



Protecting VFD-Driven Motors In: Plastics Production

Precise Control of Equipment Maximizes Output, Minimizes Processing Costs

Today, there are hundreds of types and blends of plastics, and they can be formed, molded, extruded, blown, and otherwise fashioned into a dizzying array of products. But at every stage of their processing — from the production of raw chemical ingredients; to their blending and polymerization to produce pellets, sheets, or blanks; to the forming of finished products — processing equipment must be precisely controlled to ensure the quality, durability, and finish of final products.

VFDs Provide Exceptional Control and Reduce Energy Costs

Whether used with motors for pumps, conveyors, compressors, blowers, or other plastics processing equipment, variable frequency drives (VFDs) provide the precise control of speed and/or torque required for a broad range of plastics processing applications.

The Need for Shaft Grounding on VFD-Driven Motors

But, VFDs can damage the motors they control. They induce voltages on motor shafts that discharge through the bearings, causing pitting, fluting, and catastrophic bearing failure. Without bearing protection, any benefits from the use of VFDs can be quickly wiped out by the exceptionally high cost of downtime and lost production.

Proven Long-Term Bearing Protection

By diverting damaging current from the shaft safely to ground, AEGIS® Shaft Grounding Rings ensure the reliable, long-term operation of VFD-driven motor and systems.



Applications:

- ☐ Reciprocating pumps
- ☐ Displacement pumps
- ☐ Agitators
- ☐ Mixers
- ☐ Dryers
- ☐ Hydraulic accumulators
- ☐ Compressors
- ☐ Blowers and fans
- ☐ Extruders
- ☐ Winders
- ☐ Injection molding machines
- ☐ Overmolding machines
- ☐ Film blowing machines
- ☐ Blow molding machines
- ☐ Thermoforming presses
- ☐ Vacuum forming machines
- ☐ Twin sheet forming machines
- ☐ Shredders
- ☐ Conveyors



The Problem

Plastics production processes typically involve very large runs, and machine failures can shut down production, resulting in costly repairs and huge revenue losses. So, when the 300 HP motor for an injection molding machine at a North Carolina plastics plant experienced premature bearing failure, plant engineers wanted to know why. Testing showed VFD-induced shaft voltages were the cause of the failure.

The Solution

Plant engineers contacted an AEGIS® salesperson, who recommended installing an AEGIS® Shaft Grounding Ring on the machine's motor. AEGIS® Rings completely surround the motor shaft and provide a very-low-impedance path to ground for damaging shaft voltages, protecting motor bearings and preventing costly downtime and repairs. Rings are available for low-voltage and medium-voltage motors.

The ring reduced VFD-induced shaft voltage from 28.8 V peak-to-peak (before installation of the ring) to a non-damaging level of 2.0 V peak-to-peak.

And when installed according to AEGIS® Best Practices and registered through the AEGIS® website, AEGIS®-equipped motors are protected against electrical bearing damage by a FREE 2-Year Warranty!

AEGIS® Rings are available through:

