

# OIL & GAS CAPABILITY STATEMENT



The Renroc Group has a range of Oil & Gas products to provide maximum availability, optimal lifetime and reduce maintenance and life cycle costs.

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#### RENROC GROUP

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The Renroc Group has specialised in fluid handling solutions since 1991. Specialising in Sealless pumps and API610 initially, Renroc Group has evolved to offer a diverse product range. Renroc Group has been built on the following key pillars;

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#### QUALITY

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Supplying quality products is very important to Renroc Group. Our quality systems are accredited to ISO9001. All employees are part of offering the highest quality products, service and support.

Renroc Group works with Third Party and Client Inspectors as required and has an experienced team that can meet the most stringent requirements, including documentation.

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#### HEALTH, SAFETY AND ENVIRONMENT

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The most important thing is that every employee and person in contact with Renroc Group goes home safely at the end of the day. Renroc Group operates under a strict policy for Health and Safety; we also operate with a no harm to the environment policy.

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#### SUPPLY CHAIN

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Renroc Group operates a wide supply chain with partners in Australia, Europe, Asia and America. This enables us to provide commercially attractive high quality products.

Utilising a diverse supply chain we are able to offer a wide range of delivery options both within Australia and internationally.



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### AUSTRALIAN CONTENT

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As a proud Australian company, all projects contain Australian content, from meeting Australian Standards and fabrication work, to providing project management and documentation services.

Australian content can also include manufacturing to meet Australian welding, guarding, surface treatment and pressure vessel Standards.



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### LIFE CYCLE COST

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Renroc Group works with multiple supply chain partners and technologies. We aim to recommend the best pump option for the project. We base best pump selection on our significant experience and the pump we believe will offer the lowest total life cycle cost. Renroc Group aims to collect data in conjunction with our Clients, to continually improve our life cycle cost modelling.

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### SERVICE & SUPPORT

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All products receive total lifetime support, from purchase order to decommissioning. Service staff can attend site, including offshore facilities and internationally. Warehousing for spare parts is managed by Renroc Group and full pump repairs are also undertaken.



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### EDUCATION

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Renroc Group are fluid handling experts and aim to share our knowledge with our Clients. We provide this through technical sessions to educate on the pumps and technologies that we provide and current best practice methodologies.

# Oil & Gas Products Summary

Renroc Group supplies the Oil & Gas industry with the following products;

- : API610 Pumps
- : Sealless Pumps including API685 compliant units
- : API674 Plunger Pumps
- : Cryogenic Pumps
- : General Service ANSI & ISO
- : Schroedahl Automatic Recirculating (ARC) Valves

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## API610 PUMPS

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Renroc Group has specialised in the supply of API610 pumps since 1991. With multiple Suppliers, we are able to offer best in class delivery starting at 12 weeks and a range of API pumps including; Overhung, Between Bearing and Vertically Suspended models. Documentation is completely overseen by our experienced team, to meet the most stringent requirements.

With a choice of API610 Suppliers, units can be supplied of complete Western origin including castings. Lower cost manufacturing centres can also be utilised. All pumps are backed by Renroc Group's Quality System (ISO9001) and can be audited by Inspectors at any time.

Material Certification and PMI are provided along with the full suite of API testing requirements. ABS and DNV certification is another area Renroc Group has significant experience in.

Pumps can be supplied in material classes from S-5 through to D-2 or variants as specified. Services up to 350bar and temperatures up to 450°C can be handled.

Pump ranges contain low flow designs starting at 0.3m<sup>3</sup>/hr to larger BB1 models able to handle up to 23,000m<sup>3</sup>/hr. With horizontal pumps with NPSHR values starting at 0.3m and VS6, models pumps can meet the toughest conditions. Pumps can also be supplied with seal systems in accordance with API682. This includes complex dual seal systems in accordance with plan 52, 53A or 53B and gas seals plan 72/74.

Renroc Group's technical experts are completely versed in the API610 Standard, this enables us to offer free information sessions. Renroc Group can also assist in the review of company standards and provide constructive feedback.



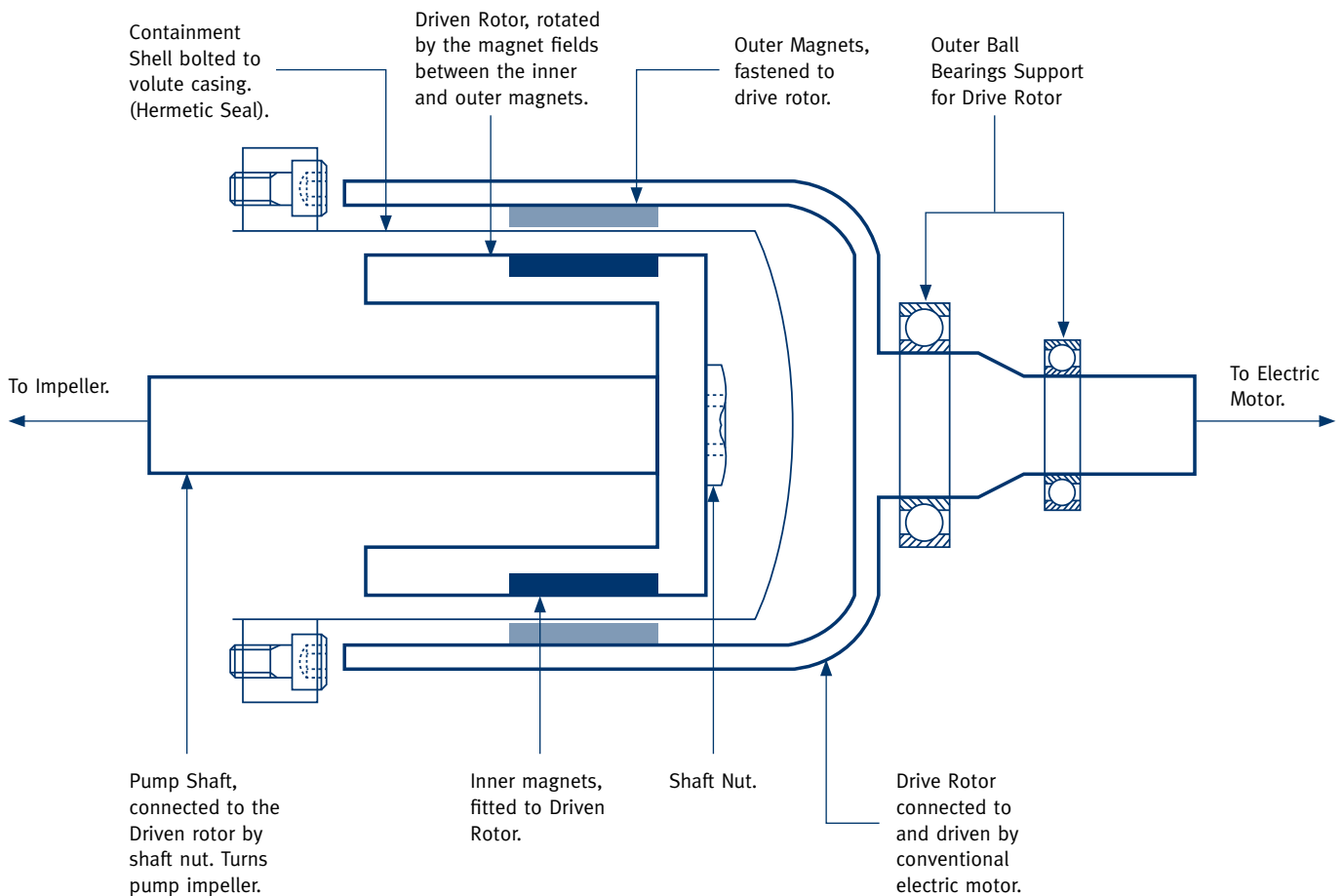


## SEALLESS PUMPS INCLUDING API685 COMPLIANT UNITS

Processing Oil & Gas results in many harsh and dangerous chemicals being encountered, for maximum safety and reliability sealless pumps provide the best solution. Sealless Pumps also are often the best solution for high temperature and high pressure applications. With models compliant to API685, Renroc Group has specialised in sealless pumps for over 25 years. Containing no mechanical seals, these pumps operate leak free and provide the highest availability with mean time between repairs (MTBR) four times greater than mechanical seal pumps. Applications containing high H<sub>2</sub>S concentrations, high vapour pressure hydrocarbons or as a simpler alternative to dual mechanical seals, there are numerous applications where sealless pumps give the best through life pumping performance. Sealless pumps come in two technologies, magnetic drive and canned motor. Renroc Group offer both forms, as detailed below.

### MAGNETIC DRIVE

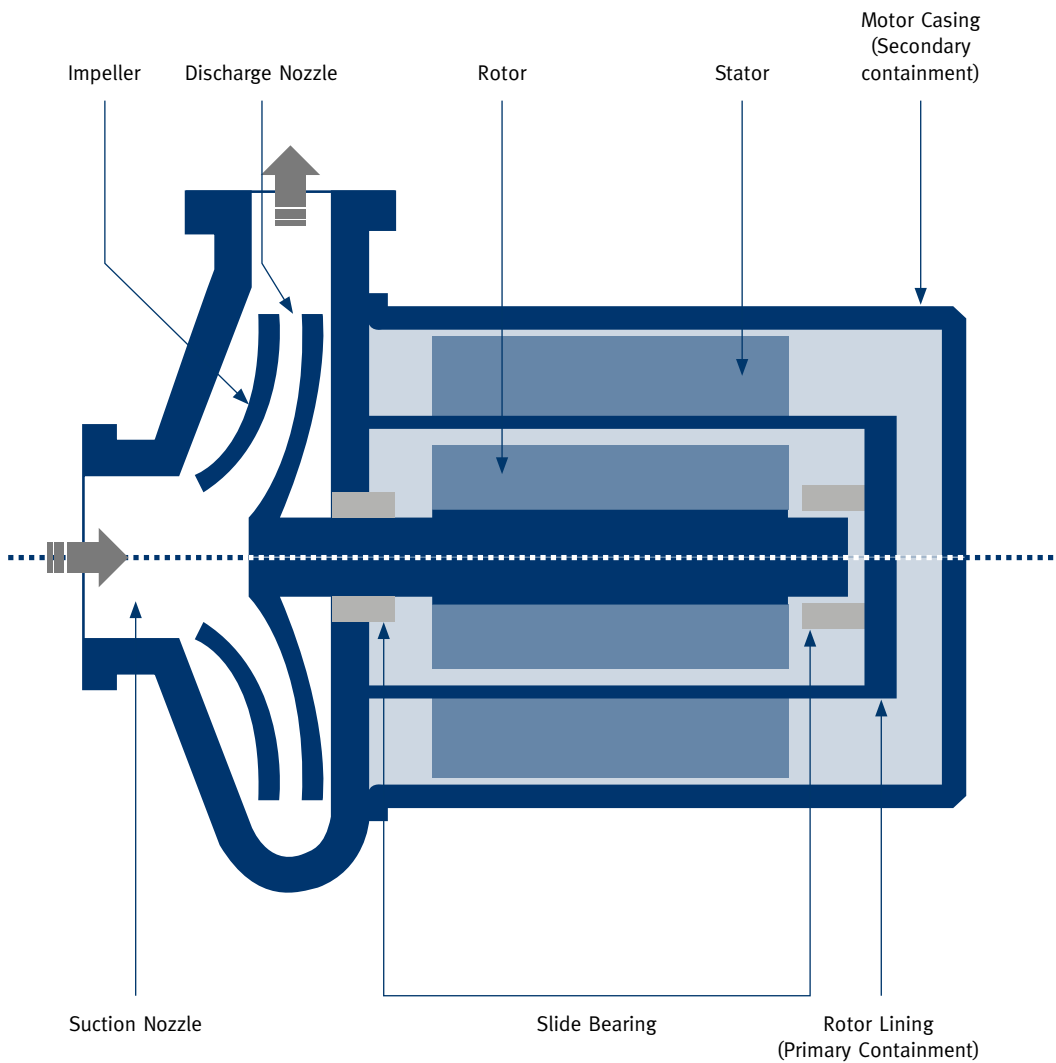
Magnetic Drive pumps transmit drive through the use of permanent magnets with a containment shell (typically made of Hastelloy) providing leak free operation. Pump internals are supported by Silicon Carbide (SiC) product lubricated slide bearings. With all designs being self-venting as per API685, pumps are a safe reliable solution for transferring media. Pumps can be supplied in single and multistage built in accordance to, or the intent of API685 (the scope of API685 only covers single stage OH2 style units). With our partners we are able to provide pumps with couplings capable of transmitting torques up to 500Nm. Units are also able to work with NPSHR's as low as 0.5m. Designs up to 450°C can be supplied and no designs require cooling water.



**SEALLESS PUMPS INCLUDING API685 COMPLIANT UNITS (CONTINUED)**

**CANNED MOTOR**

Canned motor pumps use a canned motor which has the pump hydraulics placed on the same shaft as the motor's rotor. Drive is transmitted in the same way as a conventional electric motor. In between the stator and rotor a stator liner (typically Hastelloy) is placed providing leak free operation. The stator housing of the motor provides a fully pressure rated secondary containment. The canned motor pump design is able to handle theoretically unlimited system pressure with references up to 1200bar. 450°C plus designs are possible as well as cryogenic units. Designs are self-venting as per API685 and are available in single and multistage. Hydraulics can be customised with the only limitation being the current largest canned motor available is 800kW.



**API674 PLUNGER PUMPS**

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For high pressure services, Renroc Group is proud to offer the Ram range of high pressure plunger pumps. Able to offer both triplex and quintuplex versions, these pumps give high volumetric efficiency. For services such as MEG / TEG, water injection, fracking, desalination and other high pressure services, Ram has been providing high quality pumps for over 40 years.

Our range of plunger pumps are able to operate with high volumetric efficiency and with designs capable of operating up to 750kW. Materials can be supplied from Carbon Steel to Duplex and other high end alloys.

Full material certification and API testing is provided and Inspectors can audit at anytime.



**CRYOGENIC PUMPS**

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Renroc Group offers a range of Cryogenic pumps and is able to handle temperatures as low as -200°C. Renroc Group offers a range of technologies for these services including sealless canned motor and more traditional technologies. Our Suppliers have the capability to test on liquid nitrogen, LNG or LPG.



**GENERAL SERVICE – ANSI & ISO PUMPS**

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For general services such as cooling water, Renroc Group offers a range of commercially competitive short delivery period centrifugal pumps in accordance with ISO2858 / ISO5199 and ASME B73.1/2.

Pumps made to these standards can be supplied with complete material certification and testing in accordance with ANSI, ISO or API standards. Pumps can be supplied with single or dual seals and sealing systems, with flows up to 2,000m<sup>3</sup>/hr possible.



**SCHROEDAHL AUTOMATIC RECIRCULATION (ARC) VALVES**

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Schroedahl Automatic Recirculating (ARC) Valves provide minimum flow protection for centrifugal pumps. Fully mechanical the valves provide a simple and reliable solution to protect pumps from minimum flow. The ARC Valve combines check valve and bypass valve in one unit.

ARC valves are used widely on boiler feed pumps, seawater injection, process pumps and cooling water units. For high value centrifugal pumps the ARC valve provides the best protection against minimum flow.





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REFERENCES

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Whatever your pumping needs, Renroc Group aims to offer the best technical solution giving the best through life support and lowest through life cost. In conjunction with our supply chain partners, we aim to offer the highest quality products to help your business keep pumping!

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