



Fluid Handling Solutions for the Mining Industry

Industries don't come much heavier than mining. Vehicles and other on-site machinery therefore must have the size and power to keep up with the insatiable demand for the Earth's resources. **Whether it's Fluid Transfer, Lubrication, Cleaning, Painting, Coating or Insulation; Graco has a Solution that will fit your needs.**





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Why partner with Graco?

- **Years of Expertise** in creating high quality products for fluid handling applications - including a wide range of ATEX-approved equipment
- Constantly investing in **Innovative Equipment** to boost your efficiency
- **A Worldwide Presence** with an experienced local distribution network that can provide swift and professional service and support.

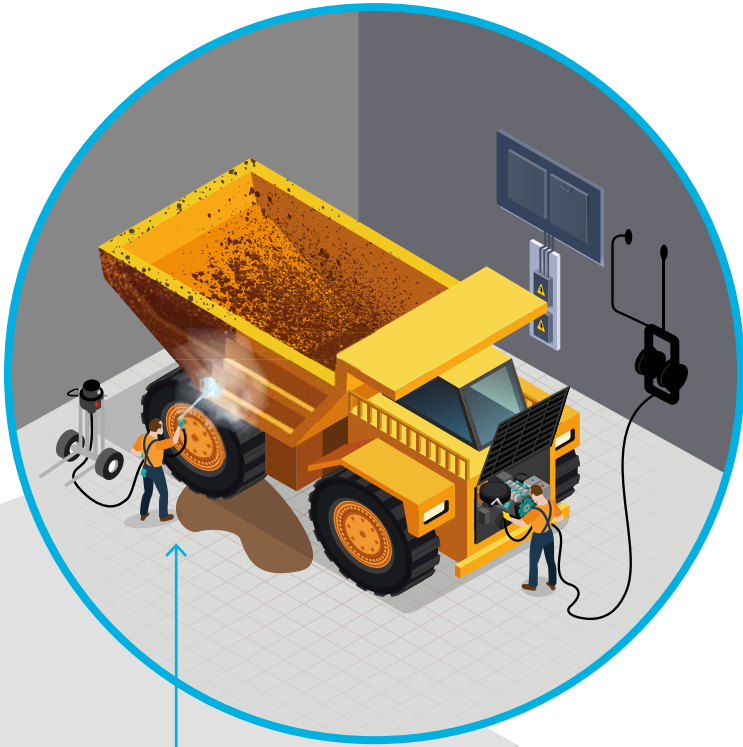
1. Workshop

In the mining industry it's all about continuous production, and the workshop plays an intrinsic part in maintaining production. This is achieved through maintenance, inspection repair and improvement. Of course, the starting point for delivering improved maintenance performance and costs is using the right equipment for every job. From **Workshop** to **Service Truck**, Graco offers the solution that fits your needs.



Oil & Grease Dispense Solutions

Lubrication equipment, specifically developed for use in the mining industry, to transfer, dispense and monitor lubricants and related products.



Waste Transfer

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The fluid transfer solutions from Graco help you evacuate old oils and greases in a safe and efficient way with minimum maintenance.

P. 7



Cleaning

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Graco offers high-pressure cleaning equipment for easy and safe maintenance of your machines and equipment.

P. 7

Oil & Grease Dispense Solutions

OIL & GREASE DISPENSE

Pumps



Fire-Ball™

Air-powered Piston Pumps are designed for medium volume, high pressure oil and grease transfer.

- ▶ Available in 5:1 for oil and 15:1 & 50:1 for grease
- ▶ Handles up to 11 lpm
- ▶ High quality, corrosion-resistant design
- ▶ Unmatched reliability and durability
- ▶ Few moving parts translates into low maintenance and low cost of ownership

Control Valves & Meters



Manual & Preset Dispense Meters

Standard Duty Series - Manual & Preset Dispense Meters are designed for dispensing motor oils, AFT, gear lube and anti-freeze.

- ▶ 103 bar- handles up to 53 lpm
- ▶ Multiple extensions available
- ▶ 3 default presets available to allow quick dispense and common volume
- ▶ Suitable for both in- and outdoor use
- ▶ Familiar locking trigger latch



Professional Level Hose Reels

Standard Duty Series - Professional level Hose Reels are designed for frequent, everyday use in the mining industry for a wide variety of applications.

- ▶ Handles hose lengths up to 20m
- ▶ Flexible mounting options: wall or ceiling
- ▶ Enclosed for safety and protection
- ▶ Compact design fits into small spaces
- ▶ Open swivel ports ensure high fluid flow with minimal pressure loss
- ▶ SD & XD with heavy-duty options

FLUID TRANSFER

Pumps



NXT™ Check-Mate™

The NXT Check-Mate is specially designed to transfer high volume lubricants to workshops or service trucks. With fewer parts, faster repairs and long-lasting durability.

- ▶ Dispenses up to 117 litre (31 gallons) of oil or 26 kg (57 pounds) of grease a minute
- ▶ Tested to outperform and outlast all other pumps on the market with its long-life packing design and intuitive, easy-to-use controls

FLUID MONITORING

Total Fluid Management System



Pulse™

An easy wireless solution for your workshop, giving you optimal control over your fluid inventory and service operations, thus helping you to reduce costs and increase profitability.

- ▶ Pulse components communicate with each other wirelessly and capture real-time data, making sure that fluids are tracked and accounted for
- ▶ Easily retrofit and add on to your existing lubrication equipment
- ▶ Easily add components as your business grows

Cleaning

CLEANING

High Pressure Washer



Hydra-Clean™

The Hydra-Clean is a quick, easy and efficient solution for cleaning Heavy Mining Equipment (HME) as well as your everyday work-space.

- ▶ Fits most pressure, flow and material requirements
- ▶ Supports multiple guns
- ▶ Efficient cleaning with water, detergent or chemical solutions
- ▶ Use with open-head universal drums
- ▶ Designed for use with both cold water and with hot water up to 93°C (200F)

Waste Transfer

FLUID TRANSFER

Air-Operated Double Diaphragm Pump



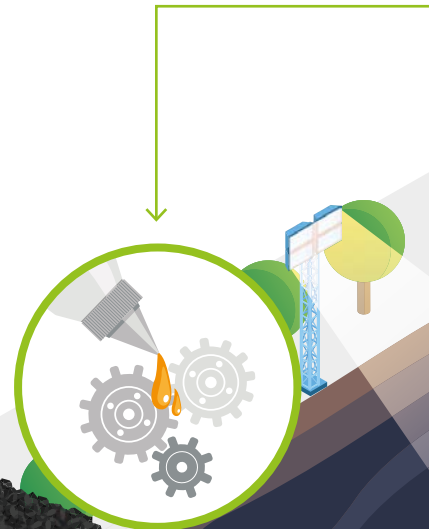
Husky™

Husky is an air-operated double diaphragm pump, ideal for fluid transfer applications, commonly used in the workshop for evacuation of oils from tanks.

- ▶ Max. output: 1135 lpm
- ▶ Pressure Ratio 1:1 or 2:1
- ▶ Low air consumption
- ▶ Longer-lasting diaphragms
- ▶ Option to add DataTrak™

2. Mining

In a mine, you are constantly striving to maximize machine availability and drive down your production and maintenance costs in tough conditions and in remote areas. Mining tools have evolved into massive machines. Whether it is **Open Cast** or **Underground**, Graco offers a solution for every situation!



Structural Reinforcement

Additional underground reinforcement is essential when working underground. Graco's equipment is designed to spray cementitious products with ease.



Automatic Lubrication

Effective lubrication of these heavily-loaded components is absolutely critical for a mine site to operate efficiently and reliably. Choosing the right lubrication systems and services for your needs can make a real difference to your bottom line.

P. 10-11

Waste Transfer

Graco's fluid transfer solutions help you evacuate waste water safely and efficiently, and with minimum maintenance.

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Automatic Lubrication

Graco's automatic lubrication solutions ensure your machinery is lubricated when it's needed most – while it's working. The automatic lubrication systems from Graco provide your conveyer belt with proper lubrication to avoid friction which can cause severe wear and tear on the machinery.

Main Components for Automatic Lubrication

1. PUMPS AND RESERVOIRS: store and provide the lubricant to the system.
2. CONTROLLER: activates the system.
3. DIVIDERS: dispenses the right amount of lubricant to the application points.

INJECTOR BASED SYSTEMS

Pumps



Dyna-Star™

Reliable heavy-duty pump for bulk fluid transfer - oil or grease. Easily adjust motor controls to suit different applications and environments.

- ▶ Complete line of pneumatic, hydraulic, or electric lubrication pumps and modules
- ▶ Auto-fill shutoff and remote-mounted fill port for clean refills
- ▶ Built-in pressure relief for safety and efficient installations
- ▶ Strong 12 gauge steel reservoir; 27kg or 41kg
- ▶ AC to DC converter box for fixed and in-plant application
- ▶ IP69k rated

Injectors



GL-Series

High performance grease injectors for automatic machine lubrication.

- ▶ Accurate, reliable and adjustable lubrication for each lube point
- ▶ Long-life seal technology to keep your machine running longer
- ▶ Large selection available in carbon or stainless steel
- ▶ Easy to design, set up and operate
- ▶ Flexible to use - easily add or subtract injectors for any lube system

Controllers



GLC 2200/4400

External multi-purpose controller for maximum precision & productivity.

- ▶ Customize your lubrication time, pressure, cycle counts and machine counters for maximum control
- ▶ Special operation modes save set-up and inspection time
- ▶ Rugged and weatherproof, meeting stringent IP 69K protection requirements



INCREASE

- ▶ Productivity
- ▶ Reliability
- ▶ Availability
- ▶ Safety
- ▶ Durability



DECREASE

- ▶ Heat generation
- ▶ Wear and noise
- ▶ Downtime and operating costs
- ▶ Product contamination and corrosion
- ▶ Maintenance
- ▶ Lubricant consumption

PROGRESSIVE SYSTEMS

Pumps



G-Series

Rugged, cost-effective pump for easy lube system set-up, operation and troubleshooting. The versatile design helps solve today's automatic lubrication challenges.

- ▶ Corrosion-resistant, tested and certified for IP69K to perform in the harshest environments
- ▶ Wide range of options to meet your desired lubrication solution (reservoir size, motor & control options)
- ▶ Optional Data Management System to track the events of the pump and to identify incorrect handling

Dividers



Series Progressive Dividers

Keeps machines running at peak performance.

- ▶ Minimise labour costs and maximise your uptime with the quick change valve sections
- ▶ Can be easily accessorized with magnetic and electronic proximity switch cycle indicators to provide optimal precision feedback & monitoring

Controllers



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Waste Transfer

FLUID TRANSFER

Air-Operated Double Diaphragm Pumps



Husky™

Husky is an air-operated double diaphragm pump, ideal for fluid transfer applications ideal for fluid transfer applications commonly used in mines to evacuate waste water from pits.

- ▶ Max. output: 1135 lpm
- ▶ Pressure Ratio 1:1 or 2:1
- ▶ Low air consumption
- ▶ Longer-lasting diaphragms
- ▶ Option to add DataTrak™

Structural Reinforcement

COATING

Mortar Pump



ToughTek™

The Toughtek is a portable sprayer for mortar, cementitious and heavily-filled materials.

- ▶ Low pressure pumping (13.7 to 34.5 bar / 200 to 500 psi) reduces wear on pump lower
- ▶ Explosion-proof for hazardous spray areas
- ▶ Less material waste
- ▶ Fast, easy cleaning with high velocity flush
- ▶ Can be quickly disassembled for hand cleaning
- ▶ One convenient air source to run pump and atomize air

COATING

Proportioners



Reactor™

Whether you're spraying foam or applying polyurea coatings, Graco Reactor™ Plural-Component Systems help you get the job done with superior results.

- ▶ Available in air, electric or hydraulic technology
- ▶ Easy-to-reach, conveniently-placed electronics
- ▶ Tracks, monitors and saves project data
- ▶ Stores up to 24 chemical recipes
- ▶ Drum level indicators
- ▶ Protects your electronics against excessive power spikes

Crack Injection

SOLID COATING



Pumps

King™

The King sprays high solids and 100% solids coatings under the toughest conditions.

- ▶ The new Air Motor lets you use multiple guns with almost no perceptible pulsation
- ▶ The King sprayer is designed to eliminate non-restartable icing stalls for more uptime
- ▶ With 145% higher exhaust capacity in the air valve, you'll achieve a faster and smoother changeover.

COATING



Plural-Component Sprayers

XP70™

The XP70 Plural-Component Sprayer is designed to pump, mix and atomize high to 100% solid coatings with superior results.

- ▶ Rated for 500 bar (50 MPa, 7250 psi) to handle viscous materials and long hose lengths
- ▶ Reduced material waste maintenance costs
- ▶ No more throwing away unused mixed material at the end of the day
- ▶ Save money by using less clean-up solvent
- ▶ Consistent material quality - no more guesswork or human error in measuring materials
- ▶ Easy to operate - minimal training required

3. Processing Plant

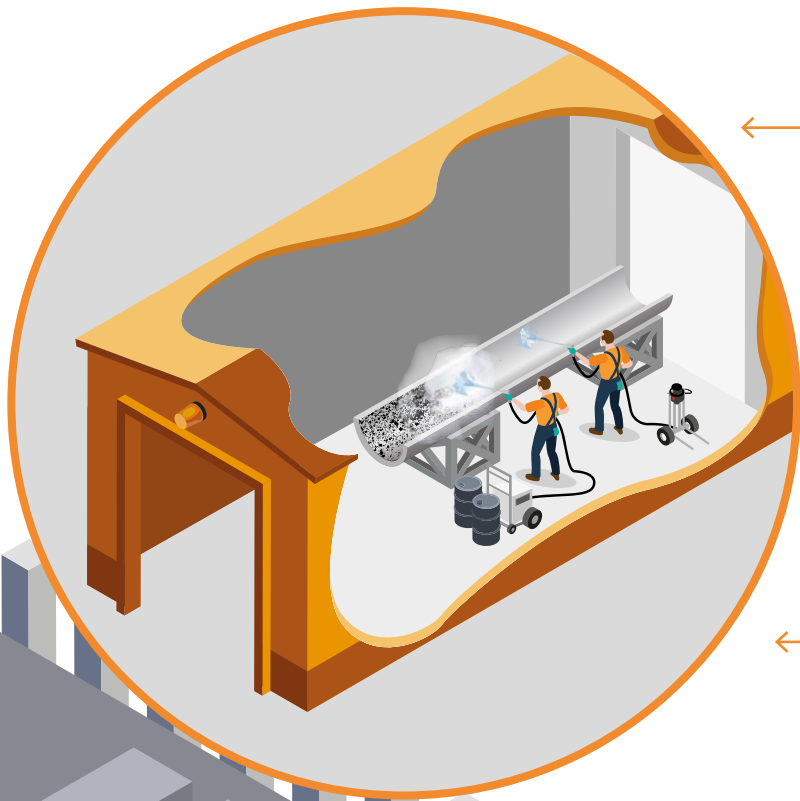
Once the mineral is extracted from a mine, it is often processed. **However, this processing operation often depends on which material is excavated.** Common applications in processing are comminution (crushing and grinding), sizing (screening or classifying), separation (physical or chemical), dewatering (thickening, filtration, or drying) and hydrometallurgical or chemical processing.



Automatic Lubrication

Effective lubrication of these heavily loaded components is absolutely critical to efficient, reliable, economical operation of a processing plant. Choosing the right lubrication systems and services for your needs can make a real difference to your bottom line.

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Cleaning

Graco offers high-pressure cleaning equipment that is safe to use, keeps your machinery and equipment safe - and shows that they are well-maintained.

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Surface Preparation

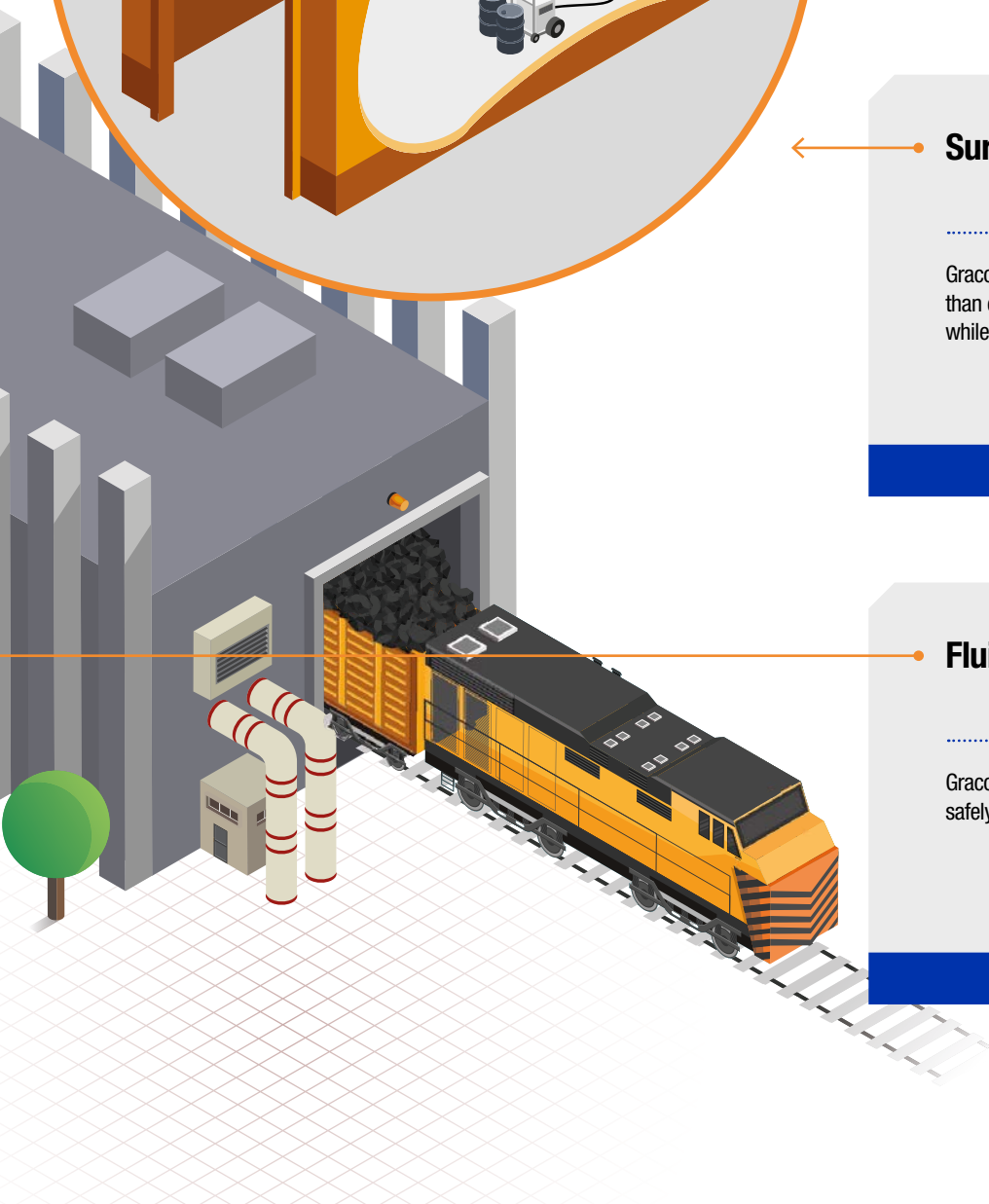
Graco's surface preparation equipment makes it easier than ever to blast quickly, safely and more efficiently, while also minimising containment and clean-up.

P. 18

Fluid Transfer

Graco's fluid transfer solutions help you to transfer fluids safely and efficiently, with minimum maintenance.

P. 18



Automatic Lubrication

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Main Components for Automatic Lubrication

1. PUMPS AND RESERVOIRS: store and provide the lubricant to the system.
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INJECTOR BASED SYSTEMS

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Controllers

GLC 2200/4400

External multi-purpose controller for maximum precision & productivity.

- ▶ Customize your lubrication time, pressure, cycle counts and machine counters for maximum control
- ▶ Special operation modes save set-up and inspection time
- ▶ Rugged and weatherproof, meeting stringent IP 69K protection requirements



	<p>INCREASE</p> <ul style="list-style-type: none"> ▶ Productivity ▶ Reliability ▶ Availability ▶ Safety ▶ Durability 		<p>DECREASE</p> <ul style="list-style-type: none"> ▶ Heat generation ▶ Wear and noise ▶ Downtime and operating costs ▶ Product contamination and corrosion ▶ Maintenance ▶ Lubricant consumption
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PROGRESSIVE SYSTEMS

Pumps



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Fluid Transfer

FLUID TRANSFER



Air-Operated Double Diaphragm Pumps

Husky™

Husky is an air-operated double diaphragm pump, ideal for fluid transfer applications commonly used in processing plants for dosing chemicals into tanks.

- ▶ Max. output: 1135 lpm
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Cleaning

CLEANING



High Pressure Washer

Hydra-Clean™

The Hydra-Clean is a quick, easy and efficient solution for cleaning Heavy Mining Equipment (HME) as well as your everyday work-space. Designed with Graco's NXT air motor, it's ideal for mining applications.

- ▶ Fits most pressure, flow and material requirements
- ▶ Supports multiple guns
- ▶ Efficient cleaning with water, detergent or chemical solutions
- ▶ Use with open-head universal drums
- ▶ Designed for use with both cold water and with hot water up to 93°C (200F)

Surface Preparation

COATING REMOVAL & SURFACE PREPARATION

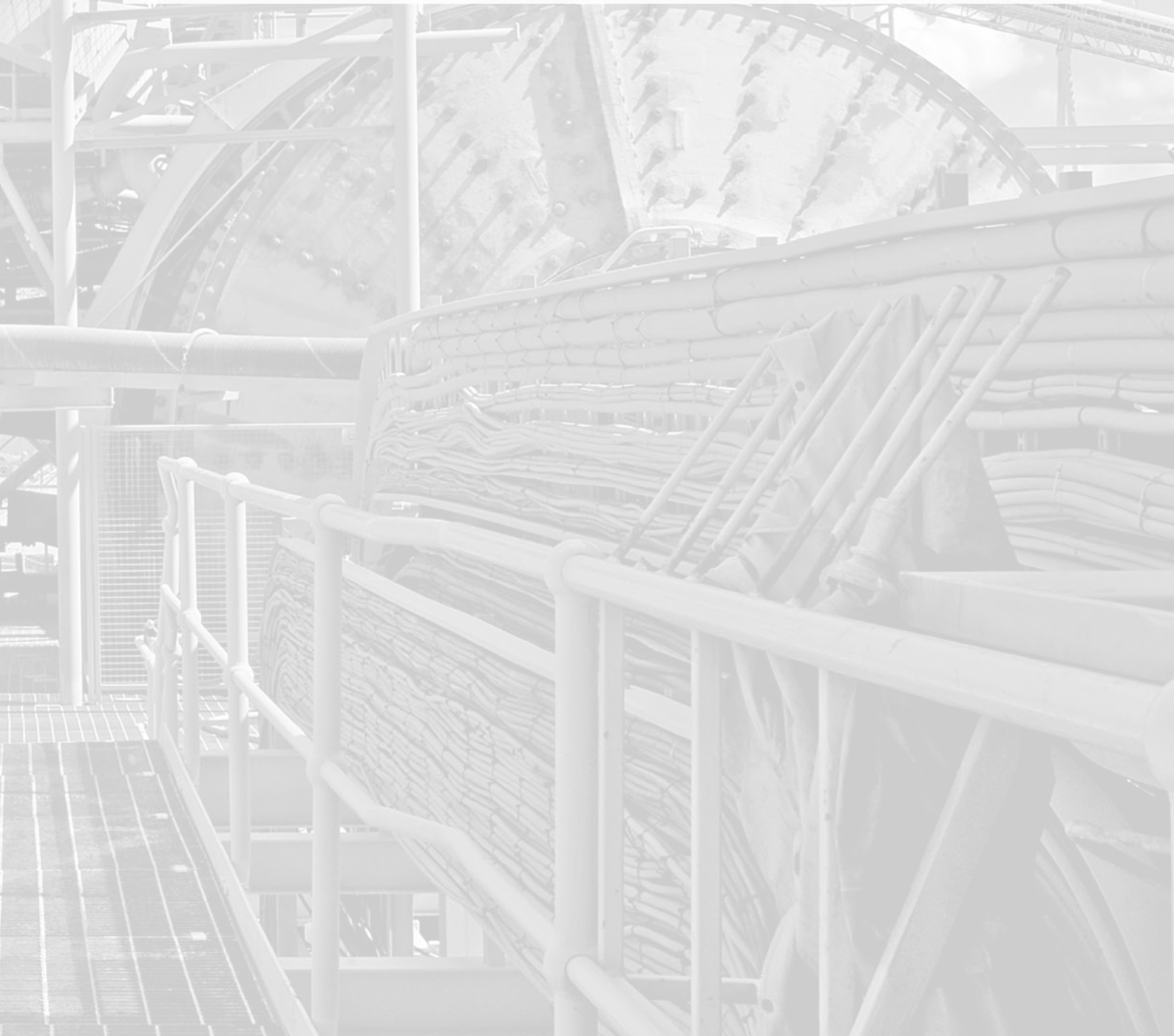
Vapor Abrasive® Blasting Equipment



EcoQuip™

EcoQuip is Graco's vapor abrasive blast equipment available in portable or mobile self-contained models for coating removal and surface preparation.

- ▶ Generates less dust - 92 percent less airborne dust than dry blasting
- ▶ Uses less water than slurry or traditional wet abrasive blasting
- ▶ Uses less material, which equals less containment and clean-up
- ▶ Max blast pressure of 175 PSI
- ▶ Handles both low and high air flow/pressure applications



4. Services & Engineering

Reducing expenses and operational costs while improving output is one of the main goals for almost all mines. Ensuring the lifetime of machines and equipment can be an extremely effective way to keep costs down and productivity up! As the equipment is exposed to some of the harshest conditions and most stressful environments, **Good Service and Maintenance is Key** to guarantee a sustainable future.





4

Coating

Our advanced coating equipment is designed to withstand the harshest environmental conditions and can easily handle the toughest coatings, helping you protect your equipment in the best way possible.

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Surface Preparation

Graco's surface preparation equipment makes it easier than ever to blast quickly, safely and more efficiently, while also minimising containment and clean-up.

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Surface Preparation

COATING REMOVAL & SURFACE PREPARATION

Vapor Abrasive™ Blasting Equipment



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Coating

SMALL VOLUME

Pumps



Mini Merkur ES

Ready-to-spray finishing package

- ▶ Available in 15:1 and 30:1
- ▶ Up to 1.5 lpm
- ▶ Quick flush system requires less than 1 minute to flush
- ▶ Very low material volume required to fill the system
- ▶ 2 to 10 years of proven reliability on key system components
- ▶ Delivers a superior, consistent spray finish

SMALL TO MEDIUM VOLUME

Pumps



Merkur

Piston pump with long-lasting durability. Suitable for local supply of multiple spray stations.

- ▶ Max output at 60 cpm: 9 lpm
- ▶ Pressure Ratio: 10:1 – 48:1
- ▶ Delivers a consistent, high quality finish
- ▶ Easy to flush. Sprays a wide variety of material viscosities

COATING

Pumps



Reactor™

Whether you're spraying foam or applying polyurea coatings, Graco Reactor™ Plural-Component Systems help you get the job done with superior results.

- ▶ Available in air, electric or hydraulic technology
- ▶ Easy-to-reach, conveniently-placed electronics
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COATING

1 Component Pumps



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2 Component Pumps



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- ▶ Consistent material quality
- ▶ Easy to operate - minimal training required
- ▶ Rated for 500 bar (50 MPa, 7250 psi) to handle viscous materials and long hose lengths

ABOUT GRACO

Founded in 1926, Graco is a world leader in fluid handling systems and components. Graco products move, measure, control, dispense and apply a wide range of fluids and viscous materials used in vehicle lubrication, commercial and industrial settings. The company's success is based on its unwavering commitment to technical excellence, world-class manufacturing and unparalleled customer service. Working closely with qualified distributors, Graco offers systems, products and technology that set the quality standard in a wide range of fluid handling solutions. Graco provides equipment for spray finishing, protective coating, paint circulation, lubrication, and dispensing sealants and adhesives, along with power application equipment for the contractor industry. Graco's ongoing investment in fluid management and control will continue to provide innovative solutions to a diverse global market.

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