



ENERGY, EXPLORATION + EXTRACTION

POWERING PROGRESS™

IF IT MOVES YOU, THERE'S A GOOD CHANCE



GATES HAS A PART IN IT



Whether it comes from oil, natural gas, coal, wind, sun, nuclear fission, or other source, energy powers the quality of life around the globe. And the need continues to grow as populations increase and developing countries expand consumption.

Petroleum meets approximately 40 percent of the current worldwide energy demand. But, every day, it is more difficult and more expensive to find and produce. This combination of dwindling supply and growing demand leads to the expansion and development of energy sources including natural gas, coal, and many other alternatives.

Gates is at the forefront in providing quality products and advanced services that lead to improved efficiency, enhanced business value and higher productivity for companies involved in energy production around the globe. We are the world's fluid power and power transmission application experts.





OIL + GAS DRILLING AND PRODUCTION



Finding and producing billions of barrels of oil and trillions of cubic feet of natural gas the world needs every year is a 24/7 operation for the companies involved wherever they operate. It is essential that every piece of equipment operates reliably and efficiently to maximize production. Unscheduled downtime will steal profits from the bottom line.

Gates offers a range of belt and hose products that are designed, engineered, and manufactured to stand up to the rugged conditions of the drilling environment and deliver quantifiable value to operators. New rig or replacement parts, Gates helps keep them running.

But we don't stop there. Through Gates Engineering & Services (E&S), we team with clients and offer an array of value added services that result in optimal equipment performance, exceptional reliability, and long service life for Gates components and rig equipment.

An offshore rig producing 100,000 barrels of oil and 58 million cubic feet of natural gas per day can cost hundreds of thousands per hour in lost production when a critical component such as a blowout preventer (BOP) hose fails.



OIL + GAS DRILLING AND PRODUCTION



SENTRY™ SERVICES

This innovative suite of services is offered to increase productivity and reduce downtime on the drilling rig.

Sentry IQ Service

Can monitor the performance and condition of every hydraulic and industrial hose on drilling rig equipment and warn of an approaching potential failure. A quick change could prevent hours or days of downtime, personnel injury, equipment damage, environmental cleanup, and more.

Sentry IQ² Service

Designed specifically for mission critical hose applications on the rig, this service adds additional monitoring capability such as flow rate and velocity of drilling fluids.

Sentry ID Service

A unique, Radio Frequency Identification (RFID) tagging system that identifies and tracks specific hose assemblies in the field for fast, easy repair or replacement.

Value Proposition > Safety risk > Environmental risk > Productivity Ongoing Hose Management

>Output: Audit proposal

Discovery

> Checklist approach

> Understand client requirements

Audit Plan Quality, HSE work plan (PPE, ground rules for audit, etc.) Quayut: Detailed audit plan for client acceptance

- > Powered by Sentry™ Services
- > Real-time data accessible by client
 > Continuous improvement
 culture approach

Report & Risk Assessment

- > Experts review audit results, identifying key risks
- > Output: Risk assessment report & maintenance strategy proposal

Audit Execution

- Performed on-site
- Gates hose experts engaged
- Can perform optional services while on-site (testing, tagging, etc.)
- >Output: Technical audit report including hose register or Sentry™ Services

KEY ELEMENTS OF HOSE MANAGEMENT SERVICES (HMS)

HOSE MANAGEMENT SERVICES (HMS)

These services represent a proven process for managing assets to produce reliability, productivity, and business value on the rig.

Hose Management Services also assists clients in regulatory compliance and pursuit of best practices as well certification and/or recertification of all hose installed on the rig.

INSPECTION, MAINTENANCE & RECERTIFICATION SERVICE (IMR)

Through comprehensive IMR service, Gates engineers and technicians work on-site or in shop locations to inspect, clean, test, and install critical flexible hose assemblies (FHA), regardless of hose manufacturer. IMR is essential in recertifying hose products and ensuring regulatory compliance. The service includes:

- Hose identification and specifications
- > External and internal cleaning
- > External and internal inspection
- > Hydrostatic pressure testing
- > Recertification and documentation

Gates IMR service provides assurance that drilling hoses will meet expected safety, quality, and regulatory requirements.





OIL + GAS DRILLING AND PRODUCTION



HOSE SOLUTIONS

Gates offers a line of mission critical drilling hoses designed, engineered, and manufactured to stand up to the rigors of the drilling environment, offshore or onshore.

- > Rotary drilling/vibrator
- > BOP lines

> Choke and kill

> Sour service

> Cementing



Gates network of Roughneck Internally Certified Fabricators work with clients worldwide, providing high quality hose assemblies to meet specific drilling and production needs.

To help keep engines, pumps and other equipment up and running, Gates offer a wide selection of industry-leading hydraulic hoses including our new line of highly flexible MegaSys® constant pressure hoses that make hose selection easy and save money.



And Gates industrial hoses, including an extensive array of petroleum, chemical, and water transfer hoses, will stand up to the harsh conditions of drilling operations, day after day.

BELT SOLUTIONS

Whether it's an onshore or offshore rig, Gates offers leading edge belt drive solutions to keep critical equipment up and running.

Applications include mud pumps, shale shakers, engine generator sets, diesel engines, motors, compressors, fans, and many others.

Gates Super HC®, Hi-Power® II, and Predator® V-belts improve performance and extend belt life.

Innovative, incredibly strong Poly Chain® GT® Carbon™ synchronous drives can replace roller chain drives size for size while eliminating the need for messy lubrication and maintenance. There's nothing tougher.

Gates experienced power transmission engineers assist clients in choosing the right belt drive system for specific drilling right applications.



MINING

A typical North American surface coal mine operation can cost an operator as much as \$6,200 per hour in lost production when equipment shuts down due to a belt drive failure.

With total production measured in the billions of tons and trillions of dollars, mining operations worldwide are on the increase. Whether it's coal, copper, iron ore, molybdenum, uranium, or other mineral, operators rely on a wide range of equipment to extract and deliver the materials and produce profits.

Surface, underground, or longwall mine, Gates has a long history of helping operators keep equipment running and producing.

Our high quality, advanced hose and belt drive systems are designed to take on the rugged, abrasive conditions found at any mine site.

Equipment applications include:

- › Graders and scrapers
- > Power shovels
- > Excavators
- > Bull dozers
- > Haulers and dump trucks
- > Mechanical shearers
- Self-advancing, hydraulic roof support systems
- > Conveyors
- > Shakers
- Ore crushers
- > Drills



MINING



SENTRY™ SERVICES

This unique suite of services is offered to optimize equipment availability and minimize or eliminate unscheduled downtime for a broad range of mining equipment.

Sentry IQ Service

Can monitor the performance and condition of every hydraulic and industrial hose in a mining operation and warn of an approaching potential failure. A quick change could prevent hours of downtime, personnel injury, equipment damage, environmental cleanup, and more.

Sentry ID Service

A unique, Radio Frequency Identification (RFID) tagging system that identifies and tracks specific hose assemblies in the field for fast, easy repair or replacement.

QUICK-PIC & AIM

Inventory support programs that help mine operators quickly and easily obtain replacement parts for their equipment to reduce downtime and lower inventory costs.

HOSE SOLUTIONS

Gates line of MSHA-approved, high-pressure hydraulic hoses provide reliable, long-lasting service in specialized mining equipment applications such as longwall roof support systems.

Gates hoses are ideal for applications including high-pressure water distribution, hot water washdown, hydraulic lines, air drill, and pneumatic equipment.

For fluid and materials transfer applications, Gates broad offering of industrial transfer hoses will handle water suction and discharge, detergents, hydraulic fluids, dilute acid solutions, alkalines, glycol, oils, gasoline, fuel oil, and lubricating oils.

Gates hoses are resistant to heat, cold, oil, abrasion, ozone, and weather for long service life in the harshest mining conditions.

BELT SOLUTIONS

Gates power transmission drive systems are strong enough and tough enough to outlast, outperform, and outmuscle roller chain 3-to-1 in the mining environment.

Gates Super HC® and Hi-Power® II V-belts are ideal for applications such as shaker screens.

Predator® belt drives have the highest power density of any V-belt on the market and are the perfect choice for drives requiring high-impact strength and load-carrying power such as those found on ore crushers.

And there's nothing tougher than Gates Poly Chain® GT® Carbon™ synchronous belt drives for low-speed, high-torque equipment such as conveyors. These belts are virtually immune to abrasion.









ALTERNATIVE ENERGY





Whether it's derived from the wind or the atom, the sun or the rivers, the depths of the earth or the breadth of the farmlands, alternative sources of energy will be essential in the future.

As the need for alternative energy sources grows, Gates will assist in designing and managing equipment systems and providing the products to help innovative companies get the most value from these alternatives.

Depending on the application and equipment involved, Gates hose assemblies and belt drive systems can help keep it all running in the pursuit of alternative energy.

- > Pumps and compressors
- > Diesel engines and generator sets
- › Heat exchange units/furnaces
- > Boilers

- > Compressors
- Air-cooled heat exchangers (ACHE)
- > Turbines

For example, Gates MegaSys® constant pressure hydraulic hoses are used on equipment that rotates blades in wind turbines to maximize the benefits of high winds. These high-quality, extremely reliable, leak-free hose assemblies mitigate difficult and costly unscheduled downtime and repairs to keep the wind producing energy to the max.



The cost of replacing a hydraulic hose that fails in a wind turbine tower up to 450 feet tall can run into the thousands of dollars in labor and lost revenue.

UTILITIES, REFINING + WASTEWATER



V-belts on 99 air-cooled heat exchangers at a refinery were converted to Poly Chain® GT® Carbon™ drives to eliminate slippage in hot weather. In addition to improved performance, the refinery realized annual energy savings of \$90,600 and an investment payback in less than one year.

Refineries and power plants deliver the energy the world needs, powering everything from automobiles to manufacturing plants to our homes. These facilities employ a wide range of equipment that processes and output depend on.

- Pumps used to move hydrocarbons and water through piping systems
- Air compressor systems compressors, coolers, air receivers, air dryers, controls, and distribution piping for a variety of processes
- Diesel engines localized power for processes
- Heat exchange units/furnaces provide heat necessary for chemical reactions to occur
- > Boilers produce steam
- Compressors put gases under pressure
- > Centrifuges separate components
- Air-cooled heat exchangers
 (ACHE) to dissipate heat

Gates V-belt drives and Poly Chain® GT® Carbon™ synchronous belt drives allow customers to realize significant performance benefits as well as energy savings totaling thousands of dollars per drive.

Our hydraulic hose systems keep equipment up and running and extend the time between scheduled maintenance service. With bend radii up to one-third SAE specs, Gates hoses can reduce hose costs by as much as 64 percent by allowing the use of shorter lengths.

A full range of durable, long-lasting industrial hoses can handle the transfer of water, petroleum products, chemicals, acids, and more.

And Gates application experts can assist with system design, product selection and management programs to help clients get the most value out of their belt and hose investments.





SYSTEM DESIGN + MAINTENANCE

Gates application expertise, product knowledge, field experience and partnership focus combine to provide quantifiable business value resulting in positive impact to the client's top and bottom line.



Engineering Assistance

Drawing on extensive market application expertise, Application engineers assist clients in hose and belt system design to optimize equipment performance and add business value.



Belt Preventive Maintenance (PM)

An exclusive, comprehensive, customer-focused program created to improve customer belt drive performance, reduce downtime, increase energy savings, train personnel, and enhance jobsite safety.



Safe Hydraulics

This unique, in-depth hydraulic preventive maintenance and training program helps customers operate and maintain equipment efficiently and safely.



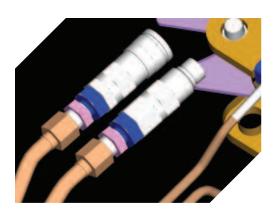
Troubleshooting

Got problems? Gates can help find solutions. Our engineers and technicians will assist in identifying causes for belt and hose failures and recommend solutions that will keep equipment up and running.



Technical & Solutions Centers

Gates operates state-of-the-art facilities in North America, Europe, and Asia dedicated to customer-focused product research and development, system engineering and design, testing, product reliability, advanced technologies, and training.



Design tools

Gates offers many easy-to-use, web-based, interactive design tools (e.g. Design Flex™ Pro™ belt drive design, DesignConnect™ 3D hose system modeling) to help engineers choose the right system designs for their product ideas and innovations.





POWERING PROGRESS™

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