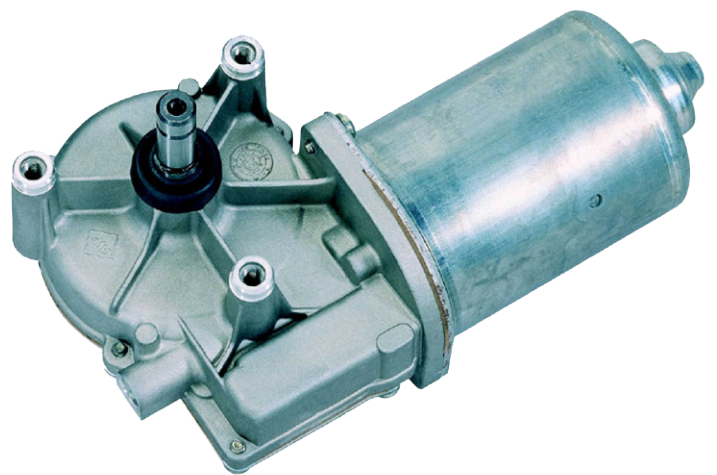




Motorized Medical Patient Lifts  
in Two Weight Capacity Models  
White Paper



The World's Largest Source of Small Electric Motors



## Scope

Our medical manufacturing client was in design and development phase of their latest ceiling-mount patient lift. Their situation was not typical for most applications as many projects are customized based on customer specifications. This project was different, however, in that they chose a motor design with the power, torque and speed needs for the weight capacity of each of their models and then designed around space requirements on the motor itself.

The ceiling-mount patient lift is designed for aiding in the transport of incapacitated patients whether in the home environment or hospital setting and provides a healthy alternative for the caregiver.



## Motor Choice

The client went with our recommended small electric motor design paired with an optional electric transfer motor.

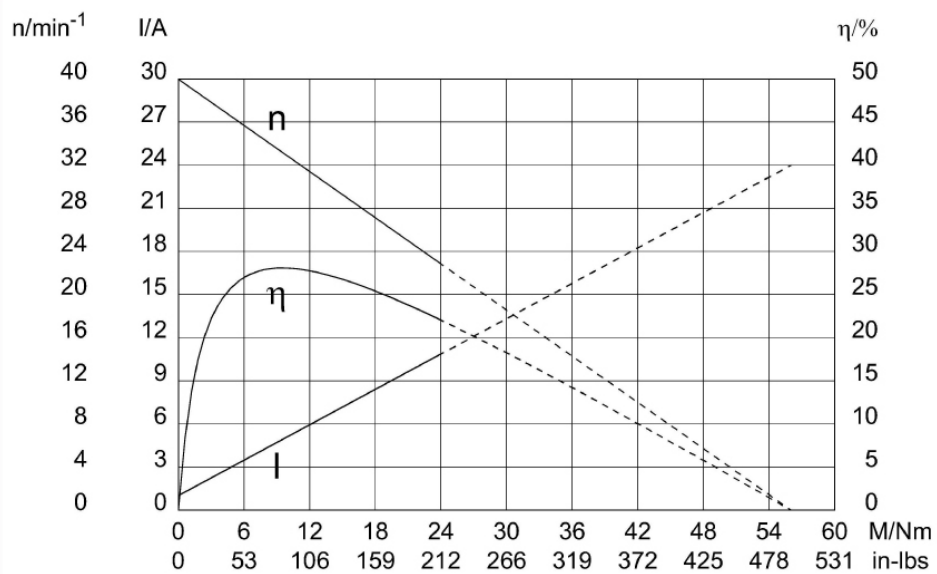
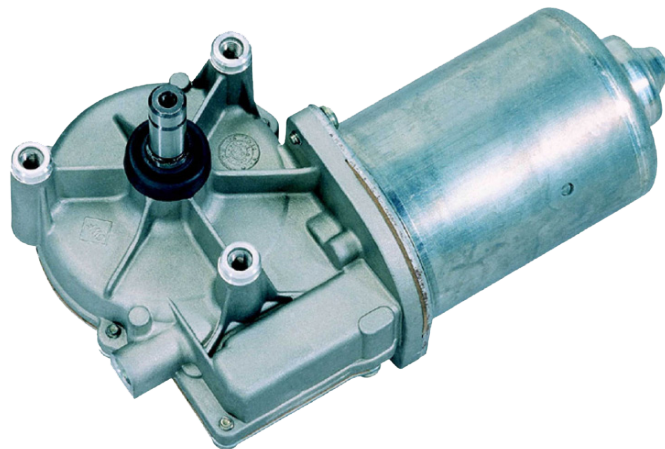
- Brushed right angle worm gear motor configuration is self-locking which allows less backdrive when the motor is stopped to prevent the patient in the lift to fall or allow it to release. Because of the lack of backdrive no brake is needed in the lift.
- The right angle design of this motor is optimal for the vertical output shaft.
- Transfer motors provide mobility from left to right.
- The quiet electric motors are critical in the hospital setting where sound reduction is important to the comfort and well-being of the patients.
- Motor is commonly used in automotive applications with rigorous quality standards.
- Works very well in conjunction with the patient belt, gear and pulley technology the client developed.
- Manufacturer is consistent in quality which is critical for the medical industry.



## Patient Lift One

### DC Right Angle Worm Gear Motor Specifications Model PE403939

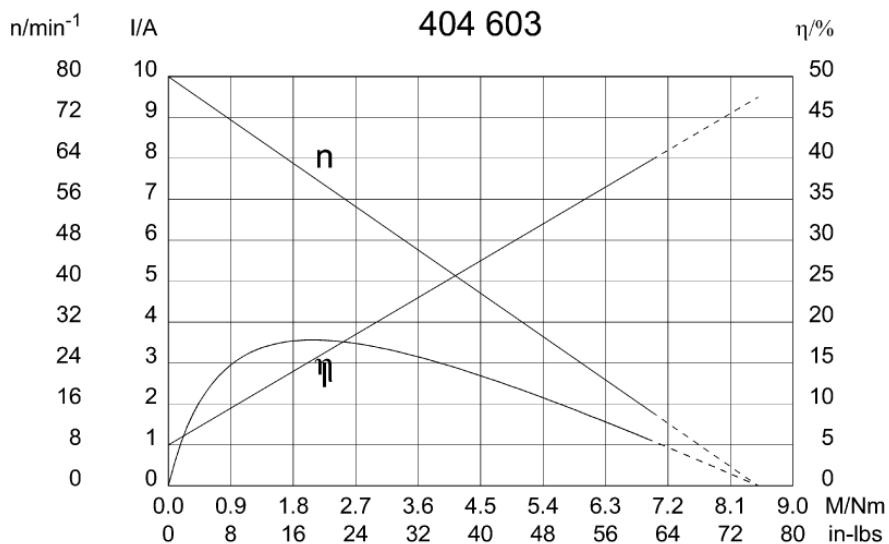
- Weight Capacity for patient lift 440 pounds
- Nominal Torque 5.0 Nm
- Nominal Power 16.8W
- No-Load Speed 40 RPM
- Gear Ratio 78:1





### DC Electric Transfer Motor Specifications Model PE404603

- Nominal Torque 1.00 Nm
- Nominal Power 7.39 W
- No-Load Speed 80.0 RPM
- Gear Ratio 62:1



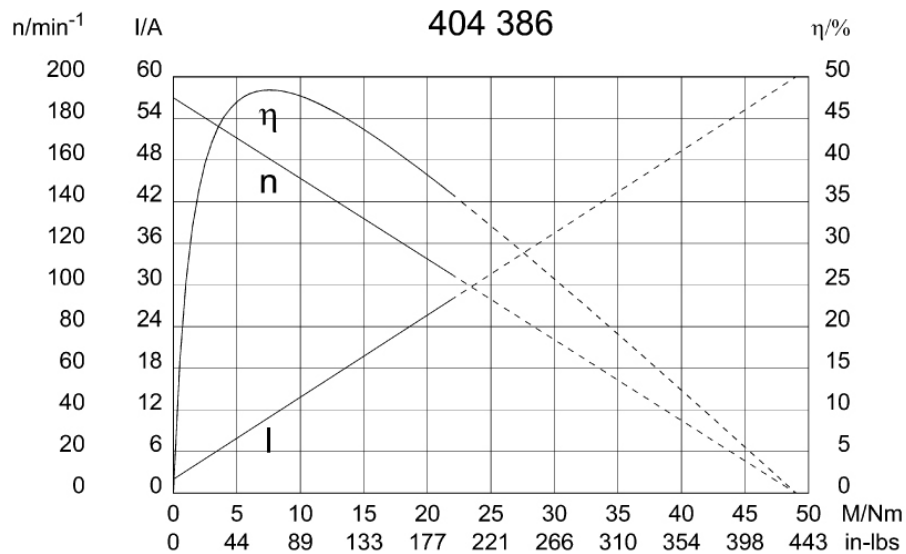
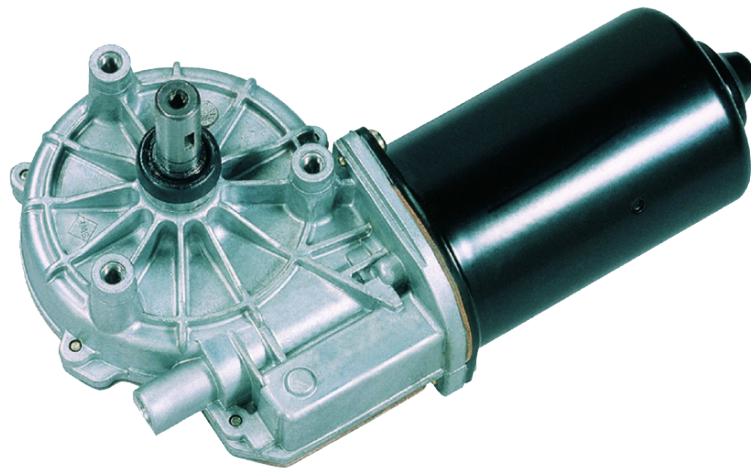




## Patient Lift Two

### DC Right Angle Worm Gear Motor Specifications Model PE404386

- Weight Capacity for patient lift 750 pounds
- Nominal Torque 4.0 Nm
- Nominal Power 73.1 W
- No-Load Speed 190.0 RPM
- Gear Ratio 103:4





## Project Details and Benefits

The client partnered with Power Electric because of quality craftsmanship, durability of the product and logistical expertise.

Power Electric was able to provide logistical support from the internal account management and operational team. A custom stocking and inventory program was established to provide the client's optimal shipping and lead times for their production and sales initiatives. Power Electric also handled customs, port fees, and logistics of ordering geared electric motors overseas through its core competency developed over 25 years.

With an in-house quality assurance team, Power Electric was capable of insuring customer quality requirements.

Innovation, quality, and patient comfort is of utmost importance for the client and Power Electric was able to provide motors to support their mission.



## Conclusion

Finding a motor capable of handling specific weight capacity was the first step for the client. Their engineering team designed the medical patient lift around the space requirements of our pre-designed right angle worm gear motor and paired transfer motor. Environmental noise restrictions and proven consistency in the automotive industry narrowed the selection of manufacturers. Reliability and simplicity in the worm gear mechanism matched the quality standards required for the medical industry. Logistics support from Power Electric has given them the ability to provide ceiling-mount patient lifts consistently and successfully to their customers.

Benefit from selecting the electric motor ideally suited to your needs. Connect with our in-house engineering experts for custom electric motors or find support choosing the right product for your application by calling (763) 383-6936.





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