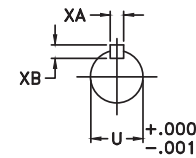
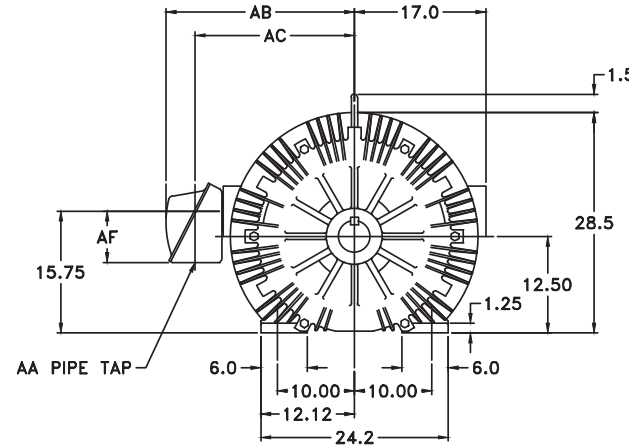
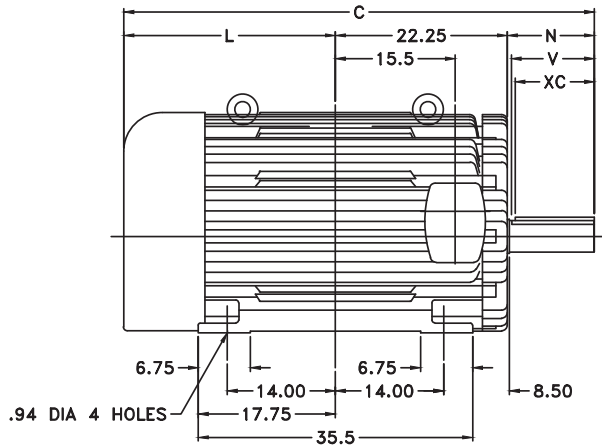


TYPE HS SQUIREL CAGE INDUCTION MOTOR
ENCLOSURE - TOTALLY ENCLOSED FAN COOLED
AND EXPLOSION PROOF
BEARING - ANTI-FRICTION

NOTES

- A- THIS DRAWING IS NOT TO BE REGARDED AS INDICATING EXACT DETAILS OF CONSTRUCTION. IT IS PROPERLY DIMENSIONED FOR ERECTION PURPOSES ONLY.
- B- MOUNTING BOLTS, DOWELS AND COUPLING NOT SUPPLIED BY TOSHIBA UNLESS SPECIFICALLY ORDERED.
- C- WHEN MOUNTING MOTOR, SHIM COMPLETE FOOT PAD AREA.
- D- ANTI-FRICTION BEARINGS MUST BE REGREASED WHILE MOTOR IS RUNNING.
- E- FOR MOUNTING OF MOTOR USE .875-9 THD/INCH HOLD DOWN BOLTS.
- F- NON DRIVE END BEARING INSULATED.

DEVICES

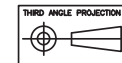


END VIEW OF SHAFT

| FRAME SIZE | REAR SHAFT EXTENSION | | | | | | RECOMMENDED COUPLING BORE | | APPROX WEIGHT | | |
|------------|----------------------|----------|-------|-------|-------|-------|---------------------------|-------|---------------|--------|------|
| | U | KEY SIZE | | | N | V | C | L | | MIN. | MAX. |
| D509US | 2.375 | .625 | .625 | 3.00 | 4.69 | 4.25 | 54.31 | 27.38 | 2.3730 | 2.3740 | 4000 |
| D509E | 2.875 | .625 | .625 | 3.75 | 5.12 | 4.62 | 54.75 | 27.38 | 2.8730 | 2.8740 | 4000 |
| D509G | 4.125 | .875 | .875 | 10.25 | 11.25 | 10.75 | 60.88 | 27.38 | | | 4000 |
| D509H | 5.000 | 1.250 | 1.250 | 11.00 | 13.25 | 12.75 | 62.88 | 27.38 | | | 4000 |
| H509US | 2.375 | .625 | .625 | 3.00 | 4.69 | 4.25 | 59.81 | 32.88 | 2.3730 | 2.3740 | 5000 |
| H509E | 2.875 | .625 | .625 | 3.75 | 5.12 | 4.62 | 60.25 | 32.88 | 2.8730 | 2.8740 | 5000 |
| H509G | 4.125 | .875 | .875 | 10.25 | 11.25 | 10.75 | 66.38 | 32.88 | | | 5000 |
| H509H | 5.000 | 1.250 | 1.250 | 11.00 | 13.25 | 12.75 | 68.38 | 32.88 | | | 5000 |

| CONDUIT BOX | | | | | | | |
|------------------------|-------|-------|------|-----------------|-------|-------|------|
| FAN COOLED - STANDARD | | | | EXPLOSION PROOF | | | |
| AA | AB | AC | AF | AA | AB | AC | AF |
| 3.00 | 24.38 | 20.62 | 6.63 | 3.00 | 25.06 | 20.44 | 7.00 |
| FAN COOLED - ALTERNATE | | | | | | | |
| 3.50 | 28.38 | 22.50 | 9.38 | | | | |

THIS DRAWING WAS PREPARED IN ACCORDANCE WITH THE NORMAL AND ACCEPTED STANDARDS WITHIN THE ELECTRICAL INDUSTRY FOR THE PURPOSE OF OBTAINING CUSTOMER APPROVAL. AS PART OF THE MANUFACTURING OR PRODUCTION PROCESS, ANY USE OR COMPARISON OF THIS DRAWING BY THE CUSTOMER CONCERNING THE DRAWING APPROVAL SHALL BE THE SOLE RESPONSIBILITY OF THE CUSTOMER.



THESE DIMENSIONS REFER TO THE PROJECTION OF TOSHIBA INDUSTRIAL PRODUCTS CANADA - TOSHIBA MARK IS REGISTERED IN CANADA, AND NO PART OF THIS DRAWING MAY BE REPRODUCED OR USED WITHOUT THE EXPRESS PERMISSION OF THE COMPANY.

TOSHIBA INDUSTRIAL PRODUCTS CANADA

TOSHIBA

TITLE TYPE HS MOTOR FRAME D509/H509
OUTLINE - TEFC/TEXP ENCLOSURE

| | | | |
|-------------|---------------|-----------|------|
| DESIGNED BY | SCALE: N.T.S. | SHEET: 1 | OF 1 |
| CHECKED BY | DATE: 1/28/99 | APP'VD BY | |
| DESIGNED BY | N.WEST | APP'VD BY | |
| CHECKED BY | | APP'VD BY | |

E10D118

STANDARD
REVISIONS
1



Issued Date

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TYPICAL MOTOR PERFORMANCE DATA

Model: 3508XPAL11E-C

| HP | kW | Pole | FL RPM | Frame | Voltage | Hz | Phase | FL Amps |
|-----------|--------|------------|---------|-------|----------------|-------------|----------|--------------|
| 350 hp | 261 kW | 8 | 894 rpm | H509E | 4000 V | 60 | 3 | 47.0 A |
| Enclosure | IP | Ins. Class | S.F. | Duty | NEMA Nom. Eff. | NEMA Design | kVA Code | Ambient (°C) |
| TEXP | 55 | F | 1.15 | Cont. | 94.6 | B | G | 40 |

| Load | HP | kW | Amperes | Efficiency (%) | Power Factor (%) |
|--------------|-------|-----|---------|----------------|------------------|
| Full Load | 350 | 261 | 47.0 | 94.6 | 84.8 |
| ¾ Load | 262.5 | 196 | 36.3 | 94.4 | 82.7 |
| ½ Load | 175 | 130 | 26.8 | 93.5 | 75.8 |
| ¼ Load | 87.5 | 65 | | | |
| No Load | | | 15.4 | | 4.9 |
| Locked Rotor | | | 288.2 | | 20.4 |

| Torque | | | | Rotor wk ² Inertia (lb-ft ²) |
|----------------------|-------------------------|--------------------|-----------------------|---|
| Full Load (lb-ft) | Locked Rotor (% FLT) | Pull Up (% FLT) | Break Down (% FLT) | |
| 2058 | 99 | 99 | 254 | 398 |

| Safe Stall Time(s) | | Sound Pressure dB(A) @ 1M | Bearings* | | Approx. Motor Weight (lbs) |
|--------------------|-----|------------------------------|-----------|----------|-------------------------------|
| Cold | Hot | | DE | NDE | |
| 29 | 24 | - | 6216-C3 | 6313Z-C3 | 5000 |

*Bearings are the only recommended spare part(s).

Motor Options:

| | |
|-------------|--|
| Customer | |
| Customer PO | |
| Sales Order | |
| Project # | |

Tag:

All characteristics are average expected values.

TOSHIBA INTERNATIONAL CORPORATION · HOUSTON, TEXAS U.S.A.

| | | | | | |
|-------------|--|------------------|--|-------------|--|
| Engineering | | Doc. Written By | | Doc.# / Rev | |
| Engr. Date | | Doc. Approved By | | Doc. Issued | |



Issued Date

Transmit #

Issued By

Issued Rev

NAMEPLATE DATA

Model: 3508XPAL11E-C

| HP | kW | Pole | FL RPM | Frame | Voltage | Hz | Phase | FL Amps |
|-----------|----------|------------|--------|-------|----------------|-------------|----------|--------------|
| 350 | 260.9915 | 8 | 894 | H509E | 4000 | 60 | 3 | 47.01 |
| Enclosure | IP | Ins. Class | S.F. | Duty | NEMA Nom. Eff. | NEMA Design | kVA Code | Ambient (°C) |
| TEXP | 55 | F | 1.15 | Cont. | 94.6 | B | G | 40 |

Type: HSB

Form:

Drive End Bearing: 6216-C3

Non-Drive End Bearing: 6313Z-C3

Power Factor: 84.8

Max Safe RPM:

Comments 1:

Comments 2:

Comments 3:

Comments 4:

Customer

Customer PO

Sales Order

Project #

Tag:

All characteristics are average expected values.

TOSHIBA INTERNATIONAL CORPORATION · HOUSTON, TEXAS U.S.A.

Engineering

Doc. Written By

D. Suarez

Doc.# / Rev

MPCF-1120 / 0

Engr. Date

Doc. Approved By

M. Campbell

Doc. Issued

6/8/2011



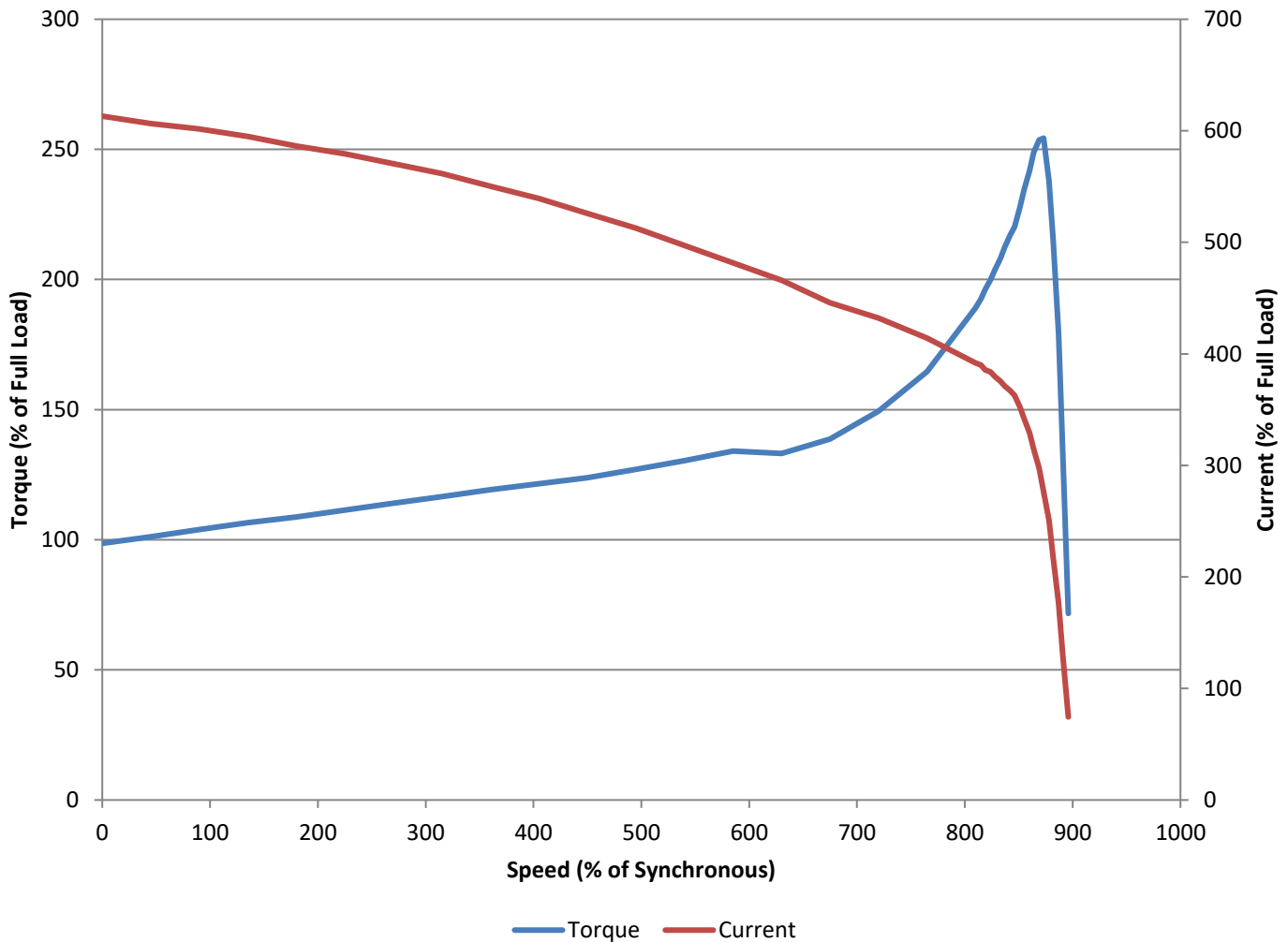
| | | | |
|-------------|--|------------|--|
| Issued Date | | Transmit # | |
| Issued By | | Issued Rev | |

SPEED TORQUE/CURRENT CURVE

Model: 3508XPAL11E-C

| | | | | | | | | |
|-------------------|---|-------------------|------------------|-------------|----------------|-------------|-------------|----------------|
| HP | kW | Pole | FL RPM | Frame | Voltage | Hz | Phase | FL Amps |
| 350 | 260.9915 | 8 | 894 | H509E | 4000 | 60 | 3 | 47.01 |
| Enclosure | IP | Ins. Class | S.F. | Duty | NEMA Nom. Eff. | NEMA Design | kVA Code | Ambient (°C) |
| TEXP | 55 | F | 1.15 | Cont. | 94.6 | B | G | 40 |
| Locked Rotor Amps | Rotor wk ² Inertia (lb-ft ²) | Torque | | | | | | Break Down (%) |
| | | Full Load (lb-ft) | Locked Rotor (%) | Pull Up (%) | | | | |
| 303.39 | 398 | 2057.53 | 98.55943777 | | 98.55943777 | | 254.3320486 | |

Design Values



| | | | | |
|-------------|--|--|-------------|-----|
| Customer | | wk ² Load Inertia (lb-ft ²) | | |
| Customer PO | | | Load Type | |
| Sales Order | | | Voltage (%) | 100 |
| Project # | | | Accel. Time | |

Tag:

All characteristics are average expected values.

TOSHIBA INTERNATIONAL CORPORATION · HOUSTON, TEXAS U.S.A.

| | | | | | |
|-------------|--|------------------|-------------|-------------|-------------|
| Engineering | | Doc. Written By | D. Suarez | Doc.# / Rev | MPCF-1121/0 |
| Engr. Date | | Doc. Approved By | M. Campbell | Doc. Issued | 6/8/2011 |



Issued Date

Transmit #

Issued By

Issued Rev

SPARE PARTS LIST*

Model: 3508XPAL11E-C

| HP | kW | Pole | FL RPM | Frame | Voltage | Hz | Phase | FL Amps |
|-----------|----------|------------|--------|-------|----------------|-------------|----------|--------------|
| 350 | 260.9915 | 8 | 894 | H509E | 4000 | 60 | 3 | 47.01 |
| Enclosure | IP | Ins. Class | S.F. | Duty | NEMA Nom. Eff. | NEMA Design | kVA Code | Ambient (°C) |
| TEXP | 55 | F | 1.15 | Cont. | 94.6 | B | G | 40 |

Bearings DE 6216-C3

Bearings NDE 6313Z-C3

*Bearings are the only recommended spare part(s).

Other than the grease used for regreasable bearings and the oil used for oil-lubricated bearings, Toshiba advises that there are no "use" parts. The only insurance spares that Toshiba suggests for these squirrel-cage induction motors are industry-standard and commercially available off-the-shelf bearings as noted above.

Motor components such as terminal boxes, fan covers and other machined parts are available on special request. In these cases, please advise our order entry department of the model and serial numbers found on the motor nameplate and a description of the needed components. With this information they will be able to furnish the current part number, price and availability.

Note: Our internal part numbers are subject to change without notice and are not published.

| | |
|-------------|--|
| Customer | |
| Customer PO | |
| Sales Order | |
| Project # | |

Tag:

All characteristics are average expected values.

TOSHIBA INTERNATIONAL CORPORATION · HOUSTON, TEXAS U.S.A.

| | | | | | |
|-------------|--|------------------|-------------|-------------|---------------|
| Engineering | | Doc. Written By | D. Suarez | Doc.# / Rev | MPCF-1125 / 0 |
| Engr. Date | | Doc. Approved By | M. Campbell | Doc. Issued | 6/8/2011 |