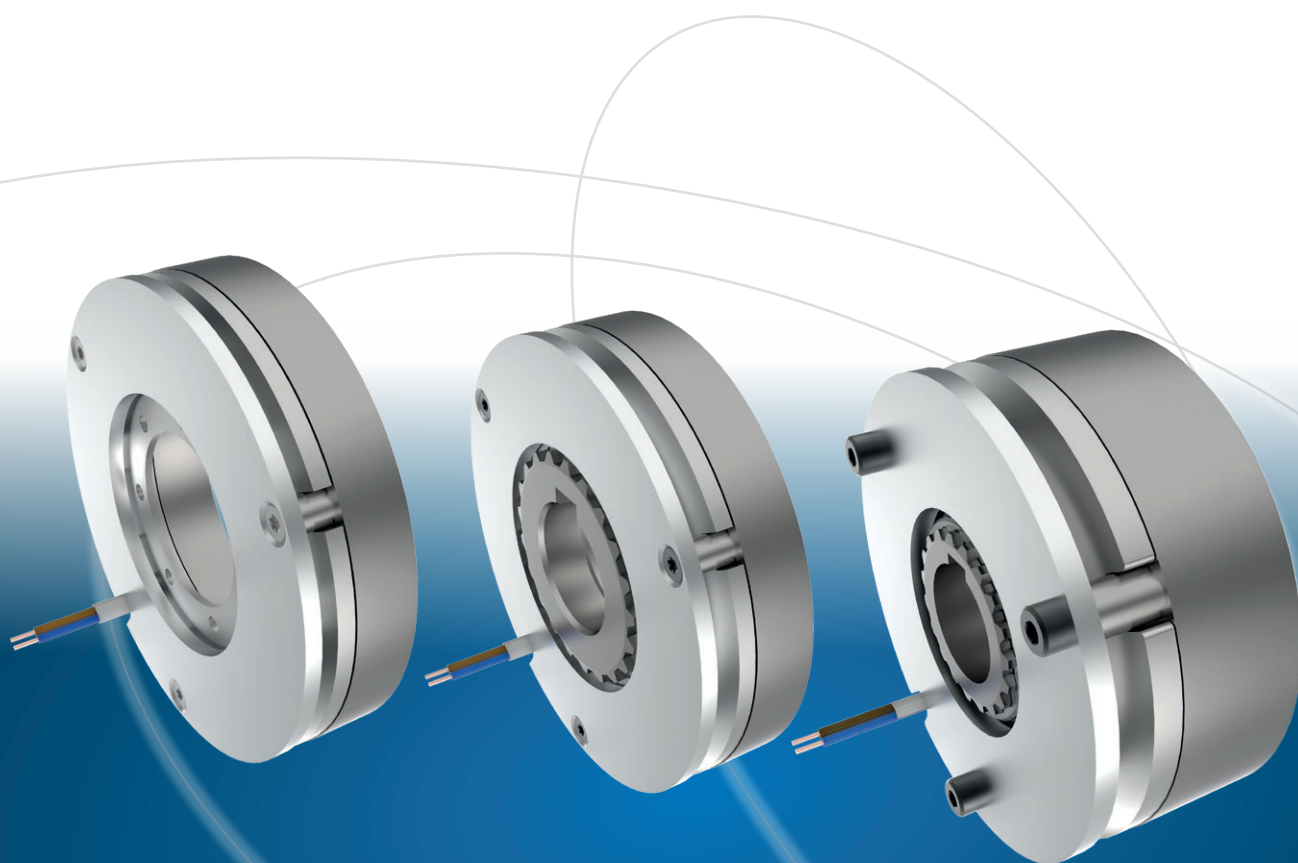




*your reliable partner*



**ROBA®-servostop®**

## ROBA<sup>®</sup>-servostop<sup>®</sup>

### The perfect safety brakes for servomotors and lightweight robots



#### Reliable function due to fail-safe principle

The spring applied ROBA<sup>®</sup>-servostop<sup>®</sup> is closed in de-energised condition. It provides the required braking torque even in the event of an emergency stop, a power failure or when the power supply is interrupted. To ensure that the ROBA<sup>®</sup>-servostop<sup>®</sup> brakes also provide sufficient friction work in emergency stop situations and brake movements with a defined braking torque, a friction lining developed for this purpose with a corresponding steel counter friction surface is required. While this is common with safety brakes, permanent magnet brakes with their steel-on-steel friction combinations reach their tribological limits here.

#### Reliable even at high temperatures

The braking torque is generated through special organic friction linings. These temperature-resistant linings impress with their high, even friction coefficients, and can also be used at high ambient temperatures of up to 120 °C.

#### Lightweight solution for robotics

In the mayr<sup>®</sup> modular system, users can choose between classic servo brakes in the motor, with hub and toothed rotor, in classic or slim constructional design. In addition, there is another slim and lightweight design variant, the ROBA<sup>®</sup>-servostop<sup>®</sup> Cobot, a pad solution with a large inner diameter. The latter is specially designed for integration into the robot joint. These solutions are particularly compact and convince with their low weight and ideal dynamic properties. But also the classic brakes with hub and toothed rotor can be customized and integrated directly into a joint.

#### High performance density and energy efficiency

The ROBA<sup>®</sup>-servostop<sup>®</sup> brakes are not only very lightweight, but also extremely fast when it comes to magnetic actuation. At the same time they display high performance density and wear resistance. Furthermore, the brakes impress users with their high permitted friction work during dynamic braking actions. In addition, the ROBA<sup>®</sup>-servostop<sup>®</sup> brakes are designed in such a way that the installation space is optimally used and as much energy as possible is saved.

#### Easy installation

The simple and ready-to-install design makes installation substantially easier. The operating air gap does not have to be adjusted. Exact axial positioning on the motor shaft is not required. The brake always operates accurately and reliably with a steady air gap and tolerates minor bearing backlash and temperature expansion. Installation errors are almost completely excluded.

#### Any installation position in servomotors

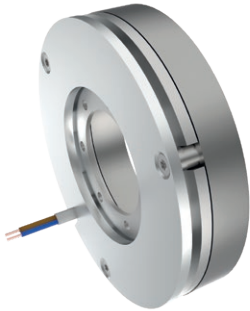
For servomotors, the brakes are preferably installed in the A-bearing shield, because the fixed bearing is located here and temperature expansions cannot influence the brake severely. The ROBA<sup>®</sup>-servostop<sup>®</sup> can also be integrated without restrictions into the B-bearing side of the motor, as temperature expansions and bearing backlash do not have a negative influence on the function and the reliability of the brake.

## ROBA<sup>®</sup>-servostop<sup>®</sup> – Overview of the series

### ROBA<sup>®</sup>-servostop<sup>®</sup> Cobot

Proven series for lightweight robots

Type 8981.29000



- Can be integrated into even the smallest installation spaces
- Ideal for hollow shafts
- High performance density at low energy consumption

#### Performance data

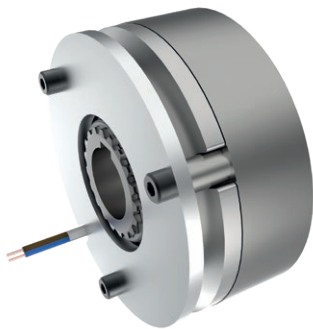
Nominal braking torque: 0.5 up to 8.5 Nm  
Max. speed: 5,000 up to 8,000 rpm

Page 4

### ROBA<sup>®</sup>-servostop<sup>®</sup> Classic

Classic series for installation into A- or B-bearing shield of servomotors

Type 8980.00000



- High braking torque
- Wear-resistant - large number of emergency stops (dynamic brakings) are allowed
- Easy installation

#### Performance data

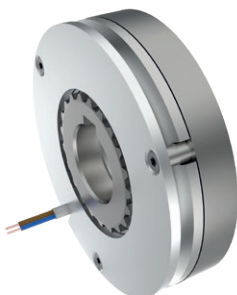
Nominal braking torque: 1.5 up to 100 Nm  
Max. speed: 3000 up to 9000 rpm

Page 6

### ROBA<sup>®</sup>-servostop<sup>®</sup> Lean

Slim series for installation into A- or B-bearing shield of servomotors

Type 8982.00000



- Slim design
- Easy installation
- High performance density at low energy consumption

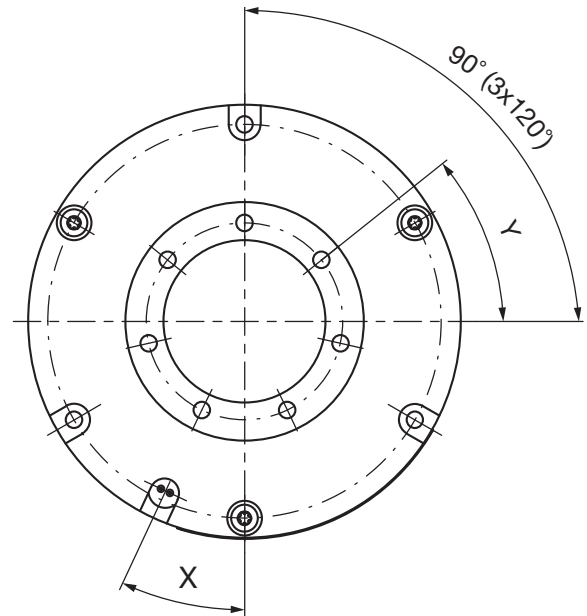
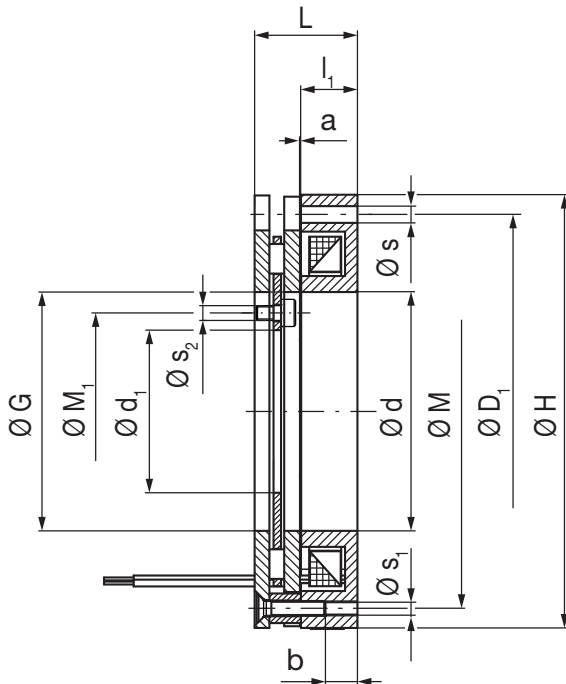
#### Performance data

Nominal braking torque: 0.65 up to 11.5 Nm  
Max. speed: 5000 up to 8000 rpm

Page 7

# ROBA®-servostop® Cobot

Type 8981.29000



Technical Data			Size			
			50	60	80	100
Nominal braking torque <sup>1) 2) 3)</sup>	M <sub>N</sub>	[Nm]	0.5	1.25	4	8.5
Overexcitation voltage	U <sub>O</sub>	[VDC]	24	24	24	24
Holding voltage	U <sub>H</sub>	[VDC]	8	8	8	8
Pull-in voltage at 20 °C	U	[VDC]	11.9	12.8	12.5	11.7
Pull-in voltage at 120 °C	U	[VDC]	16.5	17.8	17.4	16.3
Coil power at overexcitation voltage	P <sub>O</sub>	[W]	29	43	61	83
Coil power at holding voltage	P <sub>H</sub>	[W]	3.2	4.8	6.7	9.3
Maximum speed	n <sub>max</sub>	[rpm]	8000	6000	6000	5000

Dimensions	Size			
	50	60	80	100
a	0.15	0.15	0.2	0.2
b	5.5	5.5	5.5	5
d	33.5	40.5	48.5	63
d <sub>1</sub>	22	29	33	47
D <sub>1</sub>	53	62	80	98
G	33.5	40.5	48.5	63
H	58	68	88	108
L	16.5	18.4	20.9	22.4
l <sub>1</sub>	10	11	11.5	12
M	53	62	80	98
M <sub>1</sub>	27	34	40	54
s	2.4	2.9	3.4	3.4
s <sub>1</sub>	M2	M2.5	M3	M4
s <sub>2</sub>	2.3	2.3	3.4	3.4
X	35°	35°	25°	35°
Y	90° (4x)	30° (4x60°)	38.6° (7x51.4°)	18° (10x36°)

1) Braking torque tolerance: + 75 %

2) Suitable for temperatures of between 0 and 60 °C: For higher temperatures, please consider the following braking torque reductions:  
 >60 °C to 80 °C: 10 % reduction  
 >80 °C to 100 °C: 20 % reduction  
 >100 °C to 120 °C: 30 % reduction

3) The braking torque values are valid for the run-in condition and are based on friction values determined in tests at Mayr. As a friction system is influenced by many parameters, such as installation situation, temperature, ambient conditions, run-in condition, wear, switching work, sliding speed, aging, contamination, etc., deviating braking torques are possible. The specified nominal braking torque is a lower limit which is very likely to be reached, but cannot be guaranteed due to the many possible influences. The fluctuations in braking torques must be taken into account during dimensioning by providing appropriate safety measures. Especially for critical applications, it is important to consult Mayr and carry out an appropriate application check.

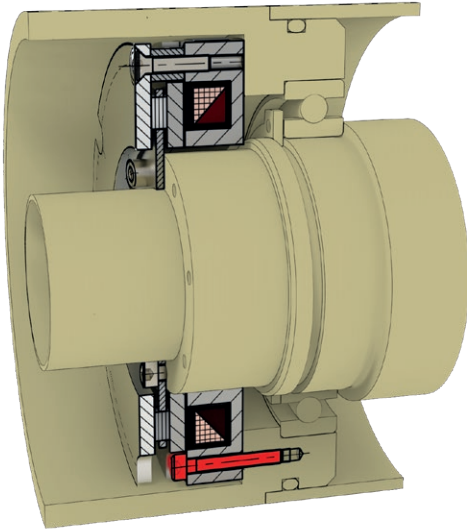
We reserve the right to make dimensional and constructional alterations.



## ROBA<sup>®</sup>-servostop<sup>®</sup> Cobot – Installation Examples

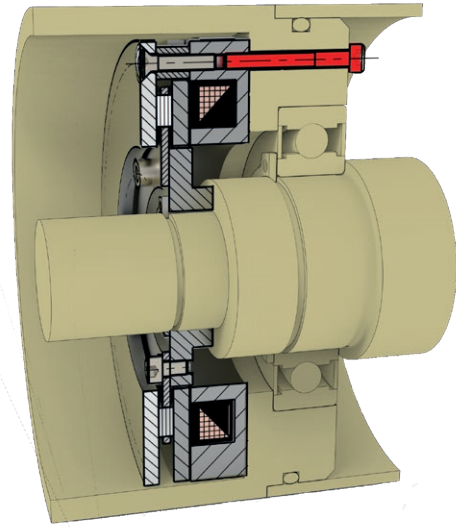
### Screw connection on the coil carrier front

Proven installation variant for hollow shaft drives. Here, the brake is connected to the motor unit via recesses in the flange plate and through holes in the coil carrier. The rotor disk with the friction lining pads is screwed to the collar of the stepped hollow shaft.



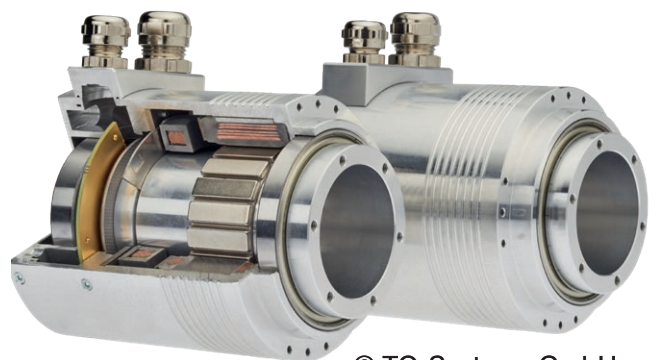
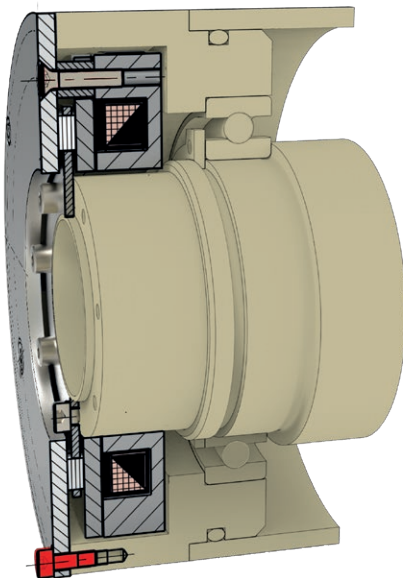
### Screw connection on the coil carrier back

Possible installation variant for drives with full shaft. The brake is mounted via through holes in the bearing shield and threaded holes in the brake back. The rotor disk with the friction lining pads is screwed to an adaptor, which is connected to the shaft via positive locking or frictional locking.



### Screw connection via the flange plate (special design)

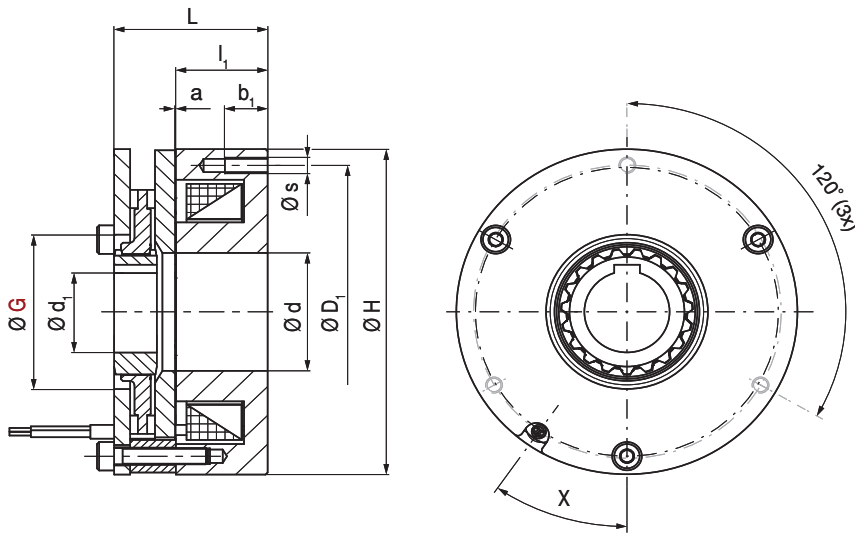
Customer-specific installation situation in connection with hollow shafts. The brake is mounted on the motor unit via the flange plate, and the rotor disk with the friction lining pads is screwed to the hollow shaft front side.



© TQ-Systems GmbH

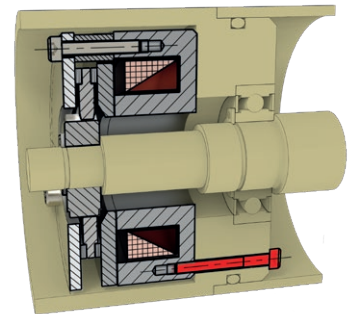
## ROBA®-servostop® classic

Type 8980.00000



### Installation example: Screw connection on the coil carrier back

Proven installation variant for ROBA®-servostop Classic and ROBA®servostop Lean. The brake is connected to the motor unit via threaded holes in the coil carrier back. The braking torque is transmitted onto the shaft via the toothing between the friction lining rotor and the toothed hub.



Technical Data			Size						
			50	60	80	100	120	140	160
Nominal braking torque <sup>1) 2) 3)</sup>	$M_N$	[Nm]	1.5	3.25	7	16	32	60	100
Coil voltage	U	[VDC]	24	24	24	24	24	24	24
Pull-in voltage at 20 °C	U	[VDC]	16	16	16	16	16	16	16
Pull-in voltage at 120 °C	U	[VDC]	21	21	21	21.5	21.5	21.5	21
Electrical power	$P_{20}$	[W]	8.7	10.3	15.4	20.7	25.8	35.8	47.2
Maximum speed	$n_{max}$	[rpm]	9000	8000	6500	5000	4000	3500	3000

Dimensions	Size						
	50	60	80	100	120	140	160
a	0.15 <sup>+0.06/-0.03</sup>	0.15 <sup>+0.06/-0.03</sup>	0.15 <sup>+0.07/-0.02</sup>	0.2 <sup>+0.06/-0.03</sup>	0.2 <sup>+0.06/-0.03</sup>	0.2 <sup>+0.07/-0.02</sup>	0.25 <sup>+0.07/-0.02</sup>
b <sub>1</sub>	7	7	10	12	12	14	14
d	16	23	29	42	47	65	70
d <sub>1 min</sub>	8	9	11	15	18	32	30
d <sub>1 max</sub>	12	15	20	30	34	44	45
D <sub>1</sub>	45	56	72	90	112	132	145
G	25	28	38	55	62	85	90
H	52	62	80	102	124	147	166
L	31.65	31.15	35.95	45	45.6	54.6	60.65
l <sub>1</sub>	20.5	19.5	21.5	25.5	24	28	31
s	M3	M3	M4	M5	M6	M8	M8
X	35°	35°	35°	35°	35°	35°	35°

1) Braking torque tolerance: + 75 %

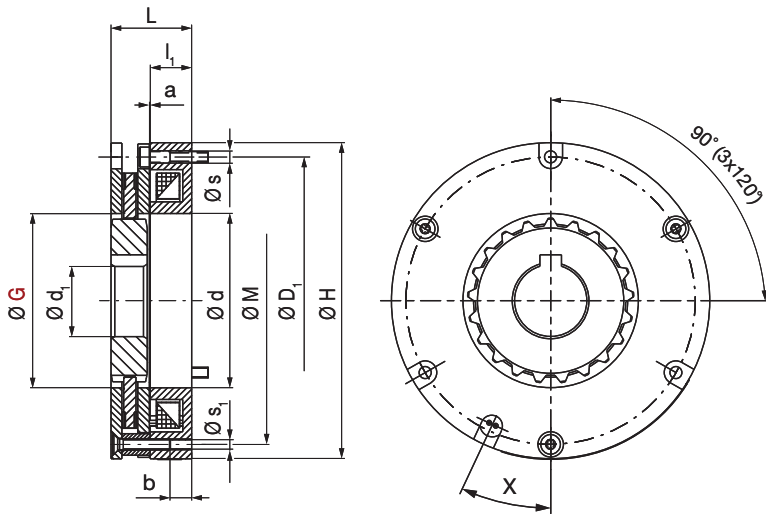
2) Suitable for temperatures of between 0 and 60 °C: For higher temperatures, please consider the following braking torque reductions:  
 >60 °C to 80 °C: 10 % reduction  
 >80 °C to 100 °C: 20 % reduction  
 >100 °C to 120 °C: 30 % reduction

3) The braking torque values are valid for the run-in condition and are based on friction values determined in tests at Mayr. As a friction system is influenced by many parameters, such as installation situation, temperature, ambient conditions, run-in condition, wear, switching work, sliding speed, aging, contamination, etc., deviating braking torques are possible. The specified nominal braking torque is a lower limit which is very likely to be reached, but cannot be guaranteed due to the many possible influences. The fluctuations in braking torques must be taken into account during dimensioning by providing appropriate safety measures. Especially for critical applications, it is important to consult Mayr and carry out an appropriate application check.

We reserve the right to make dimensional and constructional alterations.

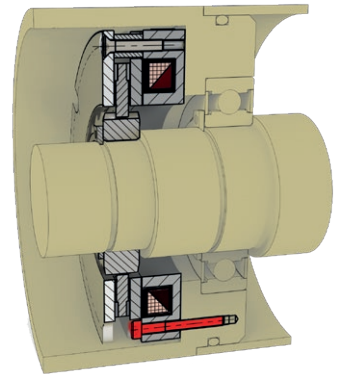
# ROBA®-servostop® Lean

Type 8982.00000



## Installation example: Screw connection on the coil carrier front

Proven installation variant for ROBA®-servostop Classic and ROBA®-servostop Lean. The brake is connected to the motor unit via through holes in the coil carrier. The braking torque is transmitted onto the shaft via the toothing between the friction lining rotor and the toothed hub.



Technical Data			Size			
			50	60	80	100
Nominal braking torque <sup>1) 2) 3)</sup>	M <sub>N</sub>	[Nm]	0.65	2.00	5.25	11.5
Overexcitation voltage	U <sub>O</sub>	[VDC]	24	24	24	24
Holding voltage	U <sub>H</sub>	[VDC]	8	8	8	8
Pull-in voltage at 20 °C	U	[VDC]	11.9	12.8	12.5	11.7
Pull-in voltage at 120 °C	U	[VDC]	16.5	17.8	17.4	16.3
Coil power at overexcitation voltage	P <sub>O</sub>	[W]	29	43	61	83
Coil power at holding voltage	P <sub>H</sub>	[W]	3.2	4.8	6.7	9.3
Maximum speed	n <sub>max</sub>	[rpm]	8000	8000	6000	5000

Dimensions	Size			
	50	60	80	100
a	0.15	0.15	0.2	0.2
b	5.5	5.5	5.5	5
d	33.5	40.5	48.5	63
d <sub>1,H7</sub>	16	22	20	35
D <sub>1</sub>	53	62	80	98
G	33.5	40.5	48.5	63
H	58	68	88	108
L	18.8	20.8	22.3	23.8
l <sub>1</sub>	10	11	11.5	12
M	53	62	80	98
s	2.4	2.9	3.4	4.5
s <sub>1</sub>	M2	M2.5	M3	M4
X	35°	35°	25°	35°

1) Braking torque tolerance: + 75 %

2) Suitable for temperatures of between 0 and 60 °C: For higher temperatures, please consider the following braking torque reductions:

>60 °C to 80 °C: 10 % reduction

>80 °C to 100 °C: 20 % reduction

>100 °C to 120 °C: 30 % reduction

3) The braking torque values are valid for the run-in condition and are based on friction values determined in tests at Mayr. As a friction system is influenced by many parameters, such as installation situation, temperature, ambient conditions, run-in condition, wear, switching work, sliding speed, aging, contamination, etc., deviating braking torques are possible. The specified nominal braking torque is a lower limit which is very likely to be reached, but cannot be guaranteed due to the many possible influences. The fluctuations in braking torques must be taken into account during dimensioning by providing appropriate safety measures. Especially for critical applications, it is important to consult Mayr and carry out an appropriate application check.

We reserve the right to make dimensional and constructional alterations.

## Headquarters

**Chr. Mayr GmbH + Co. KG**  
Eichenstraße 1, D-87665 Mauerstetten  
Tel.: +49 83 41/8 04-0, Fax: +49 83 41/80 44 21  
www.mayr.com, E-Mail: public.mayr@mayr.com



## Service Germany/Austria

**Baden-Württemberg**  
Esslinger Straße 7  
70771 Leinfelden-Echterdingen  
Tel.: 07 11/78 26 26 40  
Fax: 07 11/78 26 26 39

**Bavaria**  
Industriestraße 51  
82194 Gröbenzell  
Tel.: 0 81 42/50 19 808

**Chemnitz**  
Bornaer Straße 205  
09114 Chemnitz  
Tel.: 03 71/4 74 18 96  
Fax: 03 71/4 74 18 95

**Franken**  
Unterer Markt 9  
91217 Hersbruck  
Tel.: 0 91 51/81 48 64  
Fax: 0 91 51/81 62 45

**Kamen**  
Herbert-Wehner-Straße 2  
59174 Kamen  
Tel.: 0 23 07/24 26 79  
Fax: 0 23 07/24 26 74

**North**  
Schiefer Brink 8  
32699 Extertal  
Tel.: 0 57 54/9 20 77  
Fax: 0 57 54/9 20 78

**Rhine-Main**  
Kohlhäuser Str. 3-5  
36043 Fulda  
Tel.: 06 61/96 21 02 15

**Austria**  
Pummerinplatz 1, TIZ I, A27  
4490 St. Florian, Austria  
Tel.: 0 72 24/2 20 81-12  
Fax: 0 72 24/2 20 81 89

## Branch office

**China**  
Mayr Zhangjiagang  
Power Transmission Co., Ltd.  
Fuxin Road No.1298, Yangshe Town  
215637 Zhangjiagang  
Tel.: 05 12/58 91-75 67  
Fax: 05 12/58 91-75 66  
info@mayr-ptc.cn

**France**  
Mayr France S.A.S.  
Z.A.L. du Minopole  
Rue Nungesser et Coli  
62160 Bully-Les-Mines  
Tel.: 03.21.72.91.91  
Fax: 03.21.29.71.77  
contact@mayr.fr

**Great Britain**  
Mayr Transmissions Ltd.  
Valley Road, Business Park  
Keighley, BD21 4LZ  
West Yorkshire  
Tel.: 0 15 35/66 39 00  
Fax: 0 15 35/66 32 61  
sales@mayr.co.uk

**Italy**  
Mayr Italia S.r.l.  
Viale Veneto, 3  
35020 Saonara (PD)  
Tel.: 049/879 10 20  
Fax: 049/879 10 22  
info@mayr-italia.it

**Japan**  
Mayr Japan LLC  
Higano Nihonbashi Building 2F,  
1-1-9 Nihonbashi Kakigara-cho,  
Chuo-ku Tokyo, 103-0014 Japan  
Tel.: 03/35 27-29 00  
Fax: 03/35 27-26 61  
public.mayr@mayr.co.jp

**Singapore**  
Mayr Transmission (S) PTE Ltd.  
No. 8 Boon Lay Way Unit 03-06,  
TradeHub 21  
Singapore 609964  
Tel.: 00 65/65 60 12 30  
Fax: 00 65/65 60 10 00  
info@mayr.com.sg

**Switzerland**  
Mayr Kupplungen AG  
Tobelackerstraße 11  
8212 Neuhausen am Rheinfall  
Tel.: 0 52/6 74 08 70  
Fax: 0 52/6 74 08 75  
info@mayr.ch

**USA**  
Mayr Corporation  
10 Industrial Avenue  
Mahwah  
NJ 07430  
Tel.: 2 01/4 45-72 10  
Fax: 2 01/4 45-80 19  
info@mayrcorp.com

## Representatives

**Australia**  
Drive Systems Pty Ltd.  
8/32 Melverton Drive  
Hallam, Victoria 3803  
Australien  
Tel.: 0 3/97 96 48 00  
info@drivesystems.com.au

**India**  
National Engineering  
Company (NENCO)  
J-225, M.I.D.C.  
Bhosari Pune 411026  
Tel.: 0 20/27 13 00 29  
Fax: 0 20/27 13 02 29  
nenco@nenco.org

**Netherlands**  
Groneman BV  
Amarilstraat 11  
7554 TV Hengelo OV  
Tel.: 074/2 55 11 40  
Fax: 074/2 55 11 09  
aandrijftechnik@groneman.nl

**Poland**  
Wamex Sp. z o.o.  
ul. Pozaryskiego, 28  
04-703 Warszawa  
Tel.: 0 22/6 15 90 80  
Fax: 0 22/8 15 61 80  
wamex@wamex.com.pl

**South Korea**  
Mayr Korea Co. Ltd.  
15, Yeondeok-ro 9beon-gil  
Seongsan-gu  
51571 Changwon-si  
Gyeongsangnam-do, Korea  
Tel.: 0 55/2 62-40 24  
Fax: 0 55/2 62-40 25  
info@mayrkorea.com

**Taiwan**  
German Tech  
Component Co., Ltd.  
No.10-3, Ln. 358, Sec. 1,  
Hemu Rd., Shengang Dist.,  
429012 Taichung City  
Tel.: +886 (4) 25150566  
Fax: +886 (4) 25152413  
abby@zfgta.com.tw

**Czech Republic**  
BMC - TECH s.r.o.  
Hviezdoslavova 29 b  
62700 Brno  
Tel.: 05/45 22 60 47  
Fax: 05/45 22 60 48  
info@bmc-tech.cz

**Turkey**  
Representative Office Turkey  
Kucukbakkalkoy Mah.  
Brandium Residence R2  
Blok D:254  
34750 Atasehir - Istanbul, Turkey  
Tel.: 02 16/2 32 20 44  
Fax: 02 16/5 04 41 72  
info@mayr.com.tr

## More representatives:

Belgium, Brazil, Canada, Colombia, Croatia, Denmark, Finland, Greece, Hongkong, Hungary, Indonesia, Israel, Luxembourg, Malaysia, Mexico, New Zealand, Norway, Philippines, Portugal, Romania, Russia, Slovakia, Slovenia, South Africa, Spain, Sweden, Thailand

You can find the complete contact details for the representative responsible for your area in the Contact section at [www.mayr.com](http://www.mayr.com)

