Dynapumps®

DYNAMIC PUMP SOLUTIONS

MINING INDUSTRY CAPABILITIES

Vision & Core Values

Vision

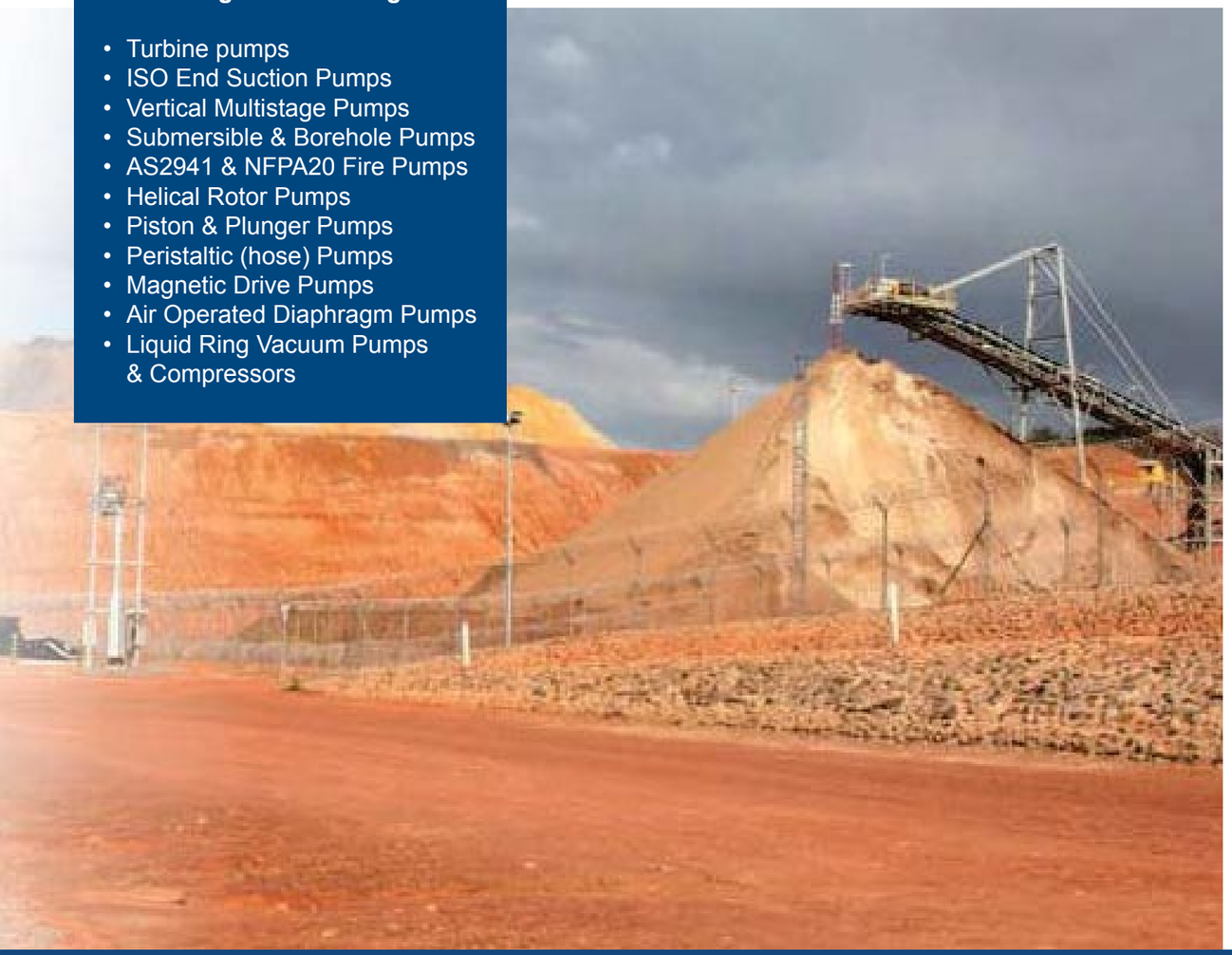
"To supply on time, high quality, recognised products to our clients as packaged equipment to their specifications with excellent after sales service and spares."

Core Values

- Consulting with our clients to achieve satisfaction and improvement
- Training our staff to ensure high levels of competency
- Providing high quality products at competitive prices
- Supplying support to our clients for spare parts, programmed maintenance, repairs and commissioning
- Ensuring our staff understand and implement our policies on Quality, Safety, Environment, Privacy, Ethics, Equal Employment, and Drugs

Our Mining Product Range:

- Turbine pumps
- ISO End Suction Pumps
- Vertical Multistage Pumps
- Submersible & Borehole Pumps
- AS2941 & NFPA20 Fire Pumps
- Helical Rotor Pumps
- Piston & Plunger Pumps
- Peristaltic (hose) Pumps
- Magnetic Drive Pumps
- Air Operated Diaphragm Pumps
- Liquid Ring Vacuum Pumps & Compressors



Company Background

Western Australia (WA)

In December 1981 we commenced operations in WA marketing Pumps and associated equipment to mining companies and manufacturers in Western Australia. Commencing business with a staff of four we have grown to become a national entity employing approximately seventy people Australia wide. WA remains our Head Office with engineering, project management, manufacturing, testing and finance based in WA. Our sales and service teams support our customers in the Oil & Gas, Mining/Mineral Processing, Water/Wastewater and General Industrial markets. Due to our continued success our sales and service team relocated to new facilities in April 2018.

New South Wales (NSW)

In May 1995 we commenced business in NSW in support of the local mining, food & beverage and water/wastewater industries. In July 2001 we began manufacturing our own brand of "FLO-MAX" turbine, propeller and submersible pumps. This operation has been successful from the very first year and is now one of the premium manufacturers of turbine pumps. FLO-MAX pumps are manufactured wholly in Australia.

Queensland (QLD)

In November 2003 we commenced business in Queensland in support of the local mining, food & beverage and water/wastewater industries. Since then our business has evolved as has the market with our sales and service team supporting a wealth of customers in the Oil & Gas, Mining/Mineral Processing, Water/Wastewater and General Industrial markets.

Victoria (VIC)

In March 2006 we commenced business in Victoria to support the growth of our Dynavac range of vacuum pumps. As the business has grown our sales team have expanded into supporting the vast array of EPCM's in a variety of industries from Oil & Gas, Mining/Mineral processing and power. The business continue to grow its sales and service footprint supporting a wealth of customers in the Oil & Gas, Mining/Mineral Processing, Water/Wastewater and General Industrial markets whilst still supporting our range of Dynavac vacuum solutions.

Company Information

Providing clients with complete engineered solutions for all pump requirements:

Quality - Environmental - Health - Safety
Dynapumps empowers its employees to provide customer satisfaction through teamwork and continuous improvement using our Quality Management System based on AS/NZS ISO 9001. We are committed to delivering products on-time and at a competitive price. Products shall conform to customers' expectations, exhibit high quality and meet the requirements of their purchase order, applicable technical standards, safety and health regulations. Delivering exceptional customer service and satisfaction are our top priorities.

Customers, Employees and Suppliers are considered vital to our business success and shall be treated fairly and with respect. Environmental impacts are considered in the manufacture and use of our products. We are committed to compliance of our Financial, Occupational Health &Safety, Environmental, Legal and Ethical values reflected in our obligations to our customers, our people and to the larger community.

Our aim is for continual improvement of our Total Management System including our Quality System for the improvement of customer service and the working environment of our people. This will be achieved by setting standards of performance, corrective action and from customer feedback. We undertake risk assessments as part of our Quality Management System to examine and implement preventive actions and to provide better service to our customers.

Engineering
Dynapumps provides engineered skids and pump packages utilising the latest 3D technologies. Our quality system ensures that we supply well designed systems that conform to your specifications by ensuring checks and balances are undertaken by our qualified engineers. We can also supply skids designed to meet wind and seismic conditions, as well as providing finite element analysis (FEA), acoustic and vibrational analysis of all our engineered solutions.

Project Management
Dynapumps have an experienced team of Project Managers and Engineers with the capability to undertake pumping projects from conception to handover. We offer a complete service for all your needs, handling everything from investigation and design to installation and after-sales support. The team also have the ability to deliver projects on time and within budget providing significant benefits to our clients.

Fabrication & Assembly
Our manufacturing facility is staffed with qualified welders and pump technicians using the latest equipment. Welding is undertaken to Australian and international standards and skids can be supplied with non-destructive testing (NDT) of your choice.

Our products are assembled and packaged as per the relevant Dynapumps procedure and relevant National or International standard. This involves following job specific ITP's and carrying out JSA's where required prior to commencement of work. Our Sydney manufacturing facility manufactures our complete range of FLO-MAX® turbine and sump pumps by outsourcing castings from Australian foundries and machining pump components in-house utilising quality CNC controlled equipment.

Service
With service facilities in Perth, Brisbane, Melbourne and Sydney we are truly able to offer national coverage in support of our customers rotating equipment requirements.

Scope of Services provided

Dynapumps offers through our engineering and sales departments the following services:

Project Development
- Technical Economic Feasibility Studies
- Preliminary Cost Estimates
- Evaluation of Technology Alternatives
- Preparation of Project Duty Specifications

Design Engineering
- Structural
- Piping & Valves
- Instrumentation
- Electrical

Commissioning and Training
- On site commissioning
- Operator Training
- Maintenance Training

Procurement
- Tender Submissions
- Contract Review
- Certified Suppliers

Manufacturing and Testing
- 2D & 3D Drawing Packages
- Welders Certified to AS1554, AWS D1.1, AS3992 & ASME IX
- In house assembly and testing to API 610, 675, 676, AS2417 or specified
- Client inspections are welcomed

Quality
- Preparation of Quality Plan & ITP
- Document Index and Progress Reporting
- Manufacturing Procedure Qualifications
- Lessons learnt

Safety
- Use of Take 5 system for risk analysis
- Preparation of Job Safety Analysis (JSA)
- Use of Safe Work Method Statements (SWMS)

Workshop and Repairs
- Qualified and experienced welders and fitters
- Welding to Australian and International standards
- High pressure cleaning of pumps and parts
- Strip down with full report and photos
- Use genuine or re-engineered parts
- Failure analysis with Non Destructive Examination
- Rebuild to manufacturer's tolerances
- Laser align couplings
- Hydrostatic and/or performance testin
- Quote with Strip down photos
- Emergency repairs
- Contract price for regular service calls
- Pump and system audits
- Helium leak detection

Recent Projects

A brief overview of some of the clients and projects supplied by Dynapumps in the mining sector.

CLIENT	PROJECT	PACKAGE
RCR RESOURCES	PILGANGOORA LITHIUM-TANTALUM	WATER PUMPS
ALCOA KWINANA	FLOCCULANT RELAY PUMPS	AL25 PUMP PACKAGE
FQML	COBRE PANAMA	DOSING SKIDS - CLARIFICATION 13
FQML	COBRE PANAMA	MSA LUBE OIL SKIDS
GR ENGG	MT MORGANS GOLD PROJECT	BOREFIELD PUMPS
SEDGMAN LIMITED	WOODLAWN PROJECT	FIRE PUMPS
FQML	COBRE PANAMA	MSA FIRE WATER PUMPS
FQML	COBRE PANAMA	HV WORKSHOP LUBE & COOLANT SKIDS
PLUMMERS	POCKET BILLIARDS	DEWATERING PACKAGE
RCR	PILGANGOORA LITHIUM	PROCESS PUMPS
ALOCOA	FLOC PLANT	LOBE PUMPS
FQML	COBRE PANAMA	VARIOUS, LUBE, DOSING, DIESEL SKIDS
SEDGMAN	BYERWAN	FIRE PUMP
ENDEAVOUR MINING	HOUNDE PROJECT	SUBMERSIBLE PACKAGE
FQML	COBRE PANAMA	EXTRA PACKAGES
LYCOPODIUM	SISSINGUE	VARIOUS PUMP PACKAGES
ROY HILL	GOLF DEWATERING	BORE PUMPS
LYCOPODIUM	FEKOLA GOLD	PONTOON PUMPS
LYCOPODIUM	FEKOLA GOLD	BORE PUMPS
PT BATUTAU	WETAR COPPER	NEW PUMP PACKAGE
ANGLOGOLD	TROPICANA	VARIOUS PUMP PACKAGES
EVOLUTION MINING	EDMA MAY GOLD MINE	UNDERGROUND DEWATERING PUMPSETS
ENDEAVOUR MINING	HOUNDE PROJECT	DEWATERING PACKAGE
NORTHERN STAR	MILLENIUM	BORE PUMPS
FQML	COBRE PANAMA	PD PUMP PACKAGES
FQML	COBRE PANAMA	MILL PROCESS PUMPS
CPC ENG	BALAMA GRAPHITE PROJECT	SOLUTION PUMPS
ANGLOGOLD	TROPICANA	VARIOUS PUMP PACKAGES
LYCOPODIUM	BOULY HEAP LEACH	CENTRIFUGAL SOLUTIONS PACKAGE
LYCOPODIUM	BOULY HEAP LEACH	SUBMERSIBLE PACKAGE
RIO TINTO	BROCKMAN 2	BOOSTER PUMP SETS
RIO TINTO	TOM PRICE	DIESEL PUMP SKIDS
RIO TINTO	CAPE LAMBERT	40FT CONTAINERISED FIRE PUMPSET AS2941
SEDGMAN	BHP JIMBLEBAR	RAW WATER AND TRANSFER PUMPS
GR ENGINEERING	WETAR COPPER	CENTRIFUGAL SOLUTIONS PACKAGE
GR ENGINEERING	DEFLECTOR COPPER	PUMPS PACKAGE
DURO FELGUERA	ROY HILL IRON ORE MINE	PLANT PROCESS WATER PUMPS
DURO FELGUERA	ROY HILL IRON ORE MINE	6 X 1200KW MAIN PROCESS WATER PUMPS
FQML	COBRE PANAMA	FIRE PUMP SKIDS
ANGLOGOLD	TROPICANA	NEW BORE PACKAGE
SULZER	WORLEY PARSONS	4 X FLO-MAX PROCESS TRUBINE PUMPS

Dewatering Projects

Client: Evolution Mining
Project: Edna May Gold Mine
Application: Dewatering Pumps

Product Details:
- Seepex 130-24VR progressive cavity pumps
- 100kW electric motors
- Seepex N70-12VR progressive cavity pumps
- 75kW electric motors

Painted hopper tanks and galvanised base frames to be installed at different levels underground. The pump skids will also have a ‘A Frame” gantry crane supplied for pump and motor maintenance and repair capabilities. The pump bases were modularly designed to facilitate interchangeable components, full bases and pump duty flow.

Client: BHP
Project: Diesel Mine Spec Skid Pump Package
Application: Dewatering Pumpset

Product Details: :
Flows: 140 lps @ 110.0 m
Maximum Pressure: 125 meters head
Motor: Caterpillar C13 Diesel enginerepair capabilities.

The pump bases were modularly designed to facilitate interchangeable components, full bases and pump duty flow.

Fire Pumps

Client: Barrick Australia Ltd
Project: Cowal Gold Mine, Central NSW
Application: Plant Fire Water Pumps to AS2941

Product Details:
FLO-MAX Vertical Turbine pump for AS2941 Fire Pump duty, Flow 90 l/sec at 90 metres total dynamic head supplied as a complete package with:

- 1 only 300 mm pump coupled to 132 kW, 4 pole motor
- 1 only 300 mm coupled to 6 cylinder diesel engine
- 1 only Jacking Pump
- AS2941 Control Panels
- Piping and valves

Client: Lycopodium Engineering Pty Ltd
Project: KMT Copper/Cobalt Project- Kolwezi, Democratic Republic of the Congo
Application: Plant Fire Pumps

Product Details:

- Electric & Diesel Fire Pump Package to AS2941
- Liquid: Raw Water
- 3 Pump flow: 1200 m /hour
- Discharge pressure: 70 metres
- Pump supplied: Sulzer Centrifugal Pump model APP53-250 material code 53
- 1 x electric, 1 x diesel and 1 x jockey
- Electric package: Above pump driven via 330 kW, 4 pole electric motor
- Diesel package: Same pump, with Deutz Engine BF8M1015CP
- 3 Jockey pump: Grundfos model CR1-17, 1.1 kW, 1 m / hour @ 100 metres
- Control Panels: Electric & Diesel Control Panels including main isolating switches

---

Client: Vale CVRD
Project: Goro Nickel Mine- New Caledonia
Application: Plant Fire Water Pumps to NFPA20 standard

Product details
NFPA20 Vertical Turbine Fire Pumps Duty flow 392 l/sec at 110 metres Total Dynamic Head suppliedas a complete package with:

- 1 x pump coupled to 630 kW, 4 pole electric motor
- 2 x pumps coupled to 650 kW, Diesel Engine with acoustic enclosure
- 1 x jacking pump
- Control panels
- Piping and valves

FLO-MAX Range

Client: Rio Tinto
Project: Dampier Salt Operations
Application: Salt Production Pumps

Product Details: FLO-MAX Vertical Axial Flow (Propeller) Pumps, 2 x 16 P (400 mm diameter) 316 stainless steel Flo-Max Axial Flow (Propeller) Pumps used for salt production at Rio Tinto's Dampier Salt Operations which is the worlds's largest exporter of solar salt. Pumps are fitted with a 37kW motor and produce 416 litres/sec at 3.5 metres head. They were supplied with Vesconite water flushed bearings for long life under abrasive and corrosive conditions.

Client: Vale-Inco
Project: Goro Nickel Project- Noumea, New Caledonia
Application: Main Tailing Dam Flood Water Pump Barge

Product Details: 3 x Flo-Max 4 Stage HM16TC vertical turbine pump complete with:

- 316SS Bowls
- SAF2205 Impellers
- SS Shaft- Bowl Assembly
- 12L24 Packed gland discharge head
- 250 mm Flanged water lubricated column
- Motor stool & independent thrust bearing

Dynapumps supply also included:

- 630 mm Poly delivery pipe and 200 mm Poly for electric conduit both with floats
- Tender Barge and gangway to main barge

Vacuum & Air

Client:
Ausenco Limited

Project:
New Bendigo Gold Mine, Australia

Projects:
- Jin Feng Gold Mine, China
- Chatree Gold Mine, Laos
- Sepon Gold Mine, Laos PDR
- Tulawaka Gold Mine, Tanzania
- North Marra Gold Mine, Tanzania

Application:
To capture and collect filtrate removed from gold sludge in a vacuum pan.

Product Details:
Filtrate receiver vessel and pump comprising of: Vacuum pump fitted with discharge separator and Teco Tropic Proof Motor. Seal water break tank with float level switch. Vertical vacuum receiver (filtrate receiver) with high level switch. Tank sight gauge, vacuum gauge, electrical control panel.

Process:
The vacuum pump is used to initially evacuate the filtrate receiver, which in turn provides a negative pressure at the pan filter. The pump remains running during this process.

Filtrate is drawn through the pan filter and into the filtrate receiver. The filtrate level in the vessel rises during operation until a high level alarm sounds to alert operator or shut down the vacuum pump motor.

The collected filtrate is drained from the receiver after the pressure in the vessel is returned to atmospheric.

Liquid Ring Vacuum Pumps

Client: Kansanshi Mining PLC
Project: Kansanshi Copper Mine, Solwezi, Zambia
Application: (6) Vacuum Priming Systems for Process Water Pumps

Product Details:
Duty Vacuum System comprising:
- 316SS Liquid Ring Vacuum Pump with 3.0 kW 4 Pole Motor
- 316SS Level Switch & Resevoir
- Control Panel with Digital Output for “System primed”indication
- Internal Piping and Cabling
- All valves and Instrumentation
- Mounted on common base

Client: Alcoa of Australia
Project: Pinjarra Alumina Refinery upgrade
Application: Seed Filter Vacuum Pumps

Product Details:
- Qty: 10 BOC Edwards Single Stage Liquid Ring Vacuum Pumps
- Pump model: AL140
- Inlet capacity: 3910 Nm3/hr (13,420 Am3/hr)
- Gas handled: Air saturated with water vapour, caustic vapour & dust Motor power: 315 kW, 6 Pole

Pressure Pumps

Client: Arccon WA
Project: Philsaga Gold Mine
Application: Dilution Pond Return Water Pump

Product Details:
2 Pioneer End Suction Self Priming Centrifugal Pump

- Pump model Pioneer PP43C10-HG
- Liquid Tailings Decant Return
- Pump Flow 120m3/h
- Discharge Pressure 75m
- Motor Power 35kW

Client: Alcoa
Project: Wagerup Refinery
Application: Supplying flocculant for Alumina processing plant

Product Details
4 Boerger316SS Rotary Lobe Pumps:

- Pump model PL 200 c/w Vari-Cap (built-in relief valve)
- Lobes Material 316 SS
- Elastomers Viton
- Liquid Flocculent
- 3 Pump Flow 25 m /Hour
- Discharge Pressure 8 metres
- Motor Power 3 kW
- 415V 50 Hz

Client: Rio Tinto
Project: Dampier Salt- North Shore
Application: Provide Feed water for evaporation ponds

Product Details
5 Southern Cross ISO PRO 250x200-315 centrifugal back pull out pumps

- 2 x Brine Duty (304mm) Coupled to 55 kW 4 Pole TECO motor
- 2 x Seawater Duty (342 mm) Coupled to 75kW 4 Pole TECO motor
- 1 x Spare pump (342 mm) Bareshaft, coupling will be supplied

Supplied with silicon carbide/ EPDM mechanical seal, bronze casing and impeller plus reticulation flush

Complete Packages

Client: First Quantum Minerals
Project: Ravensthorpe Nickel Mine

With the acquisition of the Ravensthorpe Nickel mine, First Quantum Minerals Ltd (FQM) have contracted Dynapumps to supply new seawater transfer pump skids and additional solution pump packages. These additional pumps will help FQM complete plant construction to their specific requirements and standards. Dynapumps supplied BHP Billiton the initial fire pumps, seawater intake, solution pump packages, cooling water pumps and acid pumps for the nickel mine.

Product Details
FLO-MAX Vertical Turbine Pumps for the main seawater pumps for plant process water

- 2 x 24” pumps with 250 kW, 4 pole motors
- 1690 m3/h @ 37.5 m TDH

FLO-MAX Vertical Turbine pumps for main cooling water pumps for plant process water

- 7 x pumps with 315 kW, 6 pole motor
- 2398 m /h @ 28 metres TDH
- Inlet: 762 mm
- Manufactured with corrosion resistant SAF2507 Super Duplex Stainless Steel

Water Pump packages up to 600 kW

- 60 x water pump sets
- Manufacturers: Sulzer & Grundfos
- Manufactured with corrosion resistant SAF 2507 Super Duplex Stainless Steel

Dynapumps®

DYNAMIC PUMP SOLUTIONS

For more information and to request a quote contact one of the Dynapumps offices Australia-wide

Phone 1300 788 579
sales@dynapumps.com.au
www.dynapumps.com.au

Perth - Head Office
88 Belgravia Street,
Belmont, WA 6104

Brisbane
Unit 7/ 14 Hopper Ave
Ormeau, QLD 4208

Sales & Service Centre
Unit 3, 94 Belgravia Street,
Belmont WA 6104

Sydney
Unit 5 / 6 Stanton Road,
Seven Hills, NSW 2147

Melbourne
Unit 5/39 Heyington Ave
Thomastown, VIC 3074