

**MICROPUMP**®

A Unit of IDEX Corporation

# Botanical Extraction Applications

David Grimes

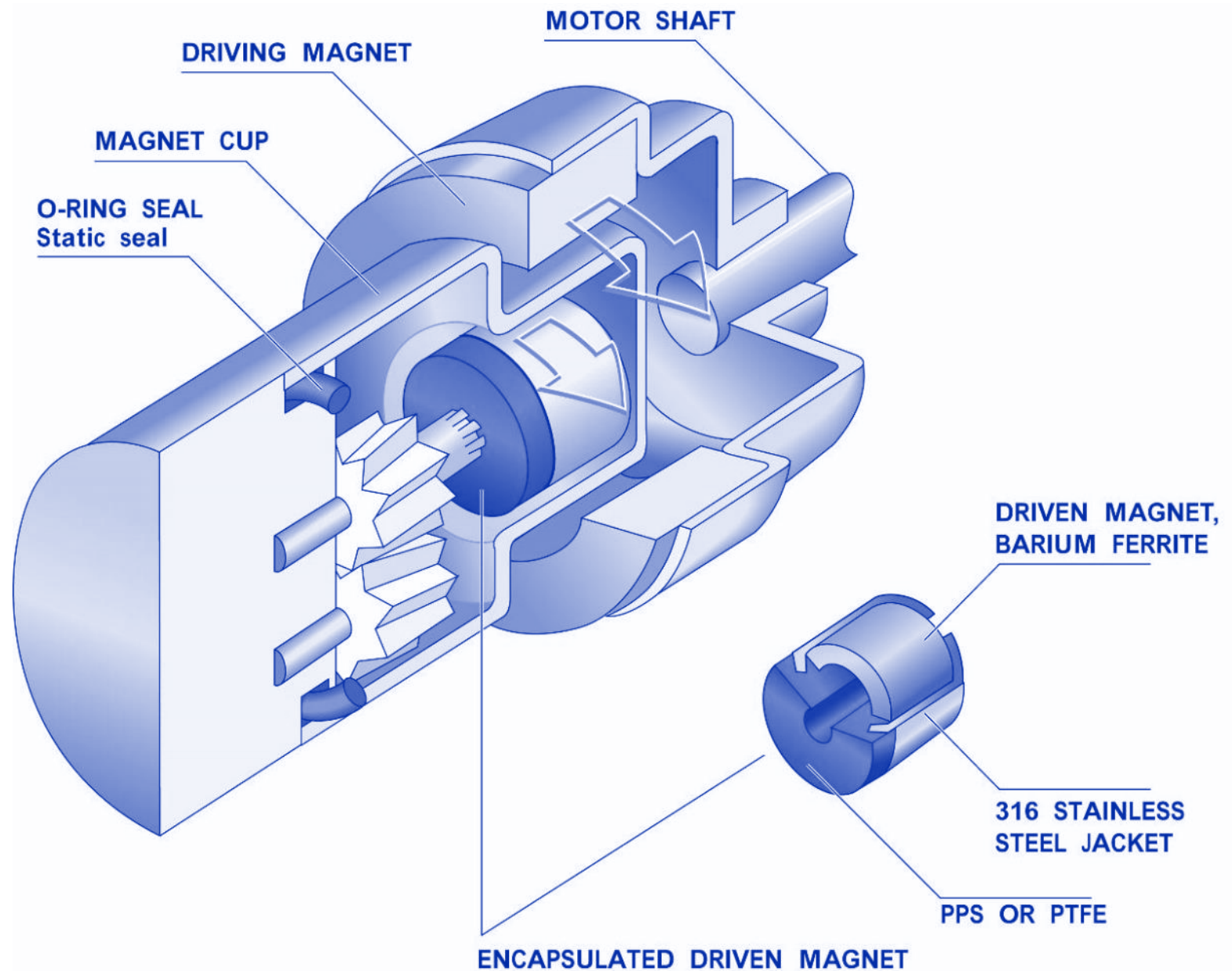
Staff Engineer

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# What is Magnetically- Driven?

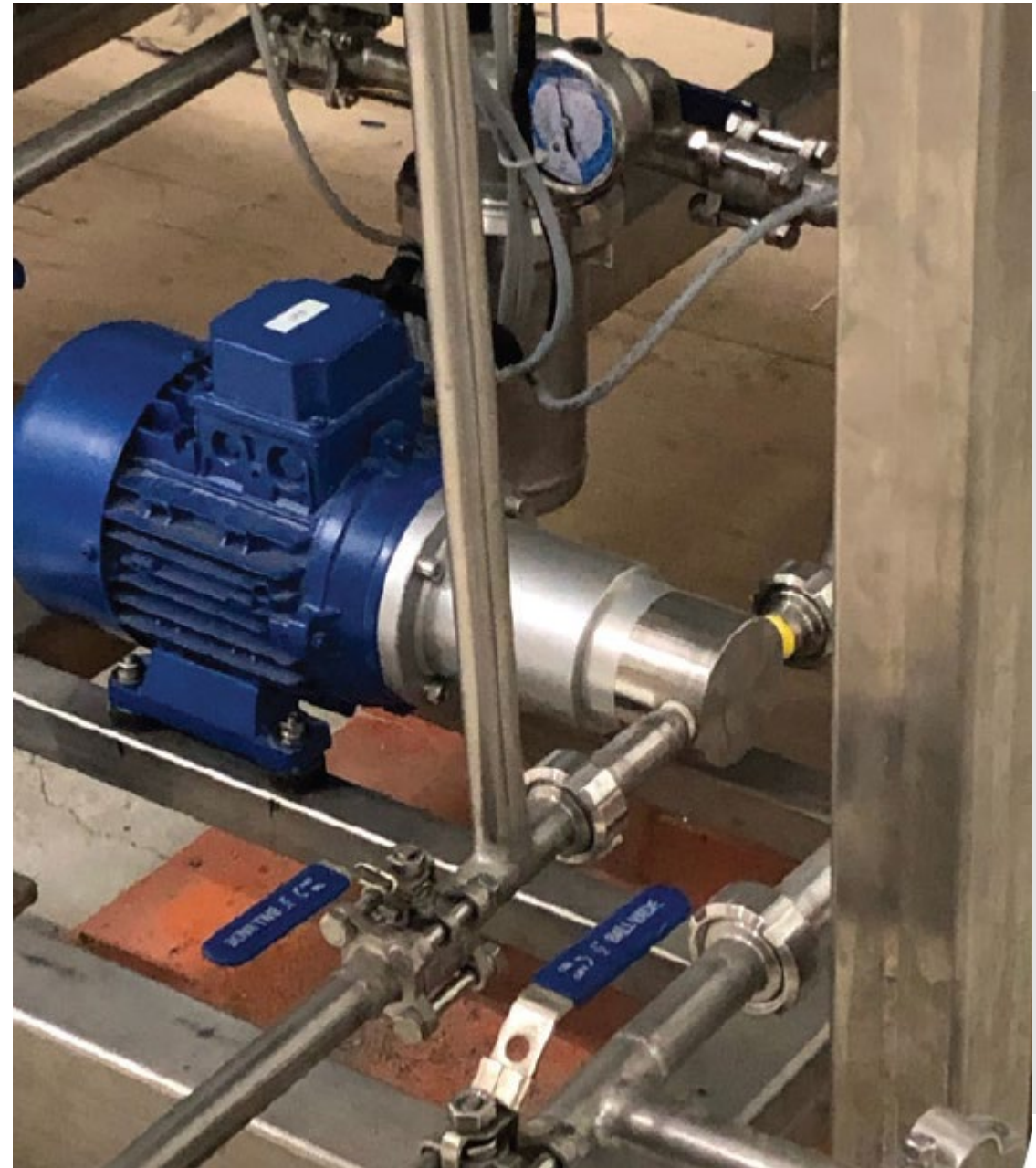


# Botanical Extraction Technology

Botanical extracts are growing in demand due to favorable governmental regulations and adoption of extracts into more and more end-use products from pharmaceuticals or personal care to food and beverages.

There are numerous technologies for extraction available on the market. Much of the market success relies on quality of the extracted product and minimal degradation to the natural ingredients.

Micropump gear pumps answer the botanical extraction industry need for accurate and reliable fluid movement, even in cold temperature applications.



# Botanical Extraction Technology

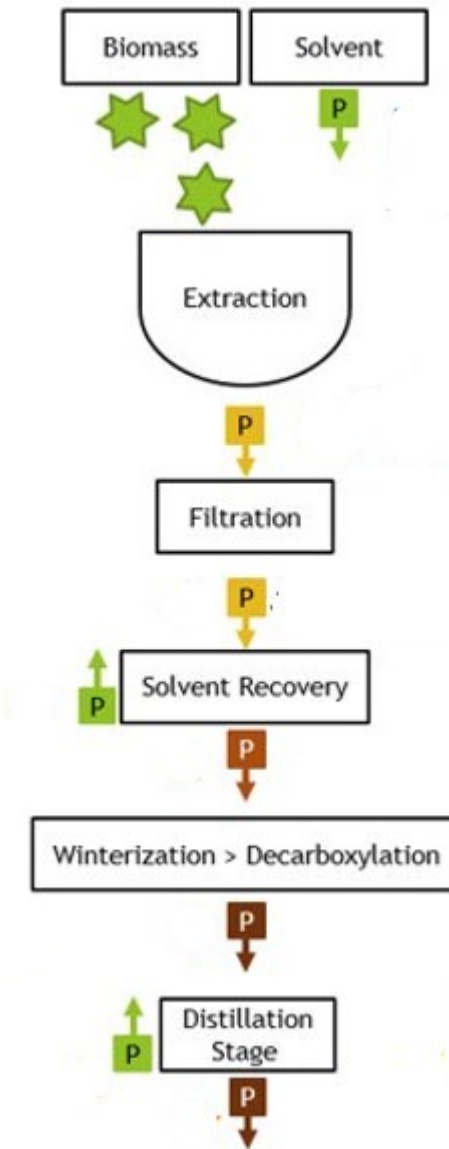
Micropump offers the best fluid movement with a truly efficient pump. Other technologies can require a lot of power as they lack volumetric efficiency, resulting in potential degradation of the extract and high power consumption.

Micropump suction shoe gear pumps are the ideal solution for extraction processes. The suction shoe allows for consistent performance across a wide operating temperature range compared to traditional cavity-style gear pumps. With no adjustment needed, the suction shoe gear pump has the same hydraulic performance from the lowest temperature to the highest temperature allowed by the materials. Similarly, the suction shoe has optimal longevity at higher differential pressures.

Extraction Process Stages Where Micropump can offer solutions:

- Solvent
- Filtration
- Solvent recovery
- Winterization

# Botanical Extraction Technology Block Diagram



 Micropump Product Success



# Botanical Extraction Technology Success

**MICROPUMP®**

COMERG GROUP Ltd. decided to rely on the high quality of Micropump gear pumps. Magnetically coupled GC-M25 and GC-M35 pumps are mainly used in the extraction process.

The GC-M25 pump is used in the 2x10 L extraction system. The GC-M35 pump is used in another product the 2x100 L extraction system.

The pumps are used to circulate solvent, where operating pressures vary between 8 and 12 bar. Micropump was chosen due to reliable and precise gear pumps. Other pump technology was originally used in the system and were failing weekly causing costly downtime and maintenance. The customer found greater value in utilizing the Micropump pumps due to the longevity and reliability they offer, with the first pumps still performing for more than 2 years of system operation – about 20 times longer than the previous technology.



Suitable for use with a wide  
range of chemistries



Longevity of pump  
lifespan



Accurate Flow



Wide operating  
temperature range

# Botanical Extraction Technology

- Solvent supply/metering pump
- Product transfer pump
- Solvent circulation pump



# Product Solutions for Botanical Extraction Equipment

## GC Series Specifications

- Displacements:  
0.81 ml/rev (M23) | 1.82 ml/rev (M25) | 3.48 ml/rev (M35)
- Min Flow Rate: 405 mL/min (0.107 US gpm)
- Max Flow Rate: 13.9 L/min (3.7 US gpm)
- Max Differential Pressure: 8.6 Bar (125 psi)
- Max System Pressure: 103 Bar (1500 psi)
- Temp range: -46 to 177 °C (-50 to 350 °F)





Thank You!