Using proven technology in innovative ways to produce reliable, productive, cost-effective transport solutions for industry

Corporate Profile
Powertrans™ is an Australian company that designs and manufactures a range of innovative haulage systems that offer the mining industry lower cost and higher productivity alternatives to conventional large mining trucks.

The Powertrans concept builds on its patented Powertrailer™ system which is coupled to a Powertrans prime mover along with up to four unpowered tow trailers in a road train configuration. Configurations are able to haul loads up to 400 tonnes.

The use of powered trailer units allows excellent power-to-weight ratios, relatively high haul speeds over long distances, and faster hauls up inclines out of underground mines or mining pits.

Powertrans prides itself on efficient, flexible and cost-effective haulage systems that offer more capacity and higher productivity, without compromising safety.

The company was established in 2001 to manufacture powered trailers for surface and underground mining applications. There are several key product families:

- Powertrans Surface Haulage Systems
- Powertrans Underground Haulage Systems
- Powertrans Components

All Powertrans products have proven themselves to be tough, reliable products that perform well in even the most demanding conditions.

Powertrans products are generally based on readily available off-the-shelf heavy-duty equipment and components that do not have the "mining premium" price tag.

Powertrans is based in Brisbane, from where it services clients around Australia and overseas, offering operational and mechanical field support in remote locations. Australian clients include major mines and transport companies in Queensland, New South Wales, Western Australia and the Northern Territory.

OUR PRODUCTS

Powertrans Components
Our in-house engineering capability has enabled Powertrans to design and manufacture its own range of components.

The Powertrans Component family includes:
- PDA25 Drive Axle - rated @ 25 tonnes
- PRD50 Powertrans Rubber Drive Suspension 50 tonne tandem rating
- TT132 Trailer Axle - rated @ 45 tonnes
- TT132 Trailer suspension rated @ 45 tonnes per axle

Powertrans Underground Haulage Systems
For underground mining haulage systems, Powertrans designs and manufactures two purpose built systems with all of the safety features and robustness necessary for underground operation.

The Powertrans Underground Haulage family includes:
- DAT60 Double Articulated Truck
- T930 Powertruck™
- T1244 Powertruck™
- Underground Powertrailer™
- Underground Towtrailer

Powertrans Surface Haulage Systems
Central to Powertrans’ product range is the patented Powertrailer™ system. It is a heavy-duty, high-capacity haulage trailer equipped with an engine, cooling system, transmission and drive axle system, all controlled from a Powertrans prime mover. For surface mining haulage systems, this may be a Powertrans T1050 or T1250 prime mover manufactured by Powertrans at its Sherwood production facility.

The Powertrans Surface Haulage family includes:
- T1050 6x4 Prime Mover - Tractor
- T1250 6x4 Prime Mover - Tractor
- PT75-2420 Powertrailer™
- PD75-2420 Powerdolly
- BT75-2000 Towtrailer
- TT75-2000 Towtrailer
- D75-2000 Dolly
Powertrans produces a number of combinations for hauling material in surface mines. Currently, most products built are side-tipping trailers of varying capacities to suit material densities and types. Bins are manufactured using high-quality steels such as Hardox for hauling abrasive material. Larger bins with stainless steel or other corrosion-resistant materials are used for coal. These trailers are used in road trains incorporating Powertrailers™ and Powertrucks™ as prime movers.

The supplementary power in road trains made up with belly dump trailers is provided by a Powerdolly™. In all of these combinations, payloads ranging from 200 tonnes to more than 400 tonnes can be achieved.

Powertrans’ surface haulage systems offer a cost-effective alternative to conventional large rear dump trucks. Owning and operating costs of a Powertrans road train are significantly lower than large off-highway mining trucks because capital costs are substantially less than the cost of larger units, as are maintenance costs.

Powertrans units use readily available off-highway light earthmoving tyres for most equipment. As a result, a Powertrans road train system allows speeds that are generally greater than can be achieved and/or sustained over haul distances by conventional off-highway mining trucks. Loaded speeds in the order of 55km/h and unloaded speeds of 60km/h are possible, depending on road condition and grades.

In mining applications with haul distances of over 5km, a Powertrans-based haulage system offers a viable low-cost and flexible alternative to rail or conveyor-based transport, with generally lower infrastructure costs. In addition, the deployment time to set up operations for a Powertrans road train system is invariably less than for conveyors or rail lines.

**Pit Hauler™**

Powertrans’ best known surface hauling system is the Pit Hauler™, which can haul up to 200 tonnes out of pits at higher speeds than conventional mining trucks, and then travel significant distances to a processing, stockpile or ROM operation. It eliminates the need to have one transport system to haul out of the pit, and a second system to transport from the pit exit to a stockpile.

**Powertrain™**

For loads of 250 tonnes or more that need to be hauled from stockpile to processing points the Powertrans Powertrain™ with a Powertrans prime mover, Powertrailer™ and up to four tow trailers with dollies is the ideal solution.

**Loading options**

Powertrans haulage systems are best suited to loading by wheel loader, rather than by excavator or shovel. Substantially lower loading heights typically mean that a Powertrans system can be easily and efficiently loaded by a wheel loader of at least one size smaller than what is required by a conventional large rear dump truck.
For underground haulage applications, Powertrailers™ are matched with Powertrucks™.

Haulage systems are available in capacities from 55 tonnes (Powertruck™ with Powertrailer™), to 85 tonnes (Powertruck™ with one Powertrailer™ and one tow trailer), and up to 100 tonnes (Powertruck™ with two Powertrailers™).

Powertrans underground haulage systems can haul out of underground declines at significantly higher speeds than conventional underground haulers. Typical haul speeds up a 14% incline are 15km/h compared with 8km/h by conventional haulers.

On arrival at the surface, a Powertrans underground haulage system can haul at a sustained speed of 50km/h to a processing or stockpile area.

In addition, the T1244 is offered with two body options for greater versatility:

- Side tip
- Rear tip

The latest edition to the Powertrans Underground family is the DAT60, a double articulated truck with a 60 tonne payload capacity.

With unrivalled manoeuvrability and power, the DAT60 powers up the average underground mine decline of 1:7 at an impressive 15 to 16 km/h. Resulting in significant gains to productivity.

NOTE: The DAT60 is currently the only Powertrans system not to use standard off-highway light earth moving tyres.
COMPONENTS

When it comes to engineering components for our trucks and trailers we do it right. Using our infield experience and our engineering systems we have created the ultimate axle and suspension systems. Our Engineering team take great pride in designing new and innovative products using CAD and Pro Engineer software systems. The result is equipment that is of the highest quality, is cost-effective to purchase and is at the cutting edge of the industry.

Axles
The Powertrans Axle family includes:
- PDA25 Drive Axle - rated @ 25 tonnes
- TT132 Trailer Axle - rated @ 45 tonnes

The Powertrans Drive Axle (PDA) has improved on the previous industry standard axle. Larger wheel bearings, more robust planetary bearings and an extra planetary gear in each wheel help get the power to the ground.

Suspension
The Powertrans Suspension family includes:
- PRD50 Powertrans Rubber Drive Suspension, 50 tonne tandem rating
- TT132 Trailer suspension rated @ 45 tonnes per axle

The TT132 trailers’ suspension was design specifically to carry the massive loads of a 45 tonne per axle. It also took into account the needs of operators by replacing conventional leaf springs with rubber springs to aid maintenance.
INNOVATION

What sets Powertrans apart from its competitors and alternative haulage systems is its commitment to developing innovative haulage solutions with superior engineering, manufacturing quality and safety features. Powertrans has made a considerable investment with in-house engineering, fabrication, assembly and field commissioning, allowing the company to bring to market a quality product and to then fully support it.

The use of off-the-shelf parts where possible minimises cost and makes maintenance easier. All design and manufacture is aimed at achieving simplicity, reliability and sustainability for remote locations.

Most Powertrans products run on standard off-highway light earthmoving tyres, with typical sizes being 11R 22.5, 315/80R 22.5, 10.00x20, 12.00x24 and 14.00 R25, which are readily available (in contrast to large earthmoving tyres), cost-effective and not as sensitive to TKPH limitations as are larger tyres.

SAFETY

By using multi-combination road trains capable of achieving fast cycle times hauling up to 400 tonne payloads with a single operator, mines require fewer vehicles (and fewer operators) to move material, reducing hazards on haul roads.

Directional stability exceeds conventional road train performance, while careful attention to trailer coupling location and weight distribution minimises the swept path of the Powertrain™.

With engine braking from both the prime mover and Powertrailer™ engines, as well as braking on all axles, the Powertrain™ has more than enough stopping power to control a fully laden vehicle on significant grades. Transmission retarders are supplied as standard equipment with all Cummins QSK-19 engines coupled to Allison transmissions and can be supplied as an option on other configurations.

Cummins QSX and Caterpillar engines can also be equipped with powerful compression brakes to aid retardation performance.

ROPS/FOPS are standard over all Powertrans cabins and fire suppression systems can be specified on all Powertrans powered units.

DURABILITY

The Powertrans haulage systems for surface and underground mining have been designed for a long service life, both underground and aboveground.

Powertrans road trains in operation, have accumulated more than 1,000,000 operating hours.

With appropriate servicing and maintenance activities, Powertrans equipment offers extended service life. Our structural design allows for a highly durable platform that is suited to the harsh environments found in off highway haulage.
LOW MAINTENANCE & OPERATING COSTS

The Powertrailer™ uses off-the-shelf driveline and suspension components, while the unpowered trailers in the Powertrain™ use readily available axle, brake and suspension components.
Wherever possible, parts are common across the trailers, minimising parts-holding requirements. Servicing and maintenance activities can be carried out by regular trained technicians, on-site.
The Powertrailer™ engine/transmission and cooling modules are readily accessible and the engine/transmission module can be removed from below or above the chassis.

SERVICE & SUPPORT

Powertrans is committed to providing a high level of after-sales service and support. We offer full field service, a full parts inventory and localised distribution systems across Australia.
Powertrans staff remain onsite with all new equipment deliveries until the client is fully satisfied that the equipment has been properly commissioned. As part of the commissioning process, Powertrans also offers onsite training for drivers, supervisors and mechanical staff.
The company’s Powerspares™ division supplies a range of quality spare parts for the heavy-duty haulage industry.
Powertrans appreciates the critical role haulage systems play in a mining operation, and provides full in-house product support.

ADVISORY SERVICE

Powertrans prides itself in delivering site specific equipment. Our consultancy service is there to help customers understand the options for bulk haulage, and to select the most appropriate option for a site.
We have a proven history of developing new solutions when required.

Note:
Due to Powertrans policy of constant product improvement specifications may be subject to change without notice.
See model specific brochures for more information.