



Advanced fluid management systems.



Rail

Marine

Heavy Equipment

Aviation

Power Generation

Mining



# Paragon Overview



- Established in 1994
- Aftermarket Supplier since 1994
  - over 95,000 fuel and oil pumps sold directly to end-users around the world
- OEM technology partner/supplier for fluid transfer since 1998
  - over 200,00 fuel and oil pumps sold as original equipment
- Six Sigma practices in place since 1999
- ISO 9001:2015 - certified continually since 2002 for design, manufacture, and repair of pumps for the transportation industry
- AAR M1003 - certified continually since 2004 for product/services for manufacturer and reconditioner of locomotive fuel, oil and water pumps.
- 40,000 sq ft facility provides for Production, Office, Quality, Engineering, Final Assembly and Test Facilities



# Paragon Delivers Performance

## Industrial fluid transfer solutions that:

- Perform under the most challenging and grueling conditions
- Are designed for over to 10-years of continuous service requiring no maintenance
- Offer unsurpassed reliability
- Deliver exceptionally low total cost of ownership



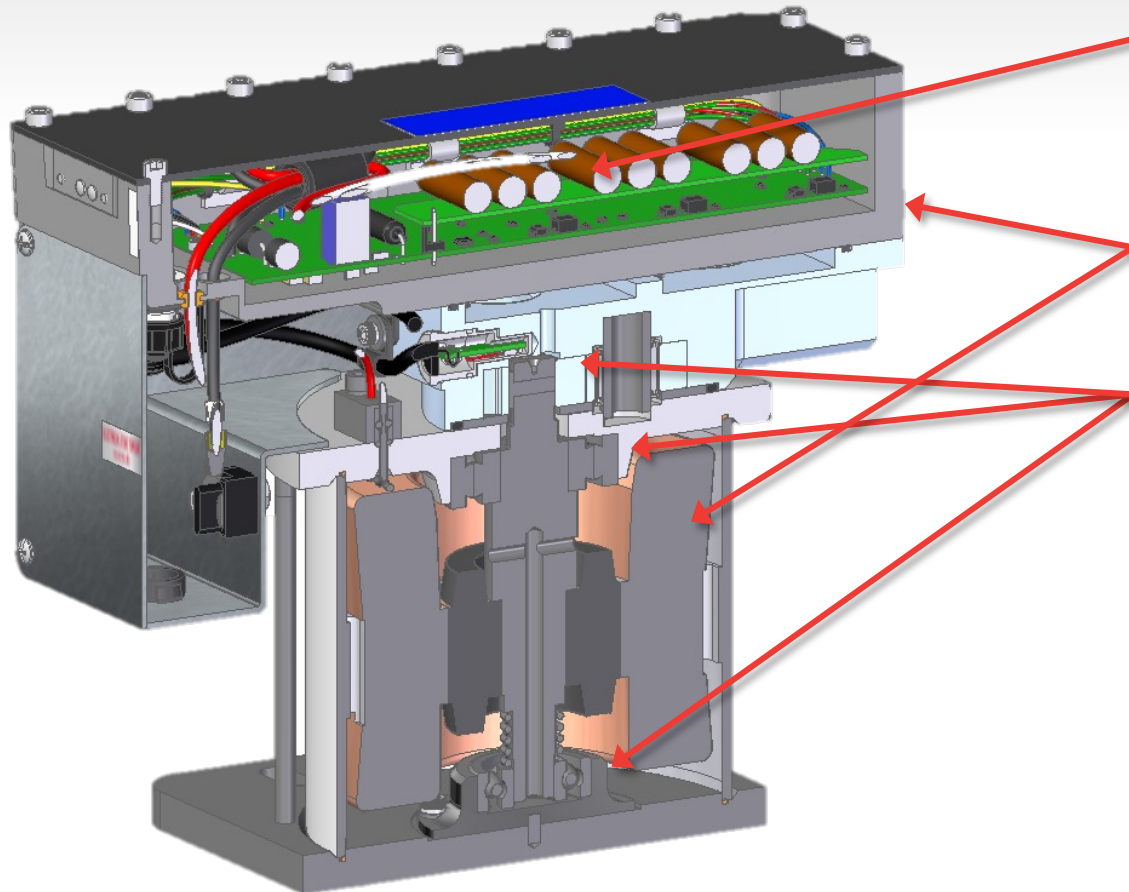
# Paragon Overview



## Products for the Rail, Marine, Mining, Off Highway, and Power Gen applications

- Fuel Pumps (electronic)— flow ranges from 0.25 to 16-gpm
  - transfer, priming, lift, boost, and polishing
- Lube Oil Pumps (electronic) — flow ranges from 0.25 to 40-gpm
  - pre-lube, turbo soak-back, continuous duty
- Coolant Pumps (engine driven) — flow ranges from 300 to 900-gpm
- DEF/AdBlue® Pumps (electronic) — flow ranges from 0.5 – 4-gpm
- Pressure Regulating & Relief Valves — flow ranges from 1 to 20-gpm

# Paragon's Advanced Technology



3 phase AC Controller 24-vdc to 110-vdc input; capable of variable speed and/or closed loop pressure control

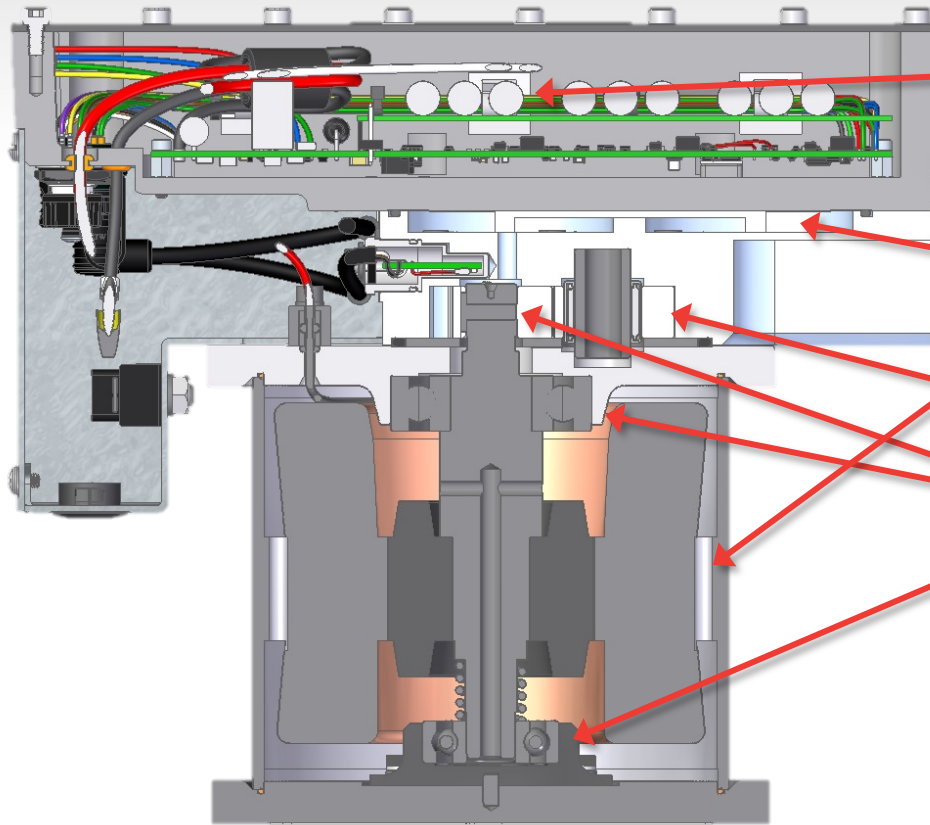
Media cooled controller/AC brushless motor

Fresh fuel purges debris from bearings

Self priming and designed to be used with large debris – 30 mesh strainer (600 microns)

Exceptional durability; designed for over 10-years maintenance service

# Paragon's Advanced Technology



Intelligent controllers (variable speed drive), controlled via CAN or closed loop

Media cooled electronics/AC brushless motor

Hardened gears

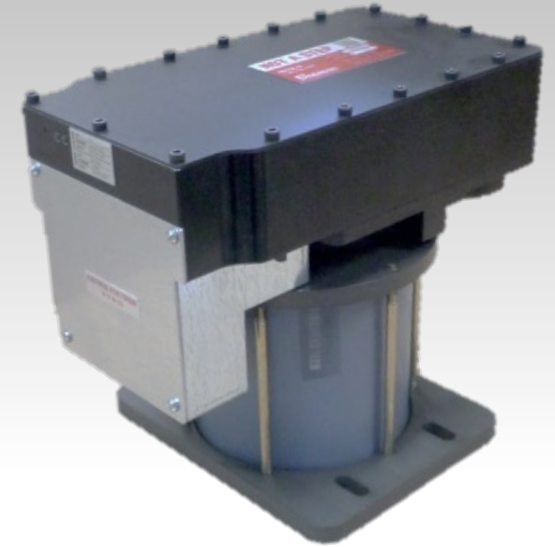
Continuously lubricated bearings

Self priming and designed to be used with large debris – 30 mesh strainer (600 microns)

Exceptional durability; designed for over 10-years maintenance service

# Controllable Fuel Transfer Pumps

- Continuous duty
- Diverse range of flow rates available
  - 0 to 30-lpm (0 to 8-gpm)
  - 30 to 60-lpm (8 to 16-gpm)
- Pressure control with target pressure between 0.5-bar and 10-bar (5-psi and 150-psi)
- Monitors and report the presence of air, sensor failure, locked rotor, filter clogging, thermal problems, limp home mode, and dry run conditions, etc.
- Visual status (LED) indicator for pump and system status.
- Handheld device for troubleshooting and diagnostics
- CANBUS signal communication
- Energy savings by reducing parasitic loads
- Extended filter life
- Maintenance free service life of over 10-years



# Fuel Priming Pumps

- Tailored to your specifications
- Various flow rates available
  - 0.25 to 26-lpm (0.5 to 7-gpm)
- Various outlet pressure designs
  - up to 10-bar (150-psi)
- 24-vdc to 110-vdc input



# Fuel Transfer Pumps

- Tailored to your specifications
- Various flow rates available
  - 0.25 to 6-lpm (0.5 to 16-gpm)
- Various outlet pressure designs
  - up to 10-bar (150-psi)
- 24-vdc to 110-vdc input



# Pre-Lube Pumps

- Tailored to customer specifications
- Brush-type DC motors
- Diverse range of flow rate designs
  - 15-lpm to 110-lpm (4-gpm to 30-gpm)
- Outlet Pressure up to 10 Bar (150-psi)
- 24-vdc to 110-vdc power input



# Turbo Soak-Back Pumps

- Tailored to suit your specifications
- Maintenance-free AC motors
- Continuous lubrication and cooling media
- Diverse range of flow rate designs
  - 8-lpm (2-gpm)
  - 15-lpm (4-gpm)
- Outlet pressure up to 2.7-bar (40-psi)
- 24-vdc to 110-vdc input



# Mechanical Lube Pumps

- Dual or single pump configurations
- Operating speed up to 1500-rpm
- Flow rate up to 1892-lpm (500-gpm)
- Outlet pressure up to 10 Bar (150-psi)
- Mount is tailored to your equipment
- 20-year design life, up to 10-year service interval
- pressure control via remotely operated valve



# Coolant Pumps

- Flow rates up to 4600-lpm (1200-gpm)
- Output pressure up to 3.5-bar (50-psi)
- Integral seal flush extends life
- Balanced impeller
- 20-year design life, up to 10-year service interval
- Mount is tailored to your equipment



# Pressure Relief Valves

- Field adjustable setting
- Flow rates 2-lpm to 53-lpm (0.5 to 14-gpm)
- Pressure settings 1-bar to 15-bar (15-psi to 150-psi)
- Customizable to fit various applications
- Exceptional durability – designed to outlast the service life of the engine they support



# Core Competencies

- Engineered fluid management solutions that deliver exceptional longevity
- Creative yet pragmatic problem solving based on sound engineering principles
- Precision manufacturing and testing capabilities that result in superior product quality, consistency, and on-time delivery
- Unparalleled reliability and warranty in **Rail, Marine, Mining, Off Highway, and Power Gen applications**

# A World of Applications

- Locomotive fluid transfer
- Priming, lift, boost and polishing applications
- Mining equipment
- Lubrication for heavy equipment
- Stationary and backup power generation
- Fuel economy enhancing systems
- Exhaust after-treatment systems
- Cooling applications
- Pressure control – fuel and oil systems

# Global service and support

North America and Europe

Paragon Products, LLC

Central America, South America and South Africa

Paragon Bombas Com. e Serv. Ltda.

Northern Asia

Yilong Manufacturing Products

Southern Asia

Auto Industries

Pakistan

Hashmi Engineers

Australia and New Zealand

Aus Railway Services Pty Ltd

Indonesia, Singapore and South East Asia

PT. Transavia Utama

# A World of Applications



TRANSNET



RioTinto



GENERAL DYNAMICS





Partner with the best.

