TOSHIBA

TOSHIBA INTERNATIONAL CORPORATION

LOW VOLTAGE MOTORS

EQP Global® Motor Series

GENERAL PURPOSE

EFFICIENCY, QUALITY & PERFORMANCE - EQP

The EQP Global® motor series is Toshiba's flagship NEMA Premium® product designed for general purpose industrial applications. The series is engineered with high quality materials, providing superior performance and durability for the most severe conditions.

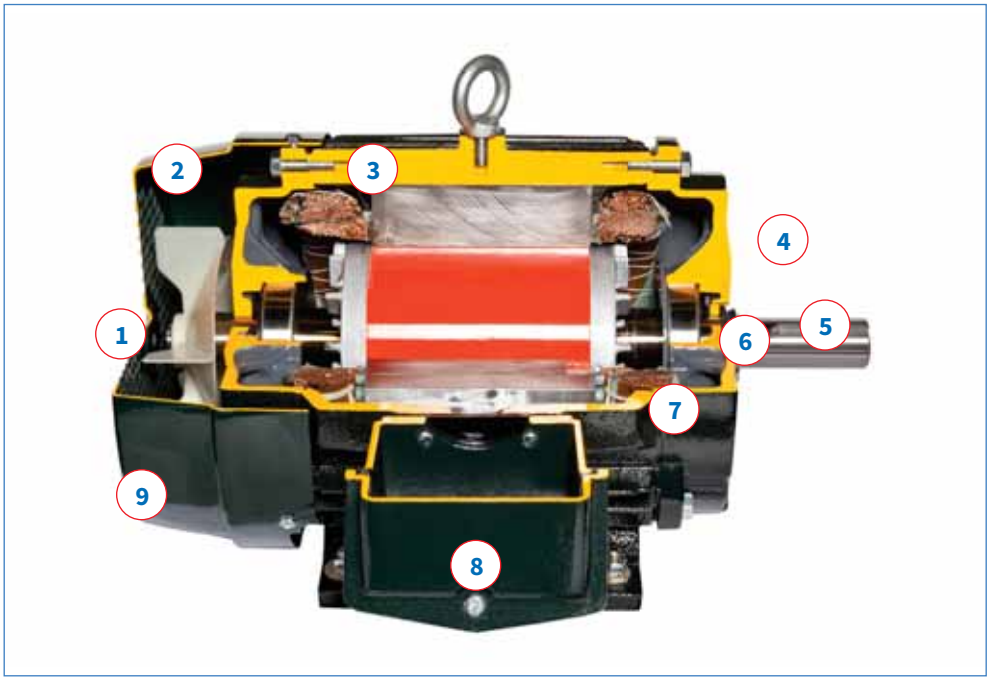
EQP Global SD

EQP Global 840

EQP Global 841

Oversized Bearings	The majority of motor failures are bearing-related. Toshiba uses over-sized, 300 series bearings on both the drive end and non-drive end. Oversized bearings allow the EQP Global series motors to last up to ten times longer than motors built with smaller bearings.
Low Vibration	The EQP Global series exceeds applicable NEMA® vibration limits, which preserves the mechanical integrity of the motor and bearings, extending the life of the motor.
Heavy Duty Construction	The EQP Global series has a robust cast iron design to increase stability and eliminate common mechanical failures. The durable construction includes increased ribbing in the end bells, maximum surface area at connection points, and deep bearing pockets.
Insulation with Wide Thermal Capability	By incorporating Class H insulation materials in its winding designs, the EQP Global series motors have increased thermal protection. Additionally, these motors operate with very low temperature rise at rated conditions, giving them a wide thermal margin and extended motor life. The life of the insulation doubles for every 10 degrees run below the insulation rating.
C-5 Rated Inter-Lamination Material	The EQP Global series uses C5-rated thermal materials on its stator and rotor laminations, that can withstand burnout temperatures over 1000°F. The C5-rated thermal materials provide increased thermal efficiencies and excellent rewind ability characteristics.
High Torque Output	The EQP Global series motors meet or exceed NEMA® Design B torque levels. High torque designs prevent motors from stalling under heavy loaded applications and electrical problems such as voltage sags.
Optimized for Adjustable Speed Drive (ASD) Use	When a motor is run on an ASD, its windings need to be able to withstand sharp voltage spikes coming from the ASD. These spikes can cause winding damage to under-protected motors. The EQP Global series motors have capability to withstand 2000 V in 0.1 µs spikes, protecting them against harm from ASDs causing other motors to fail.

EQP GLOBAL MOTOR SERIES



1. Fan Cover

2. Corrosion-Resistant Non-Sparking Conductive Nylon Plastic Fan

3. Class F Insulation System Utilizing Class H Varnish and Magnet Wire

4. Cast Iron Bearing Brackets

5. V-Ring Seals to Prevent Contaminants

6. Heavy Duty Anti-Friction 300 Series Bearings

7. Inner Locking Plate or Bearing Cap

8. Cast Iron Terminal Box

9. Corrosion-Resistant Severe Duty Paint System

100% QUALITY TEST

Toshiba performs a factory routine test per NEMA® MG1 on every single EQP Global motor it manufactures with every such motor going through rigorous quality checks.

PACKAGE DEALS

In addition to manufacturing high quality motors, Toshiba manufactures high quality ASDs and motor starters. If an ASD or starter is purchased as part of a motor/drive or motor/starter package, the warranty period is extended to meet the standard motor warranty of three years.

WARRANTY

- EQP Global SD & 840 - 36 Months
- EQP Global 841 - 60 Months

INDUSTRIES SERVED

- Oil & Gas
- HVAC
- Chemical
- Pulp & Paper
- Power Generation
- Mining & Minerals
- Agriculture
- Water & Wastewater

APPLICATIONS

- Compressors
- Conveyors
- Pumps
- Fans
- Mixers
- Material Handling

GENERAL PURPOSE - EQP GLOBAL MOTOR SERIES COMPARISON

	EQP GLOBAL® SD	EQP GLOBAL® 840	EQP GLOBAL® 841	IEEE 841-2009
GENERAL				
Horsepower	0.5 - 800 HP	0.75 - 500 HP	0.75 - 400 HP	1 - 500 HP
Speed (60 Hz)	3600, 1800, 1200 or 900 RPM			
Speed (50 Hz)	3000, 1500, 1000 or 750 RPM		N/A	3000, 1500, 1000 or 750 RPM
Voltage (60 Hz)	230/460, 460 or 575 V	460 or 575 V	460 or 575 V	N/A
Voltage (50 Hz)	190/380 or 380 V	380 V	N/A	N/A
Frame Size	56 - 5811	143 - 5810	143 - 449	143 & Larger
Enclosure	TEFC	TEFC	TEFC	TEFC or TENV
Application Design	Severe Duty	Mill & Chemical	Petrochemical	Petrochemical
ELECTRICAL FEATURES				
Meets or Exceeds NEMA Premium® Efficiency	Yes*	Yes*	Yes*	Yes*
ASD Duty at 1.0 SF (Catalog Appendix C)	Yes	Yes	Yes	Yes
Class F Insulation (Class H Magnet Wire & Varnish)	Yes	Yes	Yes	Class F
Class B Rise at 1.0 SF	Yes	Yes	Yes	Yes
Lead Cable Rating	125°C	125°C: 143 - 365, 150°C: 404 & Larger	150°C	125°C
Red Insulation Spray for Moisture and Dirt Protection	No	Yes	Yes	No
Phase Paper Between All Phases	Yes	Yes	Yes	Yes
Low Loss Electrical Grade Core Steel (1000°F Burnout)	Yes	Yes	Yes	No
Dual Voltage 230/460V	56 - 445	No	No	No
3 Lead Single Voltage (Multiple Strands Leads 449 Frame & Larger)	No	Yes	Yes	Yes
6 or 12 Leads for Wye-Delta Starting	213 - 5010	No	No	No
MECHANICAL FEATURES				
FRAME				
ASTM Grade 25 Gray Cast Iron	Yes	Yes	Yes	Yes
Dual Mount Frame (Industrial Catalog Appendix B)	Yes	Yes	Yes	N/A
F-2 Assembly Modifiable	56 - S/B449, 5010, 5810, 5811	143 - S/B449, 5010, 5810	143 - S/B449	No
Forged Shouldered Eyebolt With Blind Hole	182 & Larger	182 & Larger	182 & Larger	182 & Larger
External Ground Provision	404 - S/B449	404 - S/B449	Yes	Yes
Drains, Lowest Point Of Frame	Yes	254 & Larger	254 & Larger	Yes
Plugged Drain Holes, Both Bearing Brackets	56 - S447	143 - S447	143 - S447	No
Stainless Steel T-Drain, Both Bearing Brackets	No	143 - 215	143 - 215	No
BEARINGS				
300 Series Bearings, DE & ODE	Yes	Yes	Yes	No
ABMA C3 Clearance	Yes	Yes	Yes	Yes
L-10 Bearing Life Exceeding 150,000 Hours (Direct Coupled)	Yes	Yes	Yes	50,000
L-10 Bearing Life Exceeding 40,000 Hours (Belt Drive)	Yes	Yes	Yes	26,280
L-10 Bearing Life Exceeding 50,000 Hours (Belt Drive)	No	Yes	Yes	26,280
Locked Bearings	404 & Larger	284 & Larger	Yes	Yes
Sealed Bearings (Lithium Grease)	56 - 256	143 - 256	No	No
Regreasable Bearings (Polyurea Grease)	284 & Larger	284 & Larger	Yes	Yes
Cast Iron Inner Bearing Cap, DE & ODE	404 & Larger	284 & Larger	Yes	Yes
Extended Grease Pipes, DE	284 & Larger	284 & Larger	284 & Larger	No
45°C Maximum Bearing Temperature at 1.0 SF (50°C for 2 Pole)	Yes	Yes	Yes	Yes

Document based on Toshiba's most current design offering, and subject to change without notice.

* NEMA Premium® Efficiency is defined 1 - 500 HP.

GENERAL PURPOSE - EQP GLOBAL MOTOR SERIES COMPARISON

	EQP GLOBAL® SD	EQP GLOBAL® 840	EQP GLOBAL® 841	IEEE 841-2009
GENERAL				
Horsepower	0.5 - 800 HP	0.75 - 500 HP	0.75 - 400 HP	1 - 500 HP
Speed (60 Hz)	3600, 1800, 1200 or 900 RPM			
Speed (50 Hz)	3000, 1500, 1000 or 750 RPM		N/A	3000, 1500, 1000 or 750 RPM
Voltage (60 Hz)	230/460, 460 or 575 V	460 or 575 V	460 or 575 V	N/A
Voltage (50 Hz)	190/380 or 380 V	380 V	N/A	N/A
Frame Size	56 - 5811	143 - 5810	143 - 449	143 & Larger
Enclosure	TEFC	TEFC	TEFC	TEFC or TENV
Application Design	Severe Duty	Mill & Chemical	Petrochemical	Petrochemical
MECHANICAL FEATURES				
IP RATING				
Degree Of Protection	IP55	IP55: 143 - 286 / IP56: 324 & Larger	IP56	IP55
V-Ring Seal, DE	Yes	143 - 286	No	N/A
V-Ring & Umbrella Seal, DE & ODE	No	324 - 365	No	N/A
Labyrinth Seals, DE & ODE	No	404 & Larger	Yes	No
RTV Sealant (Brackets, Caps, T-Box Mounting Joints)	No	No	Yes	No
T-BOX				
Gasketed Diagonally Split Cast Iron Terminal Box with NPT Entry	Yes	Yes	Yes	Yes
Rotatable in 90° Increments	Yes	Yes	Yes	Yes
Neoprene Lead Seperator Between Motor Terminal Box and Frame with Permanent Marking for Lead Orientation	No	Yes	Yes	Yes
Grounding Provision	Yes	Yes	Yes	Yes
Terminal Box Volume Per IEEE 841-2009	No	Yes	Yes	Yes
Terminal Box Volume Per NEMA® Part 4	Yes	Yes	Yes	Yes
FAN				
Non-Sparking, Non-Corrosive Fan	Yes	Yes	Yes	Yes
Bi-directional Rotation	4 - 8 Pole & 2 Pole Up to 300 HP B449	4 - 8 Pole & 2 Pole Up to 300 HP B449	4 - 8 Pole & 2 Pole Up to 300 HP B449	No
Cast Iron Fan Cover	No	Yes	Yes	Yes
NAMEPLATE				
304 SS Nameplate	Yes	Yes	Yes	Yes
50 Hz Data	56 - S447	143 - S447	No	No
Class I, Division 2, Groups A, B, C, D	Yes	Yes	Yes	Yes
MISC. FEATURES				
ASTM Grade 5 Hardware with Rust Proof Coating	Yes	Yes	Yes	Yes
ASTM Grade 25 Gray Cast Iron Brackets	Yes	Yes	Yes	Yes
Shaft Runout 1/2 NEMA Standards	Yes	Yes	Yes	Yes
Lead Terminal Lugs	284 & Larger	213 & Larger	Yes	N/A
All Machined Internal Surfaces Protected with Rust Inhibitive Coating	No	Yes	Yes	Yes
Paint System Surpassing 96 Hour Salt Spray Test	Yes	Yes	Yes	Yes
TESTING				
Maximum Sound Power Level dBA, No Load	NEMA® Part 9	NEMA® Part 9	90	90
Motor Vibration Per IEEE 841-2009	No	Yes	Yes	Yes
0.005" Verified Foot Flatness	No	Yes	Yes	Yes
Factory Routine Test Report Supplied with Motor	No	Yes	Yes	Yes
Factory Routine Test Report with No Load Vibration Check	444 & Larger	444 & Larger	Yes	Yes

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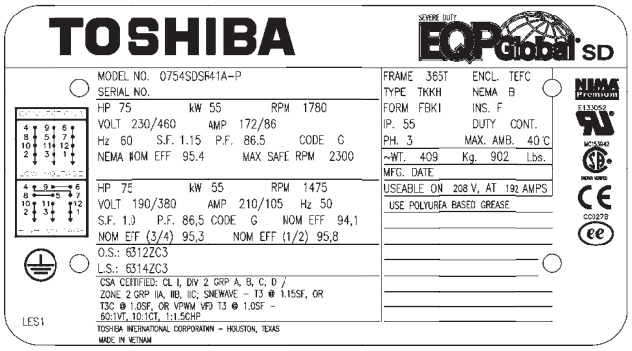
* NEMA Premium® Efficiency is defined 1 - 500 HP.

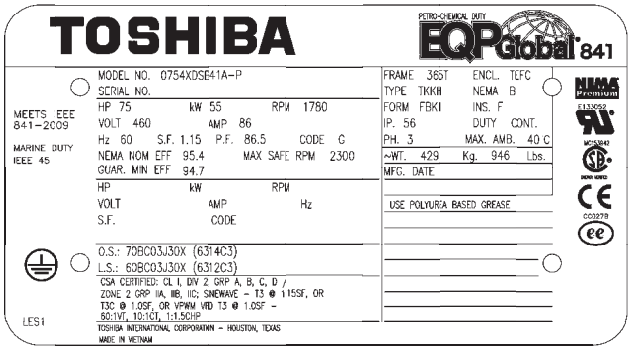
ASD CAPABILITIES

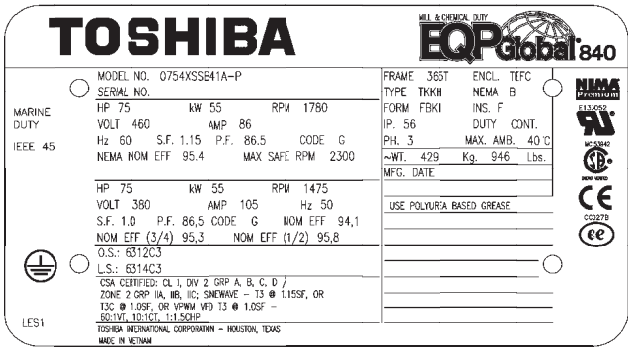
Frame	NONE	T-CODE	60:1 VT					
			2:1 CT	T-Code	3:1 CT	T-Code	10:1 CT	T-Code
140	5 HP Max.	T4	5 HP Max.	T4	5 HP Max.	T4	5 HP Max.	T4
180								
210	100 HP Max.	T3	100 HP Max.	T3	100 HP Max.	T3	100 HP Max.	T3
250								
280								
320								
360								
400								
440	350 HP Max.	T3	350 HP Max.	T3	350 HP Max.	T3	350 HP Max.	T3
500/5000	500 HP Max.	T3	500 HP Max.	T2C	500 HP Max.	T2C	400 HP Max.	T2D
580/5800	800 HP Max.	T3B	800 HP Max.	T3B	800 HP Max.	T3B	600 HP Max.	T2C

- The constant torque coverage dictates the maximum horsepower.
- Above temperature codes are based on Class I, Division 2, and standard ambient and altitude.
- 20:1 CT can be accomodated on motors up to 200 HP, up to 500/5000 frame, 4 & 6 Pole, and non-hazardous area.

NAMEPLATES







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