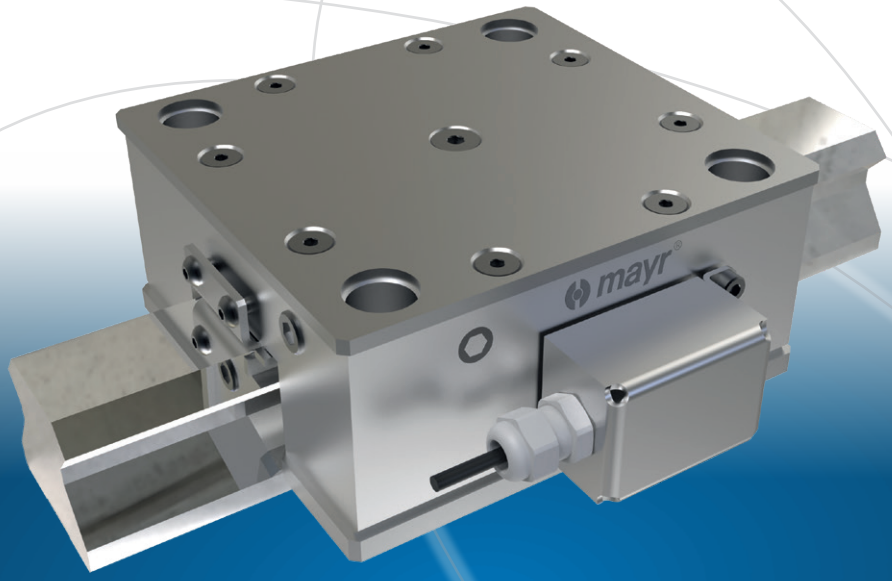
mayr®

your reliable partner



ROBA®-guidestop

P.380000.V10.EN

www.mayr®.com

Expert know-how in development and design

As the technological leader, *mayr*® power transmission focuses on continuous further development. Today, highly qualified engineers and technicians work on tomorrow's innovations using the most up-to-date tools. The many years of experience and countless tests in the Development and Testing Department at the Mauerstetten Headquarters form the basis of conscientious lifetime dimensioning.

The values upheld by our traditional, family-run company also include long-term stability and independence as well as a good reputation and satisfied customers.

Therefore, we place emphasis on:

- Tested product quality,
- Optimum customer service,
- Comprehensive know-how,
- Global presence,
- Successful innovations and
- Effective cost management

Tested quality and reliability

mayr® brakes and clutches/couplings are subject to meticulous quality inspections. These include quality assurance measures during the design process as well as a comprehensive final inspection. Only the best, tested quality leaves our place of manufacture. All products are rigorously tested on calibrated test stands, and adjusted precisely to the requested values. An electronic database in which the measured values are archived together with the associated serial numbers guarantees 100 % traceability. On request, we confirm the product characteristics with a test protocol.

The certification of our quality management according to DIN EN ISO 9001:2015 confirms the quality-consciousness of our colleagues at every level of the company.

Specialists in power transmission for more than a century

mayr® power transmission is one of the most traditional and yet most innovative companies in the field of power transmission. From modest beginnings in the year 1897, the family enterprise has developed to become the world market leader. Worldwide, the company employs approximately 1200 people.

An unsurpassed standard product range

mayr® power transmission offers an extensive range of variants of torque limiters, safety brakes, backlash-free shaft misalignment compensation couplings and high-quality DC drives. Numerous renowned machine manufacturers trust in solutions by *mayr*® power transmission.

Represented worldwide

With eight subsidiaries in Germany, sales offices in the USA, France, Great Britain, Italy, Singapore and Switzerland as well as 36 additional country representatives, *mayr*® is available in all important industrial areas, guaranteeing optimum customer service around the globe.

Never compromise on safety

We make no compromises where safety is concerned. Only top products of a perfect quality guarantee that no people are injured or machines damaged in case of malfunctions, collisions and other hazardous situations. The safety of your employees and machines is our motivation to always provide the best and most reliable clutches, couplings or brakes.

mayr® power transmission holds numerous ground-breaking patents, and is the global market or technological leader for

- application-optimised **safety brakes,** for example for passenger elevators, stage technology and gravity-loaded axes
- **torque limiters** to protect against expensive overload damage and production losses and
- backlash-free **servo couplings**.

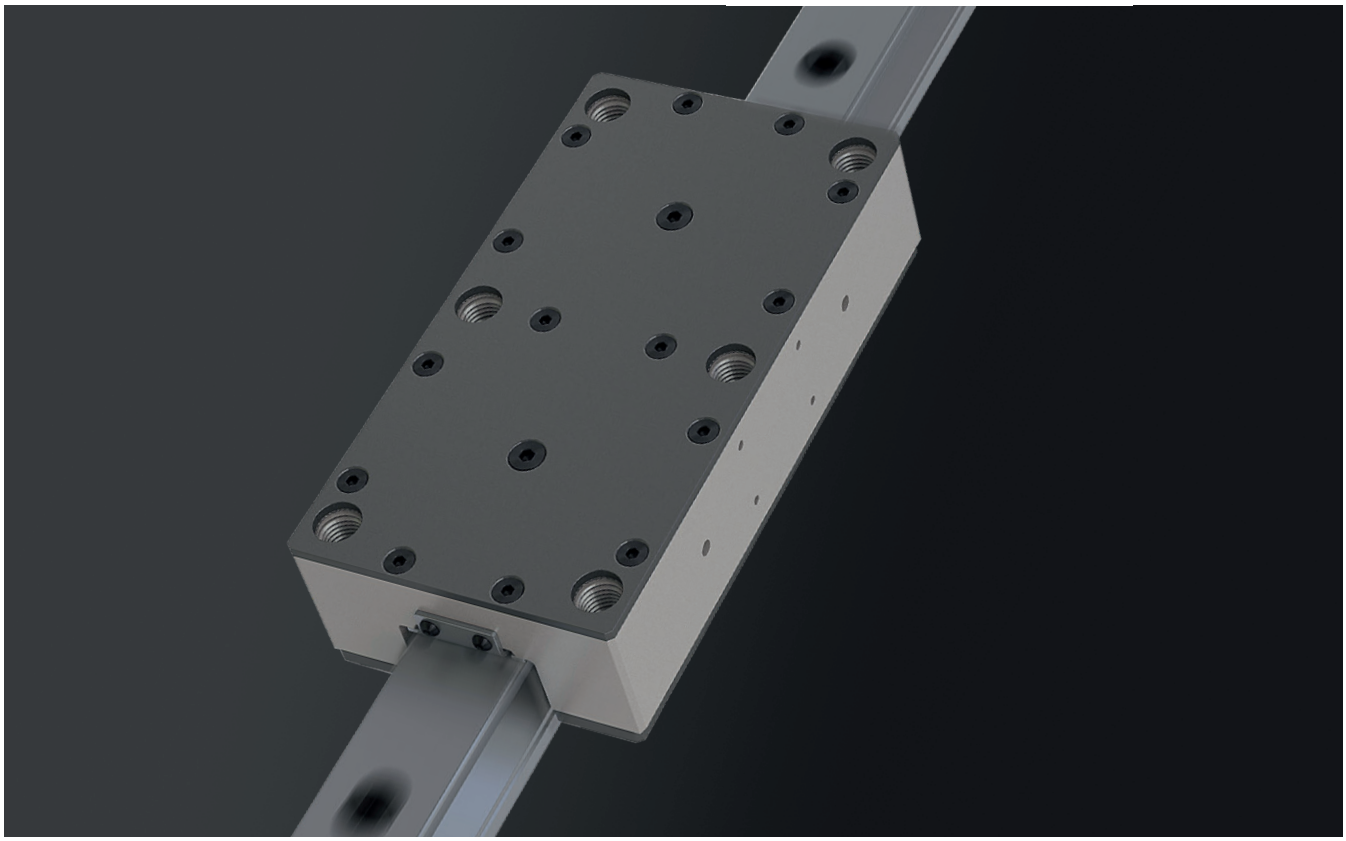
Strongly positioned

mayr® sets standards in power transmission with economically viable solutions. For maximum competitiveness of your machines and systems, we always aim for the best possible cost efficiency, starting with the development of your clutch/coupling or brake, right up to delivery of the finished and inspected product. For cost-efficient production, our factories in Poland and China represent the perfect supplement to the headquarters in Germany.

mayr® headquarters in Mauerstetten

Subsidiary with Production — *mayr*® China

Subsidiary with Production — *mayr*® Poland



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®-guidestop for application in gravity-loaded axes where hazard risks for people are to be minimised.

High 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 control movements and is thus gentle on the ball screw spindle. The closed brake absorbs 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 the cutting capacities 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.

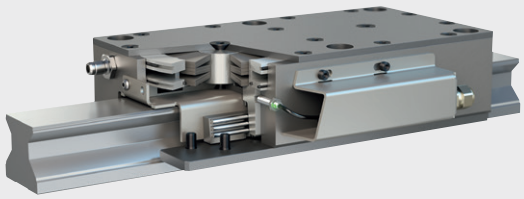
ROBA®-guidestop profiled rail brakes

decelerate reliably and safely – Clamp rigidly and backlash-free

- ❒ maximum safety due to fail-safe principle
- ❒ Type 3840, 3850/3852/3854, power pack with two brake circuits for double holding force
- ❒ Type 3841, 3851/3853/3855, 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

Standard **or** short design



ROBA®-guidestop hydraulic

Type 384$^{0}/_{1}$.0_ _ _ _

Clamps a profiled rail via a spring-loaded device at the exact position required and backlash-free.
EMERGENCY STOP braking possible.
Please observe profiled rail requirements!

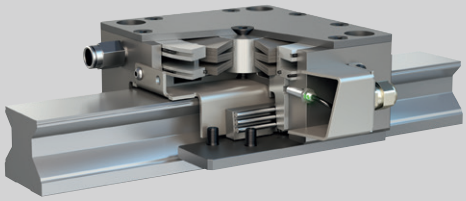
Nominal holding force: 5000 – 34000 N

Opening of the brake with 70 – 100 bar

For data and description, please see pages 6 - 9.

Pneumatically actuated

Standard **or** short design



ROBA®-guidestop pneumatic

Type 385$^{0}/_{1}$.0_ _ _ _, Type 385$^{4}/_{5}$.0_ _ _ _

Clamps a profiled rail via a spring-loaded device at the exact position required and backlash-free.
EMERGENCY STOP braking possible.
Please observe profiled rail requirements!

Type 385$^{0}/_{1}$.1_ _ _ _, Type 385$^{4}/_{5}$.1_ _ _ _

Clamps and brakes a profiled rail via a spring-loaded device at the exact position required and backlash-free.
At least 2000 dynamic braking actions possible.

Nominal holding force: 700 – 12000 N

Opening of the brake with 4, 5 or 6 bar.

For data and description, please see pages 10 - 17

Pneumatically actuated with a pressure

2 brake circuits **or** short design

- ● **with comparable nominal holding force as the hydraulic series**

ROBA®-guidestop pneumatic

Type 385$^{2}/_{3}$.0_ _ _ _

Clamps a profiled rail via a spring-loaded device at the exact position required and backlash-free.
EMERGENCY STOP braking possible.
Please observe profiled rail requirements!

Nominal holding force: 2750 – 15000 N

Opening of the brake with 20 – 28 bar.

For data and description, please see pages 18 - 21

For control with a pressure of 20 bar

Pressure booster for ROBA®-guidestop

Type 3880

For data and description, please see pages 24 - 26.

ROBA®-guidestop hydraulic

Type 3840._ _0_ _

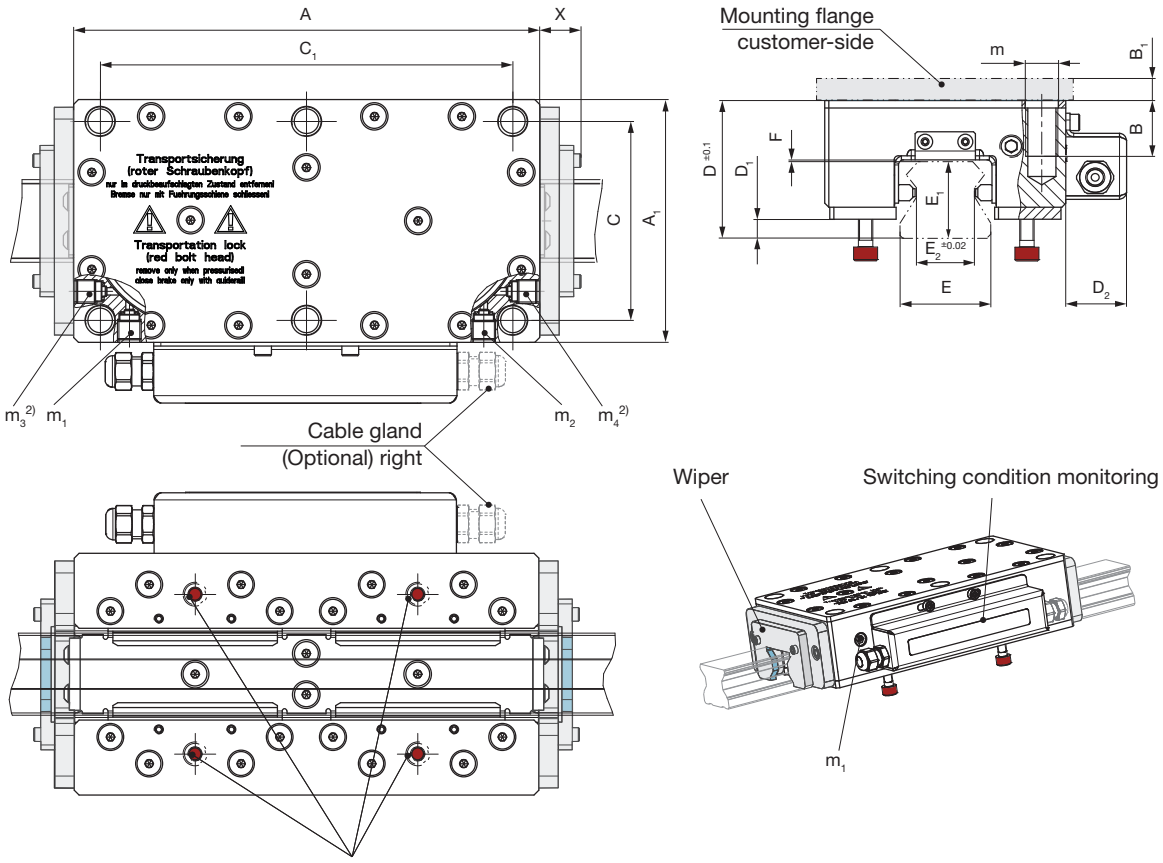


Fig. 1

Order Number

Rail manufacturer [1]				Rail type [1]	
IKO	**J**	INA	**A**	**0**	see table page 22
EWELLIX	**M**	BOSCH	**B**	**1**	
		Schneeberger	**C**	**2**	
		HIWIN	**D**		
		THK	**E**		
		Rollon	**F**		
		NSK	**G**		
		NTN-SNR	**H**		

Cable gland
0 Standard (on the left)
1 Optional (right)

__ / 3840.0 __ 0 __ __ / __

Size			Options
35 to 65	Clamping unit [4]	**0**	**0** Standard (Basic Type) **1** with switching condition monitoring [3] **2** with wiper [2] **3** with switching condition monitoring [3] and wiper [2]

Example: Order number 45 / 3840.010A1 / 0

1) For other rail manufacturers and rail types, please contact *mayr*® power transmission.
2) With a wiper, connections m_3 and m_4 can no longer be used.
3) 2 proximity switches are installed
4) Possible operating modes: Please observe page 23

Technical Data			Size			
			35	45	55	65
Nominal holding force F [2) 3)]		[N]	10000	15000	20000	34000
	Tolerance Type 3840.0_ _ _ _		0% / +150%			
Weight		[kg]	6	9	16	27
Operating pressure	min.	[bar]	70	70	70	85
	max.	[bar]	90	90	90	100
Rigidity		[N/µm]	380	490	860	1000
Hydraulic connection thread	m_1, m_2, m_3, m_4		1/8”			
Pressure Medium			Use hydraulic oil acc. DIN 51524-1:2006-04			
Absorption volume		[cm^3]	14	21	34	48
Ambient Temperature		[°C]	-10 to +60			

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

Dimensions [mm]	Size			
	35	45	55	65
A	192	225	270	325
A_1	100	120	140	170
B	21.7	27.7	35.7	43
B_1 [4)]	10	15	25	35
C	82	96	110	134
C_1	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
X	Dimension depends on the rail manufacturer			

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

Dimensions [mm]		
Rail manufacturer	Rail type	For details see page 22

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

Type 3841._ _0_ _

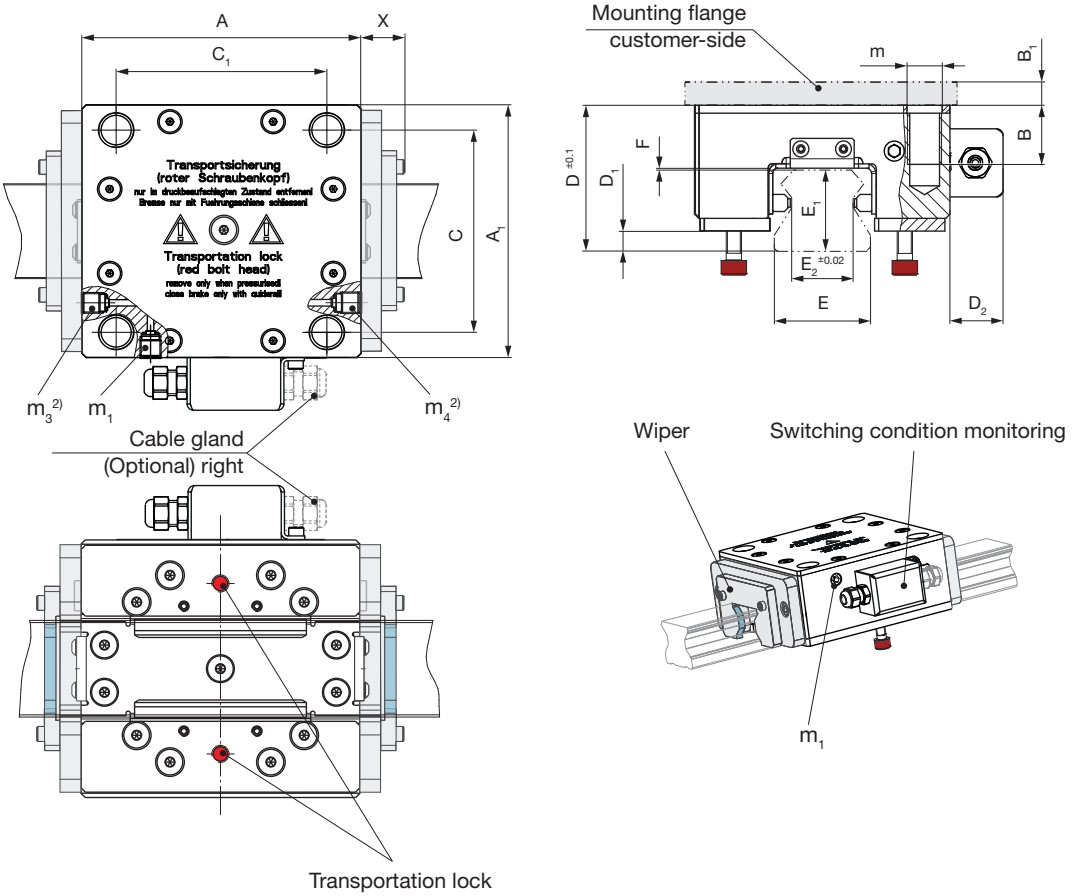


Fig. 2

Order Number

Rail manufacturer [1]		Rail type [1]	
IKO	J	INA	A	0	see table page 22
EWELLIX	M	BOSCH	B	1	
		Schneeberger	C	2	
		HIWIN	D		
		THK	E		
		Rollon	F		
		NSK	G		
		NTN-SNR	H		

Cable gland
0 Standard (on the left)
1 Optional (right)

__ / 3 8 4 1 . 0 __ 0 __ __ / __

Size	Clamping unit [3]		Options
35 to 65		0	0 Standard (Basic Type) 1 with switching condition monitoring 2 with wiper [2] 3 with switching condition monitoring and wiper [2]

Example: Order number 45 / 3841.010A1 / 0

1) For other rail manufacturers and rail types, please contact *mayr*® power transmission.
2) With a wiper, connections m_3 and m_4 can no longer be used.
3) Possible operating modes: Please observe page 23

Technical Data			Size			
			35	45	55	65
Nominal holding force F [2]		[N]	5000	7500	10000	17000
	Tolerance Type 3841.0_0_ _		0% / +150%			
Weight		[kg]	3.5	5.5	9	16
Operating pressure	min.	[bar]	70	70	70	85
	max.	[bar]	90	90	90	100
Rigidity		[N/µm]	180	245	430	500
Hydraulic connection thread	m_1, m_3, m_4		1/8”			
Pressure Medium			Use hydraulic oil acc. DIN 51524-1:2006-04			
Absorption volume		[cm³]	7	10.5	17	24
Ambient Temperature		[°C]	-10 to +60			

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

Dimensions [mm]	Size			
	35	45	55	65
A	115	130	155	190
A_1	100	120	140	170
B	21.7	27.7	35.7	43
B_1 [3]	10	15	25	35
C	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
X	Dimension depends on the rail manufacturer			

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

Dimensions [mm]		
Rail manufacturer	Rail type	For details see page 22

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

Type 3854._ _ _ _ _ Sizes 25 – 45

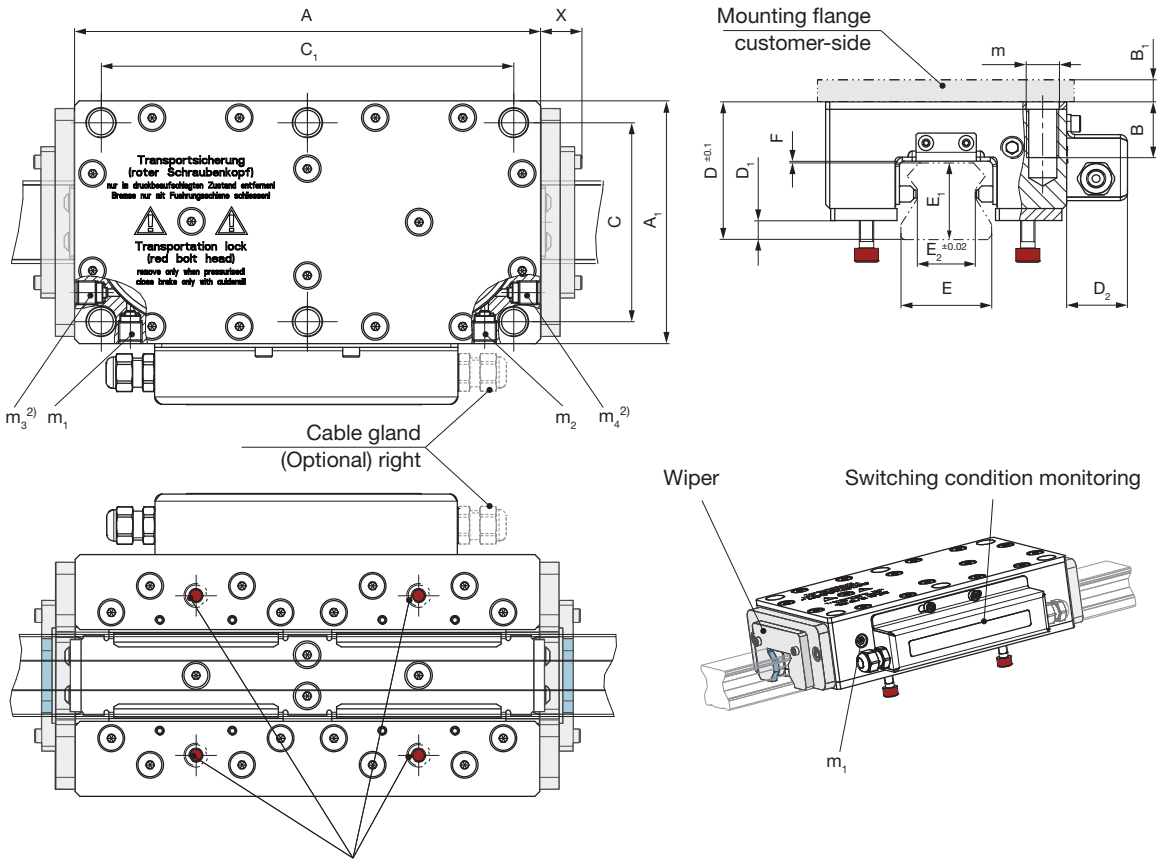


Fig. 3 Transportation lock

Order Number

Rail manufacturer [1]

IKO	**J**	INA	**A**
EWELLIX	**M**	BOSCH	**B**
		Schneeberger	**C**
		HIWIN	**D**
		THK	**E**
		Rollon	**F**
		NSK	**G**
		NTN-SNR	**H**

0	**Rail type** [1]
1	see table page 22
2	

__ / 3 8 5 4 . __ __ __ __ __ / __

Size
25 to 45

Clamping unit [4]	**0**
Brake unit [4]	**1**

Options

Standard (Basic Type)	**0**
with switching condition monitoring [3]	**1**
with wiper [2]	**2**
with switching condition monitoring [3] and wiper [2]	**3**

Opening pressure

0	Reduced	4 bar
1	Standard	5 bar
2	Increased	6 bar

Cable gland

Standard (on the left)	**0**
Optional (right)	**1**

Example: Order number 45 / 3854.000A1 / 0

1) For other rail manufacturers and rail types, please contact *mayr*® power transmission.
2) With a wiper, connections m_3 and m_4 can no longer be used.
3) 2 proximity switches are installed
4) Possible operating modes: Please observe page 23

Technical Data			Size			
			25	30	35	45
Nominal holding force [3) 4)] F_N [N]	4 bar	Type 3854.0_0_ _	1400	2000	2800	4000
	5 bar	Type 3854.0_1_ _	1700	2700	4400	5000
	6 bar	Type 3854.0_2_ _	2200	3500	-	6000
	4 bar	Type 3854.1_0_ _	980	1400	1960	2800
	5 bar	Type 3854.1_1_ _	1190	1890	3080	3500
	6 bar	Type 3854.1_2_ _	1540	2450	-	4200
	Tolerance	Type 3854.0_ _ _ _	0% / +150%			
		Type 3854.1_ _ _ _	0% / +70%			
Weight	[kg]		2.4	5.4	9	14.5
Max. Operating pressure	[bar]		8			
Rigidity	[N/µm]		200	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 opening pressure	[NL]	Type 3854._ _0_ _	0.063	0.120	0.179	0.241
		Type 3854._ _1_ _	0.079	0.150	0.224	0.301
		Type 3854._ _2_ _	0.095	0.180	0.269	0.361
Pressure Medium			Compressed air with compressed air quality acc. ISO 8573-1 Class 7:4:4			
Ambient Temperature	[°C]		-10 to +60			

3) The dimensioning as a redundant dual 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

Dimensions [mm]	Size			
	25	30	35	45
A	145	182	192	225
A_1	70	90	100	120
B	14.7	21.7	21.7	27.7
B_1 [6)]	10	10	10	15
C	58	72	82	96
C_1	132	164	170	196
D_2	25	25	25	25
E	23	28	34	45
m [7)]	6 x M8	6 x M10	6 x M12	6 x M16
X	Dimension depends on the rail manufacturer			

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

Dimensions [mm]		
Rail manufacturer	Rail type	For details see page 22

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

Type 3850._ _ _ _ _ Sizes 55, 65

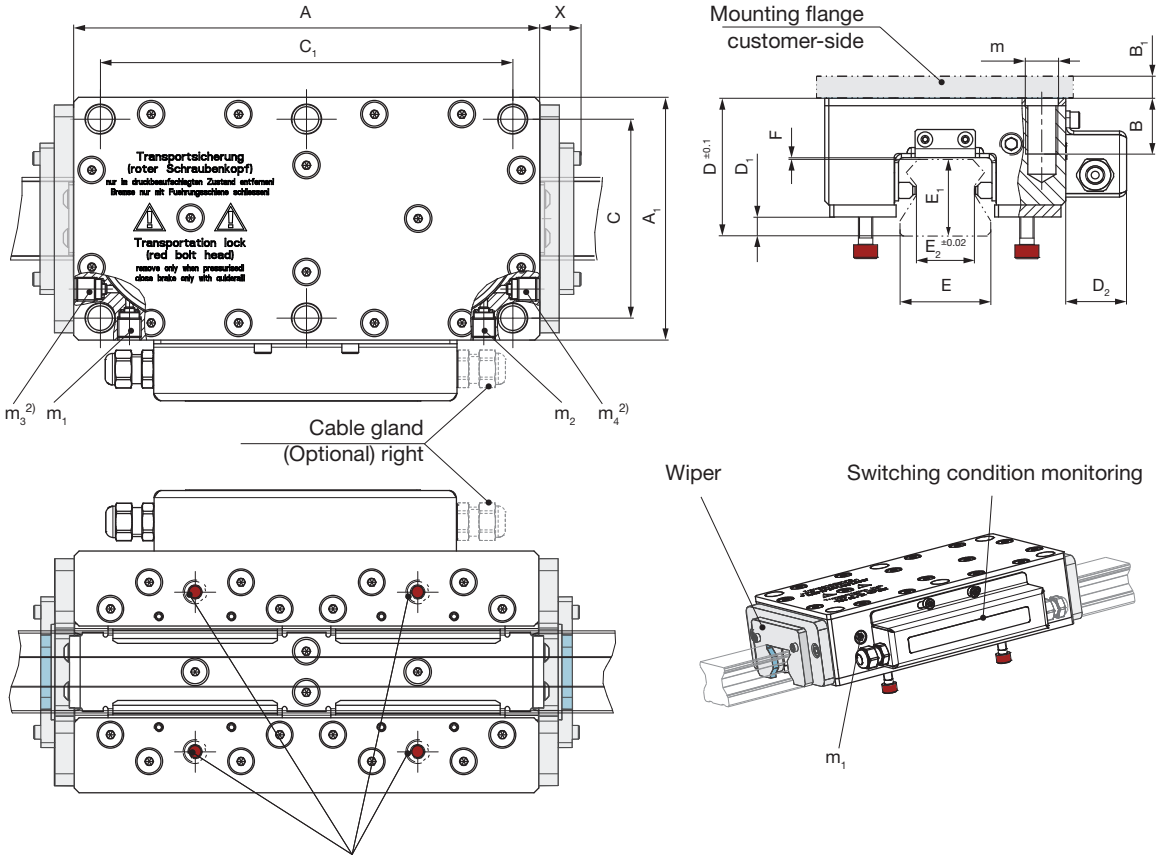


Fig. 3 Transportation lock

Order Number

Rail manufacturer [1]

IKO	**J**	INA	**A**
EWELLIX	**M**	BOSCH	**B**
		Schneeberger	**C**
		HIWIN	**D**
		THK	**E**
		Rollon	**F**
		NSK	**G**
		NTN-SNR	**H**

0	**Rail type** [1]
1	see table page 22
2	

__ / 3 8 5 0 . __ __ __ __ __ / __

Size
55, 65

Clamping unit [4]	**0**
Brake unit [4]	**1**

Options

Standard (Basic Type)	**0**
with switching condition monitoring [3]	**1**
with wiper [2]	**2**
with switching condition monitoring [3] and wiper [2]	**3**

Opening pressure

0	Reduced	4 bar
1	Standard	5 bar
2	Increased	6 bar

Cable gland

Standard (on the left)	**0**
Optional (right)	**1**

Example: Order number 45 / 3850.000A1 / 0

1) For other rail manufacturers and rail types, please contact *mayr*® power transmission.
2) With a wiper, connections m_3 and m_4 can no longer be used.
3) 2 proximity switches are installed
4) Possible operating modes: Please observe page 23

Technical Data			55	65
Nominal holding force [3) 4) 5)] F_N [N]	4 bar	Type 3850.0_0_ _	6000	8000
	5 bar	Type 3850.0_1_ _	7000	10000
	6 bar	Type 3850.0_2_ _	9000	12000
	4 bar	Type 3850.1_0_ _	4200	5600
	5 bar	Type 3850.1_1_ _	4900	7000
	6 bar	Type 3850.1_2_ _	6300	8400
	Toler-ance	Type 3850.0_ _ _ _	0% / +150%	
		Type 3850.1_ _ _ _	0% / +70%	
Weight	[kg]		14.5	26.7
Max. Operating pressure	[bar]		8	
Rigidity	[N/µm]		860	1000
Pneumatic connection thread	m_1, m_2, m_3, m_4		1/8”	1/8”
Air consumption per switching procedure in standard litres at opening pressure	[NL]	Type 3850._ _0_ _	0.241	0.34
		Type 3850._ _1_ _	0.301	0.42
		Type 3850._ _2_ _	0.361	0.5
Pressure Medium			Compressed air with compressed air quality acc. ISO 8573-1 Class 7:4:4	
Ambient Temperature	[°C]		-10 to +60	

3) The dimensioning as a redundant dual 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 %. The lower tolerance value must be considered here.

Dimensions [mm]	55	65
A	270	325
A_1	140	170
B	35.7	43
B_1 [6)]	25	35
C	110	134
C_1	240	288
D_2	25	25
E	53	63
m [7)]	6 x M20	6 x M24
X	Dimension depends on the rail manufacturer	

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

Dimensions [mm]		
Rail manufacturer	Rail type	For details see page 22

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

Type 3855._ _ _ _ _ Größe 25 - 45

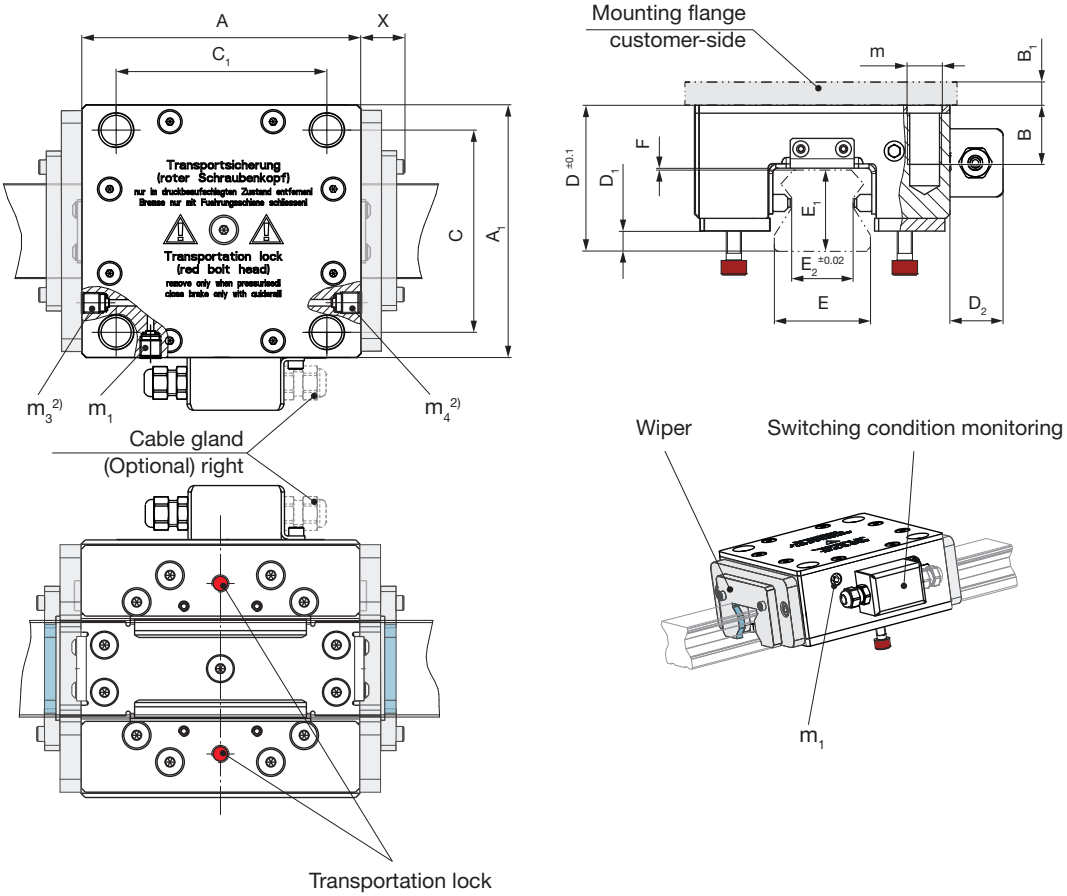


Fig. 4

Order Number

Rail manufacturer [1]

IKO	**J**	INA	**A**
EWELLIX	**M**	BOSCH	**B**
		Schneeberger	**C**
		HIWIN	**D**
		THK	**E**
		Rollon	**F**
		NSK	**G**
		NTN-SNR	**H**

0	**Rail type** [1]
1	see table page 22
2	

__ / 3 8 5 5 . __ __ __ __ __ / __

Size
25
to
45

Clamping unit [4]	**0**
Brake unit [4]	**1**

Options

Standard (Basic Type)	**0**
with switching condition monitoring	**1**
with wiper [2]	**2**
with switching condition monitoring and wiper [2] [3]	**3**

Opening pressure

0	Reduced	4 bar
1	Standard	5 bar
2	Increased	6 bar

Cable gland

Standard (on the left)	**0**
Optional (right)	**1**

Example: Order number 45 / 3855.000A1 / 0

1) For other rail manufacturers and rail types, please contact *mayr*® power transmission.
2) With a wiper, connections m_3 and m_4 can no longer be used.
3) With wiper and switching condition monitoring, for Sizes 25, 30, 45 the cable gland is only possible on the right.
4) Possible operating modes: Please observe page 23

Technical Data			Size			
			25	30	35	45
Nominal holding force [3] F_N [N]	4 bar	Type 3855.0_0_ _	700	1000	1400	2000
	5 bar	Type 3855.0_1_ _	850	1350	2200	2500
	6 bar	Type 3855.0_2_ _	1100	1750	-	3000
	4 bar	Type 3855.1_0_ _	490	700	980	1400
	5 bar	Type 3855.1_1_ _	595	945	1540	1750
	6 bar	Type 3855.1_2_ _	770	1225	-	2100
	Toler-ance	Type 3855.0_ _ _ _	0% / +150%			
		Type 3855.1_ _ _ _	0% / +70%			
Weight	[kg]		1.5	3.3	5.1	8.4
Max. Operating pressure	[bar]		8			
Rigidity	[N/µm]		100	190	245	430
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 opening pressure	[NL]	Type 3855._ _0_ _	0.032	0.060	0.090	0.120
		Type 3855._ _1_ _	0.039	0.075	0.112	0.151
		Type 3855._ _2_ _	0.047	0.090	0.135	0.181
Pressure Medium			Compressed air with compressed air quality acc. ISO 8573-1 Class 7:4:4			
Ambient Temperature	[°C]		-10 to +60			

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

Dimensions [mm]	Size			
	25	30	35	45
A	88	104	115	130
A_1	70	90	100	120
B	14.7	20	21.7	27.7
B_1 [5]	10	10	10	15
C	58	72	82	96
C_1	75	86	92	98
D_2	25	25	25	25
E	23	28	34	45
m [6]	4 x M8	4 x M10	4 x M12	4 x M16
X	Dimension depends on the rail manufacturer			

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

Dimensions [mm]		
Rail manufacturer	Rail type	For details see page 22

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

Type 3851._ _ _ _ _

Sizes 55, 65

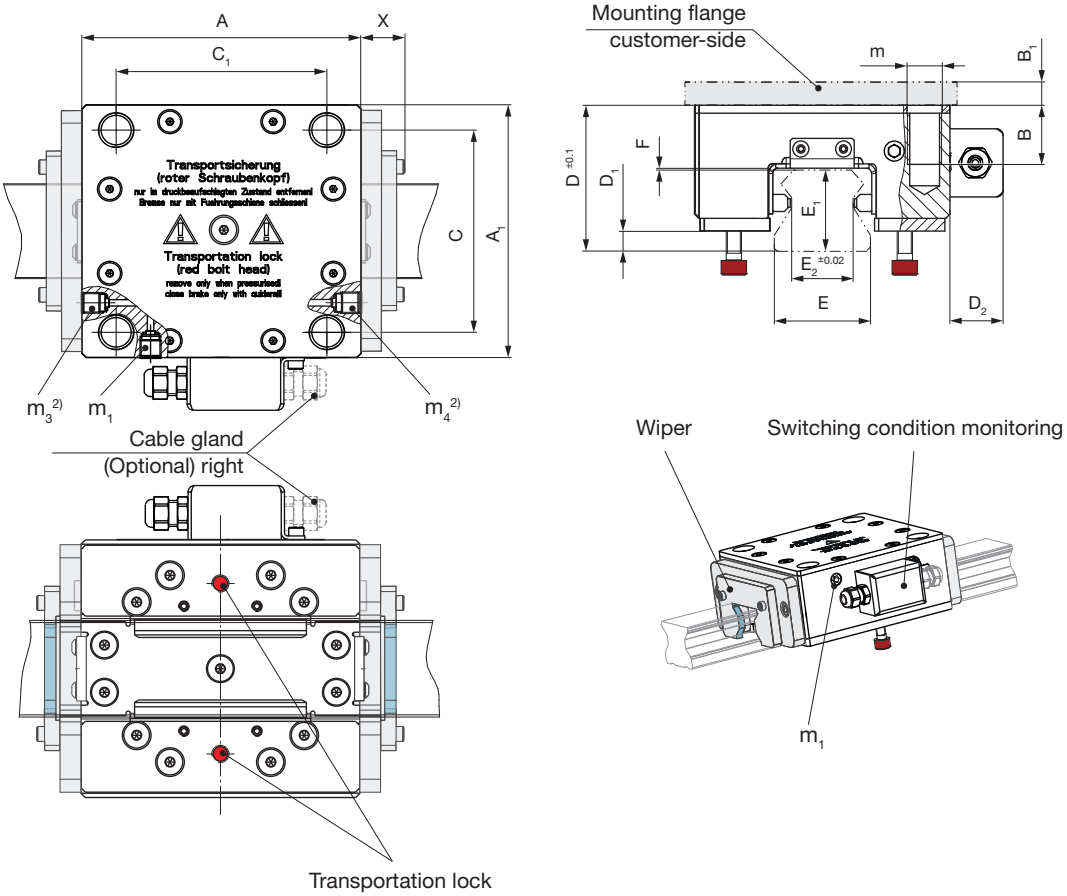


Fig. 4

Order Number

Rail manufacturer [1]

IKO	**J**	INA	**A**
EWELLIX	**M**	BOSCH	**B**
		Schneeberger	**C**
		HIWIN	**D**
		THK	**E**
		Rollon	**F**
		NSK	**G**
		NTN-SNR	**H**

0	**Rail type** [1]
1	see table page 22
2	

__ / 3 8 5 1 . __ __ __ __ __ / __

Size					
55, 65	Clamping unit [4] **0** / Brake unit [4] **1**	**Options**		**Opening pressure**	**Cable gland**
		Standard (Basic Type) **0**		**0** Reduced 4 bar	Standard (on the left) **0**
		with switching condition monitoring **1**		**1** Standard 5 bar	Optional (right) **1**
		with wiper [2] **2**		**2** Increased 6 bar	
		with switching condition monitoring and wiper [2] [3] **3**			

Example: Order number 45 / 3851.000A1 / 0

1) For other rail manufacturers and rail types, please contact *mayr*® power transmission.
2) With a wiper, connections m_3 and m_4 can no longer be used.
3) With wiper and switching condition monitoring, for size 55 the cable gland is only possible on the right
4) Possible operating modes: Please observe page 23

Technical Data			55	65
Nominal holding force [3) 4)] F_N [N]	4 bar	Type 3851.0_0_ _	3000	4000
	5 bar	Type 3851.0_1_ _	3500	5000
	6 bar	Type 3851.0_2_ _	4500	6000
	4 bar	Type 3851.1_0_ _	2100	2800
	5 bar	Type 3851.1_1_ _	2450	3500
	6 bar	Type 3851.1_2_ _	3150	4200
	Toler-ance	Type 3851.0_ _ _ _	0% / +150%	
		Type 3851.1_ _ _ _	0% / +70%	
Weight	[kg]		8.4	15.6
Max. Operating pressure	[bar]		8	
Rigidity	[N/µm]		430	500
Pneumatic connection thread	m_1, m_2, m_3, m_4		1/8”	1/8”
Air consumption per switching procedure in standard litres at opening pressure	[NL]	Type 3851._ _0_ _	0.120	0.17
		Type 3851._ _1_ _	0.151	0.21
		Type 3851._ _2_ _	0.181	0.25
Pressure Medium			Compressed air with compressed air quality acc. ISO 8573-1 Class 7:4:4	
Ambient Temperature	[°C]		-10 to +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 %. The lower tolerance value must be considered here.

Dimensions [mm]	55	65
A	155	190
A_1	140	170
B	35.7	43
B_1 [6)]	25	35
C	110	134
C_1	125	152
D_2	25	25
E	53	63
m [7)]	4 x M20	4 x M24
X	Dimension depends on the rail manufacturer	

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

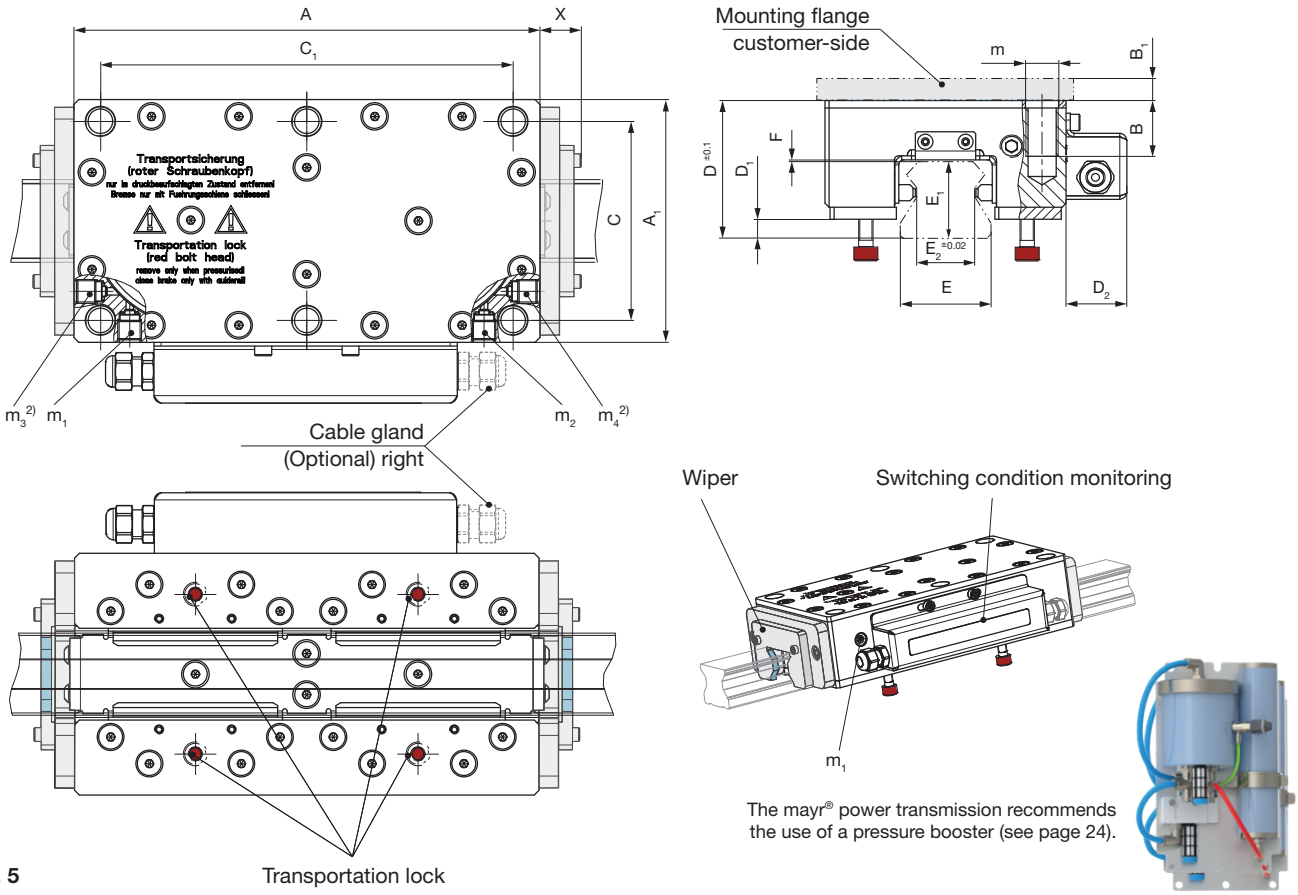
Dimensions [mm]		
Rail manufacturer	Rail type	For details see page 22

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._ _1_ _



The mayr® power transmission recommends the use of a pressure booster (see page 24).

Fig. 5

Order Number

Rail manufacturer [1]

IKO	**J**	INA	**A**
EWELLIX	**M**	BOSCH	**B**
		Schneeberger	**C**
		HIWIN	**D**
		THK	**E**
		Rollon	**F**
		NSK	**G**
		NTN-SNR	**H**

0	**Rail type** [1]
1	see table page 22
2	

__ / 3 8 5 2 . 0 __ 1 __ __ / __

Size
25 to 45

Clamping unit [4] **0**

Options

Standard (Basic Type)	**0**
with switching condition monitoring [3]	**1**
with wiper [2]	**2**
with switching condition monitoring [3] and wiper [2]	**3**

1 **Opening pressure**
Standard 20 bar

Cable gland

Standard (on the left)	**0**
Optional (right)	**1**

Example: Order number 45 / 3852.001A1 / 0

1) For other rail manufacturers and rail types, please contact *mayr*® power transmission.
2) With a wiper, connections m_3 and m_4 can no longer be used.
3) 2 proximity switches are installed
4) Possible operating modes: Please observe page 23

Technical Data			Size		
			25	35	45
Nominal holding force [3) 4) 5)] F_N [N]	20 bar	Type 3852.0_1_ _	5500	10000	15000
	Toler-ance	Type 3852.0_1_ _	0% / +150%		
Weight	[kg]		2.4	5.4	9
Operating pressure	[bar]		20 - 28		
Rigidity	[N/µm]		200	380	490
Pneumatic connection thread	m_1, m_2, m_3, m_4		M5	1/8”	1/8”
Air consumption per switching procedure in standard litres at opening pressure	[NL]		0.31	0.600	0.89
Pressure Medium			Compressed air with compressed air quality acc. ISO 8573-1 Class 7:4:4		
Ambient Temperature	[°C]		-10 to +60		

3) The dimensioning as a redundant dual 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 %. The lower tolerance value must be considered here.

Dimensions [mm]	Size		
	25	35	45
A	145	192	225
A_1	70	100	120
B	14.7	21.7	27.7
B_1 [6)]	10	10	15
C	58	82	96
C_1	132	170	196
D_2	25	25	25
E	23	34	45
m [7)]	6 x M8	6 x M12	6 x M16
X	Dimension depends on the rail manufacturer		

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

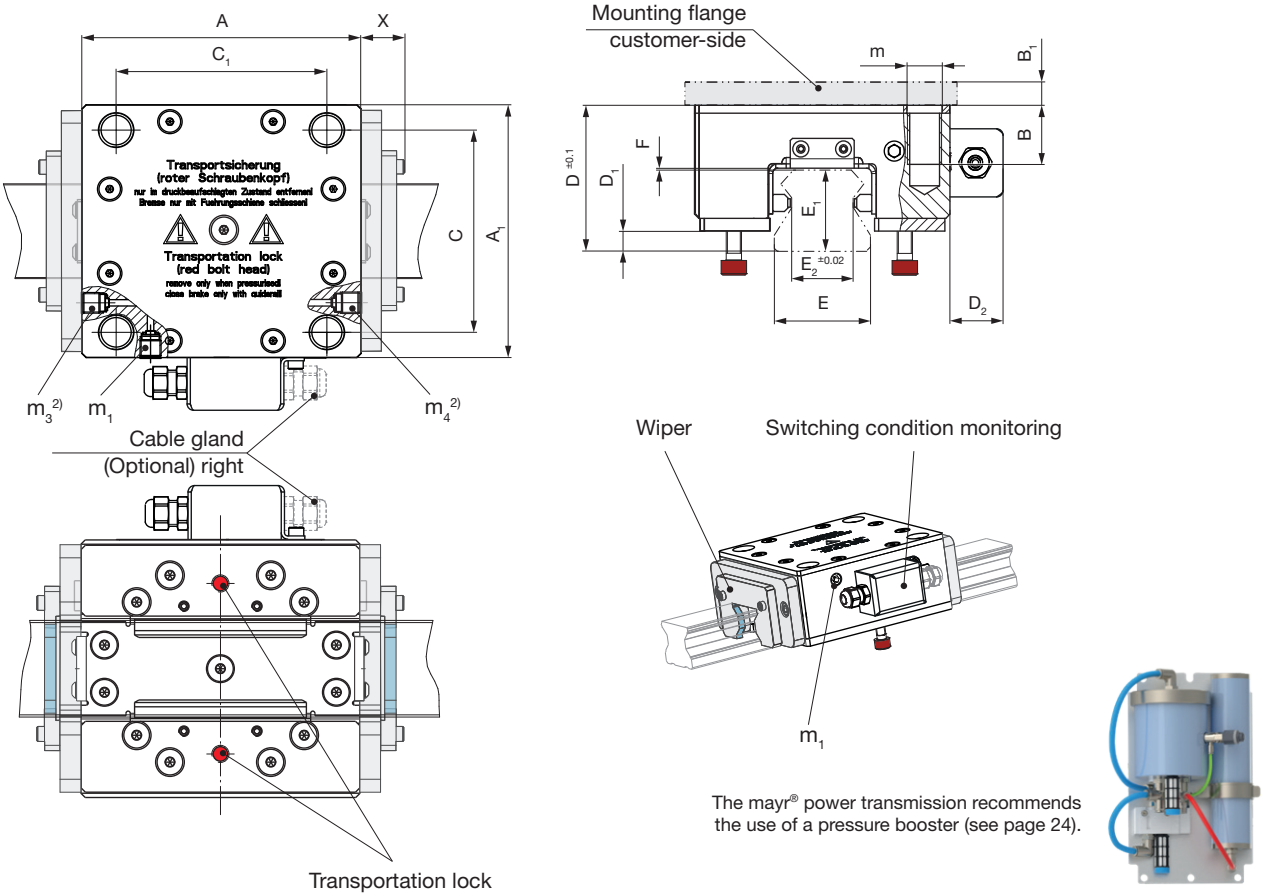
Dimensions [mm]		
Rail manufacturer	Rail type	For details see page 22

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._ _1_ _



The mayr® power transmission recommends the use of a pressure booster (see page 24).

Fig. 6

Order Number

Rail manufacturer [1]

IKO	**J**	INA	**A**
EWELLIX	**M**	BOSCH	**B**
		Schneeberger	**C**
		HIWIN	**D**
		THK	**E**
		Rollon	**F**
		NSK	**G**
		NTN-SNR	**H**

0	**Rail type** [1]
1	see table page 22
2	

__ / 3 8 5 3 . 0 __ 1 __ __ / __

Size
25 to 45

Clamping unit [4] **0**

Options

Standard (Basic Type)	**0**
with switching condition monitoring	**1**
with wiper [2]	**2**
with switching condition monitoring and wiper [2] [3]	**3**

Opening pressure
1 Standard 20 bar

Cable gland

Standard (on the left)	**0**
Optional (right)	**1**

Example: Order number 45 / 3853.001A1 / 0

1) For other rail manufacturers and rail types, please contact *mayr*® power transmission.
2) With a wiper, connections m_3 and m_4 can no longer be used.
3) With wiper and switching condition monitoring, for sizes 25, 45 the cable gland is only possible on the right.
4) Possible operating modes: Please observe page 23

Technical Data			Size		
			25	35	45
Nominal holding force [3) 4)] F_N [N]	20 bar	Type 3853.0_1_ _	2750	5000	7500
	Toler-ance	Type 3853.0_1_ _	0% / +150%		
Weight	[kg]		1.5	3.3	5.1
Operating pressure	[bar]		20 - 28		
Rigidity	[N/µm]		100	190	245
Pneumatic connection thread	m_1, m_3, m_4		M5	1/8”	1/8”
Air consumption per switching procedure in standard litres at opening pressure	[NL]		0.15	0.30	0.44
Pressure Medium			Compressed air with compressed air quality acc. ISO 8573-1 Class 7:4:4		
Ambient Temperature	[°C]		-10 to +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 %. The lower tolerance value must be considered here.

Dimensions [mm]	Size		
	25	35	45
A	88	115	130
A_1	70	100	120
B	14.7	21.7	27.7
B_1 [5)]	10	10	15
C	58	82	96
C_1	75	92	98
D_2	25	25	25
E	23	34	45
m [6)]	4 x M8	4 x M12	4 x M16
X	Dimension depends on the rail manufacturer		

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

Dimensions [mm]		
Rail manufacturer	Rail type	For details see page 22

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.

Profiled rail

Dimensions Profiled Rail

Dimensions [mm]				Size																
Rail manufacturer			Rail type	25					30					35						
				E_1	E_2	D	D_1	F	E_1	E_2	D	D_1	F	E_1	E_2	D	D_1	F		
INA	A	0	TSX-E	22.3	14.6	44.3	4.1	1	not available					30	21.5	57	6.3	1		
		1	TKSD	21.7	16	43.7	3.5	1	25	19.95	53.5	3.5	3	29.7	26.8	56.7	6.0	1		
		2	TKVD	18.7	14.5	43.7	3.5	4	not available					27	22.2	56	5.3	3		
Bosch	B	0	R1805/6/7, R1845/6/7	23.4	13	45.4	5.2	1	not available					30.8	21	57.8	7.1	1		
		1	R1605/6/7, R1645/7, R2045/7	24.2	13.8	46.3	6.1	1	28.35	18	54.85	4.85	1	31.9	23.5	58.9	8.2	1		
Schneeberger	C	0	MR	24.5	15	46.5	6.3	1	not available					32.0	21	59	8.2	1		
HIWIN	D	0	RG	23.6	14.7	45.6	5.4	1	28	17	56	6	2.5	30.2	22	57.2	6.5	1		
		1	HG	22	15.8	44	3.8	1	not available					29	23.8	56.0	5.3	1		
		2	CG [1]	24.2	13.8	46.2	7.1	1	28.3	18	54.8	4.8	1	31.8	23.5	58.8	8.8	1		
THK	E	0	SRG	23	15	45	5.8	1	30	23	57	6.3	1	30	23	57	6.3	1		
		1	SHS	20	17.6	42.5	3.3	1.5	not available					26	27	54.5	3.8	2.5		
Rollon	F	0	MR	22	15.2	44	3.8	1	26	19.2	54	4	2.5	29	25	56	6	1		
NSK	G	0	RA	24	13	46	5.8	1	28	16	56.5	6.5	3	31	21.4	58	7.3	1		
NTN-SNR	H	0	BG/LGB	19.2	17.6	42.2	2	2	not available					26	27	54.5	3.8	2.5		
IKO	J	0	LRX/MX	24.5	13.8	46.5	6.3	1	28	17.6	56.5	6.5	3	32	20	59	8.3	1		
EWELLIX	M	0	LLU	24.3	15	46.3	6.1	1	not available					32	21	59	8.3	1		
		1	LLR	24.2	16.9	46.2	6	1	not available					31.8	24.9	58.8	8.1	1		
Other rail manufacturers and rail types on request																				

Dimensions [mm]				Size																
Rail manufacturer			Rail type	45					55					65						
				E_1	E_2	D	D_1	F	E_1	E_2	D	D_1	F	E_1	E_2	D	D_1	F		
INA	A	0	TSX-E	38	27	68.5	9.5	1	45	31.8	83.8	11.5	1	53.8	38.2	97.5	10.8	1		
		1	TKSD	37.2	34.3	67.7	8.7	1	not available					not available						
		2	TKVD	34.2	29.6	67.2	8.2	3.5	41.5	35.8	85.0	12.7	5.7	not available						
Bosch	B	0	R1805/6/7, R1845/6/7	38.8	25	69.3	10.3	1	47.6	31	86.4	14.1	1	57.9	36.2	101.6	14.9	1		
		1	R1605/6/7, R1645/7, R2045/7	39.9	29	70.3	11.3	1	47.9	34.6	86.7	14.4	1	59.9	40	103.5	16.8	1		
Schneeberger	C	0	MR	40	29	70.5	11.5	1	48	35	86.8	14.5	1	58	43	101.7	15	1		
HIWIN	D	0	RG	38	30	68.5	9.5	1	44	38	82.8	10.5	1	53	44	96.7	10	1		
		1	HG	not available					not available					not available						
		2	CG [1]	39.8	30	70.3	11.3	1	not available					not available						
THK	E	0	SRG	37	32	69	10	2.5	43	38	81.8	9.5	1	54	45	99.2	12.5	2.5		
		1	SHS	32	37.5	66	7	4.5	38	38	78	5.7	2.2	53	49	96.7	10	1		
Rollon	F	0	MR	38	34	68.5	9.5	1	38	42	78.8	6.5	3	not available						
NSK	G	0	RA	38	28.5	68.5	9.5	1	43.5	30.8	83.5	11.2	2.2	55	35	100.2	13.2	2.5		
NTN-SNR	H	0	BG/LGB	31.1	37.5	65	6	4.4	38	43	78	5.7	2.2	not available						
IKO	J	0	LRX/MX	38	28	68.5	9.5	1	43	32	81.8	9.5	1	56	40	99.7	13	1		
EWELLIX	M	0	LLU	39.8	29	70.3	11.3	1	47.8	35	86.6	14.3	1	55	43	99.8	13	2		
		1	LLR	39.8	33	70.3	11.3	1	not available					not available						
Other rail manufacturers 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.

1) Only for Type 3854 / 3855

Profiled rail

Clamping unit

Type 38_ _.0 clamping unit				Size					
Rail manufacturer			Rail type	25	30	35	45	55	65
INA	A	0	TSX-E	■		■	■	■	■
		1	TKSD	■	■	■	■		
		2	TKVD	■		■	■	■	
Bosch	B	0	R1805/6/7, R1845/6/7	■		■	■	■	■
		1	R1605/6/7, R1645/7, R2045/7	■	■	■	■	■	■
Schneeberger	C	0	MR	■		■	■	■	■
HIWIN	D	0	RG	■	■	■	■	■	■
		1	HG	■		■			
		2	CG	■	■	■	■		
THK	E	0	SRG	■		■	■	■	■
		1	SHS	■		■	■	■	■
Rollon	F	0	MR	■		■	■	■	
NSK	G	0	RA	■		■	■	■	■
NTN-SNR	H	0	BG/LGB	■		■	■	■	
IKO	J	0	LRX/MX	■		■	■	■	■
EWELLIX	M	0	LLU	■		■	■	■	■
		1	LLR	■		■	■		

Possible operating modes:

■	• Static clamping • Sporadic EMERGENCY STOP brakings
■	• Static clamping ➔ no dynamic braking / EMERGENCY STOP possible

Brake unit

Type 38_ _.1 brake unit				Size					
Rail manufacturer			Rail type	25	30	35	45	55	65
INA	A	0	TSX-E						
		1	TKSD	■	■	■	■		
		2	TKVD			■	■	■	
Bosch	B	0	R1805/6/7, R1845/6/7	■		■	■	■	■
		1	R1605/6/7, R1645/7, R2045/7	■	■	■	■	■	■
Schneeberger	C	0	MR	■		■	■	■	■
HIWIN	D	0	RG	■	■	■	■	■	■
		1	HG						
		2	CG	■	■	■	■		
THK	E	0	SRG	■		■			■
		1	SHS	■				■	■
Rollon	F	0	MR					■	
NSK	G	0	RA			■	■	■	■
NTN-SNR	H	0	BG/LGB	■				■	
IKO	J	0	LRX/MX			■	■	■	■
EWELLIX	M	0	LLU	■		■	■	■	■
		1	LLR	■		■	■		

Possible operating modes:

■	• Static clamping • Dynamic braking • Sporadic EMERGENCY STOP brakings

Profiled rail requirements

mayr® power transmission recommends the use of profiled rails from approved rail manufacturers.

When using other profiled rails the following applies:

Tolerance thickness	±0.02 mm
Hardness	at least HRC 55
Surface quality	Ra <0.8 µm
Yield point	≥400 N/mm² (z. B. C45)
Evenness	≤0.01 mm
Straightness	≤0.01 mm

Table: Profiled rail requirements

Friction value reducing residues on the profiled rail must be avoided.

Danger of load crashes.

Pressure booster for ROBA®-guidestop high pressure, pneumatic

Highlights and Advantages

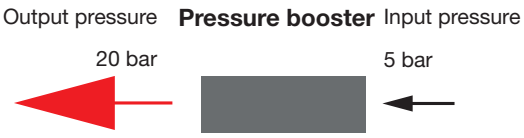
In the majority of cases, the available pressure in the compressed air system is not sufficient to operate the ROBA®-guidestop Type 3852/3853 with a pressure of 20 bar. One option is a general increase of system pressure which, however, results in high expenses and energy costs. A solution to this problem 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 ready to connect
- ❒ Pressure booster in housing ready to connect **(noise reduced 65 dB(A))**



Principle picture: Pressure increase

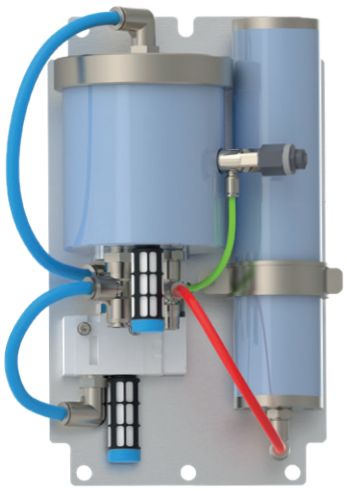


Fig. 7: Pressure booster on the plate

Fig. 8: Pressure booster in the housing

Pressure booster for ROBA®-guidestop high pressure, pneumatic

Type 3880._0000

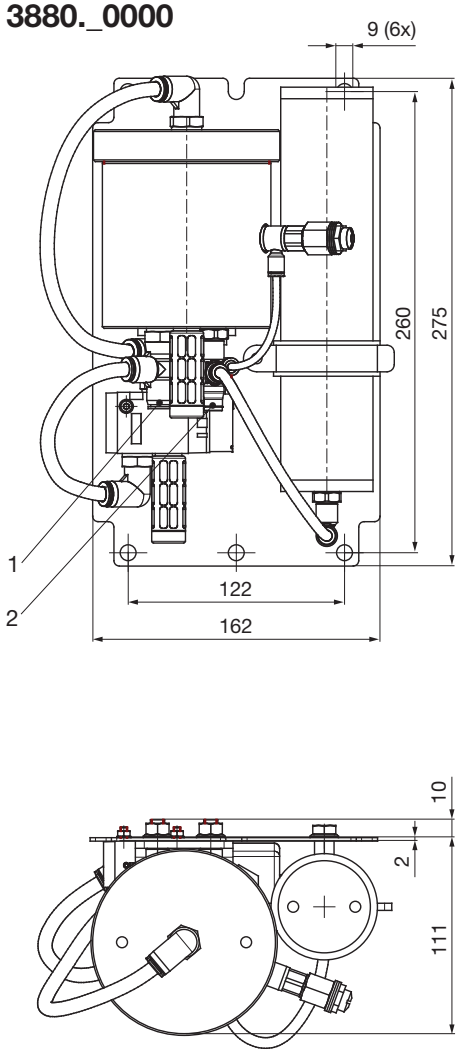


Fig. 9: Type 3880.00000

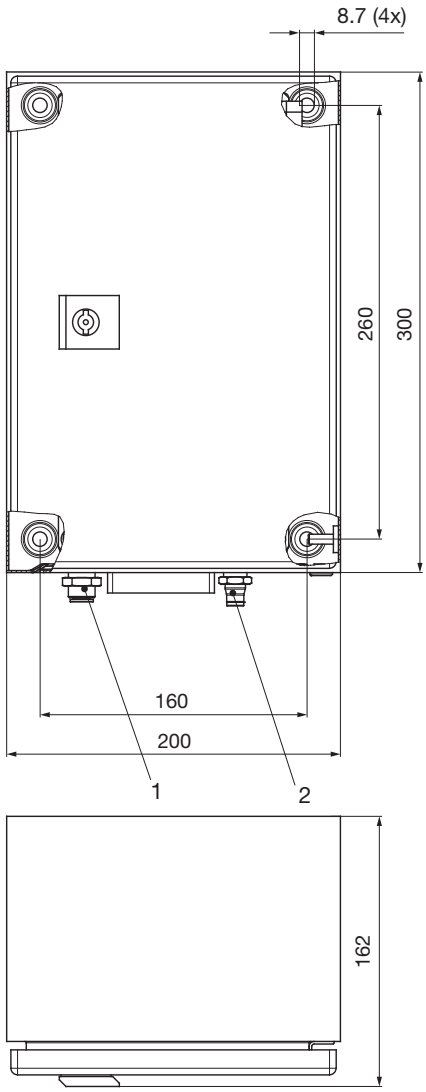


Fig. 10: Type 3880.10000

Item	Name
1	Connection input pressure
2	Connection output pressure

Order Number

__ / 3 8 8 0 . __ 0 0 0 0

Size	Designs	
1	Transmission 1:4 on the plate	0
	Transmission 1:4 in the housing **(noise reduced 65 dB(A))**	1

Example: Order number 1 / 3880.00000

Technical Data			Size
			1
Weight	Type 3880.00000	[kg]	9.3
	Type 3880.10000	[kg]	14.5
Input pressure	max.	[bar]	7
Output pressure	max.	[bar]	28
Transmission ratio			1 : 4
Connection input pressure	Connection Outer diameter Ø hose		8 mm
Connection output pressure			6 mm
Pressure Medium			Compressed air quality acc. ISO 8573-1 Class 7:4:4
Storage volume		[L]	0.3
Ambient Temperature		[°C]	-10 to +50
Flow rate		[L/min]	1.2

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.

Number of Brakes per Pressure Booster

Number of attachable brakes by size and type for a max. opening time of 1 second.

Size	Number of brakes 1)	
	3852	3853
25	2	4
35	2	4
45	1	2

1) Installing several brakes as stated in the Table is possible. As a result, the max. opening time increases.

Controls (Fig. 11)

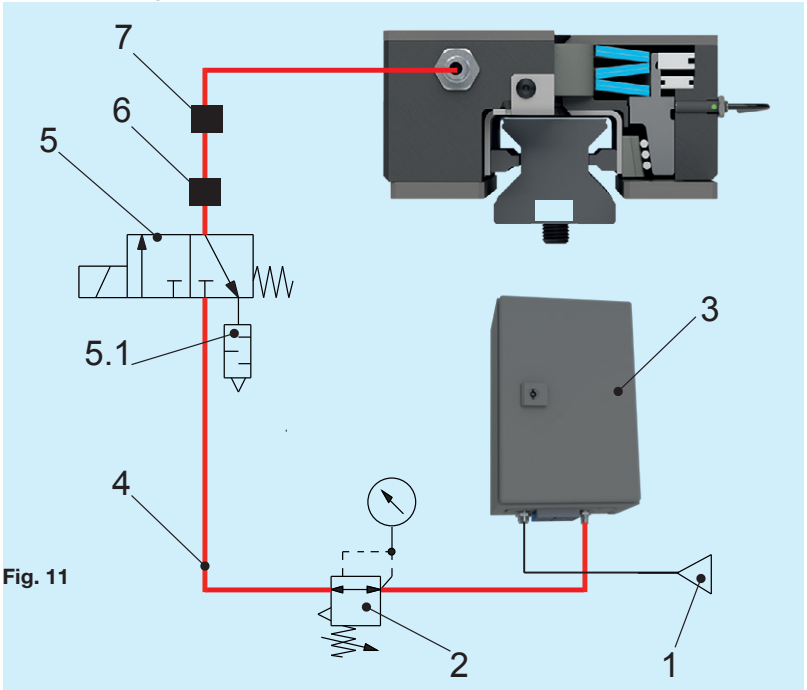


Fig. 11

Item	Name
1	Pressure source
2	Pressure regulator valve with pressure gauge (installation in the feed line also possible)
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: Switching point <0.5 bar (brake closed) • **Brake must not be pressurised**
7	Pressure switch: Min. Operating pressure (brake opened) • **Minimum operating pressure must be used** ❒ In case of pressure fluctuations ❒ In case of pressure drop e.g. leakages

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 (Type 384_.0_0_ _) , which can be opened hydraulically, 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 500,000 switchings (higher switching frequencies available on request).
The **ROBA®-guidestop** is largely 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. 12)

The company *mayr*®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!

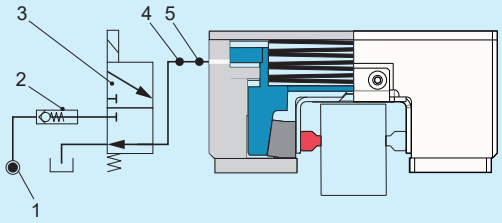


Fig. 12

Item	Name
1	Pressure source
2	Non-return valve (in case of pressure fluctuations)
3	3/2-directional control valve
4	Pressure switch: Switching point <0.5 bar (brake closed) • **Brake must not be pressurised**
5	Pressure switch: Min. Operating pressure (brake opened) • **Minimum operating pressure must be used** ❒ In case of pressure fluctuations ❒ In case of pressure drop e.g. leakages

Options

Screw connection from below

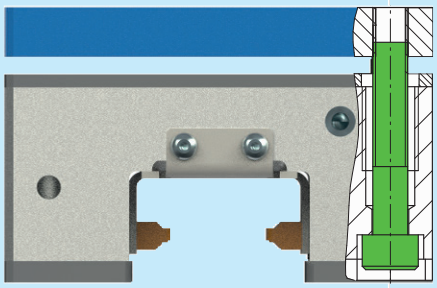


Fig. 13

Hydraulic connection, top (Type 3840)

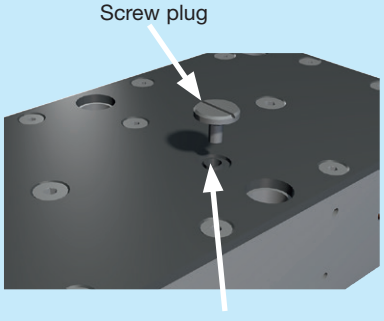


Fig. 14

Redundant design (dual circuit brake)

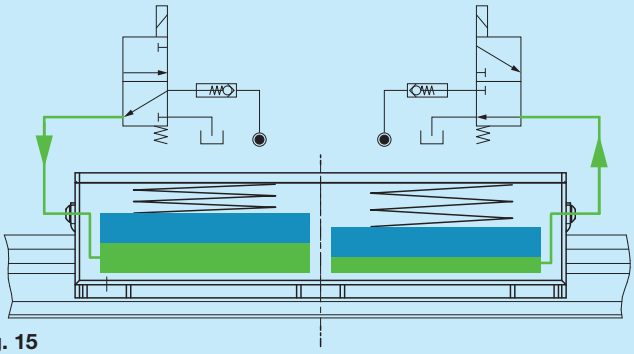


Fig. 15

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 (Type 385_.0_ _ _ _) , which can be opened pneumatically, clamps a profiled rail steplessly and backlash-free.
The ROBA®-guidestop (Type 385_.1_ _ _ _), which can be opened hydraulically, clamps and brakes 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 largely 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 *mayr®* power transmission recommends the following pneumatic control units.

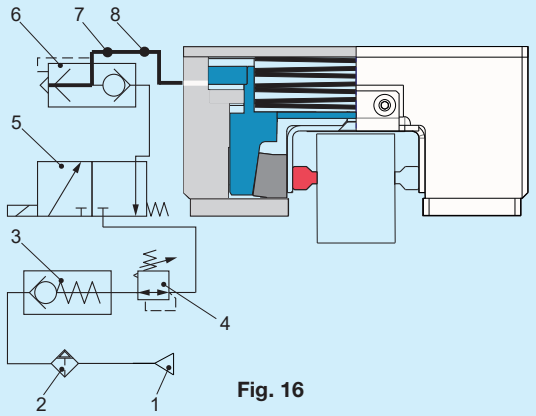


Fig. 16

Item	Name
1	Pressure source
2	Maintenance unit
3	Non-return valve (in case of pressure fluctuations)
4	Pressure reducer (switching time-related application)
5	3/2-directional control valve (installation as near to the brake as possible)
6	Quick-action ventilating valve (switching time-related application)
7	Pressure switch: Switching point <0.5 bar (brake closed) • **Brake must not be pressurised**
8	Pressure switch: Min. Operating pressure (brake opened) • **Minimum operating pressure must be used** ❒ In case of pressure fluctuations ❒ In case of pressure drop e.g. leakages

Options

Screw connection from below

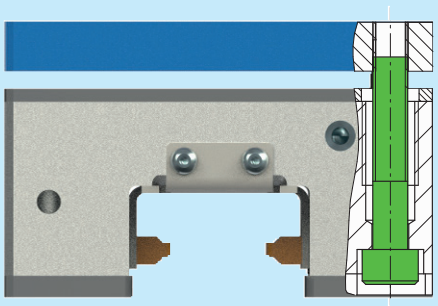


Fig. 17

Redundant design (dual circuit brake) Type standard

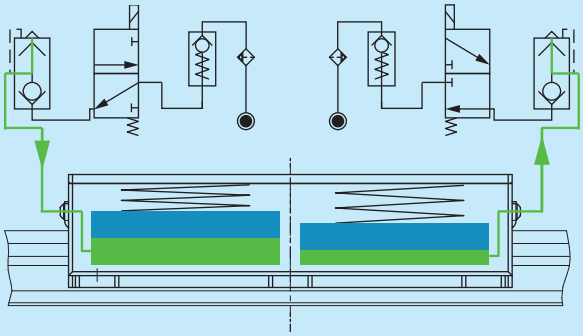


Fig. 18

Brake Dimensioning

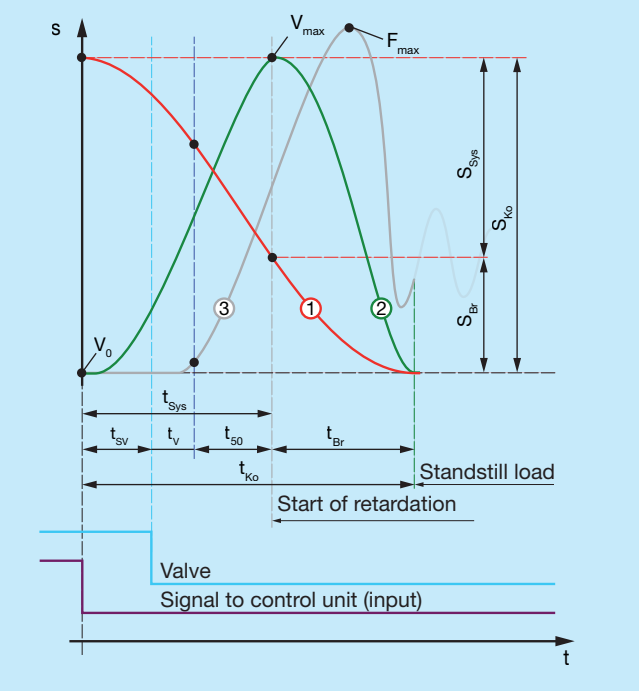


Diagram 1: Switching / Braking Times / Distances

Name

1		Distance
2		Speed
3		Axial force
α	[°]	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/s²]	Retardation
g	[m/s²]	Gravitational acceleration (9.81 m/s²)
F_{Br}	[N]	Braking force for dynamic calculation
$F_{erf.}$	[N]	Required holding force
F_N	[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 up to standstill of the load
V_0	[m/s]	Initial speed
V_{max}	[m/s]	Maximum speed

General

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

$F_N \geq F_{erf.}$ [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:

$F_{erf.} = m \times g \times 2 \times S$ [N]

Dimensioning for static holding (clamping)

We recommend to provide at least the weight force of the mass to be held +50 % reserve.

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

$F_{erf.} = m \times g \times 1.5$ [1] $\times S$ [N]

$F_{erf.} = m \times g \times 1.25 \times$ Inspection faktor [2] $\times S$ [N]

Safety factor **S**	Greasing Profiled rail	
	Grease [3]	Mineral oil
Type 38_ _.0_ _ _ _	2	1
Type 38_ _.1_ _ _ _	1.5	1

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 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).

1) Without cyclical brake test
2) Cyclical brake test with inspection factor. The Inspection factor must be determined by the user with the applicable standards. 1.25 × inspection factor must result in at least 1.5. *mayr*® power transmission recommends ≥1.3 as inspection factor
3) Friction value reducing residues on the profiled rail must be avoided

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.

If you have any questions, please contact *mayr*® 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

1. Pre-selection of braking force

$F_{erf.} = m \times g \times 2$ [N]

$F_{erf.} = 700 \times 9.81 \times 2 = \mathbf{13734}$ [N]

Selected: ROBA®-guidestop Size 45, Type 3840.1_0_ _
Nominal holding force $\mathbf{F_N = 15000\ N}$
(from Table “Technical Data“)

2. Calculation of the stopping distance /stopping time

Checking the selected brake size

Acceleration of the load

$a_B = g \times \sin(\beta) = 9.81 \times \sin(90°) = \mathbf{9.81}$ [m/s²]

System distance

$S_{Sys} = V_0 \times t_{Sys} + a_B \times t_{Sys}^2 \times 0.5$ [m]

$S_{Sys} = 0.5 \times 0.086 + 9.81 \times 0.086^2 \times 0.5 = \mathbf{0.079}$ [m]

$t_{Sys} = t_{50} + t_V + t_{SV} = 0.050 + 0.016 + 0.02 = 0.086$ [s]

Braking distance

$$S_{Br} = \frac{V_{max}^2}{2 \times \left(\frac{F_{NGes}}{m} - a_B\right)} = \frac{1.34^2}{2 \times 11.62} = \mathbf{0.077}\ [m]$$

$V_{max} = V_0 + a_B \times t_{Sys} = 0.5 + 9.81 \times 0.086 = 1.34$ [m/s]

Stopping distance

$S_{Ko} = S_{Br} + S_{Sys} = 0.077 + 0.079 = \mathbf{0.156}$ [m]

Stopping time

$t_{Ko} = t_{Br} + t_{Sys} = 0.115 + 0.086 = \mathbf{0.201}$ [s]

$$t_{Br} = \frac{V_{max}}{\frac{F_{NGes}}{m} - a_B} = \frac{1.34}{\frac{15000}{700} - 9.81} = 0.115\ [s]$$

Retardation (for system dimensioning)

$$a_v = \frac{F_{NGes} \times 2.5}{m} - g = \frac{15000 \times 2.5}{700} - 9.81 = \mathbf{43.76}\ [m/s^2]$$

$$\text{Load} = \frac{a_v}{g} = \frac{43.76}{9.81} = \mathbf{4.46}\ [g]$$

3. Friction work (Type 3840.1_0_ _)

Friction work per braking action

$Q_r = m \times a_B \times S_{Br} + 0.5 \times m \times V_{max}^2$ [J]

$Q_r = 700 \times 9.81 \times 0.077 + 0.5 \times 700 \times 1.34^2$ [J]

$Q_r = \mathbf{1157}$ [J]

Number of braking actions up to wear end

$$Z_{zul.} = \frac{Q_{r\,ges}}{Q_r}$$

ROBA®-guidestop hydraulic

Friction Work and Switching Times (Type 384 _.0_ _ _ _) 1) 3)			Size			
			35	45	55	65
Permitted total friction work up to wear end 2)	$Q_{r\,ges.}$	[10^6 J]	On request			
Maximum permitted friction work per braking action 2)	$Q_{r\,zul.}$	[J]	On request			
Brake switching time	t_{50}	[s]	0.040	0.050	0.050	0.060

ROBA®-guidestop pneumatic

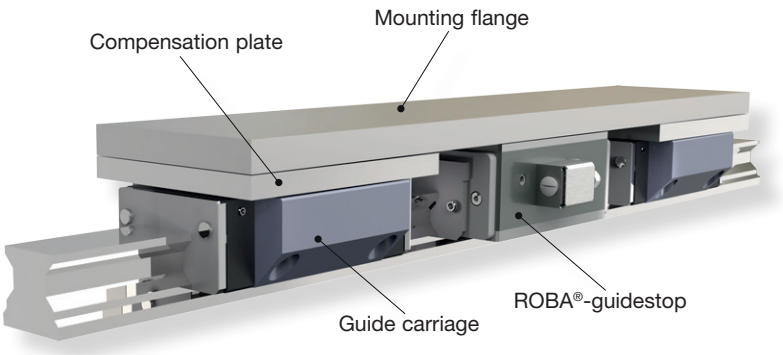
Friction Work and Switching Times (Type 385 _.1_ _ _ _) 1) 3)			Size				
			25	35	45	55	65
Permitted total friction work up to wear end 2)	$Q_{r\,ges.}$	[10^6 J]	On request				
Maximum permitted friction work per braking action 2)	$Q_{r\,zul.}$	[J]	On request				
Brake switching time Type 3850/1.0_0_ _	t_{50}	[s]	-	-	-	0.085	0.085
Brake switching time Type 3852/3.0_0_ _			On request			-	-

Friction Work and Switching Times (Type 385⁴/₅.1_ _ _ _) 3)			Size			
			25	30	35	45
Permitted total friction work up to wear end 2)	$Q_{r\,ges.}$	[10^6 J]	1.28	1.5	1.87	3.51
Maximum permitted friction work per braking action 2)	$Q_{r\,zul.}$	[J]	650	750	950	1750
Brake switching time 3854/5.0_0_ _	t_{50}	[s]	0.060	0.060	0.065	0.085
Separation time	t_2	[s]	0.12	0.12	0.12	0.23

1) For friction work Type 38_ _.0_ _ _ _ , please contact *mayr*® power transmission. The switching times also apply for Type 38_ _.0_ _ _ _
2) For higher friction work / total friction work, please contact *mayr*® power transmission.
3) Switching times are influenced by line length, operating pressure and wear

A quick-action ventilating valve must be used for the stated switching times of the pneumatic ROBA®-guidestop.

Installation Example



The ROBA®-guidestop profiled rail brake does not assume any guidance function and must only be used in combination with guide carriages.

Mounting flange and compensation plate for mounting the guide carriages are available on request.

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You can find the complete contact details for the representative responsible for your area in the Contact section at www.mayr.com

24/08/2023 GF/STE