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Maximum functional safety

ROBA[®]-guidestop safety brakes operate according to the fail-safe principle. Pre-tensioned cup springs press the brake shoes onto the "waistline" of the profiled rail. The brake mechanism is designed for relatively large stroke paths and compensates for production tolerances in profiled rails without loss of braking force.

Safety through direct clamping

ROBA[®]-guidestop safety brakes clamp directly onto the linear guide with an extremely high degree of rigidity. They are therefore directly mounted onto the masses which are to be braked or held. Drive elements between the motor and the moved mass, such as for example spindles, spindle nuts, shaft couplings or gears, can thus have no influence on safety.

Perfect for vertical axes

Direct clamping onto the linear guide predestines the ROBA[®]-uidestop for application in gravity-loaded axes where hazard risks for people are to be minimised.

High torsional rigidity

ROBA[®] guidestop safety brakes are more rigid than rod or band brakes by a factor of at least 3. Rotatory motor brakes withstand even less in comparison. They are usually subject to backlash, and furthermore every element between the brake and the carriage has a negative effect on rigidity.

Relief for spindle and guide

ROBA[®]-guidestop takes on the load when the axis is stationary, for example during machining. In this phase, the drive motor can be switched off and removed from the control. This eliminates the regulating movements and thus is gentle on the ball screw spindle. The closed brake adsorbs the axial forces. The lifetimes and maintenance intervals for the drive components are therefore increased.

More accurate with higher cutting capacities

The backlash-free clamping additionally reinforces the NC axis. This increases process accuracy, increases machining performance and provides advantages during heavy-duty machining. The machining generates less vibration and thus improves the surface quality of the workpiece.

Switching Condition Monitoring

An integrated proximity switch emits a signal every time the brake condition changes.



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ROBA®-guidestop Profiled rail brakes

Decelerate reliable and safety – Clamp rigidly and backlash-free

- □ Maximum safety due to fail-safe principle
- □ Type 3840, 3850/3852, Powerpack with two braking circuits for double the holding force or redundant design
- □ Type 3841, 3851/3853, cost-efficient solution for limited installation space
- □ Safety and reliability thanks to direct, backlash-free clamping
- High degree of rigidity up to the full nominal holding force
- **Extremely high holding forces**
- Designed for standard linear guides
- With switching condition monitoring

Hydraulically actuated

2 brake circuits or short design

Pneumatically actuated

2 brake circuits or short design

Pneumatically actuated with

a pressure of 20 bar 2 brake circuits or short design

the hydraulic series



ROBA®-guidestop hydraulic Type 3840 / 3841

Clamps a profiled rail via a spring-loaded device at the exact position required and backlash-free. The brake is opened with a hydraulic pressure of 70 - 90 bar. Suitable for **EMERGENCY STOP** braking actions.

Nominal holding force: 5000 - 34000 N

For data and description, please see pages 4 - 7

ROBA®-quidestop pneumatic Type 3850 / 3851

Clamps a profiled rail via a spring-loaded device at the exact position required and backlash-free. The brake is opened with a pneumatic pressure of 4 - 8 bar. Suitable for **EMERGENCY STOP** braking actions.

Nominal holding force: 700 - 9000 N

For data and description, please see pages 8 - 11

ROBA®-guidestop pneumatic Type 3852 / 3853

Clamps a profiled rail via a spring-loaded device at the exact position required and backlash-free. The brake is opened with a pneumatic pressure of 20 – 30 bar. Suitable for **EMERGENCY STOP** braking actions.

Nominal holding force: 2750 - 20000 N

For data and description, please see pages 12 - 15.

Pressure booster for ROBA[®]-guidestop **Type 3880**

For data and description, please see pages 16 - 18.

For control with a pressure of 20 bar

Equal to the nominal holding force of



ROBA®-guidestop hydraulic

Type 3840.0_0_





Example: Order number 45 / 3840.010A1 / 0

1) For other rail manufacturer and rail types , please contact *mayr*[®] power transmission



Technical Data				Siz	es	
Technical Data			35	45	55	65
Nominal holding force F ²⁾³⁾		[N]	10000	15000	20000	34000
Weight		[kg]	6	9	16	27
Operating process	min.	[bar]	70	70	70	75
Operating pressure	max.	[bar]	90	90	90	90
Rigidity		[N/µm]	380	490	860	1000
Hydraulic connection thread	m ₁ , m ₂ ,	m ₃ , m ₄		1/8	8"	
Pressure medium				Use hydraulic oil acc.	DIN 51524-1:2006-04	
Absorption volume		[cm ^{3]}	14	21	34	48
Ambient temperature		[°C]		-10 to	o +60	

The design as a redundant double-circuit brake (optional) may only be implemented with half of the nominal holding force.
 Minimum holding force when the brake is not pressurised and when the profiled rail is dry or moistened with mineral oil.

Dimensions		Siz	es	
[mm]	35	45	55	65
А	192	225	270	325
A ₁	100	120	140	170
В	21.7	27.7	35.7	43
B ₁ ⁴⁾	10	15	25	35
С	82	96	110	134
C,	170	196	240	288
D ₂	25	25	25	25
E	34	45	53	63
m ⁵⁾	6 x M12	6 x M16	6 x M20	6 x M24

4) Required minimum thickness of the customer-side mounting flange (Steel)5) Tapped hole

Dimensions	[m	۱m	ı]	Sizes															
Rail			Rail type		3	5			4	5			5	5			6	5	
manufacturer				E,	D	D ₁	F	E,	D	D ₁	F	E,	D	D ₁	F	E,	D	D ₁	F
		0	TSX-E	30	57	6.3	1	38	68.5	9.5	1	45	83.8	11.5	1	53.8	97.5	10.8	1
INA	A	1	TKSD	29.7	56.7	6.0	1	37.2	67.7	8.7	1		not av	ailable			not ava	ailable	
		2	TKVD	27	56	5.3	3	34.2	67.2	8.2	3.5	41.5	85.0	12.7	5.7		not available		
		0	R1805/6/7	30.8	57.8	7.1	1	38.8	69.3	10.3	1	47.6	86.4	14.1	1	57.9	101.6	14.9	1
Bosch	В	1	R1605/6/7	31.9	58.9	8.2	1	39.9	70.3	11.3	1	47.9	86.7	14.4	1	59.9	103.5	16.8	1
		2	R1845	30.8	57.8	7.1	1	38.8	69.3	10.3	1	47.6	86.4	14.1	1	57.9	101.6	14.9	1
Schneeberger	С	0	MR	32.0	59	8.2	1	40	70.5	11.5	1	48	86.8	14.5	1	58	101.7	15	1
	П	0	RG	30.2	57.2	6.5	1	38	68.5	9.5	1	44	82.8	10.5	1	53	96.7	10	1
	U	1	HG	29	56.0	5.3	1		not av	ailable		44	82.8	10.5	1		not ava	ailable	
тык	E	0	SRG	30	57	6.3	1	37	69	10	2.5	43	81.8	9.5	1	54	99.2	12.5	2.5
INK	Ē	1	SHS	26	54.5	3.8	2.5	32	66	7	4.5	38	78	5.7	2.2	53	96.7	10	1
Rollon	F	0	MR	29	55.5	5.5	1	38	68.5	9.5	1	38	78.8	6.5	3		not ava	ailable	
NSK	G	0	RA	31	58	7.3	1	38	68.5	9.5	1	43.5	83.5	11.2	2.2	55	100.2	13.2	2.5
NTN-SNR	Н	0	BG	26	54.5	3.8	2.5	31.1	65	6	4.4	38	78	5.7	2.2		not ava	ailable	
Other rail manufa	act	ure	er and rail types	on rec	uest														

For detailed information on selection, dimensioning, installation, initial operation and maintenance, please see the Installation and Operational Instructions.

We reserve the right to make dimensional and constructional alterations.



ROBA®-guidestop short design, hydraulic

Туре 3841.0_0_ _



Fig. 2

Transportation lock



Example: Order number 45 / 3841.010A1 / 0

1) For other rail manufacturer and rail types , please contact mayr® power transmission



Technical Data				Siz	es							
Technical Data			35	45	55	65						
Nominal holding force F ²⁾		[N]	5000	7500	10000	17000						
Weight		[kg]	3.5	5.5	9	16						
Operating pressure	min.	[bar]	70	70	70	75						
Operating pressure	max.	[bar]	90	90	90	90						
Rigidity		[N/µm]	380	380 490 860 100								
Hydraulic connection thread	m ₁ , n	n ₃ , m ₄		1/5	8"							
Pressure medium				Use hydraulic oil acc.	DIN 51524-1:2006-04							
Absorption volume		[cm ^{3]}	7	10.5	17	24						
Ambient temperature		[°C]		-10 to	o +60							

2) Minimum holding force when the brake is not pressurised and when the profiled rail is dry or moistened with mineral oil.

Dimensions		Siz	es	
[mm]	35	45	55	65
А	115	130	155	190
A ₁	100	120	140	170
В	21.7	27.7	35.7	43
B ₁ ³⁾	10	15	25	35
С	82	96	110	134
C ₁	92	98	125	152
D ₂	25	25	25	25
E	34	45	53	63
m ⁴⁾	4 x M12	4 x M16	4 x M20	4 x M24

3) Required minimum thickness of the customer-side mounting flange (Steel)4) Tapped hole

Dimensions	[m	۱m	ı]								Siz	es							
Rail			Rail type		3	5			4	5			5	5			6	5	
manufacturer				E,	D	D ₁	F	E,	D	D ₁	F	E,	D	D ₁	F	E,	D	D ₁	F
		0	TSX-E	30	57	6.3	1	38	68.5	9.5	1	45	83.8	11.5	1	53.8	97.5	10.8	1
INA	A	1	TKSD	29.7	56.7	6.0	1	37.2	67.7	8.7	1		not ava	ailable			not ava	ailable	
		2	TKVD	27	56	5.3	3	34.2	67.2	8.2	3.5	41.5	85.0	12.7	5.7		not ava	ailable	
		0	R1805/6/7	30.8	30.8 57.8 7.1 1 38.8 69.3 10.3 1 47.6 86.4 14.1 1 57.9 10									101.6	14.9	1			
Bosch	В	1	R1605/6/7	31.9	58.9	8.2	1	39.9	70.3	11.3	1	47.9	86.7	14.4	1	59.9	103.5	16.8	1
		2	R1845	30.8	57.8	7.1	1	38.8	69.3	10.3	1	47.6	86.4	14.1	1	57.9	101.6	14.9	1
Schneeberger	С	0	MR	32.0	59	8.2	1	40	70.5	11.5	1	48	86.8	14.5	1	58	101.7	15	1
ніші	П	0	RG	30.2	57.2	6.5	1	38	68.5	9.5	1	44	82.8	10.5	1	53	96.7	10	1
		1	HG	29	56.0	5.3	1		not av	ailable		44	82.8	10.5	1		not ava	ailable	
тык	F	0	SRG	30	57	6.3	1	37	69	10	2.5	43	81.8	9.5	1	54	99.2	12.5	2.5
THK	-	1	SHS	26	54.5	3.8	2.5	32	66	7	4.5	38	78	5.7	2.2	53	96.7	10	1
Rollon	F	0	MR	29	55.5	5.5	1	38	68.5	9.5	1	38	78.8	6.5	3		not ava	ailable	
NSK	G	0	RA	31	58	7.3	1	38	68.5	9.5	1	43.5	83.5	11.2	2.2	55	100.2	13.2	2.5
NTN-SNR	Н	0	BG	26	54.5	3.8	2.5	31.1	65	6	4.4	38	78	5.7	2.2		not ava	ailable	
Other rail manufa	act	ure	er and rail types	on rec	uest														

For detailed information on selection, dimensioning, installation, initial operation and maintenance, please see the Installation and Operational Instructions.

We reserve the right to make dimensional and constructional alterations.



ROBA®-guidestop Standard, pneumatic

Туре 3850.0_ _ _ _



Order Number



Example: Order number 45 / 3850.000A1 / 0

1) For other rail manufacturer and rail types , please contact mayr® power transmission



Technical Data				Siz	es	
Technical Data			25	35	45	55
	4 bar	Type 3850.0_0	1400	2800	4000	6000
F [N]	5 bar	Type 3850.0_1	1700	3500	5000	7000
• _N [••]	6 bar	Type 3850.0_2	2200	4400	6000	9000
Weight	[kg]		2.4	5.4	9	14.5
Max. Operating pressure	[bar]			8	3	
Rigidity	[N/µm]		-	380	490	860
Pneumatic connection thread	m ₁ , m ₂ ,	m ₃ , m ₄	M5	1/8"	1/8"	1/8"
Air consumption per switching		Type 3850.0_0	63	120	179	241
procedure in standard litres at	[cm ³]	Type 3850.0_1	79	150	224	301
operating pressure		Type 3850.0_2	95	180	269	361
Pressure medium			Compressed air	with compressed a	air quality acc. ISO	8573-1 Class 4
Ambient temperature	[°C]			-10 to	o +60	

3) The design as a redundant double-circuit brake (optional) may only be implemented with half of the nominal holding force.

4) Minimum holding force when the brake is not pressurised and when the profiled rail is dry or moistened with mineral oil.

5) At a switching frequency > 200.000, please reckon with a nominal holding force reduction of 20 %

Dimensions		Siz	es	
[mm]	25	35	45	55
Α	145	192	225	270
A ₁	70	100	120	140
В	14.7	21.7	27.7	35.7
B 1 ⁶⁾	10	10	15	25
С	58	82	96	110
C,	132	170	196	240
D ₂	25	25	25	25
E	23	34	45	53
m ⁷⁾	6 x M8	6 x M12	6 x M16	6 x M20

6) Required minimum thickness of the customer-side mounting flange (Steel)

7) Tapped hole

Dimensions	[n	۱m	ı]								Siz	zes								
Rail			Rail type		2	5			3	5			4	5			5	5		
manufacturer				E,	D	D ₁	F	E,	D	D ₁	F	E,	D	D ₁	F	E,	D	D ₁	F	
		0	TSX-E	22.3	44.3	4.1	1	30	57	6.3	1	38	68.5	9.5	1	45	83.8	11.5	1	
INA	A	1	TKSD	21.7	43.7	3.5	1	29.7	56.7	6.0	1	37.2	67.7	8.7	1		not av	ailable		
		2	TKVD	18.7	43.7	3.5	4	27	56	5.3	3	34.2	67.2	8.2	3.5	41.5	41.5 85.0 12.7			
		0	R1805/6/7	23.4	45.4	5.2	1	30.8	57.8	7.1	1	38.8	69.3	10.3	1	47.6	86.4	14.1	1	
Bosch	В	1	R1605/6/7	24.2	46.3	6.1	1	31.9	58.9	8.2	1	39.9	70.3	11.3	1	47.9	86.7	14.4	1	
		2	R1845	23.4	45.4	5.2	1	30.8	57.8	7.1	1	38.8	69.3	10.3	1	47.6	86.4	14.1	1	
Schneeberger	С	0	MR	24.5	46.5	6.3	1	32.0	59	8.2	1	40	70.5	11.5	1	48	86.8	14.5	1	
	Р	0	RG	23.6	45.6	5.4	1	30.2	57.2	6.5	1	38	68.5	9.5	1	44	82.8	10.5	1	
	U	1	HG	22	44	3.8	1	29	56.0	5.3	1		not av	ailable		44	82.8	10.5	1	
тык	E	0	SRG	23	45	4.8	1	30	57	6.3	1	37	69	10	2.5	43	81.8	9.5	1	
INK	-	1	SHS	20	42.5	2.3	1.5	26	54.5	3.8	2.5	32	66	7	4.5	38	78	5.7	2.2	
Rollon	F	0	MR	22	44	3.8	1	29	55.5	5.5	1	38	68.5	9.5	1	38	78.8	6.5	3	
NSK	G	0	RA	24	46	5.8	1	31	58	7.3	1	38	68.5	9.5	1	43.5	83.5	11.2	2.2	
NTN-SNR	Н	0	BG	19.2	42.2	2	2	26	54.5	3.8	2.5	31.1	65	6	4.4	38	78	5.7	2.2	
Other rail manufa	act	ure	er and rail types	on rec	uest															



For detailed information on selection, dimensioning, installation, initial operation and maintenance, please see the Installation and Operational Instructions.

We reserve the right to make dimensional and constructional alterations.



ROBA®-guidestop Standard short design, pneumatic

Туре 3851.0____







Example: Order number 45 / 3851.000A1 / 0

1) For other rail manufacturer and rail types , please contact mayr® power transmission



Technical Data				Siz	es	
			25	35	45	55
	4 bar	Type 3851.0_0	700	1400	2000	3000
F [N]	5 bar	Type 3851.0_1	850	1750	2500	3500
• _N [••]	6 bar	Type 3851.0_2	1100	2200	3000	4500
Weight	[kg]		1.5	3.3	5.1	8.4
Max. Operating pressure	[bar]			8	3	
Rigidity	[N/µm]		-	380	490	860
Pneumatic connection thread	m ₁ , m ₃ , I	n ₄	M5	1/8"	1/8"	1/8"
Air consumption per switching		Type 3851.0_0	32	60	90	120
procedure in standard litres at	[cm ³]	Type 3851.0_1	39	75	112	151
operating pressure		Type 3851.0_2	47	90	135	181
Pressure medium			Compressed air	with compressed	air quality acc. ISO	8573-1 Class 4
Ambient temperature	[°C]			-10 to	o +60	

3) Minimum holding force when the brake is not pressurised and when the profiled rail is dry or moistened with mineral oil.
4) At a switching frequency > 200.000, please reckon with a nominal holding force reduction of 20 %

Dimensions		Siz	Sizes							
[mm]	25	35	45	55						
Α	88	115	130	155						
A ₁	70	100	120	140						
В	14.7	21.7	27.7	35.7						
B 1 ⁵⁾	10	10	15	25						
С	58	82	96	110						
C,	75	92	98	125						
D ₂	25	25	25	25						
E	23	34	45	53						
m ⁶⁾	4 x M8	4 x M12	4 x M16	4 x M20						

5) Required minimum thickness of the customer-side mounting flange (Steel) 6) Tapped hole

Dimensions	[m	۱m	ו]	Sizes															
Rail			Rail type		2	5			3	5			4	5			5	5	
manufacturer				E,	D	D ₁	F	E,	D	D ₁	F	E,	D	D ₁	F	E,	D	D ₁	F
		0	TSX-E	22.3	44.3	4.1	1	30	57	6.3	1	38	68.5	9.5	1	45	83.8	11.5	1
INA	A	1	TKSD	21.7	43.7	3.5	1	29.7	56.7	6.0	1	37.2	67.7	8.7	1		not av	ailable	
		2	TKVD	18.7	43.7	3.5	4	27	56	5.3	3	34.2	67.2	8.2	3.5	41.5	85.0	12.7	5.7
		0	R1805/6/7	23.4	45.4	5.2	1	30.8	57.8	7.1	1	38.8	69.3	10.3	1	47.6	86.4	14.1	1
Bosch	В	1	R1605/6/7	24.2	46.3	6.1	1	31.9	58.9	8.2	1	39.9	70.3	11.3	1	47.9	86.7	14.4	1
		2	R1845	23.4	45.4	5.2	1	30.8	57.8	7.1	1	38.8	69.3	10.3	1	47.6	86.4	14.1	1
Schneeberger	С	0	MR	24.5	46.5	6.3	1	32.0	59	8.2	1	40	70.5	11.5	1	48	86.8	14.5	1
німім	П	0	RG	23.6	45.6	5.4	1	30.2	57.2	6.5	1	38	68.5	9.5	1	44	82.8	10.5	1
	U	1	HG	22	44	3.8	1	29	56.0	5.3	1		not av	ailable		44	82.8	10.5	1
тык	F	0	SRG	23	45	4.8	1	30	57	6.3	1	37	69	10	2.5	43	81.8	9.5	1
THK	-	1	SHS	20	42.5	2.3	1.5	26	54.5	3.8	2.5	32	66	7	4.5	38	78	5.7	2.2
Rollon	F	0	MR	22	44	3.8	1	29	55.5	5.5	1	38	68.5	9.5	1	38	78.8	6.5	3
NSK	G	0	RA	24	46	5.8	1	31	58	7.3	1	38	68.5	9.5	1	43.5	83.5	11.2	2.2
NTN-SNR	Н	0	BG	19.2	42.2	2	2	26	54.5	3.8	2.5	31.1	65	6	4.4	38	78	5.7	2.2
Other rail manuf	act	IIre	and rail types	on rec	ulast														

Other rail manufacturer and rail types on request



For detailed information on selection, dimensioning, installation, initial operation and maintenance, please see the Installation and Operational Instructions.

We reserve the right to make dimensional and constructional alterations.



ROBA®-guidestop High pressure, pneumatic

Type 3852.0_1_





Transportation lock



Example: Order number 45 / 3852.001A1 / 0

1) For other rail manufacturer and rail types , please contact \textit{mayr}^{\otimes} power transmission



Technical Data			Siz	es	
		25	35	45	55
Nominal holding force $^{3(4)(5)}$ F _N [N]	20 bar Type 3852.0_1	5500	10000	15000	20000
Weight	[kg]	2.4	5.4	9	14.5
Operating pressure	[bar]		20 -	- 30	
Rigidity	[N/µm]	-	380	490	860
Pneumatic connection thread	m ₁ , m ₂ , m ₃ , m ₄	M5	1/8"	1/8"	1/8"
Air consumption per switching procedure in standard litres at operating pressure	[cm³]	315	600	897	1205
Pressure medium		Compressed air	with compressed	air quality acc. ISO	8573-1 Class 4
Ambient temperature	[°C]		-10 to	o +60	

3) The design as a redundant double-circuit brake (optional) may only be implemented with half of the nominal holding force.
4) Minimum holding force when the brake is not pressurised and when the profiled rail is dry or moistened with mineral oil.
5) At a switching frequency > 200.000, please reckon with a nominal holding force reduction of 20 %

Dimensions		Siz	es	
[mm]	25	35	45	55
А	145	192	225	270
A ₁	70	100	120	140
В	14.7	21.7	27.7	35.7
B ₁ ⁶⁾	10	10	15	25
С	58	82	96	110
C,	132	170	196	240
D ₂	25	25	25	25
E	23	34	45	53
m ⁷⁾	6 x M8	6 x M12	6 x M16	6 x M20

6) Required minimum thickness of the customer-side mounting flange (Steel)

7) Tapped hole

Dimensions	[m	nm	ו]								Siz	es							
Rail			Rail type		2	5			3	5			4	5			5	5	
manufacturer				E,	D	D ₁	F	E,	D	D ₁	F	E,	D	D ₁	F	E,	D	D ₁	F
		0	TSX-E	22.3	44.3	4.1	1	30	57	6.3	1	38	68.5	9.5	1	45	83.8	11.5	1
INA	A	1	TKSD	21.7	43.7	3.5	1	29.7	56.7	6.0	1	37.2	67.7	8.7	1		not av	ailable	
		2	TKVD	18.7	43.7	3.5	4	27	56	5.3	3	34.2	67.2	8.2	3.5	41.5	85.0	12.7	5.7
		0	R1805/6/7	23.4	45.4	5.2	1	30.8	57.8	7.1	1	38.8	69.3	10.3	1	47.6	86.4	14.1	1
Bosch	в	1	R1605/6/7	24.2	46.3	6.1	1	31.9	58.9	8.2	1	39.9	70.3	11.3	1	47.9	86.7	14.4	1
		2	R1845	23.4	45.4	5.2	1	30.8	57.8	7.1	1	38.8	69.3	10.3	1	47.6	86.4	14.1	1
Schneeberger	С	0	MR	24.5	46.5	6.3	1	32.0	59	8.2	1	40	70.5	11.5	1	48	86.8	14.5	1
ніші	П	0	RG	23.6	45.6	5.4	1	30.2	57.2	6.5	1	38	68.5	9.5	1	44	82.8	10.5	1
	U	1	HG	22	44	3.8	1	29	56.0	5.3	1		not ava	ailable		44	82.8	10.5	1
тык	F	0	SRG	23	45	4.8	1	30	57	6.3	1	37	69	10	2.5	43	81.8	9.5	1
THK	-	1	SHS	20	42.5	2.3	1.5	26	54.5	3.8	2.5	32	66	7	4.5	38	78	5.7	2.2
Rollon	F	0	MR	22	44	3.8	1	29	55.5	5.5	1	38	68.5	9.5	1	38	78.8	6.5	3
NSK	G	0	RA	24	46	5.8	1	31	58	7.3	1	38	68.5	9.5	1	43.5	83.5	11.2	2.2
NTN-SNR	Н	0	BG	19.2	42.2	2	2	26	54.5	3.8	2.5	31.1	65	6	4.4	38	78	5.7	2.2
Other reil manuf	ant		ar and rail types																

Other rail manufacturer and rail types on request

For detailed information on selection, dimensioning, installation, initial operation and maintenance, please see the Installation and **Operational Instructions.**

We reserve the right to make dimensional and constructional alterations.



ROBA®-guidestop High pressure short design, pneumatic

Type 3853.0_1_ _







Example: Order number 45 / 3853.001A1 / 0

1) For other rail manufacturer and rail types , please contact mayr® power transmission



Technical Data			Siz	es					
		25	35	45	55				
Nominal holding force ^{3) 4)} $F_{_{N}}$ [N]	20 bar Type 3853.0_1	2750	5000	7500	10000				
Weight	[kg]	1.5	3.3	5.1	8.4				
Operating pressure	[bar]	20 - 30							
Rigidity	[N/µm]	-	380	490	860				
Pneumatic connection thread	m ₁ , m ₃ , m ₄	M5	1/8"	1/8"	1/8"				
Air consumption per switching procedure in standard litres at operating pressure	[cm³]	158	300	448	602				
Pressure medium		Compressed air	with compressed	air quality acc. ISO	8573-1 Class 4				
Ambient temperature	[°C]		-10 to	o +60					

3) Minimum holding force when the brake is not pressurised and when the profiled rail is dry or moistened with mineral oil. 4) At a switching frequency > 200.000, please reckon with a nominal holding force reduction of 20 %

Dimensions		Siz	es	
[mm]	25	35	45	55
Α	88	115	130	155
A ₁	70	100	120	140
В	14.7	21.7	27.7	35.7
B ₁ ⁵⁾	10	10	15	25
С	58	82	96	110
C,	75	92	98	125
D ₂	25	25	25	25
E	23	34	45	53
m ⁶⁾	4 x M8	4 x M12	4 x M16	4 x M20

5) Required minimum thickness of the customer-side mounting flange (Steel) 6) Tapped hole

Dimensions	[m	nm]	Sizes															
Rail			Rail type		2	5			3	5			4	5		55			
manufacturer				Ε,	D	D ₁	F	Ε,	D	D ₁	F	Ε,	D	D ₁	F	E,	D	D ₁	F
		0	TSX-E	22.3	44.3	4.1	1	30	57	6.3	1	38	68.5	9.5	1	45	83.8	11.5	1
INA	A	1	TKSD	21.7	43.7	3.5	1	29.7	56.7	6.0	1	37.2	67.7	8.7	1		not av	ailable	
		2	TKVD	18.7	43.7	3.5	4	27	56	5.3	3	34.2	67.2	8.2	3.5	41.5	85.0	12.7	5.7
		0	R1805/6/7	23.4	45.4	5.2	1	30.8	57.8	7.1	1	38.8	69.3	10.3	1	47.6	86.4	14.1	1
Bosch	в	1	R1605/6/7	24.2	46.3	6.1	1	31.9	58.9	8.2	1	39.9	70.3	11.3	1	47.9	86.7	14.4	1
		2	R1845	23.4	45.4	5.2	1	30.8	57.8	7.1	1	38.8	69.3	10.3	1	47.6	86.4	14.1	1
Schneeberger	С	0	MR	24.5	46.5	6.3	1	32.0	59	8.2	1	40	70.5	11.5	1	48	86.8	14.5	1
	П	0	RG	23.6	45.6	5.4	1	30.2	57.2	6.5	1	38	68.5	9.5	1	44	82.8	10.5	1
	U	1	HG	22	44	3.8	1	29	56.0	5.3	1		not av	ailable		44	82.8	10.5	1
тык	F	0	SRG	23	45	4.8	1	30	57	6.3	1	37	69	10	2.5	43	81.8	9.5	1
THK	-	1	SHS	20	42.5	2.3	1.5	26	54.5	3.8	2.5	32	66	7	4.5	38	78	5.7	2.2
Rollon	F	0	MR	22	44	3.8	1	29	55.5	5.5	1	38	68.5	9.5	1	38	78.8	6.5	3
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NTN-SNR	Н	0	BG	19.2	42.2	2	2	26	54.5	3.8	2.5	31.1	65	6	4.4	38	78	5.7	2.2
Other rail manufa	act	ure	r and rail types	on rea	uest														



For detailed information on selection, dimensioning, installation, initial operation and maintenance, please see the Installation and **Operational Instructions.**

We reserve the right to make dimensional and constructional alterations.



Pressure booster for ROBA®-guidestop High pressure, pneumatic

Highlights and Advantages

In the majority of cases, the available pressure in the compressed air system is not sufficient to operate the ROBA®-guidestop Type 3851/3853 with a pressure of 20 bar. One option is a general increase of system pressure which, however, results in high expenses and energy costs. A solution to this problem is the use of a pressure booster at exactly the location in the system where the increased pressure is required.

The pressure booster pneumatically increases the pressure available in the system to the required operating pressure of the ROBA®-guidestop in a purely mechanical way and without external use of power.

- Specific pressure increase in front of the individual brake
- □ No energy consumption after reaching the output pressure
- No electrical installation necessary
- □ Simple, safe and economic operating mode
- □ No need to invest in a high pressure grid of your own or in a decentralized separate compressor unit

Pressure booster - Designs:

- Pressure booster on plate is ready to connect
- Pressure booster in housing is ready to connect (noise reduced 65 dB(A))





Fig. 7: Pressure booster on the plate

Fig. 8: Pressure booster in the housing



Pressure booster for ROBA®-guidestop High pressure, pneumatic







Fig. 9: Type 3880.00000



Fig. 10: Type 3880.10000

Item	Name
1	Connection input pressure
2	Connection output pressure

Order Number



Example: Order number 1 / 3880.00000



Technical Data			Size
Technical Data			1
Weight	Туре 3880.00000	[kg]	9.3
Weight	Туре 3880.10000	[kg]	14.5
Input pressure	max.	[bar]	7
Output pressure	max.	[bar]	28
Transmission ratio			1:4
Input pressure	Connection		8 mm
Output pressure	hose		6 mm
Pressure medium			Compressed air quality acc. ISO 8573-1 Class 4
Ambient temperature		[°C]	-10 to +50

Technical Explanations

State of Delivery

The **Pressure booster** is ready for installation. For operation, the Pressure booster must be connected with the **ROBA®-guidestop** using a 3/2-directional control valve and a hose.

Controls (Fig. 11)



Item	Name
1	Pressure source
2	Pressure regulator valve with pressure gauge
3	Pressure booster
4	Hose for high pressure
5	3/2-directional control valve high pressure (installation as near to the brake as possible)
5.1	Silencer
6	Pressure switch (safety-related applica- tions)

Fig. 11

The pressure booster for the ROBA[®]-guidestop must have an external connection with the brake ensured via a 3/2-directional control valve.

For connection components recommended by mayr[®] power transmission (3/2-directional control valve, hose, etc.), please contact mayr[®] power transmission.

Before initial operation, please read and observe the respective Installation and Operational Instructions.



ROBA[®]-guidestop hydraulic

Technical Explanations

State of Delivery

ROBA®-guidestop brakes are manufacturer-assembled ready for installation and set to the nominal holding force stipulated in the order.

Before initial operation, please read and observe the respective Installation and Operational Instructions.

Function

The spring-loaded, enclosed **ROBA®-guidestop**, which can be opened hydraulically, clamps a profiled rail steplessly and back-lash-free.

Due to the spring-loaded system, the fail-safe principle is guaranteed, and the **ROBA®-guidestop** works as a safety brake. For the required release pressure (operating pressure), please see Table "Technical Data".

The max. sliding speed is 2 m/s.

Maintenance/Switching Frequency

The **ROBA®-guidestop** is designed for a switching frequency of 200.000 switchings (higher switching frequencies available on request).

The ROBA®-guidestop is mainly maintenance-free.

The profiled rail must be checked regularly (at least every 6 months) for contamination with friction value-reducing materials; it must be cleaned, if necessary.

In case of major accumulation of dust and dirt, or in extreme ambient conditions, special maintenance work is required.

(Please contact mayr® power transmission).

Options Screw connection from below

Fig. 13

Hydraulic connection, top (Type 3840)



Fig. 14

Connection, top

Controls (Fig. 12)

The company *mayr*^{\oplus} power transmission recommends hydraulic controls as shown in Fig. 10. During every operational movement of the profiled rail, the 3/2-way valve is electrically switched and the brake opened.

Recommendation:

- Pressure fluctuations can be reduced through a non-return valve.
- In order to guarantee fastest possible switching of the brake, the largest possible line diameter should be used in the area of the return flow line. Furthermore, do not install any choke valves in this area and keep the hydraulic lines between the brake and the valve as short as possible!



Fig. 12

Item	Name
1	Pressure source
2	Non-return valve (in case of pressure fluctuations)
3	3/2-directional control valve





ROBA®-guidestop pneumatic

Technical Explanations

State of Delivery

ROBA®-guidestop brakes are manufacturer-assembled ready for installation and set to the nominal holding force stipulated in the order.

Before initial operation, please read and observe the respective Installation and Operational Instructions.

Function

The spring-loaded, enclosed ROBA®-guidestop, which can be opened pneumatically, clamps a profiled rail steplessly and backlash-free.

Due to the spring-loaded system, the fail-safe principle is guaranteed, and the **ROBA®-guidestop** works as a safety brake. For the required operating pressure, please see Table "Technical Data". The max. sliding speed is 2 m/s.

Maintenance/Switching Frequency

The **ROBA®-guidestop** is designed for a switching frequency of 2.000.000 switchings (higher switching frequencies available on request).

The **ROBA®-guidestop** is mainly maintenance-free.

The profiled rail must be checked regularly (at least every 6 months) for contamination with friction value-reducing materials; it must be cleaned, if necessary.

In case of major accumulation of dust and dirt, or in extreme ambient conditions, special maintenance work is required.

(Please contact mayr® power transmission).

Controls (Fig. 16)

The piston space is filled with compressed air, thus suspending the spring force. In case of power failure, the compressed air in the piston space is diverted by the 3/2-directional control valve. The spring force has an effect on the clamping element. The profiled rail clamps/ brakes reliable and safely.

The \textit{mayr}° power transmission recommends the following pneumatic control units.



Item	Name
1	Pressure source
2	Maintenance unit
3	Non-return valve (in case of pressure fluctuations)
4	3/2-directional control valve (installation as near to the brake as possible)
5	Quick-action ventilating valve (for fast switching times)
6	Pressure switch (query in safety-related applications)

Options





Brake Dimensioning



Diagram 1: Switching / Braking Times / Distances

Name

1		Distance
2		Speed
3		Axial force
β	[°]	Angular position 0° (horizontal) to 90° (vertical)
a _B	[m/s²]	Acceleration of the downward-moving load, dependent on the angular position
a _v	[m/s ²]	Retardation
g	[m/s ²]	Gravitational acceleration (9.81 m/s ²)
F _{Br}	[N]	Braking force for dynamic calculation
F _{erf.}	[N]	Required holding force
F _{Nenn}	[N]	Nominal holding force (minimum holding force)
F _{NGes}	[N]	Total nominal holding force (one or more brakes)
F _{max}	[N]	Maximum holding force
m	[kg]	Load mass
S _{Br}	[m]	Braking distance: Distance from the beginning of the retardation up to the standstill of the load
S _{Sys}	[m]	System distance: Distance travelled by the load until the retardation begins.
S _{Ko}	[m]	Stopping distance: Distance from the signal interruption up to standstill of the load
t ₅₀	[s]	Brake switching time
t _v	[s]	Valve switching time
t _{sv}	[s]	Switching time control unit (signal processing time)
t _{sys}	[s]	System switching time
t _{Br}	[s]	Brake braking time
t _{Ko}	[s]	Stopping time: Time from the signal interruption

General

F

When selecting the brake, the nominal holding force must be greater or equal to the required holding force.

$$F_{Nenn} \ge F_{erf.}$$
 [N]

Dimensioning for dynamic braking (EMERGENCY STOP)

For safety reasons, at least the weight load of the masses to be held +100 % reserve must be provided.

The larger the ratio of the nominal holding force to the required holding force, the shorter the stopping distance (for the same technical conditions)

The minimum required holding force can be calculated with the following formula:

$$r_{\rm erf.} = \frac{m \times g}{0.5}$$
 [N]

Dimensioning for static holding (clamping)

For safety reasons, at least the minimum weight load of the masses to be held +20 % reserve must be provided.

The minimum required holding force can be calculated with the following formula:

$$F_{erf.} = \frac{m \times g}{0.8}$$
[N]

The stopping distance / stopping time of the load to be braked is strongly dependent on the following influences:

- Switching time control unit (signal processing)
- Switching time of the control valve
- Switching time of the brake
- Cross-section and length of the lines

The larger the sum of the switching times, the later the retardation of the load occurs (due to longer periods of acceleration). The stopping distance / the stopping time becomes longer (with constant holding force).

Please ensure sufficient dimensioning of the components of your system which may be placed under heavy loads during acceleration / retardation as a result of dynamic braking actions.

Name

V ₀	[m/s]	Initial speed
V _{max}	[m/s]	Maximum speed

If you have any questions, please contact $\textit{mayr}^{\circledast}\text{-power transmission.}$



Calculation example (dynamic braking)

Data:		
Angular position profiled rail	β	= 90° (vertical axis)
Mass	m	= 700 kg
Initial speed	V ₀	= 0.5 m/s
Valve switching time	t _v	= 0.016 s
Switching time control system	t _{sv}	= 0.020 s

Stopping distance

		-						
S _{κ₀}	=	$\mathbf{S}_{_{\mathbf{B}\mathbf{r}}}^{} + \mathbf{S}_{_{\mathbf{S}\mathbf{y}\mathbf{s}}}^{}$	=	0,06	0 + 0,058		= 0,118	[m]
Sto	ppir	ng time						
t _{ĸ₀}	=	$t_{Br} + t_{Sys}$		=	0,103 + 0	,071	= 0,174	[s]
t _e	=	V _{max}		- = -	1.2	20	- = 0,103	[s]
Br		F _{NGes}		_	15000	0.01	,	
			a _B		700	- 9.81		

1. Pre-selection of braking force								
E		m x g	_	FN1				
F _{erf.}	=	0.5	-	[N]				
E		700 x 9.81	- 10704	[]				
F _{erf.}	= -	0.5	- = 13/34	[IN]				

Selected: ROBA®-guidestop Size 45, Type 3840.0 $_0_-$ Nominal holding force **F**_{Nom} = **15000 N** (from Table "Technical Data")

2. Calculation of the stopping distance /stopping time

Checking the selected brake size

Acce	leration	of	the	load

a _B	=	$g x sin(\beta) = 9.8$	31 x sin(90°)	= 9.81	[m/s ²]
Syst	tem	distance			
S _{Sys}	=	$V_0 x t_{Sys} + a_B x t_{Sys}^2$	x 0.5		[m]
${\sf S}_{\scriptscriptstyle {\sf Sys}}$	=	0.5 x 0.071 + 9.81	x 0.071² x 0.5	= 0,058	B [m]
t_ _{Sys}	=	$t_{50} + t_v + t_{SV} =$	0,035 + 0,016 + 0.02	= 0,071	[s]
Bral	cinę	g distance			
s	_	V_max	1.20 ²	- 0.060) [m]
Br	-	$2 \times \left(\frac{F_{NGes}}{m} - a_B\right)^{-1}$	2 x 12.065	- 0,000	, [,,,]
V _{max}	=	$V_0 + a_B x t_{Svs} =$	0.5 + 9.81 x 0.071	= 1.20) [m/s]

ROBA®-guidestop hydraulic

Switching Times			Sizes			
			35	45	55	65
Brake switching time	t ₅₀	[s]	0,030	0,035	0,035	0,040

ROBA®-guidestop pneumatic

Switching Times			Sizes			
			25	35	45	55
Brake switching time 3850/20_0		[-1	0,030	0,035	0,035	0,035
Brake switching time 3851/3.0_0_ [S]			On request			

Retardation (for system dimensioning)

a _v =	F _{NGes} x 2.5 m - g	$= \frac{15000 \times 2.5}{700 - 9.81}$	= 54.34	[m/s²]
Load	= -	$\frac{\mathbf{a}_{v}}{\mathbf{g}} = \frac{54.34}{9.81}$	= 5.53	[g]

23

Electromagnetic clutches and brakes, clutch brake units

DC Drives

tendo[®]-PM Permanent magnet-excited DC motors

- ROBA-stop[®] standard
- ROBA-stop[®]-M motor brakes
- ROBA-stop[®]-S Water-proof, robust monoblock brakes
- ROBA-stop[®]-Z/ROBA-stop[®]-silenzio[®] Doubly safe elevator brakes
- ROBA[®]-diskstop[®]
- ROBA®-topstop®
- Brake systems for gravity loaded axes ROBA[®]-linearstop
- Backlash-free brake systems for linear motor axes
- ROBA[®]-guidestop Backlash-free holding brake for profield rail guides
- ROBATIC[®]/ROBA[®]-quick/ROBA[®]-takt
- Compact, very quiet disk brakes
- Robust, cost-effective motor brakes
- Multifunctional all-round safety brakes
- **Electromagnetic Brakes/Clutches**

Cost-effective torque-measuring couplings

- ROBA[®]-ES Backlash-free and damping for vibration-sensitive drives ROBA®-DS/ROBA®-D Backlash-free, torsionally rigid all-steel couplings
- smartflex[®]/primeflex[®] Perfect precision couplings for servo and stepping motors

ROBA[®]-contitorque

- Load-holding, frictionally locked torque limiting clutches
- Magnetic continuous slip clutches

Safety Clutches/Overload Clutches

Cost-effective torque limiting clutches, quick installation

Load-disconnecting protection against high torques

Exact limitation of tensile and compressive forces

Positive locking and completely backlash-free torque limiting clutches

- EAS[®]-HSC/EAS[®]-HSE
- High-speed safety clutches for high-speed applications

EAS[®]-Sp/EAS[®]-Sm/EAS[®]-Zr Load-disconnecting torque limiting clutches with switching function ROBA[®]-slip hub

EAS[®]-element clutch/EAS[®]-elements

Product Summary

EAS[®]-Compact[®]/EAS[®]-NC

EAS[®]-smartic[®]

EAS[®]-axial

ROBA®-DSM











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