

**Mining  
Capabilities  
Pack  
2011**

# Dynapumps

DYNAMIC PUMP SOLUTIONS



# Company Profile

Pressure & Vacuum Pump Specialist

## Vision

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

## Dynapumps Core Values

- Consulting with our clients to achieve satisfaction and improvement
- Training our staff to ensure high levels of competency
- Following the policies & procedures set down in our Quality, OHS and Environmental systems
- Providing high quality products at competitive prices
- Supplying service support to our clients for spare parts, programmed maintenance and repairs



### 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



# Australia Wide

With offices in WA, NSW, VIC and QLD, Dynapumps are equipped to supply nationally and internationally

## Company Background

Dynapumps commenced operations in December 1981 selling pumps and pump systems to mining companies and manufacturers in Western Australia. The company was started by two directors and has grown from a staff of four to fifty with a substantial increase in assets.

Dynapumps now represents a wide range of internationally recognised pump companies and specialises in the supply of complete project packages for mining, oil & gas and water supply & water treatment markets.

### WESTERN AUSTRALIA

WA is the Head Office and has the largest turnover. It supports our central design and engineering office and has an integrated manufacturing and assembly plant. WA office is accredited to ISO9001:2008.

It processes all the other states accounting and has a main server with remote Citrix connection for the other offices and an offsite computer back-up system

### NEW SOUTH WALES

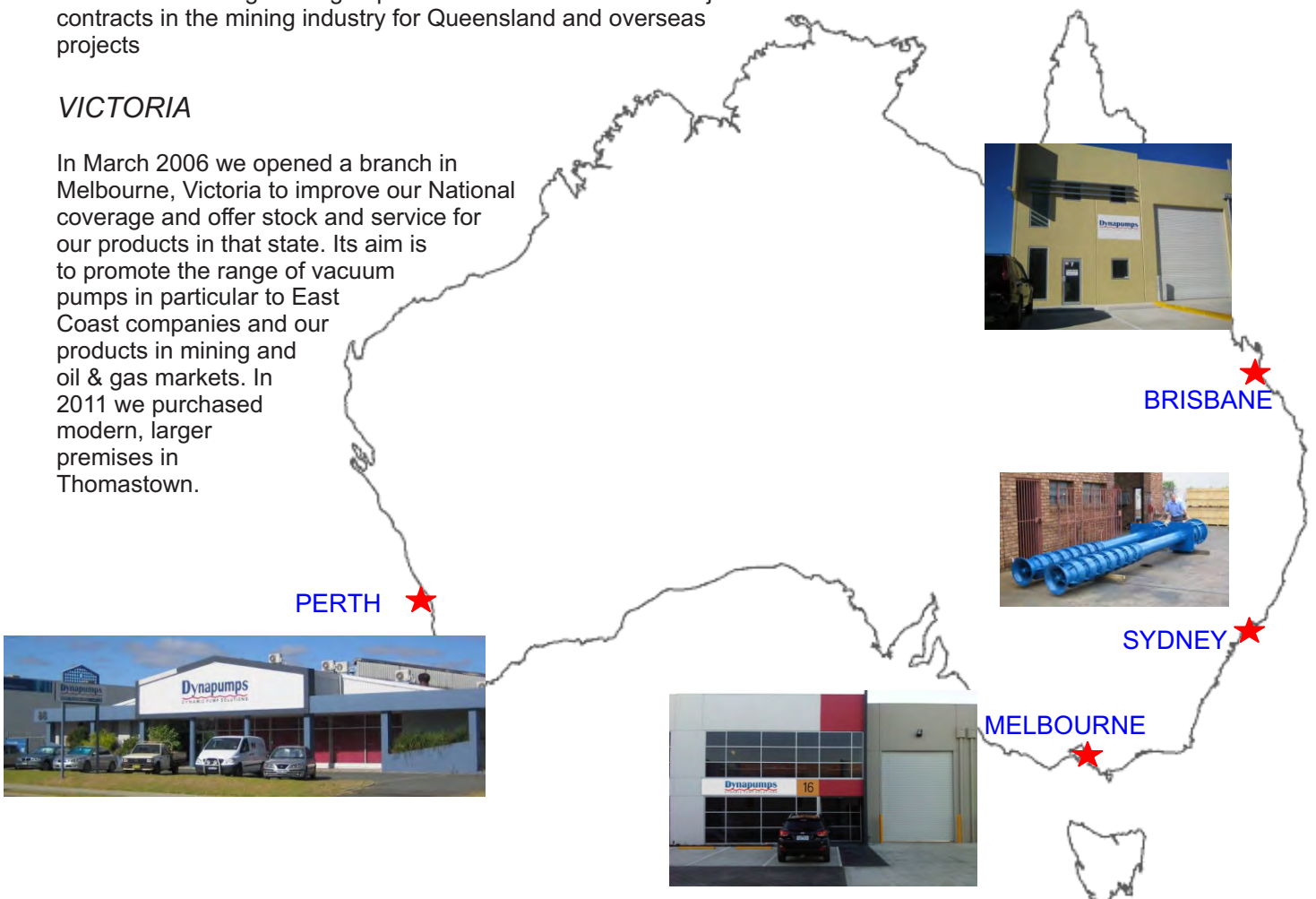
May 1995 we opened our NSW office on the East Coast of Australia. In July 2001 we commenced manufacturing our own brand of "Flo-Max" turbine, propeller and submersible borehole pumps. In 2010 the Flo-Max range was extended to cover submersible sewage pumps. Flo-Max pumps are sold for use in mining, oil & gas and water supply & water treatment markets as well as farm irrigation through their country distributors.

### QUEENSLAND

In November 2003 we opened a branch in Queensland to market our range of general pumps but in particular the range of metering pumps for the East coast of Australia. In 2005 we purchased our own premises in Yatala. They have their own engineering department and have secured major contracts in the mining industry for Queensland and overseas projects

### VICTORIA

In March 2006 we opened a branch in Melbourne, Victoria to improve our National coverage and offer stock and service for our products in that state. Its aim is to promote the range of vacuum pumps in particular to East Coast companies and our products in mining and oil & gas markets. In 2011 we purchased modern, larger premises in Thomastown.



# Company Information

Providing clients with complete engineered solutions for all their pressure and vacuum requirements

## Quality

Dynapumps is accredited to AS/NZS ISO 9001: 2008 and are audited annually by Bureau Veritas. We provide training for our staff to ensure that they are aware of and capable of implementing our Quality System.

## OHS

Dynapumps has implemented an Occupational Health and Safety program to comply with Worksafe requirements. We will revise our system to comply with the new Safe Work Australia legislation as of 1<sup>st</sup> January 2012.



## Environmental

Dynapumps is committed to ensure that we follow Government legislation for the protection of our environment and this is conveyed to all staff for their implementation.

## Associations

Dynapumps has joined a number of organisations to better understand our clients and their needs. These memberships also provide further learning opportunities for our staff.



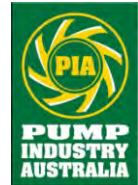
Australian Petroleum Production and Exploration Association



CHAMBER OF COMMERCE AND INDUSTRY WESTERN AUSTRALIA



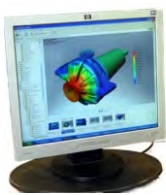
Australian Drilling Industry Association



Pump Industry Australia



Vacuum Society of Australia



## SolidWorks3D™

Dynapumps have invested in the latest in 3D technology to support our customers who are dealing regularly with multi-million dollar projects. Efficiency, cost containment and time are more crucial than ever, engaging with suppliers with SolidWorks3D™ capabilities can offer businesses a distinct advantage. Listing First Quantum Minerals, BHP Billiton, Rio Tinto and many smaller miners amongst our clientele, our drawings integrate seamlessly into their systems in any number of drawing formats. Our clients have benefited from the notable reduction in fabrication costs, which has resulted from the ability to more thoroughly check the systems in 3-dimensional format.



On balance, SolidWorks3D™ has presented the opportunity for the engineering team at Dynapumps to fully harness their technical expertise and skills and as a result, the designs being received by our clients are more innovative, accurate and cost efficient.



# Mining Specialist

Recent mining projects

Below is a brief overview of some of the typical clients and projects supplied by Dynapumps in the mining sector.



Year	Customer	Projects	Package
2011	AUSENCO/ LONDON MINING CO	MARAMPA IRON ORE PROJECT	- WATER FEED PUMPS
2011	LYCOPODIUM/ NEWMONT GHANA	AKYEM GOLD PROJECT	- SOLUTION PUMP PACKAGE - FIRE PUMPS PACKAGE - SUBMERSIBLE PUMPS
2011	NALCO AUSTRALIA PTY LTD	BHP BILLITON KWINANA	- BOILER DOSING PUMP SKID
2011	AUSENCO/ TONKOLILI IRON ORE LTD	TONKOLILI IRON ORE PROJECT	- SOLUTION PUMPS
2011	CHIRANO GOLD MINES LTD	CHIRANO GOLD PROJECT	- FIRE WATER PUMP SET
2011	AMEC MINPROC/ PHU BIA MINING LTD	BAN HOUAYXAI GOLD/SILVER PROJECT	- GOLD ROOM PAN FILTER SYSTEM
2011	ABESQUE ENGINEERING	KANMANTOO COPPER PROJECT	- REAGENT & DRUM TRANSFER PUMPS - WATER PUMPS - TRAILER MOUNTED DIESEL DRIVEN WATER PUMP SET - FIRE & POTABLE WATER PUMPS
2011	LYCOPODIUM/ ANGLOGOLD ASHANTI	TROPICANO GOLD	- SUBMERSIBLE PUMPS
2011	CRUSHING SERVICES INTERNATIONAL	FMG CHRISTMAS CREEK IRON ORE	- DUST SUPPRESSION PUMPS
2011	LYCOPODIUM/ ENVIROGOLD	LAS LAGUNAS GOLD MINE	- FIRE WATER PUMPS - DIESEL PUMPS - SOLUTION & REAGENT PUMPS - TAILINGS DECANT WATER PUMP
2011	FIRST QUANTUM MINERALS LTD	KEVITSA COPPER/NICKEL PROJECT	- DRUM PUMP PACKAGE
2010	FIRST QUANTUM MINERALS LTD	RAVENSTHORPE NICKEL PROJECT	- HP GLAND SEAL PUMPS - HP ACID PUMPS - SOLUTION PUMPS - SEAWATER TRANSFER PUMPS
2010	FIRST QUANTUM MINERALS LTD	KANSANSHI COPPER/GOLD PROJECT	- REAGENT PUMPS - WATER PUMPS - VACUUM PRIMING SYSTEM
2010	FMG	CHRISTMAS CREEK IRON ORE PROJECT	- STOCKYARD PUMPS - GLAND PUMP SET
2010	AUSENCO/ AKARA MINING	CHATREE GOLD PROJECT	- SOLUTION PUMPS - PAN FILTER VACUUM SET
2010	LYCOPODIUM/ ADAMUS	NZEMA GOLD PROJECT	- SUBMERSIBLE PUMPS - SEWAGE PUMP STATION - CENTRIFUGAL SOLUTION PUMPS
2010	THIESS	BHP BILLITON IRON ORE - YANDI	- SUBMERSIBLE PUMPS
2010	GALAXY RESOURCES	MT CATTLIN SPODMENE PROJECT	- ISO 5199 WATER PUMPS
2010	GFR INDUSTRIES	SINO DESALINATION PLANT	- WATER PUMPS
2009	WORLEY PARSONS/ VALE INCO	GORO NICKEL S.A.S.	- ELECTRIC SELF PRIMING PUMPS
2009	PROTEUS ENGINEERING	TIWEST EXPANSION PROJECT	- DUCTILE IRON WATER PUMPS
2009	PT NATARANG MINING INDONESIA	WAY LINGGO GOLD/SILVER PROJECT	- PROCESS & SOLUTION PUMPS
2009	RIO TINTO	DAMPIER SALT	- SALT PRODUCTION PUMPS - FEED WATER PUMPS



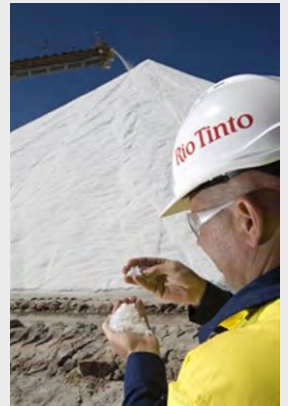
# Mining Projects

PREVIEW

**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 world'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 (gangway not shown)



# Mining Projects

FIRE PUMPS



**Client:** Barrick Australia Ltd  
**Consultant:** Aker Kvaerner  
**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:** Vale CVRD  
**Consultant:** Inco Nickel  
**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 supplied as 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



**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  
*Pump flow:* 1200 m<sup>3</sup>/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

*Jockey pump:* Grundfos model CR1-17, 1.1 kW, 1 m<sup>3</sup>/ hour @ 100 metres

*Control Panels:* Electric & Diesel Control Panels including main isolating switches, power lights, pump run lights, monitor battery, alarms, emergency manual start buttons





# Mining Projects

VACUUM & AIR

**Client:** Alcoa of Australia

**Project:** Pinjarra Alumina Refinery Upgrade, Western Australia, AUSTRALIA

**Application:** Liquid ring vacuum pumps are used in the Bayer Process of refining bauxite to produce alumina particularly in separating valuable solids from valuable liquids (seed filtration)

**Product Details:**

*Pump* 10 x Single Stage Liquid Ring Vacuum

*Inlet Capacity* 3910 Nm<sup>3</sup>/hr (13,420 Am<sup>3</sup>/hr)

*Gas Handled* Air saturated with water vapour, caustic vapour & dust

*Motor Power* 315 KW, 6 Pole



**Client:** Ausenco Limited

**Projects:**

- New Bendigo Gold Mine, AUSTRALIA
- 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 (tall vessel in picture above), 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.



North Marra package



# Mining Projects

PRESSURE PUMPS

**Client:** Iluka Mineral Sands

**Project:** Capel Mine site

**Application:** Mine De-watering pumps capable of handling 300 m<sup>3</sup>/hour dirty mine water at 26.2 metres head.



**Product Details**

2 x 200mm VICTOR self priming pumps up to 720 m<sup>3</sup>/hour, heads up to 90 metres. The pump is driven by a Cummins B3.3-85, 63.0 kW diesel engine all mounted on a steel skid with a full acoustic enclosure around it to maintain noise levels below 85 dB(A) @ 1 metre



**Client:** Alcoa

**Project:** Wagerup Refinery

**Application:** Supplying flocculant for Alumina processing plant

**Product Details**

4 Boerger316SS Rotary Lobe Pumps

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



**Client:** Rio Tinto

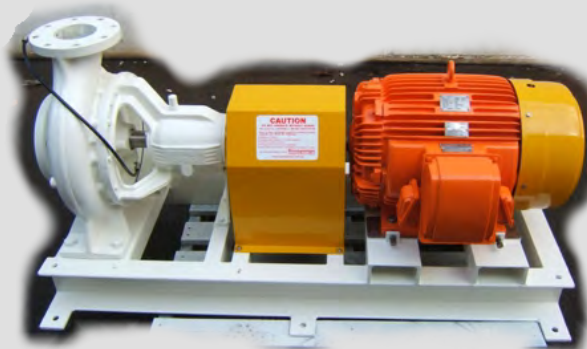
**Project:** Dampier Salt- North Shore

**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 (304 mm) Coupled to 55 kW 4 Pole TECO motor
  - 2 x Seawater Duty (342 mm) Coupled to 75 kW 4 Pole TECO motor
  - 1 x Spare pump (342 mm) Bareshaft, coupling will be supplied
- Supplied with silicon carbide/ EPDM mechanical sea, bronze casing and impeller plus reticulation flush



# Mining Projects

COMPLETE PACKAGES

## Ravensthorpe Nickel Mine

**Client:** First Quantum Minerals

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 m<sup>3</sup>/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<sup>3</sup>/h @ 28 metres TDH
- Inlet: 762 mm
- Manufactured with corrosion resistant SAF 2507 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



# Mining Projects

PRESSURE AND VACUUM SOLUTIONS

## Kansanshi Copper-Gold Mine, Solwezi, ZAMBIA

**Client:** Kansanshi Mining PLC (a First Quantum subsidiary)

**Consultant:** AMEC Minproc

### Product details

6 x Automatic Self Priming Vacuum Systems for Slurry pumps. System to provide a vacuum in the suction pipework for larger non self priming pumps

Pump comprising of:

- 316SS Liquid Ring Vacuum Pump with 3.0 kW 4 Pole motor
- 316SS Level switch & reservoir
- Control Panel with digital output for "System primed" indication
- Internal piping and cabling
- All valves and instrumentation
- Mounted on common base

### Electric & Diesel Fire Pump Package AS2941

*Liquid* Raw water  
*Pump Flow* 1200 m<sup>3</sup>/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

*Jockey Pump* Grundfos model CR1-13, 1.1 kW

*Control Panels* Electric & Diesel Control Panels including main isolating switches, power lights, pump run lights, monitor battery, alarms, emergency manual start buttons



Self priming vacuum system



330kW Electric Pumpset



DEUTZ 330 kW Diesel Pumpset



SULZER ISO5199  
300 X 250-530 Pump





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