



X2 TECHNOLOGY

A Phoenix Mecano Brand

Lifting column

B-series

B13

B23

Max 12.000 N



Made in Sweden

Description

The rectangular shapes of the B13 and B23-columns are designed to manage high centric and offset loads. With our patented drive, the columns perform very well with high loads, high speeds, and long strokes. The columns are equipped with long-life pads to give them a long lifetime without any required maintenance.



 Long lifetime

 High speed

 Great force

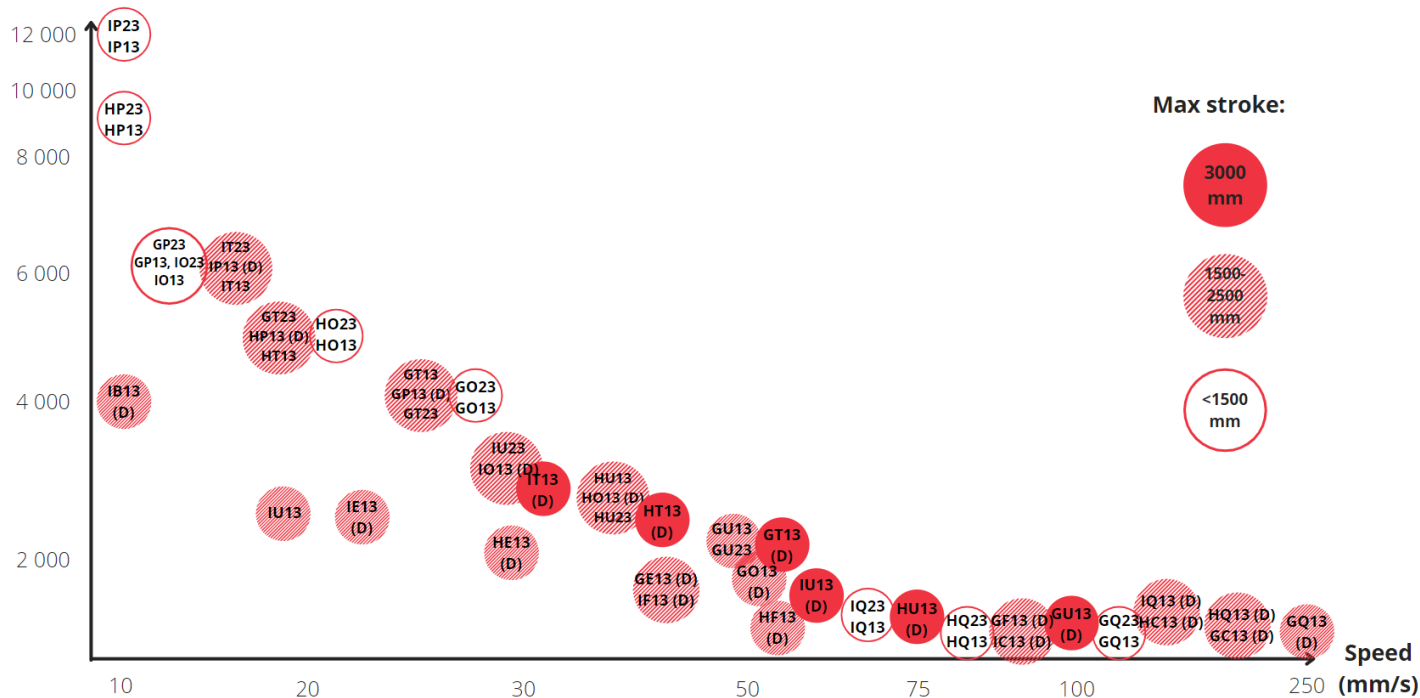
Features

Push
Encoder
Cable out small/large tube
Limit switch

Options

Pull
Customized bottom/top plates

Force (N)



- The columns are divided in two categories (3-sectioned B13 and 2-sectioned B23) with two subcategories, S and D.
- (D) on the diagram means DB13, the others are SB13 or SB23.

SB13 - 3 sections

	SB-GQ13	SB-HQ13	SB-IQ13	SB-GU13	SB-HU13	SB-IU13	SB-GT13
Force, max push*	400 N	800 N	1.200 N	2.000 N	2.800 N	3.500 N	4.000 N
Self-locking force**	400 N	800 N	1.200 N	2.000 N	2.800 N	3.500 N	4.000 N
Speed @max load	125 mm/s	85 mm/s	65 mm/s	50 mm/s	35 mm/s	18 mm/s	26 mm/s
Stroke, S (longer strokes on request)	1.250 mm			1.500 mm			
Retracted length, R***	R = S + 60 mm						
Duty cycle [%]	20% (2 min ON / 8 min OFF)						
Voltage				24 VDC			
Ambient temp	+10°C to +40°C						
Current @max load				8 A			
IP Class				IP 30			
Safety factor Static centric load @ max stroke & load*	15	8	5,5	6	4,5	3,5	3

	SB-GO13	SB-HT13	SB-HO13	SB-IT13	SB-IO13	SB-GP13	SB-HP13	SB-IP13
Force, max push*	4.000 N	5.000 N		6.000 N			9.000 N	12.000 N
Self-locking force**	4.000 N	5.000 N		6.000 N			9.000 N	12.000 N
Speed @max load	26 mm/s	18 mm/s		14 mm/s		13 mm/s	9 mm/s	7 mm/s
Stroke, S (longer strokes on request)	1.250 mm	1.500 mm	1.250 mm	1.500 mm	900 mm	1.000 mm	800 mm	600 mm
Retracted length, R***	R = S + 60 mm							
Duty cycle [%]	20% (2 min ON / 8 min OFF)							
Voltage	24 VDC							
Ambient temp	+10°C to +40°C							
Current @max load	8 A							
IP Class	IP 30							
Safety factor Static centric load @ max stroke & load*	1,8	2,5	1,5	2	1,8	2	1,8	1,8

DB13 - 3 sections

	DB-GQ13	DB-GC13	DB-HQ13	DB-HC13	DB-IQ13	DB-IC13
Force, max push*	200 N	300 N	400 N		600 N	
Self-locking force**	1.000 N	600 N	1.000 N	600 N	1.000 N	600 N
Speed @max load	250 mm/s	160 mm/s	115 mm/s	170 mm/s	90 mm/s	130 mm/s
Stroke, S (longer strokes on request)	2.500 mm	1.500 mm		2.500 mm	1.500 mm	2.500 mm
Retracted length, R***	R = S/2 + 250 mm	R = S/2 + 200 mm	R = S/2 + 250 mm	R = S/2 + 200 mm	R = S/2 + 250 mm	R = S/2 + 200 mm
Duty cycle [%]	20% (2 min ON / 8 min OFF)					
Voltage	24 VDC					
Ambient temp	+10°C to +40°C					
Current @max load	8 A					
IP Class	IP 30					
Safety factor Static centric load @ max stroke & load*	15	8		6	5,5	4,5

* See diagrams on page 8-11

** Only applied when connected by short circuit

*** Longer retracted length enables more offset load, see diagrams on page 8-11

	DB-GF13	DB-HF13	DB-GU13	DB-IF13	DB-HU13	DB-GE13
Force, max push*	750 N	1.000 N		1.400 N		1.500 N
Self-locking force**	1.500 N		1.000 N	2.000 N	1.400 N	1.500 N
Speed @max load	80 mm/s	55 mm/s	100 mm/s	40 mm/s	70 mm/s	40 mm/s
Stroke, S (longer strokes on request)	1.500 mm		3.000 mm	1.500 mm	3.000 mm	1.500 mm
Retracted length, R***	R = S/2 + 200 mm	R = S/2 + 200 mm	R = S/2 + 250 mm	R = S/2 + 200 mm	R = S/2 + 250 mm	R = S/2 + 200 mm
Duty cycle [%]	20% (2 min ON / 8 min OFF)					
Voltage	24 VDC					
Ambient temp	+10°C to +40°C					
Current @max load	8 A					
IP Class	IP 30					
Safety factor Static centric load @ max stroke & load*	8	6		4,5		5,5

	DB-IU13	DB-HE13	DB-GT13	DB-GO13	DB-IE13	DB-HT13
Force, max push*	1.750 N	2.000 N			2.500 N	
Self-locking force**	1.750 N	2.000 N			2.500 N	
Speed @max load	55 mm/s	29 mm/s	52 mm/s		23 mm/s	36 mm/s
Stroke, S (longer strokes on request)	3.000 mm	1.500 mm	3.000 mm	2.500 mm	1.500 mm	3.000 mm
Retracted length, R***	R = S/2 + 250 mm	R = S/2 + 200 mm	R = S/2 + 250 mm	R = S/2 + 200 mm		R = S/2 + 250 mm
Duty cycle [%]	20% (2 min ON / 8 min OFF)					
Voltage	24 VDC					
Ambient temp	+10°C to +40°C					
Current @max load	8 A					
IP Class	IP 30					
Safety factor Static centric load @ max stroke & load*	3,5	4	3	3	3,4	2,5

	DB-HO13	DB-IT13	DB-IO13	DB-IB13	DB-GP13	DB-HP13	DB-IP13
Force, max push*	2.500 N	3.000 N	3.000 N	4.000 N		5.000 N	6.000 N
Self-locking force**	2.500 N	2.500 N	3.000 N	3.000 N	4.000 N	5.000 N	6.000 N
Speed @max load	36 mm/s	28 mm/s		10 mm/s	26 mm/s	18 mm/s	14 mm/s
Stroke, S (longer strokes on request)	2.500 mm	3.000 mm	2.500 mm	1.500 mm	2.500 mm	2.100 mm	1.900 mm
Retracted length, R***	R=S/2+200 mm	R=S/2+250 mm	R=S/2+200mm				
Duty cycle [%]	20% (2 min ON / 8 min OFF)						
Voltage	24 VDC						
Ambient temp	+10°C to +40°C						
Current @max load	8 A						
IP Class	IP 30						
Safety factor Static centric load @ max stroke & load*	2,5	2	2,2	4,5	1,8	1,8	1,8

* See diagrams on page 8-11

** Only applied when connected by short circuit

*** Longer retracted length enables more offset load, see diagrams on page 8-11

SB23 - 2 sections

	SB-GQ23	SB-HQ23	SB-IQ23	SB-GU23	SB-HU23
Force, max push*	400 N	800 N	1.200 N	2.000 N	2.800 N
Self-locking force**	400 N	800 N	1.200 N	2.000 N	2.800 N
Speed @max load	125 mm/s	85 mm/s	65 mm/s	50 mm/s	35 mm/s
Stroke, S (longer strokes on request)	1.250 mm			1.500 mm	
Retracted length, R***	R = S + 60			R = S + 120	
Duty cycle [%]	20% (2 min ON / 8 min OFF)				
Voltage	24 VDC				
Ambient temp	+10°C to +40°C				
Current @max load	8 A				
IP Class	IP 30				
Safety factor Static centric load @ max stroke & load*	15	8	5,5	6	4,5

	SB-IU23	SB-GT23	SB-GO23	SB-HT23	SB-HO23
Force, max push*	3.500 N	4.000 N		5.000 N	
Self-locking force**	3.500 N	4.000 N		5.000 N	
Speed @max load	29 mm/s	26 mm/s		18 mm/s	
Stroke, S (longer strokes on request)	1.500 mm		1.250 mm	1.500 mm	1.250 mm
Retracted length, R***	R = S + 120				
Duty cycle [%]	20% (2 min ON / 8 min OFF)				
Voltage	24 VDC				
Ambient temp	+10°C to +40°C				
Current @max load	8 A				
IP Class	IP 30				
Safety factor Static centric load @ max stroke & load*	3,5	3	1,8	2,5	1,5

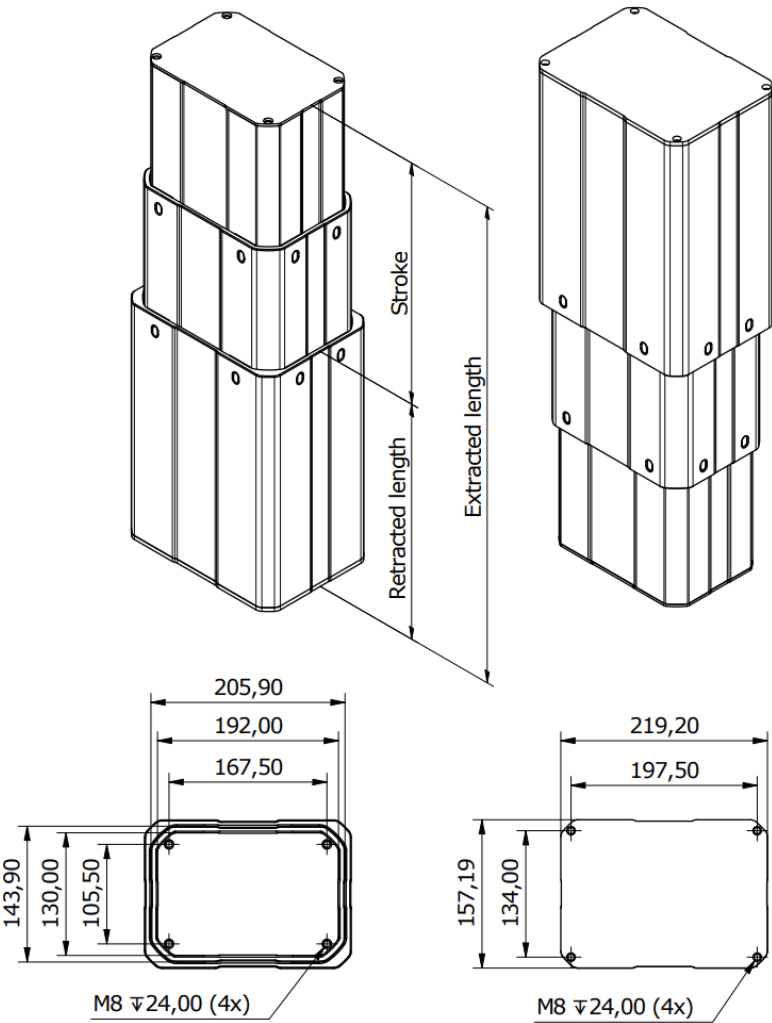
	SB-IT23	SB-IO23	SB-GP23	SB-HP23	SB-IP23
Force, max push*	6.000 N			9.000 N	12.000 N
Self-locking force**	6.000 N			9.000 N	12.000 N
Speed @max load	14 mm/s		13 mm/s	9 mm/s	7 mm/s
Stroke, S (longer strokes on request)	1.500 mm	900 mm	1.000 mm	800 mm	600 mm
Retracted length, R***	R = S + 120				
Duty cycle [%]	20% (2 min ON / 8 min OFF)				
Voltage	24 VDC				
Ambient temp	+10°C to +40°C				
Current @max load	8 A				
IP Class	IP 30				
Safety factor Static centric load @ max stroke & load*	2	1,8	2	1,8	1,8

* See diagrams on page 8-11

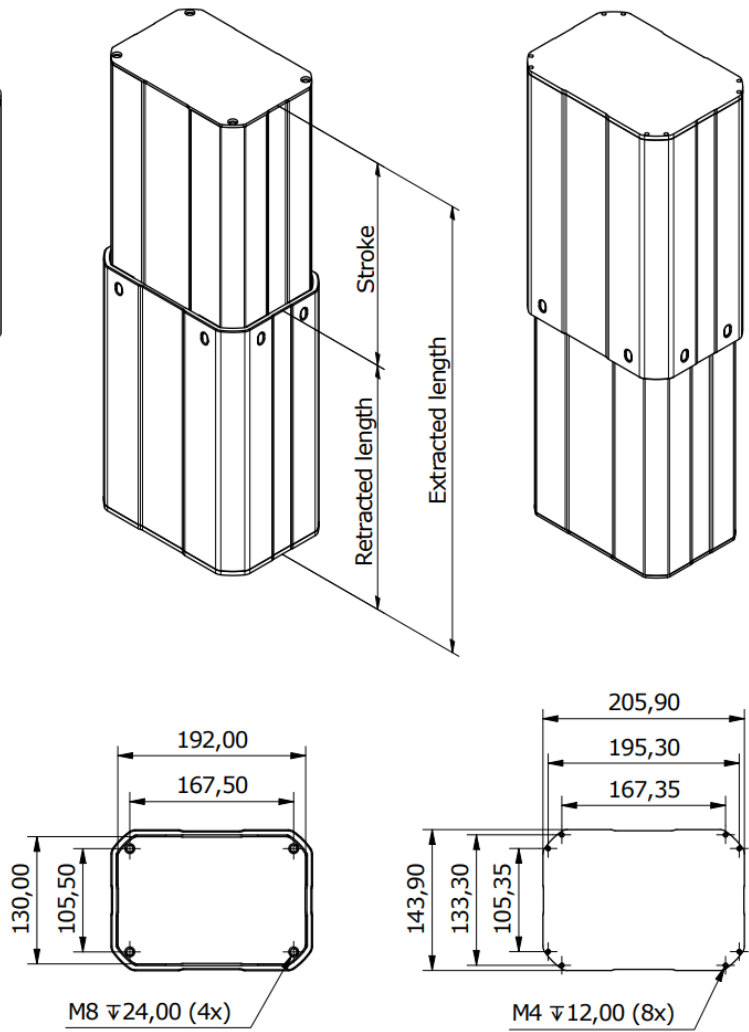
** Only applied when connected by short circuit

*** Longer retracted length enables more offset load, see diagrams on page 8-11

Technical drawing B13



Technical drawing B23



Pin layout



8 pin JS-1149-08 Male

Connectors

	Description
1.	Not in use
2.	Not in use
3.	Not in use
4.	Motor+
5.	Not in use
6.	Not in use
7.	Not in use
8.	Motor-

Encoder

SB13 3 sections

Pulse/mm, dual channel A+B	SB-GQ13	SB-HQ13	SB-IQ13	SB-GU13	SB-HU13	SB-IU13	SB-GO13
G01 [p/mm]	1,7	2,4	3,06	4,25	6	7,65	8,5
G02 [p/mm]	3,4	4,8	6,12	8,5	12	15,3	17
G04 [p/mm]	435,2	614,4	783,4	1088	1536	1958,4	2176
G05 [p/mm]	85	120	153	212,5	300	382,5	425

Pulse/mm, dual channel A+B	SB-GT13	SB-HO13	SB-HT13	SB-GP13	SB-IO13	SB-IT13	SB-HP13	SB-IP13
G01 [p/mm]	8,5	12	12	17	15,3	15,3	24	30,6
G02 [p/mm]	17	24	24	34	30,6	30,6	48	61,2
G04 [p/mm]	2176	3072	3072	4352	3916,8	3916,8	6144	7833,6
G05 [p/mm]	425	600	600	850	765	765	1200	1530

DB13 3 sections

Pulse/mm, dual channel A+B	DB-GQ13	DB-GC13	DB-HC13	DB-HQ13	DB-IC13	DB-IQ13	DB-GF13
G01 [p/mm]	0,8	0,9	1,3	1,2	1,7	1,5	2,6
G02 [p/mm]	1,7	1,9	2,7	2,4	3,4	3	5,3
G04 [p/mm]	217,6	247,2	349	307,2	445	391,6	680
G05 [p/mm]	42,5	48,3	68,1	60	86,9	76,5	132,8

Pulse/mm, dual channel A+B	DB-HF13	DB-GU13	DB-IF13	DB-HU13	DB-GE13	DB-IU13
G01 [p/mm]	3,7	2,1	4,8	3	5,3	3,8
G02 [p/mm]	7,5	4,3	9,6	6	10,6	7,6
G04 [p/mm]	960	544	1224	768	1360	979,2
G05 [p/mm]	187,5	106,3	239	150	265,6	191,3

Pulse/mm, dual channel A+B	DB-HE13	DB-GO13	DB-GT13	DB-IE13	DB-HO13	DB-HT13
G01 [p/mm]	7,5	4,3	4,3	9,5	6	6
G02 [p/mm]	15	8,5	8,5	19,1	12	12
G04 [p/mm]	1920	1088	1088	2448	1536	1536
G05 [p/mm]	375	212,5	212,5	478,1	300	300

Pulse/mm, dual channel A+B	DB-IO13	DB-IT13	DB-IB13	DB-GP13	DB-HP13	DB-IP13
G01 [p/mm]	7,7	7,7	19,1	8,5	12	15,3
G02 [p/mm]	15,3	15,3	38,2	17	24	30,6
G04 [p/mm]	1958,4	1958,4	4896	2176	3072	3916,8
G05 [p/mm]	382,5	382,5	956,2	425	600	765

SB23 2 sections

Pulse/mm, dual
channel A+B

	SB-GQ23	SB-HQ23	SB-IQ23	SB-GU23	SB-HU23
G01 [p/mm]	1,7	2,4	3,06	4,25	6
G02 [p/mm]	3,4	4,8	6,12	8,5	12
G04 [p/mm]	435,2	614,4	783,36	1088	1536
G05 [p/mm]	85	120	153	212,5	300

Pulse/mm, dual
channel A+B

	SB-IU23	SB-GT23	SB-GO23	SB-HT23	SB-HO23
G01 [p/mm]	7,6	8,5	8,5	12	12
G02 [p/mm]	15,3	17	17	24	24
G04 [p/mm]	1958,4	2176	2176	3072	3072
G05 [p/mm]	382,5	425	425	600	600

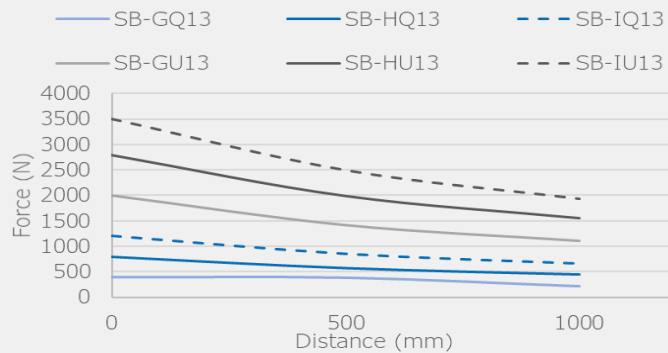
Pulse/mm, dual
channel A+B

	SB-IT23	SB-IO23	SB-GP23	SB-HP23	SB-IP23
G01 [p/mm]	15,3	15,3	17	24	30,6
G02 [p/mm]	30,6	30,6	34	48	61,2
G04 [p/mm]	3916,8	3916,8	4352	6144	7833,6
G05 [p/mm]	765	765	850	1200	1530

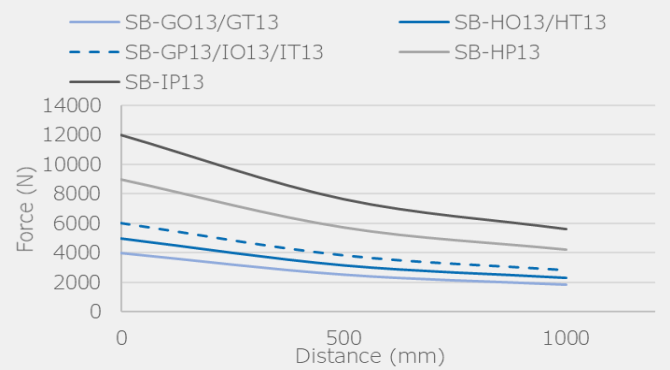
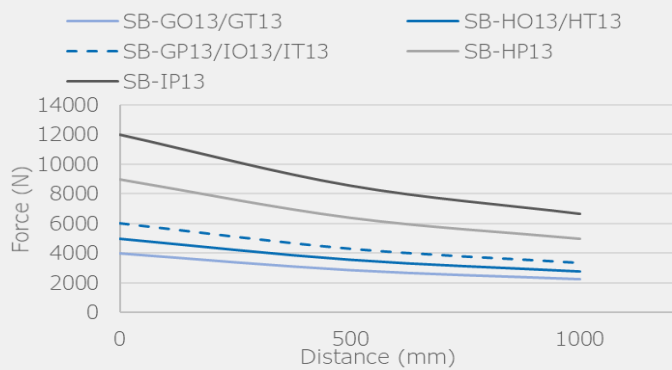
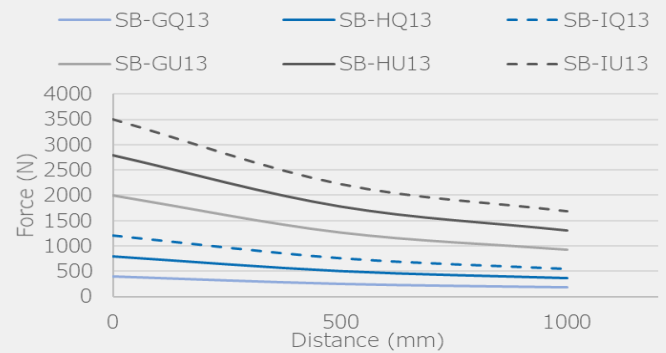
Diagrams – SB13 3 sections

Offset load

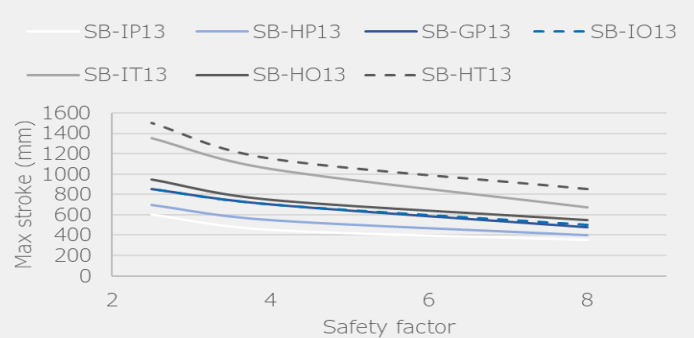
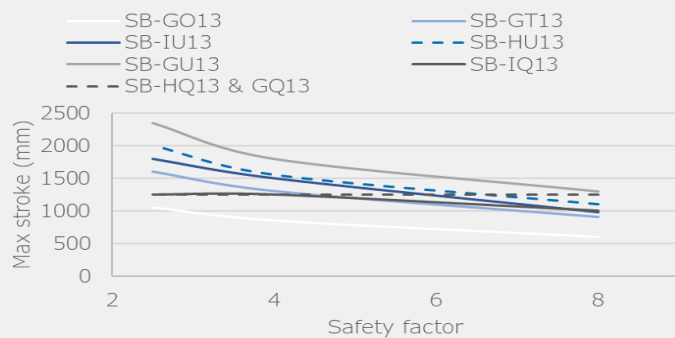
Long retracted length ($R = S + 270 \text{ mm}$)



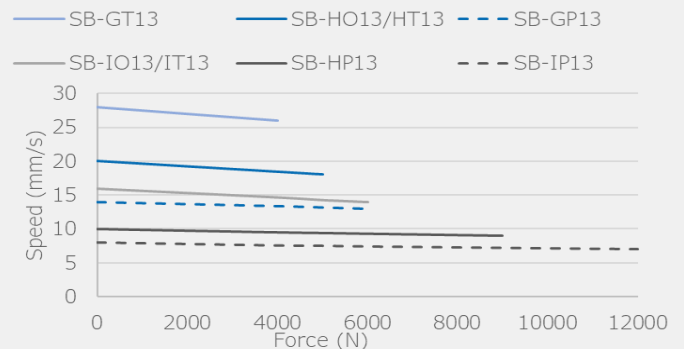
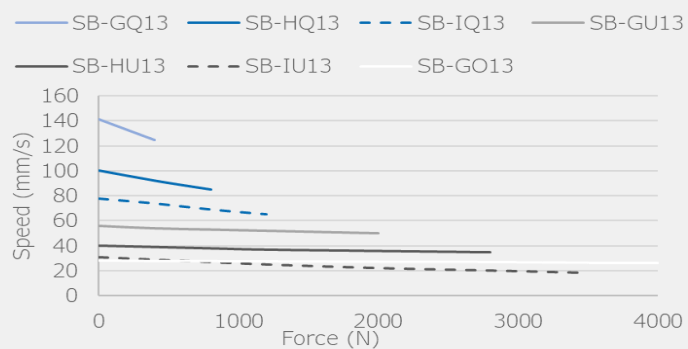
Short retracted length ($R = S + 195$)



Safety factor



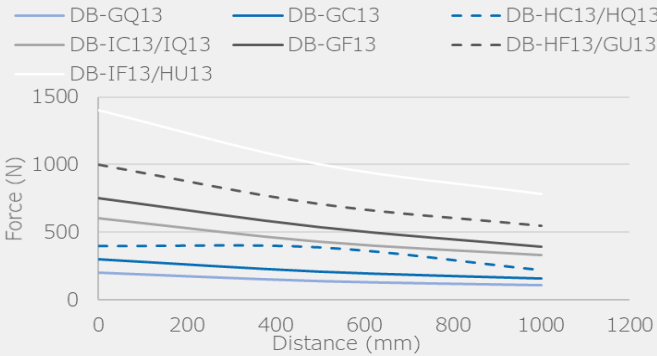
Speed



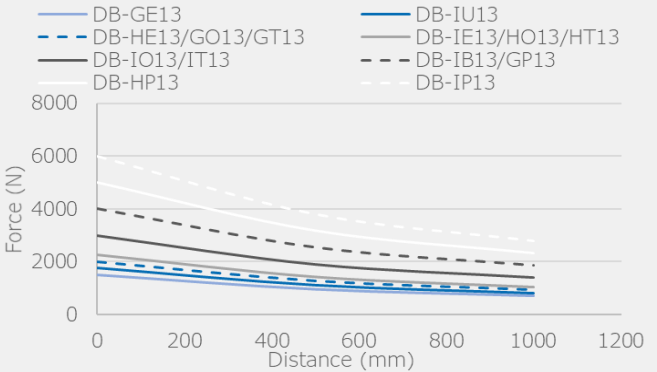
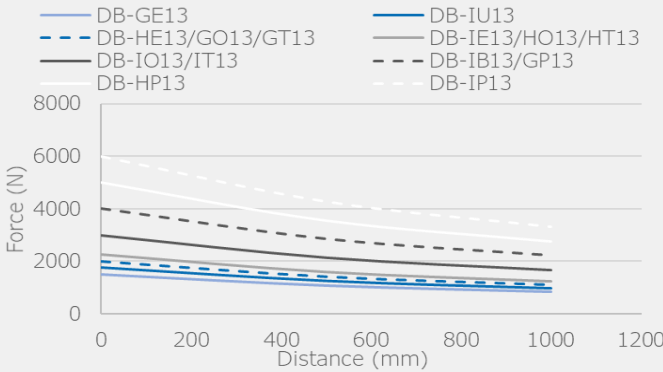
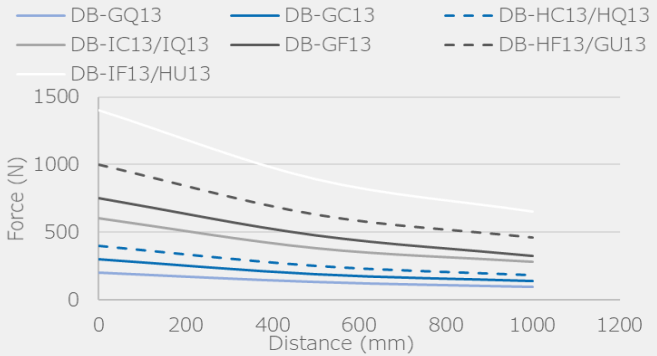
Diagrams – DB13 3 sections

Offset load

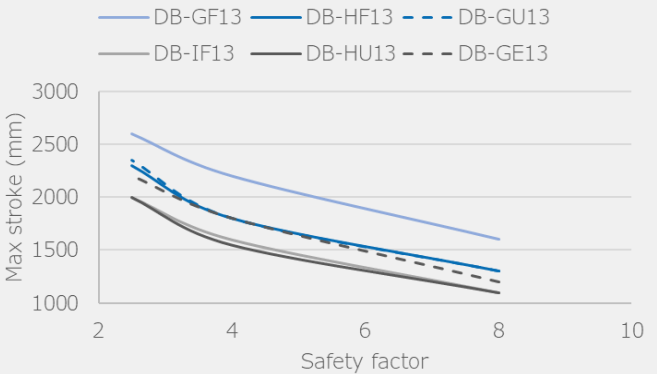
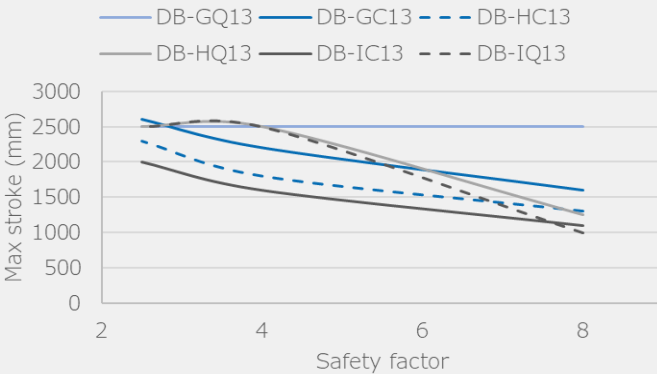
Long retracted length ($R = S + 270 \text{ mm}$)



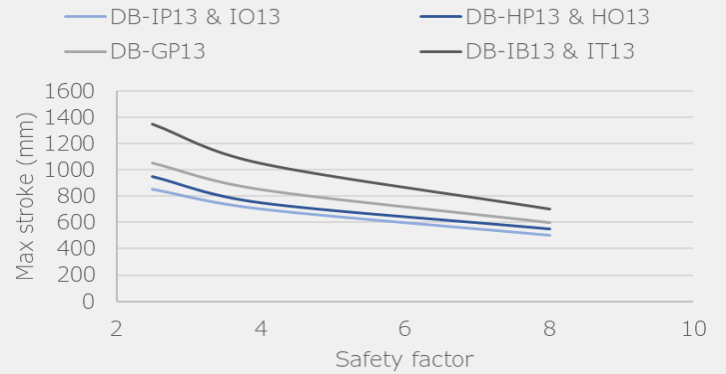
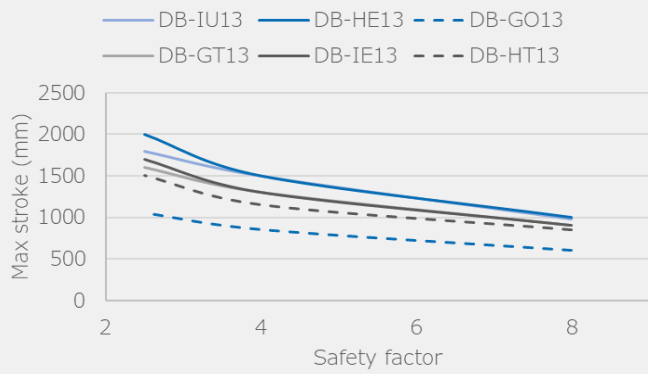
Short retracted length ($R = S + 195$)



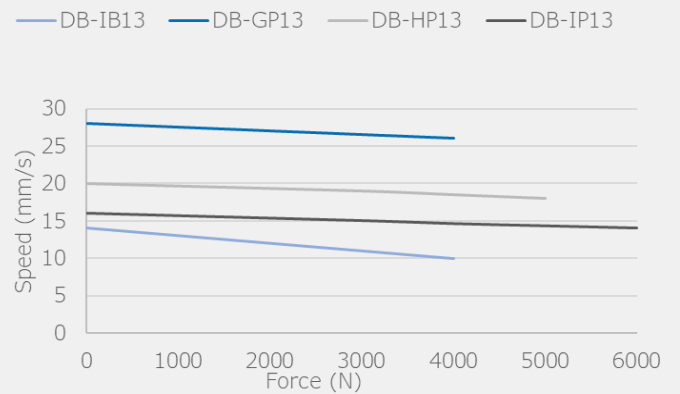
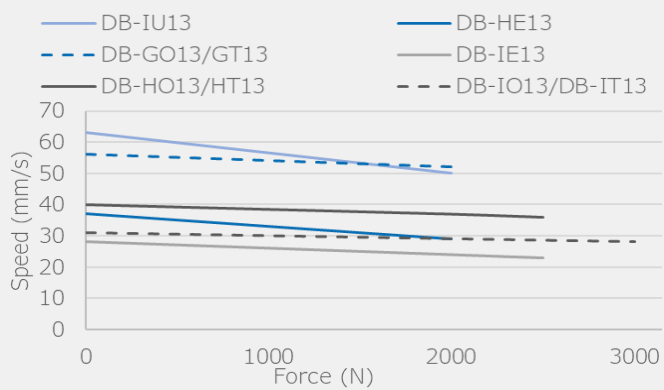
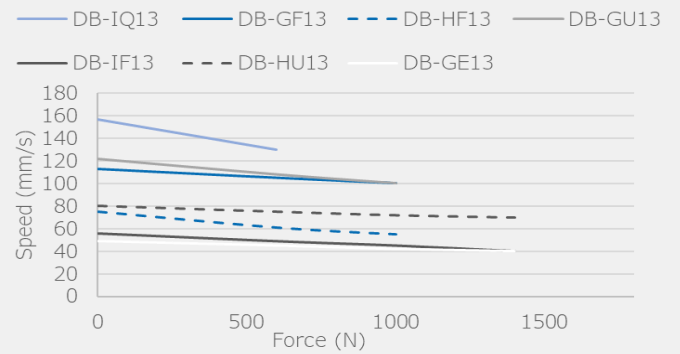
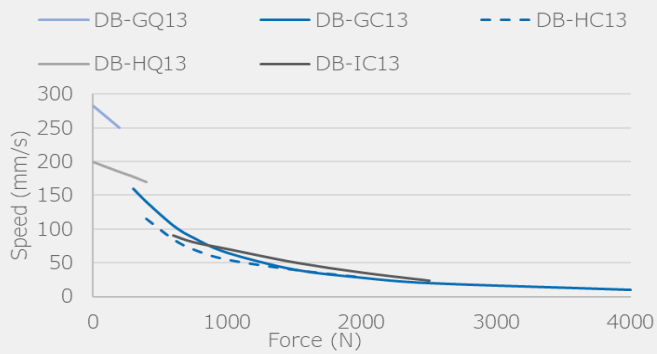
Safety factor



Safety factor

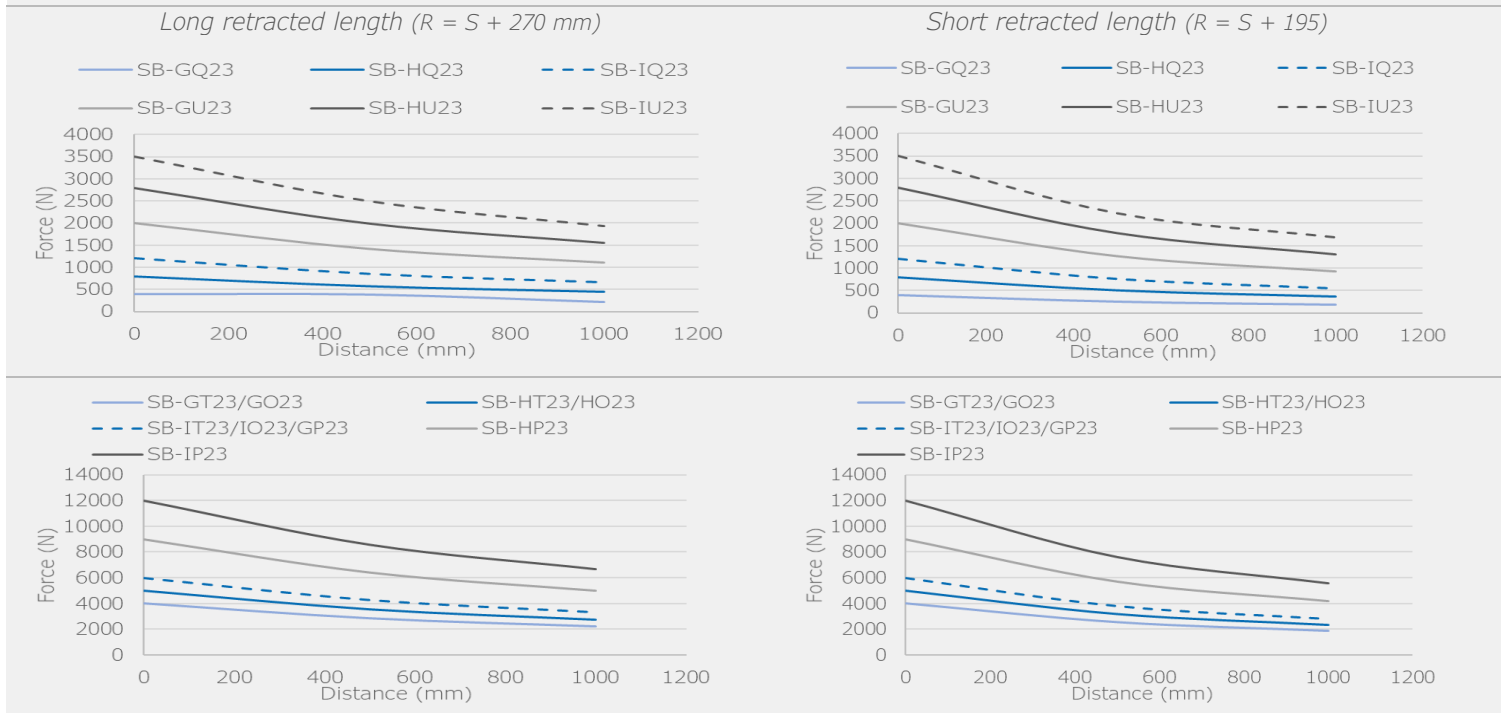


Speed

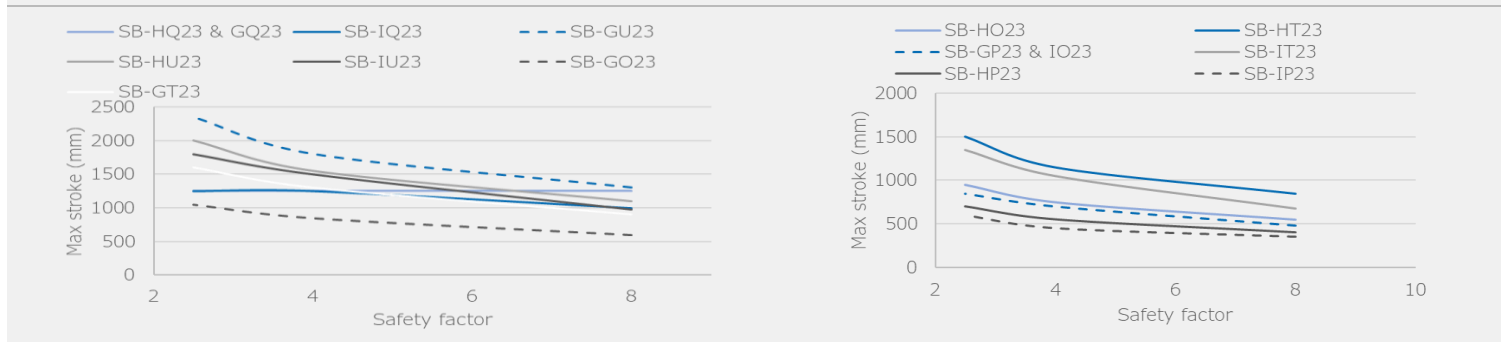


Diagrams – SB23 2 sections

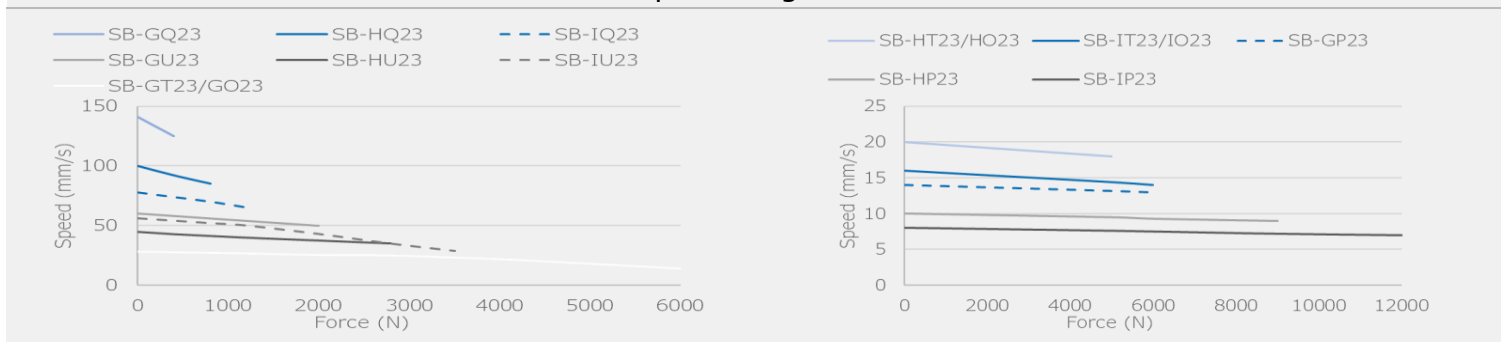
Offset load



Safety factor diagrams



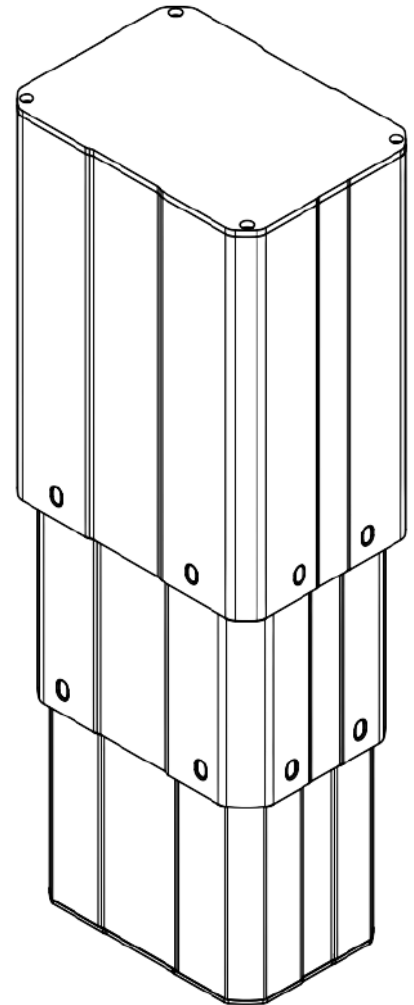
Speed diagrams



X2 Technology – The Customizer

Before use of products, see general terms & conditions and operating manuals. Lifetime and suitability are depending on application and must therefore be tested by each user. Specifications subject to change without prior notice. All components in this datasheet are property of X2 Technology and may therefore not be used without permission.

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