

Cognito's EODD Pump Delivers Over 70% Energy Savings in Lubricating Oil Transfer for a Chinese Chemical Manufacturer

Cognito worked with one of the world's largest energy and chemical producers, a Chinese chemical manufacturer known for setting benchmarks in operational excellence and innovation across the world. Specializing in lubricating oil transfer, the customer sought to overcome persistent challenges in its pumping operations.

This success story highlights how Cognito's advanced electrically operated double diaphragm (EODD) pump technology improved performance, safety, and overall cost efficiency.

Lubricating oil, with a viscosity ranging between 200–1500 cP, presents unique challenges in transfer applications. While the fluid is non-abrasive, viscosity variations require pumps that can maintain stable flow and pressure without frequent failures. Smooth, reliable lubricating oil transfer is essential to prevent process interruptions and support continuous production.

Operational Challenges

The customer's operations relied on air-operated double diaphragm (AODD) pumps, which led to several ongoing issues:

- Excessive energy consumption
- High noise levels during operation
- Inadequate safety features
- Frequent diaphragm and ball failures resulting in unplanned downtime and increased maintenance costs

To address these challenges, the customer required:

- A pump with minimal maintenance requirements
- Reduced energy consumption
- Enhanced safety features
- Faster return on investment (ROI)
- Lower noise levels for improved workplace conditions



The Right Solution: Cognito's EODD Pump

Cognito's EODD pump solution delivered a measurable and transformative impact:

- Energy savings of more than 70% compared to AODD pumps
- Significantly lower noise levels, improving operator comfort
- Enhanced safety features for secure operation
- Robust diaphragm design supporting long-term, stable performance
- Reduced downtime due to fewer spare part replacements and maintenance interventions

Customer Experience & Results

Replacing the existing AODD pumps with Cognito's EODD pumps proved to be a game-changer. The customer experienced:

- A substantial reduction in operating energy costs
- Lower maintenance expenses, with diaphragm failures effectively eliminated
- Quieter operation, improving overall working conditions
- Improved reliability, ensuring uninterrupted lubricating oil transfer

The implementation of Cognito's EODD pump significantly improved lubricating oil transfer performance for this chemical manufacturer. By addressing energy inefficiency, noise, and maintenance challenges, Cognito delivered a solution that exceeded operational expectations. The customer expressed complete satisfaction, citing energy savings, reduced spare part consumption, and minimized downtime as key benefits.



Competitive Analysis & Energy Consumption

Parameter	AODD Pump	Cognito EODD Pump
Size of Pump	2"	2"
Fluid Name	Oil	Oil
Flow Rate	160 LPM	160 LPM
Discharge Pressure	2 barg	2 barg
Viscosity	200–1500 cP	200–1500 cP
Solid Particle Size	None	None
Temperature	Ambient	Ambient
Discharge Head (Sp. Gr.)	1	1
Air Consumption (SCFM)	46 SCFM	–
Pump RPM	–	110 rpm
Compressor HP Required (1 HP = 4 SCFM)	11.5 HP	–
Motor HP	–	7.5 HP
Energy Consumption at Duty Point (Estimated)	8.6 kW	2.1 kW
Electricity Consumption / Month	3,088 kWh	756 kWh
Electricity Consumption / Year	37,061 kWh	9,072 kWh
Per Year Energy Saving	–	27,989 kWh
Maintenance Frequency	Frequent diaphragm & air valve failures	Robust diaphragm & minimal failures
Noise Level	High	Relatively lower
Safety Features	None	Enhanced
Per Year Energy + Maintenance Impact	Higher	Significantly reduced



Performance, Safety, and Trust Delivered

By replacing AODD pumps with Cognito's EODD pump technology, the customer achieved over 70% energy savings, drastically reducing electricity consumption and operational downtime. The robust diaphragm design minimized failures, while quieter operation and enhanced safety features improved workplace conditions.

With a payback period of less than two years and significant long-term savings, Cognito's solution has proven to be a sustainable, reliable, and cost-efficient choice for lubricating oil transfer applications.

Before



After

