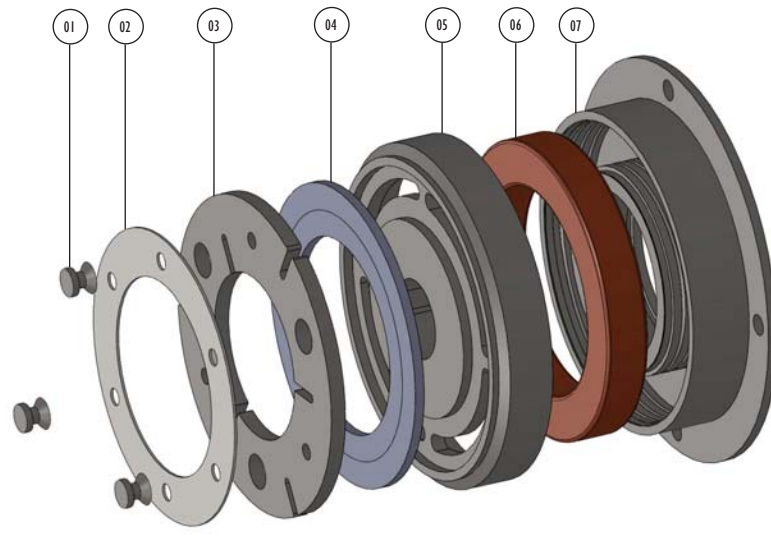


ELECTROMAGNETIC SINGLE-DISC CLUTCHES

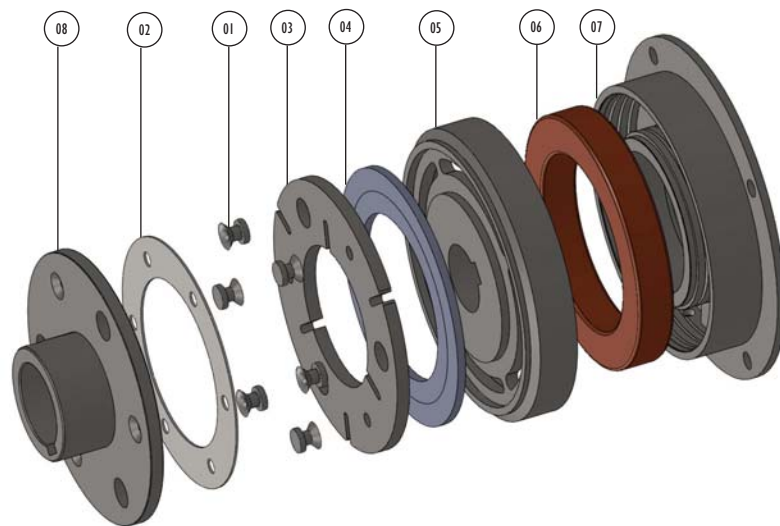
Type EBA & EBK



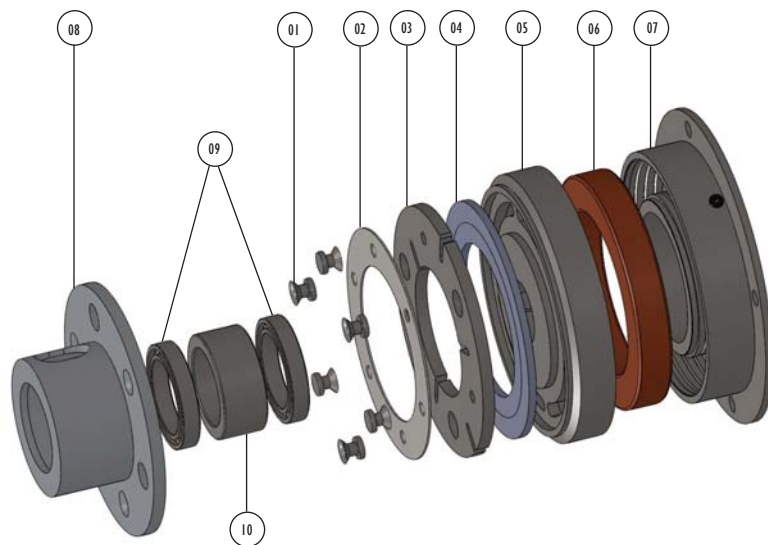


Part No	Description
01	Rivet
02	Spring plate
03	Armature plate
04	Friction plate
05	Rotor
06	Coil
07	Magnet Body
08	Hub
09	Bearing
10	Spacer

Exploded 3D view EBA 100



Exploded 3D view EBA 101

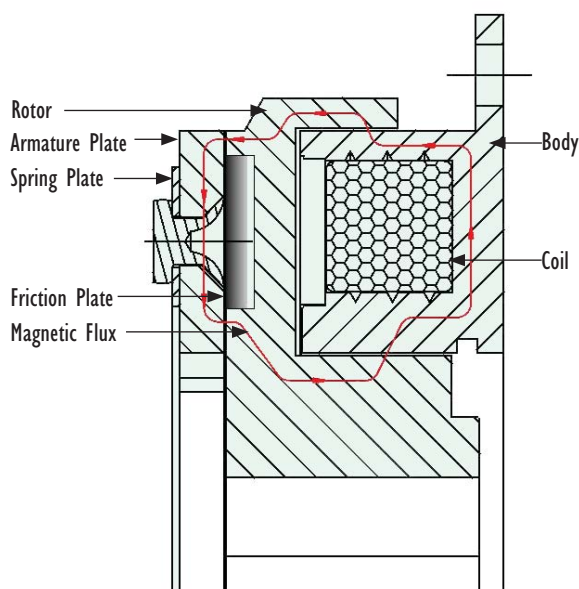


Exploded 3D view EBA 102

TYPE EBA

VORTEX, Electromagnetic stationary field Single Face Clutch Type EBA is a “Normally Off” type clutch consisting of 3 main parts i.e. the Stator with coil, Rotor with the friction material & Armature Plate. When the Stator coil is energized by a suitable DC voltage, a magnetic field is generated which attracts the armature to the rotor, providing the clamping force for torque transmission. The armature is spring loaded to ensure rapid disengagement and zero drag when disengaged as a result of the current through the coil being cut off.

Various clutch configurations are available to suit different drive installation requirements. These clutches are zero backlash and designed for dry use.



Magnetic Flux Path in EBA Type Clutch

MOUNTING

The Stator and the optional Hub connecting the Armature should be mounted centrally on the shaft and one diameter with close tolerances on each of the two parts are available for this purpose. The Clutch Rotor is mounted on the shaft using a keyway connection and secured against axial movement. Mounting dimension “N” under ‘Dimension table’ must be strictly adhered to.

Armature Elements as per Design 100, 101 & 102 are available. The Armature components should be mounted on the shaft and secured against axial movement following precise setting of the defined working air-gap, ‘s’. See the Dimensions for the corresponding values of ‘s’. Ensure with special precaution that the Clearance holes for the Rivet Heads on the Armature element are large enough not to interfere and result in restricting the axial movement of the armature plate.

NOTE:

These Clutches are designed for dry operation and hence the friction surfaces have to be absolutely free of oil and grease or else, the torque values drop very significantly.

FEATURES

1. These clutches are designed for simple mounting and are easily adaptable to any mounting requirement as it is manufactured in varied designs
2. The annular spring plate enables a backlash free transmission. The spring plate can be available in pre-stressed version enabling very short operating times or in standard flat version enabling higher working gap and hence a higher lifetime
3. The friction faces are completely separated by the spring plate eliminating any drag and permitting use at very high idling speeds
4. These units are practically maintenance free due to the stationary coil and highly wear resistant asbestos-free friction surfaces. Air-Gap has to be only checked based on the friction energy in the application
5. These clutches are specially treated and machined for out-of-box use and give the rated torque within short number of cycles without necessitating an elaborate “running-in” process
6. The specially heat-treated armatures give a very long operating life and increase the longevity of the brake unit.
7. These clutches are manufactured and tested in compliance to DIN VDE 0580 norms
8. These clutches are CE certified as standard. They are also available with UL certification & ROHS Compliance on request
9. Several optional features and designs are available for customization to specific applications. Different Voltages, Different Bore sizes of the Hub & additional mounting and location geometry/dimensions are some of the main variants possible on request
10. Class ‘H’ insulation system to 180°C
11. Stationary Field design, eliminating current-supply brush and simplifying supply connection

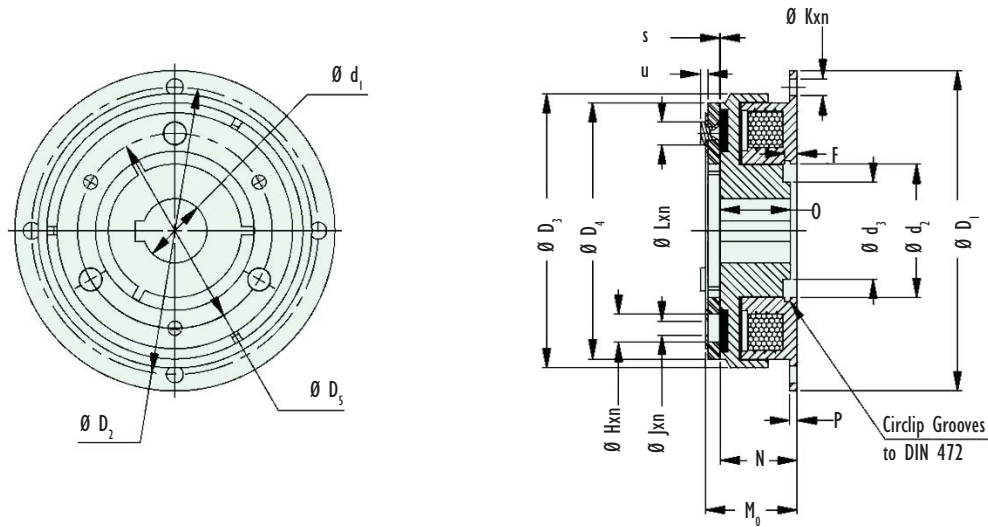
The tables may not cover the entire range of sizes available for offer, so kindly please get in touch with our design team to get options of more sizes with alternative torque transmission capacity.

SPECIAL VERSIONS

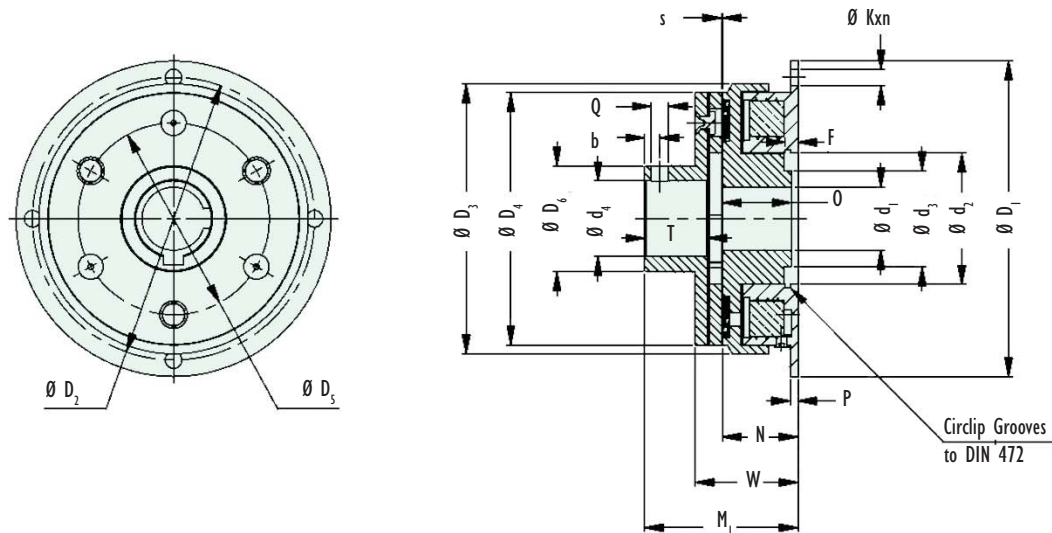
Limited external diameters, with internal mounting arrangement in applications having space constraint are also possible to adapt to some customer machine requirements. In this special design, the mounting holes are provided on an internal flange rather than an external flange as in our standard EAA series. This restricts the external dimensions, as some design constraints would demand.

VORTEX can also offer other custom built variations for which you are requested to contact our design team.

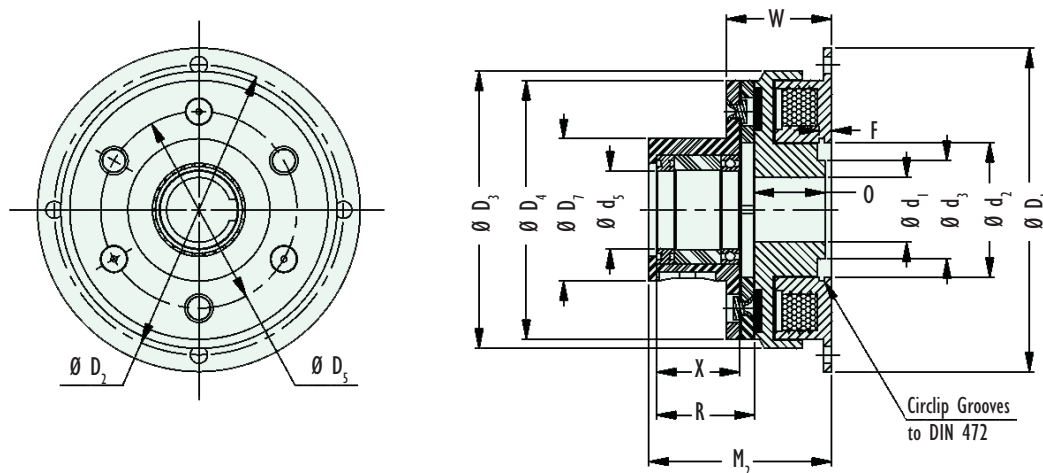
TYPE EBA Drawings



Design 100 (Size 0.15 to 240)



Design 101 (Size 0.15 to 240)



Design 102 (Size 01 to 120)

TYPE EBA TECHNICAL DATA

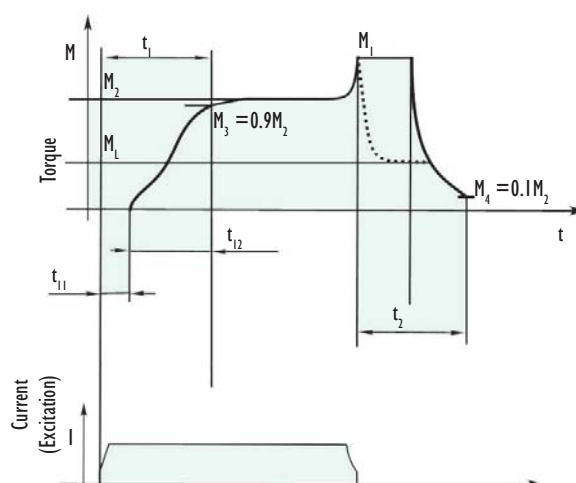
Size	0.15	0.45	01	02	03	06	10	20	40	60	120	240
Torque (N-m)	1.5	3.6	8	15	30	60	120	240	480	750	1440	
Ø D ₁ h8	54	65	80	100	125	150	190	230	290	355	440	
Ø D ₂	47	58	72	90	112	137	175	215	270	335	420	
Ø D ₃	43	54	67	85	107	134.5	170	214	266.5	355	422	
Ø D ₄ h8	40	54	63	80	100	125	160	200	250	320	400	
Ø D ₅	30	38	46	60	76	95	120	158	210	250	315	
Ø D ₆	17	24	27	32	42	49	65	83	105	135	175	
Ø D ₇ k6	18	-	38	45	55	64	75	90	115	145	185	
F	3.3	3.3	3.5	4.3	5	5.5	6	7	8	9	11	
Ø Hxn	6x3	6.5x3	6.3x3	8.5x3	11x3	12x3	15.2x3	18x4	24x4	28x4	32x4	
Ø Jxn	3.1x3	3.1x3	3.1x3	4.2x3	5.5x3	6.1x3	8.2x3	10.2x4	12.2x4	16.2x4	18.2x4	
Ø Kxn	3.5x4	3.4x4	4.5x4	5.5x4	6.5x4	6.5x4	9x4	9x4	11x4	11x8	13x8	
Ø Lxn	5x3	5x3	5.5x3	7x3	9x3	10x3	13x3	16x3	20x4	26x4	30x4	
M ₀	28.55	26.7	28	31	36	40.5	46.5	55.4	63.9	78	94	
M ₁	40.6	38.7	43	51	60.8	70.5	84.5	103.4	118.9	142	170	
M ₂	40.6	-	51	60	71	86.5	103.5	125.4	145	173	206	
N	25.4	23.5	24	26.5	30	33.5	37.5	44	51	62	74	
O	23.3	20.5	22	24	27.4	30	34.5	40.2	47	58	68	
P	2	2	2	2.5	3	3.5	4	5	6	14	17	
Q	M4	M4	M6	M6	M8	M10	M10	M12	M12	M12	M16	
R	13	-	26.8	33.5	40.6	52.7	65.9	80.9	93.5	110	131.2	
T	12	12	15	20	25	30	38	48	55	64	76	
W	31.5	29.7	31.5	35	40.8	46.5	53.5	64.4	74.9	90	110	
X	9.9	-	23	29	35	46	57.2	70	81	95	112	
b	5	5	5	6	6	10	10	15	20	20	25	
Ø d ₁ H7 (max.)	10	15	17	25	30	40	50	65	80	105	130	
Ø d ₂ H8	19	26	35	42	52	62	80	100	125	160	200	
Ø d ₃	15.5	-	24	28.7	38	45	62.5	77	100	130	180	
Ø d ₄ H7 (max.)	10	15	17	20	30	35	45	60	80	105	130	
Ø d ₅ K6	10	-	17	20	30	35	40	60	80	100	130	
s	0.15	0.2	0.2	0.2	0.3	0.3	0.4	0.5	0.5	0.8	0.8	
u	1.4	1.6	1.6	1.8	2.1	2.5	3.2	4	4.3	5	5	
Power (w)	8	10	11	20	29	35	48	70	91	98	138	

On Request

NOTE:

1. Power consumption values are specified at 20°C
2. Ø d₄ H7 is max. bore. Any custom-dedicate lower bore size can be supplied at no additional cost
3. Std. voltage is 24V DC, 96V DC & 190V DC are supplied on demand. Other voltages are also possible on request
4. Torque values mentioned are the Static Rated torques
5. Keyways are to DIN 6885 & Circlip grooves to DIN 472 or IS 3075
6. Specifications are subject to change without prior notice
7. All dimensions in mm

TORQUE & EXCITATION CURVE AS PER DIN VDE 0580



TYPE EBA SELECTION DATA

Size	M ₁ [N-m]	n _{max} RPM	J [kg cm ²]				Operating times ¹⁾ [ms]				Weight approx [Kg]		
			Rotor side	Armature side			t ₁₁	t ₁₂	t ₁	t ₂	Design 100	Design 101	Design 102
				Design 100	Design 101	Design 102							
0.15	1.5	10000	0.2	0.06	0.08	-	9	25	34	10	0.250	0.260	0.270
0.45	3	10000	0.5	0.2	0.3	-	14	32	46	12	0.400	0.420	0.440
01	8	8000	1.0	0.4	0.6	0.7	17	35	52	12	0.520	0.560	0.610
02	15	6000	2.5	1.1	1.6	1.9	23	63	86	17	0.920	0.990	1.070
03	30	5000	8.1	3.6	5.0	5.8	29	98	127	29	1.750	1.880	2.020
06	60	4000	24	10	15	16	40	121	161	46	3.200	3.450	3.590
10	120	3000	65	37	51	54	52	144	196	58	4.950	5.530	5.900
20	240	3000	220	110	155	165	69	161	230	69	11.160	12.150	12.850
40	480	2000	610	300	640	680	86	178	264	81	20.300	25.200	26.600
60	750	1500	2280	1010	2030	2145	Data on request				39.700	49.200	51.200
120	1440	1500	4650	3080	6405	6705					71.600	90.100	93.100
240	2880	1500	Data on request										

NOTE:

- ¹⁾ Mean values for switching on the DC side with rated air gap and warm coil
- Standard voltage 24 V +5%/-10% to DIN VDE 0580 (other voltages on request)
- Thermal class H (180°C), optionally available with UL certification

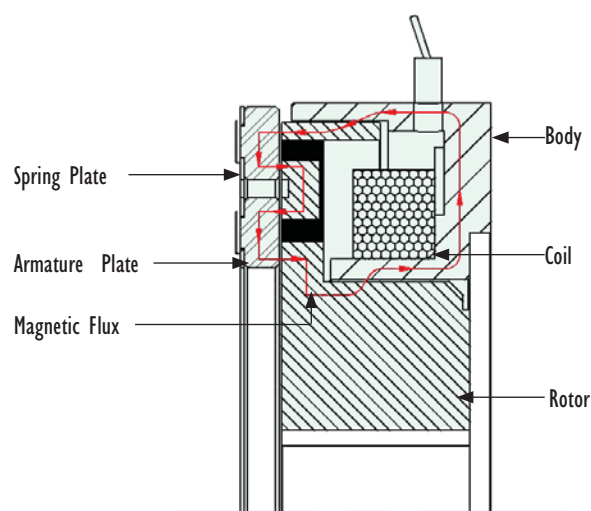
OPERATING TIMES:

The operating times listed in the Technical data are valid for switching on the DC side with the rated air gap and a warm coil. The times are mean values whose accuracy will be determined for example by the type of rectification and the air gap 's'.

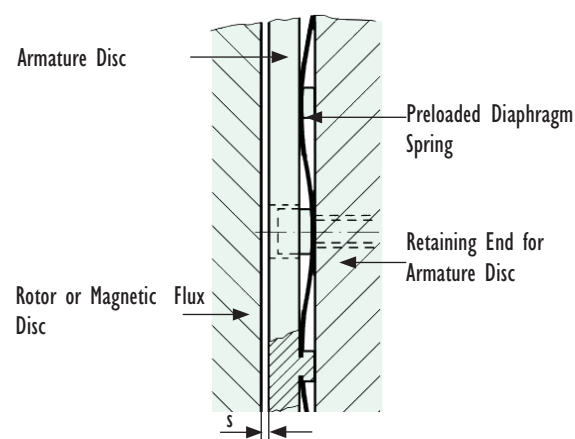
Identification	Description
M_L [N-m]	Static torque
M_L [N-m]	Load Torque
J [kg cm ²]	Moment of inertia, reduced to clutch shaft
N_{max} [RPM]	Maximum Speed
t_1 [s]	Engagement time, $t_1 = t_{11} + t_{12}$
t_2 [s]	Disengagement time (time from the beginning of the torque reduction until 0.1 M_L is reached)
t_{11} [s]	Response delay time (time between the voltage being connected and the torque starting to rise)
t_{12} [s]	Rise time (time from the beginning of the torque rise until 0.9 M_L is reached)

TYPE EBK

VORTEX also produce the EBK series of single disc clutches which typically work on the same principle as the EBA series but are characterized by their higher flexibility due to their metallic friction surfaces as opposed to the conventional steel - friction liner mating surfaces. They also give a higher torque for the similar size and more importantly can function even in wet environment albeit with reduced torque transmission capacity.



Magnetic Flux Path in EBK Type Clutch



**Armature Disc with Preloaded Diaphragm Spring Plate
(Shown Exaggerated)**

Wet Operation

Single-disc clutches lubricated with oil or grease have lower torque capacities and longer operating times. Provided the lubrication is adequate to control the energy dissipation, they are completely free from wear and therefore require absolutely no maintenance. More detailed design notes regarding wet operation are available on request.

2. The torque loading of the clutches is transferred to the shaft using keys to DIN 6885, Sheet 2. In the case of small types with bores up to 8 mm, the connection between shaft and rotor is made by pinning, bonding or interference fit. The rotor must be located axially on the shaft.

CONSTRUCTION AND MODE OF OPERATION

These clutches have no slip rings and are maintenance-free. An important feature is the double magnetic flux path in the armature, which enables the force of the magnetic field to be used twice. This gives a high torque capacity with small physical dimensions and a relatively large bore.

The friction surfaces are of metal, making these clutches particularly acceptable from the environmental point of view because the organic friction linings containing asbestos commonly found in other single-disc clutches are eliminated. They are also suitable for wet or dry operation.

The clutches need to be run-in briefly or to be operated a few times with a speed differential before they will develop their full rated torque. In dry operation they are unaffected by oil or grease.

A diaphragm spring is used for transmitting the torque without radial float. It is attached to the face of the armature at 3 or 6 points and secured to the mating component (driving or driven gearwheel, flange, etc.) by 3 bolts.

These clutches comprise a stationary magnet body containing the coil, rotor and armature. The magnet body is bolted to the machine housing whereas the rotor is mounted on the shaft to be coupled.

It rotates in the stationary magnet body with a small radial air gap. The armature is secured to the face of the driving or driven part by 3 bolts.

The torque is transmitted by the rotor and the armature; it is unimportant whether the rotor or armature is driving or driven, it simply depends on the mounting arrangements of the particular application.

Good central alignment of the three parts (magnet body, rotor and armature) is necessary in accordance with the tolerances stated in "Design notes" (paragraphs 4 and 5).

DESIGN NOTES

1. These single-disc clutches have metal friction faces and are suitable for dry or wet operation. The following criteria affect the choice of suitable operating conditions:

Dry Operation

In dry operation, single-disc clutches have high torque capacities and short operating times. The actual torque values are given in the Selection tables. However, the friction surfaces are subject to wear in normal use and therefore have a finite life.

Should small quantities of oil or grease contaminate the friction surfaces in dry operation, the torque capacity will be reduced briefly but will be regained after a few operations involving slipping. If there is no slipping, i.e. frictional work, this self-cleaning action will not occur. When installing a new clutch the friction surfaces should be cleaned to remove the anti-corrosion oil film applied, prior to dispatch, otherwise the stated torque values will not be attained. If there is constant heavy contamination by oil or grease there will be a reduction in torque capacity.

3. The clutch can be installed either horizontally or vertically with the armature at the top or bottom, as required

4. When clutches are used for connecting two shafts the value of center offset must be within specified limits for which please contact our design team; for rough reference, these values are also given in the tables. If the required accuracy cannot be obtained, the rotor and armature must be located centrally on one shaft extension and the torque transmitted to the second shaft extension via a flexible coupling.

A radial air gap must be left between the rotor and the magnet body otherwise both will suffer damage. This is why the stated value of centre offset must never be exceeded. Central alignment is provided by diameters D4 and D3 on the magnet body. It is preferable for the central alignment to be on an anti-friction bearing in D3 enabling the axial position of the magnet body to the rotor to be fixed at the same time.

Central alignment of the armature is provided by the 3 fixing bolts only. It must not be centered or located in other way. However, it is essential for the tapped holes to be accurate in pitch and pitch circle diameter.

SPECIAL VERSIONS

Limited external diameters with internal mounting arrangement in applications having space constraint are also possible to suite some customer machine requirements. In this special design, the mounting holes are provided on an internal flange rather an external flange as in our standard EAR series. This restricts the external dimensions, as some design constraints would demand.

VORTEX can also offer other custom built variations for which you are requested to contact our design team

5. Fitting the Armature

The armature is bolted to the mating part (flange, belt pulley, etc.) at 3 points. There are appropriate through-holes in the diaphragm spring and counter bores for the bolt heads; socket head screws to DIN 84 or hexagonal socket-head screws to DIN 7984/6912 should be used. Locking of the screws to the diaphragm is impractical; they must therefore be secured by adhesive, or by caulking or locknuts.

When the armature is fitted, the diaphragm spring is preloaded in the axial direction in order to produce rapid operation of the clutch.

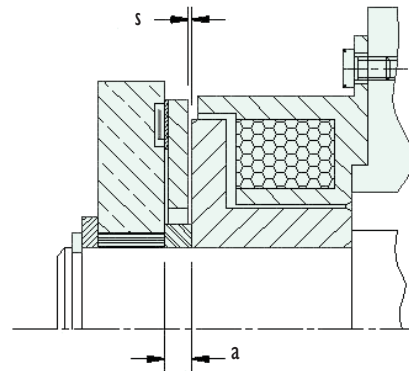
This also ensures that the armature does not rattle or rub against the rotor or clutch disc.

This preloading is unnecessary on the electromagnet clutches of this EBK series for sizes EBK 0.05 and 0.16. In special cases the sizes EBK 0.5 to 125 can also be used without preloading, to utilize the greater travel and hence achieve long intervals between readjustments in dry operation.

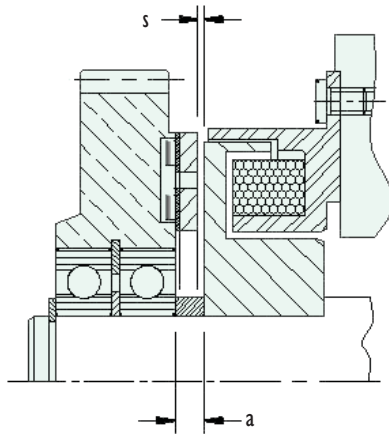
TYPE EBK FITTING OF THE ARMATURE

ARMATURE WITHOUT PRELOADING

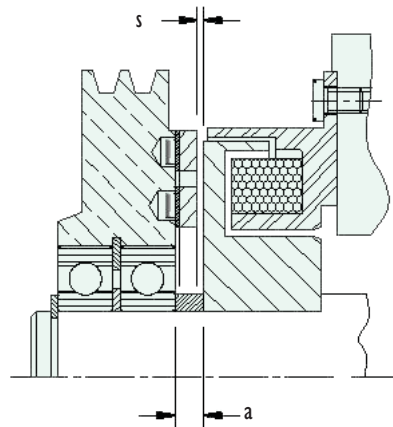
Size	Travel. min s mm	Without preloading	
		Travel max. s mm	a mm
Recessing of rivet heads in mating part			
0.05	0.1	0.3	2.2
0.16	0.2	0.5	2.7
Recessing of rivet heads in mating part (use only in special cases)			
0.5	0.3	0.7	3.2
01	0.3	0.9	4.1
02	0.3	1.1	5
04	0.3	1.3	5.9
08	0.4	1.5	6.7
16	0.4	1.8	8
32	0.4	2.2	9.3
63	0.5	2.6	12
125	0.5	3	15



EBK 0.05 to EBK 0.16



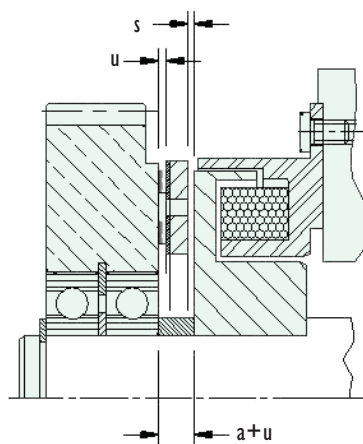
EBK 0.5 to EBK 16



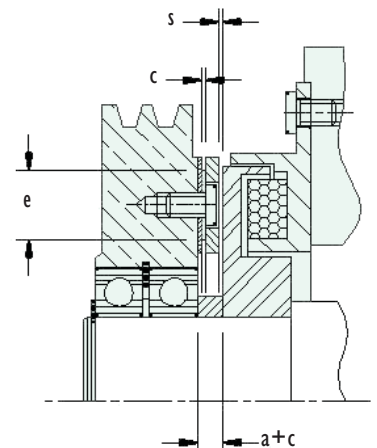
EBK 32 to EBK 125

ARMATURE WITH PRELOADING

Size	Travel min s mm	With preloading			
		Travel max s mm	a+u a+c mm	u or c mm	e mm
Without recessing of rivet heads in mating part					
0.5	0.3	0.5	3.5	0.3	-
01	0.3	0.6	4.5	0.4	-
02	0.3	0.7	5.5	0.5	-
04	0.3	0.8	6.5	0.6	-
08	0.4	1.0	7.5	0.8	-
16	0.4	1.2	9	1.0	-
32	0.4	1.4	10.5	1.2	-
Recessing of rivet heads in mating part (preloading by washers between diaphragm spring and armature)					
63	0.5	1.7	13.5	1.5	40
125	0.5	2.0	17	2.0	50



EBK 0.5 to EBK 32



EBK 63 to EBK 125

TYPE EBK DRAWINGS

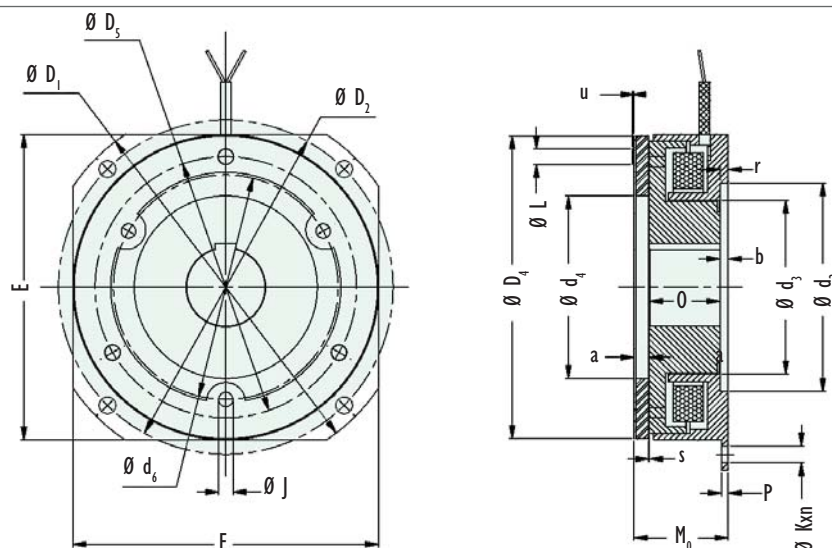


Fig. A (Size 0.05 to 0.16)

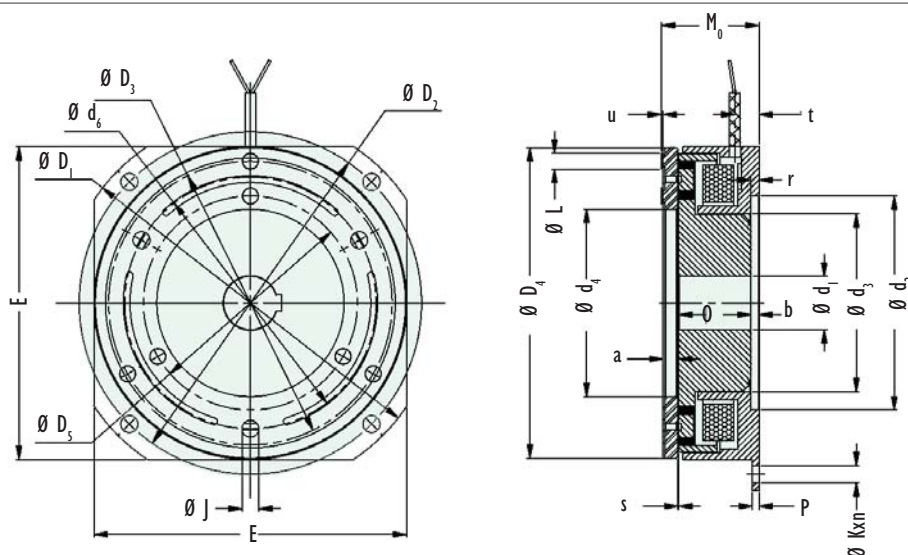


Fig. B (Size 0.5 to 04)

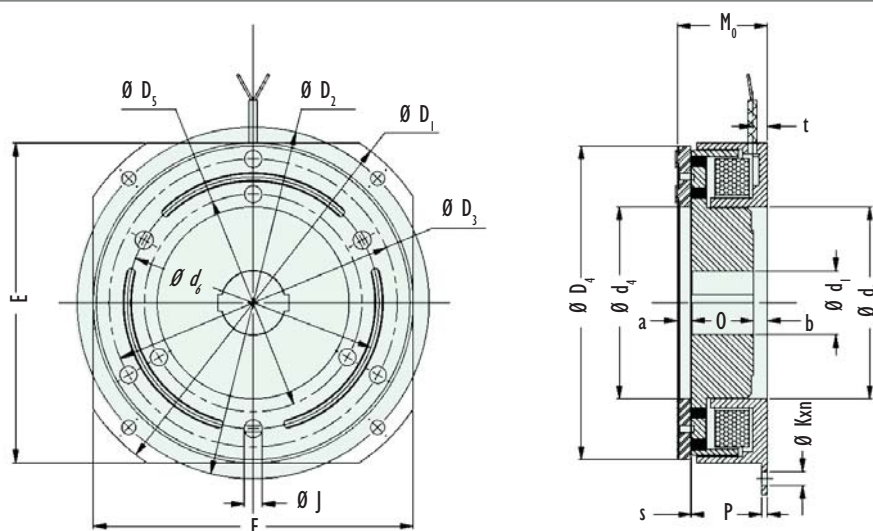


Fig. C (Size 08 to 125)

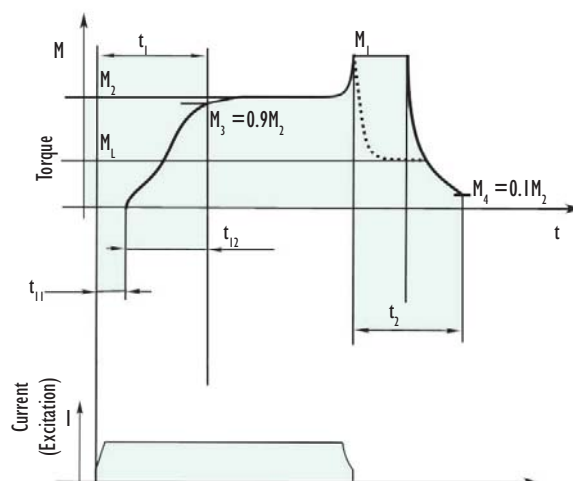
TYPE EBK TECHNICAL DATA

Size		0.05	0.16	0.5	01	02	04	08	16	32	63	125
Max Torque in N-m	Dynamic	0.5	1.6	5	10	20	40	80	160	320	630	1250
	Static	0.6	2	6	13	25	50	100	200	400	800	1600
D ₁ h8		38	52	72	92	115	140	180	220	275	350	430
D ₂		33.5	46	66	83	104	128	165	205	255	325	400
D ₃		-	-	53	67	84	106	135	170	211	270	335
D ₄		28.5	40	58	73.5	93	117	147	186	230	294	365
D ₅		24.5	35	39	50	62	80	102	128	159	204	255
E		30	42	59	74	93	117	150	190	235	300	370
Ø Kxn		2.7x6	3.2x6	3.2x6	4.3x6	5.3x6	6.5x6	6.6x6	9x6	11x6	14x6	18x6
J		2.6	3.1	3.1	4.1	5.1	6.3	8.4	10.5	12.5	16.4	20.4
Ø L		2.5	3	3.5	4	5	6	8	10	14	16	18
M ₀		18	21	25.2	29	33	37	42.5	47	51	61	69
O [§]		14	16.5	20	22	25	27	29	31	33	35	38
p		1.2	1.2	1.5	2	2	2.5	2.5	3	3	3	4
a		2.2	2.7	3.2	4.1	5	5.9	6.7	8	9.3	12	15
b		1.5	1.5	2	2.5	2.5	3	6.5	7	7.5	8	9
d ₁ [*]		6	10	15	25	30	40	50	60	80	100	120
d ₂ H8		16	26	42	52	62	80	90	110	140	180	225
d ₃		11.5	18	30.5	39.5	51.5	66.5	-	-	-	-	-
d ₄		11.5	18	34	43.5	54	70	90	112	140	180	225
d ₆ [§]		20	29	46	58	74	94	118	150	185	238	295
s		0.2	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.5	0.5
t		-	-	6	7	7	9	7	8	9	11	12
r		1.5	1.5	2	2.5	2.5	3	-	-	-	-	-
u		0.3	0.3	0.3	0.4	0.5	0.6	0.8	1	1.2	6	7
POWER [W]	at 20°C	5.5	8.5	10.5	12.7	28.7	25.6	33	42	55.2	67	100
	at 120°C	4	6	7.5	9	15	18	22	30	40	48	72

NOTE:

- Also available with AMP connecting plug as option on special request
- * d₁ is the maximum bore. For other std. lower bores contact our design team. Customer dedicated bore sizes also supplied on request at additional cost.
- Hub bore, fit H7 & key ways to DIN 6885 sheets 2/fit p9
- Std. voltage is 24 V. DC. Electrical data is specified for std. voltage. Other voltages are also possible on request
- [§] Tolerance for sizes 0.05 to 32: ± 0.1 ; 63 & 125: ± 0.2
- [§] Tolerance for sizes 0.05 to 4: -0.1; 8 & 125: -0.2

TORQUE & EXCITATION CURVE AS PER DIN VDE 0580



TYPE EBK SELECTION DATA

Size	Dry Operation		Wet Operation		n _{max} Min ⁻¹	J kg cm ²		Operating times [ms]								Weight approx [Kg]
	M ₁	M ₂	M ₁	M ₂				Dry Operation				Wet Operation				
	[Nm]					Rotor side	Armature side	t ₁₁	t ₁₂	t ₁	t ₂	t ₁₁	t ₁₂	t ₁	t ₂	
0.05	0.6	0.5	0.25	0.16	15000	0.02	0.01	6	12	18	6	12	46	58	17	0.065
0.16	2	1.6	0.8	0.5	12000	0.07	0.05	12	12	24	12	17	58	75	23	0.150
0.5	6	5	2.5	1.6	9000	0.5	0.2	12	23	35	17	23	69	92	35	0.37
01	13	10	5	3	8000	1.3	0.7	23	35	58	23	35	81	116	46	0.7
02	25	20	10	6	7000	3.8	1.9	23	58	81	35	46	92	138	58	1.4
04	50	40	20	12	6000	12	5.9	35	81	116	46	58	115	173	69	2.3
08	100	80	40	25	6000	41	17	35	115	150	63	69	138	207	92	4.2
16	200	160	80	50	6000	105	51	46	138	184	81	81	173	254	115	7.4
32	400	320	160	100	5000	240	145	58	173	231	104	92	219	311	150	12
63	800	630	320	200	4500	880	490	On request								20
125	1600	1250	530	400	4000	2370	1370									34

NOTE:

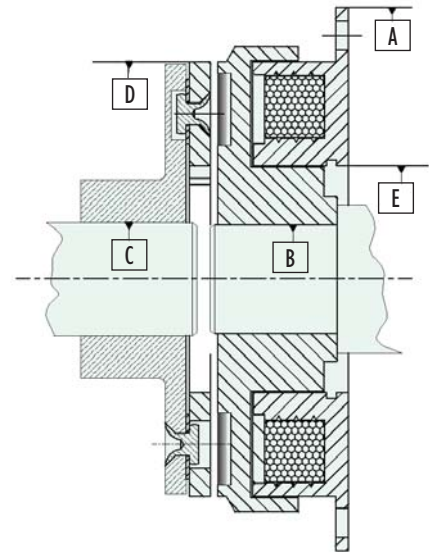
- Dry operation, 24 V DC (other voltages on request)
- Wet operation possible; values available on request
- UL certified insulation available on request

Identification	Description	Identification	Description
J [kg cm ²]	Moment of inertia, reduced to clutch shaft	t ₁ [s]	Engagement time, t ₁ = t ₁₁ + t ₁₂
M ₁ [N-m]	Static torque	t ₂ [s]	Disengagement time
M ₂ [N-m]	Dynamic torque	t ₁₁ [s]	Response delay time
M _t [N-m]	Load Torque	t ₁₂ [s]	Rise time

PERMITTED CENTRE OFFSET

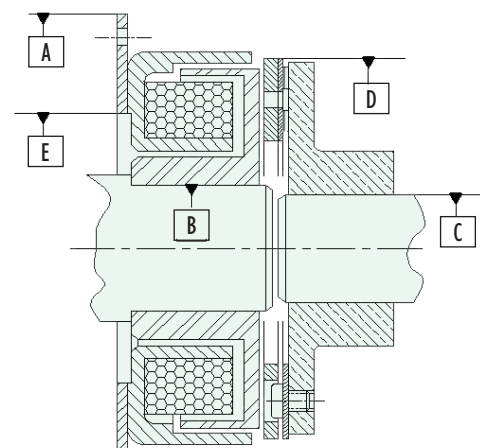
TYPE EBA

Size	Permitted centre offset in mm		
	Rotor axis B / armature side axis C	Rotor axis B / magnet body A or E	Armature side axis C / armature outer dia D
0.15	0.03	0.05	0.05
0.45	0.05	0.05	0.05
01	0.1	0.2	0.2
02	0.1	0.3	0.3
03	0.1	0.3	0.3
06	0.1	0.3	0.3
10	0.2	0.3	0.3
20	0.2	0.3	0.3
40	0.2	0.3	0.3
60	0.2	0.4	0.4
120	0.2	0.4	0.4
240	0.2	0.4	0.4

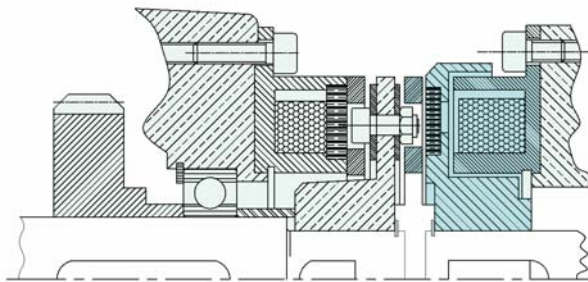


TYPE EBK

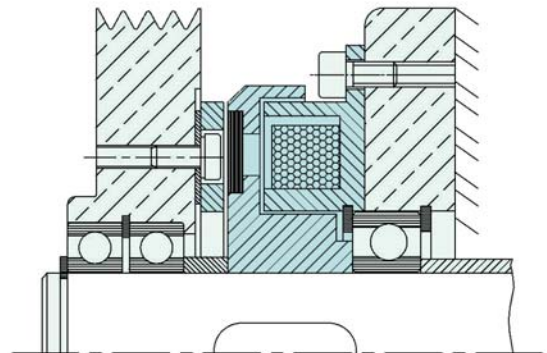
Size	Permitted centre offset in mm		
	Rotor axis B / armature side axis C	Rotor axis B / magnet body A or E	Armature side axis C / armature outer dia D
0.05	0.05	0.05	0.10
0.16	0.05	0.05	0.10
0.5	0.05	0.10	0.15
01	0.10	0.10	0.15
02	0.10	0.15	0.20
04	0.10	0.15	0.20
08	0.15	0.15	0.20
16	0.15	0.20	0.25
32	0.15	0.20	0.25
63	0.20	0.25	0.30
125	0.20	0.25	0.30



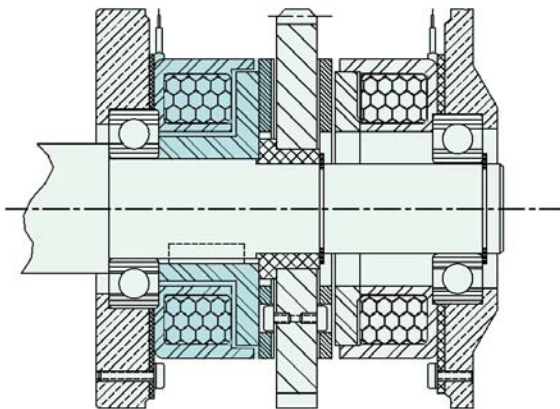
INSTALLATION EXAMPLES



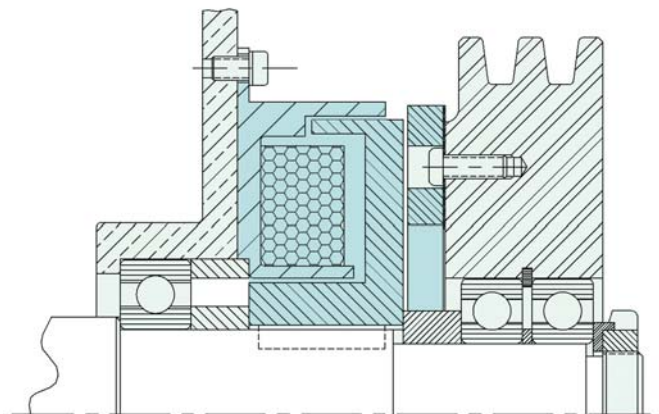
1) EBA clutch used with (EAA) brake --- The Clutch on the right for driving the driven shaft and the connected spur gear & The Brake on the left for instantaneous stoppage of the driven shaft and the spur gear. The Clutch and Brake Armatures are connected to a common Hub with the Clutch Rotor rigidly connected to the drive shaft.



2) EBA clutch driving a machine element (gear, pulley or like) --- Mounting Armature to design 100 directly on the driven machine element, eliminating need of an Armature-Hub. A spacer-ring between the Clutch Rotor and the Inner race of the ball-bearing maintains the working air-gap

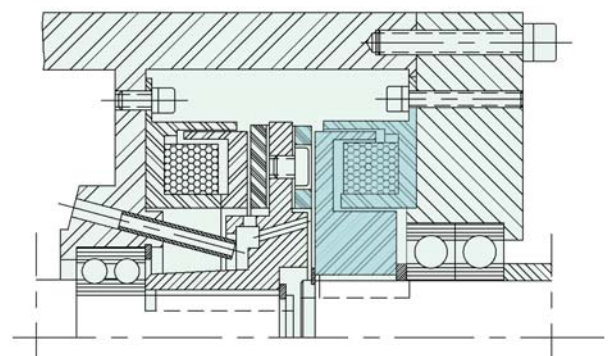


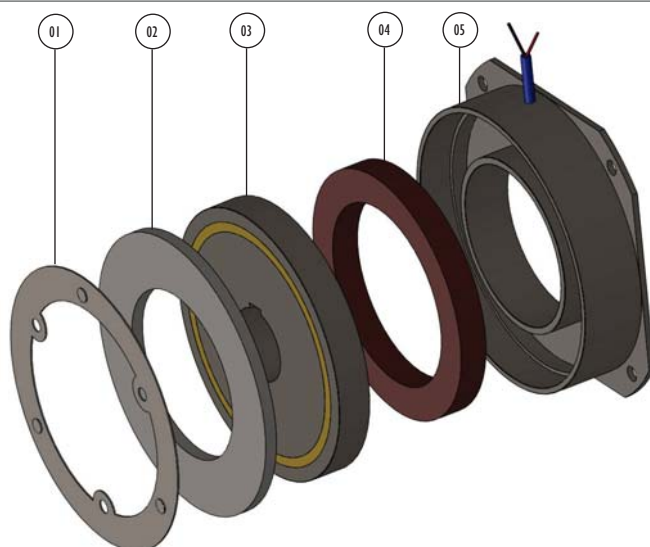
3) EBK clutch used with (EAR) brake --- The Clutch on the left to connect the drive to the Spur Gear from the shaft while the Brake on the right, fixed to the Housing, for instantaneous stoppage of the gear drive. Both the Clutch and Brake Armatures are fitted directly to the Spur Gear.



4) EBK clutch used in combination with a V-belt Pulley --- Armature fixed directly to the Pulley connects the drive between the Pulley & the Shaft. The Spacer Rig between the Clutch Rotor face and the inner race of the ball-bearing sets the working air-gap in the Clutch.

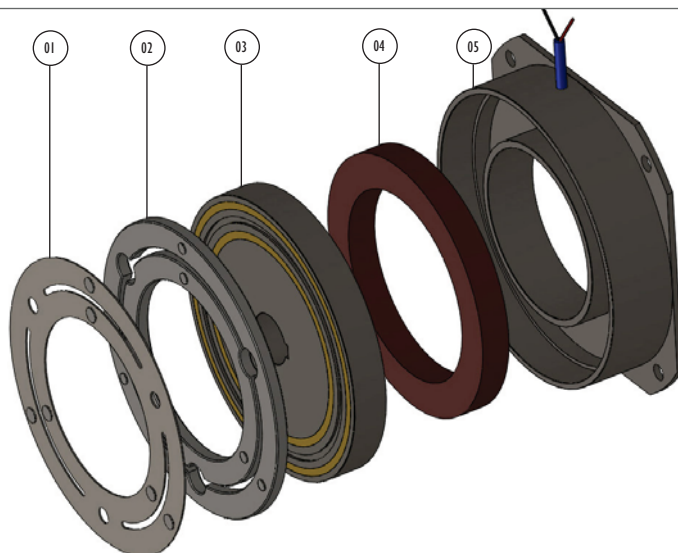
(5) EBK clutch & (EAR brake) mounted in housing for wet operation --- High energy dissipation & high speed necessitate internal lubrication. Clutch & brake are fitted without preloading of the diaphragm spring but with increased armature travel so that a good flow of oil can be passed between the friction surfaces.



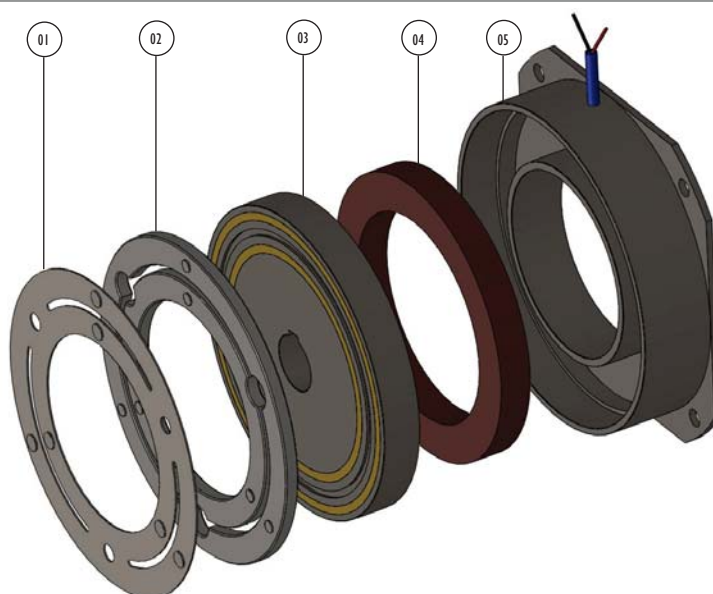


Part No	Description
01	Spring plate
02	Armature plate
03	Rotor
04	Coil
05	Body

Exploded 3D view (Size EBK 0.05 – EBK 0.16)



Exploded 3D view (Size EBK 0.5 – EBK 04)



Exploded 3D view (Size EBK 08 – EBK 125)



Vortex Engineering Works India Pvt. Ltd.

India's foremost manufacturer of a wide range of clutches & brakes

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