

# Crusher Duty



## The Motor of Choice for Severe Belted-Load Applications

Crushers, pulverizers, conveyors...if you've got major-league radial loads, this is your motor. With roller-bearings specifically suited for belted load jobs, Lincoln Crusher Duty motors are also standouts for bandmills, chippers, hogs, balers and compactors.

## Torque to Spare

Lincoln Crusher Duty motors have the "get up and go" capability of a Design C motor **and** the excellent overload capability of Design B...truly the best of both worlds when it comes to torque.

## Lower Your Operating Costs with a Lincoln Premium Efficiency Design

Lincoln gives you two premium-efficiency options: select an Ultimate E1 motor to meet EPAct requirements (motors up to 200 HP with a roller bearing must have EPAct efficiency values starting in October 1999); or choose an Ultimate E2 motor to maximize your energy savings. Either way, you'll enjoy lower operating costs.

## 5-Year Warranty; Made in USA

All Ultimate E motors are designed and manufactured in the USA. Our new facility in Cleveland, Ohio provides you with excellent craftsmanship, allowing us to offer a five-year warranty against defects in materials and workmanship. Plus, all Crusher Duty motors with a 1.15 or higher service factor have a 2 year warranty when operated on inverter power (1 year warranty on 1.0 SF motors).



# Ultimate E<sup>®</sup>

# TEFC Steel Motors

# Crusher Duty Ultimate E<sup>®</sup>

## TEFC Steel Motors

**Frame Sizes**  
405T - 449T

**Horsepower Range**  
100 - 400 HP; for higher  
HP sizes, contact Lincoln.

**Speeds**  
1800, 1200 RPM

**Insulation**  
Premium Class F Plus

### Design

HP	Speed	E1	E2
100	1800	B & C	B & C
	1200	B	B & C
125 to 200	1800 & 1200	B & C	B & C
250 to 400	1800 & 1200	B	B

**Paint System**  
E-Coat primer and  
epoxy top coat

**Salt Fog Test**  
>300 hours

**Windings**  
100% copper  
200°C

**Shaft Material**  
High strength 4340 steel

**Bearings**  
Roller bearing on drive  
end; ball bearing on  
opposite drive end

### BEARING SIZES

Frame Size	DE	Opp DE
405T	315	313
444T-449T	318	315



# Belt Me.

(I can take it.)



### Mechanical Toughness

- Durable, heavy gauge arc welded steel frame, end brackets and fan cover.
- High-strength 4340 steel shaft and drive end roller bearing combine to handle severe belted loads.

### Excellent Corrosion Protection

- Lincoln E-coat system for prime painting all metal surfaces provides industry-best corrosion protection. Tests show no primer degradation after 300 hours of salt fog exposure. A top coat of gray epoxy paint adds a final layer of protection.

### Ultimate Protection From the Elements

- TEFC enclosure is ideally suited for environments where dust, dirt and moisture are present.
- Build-up of dirt, dust or debris on outer shell doesn't block ventilation system - motor continues to run cool (unlike cast iron frames where material can accumulate in valleys between fins and restrict heat transfer.)
- Fully gasketed steel terminal box - lead connections stay clean and dry.
- Laser-etched, stainless steel nameplate remains easy to read.

### Longer Bearing Life

- Shaft slingers (both ends), internal cast iron bearing cartridges and close tolerance fits prevent contaminants from entering bearing system.
- Lincoln dynamically balances every rotor to minimize vibration. In fact, vibration is *equal to or less than half* of the NEMA maximum allowable limit.

### Superior Insulation System

- Premium Class F and Class H components are expertly combined in Lincoln Crusher Duty motors to provide an extra 5°C temperature cushion (insulation system rated at 160°C vs. standard 155°C) for longer motor life expectancy.

### More Versatile

- Every Crusher Duty motor is capable of across-the-line starting, y-delta start (YDS) and part-winding start (PWS).
- Lincoln Crusher Duty motors work well in a variety of positions - mount them horizontally or vertical shaft down.
- Installing an inverter-drive on your equipment may improve operation efficiency and lower costs - Lincoln Crusher Duty motors are inverter-rated for any drive at any distance and any carrier frequency plus they don't require filters.
- Most ratings (see chart) have starting torques which surpass NEMA Design C (special high-torque) requirements. All sizes have breakdown torques which exceed NEMA Design B levels (Design B's BDT values are actually higher than Design C's).
- Starting currents are within the Design B maximum values so you don't have to worry about special control system requirements.

### Protecting Your Investment

- Every Lincoln Crusher Duty motor features thermostats for effective thermal overload protection.
- Optional space heaters\* eliminate condensation build-up in the motor during extended periods of no production to lengthen motor life.
- Optional thermistors\* and control module.

\* MOTOR-9-1™ Program option. Modifications made at Lincoln's Cleveland facility in as little as 5 working days. See LC100 catalog for details.



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