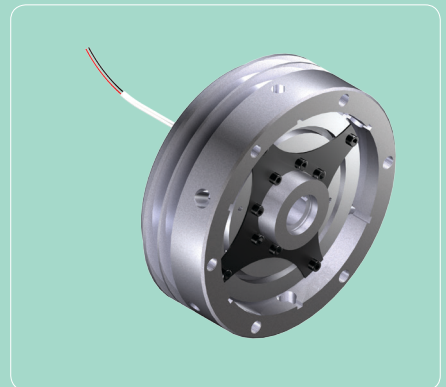
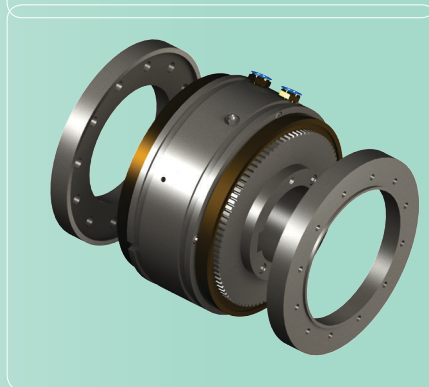
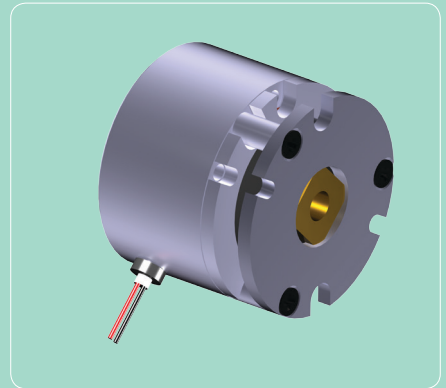
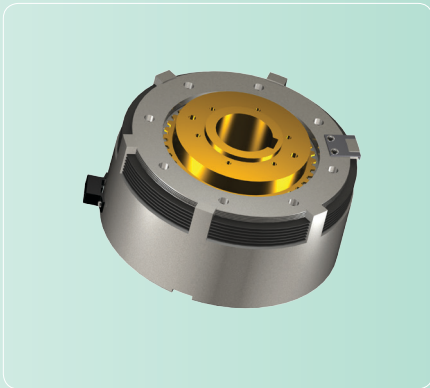
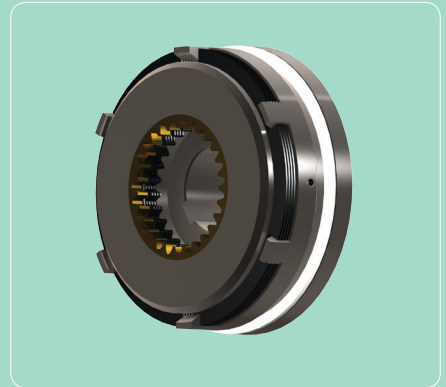
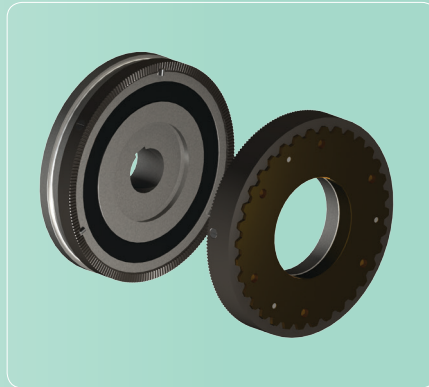




Vortex Engineering Works



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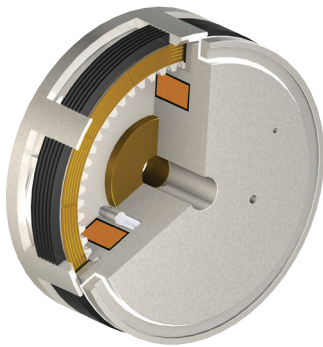
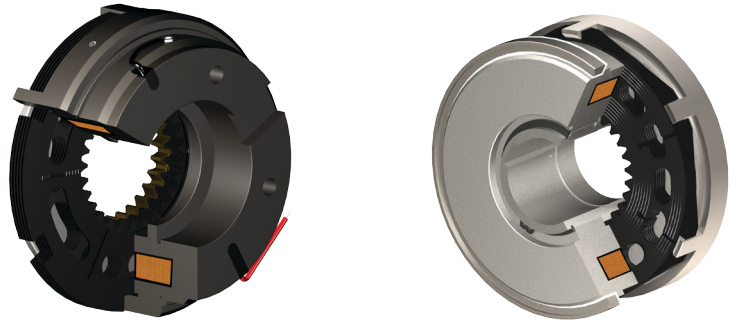


PRODUCT PROGRAM

1. ELECTROMAGNETIC MULTI-DISC CLUTCHES & BRAKES (FLUX THROUGH PLATES)

- # Wet Operation
- # Steel-Steel friction Combination
- # Stationary field or rotating field option

Rated dynamic torque Range: 5 N-m to 10,000 N-m
Outer dia range: 70 mm to 470 mm



2. ELECTROMAGNETIC MULTI-DISC CLUTCHES AND BRAKES (FLUX OUTSIDE PLATES)

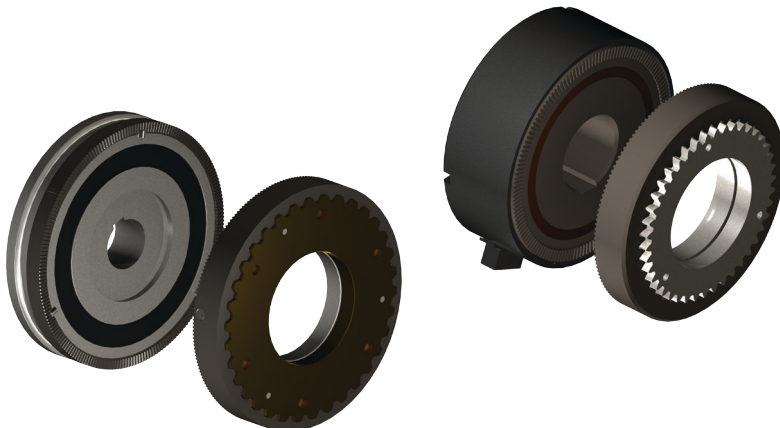
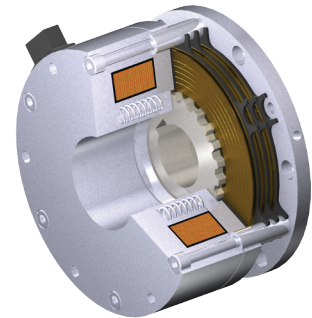
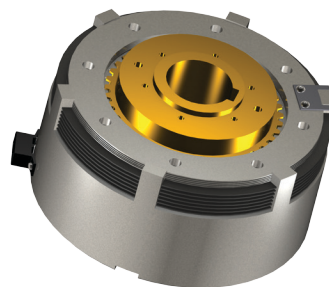
- # Wet or Dry Operation (Special self adjusting design possible)
- # Steel-Sintered bronze or Steel-Liner friction combination
- # Rotating field (Special Stationary field design possible)

Rated dynamic torque range: 10 N-m to 10,000 N-m
Outer dia range: 100 mm to 560 mm

3. ELECTROMAGNETIC RELEASE SPRING APPLIED MULTI-DISC FAIL-SAFE CLUTCHES & BRAKES

- # Wet or dry operation
- # Zero backlash option
- # Steel-Bronze or Steel-Sintered Bronze or steel-Liner (Non-Asbestos) friction combination
- # Rotating field (Special stationary field design possible)

Rated dynamic torque range: 10 N-m to 600 N-m
Outer Dia range; 100 mm to 255 mm



4. ELECTROMAGNETIC TOOTHED CLUTCHES & BRAKES

- # Wet or Dry operation
- # Zero backlash option
- # Variable tooth profiles as option (Overload protection teething, single position engagement teething, Self locking under load teething etc)
- # Stationary or rotating field options
- # Highest Torque v/s dimension ratio

Transmitting Torque range: 6 N-m to 40,000 N-m
Outer dia range: 40 mm to 560 mm

5. ELECTROMAGNETIC SINGLE-DISC CLUTCHES & BRAKES

- # Zero backlash
- # Dry operation
- # Non-asbestos liner friction surface
- # Stationary field
- # Various mounting options

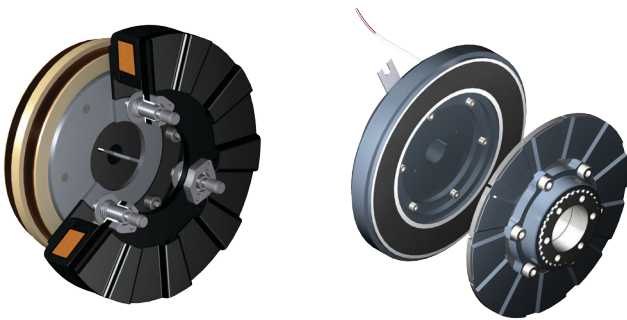
Transmitting Torque range: 0.2 N-m to 2,400 N-m
Outer friction diameter range: 23 mm to 500 mm



6. ELECTROMAGNETIC SELF-ADJUSTING SINGLE-DISC CLUTCHES & BRAKES

- # Zero backlash
- # Dry operation
- # Non-Asbestos liner friction surface
- # Stationary field or rotating field option
- # Self wear adjusting
- # Long Life & higher heat dissipation capacity.
- # Various mounting options

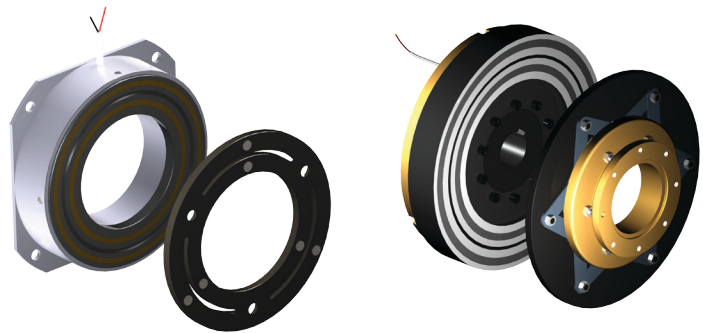
Transmitting torque range: 0.15 N-m to 1,800 N-m
Outer friction diameter range: 23 mm to 390 mm



7. ELECTROMAGNETIC POLE-FACE FRICTION CLUTCHES & BRAKES

- # Zero backlash
- # Dry operation (Wet Operation is also possible)
- # Steel-Steel friction surfaces
- # Stationary field
- # 4-pole or 6-pole faces for high torque v/s size ratio
- # Various mounting options

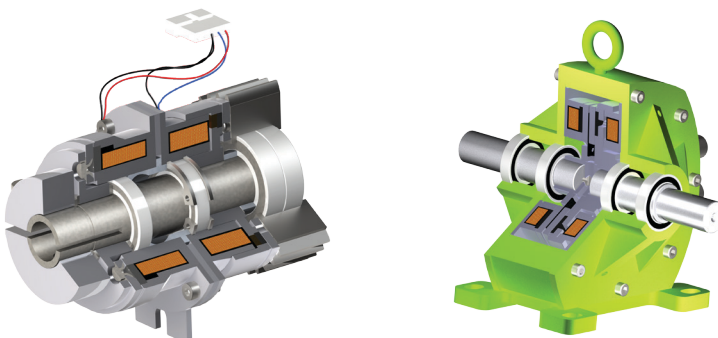
Rated dynamic torque range: 5 N-m to 4,800 N-m
Transmitting torque range: 6 N-m to 6,000 N-m
Outer friction diameter range: 58 mm to 480 mm



8. ELECTROMAGNETIC CLUTCH BRAKE COBINATION UNITS

- # Clutch-Clutch or Clutch-Brake combination
- # Open or enclosed units
- # Zero backlash
- # High cycling frequency
- # Enclosed units with simple wear adjustment device
- # Up to IP65 Protection with enclosed version
- # Many mounting and adaption versions available

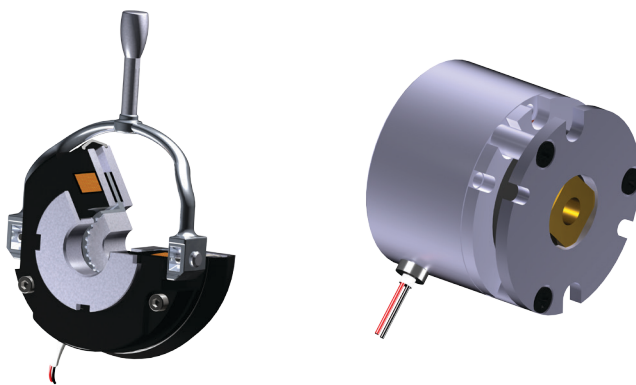
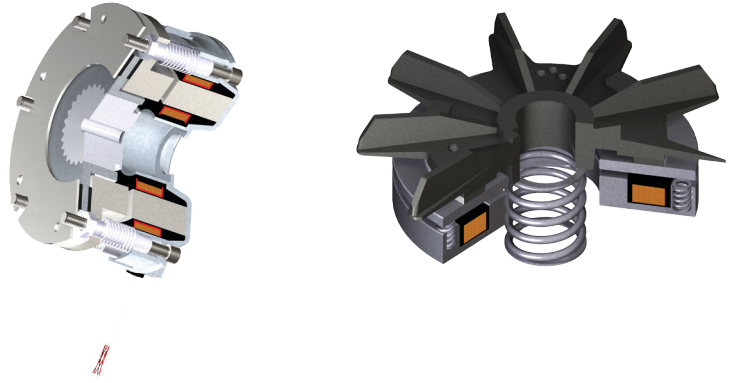
Torque range 8 N-m to 2,400 N-m



9. ELECTROMAGNETIC RELEASE SPRING APPLIED FAIL-SAFE BRAKES (D.C & A.C DESIGNS)

- # Versions for D.C or A.C Operation Voltage
- # Modular with several optional features & accessories
- # Special versions for port, explosion-proof requirements
- # Standard non-asbestos dual friction surfaces (Option, sintered friction surfaces)
- # IEC or NEMA Motor mounting ready

Rated brake torque range: 1 N-m to 1,000 N-m
(up to 6,300 N-m on request)
Outer diameter range: 60 mm to 365 mm
(up to 560 mm on request)



10. ELECTROMAGNETIC RELEASE SPRING APPLIED FAIL-SAFE HOLDING BRAKES (D.C VOLTAGE)

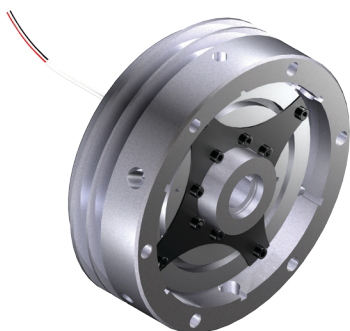
- # Low cost brake designed for holding application
- # Emergency braking capability
- # IEC or NEMA Motor mounting ready

Rated brake torque range: 0.1 N-m to 1,500 N-m
Outer Diameter range: 37 mm to 365 mm

11. PERMANENT MAGNET BRAKES & CLUTCHES

- # Dry Operation
- # Brake: Steel-Steel friction surface as standard
- # Clutch: Steel-Liner (Non-Asbestos) friction combination standard
- # Zero backlash
- # High Temperature resistant, rare-earth magnets
- # Variety of mounting and adapting options

Rated brake torque range: 0.4 N-m to 130 N-m
Outer friction diameter range: 32 mm to 160 mm



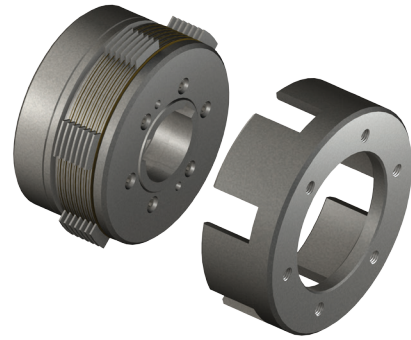
12. ELECTROMAGNETIC CLUTCHES FOR VEHICLE AIR-CONDITIONING COMPRESSORS

- # Steel-Steel friction surface
- # Optional with temperature sensor to avoid coil burn out
- # Integrated pulley
- # Pulley through magnetic circuit or pulley outside magnetic circuit options
- # All SPA & SPB Single and multi groove can be integrated

Transmitting Torque range: 120 N-m to 800 N-m

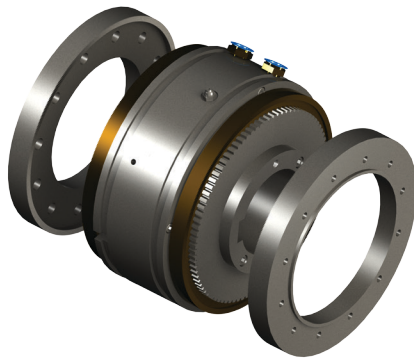
13. HYDRAULICALLY/PNEUMATICALLY OPERATED MULTI-DISC CLUTCHES & BRAKES

- # Hydraulic Actuation: Steel-Sintered Bronze friction combination
- # Pneumatic Actuation: Steel-Liner (Non Asbestos) friction combination
- # Rated dynamic torque range (Hydraulic): 100 N-m to 6,000 N-m
- # Operating hydraulic pressure: 16 to 24 bar
- # Rated dynamic torque range (Pneumatic): 60 N-m to 3750 N-m
- # Operating pneumatic pressure: 5.5 bar
- # Outer diameter range; 90 mm to 315 mm

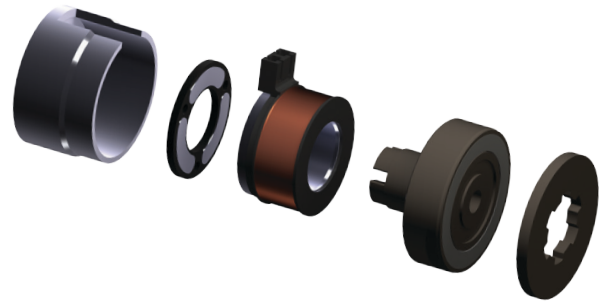


14. CUSTOM BUILT ELECTROMAGNETIC, MECHANICAL & PNEUMATIC CLUTCHES & BRAKES

- # Transmissible torque range: 0.1 N-m to 60,000 N-m
- # Outer diameter range Up to 600 mm



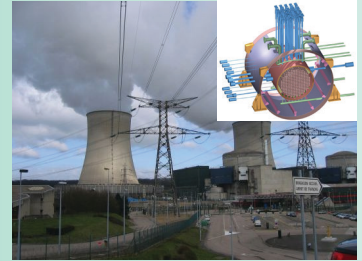
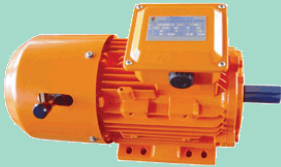
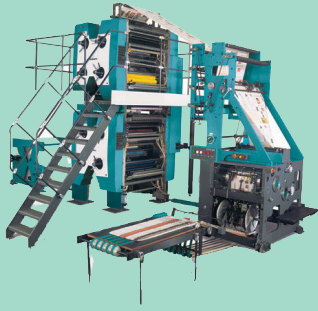
Pneumatic toothed Clutch-Clutch combination unit for tyre building M/C



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