



RPC

Pneumatic Conveying Units

Air operated solids and slurry pumps. Ultra tough pumping units capable of transferring any flowable material across a wide range of agricultural, industrial, municipal, mining, oil and gas applications.

RELIABLE PUMPS SOLIDS PUMPS

Reliable Pumps Solids Pumps are Pneumatic conveying units which are capable of transferring up to 60m³/hour of any flowable material with solids sizes up to 80% of the diameter of inlet.

RPC Solids Pumps are not a competitor for conventional pumps, they come into their own when traditional pumps fail due to the high solids nature of the material being conveyed. RPC Solids Pumps are self priming and are fully sealed with zero discharge, allowing for the safe transfer of hazardous materials for environmental compliance.

RPC Solids Pumps are 100% air operated, relying on compressed air to create a vacuum and high airflow allowing the recovery of material up to 25 metres (82ft) and discharge it more than 1000 metres (3280ft) horizontally.

With no rotating parts and no moving parts in contact with the pumped material, they are not susceptible to clogging and wear that occurs in centrifugal and submersible pumps. They do not suffer from cavitation and can be run dry indefinitely with no overheating or damage.

COMPACT, LIGHTWEIGHT & MOBILE

RPC Solids Pumps are designed to be easily transported and quickly deployed where and when required. Units are lightweight and fitted with either wheels or skid mounted for simple on-site mobility and deployment.

Units are supplied with protective covers for operating controls and valves. They can also be fitted with roll cages and enclosures to provide additional protection and durability.

SIMPLE OPERATION

With easy access to air supply and suction and discharge pipelines, RPC Solids Pump units can be deployed in less than 10 minutes.

Deployment is a simple process involving the connection of suction and discharge pipes (camlock, victaulic or BSP), air hoses and then turning on the air supply.

Once running, units are controlled by simply varying the suction and discharge timers to suit the material being conveyed, the distance being recovered from and the transfer distance. This allows for fully automatic operation. Alternatively, units can be manually operated using a switch to control loading and discharge times.

INTRINSICALLY SAFE

RPC Solids Pumps require no electricity supply to operate and have been designed to safely operate in

RPC SLUDGE BUSTER



RELIABLE PUMPS 110-V "GLUTT'N"





hazardous environments.

There are no rotating parts and all moving parts covered to prevent entanglement and reduce the risk of operator injury.

MAINTENANCE AND SUPPORT

With minimal moving parts and no electricity, troubleshooting is a quick and simple process. Parts are easily replaced and fitted using readily available tools.

Reliable Pumps provides global support for all RPC Solids Pumps. Our expert operators can provide on-site demonstrations and training for new users and assist with product selection and troubleshooting.

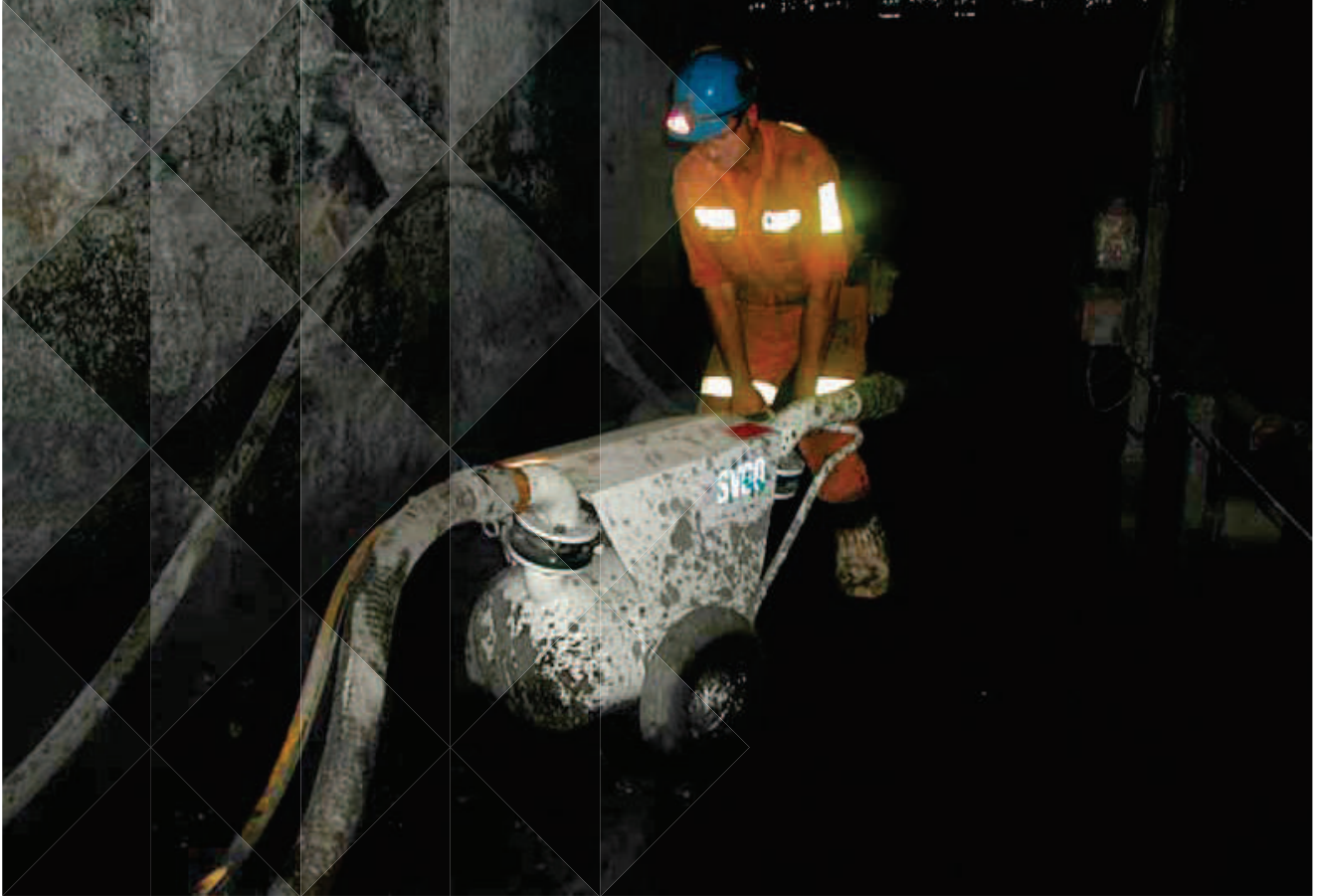
APPLICATIONS

RPC Solids Pumps have been utilised all over the world to provide effective solutions for a wide range of product transfer problems including:

- Coal and other mining slurries
- Thickener sludge
- Sump, shaft and pipeline cleaning
- Tank and drain cleaning
- Tailings and ash pond cleaning
- Oil spill capture and transfer
- Hazardous waste recovery
- Drilling mud and cuttings
- Agricultural product and waste
- Dam desilting
- Bentonite, sand and cement powder
- Effluent and processing waste
- Pulp and paper mill waste
- Tunnelling and pneumatic excavation
- Barge, ballast tank and ship cleaning
- Wash plant and under belt cleaning

RPC Solids Pumps are capable of pumping any flowable material including liquids, liquors, slurries, mud, slimes, sand, gravel, powders and many more. Where other pumps cannot operate, RPC Solids Pumps provide a simple, safe and versatile solution.

PNEUMATIC CONVEYING MATERIAL RECOVERY AND TRANSFER



PURE VACUUM PUMPING

RPC Solids Pumps have the capability of recovering material by two modes the first being 'pure vacuum' while the second is 'air conveying'.

As a general rule pure vacuum would be used for removing sludge from beneath liquid or for rapid liquid or slurry loading within close proximity to the machine. In this mode, the vacuum tube is totally submersed in the liquid and only material (no air) transports through the line.

The maximum vertical suction lift from the machine to the liquid surface cannot exceed 9.2 metres at sea level assuming water is the liquid. Horizontal suction distances would be greater. For materials of a higher density than water, these figures must be reduced accordingly. This mode

is a conventional pumping technique with the material being displaced by negative pressure.

However the RPC Solids Pumps can transcend conventional pumping techniques by pneumatically conveying materials.

PNEUMATIC CONVEYING

Pneumatic conveying is a method of handling materials by utilising high velocity airflow with a pipeline. This requires sufficient air velocity to pass the material being picked up to capture it and convey it through the vacuum tube to the machine.

The air velocity is kept up by not fully submersing the nozzle or by allowing air to the pick-up point via a snorkel tube attached to the nozzle.

The advantages of this technique are:

- Suction lifts up to 25 metres (82 feet)+ vertically can be achieved
- Materials can be liquid dry or damp
- Particle sizes of up to 80% of the suction hose diameter can be conveyed
- Horizontal suction distances in excess of 60 metres (197 feet) can be achieved
- Fibrous, waxy and heavy sludge can be handled
- Powders and solids can be handled as well as wet materials

There are also applications where a vacuum fluidizing tube should be used which combines the benefits of pure vacuum and pneumatic conveyance when removal of material from beneath liquids is required where the distance exceeds the limitations of pure vacuum.

All RPC Solids Pumps utilize high airflow and vacuum (up to 85kPa vacuum at 700kPa air pressure) to ensure high performance.

The RPC Solids Pumps are designed to convey recovered material under pressure through a pipeline or into a collection vessel. Alternatively, deadheads and cuttings carousels are available which absorb and dissipate the discharge pressure and allow the delivery of material under gravity to a confined location such as a conveyor belt or cuttings skip.

Two modes of positive pressure discharge are used in RPC Solids Pumps; dense phase and lean phase pneumatic conveying. The later can achieve vertical heads in excess of 35 metres (115ft) and horizontal discharge distances of over 1000 metres (3280ft).

The absence of any electrical supply in RPC Solids Pumps makes them useful in restricted or potentially hazardous areas.



RPC 280-V

