

BRAKES & CLUTCHES

PRODUCT PORTFOLIO MAGNET TECHNOLOGY

EN



Proven standard version or individually adapted to the customer's requirements

RELIABLE BRAKES AND CLUTCHES FOR YOUR DRIVE

KEB's success story began over 50 years ago in the field of brakes and clutches, and the safety and reliability of our products have been impressing customers around the world ever since.

In addition to our standard range of safety brakes, safety clutches and corresponding electronic accessories, we work with you to adapt the products to your requirements and needs.

In the process, we manufacture the products in accordance with the valid ISO 9001 quality guidelines and, for our automotive customers, also in accordance with IATF 16949.

IIoT



IIoT & Edge-Platform


Analytics


Monitoring


Management


Service

CONTROL HARDWARE

Visualisation



HMI

Engineering


Control Software

Remote Control


Router

CONTROL HARDWARE


Web HMI


Embedded Control


IPC


I/O


Safety PLC

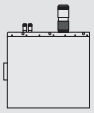
DRIVES

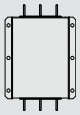

Inverter

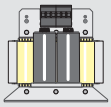

Servo Drive


Drive Controller

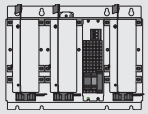

Pitch Drive


eMobility Drive


EMC & THD Filter


Sine Wave Filter

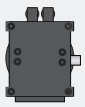

Motor Choke


Sine Wave EMC Filter

MOTORS


AC Motor


PM Motor


PM Gear Motor


AC Gear Motor

BRAKES AND CLUTCHES


Permanent Magnet Brake


Spring Applied Brake


Electromagnetic Brake


Electromagnetic Clutch

PRODUCT OVERVIEW

SPRING-APPLIED BRAKES
(Power-off safety brakes)



COMBISTOP 08
Mini brake 0.3 - 2 Nm
For dynamic and static applications

from page 6



COMBISTOP 28
Sealed brake (IP66) 3 - 2,000 Nm
For dynamic and static applications with enhanced sealing requirements or tough ambient conditions

from page 8



COMBISTOP 38
Standard spring-applied brake with modular system 3 – 2,000 Nm
For dynamic and static applications with varied standard options

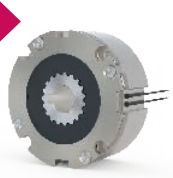
from page 10



COMBISTOP 38D
Redundant double brake 2 x 3 – 2 x 2,000 Nm
For dynamic and static applications with the requirement of redundancy respectively double safety

from page 12

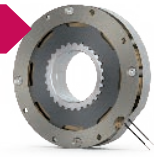
NEW



COMBISTOP S1
High performance holding brake 2.8 – 45 Nm
Holding brake with emergency stop function especially for servo applications

from page 14

NEW



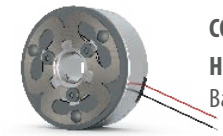
COMBISTOP S1 FLAT
Holding Brake in flat design 3,4 – 10,8 Nm
Holding brake S1 with patented friction system

from page 16

PERMANENT MAGNET BRAKES AND CLUTCHES
(Power-off brakes and clutches)



COMBIPERM P1
Standard permanent magnet brake 0.15 – 194 Nm
Backlash-free brake for static applications with emergency stop function
from page 20



COMBIPERM P2
High performance permanent magnet brake 2.8 – 20 Nm
Backlash-free brake with improved emergency stop function and temperatures up to -40°C
from page 22



COMBIPERM PC
permanent magnet clutch 1.5 – 120 Nm
Safety clutch: In case of an emergency the drive and output are coupled
from page 24

ELEKTROMAGNETIC BRAKES AND CLUTCHES
(Power-on brakes and clutches)



COMBINORM B
Electromagnetic brake 0.5 – 1,250 Nm
For precise positioning and reliable holding
from page 26



COMBINORM C
Electromagnetic clutch 0.5 – 1,250 Nm
For simple controlled switching on and off of functional parts in synchronised processes
from page 28



COMBINORM T
Electromagnetic tooth clutch 21 – 390 Nm
For torsional backlash-free and positive transmission of torque
from page 34

ACCESSORIES AND TOOLS



COMBITRON 91
Rectifier up to 720V
from page 36



COMBITRON 98
POWERBOX ECO / fast-acting rectifier up to 94% energy saving
from page 37

CUSTOMIZED SOLUTIONS
Individual designs and customized development, testing and production from a single source
from page 38

COMBISTOP **08 - MINI BRAKE**

The COMBISTOP 08 is KEB's mini-series of closed-current spring-applied brakes. This brake solution is characterised by a particularly compact construction, and is designed for small loads.

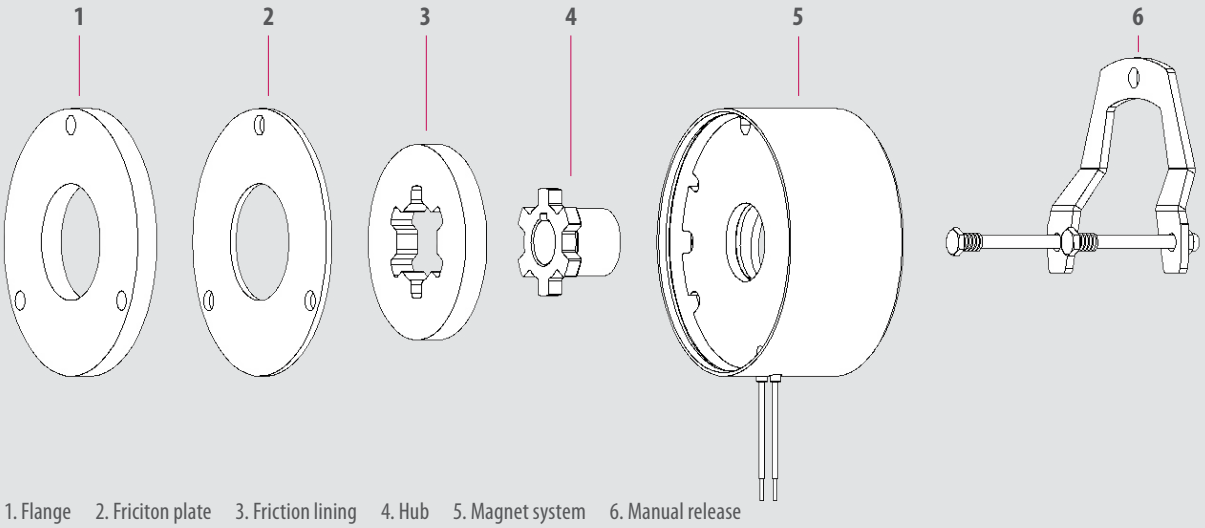
The 08 can be used as a service brake for dynamic applications, and as a holding brake with an emergency stop function for static applications.



OPTIONS:

- Manual release
- Flange
- Sealing plug
- CCV - Cold Climate Version down to 40 °C
- Modified braking torque
- Customized voltages
- Connector assembly
- Certificate 2.1 / acceptance test certificate 3.1

AREAS OF APPLICATION: SERVO MOTORS | MEDICAL TECHNOLOGY | ROBOTICS AND AUTOMATION | INDUSTRIAL TRUCKS & AGVS MATERIAL HANDLING | DOOR AND GATE OPERATORS | E-MOBILITY



1. Flange 2. Friciton plate 3. Friction lining 4. Hub 5. Magnet system 6. Manual release

HIGHLIGHTS

- Two sizes
- Ready to install, adjusted air gap
- Used as a service brake or holding brake
- Iso class B in accordance with VDE 0580
- CSA/CUS-certified
- Designed for S1 operation or 100 % duty cycle
- Standard voltages 24 / 105 / 180 / 205V

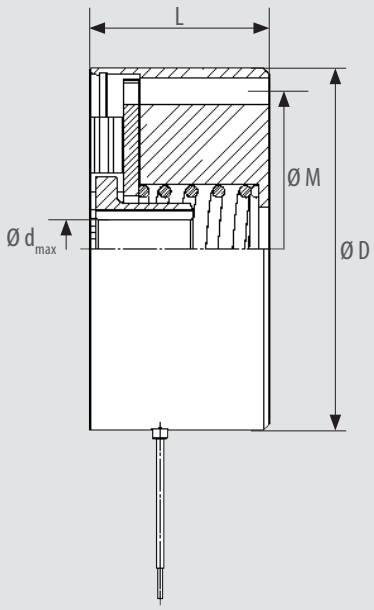
SIZE	Reduced torque [Nm]	Rated torque M_2 [Nm]	Increased torque* [Nm]	Standard power P [W]	D [mm]	H [mm]	M [mm]	L [mm]	L_2 [mm]	d_{max} [mm]
0B	-	0.3	-	6	40	-	34	23	-	8
00	0.5	1	2	11 - 15	59.5	41	52	29.5	39.7	10

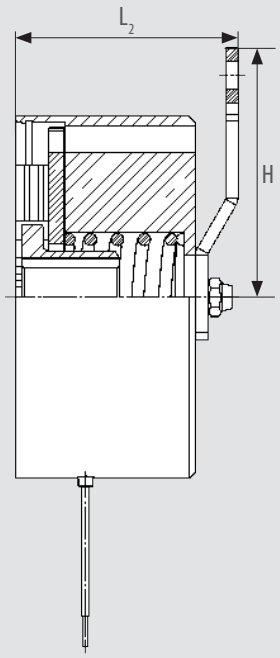
Rated torque is reached after pairing conditioning of the friction partners

**Holding brake with emergency stop function*

Assembly situation	Without options	With shaft sealing ring* or sealing plug	Customized solution
Uncovered machine side	IP11	IP55	on request
Under the fan cowl without manual release	IP54	IP55	on request
Under the fan cowl with manual release	IP22	IP55	on request

**The protection class of the shaft sealing ring depends on the respective of the manufacturer*





Download 3D models here and view further technical data

COMBISTOP **28 – SEALED BRAKE**

The brake can be used as a service brake for dynamic applications, and as a holding brake with an emergency stop function for static applications. Thanks to its modular system, the COMBISTOP can be easily assembled according to individual requirements.

Even project solutions for implementing specific requirements that go beyond the standard can be achieved thanks to our in-house development and production.

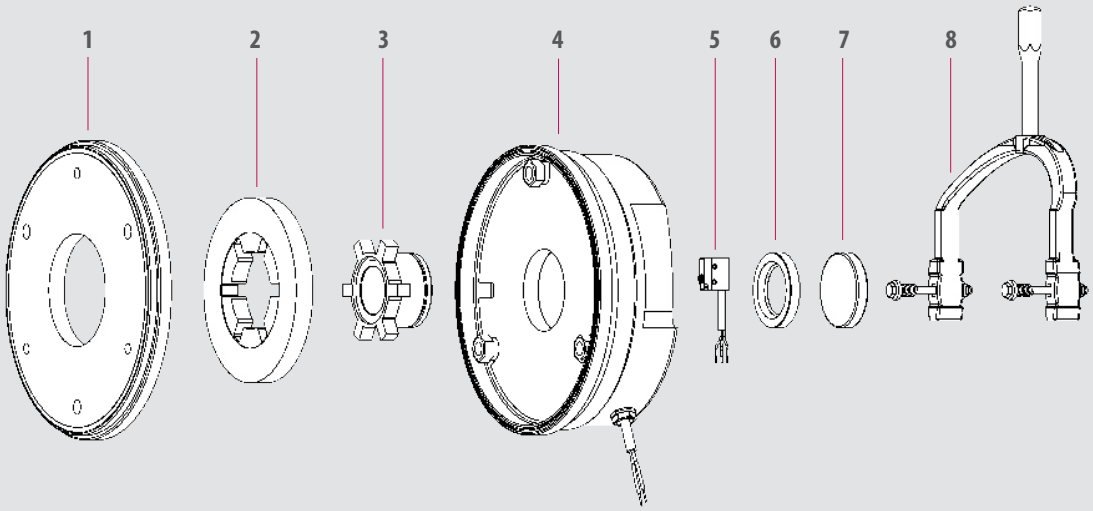


OPTIONS:

- Manual release
- Microswitch to monitor performance or wear and tear*
- Flange / centering flange
- Shaft sealing ring / sealing plug
- CCV - Cold Climate Version down to 40 °C
- Threaded holes on the back for encoder attachment
- Modified braking torque
- Flat design
- Customized voltages
- Connector assembly
- Certificate 2.1 / acceptance test certificate 3.1
- Corrosion protection class up to C4

** From size 03 upwards*

AREAS OF APPLICATION: CRANES AND HOISTS | MEDICAL TECHNOLOGY | WIND ENERGY | INDUSTRIAL TRUCKS & AGVS MATERIAL HANDLING | AGRICULTURE | MINING AND MUNICIPAL MACHINERY



1. Flange 2. Friction lining 3. Hub 4. Magnet system 5. Micro switch 6. Shaft sealing ring 7. Sealing plug 8. Manual release

HIGHLIGHTS

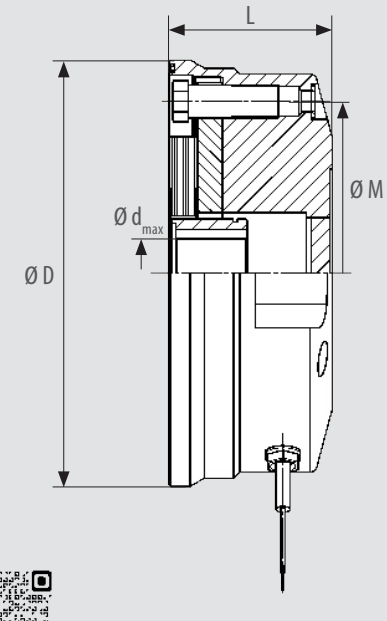
- Ten sizes
- Ready to install, adjusted air gap
- Used as a service brake or holding brake
- Up to Iso class H in accordance with VDE 0580
- CSA / CUS-certified
- Protection class up to IP67
- Designed for S1 operation or 100 % duty cycle
- Up to 7 million switching cycles as standard
- Standard voltages 24 / 105 / 180 / 205V

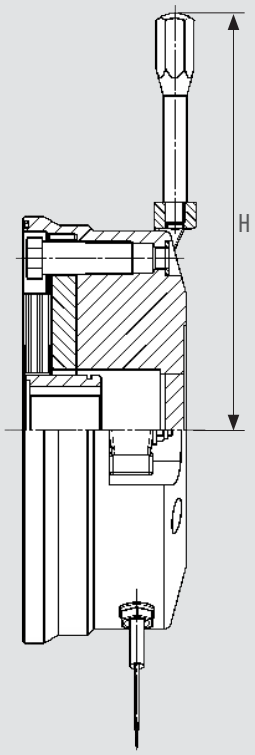
SIZE	Reduced torque [Nm]	Rated torque M_2 [Nm]	Increased torque* [Nm]	Standard power P [W]	D [mm]	H [mm]	M [mm]	L [mm]	d_{max} [mm]
02	3	6.5	10	25	98	105.5	72	39	15
03	4	13	20	30	118	114	90	42.8	20
04	8	25	40	30	143	128	112	52.8	25
05	15	45	65	48	165	166	132	58.3	30
06	33	90	120	62	180	176	145	68.8	35
07	65	130	200	65	210	225	170	74.2	45
08	75	200	300	75	240	235	196	86.5	60
09	120	330	500	80	276	256	230	102	60
10**	165	665	1000	130	328	335	278	118	75
11**	445	1335	2000	180	on request		325	on request	

Braking torque tolerance ±25% after pairing conditioning of the friction partners **Holding brake with emergency stop function* ***Quantity dependent project solution*

Assembly situation	Without options	Customized solution
Uncovered machine side without manual release	IP66	up to IP67
Uncovered machine side with manual release	IP65	up to IP67
Under the fan cowl without manual release	IP66	up to IP67
Under the fan cowl with manual release	IP66	up to IP67

**The protection class of the shaft sealing ring depends on the respective of the manufacturer*





Download 3D models here and view further technical data

COMBISTOP **38 – STANDARD SPRING-APPLIED BRAKE**

The brake can be used both as a service brake for dynamic applications, and as a holding brake with an emergency stop function for static applications. Thanks to its modular system, the COMBISTOP can be easily assembled according to individual requirements in terms of braking torque and varied options.

Even project solutions for implementing specific requirements that go beyond the standard can be achieved thanks to our in-house development and production.

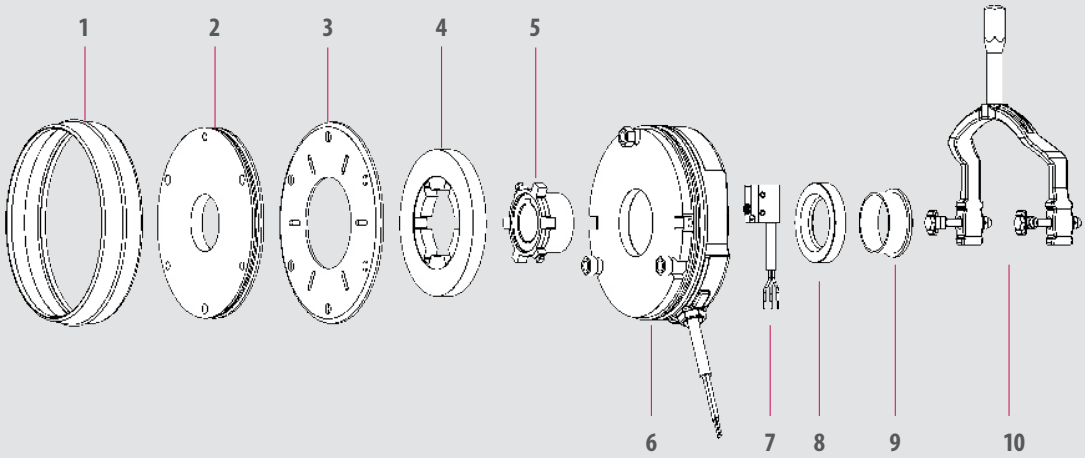


OPTIONS:

- Manual release
- Microswitch to monitor performance or wear and tear*
- Flange / friction disc
- Dust protection ring
- Shaft sealing ring / sealing plug
- CCV - Cold Climate Version down to 40 °C
- Threaded holes on the back for encoder attachment
- Modified braking torque
- Flat design
- Customized voltages
- Connector assembly
- Certificate 2.1 / acceptance test certificate 3.1

** From size 03 upwards*

AREAS OF APPLICATION: MATERIAL HANDLING | WIND ENERGY | MEDICAL TECHNOLOGY | ROBOTIC AND AUTOMATION INDUSTRIAL TRUCKS & AGVS | CRANES AND HOISTS



1. Dust protection ring 2.Flange 3. Friction disc 4. Friction lining 5. Hub 6. Magnet system
7. Micro switch 8. Shaft sealing ring 9. Sealing plug 10. Manual release

HIGHLIGHTS

- Ten sizes
- Ready to install, adjusted air gap
- Used as a service brake or holding brake
- Up to Iso class H in accordance with VDE 0580
- CSA/CUS-certified
- Protection class up to IP54
- Designed for S1 operation or 100 % duty cycle
- Up to 7 million switching cycles as standard
- Standard voltages 24 / 105 / 180 / 205V

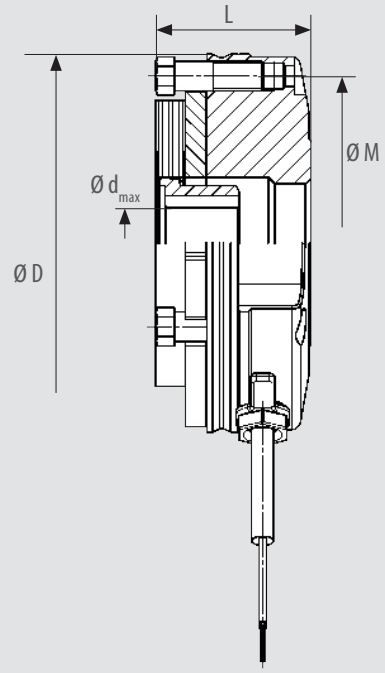
SIZE	Reduced torque [Nm]	Rated torque M_2 [Nm]	Increased torque* [Nm]	Standard power P [W]	D [mm]	H [mm]	M [mm]	L [mm]	d_{max} [mm]
02	3	6.5	10	25	85	105.5	72	37.7	15
03	4	13	20	30	102	114	90	41.7	20
04	8	25	40	30	127	128	112	51.7	25
05	15	45	65	48	147	166	132	57.7	30
06	33	90	120	62	164	176	145	68.8	35
07	65	130	200	65	190	225	170	75.5	45
08	75	200	300	75	218	235	196	87.4	60
09	120	330	500	80	253	256	230	101.7	60
10	165	665	1000	130	307	335	278	110.8	75
11	445	1335	2000	180	363	on request	325	134.5	90

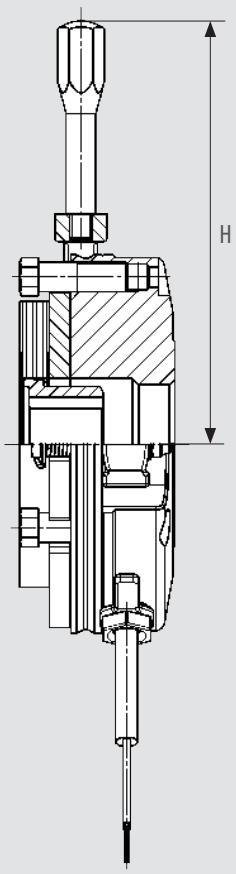
Braking torque tolerance ±25% after pairing conditioning of the friction partners

**Holding brake with emergency stop function*

Assembly situation	Without options	With dust protection ring and shaft sealing ring* or sealing plug
Uncovered machine side	IP00	IP54
Under the fan cowl without manual release	IP54	IP55
Under the fan cowl with manual release	IP22	IP55

**The protection class of the shaft sealing ring depends on the respective of the manufacturer*





Download 3D models here and view further technical data

COMBISTOP **38D – REDUNDANT DOUBLE BRAKE**

The 38D double brake doubles the safety level and covers a range that is prepared for tasks with redundant brake circuits.

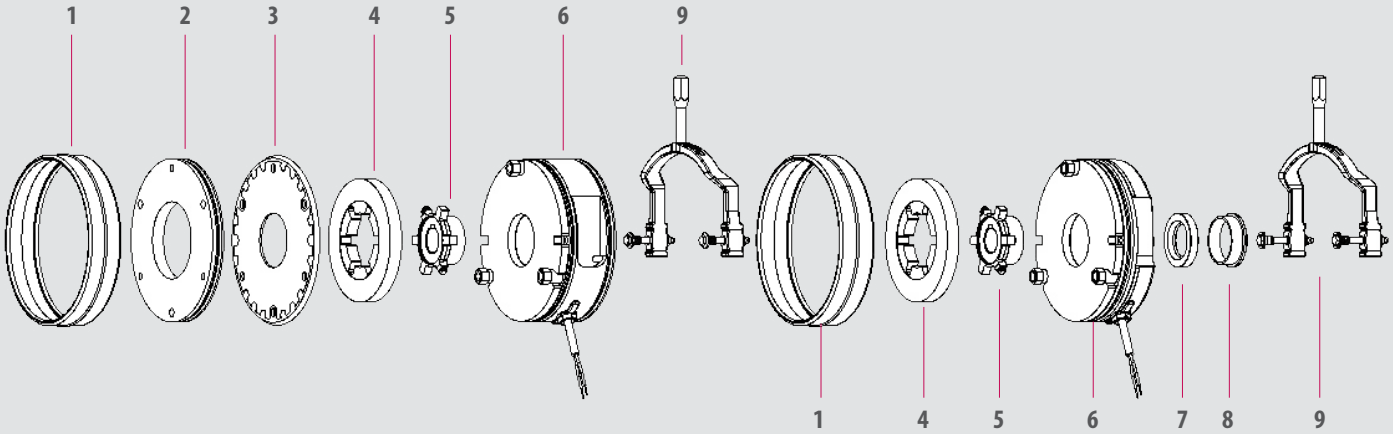
The mechanical design with two safety spring-applied brakes, which are completely independent of each other, meets the requirements according to DIN 56950 (BGV C1). The redundant brake system is delivered ready for use and adjusted by KEB.



OPTIONS:

- Manual release
- Microswitch to monitor performance or wear and tear
- Flange / friction disc
- Dust protection ring
- Shaft sealing ring / sealing plug
- CCV - Cold Climate Version down to 40 °C
- Threaded holes on the back for encoder attachment
- Modified braking torque
- Flat design
- Customized voltages
- Connector assembly
- Certificate 2.1 / acceptance test certificate 3.1

AREAS OF APPLICATION: MEDICAL TECHNOLOGY | CRANES AND HOISTS | MATERIAL HANDLING
AGRICULTURE | MINING AND MUNICIPAL MACHINERY



1. Dust protection ring 2. Flange 3. Friction disc 4. Friction lining 5. Hub 6. Magnet system 7. Shaft sealing ring 8. Sealing plug 9. Manual release

HIGHLIGHTS

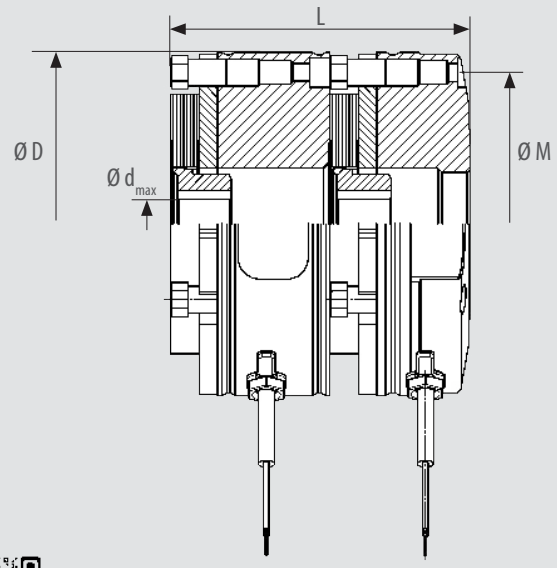
- Ten sizes
- Two redundant brake circuits
- Ready to install, adjusted air gap
- Used as a service brake or holding brake
- Up to Iso class H in accordance with VDE 0580
- CSA/CUS-certified
- Protection class up to IP67
- Designed for S1 operation or 100 % duty cycle
- Up to 7 million switching cycles as standard
- Standard voltages 24 / 105 / 180 / 205V

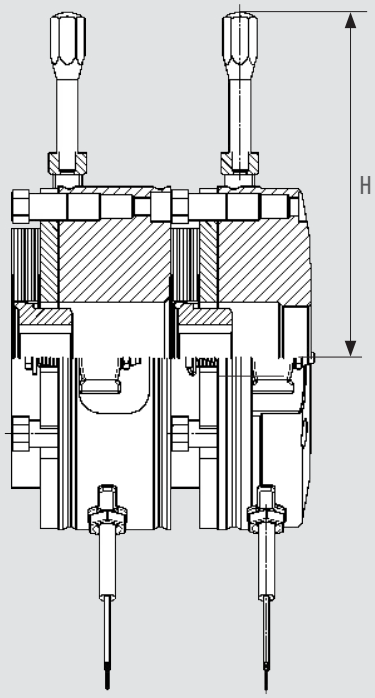
SIZE	Reduced torque [Nm]	Rated torque M_2 [Nm]*	Increased torque* [Nm]	Standard power P [W]	D [mm]	H [mm]	M [mm]	L [mm]	d_{max} [mm]
02	2 x 3	2 x 6,5	2 x 10	2 x 25	85	105.5	72	84	15
03	2 x 4	2 x 13	2 x 20	2 x 30	102	114	90	96	20
04	2 x 8	2 x 25	2 x 40	2 x 30	127	128	112	111	25
05	2 x 15	2 x 45	2 x 65	2 x 48	147	166	132	124	30
06	2 x 33	2 x 90	2 x 120	2 x 62	164	176	145	144	35
07	2 x 65	2 x 130	2 x 200	2 x 65	190	225	170	165	45
08	2 x 75	2 x 200	2 x 300	2 x 75	218	235	196	177.5	60
09	2 x 120	2 x 330	2 x 500	2 x 80	253	256	230	206.5	60
10	2 x 165	2 x 665	2 x 1000	2 x 130	307	335	278	224	75
11	2 x 445	2 x 1335	2 x 2000	2 x 180	363	On request	325	On request	90

Braking torque tolerance ±25% after pairing conditioning of the friction partners **Holding brake with emergency stop function*

Assembly situation	Without options	With dust protection ring and shaft sealing ring* or sealing plug	Customized solution
Uncovered machine side	IP00	IP54	up to IP67
Under the fan cowl without manual release	IP54	IP55	up to IP67
Under the fan cowl with manual release	IP22	IP55	up to IP67

**The protection class of the shaft sealing ring depends on the respective of the manufacturer*





Download 3D models here and view further technical data

COMBISTOP **S1 – HIGH PERFORMANCE HOLDING BRAKE**

The new S1 high-performance holding brake impresses with a new, patented friction system. This results in a significantly higher braking torque compared to conventional spring-applied brakes.

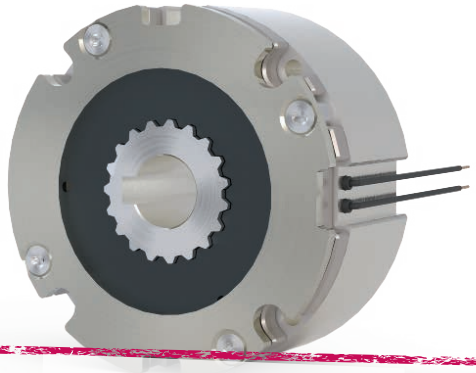
This is particularly suitable for servo applications with increased safety requirements. Thanks to the plug & play system, this series is also easy to assemble.

Like the COMBISTOP S1 flat, the **COMBISTOP S1** operates entirely without rare-earth elements – whilst delivering performance on a par with that of a permanent-magnet brake. The advantage: greater independence from materials and more reliable supply chains, making planning easier.

OPTIONS:

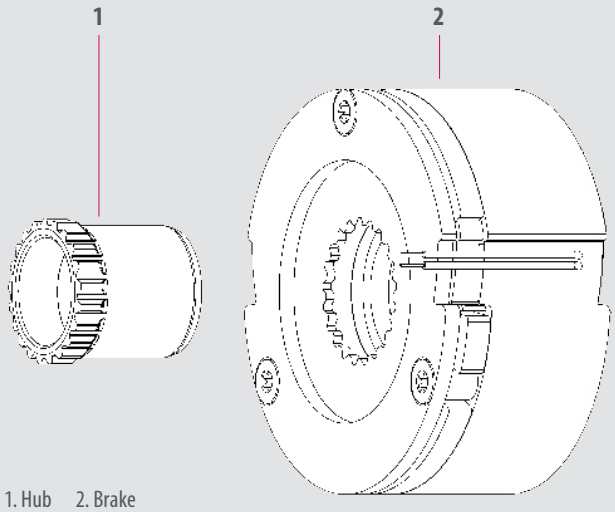
- Felt ring
- CCV - Cold Climate Version down to 40 °C
- Modified braking torque
- Customized voltages
- Connector assembly
- Certificate 2.1 / acceptance test certificate 3.1

NEW **Braking torque on par with PM brakes**



Prototypes will be available in the 1. Quarter of 2027 – Mass production will begin at the end of the 2. Quarter of 2027

AREAS OF APPLICATION: SERVO MOTORS | MEDICAL TECHNOLOGY | ROBOTICS AND AUTOMATION | INDUSTRIAL TRUCKS & AGVS E-MOBILITY | MATERIAL HANDLING



1. Hub 2. Brake

HIGHLIGHTS

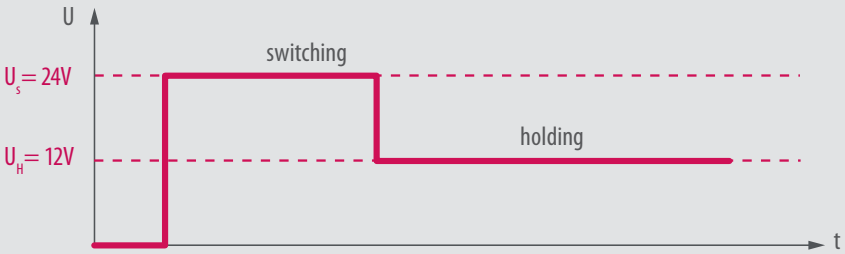
- Six sizes
- High permissible emergency stop friction energy
- Stable brake torque
- High temperature resistance
- Ready to install, adjusted air gap
- Used as a service brake or holding brake
- Integrated cable slots
- Up to Iso class F in accordance with VDE 0580
- Designed for S1 operation or 100 % duty cycle
- Standard voltage 24V

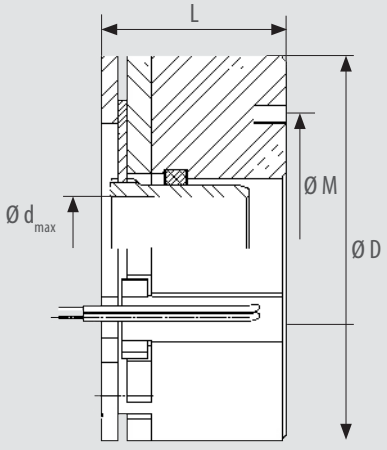
SIZE	Rated torque M_2 [Nm]	$M_{4min120}$ [Nm]	Standard power P [W]	D [mm]	L [mm]	d_{max} [mm]
04	2.8	2	37.5 / 9.4	44	29	9 / 12
05	6.9	5	37.5 / 9.4	56	34.2	12 / 15
06	12.9	9	37.7 / 9.4	67	34.5	15 / 18
07	17.8	13	37.5 / 9.4	74	36	16,5 / 20
08	22	16	37.5 / 9.4	82	37	21 / 25
10	45	32	37.5 / 9.4	104	46	30 / 36

[1] *S = switching / H = Holding*
[2] *keyway 6885/1 / without keyway*
[3] *Sizes 03, 09, 12 and 19 are currently in development*

Assembly situation	Without options
Uncovered machine side	IP00
Under the fan cowl without manual release	IP54

CONTROL





Download 3D models here and view further technical data

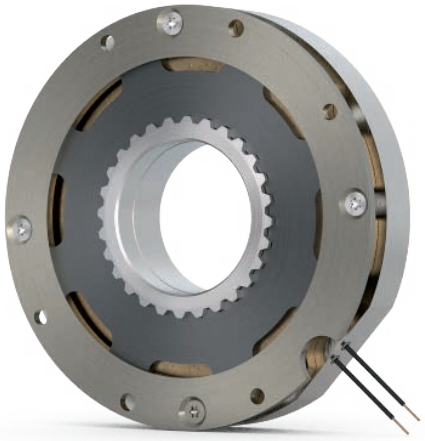
COMBISTOP **S1 FLAT – HIGH-PERFORMANCE HOLDING BRAKE**

The new S1 flat high-performance holding brake impresses with a new, patented friction system. This results in a significantly higher braking torque compared to conventional spring-applied brakes.

The COMBISTOP S1 Flat fits perfectly with the requirements of AGVs and robotics & automation. Thanks to its plug & play system, this series is also easy to install.

Like the COMBISTOP S1, the **COMBISTOP S1 flat** operates entirely without rare-earth elements – whilst delivering performance on a par with that of a permanent-magnet brake. The advantage: greater independence from materials and more reliable supply chains, making planning easier.

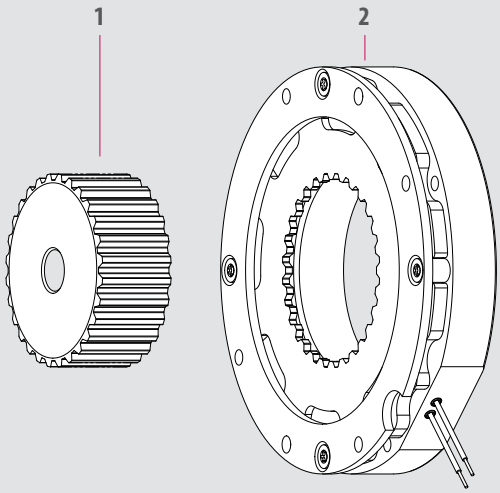
NEW **It couldn't be flatter**



OPTIONS:

- CCV - Cold Climate Version down to 40 °C
- Modified braking torque
- Customised voltages
- Connector assembly
- Certificate 2.1 / acceptance test certificate 3.1

AREAS OF APPLICATION: INDUSTRIAL TRUCKS & AGVS | ROBOTICS AND AUTOMATION | SERVO MOTORS | MEDICAL TECHNOLOGY | E-MOBILITY | MATERIAL HANDLING



1. Hub 2. Brake

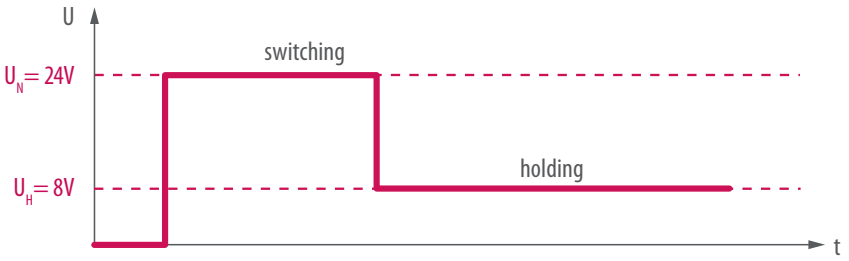
HIGHLIGHTS

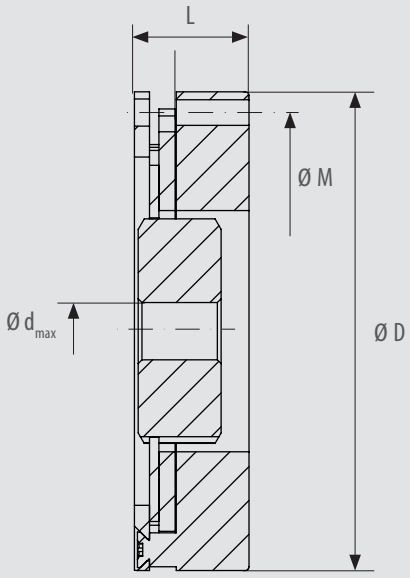
- Two sizes
- High permissible emergency stop friction energy
- Stable brake torque
- High temperature resistance
- Ready to install, adjusted air gap
- Used as a service brake or holding brake
- Integrated cable slots
- Up to Iso class F in accordance with VDE 0580
- Designed for S1 operation or 100 % duty cycle
- Standard voltage 24 V
- Further standard sizes to follow

SIZE	Rated torque M_2 [Nm]	M_{4min80} [Nm]	Standard-power P [W]	D [mm]	M* [mm]	L [mm]	d_{max} [mm]
769	3.4	2.1	42	63.5	58	15.2	22
770	10.8	6.5	36	94	87	19.5	34

Rated torque is reached after pairing conditioning of the friction partners

**CONTROL*Standard mounting diameter, further diameters on request*





Download 3D models here and view further technical data

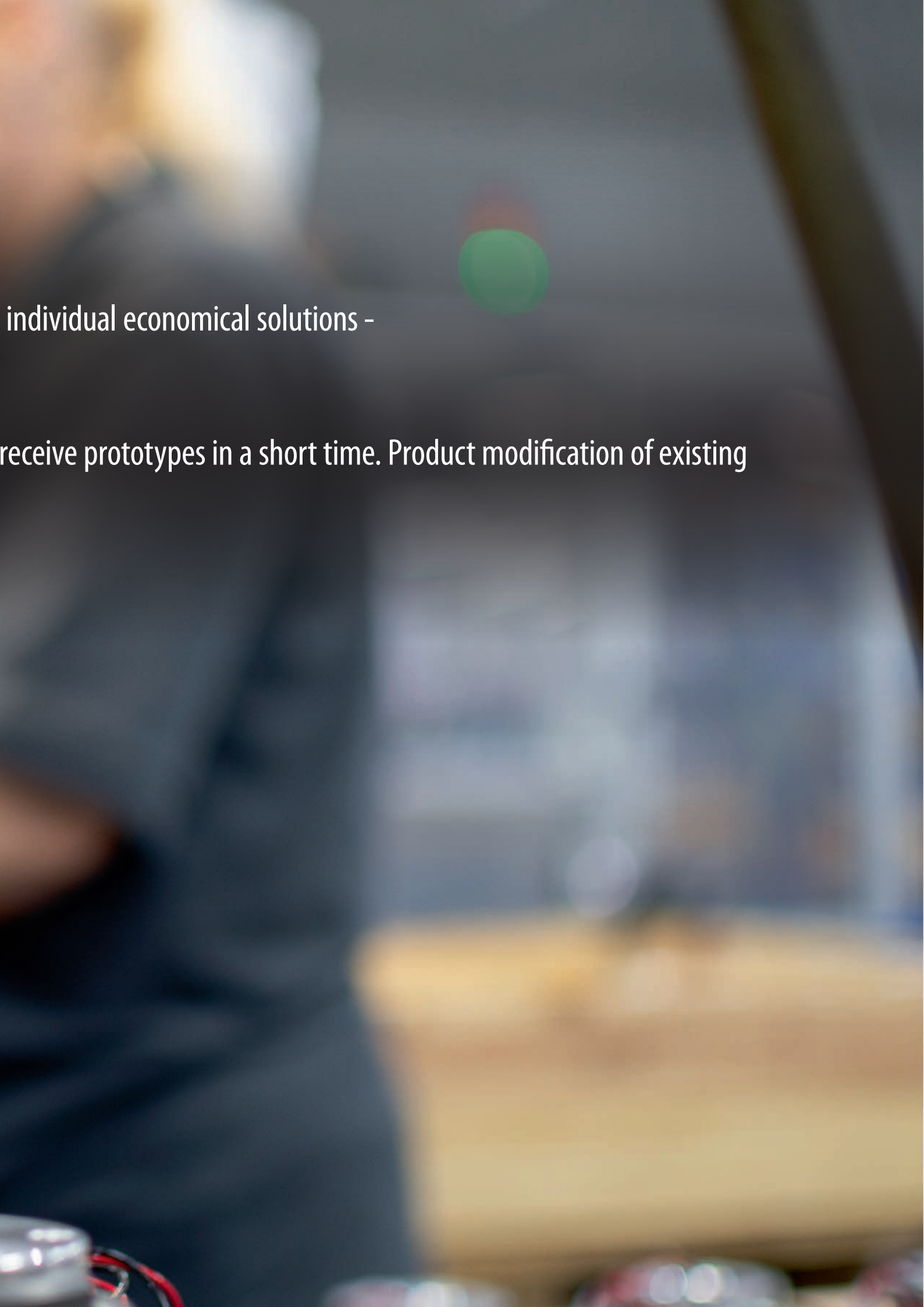


WE START WHERE OTHERS STOP

In addition to our standard products, we develop and produce
based on technical customer specifications.

Due to our high vertical range of manufacture, our customers
series products can also be implemented quickly.

KEB



individual economical solutions –

receive prototypes in a short time. Product modification of existing

COMBIPERM **P1 – STANDARD PERMANENT MAGNET BRAKE**

The COMBIPERM P1 is a powerful permanent magnet brake with a frictionally engaged, backlash-free effect. In the energised state, the magnetic field of the permanent magnet is cancelledand the connected component can rotate without residual torque. In the event of an emergency stop or if the power is switched off, the afety brake engages, brakes and holds the drive safely in position. Thanks to the short switching times and the compact design,these brakes are ideal for servo motors and the medical industry.

The COMBIPERM P1, which does not contain heavy rare earths, will be available as a prototype from the end of Q1 2027 and in series production from Q2 2027. Initially, it will be available in sizes 02, 03, 05, 06, 07 and 08 as standard component. Customised designs can also be produced.

NEW

HRE-FREE



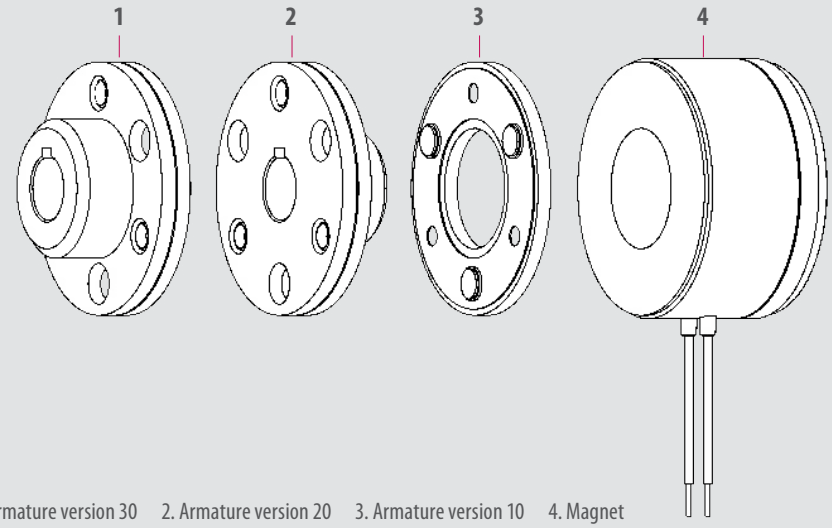
C US

OPTIONS:

- VdS- monitoring
- Cable protection plate
- Felt ring
- Customized flange
- Customized voltage
- Customized plug
- Certificate 2.1 / acceptance test certificate 3.1

AREAS OF APPLICATION: SERVO MOTORS | MEDICAL TECHNOLOGY | ROBOTIC AND AUTOMATION | INDUSTRIAL TRUCKS & AGV´S ELECTROMOBILTITY | INTRALOGISTICS

Download 3D models here and view further technical data



1. Armature version 30 2. Armature version 20 3. Armature version 10 4. Magnet

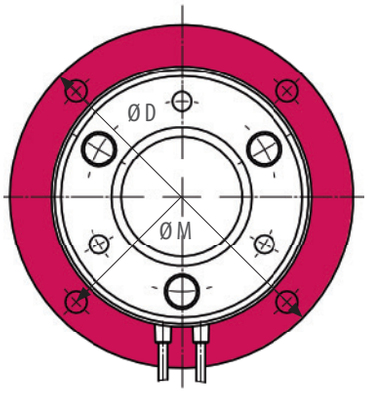
HIGHLIGHTS

- Eleven sizes, currently six sizes available withourt HRE
- Backflash free
- Frictional engagement
- Release without residual torque
- ISO class F in accordance with VDE 0580
- CSA/CUS certification
- Designed for S1 operation or 100% duty cycle
- Up to ten million switching cycles as standard
- Up to 10,000 rpm
- Standard voltage 24V

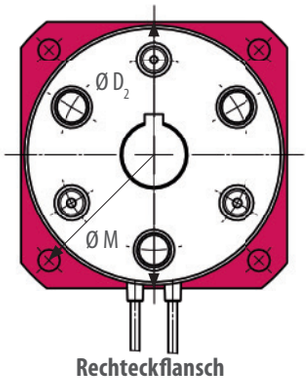
GRÖSSE	Kennmoment M_2 [Nm]	$M_{4min\ 120}$ [Nm]	Standard-leistung P [W]	D [mm]	D_2 [mm]	D_3	M* [mm]	M_2* [mm]	L [mm]	L_2 [mm]	L_3 [mm]	d_{max} [mm]
0A	0,15	0,1	3	-	-	18	15,2	-	-	-	20,75	3
01	0,5	0,3	8	39	32	28	33,5	22	21,9	23,9	28,9	6
02	1,4	0,8	10	45	34	32,2	38	23	23,75	25,75	33,75	8
03	2,7	1,8	11	54	42	41	47	28,5	25,25	27,85	37,25	12
04	3,5	2,5	11	60	45	42	52	34	28,6	32,1	40,9	12
05	6,1	4	12	65	53	51,5	58	40	31,7	34,7	43,7	15
06	12	8	18	80	66	64	72	49	31	34,5	46	18
07	24	15	24	100	83	80,8	90	63	34,7	38,7	54,7	25
08	49	32	26	125	103	101	112	78	40,45	45,45	65,45	30
09	96	65	40	150	128	126	137	106	45,5	51,5	75,5	40
10	194	115	50	190	163	161	175	135	52,5	59,5	90,5	50

Kennmoment nach Konditionierungseinlauf der Reibpartner ** Standardanschraubung, weitere kundenspezifische Anschraubung auf Anfrage*

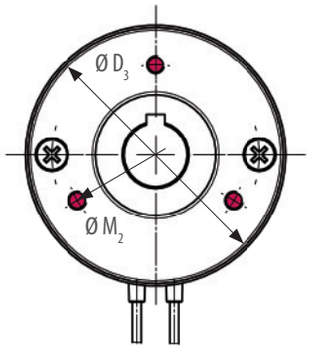
VARIANTENÜBERSICHT



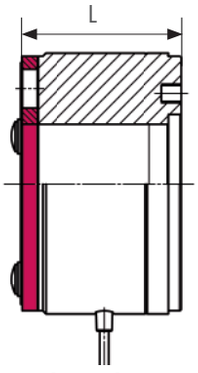
Runder Flansch
(Variante 100)



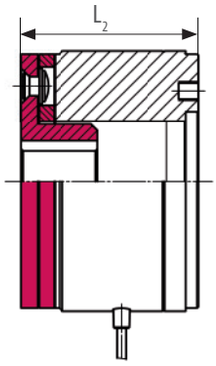
Rechteckflansch
(Variante 200)



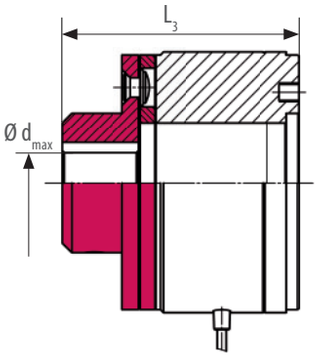
Verschraubung im Rücken
(Variante 300)



ohne Nabe
(Ausführung 10)



Nabenhals im Magneten
(Ausführung 20)



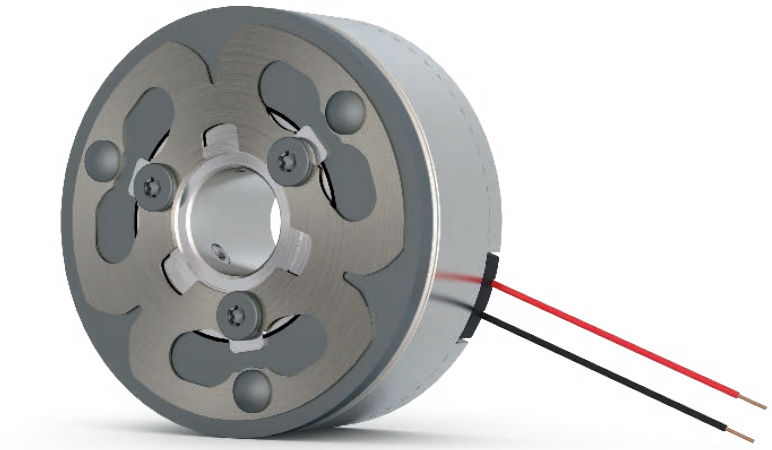
Nabenhals außen
(Ausführung 30)

COMBIPERM **P2 – HIGH-PERFORMANCE PERMANENT MAGNET BRAKE**

The COMBIPERM P2 is a very compact and powerful permanent magnet brake with frictionally engaged, backlash-free action.

Compared to the COMBIPERM P1, the brake is smaller in the installation space and requires less power with increased performance. In addition, due to its design, it can be used down to -40°C.

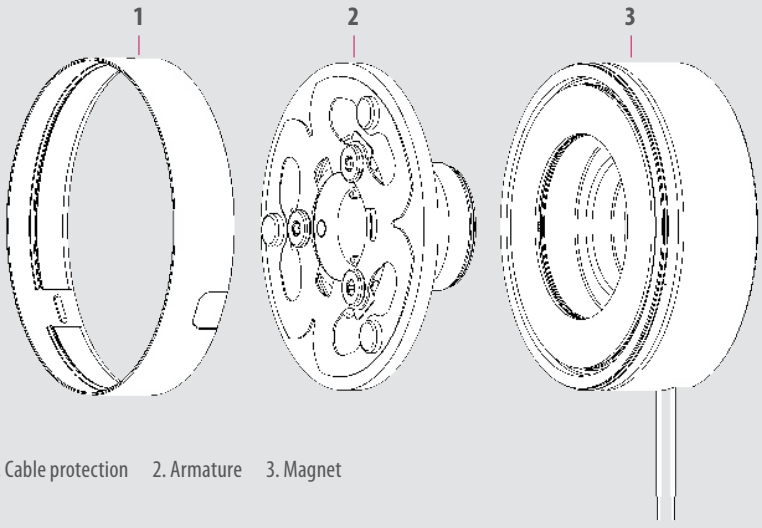
Braking torque at the highest level



OPTIONS:

- Cable-protection
- Customized flange and hub
- Customised storage recess
- Customized bolt circle
- Customized plugs
- Certificate 2.1 / acceptance test certificate 3.1

AREAS OF APPLICATION: SERVO MOTORS | MEDICAL TECHNOLOGY | ROBOTIC AND AUTOMATION | INDUSTRIAL TRUCKS & AGV´S ELECTROMOBILTITY | INTRALOGISTICS



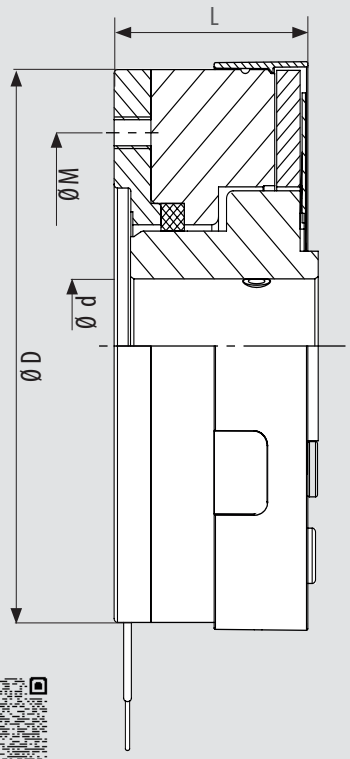
1. Cable protection 2. Armature 3. Magnet

HIGHLIGHTS

- Five sizes
- Backflash free
- Frictional engagement
- Release without residual torque
- ISO class F in accordance with VDE 0580
- Designed for S1 operation or 100% duty cycle
- Up to ten million switching cycles as standard
- Up to 10,000 rpm
- Felt ring integrated
- Operation temperature -40°C - 120°C
- Standard voltage 24V

SIZE	Rated torque M_2 [Nm]	$M_{4min\ 120}$ [Nm]	Standard power P [W]	D [mm]	M* [mm]	L [mm]	$d_{max\ Hub}$ [mm]
03	2.8	2.3	10.5	40	34	24.3	12
04	6	5	12	53	40	26.1	17
05	11	9	13.6	63	54	27.1	20
06	14	11.5	14.4	70	54	27.8	22
07	20	16	16.4	80	62	32.6	25

Rated torque after running in process **Standard screw connection, customized screw conection on request*



Download 3D models here and view further technical data

COMBIPERM **PC – PERMANENT MAGNET CLUTCH**

Our COMBIPERM PC is a permanent magnet clutch that transmits torque frictionally when de-energised. High torques can thus be reliably transmitted in a small installation space.

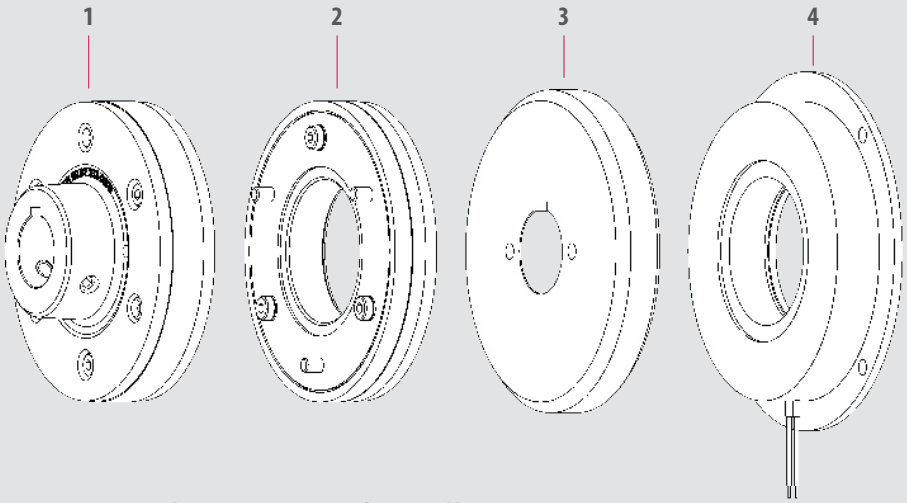
The frictional connection is opened by applying a voltage so that the force effect of the permanent magnets is eliminated.



OPTIONS:

- Customized flange
- Customized plugs
- Connector assembly
- Certificate 2.1 / acceptance test certificate 3.1

AREAS OF APPLICATION: MEDICAL TECHNOLOGY | WOOD WORKING MACHINES | ELECTROMOBILTITY | INTRALOGISTICS PLASTIC TECHNOLOGY | PACKAGING MACHINES AND FOOD TECHNOLOGY



1. Armature version 30 2. Armature version 10 3. Rotor 4. Magnet

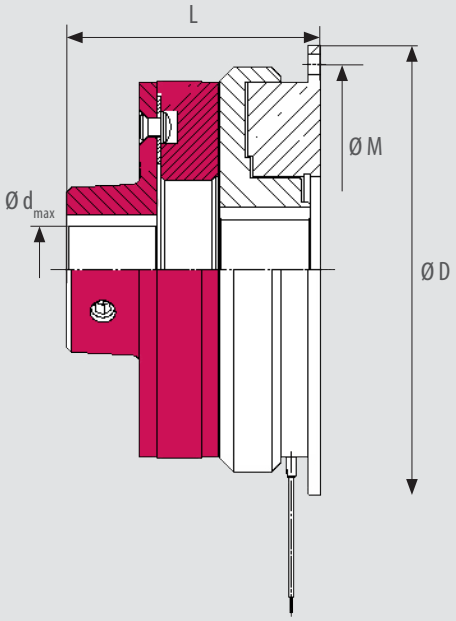
HIGHLIGHTS

- Seven sizes
- Frictional engagement
- ISO class F in accordance with VDE 0580
- Designed for S1 operation or 100% duty cycle
- Standard voltage 24V

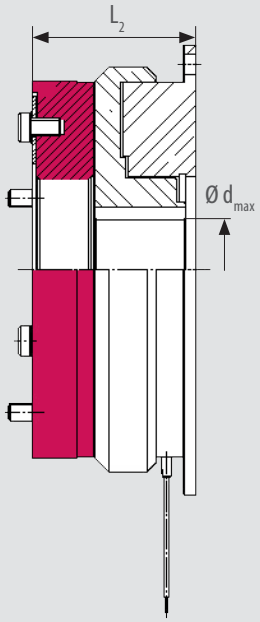
SIZE	Rated torque M_2 [Nm]	Standard power P [W]	D [mm]	M [mm]	L [mm]	L_2 [mm]	$d_{max\ Rotor}$ [mm]	$d_{max\ Hub}$ [mm]
03*	1.5	13	54	47	47.55	35.55	10	10
05*	3	10	65	58	51.2	39.2	15	15
06	6	18	80	72	51.8	36.8	20	18
07	12	24	100	90	60.8	40.8	25	22
08	24	28	125	112	73.35	48.35	30	30
09	50	35	150	137	84.4	54.4	35	35
10	120	80	190	175	100	62	50	45

Rated torque is reached after pairing conditioning of the friction partners

** Quantity dependent project solution*



Hub on the outside
(Variant 130)



Without hub
(Variant 110)

Download 3D models here and view further technical data

COMBINORM **B – ELECTROMAGNETIC BRAKE**

The operating current brake COMBINORM B opens when the power supply is switched off or in the event of a power failure. The electromagnetic brake is particularly suitable for precise positioning and reliable holding.

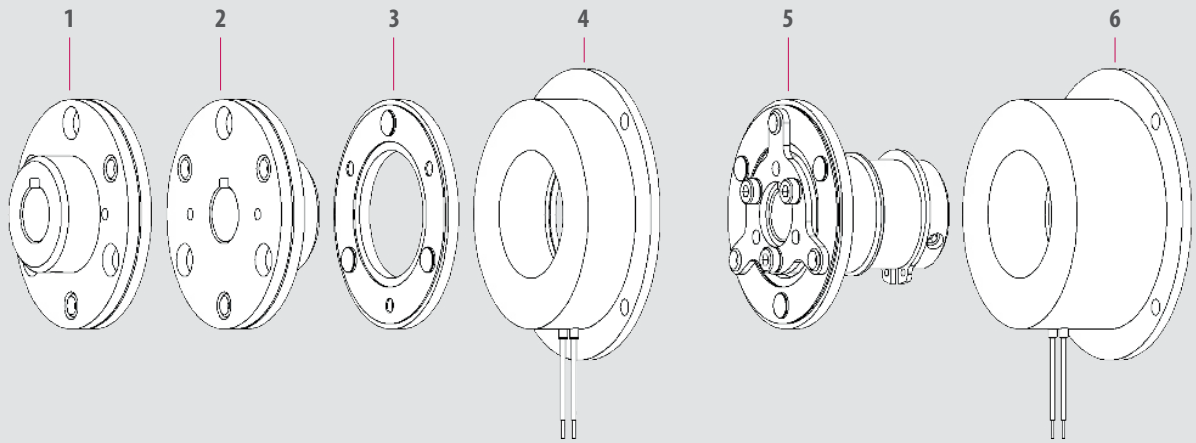
It is also used in safety and access technology, e.g. in the area of access barriers or fire doors. The electromagnetic brake is designed for a 100 % duty cycle and can optionally be certified to VdS. The electromagnetic brake has a torque range of 0.5 to 500 Nm.



OPTIONS:

- Customized flange
- CSA / CUS Certification
- Customized voltage
- Customized plug
- Certificate 2.1 / acceptance test certificate 3.1
- Anti-remanence
- Interlocking toothed version for torque increase

AREAS OF APPLICATION: MEDICAL TECHNOLOGY | DOOR AND GATE OPERATOR | WOOD WORKING MACHINES ELECTROMOBILTITY | ROBOTIC AND AUTOMATION | PACKAGING MACHINES AND FOOD TECHNOLOGY AGRAR- MINING- AND MUNICIPAL MACHINERY



1. Armature version 30 2. Armature version 20 3. Armature version 10 4. Magnet flange mounted 5. Armature shaft mounted 6. Magnet shaft mounted

HIGHLIGHTS

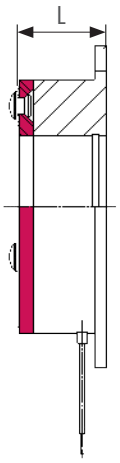
- Thirteen sizes
- Short switching times
- Positioning accuracy and functional reliability
- Designed for S1 operation or 100% duty cycle
- ISO class B in accordance with VDE 0580
- Wide temperature and voltage range
- Continuously adjustable torque
- Standard voltage 24V

SIZE	Rated torque M_2 [Nm]	Standard power P [W]	D [mm]	M [mm]	L [mm]	L_2 [mm]	L_3 [mm]	L_4 [mm]	d_{max} [mm]
01	0.5	6	39	33.5	16.1	18.1	23.1	-	6
02	0.75	6	45	38	19.25	21.25	29.25	-	8
03	1.5	8	54	47	22.85	25.45	34.85	-	10
05	3	10	65	58	25.2	28.2	37.2	-	15
06	7	12	80	72	22	25.5	37	37.7	20
07	15	16	100	90	24.5	28.5	44.5	41.3	22
08	30	21	125	112	28.2	33.2	53.2	47.5	30
09	65	28	150	137	31.2	37.2	61.2	51.2	35
10	130	38	190	175	35.2	42.2	73.2	60.7	45
11	250	50	230	215	41.6	50.6	89.6	-	60
12	500	65	290	270	48.4	59.4	103.4	-	70
13*	750	80	355	335	60.4	73	124	-	90
14*	1250	100	440	420	75.5	92.5	151.5	-	100

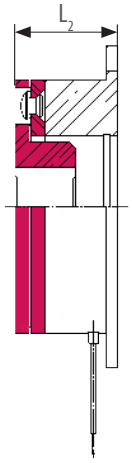
Rated torque is reached after pairing conditioning of the friction partners

** Quantity dependent project solution*

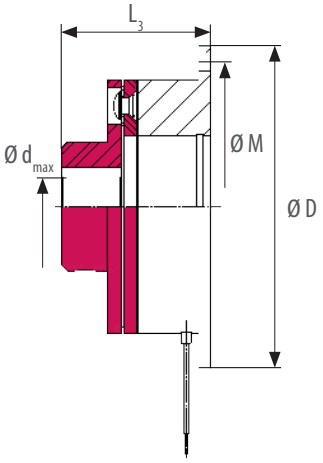
FLANGE MOUNTED VERSION:



Without hub
(Variant 110)

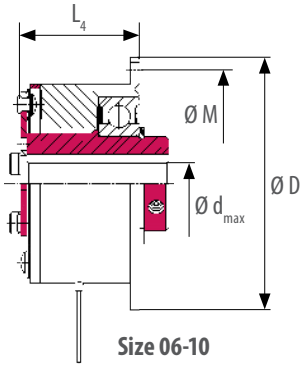


Hub in the magnet
(Variant 120)



Hub on the outside
(Variant 130)

SHAFT MONTED BRAKE:



Size 06-10
(Version 320)

Download 3D models here and view further technical data

COMBINORM **C – ELECTROMAGNETIC CLUTCH**

The operating current clutch COMBINORM C provides clutch engagement when electrically powered. As a result it enables particularly simple controlled switching on and off of functional parts.

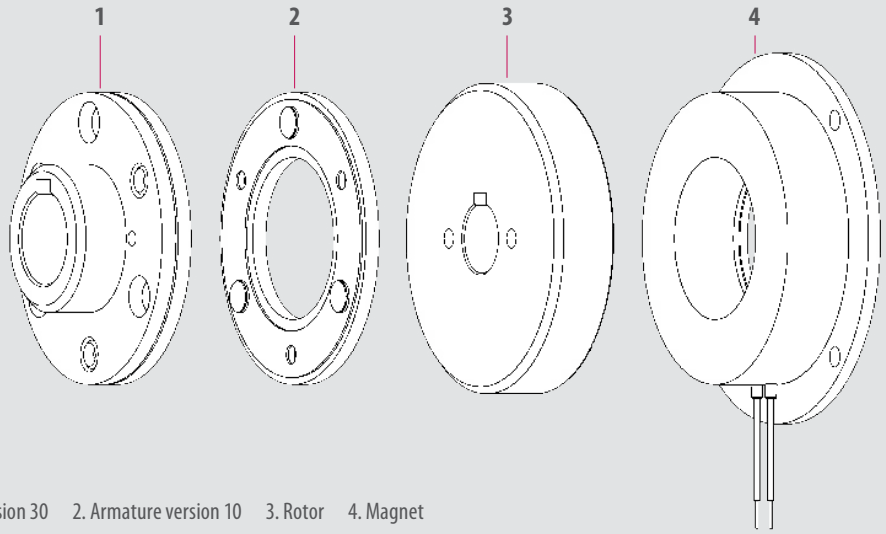
The electromagnetic clutch is suitable for reliable positioning and torque transmission of switchable shaft connections in synchronised processes. The electromagnetic clutch has a torque range of 0.5 to 500 Nm.



OPTIONS:

- Customized flange
- CSA / CUS certificate
- Customized voltage
- Customized plugs
- Certificate 2.1 / acceptance test certificate 3.1

AREAS OF APPLICATION: MEDICAL TECHNOLOGY | DOOR AND GATE OPERATOR | WOOD WORKING MACHINES ELECTROMOBILTITY | ROBOTIC AND AUTOMATION | PACKAGING MACHINES AND FOOD TECHNOLOGY AGRAR- MINING- AND MUNICIPAL MACHINERY



1. Armature version 30 2. Armature version 10 3. Rotor 4. Magnet

HIGHLIGHTS

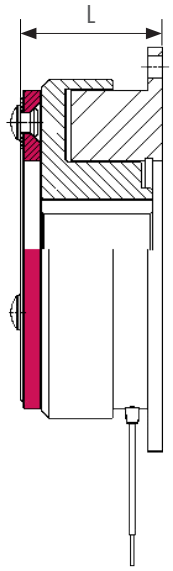
- Thirteen sizes
- Short switching times
- Positioning accuracy and functional reliability
- Designed for S1 operation or 100% duty cycle
- ISO class B in accordance with VDE 0580
- Wide temperature and voltage range
- Continuously adjustable torque
- Standard voltage 24V

SIZE	Rated torque M_2 [Nm]	Standard power P [W]	D [mm]	M [mm]	L [mm]	L_2 [mm]	$d_{max\ Rotor}$ [mm]	$d_{max\ Hub}$ [mm]
01	0.5	6	39	33.5	20.4	27.4	6	6
02	0.75	6	45	38	24.45	34.45	8	8
03	1.5	8	54	47	28.25	40.25	10	10
05	3	10	65	58	31.3	43.3	17	15
06	7	15	80	72	28	43	20	18
07	15	20	100	90	31	51	25	22
08	30	28	125	112	36.2	61.2	30	30
09	65	35	150	137	40.7	70.7	35	35
10	130	50	190	175	46.7	84.7	50	45
11	250	68	230	215	55.6	103.6	65	60
12*	500	85	290	270	64.4	119.4	80	70
13*	750	On request	355	335	78	127	90	90
14*	1250	On request	440	420	On request			

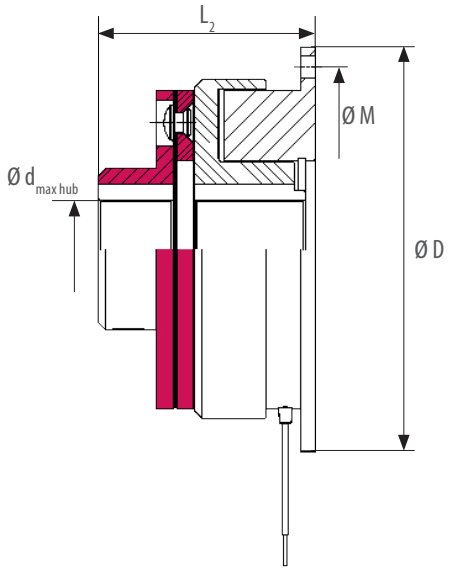
Rated torque is reached after pairing conditioning of the friction partners

**Quantity dependent project solution*

FLANGE MOUNTED VERSION:



Without hub
(Variant 110)



Hub on the outside
(Variant 130)

Download 3D models here and view further technical data

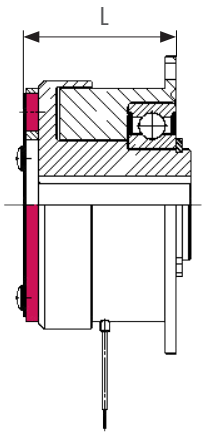
COMBINORM **C – VARIANTS 210 / 230 / 810**

SIZE	Rated torque M_2 [Nm]	Standard power P [W]	D [mm]	M [mm]	L [mm]	L_2 [mm]	L_3 [mm]	$d_{max\ Rotor}$* [mm]	$d_{max\ Hub}$ [mm]
06	7	15	80	72	45	60	80	17	18
07	15	20	100	90	49.5	69.5	90	22	22

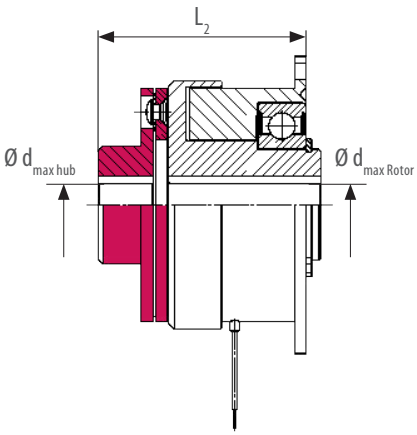
Rated torque is reached after pairing conditioning of the friction partners

**More customized max. diameter on request*

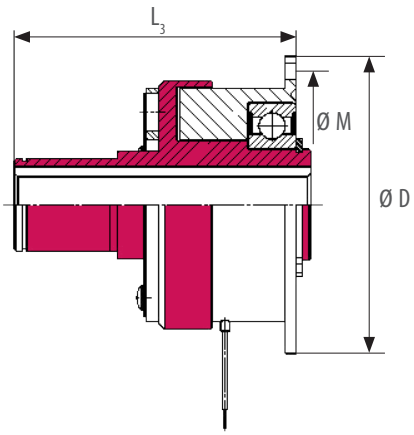
FLANGE MOUNTED VERSIONS WITH BEARING MOUNTED ROTOR:



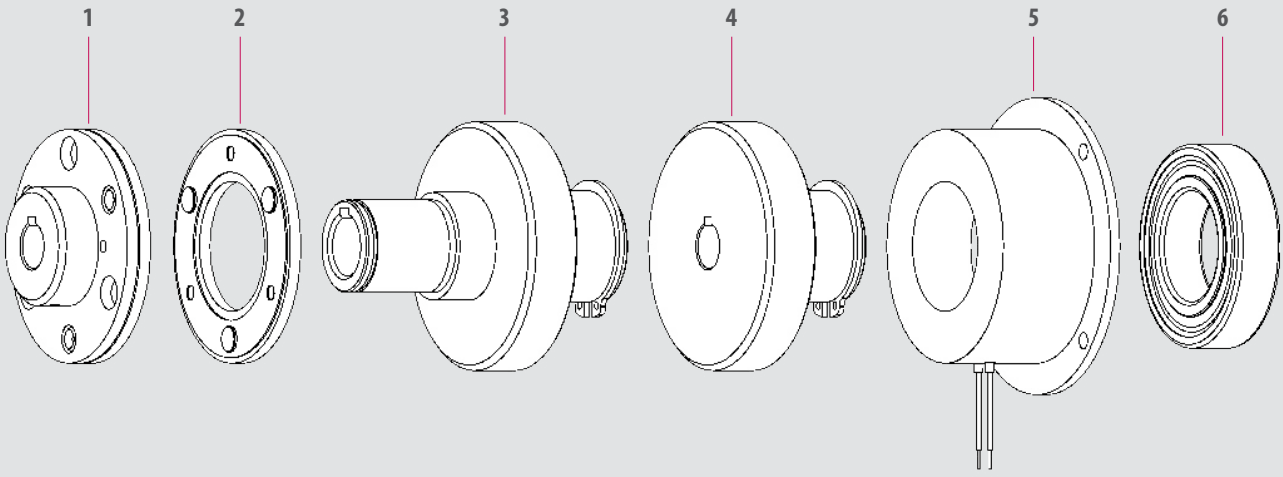
Without hub
(Variant 210)



Hub on the outside
(Variant 230)



Rotor for bearing
(Variant 810)

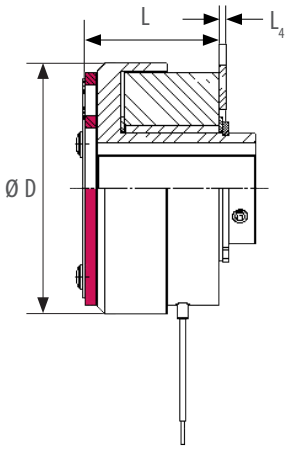


1. Armature version 30 2. Armature version 10 3. Rotor for bearing 4. Rotor 5. Magnet 6. Bearing

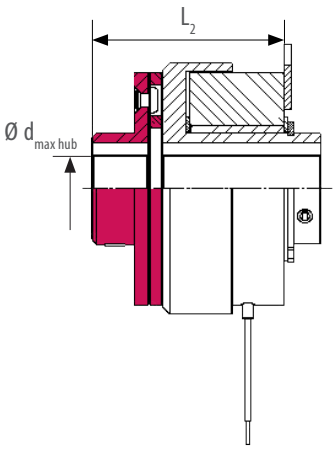
SIZE	Rated torque M_2 [Nm]	Standard power P [W]	D [mm]	M [mm]	L [mm]	L_2 [mm]	L_3 [mm]	L_4 [mm]	$d_{max\ Rotor}$ [mm]	$d_{max\ Hub}$ [mm]	$d_{max\ Hub2}$ [mm]
01	0.5	6	31	16.8	19.7	26.7	26.7	1.5	6	6	6
02	0.75	6	34	20	22.05	32.05	32.05	1.5	6	8	6
03	1.5	8	43	23	25.85	37.85	37.85	1.5	10	10	10
05	3	10	54	28	29.3	41.3	41.3	1.5	17	15	15
06	7	15	67	36	28	43	-	2.5	20	18	-
07	15	20	85	45	31	51	-	2.5	25	22	-

Rated torque is reached after pairing conditioning of the friction partners

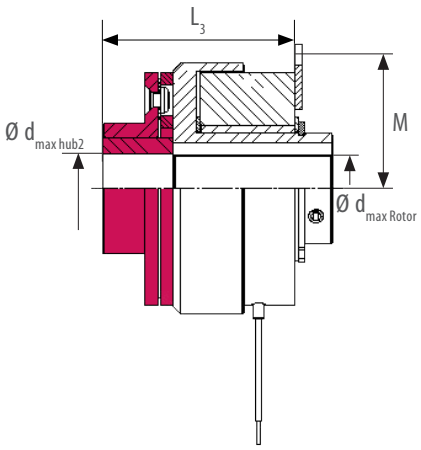
SHAFT MOUNTED VERSIONS WITH PLAIN-BEARING FOR THE ROTOR:



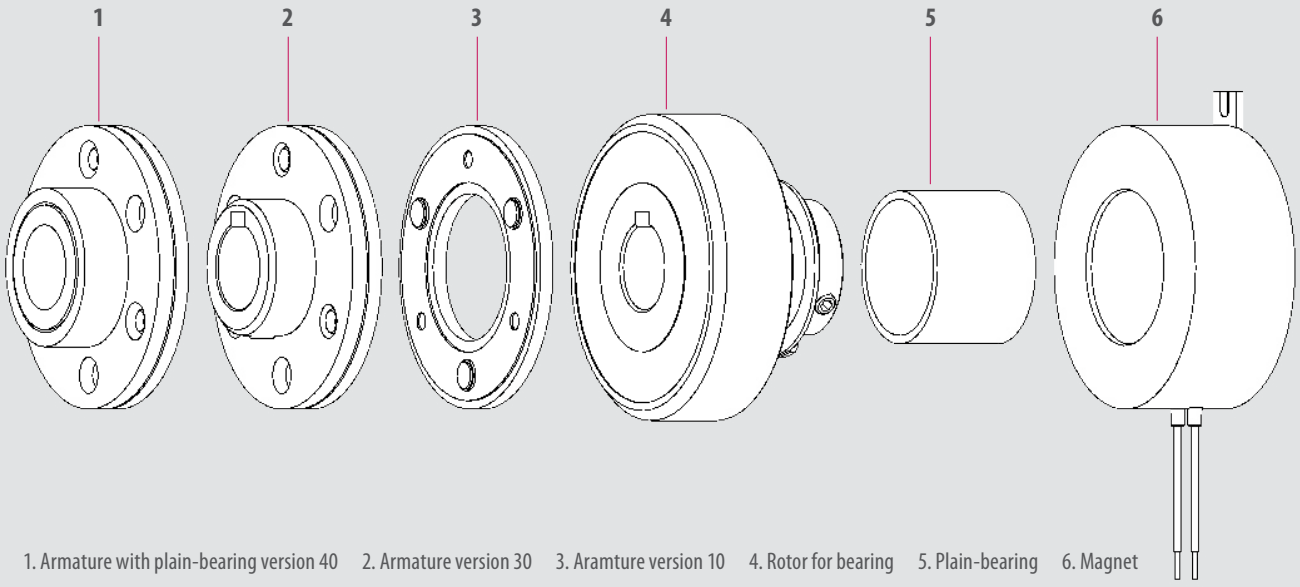
Without hub
(Variant 610)



Hub on the outside
(Variant 630)



Hub with plain-bearing
(Variant 640)



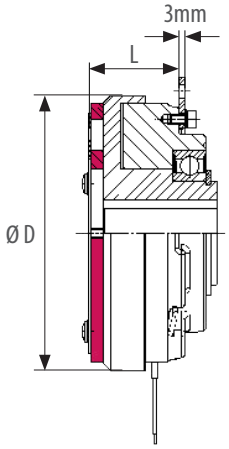
1. Armature with plain-bearing version 40 2. Armature version 30 3. Aramture version 10 4. Rotor for bearing 5. Plain-bearing 6. Magnet

COMBINORM **C – VARIANTS 710 / 730 / 810**

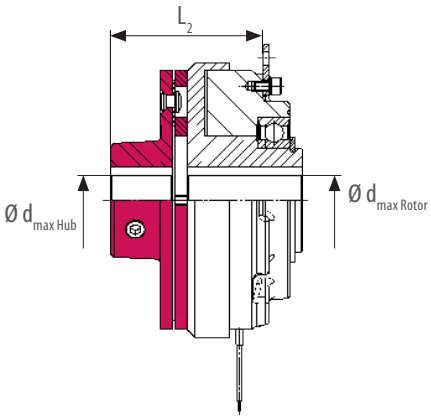
SIZE	Rated torque M_2 [Nm]	Standard power P [W]	D [mm]	M [mm]	L [mm]	L_2 [mm]	L_3 [mm]	$d_{max\ Rotor}$* [mm]	$d_{max\ Hub}$* [mm]
08	30	28	106	56	41.5	66.5	96	30	30
09	65	35	133	68.5	43.5	73.5	103	35	35
10	130	50	169	87.5	52.7	90.7	126	50	45
11	250	68	212.5	107.5	59.45	107.4	134	50	60
12**	500	85	266	135	71.4	125.6	162	80	70

Rated torque is reached after pairing conditioning of the friction partners
**More customized max. diameter on request*
***Quantity dependent project solution*

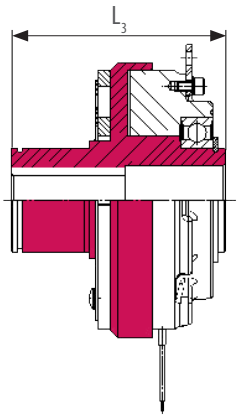
SHAFT MOUNTED VERSIONS WITH BEARING MOUNTED ROTOR:



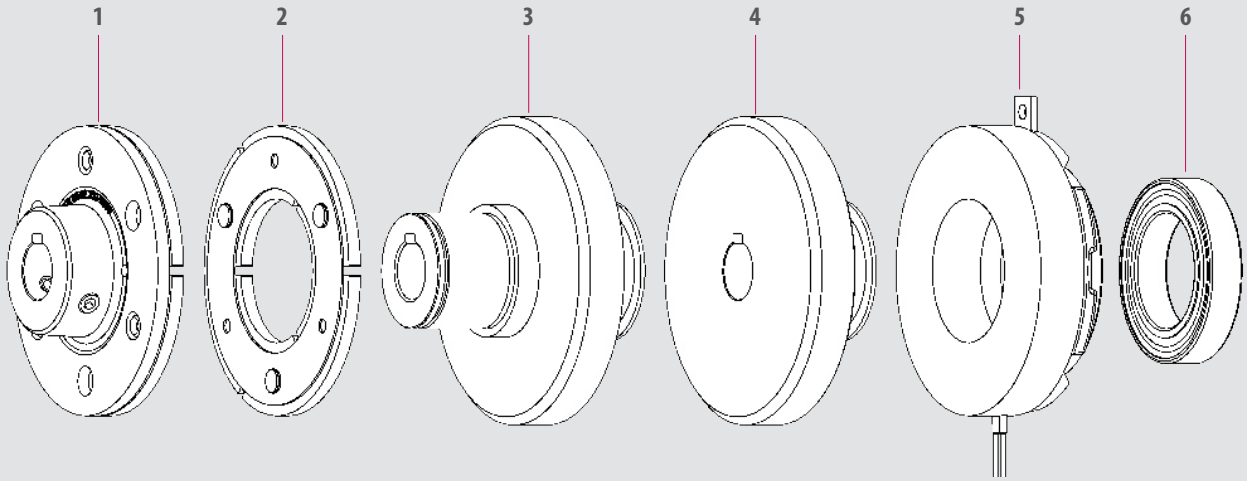
Without hub
(Variant 710)



Hub on the utside
(Variant 730)



Rotor for bearing
(Variant 810)



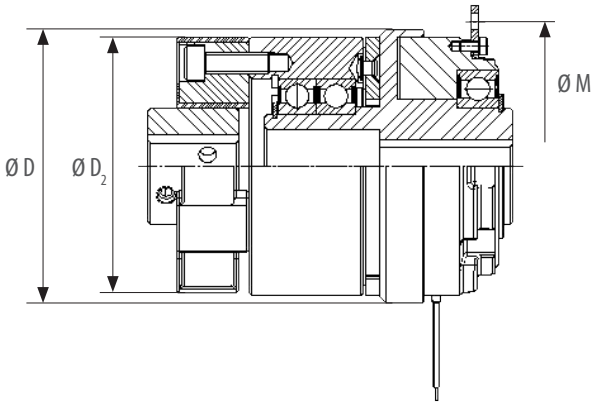
1.Armature version 30 2. Armature version 10 3. Rotor for bearing 4. Rotor 5. Magnet 6. Bearing

SIZE	Rated torque M_2 [Nm]	Standard power P [W]	D [mm]	D_2 [mm]	M [mm]	L [mm]	$d_{max\ Rotor}$ [mm]	$d_{max\ Hub}$ [mm]
06	7	15	67	56	72	117	20	19
07	15	20	85	85	90	129	25	26
08	30	28	106	100	-	141	30	30
09	65	35	133	120	-	160	35	38
10	130	50	169	170	-	200	50	55
11	250	68	212.5	200	-	217	65	65
12*	500	85	on request					

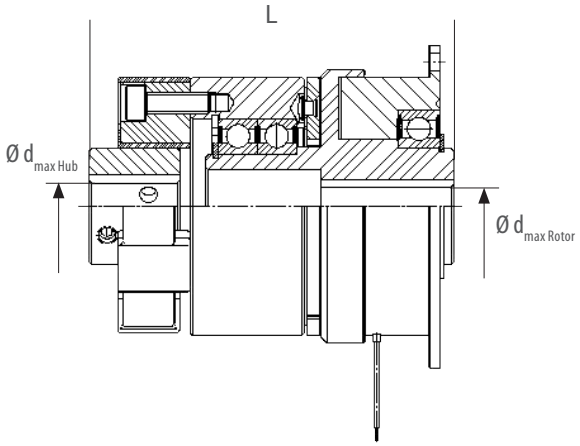
Rated torque is reached after pairing conditioning of the friction partners

***Quantity dependent project solution*

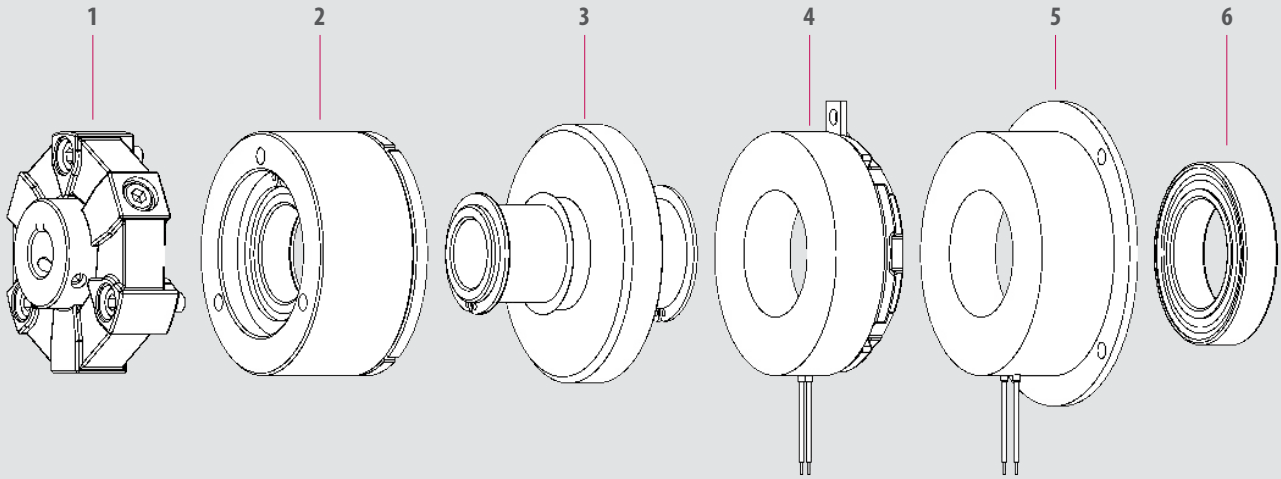
SHAFT OR FLANGE MOUNTED VERSION WITH ELASTIC CLUTCH:



Shaft-mounted
(Size 08-12)



Flange-mounted
(Size 06-07)



1. Elastic clutch 2.Armature 3. Rotor 4. Magnet (shaft-mounted size 08-12) 5. Magnet (Flange- mounted size 06-07) 6.Bearing

COMBINORM **T – ELECTROMAGNETIC TOOTH CLUTCH**

Like the COMBINORM C, the operating current clutch COMBINORM T engages when electrically powered. However, this device is designed as an electromagnetically operated tooth clutch. Through the positive connection, particularly large torques are transmitted in both directions within a small space by restricting the speed of incidence.

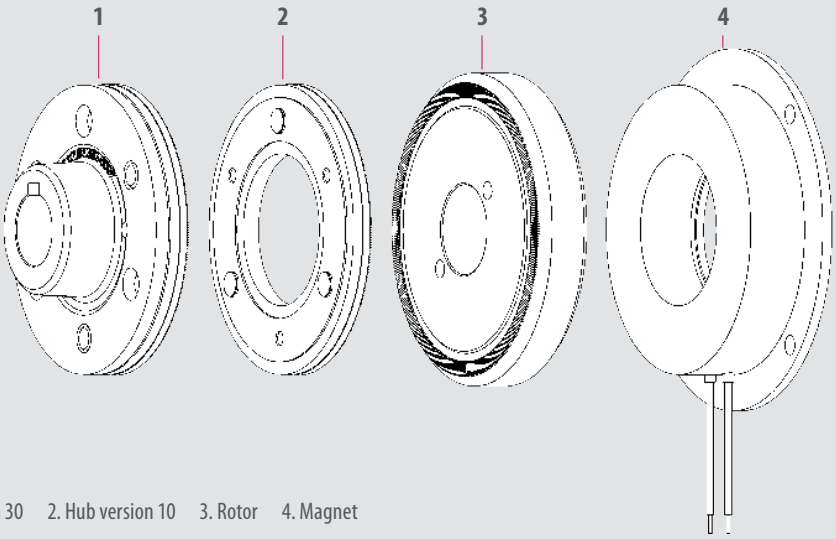
In the process, torque is applied by the leading faces of hardened serrations and is backlash-free. The electromagnetic tooth clutch has a torque range of 21 to 390 Nm.



OPTIONS:

- Customized flange
- CSA / CUS certificate
- Customized voltage
- Customized plugs
- Factory certificate 2.1 / inspaction certificate 3.1

AREAS OF APPLICATION: MEDICAL TECHNOLOGY | DOOR AND GATE OPERATOR | WOOD WORKING MACHINES PACKAGING MACHINES AND FOOD TECHNOLOGY | INTRALOGISTICS



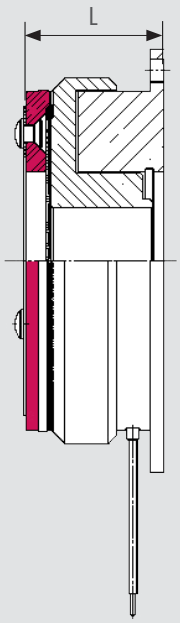
1. Armature version 30 2. Hub version 10 3. Rotor 4. Magnet

HIGHLIGHTS

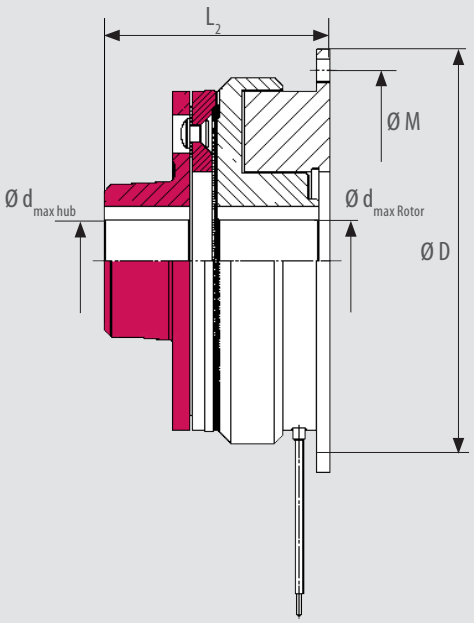
- Five sizes
- Backlash free
- Iso class B accordance with VDE 0580
- Designed for S1 operation or 100% duty cycle
- wide tmperature and voltage range
- Standard voltage 24V

SIZE	Rated torque M_2 [Nm]	Standard power P [W]	D [mm]	M [mm]	L [mm]	L_2 [mm]	$d_{max\ Rotor}$ [mm]	$d_{max\ Hub}$
06	21	15	80	72	29.45	44.45	18	18
07	45	20	100	90	33.1	53.1	22	22
08	90	28	125	112	38.8	63.8	30	30
09	195	35	150	137	44.9	74.9	35	35
10	390	50	190	175	50.55	88.55	45	45

Rated torque is immediatly reachable



Without hub
(Variant 110)



Hub on the outside
(Variant 130)

Download 3D models here and view further technical data

COMBITRON 91 – **RECTIFIER**

COMBITRON 91 rectifiers are half-wave or bridge rectifiers for supplying electromagnets with a supply voltage of up to max. 720 V AC for DC or AC side switching in accordance with the 73/231/EEC Low Voltage Directive.

When switching electromagnetic clutches and brakes and other inductive DC consumers, harmful electromagnetic interference can occur.

Our half-wave rectifier with interference suppression limits the interference to class A in accordance with EN 55011.



Input voltage U_{in} [V AC]	max. Input voltage $U_{in\,max}$ [V AC]	max. Cut-off voltage [V]	Switching mode	Nominal voltage magnet [V DC]*	Type of rectifier
48	275	450	Half wave	20	0291010-CE07
			Full wave	42	0291020-CE07
110	275	450	Full wave	105	0291020-CE07
220 / 230	275	450	Half wave	105	0291010 - CE07
			Full wave	205	0291020 - CE07
			Half wave with EMC protection	105	0291010 - CEMV
380 / 400	500	900	Half wave	180	0491010 - CE07
			Full wave	380	0491020 - CE07
380 / 400	600	1000	Half wave	on request	0591010 - CE09
600 / 690	720	1600	Half wave	on request	0691010 - CE09

* Half-wave rectifier: 0,45*U_{in} Full wave: 0,9*U_{in}

Download 3D models here and view further technical data

HIGHLIGHTS

- Half-wave or bridge rectifier
- Up to 720 V
- UL-certified
- Compact design in plastic housing
- DC-side and AC-side switching

COMBITRON 98 – **POWERBOX ECO/FAST-ACTING RECTIFIER**

With the COMBITRON 98, KEB offers a fast-acting rectifier with overexcitation for optimum activation or deactivation times for spring-applied brakes and electromagnets. Two powerbox designs in rigid housing for fitting on DIN rails or as a screw-on version complete the range.

The advantages of COMBITRON 98 become clear in practice, as faster switching times and the possibility of achieving significant energy savings make the fast-acting rectifier a highly sought-after "assistant".



	9098210 - CE04	**9098200 - CE09** [1]
Input voltage	24 V DC ± 20%	180-300 V AC ± 0%
Overexcitation time	800 ms ± 15%	350 ms ± 10%
Current I_N 45°C	1.2 A continous 7 A für 800 ms	1.2 A continous 2.4 A für 350 ms
Current I_N 75°C	0.6 A continous 3.5 A für 800 ms	0.7 A continous 1.4 A für 350 ms
Temperature	CCV -40° ... 75°	CCV -40° ... 75°
Switching rate	max. 6 per minute at max. current	max. 1 per minute at max. current

[1] different values (U, A) when used under conditions of UL

Download 3D models here and view further technical data

HIGHLIGHTS

- Two versions
- Up to 94 % power reduction
- Overexcitation possibility
- Up to 300 V
- UL-certified
- Compact design in plastic housing
- Low level of intrinsic heating
- DC-side and AC-side switching

CUSTOMISED BRAKES AND CLUTCHES

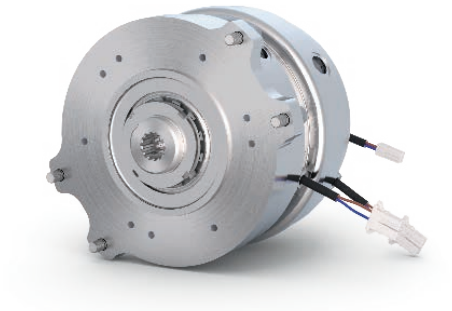
IF THE STANDARD VERSION DOES NOT DO WHAT YOU NEED, WE CAN DEVELOP A SOLUTION FOR YOU

Implementing customer-specific product solutions is one of KEB Automation's core competencies thanks to decades of experience, in-depth expertise and a high level of in-house vertical integration.

We work in partnership with you to develop high-quality, customised solutions in the area of spring-applied brakes, permanent magnet brakes and clutches, as well as electromagnetic clutches and brakes. By individually analysing your requirements and needs, we design the right product for your application.

EXAMPLE MODIFICATIONS SPRING-APPLIED BRAKES

- Multi-surface and double rotor brakes
- Lockable hand release
- Customised brake torque tolerances
- Customised sizes/dimensions
- Bistable solutions for saving energy



Double brake with additional single surface brake



Spring-applied brake with lockable hand release



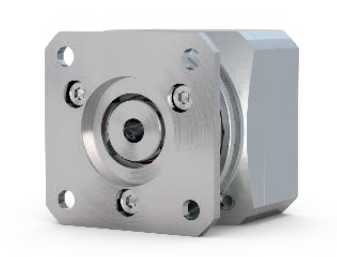
Bistable spring applied brake for energy saving

HIGHLIGHTS

- 90 % in-house production possibility at KEB
- Magnetic flux simulation
- Strength analysis
- 3D rapid prototyping
- 100 % torque testing possible

EXAMPLE MODIFICATIONS PERMANENT MAGNET BRAKES

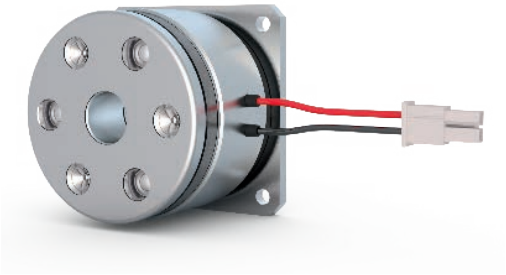
- Plug-and-play solutions
- Individual external dimensions and intermediate sizes
- Adapted temperature range
- Automated air gap adjustment
- Redundant coil and bistable brake solutions



Plug&Play Permanent Magnet brake



Floating supported permanent magnet brake



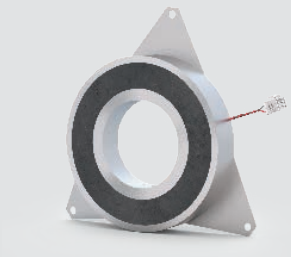
Individual intermediate size

EXAMPLE MODIFICATIONS ELECTROMAGNETIC BRAKES AND CLUTCHES

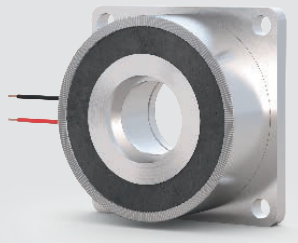
- Complete mounting units
- Integrated bearing
- Multipole solution for increased torque
- Anti-remanence function
- Narrow torque window



Plug&Play unit for the automotive Sector



Holding magnet with spring plates



Toothed power brake



RELIABLE, SAFE AND ECONOMICAL

Electricity and magnetism cannot be separated from each other. Electromagnetism is considered one of the four elemental forces, through which one of the most important power transmissions in modern drive technology is available.

KEB uses this force sensibly and purposefully. Switching machine segments on and off, safely stopping and holding loads or dynamic positioning...

Electromagnetic assemblies offer the designer economical, robust, safe and reliable options for the individual solution.

THE MAIN APPLICATIONS ARE:

- Gear and servo motors
- Medical technology
- Robotics and automation
- Cranes, hoists and trolleys
- Intralogistics
- Wind energy

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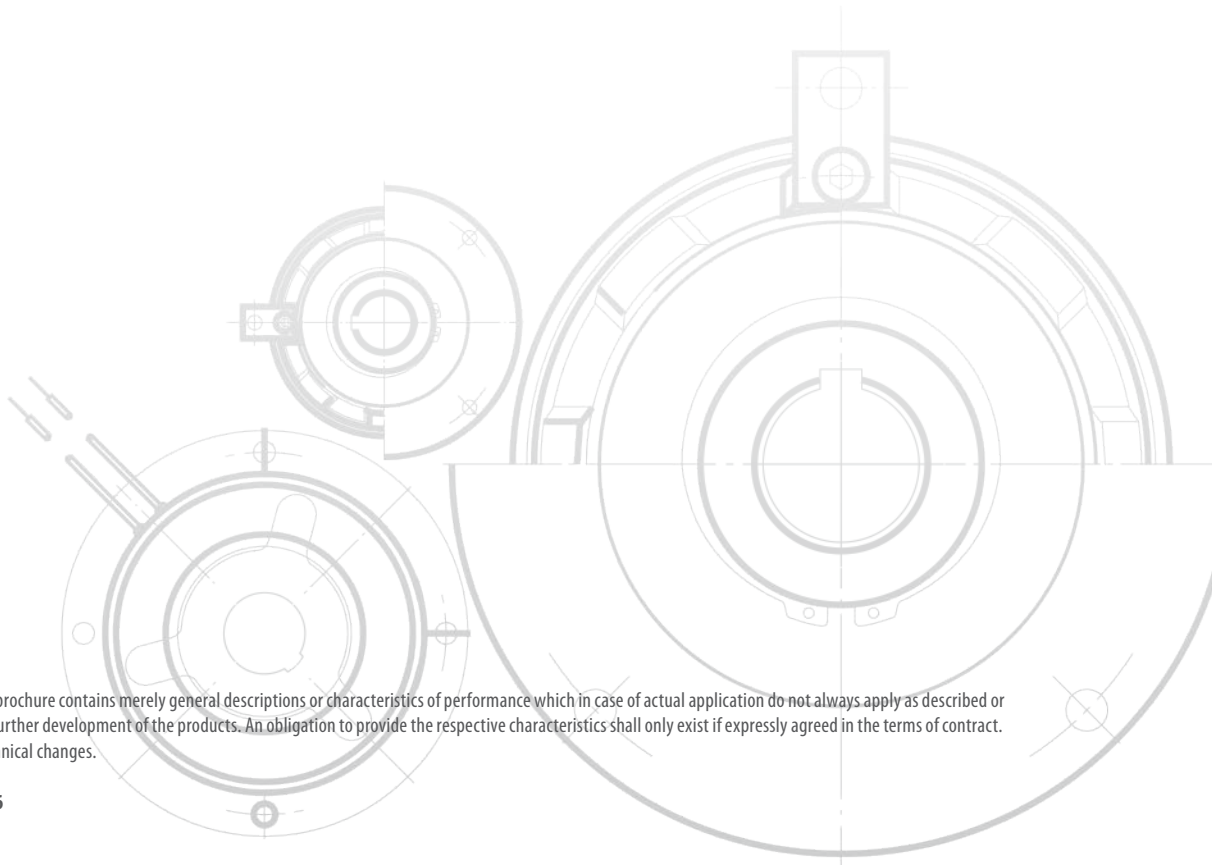
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KEB'S GLOBAL PARTNER NETWORK



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