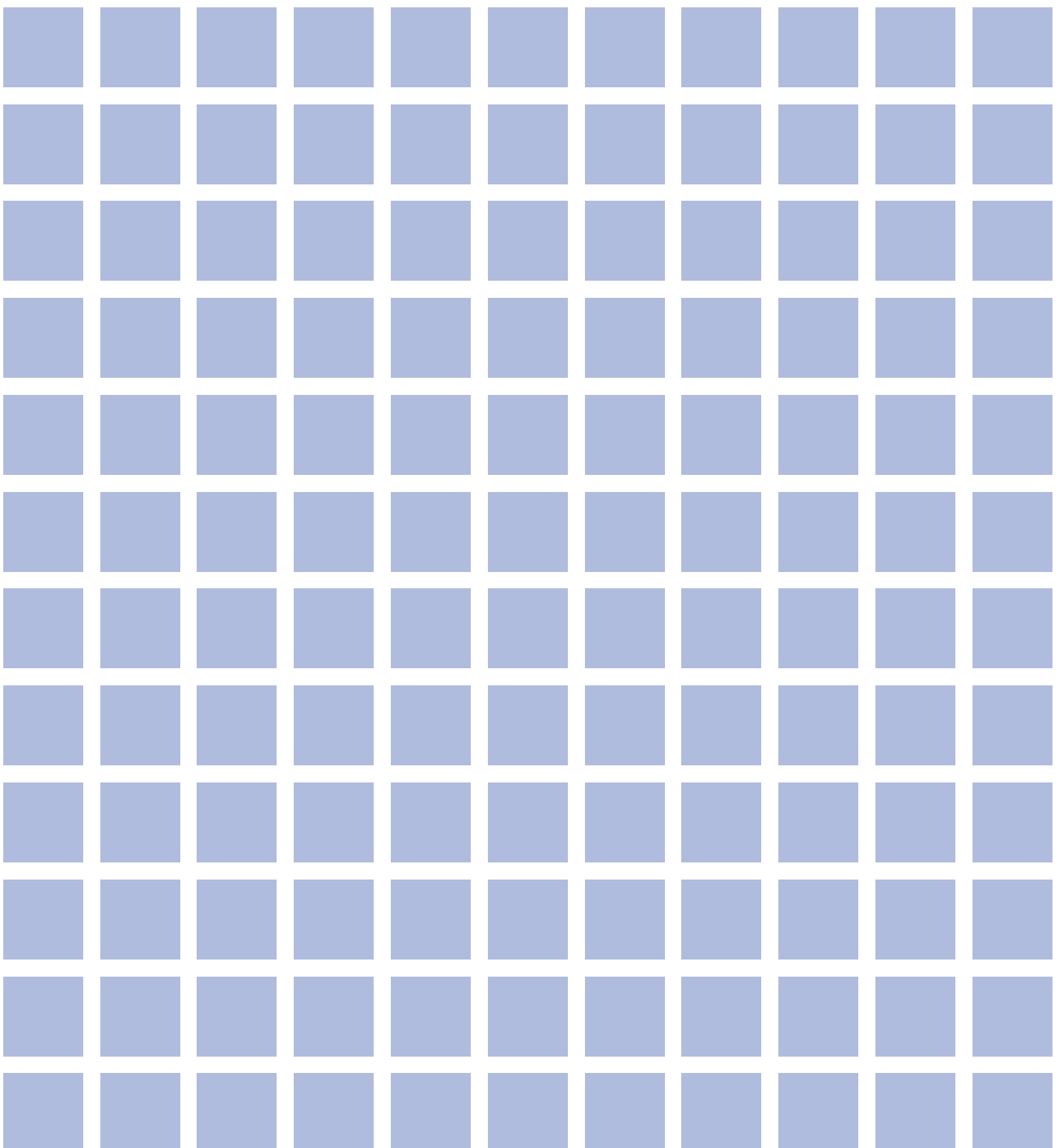


2

Spindle drives



OVERVIEW OF SPINDLE DRIVES																
Type	Form	Model		Stroke	Force		Speed		Stroke in	Cut-off current	Use			Location		Functions
		Type of cut-off	Rated voltage	Range	Pushing force	Pulling force	OPEN	CLOSE	60 s	Max.	Natural ventilation	SHEV	NSHEV	Facade	Roof	Run monitoring Synchronised run Sequence control
			[VDC]	[mm]	[N]	[N]	[mm/s]	[mm/s]	[mm]	[A]						
PLA	PLA6	S3	24	100–1000	600	600	6,0	6,0	350	0,8	●	●	●	■	●	●
		S12		100–1000	600	600	6,0	6,0	350	0,8	●	●	●	■	●	●
	PLA8	S3	24	100–1000	800	800	10,0	10,0	600	1,4	●	●	●	■	●	●
		S12		100–1000	800	800	10,0	10,0	600	1,4	●	●	●	■	●	●
	PLA10	S12	24	100–1000	1000	1000	12,6	12,6	750	2,5	●	●	●	■	●	●
	PLA101	S3	24	100–1000	1000	1000	4,6	4,6	250	1,0	●	●	●	■	●	●
		S12		100–1000	1000	1000	4,6	4,6	250	1,0	●	●	●	■	●	●
	PLA16	S12		100–1000	1600	1600	7,0	7,0	400	2,5	●	●	●	■	●	●
	PLA116	S3	24	100–750	1600	1600	4,0	4,0	240	1,2	●	●	●	■	●	●
		S12		100–750	1600	1600	4,0	4,0	240	1,2	●	●	●	■	●	●
PLS	PLS15	S12	24	300–1000	1500	1500	16,0	16,0	950	4,0	●	●	●	■	●	●
	PLS30	S12	24	300–1000	3000	2000	7,8	7,8	450	5,0	●	●	●	■	●	●
	PLS50	S12	24	200–750	5000	5000	4,0	4,0	240	4,2	●	●	●	■	●	●
SP	SP8	S2	24	100–750	800	800	7,0	7,0	400	1,0	●	●		■	●	○
		S2	230	300–750	800	800	7,0	7,0	400	0,2	●			■	●	

LEGEND

● suitable

■ not recommended

S2 internal load dependend cut-off switch

S3 internal load dependend cut-off switch, post cycle resistant, programmable for motion monitoring (up to 300 mm stroke) and sequence control

S12 internal intelligent cut-off switch for synchronised run and programmable functions

○ only with external modules (cut-off switch system, synchronisation module, sequence control module)

PLA

PLA SPINDLE DRIVES

- Model 24V DC, S3 und S12
- Pulling force 600–1600 N (type depending)
- Stroke length 100–1000 mm
- Speed 4,0–12,5 mm/s (type depending)
- Housing (DxL) D=36 mm, length depends on stroke
- Opening mechanism stainless steel spindle tube
- Versions SOLO, Tandem, Synchro
- Protection rating IP65

PLS

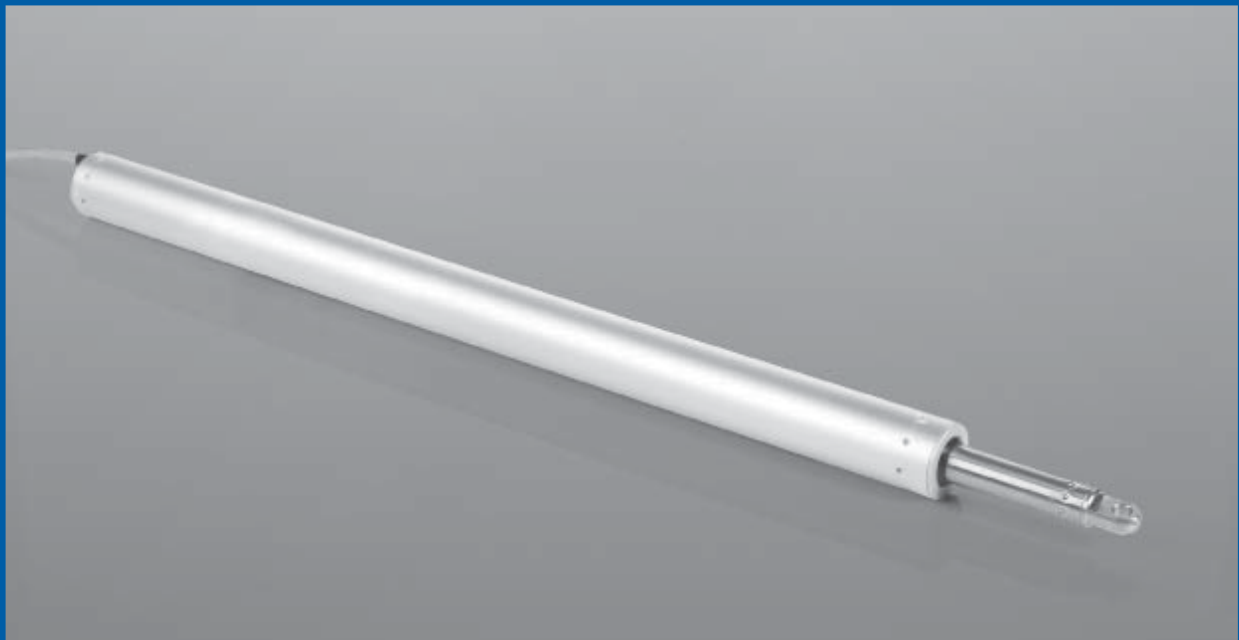
PLS SPINDLE DRIVES

- Model 24V DC, S12
- Pulling force 1500–5000 N
- Stroke length 300–1200 mm
- Speed 4,0–17,0 mm/s (type depending)
- Housing (DxL) D=50/(60) mm, length depends on stroke
- Opening mechanism stainless steel spindle tube
- Versions SOLO, Tandem, Synchro
- Protection rating IP54

SP

SP SPINDLE DRIVES

- Model 24V DC, S2/230V AC, S2
- Pulling force 800 N
- Stroke length 100–750 mm (230V AC: 300–750)
- Speed 8,5 mm/s
- Housing (DxL) 43x76 mm, length depends on stroke
- Opening mechanism aluminium spindle tube
- Versions SOLO, Z with feedback contact
- Protection rating IP54/IP65

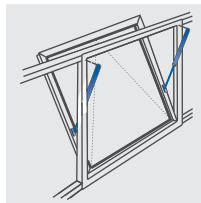
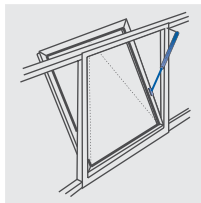
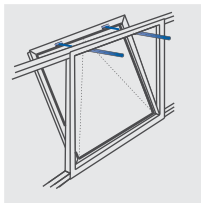
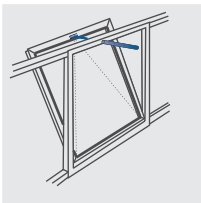
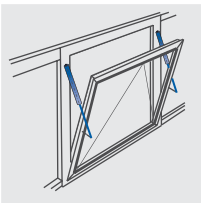
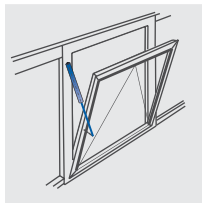


SPECIAL FEATURES PLA

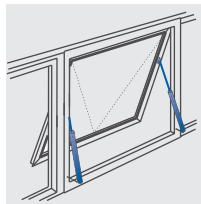
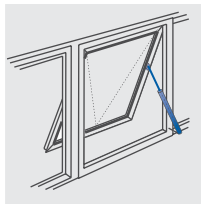
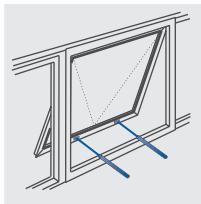
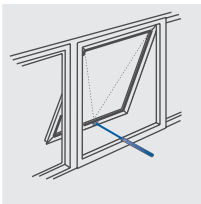
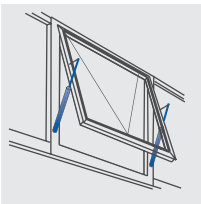
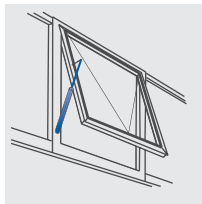
- For natural ventilation, smoke and heat exhausting and ferralux® NSHEV (EN12101-2)
- Robust corrosion-resistant design in a slim aluminium housing (D = 36 mm)
- Easy installation due to adjustable clamp ring and rear suspension
- Stainless steel spindle and spindle tube, ball beared with end position dampening
- Programmable parameters of intelligent S12 electronic cut-off switch
 - Synchronised multi-operation and sequence control without add. devices
 - Electronic soft-start, soft-close and soft-stop at end of stroke control
 - Stroke, force, speed
 - Rebate control

FACADE

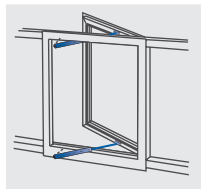
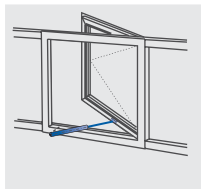
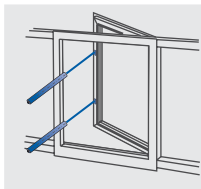
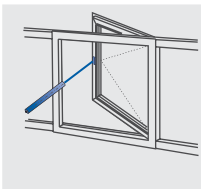
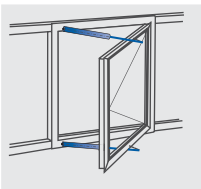
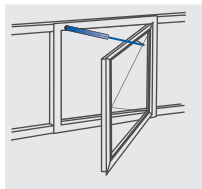
Bottom-hung



Top-hung

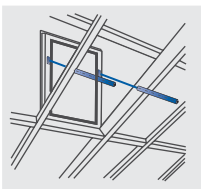
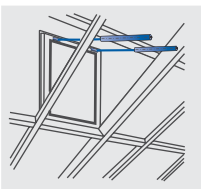
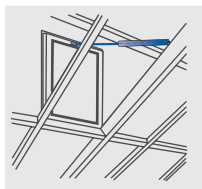


Side-hung

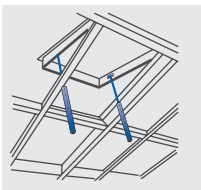
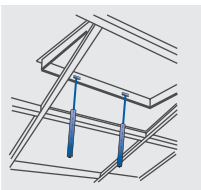
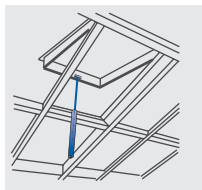


ROOF

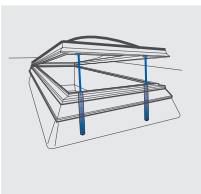
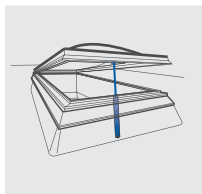
Bottom-hung



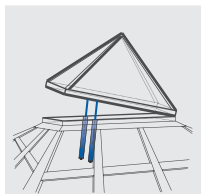
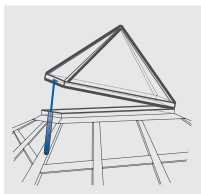
Top-hung



Sky light



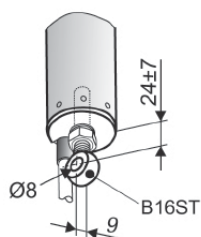
Glass pyramid





ORDER DATA						
s [mm]	L [mm]	Version	Finish	PU/pcs.	Part.-No.	
100	402	PLA6 100 S3	E6/C-0	1	564110	
	442	PLA6 100 S12		1	546310	
200	502	PLA6 200 S3	E6/C-0	1	564121	
	542	PLA6 200 S12		1	546320	
300	602	PLA6 300 S3	E6/C-0	1	564130	
	642	PLA6 300 S12		1	546330	
400	702	PLA6 400 S3	E6/C-0	1	564140	
	742	PLA6 400 S12		1	546340	
500	802	PLA6 500 S3	E6/C-0	1	564150	
	842	PLA6 500 S12		1	546350	
600	902	PLA6 600 S3	E6/C-0	1	564160	
	942	PLA6 600 S12		1	546360	
750	1052	PLA6 750 S3	E6/C-0	1	564175	
	1092	PLA6 750 S12		1	546375	
1000	1302	PLA6 1000 S3	E6/C-0	1	564200	
	1342	PLA6 1000 S12		1	546400	

OPTIONS						
Special model				PU/pcs.	Part.-No.	
Front Fixing						
Spindle tube end with interior thread M8				1	515061	
Spindle tube end with interior thread M10				1	515060	
Drive housing painted/powder coated in other RAL colours						
Specify at order stage:				1 – 4	516004	
				5 – 9	516004	
				10 – 49	516004	
				50 – 99	516004	
				up 100	516004	
Extra length connecting cable:						
5 m – non-halogen, grey – 3 x 1,0 mm ²					501037	
10 m – non-halogen, grey – 3 x 1,0 mm ²					501039	
Mechanic stroke reduction S3						
w/o basic length shortening of housing				1	516000	
Accessories for front / rear suspension						
B16ST Eyebolt Ø8 mm, galvanized				1	100044	
B16VA Eyebolt Ø8 mm, stainless steel				1	100144	
B27ST Clevis M8x16 mm, galvanized, thread M8x45 mm				1	105510	
B28ST Clevis M10x20 mm, galvanized, thread M10x50 mm				1	105520	
Microprocessor programming S3						
Motion monitored run / sequence control				1	524181	
Electronic stroke reduction with lengths reduction for S3 + S12					515990	
Microprocessor programming S12						
Electronic stroke reduction without lengths reduction for S12				1	524190	
Electronic stroke reduction with lengths reduction for S3 + S12				1	515990	
Special functions				1	524180	
Optional accessories				PU/pcs.	Part.-No.	
M-COM Comm. module for synchronised multi-drive systems				1	524177	



ORDER DATA						
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100	402	PLA8 100 S3	E6/C-0	1	523710	
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200	502	PLA8 200 S3	E6/C-0	1	523720	
	542	PLA8 200 S12		1	515220	
300	602	PLA8 300 S3	E6/C-0	1	523730	
	642	PLA8 300 S12		1	515230	
400	702	PLA8 400 S3	E6/C-0	1	523740	
	742	PLA8 400 S12		1	515240	
500	802	PLA8 500 S3	E6/C-0	1	523750	
	842	PLA8 500 S12		1	515250	
600	902	PLA8 600 S3	E6/C-0	1	523760	
	942	PLA8 600 S12		1	515260	
750	1052	PLA8 750 S3	E6/C-0	1	523775	
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1000	1302	PLA8 1000 S3	E6/C-0	1	523800	
	1342	PLA8 1000 S12		1	515295	

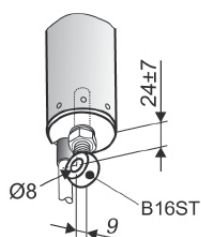
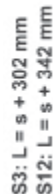
OPTIONS						
Special model				PU/pcs.	Part.-No.	
Front Fixing						
Spindle tube end with interior thread M8				1	515061	
Spindle tube end with interior thread M10				1	515060	
Drive housing painted/powder coated in other RAL colours						
Specify at order stage:				1 – 4	516004	
				5 – 9	516004	
				10 – 49	516004	
				50 – 99	516004	
				up 100	516004	
Extra length connecting cable:						
5 m – non-halogen, grey – 3 x 1,0 mm ²					501037	
10 m – non-halogen, grey – 3 x 1,0 mm ²					501039	
Mechanic stroke reduction S3						
w/o basic length shortening of housing				1	516000	
Accessories for front / rear suspension						
B16ST Eyebolt Ø8 mm, galvanized				1	100044	
B16VA Eyebolt Ø8 mm, stainless steel				1	100144	
B27ST Clevis M8x16 mm, galvanized, thread M8x45 mm				1	105510	
B28ST Clevis M10x20 mm, galvanized, thread M10x50 mm				1	105520	
Microprocessor programming S3						
Motion monitored run / sequence control				1	524181	
Electronic stroke reduction with lengths reduction for S3 + S12				1	515990	
Microprocessor programming S12						
Electronic stroke reduction without lengths reduction for S12				1	524190	
Electronic stroke reduction with lengths reduction for S3 + S12				1	515990	
Special functions				1	524180	
Optional accessories				PU/pcs.	Part.-No.	
M-COM Comm. module for synchronised multi-drive systems				1	524177	



- Spindle tube end with interior thread for clevis
- Eyebolt and clevis for rear suspension

- Internal load dependend cut-off switch, post cycle resistant S3
- Programmable motion monitored run (up to 300 mm stroke)
- Programmable sequence control with FV locking drives (S3/S12 SW V2)

- Programmable synchronised run (max. 4 drives) and special functions
- M-COM for automatic synchronised run of multi drive systems and automatic sequence control with FV locking drives (S3/S12 SW V2)

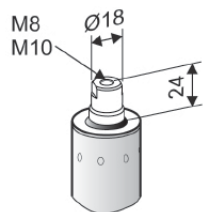


Displacement s (mm)	Force F (N)
0	1000
1000	1000
1300	300

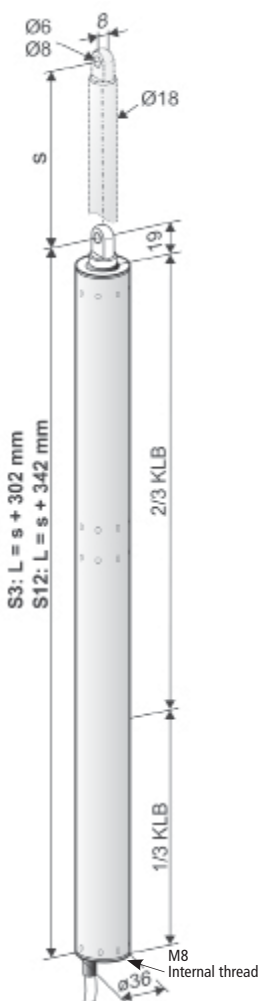
Product List

11/2015

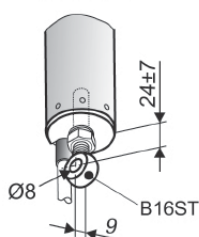
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200	502	PLA101 200 S3	E6/C-0	1	565120			
	542	PLA101 200 S12		1	564922			
300	602	PLA101 300 S3	E6/C-0	1	565130			
	642	PLA101 300 S12		1	564930			
400	702	PLA 01 400 S3	E6/C-0	1	565140			
	742	PLA101 400 S12		1	564940			
500	802	PLA101 500 S3	E6/C-0	1	565150			
	842	PLA101 500 S12		1	564950			
600	902	PLA101 600 S3	E6/C-0	1	565160			
	942	PLA101 600 S12		1	564960			
750	1052	PLA101 750 S3	E6/C-0	1	565175			
	1092	PLA101 750 S12		1	564975			
1000	1302	PLA101 1000 S3	E6/C-0	1	565200			
	1342	PLA101 1000 S12		1	565000			
OPTIONS								
Special model				PU/pcs.	Part.-No.			
Front Fixing								
Spindle tube end with interior thread M8				1	515061			
Spindle tube end with interior thread M10				1	515060			
Drive housing painted/powder coated in other RAL colours								
Specify at order stage:				1 – 4	516004			
				5 – 9	516004			
				10 – 49	516004			
				50 – 99	516004			
				up 100	516004			
Extra length connecting cable:								
5 m – non-halogen, grey – 3 x 1,0 mm²					501037			
10 m – non-halogen, grey – 3 x 1,0 mm²					501039			
Mechanic stroke reduction S3								
w/o basic lenght shortening of housing				1	516000			
Accessories for front / rear suspension								
B16ST Eyebolt Ø8 mm, galvanized				1	100044			
B16VA Eyebold Ø8 mm, stainless steel				1	100144			
B27ST Clevis M8x16 mm, galvanized, thread M8x45 mm				1	105510			
B28ST Clevis M10x20 mm, galvanized, thread M10x50 mm				1	105520			
Microprocessor programming S3								
Motion monitored run / sequence control				1	524181			
Electronic stroke reduction with lengths reduction for S3 + S12				1	515990			
Microprocessor programming S12								
Electronic stroke reduction without lengths reduction for S12				1	524190			
Electronic stroke reduction with lengths reduction for S3 + S12				1	515990			
Special functions				1	524180			
Optional accessories				PU/pcs.	Part.-No.			
M-COM Comm. module for synchronised multi-drive systems				1	524177			



OPTION



OPTION



- Application: natural ventilation, SHEV, ferralux®-NSHEV

Options

- Spindle tube end with interior thread for clevis
- Eyebolt and clevis for rear suspension

S3

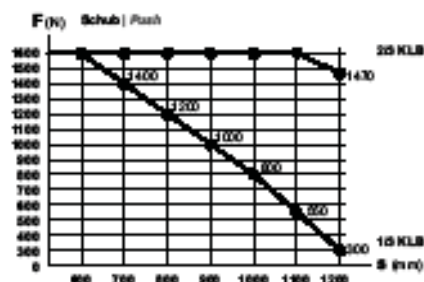
- Internal load dependent cut-off switch, post cycle resistant S3
- Programmable motion monitored run (up to 300 mm stroke)
- Programmable sequence control with FV locking drives (S3/S12 SW V2)

S12

- Internal intelligent cut-off switch S12
- Options
- Programmable synchronised run (max. 4 drives) and special functions
- M-COM for automatic synchronised run of multi drive systems and automatic sequence control with FV locking drives (S3/S12 SW V2)

TECHNICAL DATA

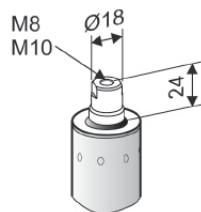
U_N	Rated voltage	24V DC ($\pm 20\%$), max. 2 Vpp
I_N	Rated current	1,0 A
I_A	Cut-off current	1,2 A
P_N	Rated power	24 W
ED	Duty cycle	30 % (ON: 3 min. / OFF: 7 min.)
	Protection rating	IP 65
	Ambient temperature range	-5 °C ... +75 °C
F_Z	Pulling force max.	1600 N
F_A	Pushing force	



F_H	Pullout force	5000 N (fastening depended)
	Spindle tube	stainless steel
	Connecting cable	non-halogen, grey 3 x 1,0 mm ² , ~ 3 m
v	Speed	∇ 4,0 mm/s \curvearrowright 4,0 mm/s
s	Stroke	100 – 1000 mm ($\pm 5\%$)
L	Length	S3: s + 302 mm S12: s + 342 mm see order data

ORDER DATA						
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100	402	PLA 116 100 S3	E6/C-0	1	565310	
	442	PLA 116 100 S12		1	565510	
200	502	PLA 116 200 S3	E6/C-0	1	565320	
	542	PLA 116 200 S12		1	565520	
300	602	PLA 116 300 S3	E6/C-0	1	565330	
	642	PLA 116 300 S12		1	565530	
400	702	PLA 116 400 S3	E6/C-0	1	565340	
	742	PLA 116 400 S12		1	565540	
500	802	PLA 116 500 S3	E6/C-0	1	565350	
	842	PLA 116 500 S12		1	565550	
600	902	PLA 116 600 S3	E6/C-0	1	565360	
	942	PLA 116 600 S12		1	565560	
750	1052	PLA 116 750 S3	E6/C-0	1	565375	
	1092	PLA 116 750 S12		1	565575	

OPTIONS						
Special model				PU/pcs.	Part.-No.	
Front Fixing						
Spindle tube end with interior thread M8				1	515061	
Spindle tube end with interior thread M10				1	515060	
Drive housing painted/powder coated in other RAL colours						
Specify at order stage:				1 – 4	516004	
				5 – 9	516004	
				10 – 49	516004	
				50 – 99	516004	
				up 100	516004	
Extra length connecting cable:						
5 m – non-halogen, grey – 3 x 1,0 mm ²					501037	
10 m – non-halogen, grey – 3 x 1,0 mm ²					501039	
Mechanic stroke reduction S3						
w/o basic lenght shortening of housing				1	516000	
Accessories for front / rear suspension						
B16ST Eyebolt Ø8 mm, galvanized				1	100044	
B16VA Eyebold Ø8 mm, stainless steel				1	100144	
B27ST Clevis M8x16 mm, galvanized, thread M8x45 mm				1	105510	
B28ST Clevis M10x20 mm, galvanized, thread M10x50 mm				1	105520	
Microprocessor programming S3						
Motion monitored run / sequence control				1	524181	
Electronic stroke reduction with lengths reduction for S3 + S12				1	515990	
Microprocessor programming S12						
Electronic stroke reduction without lengths reduction for S12				1	524190	
Electronic stroke reduction with lengths reduction for S3 + S12				1	515990	
Special functions				1	524180	
Optional accessories				PU/pcs.	Part.-No.	
M-COM Comm. module for synchronised multi-drive systems				1	524177	



OPTION

■ Application: natural ventilation, SHEV, ferralux®-NSHEV

■ Internal intelligent cut-off switch S12

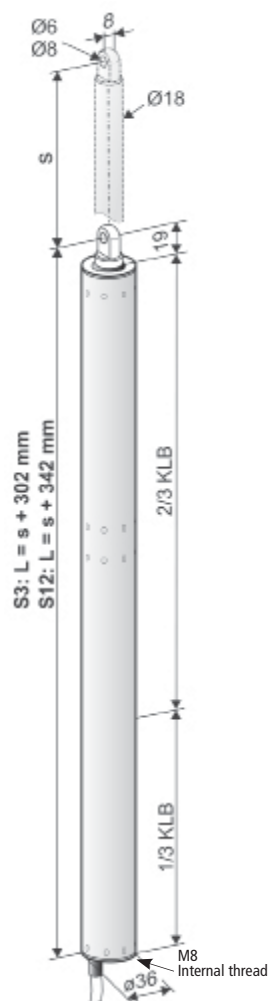
Options

■ Programmable synchronised run (max. 4 drives) and special functions

■ M-COM for automatic synchronised run of multi drive systems and automatic sequence control with FV locking drives (S3/S12 SW V2)

■ Spindle tube end with interior thread for clevis

■ Eyebolt and clevis for rear suspension



TECHNICAL DATA

U_N Rated voltage 24V DC ($\pm 20\%$), max. 2 Vpp

I_N Rated current 1,9 A

I_A Cut-off current 2,5 A

P_N Rated power 45 W

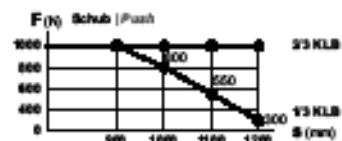
ED Duty cycle 30 % (ON: 3 min / OFF: 7 min.)

Protection rating IP 65

Ambient temperature range -5 °C ... +75 °C

F_Z Pulling force max. 1000 N

F_A Pushing force



F_H Pullout force 5000 N (fastening depended)

Spindle tube stainless steel

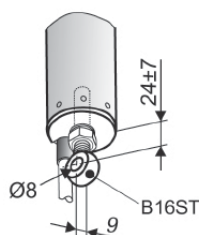
Connecting cable non-halogen, grey 3 x 1,0 mm², ~ 3 m

v Speed \times 12,6 mm/s \rightarrow 12,6 mm/s

s Stroke 100 – 1000 mm ($\pm 5\%$)

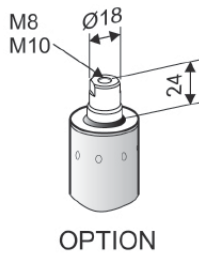
L Length $s + 342$ mm
see order data

OPTION



ORDER DATA						
s [mm]	L [mm]	Version	Finish	PU/pcs.	Part.-No.	
100	442	PLA 10 100 S12	E6/C-0	1	523610	
200	542	PLA 10 200 S12	E6/C-0	1	523620	
300	642	PLA 10 300 S12	E6/C-0	1	523630	
400	742	PLA 10 400 S12	E6/C-0	1	523640	
500	842	PLA 10 500 S12	E6/C-0	1	523650	
600	942	PLA 10 600 S12	E6/C-0	1	523660	
750	1092	PLA 10 750 S12	E6/C-0	1	523675	
1000	1342	PLA 10 1000 S12	E6/C-0	1	523700	

OPTIONS						
Special model				PU/pcs.	Part.-No.	
Front Fixing						
Spindle tube end with interior thread M8				1	515061	
Spindle tube end with interior thread M10				1	515060	
Drive housing painted/powder coated in other RAL colours						
Specify at order stage:				1 – 4	516004	
				5 – 9	516004	
				10 – 49	516004	
				50 – 99	516004	
				up 100	516004	
Extra length connecting cable:						
5 m – non-halogen, grey – 3 x 1,0 mm ²					501037	
10 m – non-halogen, grey – 3 x 1,0 mm ²					501039	
Mechanic stroke reduction S3						
w/o basic length shortening of housing				1	516000	
Accessories for front / rear suspension						
B16ST Eyebolt Ø8 mm, galvanized				1	100044	
B16VA Eyebolt Ø8 mm, stainless steel				1	100144	
B27ST Clevis M8x16 mm, galvanized, thread M8x45 mm				1	105510	
B28ST Clevis M10x20 mm, galvanized, thread M10x50 mm				1	105520	
Microprocessor programming S12						
Electronic stroke reduction without lengths reduction for S12				1	524190	
Electronic stroke reduction with lengths reduction for S12				1	515990	
Special functions				1	524180	
Optional accessories				PU/pcs.	Part.-No.	
M-COM Comm. module for synchronised multi-drive systems				1	524177	



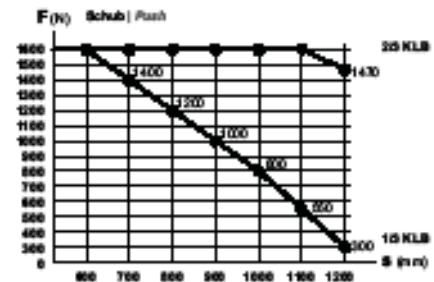
- Application: natural ventilation, SHEV, ferralux®-NSHEV
- Internal intelligent cut-off switch S12

Options

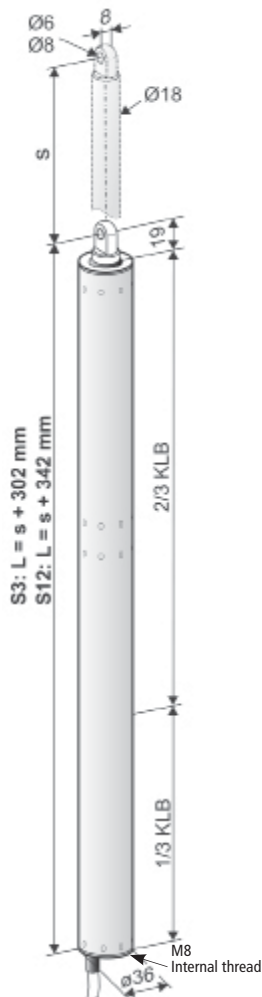
- Programmable synchronised run (max. 4 drives) and special functions
- M-COM for automatic synchronised run of multi drive systems and automatic sequence control with FV locking drives (S3/S12 SW V2)
- Spindle tube end with interior thread for clevis
- Eyebolt and clevis for rear suspension

TECHNICAL DATA

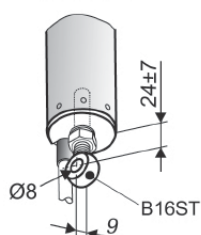
U_N	Rated voltage	24V DC ($\pm 20\%$), max. 2 Vpp
I_N	Rated current	1,9 A
I_A	Cut-off current	2,5 A
P_N	Rated power	45 W
ED	Duty cycle	30 % (ON: 3 min / OFF: 7 min.)
	Protection rating	IP 65
	Ambient temperature range	-5 °C ... +75 °C
F_Z	Pulling force max.	1600 N
F_A	Pushing force	



F_H	Pullout force	5000 N (fastening depended)
	Spindle tube	stainless steel
	Connecting cable	non-halogen, grey 3 x 1,0 mm ² , ~ 3 m
v	Speed	7,0 mm/s 7,0 mm/s
s	Stroke	100 – 1000 mm ($\pm 5\%$)
L	Length	s + 342 mm see order data



OPTION



ORDER DATA

s [mm]	L [mm]	Version	Finish	PU/pcs.	Part.-No.			
100	442	PLA16 100 S12	E6/C-0	1	565710			
200	542	PLA16 200 S12	E6/C-0	1	565720			
300	642	PLA16 300 S12	E6/C-0	1	565730			
400	742	PLA16 400 S12	E6/C-0	1	565740			
500	842	PLA16 500 S12	E6/C-0	1	565750			
600	942	PLA16 600 S12	E6/C-0	1	565760			
750	1092	PLA16 750 S12	E6/C-0	1	565775			
1000	1342	PLA16 1000 S12	E6/C-0	1	565800			

OPTIONS

Special model	PU/pcs.	Part.-No.			
Front Fixing					
Spindle tube end with interior thread M8	1	515061			
Spindle tube end with interior thread M10	1	515060			
Drive housing painted/powder coated in other RAL colours					
Specify at order stage:	1 – 4	516004			
	5 – 9	516004			
	10 – 49	516004			
	50 – 99	516004			
	up 100	516004			
Extra length connecting cable:					
5 m – non-halogen, grey – 3 x 1,0 mm ²		501037			
10 m – non-halogen, grey – 3 x 1,0 mm ²		501039			
Mechanic stroke reduction S3					
w/o basic lenght shortening of housing	1	516000			
Accessories for front / rear suspension					
B16ST Eyebolt Ø8 mm, galvanized	1	100044			
B16VA Eyebold Ø8 mm, stainless steel	1	100144			
B27ST Clevis M8x16 mm, galvanized, thread M8x45 mm	1	105510			
B28ST Clevis M10x20 mm, galvanized, thread M10x50 mm	1	105520			
Microprocessor programming S12					
Electronic stroke reduction without lengths reduction for S12	1	524190			
Electronic stroke reduction with lengths reduction for S12	1	515990			
Special functions	1	524180			
Optional accessories					
M-COM Comm. module for synchronised multi-drive systems	1	524177			

OVERVIEW OF BRACKETS															
Typical applications				1	2	3	4	5	6	7	8	9	10		
Frame bracket				K5	K5	K5	K17	K82	K122	K127	K122-1	K122-1	K7		
Mounting aid						K21									
Bracket accessories				clamping ring B4 (36 mm-G1/8)											
Casement bracket				F29-1	F1, F1V, F1.1, F10.6, F10.8S, F11, F13, F40				F29	F11	F36	F30	F12		
Special application				Heroal 085D					Heroal 085 D	Wing 105D	AWS 57RO	Wictec 50	Sky light Essmann		
Space requirement		min.	[mm]	50	50	40 – 50	70	45	60	35	68	68	120		
Window material		Alu		●	●	●	●	●	●	●	●	●			
		Wood			●	●	●	●							
		PVC			●	●	●	●					●		
Type of window and mounting	Bot- tom hung	in- ward	HSK	FM			■		■						
				RM											
			NSK	FM											
				RM											
		out- ward	HSK	RM			●		●						
				PR		●		●							
			NSK	RM											
				PR											
	Top hung	in- ward	HSK	FM			■		■						
				RM											
			NSK	FM											
				RM											
		out- ward	HSK	RM			●		●						
				PR		●		●							
			NSK	RM											
				PR											
	Side hung	in- ward	HSK	FM			■		■						
				RM											
			NSK	FM											
				RM											
	Roof	out- ward	HSK	RM	●		●		●						
				PR		●		●							
			NSK	RM			●			●	●	●	●		
				PR		●		●							
		Sky- light	out- ward	HSK	RM		●		●	●				●	
					NSK	RM									
FAB(*1				Solo	[mm]	450 – 1300									600 – 1200
				Sync2	[mm]	1200 – 2400									1200 – 2400
FAH(*1	Solo	[mm]	450 – 1500									600 – 1200			
	Sync2	[mm]	450 – 2500									1200 – 1500			

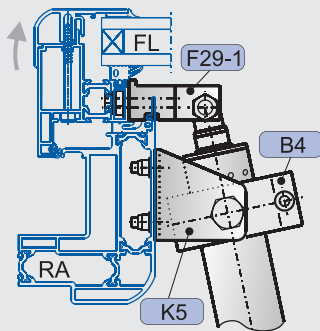
LEGEND

- suitable ■ not recommended

(*1) Sample value of the casement dimensions. The actual casement dimensions depend on the stroke and the position of the drives to the hinges. The values of FAB/FAH are to be used analogue for side hung windows.

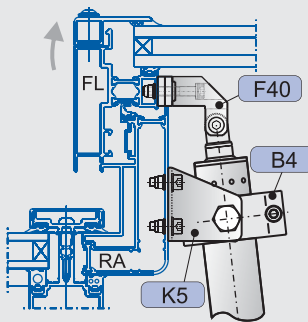
TYPICAL APPLICATIONS

1 RM, HSK, roof



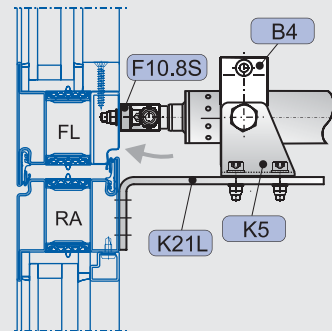
View on aluminium window

2 RM, HSK, roof



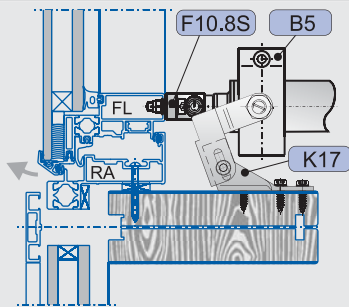
View on aluminium window

3 RM, HSK, top hung outward opening



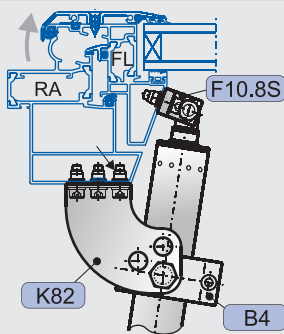
View on aluminium window

4 RM, HSK, top hung outward opening



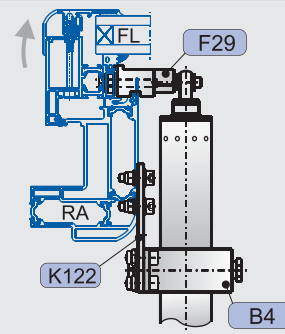
View on aluminium window

5 RM, HSK, roof



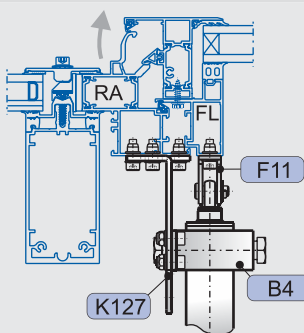
View on aluminium window

6 RM, NSK, roof



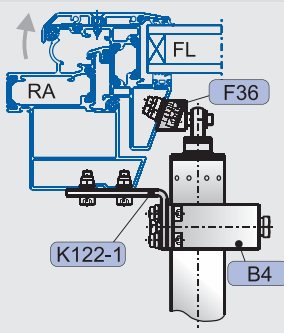
View on aluminium window

7 RM, NSK, roof



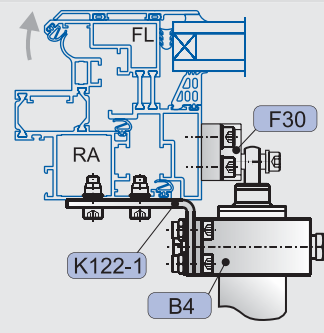
View on aluminium window

8 RM, NSK, roof



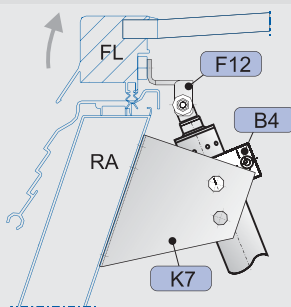
View on aluminium window

9 RM, NSK, roof



View on aluminium window

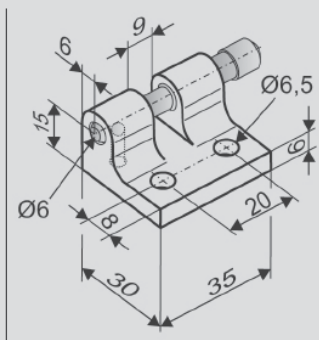
10 RM, HSK, sky-light



View on sky light

CASEMENT BRACKETS

F1



Application

Surface mounting on the main closing edge of casement profiles of outward opening windows or skylights, for drives with front or rear suspension with bore Ø6 mm, manual removal of drive possible

Part.-No. 150102

Material/Finish
aluminium, diecast

Feature/Equipment

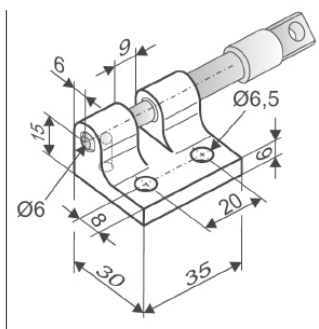
1x locking bolt

Ø6 mm

Load

max. 1000 N

F1.1



Application

Surface mounting on the main closing edge of casement profiles of outward opening windows or skylights, for drives with front or rear suspension with bore Ø6 mm, manual removal of drive possible

Part.-No. 150110

Material/Finish
aluminium, diecast

Feature/Equipment

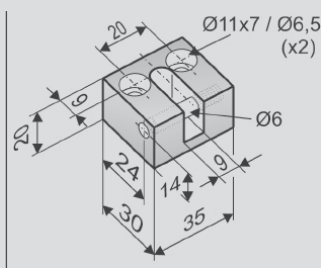
1x locking spring bolt

Ø6 mm

Load

max. 600 N

F1V



Application

Surface mounting on the main closing edge of casement profiles of outward opening windows or skylights, for drives with front or rear suspension with bore Ø6 mm

Part.-No. 150101

Material/Finish
aluminium

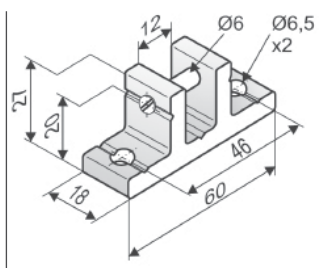
Feature/Equipment

1x grubscrew Ø6 mm

Load

max. 1600 N

F10.6



Application

Surface mounting on main closing edge of casement profiles of outward opening windows or skylights, for drives with front or rear suspension with bore Ø6 mm, threaded stud bolt

Part.-No. 151000

Material/Finish
aluminium

Feature/Equipment

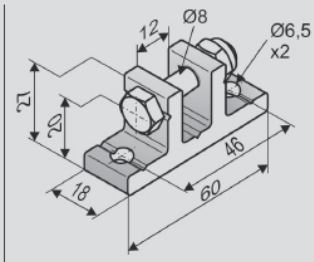
1x stud bolt Ø6 mm

Load

max. 1600 N

CASEMENT BRACKETS

F10.8S

**Application**

Surface mounting on the **main closing edge** of casement profiles of outward opening windows, for drives with **front or rear suspension** with bore **Ø8 mm**

Part.-No. 151105

Material/Finish
aluminium

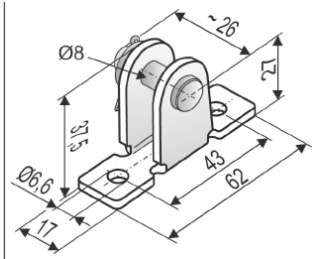
Feature/Equipment

1x nut M8,
1x screw M8x35

Load

max. 5000 N

F11ST

**Application**

Surface mounting on the **side closing edge** of casement/ window frame profiles of in-/outward opening windows or on skylights, for drives with front or rear suspension with bore **Ø8 mm**, mounting holes aligned with central axis of drive

Part.-No. 151400

Material/Finish
steel galvanized

Feature/Equipment

1x bolt Ø8 mm,
washer,
cotter pin

Load

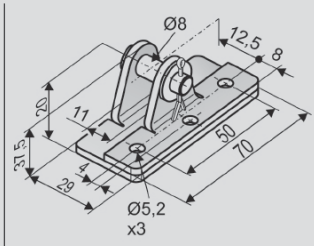
max. 3000 N

F11VA

Part.-No. 151401

Material/Finish
stainless steel

F13

**Application**

Surface mounting on the **side closing edge** of casement/ window frame profiles of in-/outward opening windows or on skylights, for drives with front or rear suspension with bore **Ø8 mm**, mounting holes not aligned with the central axis of drive

Part.-No. 151405

Material/Finish
steel galvanized

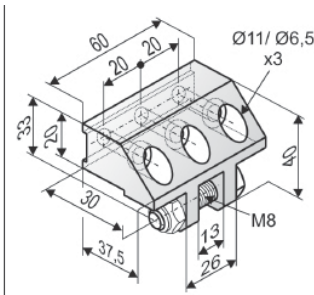
Feature/Equipment

1x bolt Ø8 mm,
washer,
cotter pin

Load

max. 1600 N

F40

**Application**

Surface mounting on the **main closing edge** of the casement profiles of outward opening roof windows, for drives with **front or rear suspension** with bore **Ø8 mm**

Part.-No. 155172

Material/Finish
aluminium

Feature/Equipment

1x screw M8x35,
nut M8

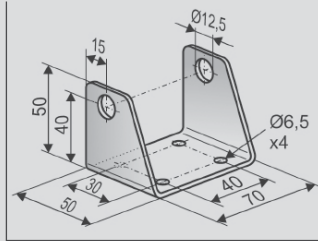
Optional accessories

B2 Base Plate F39/F49

Part.-No. 155173

FRAME BRACKETS

K5



Application

Surface mounting on the **main closing edge** of window frame profiles or on the mullion/transom of outward opening (roof-)windows, for **swivelling suspension** of drives
PLA with **B4**,
SP with **B13**,
LKS with **B7**

Part.-No. 155800

Material/Finish

steel galvanized

Feature/Equipment
drilled holes Ø12,5 mm

Accessories

B4 clamp ring PLA
(Ø36 mm, G1/8)

Part.-No. 515900

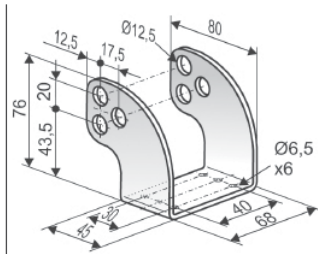
K21K Frame bracket

Part.-No. 159900

K21L Frame bracket

Part.-No. 159905

K82



Application

Surface mounting on the **main closing edge** of window frame profiles or on the mullion/transom of outward opening (roof-)windows, for **swivelling suspension** of drives
PLA with **B4**,
SP with **B13**,
LKS with **B7**

Part.-No. 151320

Material/Finish

stainless steel

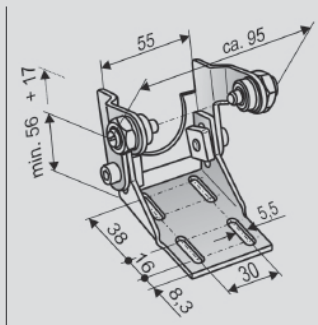
Feature/Equipment
drilled holes Ø12,5 mm

Accessories

B4 clamp ring PLA
(Ø36 mm, G1/8)

Part.-No. 515900

K17



Application

Surface mounting on the **main closing edge** of window frame profiles or on the mullion/transom of outward opening (roof-)windows, for **swivelling suspension** of drives
PLA with **B5**,
SP with **B12**

Part.-No. 159200

Material/Finish

steel galvanized

Feature/Equipment
adjustable height

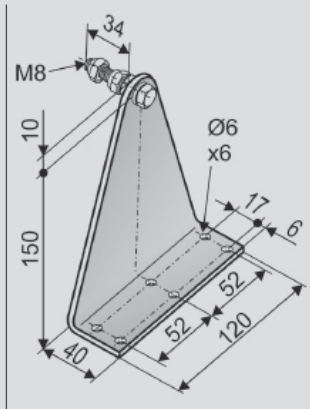
Accessories

B5 clamp ring PLA
(Ø36 mm, Ø8 mm)

Part.-No. 515825

FRAME BRACKETS

K15



Application

Surface mounting on the **side closing edge** of window frame profiles of in-/outward opening windows, by obliquely arranged drives with **rear suspension** with bore **Ø8 mm**

Required space on the frame
40 mm

Part.-No. 307000

Material/Finish

steel galvanized

Feature/Equipment

H=150 mm, t=4 mm

Optional accessories

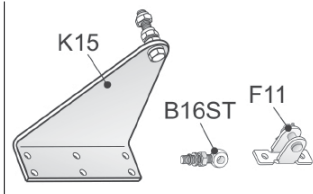
B16ST Eyebolt
(Ø8 x 40 mm ST)

Part.-No. 100044

B16VA Eyebolt
(Ø8 x 40 mm VA)

Part.-No. 100144

K15-Set



Application

Surface mounting on the **side closing edge** like RWA-1000/1100 hardware sets

Required space on the frame
40 mm

Part.-No. 517590

Material/Finish

steel galvanized

Feature/Equipment

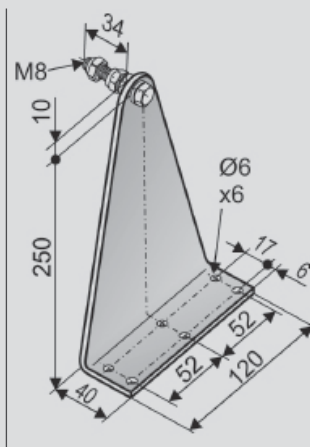
Set:

1x K15

1x F11ST

1x B16ST

K37



Application

Surface mounting on the **side closing edge** of window frame profiles of in-/outward opening windows, by obliquely arranged drives with rear suspension with bore **Ø8 mm**

Required space on the frame
40 mm

Part.-No. 307500

Material/Finish

steel galvanized

Feature/Equipment

H=250 mm, t=5 mm

Optional accessories

B16ST Eyebolt
(Ø8 x 40 mm ST)

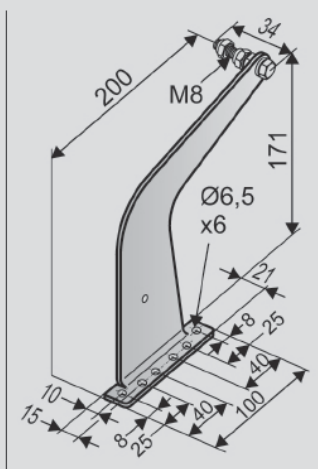
Part.-No. 100044

B16VA Eyebolt
(Ø8 x 40 mm VA)

Part.-No. 100144

FRAME BRACKETS

K97L



Application

Surface mounting on the side closing edge of window frame profiles of inward opening side hung windows, by obliquely arranged drives with rear suspension with bore Ø8 mm. Required space on the frame 20 mm

Part.-No. 160938

Material/Finish

stainless steel,
vibratory grinding

Feature/Equipment

left hand

Optional accessories

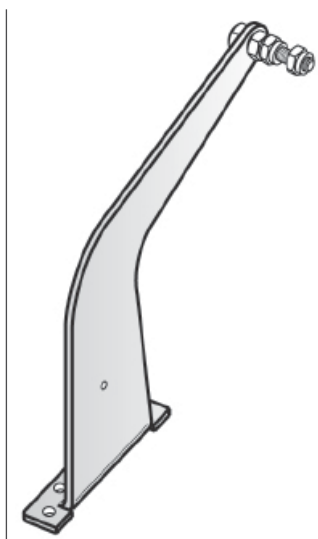
B16ST Eyebolt
(Ø8 x 40 mm ST)

Part.-No. 100044

B16VA Eyebolt
(Ø8 x 40 mm VA)

Part.-No. 100144

K97R



Application

Surface mounting on the side closing edge of window frame profiles of inward opening side hung windows, by obliquely arranged drives with rear suspension with bore Ø8 mm. Required space on the frame 20 mm

Part.-No. 160939

Material/Finish

stainless steel,
vibratory grinding

Feature/Equipment

right hand

Accessories

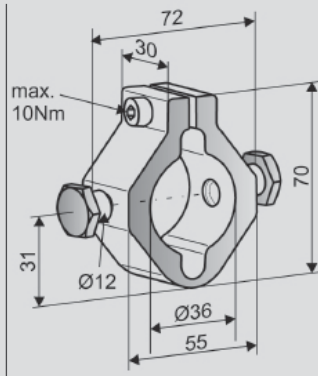
B16ST Eyebolt
(Ø 8 x 40 mm ST)

Part.-No. 100044

B16VA Eyebolt
(Ø8 x 40 mm VA)

Part.-No. 100144

OPTIONAL ACCESSORIES

B4**Application**

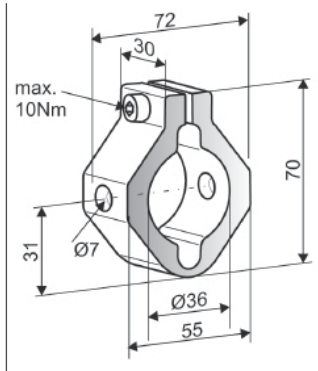
Adjustable clamping of the PLA drive housing, for surface mounting with **swivelling suspension** on **K5, K7, K82, K22, K22-1, K127** (preferably on outward opening windows)

Part.-No. 515900**Material/Finish**

aluminium (antreated), stainless steel

Feature/Equipment

2x B8 collar screw
Ø12mm, G1/8
1x cylinder head screw
M6x16mm

B5**Application**

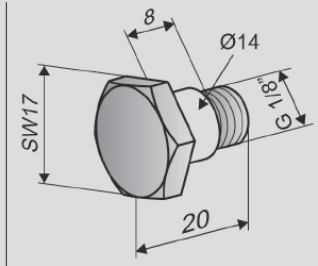
Adjustable clamping of the PLA drive housing, for surface mounting with **swivelling suspension** on **K17** (preferably on outward opening windows)

Part.-No. 515825**Material/Finish**

aluminium (antreated), stainless steel

Feature/Equipment

2x Holes Ø7 mm
1x cylinder head screw
M6x16

B8**Application**

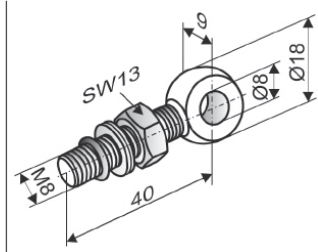
Swivelling suspensin of the clamp rings
B4 for PLA
B7 for LKS
or of the clamping blocks
B11, B13 for SP
for U-shaped frame brackets
with bore **Ø12 mm**

Part.-No. 172800**Material/Finish**

stainless steel

Feature/Equipment

Collar Ø12 mm, G1/8"

B16ST**Application**

Eye bolt for rear or front suspension of spindle drives with **M8** thread in the rear base cap or in the spindle tube

Part.-No. 100044**Material/Finish**

steel galvanized

Feature/Equipment

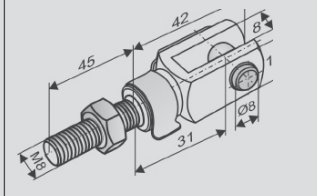
M8x40 (Eye Ø8 mm),
1 x nut M8 + Nordlock-
safety-washer + O-ring
max. screw-in depth in the
drive 25 mm

B16VA**Part.-No. 100144****Material/Finish**

stainless steel (V2A)

OPTIONAL ACCESSORIES

B27ST



Application

Clevis for rear or front suspension of spindle drives with M8 thread in the rear base cap or in the spindle tube

Part.-No. 105510

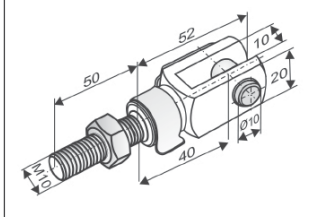
Material/Finish

steel galvanized

Feature/Equipment

Clevis M8 x 40 mm with spring bolt Ø8 mm and thread M8 x 45 mm
1x nut M10 + Nordlock-safety-washer + O-ring, max. screw-in depth in the drive 25 mm

B28ST



Application

Clevis for rear or front suspension of spindle drives with M10 thread in the rear base cap or in the spindle tube

Part.-No. 105520

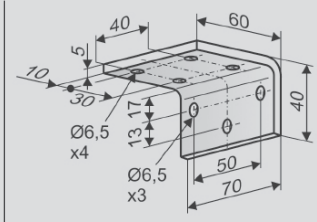
Material/Finish

steel galvanized

Feature/Equipment

Clevis M10 x 40 mm with spring bolt Ø8 mm and thread M10 x 50 mm
1x nut M10 + Nordlock-safety-washer + O-ring, max. screw-in depth in the drive 25 mm

K21K



Application

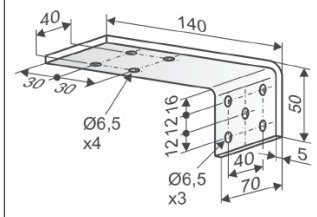
Shift the fastening level of the frame brackets **K5**, **K29** from the horizontal to the vertical position of the **main closing edge** of window frame profiles

Part.-No. 159900

Material/Finish

steel galvanized

K21L



Application

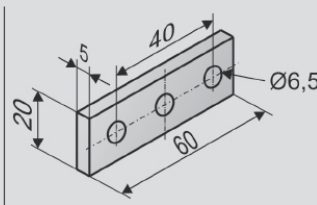
Shift the fastening level of the frame brackets **K5**, **K29** from the horizontal to the vertical position of the **main closing edge** of window frame profiles

Part.-No. 159905

Material/Finish

steel galvanized

B2



Application

Support for **F39** and **F40** as packing plate for mounting on the casement profiles of outward opening roof windows

Part.-No. 155173

Material/Finish

aluminium

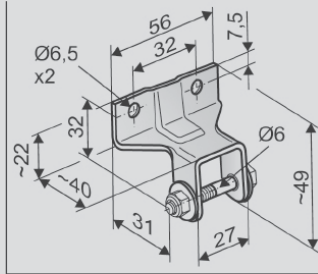
Feature/Equipment

60 x 20 x 5 mm

SPECIFIC APPLICATIONS

SKY-LIGHT ESSMANN TYP 810

F12

**Application**

Surface mounting on the main closing edge of the case-ment profiles of skylight domes **Essmann 810** for drives with front suspension with bore Ø6 mm

Part.-No. 151500

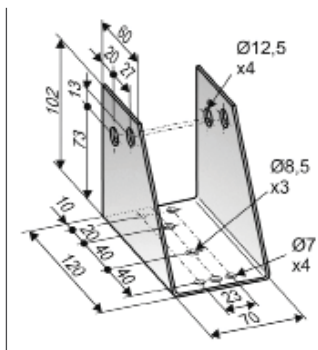
Material/Finish
steel galvanized**Feature/Equipment**

1x screw M6,
washer,
nut

Load

max. 800 N

K7

**Application**

Surface mounting on the main closing edge of the upstand of skylight domes **Essmann 810** for swivelling suspension of drives **PLA** with **B4**, **SP** with **B13**, **LKS** with **B7**

Part.-No. 157500

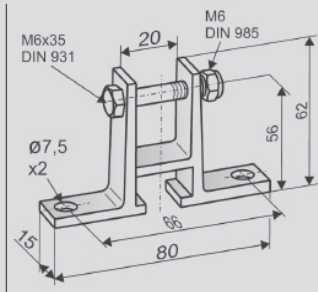
Material/Finish
steel galvanized**Feature/Equipment**
drilled holes Ø12,5 mm**Accessories**

B4 clamp ring PLA
(Ø36 mm, G1/8)

Part.-No. 515900

SKY-LIGHT ETERNIT

F2

**Application**

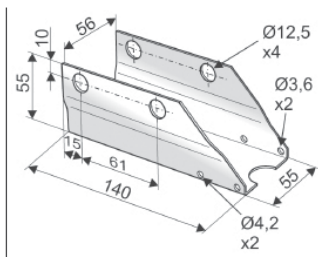
Surface mounting on the main closing edge of skylight domes **Eternit**, for drives with front suspension with bore Ø6 mm

Part.-No. 150303

Material/Finish
aluminium**Feature/Equipment**

1x nut M6,
1x screw M6x35

K4-L

**Application**

Surface mounting on the main closing edge of the upstand of skylight domes **Eternit** for swivelling suspension of drives **PLA** with **B4**, **SP** with **B11**,

Part.-No. 155610

Material/Finish
steel galvanized**Feature/Equipment**

2x screw Taptite M4x10,
1x nut M4,
1x screw M4x65

Accessories

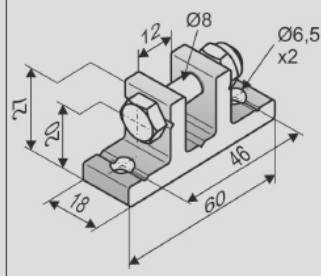
B4 clamp ring PLA
(Ø36 mm, G1/8)

Part.-No. 515900

SPECIFIC APPLICATIONS

SCHÜCO AWS 57RO, WICONA WICTEC 50, RAICO WING 105D – HSK

F10.8S



Application

Surface mounting on the **main closing edge** of casement profiles of outward opening windows, for drives with **front or rear suspension** with bore **Ø8 mm**

Part.-No. 151105

Material/Finish
aluminium

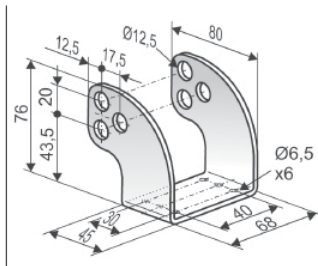
Feature/Equipment

1x nut M8,
1x screw M8x35

Load

max. 5000 N

K82



Application

Surface mounting on the **main closing edge** of window frame profiles or on the mullion/transom of outward opening (roof-)windows, for **swivelling suspension** of drives

PLA with B4,
SP with B13,
LKS with B7

Part.-No. 151320

Material/Finish
stainless steel

Feature/Equipment
drilled holes Ø12,5 mm

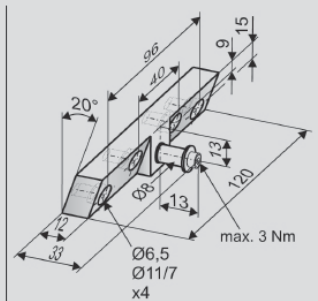
Accessories

B4 clamp ring PLA
(Ø36 mm, G1/8)

Part.-No. 515900

SCHÜCO AWS 57R – NSK

F36



Application

Surface mounting on the **side closing edge** of outward opening casement profiles of roof windows **Schüco AWS 57RO**, for drives with **front suspension** with bore **Ø8 mm**

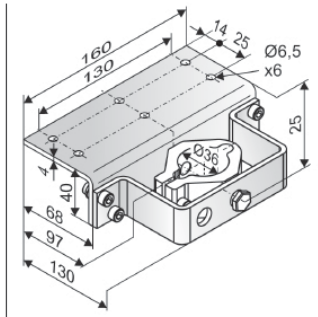
Part.-No. 155170

Material/Finish
aluminium,
stainless steel

Feature/Equipment

1x bolt Ø8 mm,
screw M4,
washer A4,3

K122-1



Application

Surface mounting on the **side closing edge** of window frame profiles of outward opening roof windows **Schüco AWS 57RO**, **Wicona Wictec 50** for **swivelling suspension** of drives
PLA with B4

Part.-No. 155116

Material/Finish
stainless steel

Feature/Equipment
without clamping ring B4

Accessories

B4 clamp ring PLA
(Ø 36 mm, G1/8)

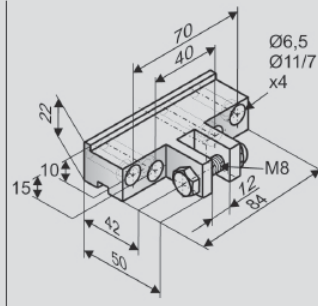
Part.-No. 515900

WICONA WICTEC 50 – NSK					
F30		Application Surface mounting on the side closing edge of the outward opening casement profiles of roof windows Wicona Wictec 50 , for drives with front suspension with bore Ø8 mm	Part-No. 155160 Material/Finish aluminium, stainless steel Feature/Equipment 1x bolt Ø8 mm, screw M4, washer A4,3		
K122-1		Application Surface mounting on the side closing edge of window frame profiles of outward opening roof windows Schüco AWS 57RO , Wicona Wictec 50 for swivelling suspension of drives PLA with B4	Part-No. 155116 Material/Finish stainless steel Feature/Equipment without clamping ring B4		
			Accessories		
			B4 clamp ring PLA (Ø36 mm, G1/8)	Part-No. 515900	
RAICO WING 105D – NSK					
F11ST		Application Surface mounting on the side closing edge of casement/window frame profiles of in-/outward opening windows or on skylights, for drives with front or rear suspension with bore Ø8 mm, mounting holes aligned with central axis of drive	Part-No. 151400 Material/Finish steel galvanized Feature/Equipment 1x bolt Ø8 mm, washer, cotter pin Load max. 3000 N		
F11VA			Part-No. 151401 Material/Finish stainless steel		
K127		Application Surface mounting on the side closing edge of window frame profiles of outward opening roof windows Raico Wing 105D for swivelling suspension of drives PLA with B4	Part-No. 155119 Material/Finish stainless steel Feature/Equipment without clamping ring B4		
			Accessories		
			B4 clamp ring PLA (Ø36 mm, G1/8)	Part-No. 515900	

SPECIFIC APPLICATIONS

HEROAL 085D – HSK

F29-1



Application

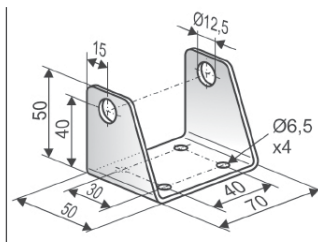
Surface mounting on the **main closing edge** of casement profiles of roof windows **Heroal 085D** for drives with **front suspension** with bore **Ø8 mm**

Part.-No. 155158

Material/Finish
aluminium
(natural anodized),
stainless steel

Feature/Equipment
1x screw M8x35,
nut M8

K5



Application

Surface mounting on the **main closing edge** of window frame profiles or on the mullion/transom of outward opening (roof-)windows, for **swivelling suspension** of drives

PLA with **B4**,
SP with **B13**,
LKS with **B7**

Part.-No. 155800

Material/Finish
steel galvanized

Feature/Equipment
drilled holes Ø12,5 mm

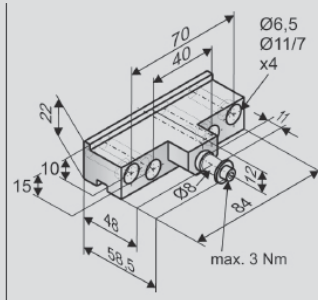
Accessories

B4 clamp ring PLA
(Ø36 mm, G1/8)

Part.-No. 515900

HEROAL 085D – NSK

F29



Application

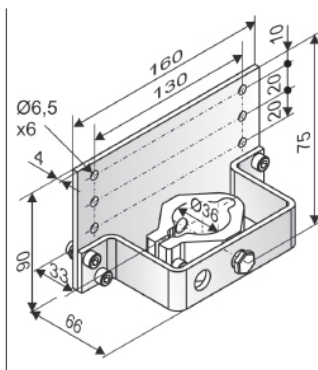
Surface mounting on the **side closing edge** of casement profiles of roof windows **Heroal 085D** for drives with **front suspension** with bore **Ø8 mm**

Part.-No. 155156

Material/Finish
aluminium
(natural anodized),
stainless steel

Feature/Equipment
1x bolt Ø8 mm,
screw M4,
washer A4,3

K122



Application

Surface mounting on the **side closing edge** of window frame profiles of outward opening roof windows **Schüco RS 106D**, **Heroal 085D** for **swivelling suspension** of drives

PLA with **B4**

Part.-No. 155115

Material/Finish
stainless steel

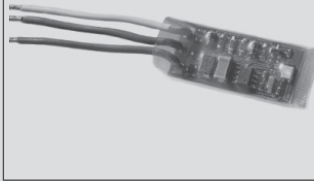
Feature/Equipment
without clamping ring B4
(#515900)

Accessories

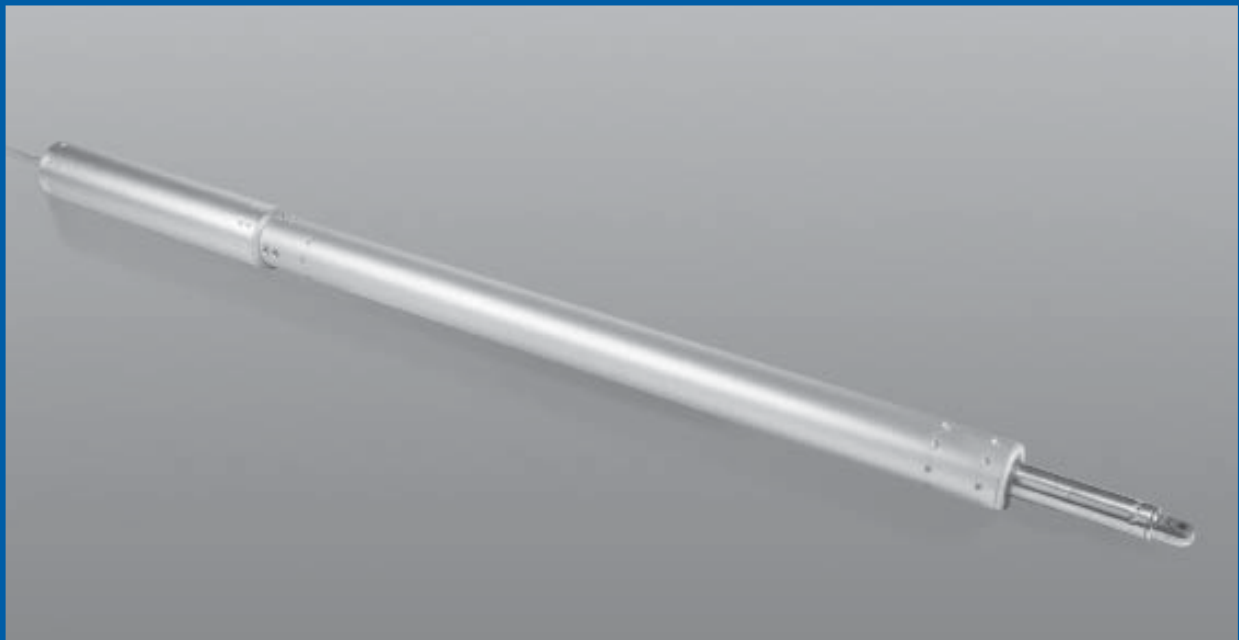
B4 clamp ring PLA
(Ø36 mm, G1/8)

Part.-No. 515900

OPTIONAL ACCESSORIES

Main control unit			
M-COM		Application	Part.-No. 524177
		Communication module for automatic configuration and surveillance of max. 6 opening or locking drives version S12/S3 (software version SW-V2) in synchronised multi-drive systems Rated voltage: 24 V DC +/- 20%, (max. 2 Vss) Current consumption: <12 mA Drive type: S12	Protection rating IP30 rubber envelope Ambient temperature range 0 °C ... + 70 °C Dimensions 45 x 17 x 6 mm Connecting wires 3 wires 0,5 mm ² x 50 mm Feature/Equipment Printed circuit board with components and connection wires to be installed in connection box to be supplied on site.

Special model	PU/pcs.	Part.-No.			
Casement brackets painted / powder coated in other RAL colours					
Specify at order stage:	1 – 4	516026			
	5 – 9	516026			
	10 – 49	516026			
	50 – 99	516026			
	up 100	516026			
Casement brackets painted / powder coated in other RAL colours					
Specify at order stage:	1 – 4	516025			
	5 – 9	516025			
	10 – 49	516025			
	50 – 99	516025			
	up 100	516025			

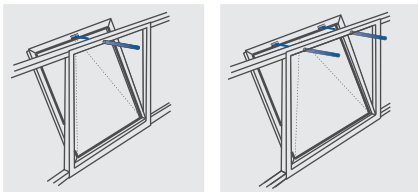


SPECIAL FEATURES PLS

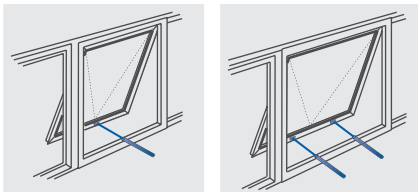
- For natural ventilation, smoke and heat exhausting and ferralux® NSHEV (EN12101-2)
- Powerful heavy duty drives for loads up to 5000 N
- Robust corrosion-resistant design in aluminium housing (D = 50 mm)
- Easy installation due to adjustable clamp ring (Rear suspension on request)
- Stainless steel spindle, ball beared with end position dampening and gentle soft-start and soft-stop mode
- Programmable parameters of intelligent S12 electronic cut-off switch
 - Synchronised multi-operation and sequence control without add. devices
 - Electronic soft-start, soft-close and soft-stop at end of stroke control
 - Stroke, force, speed
 - Rebate control

FACADE

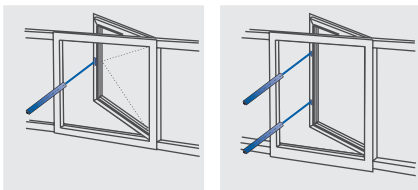
Bottom-hung



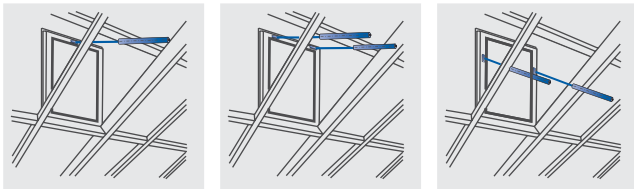
Top-hung



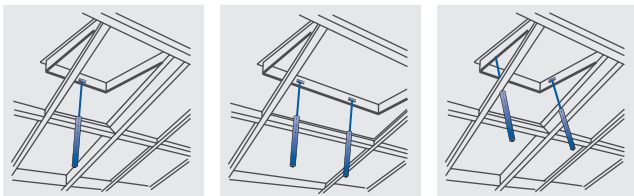
Side-hung

**ROOF**

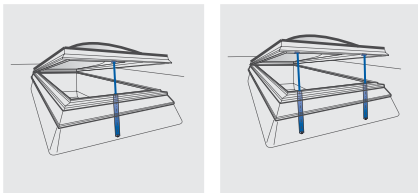
Bottom-hung



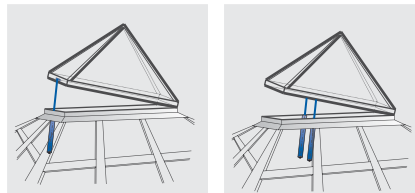
Top-hung

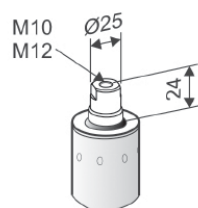


Skylight

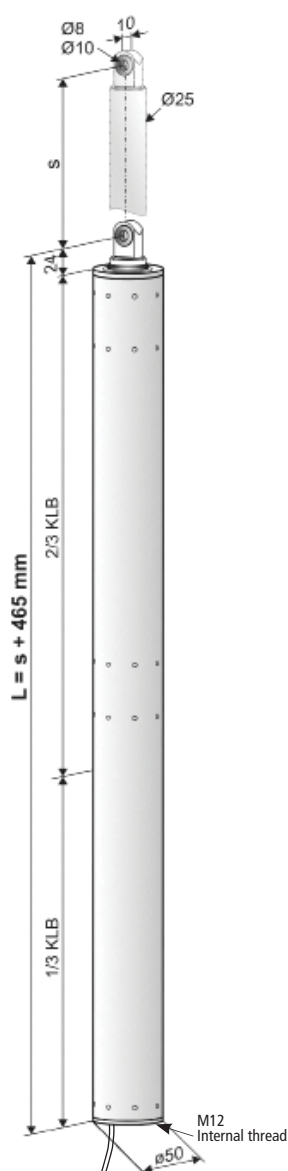


Glass pyramid

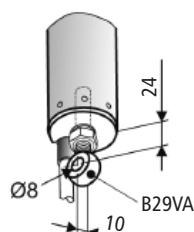




OPTION



OPTION



- Application: natural ventilation, SHEV, ferralux®-NSHEV

Options

- Spindle tube end with interior thread for clevis
- Eyebolt and clevis for rear suspension

S12

- Internal intelligent cut-off switch S12

Options

- Programmable synchronised run (max. 4 drives) and special functions
- M-COM for automatic synchronised run of multi drive systems and automatic sequence control with FV locking drives (S3/S12 SW V2)

TECHNICAL DATA

U_N Rated voltage 24V DC ($\pm 20\%$), max. 2 Vpp

I_N Rated current 3,0 A

I_A Cut-off current 4,0 A

P_N Rated power 72 W

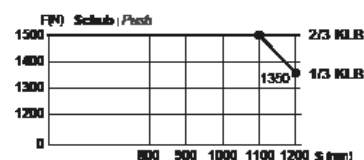
ED Duty cycle 30 % (ON: 3 min. / OFF: 7 min.)

Protection rating IP 54

Ambient temperature range -5 °C ... +75 °C

F_Z Pulling force max. 1500 N

F_A Pushing force



F_H Pullout force 25000 N (fastening depended)

Spindle tube stainless steel

Connecting cable non-halogen, grey 3 x 1,0 mm², ~ 3 m

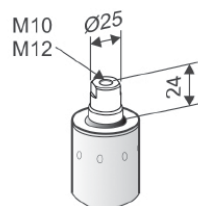
v Speed $\nabla = 16,0$ mm/s $\rightarrow = 16,0$ mm/s

s Stroke 300 – 1000 mm ($\pm 5\%$)

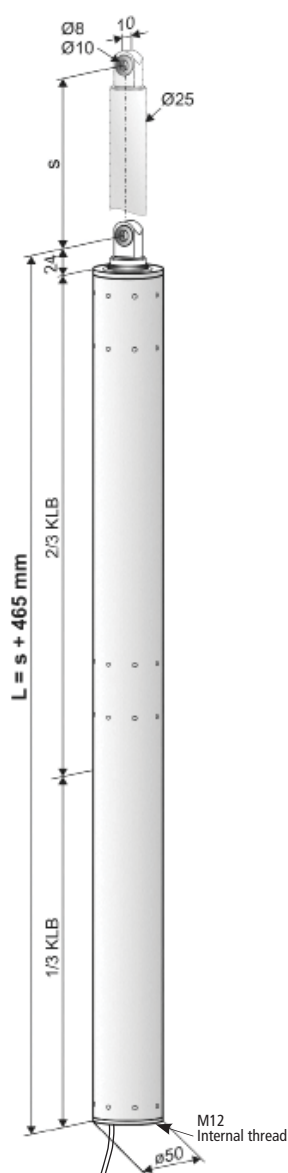
L Length $s + 465$ mm
see order data

ORDER DATA						
s [mm]	L [mm]	Version	Finish	PU/pcs.	Part.-No.	
300	765	PLS15 300 S12	E6/C-0	1	576830	
400	865	PLS15 400 S12	E6/C-0	1	576840	
500	965	PLS15 500 S12	E6/C-0	1	576850	
600	1065	PLS15 600 S12	E6/C-0	1	576860	
750	1215	PLS15 750 S12	E6/C-0	1	576875	
1000	1465	PLS15 1000 S12	E6/C-0	1	576800	
1200	1665	PLS15 1200 S12	E6/C-0	1	576812	

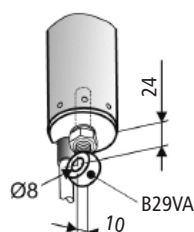
OPTIONS					
Special model	PU/pcs.	Part.-No.			
Front / Rear Fixing					
Spindle tube end with interior thread M10	1	515062			
Spindle tube end with interior thread M12	1	515063			
Drive housing painted/powder coated in other RAL colours					
Specify at order stage:	1 – 4	516004			
	5 – 9	516004			
	10 – 49	516004			
	50 – 99	516004			
	up 100	516004			
Extra length connecting cable:					
5 m – non-halogen, grey – 3 x 1,0 mm²		501037			
10 m – non-halogen, grey – 3 x 1,0 mm²		501039			
Accessories for front / rear suspension					
B29VA Eyebolt M12x40mm, Ø8 mm, stainless steel	1	105430			
B28ST Clevis M10x20 mm, galvanized, thread M10x50 mm	1	105520			
Microprocessor programming S12					
Electronic stroke reduction without lengths reduction for S12	1	524190			
Electronic stroke reduction with lengths reduction for S12	1	515990			
Special functions	1	524180			
Optional accessories	PU/pcs.	Part.-No.			
M-COM Comm. module for synchronised multi-drive systems	1	524177			



OPTION



OPTION



- Application: natural ventilation, SHEV, ferralux®-NSHEV

Options

- Spindle tube end with interior thread for clevis
- Eyebolt and clevis for rear suspension

S12

- Internal intelligent cut-off switch S12

Options

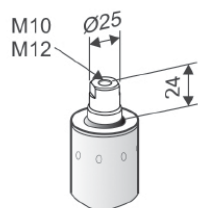
- Programmable synchronised run (max. 4 drives) and special functions
- M-COM for automatic synchronised run of multi drive systems and automatic sequence control with FV locking drives (S3/S12 SW V2)

TECHNICAL DATA

U_N	Rated voltage	24V DC ($\pm 20\%$), max. 2 Vpp
I_N	Rated current	3,8 A
I_A	Cut-off current	5,0 A
P_N	Rated power	91 W
ED	Duty cycle	30 % (ON: 3 min. / OFF: 7 min.)
	Protection rating	IP 54
	Ambient temperature range	-5 °C ... +75 °C
F_Z	Pulling force max.	3000 N
F_A	Pushing force	
F_H	Pullout force	25000 N (fastening depended)
	Spindle tube	stainless steel
	Connecting cable	non-halogen, grey 3 x 1,0 mm ² , ~ 3 m
v	Speed	$v_{\text{push}} = 7,8 \text{ mm/s}$ $v_{\text{pull}} = 7,8 \text{ mm/s}$
s	Stroke	300 – 1000 mm ($\pm 5\%$)
L	Length	s + 465 mm see order data

ORDER DATA						
s [mm]	L [mm]	Version	Finish	PU/pcs.	Part.-No.	
300	765	PLS30 300 S12	E6/C-0	1	577530	
400	865	PLS30 400 S12	E6/C-0	1	577540	
500	965	PLS30 500 S12	E6/C-0	1	577550	
600	1065	PLS30 600 S12	E6/C-0	1	577560	
750	1215	PLS30 750 S12	E6/C-0	1	577575	
1000	1465	PLS30 1000 S12	E6/C-0	1	577500	
1200	1665	PLS30 1200 S12	E6/C-0	1	577512	

OPTIONS					
Special model	PU/pcs.	Part.-No.			
Front / Rear Fixing					
Spindle tube end with interior thread M10	1	515062			
Spindle tube end with interior thread M12	1	515063			
Drive housing painted/powder coated in other RAL colours					
Specify at order stage:	1 – 4	516004			
	5 – 9	516004			
	10 – 49	516004			
	50 – 99	516004			
	up 100	516004			
Extra length connecting cable:					
5 m – non-halogen, grey – 3 x 1,0 mm²		501037			
10 m – non-halogen, grey – 3 x 1,0 mm²		501039			
Accessories for front / rear suspension					
B29VA Eyebolt M12x40mm, Ø8 mm, stainless steel	1	105430			
B28ST Clevis M10x20 mm, galvanized, thread M10x50 mm	1	105520			
Microprocessor programming S12					
Electronic stroke reduction without lengths reduction for S12	1	524190			
Electronic stroke reduction with lengths reduction for S12	1	515990			
Special functions	1	524180			
Optional accessories	PU/pcs.	Part.-No.			
M-COM Comm. module for synchronised multi-drive systems	1	524177			



OPTION

- Application: natural ventilation, SHEV

Options

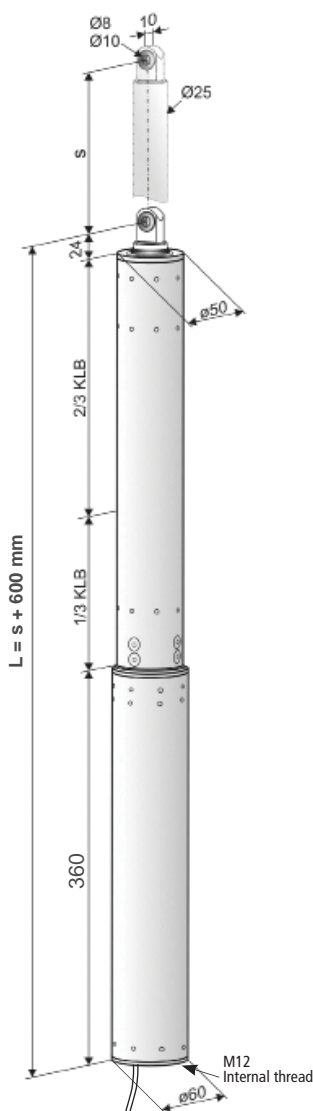
- Spindle tube end with interior thread for clevis
- Eyebolt and clevis for rear suspension

S12

- Internal intelligent cut-off switch S12

Options

- Programmable synchronised run (max. 4 drives) and special functions
- M-COM for automatic synchronised run of multi drive systems and automatic sequence control with FV locking drives (S3/S12 SW V2)



TECHNICAL DATA

U_N Rated voltage 24V DC ($\pm 20\%$), max. 2 Vpp

I_N Rated current 3,0 A

I_A Cut-off current 4,2 A

P_N Rated power 72 W

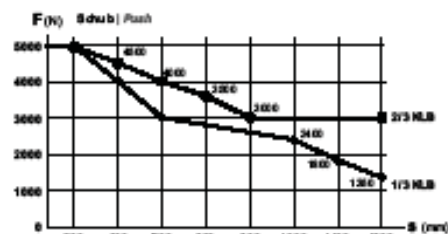
ED Duty cycle 30 % (ON: 3 min. / OFF: 7 min.)

Protection rating IP 54

Ambient temperature range $-5\text{ }^{\circ}\text{C} \dots +75\text{ }^{\circ}\text{C}$

F_Z Pulling force max. 5000 N

F_A Pushing force



F_H Pullout force 25000 N (fastening depended)

Spindle tube stainless steel

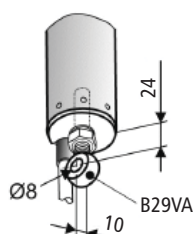
Connecting cable non-halogen, grey 3 x 1,0 mm², ~ 3 m

v Speed $\times = 4,0\text{ mm/s}$ $\rightarrow = 4,0\text{ mm/s}$

s Stroke 200 – 750 mm ($\pm 5\%$)

L Length $s + 600\text{ mm}$
see order data

OPTION



ORDER DATA						
s [mm]	L [mm]	Version	Finish	PU/pcs.	Part.-No.	
200	800	PLS50 200 S12	E6/C-0	1	577620	
300	900	PLS50 300 S12	E6/C-0	1	577630	
400	1000	PLS50 400 S12	E6/C-0	1	577640	
500	1100	PLS50 500 S12	E6/C-0	1	577650	
600	1200	PLS50 600 S12	E6/C-0	1	577660	
750	1350	PLS50 750 S12	E6/C-0	1	577675	

OPTIONS						
Special model				PU/pcs.	Part.-No.	
Front / Rear Fixing						
Spindle tube end with interior thread M10				1	515062	
Spindle tube end with interior thread M12				1	515063	
Drive housing painted/powder coated in other RAL colours						
Specify at order stage:		1 – 4	516004			
		5 – 9	516004			
		10 – 49	516004			
		50 – 99	516004			
		up 100	516004			
Extra length connecting cable:						
5 m – non-halogen, grey – 3 x 1,0 mm ²					501037	
10 m – non-halogen, grey – 3 x 1,0 mm ²					501039	
Accessories for front / rear suspension						
B29VA Eyebolt M12x40mm, Ø8 mm, stainless steel				1	105430	
B28ST Clevis M10x20 mm, galvanized, thread M10x50 mm				1	105520	
Microprocessor programming S12						
Electronic stroke reduction without lengths reduction for S12				1	524190	
Electronic stroke reduction with lengths reduction for S12				1	515990	
Special functions				1	524180	
Optional accessories				PU/pcs.	Part.-No.	
M-COM Comm. module for synchronised multi-drive systems				1	524177	

OVERVIEW OF BRACKETS

Typical applications				1	2	3	4	5	6	7
Frame bracket				K70	K82-1	K82-1	K121	K127-1	K-121-1	K12-1
Mounting aid										
Bracket accessories				clamping ring B6 (50 mm-G1/8)						
Casement bracket				F10.8S, F10.10		F28-1	F28	F11	F36	F30
Special application				Wictec 50, Wing 105 D	AWS 57RO, Wing 105D	Heroal 085D	Heroal 085D	Raico Wing 105 D	Schüco AWS 57RO	Wicona Wictec 50
Space requirement	min.	[mm]		120	50	50	35	35	50	50
Window material		Alu		●	●	●	●	●	●	●
		Wood		●	●					
		PVC		●	●					
Type of window and mounting	Bottom hung	inward	HSK	FM						
				RM						
			NSK	FM						
				RM						
		outward	HSK	RM		●				
				PR						
			NSK	RM						
				PR						
	Top hung	inward	HSK	FM						
				RM						
			NSK	FM						
				RM						
		outward	HSK	RM		●				
				PR						
			NSK	RM						
				PR						
	Side hung	inward	HSK	FM						
				RM						
			NSK	FM						
				RM						
	Roof	outward	HSK	RM	●	●	●			
				PR						
			NSK	RM			●	●	●	●
				PR						
	Sky-light	outward	HSK	RM	●	●				
			NSK	RM						
FAB(*1		Solo	[mm]	450 – 1300						
		Sync2	[mm]	1200 – 2500						
FAH(*1		Solo	[mm]	450 – 1500						
		Sync2	[mm]	450 – 2500						

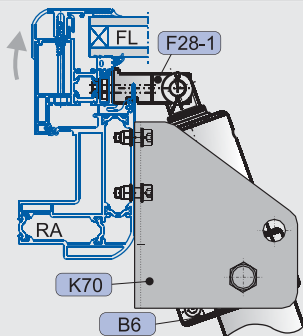
LEGEND

● suitable ■ not recommended

(*1) Sample value of the casement dimensions. The actual casement dimensions depend on the stroke and the position of the drives to the hinges. The values of FAB/FAH are to be used analogue for side hung windows.

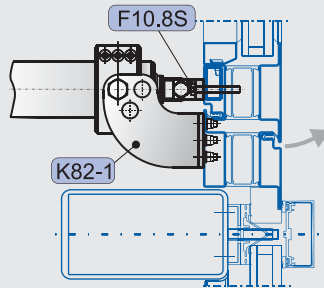
TYPICAL APPLICATIONS

1 RM, HSK, Roof



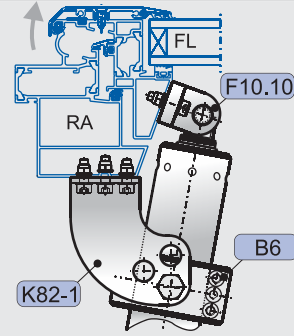
View on aluminium window

1 RM, HSK, Top-hung outward opening



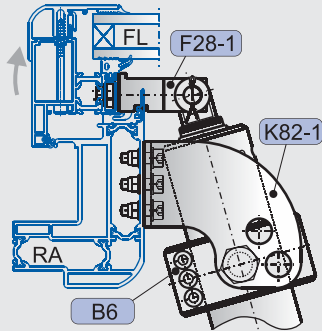
View on steel window

2 RM, HSK, Roof



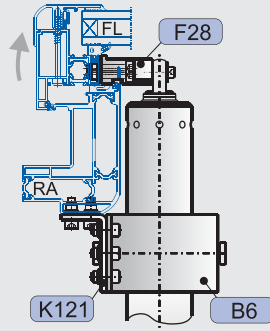
View on aluminium window

3 RM, HSK, Roof



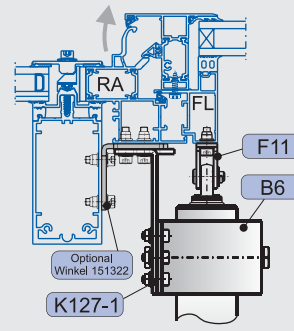
View on aluminium window

4 RM, NSK, Roof



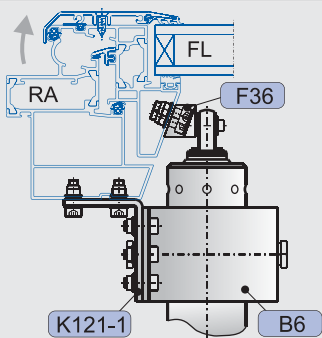
View on aluminium window

5 RM, NSK, Roof



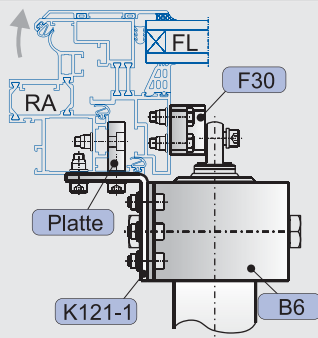
View on aluminium window

6 RM, NSK, Roof



View on aluminium window

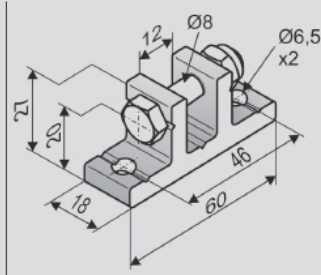
7 RM, NSK, Roof



View on aluminium window

CASEMENT BRACKETS

F10.8S



Application

Surface mounting on the main closing edge of casement profiles of outward opening windows, for drives with front or rear suspension with bore Ø8 mm

Part.-No. 151105

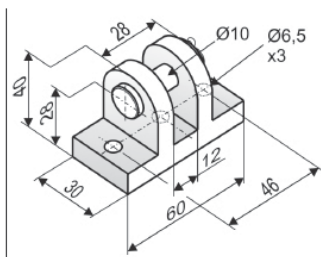
Material/Finish
aluminium

Feature/Equipment

1x nut M8,
1x screw M8x35

Load
max. 5000 N

F10.10



Application

Surface mounting on the main closing edge of the casement profiles of outward opening windows, for drives with front or rear suspension with bore Ø10 mm

Part.-No. 151201

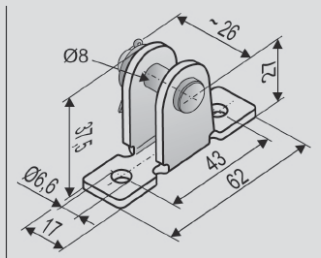
Material/Finish
aluminium, stainless steel

Feature/Equipment

1x bolt Ø8 mm,
washer,
split pin

Load
max. 5000 N

F11ST



Application

Surface mounting on the side closing edge of casement/window frame profiles of in-/outward opening windows or on skylights, for drives with front or rear suspension with bore Ø8 mm, mounting holes aligned with central axis of drive

Part.-No. 151400

Material/Finish
steel galvanized

Feature/Equipment

1x bolt Ø8 mm,
washer,
cotter pin

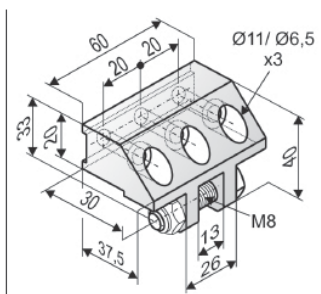
Load
max. 3000 N

F11VA

Part.-No. 151401

Material/Finish
stainless steel

F40



Application

Surface mounting on the main closing edge of the casement profiles of outward opening roof windows, for drives with front or rear suspension with bore Ø8 mm

Part.-No. 155172

Material/Finish
aluminium

Feature/Equipment

1x screw M8x35,
nut M8

Optional accessories

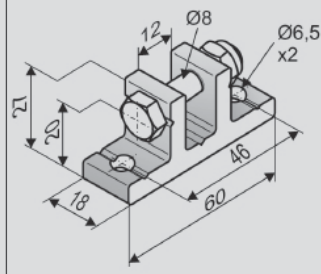
B2 Base plate F39/F49

Part.-No. 155173

SPECIFIC APPLICATIONS

SCHÜCO AWS 57RO, WICONA WICTEC 50, RAICO WING 105D – HSK

F10.8S



Application

Surface mounting on the **main closing edge** of casement profiles of outward opening windows, for drives with **front or rear suspension** with bore **Ø8 mm**

Part.-No. 151105

Material/Finish
aluminium

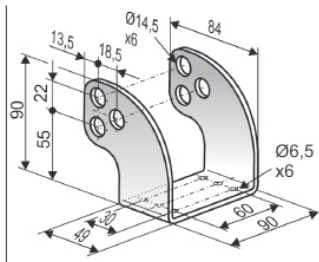
Feature/Equipment

1x nut M8,
1x screw M8x35

Load

max. 5000 N

K82-1



Application

Surface mounting on the **main closing edge** of window frame profiles or on the mullion/transom of outward opening (roof-)windows, for **swivelling suspension** of drives **PLS with B6**

Part.-No. 151321

Material/Finish
stainless steel

Feature/Equipment
drilled holes Ø14,5 mm

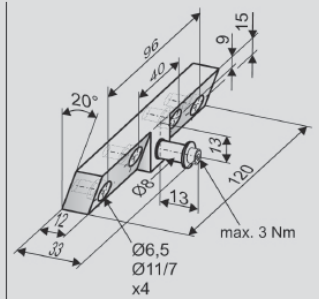
Accessories

B6 Clamp ring PLS
(Ø50 mm, G1/8)

Part.-No. 576001

SCHÜCO AWS 57RO – NSK

F36



Application

Surface mounting on the **side closing edge** of outward opening casement profiles of roof windows **Schüco AWS 57RO**, for drives with **front suspension** with bore **Ø8 mm**

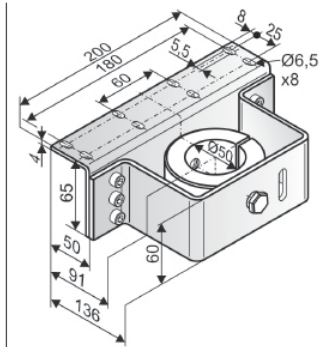
Part.-No. 155170

Material/Finish
aluminium
(natural anodized),
stainless steel

Feature/Equipment

1x bolt Ø8 mm,
screw M4,
washer A4,3

K121-1



Application

Surface mounting on the **side closing edge** of window frame profiles of outward opening roof windows **Schüco AWS 57RO**, **Wicona Wictec 50**, **Metra** for **swivelling suspension** of drives **PLS with B6**

Part.-No. 155117

Material/Finish
stainless steel

Feature/Equipment
without clamp ring B6

Accessories

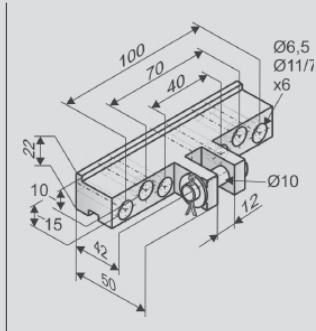
B6 Clamp ring PLS
(Ø50 mm, G1/8)

Part.-No. 576001

SPECIFIC APPLICATIONS

HEROAL 085 / 180 – HSK

F28-1



Application

Surface mounting on the **main closing edge** of outward opening casement profiles of roof windows **Heroal 085D**, for drives with **front suspension** with bore **Ø10 mm**

Part.-No. 155154

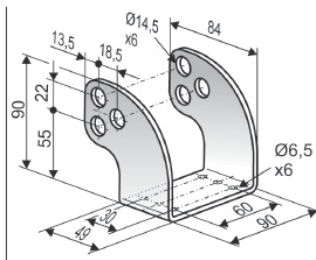
Material/Finish

aluminium
(natural anodized),
stainless steel

Feature/Equipment

1x bolt Ø10 mm,
screw M5,
washer A5,3

K82-1



Application

Surface mounting on the **main closing edge** of window frame profiles or on the mullion/transom of outward opening (roof-)windows, for **swivelling suspension** of drives **PLS** with **B6**

Part.-No. 151321

Material/Finish

stainless steel

Feature/Equipment

drilled holes Ø14,5 mm

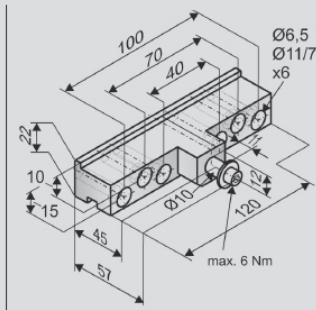
Accessories

B6 Clamp ring PLS
(Ø50 mm, G1/8)

Part.-No. 576001

HEROAL 085 / 180 – NSK

F28



Application

Surface mounting on the **side closing edge** of outward opening casement profiles of roof windows **Heroal 085D**, for drives with **front suspension** with bore **Ø10 mm**

Part.-No. 155155

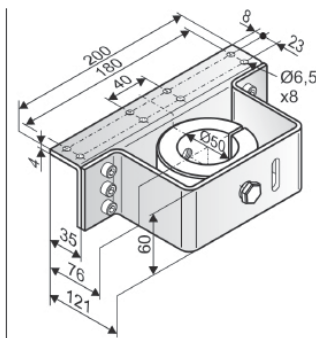
Material/Finish

aluminium
(natural anodized),
stainless steel

Feature/Equipment

1x bolt Ø10 mm,
screw M5,
washer A5,3

K121



Application

Surface mounting on the **side closing edge** of window frame profiles of outward opening roof windows **Schüco RS 106D**, **Heroal 085D** for **swivelling suspension** of drives **PLS** with **B6**

Part.-No. 155110

Material/Finish

stainless steel

Feature/Equipment

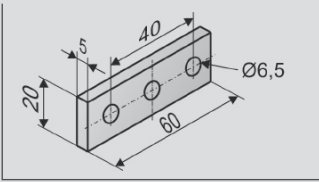
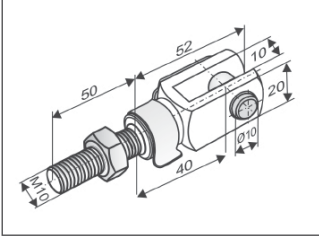
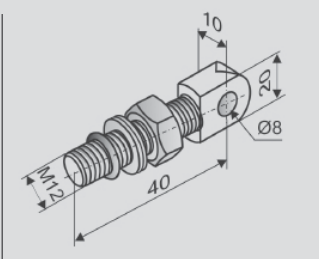
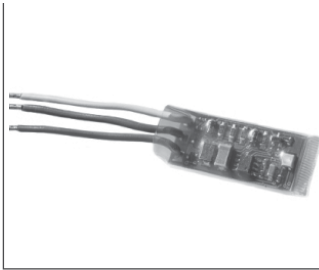
without clamping ring B6

Accessories

B6 Clamp ring PLS
(Ø50 mm, G1/8)

Part.-No. 576001

OPTIONAL ACCESSORIES

Base Plate			
B2		Application Support for F39 and F40 as packing plate for mounting on the casement profiles of outward opening roof windows	Part.-No. 155173 Material/Finish aluminium (natural anodized) Feature/Equipment 60 x 20 x 5 mm
Clevis			
B28ST		Application Clevis for rear or front suspension of spindle drives with M10 thread in the rear base cap or in the spindle tube	Part.-No. 105520 Material/Finish steel galvanized Feature/Equipment Clevis M10 x 50 mm with spring bolt Ø8 mm and thread M10x 50 mm 1x nut M10 + Nordlock-safety-washer + O-ring, max. screw-in depth in the drive 25 mm
Eyebolt			
B29VA		Application Eyebolt for rear or front suspension of spindle drives with M12 thread in the rear base cap or in the spindle tube	Part.-No. 105430 Material/Finish stainless steel Feature/Equipment M12x 40 (eye Ø8,2 mm), 1x nut M12 + Nordlock-safety-washer + o-ring, minimum depth drive 25 mm
Main control unit			
M-COM		Application Communication module for automatic configuration and surveillance of max. 6 opening or locking drives version S12/S3 (software version SW-V2) in synchronised multi-drive systems Rated voltage: 24 V DC +/- 20%, (max. 2 Vss) Current consumption: <12 mA Drive type: S12	Part.-No. 524177 Protection rating IP30 rubber envelope Ambient temperature range 0 °C ... + 70 °C Dimensions 45 x 17 x 6 mm Connecting wires 3 wires 0,5 mm² x 50 mm Feature/Equipment Printed circuit board with components and connection wires to be installed in connection box to be supplied on site
Special model			
Casement brackets painted / powder coated in other RAL colours		PU/pcs.	Part.-No.
Specify at order stage:	1 – 4		516026
	5 – 9		516026
	10 – 49		516026
	50 – 99		516026
	up 100		516026
Frame brackets painted / powder coated in other RAL colours			
Specify at order stage:	1 – 4		516025
	5 – 9		516025
	10 – 49		516025
	50 – 99		516025
	up 100		516025