INTRODUCING BCP* MOTORS FROM MARATHON MOTORS

Marathon Motors "BCP" motors, equipped with grounding rings, assures successful operation with Variable Frequency Drives without sustaining bearing damage due to inverter-sourced bearing current. Our "Bearing-to-Bearing" guarantee includes bearing replacement for the duration of the standard warranty period.

Marathon Motors is pleased to announce "BCP" – Bearing Current Protection into the following standard stock product lines:

- NEMA Premium ODP, rolled steel frame
- NEMA Premium TEFC, rolled steel and cast iron frame
- NEMA Premium Explosion Proof, cast iron frame
- Blue MAX Vector Duty, cast iron frame
- NEMA Premium XRI-SD, Severe Duty
- NEMA Premium XRI-841, IEEE841
- SXT-Plus Stainless Steel Wash-Down

BCP BEARING CURRENT PROTECTION

*"BCP" (Bearing Current Protection) is a trademark of Marathon Motors.

Marathon Electric's MAX Family of AC Variable Speed Motors

Performance and Specification Comparisons

Characteristic	microMAX™	Black Max®	Blue Max®
Electrical Characteristics			
Horsepower range	1/8-10	1/4-30	1-1250
Base speed (# Poles)	4	4 and 6	2, 4, 6, 8, 10,12
Standard Voltage	230, 230/460, 575	230/460, 575	230/460, 460, 575
Insulation Class	H	F	F (select models are H)
Insulation System	CR200 magnet wire / Class H	MAX GUARD® / Class F	MAX GUARD® / Class F or H
Service Factor (inverter power)	1.0	1.0	1.0
Phase/Base Frequency	3/60	3/60	3/60
Design Code (NEMA)	A	A	A ("B" as noted)
Duty Cycle	Continuous	Continuous	Continuous
Thermal protection	None	Class F thermostats	Class F thermostats
Mechanical Characteristic			
Frame size (mounting)	56-215T	56-286T	143T-6805
Normal NEMA frame size	Yes	Yes	Yes
Enclosure	TENV & TEFC	TENV & EPNV	TENV, TEFC, TEBC, EPNV, DPFV
Frame material	Rolled Steel	Rolled Steel, Aluminum, and Cast Iron	Cast Iron
End bracket material	Aluminum	Aluminum, Cast Iron	Cast Iron
Conduit box material	Steel	Steel	Cast Iron
Fan guard material	Polypropylene	None (all ratings TENV)	Cast Iron
Fan material	Polypropylene	None (all ratings TENV)	Polypropylene
Severe Duty option	No	No	Yes
Lead termination	Terminal block (3 lead TENV) Conduit box (all others)	Conduit box	Conduit box
Standard mounting (stock)	C-Face with Rigid Base and C-Face Round Body	C-Face with Rigid Base	C-Face with Rigid Base (1-100 HP) Rigid base (TEFC and over 100 HP)
Drive end shaft slinger	No	No	Yes
Paint	Black (powder-coat or enamel)	Black (powder-coat or enamel)	Blue (powder-coat or enamel)
Bearings	Ball (C3 fit)	Ball (C3 fit)	Ball (C3 fit); 445T-up Roller
Grease	Mobil POLYREX EM	Mobil POLYREX EM	Mobil POLYREX EM
Standard conduit box assembly position	F3	F1, reversible to F2 (except 56/140 frame steel)	F1, reversible to F2 (F3 available on build-up)
Performance Characteristics			
Constant Torque speed range	20:1 (TEFC), 1000:1 (TENV)	1000:1 (TENV)	2000:1 (all enclosures) TEFC: 20:1 on V/H drives
Constant Horsepower speed range	2:1 (90-120 Hz intermittent)	2:1 (90-120 Hz intermittent)	1.5:1-4:1
Temperature rise	B	F	F (TENV & TEFC) B (TEBC)
Encoder provisions (stock motors)	No	Yes	Yes
High Breakdown Torque	Yes	Yes	Yes
Other Characteristics			
Agency listings	UL Recognized, CSA Certified, CE	UL Recognized, CSA Certified, CE	UL Recognized, CSA Certified, CE
Warranty	3 years	3 years	3 years

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Variable Speed Motors

SB526

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FOR YOUR TOUGHEST APPLICATIONS

VARIABLE SPEED MOTORS

marathon™ Motors

microMAX™ INVERTER DUTY

1000:1 CT & 20:1 CT

- Designed to replace PMDC, variable, or fixed speed systems.
- 1/8 HP to 10 HP, 1800 RPM, TENV & TEFC, 230 Volt, 230/460 Volt, or 575 Volt.
- TENV rated for 1000:1 Constant torque (0 to base speed).
- TEFC rated for 20:1 Constant torque.
- Cost effective designs available as C-Face, C-Face with rigid base and C-Face with removable rigid base.
- Class H insulation with CR^{200} corona resistant magnet wire.
- UL, CSA, CE
- No encoder provisions

BLACK MAX® VECTOR DUTY

1000:1 CT

- Designed for high performance applications utilizing Closed- or Open-Loop Vector controls or Volts/Hertz drives.
- Stock through 30 HP, 1800 RPM, and 10 HP, 1200 RPM, 230/460 Volt or 575 Volt, TENV.
- Constant torque operation from 0 to base speed on vector drive.
- Lightweight versatile design with encoder and brake provisions included on opposite drive end.
- MAX GUARD® Class F insulation system.
- UL, CSA, CE

BLACK MAX® EXPLOSION PROOF

1000:1 CT

- Designed for hazardous locations Class I Groups C & D, Class II Groups F & G.
- Stock ratings available from 1/4 HP through 1 HP, 1800 RPM, 230/460 Volt, C-Face with rigid base.
- Constant torque operation from 0 to base speed on vector drive.
- Top mounted (F3) conduit box included (shipped loose).
- MAX GUARD® Class F insulation system.
- Class F normally closed thermostats.
- No encoder provisions

BLUE MAX® 2000 VECTOR DUTY

2000:1 CT

- Designed for VFD applications requiring full rated torque at 0 speed using Closed- or Open-Loop (Sensorless) Vector controls.
- 1 HP through 350 HP, 1800 RPM in stock, 230/460 Volt and 460 Volt, C-Face with rigid base (through 100 HP).
- Cast iron frame and brackets for harsh environments and minimal vibration.
- Encoder provisions on all stock ratings.
- Patented "fracket" design provides more options.
- MAX GUARD® Class H insulation system.
- UL, CSA, CE

BLUE MAX® 2000 EXPLOSION PROOF

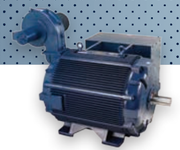
2000:1 CT

- Designed for industrial applications in hazardous locations, Class I Groups C & D, Class II Groups F & G, that require precise speed control.
- 1 HP through 20 HP, 1800 RPM, 230/460 Volt, C-Face with rigid base.
- Capability of building ratings up to 150 HP.
- Cast iron frame and brackets for dirty, dusty or caustic environments.
- BEI H38 Encoder, 1024 ppr on stock ratings, other encoders available on factory build-ups.
- MAX GUARD® Class F insulation system.

BLUE MAX® 2000 BRAKEMOTORS

2000:1 CT

- Similar industrial design as the Blue Max® 2000 motor only featured with a brake for temporary slow down and holding.
- Stock ratings from 1 HP through 20 HP, 1800 RPM, 230/460 volt, C-face with rigid base.
- Constant torque operation from 0 to base speed on vector drive.
- Cast iron frame and brackets for dirty, dusty or caustic environments.
- MAX GUARD® Class F insulation system.
- Build-up ratings through 200 HP with brakes up to 1000 lb-ft.



BLUE MAX® 2000 DRIPPROOF FORCE VENTILATED

2000:1 CT

- Durable Blue Max® 2000 design, precise speed and torque regulation.
- 30 HP through 1250 HP, factory build-up capabilities.
- Cast iron frame and brackets for industrial durability.
- Constant torque operation from 0 to base speed on vector drive.
- Numerous encoder options and configurations
- MAX GUARD® Class F insulation system.

BLUE MAX® 2000 WIDE CONSTANT HORSEPOWER

2000:1 CT

- Available in TEBC, TENV, and DPFV Blue Max® enclosures.
- Totally Enclosed from 5 HP through 350 HP and Dripproof from 25 HP through 450 HP.
- Up to 4 times base speed, constant horsepower ("field weakening" mode).
- One minute overload at 150% of rated torque below base speed.
- 125% overload capability to maximum constant HP RPM.
- MAX GUARD® Class F insulation system.
- Class F normally closed thermostats.

BLUE CHIP® SEVERE DUTY EXPLOSION PROOF

2:1 CT to 10:1 CT

- Cast iron construction, 1 HP through 350 HP, UL Listed.
- Class I Groups C & D, Class II Groups F & G, Temperature code T3B.
- Motor nameplate has Variable & Constant torque capability for use with any PWM Drive.
- 1.15 Service factor on sinewave, 1.0 Service factor on VFD power.
- CR^{200} corona resistant magnet wire.
- Meets IEEE45 USCG Marine Duty specifications.
- IP54 Construction.

BLUE CHIP XRI® SEVERE DUTY & IEEE841

Up to 20:1 CT

- 100% cast iron construction, 3/4 HP through 600 HP.
- Capable of Variable torque and Constant torque.
- 1.15 Service factor on sinewave, 1.0 Service factor on VFD power.
- NEMA Design B provides limited in-rush current when by-passing the VFD.
- Internal and external epoxy coatings.
- MAX GUARD® Class F insulation system.
- Meets IEEE45 USCG Marine Duty Specifications.
- IP54 Construction on XRI Severe Duty and IP56 Construction on IEEE841.

WASHDOWN POWERWASH™

2:1 CT to 1000:1 CT

- USDA-approved white epoxy paint, 1/4 HP through 15 HP.
- 100% stainless steel single and three phase designs available, 1/2 HP through 10 HP.
- Capable of 10:1 Variable torque and up to 1000:1 Constant torque on select ratings.
- 1.15 Service factor on sinewave, 1.0 Service factor on VFD power.
- Internal corrosion resistant coatings on frame, base, endshields, rotor and stator.
- MAX GUARD® Class F insulation system.
- IP55 Construction and IP65 on Powerwash Extreme.

IEC GLOBETROTTER®

Up to 20:1 CT

- Aluminum construction 63-90 frame, cast iron construction 100-315 frame.
- Capable of 10:1 Variable torque, and up to 20:1 Constant torque on select ratings.
- Meets IEC 34 and IEC 72 standards.
- Design N with NEMA design B torques.
- B3 Mounting (rigid base) in stock; B3/B5 or B3/B14 mountings available.
- MAX GUARD® Class F insulation system.
- IP55 Construction.

APPLICATIONS

- Machine Tools
- Conveyors
- Packaging Equipment
- Batching Machines
- Printing Equipment
- Stair Lifts

- Material Handling
- Machine Tools
- Conveyors
- Crane and Hoist
- Metal Processing
- Pumps
- Packaging Equipment
- Test Stands

- Machine Tools
- Conveyors
- Crane and Hoist
- Packaging Equipment

- Process Lines
- Chemical Plants
- Paper Mills
- Conveyors
- Crane and Hoist

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- Center Winders
- Tension Reels
- Uncoilers
- Recoilers
- Scrap Choppers
- Slitters

- Center Winders
- Payoff and Tension Reels
- Uncoilers
- Recoilers
- Scrap Choppers
- Slitters

- Fans and Blowers
- Pumps
- Compressors
- Machine Tools
- Conveyors

- Refineries
- Food Processing
- Mines
- Foundries
- Chemical Plants
- Paper Making
- Marine Duty
- Automotive Plants

- Dairies
- Beverage Plants
- Food Processing
- Slaughter Houses
- Bakeries
- Pharmaceutical Plants
- Car Washes

- Machine Tools
- Textile Machinery
- Conveyors
- Pumps
- Blowers