Fail-Safe Electric Clutches & Brakes (FEA)

Durable and adjustable for long life

ADVANTAGES

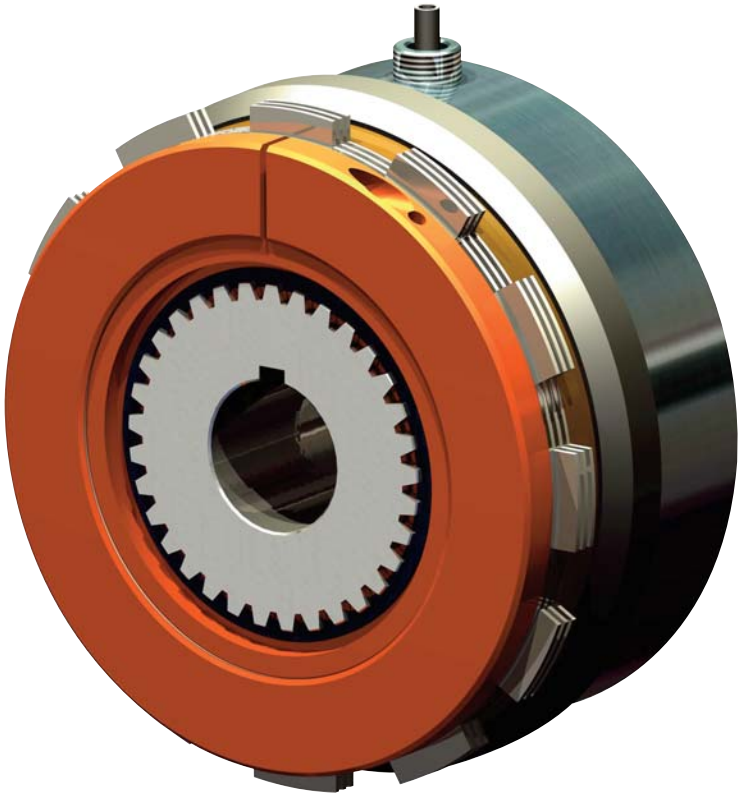
- Highly-repetitive operations
- Spring-set
- Unique end-plate design allows for easy wear adjustments
- Stationary field eliminates the need for brushes and rings
- Highest torque in the smallest space within the industry
- Completely assembled – ready to install
- No levers, cams or highly-stressed parts

OPERATION

- Torque range 12 lb. ft. – 750 lb. ft.
- Positive engagement/disengagement possible at any speed
- Exclusive MAXITORQ® long-life floating disc pack for low heat, low neutral drag and consistent release
- Runs in both rotational directions in wet or dry applications
- Spring applied, electrically released

CUSTOMIZATION

- Higher torque options available
- Variety of electronic controls available to provide slower or faster actuation and release, and controlled acceleration and deceleration
- Custom designs and alterations available



MAXITORQ® FEA fail-safe clutches and brakes provide an automatic, remote-controlled, positive-action unit that quickly starts and stops machinery. FEA models have proven reliable and dependable in a variety of diverse applications, including mission critical uses in heavy-duty machinery and fragile production environments.

These clutches and brakes provide fast power transmission with precise performance and a compact design. Units can be employed in individual machinery and as a part of automated production equipment, and are often relied upon to protect personnel from injury and machinery from damage.

MAXITORQ®

CARLYLE JOHNSON

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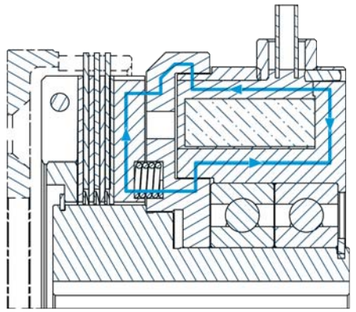
Designed for Instant Response & Positive Action

In a typical brake installation, FEA units are keyed to a shaft and engage with a stationary cup, which is usually secured to a machine frame. The coil is energized and disengages the armature plate, separating the multiple friction discs for release.

When energized, the FEA unit's coil induces a strong magnetic flux – in Carlyle Johnson's exclusive radial flux design – to flow in the path shown here. This magnetic force travels through the buttress plate, across the Fail-Safe air gap, through the armature and will override the spring-loaded pressure on the multiple disc unit. When the coil is not energized, radially spaced coil springs (which are between the buttress plate and the armature) maintain a constant pressure on the multiple disc unit and, depending upon application, provide a positive, spring-loaded clutch, brake or drive. Separator springs between the friction discs assure fast disc separation and a low drag neutral.

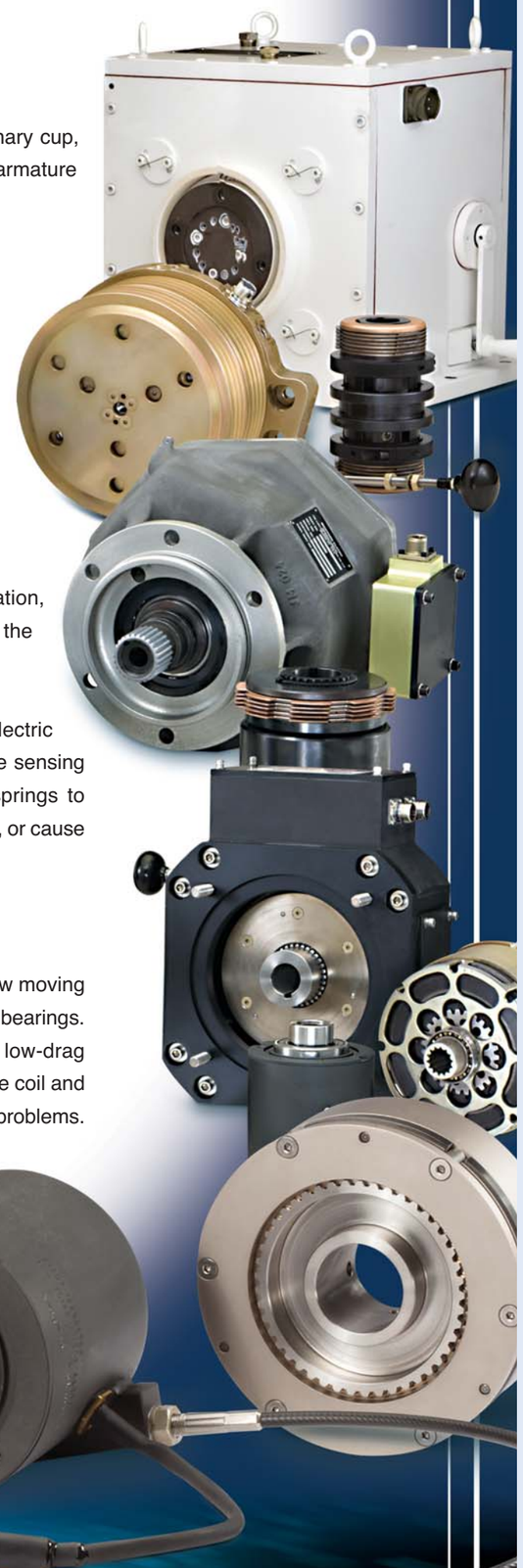


Radial magnetic flux path provides maximum torque throughout life of clutch.

Brake actuation is triggered by a limit switch, an overload sensor, or with a similar electric apparatus that has been wired in series with the coil winding. When trouble occurs, the sensing device interrupts the electrical circuit, de-energizing the coil and causing the coil springs to compress the multiple friction discs. These actions stop movement in braking applications, or cause coupling of the driving member and driven member, when used as a clutch.

Simple & Safe Operation

Designed for reliable, safe performance, MAXITORQ® FEA clutches and brakes have few moving parts. The coil winding is sealed within a stationary housing and supported by anti-friction bearings. A powerful electromagnetic force disengages the multiple disc units and provides a low-drag neutral. There are no stressed parts, whether the unit is in use or turned off, and since the coil and housing assembly does not rotate, there are no slip rings, brushes or troublesome wiring problems.



Series 9000A Fail-Safe Electric Clutches

Easily Installed & Adjustable

MAXITORQ FEA fail-safe clutches and brakes feature an adjustable end plate design and an adjustable multiple disc unit, which provides long lifespan and can be rebuilt without special tools. The coil housing is kept from rotating by either an electrical conduit or a fixed member, which is fastened to a threaded fitting.

Special High-Performance Design

While this sheet describes our standard FEA model fail-safe clutch and brake units, a significant portion of Carlyle Johnson's production is devoted to the design and manufacture of special clutches and brakes which meet specific user applications and requirements.

Customers often request high performance clutches that produce higher torques, which we develop by either varying the disc pack design, by modifying the magnetic circuits, or through the use of special coils. Various electric controls are also available from Carlyle Johnson, which can provide faster actuation and controlled acceleration and deceleration.

Our experienced engineering staff is ready to assist you with any of your motion control needs. We can advise on products that best fit the requirements of your application, alter our standard designs or even build a completely new power transmission system. Carlyle Johnson also provides service and maintenence on all of our products, ensuring long lifespan and optimal performance.

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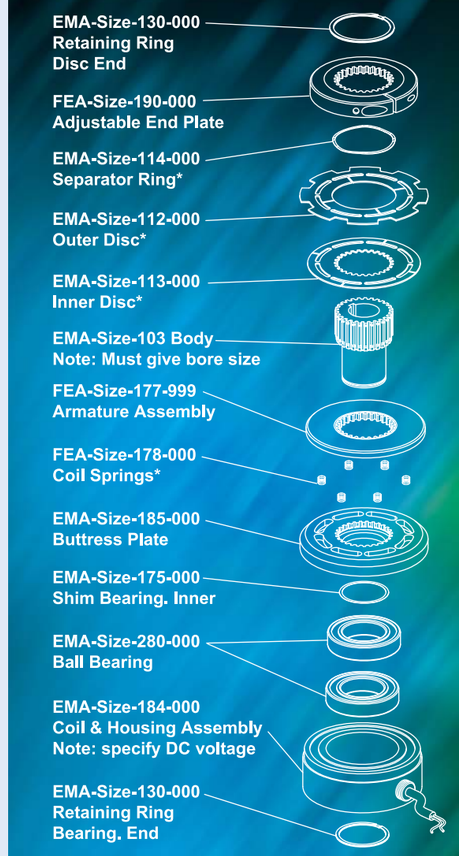
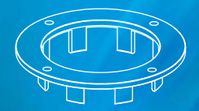


* Quantity as required

Drive Cup (External Flange)



Drive Cup (Internal Flange)

When ordering replacement parts please provide:

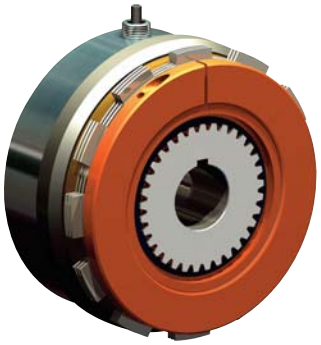
1. Part name
2. Quantity
3. Clutch/Brake size & serial number (marked on O.D. of housing assembly)
4. Name of machine manufacturer & type of machine

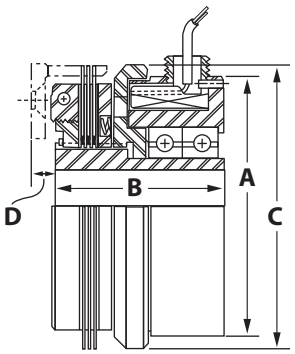
NOTE: MAXITORQ Clutches and brakes, as furnished, can run dry or in oil. We specifically recommend Series A oils. If extreme pressure additives that would reduce clutch torque are utilized, please contact the factory for recommendations.

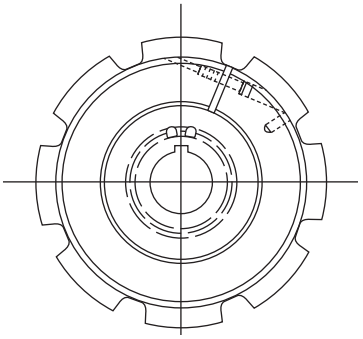
Specifications of FEA MAXITORQ Fail-Safe Electric Clutches and Brakes

Model	Torque (lb. ft.)		A	B	C	D - Axial Position Min.	Bores	Keyway	D.C.* Volts	Watts
	Dyn.	Static								
FEA-0375	6	12	3.797	2.563	4.063	.375	3/4 or 7/8	3/16 x 3/32	100 or 24	40
FEA-0425	12	25	4.359	2.750	4.625	.313	1 or 1 1/8	3/16 x 3/32	100 or 24	40
FEA-0475	25	50	4.282	3.063	5.188	.438	1 1/4 or 1 3/8	1/4 x 1/8	100 or 24	50
FEA-0625	50	100	6.359	3.625	6.750	.500	1 3/4 or 1 7/8	3/8 x 3/16	100 or 24	50
FEA-0800	120	240	8.094	4.063	8.500	.500	2 or 2 1/4	7/16 x 7/32	100 or 24	80

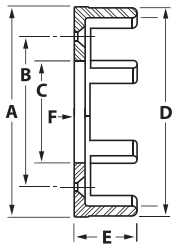
Previous part designation was FEMA. All fail-safe coils will operate at rated voltage ± 10%. Dyn = Dynamic.





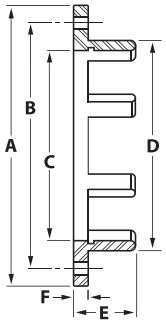


Internal Flange



Drive Cup Number	A	B (b.c.)	Screw Size	# of Holes	C	D	E	F	# of Slots
EMA-0375-106-30	4.250-4.248	3.067-3.057	1/4	3	2.017-2.015	4.188	1.188	.188	8
EMA-0425-106-30	4.750-4.748	3.630-3.620	1/4	3	2.517-2.515	4.688	1.250	.188	8
EMA-0475-106-30	5.250-5.248	3.942-3.932	5/16	3	2.517-2.515	5.188	1.375	.250	8
EMA-0625-106-30	6.812-6.810	5.317-5.307	3/8	4	3.767-3.765	6.750	1.656	.313	8
EMA-0800-106-30	8.562-8.560	6.255-6.245	1/2	4	4.517-4.515	8.500	1.703	.313	12
EMA-0950-106-30	10.062-10.060	8.067-8.057	1/2	4	5.517-5.515	10.00	1.781	.313	12
EMA-1150-106-30	11.812-11.809	9.817-9.807	1/2	6	8.017-8.015	11.75	2	.313	12

External Flange



Drive Cup Number	A	B (b.c.)	Screw Size	# of Holes	C	D	E	F	# of Slots
EMA-0375-106-20	5.625-5.623	4.880-4.870	1/4	3	3.814-3.812	4.188	1.188	.250	8
EMA-0425-106-20	6.125-6.123	5.380-5.370	1/4	4	4.314-4.312	4.688	1.250	.250	8
EMA-0475-106-20	6.875-6.873	6.005-5.995	5/16	4	4.814-4.812	5.188	1.375	.250	8
EMA-0625-106-20	8.500-8.498	7.692-7.682	3/8	4	6.377-6.375	6.750	1.656	.313	8
EMA-0800-106-20	10.625-10.623	9.630-9.620	1/2	4	8.095-8.093	8.500	1.781	.313	12
EMA-0950-106-20	12.250-12.248	11.130-11.120	1/2	4	9.533-9.531	10.00	1.781	.313	12
EMA-1150-106-20	14.248-14.247	13.005-12.995	1/2	6	11.253-11.250	11.75	2	.375	12

Standard hardened MAXITORQ® electric clutch cups are designed especially for use with electric clutch and brake units. Available with internal or external flanges and provided with mounting bolt holes, these cups can be quickly adapted to various types of driven or driving members. We offer these cups as an economical and simple way of adapting our clutches and brakes to your application. External flange cup for model FEA 0265 available upon request.