

TOSHIBA

3 Phase Low Voltage Motors



Premium Performance & Quality By Design

10 Compelling Reasons To Use

Nowhere is Toshiba's commitment to quality design and manufacturing more evident than in our extensive line of extreme duty motors. They're simply the most reliable and performance-driven in the industry. Each one is engineered, manufactured and tested to ISO 9001 certification standards—ensuring the most technically advanced, highest quality products available.

1. High Torque:



Low Voltage Motors

By utilizing double-cage, die cast aluminum bar rotors, Toshiba motors develop high locked rotor and breakdown torque. We offer the highest overall locked rotor torque to locked rotor current ratio in the industry. Even with a 10% voltage drop, our motors exceed NEMA Design B minimum locked rotor torque requirements. In fact, most of our "off the shelf" standard and premium efficiency motors meet NEMA Design C torque requirements which eliminates the need for a special order motor.



Standard
Double-Build

Class H Magnet Wire

Premium QS

2. Improved Insulation System:

We offer Class F insulation as standard. This insulation utilizes Class H varnish over high build Class H magnet wire to achieve superior dielectric strength and long thermal life. Fully laced coils with phase separators are standard on 143T frame and up.

3. Precision Rotor Balance:

A maximum allowable vibration level of 0.10 inch per second allows for smoother and quieter operation, resulting in longer motor life. Our precision balance helps to lower bearing temperature rise, bearing wear, and the risk of down time due to bearing failure.

Precision Rotor Balance



Toshiba Low Voltage Motors:

4. Low Temperature Rise:

Class B temperature rise maximum at rated load provides an increased thermal safety factor for longer insulation, grease, and bearing life. All 1.15 service factor low voltage motors are suitable for 1.0 service factor operation at elevations up to 9,000 feet. The inherent low temperature rises and high torque also allow many of our motors to be re-nameplated for 50 hz operation.

5. Oversized Bearings:



The L-10 life of a bearing varies approximately as the cube of the load on the bearing. Toshiba motors have substantially oversized bearings. This increases the load capacity and bearing life of the motor.



6. Multiple Starting Methods:

Our motor designs with multiple leads allow for a variety of starting methods. 12 lead, dual voltage motors are suitable for Across the Line starting, Wye-Delta starting, and Part Winding Starting (on low voltage only). Multiple leads allow for motor usage on 208, 230, or 460 volt systems.

Delta-Connected Dual Voltage (230/460 V)-12 Leads

POLE	ODP	TEFC & EXP
2P	10HP-250HP	7.5 HP-150HP
4P	7.5 HP-200HP	7.5 HP-150HP
6P	7.5 HP-125HP	7.5 HP-125HP
8P	7.5 HP-100HP	7.5 HP-100HP

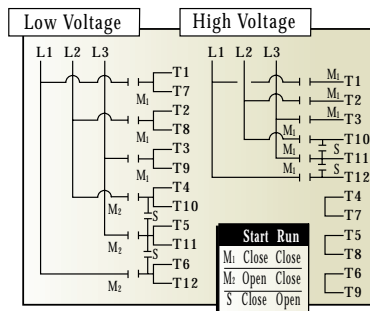
Across the Line Starting

Low Voltage	High Voltage
T4 T9 T6	T4 T9 T6
T8 T5 T7	T8-T5 T7
T10 T11 T12	T10 T11 T12
T2 T3 T1	T2 T3 T1
LINE	LINE

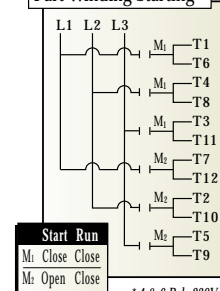


Hand-Wound Craftsmanship

Wye Start Delta Run



Part Winding Starting*



* 4 & 6 Pole 230V

G3 Inverter



7. Inverter Compatible:

Toshiba EQP III motors have been designed for use with adjustable speed drives. Low temperature rises, upgraded insulation systems (NEMA MG1 part 31), improved magnet wire, and proper application support are required for the reliable use of motors with PWM inverters. Toshiba motors and adjustable speed drives are all manufactured under the same roof, with careful engineering, coordination, and testing to ensure total system compatibility.



EQP III Motor

8. Quick Delivery:

We stock three phase, A-C motors ranging from 3/4 hp to 800 hp and keep approximately \$14-16 million in motor inventory at all times. We also offer many modifications of standard stock motors through our Quick Mod Program with a turnaround time ranging from 2 to 4 weeks. We can also design, build, and ship custom motors in 8 weeks after placement of order in most cases. Two and four week "Quick Ship" programs (known as the Toshiba 10 and Toshiba 20) for special production motors are available on a special approval basis. These programs allow our customers to meet the tightest of delivery schedules.



Toshiba's Abundant Stock



Toshiba "Quick Mod" Program

**Cast Iron
Frames**



9. Rugged Cast Iron Construction:

Our cast iron frames and end brackets are machined to exacting tolerances to ensure accurate alignment and fit. Cast iron construction also offers excellent corrosion resistance, structural rigidity, and better bearing alignment (concentricity) than other conventional materials.

10. Made in Houston:

Toshiba motors are engineered, manufactured, and tested at our facility in Houston, Texas. Our 550,000 sq. ft. state-of-the-art manufacturing facility is also ISO 9001 certified. We are proud to be one of the few motor manufacturers who start with raw materials and make finished products here in the North America.



**Toshiba's
Progressive
Line**

S O L U T I O N S

T H E
P O W E R
O F O N E



T H E P O W E R O F

The Toshiba Team delivers "The Power of One." This simply means that from one plant and one resource, our customers are able to receive one solution.

Together, we offer our customers the benefits of cooperative engineering and years of manufacturing expertise. We design, develop, test and create solutions for virtually any industrial application. We are better able to deliver superior technology, quality and total product compatibility than anyone else in the industrial marketplace.

So whether your requirements are for motors, controls, adjustable speed drives, uninterruptible power systems, switchgear, programmable logic controllers, cartesian robots or instrumentation, you can count on Toshiba!

Low Voltage Motor Group

Toshiba International Corporation is recognized worldwide as a leader in low voltage electric motors. The company first introduced Toshiba motors in the U.S. in 1970. In 1977, Toshiba's manufacturing facility was established in Houston, Texas. Today, Toshiba motors are designed, manufactured and tested at our Houston facility which is ISO 9001 certified and considered to be one of the most advanced production plants in the country. Products are comprised of nearly 100% domestic materials and parts enabling Toshiba to provide superior response times to meet customer needs.

Toshiba's Houston Motor Plant production capabilities have been expanded to include the following:

1-600HP (2,4 & 6 pole), ODP and TEFC enclosures; 230/460 & 575V. Explosion proof motors are also available in 143T-447TZ frames which are suitable for the following hazardous locations: Class 1, Group D; Class II, Groups E, F & G.

TOSHIBA - Quality by design

From raw material to finished product, customers are assured of exacting quality engineering excellence and stringent testing to meet international performance standards. Our team delivers "The Power of One."

Product Warranty

Toshiba offers a comprehensive warranty program on its full line of industrial products. Consult your salesperson or the factory for specific information.

Need to know more?

Be sure to visit our web site located at www.tic.toshiba.com for the latest information on Toshiba products.

Customer Support Services

Toshiba offers 24 hour service nationwide. For assistance of any type, call: **1-800-231-1412.**



Medium Voltage Motors



G3 Adjustable Speed Drive



JK Starter



UPS Rack Mount

ADJUSTABLE SPEED DRIVES • CONTROLS • SWITCHGEAR • UPS • MOTORS • PLC • INSTRUMENTATION

TOSHIBA

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