

TOSHIBA

Industrial Products



Mining Solutions



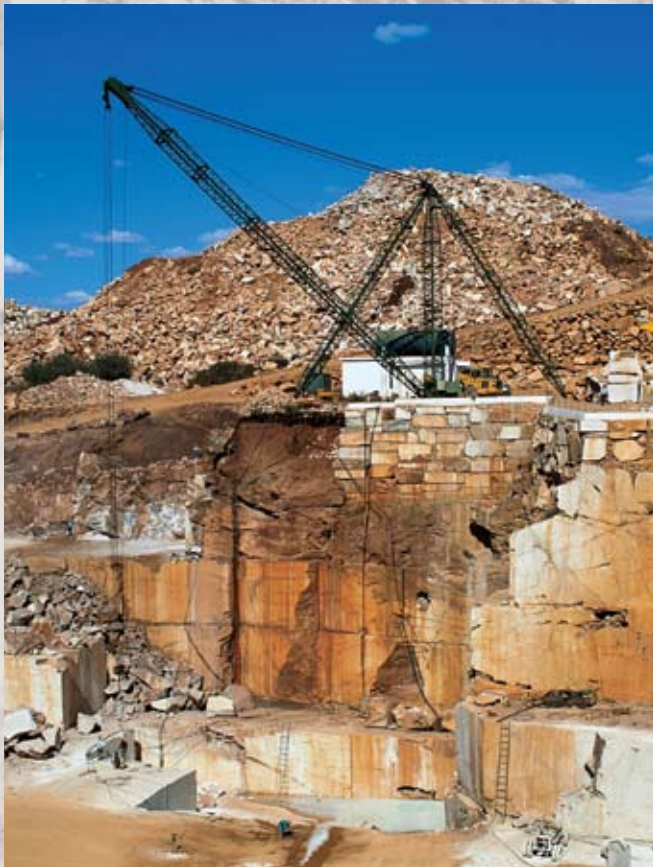
We **OUT-TOUGH**

The Industry

TOSHIBA

Leading Innovation >>>

Toshiba International Corporation is a world leader in the design and manufacture of motors, adjustable speeds drives, motor controls, uninterruptible power systems, and others. Toshiba's proud tradition of quality, innovation, reliability, and a commitment to customer service takes tough to a whole new level.



Toshiba products are monsters in performance that withstand the test of time and are designed to be easy, user-friendly replacements for older equipment. Even with the diversity of applications in the mining industry, our expansive product range allows you to look to Toshiba as the single provider for your many mining solutions. We set a new standard for extreme duty, allowing our products to out-tough even the mining industry.

Adjustable Speed Drive Solutions

AS1

The AS1 low voltage adjustable speed drive builds on Toshiba's history of supplying tough, reliable, and versatile drives. With its outdoor enclosure options, it can be quickly and easily installed in hot mining environments and operate in temperatures up to 50°C without derating. It is a great fit for any motor control center room as it can be applied to virtually any mining application requiring a drive. Its sealed cabinet design, motor-over-flux-braking technology, and new PID algorithm make it ideal for maintaining flow rates on pump and fan applications traditionally used in mining.

- Integrator/MCC-Friendly
- Heat Sink Out-the-Back Capable
- SS Overload Protection
- Adjustable Acceleration/Deceleration
- Adjustable Carrier Frequency
- Flying Start
- Power Ride-Through
- Preset Speeds
- Pattern Run
- Output Frequency 0.01 to 500 Hz
- PID Control
- Encoder Feedback
- My Function Logic Feature
- 50°C Ambient



G9

The G9 low voltage adjustable speed drive is the most advanced severe duty drive ever offered by Toshiba. The drive's flexibility and ability to handle even the toughest mining jobs make it a great fit for the mining industry's diverse needs. It is a blend of a robust power platform and a state-of-the-art control scheme. With the highest standard overload rating in the industry on a drive, at 115% continuous, and dual 32-bit processor controls, the G9 provides the ability to operate the toughest mining applications while still maintaining a high level of control. Its 1.15 service factor, standard IGBT7, startup wizard, and advanced monitoring capabilities allow for easy startup and support.

- SS Overload Protection
- Adjustable Acceleration/Deceleration
- Adjustable Carrier Frequency
- Flying Start
- Power Ride-Through
- Preset Speeds
- Output Frequency 0.01 to 299 Hz
- Pattern Run
- Encoder Feedback
- My Function Logic Feature
- Startup Wizard
- Full-English LCD Display
- Real-Time Clock
- PID Control



HX7 Plus Pack

The HX7 Plus Pack low voltage adjustable speed drive is a solid-state PWM AC drive ranging from 66 to 1500 KVA that is built to withstand the harshest conditions. Designed for outdoor and indoor applications, it is equipped with Toshiba's cutting edge vector control algorithm. This enables motors to develop high starting torque and compensates for motor slip. With its advanced features, the HX7 Plus Pack is ideal for crusher, conveyor, pump, and fan applications. The HX7 Plus Pack is available in NEMA 3R packages for ambients of 50°C. It eliminates maintenance issues associated with coolant-based units and prevents outside air exchange with inside air, making this drive suitable for harsh mining applications requiring unparalleled motor control and rugged reliability.

- Outdoor and Indoor Applications (NEMA 3R and NEMA 1)
- Open and Closed-Loop Speed Control
- 50°C Ambient
- Accurate Speed Control Requiring Little Programming
- Powerful, User-Friendly Operator Interface
- Full-English Back-Lit LCD Display
- User-Friendly PC Software for Monitoring and Programming
- Communication Options Include: Ethernet, DeviceNet, Profibus DP, Modbus RTU and Others



T300MVi

The T300MVi medium voltage adjustable speed drive is one of Toshiba's most advanced drives. It offers a PWM five-level design, which allows for a small footprint, reduced component count, and ultimately a lower cost of ownership, making this drive ideal for the mining industry. The T300MVi also offers a control circuit topology which provides higher performance than competitors' models while using fewer parts for ease of maintenance. The T300MVi can be retrofit into any mining installation using the existing motors and is compatible with all power systems. In addition, it incorporates the latest safety technology, making it one of the toughest but safest designs on the market.

- Small Footprint
- Reduced Component Count
- IEEE-519 1992 Compliant with 24-Pulse Harmonic Cancellation
- Additive Pulse-Width Modulated Output Voltage with No Neutral Shift
- May be Used with Standard Motors
- Ten-Year Mean Time Between Failures



MTX NEMA 3R

Toshiba's MTX NEMA 3R outdoor medium voltage adjustable speed drive is the world's first ASD specifically designed for outdoor mounting in remote applications or applications where a building does not exist. The MTX is ideal for the mining industry as it is the toughest product Toshiba manufactures. This product also allows for multiple-motor operation as needed by conveyor mining applications. The new topology is a logical progression of the proven T300MVi design in a UL raintight enclosure. Additionally, users achieve a lower cost of ownership with the MTX because the need for heat removal from a building-based drive is eliminated.

- Innovative Design for Use in the Desert, Jungle, or Anywhere in Between
- 4160 V at 500, 1000, and 3000 HP
- NEMA 3R/UL Raintight Enclosure Ratings
- 50°C Ambient Rating
- IEEE-519 Compliant/36-Pulse Harmonic Cancellation
- Additive PWM Output Allows Use with Standard / Existing Motors
- Neutral Point Clamp Eliminates Common Mode Voltage



Motor Solutions

Dura-Bull TX

Toshiba's new Dura-Bull TX medium voltage totally enclosed fan-cooled motor series is designed and manufactured in Texas. Its rugged total cast iron construction, high torque/high efficiency performance, and unique multi-mount capability makes it the perfect choice for tough applications such as mining, where reliability and durability are essential to minimizing down time and maximizing production. It is available in high torque designs for crusher, mill, and conveyor applications. The Dura-Bull TX uses heavy duty paint and offers IP55 protection with labyrinth seal for protection against dirt, dust, and particles.

- Offering Potentially 200 to 2000 HP
- Extreme Performance, Multiple-Mount, and Low Maintenance
- Motor and Starter/Drive Combinations (Smooth Start)
- Sleeve Bearing and Copper Bar Rotor Capability
- Side-Ventilated Cast Iron Fan Covers Allow Installation in Tight Spots where Traditional End-Ventilated May Restrict Cooling
- Low Temperature, Low Vibration Design
- Oversized Cast Iron Main Terminal Box with F1, F2, or Top-Mount Capability
- Multi-Functional Cast Iron Auxiliary Terminal Box Configuration
- Oversized, Same Diameter Bearings on Both Ends for Extended Life
- Vertical Jacking Screws and Four-Position Dowel Holes for Easy Alignment



EQPIII-840

The EQPIII-840 low voltage motor series is Toshiba's toughest low voltage motor product. This line was built using the cornerstone of the Toshiba motor product offering as a base and is designed for the harshest mining environments where premium performance and reliability are a must. It carries an impressive 20 to 1 constant torque, which is critical in conveyor mining applications. In addition the EQPIII-840 includes oversized bearings, IP55 protection, a Class insulation system, and a NEMA Premium® design. These motors are built to meet or exceed IEEE standard 840 specifications, feature a labyrinth seal on both DE and ODE, and are backed up with a five-year warranty.

- All Cast Iron Construction Including Frame, Conduit Box, and Fan Cover Guard
- Totally Enclosed Fan Cooled
- Vibration Levels Typically 0.04 Inches/Second or Less
- NEMA Premium® Efficiency
- 20:1 Constant Torque (1 to 200 HP, 1800 & 1200 RPM)
- 3/4 to 300 HP, 460 or 575 V
- 3600, 1800, 1200, or 900 RPM
- 143T through N449T
- IP55 Protection
- Test Report with Motor



Motor Control Solutions

JKSSS

Toshiba's JKSSS motor starter series is designed to softly start and stop AC motors in any fixed speed application regardless of power condition, load weight, and the extremity of its environment. In fact, rated at 500% for 60 seconds, the JKSSS is one of the toughest and highest rated devices in current-carrying capacity, making it a great fit for any mining application using motors, such as conveyors or pumps. The JKSSS line provides maximum protection with true thermal modeling, while allowing smooth, stepless control of acceleration and deceleration.

- One or Two-High Design on FVNR or Feeder Design, No Internal Power Cables
- Streamlined, Space Saving 30" Wide Design
- Isolation Switch with Visible Disconnect
- Includes: Safety Interlock Grounded in Open Position, Patented Bolted Pressure-Isolation Switch Connections, Zero-Insertion Pressure for Increased Life, and Low Resistance Connection for Decreased Heat Loss
- Separate Medium and Low Voltage Compartments
- Toshiba Vacuum Contactors, 400 and 720 A (U.S. Manufactured)
- Current Limiting, High Interrupting Power Fuses
- cUL and UL Listings



Instrumentation Solutions

GF630PV

Toshiba's electromagnetic flowmeter, the GF630PV, is built with Toshiba's reputation for high quality, durability, and reliability and is superb in measuring the flow of conductive fluids in the mining industry. The GF630PV features a detector with a 40-year MTBF rating using military specification (MIL-HDK-217F) standards. The multi-sampling technique employed in the measurement circuit is well suited for slurries found in mining applications. This helps in the elimination of mechanical noise resulting from solid material bouncing off the electrodes. It also offers a polyurethane lining for use in abrasive mining environments, making it possible to measure fluid in almost any mining application.

- Divided Multi-Sampling System Provides Reliable and Accurate Measurement
- Unique Noise-Suppression Technology Reduces Chemical Noise
- High-Purity Alumina Ceramic Measurement Tube Eliminates Problems with Fluid Measurement Under Adverse Conditions
- Magnetic Field Distribution Technique and Reduced Component Count Increase Flowmeter Efficiency and Reliability
- NIST-Traceable Built-In Field Calibration



TOSHIBA INTERNATIONAL CORPORATION



North American Headquarters and Manufacturing Facility (Houston, TX)

TOSHIBA – Quality by Design

Toshiba's culture and history are strongly rooted in quality. Our designs are technologically innovative, and our products are manufactured from start to end using only the highest quality domestic and foreign parts.

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 website located at www.toshiba.com/ind for the latest information on Toshiba products and services.

Customer Support Services

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



MOTORS ADJUSTABLE SPEED DRIVES CONTROLS UPS INSTRUMENTATION PLC

TOSHIBA

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