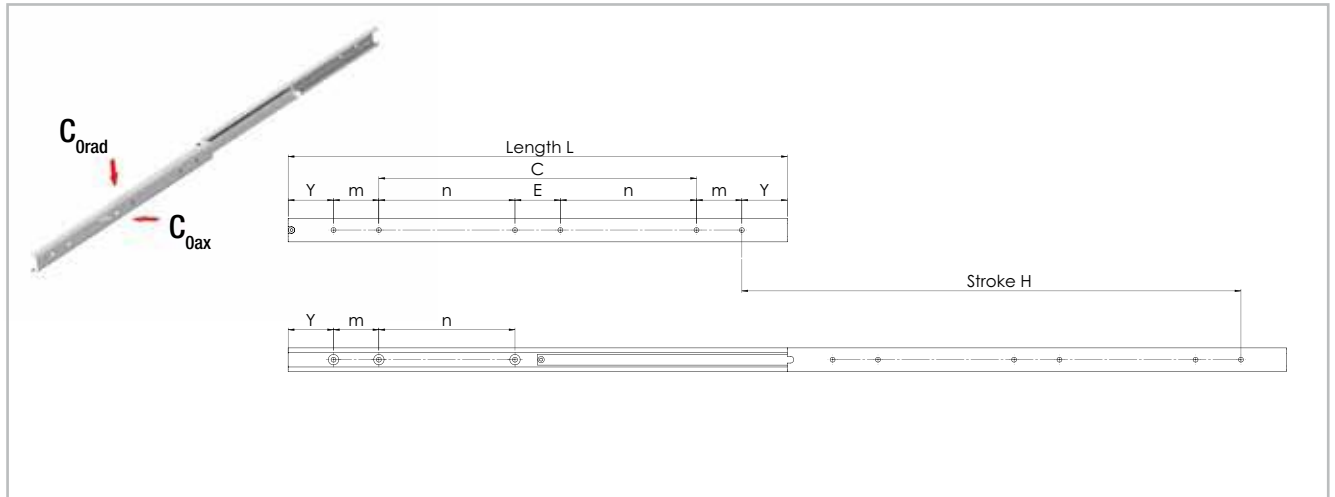


Full extension

> 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!

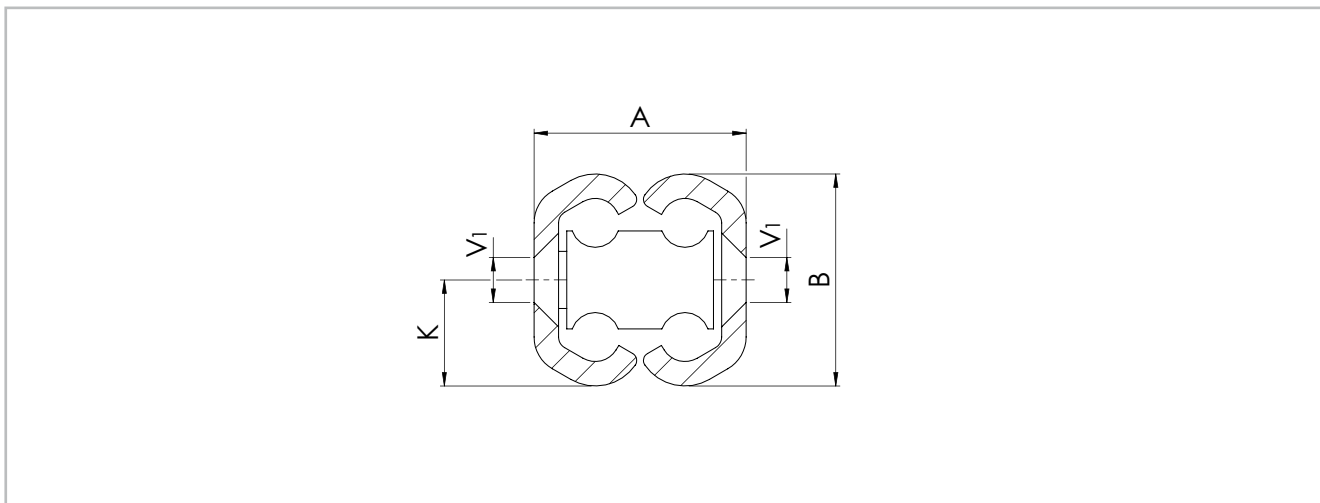
Fig. 66

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	50 % 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

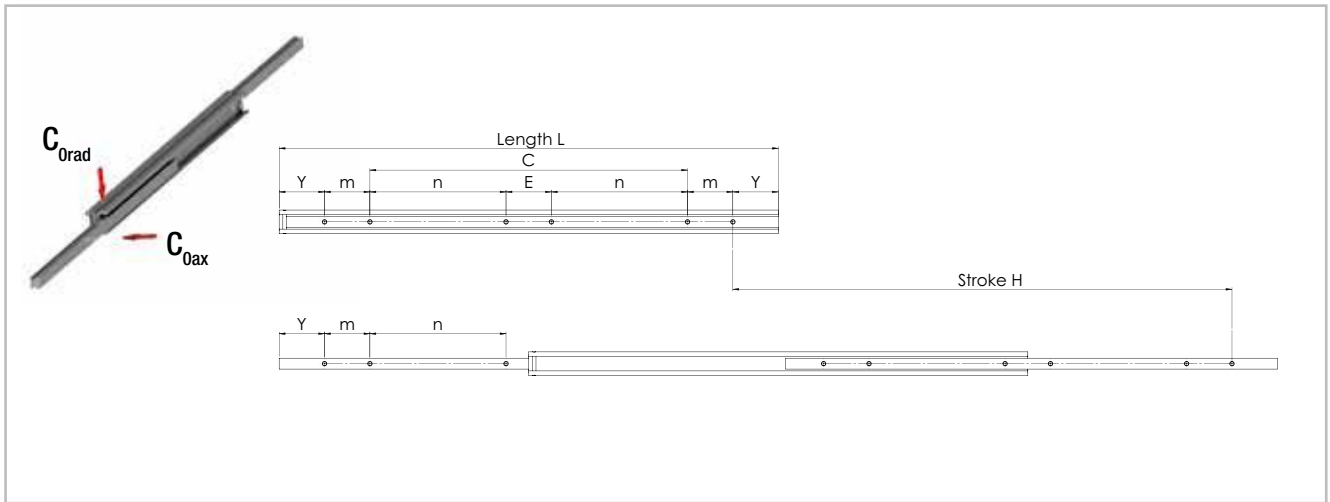
V1 Mounting holes (V) for countersunk screws according to DIN 7991/ISO 10642

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

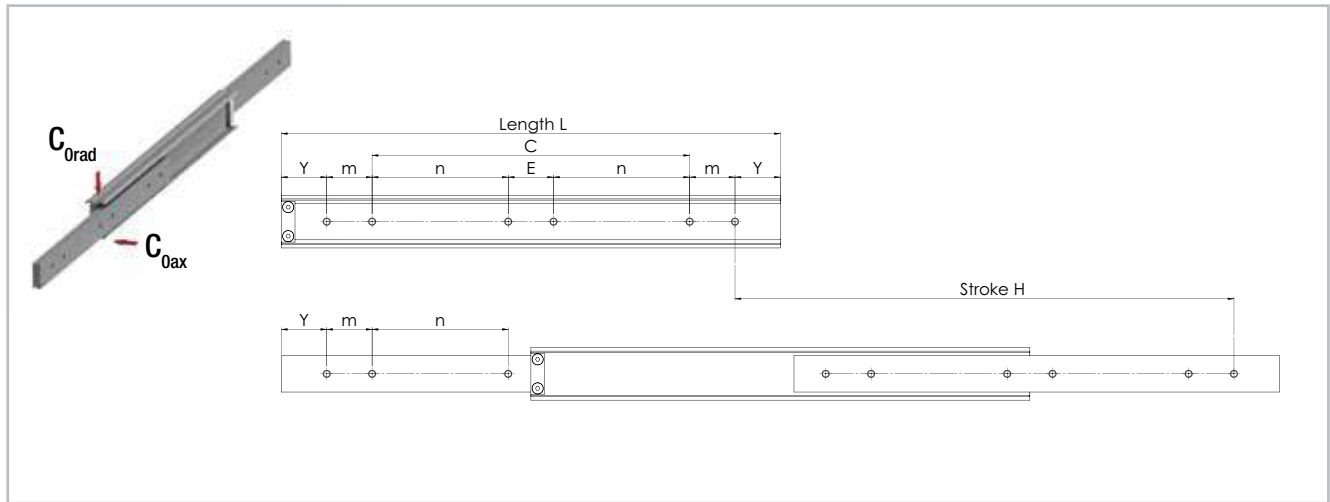
Fig. 68

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 _{Orad} [N]	C _{Oax} [N]						
HVD	45	300	300	1600	50 % C _{Orad}	50	50	-	-	100	4
		350	350	1650						150	
		400	400	1700						200	
		450	450	1700						250	
		500	500	1700						300	
		550	550	1650						150	
		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 _{0rad} [N]	C _{0ax} [N]								
HVD	50	300	300	1800	50 % C _{0rad}	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

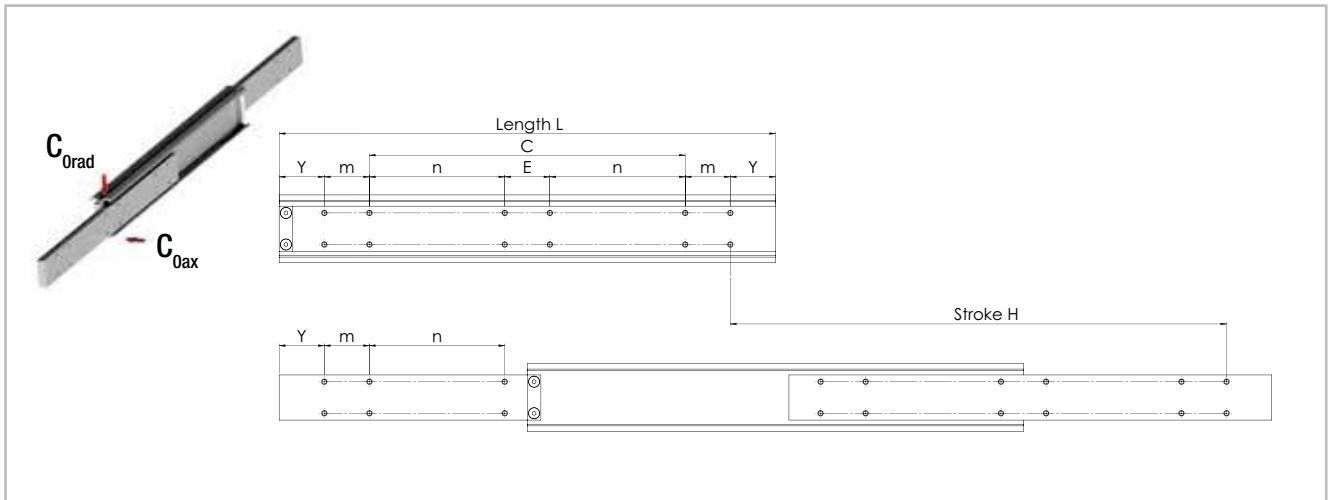
Type	Size	Length	Stroke	Load capacity per pair		Y	m	n*	E*	C	Number of holes		
				C _{0rad} [N]	C _{0ax} [N]								
HVD	58	300	300	2400	50 % C _{0rad}	50	50	-	-	100	4		
		350	350	2450						150			
		400	400	2500						200			
		450	450	2450						250			
		500	500	2400						300			
		550	550	2350						150	50	-	6
		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

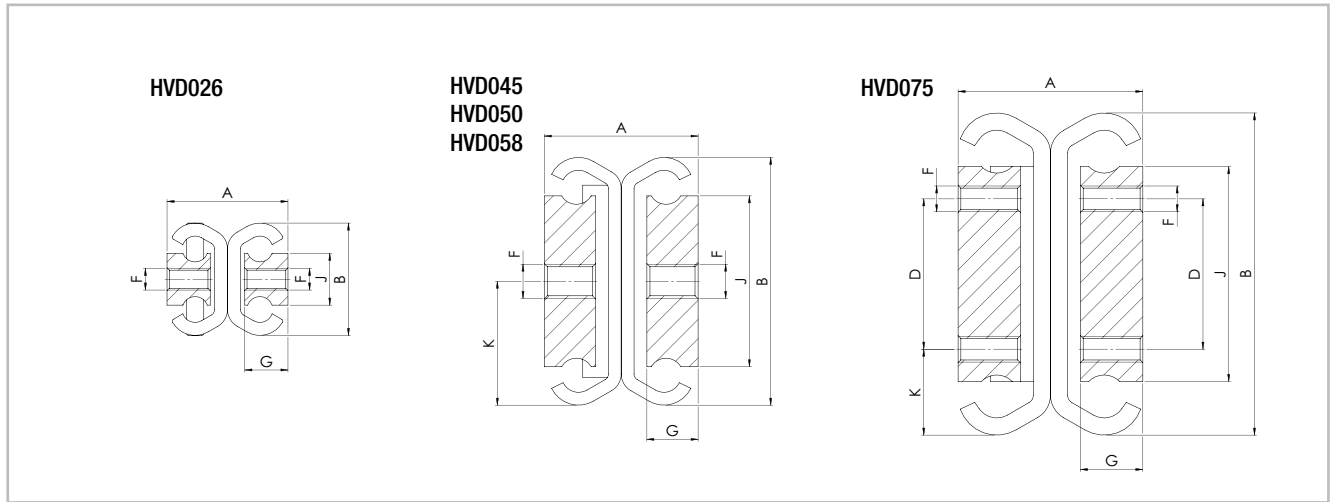
Fig. 70

Type	Size	Length L [mm]	Stroke H [mm]	Load capacity per pair		Y	m	n*	E*	C	Number of holes		
				C _{Orad} [N]	C _{Oax} [N]								
HVD	75	300	300	3600	50 % C _{Orad}	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.

> HVD



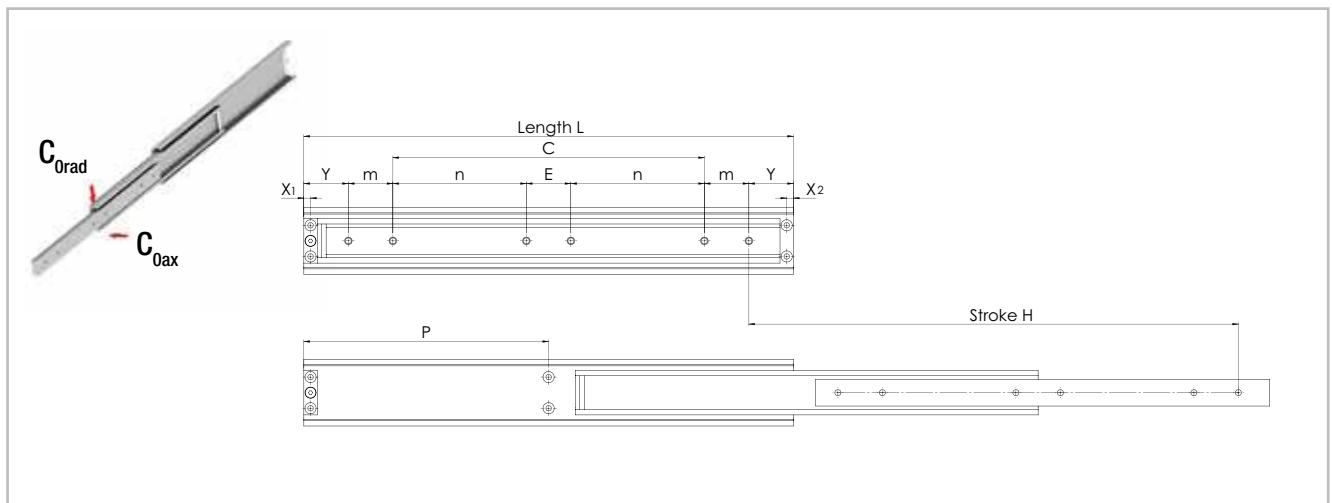
All dimensions are indicated in mm

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	36	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 _{Orad} [N]	C _{Oax} [N]										
HVC	50	300	300	1400	50 % C _{Orad}	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 _{0rad} [N]	C _{0ax} [N]										
HVC	58	300	300	2000	50 % C _{0rad}	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 _{Orad} [N]	C _{Oax} [N]														
HVC	75	300	300	3200	50 % C _{Orad}	7.5	7.5	50	50	-	-	100	-	4					
		350	350	3250								150							
		400	400	3300								200							
		450	450	3250								250							
		500	500	3200								300		50	-	-	-	-	6
		550	550	3150								150							
		600	600	3100								175							
		650	650	3050								200							
		700	700	3000								225							
		750	750	2950								250							
		800	800	2900								275							
		850	850	2850								300							
		900	900	2800								325							
		950	950	2750								350							
		1000	1000	2700								375							
		1100	1100	2600								425							
		1200	1200	2500								475							
		1300	1300	2350								525							
		1400	1400	2200								575							
		1500	1500	2050								625							
1600	1600	1900	675																
1700	1700	1750	725																
1800	1800	1600	775																
1900	1900	1450	825																
2000	2000	1300	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. 25

> HVC

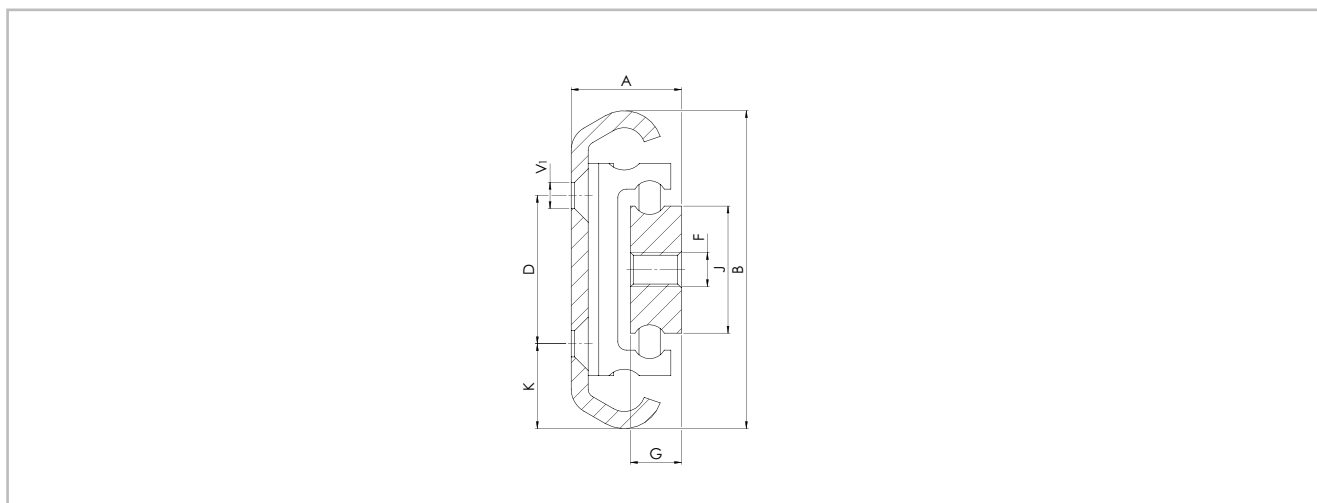


Fig. 73

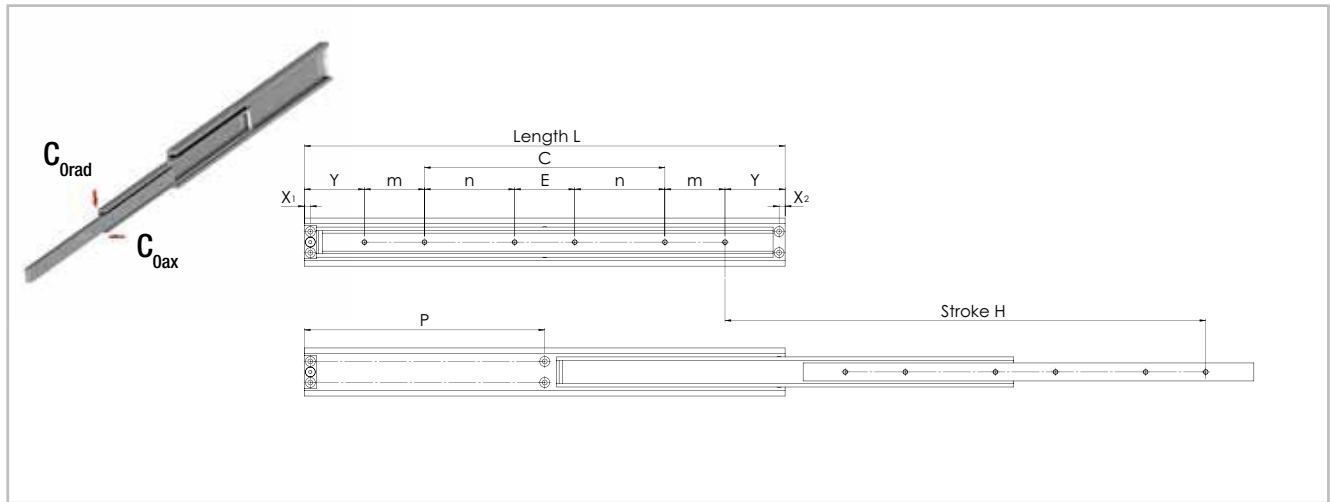
All dimensions are indicated in mm

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]
HVC	45	20.5	45	16	10	11.5	22	M6	M5	4.00
	50	22.1	50	20	12	14	32	M8	M6	5.10
	58	24	58	25		13				6.50
	75	26	75	30	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 _{Orad} [N]	C _{Oax} [N]												
HVT	60	300	300	2600	50 % C _{Orad}	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			50	450	6
		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

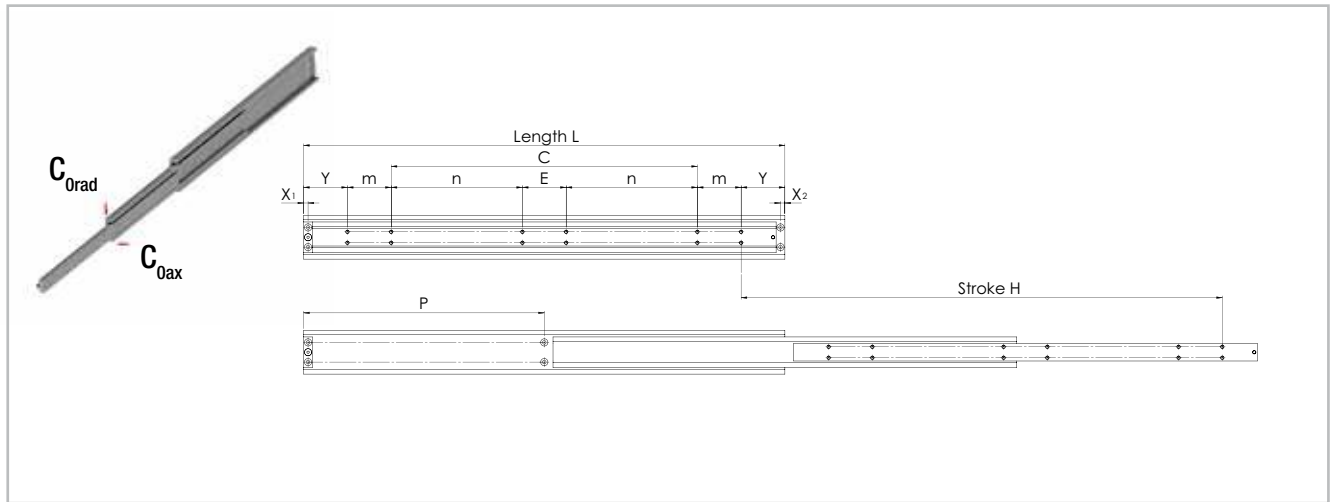
Type	Size	Length	Stroke	Load capacity per pair		X1	X2	Y	m	n*	E	C	P	Number of holes			
				C _{0rad} [N]	C _{0ax} [N]												
HVT	80	500	500	4250	50 % C _{0rad}	10	10	100	100	-	-	100	-	4			
		550	550	4300								150					
		600	600	4350								200					
		650	650	4350								250					
		700	700	4350								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 _{Orad} [N]	C _{Oax} [N]											
HVT	100	600	600	5700	50 % C _{Orad}	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
		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

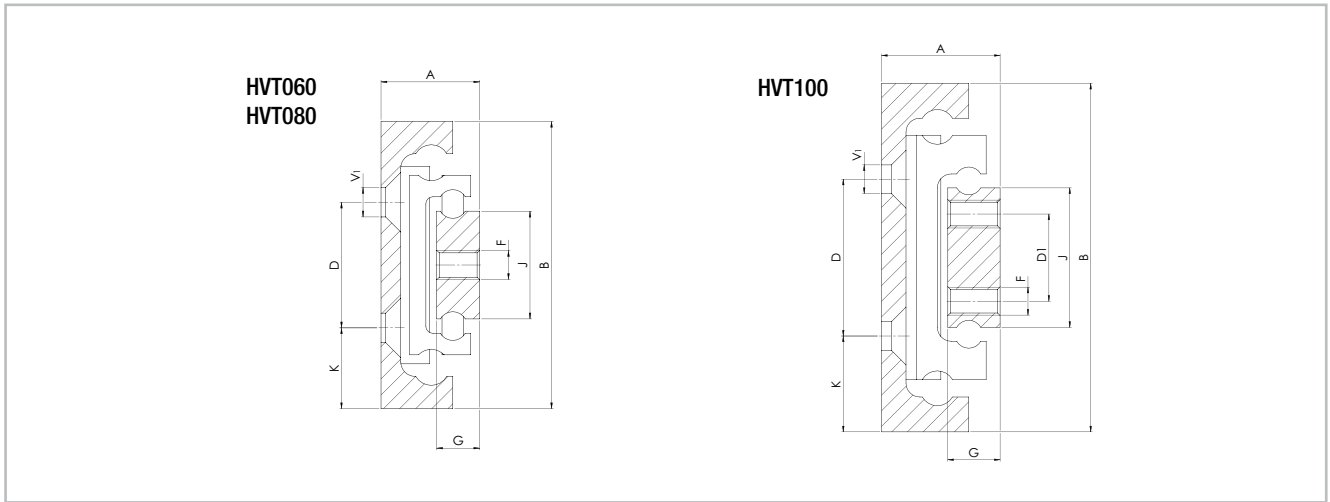


Fig. 76

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