



# Product Data Sheet

## Horizontal A.C. Motors

### U-Frame

#### Automotive Duty Motors



- **Specifically designed for the demands of the Automotive industry**
- **1/4 through 300 HP available 900, 1200, 1800, 3600 RPM 460 and 575 volt**
- **Class F insulation system, Class A temperature rise**
- **Totally Enclosed Fan Cooled**
- **C-Face and D-Flange Kits available 140-447 Frame**
- **ALLGUARD® Motor Quality System**



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# Product Overview

## JAD & JDE Specifications

U.S. Electrical Motors manufactures two lines of Automotive Duty, U-Frame motors. The JAD line meets specifications for standard efficiency motors, and the JDE line fulfills requirements for premium efficient motors. These motors are designed to provide a long service life and cool, quiet, efficient operation, while withstanding harsh environments.

The U-Frame Automotive Duty Motors are specifically designed to meet the specifications of General Motors, Ford and Chrysler:

JDE Premium Efficiency-  
General Motors 7EH  
Chrysler NPEM-105

JAD Standard Efficiency-  
Chrysler NPEM 100  
Ford EM-1  
General Motors 7EQ

## C-Face and D-Flange Kits

U.S. Electrical Motors has developed kits to be added to stock Automotive Duty Motors. These kits enable our conversion center, our distributors and our users to convert stock motors to footed C-Face or D-Flange motors. C-Face kits are available from 56 through 447 frame. D-Flange kits are available from 180 through 447 frame.

## Enclosure

1 or 1- 1/2 HP motors are available as either totally enclosed non-ventilated or totally enclosed fan cooled, and all motors 2 HP and larger are totally enclosed fan cooled.

## Speeds

U-Frame motors are available from stock in 900, 1200, 1800 and 3600 RPM.

## Construction

The stator frames and end brackets are cast iron. Fan cover guards and conduit boxes are sheet steel on the JAD motors and cast iron on the JDE motors. The oversized conduit boxes contain a lead positioning gasket between the box and the frame, and the cooling fans are made from non-sparking metal alloys or plastic for safety and efficiency. Drains are located at both ends of the motor to eliminate moisture. All rotors are keyed or shrunk to the shaft. A shaft slinger is also standard.

## Bearings

The U-Frame's bearings are double shielded regreaseable with the "straight-through" lube system, and their life span is 50,000 hours L-10 under normal loading conditions, surpassing the 25,000 hour specified life span. Their extremely low temperature rise extends bearing grease life up to 10%, as compared to other high efficiency models, helping you reduce maintenance costs.

## Temperature

U-Frame motors' temperature rise at a full load normally falls in the 30° to 40°C range, which is well below the specified 60°C temperature rise standard for automotive duty motors. This means the motor will have longer insulation and bearing grease life.

## Noise Level

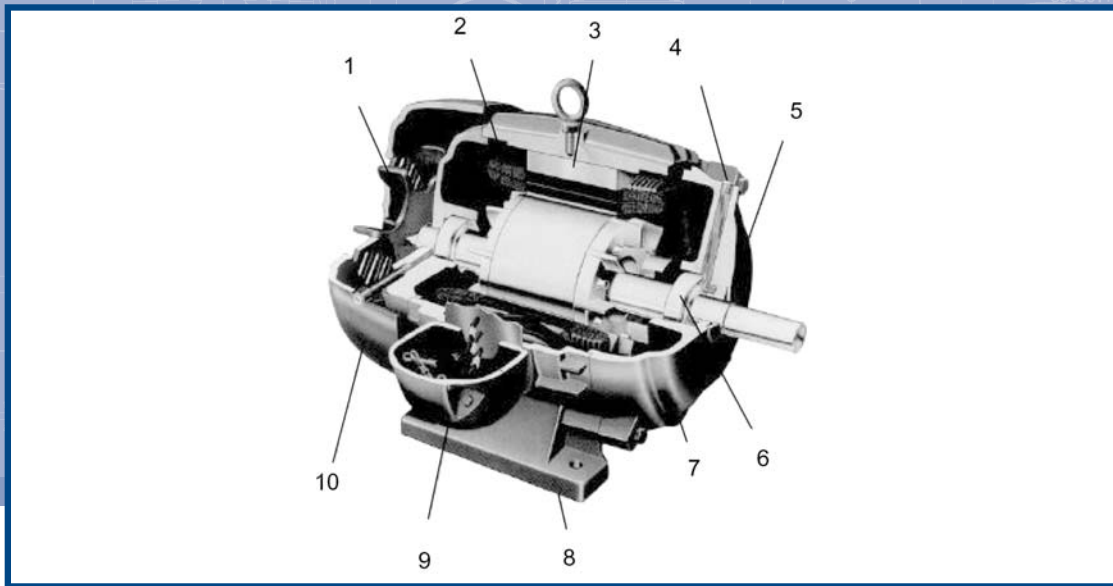
Sound power level on an "A" weighted scale for all motors 1800 RPM and below shall not exceed the dB values listed below when tested according to IEEE 85:

Up through and including 405"U" 85dBA lw (A)  
444 "U" and 445 "U" 88dBA lw (A)

U-Frame motors meet this specification, but can be made even quieter. Optional non-vented construction reduces sound levels an additional 5 to 10 dBA for motors to 10 HP.



# Product Features



## Frame Size

NEMA old rating size “U” frame, 1952

## Voltage

All U-Frame motors are stocked as 460 volt, three leads only. 575 volts are available from production.

## Efficiency

Both the JAD and JDE U-Frame motor types surpass the federally legislated minimum efficiency levels. In fact, the JDE (premium efficiency) type is one of the most efficient stock motors available in the marketplace.

## Insulation

All motors have a Class F insulation system that consists of Class H insulation materials with Class F leads to help withstand the severe environments found in the automotive industry.

## Vibration

Automotive specs call out specific balance limits. All U.S. Motors U-Frame products are balanced to .08ips peak resilient mount per Nema MG1

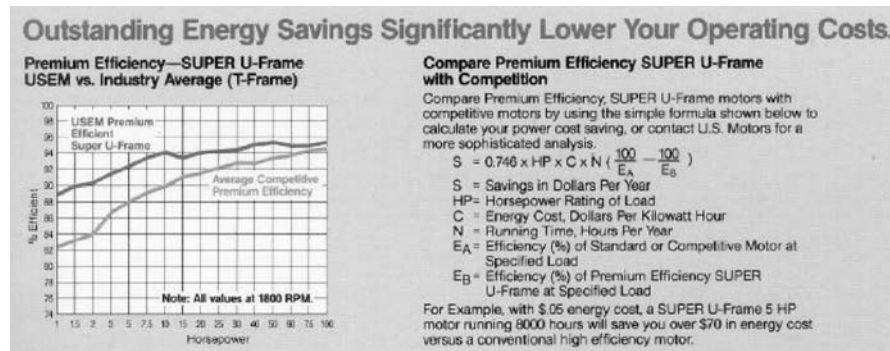
## Construction Features

1. The compact, non-sparking (metal or plastic) fan reduces noise levels, losses and resists corrosion.
2. Class F insulation system provides longer winding life.
3. A low-loss steel stator provides for higher efficiency.
4. The grease fill and drain are located for easy access.
5. A Neoprene Shaft Slinger minimizes entry of contaminants to extend bearing life.
6. The double-shielded, vacuum degassed ball bearings offer smooth, quiet operation and a long service life.
7. Strategically located breather drains eliminate moisture and contaminant buildup.
8. The cast iron frames and brackets are durable to withstand severe stresses.
9. The dual gasketed, rotatable conduit box protects against contaminants and positions non-braided, non wicking motor leads.
10. Oxide primer and Corro-duty paint protect the external surfaces from corrosion.



## Efficiency levels Provide Long Term Payback

U.S. Motors' unsurpassed efficiency levels are providing long term payback for customers. The JDE line of U-Frame motors gives the best efficiency levels in the marketplace. These efficiency levels provide the best return on investment in the industry. With the U.S. Motors U-Frame motor, you will realize a significant drop in operating costs from lower electric bills to less maintenance.



Emerson Motor Technologies, a global leader in the design and manufacture of electrical motors, provides a complete line of general and special purpose electric motors from 1/200 through 4,000 horsepower. Brands such as Emerson, Doerr, U.S. Electrical Motors, Hurst, and Switch Reluctance Drives, allow Emerson Motor Technologies to support a wide variety of applications including commercial and industrial, appliance, hermetic, automotive, and HVAC. For more information about Emerson Motor Technologies visit [www.emersonmotors.com](http://www.emersonmotors.com).

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