

**ROLLON**<sup>®</sup>  
Linear Evolution

**Hegra Rail**



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

# When you move. We move.

Rollon S.p.A. was founded in 1975 as a manufacturer of linear motion components. Today Rollon group is a leading name in the design, production, and sale of linear rails, telescopic rails, and actuators, with headquarters based in Italy and offices and distributors located throughout the world. Rollon products are used in many industries, providing creative and efficient solutions in a wide variety of applications.

## Rollon solutions for linear motion

Linear Line



Telescopic Line



Actuator Line



Actuator System Line



### Linear Rails

- Rails with roller bearings
- Rails with caged ball bearings
- Rails with recirculating ball bearing

### Telescopic Rails

- Rails with partial/total extension
- Heavy duty rails
- Rails for automated and manual applications

### Actuators

- Belt driven actuators
- Ball screw driven actuators
- Rack and pinion actuators

### Solutions for industrial automation

- Multi-axis for pick and place
- Telescopic actuators
- Seventh axis for robots
- Solutions for metal sheet handling

## Core Competencies

- > Full range of linear rails, telescopic rails and actuators
- > Worldwide presence with branches and distributors
- > Fast delivery all over the world
- > Large technical know-how for applications



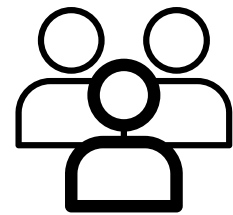
### > Standard solutions

Wide range of products and sizes  
Linear rails with roller and caged ball bearings  
Heavy duty telescopic rails  
Belt or ball screw driven linear actuators  
Multi-axis systems



### > Collaboration

International know-how in several industries  
Project consultancy  
Maximizing performance and cost optimization



### > Customization

Special products  
Research and development of new solutions  
Technologies dedicated to different sectors  
Optimal surface treatment

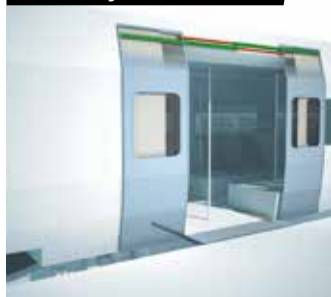


## Applications

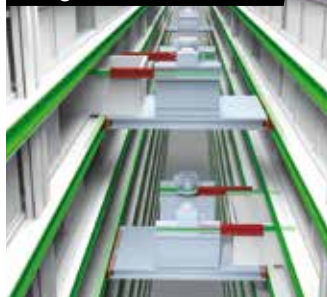
Aerospace



Railway



Logistics



Industrial Machines



Medical



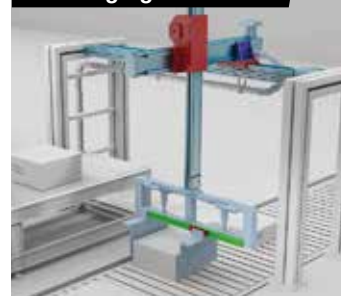
Specialty Vehicles



Robotics



Packaging



## > *Hegra Rail*



### Overview of technical features

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# Technical features overview



Reference			Product name	Extraction	Size	Material			Stroke direction				
Product category	Product	Section				Steel	X*4	A	B	BM	EG		
Partial extension		HTT			60 % to 66 %	HTT030	●	●	●	●		●	
						HTT040	●	●	●	●		●	
						HTT050	●	●	●	●		●	
						HTT060	●	●	●	●		●	
						HTT070	●	●	●	●		●	
						HTT080	●	●	●	●		▲	
						HTT100	●	●	●	●		●	
						HTT120	●	●	●	●		●	
	HTT150	●	●			●	●		●				
		HTC				HTC026	HTC026	●	●		●		●
							HTC045	●			●		●
							HTC050	●			●		●
							HTC058	●	●		●		●
							HTC075	●			●		●
Full extension		HVB			100 %	HVB026	●	●		●		●	
		HVD				HVD026	HVD026	●	●		●		●
							HVD045	●			●		●
							HVD050	●			●		●
							HVD058	●	●		●		●
		HVC				HVC045	HVC045	●			●		●
							HVC050	●			●		●
							HVC058	●	●		●	●	●
							HVC075	●			●	●	●
		HVT				HVT060	HVT060	●	●	●	●		●
							HVT080	●	●	●	●		●
							HVT100	●	●	●	●		▲
Over extension		H1D*1			150 % to 200 %	H1D045	●			●		●	
						H1D058	●	●		●		●	
						H1D075	●			●		●	
		H1C*1				H1C075	●			●		●	
		H1T*1				H1T060	H1T060	●	●	●	●		●
							H1T080	●	●	●	●		●
							H1T100	●	●	●	●		●
H1T150	●	●	●	●		●							
	H2H080		H2H080	80	●	●	●			●			
Heavy load extension		LTH			100 %	LTH30	●						
						LTH45	●						
						LTH30S	●						
						LTH45S	●						
		HGT				HGT060	HGT060	●	●	●	●	●	●
							HGT080	●	●	●	●	●	▲
							HGT100	●	●	●	●	●	●
							HGT120	●	●	●	●	●	●
							HGT150	●	●	●	●	●	●
							HGT200	●	●	●	●	●	●
HGT240	●	●	●	●	●	●							
S-profiles		LTF			100 %	LTF44	●			●			
		HGS				HGS060	●		●	●		●	
						HGS080	●		●	●		●	
HGS100	●		●	●		●							

The values given are defaults.

For a complete overview of the technical data, please consult our catalogs on the website [www.rollon.com](http://www.rollon.com).

In many cases, special designs or alternative surface coatings are possible. Please contact our technical service.

\*1 The over extension corresponds to 150 % stroke (1=150 % extraction). For a 200 % stroke (2=200 % extraction) please contact our technical service.

\*2 Different temperature ranges from -30 °C to +250 °C, after consultation with the application technologies.

\*3 The load capacity for aluminum is 40 % and for stainless steel 60 % of the stated values, if available in this material variant.

\*4 Different stainless steels, such as the «electropolishing» option, are available, please contact our technical service.

\*5 The availability of interlocks depends on the system length and varies per product group. Please contact our technical service.

\*6 The operating temperature may differ if damping is used. Please contact our technical service.

- feasible
- ▲ only to length 1000
- rotor is 35x12 EB=18
- only with locking bolt
- standard



Snap		Locking*5			Damp- ing	Max. load capacity per pair [N]		Max. rail length [mm]	Max. stroke [mm]	Max. extension speed [m/s]	Rigidity (deflection)	Operating tempera- ture*6 [°C]
E0	EB	VG	VO	VB	DG	C <sub>0rad</sub> *3	C <sub>0ax</sub>					
●	●				■	1200	70% C <sub>0rad</sub>	1000	660	0,8	+++	0 °C to +170 °C
●	●				■	2550	70% C <sub>0rad</sub>	1000	660	0,8	+++	0 °C to +170 °C
●	●	●	●	●	■	2900	70% C <sub>0rad</sub>	1200	720	0,8	+++	0 °C to +170 °C
●	●	●	●	●	●	3400	70% C <sub>0rad</sub>	1500	900	0,8	+++	0 °C to +170 °C
●	●	●	●	●	●	4200	70% C <sub>0rad</sub>	1700	1020	0,8	+++	0 °C to +170 °C
▲	▲	●	●	●	●	5000	70% C <sub>0rad</sub>	1700	1020	0,8	+++	0 °C to +170 °C
		●	●	●	●	10000	70% C <sub>0rad</sub>	2000	1200	0,8	+++	0 °C to +170 °C
		●	●	●	●	12000	70% C <sub>0rad</sub>	2000	1200	0,8	+++	0 °C to +170 °C
		●	●	●	●	15500	70% C <sub>0rad</sub>	2000	1200	0,8	+++	0 °C to +170 °C
●	●				●	750	60% C <sub>0rad</sub>	1000	660	0,8	+++	0 °C to +170 °C
●	●	●			●	1300	60% C <sub>0rad</sub>	1200	800	0,8	+++	0 °C to +170 °C
●	●	□	□	□	●	1800	60% C <sub>0rad</sub>	1200	800	0,8	+++	0 °C to +170 °C
●	●	●	●	●	●	2500	60% C <sub>0rad</sub>	1500	1000	0,8	+++	0 °C to +170 °C
●	●	●	●	●	●	3000	60% C <sub>0rad</sub>	1700	1020	0,8	+++	0 °C to +170 °C
●	●					1150	60% C <sub>0rad</sub>	1000	1000	0,8	+	0 °C to +170 °C
●	●					750	50% C <sub>0rad</sub>	1000	1000	0,8	++	0 °C to +170 °C
●	●				●	1700	50% C <sub>0rad</sub>	1200	1200	0,8	++	0 °C to +170 °C
●	●				●	1900	50% C <sub>0rad</sub>	1500	1500	0,8	++	0 °C to +170 °C
●	●				●	2500	50% C <sub>0rad</sub>	1500	1500	0,8	++	0 °C to +170 °C
●	●				●	3700	50% C <sub>0rad</sub>	2000	2000	0,8	++	0 °C to +170 °C
●	●				●	1200	50% C <sub>0rad</sub>	1200	1200	0,8	+	0 °C to +170 °C
●	●	●	●	●	●	1500	50% C <sub>0rad</sub>	1500	1500	0,8	+	0 °C to +170 °C
●	●	●	●	●	●	2100	50% C <sub>0rad</sub>	1500	1500	0,8	+	0 °C to +170 °C
●	●	●	●	●	●	3300	50% C <sub>0rad</sub>	2000	2000	0,8	+	0 °C to +170 °C
●	●	●	●	●	●	2700	50% C <sub>0rad</sub>	1500	1500	0,8	+	0 °C to +170 °C
▲	▲	●	●	●	●	4350	50% C <sub>0rad</sub>	2000	2000	0,8	+	0 °C to +170 °C
		●	●	●	●	5700	50% C <sub>0rad</sub>	2000	2000	0,8	+	0 °C to +170 °C
●	●				●	650	-	1000	1500	0,5	++	0 °C to +170 °C
●	●				●	1900	-	1500	2250	0,5	++	0 °C to +170 °C
●	●				●	2600	-	1500	2250	0,5	++	0 °C to +170 °C
●	●				●	1350	-	1500	2250	0,5	+	0 °C to +170 °C
●	●				●	2600	-	1500	2250	0,5	++	0 °C to +170 °C
●	●				●	3200	-	1500	2250	0,5	++	0 °C to +170 °C
					●	5500	-	2000	3000	0,5	++	0 °C to +170 °C
					●	7500	-	2000	3000	0,5	++	0 °C to +170 °C
●	●				●	5500	-	2000	3000	0,5	++	0 °C to +170 °C
						735	on request	1200	1215	0,5	++	-20 °C to +170 °C
						1673	on request	1500	1522	0,5	++	-20 °C to +170 °C
					●	749	on request	1200	1217	0,5	++	-20 °C to +50 °C
					●	1542	on request	1500	1522	0,5	++	-20 °C to +50 °C
●	●	●	●	●	●	5500	60% C <sub>0rad</sub>	1500	1500	0,5	+++	0 °C to +170 °C
▲	▲	●	●	●	●	9350	60% C <sub>0rad</sub>	2000	2000	0,5	+++	0 °C to +170 °C
		●	●	●	●	11000	60% C <sub>0rad</sub>	2000	2000	0,5	+++	0 °C to +170 °C
		●	●	●	●	11800	60% C <sub>0rad</sub>	2000	2000	0,5	+++	0 °C to +170 °C
		●	●	●	●	13900	60% C <sub>0rad</sub>	2000	2000	0,5	+++	0 °C to +170 °C
		●	●	●	●	17500	60% C <sub>0rad</sub>	2300	2300	0,5	+++	0 °C to +170 °C
		●	●	●	●	20000	60% C <sub>0rad</sub>	2000	2000	0,5	+++	0 °C to +170 °C
						648	-	1010	1010	0,3	+	-20 °C to +170 °C
●	●					1400	-	1000	1000	0,5	+++	0 °C to +170 °C
●	●					2450	-	1000	1000	0,5	+++	0 °C to +170 °C
●	●	○				3600	-	1500	1500	0,5	+++	0 °C to +170 °C

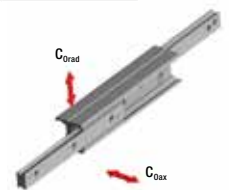
steel  
 X stainless steel  
 A aluminum

B stroke in both directions  
 BM stroke in both directions with driving disc

EG snap on closed position  
 EO snap on opened position  
 EB snap on both positions

VG locking closed position  
 VO locking opened position  
 VB locking both positions

DG damping closed position



## Product explanation

### > Partial and full extension guides of different types



Fig. 1

The Hegra Rail product family consists of five product categories: partial, fully extending, overextending and heavy-duty rails as well as S-profiles. Different versions in the single categories, such as design or materials, also provide for increased customer benefits.

#### The most important characteristics:

- High load capacity and minimal deflection
- Different versions and materials
- Compact design
- Lightweight; smooth operation
- Long life
- High functional reliability

#### Preferred applications:

- Rail vehicles (maintenance and battery compartments)
- Motor vehicle technology
- Construction and machine technology
- Special purpose machinery



**Partial extension guides**

Partial extension guides with a stroke of more than 50 % of the closed telescoping length, consisting of one guide rail and one slider. The high system rigidity is achieved here in combination with the connection construction.



Fig. 2

**Full extension guides**

Full extension guides with strokes of about 100 % of the closed length consisting of three elements in different designs and sizes.



Fig. 3

**Overextending guides**

Overextending guides with a stroke of up to 200 % of the closed telescoping length. The use of intermediate elements with a high moment of inertia achieves excellent system rigidity and a high load capacity in fully extended systems.



Fig. 4

**Heavy load extension guides**

Full extension guides with strokes of about 100 % of the length consist of a solid, double T-shaped intermediate element and the two corresponding sliders. This full extension guide was specially designed for extremely heavy loads with minimal deflection and high system rigidity.



Fig. 5

**S-profiles**

Full extension guides with strokes of about 100 % of the closed length consisting of two guide rails and one S-shaped intermediate element. The advantages of the full extension guide are high rigidity and a compact design.

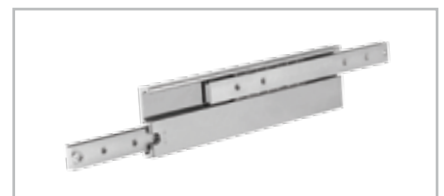


Fig. 6

# Overview product cross sections



## > Partial extension guides

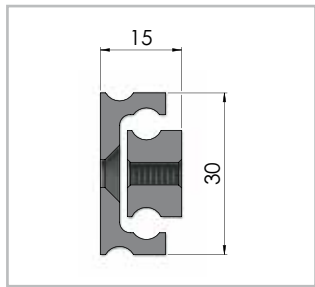


Fig. 7

**HTT030**

Load capacities p. HR-16

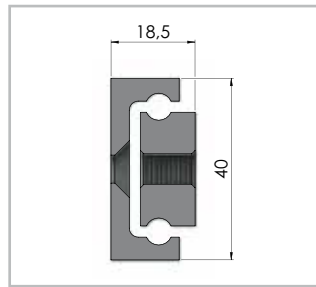


Fig. 8

**HTT040**

Load capacities p. HR-17

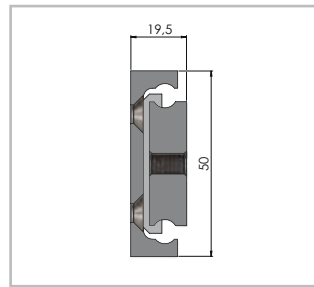


Fig. 9

**HTT050**

Load capacities p. HR-18

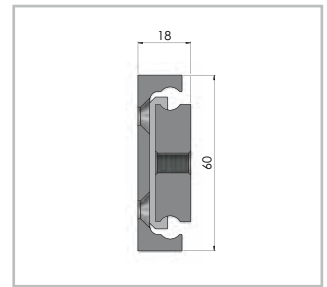


Fig. 10

**HTT060**

Load capacities p. HR-18

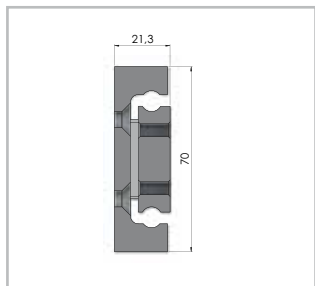


Fig. 11

**HTT070**

Load capacities p. HR-20

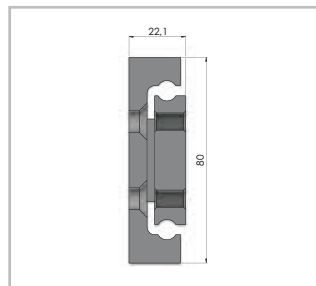


Fig. 12

**HTT080**

Load capacities p. HR-21

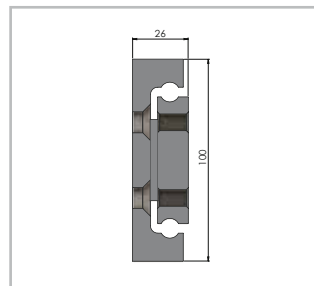


Fig. 13

**HTT100**

Load capacities p. HR-21

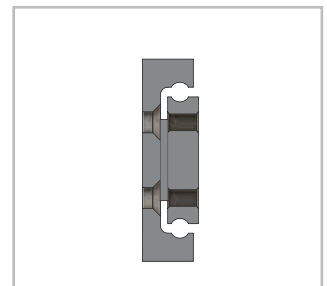


Fig. 14

**HTT120, HTT150**

Versions are available on request  
Load capacities p. HR-22

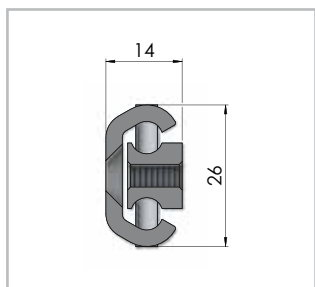


Fig. 15

**HTC026**

Load capacities p. HR-24

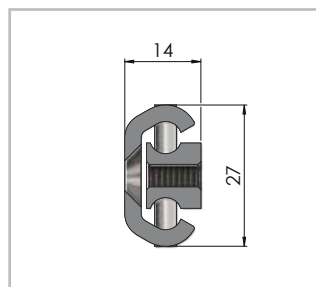


Fig. 16

**HTCX026**

Load capacities p. HR-24

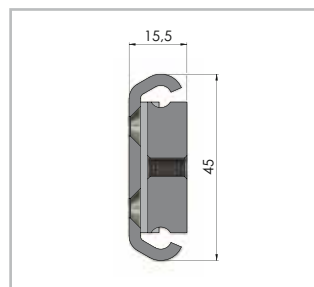


Fig. 17

**HTC045**

Load capacities p. HR-25

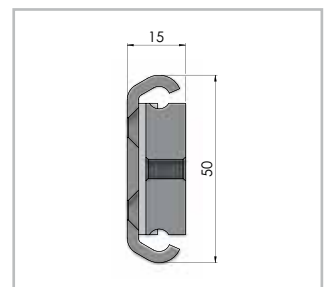


Fig. 18

**HTC50**

Load capacities p. HR-26

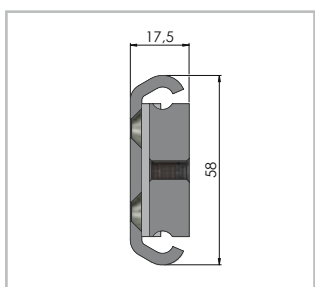


Fig. 19

**HTC058**

Load capacities p. HR-26

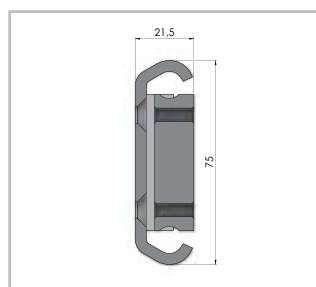


Fig. 20

**HTC075**

Load capacities p. HR-27

**HR-10**

## Full extension guides

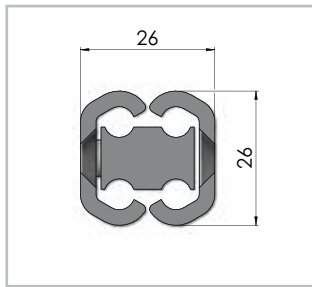


Fig. 21

**HVB026**

Load capacities p. HR-29

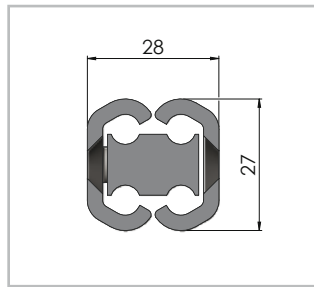


Fig. 22

**HVBX026**

Load capacities p. HR-29

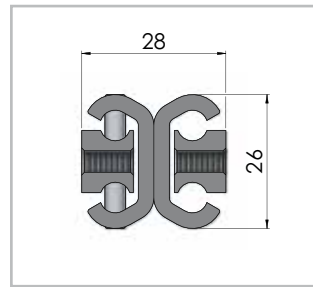


Fig. 23

**HVD026**

Load capacities p. HR-31

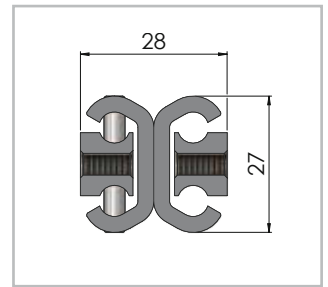


Fig. 24

**HVDX026**

Load capacities p. HR-31

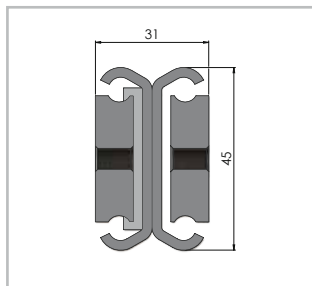


Fig. 25

**HVD045**

Load capacities p. HR-32

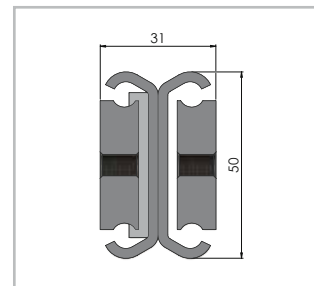


Fig. 26

**HVD050**

Load capacities p. HR-33

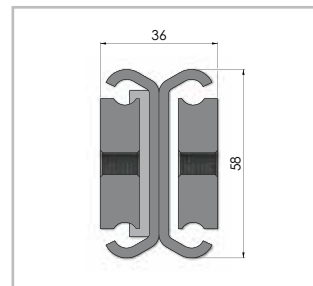


Fig. 27

**HVD058**

Load capacities p. HR-34

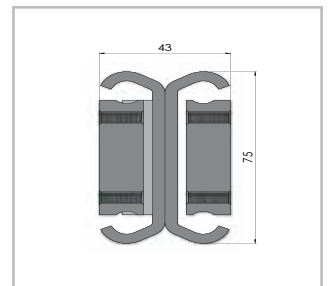


Fig. 28

**HVD075**

Load capacities p. HR-35

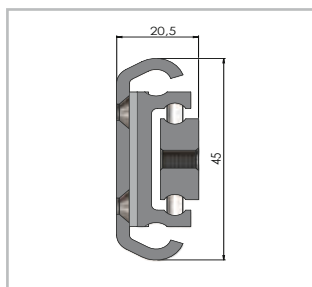


Fig. 29

**HVC045**

Load capacities p. HR-37

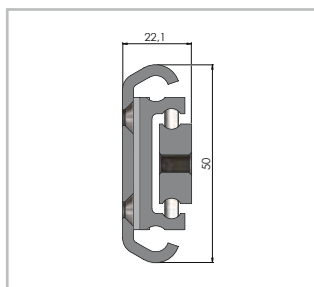


Fig. 30

**HVC050**

Load capacities p. HR-38

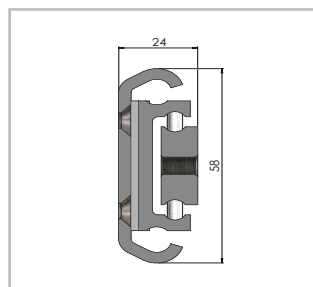


Fig. 31

**HVC058**

Load capacities p. HR-39

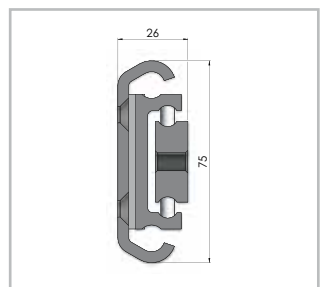


Fig. 32

**HVC075**

Load capacities p. HR-40

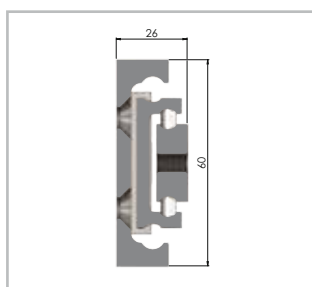


Fig. 33

**HVT060**

Load capacities p. HR-42

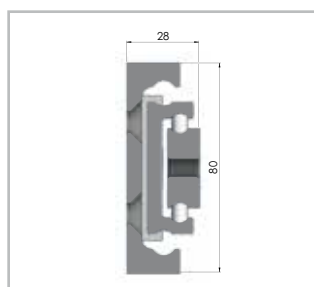


Fig. 34

**HVT080**

Load capacities p. HR-43

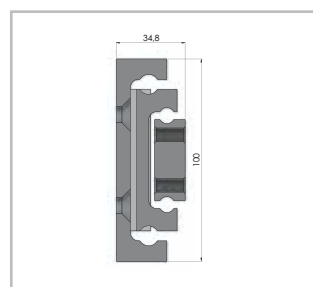


Fig. 35

**HVT100**

Load capacities p. HR-44

> Overextending guides

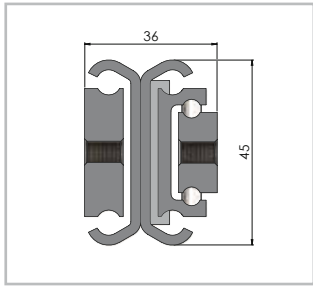


Fig. 36

**H1D045**

Load capacities p. HR-46

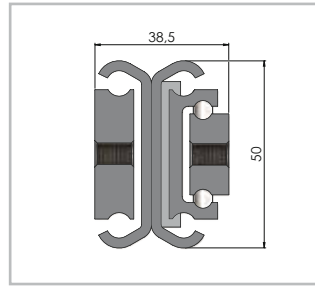


Fig. 37

**H1D050**

Load capacities p. HR-47

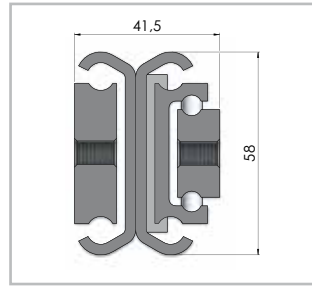


Fig. 38

**H1D058**

Load capacities p. HR-47

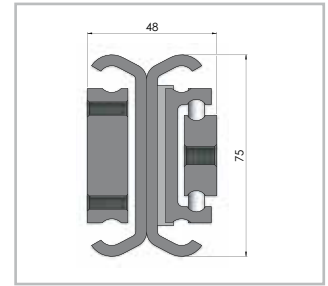


Fig. 39

**H1D075**

Load capacities p. HR-48

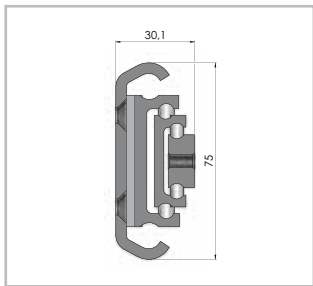


Fig. 40

**H1C075**

Load capacities p. HR-50

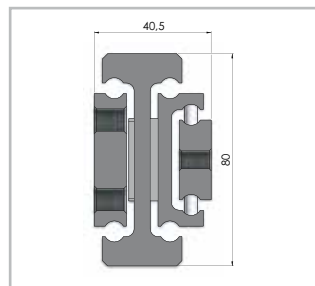


Fig. 41

**H1T060**

Load capacities p. HR-52

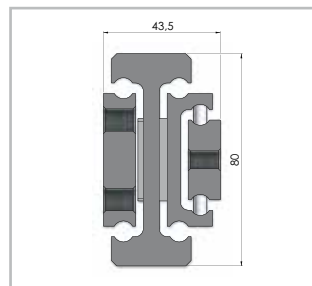


Fig. 42

**H1T080**

Load capacities p. HR-53

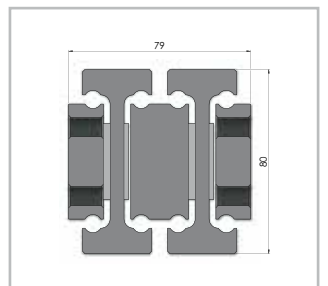


Fig. 43

**H2H080**

Load capacities p. HR-56

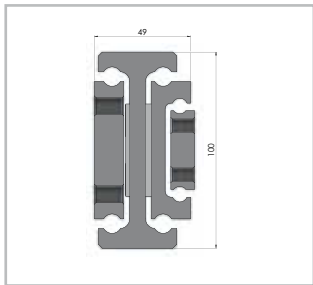


Fig. 44

**H1T100**

Load capacities p. HR-54

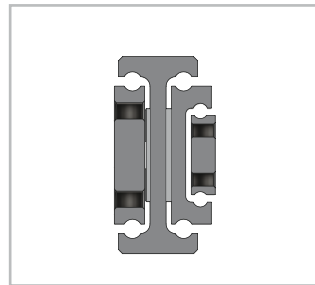


Fig. 45

**H1T150**

Versions are available on request  
Load capacities p. HR-54

➤ Heavy load extension guides

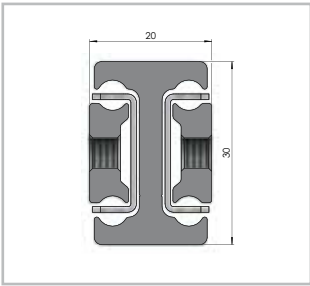


Fig. 46

**LTH30**

Load capacities p. HR-58

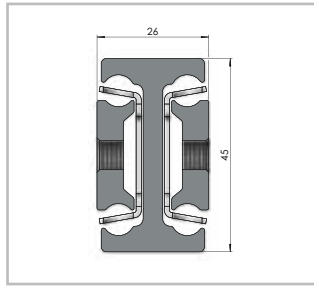


Fig. 47

**LTH45**

Load capacities p. HR-61

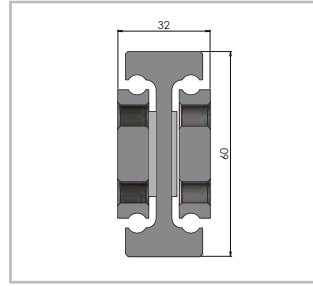


Fig. 48

**HGT060**

Load capacities p. HR-65

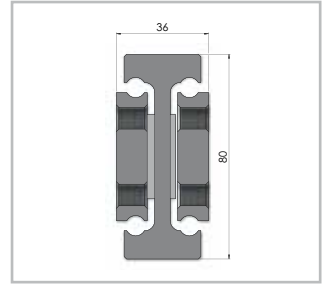


Fig. 49

**HGT080**

Load capacities p. HR-66

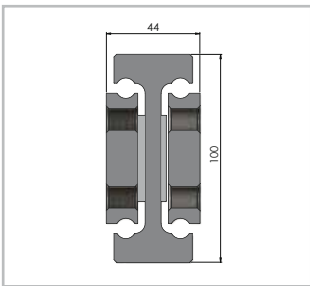


Fig. 50

**HGT100**

Load capacities p. HR-67

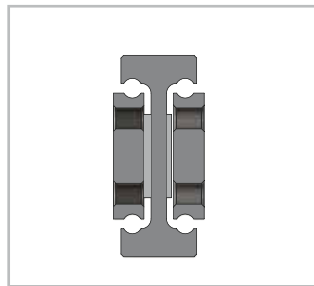


Fig. 51

**HGT120, HGT150, HGT200, HGT240**

Versions are available on request

Load capacities p. HR-67

> S-profiles

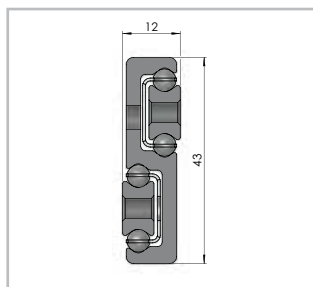


Fig. 52

**LTF44**

Load capacities p. HR-69

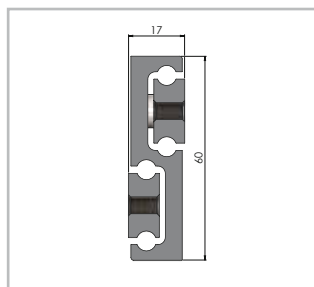


Fig. 53

**HGS060**

Load capacities p. HR-71

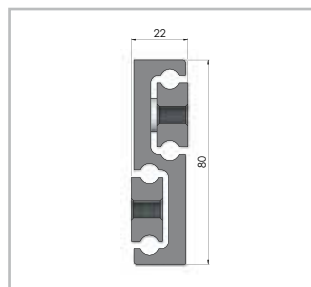


Fig. 54

**HGS080**

Load capacities p. HR-72

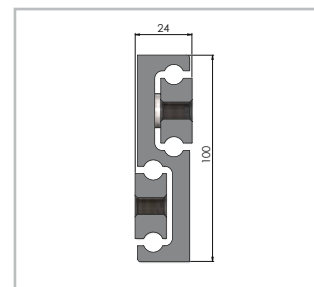


Fig. 55

**HGS100**

Load capacities p. HR-72



## Technical data

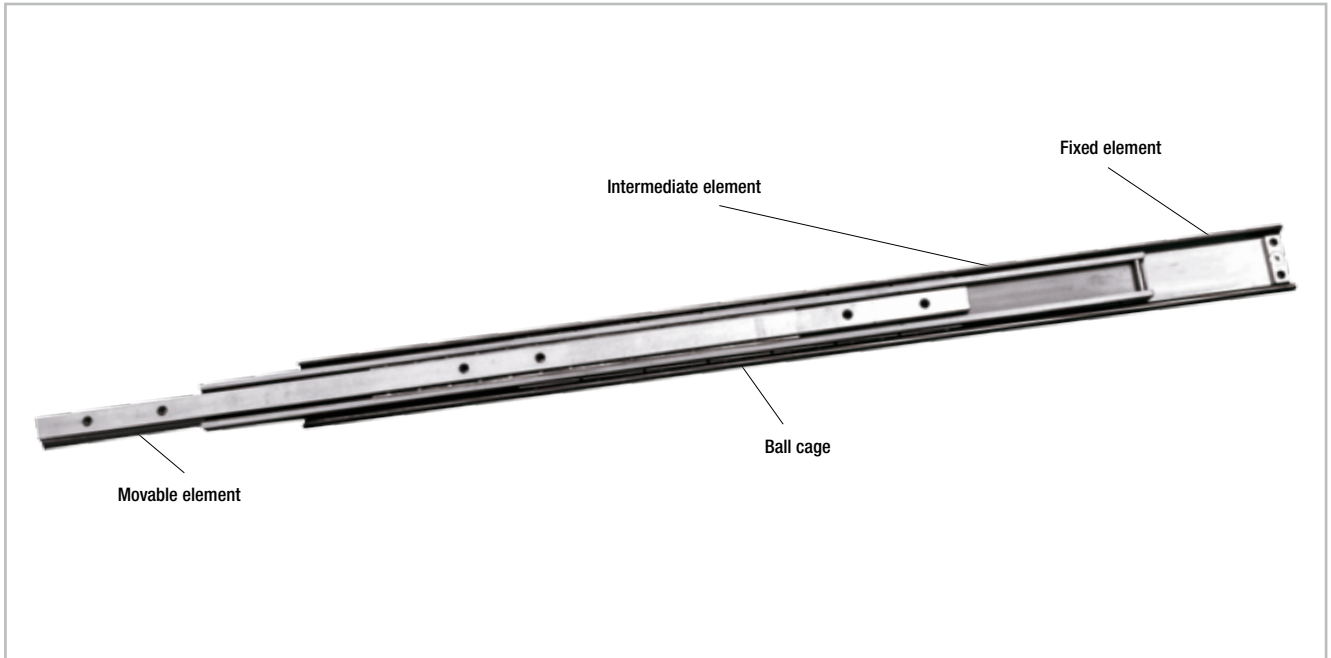


Fig. 56

### Performance characteristics:

- Temperature range: 0 °C to +170 °C (32 °F to +338 °F)  
(in exceptions also -30 °C to +250 °C (-22 °F to +482 °F))
- Max. operating speed 0.8 m/s (depending on the application)
- Different materials and anti-corrosion coatings are available
- Special solutions, such as locking mechanisms, catches, damping elements or Einhaltung are available on request

### Attention!

The load capacity for aluminum is 40 % and for stainless steel 60 % of the stated values, if available in this material variant.

### Notes:

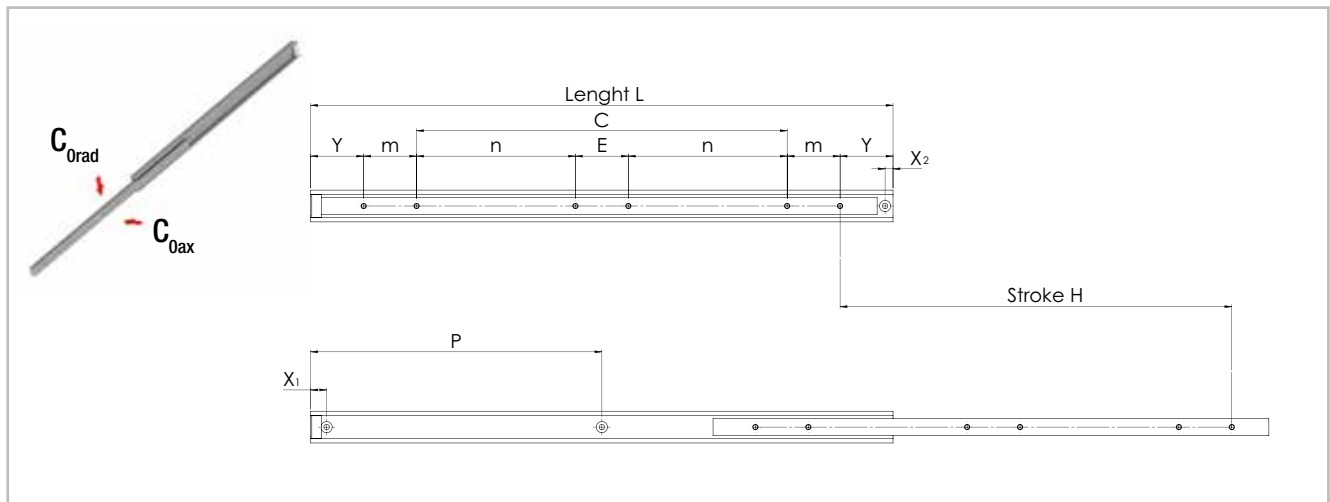
- Horizontal installation is recommended
- Vertical installation on request
- Special strokes on request
- All load capacities refer to one telescopic pair
- Mounting screws with a strength class of 10.9 must be used for all telescopic rails
- Internal stops are provided to stop the sliders when not under load and the ball cage. Please use external stops as limit stops for a system under load
- Not all accessories (interlocks, damping, drive disk, snap) can be combined with each other. Please contact our technical service.
- For models HGT with locking please observe right or left side use.
- Temperature range: LTH und LTF  
-20 °C to +170 °C (-22 °F to +338 °F)
- Temperature range: LTH ...S  
-20 °C to +50 °C (-22 °F to +122 °F)
- Telescopic guides made of aluminum or stainless steel are standard without greasing. If a greasing is desired, it must be stated separately at the order.
- Please note eventually dimensional variations in use of stainless steel. Please contact our technical service.

# Load capacities and dimensions



## Partial extension guides

### > HTT030



All dimensions are indicated in mm

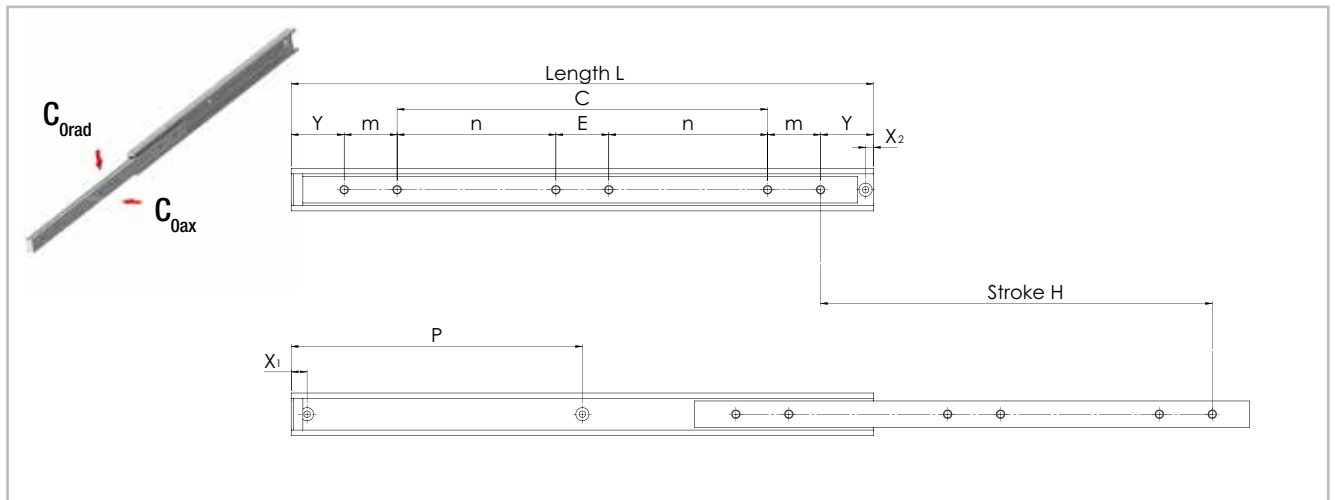
Fig. 57

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		X1	X2	Y	m	n	E	C	P	Number of holes
				$C_{Orad}$ [N]	$C_{Oax}$ [N]									
HTT	30	250	130	1100	70 % $C_{Orad}$	15	7.5	50	50			50	125	4
		300	180	1200								100	150	
		350	230	1150								150	175	
		400	260	1100								200	200	
		450	310	1050								250	225	
		500	340	1000								300	250	
		550	370	950								150	275	6
		600	400	900								175	300	
		650	430	850								200	325	
		700	460	800								225	350	
		750	490	750								250	375	
		800	520	700								275	400	
		850	550	650								300	425	
		900	600	600								325	450	
		950	630	550								350	475	
		1000	660	500								375	500	

The load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

Tab. 1

## > HTT040



All dimensions are indicated in mm

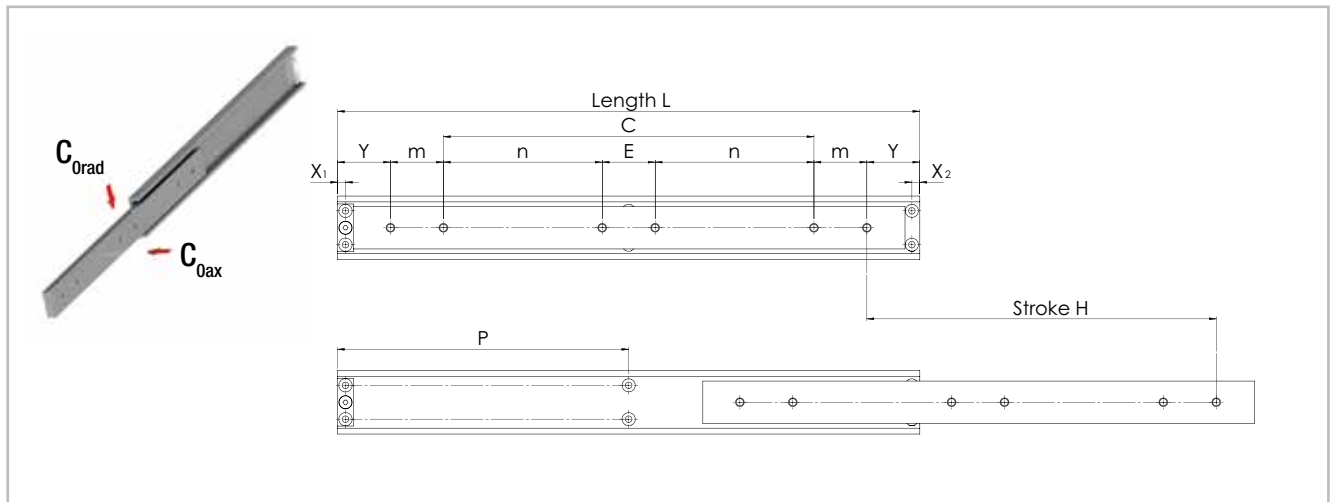
Fig. 58

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		X1	X2	Y	m	n	E	C	P	Number of holes
				$C_{0rad}$ [N]	$C_{0ax}$ [N]									
HTT	40	250	130	2100	70 % $C_{0rad}$	15	7.5	50	50	-	-	50	125	4
		300	180	2250								100	150	
		350	230	2350								150	175	
		400	260	2450								200	200	
		450	310	2550								250	225	
		500	340	2500								300	250	
		550	370	2450								150	275	6
		600	400	2400								175	300	
		650	430	2350								200	325	
		700	460	2300								225	350	
		750	490	2250								250	375	
		800	520	2150								275	400	
		850	550	2050								300	425	
		900	600	1950								325	450	
		950	630	1800								350	475	
		1000	660	1650								375	500	

The load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

Tab. 2

> **HTT050, HTT060**



All dimensions are indicated in mm

Fig. 59

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		X1	X2	Y	m	n	E	C	P	Number of holes		
				C <sub>Orad</sub> [N]	C <sub>Oax</sub> [N]											
HTT	50	300	180	2500	70 % C <sub>Orad</sub>	15	7.5	50	50			100	150	4		
		350	230	2600								150	175			
		400	260	2700								-	-		200	200
		450	310	2800								250	225			
		500	340	2900								300	250	6		
		550	370	2850								150	275			
		600	400	2800								175	300			
		650	430	2700								200	325			
		700	460	2600								225	350			
		750	490	2500								250	375			
		800	520	2400								275	400			
		850	550	2300								300	425			
		900	600	2200								325	450			
		950	630	2100								350	475			
		1000	660	2000								375	500			
		1100	690	1850								425	525			
1200	720	1650	475	550												

The load capacity for aluminum is 40 % and for stainless steel 60 % of the stated values, if available in this material variant (see Technical features overview).

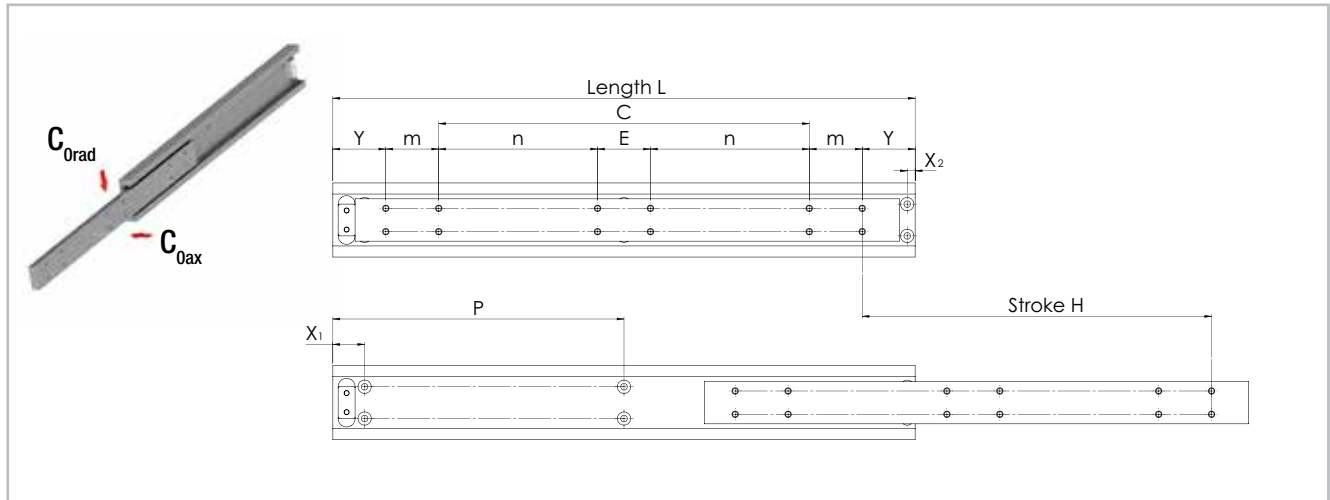
Tab. 3

Type	Size	Length	Stroke	Load capacity per pair		X1	X2	Y	m	n	E	C	P	Number of holes
				C <sub>0rad</sub> [N]	C <sub>0ax</sub> [N]									
HTT	60	300	180	3200	70 % C <sub>0rad</sub>	7.5	7.5	50	50	-	-	100	150	4
		350	210	3250								150	175	
		400	240	3300								200	200	
		450	270	3350								250	225	
		500	300	3400								300	250	
		550	330	3350								150	275	6
		600	360	3300								175	300	
		650	390	3250								200	325	
		700	420	3200								225	350	
		750	450	3100								250	375	
		800	480	3000								275	400	
		850	510	2900								300	425	
		900	540	2800								325	450	
		950	570	2700								350	475	
		1000	600	2600								375	500	
		1100	660	2450								425	550	
		1200	720	2250								475	600	
		1300	780	2050								525	650	
		1400	840	1900								575	700	
		1500	900	1700								625	750	

The load capacity for aluminum is 40 % and for stainless steel 60 % of the stated values, if available in this material variant (see Technical features overview).

Tab. 4

> HTT070, HTT080, HTT100, HTT120, HTT150



All dimensions are indicated in mm

Fig. 60

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		X1	X2	Y	m	n	E	C	P	Number of holes
				$C_{Orad}$ [N]	$C_{Oax}$ [N]									
HTT	70	500	300	4200	70 % $C_{Orad}$	30	7.5	50	50		-	300	250	8
		550	330	4150						150	275			
		600	360	4100						175	300			
		650	390	4050						200	325			
		700	420	4000						225	350			
		750	450	3900						250	375			
		800	480	3800						275	400			
		850	510	3700						300	425			
		900	540	3600						325	450			
		950	570	3450						350	475			
		1000	600	3300						375	500			
		1100	660	3100						425	550			
		1200	720	2900						475	600			
		1300	780	2700						525	650			
		1400	840	2400						575	700			
		1500	900	2100						625	750			
		1600	960	1800						675	800			
1700	1020	1500	725	850										

The load capacity for aluminum is 40 % and for stainless steel 60 % of the stated values, if available in this material variant (see Technical features overview).

Tab. 5



Type	Size	Length		Stroke		Load capacity per pair		X1	X2	Y	m	n	E	C	P	Number of holes
		L [mm]	H [mm]	C <sub>0rad</sub> [N]	C <sub>0ax</sub> [N]											
HTT	80	500	300	4800	70 % C <sub>0rad</sub>	35	15	100	100					100	250	8
		550	330	4900										150	275	
		600	360	5000										200	300	
		650	390	4900										250	325	
		700	420	4800										300	350	
		750	450	4700										350	375	
		800	480	4600										400	400	
		850	510	4500										450	425	
		900	540	4400										500	450	
		950	570	4250										550	475	
		1000	600	4100										600	500	
		1100	660	3800										300	550	12
		1200	720	3500										350	600	
		1300	780	3200										400	650	
		1400	840	2900										450	700	
		1500	900	2600										500	750	
		1600	960	2300										550	800	
1700	1020	2000	600	850												
HTT	100	700	420	9000	70 % C <sub>0rad</sub>	35	12	100	200					100	350	8
		750	450	9500										150	375	
		800	480	10000										200	400	
		850	510	9750										250	425	
		900	540	9500										300	450	
		950	570	9250										350	475	
		1000	600	9000										400	500	
		1100	660	8500										150	550	12
		1200	720	8000										200	600	
		1300	780	7500										250	650	
		1400	840	6900										300	700	
		1500	900	6300										350	750	
		1600	960	5700										400	800	
		1700	1020	5100										450	850	
		1800	1080	4500										500	900	
		1900	1140	3900										550	950	
		2000	1200	3300										600	1000	

The given load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

Tab. 6

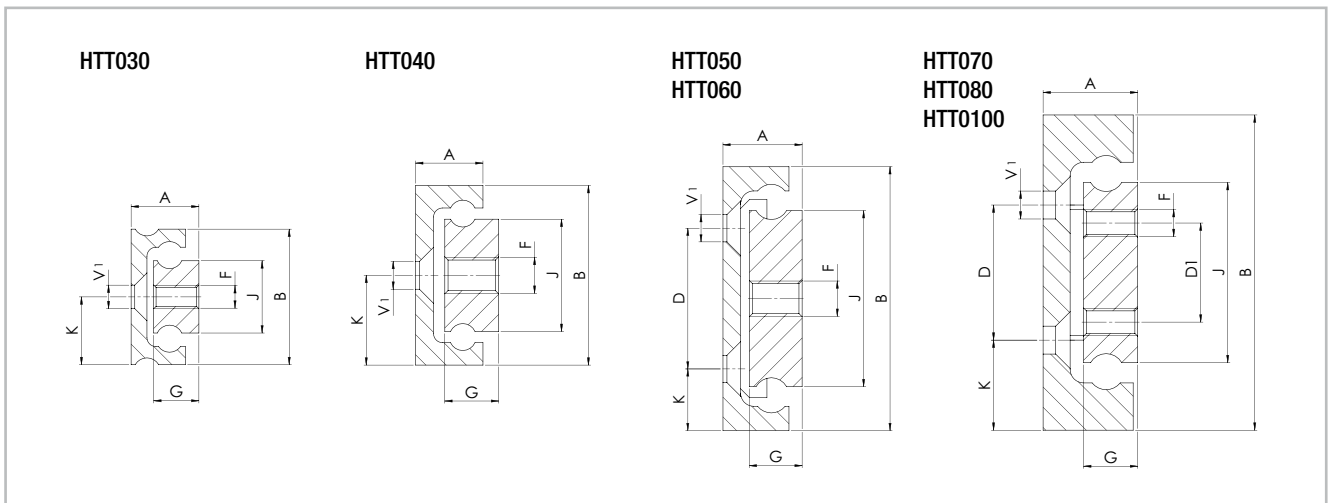
Other sizes and versions are available on request

Type	Size	Length L [mm]	Load capacity per pair	
			$C_{0rad}$ [N]	$C_{0ax}$ [N]
HTT	120	700	11500	70 % $C_{0rad}$
		⋮	⋮	
		2000	4700	
HTT	150	700	14500	70 % $C_{0rad}$
		⋮	⋮	
		2000	6400	

The given load capacity for aluminum is 40 % and for stainless steel 60 % of the stated values, if available in this material variant (see Technical features overview).

Tab. 7

## > HTT



All dimensions are indicated in mm

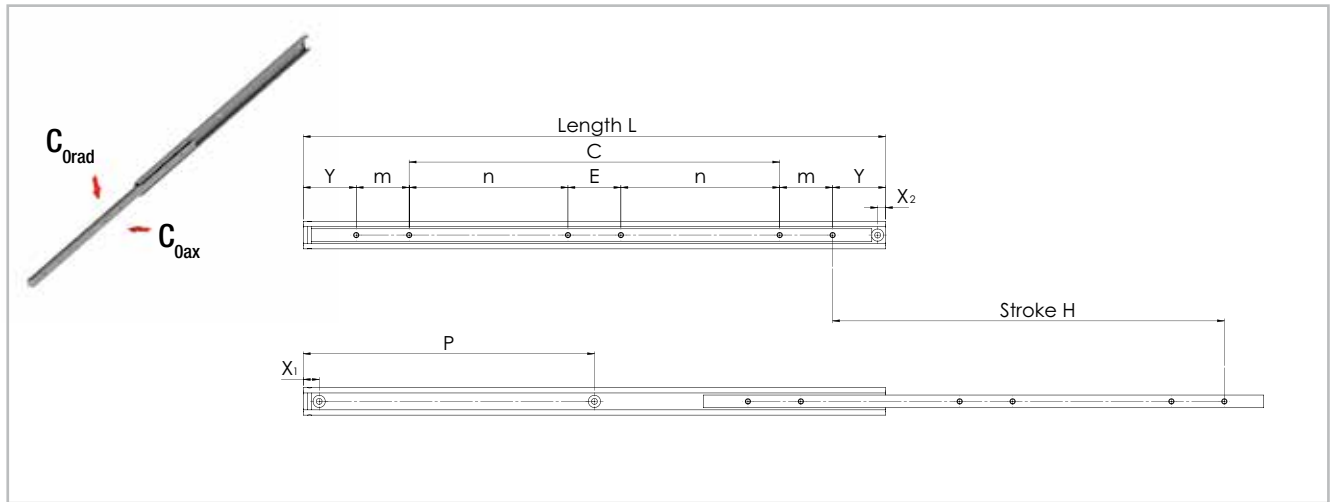
<sup>1</sup> Mounting holes (V) for countersunk screws according to DIN 7991/ISO 10642

Fig. 61

Type	Size	A	B	J	G	K	D	D1	F	V1	Weight [kg/m]
HTT	30	15	30	16	10	15	-	-	M6	M5	2.4
	40	18.5	40	25	-	20	-	-	M8	M6	4.3
	50	19.5	50	30	-	12.5	25	-			5.6
	60	18	60	40	12	14	32	-	M6	M6	7.7
	70	21.3	70	40	-	20	30	22			M6
	80	22.1	80	50	-	25	-	30	M8	M8	10.4
	100	26	100	70	15	27.5	45	45	M10		17

Tab. 8

> HTC026



All dimensions are indicated in mm

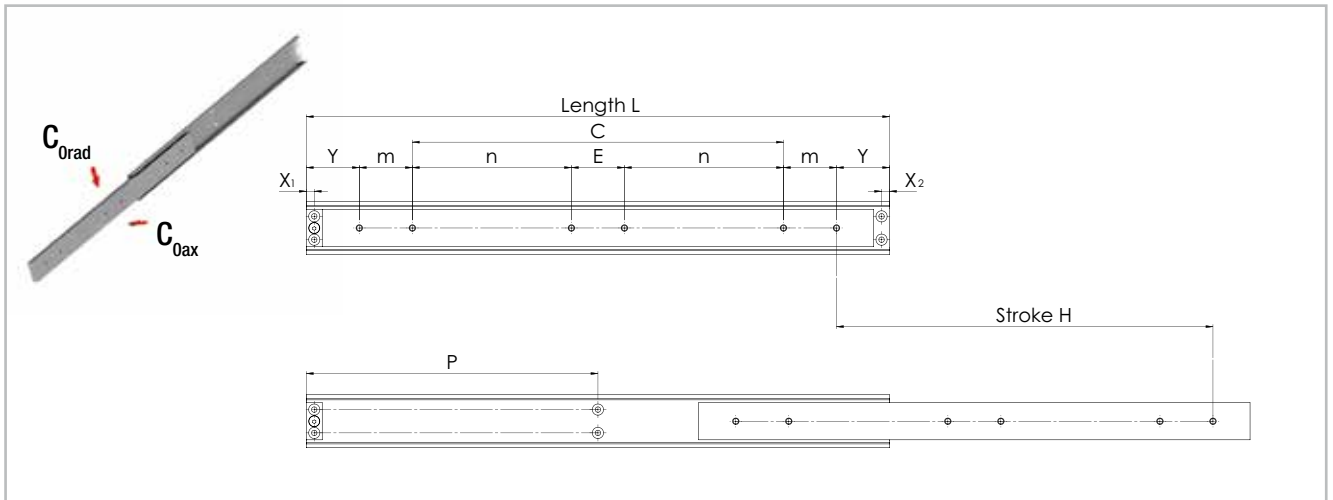
Fig. 62

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		X1	X2	Y	m	n	E	C	P	Number of holes
				C <sub>Orad</sub> [N]	C <sub>Oax</sub> [N]									
HTC	26	250	130	700	60 % C <sub>Orad</sub>	15	7.5	50	50	-	-	50	125	4
		300	180	750								100	150	
		350	230	750								150	175	
		400	260	700								200	200	
		450	310	650								250	225	
		500	340	600								300	250	
		550	370	550								150	275	6
		600	400	500								175	300	
		650	430	450								200	325	
		700	460	400								225	350	
		750	490	350								250	375	
		800	520	300								275	400	
		850	550	250								300	425	
		900	600	220								325	450	
		950	630	200								350	475	
		1000	660	180								375	500	

The load capacity for aluminum is 40 % and for stainless steel 60 % of the stated values, if available in this material variant (see Technical features overview).

Tab. 9

## > HTC045, HTC050, HTC058



All dimensions are indicated in mm

Fig. 63

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		X1	X2	Y	m	n	E	C	P	Number of holes			
				$C_{0rad}$ [N]	$C_{0ax}$ [N]												
HTC	45	300	180	1250	60 % $C_{0rad}$	7.5	7.5	50	50	-	-	100	150	4			
		350	230	1300								150	175				
		400	260	1250								200	200				
		450	310	1200								250	225				
		500	340	1150								300	250	50	-	-	6
		550	370	1100								150	275				
		600	400	1050								175	300				
		650	430	1000								200	325				
		700	460	950								225	350				
		750	490	900								250	375				
		800	520	850								275	400				
		850	550	800								300	425				
		900	600	750								325	450				
		950	630	700								350	475				
		1000	660	650								375	500				
		1100	720	550								425	550				
		1200	800	450								475	600				

The load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

Tab. 10

#### 4 Load capacities and dimensions

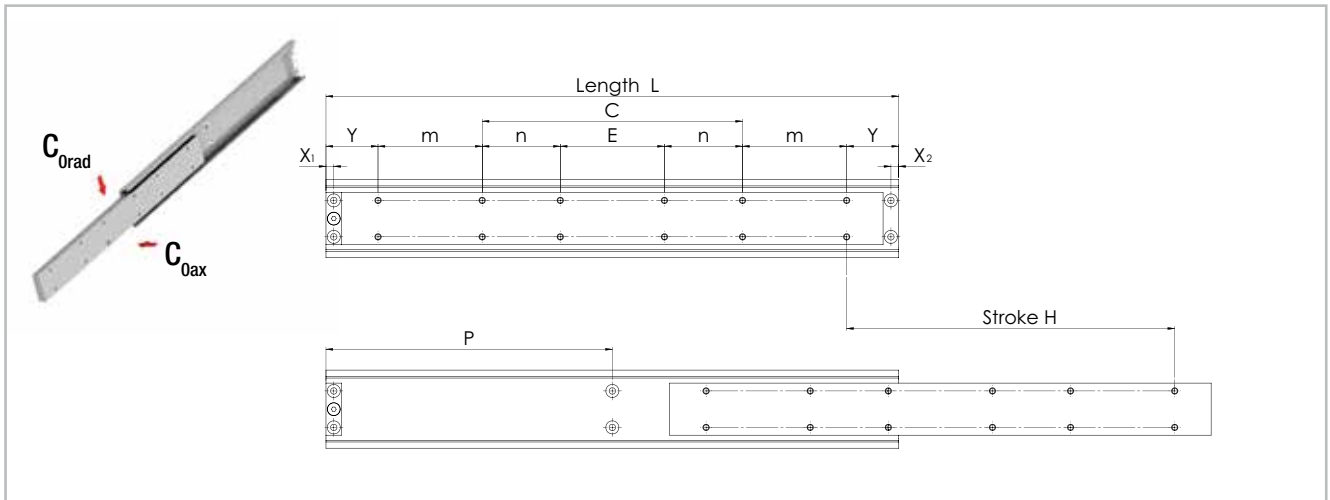
Type	Size	Length	Stroke	Load capacity per pair		X1	X2	Y	m	n	E	C	P	Number of holes
				C <sub>0rad</sub> [N]	C <sub>0ax</sub> [N]									
HTC	50	300	180	1500	60 % C <sub>0rad</sub>	7.5	7.5	50	50			100	150	4
		350	230	1600								150	175	
		400	260	1700								200	200	
		450	310	1800								250	225	
		500	340	1750								300	250	
		550	370	1700								150	275	
		600	400	1650						175	300			
		650	430	1600						200	325			
		700	460	1550						225	350			
		750	490	1450						250	375			
		800	520	1350						275	400			
		850	550	1250						300	425			
		900	600	1150						325	450			
		950	630	1050						350	475			
		1000	660	950						375	500			
		1100	720	750						425	550			
		1200	800	550						475	600			
		HTC	58	300						180	2200	60 % C <sub>0rad</sub>	7.5	7.5
350	230			2300	150	175								
400	260			2400	200	200								
450	310			2500	250	225								
500	340			2450	300	250								
550	370			2400	150	275								
600	400			2350	175	300								
650	430			2300	200	325								
700	460			2200	225	350								
750	490			2100	250	375								
800	520			2000	275	400								
850	550			1900	300	425								
900	600			1800	325	450								
950	630			1700	350	475								
1000	660			1600	375	500								
1100	720			1400	425	550								
1200	800			1200	475	600								
1300	860			1000	525	650								
1400	920	800	575	700										
1500	1000	600	625	750										

The load capacity for aluminum is 40 % and for stainless steel 60 % of the stated values, if available in this material variant (see Technical features overview).

Tab. 11



## > HTC075



All dimensions are indicated in mm

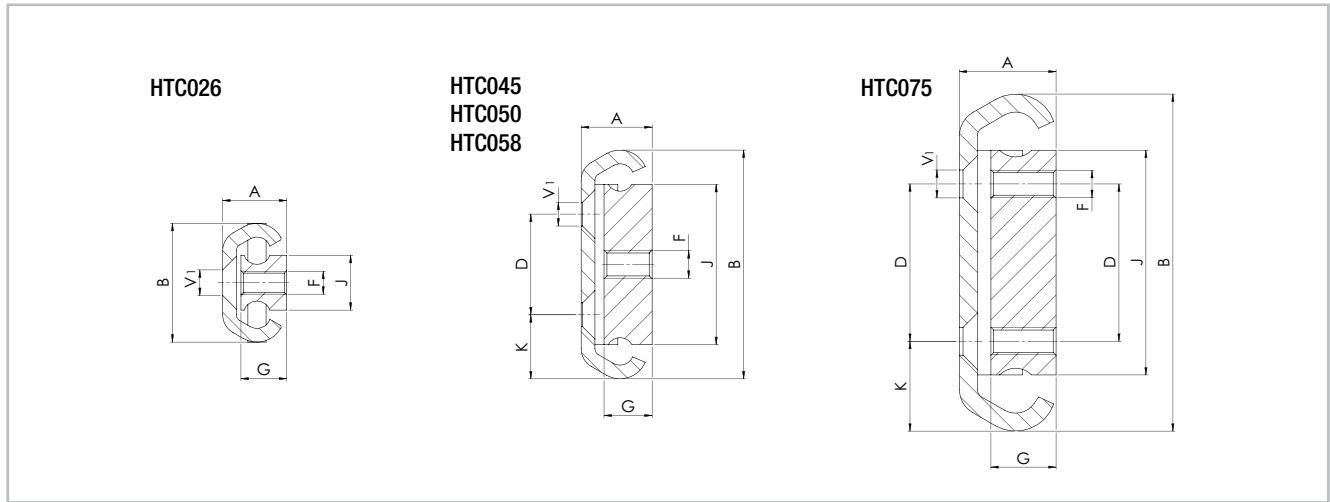
Fig. 64

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		X1	X2	Y	m	n	E	C	P	Number of holes			
				$C_{0rad}$ [N]	$C_{0ax}$ [N]												
HTC	75	400	240	2800	60 % $C_{0rad}$	7.5	7.5	50	100			150	200	6			
		450	270	2850								-	-		175	225	
		500	300	2900											200	250	
		550	330	3000											75	275	12
		600	360	2950											100	300	
		650	390	2900											125	325	
		700	420	2850											150	350	
		750	450	2800											175	375	
		800	480	2750											200	400	
		850	510	2700											225	425	
		900	540	2650											250	450	
		950	570	2600											275	475	
		1000	600	2500										100	-	500	
		1100	660	2250												550	
		1200	720	2000												600	
		1300	780	1750												650	
		1400	840	1500												700	
		1500	900	1200												750	
1600	960	900					800										
1700	1020	700					850										

The load capacity for aluminum is 40 % and for stainless steel 60 % of the stated values, if available in this material variant (see Technical features overview).

Tab. 12

> HTC



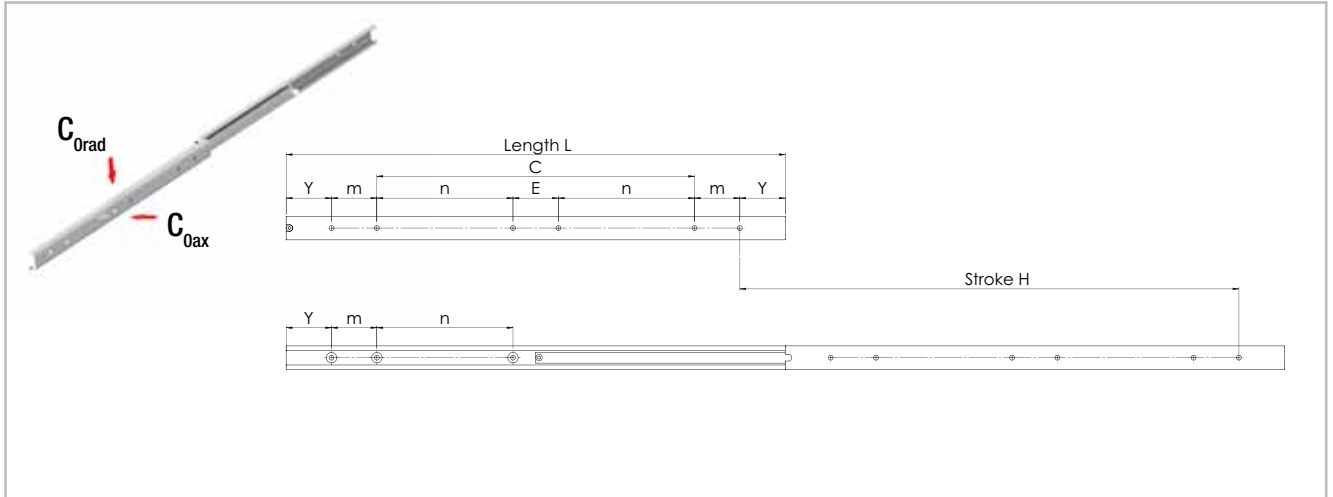
All dimensions are indicated in mm  
 V<sup>1</sup> Mounting holes (V) for countersunk screws according to DIN 7991/ISO 10642

Fig. 65

Type	Size	A	B	J	G	K	D	F	V1	Weight [kg/m]
HTC	26	14	26	12	10	-	-	M5	M5	1.81
	45	15.5	45	30	10	11.5	22	M6	M6	3.80
	50		50	35	10.5	14	22		M5	3.80
	58	17.5	58	40	12	13	32	M8	M6	7.10
	75	21.5	75	50	14.5	20	35	M6		8.80

Tab. 13

## Full extension

> HVB026


All dimensions are indicated in mm

Attention! For assembly, the end limit screws must be removed. A drop out of the balls is possible after removing the screws!

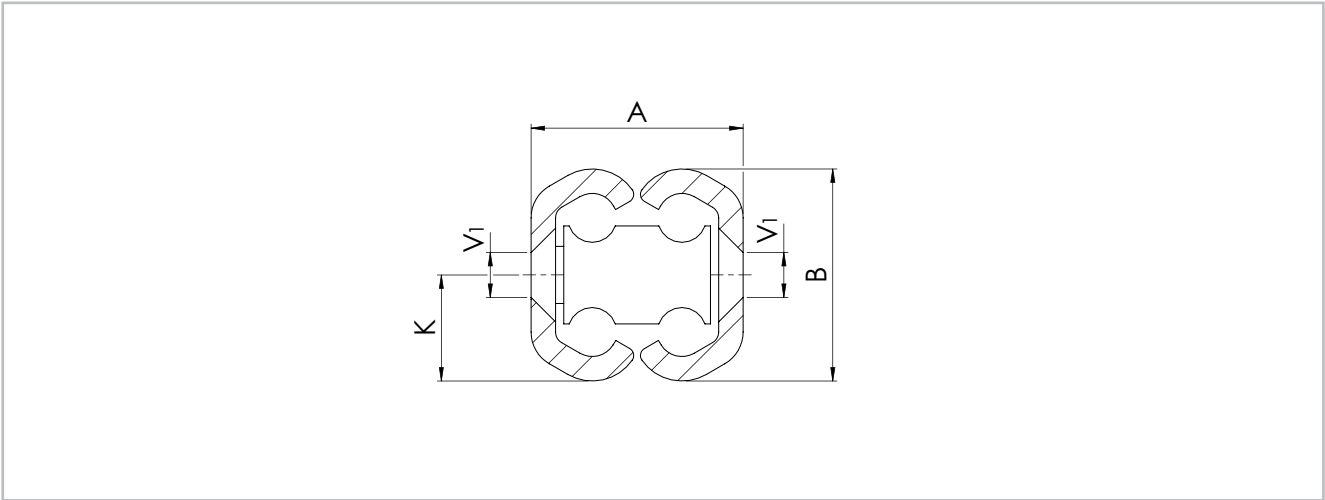
Fig. 66

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		Y	m	C	Number of holes
				$C_{Orad}$ [N]	$C_{Oax}$ [N]				
HVB	26	250	250	1050	60 % $C_{Orad}$	50	50	50	4
		300	300	1100				100	
		350	350	1150				150	
		400	400	1100				200	
		450	450	1050				250	
		500	500	1000				300	
		550	550	950				-	6
		600	600	900					
		650	650	850					
		700	700	800					
		750	750	750					
		800	800	700					
		850	850	650					
		900	900	600					
		950	950	550					
		1000	1000	500					

The load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

Tab. 14

> HVB



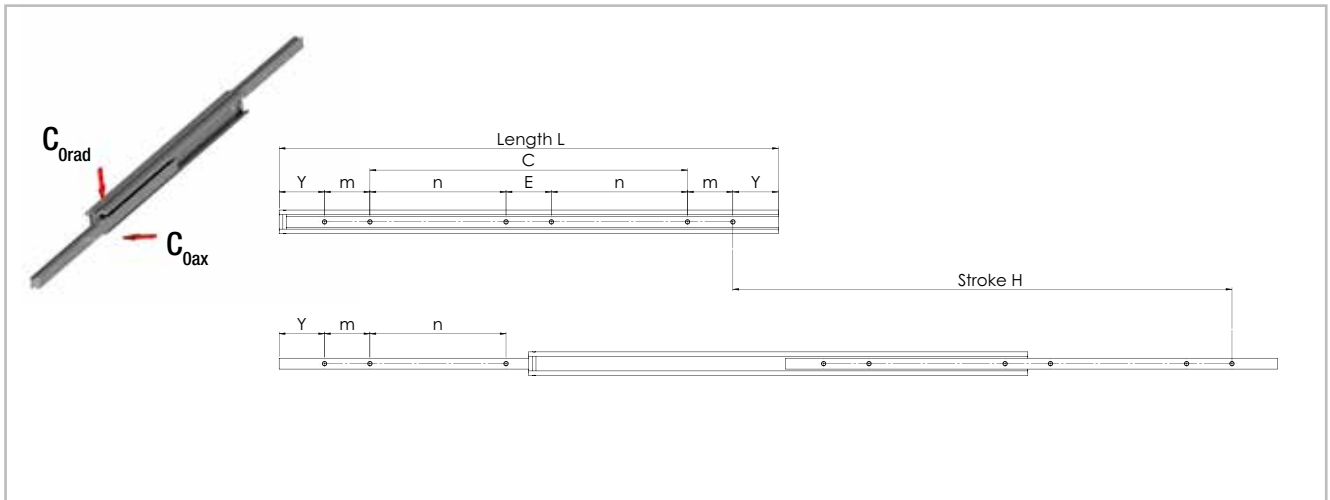
All dimensions are indicated in mm  
 V1 Mounting holes (V) for countersunk screws according to DIN 7991/ISO 10642

Fig. 67

Type	Size	A	B	K	V1	Weight [kg/m]
HVB	26	26	26	13	M5	3.80

Tab. 15

## > HVD026



All dimensions are indicated in mm

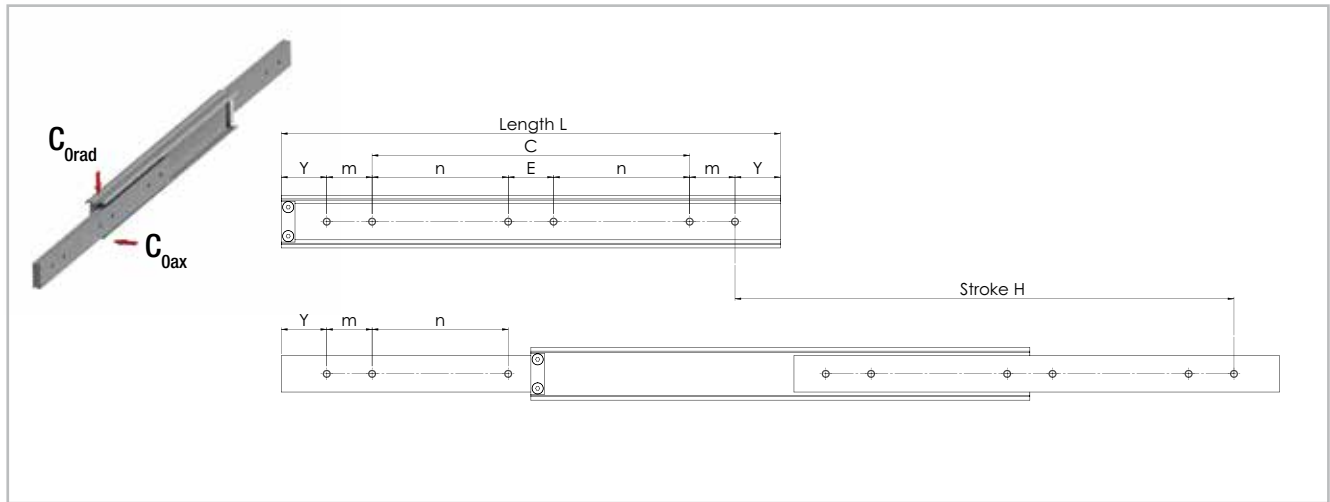
Fig. 68

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		Y	m	C	Number of holes
				$C_{Orad}$ [N]	$C_{Oax}$ [N]				
HVD	26	250	250	650	50 % $C_{Orad}$	50	50	50	4
		300	300	700				100	
		350	350	750				150	
		400	400	700				200	
		450	450	650				250	
		500	500	600				300	
		550	550	550				-	6
		600	600	500				-	
		650	650	450				-	
		700	700	400				-	
		750	750	350				-	
		800	800	300				-	
		850	850	270				-	
		900	900	240				-	
		950	950	220				-	
		1000	1000	200				-	

The load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

Tab. 16

> HVD045, HVD050, HVD058



All dimensions are indicated in mm

Fig. 69

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		Y	m	n*	E*	C	Number of holes
				C <sub>Orad</sub> [N]	C <sub>Oax</sub> [N]						
HVD	45	300	300	1600	50 % C <sub>Orad</sub>	50	50	-	-	100	4
		350	350	1650						150	
		400	400	1700						200	
		450	450	1700						250	
		500	500	1700						300	
		550	550	1650						150	6
		600	600	1600						175	
		650	650	1550						200	
		700	700	1500						225	
		750	750	1450						250	
		800	800	1400						275	
		850	850	1350						300	
		900	900	1300						325	
		950	950	1250						350	
		1000	1000	1200						375	
		1100	1100	1100						400	
		1200	1200	1000						425	

The load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

\* When using full telescopes with interlocks in the open state (VO) or with interlocks open and closed (VB) the following measures change:  
n reduces by 35 mm - E increases to 120 mm.

Tab. 17

Type	Size	Length		Stroke		Load capacity per pair		Y	m	n*	E*	C	Number of holes
		L [mm]	H [mm]	C <sub>0rad</sub> [N]	C <sub>0ax</sub> [N]								
HVD	50	300	300	1800	50 % C <sub>0rad</sub>	50	50	-	-	100	4		
		350	350	1850						150			
		400	400	1900						200			
		450	450	1850						250			
		500	500	1800						300			
		550	550	1750						150	6		
		600	600	1700						175			
		650	650	1650						200			
		700	700	1600						225			
		750	750	1550						250			
		800	800	1500						275			
		850	850	1450						300			
		900	900	1400						325		50	
		950	950	1350						350			
		1000	1000	1300						375			
		1100	1100	1200						425			
		1200	1200	1100						475			
		1300	1300	1000						525			
		1400	1400	900						575			
		1500	1500	800						625			

The load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

\*When using full telescopes with interlocks in the open state (VO) or with interlocks open and closed (VB) the following measures change:  
n reduces by 35 mm - E increases to 120 mm.

Tab. 18

## 4 Load capacities and dimensions

Type	Size	Length	Stroke	Load capacity per pair		Y	m	n*	E*	C	Number of holes		
				C <sub>Orad</sub> [N]	C <sub>Oax</sub> [N]								
HVD	58	300	300	2400	50 % C <sub>Orad</sub>	50	50	-	-	100	4		
		350	350	2450						150			
		400	400	2500						200			
		450	450	2450						250			
		500	500	2400						300			
		550	550	2350						150	50	-	-
		600	600	2300						175			
		650	650	2250						200			
		700	700	2200						225			
		750	750	2150						250			
		800	800	2100						275			
		850	850	2050						300			
		900	900	2000						325			
		950	950	1900						350			
		1000	1000	1850						375			
		1100	1100	1750						425			
		1200	1200	1650						475			
		1300	1300	1550						525			
		1400	1400	1450						575			
		1500	1500	1400						625			

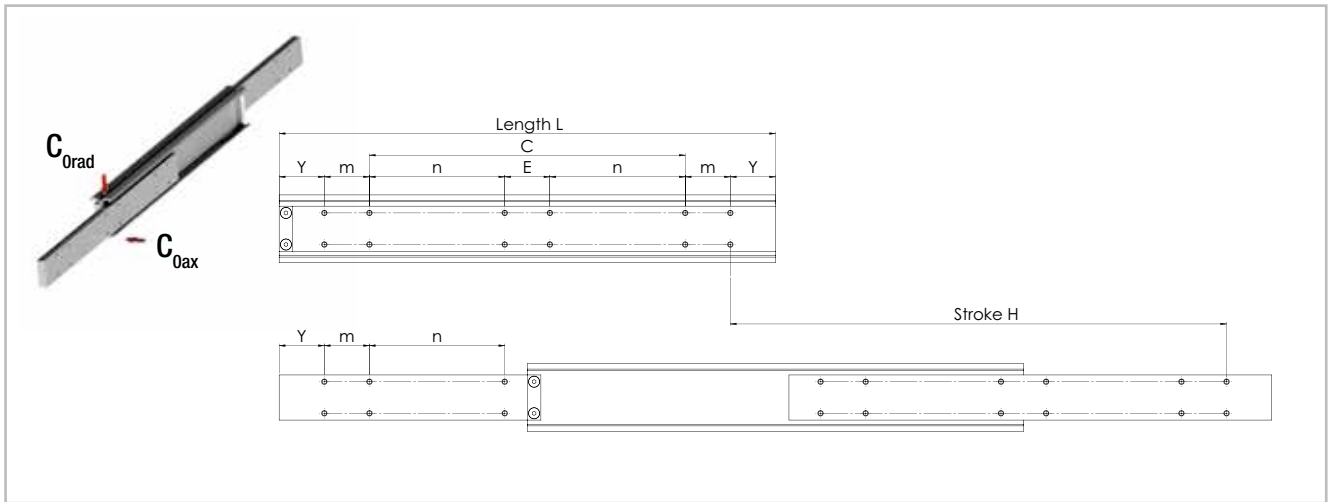
The load capacity for aluminum is 40 % and for stainless steel 60 % of the stated values, if available in this material variant (see Technical features overview).

\*When using full telescopes with interlocks in the open state (VO) or with interlocks open and closed (VB) the following measures change:  
n reduces by 35 mm - E increases to 120 mm.

Tab. 19



> HVD075



All dimensions are indicated in mm

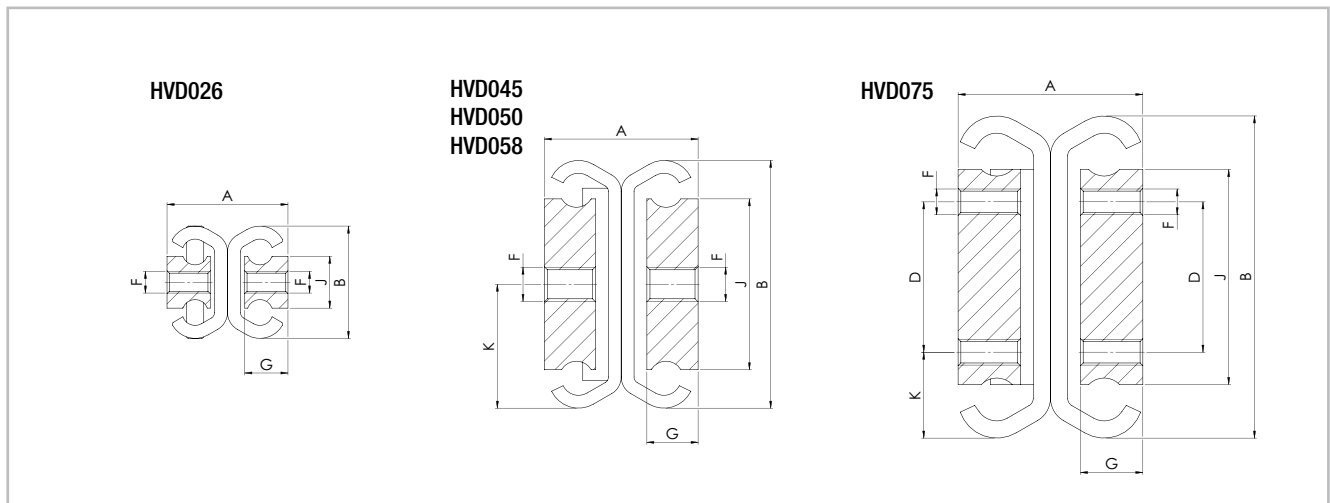
Fig. 70

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		Y	m	n*	E*	C	Number of holes		
				C <sub>Orad</sub> [N]	C <sub>Oax</sub> [N]								
HVD	75	300	300	3600	50 % C <sub>Orad</sub>	50	50	-	-	100	8		
		350	350	3650						150			
		400	400	3700						200			
		450	450	3650						250			
		500	500	3600						300			
		550	550	3550						150	50	-	-
		600	600	3500						175			
		650	650	3450						200			
		700	700	3400						225			
		750	750	3350						250			
		800	800	3300						275			
		850	850	3250						300			
		900	900	3200						325			
		950	950	3150						350			
		1000	1000	3100						375			
		1100	1100	3000						425	12		
		1200	1200	2900						475			
		1300	1300	2750						525			
		1400	1400	2600						575			
		1500	1500	2450						625			
1600	1600	2300	675										
1700	1700	2100	725										
1800	1800	1900	775										
1900	1900	1700	825										
2000	2000	1400	875										

The load capacity for aluminum is 40 % and for stainless steel 60 % of the stated values, if available in this material variant (see Technical features overview).  
 \*When using full telescopes with interlocks in the open state (VO) or with interlocks open and closed (VB) the following measures change: n reduces by 35 mm - E increases to 120 mm.

Tab. 20

**> HVD**



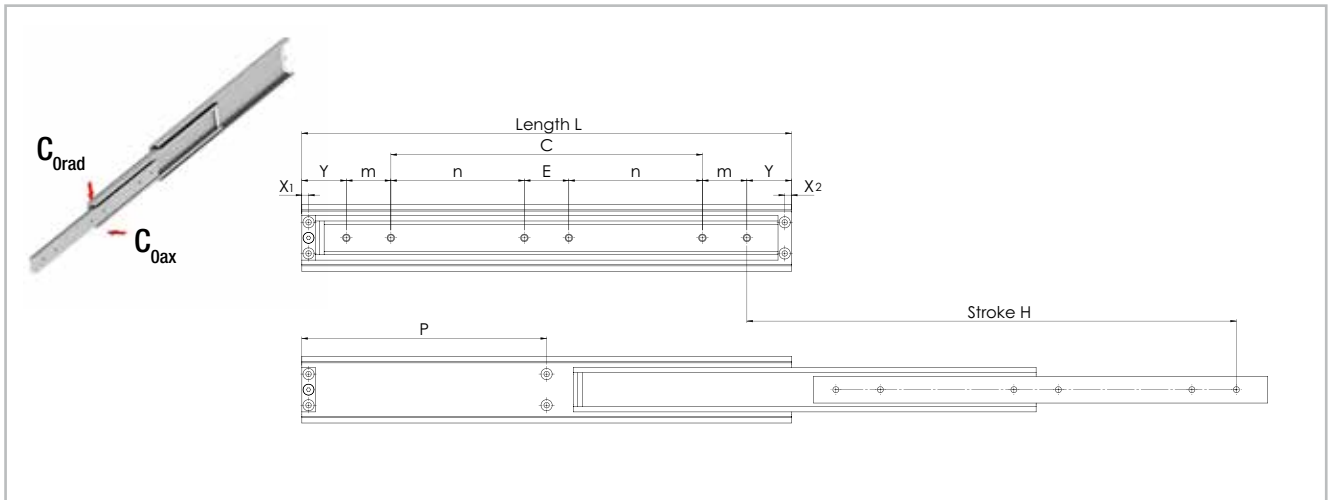
All dimensions are indicated in mm

Fig. 71

Type	Size	A	B	J	G	K	D	F	Weight [kg/m]
HVD	26	28	26	12		-		M5	3.80
	45	31	45	30	10	22.5	-	M6	7.70
	50		50	35	25	8.80			
	58	35	58	40	12	29	M8	11.70	
	75	43	75	50	14.5	20		35	18.80

Tab. 21

## > HVC045, HVC050, HVC058, HVC075



All dimensions are indicated in mm

Fig. 72

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		X1	X2	Y	m	C	P	Number of holes
				$C_{0rad}$ [N]	$C_{0ax}$ [N]							
HVC	45	300	300	1150	50 % $C_{0rad}$	7.5	7.5	50	50	100	-	4
		350	350	1200						150		
		400	400	1200						200		
		450	450	1150						250		
		500	500	1150						300		
		550	550	1100						275		
		600	600	1050						300		6
		650	650	1000						325		
		700	700	950						350		
		750	750	900						325		
		800	800	850						400		
		850	850	800						425		
		900	900	750						450		
		950	950	700						475		
		1000	1000	650						500		
		1100	1100	500						50		
		1200	1200	400						600		

The load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

Tab. 22

#### 4 Load capacities and dimensions

Type	Size	Length	Stroke	Load capacity per pair		X1	X2	Y	m	n*	E*	C	P	Number of holes	
				C <sub>Orad</sub> [N]	C <sub>Oax</sub> [N]										
HVC	50	300	300	1400	50 % C <sub>Orad</sub>	7.5	7.5	50	50	-	-	100	-	4	
		350	350	1450								150			
		400	400	1500								200			
		450	450	1450								250			
		500	500	1400								300			
		550	550	1350								150			6
		600	600	1300								175			
		650	650	1250								200			
		700	700	1200								225			
		750	750	1150								250			
		800	800	1100								275			
		850	850	1050								300			
		900	900	1000								325			
		950	950	950								350			
		1000	1000	900								375			
		1100	1100	800								425			
		1200	1200	700								475			
		1300	1300	600								525			
		1400	1400	500								575			
		1500	1500	400								625			

The load capacity for aluminum is 40 % and for stainless steel 60 % of the stated values, if available in this material variant (see Technical features overview).

\*When using full telescopes with interlocks in the open state (VO) or with interlocks open and closed (VB) the following measures change:  
n reduces by 35 mm - E increases to 120 mm.

Tab. 23

Type	Size	Length	Stroke	Load capacity per pair		X1	X2	Y	m	n*	E*	C	P	Number of holes	
				C <sub>0rad</sub> [N]	C <sub>0ax</sub> [N]										
HVC	58	300	300	2000	50 % C <sub>0rad</sub>	7.5	7.5	50	50	-	-	100	-	4	
		350	350	2050								150			
		400	400	2100								200			
		450	450	2050								250			
		500	500	2000								300			
		550	550	1950								150			275
		600	600	1900								175			300
		650	650	1850								200			325
		700	700	1800								225			350
		750	750	1750								250			325
		800	800	1700								275			400
		850	850	1650								300			425
		900	900	1600								325			450
		950	950	1500								350			475
		1000	1000	1450								375			500
		1100	1100	1350								425			550
		1200	1200	1250								475			600
		1300	1300	1150								525			650
		1400	1400	1050								575			700
		1500	1500	1000								625			750

The load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

\*When using full telescopes with interlocks in the open state (VO) or with interlocks open and closed (VB) the following measures change:  
n reduces by 35 mm - E increases to 120 mm.

Tab. 24

#### 4 Load capacities and dimensions

Type	Size	Length	Stroke	Load capacity per pair		X1	X2	Y	m	n*	E*	C	P	Number of holes	
				C <sub>Orad</sub> [N]	C <sub>Oax</sub> [N]										
HVC	75	300	300	3200	50 % C <sub>Orad</sub>	7.5	7.5	50	50	-	-	100	-	4	
		350	350	3250								150			
		400	400	3300								200			
		450	450	3250								250			
		500	500	3200								300			
		550	550	3150								150			275
		600	600	3100								175			300
		650	650	3050								200			325
		700	700	3000								225			350
		750	750	2950								250			325
		800	800	2900								275			400
		850	850	2850								300			425
		900	900	2800								325			450
		950	950	2750								350			475
		1000	1000	2700								375			500
		1100	1100	2600								425			550
		1200	1200	2500								475			600
		1300	1300	2350								525			650
		1400	1400	2200								575			700
		1500	1500	2050								625			750
1600	1600	1900	675	800											
1700	1700	1750	725	50											
1800	1800	1600	775	900											
1900	1900	1450	825	950											
2000	2000	1300	875	1000											

The load capacity for aluminum is 40 % and for stainless steel 60 % of the stated values, if available in this material variant (see Technical features overview).

\*When using full telescopes with interlocks in the open state (VO) or with interlocks open and closed (VB) the following measures change:  
n reduces by 35 mm - E increases to 120 mm.

Tab. 25

## > HVC

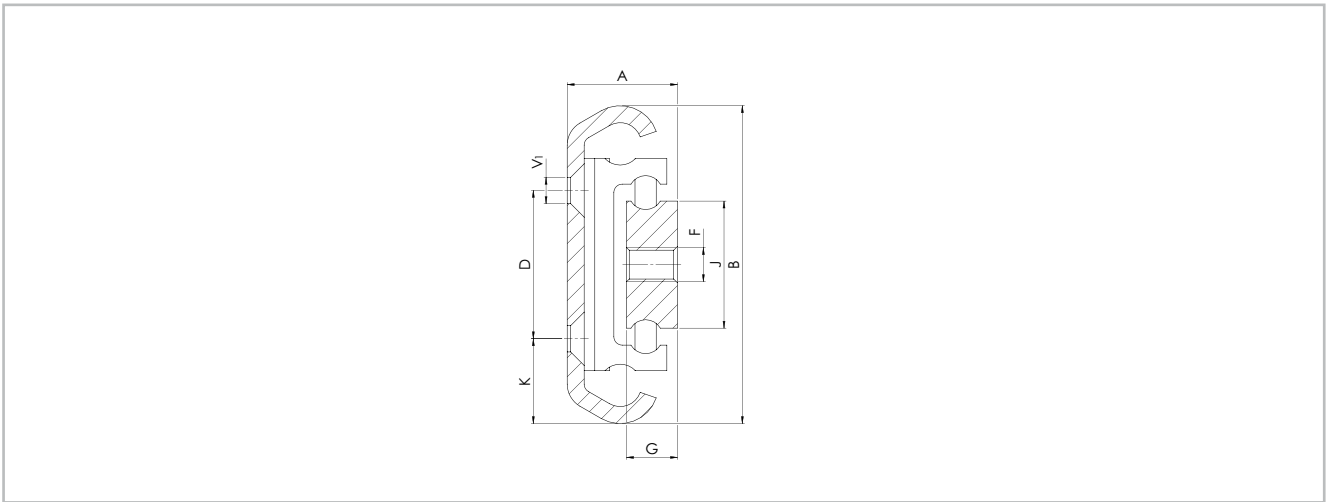


Fig. 73

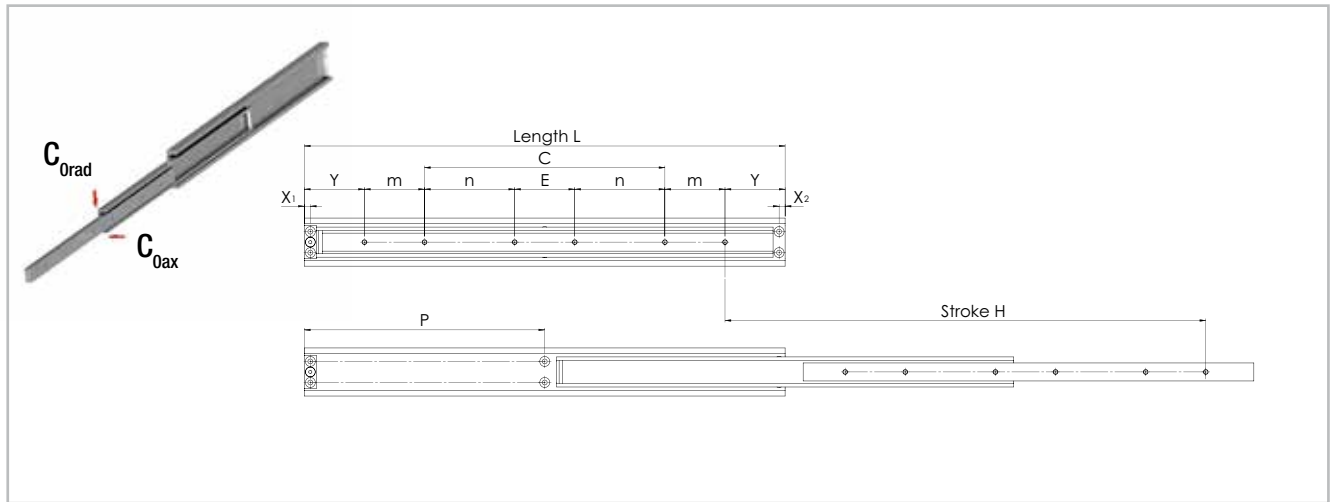
All dimensions are indicated in mm

V<sup>1</sup> Mounting holes (V) for countersunk screws according to DIN 7991/ISO 10642

Type	Size	A	B	J	G	K	D	F	V1	Weight [kg/m]
HVC	45	20.5	45	16	10	11.5	22	M6	M5	4.00
	50	22.1	50	20	10	14	22	M6	M5	5.10
	58	24	58	25	12	13	32	M8	M6	6.50
	75	26	75	30	12	20	35			9.30

Tab. 26

> HVT060, HVT080



All dimensions are indicated in mm

Fig. 74

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		X1	X2	Y	m	n*	E*	C	P	Number of holes	
				C <sub>Orad</sub> [N]	C <sub>Oax</sub> [N]										
HVT	60	300	300	2600	50 % C <sub>Orad</sub>	7.5	7.5	50	50	-	-	100	-	4	
		350	350	2650								150			
		400	400	2700								200			
		450	450	2650								250			
		500	500	2600								300			
		550	550	2550								150			275
		600	600	2500								175			300
		650	650	2450								200			325
		700	700	2400								225			350
		750	750	2350								250			325
	800	800	2300	275	400										
	850	850	2250	300	425										
	900	900	2200	325	450										
	950	950	2130	350	475										
	1000	1000	2050	375	500										
	1100	1100	1900	425	550										
	1200	1200	1750	475	600										
	1300	1300	1600	525	650										
	1400	1400	1500	575	700										
	1500	1500	1400	625	750										

The load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

\*When using full telescopes with interlocks in the open state (VO) or with interlocks open and closed (VB) the following measures change: n reduces by 35 mm - E increases to 120 mm.

Tab. 27



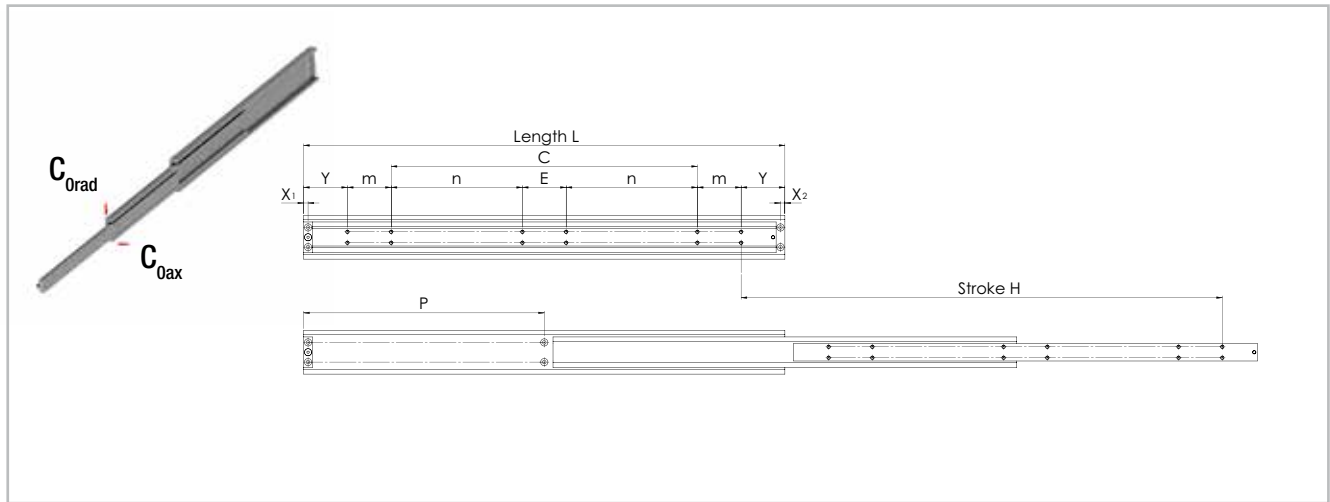
Type	Size	Length	Stroke	Load capacity per pair		X1	X2	Y	m	n*	E*	C	P	Number of holes			
				C <sub>0rad</sub> [N]	C <sub>0ax</sub> [N]												
HVT	80	500	500	4250	50 % C <sub>0rad</sub>	10	10	100	100	-	-	100	-	4			
		550	550	4300								150					
		600	600	4350								200					
		650	650	4350								250					
		700	700	4350								300					
		750	750	4300								350					
		800	800	4250								150		100	-	400	6
		850	850	4200								175				425	
		900	900	4100								200				450	
		950	950	4000								225				475	
		1000	1000	3900								250				500	
		1100	1100	3700								300				550	
		1200	1200	3500								350				600	
		1300	1300	3250								400				650	
		1400	1400	3000								450				700	
		1500	1500	2700								500				750	
		1600	1600	2400								550				800	
		1700	1700	2150								600				850	
		1800	1800	1900								650				900	
		1900	1900	1650								700				950	
2000	2000	1400	750	1000													

The load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

\*When using full telescopes with interlocks in the open state (VO) or with interlocks open and closed (VB) the following measures change: n reduces by 10 mm - E increases to 120 mm.

Tab. 28

> HVT100



All dimensions are indicated in mm

Fig. 75

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		X1	X2	Y	m	n*	E*	C	P	Number of holes			
				C <sub>Orad</sub> [N]	C <sub>Oax</sub> [N]												
HVT	100	600	600	5700	50 % C <sub>Orad</sub>	10	10	100	100	-	-	200	-	8			
		650	650	5600								250					
		700	700	5500								300					
		750	750	5400								350					
		800	800	5300								400					
		850	850	5200								450					
		900	900	5100								500					
		950	950	5000								550					
		1000	1000	4900								600					
		1100	1100	4700								300			100	550	12
		1200	1200	4500								350			600		
		1300	1300	4250								400			650		
		1400	1400	4000								450			700		
		1500	1500	3750								500			750		
		1600	1600	3500								550			800		
		1700	1700	3250								600			850		
		1800	1800	3000								650			900		
		1900	1900	2700								700			950		
		2000	2000	2400								750			1000		

The load capacity for aluminum is 40 % and for stainless steel 60 % of the stated values, if available in this material variant (see Technical features overview).

\*When using full telescopes with interlocks in the open state (VO) or with interlocks open and closed (VB) the following measures change: n reduces by 10 mm - E increases to 120 mm.

Tab. 29

## > HVT

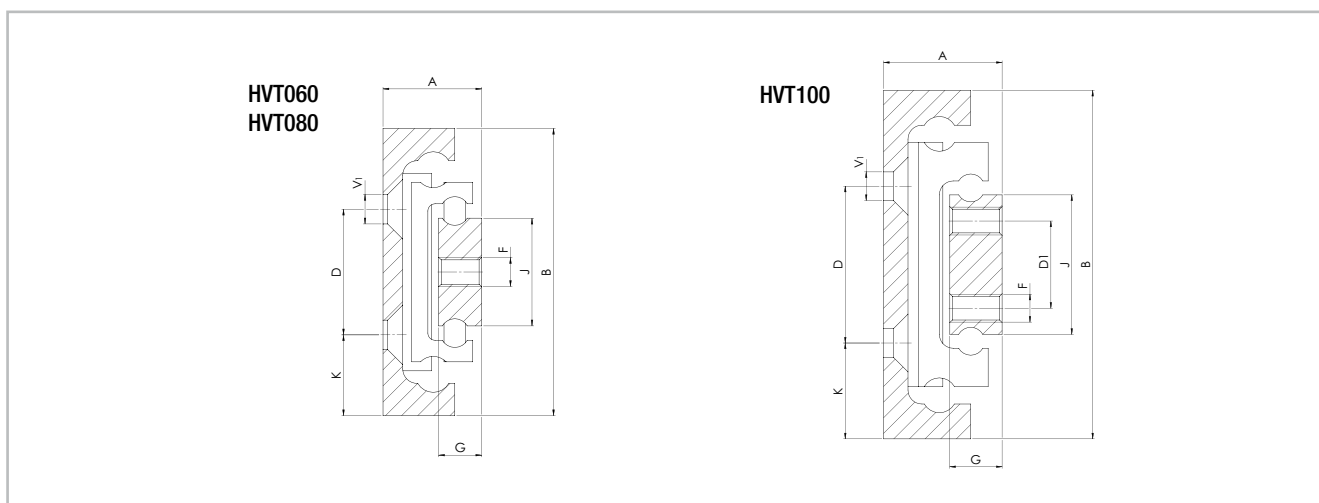


Fig. 76

All dimensions are indicated in mm

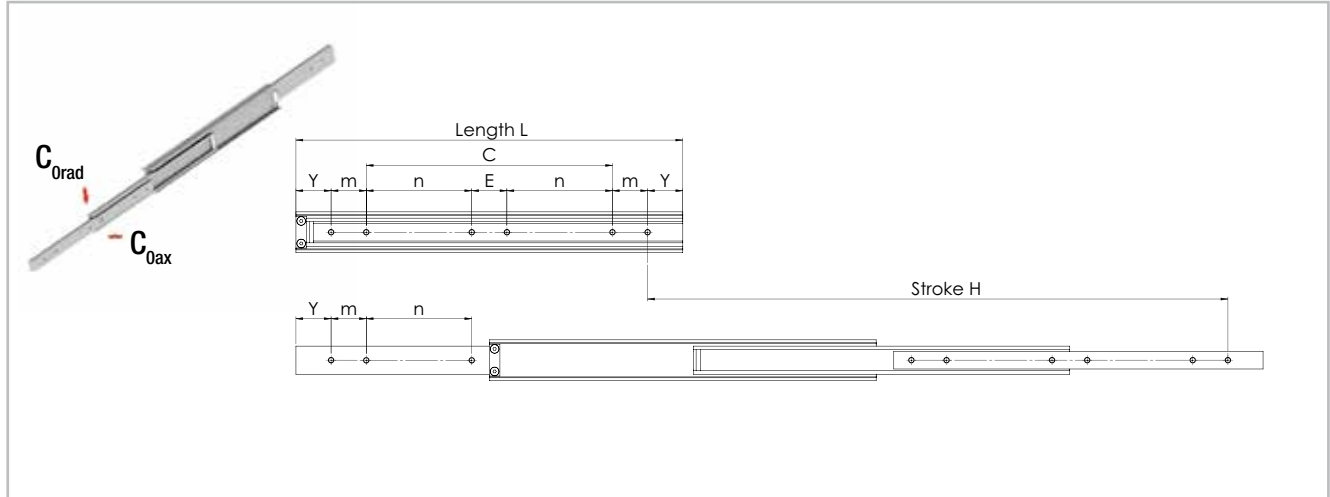
V1 Mounting holes (V) for countersunk screws according to DIN 7991/ISO 10642

Type	Size	A	B	J	G	K	D	D1	F	V1	Weight [kg/m]
HVT	60	26	60	25	12	14	32	-	M8	M6	5.10
	80	27.5	80	30		12.5	35			M8	11.40
	100	34	100	40	15	27.5	45	25		M8	18.70

Tab. 30

## Over extension

### > H1D045, H1D050, H1D058



All dimensions are indicated in mm

Fig. 77

Type	Size	Length	Stroke	Load capacity per pair $C_{Orad}$ [N]	Y	m	n	E	C	Number of holes
		L [mm]	H [mm]							
H1D	45	250	375	500	50	50			50	4
		300	450	550						
		350	525	600						
		400	600	650						
		450	675	650						
		500	750	650						
		550	825	650			150	50	-	6
		600	900	600			175			
		650	975	600			200			
		700	1050	550			225			
		750	1125	500			250			
		800	1200	450			275			
	850	1275	400	300						
	900	1350	350	325						
	950	1425	300	350						
	1000	1500	250	375						

The load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

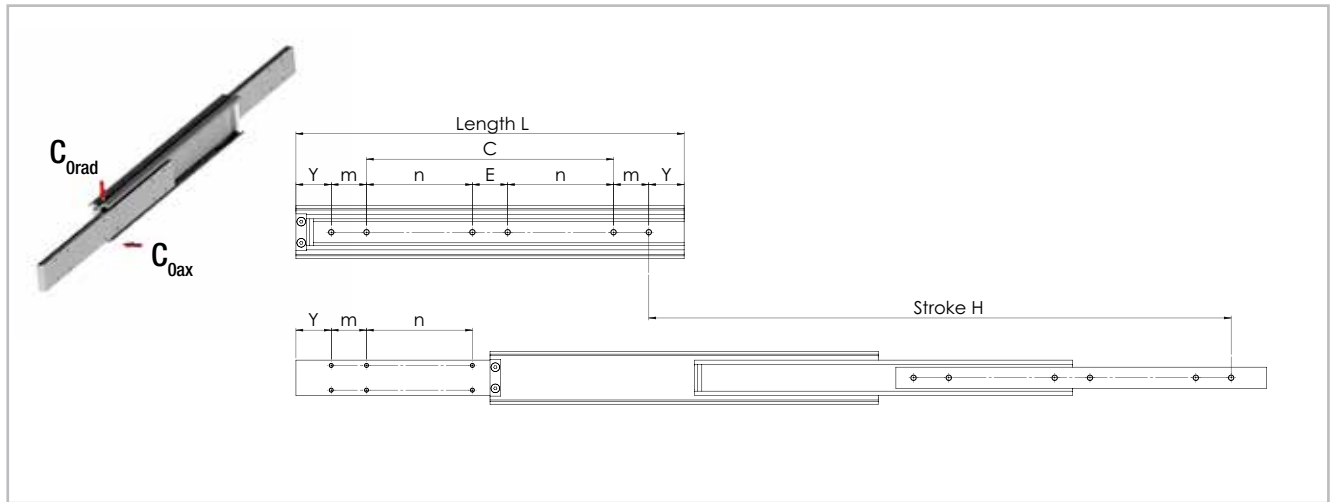
Tab. 31

Type	Size	Length	Stroke	Load capacity per pair	Y	m	n	E	C	Number of holes					
		L [mm]	H [mm]	C <sub>0rad</sub> [N]											
H1D	50	250	375	600	50	50	-	-	50	4					
		300	450	650					100						
		350	525	700					150						
		400	600	750					200						
		450	675	800					250						
		500	750	750					300						
		550	825	720			150	6							
		600	900	690			175								
		650	975	650			200								
		700	1050	610			225								
		750	1125	570			250								
		800	1200	540			275								
		850	1275	500			300								
		900	1350	450			325								
		950	1425	400			350								
		1000	1500	350			375								
		H1D	58	300			450		1700	50	50	-	-	100	4
				350			525		1800					150	
400	600			1850	200										
450	675			1900	250										
500	750			1900	300										
550	825			1850	150	6									
600	900			1800	175										
650	975			1750	200										
700	1050			1700	225										
750	1125			1650	250										
800	1200			1600	275										
850	1275			1530	300										
900	1350			1460	325										
950	1425			1390	350										
1000	1500			1320	375										
1100	1650			1190	425										
1200	1800			1060	475										
1300	1950			920	525										
1400	2100	760	575												
1500	2250	600	625												

The load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

Tab. 32

> H1D075



All dimensions are indicated in mm

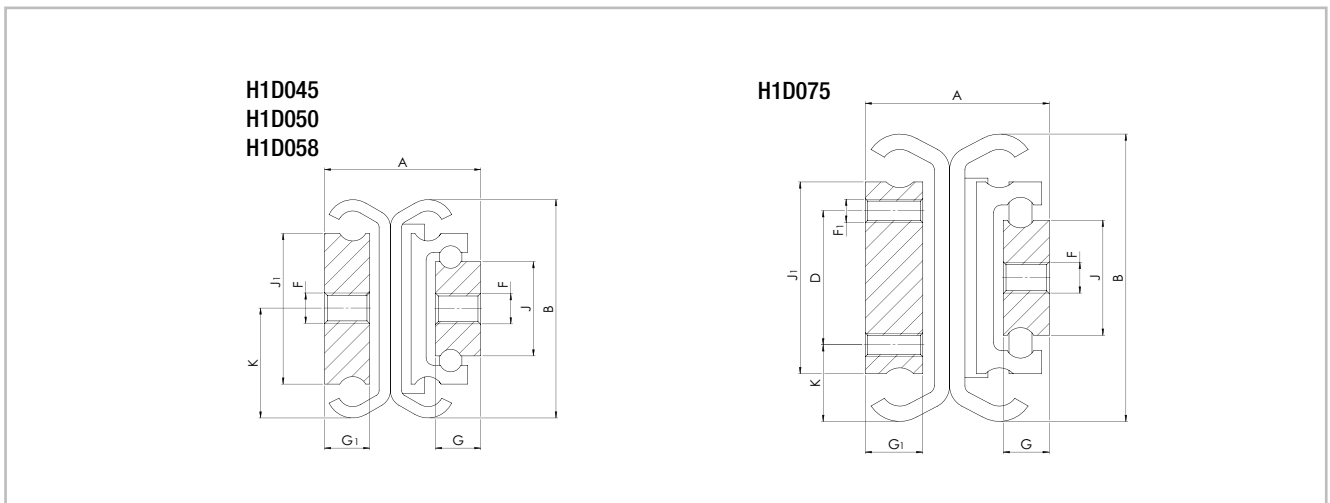
Fig. 78

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair C <sub>Orad</sub> [N]	Y	m	n	E	C	Number of holes		
										M6	M8	
H1D	75	300	450	2400	50	50				100	8	4
		350	525	2500						150		
		400	600	2550						200		
		450	675	2600						250		
		500	750	2600						300		
		550	825	2550			150	50	-	-	12	6
		600	900	2500			175					
		650	975	2450			200					
		700	1050	2400			225					
		750	1125	2350			250					
		800	1200	2300			275					
		850	1275	2250			300					
		900	1350	2200			325					
		950	1425	2150			350					
		1000	1500	2100			375					
		1100	1650	2000			425					
		1200	1800	1850			475					
		1300	1950	1700			525					
1400	2100	1550	575									
1500	2250	1400	625									

The load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

Tab. 33

## > H1D



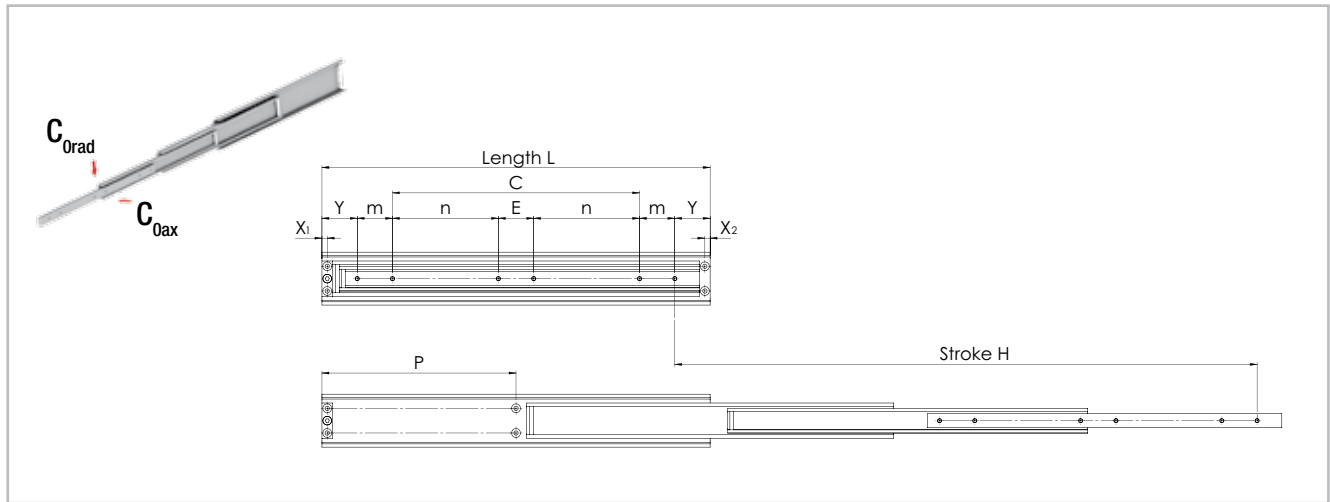
All dimensions are indicated in mm

Fig. 79

Type	Size	A	B	J	J1	G	G1	K	D	F	F1	Weight [kg/m]
H1D	45	36	45	16	30	10	10	22.5	-	M6	-	7.80
	50	37.5	50	20	35	12	10	25	-	M6	-	9.60
	58	41.5	58	25	40	12	12	29	-	M8	-	8.80
	75	48	75	30	50		15	20	35		M6	18.35

Tab. 34

> H1C075



All dimensions are indicated in mm

Fig. 80

Type	Size	Length	Stroke	Load capacity per pair $C_{Orad}$ [N]	X1	X2	Y	m	n	E	C	P	Number of holes	
		L [mm]	H [mm]											
H1C	75	300	450	1200	7.5	7.5	50	50	-	50	100	-	4	
		350	525	1250							150			
		400	600	1300							200			
		450	675	1350							250			
		500	750	1300							300			
		550	825	1200							150	275		
		600	900	1150							175	300		
		650	975	1100							200	325		
		700	1050	1050							225	350		
		750	1125	1000							250	325		
		800	1200	950							275	400		
		850	1275	900							300	425		
		900	1350	850							325	-	450	6
		950	1425	800							350	475		
		1000	1500	750							375	500		
		1100	1650	650							425	550		
		1200	1800	550							475	600		
		1300	1950	450							525	650		
		1400	2100	350							575	700		
1500	2250	200	325	750										

The load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

Tab. 35



> H1C075

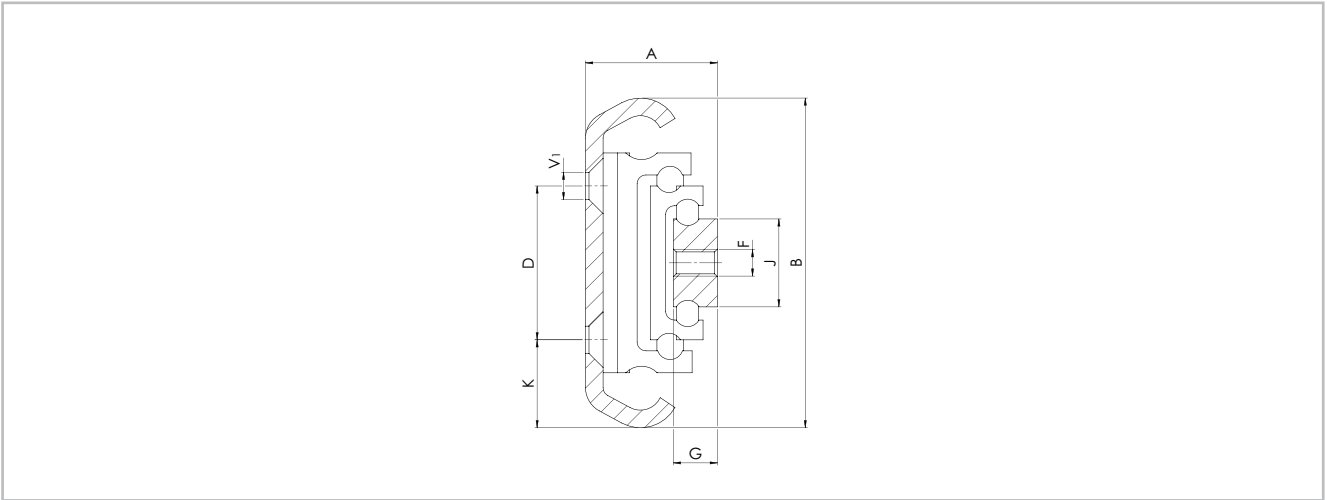


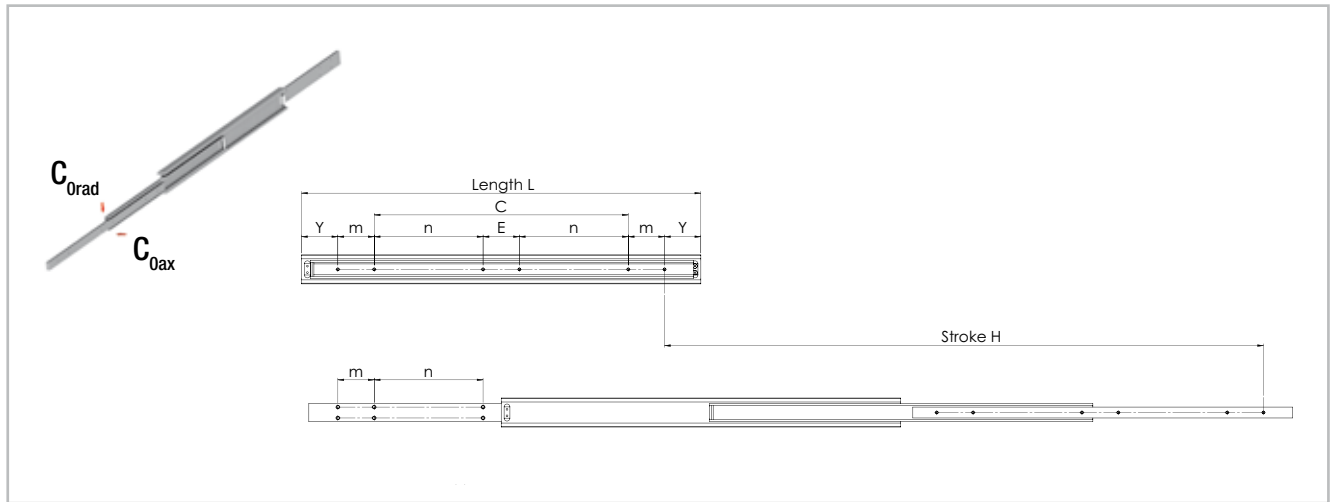
Fig. 81

All dimensions are indicated in mm  
 V1 Mounting holes (V) for countersunk screws according to DIN 7991/ISO 10642

Type	Size	A	B	J	G	K	D	F	V1	Weight [kg/m]
H1C	75	30	75	20	10	20	35	M6	M6	8.60

Tab. 36

> H1T060, H1T080



All dimensions are indicated in mm

Fig. 82

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair $C_{0rad}$ [N]	Y	m	n	E	C	Number of holes			
										M6	M8		
H1T	60	300	450	2400	50	50				100	8	4	
		350	525	2500						150			
		400	600	2550						200			
		450	675	2600						250			
		500	750	2600						300			
		550	825	2550			150	50	-	-	-	12	6
		600	900	2500			175						
		650	975	2450			200						
		700	1050	2400			225						
		750	1125	2350			250						
		800	1200	2300			275						
		850	1275	2250			300						
		900	1350	2200			325						
		950	1425	2150			350						
		1000	1500	2100			375						
		1100	1650	2000			425						
		1200	1800	1850			475						
		1300	1950	1700			525						
1400	2100	1550	575										
1500	2250	1400	625										

The load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

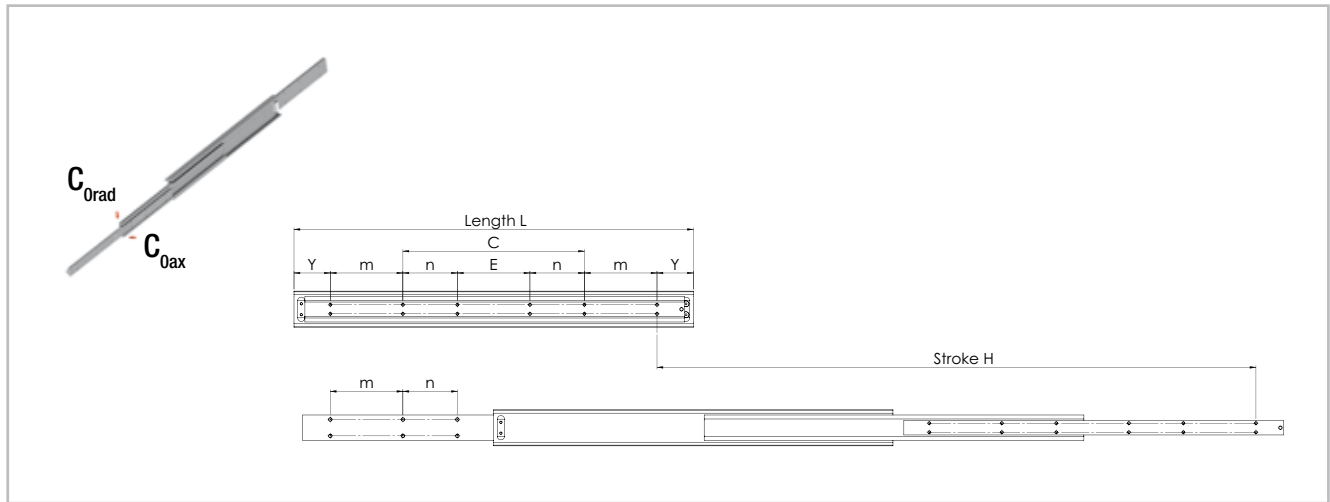
Tab. 37

Type	Size	Length		Stroke	Load capacity per pair $C_{0rad}$ [N]	Y	m	n	E	C	Number of holes	
		L [mm]	H [mm]								M8	M10
H1T	80	500	750	3100	100	100				100	4	8
		550	825	3150						150		
		600	900	3200						200		
		650	975	3150						250		
		700	1050	3100						300		
		750	1125	3000						350		
		800	1200	2900						400		
		850	1275	2800						450		
		900	1350	2700						500		
		950	1425	2600						550		
		1000	1500	2500						600		
		1100	1650	2280						300		
		1200	1800	2060						350		
		1300	1950	1840						400		
		1400	2100	1620						450		
		1500	2250	1400						500		
								100	-	6	12	

The load capacity for aluminum is 40 % and for stainless steel 60 % of the stated values, if available in this material variant (see Technical features overview).

Tab. 38

> H1T100, H1T150



All dimensions are indicated in mm

Fig. 83

Type	Size	Length		Load capacity per pair $C_{Orad}$ [N]	Y	m	n	E	C	Number of holes
		L [mm]	H [mm]							
H1T	100	700	1050	5500	100	200	-	-	100	8
		750	1125	5500					150	
		800	1200	5300					200	
		850	1275	5100					250	
		900	1350	4700					300	
		950	1425	4500					350	
		1000	1500	4300					400	
		1100	1650	4000					150	
	1200	1800	3700	200						
	1300	1950	3400	250						
	1400	2100	3100	300						
	1500	2250	2900	350						
	1600	2400	2600	400						
	1700	2550	2300	450						
	1800	2700	2000	500						
	1900	2850	1700	550						
2000	3000	1400	600							

The load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

Tab. 39

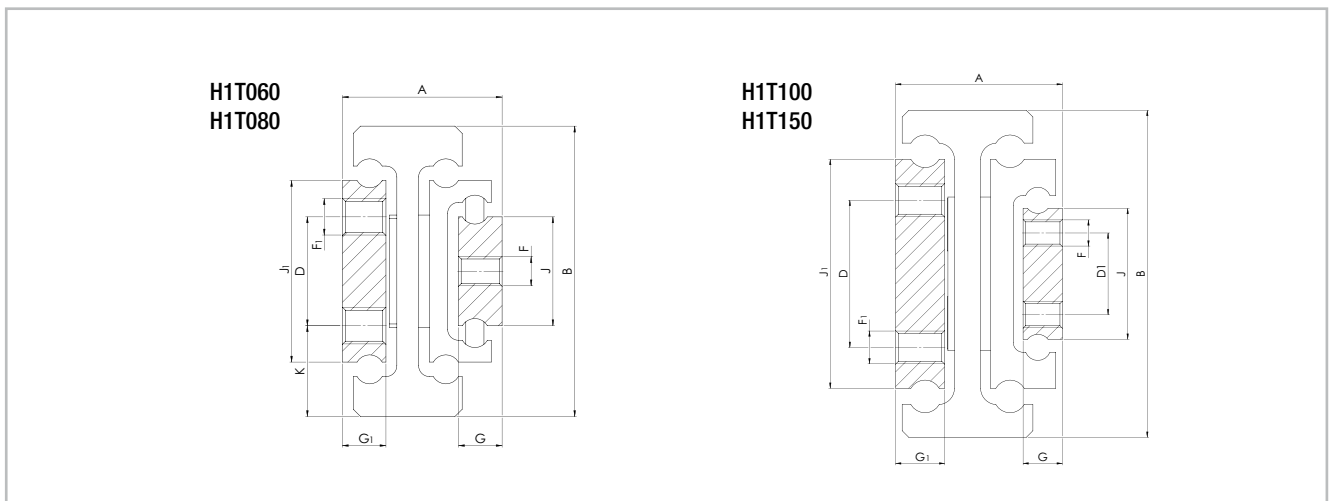
Other sizes and versions are available on request

Type	Size	Length	Load capacity per pair
		L [mm]	$C_{0rad}$ [N]
H1T	150	700	7000
		⋮	⋮
		2000	2300

Tab. 40

The load capacity for aluminum is 40 % and for stainless steel 60 % of the stated values, if available in this material variant (see Technical features overview).

## > H1T



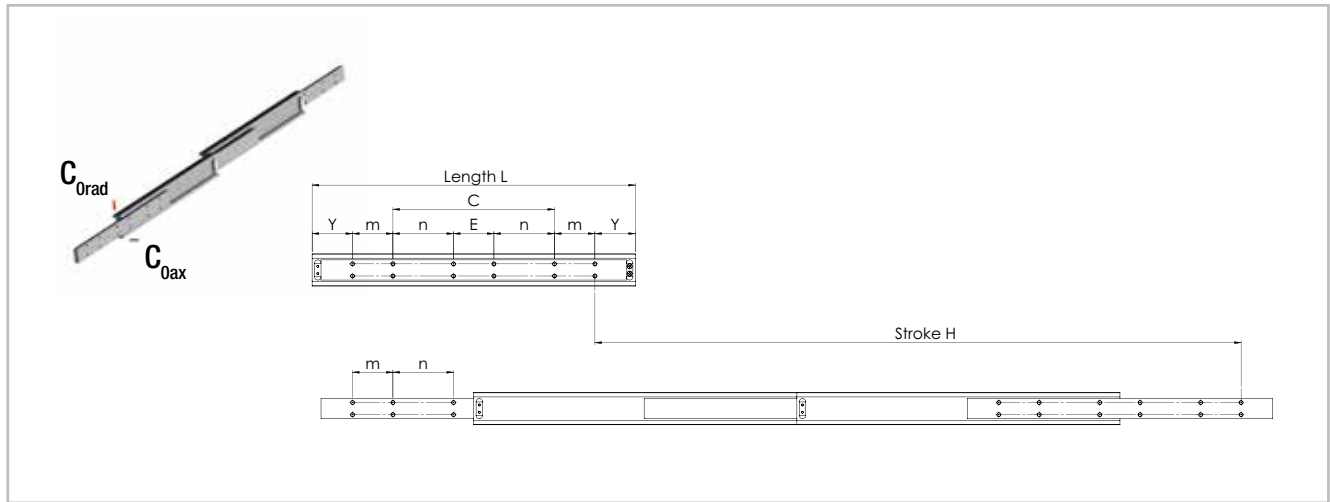
All dimensions are indicated in mm

Fig. 84

Type	Size	A	B	J	J1	G	G1	K	D	D1	F	F1	Weight [kg/m]
H1T	60	40.5	60	25	40	12	10	19	22	-	M8	M6	12.90
	80	44	80	30	50		12	25	30			M10	18.60
	100	51	100	40	70		15	27.5	45			25	M10

Tab. 41

> H2H080



All dimensions are indicated in mm

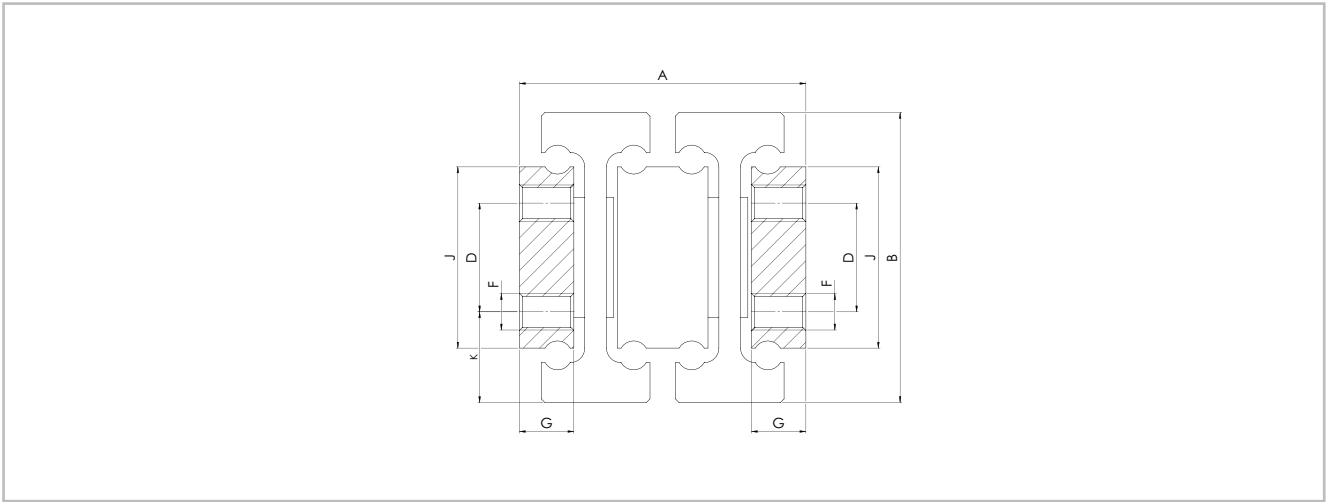
Fig. 85

Type	Size	Length		Load capacity per pair $C_{0rad}$ [N]	Y	m	n	E	C	Number of holes
		L [mm]	H [mm]							
H2H	80	500	1000	4850	100	100			100	8
		550	1100	5200					150	
		600	1200	5400					200	
		650	1300	5500					250	
		700	1400	5350					300	
		750	1500	5200					350	
		800	1600	5050			150	100	-	
		850	1700	4850			175			
		900	1800	4650			200			
		950	1900	4450			225			
		1000	2000	4250			250			
		1100	2200	3750			300			
		1200	2400	3250			350			
		1300	2600	3100			400			
		1400	2800	3000			450			
		1500	3000	2800			500			

The load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

Tab. 42

> H2H080



All dimensions are indicated in mm

Fig. 86

Type	Size	A	B	J	G	K	D	F	Weight [kg/m]
H2H	80	79+-1	80	50	15	25	30	M10	34.80

Tab. 43

## Heavy load extension

### > LTH30 RF

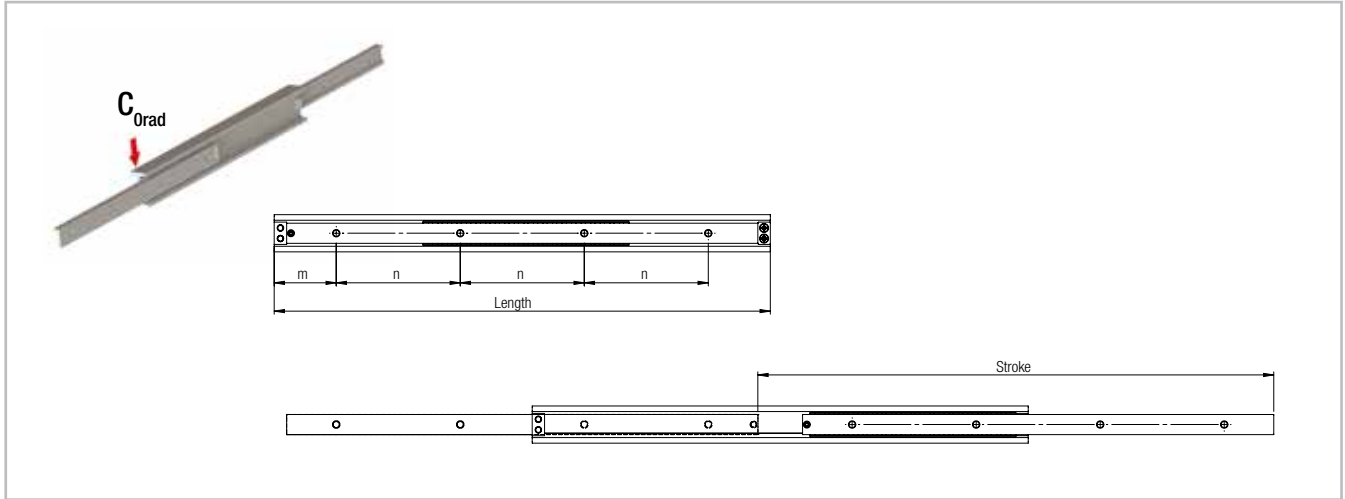


Fig. 87

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		m [mm]	n [mm]	Number of holes
				$C_{0rad}$ [N]	$C_{0ax}$ [N]			
LTH	30	250	285	404	on request	25	100	3
		300	323	1008		50		
		350	377	1042		25		4
		400	416	1136		50		
		450	485	1164		25		5
		500	523	1470		50		
		550	577	1464		25		6
		600	615	1402		50		
		650	685	1230		25		7
		700	723	1186		50		
		750	777	1100		25		8
		800	815	1066		50		
		850	884	962		25		9
		900	923	936		50		
		950	977	882		25		10
		1000	1015	858		50		
1050	1084	792	25	11				
1100	1123	772	50					
1150	1176	736	25	12				
1200	1215	720	50					

Tab. 44



## > LTH30 KF

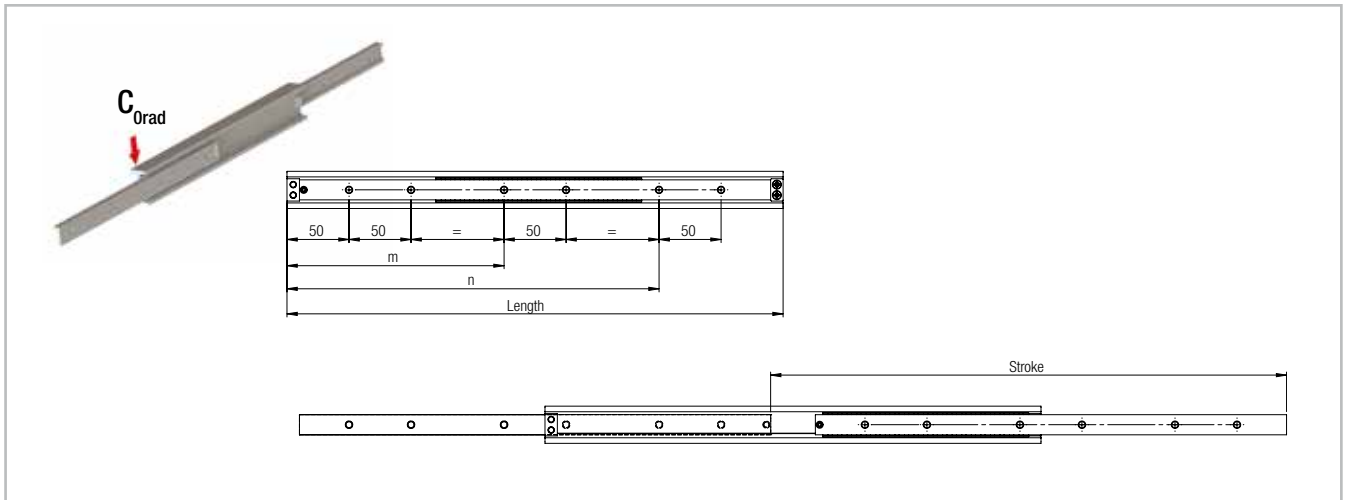


Fig. 88

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		m [mm]	n [mm]	Number of holes
				$C_{Orad}$ [N]	$C_{Oax}$ [N]			
LTH	30	250	285	404	on request	-	150	4
		300	323	1008			200	
		350	377	1042			250	
		400	416	1136			175	
		450	485	1164		200	350	6
		500	523	1470		225	400	
		550	577	1464		250	450	
		600	615	1402		275	500	
		650	685	1230		300	550	
		700	723	1186		325	600	
		750	777	1100		350	650	
		800	815	1066		375	700	
		850	884	962		400	750	
		900	923	936		425	800	
		950	977	882		450	850	
		1000	1015	858		475	900	
		1050	1084	792		500	950	
		1100	1123	772		525	1000	
1150	1176	736	550	1050				
1200	1215	720	575	1100				

Tab. 45

> LTH30 S

... S version with reinforced and dampened end stops made of stainless steel

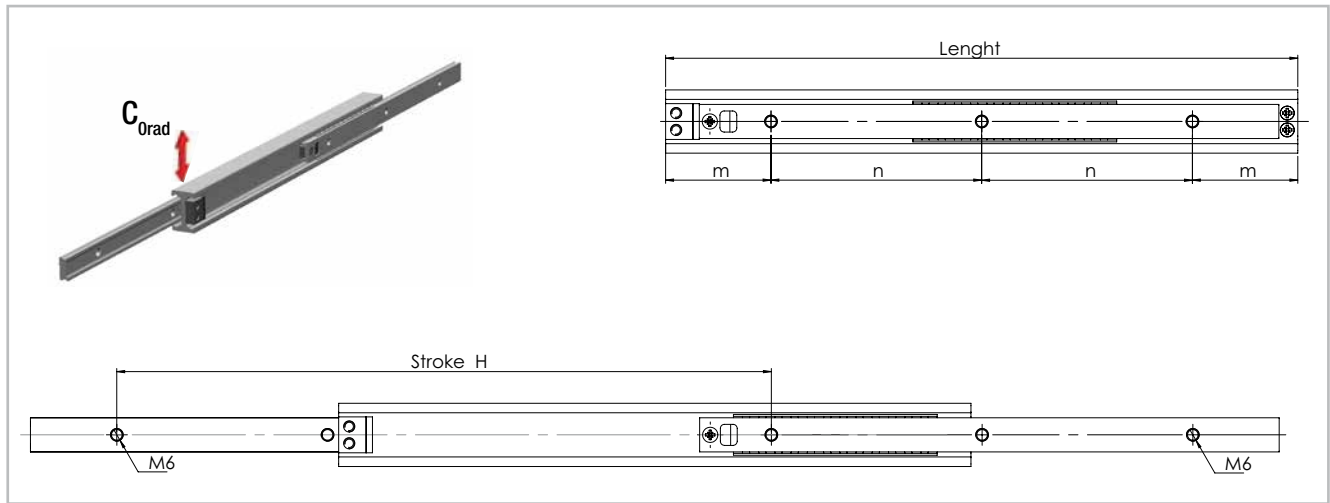


Fig. 89

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		m [mm]	n [mm]	Number of holes
				$C_{Orad}$ [N]	$C_{Oax}$ [N]			
LTH...S	30	300	310	816	on request	50	100	3
		350	364	880		75		
		400	402	994		50		
		450	472	1032		75		4
		500	510	1330		50		
		550	564	1498		75		5
		600	618	1392		50		
		650	671	1276		75		6
		700	725	1178		50		
		750	764	1138		75		7
		800	817	1060		50		
		850	871	992		75		8
		900	925	932		50		
		950	979	878		75		9
		1000	1017	856		50		
		1050	1071	810		75		10
1100	1109	790	50					
1150	1179	732	75	11				
1200	1217	718	50					

Tab. 46

## > LTH45 RF

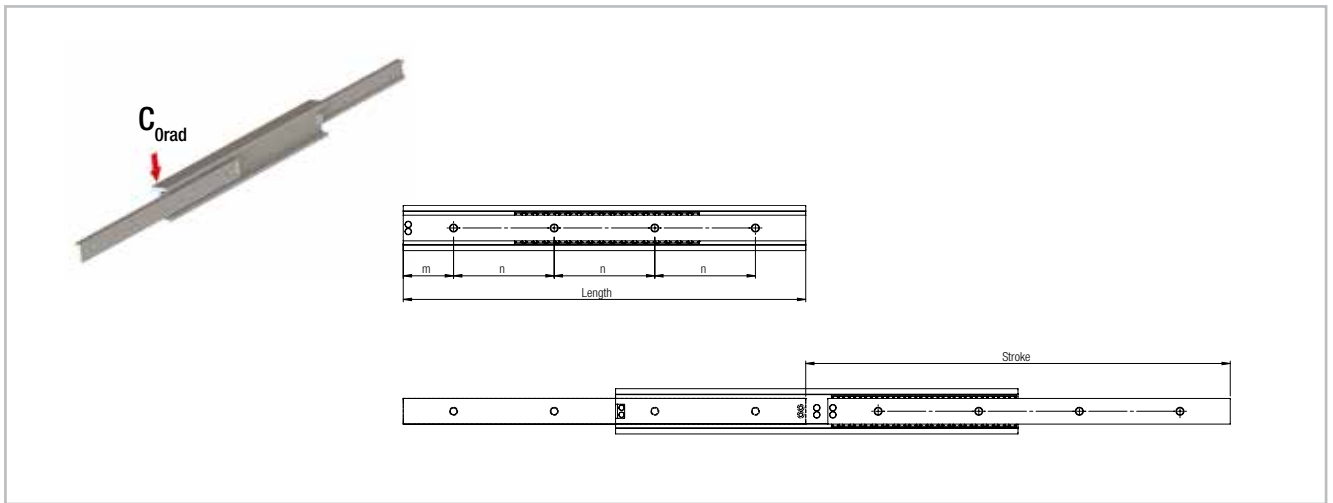


Fig. 90

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		m [mm]	n [mm]	Number of holes
				$C_{Orad}$ [N]	$C_{Oax}$ [N]			
LTH	45	250	276	2610	on request	25	100	3
		300	310	2824		50		
		350	388	2820		25		
		400	422	2842		50		4
		450	478	2864		25		
		500	512	2900		50		5
		550	590	2764		25		
		600	624	3032		50		6
		650	680	3252		25		
		700	714	3346		50		7
		750	770	3084		25		
		800	826	2860		50		8
		850	882	2666		25		
		900	916	2614		50		9
		950	972	2450		25		
		1000	1028	2306		50		10
		1050	1084	2178		25		
		1100	1118	2144		50		11
		1150	1174	2034		25		
		1200	1230	1934		50		12
1250	1286	1842	25					
1300	1320	1818	50	13				
1350	1376	1738	25					
1400	1410	1716	50	14				
1450	1488	1596	25					
1500	1522	1578	50	15				

Tab. 47

> LTH45 KF

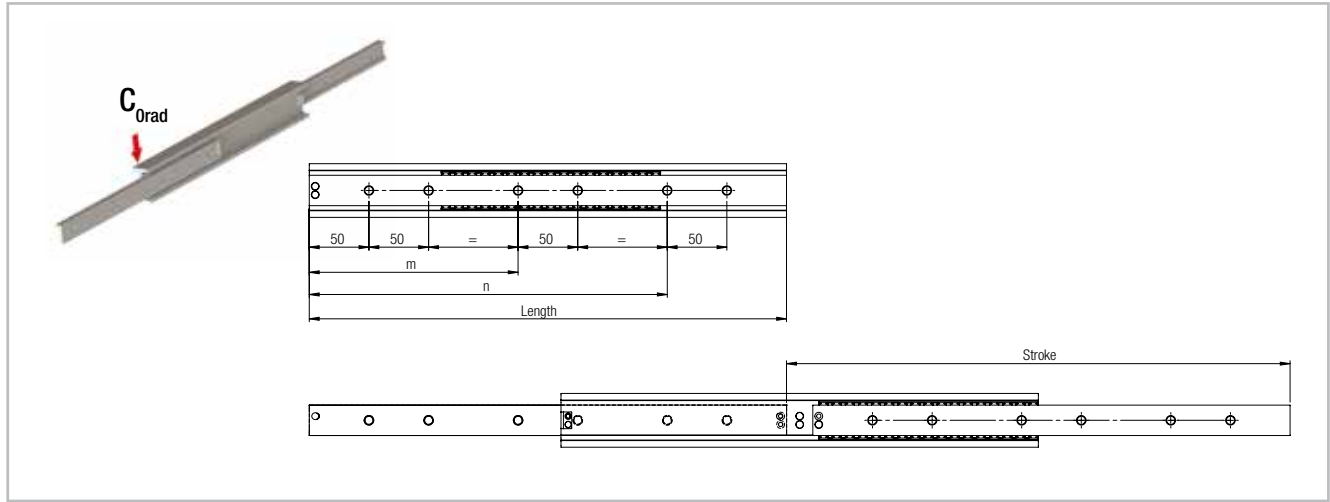


Fig. 91

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		m [mm]	n [mm]	Number of holes
				$C_{Orad}$ [N]	$C_{Oax}$ [N]			
LTH	45	250	276	2610	on request	-	150	4
		300	310	2824			200	
		350	388	2820			250	
		400	422	2842		175	300	6
		450	478	2864		200	350	
		500	512	2900		225	400	
		550	590	2764		250	450	
		600	624	3032		275	500	
		650	680	3252		300	550	
		700	714	3346		325	600	
		750	770	3084		350	650	
		800	826	2860		375	700	
		850	882	2666		400	750	
		900	916	2614		425	800	
		950	972	2450		450	850	
		1000	1028	2306		475	900	
		1050	1084	2178		500	950	
		1100	1118	2144		525	1000	
		1150	1174	2034		550	1050	
		1200	1230	1934		575	1100	
1250	1286	1842	600	1150				
1300	1320	1818	625	1200				
1350	1376	1738	650	1250				
1400	1410	1716	675	1300				
1450	1488	1596	700	1350				
1500	1522	1578	725	1400				

## > LTH45 S

... S version with reinforced and dampened end stops made of stainless steel

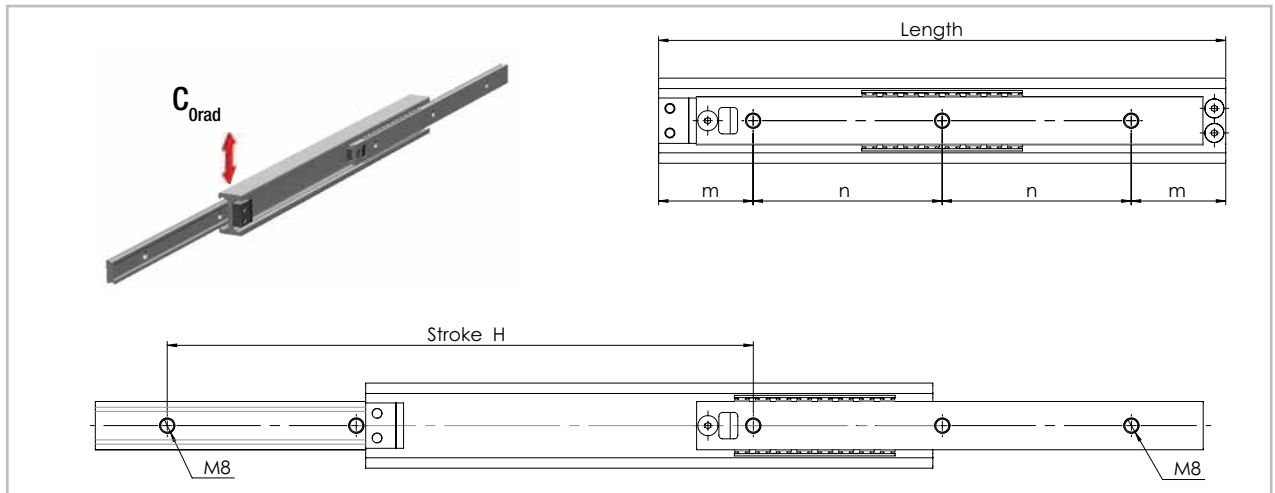
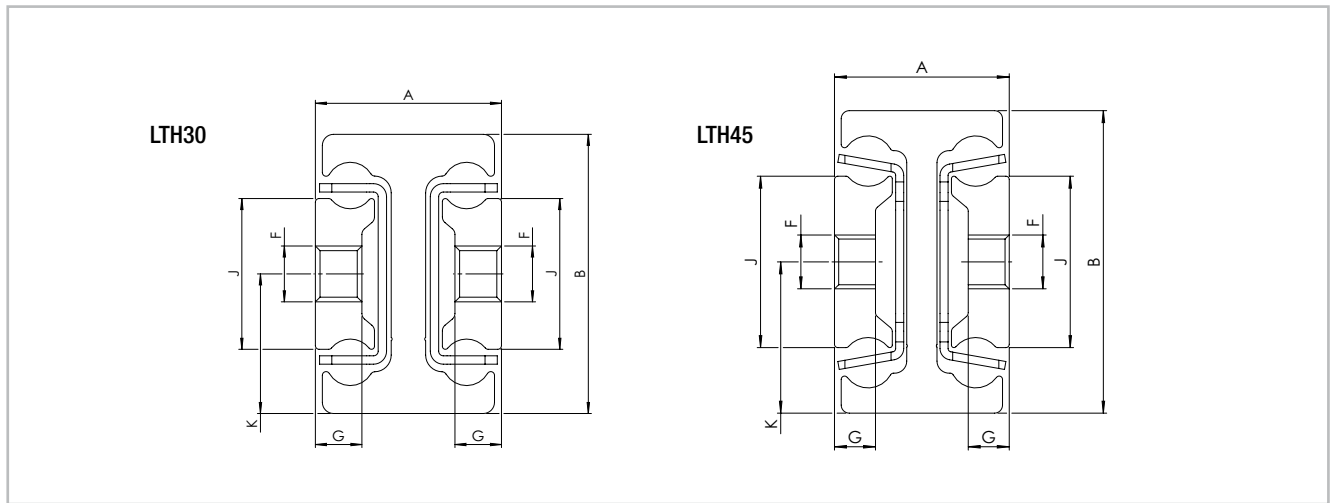


Fig. 92

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		m [mm]	n [mm]	Number of holes
				$C_{Orad}$ [N]	$C_{Oax}$ [N]			
LTH...S	45	300	310	1316	on request	50	100	3
		350	366	1832		75		4
		400	422	1666		50		5
		450	456	2154		75		6
		500	512	1972		50		7
		550	568	2200		75		8
		600	624	2204		50		9
		650	680	2426		75		10
		700	714	2942		50		11
		750	770	3084		75		12
		800	826	2860		50		13
		850	882	2666		75		14
		900	916	2614		50		15
		950	972	2450		75		
		1000	1028	2306		50		
		1050	1084	2178		75		
		1100	1118	2144		50		
		1150	1174	2034		75		
		1200	1230	1934		50		
		1250	1286	1842		75		
1300	1320	1818	50					
1350	1376	1738	75					
1400	1410	1716	50					
1450	1488	1596	75					
1500	1522	1578	50					

Tab. 49

> LTH



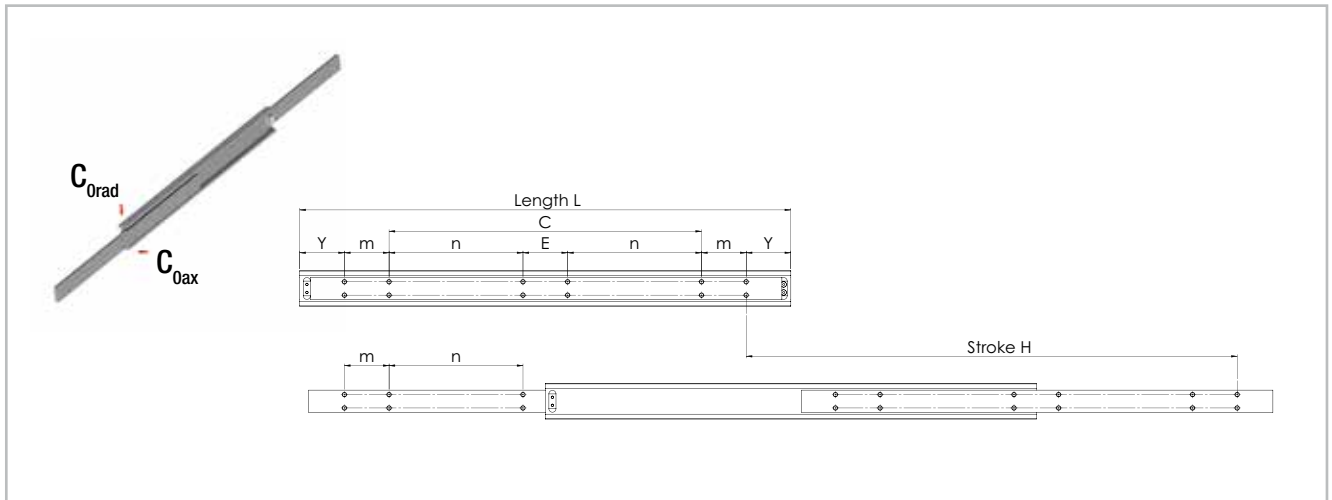
All dimensions are indicated in mm

Fig. 93

Type	Size	A	B	J	G	K	F	Weight [kg/m]
LTH	30	20	30	16.2	5.0	15.0	M6	3.5
	45	26	45	25.5	6.1	22.5	M8	6.0

Tab. 50

➤ HGT060, HGT080, HGT100, HGT120, HGT150, HGT200, HGT240



All dimensions are indicated in mm

Fig. 94

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		Y	m	n	E	C	Number of holes
				$C_{0rad}$ [N]	$C_{0ax}$ [N]						
HGT	60	400	400	5250	60 % $C_{0rad}$	50	50			200	8
		450	450	5350						250	
		500	500	5400						300	
		550	550	5500						150	12
		600	600	5400						175	
		650	650	5350						200	
		700	700	5250						225	
		750	750	5100						250	
		800	800	4900						275	
		850	850	4700						300	
		900	900	4500					50	-	
		950	950	4300							
		1000	1000	4050							
		1100	1100	3700							
		1200	1200	3300							
		1300	1300	2900							
		1400	1400	2500							
1500	1500	2100									

The load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

Tab. 51

#### 4 Load capacities and dimensions

Type	Size	Length	Stroke	Load capacity per pair		Y	m	n	E	C	Number of holes	
				C <sub>Orad</sub> [N]	C <sub>Oax</sub> [N]							
HGT	80	500	500	9000	60 % C <sub>Orad</sub>	100	100			100	8	
		550	550	9250						150		
		600	600	9350						200		
		650	650	9200						250		
		700	700	9050						300		
		750	750	8800						350		
		800	800	8600						400		
		850	850	8350						450		
		900	900	8100						500		
		950	950	7850						550		
		1000	1000	7550				600				
		1100	1100	7150				300	100	-		12
		1200	1200	6700				350				
		1300	1300	6200				400				
		1400	1400	5700				450				
		1500	1500	5200				500				
		1600	1600	4600				550				
		1700	1700	4100				600				
		1800	1800	3600				650				
		1900	1900	3000				700				
2000	2000	2500	750									

The load capacity for aluminum is 40 % and for stainless steel 60 % of the stated values, if available in this material variant (see Technical features overview).

Tab. 52



Type	Size	Length		Stroke		Load capacity per pair		Y	m	n	E	C	Number of holes					
		L [mm]	H [mm]	C <sub>0rad</sub> [N]	C <sub>0ax</sub> [N]													
HGT	100	700	700	11000	60 % C <sub>0rad</sub>	100	200	-	-	100	-	8						
		750	750	10750						150								
		800	800	10500						200								
		850	850	10250						250								
		900	900	10000						300								
		950	950	9750						350								
		1000	1000	9500						400								
		1100	1100	9000						150								
		1200	1200	8500						200								
		1300	1300	7900						250								
	1400	1400	7300	300														
	1500	1500	6700	350														
	1600	1600	6100	400														
	1700	1700	5450	450														
	1800	1800	4800	500														
	1900	1900	4100	550														
	2000	2000	3400	600														
																200	-	12

The load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

Tab. 53

## Other sizes and versions are available on request

Type	Size	Length		Load capacity per pair	
		L [mm]	H [mm]	C <sub>0rad</sub> [N]	C <sub>0ax</sub> [N]
HGT	120	700	700	11500	60 % C <sub>0rad</sub>
		⋮	⋮	⋮	
		2000	2000	4700	
HGT	150	700	700	13900	60 % C <sub>0rad</sub>
		⋮	⋮	⋮	
		2000	2000	7000	
HGT	200	700	700	15000	60 % C <sub>0rad</sub>
		⋮	⋮	⋮	
		2300	2300	6700	

The load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

Tab. 54

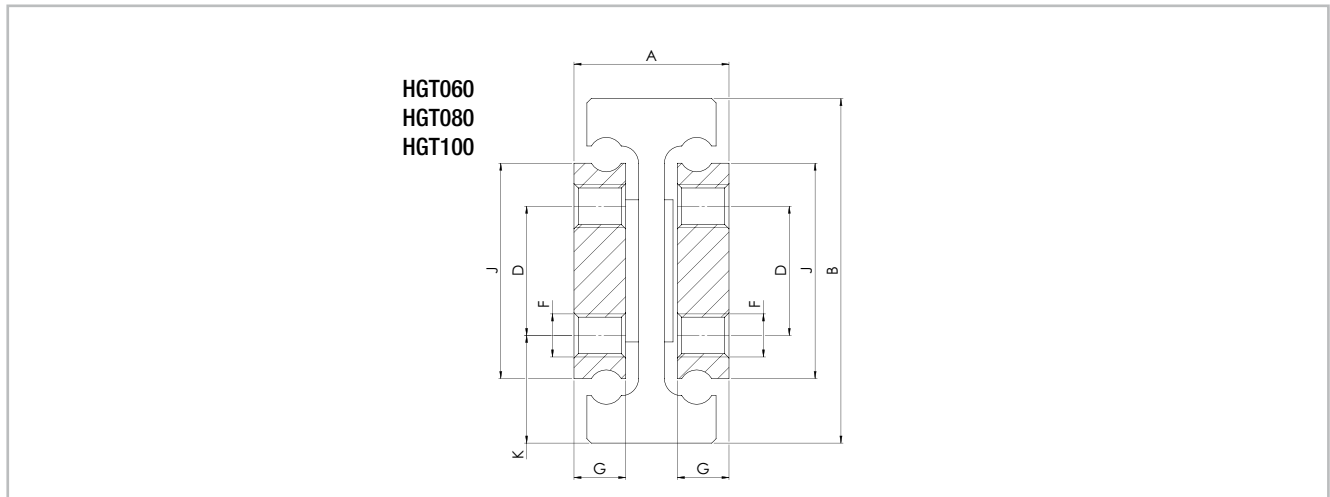
## 4 Load capacities and dimensions

Type	Size	Length L [mm]	Load capacity per pair	
			$C_{0rad}$ [N]	$C_{0ax}$ [N]
HGT	240	700	17500	60 % $C_{0rad}$
		⋮	⋮	
		2000	12500	

The load capacity for aluminum is 40 % and for stainless steel 60 % of the stated values, if available in this material variant (see Technical features overview).

Tab. 55

### > HGT



All dimensions are indicated in mm

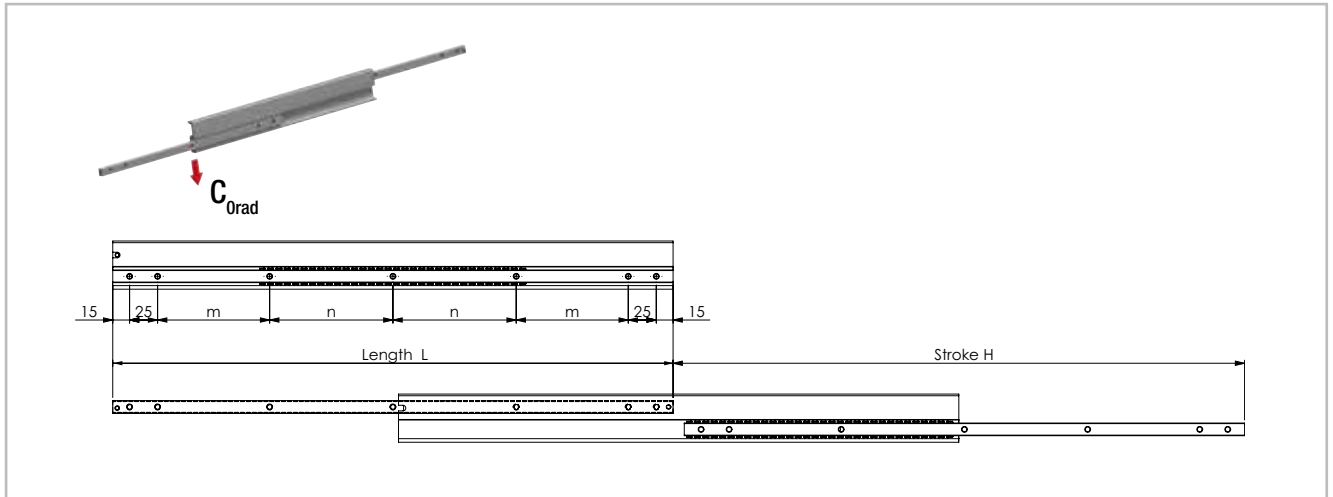
Fig. 95

Type	Size	A	B	J	G	K	D	F	Weight [kg/m]
HGT	60	32	60	40	10	19	22	M6	11.70
	80	38	80	50	12	25	30	M10	17.50
	100	44	100	70	15	27.5	45		27.60

Tab. 56

## S-profiles

## &gt; LTF44



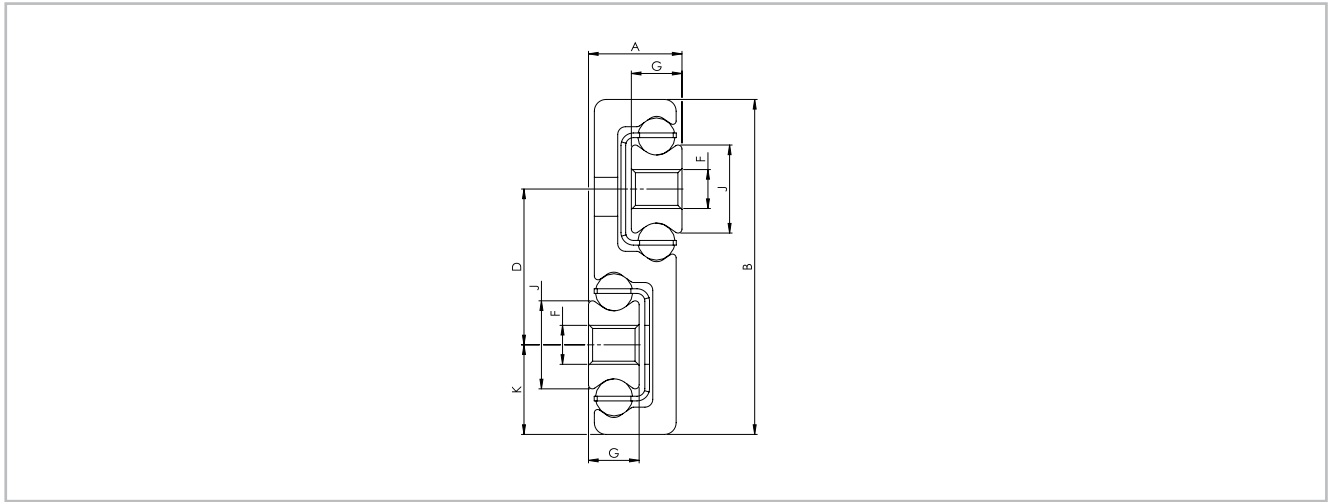
All dimensions are indicated in mm

Fig. 96

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair  $C_{Orad}$ [N]	Fixed and moving rails		Number of holes
					m [mm]	n [mm]	
LTF	44	200	210	228	60	-	5
		225	235	260	72.5		
		250	260	288	85		
		275	285	324	97.5		
		300	310	360	110		
		325	335	392	122.5		
		350	360	420	135		
		375	385	452	147.5		
		400	410	492	160		
		425	435	524	172.5		
	450	460	552	185			
	500	510	624	100	110	7	
	550	560	684		135		
	600	610	768		160		
	650	660	816		185		
	700	710	888	150	160		
	750	760	948		185		
	800	810	1020		210		
	850	860	1080		235		
	900	910	1152		260		
950	960	1224	285				
1000	1010	1296		310			

Tab. 57

> LTF44



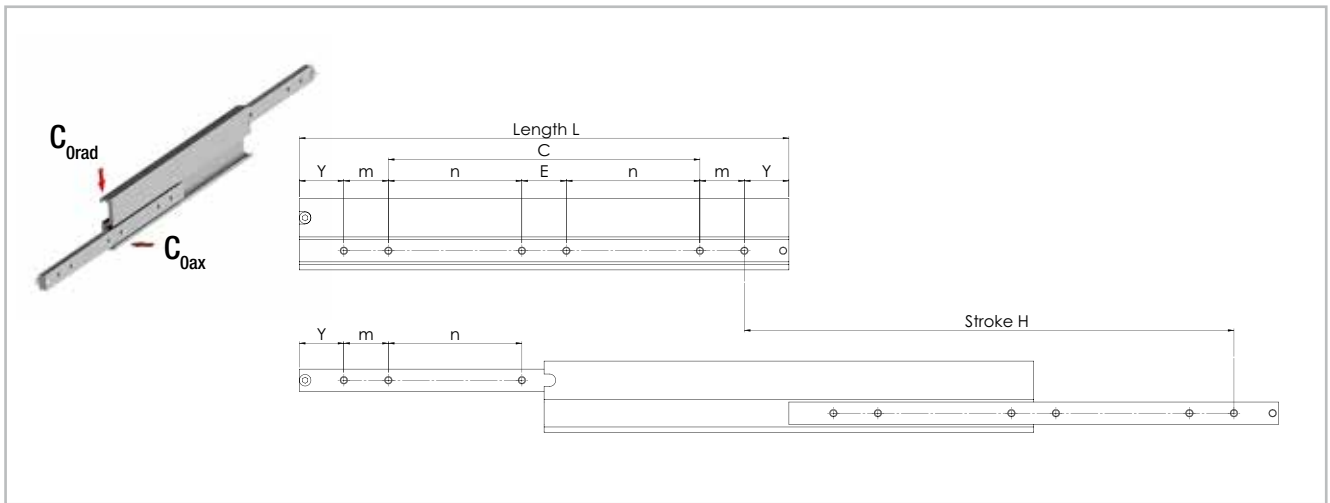
All dimensions are indicated in mm

Fig. 97

Type	Size	A	B	J	G	K	D	F	Weight [kg/m]
LTF44	44	12	43	11.3	6.5	11.5	20	M5	2.7

Tab. 58

## > HGS060, HGS080, HGS100



All dimensions are indicated in mm

Fig. 98

Type	Size	Length	Stroke	Load capacity per pair $C_{Orad}$ [N]	Y	m	n	E	C	Number of holes
		L [mm]	H [mm]							
HGS	60	250	250	1000	50	50	-	-	50	4
		300	300	1250					100	
		350	350	1350					150	
		400	400	1400					200	
		450	450	1400					250	
		500	500	1400					300	
		550	550	1350			150	50	-	
		600	600	1300			175			
		650	650	1250			200			
		700	700	1200			225			
		750	750	1150			250			
		800	800	1050			275			
		850	850	950			300			
		900	900	850			325			
		950	950	750			350			
		1000	1000	650			375			

The load capacity for aluminum is 40% and for stainless steel 60% of the stated values, if available in this material variant (see Technical features overview).

Tab. 59

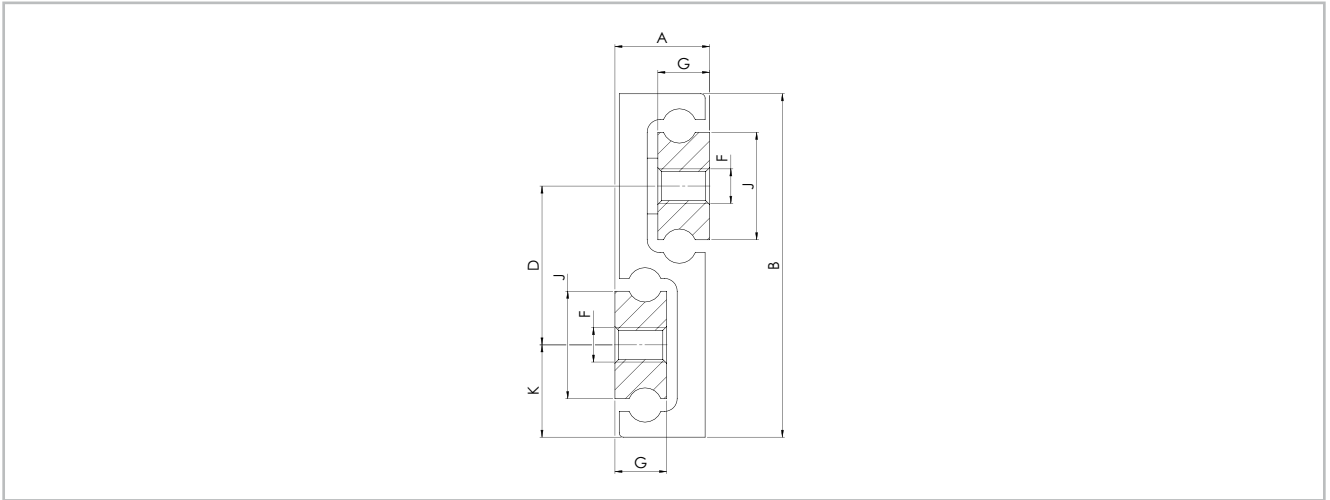
#### 4 Load capacities and dimensions

Type	Size	Length	Stroke	Load capacity per pair $C_{grad}$ [N]	Y	m	n	E	C	Number of holes
		L [mm]	H [mm]							
HGS	80	250	250	1600	50	50	-	-	50	4
		300	300	2000					100	
		350	350	2200					150	
		400	400	2350					200	
		450	450	2450					250	
		500	500	2450					300	
	550	550	2450	150			50	-	6	
	600	600	2400	175						
	650	650	2300	200						
	700	700	2200	225						
	750	750	2100	250						
	800	800	2000	275						
	850	850	1900	300						
	900	900	1800	325						
	950	950	1650	350						
	1000	1000	1500	375						
	HGS	100	400	400						3200
450			450	3500	250					
500			500	3600	300					
550			550	3600	150	50	-	6		
600			600	3550	175					
650			650	3450	200					
700			700	3300	225					
750			750	3150	250					
800			800	3000	275					
850			850	2850	300					
900			900	2700	325					
950			950	2550	350					
1000			1000	2400	375					
1100			1100	2250	425					
1200			1200	2100	475					
1300			1300	1950	525					
1400			1400	1850	575					
1500	1500	1600	625							

The load capacity for aluminum is 40 % and for stainless steel 60 % of the stated values, if available in this material variant (see Technical features overview).

Tab. 60

## > HGS



All dimensions are indicated in mm

Fig. 99

Type	Size	A	B	J	G	K	D	F	Weight [kg/m]
HGS	60	17	60	16	10	16	28	M6	6.00
	80	22	80	25	12	21.5	37	M8	10.50
	100	24	100	32		26	48		14.20

Tab. 61

## Accessories



### Available options (depending on telescope version)

#### > Locking

Locking mechanisms make it possible to lock the Hegra rails in the end position. This prevents inadvertent extension or retraction of the rail in any case. Locking mechanisms can be implemented as locking bolts or bars. This ensures personal safety and protection of materials, especially in moving installations, as in vehicles. For models HGT with locking please observe right or left side use.



Fig. 100



Fig. 101

#### > Driving disc

In the full extension rails with dual stroke the intermediate element does not follow a particular order. The exact position of the element is therefore defined only in fully extended condition. The optional driving disc defines the movement of the intermediate element. This prevents unwanted protrusion of the element. An example for use of the driving disc is in warehouse rails, which are extended in both directions.



Fig. 102



Fig. 103

#### > Damping

Hegra telescoping rails can be equipped with damped end stops in closed position. Plastic or elastomer damping elements provide for quieter operation, a softer end stop when pushing in the rail and higher resistance at the end of the stroke.



Fig. 104



Fig. 105



## Snap

Hegra Rail telescopic guides can be partial with a snap through a ball thrust piece. Thus, an unintended process of the telescope system is avoided.

Note: Not all accessories (interlocks, damping, Drive disk, snap) can be combined with each other and available. (see Technical features overview) Please contact our technical service.

## Technical information



### > Selecting a suitable telescoping rail

To find a telescoping rail that meets your requirements, the following factors must be considered.

- Desired load capacity
- Available sizes (height, width and rail length)
- Required extension type (partial, full extension, etc.)
- Length of travel
- Desired material and surface

### > Mounting tolerances

Installation

length (mm)	$\geq 150 < 420$	$\geq 420 < 1050$	$\geq 1050 < 2840$
Tolerance (mm)	$\pm 0.5$	$\pm 0.8$	$\pm 1.2$

At the installation, width tolerances of  $\pm 0.5$  mm for compensating are to be considered. For all other dimensions, the tolerances according to DIN ISO 2768-1 (m) apply.

### > Life cycle

The life cycle describes the time span from installation to failure of the telescoping rail, due to wear.

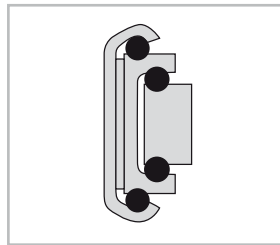
The life cycle is affected by the following factors.

- Load
- Assembly precision
- Parallelism when installed in pairs
- Rigidity of the connection construction
- Jolts and vibrations
- Operating temperature
- Lubrication (in accordance with maintenance intervals)

### > Load capacity

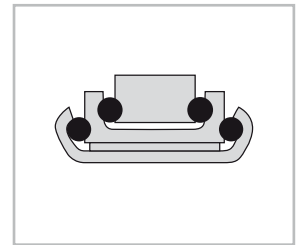
The specified maximum load capacity always refers to one pair of vertically installed telescoping rails. To achieve this capacity, the following requirements must be fulfilled.

- An absolutely rigid connection construction
- Even distribution of the load over the entire length of the moving rail element
- Mounting of the telescoping rails on a flat and rigid surface using all provided mounting holes
- Please be sure to use the correct screw length to prevent damage to the ball cage: shank length of screw  $<$  thickness of the moving element
- Vertical installation of telescoping rails



Vertical installation

Fig. 106



Level installation

Fig. 107

If optimal implementation of all of these requirements is not possible, we will be glad to assist you in calculating the actual load capacity.

In case of a level installation of the telescoping rails, only 50 % of the permissible load values is possible, depending on the type.

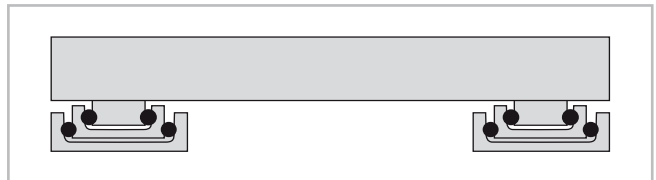


Fig. 108

## > Deflection

If the rails are installed in pairs and the requirements under “Load capacity” are taken into account, the maximum deflection of steel rails under full load is 1 % of the extended length (stroke). Example: 500 mm length of travel -> max. 5 mm deflection under full load.

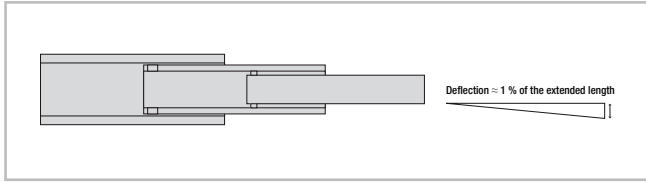


Fig. 109

## > Operating temperature

The telescoping rails can be used at ambient temperatures from 0 °C to +170 °C (32 °F to +338 °F). At lower temperatures down to -30 °C (-22 °F) or higher temperatures up to +250 °C (+482 °F), please contact our application engineers. These ranges always require the use of a special lubricant.

## > Corrosion protection

As standard features, all series are zinc electroplated, thick-film passivated and Reach/RoHS compliant. For higher corrosion protection we offer zinc nickel plating with stainless steel balls. Overview of available coatings:

Coating type thickness 12-15µm	Salt-spray test DIN EN ISO 9227	Reach/ RoHS
Thick-film passivated	ca. 400 hours	yes
Zinc nickel	more than 700 h	yes

Tab. 62

## > Ball cage displacement

The stroke movement of a telescoping rail is achieved by the ball cages, among other elements. You should ensure that the telescoping rail is always fully extended and retracted, since otherwise the ball cages can become displaced. Ball cage displacement occurs as a result of slippage and means that you can achieve the required extension length and the desired closed condition of the telescoping rail only with increased application of force.

Automated systems must have sufficient reserve driving force or an additional maximum stroke must be planned for in order to prevent displacement.

On request we also implement custom design solutions. Feel free to contact us.

## > Motive force

The motive force is subject to production-related tolerances and is also defined by the load and the deflection of a telescoping rail. Taking into account the load and deflection of a telescoping rail, the closing force is higher than the opening force, since deflection occurs under load and closing takes place by pushing against a slanted plane.

## > Lubrication

Alternative lubricants, for example for the food industry, or alternate temperature ranges are available on request. Our aluminium or stainless steel telescoping rails are generally delivered without grease.

## > Maintenance intervals

A visual inspection should be conducted occasionally; foreign particles should be removed and “dry” guide rails should be lightly lubricated with roller bearing grease. This prevents friction, protects the components and prolongs the life of the system. The lubrication intervals are variable and should be determined based on the respective operating conditions such as load, ambient conditions, travel speed, temperature, pollution, etc.

## > Mounting instructions

- Please use all mounting holes, in addition to screws of the correct length.
- A stable base is necessary for mounting the telescoping rails.
- In the connection construction, be aware that we have switched to counterbores according to DIN 74 Form F and due to the material thickness of our profiles, the head of the countersunk screw protrudes somewhat from the profile, so that the mating piece must have a corresponding counterbore.

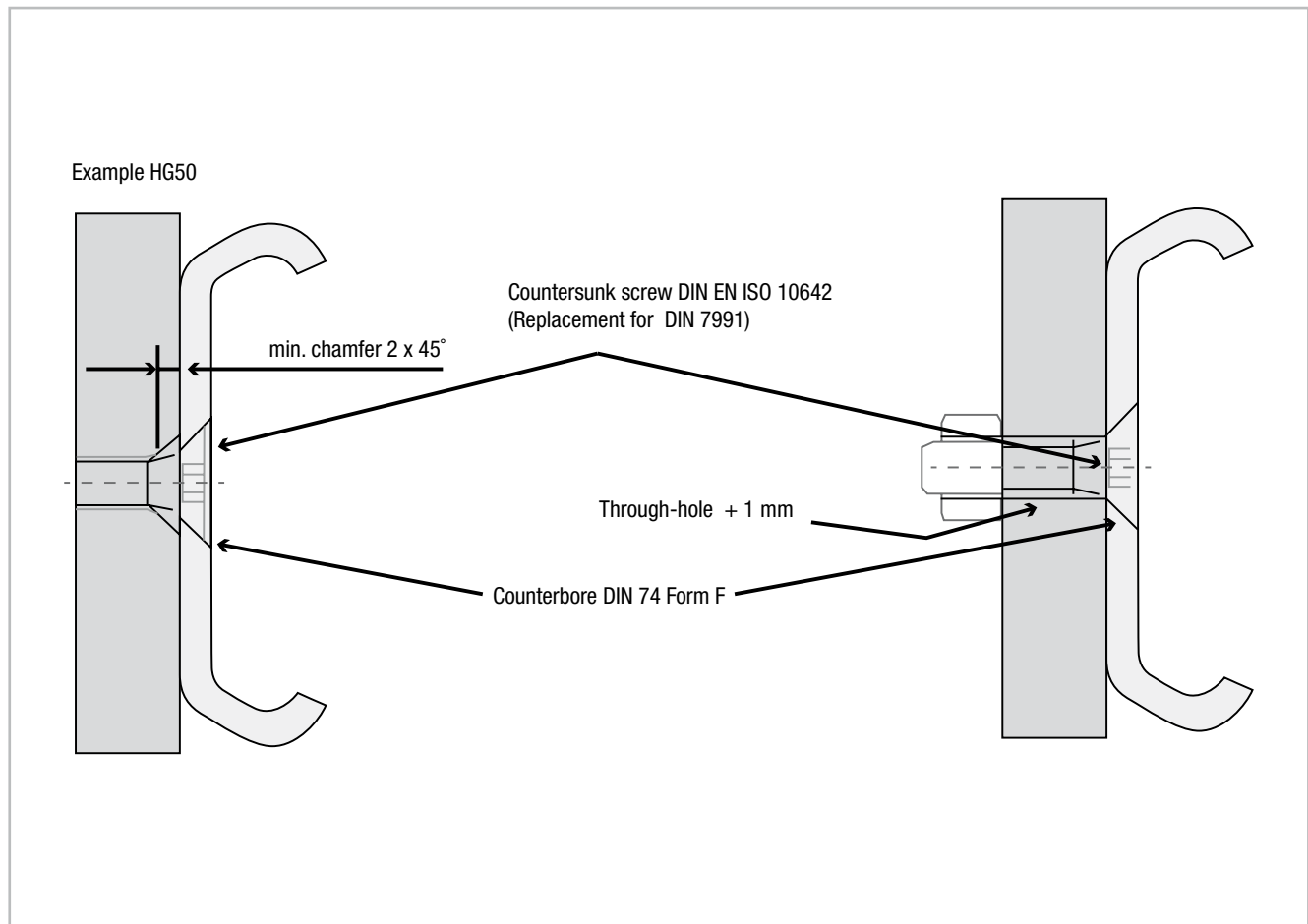
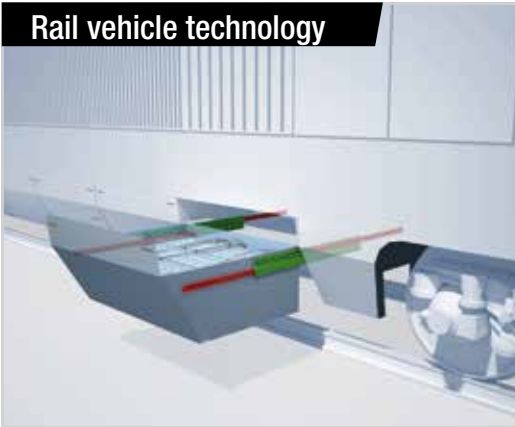


Fig. 110

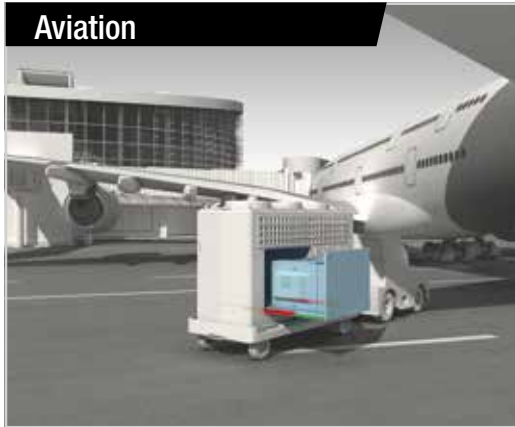
## Potential areas of use



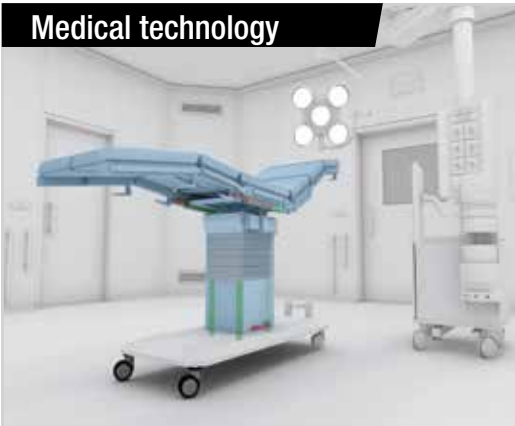
Rail vehicle technology



Aviation



Medical technology



Warehouse logistics



Machine construction



Motor vehicle technology



# Ordering key

## > Hegra Rail

HGTX080	0500	0600	EG	VO	DG	B	Z	R	
									right or left version
									alternate coating
									stroke in both directions
									damping
									locking
									snap
									alternate stroke
									closed length
type with material and size									

Note on ordering: The size is always indicated as 3 digits, the length of the rail and the stroke are always 4 digits with the 0 prefixes.

Not all fields must be filled out. If they are not used, they remain empty.

Ordering example: HGTX080-0500-0600-EG-VO-DG-B-Z-R

Type	
HTT	partial extension machined/drawn profile
HTC	partial extension c-profile
HVB	full extension outer c-profiles
HVD	full extension double c-profile
HVC	full extension single c-profile
HVT	full extension machined/drawn profile
H1D	over extension 150 % double c-profile
H1C	over extension 150 % single c-profile
H1T	over extension 150 % machined/drawn profile
H2H	over extension 200 % machined/drawn profile
LTH	heavy duty slide
HGT	heavy duty slide
LTF	s-profile
HGS	s-profile

Material	
	steel
A	aluminum
X*	stainless steel

\* Different stainless steels, such as the “electropolishing” option, are available, please contact our technical service.

Accessory	
	no accessory
EO	snap on opened position
EG	snap on closed position
EB	snap on closed an opened position
VO	locking opened position
VG	locking closed position
VB	locking on closed an opened position
DG	damping closed position
B	stroke on closed an opened position
BM	stroke on closed an opened position with synchronization

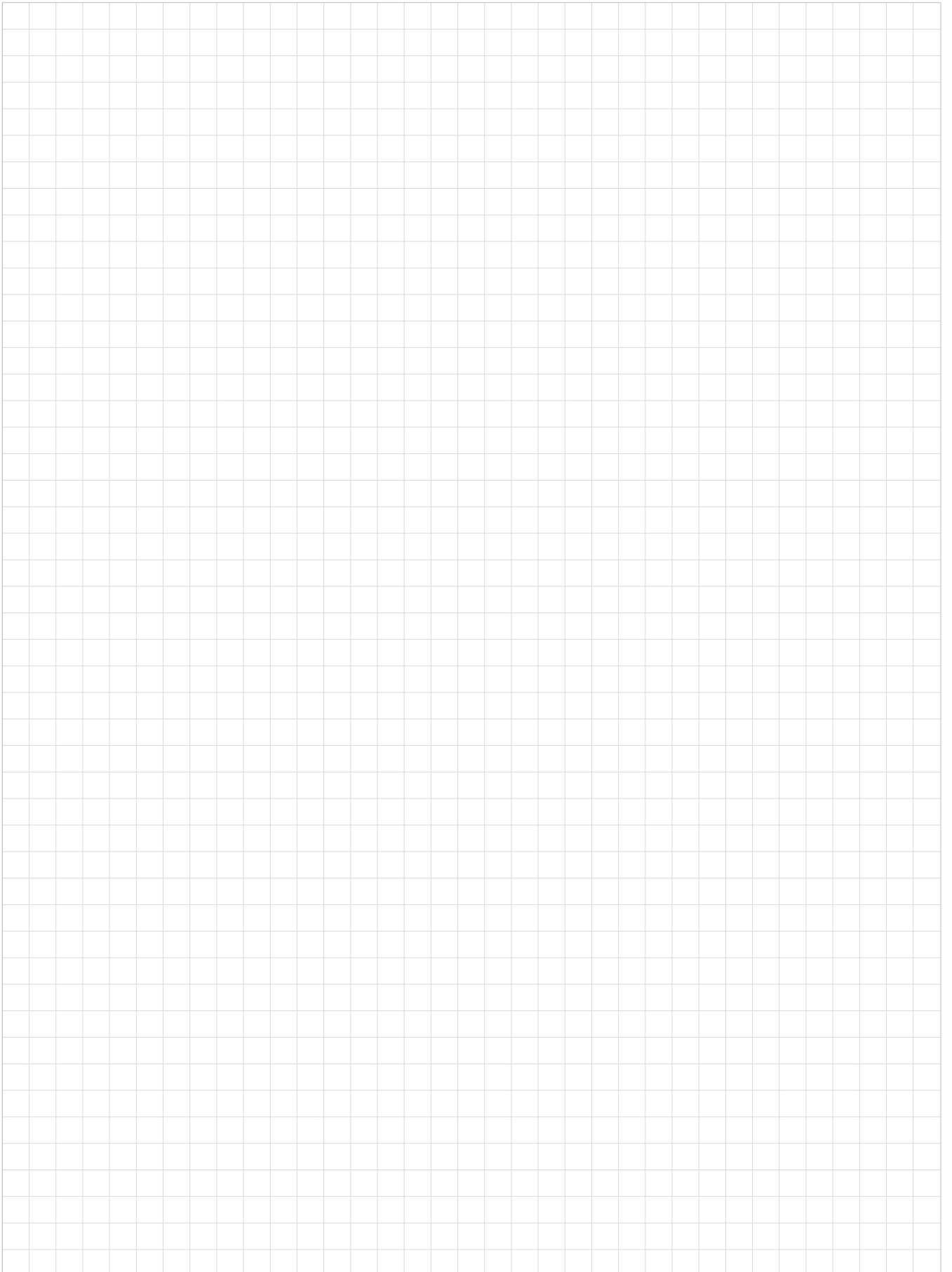
Coating	
	thick-film passivation
Z	zinc nickel
N	nickel
E	anodizing colorless

Layout	
L	left version
R	right version

Special/Configuration	
S01	special (according to drawing)
C01	configuration (special stroke, stainless steel balls, special grease)









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