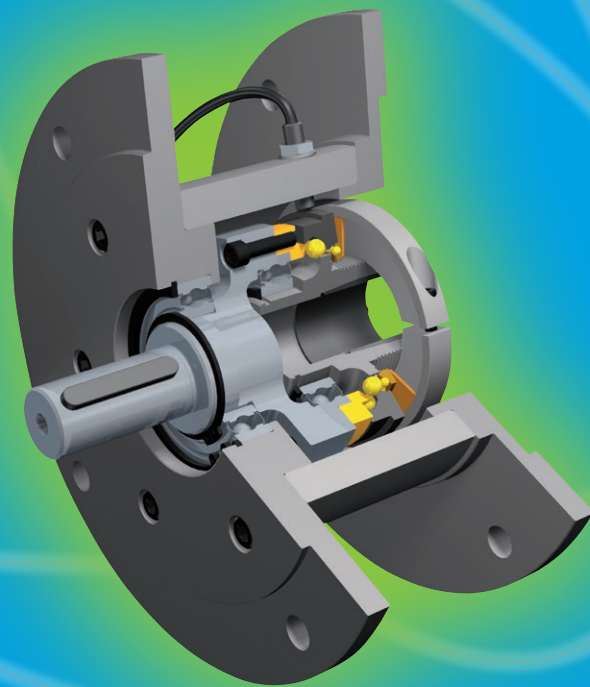




*your reliable partner*

**EAS<sup>®</sup>-HTL**

**Housed Torque Limiter**



Type 4190\_3400



Protected against  
dust and water

## Construction and Development

### Innovations for Your Success

With our innovative and economical solutions, we are able to set new records in the field of power transmission. Our many worldwide patents prove our constant ambition of developing better and technologically superior products.

Highly qualified engineers, high-performance 3D-CAD-systems and the most up-to-date FEM calculation aids used in our Development and Construction departments mean that our business is perfectly equipped to offer our customers effective solutions.

### Experts for all Power Transmission Questions

Exploit our know-how, gained by decades of experience in the development, production and application of power transmission products. Our experts in Construction and Development are happy to advise you personally and competently when selecting and dimensioning the drive solution you require.

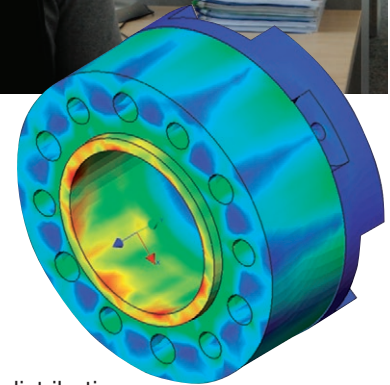
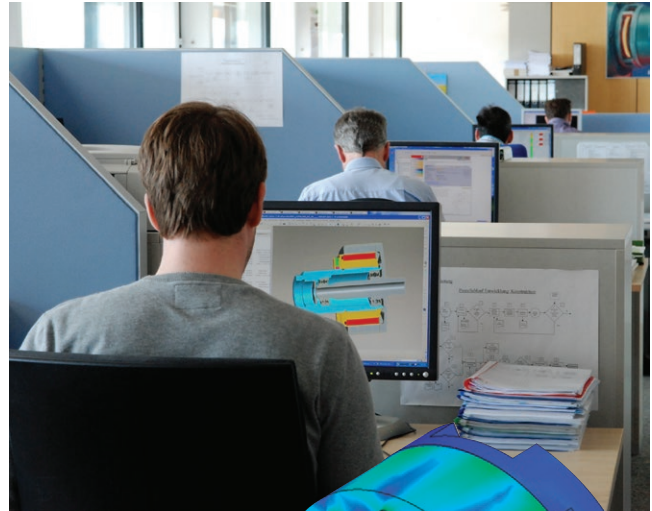


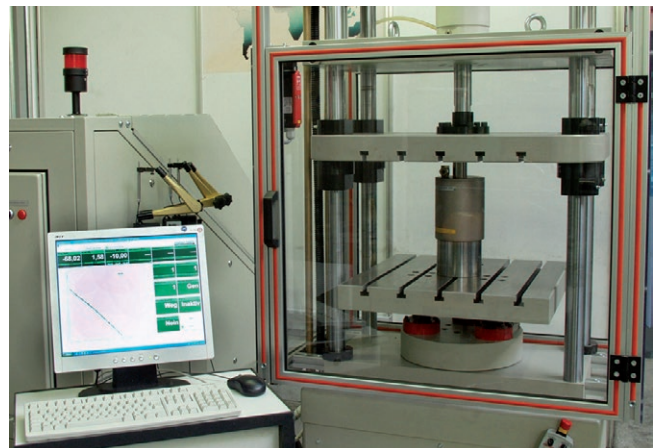
Illustration of the stress distribution in a backlash-free shaft connection

## From Prototype to Finished Product

***No mayr<sup>®</sup> product is released onto the market until it has proved its functional capabilities and reliability in extreme, long-term tests.***

The spectrum of test stands is as varied as our range of products:

- Friction work test stands
- Wear test stands
- Noise measurement room with highly accurate noise measurement inspection devices
- Torque inspection stands up to 200.000 Nm
- Impact and alternating load test stands
- Force test stands
- Linear movement test stands
- Continuous performance test stands
- Magnetic flux measurement test stands
- High-speed test stands up to 20.000 rpm
- Misalignment and angular misalignment test stands
- Load and measurement test stands for DC motors



## Product Data: Our 24-hour Service

Our website offers you detailed information 24 hours per day, 365 days per year with no delays. Here you can find not only the latest catalogues and technical documentation but also CAD-files for cost-saving construction of our products.

## An unsurpassed standard product range

As worldwide market leaders, we are able to offer the largest product range of load holding, load separating, torque and force-limiting, frictionally-locking, positive-locking, magnetic, controllable and switchable safety clutches. We can also provide you with the optimum protection element for your application.

### Versatile Functions

Synchronous, ratchetting or overload clutch designs

### Solid Housing

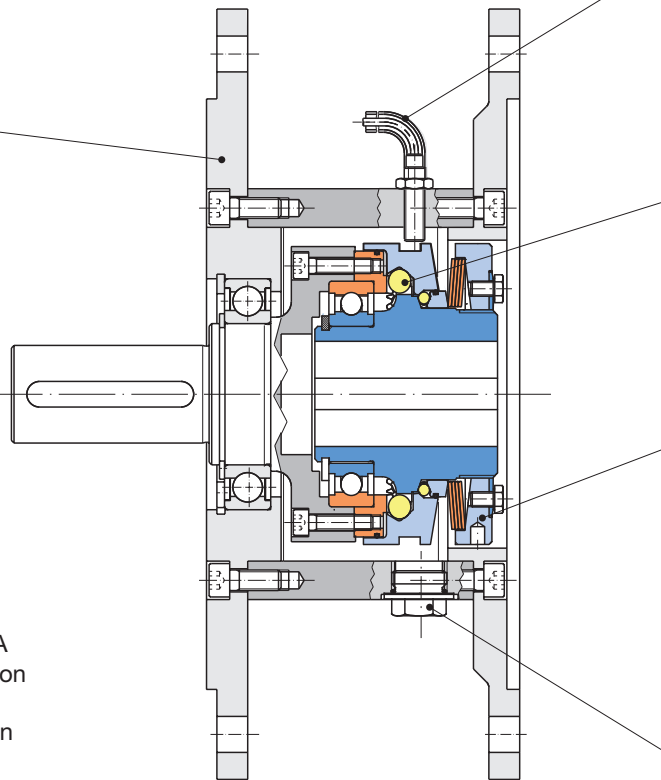
The solidity of the steel housing means that hanging loads can be attached to it.

### Short Installation Length

The exceptionally short installation length makes integration easier in pre-existing constructions and systems.

### IEC and NEMA

Standard IEC/B5 and NEMA dimensions on the connection flange and shaft diameters allow subsequent installation into pre-existing systems.



### Integrated Limit Switch

- PNP NO contact
- Transmits a signal to switch off the drive on overload
- Installation and Adjustment manufacturer-side

### Backlash-free Torque Transmission

Backlash-free torque transmission using our patented EAS<sup>®</sup>-NC/EAS<sup>®</sup>-compact<sup>®</sup> functional principle

### Torque Adjustment

Torque adjustment is carried out manufacturer-side according to the customer's wishes. The percent graduation scale on the adjusting nut allows the customer to read the torque setting.

### Hole for Re-engagement

Only on overload clutch designs

### Order Number

\_ - \_ / 4 5 9 0 . \_ 2 \_ . 0 2<sup>1)</sup>

Motor size			Clutch size	Torque range		Clutch design
IEC	NEMA					
63	71		02	medium	5	0 Ratchetting clutch (automatic re-engagement)
80	56 C	143 TC	01	high	6	
90			0	very high	7	5 Synchronous clutch (automatic re-engagement)
100	184 TC		1			
132	215 TC	256 TC	2			
160	180		3			
200	225	250	4 <sup>1)</sup>			
280	315		5 <sup>1)</sup>			

Example: 71 - 02 / 450.520.0      132 - 2 / 490.724.0      215 TC - 2 / 490.625.0

### Order Number

\_ - \_ / 4 1 9 0 . \_ 3 5<sup>1)</sup> 4 0 0

Motor size			Clutch size	Torque range		Clutch design
IEC	NEMA					
80	56 C	143 TC	01	medium	5	
90			0	high	6	4 Overload clutch (manual re-engagement)
100	184 TC		1	very high	7	
132	215 TC	256 TC	2			
160	180		3			
200	225	250	4 <sup>1)</sup>			
280	315		5 <sup>1)</sup>			

Example: 80 - 01 / 4190.53400      132 - 2 / 4190.73400      200 - 4 / 4190.65400

1) Starting at Size 200 (clutch Sizes 4 and 5), the EAS<sup>®</sup>-compact<sup>®</sup> Type 490.\_2\_2 or 4190.\_5400 is used.

**EAS<sup>®</sup>-HTL**

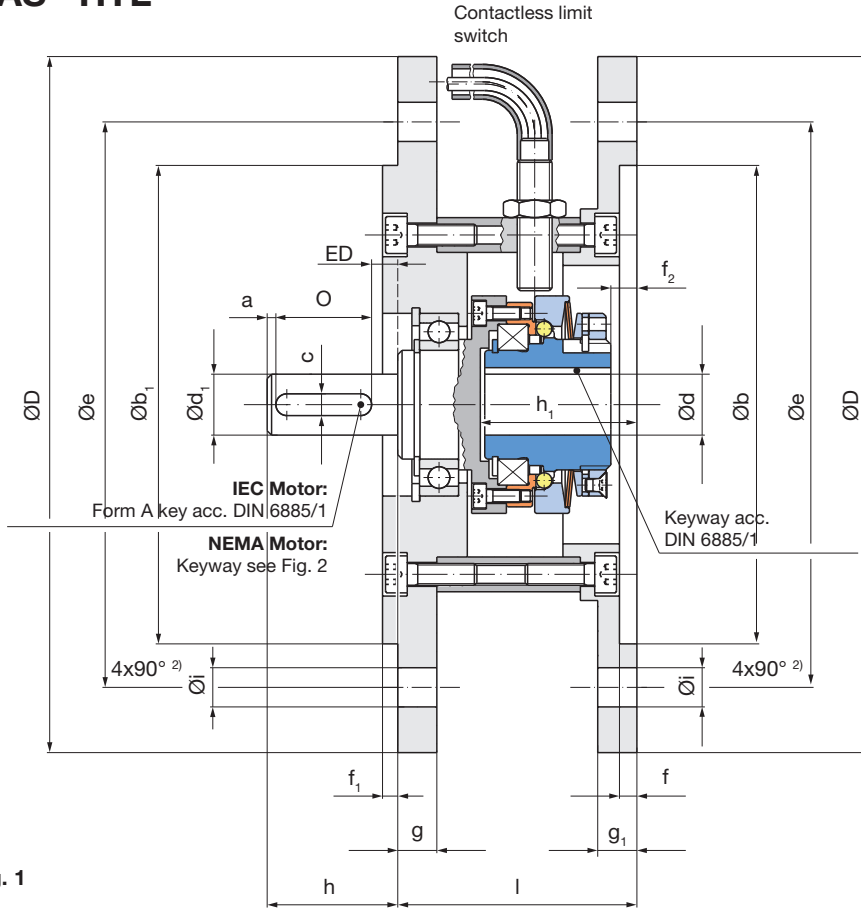



Fig. 1

The EAS<sup>®</sup>-HTL overload clutches Type 4190...4... are also available in



ATEX design according to directive 2014/34/EU (ATEX 114).

On Types 56 C up to 256 TC (without key)

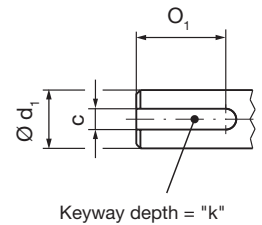


Fig. 2

Technical Data			Ratchetting, synchronous clutches					Overload clutches					Weight
			Limit torques for overload $M_G$ [Nm]			Maximum speed	Type	Limit torques for overload			Maximum speed		
			$M_G$ [Nm]					$n_{max}$ [rpm]	$M_G$ [Nm]			$n_{max}$ [rpm]	
			Size	Clutch	Type	4_0.5250.0			4_0.6250.0	4_0.7250.0	4190.5_400		
IEC	NEMA												
63	-	02	450_2_0	2 - 5	5 - 10	6 - 15	4000	-	-	-	-	3.6	
71	-			2 - 5	5 - 10	6 - 15	4000	-	-	-	-	4.2	
80	-			5 - 12.5	10 - 25	20 - 50	4000					7.7	
-	56 C	01	490_2_0	5 - 12.5	10 - 25	20 - 50	4000	4190_3400	5 - 12.5	10 - 25	20 - 50	8000	6.7
-	143 TC			5 - 12.5	10 - 25	20 - 50	4000		5 - 12.5	10 - 25	20 - 50	8000	6.7
90	-	0	490_2_0	10 - 25	20 - 50	40 - 100	3000	4190_3400	10 - 25	20 - 50	40 - 100	7000	9.4
100	-			20 - 50	40 - 100	80 - 200	2500		20 - 50	40 - 100	80 - 200	6000	17.4
-	184 TC	1	490_2_0	20 - 50	40 - 100	80 - 200	2500	4190_3400	20 - 50	40 - 100	80 - 200	6000	18.5
132	-			40 - 100	80 - 200	160 - 400	2000		40 - 100	80 - 200	160 - 400	5000	24.9
-	215 TC	2	490_2_0	40 - 100	80 - 200	160 - 400	2000	4190_3400	40 - 100	80 - 200	160 - 400	5000	20.0
-	256 TC			40 - 100	80 - 200	160 - 400	2000		40 - 100	80 - 200	160 - 400	5000	20.9
160	-			70 - 175	140 - 350	280 - 700 <sup>1)</sup>	1500 <sup>1)</sup>		80 - 200	160 - 400	320 - 800	4000	36.2
180	-	3	490_2_0	70 - 175	140 - 350	280 - 700 <sup>1)</sup>	1500 <sup>1)</sup>	4190_3400	80 - 200	160 - 400	320 - 800	4000	36.8
200	-			-	-	-	-		120 - 300	240 - 600	480 - 1200	3500	73.1
225	-	4		-	-	-	-		120 - 300	240 - 600	480 - 1200	3500	83.3
250	-			-	-	-	-		120 - 300	240 - 600	480 - 1200	3500	111.9
280	-			-	-	-	-		240 - 600	480 - 1200	960 - 2400	3000	145.5
315	-	5		-	-	-	-	4190_5400	240 - 600	480 - 1200	960 - 2400	3000	237.0

1) Maximum speed for 4\_0.7250.0: 1200 rpm  
2) On IEC 225/250/280 8x45° are valid.

We reserve the right to make dimensional and constructional alterations.

Dimensions [mm]			DIN 42939	a	-	$\varnothing b^{+0.3}_{+0.2}$	$\varnothing b_1$	c P <sup>9</sup>	$\varnothing D$	$\varnothing d^{F7}$	$\varnothing d_{1k6}$	$\varnothing e$	f	f <sub>1</sub>	f <sub>2</sub>	
			DIN EN 50347	-	ED	$\varnothing N_2^{+0.3}_{+0.2}$	$\varnothing N$	F P <sup>9</sup>	$\varnothing P$	$\varnothing D_2^{F7}$	$\varnothing D_{k6}$	$\varnothing M$	T <sub>2</sub>	T	-	
Motor IEC	Size Clutch	Flange	Type													
63	02	FF115	450_2_0	2	5	95	95 <sup>j6</sup>	4	140	11	115	3	2.5	6	-	
71		FF130		2	6	110	110 <sup>j6</sup>	5	160	14	130	4	3.5	6	-	
80	01	FF165	490_2_0/ 4190_3400	2	6	130	130 <sup>j6</sup>	6	200	19	165	4	3.5	11	9	
90	0	FF165		2	8	130	130 <sup>j6</sup>	8	200	24	165	4	3.5	12	7	
100	1	FF215	490_2_0/ 4190_3400	4	6	180	180 <sup>j6</sup>	8	250	28	215	4.5	4	12	7	
132	2	FF265		6	4	230	230 <sup>j6</sup>	10	300	38	265	5	4	8	12	
160	3	FF300	490_2_2/ 4190_5400	6	14	250	250 <sup>h6</sup>	12	350	42	300	6	5	15	23	
180		FF300		5	5	250	250 <sup>h6</sup>	14	350	48	300	6	5	15	23	
200	4	FF350	490_2_2/ 4190_5400	5	5	300	300 <sup>h6</sup>	16	400	55	350	5.5	5	-	23	
225		FF400		5	10	350	350 <sup>h6</sup>	18	450	60	400	5.5	5	-	23	
250	5	FF500	490_2_2/ 4190_5400	5	10	450	450 <sup>h6</sup>	18	550	60	500	5.5	5	-	23	
280		FF500		5	10	450	450 <sup>h6</sup>	20	550	75	500	5.5	5	-	31	
315		FF600		6	9	550	550 <sup>h6</sup>	22	660	80	600	7.5	6	-	27	

Dimensions [mm]			DIN 42939	g	g <sub>1</sub>	h	h <sub>1</sub>	$\varnothing i$	k	l	O <sub>1</sub>	O
			DIN EN 50347	LA	LA <sub>2</sub>	E	E <sub>2</sub>	$\varnothing S$	GE	LB	EB <sub>1</sub>	EB
Motor IEC	Size Clutch	Flange	Type									
63	02	FF115	450_2_0	9	9	23	35	9	2.5	55	-	16
71		FF130		9	9	30	36	9	3	55	-	22
80	01	FF165	490_2_0/ 4190_3400	10	10	40	52	11	3.5	78	81	32
90	0	FF165		10	10	50	61	11	4	90	92	40
100	1	FF215	490_2_0/ 4190_3400	11	11	60	73	13.5	4	110	116	50
132	2	FF265		12	12	80	85	13.5	5	110	118	70
160	3	FF300	490_2_2/ 4190_5400	13	13	110	111	17.5	5	124	139	90
180		FF300		13	13	110	111	17.5	5.5	126	141	100
200	4	FF350	490_2_2/ 4190_5400	15	15	110	-	17.5	6	-	216	100
225		FF400		15	15	140	-	17.5	7	-	216	125
250	5	FF500	490_2_2/ 4190_5400	18	18	140	-	17.5	7	-	216	125
280		FF500		17	17	140	-	17.5	7	-	252	125
315		FF600		24	24	170	-	204	9	-	266	150

Dimensions			a	$\varnothing b^{+0.3}_{+0.2}$	$\varnothing b_1$	c P <sup>9</sup>	$\varnothing D$	$\varnothing d^{F7}$	$\varnothing d_{1k6}$	$\varnothing e$	f	f <sub>1</sub>	f <sub>2</sub>
							[mm]						
Motor NEMA	Size Clutch	Type											
56 C	01	490_2_0/ 4190_3400	-	4.500"	4.500" <sup>j6</sup>	0.188"	180	0.625"	5.875"	0.180"	0.160"	0.433"	0.354"
143 TC			-	4.500"	4.500" <sup>j6</sup>	0.188"	180	0.875"	5.875"	0.180"	0.160"	0.433"	0.354"
184 TC	1	490_2_0/ 4190_3400	-	8.500"	8.500" <sup>j6</sup>	0.250"	250	1.125"	7.250"	0.250"	0.250"	0.518"	0.518"
215 TC	2		-	8.500"	8.500" <sup>j6</sup>	0.310"	250	1.375"	7.250"	0.250"	0.250"	0.678"	0.362"
256 TC			-	8.500"	8.500" <sup>j6</sup>	0.375"	250	1.625"	7.250"	0.250"	0.250"	1.310"	0.992"

Dimensions			g	g <sub>1</sub>	h	h <sub>1</sub>	$\varnothing i$	k	l	O <sub>1</sub>	O		
Motor NEMA	Size Clutch	Type											
56 C	01	490_2_0/ 4190_3400	0.375"	0.375"	2.060"	2.200"	2.323"	0.438"	0.104"	3.070"	3.19"	1.410"	-
143 TC			0.375"	0.375"	2.120"	2.200"	2.323"	0.438"	0.104"	3.070"	3.19"	1.410"	-
184 TC	1	490_2_0/ 4190_3400	0.375"	0.704"	2.870"	2.920"	3.160"	0.562"	0.139"	4.420"	4.650"	1.780"	-
215 TC	2		0.375"	0.704"	3.370"	3.390"	3.430"	0.562"	0.174"	4.655"	4.650"	2.410"	-
256 TC			0.375"	0.704"	4.000"	4.020"	4.059"	0.562"	0.200"	5.280"	5.280"	2.910"	-

We reserve the right to make dimensional and constructional alterations.

## Technical Explanations EAS<sup>®</sup>-HTL

### Torque Adjustment

The torque is set manufacturer-side according to the customer's request. However, should a different torque adjustment be required, it can be adjusted according to the attached Installation and Operational Instructions.

For this, the clutch must be removed from the housing.

The installed cup springs are operated in the negative range of the characteristic curve (see Fig. 3). This means that tightening the adjusting nut causes the spring force to decrease, and loosening the adjusting nut causes the spring force to increase.

### Maintenance

The EAS<sup>®</sup>-HTL clutches are largely maintenance-free. Special maintenance work may be necessary, however, if the device is operating in extreme ambient conditions.

In this case, please contact the manufacturers.

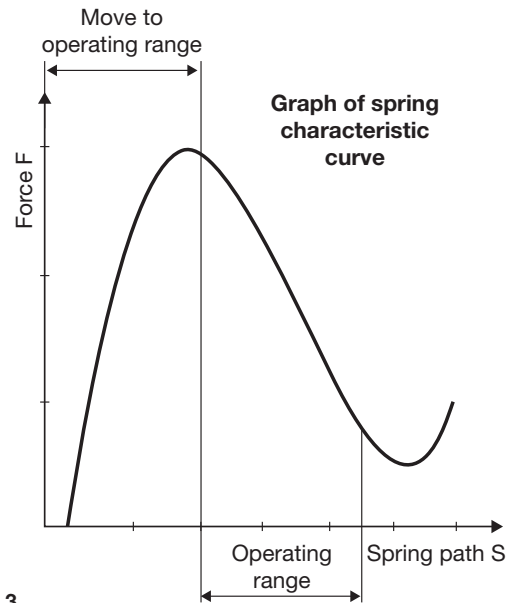


Fig. 3

### Adjustment (Limit Switch):

The limit switch (PNP NO contact) for the EAS<sup>®</sup>-HTL clutch has been adjusted and countered manufacturer-side. However, as the final clutch position is defined via the customer-side attachment, re-adjustment may be necessary. This is carried out as follows:

- Loosen the counter nut on the limit switch.
- Screw in the limit switch up to its limit (limit switch damped).
- Unscrew the limit switch until it switches (limit switch undamped).
- Screw in the limit switch carefully until it switches (limit switch is damped again), then continue for another 90°.
- Counter the limit switch.
- Check the switching function by disengaging the clutch.

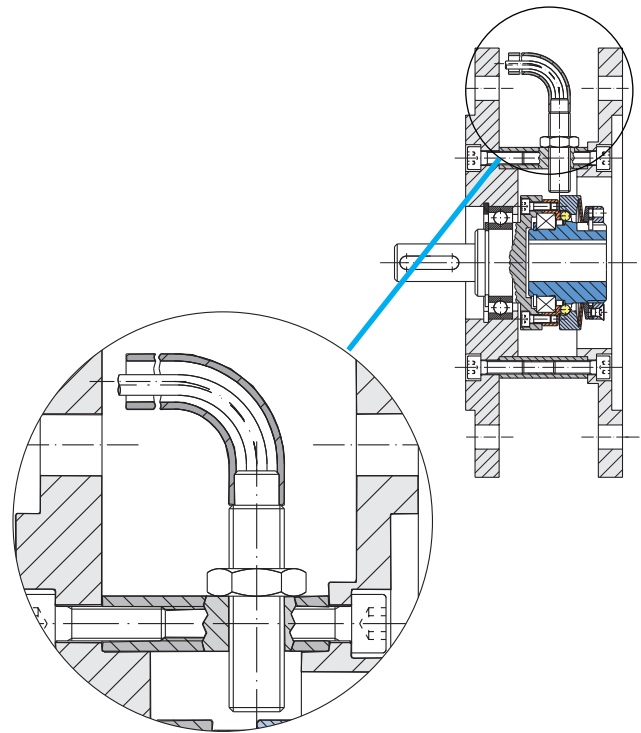


Fig. 4

### Important!

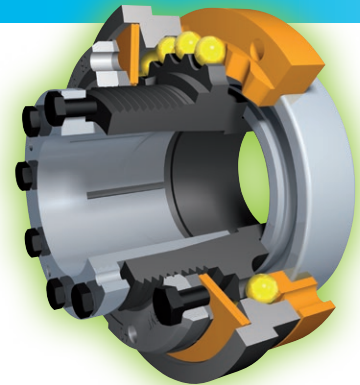
In order to secure limit switch function, please keep it free from oil, grease and other dirt particles.



## Product Summary

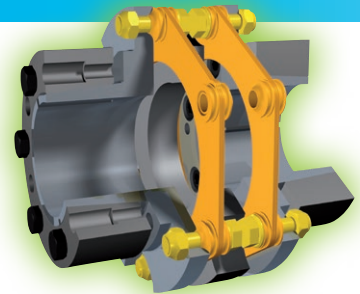
### Torque Limiters/Overload Clutches

- ❑ **EAS<sup>®</sup>-compact<sup>®</sup>/EAS<sup>®</sup>-NC**  
Positive locking and completely backlash-free torque limiting clutches
- ❑ **EAS<sup>®</sup>-smartic<sup>®</sup>**  
Cost-effective torque limiting clutches, quick installation
- ❑ **EAS<sup>®</sup>-element clutch/EAS<sup>®</sup>-elements**  
Load-disconnecting protection against high torques
- ❑ **EAS<sup>®</sup>-axial**  
Exact limitation of tensile and compressive forces
- ❑ **EAS<sup>®</sup>-Sp/EAS<sup>®</sup>-Sm/EAS<sup>®</sup>-Zr**  
Load-disconnecting torque limiting clutches with switching function
- ❑ **ROBA<sup>®</sup>-slip hub**  
Load-holding, frictionally locked torque limiting clutches
- ❑ **ROBA<sup>®</sup>-contitorque**  
Magnetic continuous slip clutches
- ❑ **EAS<sup>®</sup>-HSE**  
High-speed torque limiters for high-speed applications



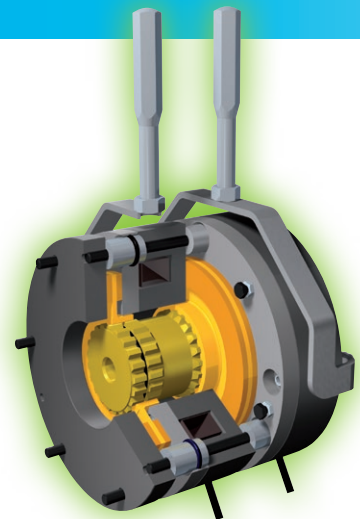
### Shaft Couplings

- ❑ **smartflex<sup>®</sup>/primeflex<sup>®</sup>**  
Perfect precision couplings for servo and stepping motors
- ❑ **ROBA<sup>®</sup>-ES**  
Backlash-free and damping for vibration-sensitive drives
- ❑ **ROBA<sup>®</sup>-DS/ROBA<sup>®</sup>-D**  
Backlash-free, torsionally rigid all-steel couplings
- ❑ **ROBA<sup>®</sup>-DSM**  
Cost-effective torque-measuring couplings



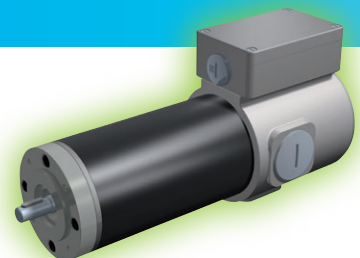
### Electromagnetic Brakes/Clutches

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



### DC Drives

- ❑ **tendo<sup>®</sup>-PM**  
Permanent magnet-excited DC motors



## 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 Kakigaracho,  
Chuo-ku  
Tokyo  
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  
aandrijftechniek@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.  
6F, No 462, Sec. 2, ZhongQing Rd  
Beitun Dist.,  
Taichung City  
Tel.: 04/25 15 05 66  
Fax: 04/25 15 24 13  
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)

