

Warner Electric

Boston Gear

TB Wood's

Formsprag Clutch

Wichita Clutch

Marland Clutch

Industrial Clutch

Bauer Gear Motor

Svendborg Brakes

Nuttall Gear

Warner Linear

Delroyd Worm Gear

Stieber Clutch

Ameridrives Couplings

Inertia Dynamics

Matrix International

Huco Dynatork

Bibby Turboflex

Twiflex Limited

Lamiflex Couplings

Kilian Manufacturing

Guardian Couplings

Ameridrives Power  
Transmission

# Redesigned Air Motors



As seen in  
**Power Transmission Engineering**  
December, 2008



An Altra Industrial Motion Company

# Redesigned Air Motors

*Minimize need for compressors*



A redesigned series of air motors from Huco Dynatork has reduced the need for air compressors in paint stirring applications. Plants in both the United States and the U.K. have switched from traditional vane motors to air motors. According to the companies press release, one automobile plant is saving over \$150,000 annually on power and equipment costs.

Via an integral rotary valve, air up to 100 psi is supplied to each of three pistons in turn. The free-floating pistons transmit torque on start-up that can be adjusted via a pressure regulator. This results in high torque at variable low speed and low noise.

Because a Dynatork air motor traps the compressed air within the piston/cylinder allowing for maximum energy conversion, the unit is easier to seal than a vane motor cylinder. The air motor consumes up to 80% less air than a vane motor, providing a significant cost savings even at maximum torque. It can be used in harsh and hazardous environments thanks to redesigned internal air passages that replace the external type structure, and it can operate in constant start-stop applications under loads displaying similar characteristics to a stepper motor.

“The original purchasing criteria for the motors, given by the U.K. automaker, were greater reliability on 24/7 operation and freedom from lubrication to avoid the possibility of contamination,” said David Lockett, joint managing director of Huco Dynatork. “However, by changing to the air motor, this manufacturer has gained considerably more. The company has now installed 42 Dynatork motors which have provided a capital savings of two 600 scfm compressors and an overall power savings of 152 kVA per year.”

Available in aluminum, stainless steel for harsh environments, or plastic for high-pressure washdown environments, the air motors can be supplied as fully submersible units for either lubricated or non-lubricated operation.

The air motors are available with maximum torques up to 16Nm, or 550Nm with gearbox. Huco has also introduced a new controller that holds the motor speed constant under variable load for paint and other liquid stirring applications where torque reduces as the paint or liquid levels falls.



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