

# NIDEC MOTOR CORPORATION

8050 WEST FLORISSANT AVE.  
ST. LOUIS, MO 63136



DATE: 1/21/2013

P.O. NO.: CY32  
Order/Line NO.: 20342 MN 100

TO:

Model Number: CY32  
Catalog Number:  
Corro-Duty Premium Eff. Config  
CONF,MOTOR,CORRO-DUTY PRE EFF

REVISIONS:  
(NONE)

ALL DOCUMENTS HEREIN ARE CONSIDERED CERTIFIED BY NIDEC MOTOR CORPORATION.  
THANK YOU FOR YOUR ORDER AND THE OPPORTUNITY TO SERVE YOU.

## Features:

Horsepower ..... 00001.50 ~ KW: 1.119  
Enclosure ..... TEFC  
Poles ..... 04 ~ RPM: 1800  
Frame Size ..... 145~T  
Phase/Frequency/Voltage.. 3~060~230/460 ~ Random Wound  
Service Factor ..... 1.15  
Insulation Class ..... Class "F" ~ Insulife 2000  
Altitude In Feet (Max) .. 3300 Ft.(1000 M)  
Ambient In Degree C (Max) +40 C  
Assembly Position ..... "F-1" Assembly Position  
Efficiency Class ..... Premium Efficiency  
Application ..... Unknown  
Customer Part Number ....  
"AK" Dimension (Inches).. NA  
Temperature Rise (Sine Wave): "B" Rise @ 1.0 SF (Resist)  
NEMA Design ..... B  
KVA Code Letter ..... "M"  
Starting Method ..... Direct-On-Line Start  
Duty Cycle ..... Continuous Duty  
Efficiency Value ..... 86.5 % ~ NEMA Nominal  
Load Inertia (lb-ft<sup>2</sup>): NEMA ~ NEMA Inertia: 8.60 ~ 1.00  
Number Of Starts Per Hour: NEMA  
Motor Type Code ..... TCE  
Rotor Inertia (LB-FT<sup>2</sup>) ..... .122 LB-FT<sup>2</sup>  
Qty. of Bearings PE (Shaft) 1  
Qty. of Bearings SE (OPP) 1  
Bearing Number PE (Shaft) 6205-2Z-J/C3  
Bearing Number SE (OPP) 6203-2Z-J/C3

Nidec trademarks followed by the ® symbol are registered with the U.S. Patent and Trademark Office.

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**Accessories:**

Corro-Duty  
Clockwise Rotation FODE  
Ground Lug In Conduit Box  
Special Balance  
Standard Leadtime: REFER TO OFFICE  
Est. Weight (lbs ea): 70 ~ F.O.B.: St. Louis, MO

**USE THE DATA PROVIDED BELOW TO SELECT THE APPROPRIATE DIMENSION PRINT**

|                         |         |
|-------------------------|---------|
| <b>Horsepower</b>       | 1.5     |
| <b>Pole(s)</b>          | 04      |
| <b>Voltage(s)</b>       | 460-230 |
| <b>Frame Size</b>       | 145T    |
| <b>Shaft U Diameter</b> | 0.875   |
| <b>Outlet Box AF</b>    | 1.25    |
| <b>Outlet Box AA</b>    | 0.75    |

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EFFECTIVE:  
**01-APR-11**

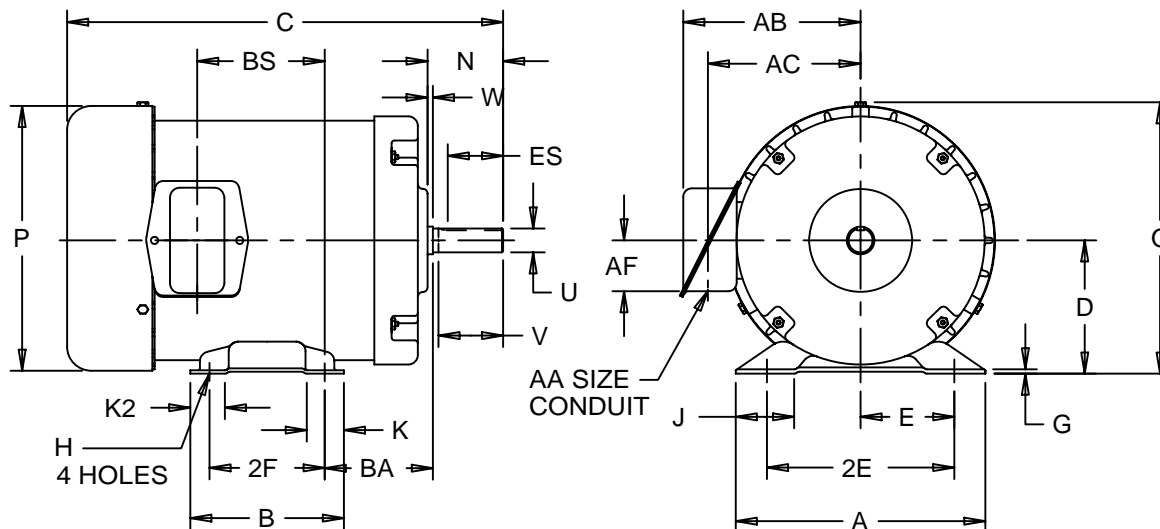
SUPERSEDES:  
**12-JUN-01**

# HORIZONTAL MOTORS

7.75" STEEL FRAME  
FRAME: 140T  
BASIC TYPE: TCE

PRINT:  
**07-2280**

SHEET:  
**1 OF 1**



ALL DIMENSIONS ARE IN INCHES & MILLIMETERS

| UNITS | A    | B    | C     | E    | G   | J   | K   | K2   | N    | O    | P <sup>2</sup> |
|-------|------|------|-------|------|-----|-----|-----|------|------|------|----------------|
| IN    | 6.50 | 6.00 | 13.88 | 2.75 | .13 | .88 | .88 | 1.88 | 2.38 | 7.31 | 7.63           |
| MM    | 165  | 152  | 353   | 70   | 3   | 22  | 22  | 48   | 60   | 186  | 194            |

| UNITS | V<br>MIN | W   | AA      | AB   | AC   | AF   | BA   | BS   | ES<br>MIN | SQ<br>KEY |
|-------|----------|-----|---------|------|------|------|------|------|-----------|-----------|
| IN    | 2.06     | .13 | 3/4 NPT | 6.38 | 4.56 | 1.25 | 2.25 | 4.90 | 1.41      | .188      |
| MM    | 52       | 3   |         | 162  | 116  | 32   | 57   | 125  | 36        | 4.78      |

| UNITS | D<br>-.06 | 2E<br>±.03 | H<br>+.05 | U<br>-.0005 |
|-------|-----------|------------|-----------|-------------|
| IN    | 3.50      | 5.50       | .34       | .8750       |
| MM    | 89        | 140        | 9         | 22.225      |

| FRAME | UNITS | 2F<br>±.03 |
|-------|-------|------------|
| 143T  | IN    | 4.00       |
|       | MM    | 102        |
| 145T  | IN    | 5.00       |
|       | MM    | 127        |

1: ALL ROUGH CASTING DIMENSIONS MAY VARY BY .25"  
DUE TO CASTING AND/OR FABRICATION VARIATIONS.

2: LARGEST MOTOR WIDTH.

3: CONDUIT BOX MAY BE LOCATED ON EITHER SIDE  
OF MOTOR. CONDUIT OPENINGS MAY BE LOCATED IN  
STEPS OF 90 DEGREES REGARDLESS OF LOCATION.  
STANDARD AS SHOWN WITH CONDUIT OPENING DOWN.

4: TOLERANCE UNITS ARE IN INCHES ONLY.

07-2280

**Nidec Motor Corporation**  
St. Louis, Missouri

INFORMATION DISCLOSED ON THIS DOCUMENT  
IS CONSIDERED PROPRIETARY AND SHALL NOT BE  
REPRODUCED OR DISCLOSED WITHOUT WRITTEN  
CONSENT OF NIDEC MOTOR CORPORATION



ISSUED BY  
**R. KING**  
APPROVED BY  
**K. POTTER**

IHP\_DP\_NMCA (MAR-2011) SOLIDEDGE

# NAMEPLATE DATA

|                                   |      |                      |      |                      |       |                      |    |
|-----------------------------------|------|----------------------|------|----------------------|-------|----------------------|----|
| CATALOG NUMBER:                   |      |                      |      | NAMEPLATE PART #:    |       | 431157-000           |    |
| MODEL                             | CY32 | FR                   | 145T | TYPE                 | TCE   | ENCL                 | TE |
| SHAFT<br>END BRG                  |      | 6205-2Z-J/C3 - QTY 1 |      | OPP<br>END BRG       |       | 6203-2Z-J/C3 - QTY 1 |    |
| PH                                | 3    | MAX<br>AMB           | 40 C | ID#                  |       |                      |    |
| INSUL<br>CLASS                    | F    | Asm.<br>Pos          | F1   | DUTY                 | CONT  |                      |    |
| HP                                | 1.5  | RPM                  | 1750 | HP                   |       | RPM                  |    |
| VOLTS                             | 460  | 230                  |      | VOLTS                |       |                      |    |
| FL<br>AMPS                        | 2.1  | 4.3                  |      | FL<br>AMPS           |       |                      |    |
| SF<br>AMPS                        | 2.4  | 4.7                  |      | SF<br>AMPS           |       |                      |    |
| SF                                | 1.15 | DESIGN               | B    | CODE                 | M     |                      |    |
| NEMA NOM<br>EFFICIENCY            | 86.5 | NOM<br>PF            | 76.1 | KiloWatt             | 1.119 |                      |    |
| GUARANTEED<br>EFFICIENCY          | 84.0 | MAX<br>KVAR          | .9   | HZ                   | 60    |                      |    |
| <b>UL DATA (IF APPLICABLE):</b>   |      |                      |      |                      |       |                      |    |
| DIVISION                          |      |                      |      | CLASS I              |       |                      |    |
| TEMP CODE                         |      |                      |      | CLASS II             |       |                      |    |
| <b>VFD DATA (IF APPLICABLE):</b>  |      |                      |      |                      |       |                      |    |
| VOLTS                             |      |                      |      | TORQUE 2             |       |                      |    |
| AMPS                              |      |                      |      | VFD LOAD TYPE 2      |       |                      |    |
| TORQUE 1                          |      |                      |      | VFD HERTZ RANGE 2    |       |                      |    |
| VFD LOAD TYPE 1                   |      |                      |      | VFD SPEED RANGE 2    |       |                      |    |
| VFD HERTZ RANGE 1                 |      |                      |      |                      |       |                      |    |
| VFD SPEED RANGE 1                 |      |                      |      |                      |       |                      |    |
| SERVICE FACTOR                    |      |                      |      | FL SLIP              |       |                      |    |
| NO. POLES                         |      | 4                    |      | MAGNETIZING AMPS     |       | 1.3                  |    |
| VECTOR MAX RPM                    |      |                      |      | Encoder PPR          |       |                      |    |
| Radians / Seconds                 |      | 1                    |      | Encoder Volts        |       |                      |    |
| <b>TEAO DATA (IF APPLICABLE):</b> |      |                      |      |                      |       |                      |    |
| HP (AIR OVER)                     |      | HP (AIR OVER M/S)    |      | RPM (AIR OVER)       |       | RPM (AIR OVER M/S)   |    |
| FPM AIR VELOCITY                  |      | FPM AIR VELOCITY M/S |      | FPM AIR VELOCITY SEC |       |                      |    |

**ADDITIONAL NAMEPLATE DATA:**

|                           |                     |                           |        |
|---------------------------|---------------------|---------------------------|--------|
| Decal / Plate             | WD=158802           | Customer PN               |        |
| Notes                     |                     | Non Rev Ratchet           |        |
| Max Temp Rise             | 80C RISE/RES@1.00SF | OPP/Upper Oil Cap         | GREASE |
| Thermal (WDG)             |                     | SHAFT/Lower Oil Cap       | GREASE |
| Altitude                  |                     |                           |        |
| Regulatory Notes          |                     | Regulatory Compliance     |        |
| COS                       |                     | Marine Duty               |        |
| Balance                   | 0.08 IN/SEC         | Arctic Duty               |        |
| 3/4 Load Eff.             | 86.3                | Inrush Limit              |        |
| Motor Weight (LBS)        | 70                  | Direction of Rotation     |        |
| Sound Level               |                     | Special Note 1            |        |
| Vertical Thrust (LBS)     |                     | Special Note 2            |        |
| Thrust Percentage         |                     | Special Note 3            |        |
| Bearing Life              |                     | Special Note 4            |        |
| Starting Method           |                     | Special Note 5            |        |
| Number of Starts          |                     | Special Note 6            |        |
| 200/208V 60Hz Max Amps    |                     | SH Max. Temp.             |        |
| 190V 50 hz Max Amps       |                     | SH Voltage                |        |
| 380V 50 Hz Max Amps       |                     | SH Watts                  |        |
| NEMA Inertia              |                     | Load Inertia              |        |
| Sumpheater Voltage        |                     | Sumpheater Wattage        |        |
| Special Accessory Note 1  |                     | Special Accessory Note 16 |        |
| Special Accessory Note 2  |                     | Special Accessory Note 17 |        |
| Special Accessory Note 3  |                     | Special Accessory Note 18 |        |
| Special Accessory Note 4  |                     | Special Accessory Note 19 |        |
| Special Accessory Note 5  |                     | Special Accessory Note 20 |        |
| Special Accessory Note 6  |                     | Special Accessory Note 21 |        |
| Special Accessory Note 7  |                     | Special Accessory Note 22 |        |
| Special Accessory Note 8  |                     | Special Accessory Note 23 |        |
| Special Accessory Note 9  |                     | Special Accessory Note 24 |        |
| Special Accessory Note 10 |                     | Special Accessory Note 25 |        |
| Special Accessory Note 11 |                     | Special Accessory Note 26 |        |
| Special Accessory Note 12 |                     | Special Accessory Note 27 |        |
| Special Accessory Note 13 |                     | Special Accessory Note 28 |        |
| Special Accessory Note 14 |                     | Special Accessory Note 29 |        |
| Special Accessory Note 15 |                     | Special Accessory Note 30 |        |

**NIDEC MOTOR CORPORATION**  
ST. LOUIS, MO



TYPICAL NAMEPLATE DATA  
ACTUAL MOTOR NAMEPLATE LAYOUT MAY VARY  
SOME FIELDS MAY BE OMITTED

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## MOTOR PERFORMANCE

| MODEL NO. | CATALOG NO. | PHASE | TYPE | FRAME |
|-----------|-------------|-------|------|-------|
| CY32      | NA          | 3     | TCE  | 145T  |

| ORDER NO. | 20342 | LINE NO. |  |
|-----------|-------|----------|--|
|-----------|-------|----------|--|

|                             |        |        |
|-----------------------------|--------|--------|
| MPI:                        | 125393 | 125394 |
| HP:                         | 1.5    | 1.5    |
| POLES:                      | 4      | 4      |
| VOLTS:                      | 460    | 230    |
| HZ:                         | 60     | 60     |
| SERVICE FACTOR:             | 1.15   | 1.15   |
| EFFICIENCY (%):             |        |        |
| S.F.                        | 86.3   | 86.3   |
| FULL                        | 86.5   | 86.5   |
| 3/4                         | 86.3   | 86.3   |
| 1/2                         | 83.8   | 83.8   |
| 1/4                         | 75     | 75     |
| POWER FACTOR (%):           |        |        |
| S.F.                        | 79.4   | 79.4   |
| FULL                        | 76.1   | 76.1   |
| 3/4                         | 67.7   | 67.7   |
| 1/2                         | 54.5   | 54.5   |
| 1/4                         | 34.9   | 34.9   |
| NO LOAD                     | 7.9    | 7.9    |
| LOCKED ROTOR                | 63.5   | 63.5   |
| AMPS:                       |        |        |
| S.F.                        | 2.4    | 4.7    |
| FULL                        | 2.1    | 4.3    |
| 3/4                         | 1.8    | 3.6    |
| 1/2                         | 1.5    | 3.1    |
| 1/4                         | 1.3    | 2.7    |
| NO LOAD                     | 1.3    | 2.6    |
| LOCKED ROTOR                | 19.8   | 40     |
| NEMA CODE LETTER            | M      | M      |
| NEMA DESIGN LETTER          | B      | B      |
| FULL LOAD RPM               | 1750   | 1750   |
| NEMA NOMINAL EFFICIENCY (%) | 86.5   | 86.5   |
| GUARANTEED EFFICIENCY (%)   | 84     | 84     |
| MAX KVAR                    | 0.9    | 0.9    |
| AMBIENT (°C)                | 40     | 40     |
| ALTITUDE (FASL)             | 3300   | 3300   |
| SAFE STALL TIME-HOT (SEC)   | 15     | 15     |
| SOUND PRESSURE (DBA @ 1M)   | 54     | 54     |
| TORQUES:                    |        |        |
| BREAKDOWN{% F.L.}           | 504    | 504    |
| LOCKED ROTOR{% F.L.}        | 383    | 383    |
| FULL LOAD{LB-FT}            | 4.5    | 4.5    |

The Above Data Is Typical, Sinewave Power Unless Noted Otherwise

**NIDEC MOTOR CORPORATION**  
ST. LOUIS, MO

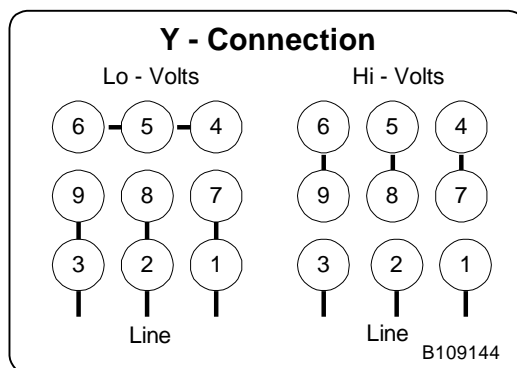
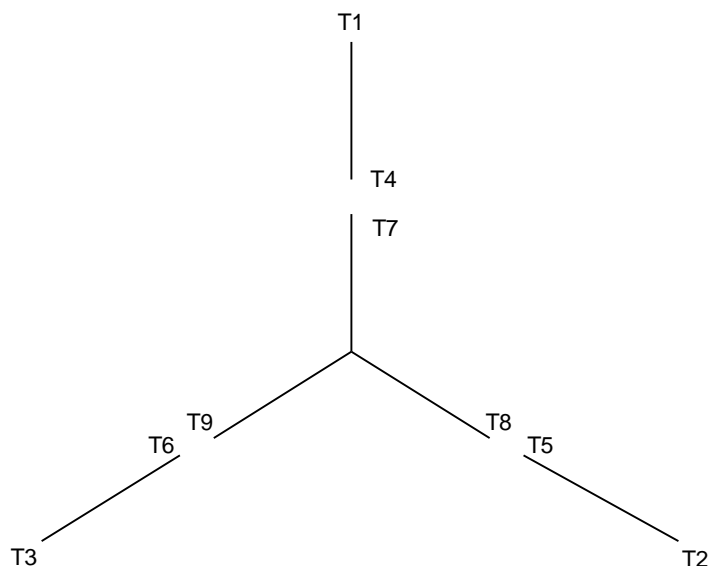


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**B109144**

**Motor Wiring Diagram**  
**9 Lead, Dual Voltage (WYE Conn.)**



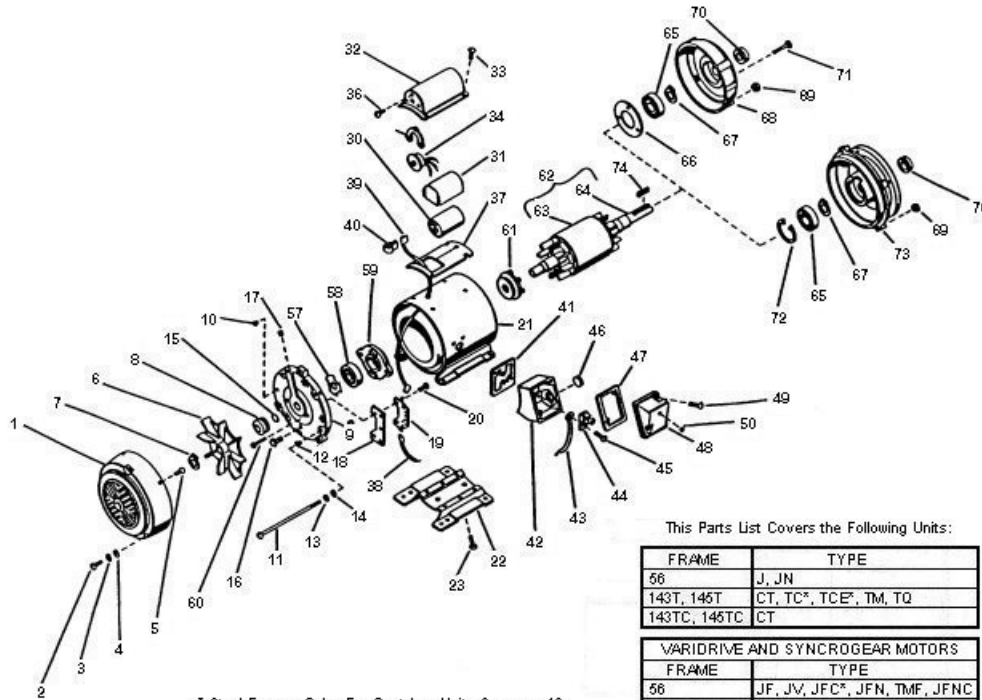
To reverse direction of rotation interchange connections L1 and L2.

Each lead may have one or more cables comprising that lead.  
In such case each cable will be marked with the appropriate lead number.

## RENEWAL PARTS

### 56 thru 145 - TOTALLY ENCLOSED MOTORS

Types: CE, CEF, CEF4, CT, CT4, CTC, CTE, CTE4, CTEF, CTF, CTFI, CTFNI, CTI, CTN, FCT, FCTF, FTC, FTCF, J, JCE, JF, JFC, JFN, JFNC, JFNI, JN, JV, TC, TC1, TC4, TCE, TCEF, TCEN, TCE1, TCF, TCF1, TCF4, TCFI, TCI, TCN, TF, TFN, TFNI, TM, TMF, TMQ



| ITEM NO. | QTY | NAME OF PART  |
|----------|-----|---|
| 1        | 1   | Fan Cover Guard<br>(Not used on types JN, JFN & JFNC)   |
| 2        | 3   | Self Tapping Screw (Used on frame 56 types J, JF, JFC, TMF & frames 143 & 145T, type TF, TM, TFC, TMF, TMQ)<br>Round Head Machine Screw (Qty 2 frame 56 type J) |
| 3        | 3   | Lockwasher (Used on frame 56 types J, JF, JFC, TMF, and frames 143T & 145T, types TF, TM, TFC, TMF, TMQ) (Qty 2 frame 56 type J)                                |
| 4        | 3   | Plain Washer (Used on frame 56 types J, JF, JFC and frames 143T & 145T type TFC)  |
| 5        | 4   | Hex Head Cap Screw (Types CT, TC, & TCE)  |
| 6        | 1   | Fan (Not used on types JN, JFN, & JFNC)   |

| ITEM NO. | QTY | NAME OF PART  |
|----------|-----|---|
| 7        | 1   | Retaining Snap Ring (Not used on types J, JN, JV, JFN & JFNC) |
| 8        | 1   | Water Deflector (Types JFC & TFC only)                        |
| 9        | 1   | Bracket   |
| 10       | 4   | Plastic Plug (Not used on types CT, JN, TC, JFN, TCE)         |
| 11       | 4   | Screw   |
| 12       | 4   | Bushing (Not used on types J, JV, CT, JN, TC, JFN, TCE)       |
| 13       | 4   | Lockwasher (Used on types J, JN, JV, TMF)                     |
| 14       | 4   | Plain Washer (Used on type TMF)                               |
| 15       | 1   | Bracket Plug (Types JN & JFNC)                                |
| 16       | 2   | Vent Plug (Types TC & TCE)                                    |
| 17       | 4   | Hex Countersunk Pipe Plug (Types TC & TCE)                    |
| 18       | 1   | Switch Insulator (Types TM, TMF, TMQ)                         |

#### WARNING:

Any disassembly or repair work on explosionproof motors will void the Underwriters Laboratories, Inc. label unless done by the manufacturer, or a facility approved by the Underwriters Laboratories, Inc. Refer to your nearest sales office for assistance.

#### BEARINGS:

Refer to motor nameplate for the bearing numbers.

#### PRICES:

Parts stocking distributors: refer to renewal parts numerical index. All Others: refer to your nearest parts distributor.

reference: Renewal Parts Section 700, Pages 10 & 11

## RENEWAL PARTS

56 thru 145 - TOTALLY ENCLOSED MOTORS

Types: CE, CEF, CEF4, CT, CT4, CTC, CTE, CTE4, CTEF, CTF, CTFI, CTFNI, CTI, CTN, FCT, FCTF, FTC, FTCF, J, JCE, JF, JFC, JFN, JFNC, JFNI, JN, JV, TC, TC1, TC4, TCE, TCEF, TCEN, TCE1, TCF, TCF1, TCF4, TCFI, TCI, TCN, TF, TFN, TFNI, TM, TMF, TMQ

| ITEM NO. | QTY | NAME OF PART   |
|----------|-----|--|
| 19       | 1   | Starting Switch Assembly (Types TM, TMF, TMQ)  |
| 20       | 3   | Self Tapping Screw (Types TM, TMF, TMQ)  |
| 21       | 1   | Wound Stator Assembly (Mounting Base Included on types CT, TC, TCE, TM, TMQ)                   |
| 22       | 1   | Mounting Bases (Types J & JN)  |
| 23       | 2   | Screws (Types J & JN)  |
| 24-29    | -   | Not Used   |
| 30       | 1   | Starting Capacitor (Types TM, TMF, TMQ)  |
| 31       | 1   | Capacitor Insulator (Types TM, TMF, TMQ)   |
| 32       | 1   | Capacitor Box (Types TM, TMF, TMQ)   |
| 33       | 4   | Self Tapping Screws (Types TM, TMF, TMQ)   |
| 34       | 1   | Thermal Protector (Type TMQ)   |
| 35       | 1   | Clamping Plate (Type TMQ)  |
| 36       | 3   | Self Tapping Screw (Type TMQ)  |
| 37       | 1   | Gasket (Type TMQ)  |
| 38       | 1   | Connection Lead Assembly No. 5 (Included with Wound Stator Assembly item 20) (Types TM & TMQ)  |
| 39       | 1   | Connection Lead Assembly No. 10 (Included with Wound Stator Assembly item 20) (Types TM & TMQ) |
| 40       | 4   | Sleeving Insulation (Included with Items No. 38 & 39)  |
| 41       | 1   | Gasket (Not used on J, JN, JV)   |
| 42       | 1   | Outlet Box Base  |
| 43       | 1   | Connection Lead Assembly Ground (Type TMQ)   |
| 44       | 1   | Grounding Lug (Types TC, TCE)  |
| 45       | 2   | Self Tapping Screw (Qty. 4 Round Head Screw on types J, JN, JV)                                |
| 46       | 1   | Plastic Plug (Types CT, TC, TCE)   |
| 47       | 1   | Gasket (Types CT, TC, TCE)   |

| ITEM NO.   | QTY | NAME OF PART  |
|--|-----|---|
| 48   | 1   | Outlet Box Cover  |
| 49   | 2   | Screw (Qty. 4 Round Head Screws on types J, JN, JV)                     |
| 50   | 3   | Plastic Plug (Types JFC, JFNC, TFC)                                     |
| 51-56  | -   | Not Used  |
| 57   | 1   | Wave Spring Washer (Type CT without "C" Bracket, TC, TCE, TM, TMQ, TMF) |
| 58   | 1   | Ball Bearing  |
| 59   | 1   | Bearing Cap (Type JV only)  |
| 60   | 2   | Round Head Screw (Type JV only)   |
| 61   | 1   | Rotary Actuator (Types TM, TMQ, TMF)                                    |
| 62   | 1   | Rotor Assembly (Includes items 63 & 64)                                 |
| 63   | 1   | Rotor Core  |
| 64   | 1   | Rotor Shaft   |
| ITEMS 65 THRU 74 ARE FOR TYPES J, CT, JN, TC, TCE, TM, TMQ |     |   |
| 65   | 1   | Ball Bearing (Refer to section 775)                                     |
| 66   | 1   | Retaining Cap (Type TMQ)  |
| 67   | 1   | Retaining Snap Ring (Types CT with "C" Bracket, & TMQ)                  |
| 68   | 1   | Bracket (Not used with "C" Bracket)                                     |
| 69   | 4   | Hex Nut   |
| 70   | 1   | Water Deflector (Types CT with "C" Bracket, TC, TCE)                    |
| 71   | 3   | Round Head Machine Screw (Type TMQ)                                     |
| 72   | 1   | Retaining Snap Ring (Type CT with "C" Bracket)                          |
| 73   | 1   | "C" Bracket   |
| 74   | 1   | Square Key  |

### WARNING:

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reference: Renewal Parts Section 700, Pages 10 & 11