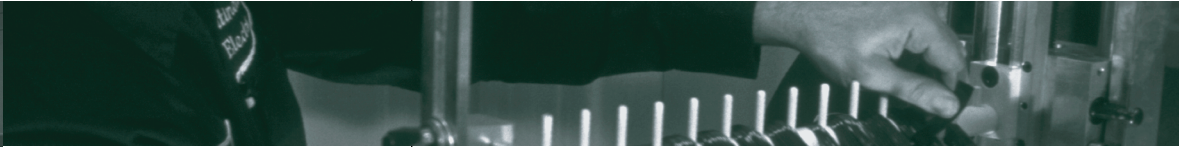
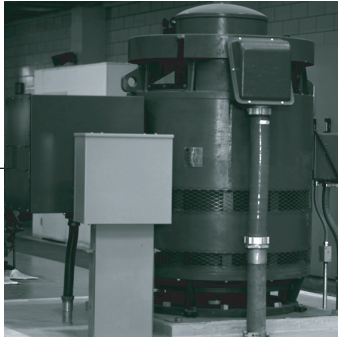


**DRIP-PROOF SPLASH-PROOF
WOUND ROTOR
HORIZONTAL AND VERTICAL
INDUCTION MOTORS**



CONTINENTAL

Custom designed



100% U.S. manufactured



Continental Electric's wound rotor induction (slip ring) motors are the perfect choice for drives requiring high, constant torque, adjustable speeds, and low starting current. With these variables, Continental Electric's wound rotor induction motors are suitable for a broad range of high-performance, heavy-duty applications. Each is fully designed and manufactured in the United States. This gives the customer greater control over the motor's final design and assembly, and assures the immediate availability of replacement parts and skilled service engineers.

Engineering advances have made Continental's wound rotor induction motors as efficient as their AC counterparts, but at a far more economical price. Each is designed to meet the appropriate standards of drip-proof and splash-proof motors*. This makes them the ideal selection for applications such as sewer and waste water treatment plants; prime movers of heavy inertial loads; smooth starting for compressors, beaters, hoists, crushers, cranes, elevators, displacement pumps, turntables and stokers; speed control for fans and centrifugal pumps; and wherever line disturbance must be minimized.

Continental's wound rotor induction motors are available in power ranges from fractional Hp to 3000 Hp, and voltages as high as 4160V. They can be produced in horizontal and vertical configurations, with all types of enclosures. Frames with separately enclosed slip-rings can also be supplied.

ENGINEERED FOR PERFORMANCE

Little things make big motors perform better. That's why Continental attends to every detail.

Quality assurance checks begin the moment components or raw materials enter our plant and continue, almost uninterrupted, until completed motors are shipped. Each motor is dynamically balanced and thoroughly tested. Vibration and noise levels are in accordance with NEMA and IEEE guidelines, or are controlled to meet your safety specifications. Certificates of Conformance accompany each motor shipped. Every effort is made to assure optimum performance with minimal repair and maintenance. It's why Continental today supports its motors with the broadest, most comprehensive product warranty in the industry.

* NEMA – National Electrical Manufacturers Association; IEEE – Institute of Electrical and Electronics Engineers; API – American Petroleum Industries; UL – Underwriters Laboratories; ANSI – American National Standards Institute; ABMA – American Bearing Manufacturers Association.

**DRIP-PROOF
SPLASH-PROOF
WOUND ROTOR
INDUCTION
MOTORS**

CONTINENTAL

1000
5000

DRIP-PROOF, SPLASH-PROOF DESIGN

- Drip proof against liquids and solids at angles from 0° to 15° from above
- Splash proof against liquids and solids at angles from 0° to 100° from below
- Weatherproof terminal boxes
- Special baffles at air entry and discharge ports
- Absolutely no sacrifice to efficiency or rating
- Cast iron and fabricated steel frame and bracket assemblies

AIR GAP

- Provides optimal mechanical clearance with high power factor
- Perfect concentricity of rotors and stators minimize noise and vibration
- Combined with small slot openings to minimize permeance pulsations.

BEARINGS

- Ball bearings are standard in all frame sizes
- Bearing combinations designed to accommodate a broad range of radial and thrust loads
- Advanced INSOCOAT bearings
- New electrically insulated technology developed by SKF
- Protects bearings against breakdown voltages up to 1000 V
- Prevents cratering caused by the passage of electrical current
- Maximizes interval between servicing and maintenance
- Provides long operating life

BRUSH HOLDERS

- Cast bronze brush holders mounted on insulated steel studs
- Grades are meticulously selected to minimize wear

CECO-SEAL

- B-Stage epoxy tape provides a sealed system for all Weather Protected I and II motors
- After curing, the tape bonds to itself, forming an abrasion resistant seal that protects against moisture, carbon black and other conductive materials

RANDOM WOUND COILS

- Random wound coils for low voltage applications
- Wound with heavy duty, high temperature, single- or double-film insulated copper magnetwires
- Housed in semi-enclosed slots insulated with high dielectric, high temperature Class 155 C slot liner, then secured with high temperature rated melamine top sticks
- Silver brazed connections
- Vacuum pressure impregnation with varnish of Class "F", solventless, non-flammable, high dielectric strength, high bonding strength
- Baked at 280° - 300° to prevent greening

FORM WOUND COILS

- For large motors where high voltages are required, or for low voltage motors with greater than 250 Hp
- Wound in loop fashion from rectangular copper wire, heavy poly-thermalize, single dacron glass, double dacron glass over single or double film coated as required
- Loops lightly taped with untreated glass tape, varnished and soft baked, then spread and insulated according to electrical engineering specifications
- Coils placed in open slots and further insulated against mechanical damage and dielectric failure
- Vacuum pressure impregnated and baked to assure solid bond between coils and iron

VARNISH

Continental uses only Class F (MIL-I-24092) varnish, even with a Class B temperature rise. The varnish is never diluted, so each dipping results in a thick protective coating.

HOUSINGS

- Heavy duty cast iron frames and bearing brackets limit vibration and noise
- Fabricated steel housings are available for unusually severe demands or special applications

MAGNETIC DENSITIES

- Controlled flux densities provide economical use of active materials without diminishing motor performance
- Steel densities in the teeth and core assure acceptable levels of saturation, and allow operation at + 10% of rated voltage without excessive iron loss.

NON-REVERSE RATCHET ASSEMBLY

- Installed when reverse rotation caused by electrical phase reversal or motorizing of the pump or other load could damage the line shaft couplings or driven equipment

ROTOR ASSEMBLY

- Designed for long life and quiet, trouble-free operation
- Oversized shafts constructed from selected high-grade steels
- Cooling provided by large, powerful fans
- Wound rotor assembly VPI and baked
- Bronze collector rings are molded with Giastic compound, and pressed on the motor shaft
- Entire rotor assembly is dynamically balanced
- Rotor output voltage designed per NEMA or system requirement.

SERVICE FACTOR

- All Continental motors are standard 1.15 service factor

SHAFT

- Engineered for high mechanical strength, low vibration, and minimal deflection
- Two pole, high speed motors with shafts milled from forgings, and containing no welds
- Stiffening-ribs in lower speed motors assure proper stiffness and high critical speed
- Uniform air flow under the rotor core and out the rotor's radial vents and stator provide uniform temperature distribution

- Shaft diameters give a large safety factor in torsional shear strength
- Dynamically balanced rotor assembly assures vibration-free operation

SLOT COMBINATION

- Minimizes magnetic noise, cusps and cogging in the motor

STATOR CORES

- Selected electrical grade, low loss silicon steel laminations maximize electrical efficiency
- Laminations secured with steel locking end-rings and full length keys
- For large motors, press flanges and individual tooth stiffeners provide additional support
- Semi-enclosed slots for smaller ratings; open slots for larger ratings
- Ground to size for uniform air gap between the core and the rotor

STATOR FRAME

- Heavy duty cast iron or fabricated steel casting assures structurally strong, torsionally rigid frame
- Frames made from heavy-section cast iron or fabricated from plates are connected with longitudinal members and a 1/4" steel outer shell
- All fabricated pieces are stress relieved for dimensional stability

TERMINAL BOXES

- Oversized terminal boxes on all Continental wound rotor induction motors
- Constructed of rugged cast iron, diagonally split for easy access
- Mounts in any of four positions.

VENTILATION

- Special air circulation systems assure cool, long-life motors with maximum performance and efficiency
- Fans are individually balanced for proper air flow and for quiet, vibration-free operation.

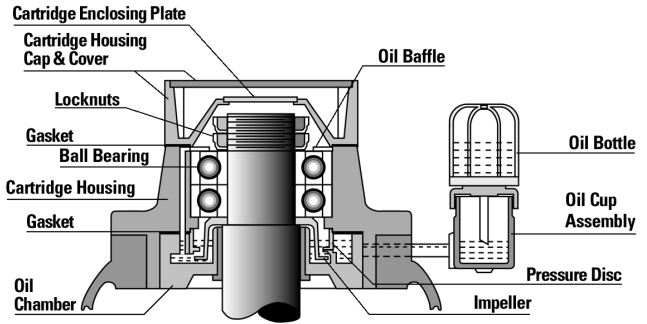
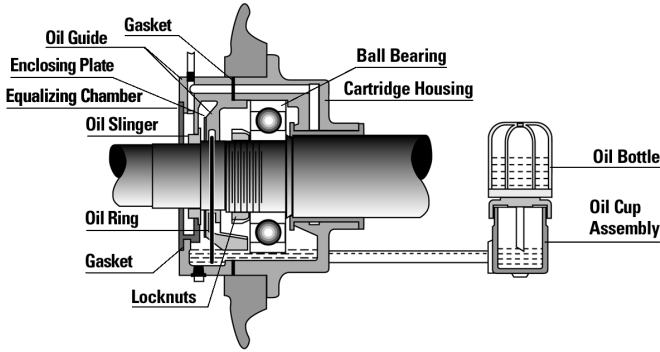
MOTOR FRAME ASSIGNMENTS

Induction Motors, Integral HP, 60Hz, 3 Phase 40C Ambient, Class F Insulation.

HP	Speed	208-575 V	2300-4160 V	HP	Speed	208-575 V	2300-4160 V	
200	3600	585	585	450	1800	686	804	
	1800	686	684		1200	806	943	
	1200	802	-		900	945	945	
	900	585	585		720	947		
	720	686	684		600	686		
	600	802	-		514	804	806	
250	1800	585	684		450	943	945	945
	1200	686				945	947	
	900	802	804		500	1800	804	804
	720	806	585			1200	806	943
	600	684	686	900		943	945	
	514	686	802	720		947	804	
450	804	806	600	804		806		
			514	943		943		
300	3600	585	586	450	945	947		
	1800	802	802	600	1800	-	804	
	1200	804	806		1200	-	806	
	900	943	-		900	-	943	
	720	585	586		720	-	945	
	600	802	802		600	-	945	
514	804	806						
350	450	-	943	700	1800	-	-	
	3600	586	686		1200	806	-	
	1800	804	806		900	943	945	
	1200	806	943	800	1800	-	-	
	900	945	-		1200	-	806	
	720	586	-		900	943	945	
600	686	804	900	1800	-	943		
514	806	806		1200	-	945		
450	943	945						
400	400	945	945	1000	1800	945		
	350	-						
	1800	684	686					
	1200	804	806					
	900	943	945					
	720	684	686					
600	804	806						
514	943	945						
450	945	945						
400								

PATENTED LUBRICATION SYSTEM

Oil ring lubrication systems are available on request, and are standard on 3600 rpm motors. Continental's patented self-contained oil lubricator is mounted on the motor shaft. There's no oil bath. Complete lubrication is accomplished with just 24 ounces of oil, as opposed to the 24 or more quarts often required by other systems. Because the impellers turn with the shaft, lubrication starts the moment the motor is started.



Horizontal Motors: Oil is carried to the top of the shaft by an oil ring. It's then guided to the inside of the outer race where it lubricates continually with fresh oil. The oil is automatically replenished from an exterior bottle while the motor is in operation. There are no contact seals to wear out. Differential air pressures are balanced or released from the motor. Changing or replenishing the lubricant can be performed while the motor is operating. When stopped, the oil drains down, covering the inside bottom of the outer race. With this proprietary oil-ring system, oil is immediately available upon restarting.

Vertical Motors: Oil-lubricated ball bearing assemblies lubricate the entire assembly. Thrust bearings can be changed on site with no special tools. All parts are interchangeable with any rating having the same sized bearings. Jack screws and tapped holes allow removal of the entire cartridge and bearings simultaneously. There are no contact seals to leak or wear out. On vertical motors with high thrust requirements, pivot shoe bearings are mounted with a vertical sleeve bearing to assure precise alignment and radial support. For medium thrust motors, spherical roller bearings can be used.

EFFICIENCY

High efficiency may be optionally available with other motor manufacturers, but it's standard with Continental. We supplied 95% efficient motors long before they became fashionable, and long before they were mandated.

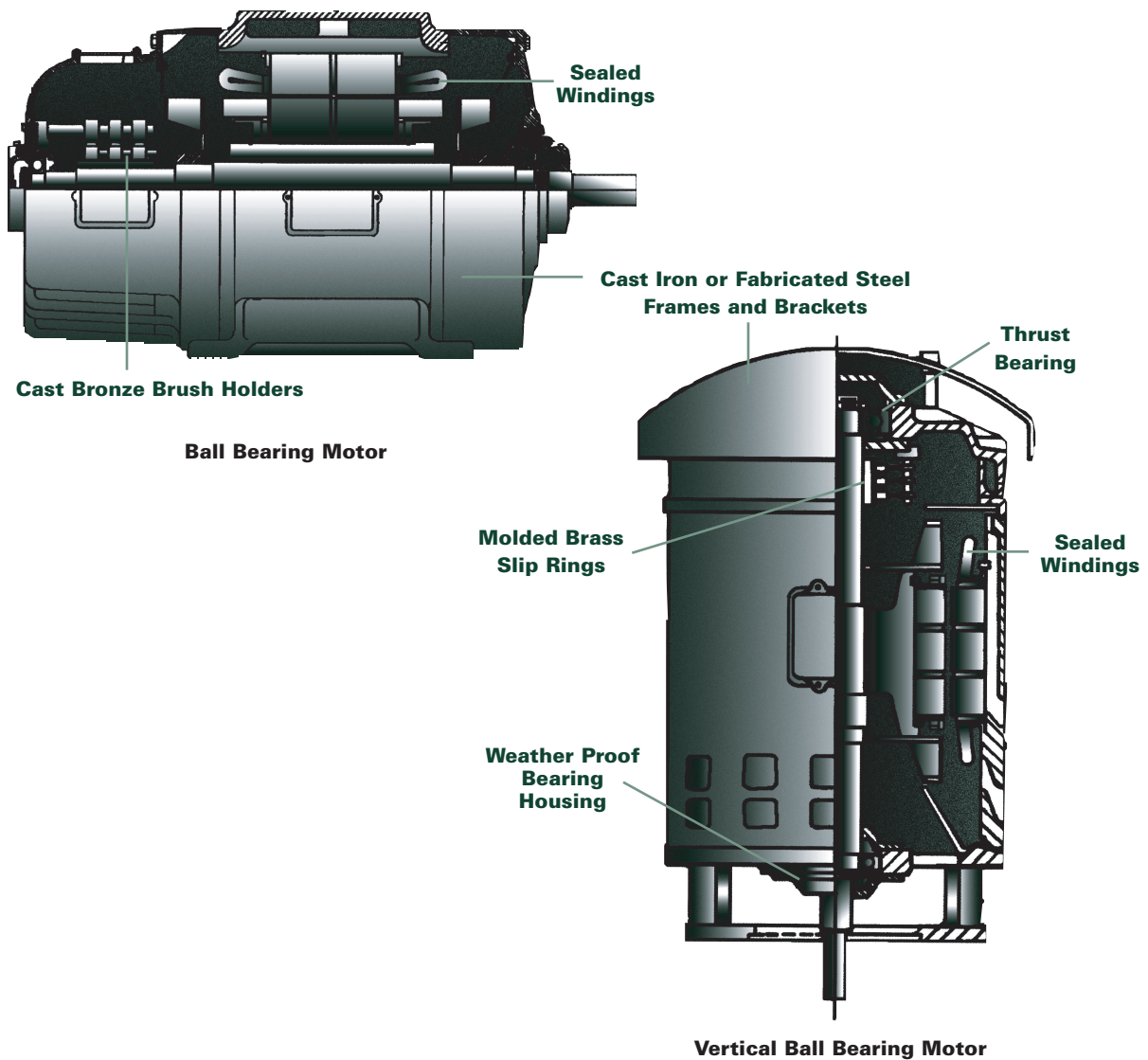
**Performance Data for Totally Enclosed Fan Cooled & Explosion Proof Squirrel Cage Induction Motors
Class "B" Temperature Rise, Nominal Efficiency, 2300 Volts, 3 Phase, 60 Hertz**

HP	FL RPM	EFFICIENCY (%)			Power Factor (%)			Current (A)		Torque			NEMA DESIGN	NEMA CODE LETTER
		FULL LOAD	3/4 LOAD	1/2 LOAD	FULL LOAD	3/4 LOAD	1/2 LOAD	@ F.L.	@ L.R.	F.L. Torque LB. FT.	@STG in % FLT	@BKD in % FLT		
800	3585	95.6	95.2	94.0	93.1	91.5	87.5	169	1250	1171	60	225	A	G
	1790	95.8	95.4	94.2	91.7	90.5	85.6	171	1250	2346	70	250	A	G
	1192	95.3	95.0	94.0	89.7	88.5	83.3	175	1125	3523	80	225	B	F
	895	94.3	93.5	91.6	83.0	78.0	68.0	193	1375	4694	90	260	A	H

**Performance Data for Drip Proof, WPI and WPII Squirrel Cage Induction Motors
Class "B" Temperature Rise, Nominal Efficiency, 2300 Volts, 3 Phase, 60 Hertz—Design B, Code F**

HP	FL RPM	EFFICIENCY (%)			Power Factor (%)			Current (A)		Torque		
		FULL LOAD	3/4 LOAD	1/2 LOAD	FULL LOAD	3/4 LOAD	1/2 LOAD	@ F.L.	@ L.R.	F.L. FT. LBS.	STG. %	BKD. %
800	3570	95.5	95.2	94.6	91.0	90.0	85.0	173	1010	1180	80	225
	1780	95.4	95.0	94.5	91.0	90.5	89.0	175	0950	2360	75	175
	1190	95.2	95.0	94.5	87.0	84.5	78.0	180	1000	3530	80	200
	890	95.2	94.9	94.0	85.0	83.0	77.0	186	1100	4720	80	200

WOUND ROTOR ODP

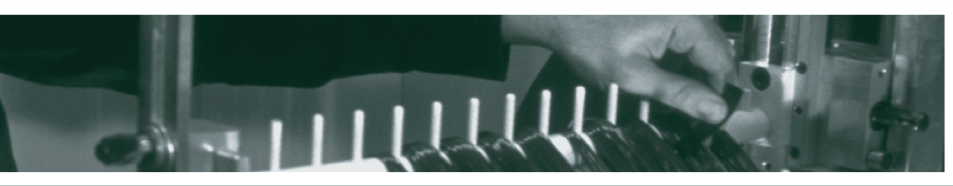


Note: All wound rotor motors are equipped with special supports to prevent centrifugal movement.

OPTIONAL FEATURES All Continental motors are available with the following:

- Surge capacitors (usually 3-pole)
- Lightning arrestors (one for each phase)
- RTDs
- Space heaters
- Thermocouples
- Thermistors
- Current differential transformers
- P.F. correction capacitors
- Vibration switches
- Zero speed switches
- Tach generators
- and others as specified.

**CONTINENTAL — FOR
90 YEARS, A
TRUSTED NAME
IN MOTOR DESIGN**



Continental is one of the oldest electric motor manufacturers in the country. The first of our motors left our plant more than 90 years ago. Since then, we've produced and installed more than 25,000 motors, and have developed an unsurpassed reputation for product quality and customer support.

In an industry characterized by imports, Continental stands apart. All our motors and components are U.S. made. This gives you added control over the design and manufacture of your motors, and assures that spare parts and expert service are never an ocean away.

For your next electric motor, call Continental. If in our library of 19,000 proven designs you can't find one that's perfect for you, we'll create a new one.



CONTINENTAL ELECTRIC MOTORS, INC.

The Workhorse of Industry

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