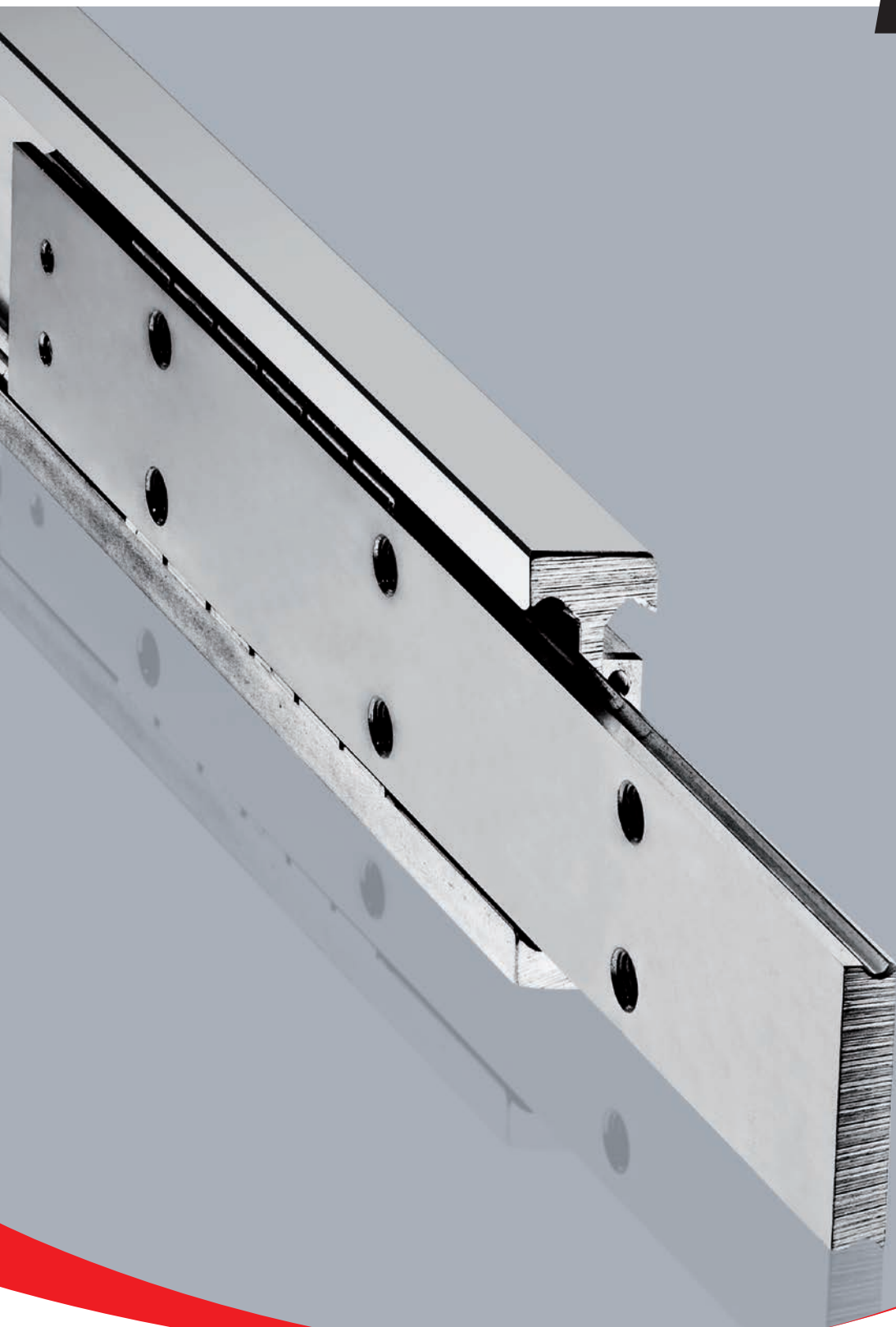


ROLLON®
BY TIMKEN

Hegra Rail



TO SUPPORT YOU, WE DESIGN AND PRODUCE

An industrialized process with various levels
of customization



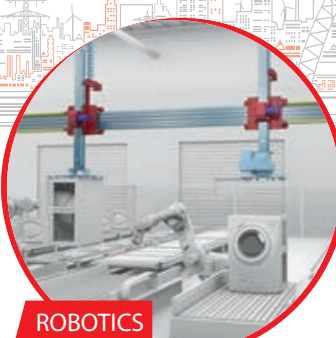
For over 45 years, Rollon has adopted an approach entailing responsibility and ethics in the design and production of our linear motion solutions for different industrial sectors. The reliability of an international technology group has now been combined with the availability of a local support and service network



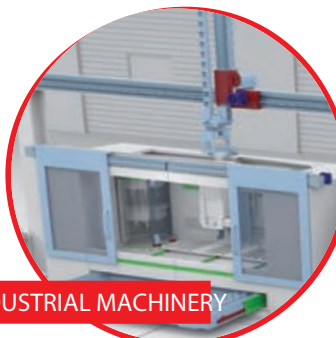
VALUES

Rollon's goal is to help our clients become more competitive in their markets through technological solutions, design simplification, productivity, reliability, duration, and low maintenance.

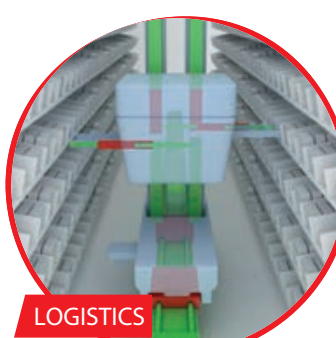
PERFORMANCE



ROBOTICS



INDUSTRIAL MACHINERY



LOGISTICS

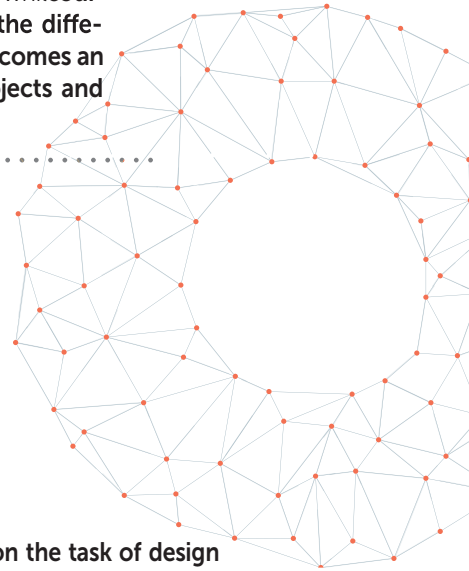


RAILWAY

COLLABORATION



High-level technical consulting and cross-competence allow us to identify the needs of our clients and transform them into guidelines for continuous exchange, while our strong specialization in the different industrial sectors becomes a factor in developing projects and innovative applications.

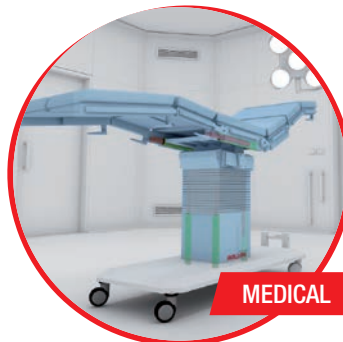


Rollon takes on the task of design and development of linear motion solutions, taking care of everything for our customers, so that they can concentrate on their core business. We offer everything from individual components to specifically designed, mechanically integrated systems: the quality of our applications is an expression of our technology and competence.

SOLUTIONS APPLICATIONS



INTERIORS AND ARCHITECTURE



MEDICAL



SPECIAL VEHICLES



AERONAUTICS

DIVERSIFIED LINEAR SOLUTIONS FOR EVERY APPLICATION REQUIREMENT

Linear and telescopic rails

Linear Line



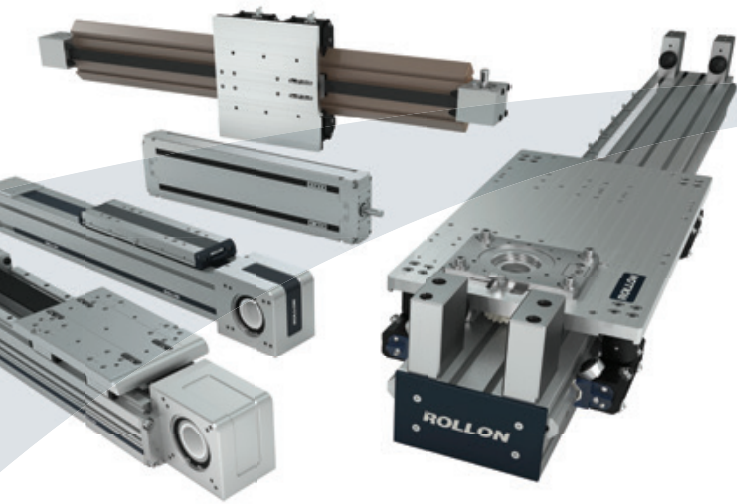
Linear and curved rails with ball and roller bearings, with hardened raceways, high load capacity, self-alignment, and capable of working in dirty environments.

Telescopic Line



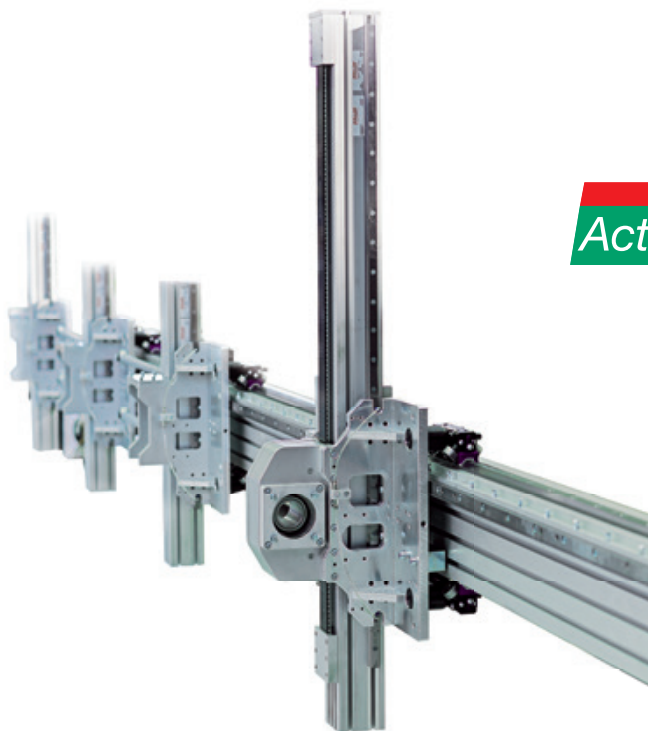
Telescopic rails with ball and roller bearings, with hardened raceways, high load capacities, low bending, resistant to shocks and vibrations. For partial, total or extended extraction up to 200% of the length of the guide.

Linear actuators and automation systems



Actuator Line

Linear actuators with different rail configurations and transmissions, available with belt, screw, or rack and pinion drives for different needs in terms of precision and speed. Rails with bearings or ball recycle systems for different load capacities and critical environments.



Actuator System Line

Integrated actuators for industrial automation, used in applications in several industrial sectors: automated industrial machinery, precision assembly lines, packaging lines and high speed production lines. The Actuator Line evolves to satisfy the requests of our most discerning clients.

> Hegra Rail



1 Product explanation

Partial and full extension guides of different types

HR-2

2 Product cross sections

HR-4

3 Technical data

Performance characteristics and notes

HR-6

4 Load capacities and dimensions

HTT

HR-7

HVC

HR-11

H1C

HR-16

H1T

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H2H

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LTH

HR-24

HGT

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LTF

HR-35

HGS

HR-37

5 Accessories

Locking, driving disc, damping

HR-39

6 Technical information

Selecting a suitable telescoping rail, Mounting tolerances,

Life cycle, Load capacity,

HR-40

Deflection, Operating temperature, Corrosion protection,

Ball cage displacement, Moving force, Lubrication

HR-41

Maintenance intervals, Assembly information

HR-42

Ordering key

Ordering key with explanations

HR-43

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.

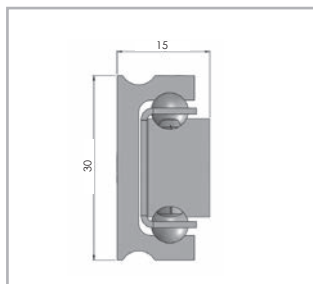


Fig. 6

Overview product cross sections

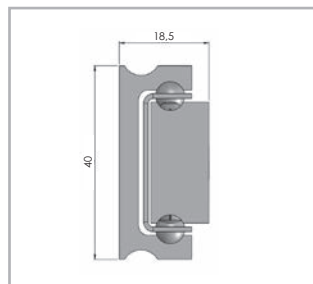


> Partial extension guides



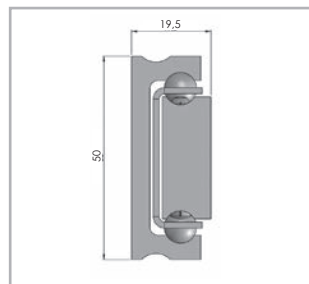
HTT030

Load capacities p. HR-7



HTT040

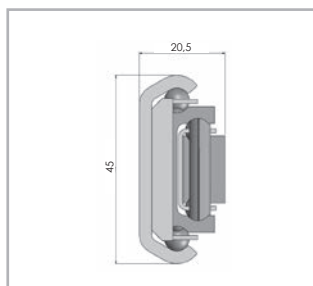
Load capacities p. HR-8



HTT050

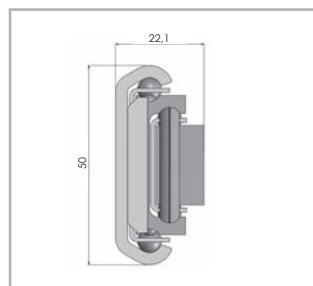
Load capacities p. HR-9

> Full extension guides



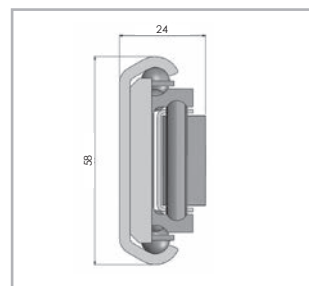
HVC045

Load capacities p. HR-11



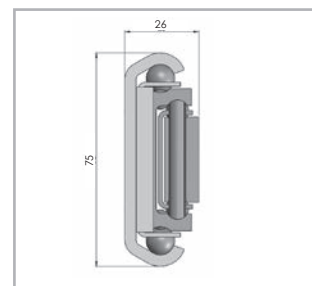
HVC050

Load capacities p. HR-12



HVC058

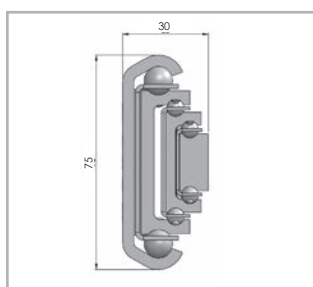
Load capacities p. HR-13



HVC075

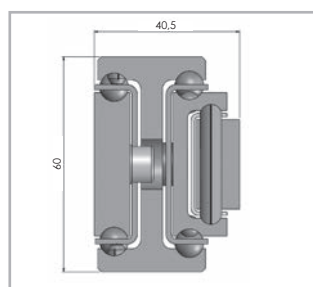
Load capacities p. HR-14

> Overextending guides



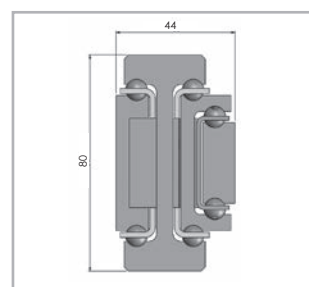
H1C075

Load capacities p. HR-16



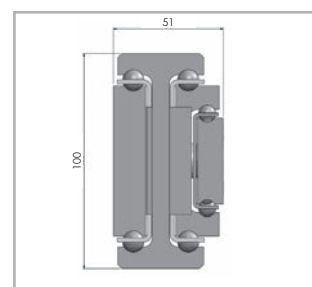
H1T060

Load capacities p. HR-18



H1T080

Load capacities p. HR-19



H1T100

Load capacities p. HR-20

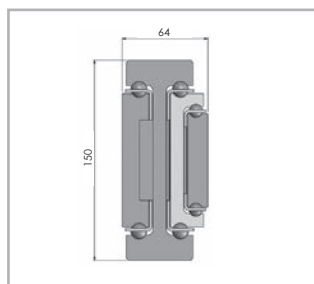


Fig. 18

H1T150

Versions are available on request
Load capacities p. HR-21

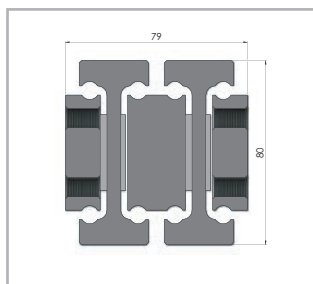


Fig. 19

H2H080

Load capacities p. HR-22

> Heavy load extension guides

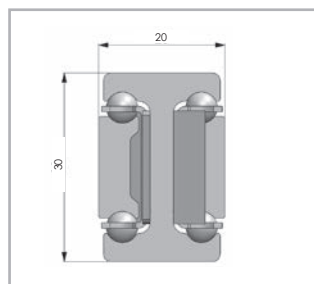


Fig. 20

LTH30

Load capacities p. HR-24

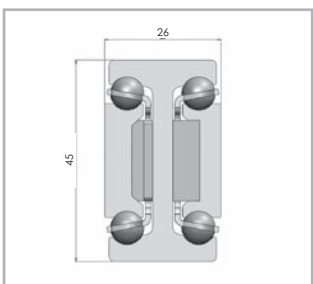


Fig. 21

LTH45

Load capacities p. HR-27

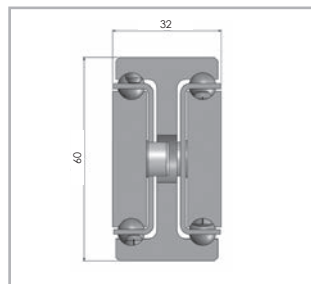


Fig. 22

HGT060

Load capacities p. HR-31

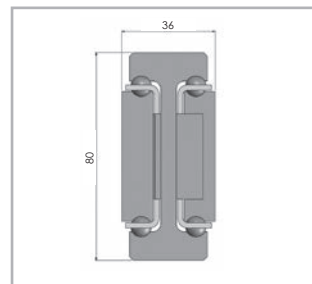


Fig. 23

HGT080

Load capacities p. HR-32

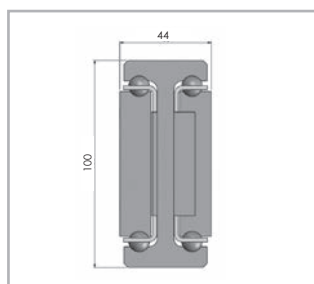


Fig. 24

HGT100

Load capacities p. HR-33

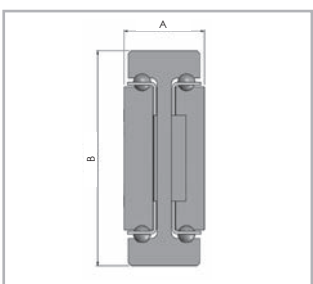


Fig. 25

HGT120, HGT150, HGT200, HGT240

Versions are available on request
Load capacities p. HR-33

HGT120: A = 44, B = 120

HGT 150: A = 56, B = 150

HGT 200: A = 72, B = 200

HGT 240: A = 74, B = 240

> S-profiles

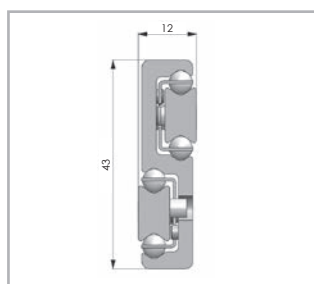


Fig. 26

LTF44

Load capacities p. HR-35

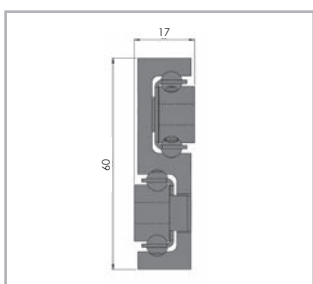


Fig. 27

HGS060

Load capacities p. HR-37

Technical data

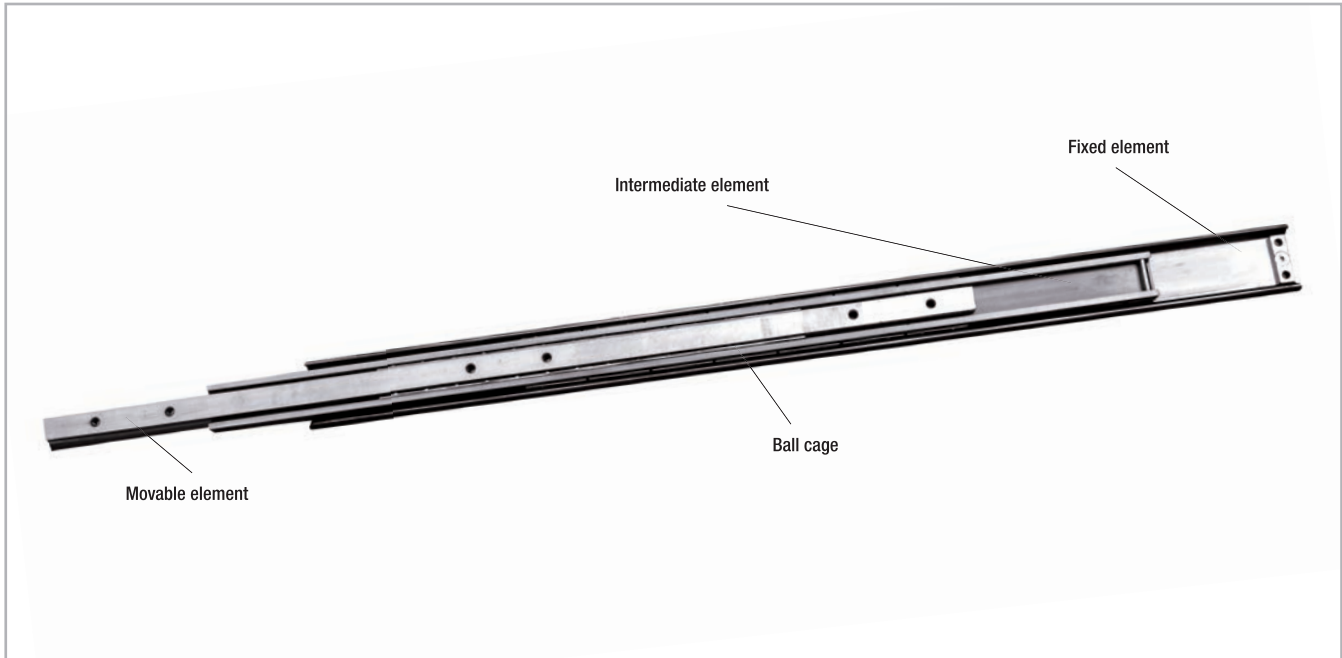


Fig. 28

Performance characteristics:

- Temperature range: -20 °C to +170 °C (-4 °F to +338 °F)
(in exceptions also -30 °C to +250 °C (-22 °F to +482 °F)
Above 80°C all rubber part, if they exist, must be removed.
- 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 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.

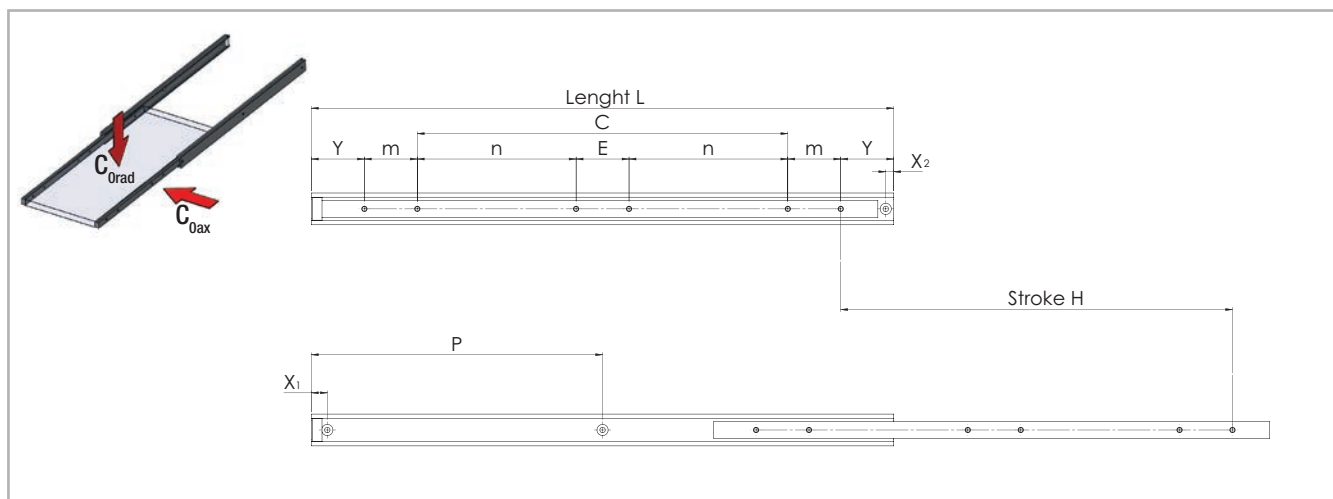
Notes:

- Horizontal movement installation is recommended
- Vertical movement 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
-20 °C to +170 °C (-4 °F to +338 °F)
- Temperature range: LTH ...S
-20 °C to +50 °C (-4 °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



> HTT030



All dimensions are indicated in mm

Fig. 29

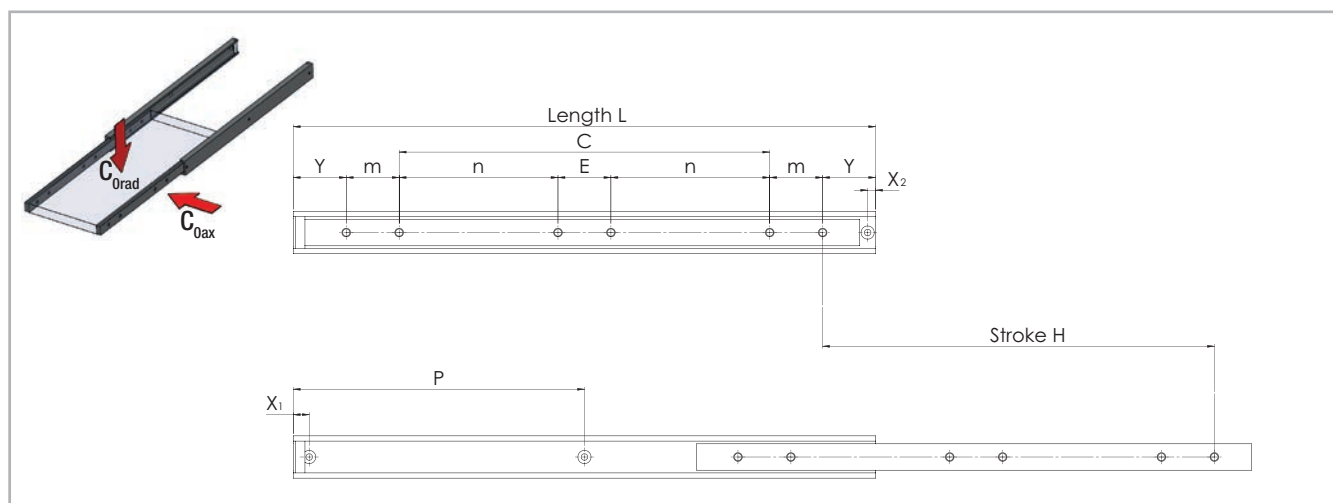
Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		X1*	X2	Y	m	n	E	C	P	Number of holes
				C _{0rad} [N]	C _{0ax} [N]									
HTT	30	250	130	1100	on request	15	7.5	50	50	-	-	50	125	4
		300	180	1200								100	150	
		350	230	1150								150	175	
		400	260	1100								200	200	
		450	310	1050								250	225	
		500	340	1000								300	250	
		550	370	950						150	50	-	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).

* For double-sided stroke the dimension X1=7,5mm

Tab. 1

> **HTT040**



All dimensions are indicated in mm

Fig. 30

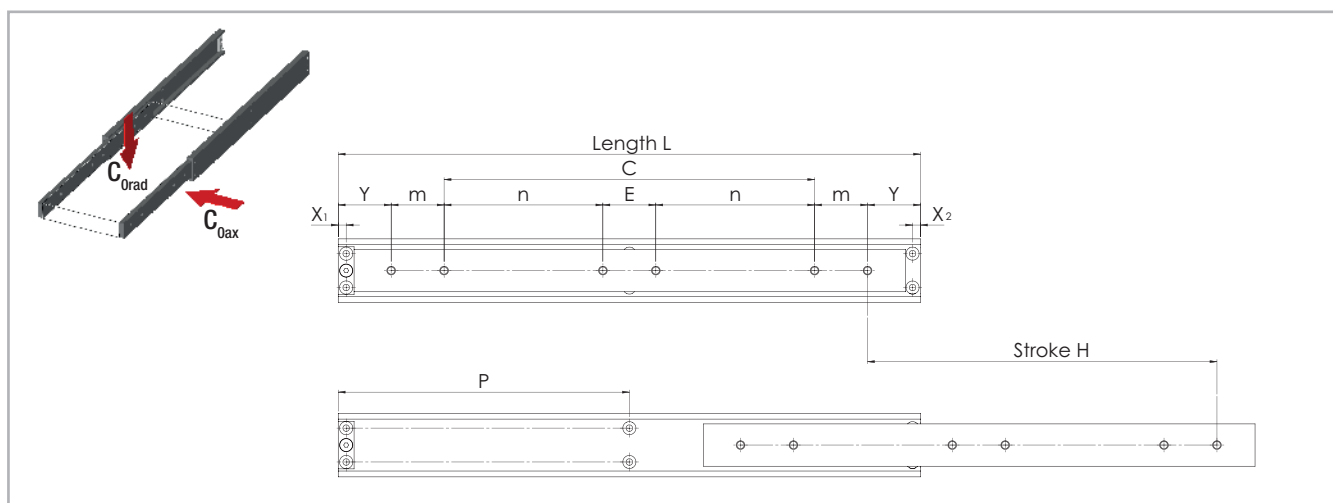
Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		X1*	X2	Y	m	n	E	C	P	Number of holes
				C _{0rad} [N]	C _{0ax} [N]									
HTT	40	250	130	2100	on request	15	7.5	50	50			50	125	4
		300	180	2250								100	150	
		350	230	2350								150	175	
		400	260	2450								200	200	
		450	310	2550								250	225	
		500	340	2500								300	250	
		550	370	2450						150	50	-	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).

* For double-sided stroke the dimension X1=7,5mm

Tab. 2

> HTT050



All dimensions are indicated in mm

Fig. 31

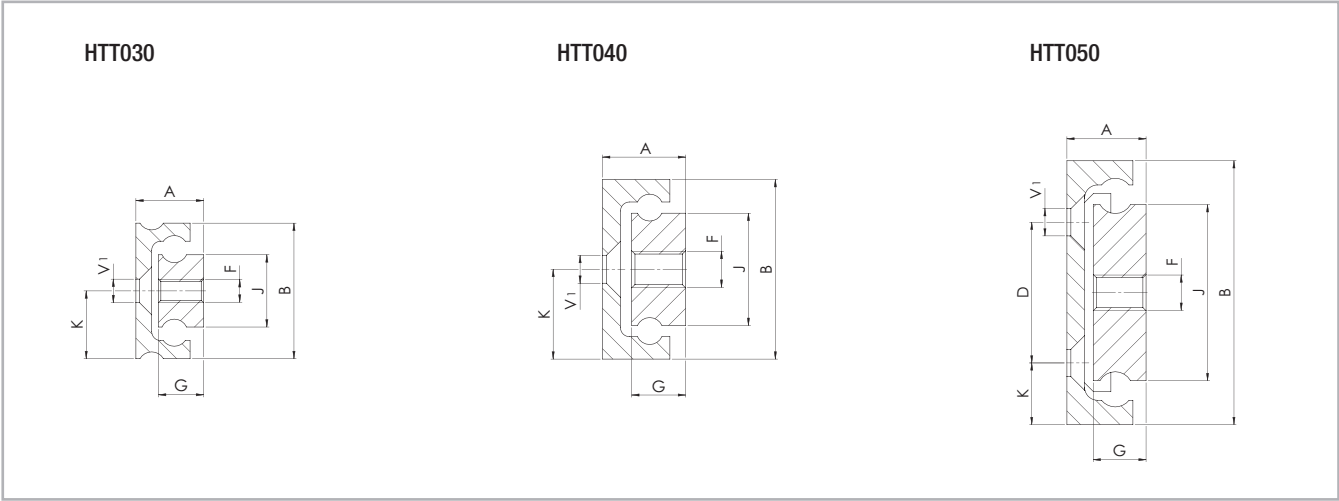
Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		X1*	X2	Y	m	n	E	C	P	Number of holes
				C _{Orad} [N]	C _{Oax} [N]									
HTT	50	300	180	2500	on request	15	7.5	50	50			100	150	4
		350	230	2600								150	175	
		400	260	2700								200	200	
		450	310	2800								250	225	
		500	340	2900								300	250	6
		550	370	2850						150	50	-	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	700	1850						425			525	
		1200	760	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).

* For double-sided stroke the dimension X1=7,5mm

Tab. 3

> HTT



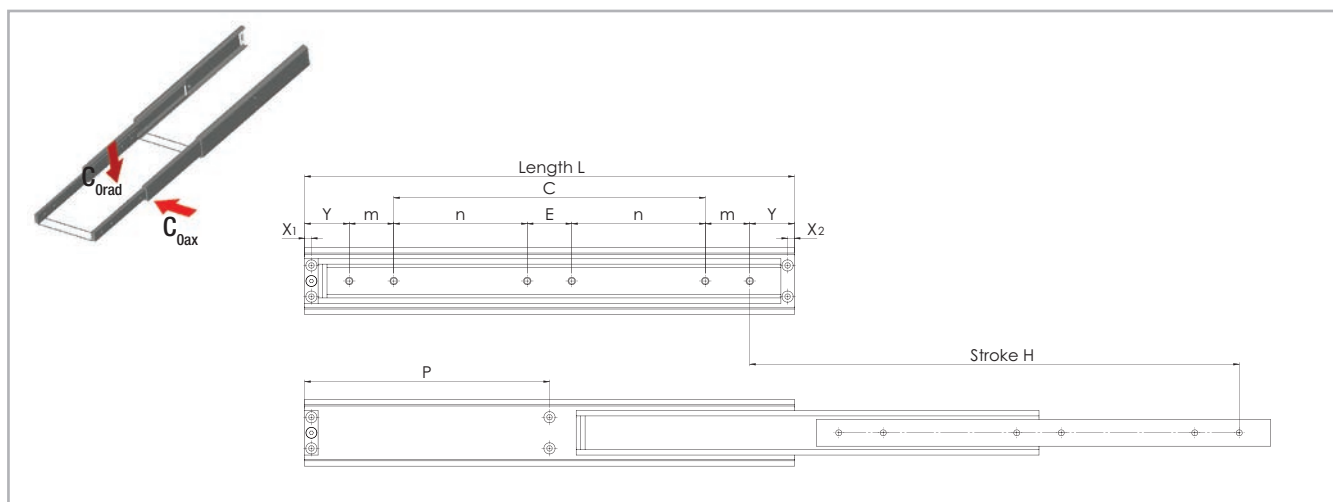
All dimensions are indicated in mm
¹ Mounting holes (V) for countersunk screws according to DIN 7991/ISO 10642

Fig. 32

Type	Size	A	B	J	G	K	D	D1	F	V1	Weight per single guide [kg/m]
HTT	30	15	30	16	10	15	-	-	M6	M5	2.4
	40	18.5	40	25	12	20	-	-	M8	M6	4.3
	50	19.5	50	30		12.5	25				5.6

Tab. 4

> HVC045, HVC050, HVC058, HVC075



All dimensions are indicated in mm

Fig. 33

Type	Size	Length	Stroke	Load capacity per pair		X1	X2	Y	m	n	E	C	P	Number of holes
		L [mm]	H [mm]	C _{0rad} [N]	C _{0ax} [N]									
HVC	45	300	300	1150	on request	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						150	-		275	6
		600	600	1050						175			300	
		650	650	1000						200			325	
		700	700	950						225			350	
		750	750	900						250			325	
		800	800	850						275	50		400	
		850	850	800						300			425	
		900	900	750						325			450	
		950	950	700						350			475	
		1000	1000	650						375	-		500	
		1100	1100	500						425			50	
		1200	1200	400						475			600	

Tab. 5

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 _{grad} [N]	C _{oax} [N]									
HVC	50	300	300	1400	on request	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	50	-	275	6
		600	600	1300						175			300	
		650	650	1250						200			325	
		700	700	1200						225			350	
		750	750	1150						250			325	
		800	800	1100						275			400	
		850	850	1050						300			425	
		900	900	1000						325			450	
		950	950	950						350			475	
		1000	1000	900						375			500	
		1100	1100	800						425			550	
		1200	1200	700						475			600	
		1300	1300	600						525			650	
		1400	1400	500						575			700	
		1500	1500	400						625			750	

*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. 6

Type	Size	Length	Stroke	Load capacity per pair		X1	X2	Y	m	n*	E*	C	P	Number of holes
		L [mm]	H [mm]	C _{0rad} [N]	C _{0ax} [N]									
HVC	58	300	300	2000	on request	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	50	-	275	6
		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 stainless steel 60 % of the stated values.

*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. 7

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 _{grad} [N]	C _{oax} [N]									
HVC	75	300	300	3200	on request	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	50	-	275	6
		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	

*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. 8

> HVC

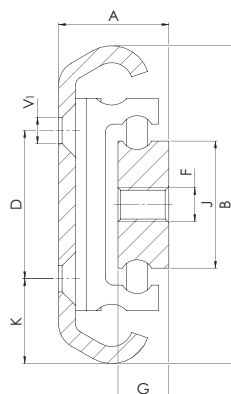


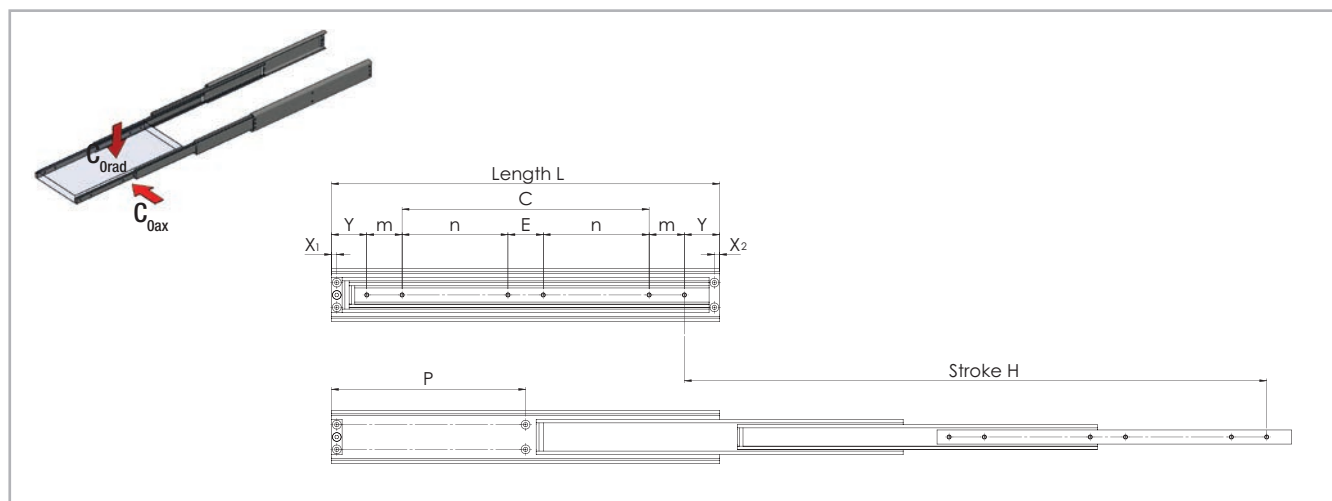
Fig. 34

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 per single guide [kg/m]
HVC	45	20.5	45	16	10	11.5	22	M6	M5	4.00
	50	22.1	50	20	12	14				5.10
	58	24	58	25		13	32	M8	M6	6.50
	75	26	75	30		20				9.30

Tab. 9

> H1C075



All dimensions are indicated in mm

Fig. 35

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair C_{0rad} [N]	X1	X2	Y	m	n	E	C	P	Number of holes
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	6
		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	
		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					625			750	

Tab. 10

> H1C075

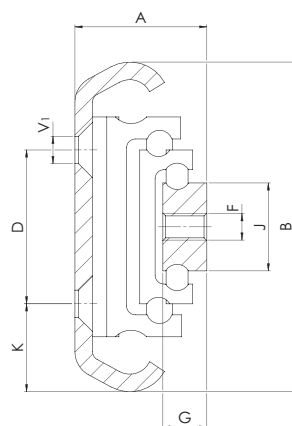


Fig. 36

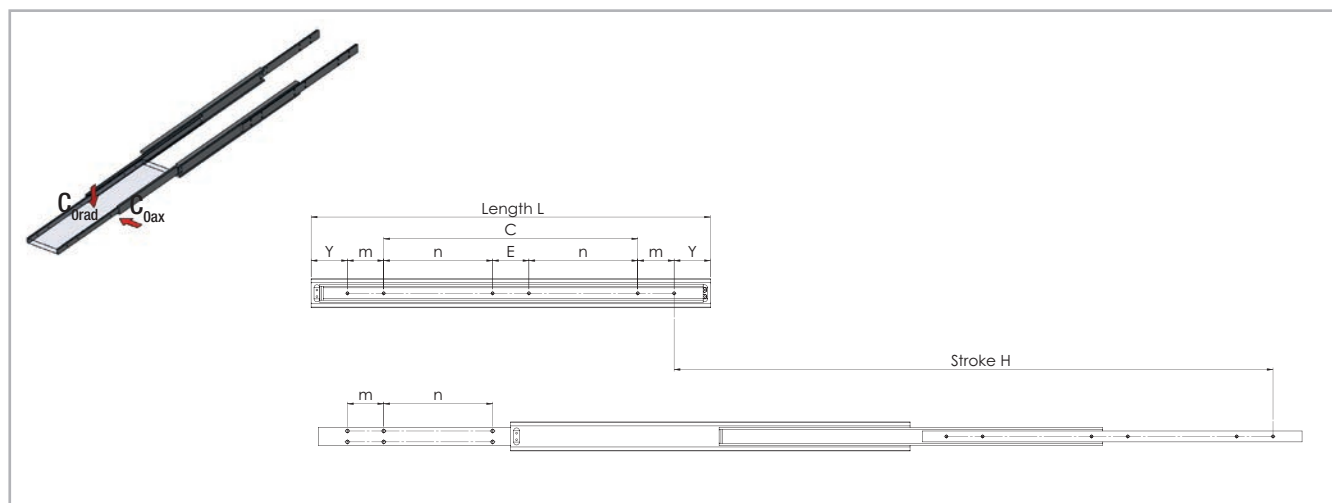
All dimensions are indicated in mm

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

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

Tab. 11

> H1T060, H1T080



All dimensions are indicated in mm

Fig. 37

Type	Size	Length	Stroke	Load capacity per pair C_{0rad} [N]	Y	m	n	E	C	Number of holes	
		L [mm]	H [mm]							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).

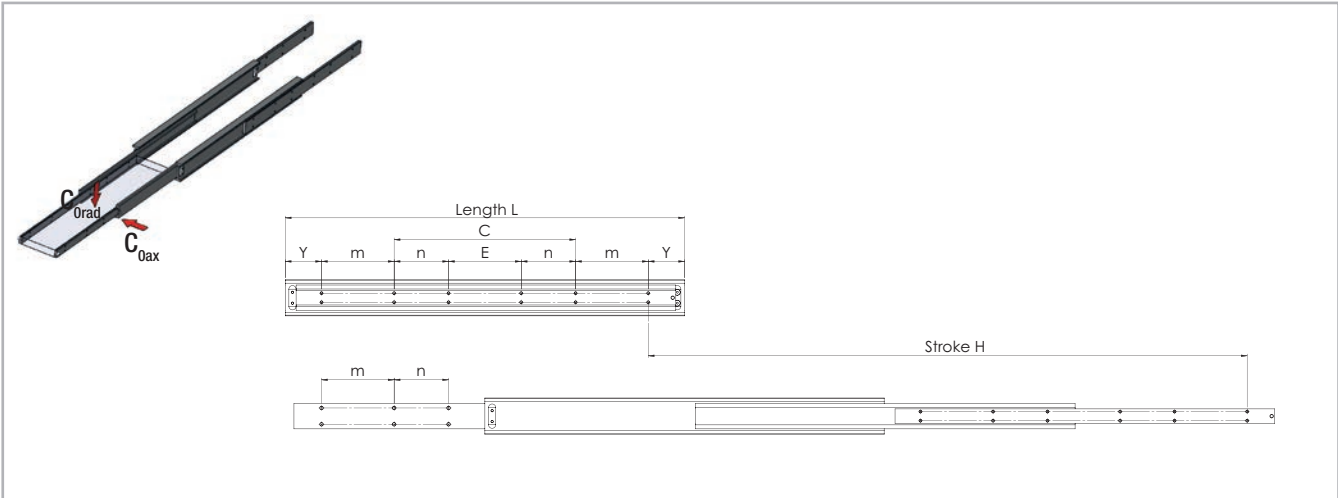
Tab. 12

Type	Size	Length	Stroke	Load capacity per pair	Y	m	n	E	C	Number of holes	
		L [mm]	H [mm]	C _{0rad} [N]						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	100		6	12
		1200	1800	2060			350				
		1300	1950	1840			400				
		1400	2100	1620			450				
		1500	2250	1400			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. 13

> H1T100, H1T150



All dimensions are indicated in mm

Fig. 38

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair C _{0rad} [N]	Y	m	n	E	C	Number of holes
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	200	-	12
		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. 14

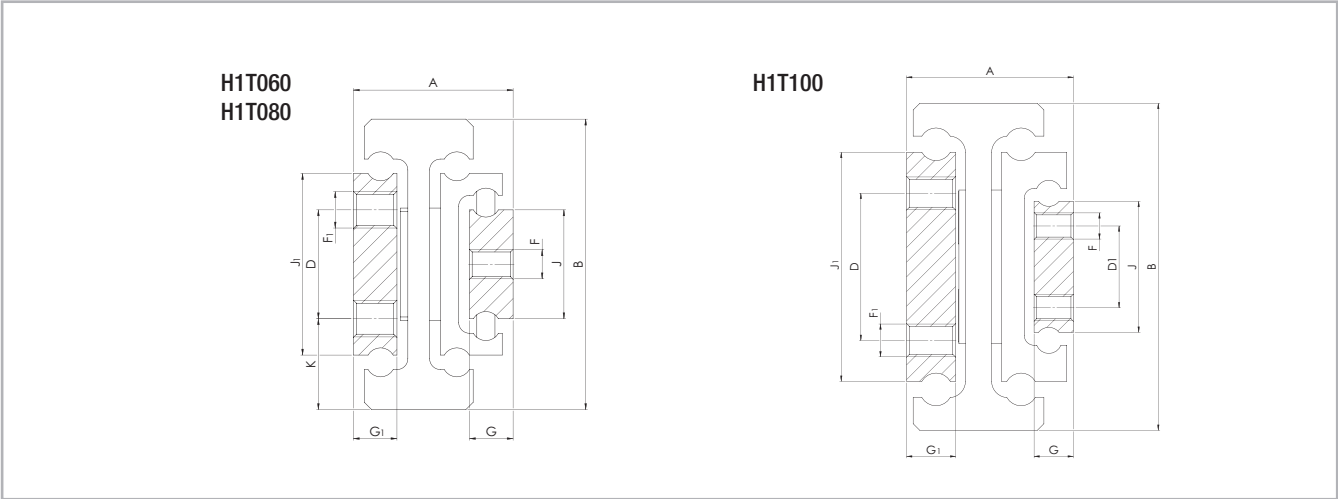
Other sizes and versions are available on request

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

Tab. 15

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



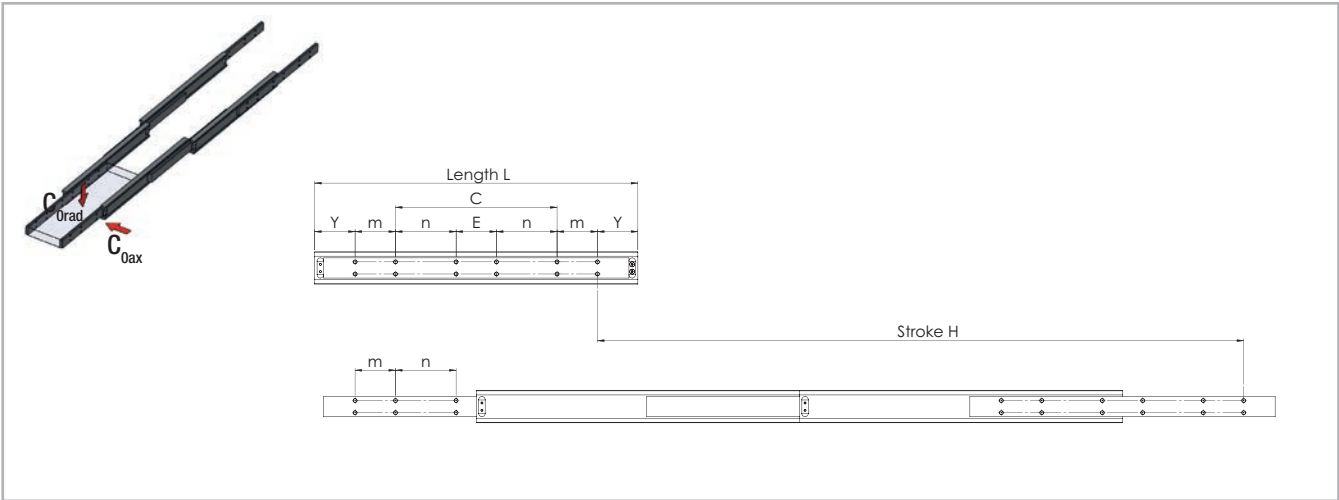
All dimensions are indicated in mm

Fig. 39

Type	Size	A	B	J	J1	G	G1	K	D	D1	F	F1	Weight per single guide [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				28.60

Tab. 16

> H2H080



All dimensions are indicated in mm

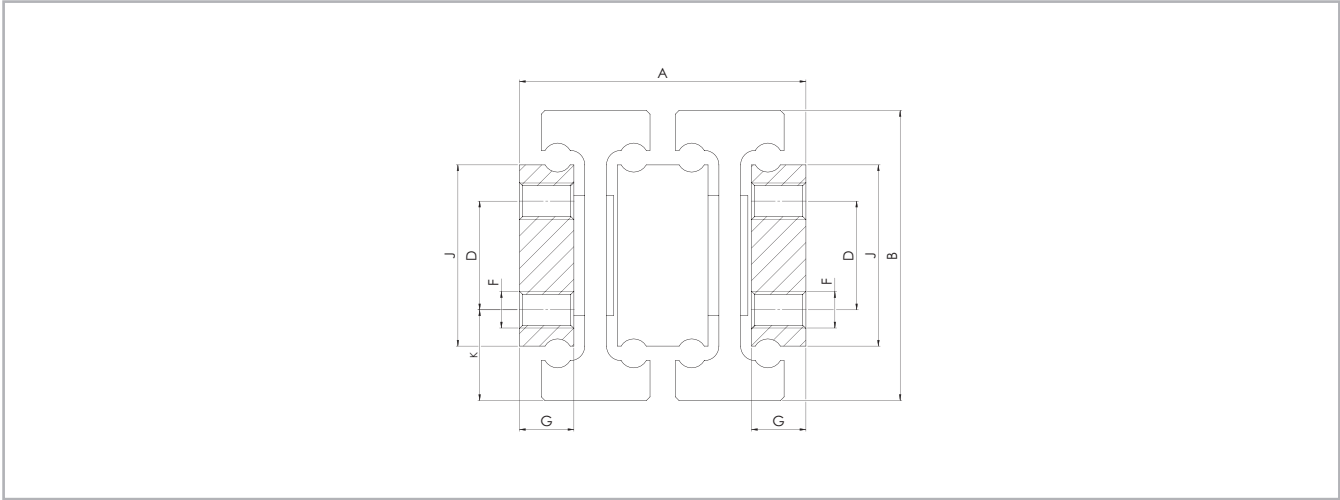
Fig. 40

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair C _{0rad} [N]	Y	m	n	E	C	Number of holes
H2H	80	500	1000	on request	100	100			100	8
		550	1100						150	
		600	1200						200	
		650	1300						250	
		700	1400						300	
		750	1500						350	
		800	1600				150	100	-	12
		850	1700				175			
		900	1800				200			
		950	1900				225			
		1000	2000				250			

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. 17

> H2H080



All dimensions are indicated in mm

Fig. 41

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

Tab. 18

> LTH30 RF

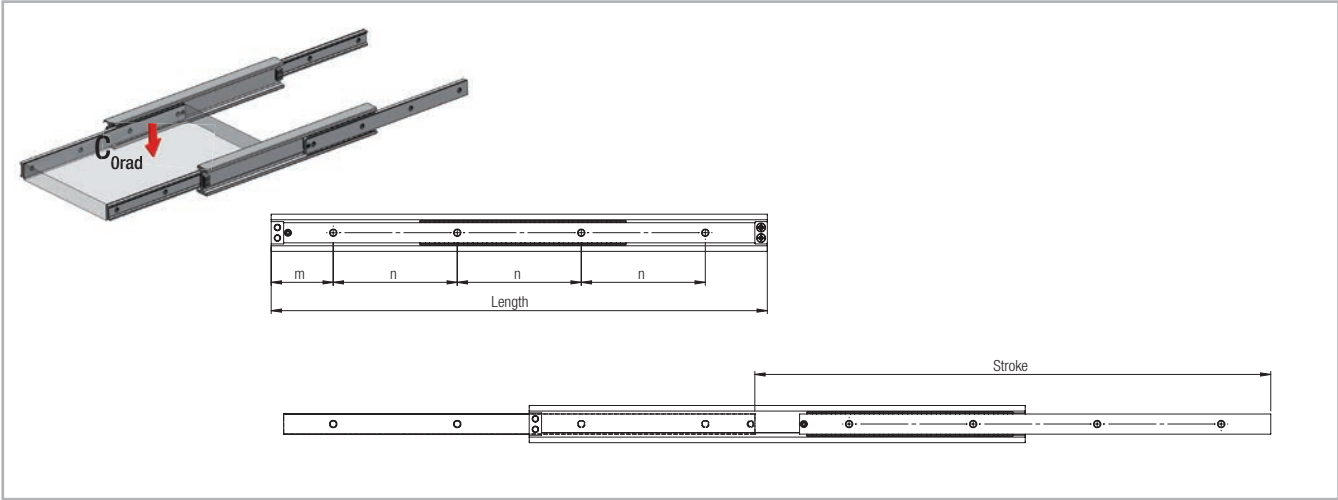


Fig. 42

Type	Size	Length		Stroke		Load capacity per pair		m	n	Number of holes
		L [mm]	H [mm]			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. 19

> LTH30 KF

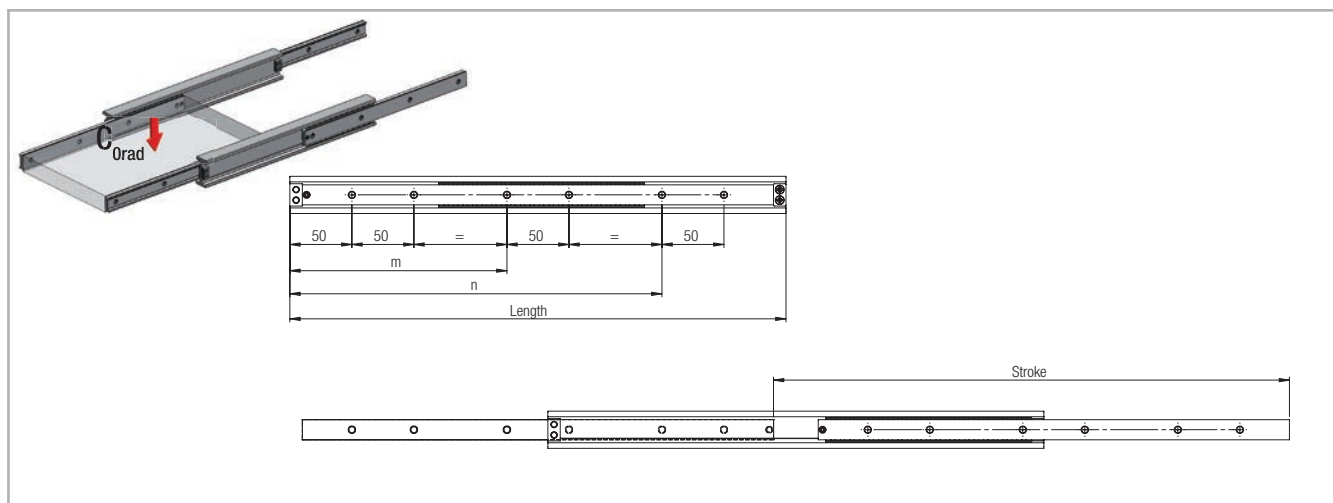


Fig. 43

Type	Size	Length	Stroke	Load capacity per pair		m	n	Number of holes
		L [mm]	H [mm]	C _{0rad} [N]	C _{0ax} [N]	[mm]	[mm]	
LTH	30	250	285	404	on request	-	150	4
		300	323	1008			200	
		350	377	1042			250	
		400	416	1136		175	300	6
		450	485	1164		200	350	
		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. 20

> LTH30 S

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

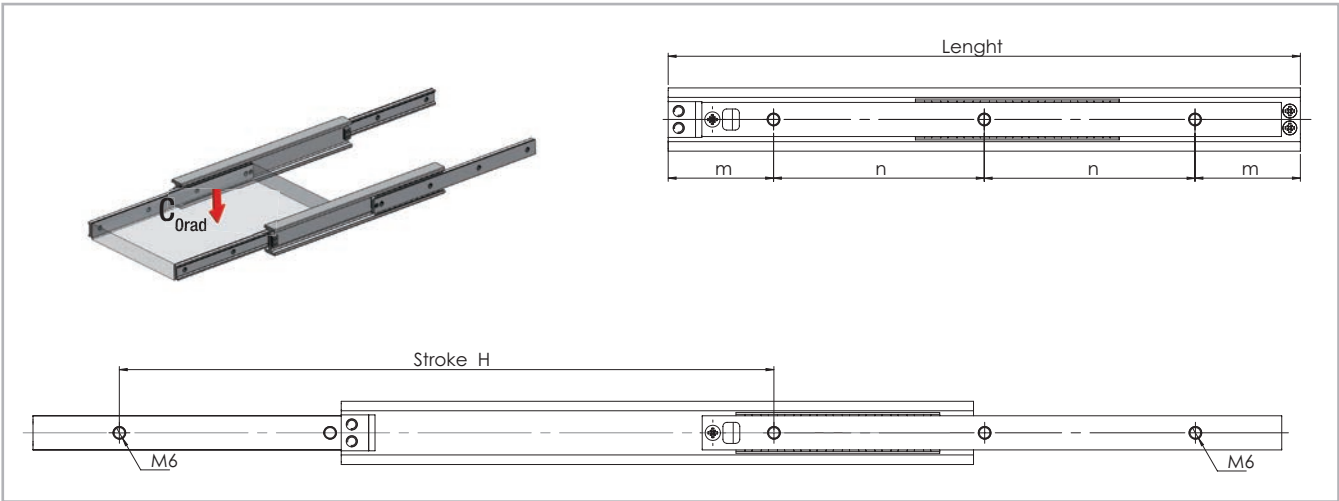


Fig. 44

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...S	30	300	310	816	on request	50	100	3
		350	364	880		75		4
		400	402	994		50		5
		450	472	1032		75		6
		500	510	1330		50		7
		550	564	1498		75		8
		600	618	1392		50		9
		650	671	1276		75		10
		700	725	1178		50		11
		750	764	1138		75		12
		800	817	1060		50		
		850	871	992		75		
		900	925	932		50		
		950	979	878		75		
		1000	1017	856		50		
		1050	1071	810		75		
		1100	1109	790		50		
		1150	1179	732		75		
		1200	1217	718		50		

Tab. 21

> LTH45 RF

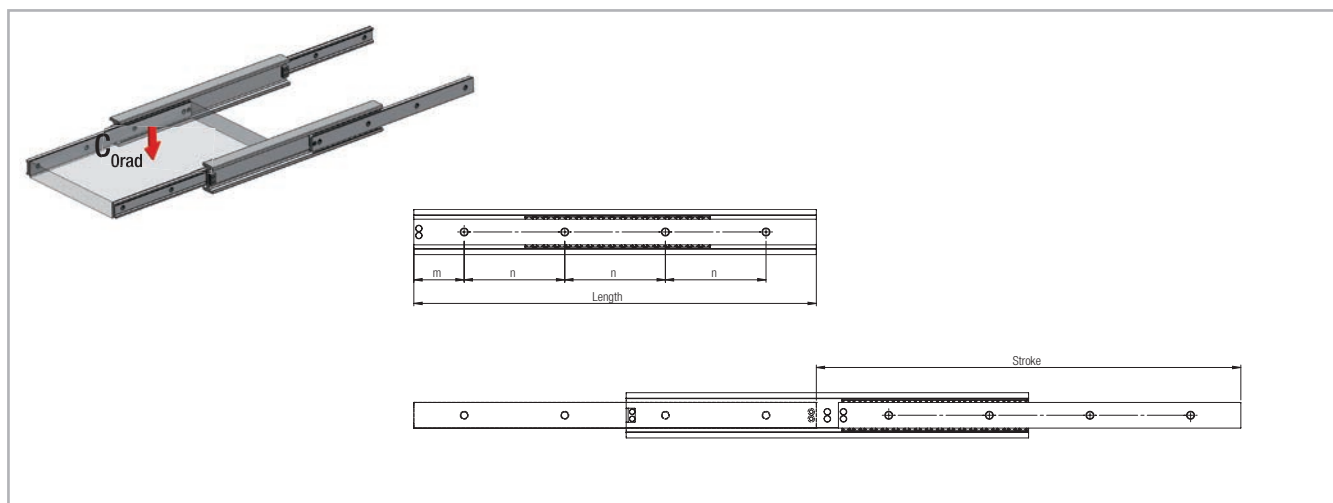


Fig. 45

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		4
		400	422	2842		50		
		450	478	2864		25		5
		500	512	2900		50		
		550	590	2764		25		6
		600	624	3032		50		
		650	680	3252		25		7
		700	714	3346		50		
		750	770	3084		25		8
		800	826	2860		50		
		850	882	2666		25		9
		900	916	2614		50		
		950	972	2450		25		10
		1000	1028	2306		50		
		1050	1084	2178		25		11
		1100	1118	2144		50		
		1150	1174	2034		25		12
		1200	1230	1934		50		
		1250	1286	1842		25		13
		1300	1320	1818		50		
		1350	1376	1738		25		14
		1400	1410	1716		50		
		1450	1488	1596		25		15
		1500	1522	1578		50		

Tab. 22

> LTH45 KF

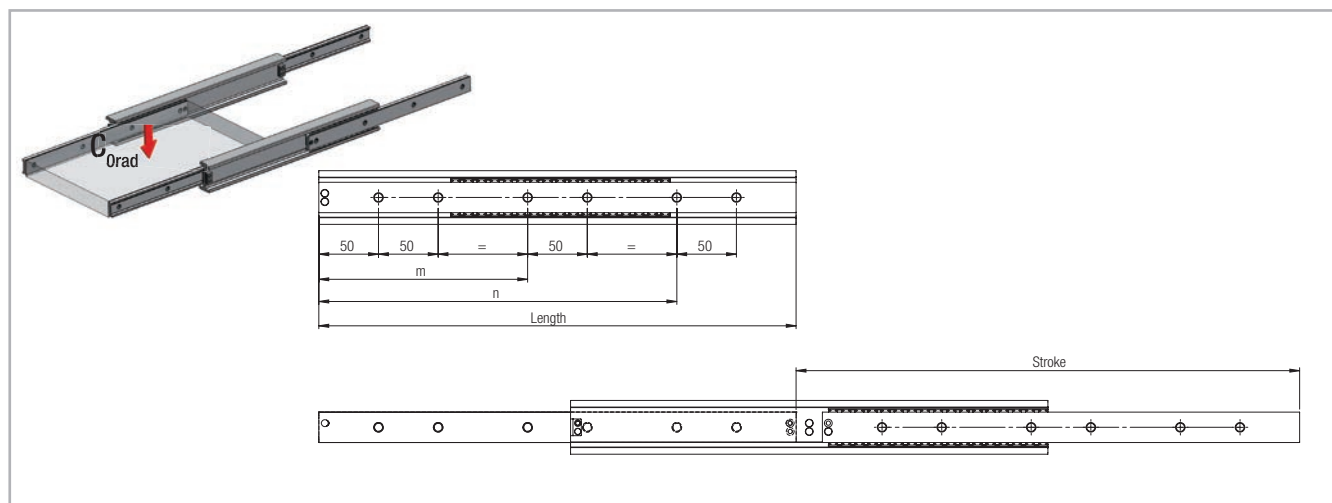


Fig. 46

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	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

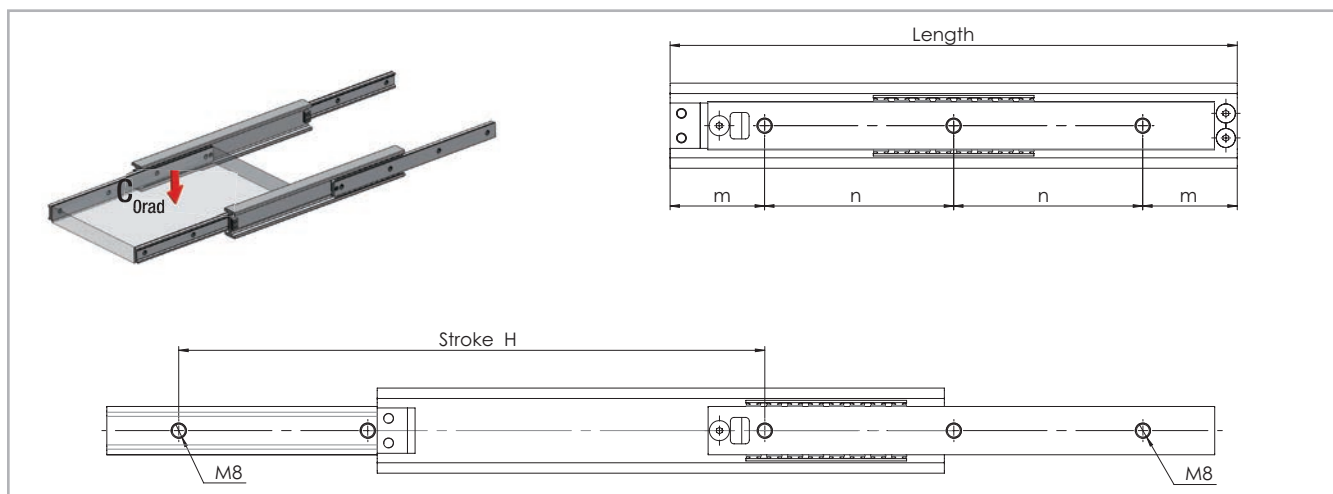
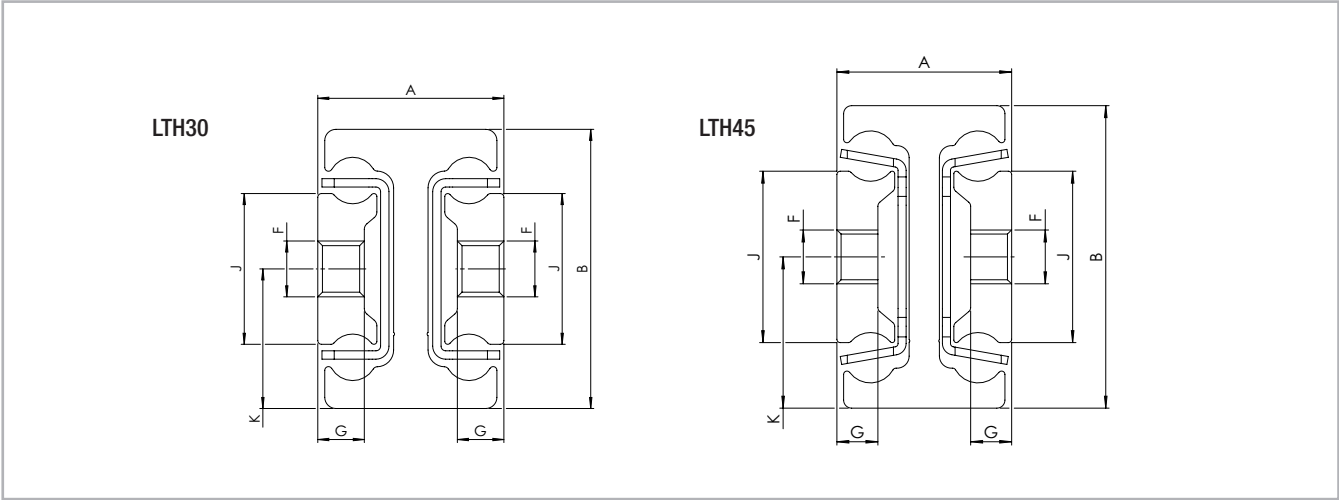


Fig. 47

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...S	45	300	310	1316	on request	50	100	3
		350	366	1832		75		
		400	422	1666		50		4
		450	456	2154		75		
		500	512	1972		50		5
		550	568	2200		75		
		600	624	2204		50		6
		650	680	2426		75		
		700	714	2942		50		7
		750	770	3084		75		
		800	826	2860		50		8
		850	882	2666		75		
		900	916	2614		50		9
		950	972	2450		75		
		1000	1028	2306		50		10
		1050	1084	2178		75		
		1100	1118	2144		50		11
		1150	1174	2034		75		
		1200	1230	1934		50		12
		1250	1286	1842		75		
		1300	1320	1818		50		13
		1350	1376	1738		75		
		1400	1410	1716		50		14
		1450	1488	1596		75		
		1500	1522	1578		50		15

Tab. 24

> LTH



All dimensions are indicated in mm

Fig. 48

Type	Size	A	B	J	G	K	F	Weight per single guide [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. 25

> LTH Special strokes

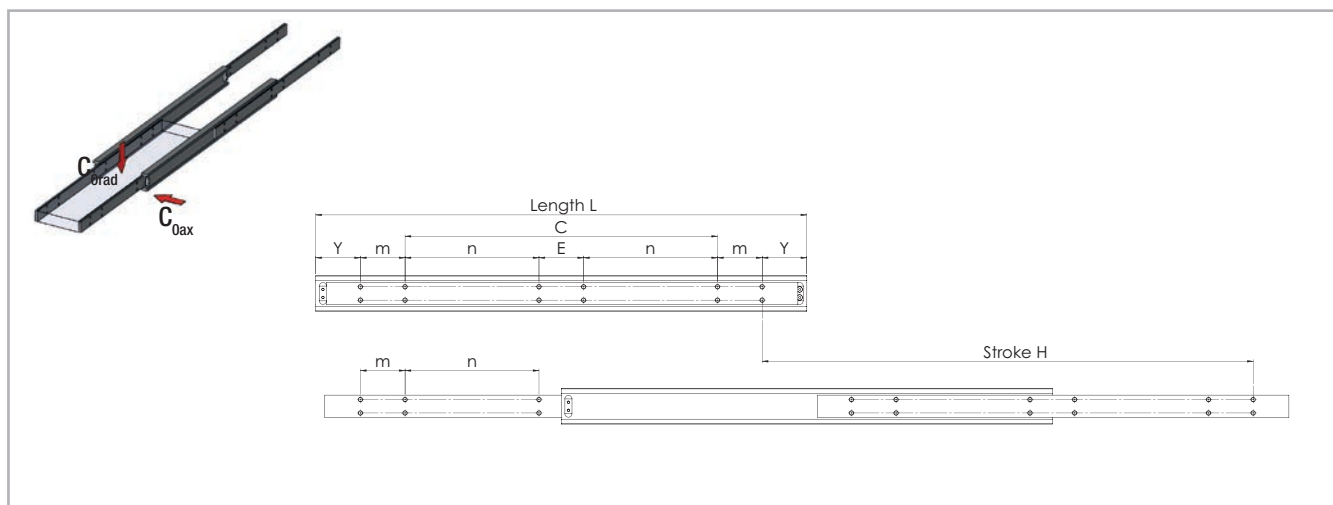
Special strokes are defined as deviations from standard stroke.
 They are each available as multiples of the values in tab. 26.
 These values are dependent on the spacing of the ballcage.

Type	Size	Stroke modification [mm]
LTH	30	15,4
	45	22

Tab. 26

Each stroke modification influences the load capacities stated in the catalogue. For more information please contact Rollon technical support.

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



All dimensions are indicated in mm

Fig. 49

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	on request	50	50	-	-	200	8
		450	450	5350						250	
		500	500	5400						300	
		550	550	5500				150	50	-	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				325			
		950	950	4300				350			
		1000	1000	4050				375			
		1100	1100	3700				425			
		1200	1200	3300				475			
		1300	1300	2900				525			
		1400	1400	2500				575			
		1500	1500	2100				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. 27

4 Load capacities and dimensions

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		Y	m	n	E	C	Number of holes
				C _{grad} [N]	C _{oax} [N]						
HGT	80	500	500	9000	on request	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. 28

Type	Size	Length		Stroke		Load capacity per pair		Y	m	n	E	C	Number of holes
		L [mm]	H [mm]	C _{0rad} [N]	C _{0ax} [N]								
HGT	100	700	700	11000	on request	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	200				12
		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					

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. 29

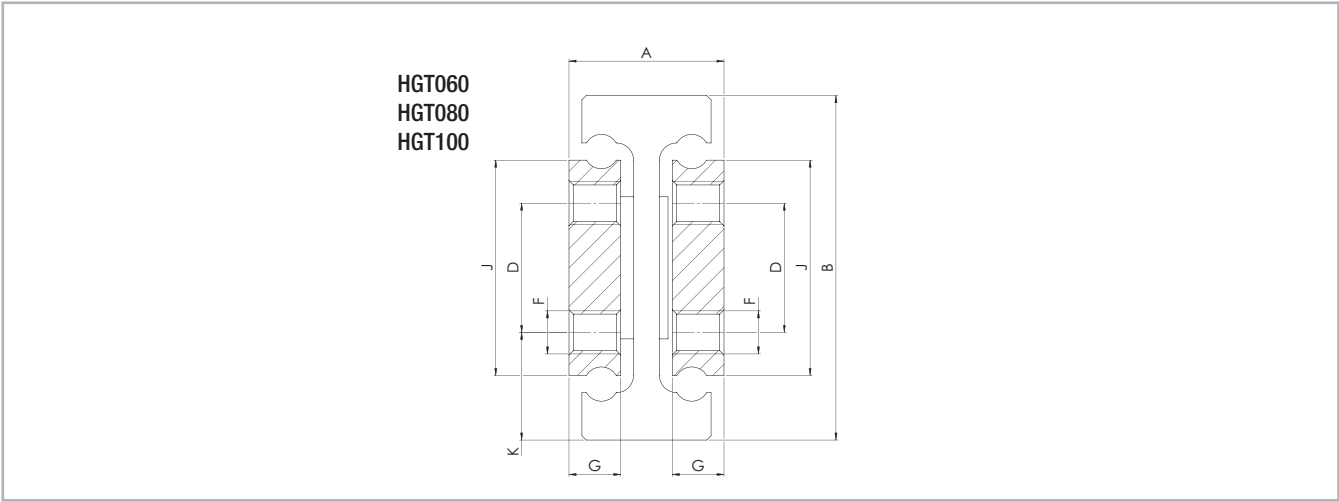
Other sizes and versions are available on request

Type	Size	Length		Load capacity per pair	
		L [mm]		C _{0rad} [N]	C _{0ax} [N]
HGT	120	700		11500	on request
		⋮		⋮	
		2000		4700	
	150	700		13900	
		⋮		⋮	
		2000		7000	
	200	700		15000	
		⋮		⋮	
		2000		10000	
	240	700		17500	
		⋮		⋮	
		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. 30

> HGT



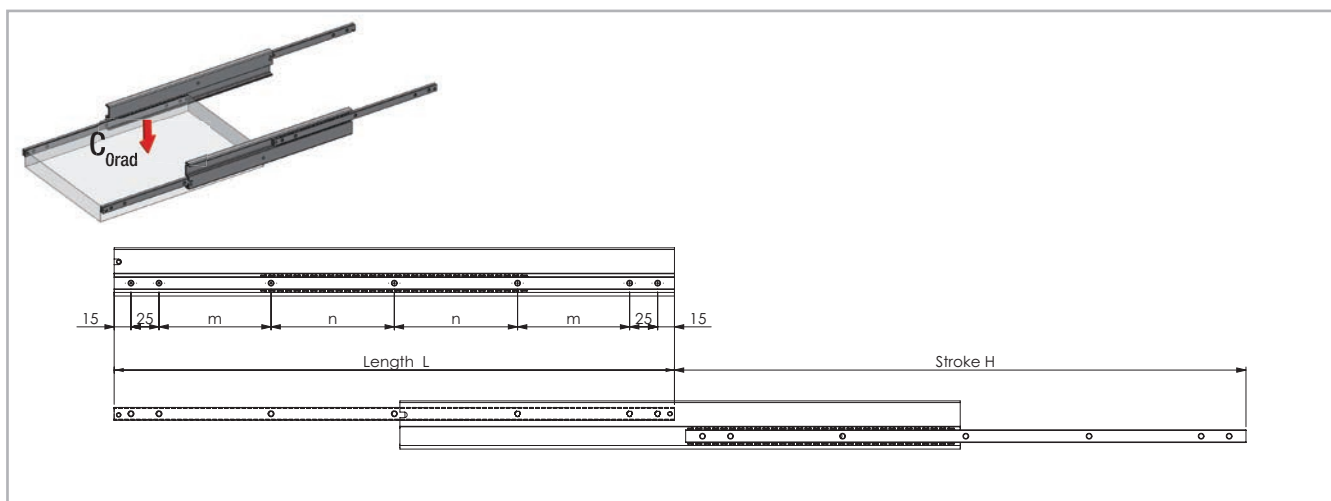
All dimensions are indicated in mm

Fig. 50

Type	Size	A	B	J	G	K	D	F	Weight per single guide [kg/m]
HGT	60	32	60	40	10	19	22	M6	11.70
	80	36	80	50	12	25	30	M10	17.50
	100	44	100	70	15	27.5	45		27.60

Tab. 31

> LTF44



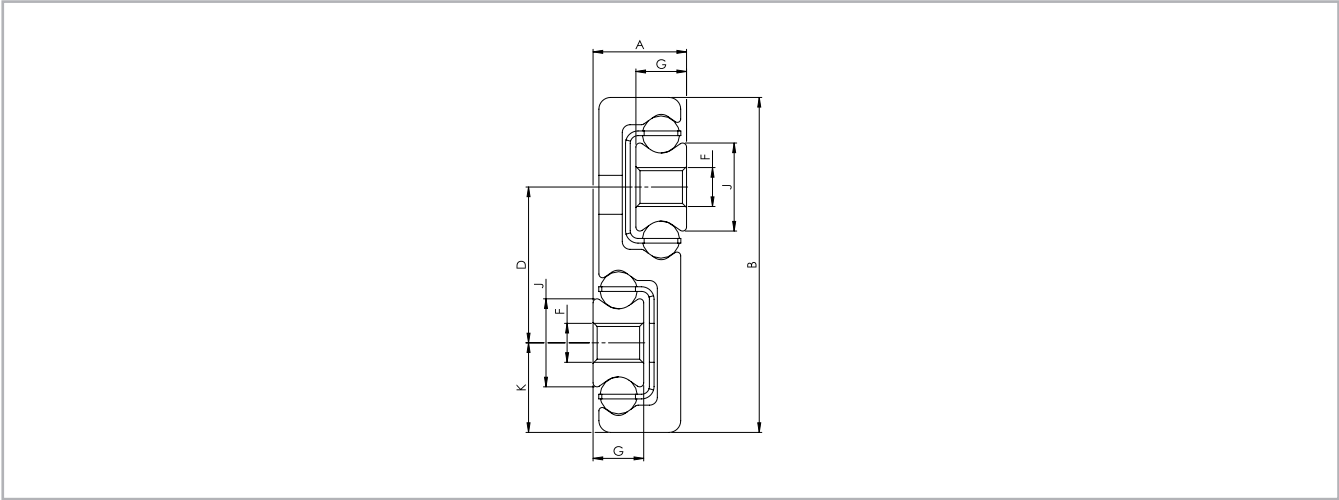
All dimensions are indicated in mm

Fig. 51

Type	Size	Length	Stroke	Load capacity per pair	Fixed and moving rails		Number of holes
		L [mm]	H [mm]	C _{Orad} [N]	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. 32

> LTF44



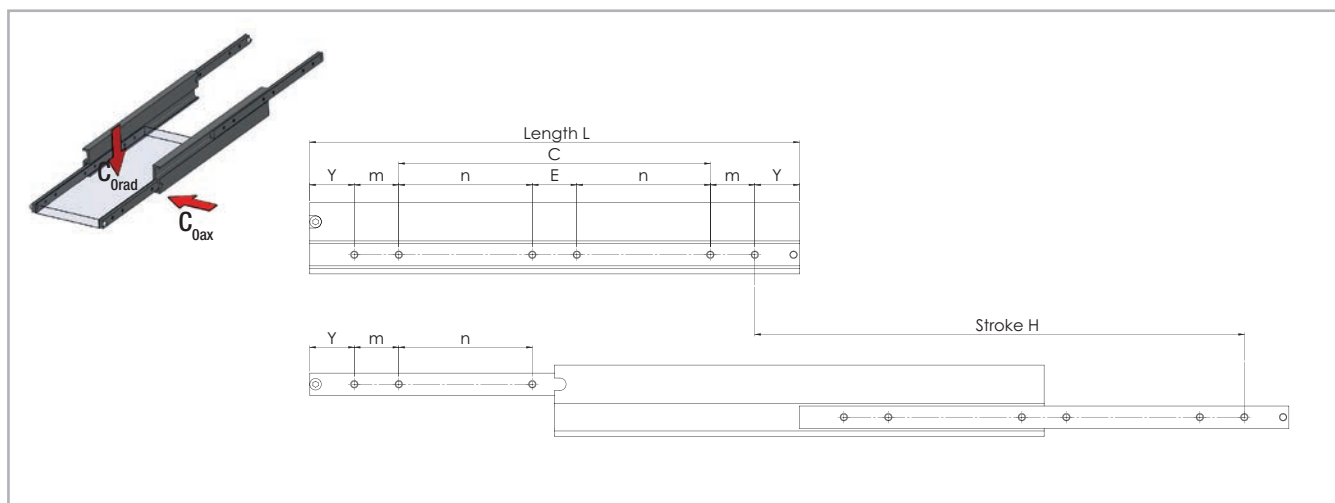
All dimensions are indicated in mm

Fig. 52

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

Tab. 33

HGS060



All dimensions are indicated in mm

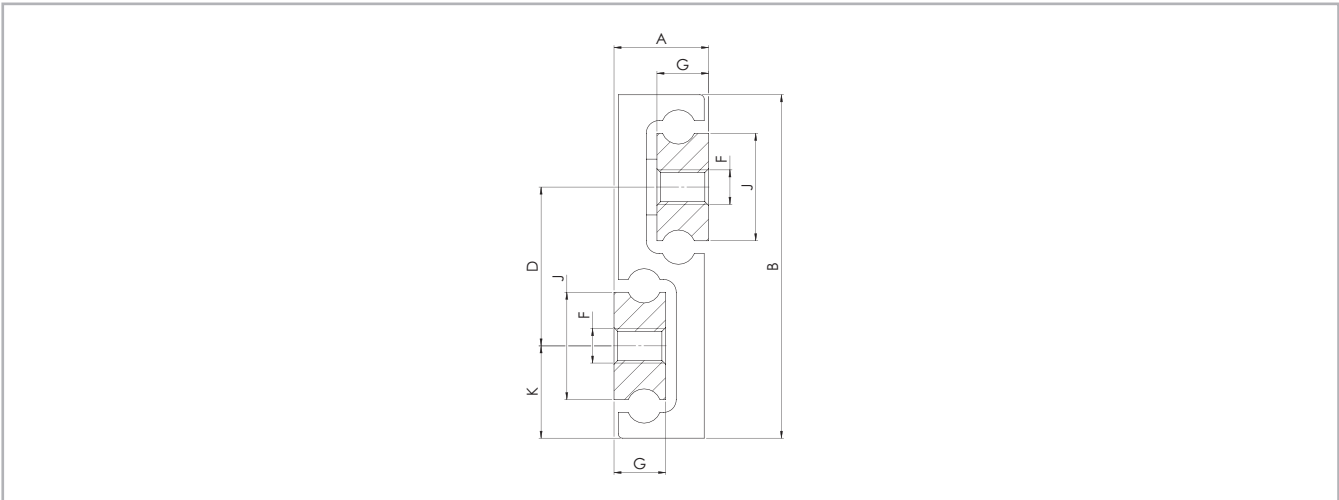
Fig. 53

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair C_{0rad} [N]	Y	m	n	E	C	Number of holes
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	-	6
		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 % of the stated values,

Tab. 34

> HGS



All dimensions are indicated in mm

Fig. 54

Type	Size	A	B	J	G	K	D	F	Weight per single guide [kg/m]
HGS	60	17	60	16	10	16	28	M6	6.00

Tab. 35

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. 55



Fig. 56

> 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. 57



Fig. 58

> 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.

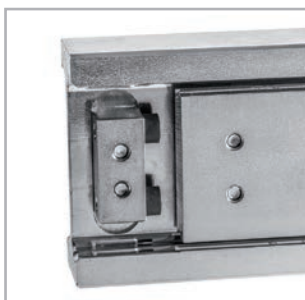


Fig. 59

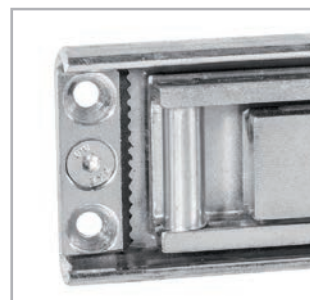


Fig. 60

> 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)	± 0.5	± 0.8	± 1.2

At the installation, width tolerances of ± 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.

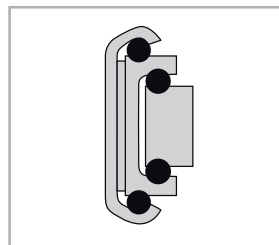
The life cycle is affected by the following factors.

- 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

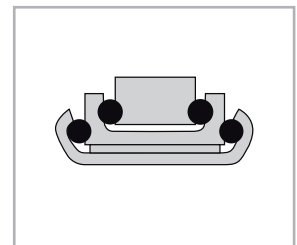
The specified maximum load capacity always refers to one pair of vertically installed telescoping rails. To achieve this capacity, the following requirements must be fulfilled.

- 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. 61



Level installation

Fig. 62

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 (axial load direction), only a reduced value of the radial load capacity is possible.

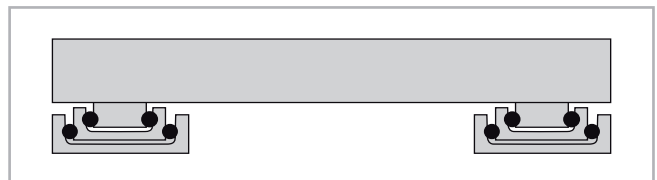


Fig. 63

> Deflection

If the telescopic guides of the HGT series are assembled 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.

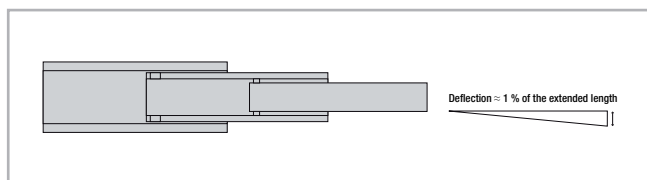


Fig. 64

Note: All other deflection of the Hegra Rail product family on request

> Operating temperature

The telescopic rails can be used at ambient temperatures from -20 °C to +170 °C (-4 °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. For temperature above 80°C all plastic parts, if they exist, must be removed

The operating temperature is -20 °C to + 50 °C (-4 °F to + 122 °F) when damping is used.

> 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:

Treatment	Characteristics
Thick-film passivation	Standard coating composed of a galvanic zinc coating and an additional passivation
Zinc nickel	Increase corrosion resistance due to a zinc nickel coating and the use of stainless steel balls

Tab. 36

> Ball cage displacement

The stroke movement of a telescopic rail is achieved by the ball cages, among other elements. You should ensure that the telescopic 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 telescopic rail only with increased application of force.

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

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

> Moving force

The moving force is subject to production-related tolerances and is also defined by the load and the deflection of a telescopic rail. Taking into account the load and deflection of a telescopic 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 telescopic 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.

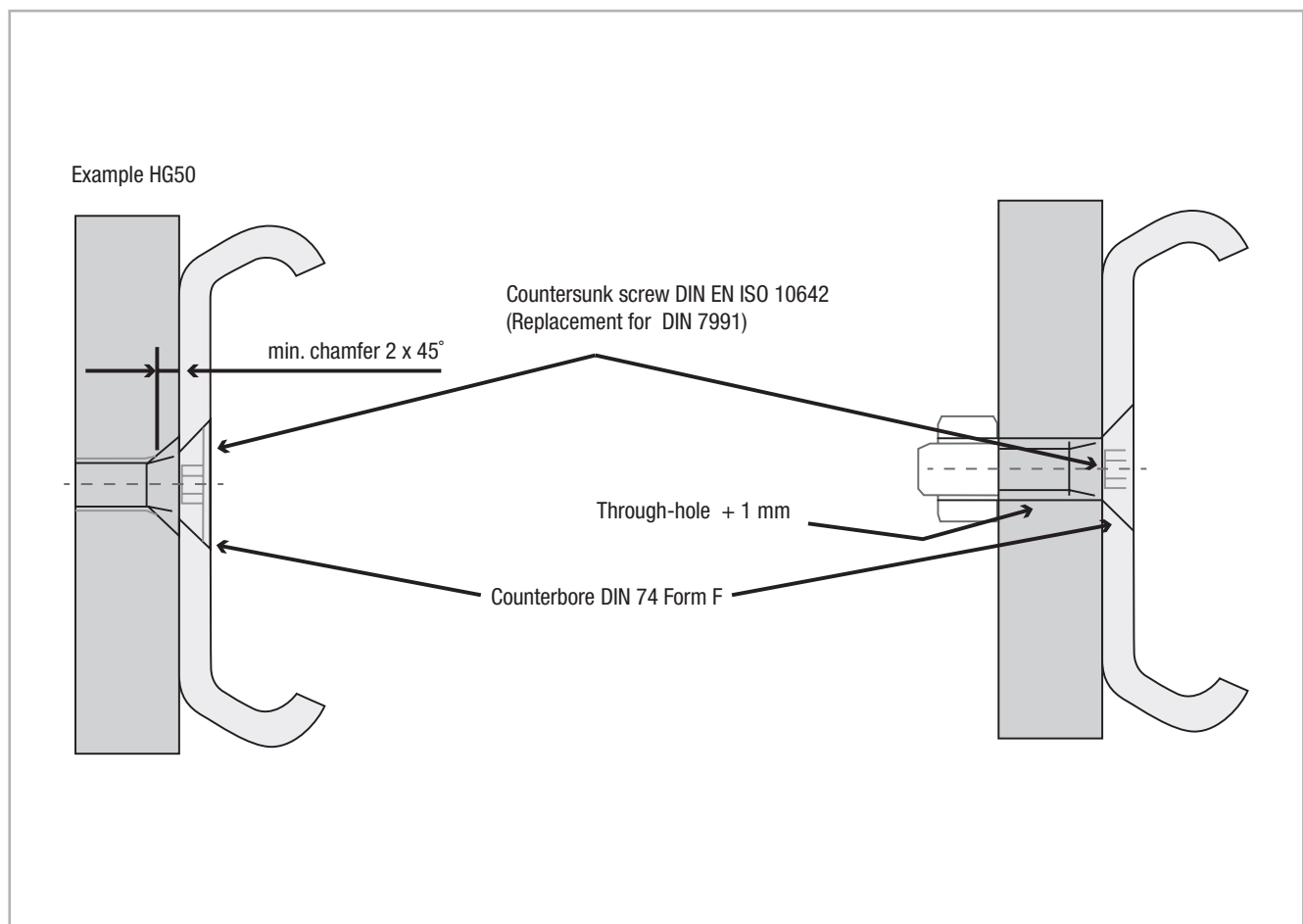


Fig. 65

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
HVC	full extension single 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.

*To process your order for stainless steel telescopic systems we need the material number you prefer. Please consider: Our standard material for rails and sliders in V2A is 1.4301 (AISI304), in V4A it is 1.4571 (AISI316Ti) and that the material of our stainless balls is 1.4034 (AISI420)

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)

Notes 

H
R



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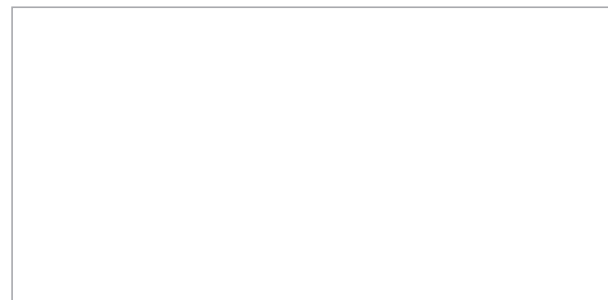


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