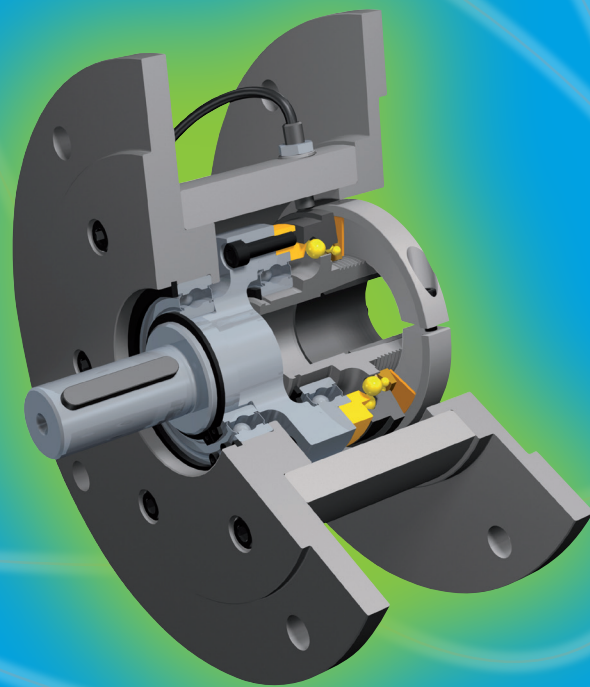




your reliable partner

EAS[®]-HTL

Housed Torque Limiter



Type 490_24_



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 Drive-technological 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.

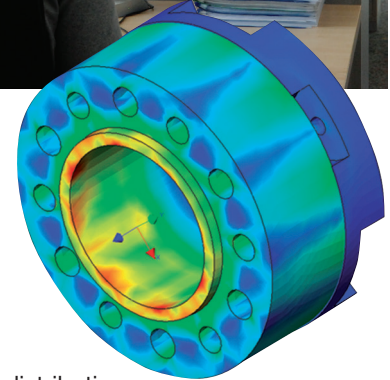
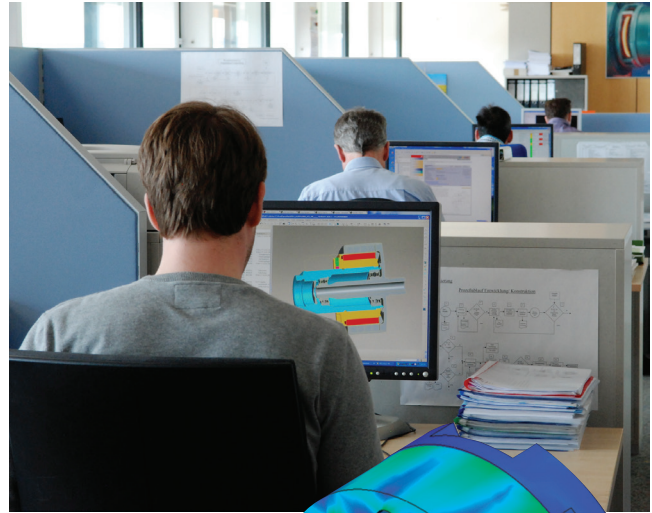


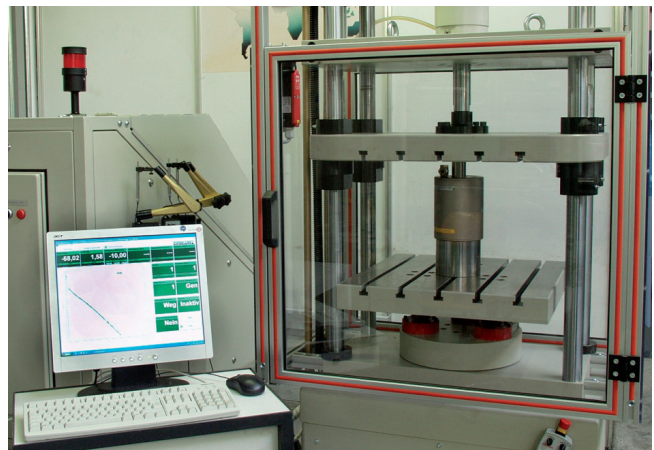
Illustration of the stress distribution in a backlash-free shaft connection

From Prototype to Finished Product

No mayr[®] product is released onto the market until it has proved its functional capabilities and reliability in extreme, long-term tests.

The spectrum of testing equipment 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 flow 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.

Unsurpassed - Our Standard Programme

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

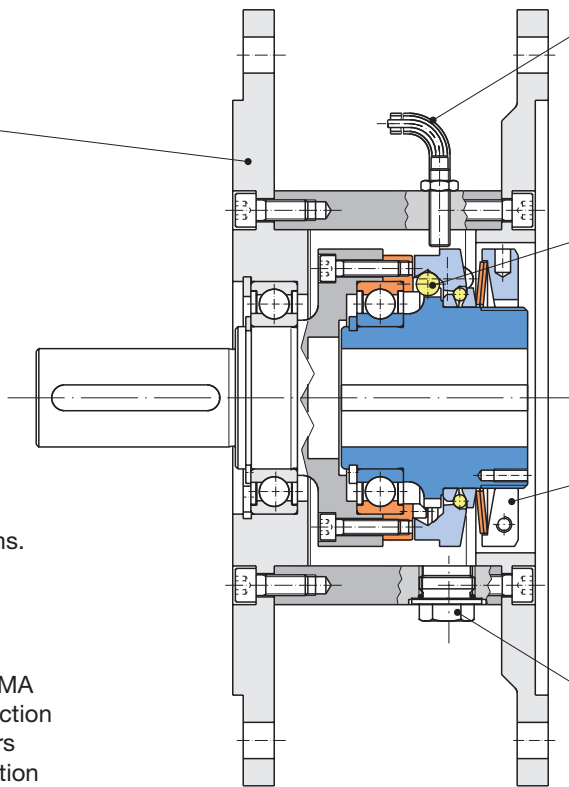
The solidity of the steel housing means that hanging loads can be attached to it.

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 signal to switch off drive on overload.
- Installation and adjustment manufacturer-side

Backlash-free Torque Transmission

Backlash-free torque transmission using our patented EAS®-NC/EAS®-Compact® 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 0 . — 2 — . 0
9 2 1)

Motor size				Clutch size	Torque range	Clutch design
IEC		NEMA				
63	71			02	medium	5
80		56 C	143 TC	01	high	6
90				0	very high	7
100		184 TC		1		
132		215 TC	256 TC	2		
160	180			3		
200	225	250		4 ¹⁾		
280	315			5 ¹⁾		

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

1) Starting at Size 200 (clutch sizes 4 and 5), the EAS® -Compact® Type 490_2_2 is used.



According to German notation, decimal points in this brochure are represented with a comma (e.g. 0,5 instead of 0.5).

EAS[®]-HTL

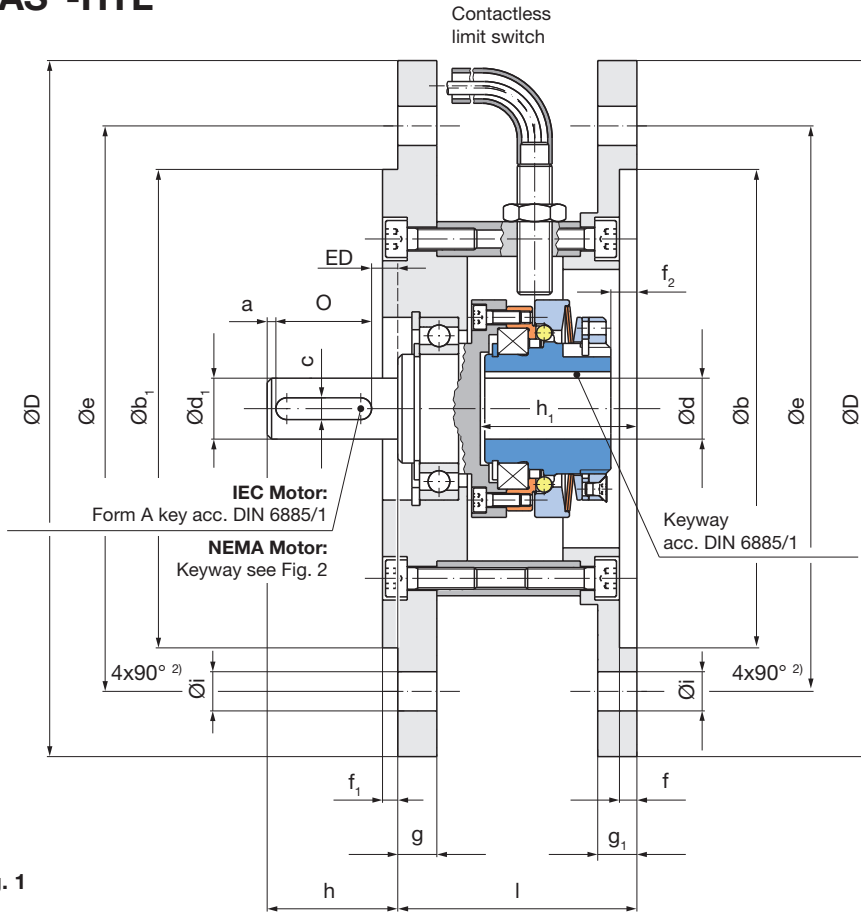


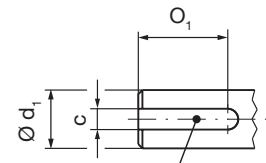
Fig. 1

The EAS[®]-HTL overload clutches Type 490._24.⁰/₂ are also available in



ATEX design according to directive 94/9 EC (ATEX 95).

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



Keyway depth = "k"

Fig. 2

Technical Data			Ratchetting, synchronous clutches				Overload clutches				Weight	
Size		Type	Limit torques for overload			Maximum speed	Limit torques for overload			Maximum speed		
Motor	Clutch		M_G [Nm]				M_G [Nm]					
IEC	NEMA		n_{max} [rpm]	n_{max} [rpm]			n_{max} [rpm]					
			4_0.52 ⁰ / _{5.0}	4_0.62 ⁰ / _{5.0}	4_0.72 ⁰ / _{5.0}	490.524. ⁰ / ₂	490.624. ⁰ / ₂	490.724. ⁰ / ₂		m [kg]		
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	-	01	490._2_0	5 - 12,5	10 - 25	20 - 50	4000	5 - 12,5	10 - 25	20 - 50	8000	8,2
-	56 C			5 - 12,5	10 - 25	20 - 50	4000	5 - 12,5	10 - 25	20 - 50	8000	6,8
-	143 TC			5 - 12,5	10 - 25	20 - 50	4000	5 - 12,5	10 - 25	20 - 50	8000	7
90	-	0	490._2_0	10 - 25	20 - 50	40 - 100	3000	10 - 25	20 - 50	40 - 100	7000	9,8
100	-	1	490._2_0	20 - 50	40 - 100	80 - 200	2500	20 - 50	40 - 100	80 - 200	6000	16,6
-	184 TC			20 - 50	40 - 100	80 - 200	2500	20 - 50	40 - 100	80 - 200	6000	18,3
132	-	2	490._2_0	40 - 100	80 - 200	160 - 400	2000	40 - 100	80 - 200	160 - 400	5000	23,5
-	215 TC			40 - 100	80 - 200	160 - 400	2000	40 - 100	80 - 200	160 - 400	5000	19,8
-	256 TC			40 - 100	80 - 200	160 - 400	2000	40 - 100	80 - 200	160 - 400	5000	19,0
160	-	3	490._2_0	70 - 175	140 - 350	280 - 700 ¹⁾	1500 ¹⁾	80 - 200	160 - 400	320 - 800	4000	34
180	-			70 - 175	140 - 350	280 - 700 ¹⁾	1500 ¹⁾	80 - 200	160 - 400	320 - 800	4000	37
200	-	4	490._2_2	-	-	-	-	120 - 300	240 - 600	480 - 1200	3500	78,7
225	-			-	-	-	-	120 - 300	240 - 600	480 - 1200	3500	88,4
250	-			-	-	-	-	120 - 300	240 - 600	480 - 1200	3500	108,4
280	-	5	490._2_2	-	-	-	-	240 - 600	480 - 1200	960 - 2400	3000	145,7
315	-			-	-	-	-	240 - 600	480 - 1200	960 - 2400	3000	236

1) Maximum speed for Type 4_0.72⁰/_{5.0}: 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 ^{P9}	$\varnothing D$	$\varnothing d^{F7}$	$\varnothing d_{1k6}$	$\varnothing e$	f	f ₁	f ₂		
			DIN EN 50347	-	ED	$\varnothing N_2^{+0,3}_{+0,2}$	$\varnothing N$	F ^{P9}	$\varnothing P$	$\varnothing D_2^{F7}$	$\varnothing D_{k6}$	$\varnothing M$	T ₂	T	-	-	
Motor IEC	Size Clutch	Flange	Type													4.0-2 ₀ ⁰	490-24 ₂ ⁰
63	02	FF115	450_2_0	2	5	95	95 ^{j6}	4	140	11	115	3	2,5	6	-	-	
71		FF130		2	6	110	110 ^{j6}	5	160	14	130	4	3,5	6	-	-	
80	01	FF165	490_2_0	2	6	130	130 ^{j6}	6	200	19	165	4	3,5	11	6	-	-
90	0	FF165		2	8	130	130 ^{j6}	8	200	24	165	4	3,5	12	7	-	-
100	1	FF215		4	6	180	180 ^{j6}	8	250	28	215	4,5	4	12	7	-	-
132	2	FF265		6	4	230	230 ^{j6}	10	300	38	265	6	4	8	8	-	-
160	3	FF300		6	14	250	250 ^{h6}	12	350	42	300	6	5	15	23	-	-
180		FF300		5	5	250	250 ^{h6}	14	350	48	300	6	5	15	23	-	-
200	4	FF350		5	5	300	300 ^{h6}	16	400	55	350	5,5	5	-	20	-	-
225		FF400		5	10	350	350 ^{h6}	18	450	60	400	5,5	5	-	23	-	-
250		FF500		5	10	450	450 ^{h6}	18	550	60	500	5,5	5	-	22	-	-
280		5		FF500	5	10	450	450 ^{h6}	20	550	75	500	5,5	5	-	31	-
315	FF600		6	9	550	550 ^{h6}	22	660	80	600	7,5	6	-	27	-	-	

Dimensions [mm]			DIN 42939	g	g ₁	h	h ₁	$\varnothing i$	k	l	O ₁	O		
			DIN EN 50347	LA	LA ₂	E	E ₂	$\varnothing S$	GE	LB	EB ₁	EB		
Motor IEC	Size Clutch	Flange	Type				4.0-2 ₀ ⁰	490-24 ₂ ⁰		4.0-2 ₀ ⁰	490-24 ₂ ⁰			
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	10	10	40	52	52	11	3,5	78	78	32	
90	0	FF165		10	10	50	61	63	11	4	90	92	40	
100	1	FF215		11	11	60	73	79	13,5	4	110	116	50	
132	2	FF265		12	12	80	85	93	13,5	5	110	118	70	
160	3	FF300		13	13	110	111	126	17,5	5	124	139	90	
180		FF300		13	13	110	111	126	17,5	5,5	126	141	100	
200	4	FF350		15	15	110	-	166	17,5	6	-	213	-	100
225		FF400		15	15	140	-	169	17,5	7	-	216	-	125
250		FF500		18	18	140	-	168	17,5	7	-	216	-	125
280		5		FF500	17	17	140	-	207	17,5	7	-	252	-
315	FF600		24	24	170	-	202	22	9	-	266	-	150	

Dimensions			a	$\varnothing b^{+0,3}_{+0,2}$	$\varnothing b_1$	c ^{P9}	$\varnothing D$	$\varnothing d^{F7}$	$\varnothing d_{1k6}$	$\varnothing e$	f	f ₁	f ₂	
							[mm]						4.0-2 ₀ ⁰	490-24 ₂ ⁰
Motor NEMA	Size Clutch	Type												
56 C	01	490_2_0	-	4.500"	4.500 ^{j6} "	0.188"	180	0.625"	5.875"	0.180"	0.180"	0.433"	0.236"	
143 TC			-	4.500"	4.500 ^{j6} "	0.188"	180	0.875"	5.875"	0.250"	0.250"	0.433"	0.236"	
184 TC	1		-	8.500"	8.500 ^{j6} "	0.250"	250	1.125"	7.250"	0.250"	0.250"	0.271"	0.271"	
215 TC	2		-	8.500"	8.500 ^{j6} "	0.310"	250	1.375"	7.250"	0.250"	0.250"	0.678"	0.354"	
256 TC			-	8.500"	8.500 ^{j6} "	0.375"	250	1.625"	7.250"	0.250"	0.250"	1.310"	1.115"	

Dimensions			g	g ₁	h	h ₁	$\varnothing i$	k	l	O ₁	O		
						4.0-2 ₀ ⁰	490-24 ₂ ⁰		4.0-2 ₀ ⁰	490-24 ₂ ⁰			
Motor NEMA	Size Clutch	Type											
56 C	01	490_2_0	0.375"	0.375"	2.060"	2.200"	2.200"	0.438"	0.104"	3.070"	3.070"	1.410"	-
143 TC			0.375"	0.375"	2.120"	2.200"	2.200"	0.438"	0.104"	3.070"	3.070"	1.410"	-
184 TC	1		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"	4.020"	0.562"	0.200"	5.280"	5.280"	2.910"	-

Technical Explanations EAS[®]-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), i.e. tightening the adjusting nut causes the spring force to decrease, whereas loosening the adjusting nut causes the spring force to increase.

Maintenance

EAS[®]-HTL-clutches are mainly maintenance-free. Special maintenance work may be necessary should the device be subject to extreme ambient conditions.

In this case, we request that you please contact the manufacturers.

Adjustment (Limit Switch)

The limit switch (PNP NO contact) on the EAS[®]-HTL clutch has been set and countered manufacturer-side. However, since the clutch position is ultimately defined by the customer-side attachment, readjustment may be necessary.

This can be carried out as follows:

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

Important!

To avoid any functional impairment of the limit switch, it must be kept free of oil, grease and other dirty particles.

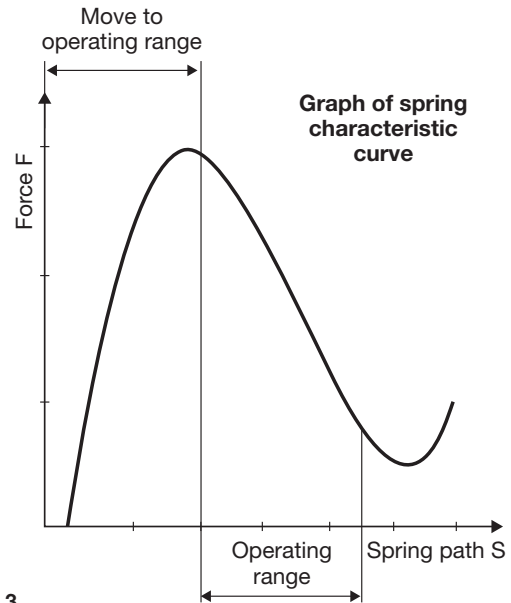


Fig. 3

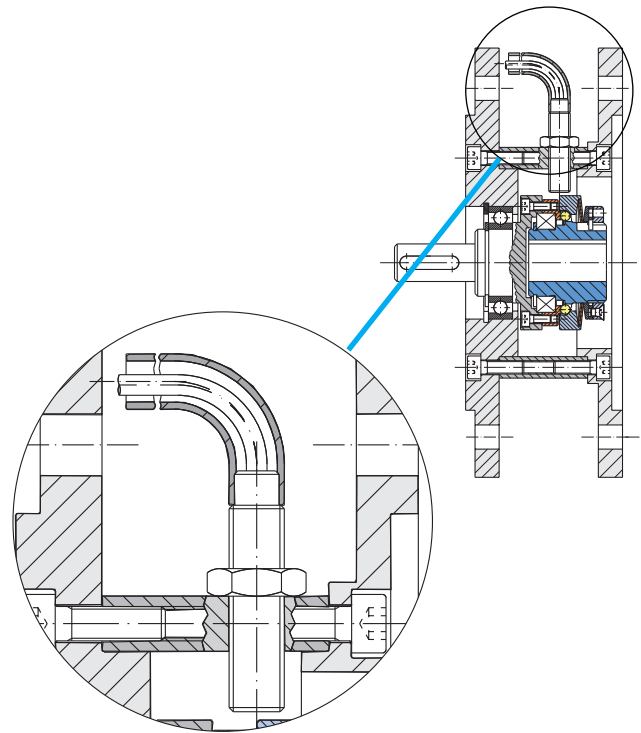
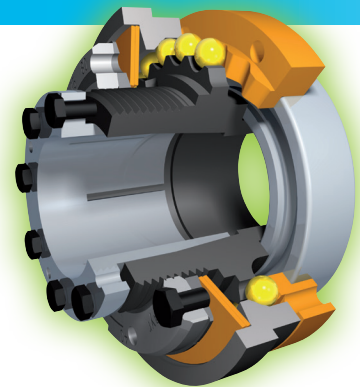


Fig. 4

Product Summary

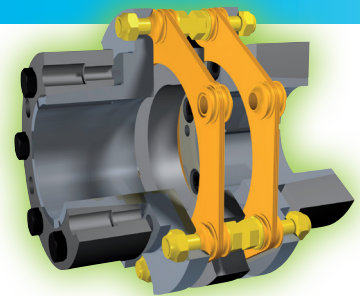
Safety Clutches/Overload Clutches

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



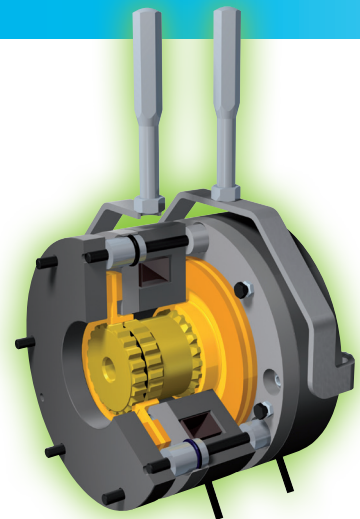
Shaft Couplings

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



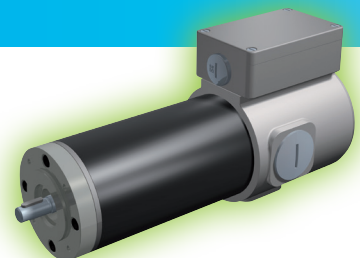
Electromagnetic Brakes/Clutches

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



DC Drives

- ❑ **tendo®-PM**
Permanent magnet-excited DC motors



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You can find the complete address for the representative responsible for your area under www.mayr.com in the internet.