

WHY

LGG Industrial?

Some Of The World's Largest Refineries Trust Our Decades Of Industry Experience,





In-Depth Knowledge of Our Products,

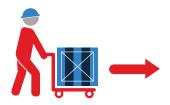


And Their Applications to Provide Them with Unique Market Advantages.



We Have Documented a Savings to Our Refinery Customers of \$10.3 Million Dollars (Or \$645k Per Customer) in the Last Five Years.

You can view specific refinery industry savings examples by visiting our industry page on our www.lggindustrial.com website.



Their Confidence is Rooted in Our Ability to: Deliver System Engineered Solutions from the Most Reputable Manufacturers, Provide High-Performance Alternatives, Repair and Reclamation Services.

Our Commitment to Product Safety and Sustainability That Reduces Our Customers Total Cost of Ownership by Increasing the Products Lifespan.



Our Proactive Service Which is Backed by Our North American Geographic Footprint of Nearly 90 Locations Allows Us to Provide



Immediate 24/7 On-Site Diagnostic and Preventative Service, Local Emergency Response and Faster Delivery Times.

The Long Time Tenure of Our Specialists We Have on Staff Have Proven That They Can Solve Their Problems Before They Become Emergencies.



One of the Largest Refineries in the U.S. Wrote to Thank Us for a Massive Turnaround and Capital Project That We Were Involved in. The Note Read As Follows:

I just wanted to take the time to thank all of your personnel for the 'great service' that we received during this fall turnaround. Everyone gave their all (110%) to supply the needed material and service requested.

I personally and truly appreciate all of your efforts. It makes my job so much better/easier. Once again... thank you!

We Are Active Members of Top Accredited Associations



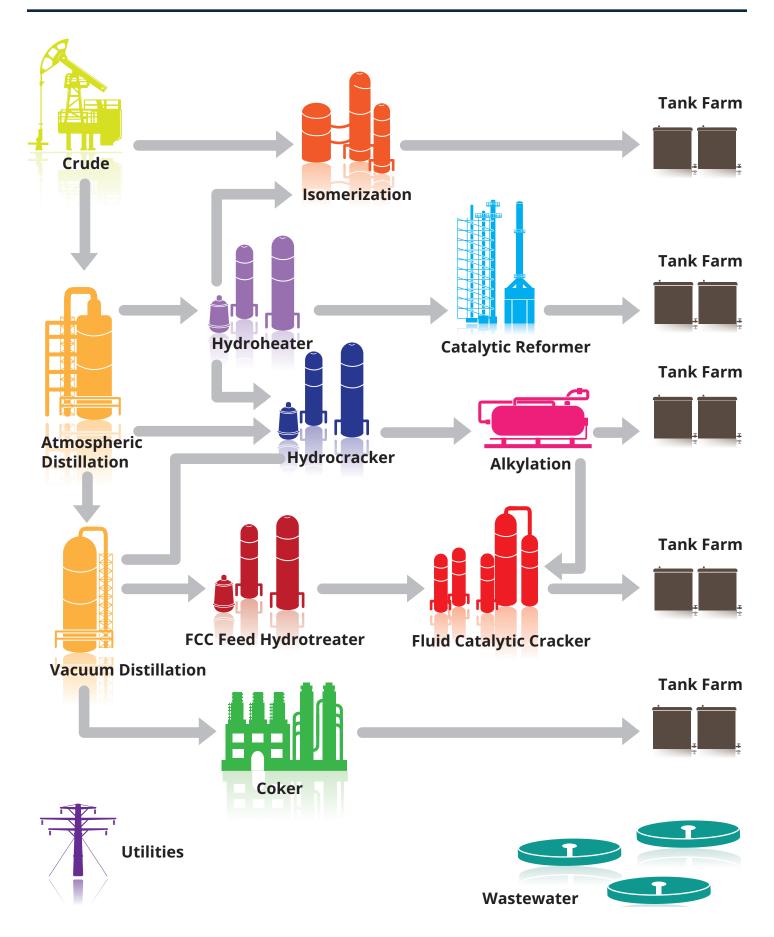




We Are Also Ranked As A Market Leader In Modern Distribution Management:



Refinery Overview: Bringing the parts together.



Products

Gasketing Selection

Refinery Unit	KAG™	CGG™	ALKY- ONE	Spiral- wound	HDLE	Double Jacketed	Flexible Graphite	PTFE w/ Glass	PTFE w/ Barium Sulfate	NBR/ Carbon Fiber	NBR/ Aramid/ Inorganic*	NBR/ Armid Fiber*
Atmospheric Distillation												
Vacuum Distillation												
Hydrocracker												
Hydrotreater												
Coker												
Alkylation												
Isomerization												
FCC Feed Hydrotreater												
Fluid Catalytic Cracker												
Catalytic Reformer												
Tank Farm												
Wastewater												
Utilities												

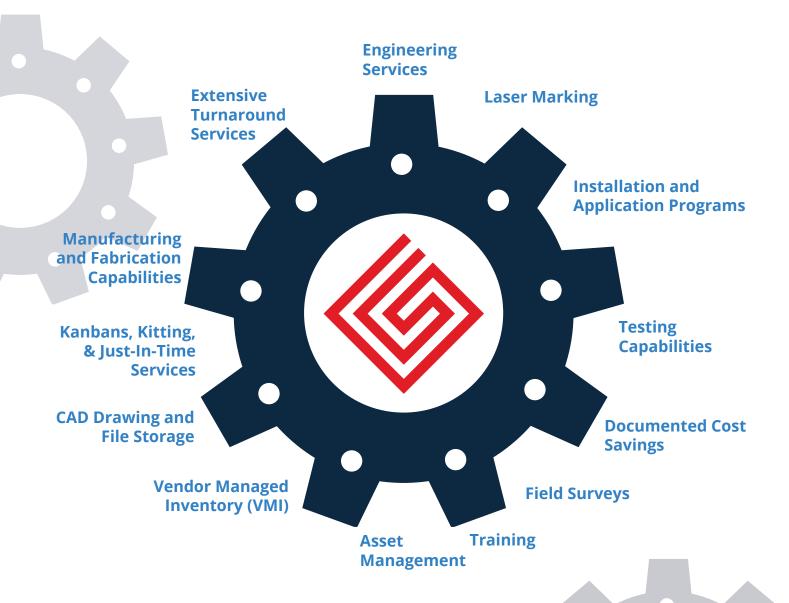
^{*}Temperature/Media/Pressure Dependent

Hose Selection

Refinery Unit	Air Hose	Multi- Purpose Hose	Nitrogen Hose	Hydrocarbon Drain Hose	Steam Hose	Chemical Hose	Tank Truck Hose	Water Hose	LPG Hose	Decoking Hose	Metal Hose
Atmospheric Distillation											
Vacuum Distillation											
Hydrocracker											
Hydrotreater											
Coker											
Alkylation											
Isomerization											
FCC Feed Hydrotreater											
Fluid Catalytic Cracker											
Catalytic Reformer											
Tank Farm											
Wastewater											
Utilities											

^{*}Temperature/Media/Pressure Dependent

LGG Industrial Offers an Unmatched Suiteof Value Added Services



Our product service portfolio is designed to significantly reduce our customers' total cost of ownership.

Metal Gaskets



Camprofile Gaskets

Style: KAG™

Camprofile Gaskets are high-performance gaskets used in a variety of flange applications including heat exchangers. The high purity graphite facing molds in place filling in flange irregularities creating a superior seal at lower stress levels. It maintains the seal even in the harshest environments, including hydrocarbons and steam applications. A machined metal gasket using a thicker metal core substrate provides a solid sealing solution especially in smaller cross-sectional spaces. They are designed for the most difficult sealing environments where performance is mission critical. Camprofile gaskets offer a high-quality sealing alternative solution for emission control.



Corrugated Metal Graphite Gaskets

Style: CGG™

Corrugated Metal Graphite Gaskets are a more economical engineered gasket used in a variety of flange applications including heat exchangers. The high purity graphite facing molds in place filling in flange irregularities creating a superior seal at lower stress levels. It maintains the seal even in the harshest environments, including hydrocarbons and steam applications. The corrugated core results in superior recovery as well as crush resistance in the most demanding applications. Used in heat exchangers with cross-sections ½" or wider and where difficult sealing environments and mission critical performance is expected. Corrugated metal gaskets offer a high-quality sealing alternative solution for emission control.



Alky Gaskets

Style: ALKY-ONE

The most advanced gasket for Hydrofluoric Acid Service. Five times as much deformation of the barrier pillow, giving better conformance to the flanges to eliminate flange corrosion. Seals with half the bolt load required by other gaskets and nearly three times as much gasket seating stress at full bolt loads. Proven Fire-Safe to API 6FB by Yarmouth Research Lab.



Spiral-wound Gaskets

Spiral-wound Gaskets were developed specifically to handle the severe temperatures and pressures found in a refinery. These gaskets are engineered to be flexible and to recover when confronted with pressure, temperature fluctuations, bolt stress, relaxation and creep. These gaskets can be used with almost every known corrosive and toxic media. Spiral-wound Gaskets with an inner ring prevent inward buckling of the winding from entering the process stream.



HDLE Gasket

Style: High Density Low Emission Spiral Wound Gasket

Style SRI Spiral-wound gasket constructed with high density >98% purity inhibited grade graphite that extends slightly above the metal windings and wound with metal filler to a specific pressure setting on the windings to ensure uniform compression under high load creating a low emission seal without crushing the sealing element.



Double Jacketed Gaskets

Double Jacketed Gaskets offer greater compressibility and resilience than a solid metal gasket due to the enclosed soft filler. The two piece metal construction also provides extra rigidity allowing for large diameters. Double Jacketed Gaskets are used on boiler and heat exchanger applications when ample bolting is available to correctly seat the gasket. They are designed for high pressure and temperature applications.





Soft Gaskets



Flexible Graphite

From precision pipe threads to large valves and flanges, GRAFOIL® Flexible Graphite create a superior seal. GRAFOIL® products fill pits, gouges and microscopic irregularities under only moderate bolt loads, leaving no open spaces – or voids for leak path improvement. Even the most demanding industrial, chemical and petrochemical sealing applications can benefit from GRAFOIL® products.



Biaxially Oriented PTFE Sheet with Hollow Glass Microspheres

Modified PTFE gasket material manufactured with biaxial orientated chains to obtain a tight seal for demanding applications. Produced with Modified PTFE and hollow glass micro spheres, this material has rather high compressibility characteristics and low minimum seating stress value. It is typically recommended for low torque applications, plastic pipe systems and flanges, as well as glass and ceramic lined equipment.



Biaxially Oriented PTFE Sheet with Barium Sulfate Filler

Modified PTFE gasket material manufactured with biaxial orientated chains to obtain a tight seal for demanding applications. A very dense material with low compressibility, high recovery and low creep properties. Off-white in color and produced with Modified PTFE and barium sulfate filler, it is particularly suitable for use with hydrofluoric acid and chlorine applications and a wide variety of different media across the whole pH-range.



Compressed NBR/Carbon Fiber Sheet

Compressed NBR/Carbon Fiber Sheet Gaskets possess excellent creep resistance and are suitable for use with oils, fuels and refrigerants. They are a universal grade especially suitable for use under alkaline conditions, with good steam resistance and can also be used for general service gaskets on all machinery, process piping and equipment.



Compressed NBR/Aramid/Inorganic Fiber Sheet

Made of good quality material based on a blend of aramid and inorganic fibers bonded with high quality nitrile rubber. General purpose material suitable for use in a wide range of applications, including hot and cold water, steam, oils, fuels, gases and a wide range of general chemicals.



Compressed NBR/Aramid Fiber Sheet

NBR/Aramid fiber is compressed gasket sheet made with all the great features of premium gasket materials without the cost. Nothing is left out, only the best raw materials are used, without compromise. It exhibits excellent cutability and flexibility characteristics and is recommended for general service gaskets in process piping, blinding and equipment.





Fasteners & Kitting



Exchanger and Bolted Joint Kitting

- Complete "point of use" packaging of all components and supplies required for exchanger assemblies, including gaskets, custom fasteners, anti-seize and assembly instructions. All components tagged to specific flanges for trouble-free assembly.
- Kits include all bolting and installation specifications in one unit
- System simplifies warehouse logistics and storage, reduces the risk for errors and improves efficiencies in managing employees by providing all of the items they need to properly and safely assemble the bolted joint - all in one place

In order to provide customers with all of the components that create a leak free environment, LGG Industrial stocks and fabricates a wide range of fasteners for process industries. We stock Grades 5, 8, B7, B7M, B8, B8M and B16 studs. These can be assembled along with 2H, 8F, 8M, 4H and Grade 7 nuts and threaded bar. Our production facilities will cut bar to specified lengths to meet all our customers requirements.



Standard ANSI Flange Kitting

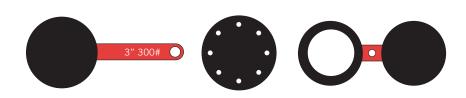
- Gaskets, fasteners and washers per flange size and pound class all in one place
- Easy to store
- Greater inventory control
- Reduced waste by eliminating loose parts for job requirements

Our kitting capabilities allow us to provide the right gasket, eliminate torque misapplication and create time efficiencies providing one thing – total peace of mind.

Blinds

Style: Paddle and Spectacle

For all your isolation and hydro requirements (isolation blinds are not intended for pressurized services or hydrotest). Unless specified, isolation blinds are 1/4" to 3/8" carbon steel. Blinds for hydrotest are available with thickness per ASME and API.



Tube/Coker/Reformer Seals/Conveyor Solutions

Tube/Coker/Reformer Seals

Keeps cold air out and hot air in your furnaces. Full top-to-bottom zipper prevents gapping throughout thermal cycle. Inner and outer flaps overlap to protect the zipper and D-Ring Buckle keeps outer flap closed. Abrasion-resistant Silica tape protects the top and bottom hems.







Coker Seals



Reformer Seals

Conveyor Solutions

We have a variety of conveyor system components and management programs to meet the needs of your plant. Our primary product offering to the refinery industry is comprised of heavyweight and lightweight belt (grade I & II as well as specialty compounds), bucket elevator belt and a variety of accessories including impact rollers, impact beds, belt cleaners, pulleys, idlers, lagging and chute lining.

We also have conveyor-system service teams throughout the U.S. and Canada that provide a variety of installation, troubleshooting and preventative maintenance services. These crews are fully equipped to mobilize and respond to your conveyor systems needs 24/7.



Coker belt at a Refinery

Hoses

Air Hose



High Pressure Utility Air Hose

Applications: Compressed air transfer service

Tube: Wrapped SBR Tube **Reinforcement:** Textile braid

Cover: Wrapped EPDM rubber compound, yellow cover

Temperature Ranges: -40°F to 180°F (-40°C to 82°C)

Working Pressure: 500 psi, Burst Pressure Minimum 4:1

Available Sizes: 1/2" to 2"



Multi-Purpose Hose





Nitrogen Service Hose



Hi-Temp Compressed Air Hose

Applications: Compressed air transfer service

Tube: Wrapped CPE Tube

Reinforcement: Multiple layers of wrapped tensile steel wire **Cover:** Wrapped EPDM rubber compound, yellow cover

Temperature Ranges: -40° F to 300° F (-40°C to 148°C) **Working Pressure:** 600 psi, Burst Pressure Minimum 4:1

Available Sizes: 1" through 4"

GOODALL® Saxon 300 PSI Nitrile Multi-Purpose Hose

Advantages: Extremely flexible, kink resistant and crush proof for

harsh, demanding applications

Applications: Premium multi-purpose heavy-duty hose handling air,

water, oil, diesel and other petroleum based products

(not recommended for unleaded gasoline) Extruded smooth NBR tube compound High tensile strength 4 spiral polyester yarn

reinforcement

Cover: Extruded, smooth NBR/PVC abrasion, oil and ozone

resistant rubber compound, red cover

Temperature Ranges: -20°F to 180°F (-29°CC to 82°C) **Working Pressure:** 300 psi, Burst Pressure Minimum 4:1

Available Sizes: 1/4" through 1"

Tube:

Reinforcement:

GOODALL® Air Hammer & Titon 300 PSI EPDM Multi-Purpose Hose

Advantages: Heat, abrasion, weather and ozone resistant **Applications:** Multi-Purpose applications in Petrochemical and

Chemical refineries

Tube:Extruded smooth EPDM tube compoundReinforcement:High tensile strength 4 spiral polyester yarn

Cover: Extruded EPDM rubber compound: red, black, yellow,

blue and green*

Temperature Ranges: -40°F to 203°F (-40°C to 95°C)

Working Pressure: 300 psi, Burst Pressure Minimum 4:1

Available Sizes: 1/4" through 1"

300 PSI Nitrogen Service Hose

Applications: For use in nitrogen service to purge lines in refineries,

petrochemical, and general industries

Tube: Black thermoplastic PVC/NBR compound

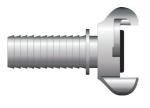
Reinforcement: Multiple spiral high tensile polyester **Cover:** Abrasion and weather resistant. **Temperature Ranges:** -20°F to 150°F (-29°C to 65°C)

Working Pressure: 300 psi, Burst Pressure Minimum 4:1

Available Sizes: 1/2" through 1"

^{*}Colors red and black kept in stock, minimum run required for all other colors

Multi-Purpose and Nitrogen Connections









Chicago/Crows Foot

Male Bowes Coupling

Ground Joint Coupling

Female Bowes Coupling



Male NPT Threads

Hydrocarbon Drain Hose



500 PSI High Temp Hydrocarbon Drain Hose

Advantages: For uses where temperature exceeds 250°F

Applications: To drain hydrocarbons from the operation of vessels

and piping systems in chemical and petrochemical

industries

Tube: Extruded, smooth nitrile (NBR) compound with superior

heat-resistant properties

Reinforcement: High tensile wire braid and textile breaker yarn; braided

with brass plated wire for corrosion resistance and

improved adhesion

Cover: Chlorosulfonated polyethylene blue abrasion and

ozone resistant cover

Temperature Ranges: -40° F to 350° F (-40°C to 121°C)" **Working Pressure:** 500 psi, Burst Pressure Minimum 5:1

Available Sizes: 1/2" through 2"





and piping systems in chemical and petrochemical

industries.

Tube: Extruded, smooth nitrile (NBR) compound with superior

heat-resistant properties.

Reinforcement: High tensile wire braid and textile breaker yarn; braided

with brass plated wire for corrosion resistance and

improved adhesion

Cover: Chlorosulfonated polyethylene blue abrasion and

weatherresistant cover

Temperature Ranges: -40°F to +275°F

-40°C to +135°C

Working Pressure: 300 psi, Burst Pressure Minimum 5:1

Available Sizes: 3/4" through 2"



Steam Hose



250 PSI EPDM Steam Hose

Applications: Steam application in Petrochemical and Chemical

refineries

Tube: Extruded smooth EPDM tube compound

Reinforcement: Multiple braids of high tensile steel wire; braided with

brass plated wire for corrosion resistance and

improved adhesion

Cover: Smooth EPDM rubber compound, pin-pricked

black cover

Temperature Ranges: -40°F to 450°F (-40°C to 232°C) **Working Pressure:** 250 psi, Burst Pressure Minimum 10:1

Available Sizes: 1/2" through 2"



GOODALL® Super Inferno 250 PSI Chlorobutyl Steam Hose

Advantages: Heavy-duty construction with a 20:1 burst pressure

for increased safety. Specifically designed to resist

pop-corning and blistering.

Applications: High-pressure steam hose for applications in

Petrochemical and Chemical refineries

Tube: Extruded smooth Chlorobutyl tube compound

Reinforcement: Multiple braids of high tensile steel wire; braided with

brass plated wire for corrosion resistance and

improved adhesion

Cover: Smooth EPDM rubber compound, pin-pricked red cover

Temperature Ranges: -40°F to 450°F (-40°C to 232°C)

Working Pressure: 250 psi, Burst Pressure Minimum 20:1

Available Sizes: 3/4" through 1"

Steam and Hydrocarbon Drain Couplings



Crimping System +

Steam and Hydrocarbondrain Hose

Reliable Solution for Your Steam and Hydrocarbon Drain Hose Application

Female Ground Joint, Male Pipe Thread, and Flanged fittings available

Chemical Hose



Chemical Transfer Hose 200 PSI Modified XLPE

Advantages: Handles a broad range of chemicals

Applications: Chemical application in Petrochemical and Chemical

refineries

Tube: Tan Modified XLPE Liner

Reinforcement: Spiral-plied synthetic fabric with steel wire helix

Cover: Corrugated EPDM rubber compound, black

Temperature Ranges: -40°F to 250°F* (-40°C to 121°C). Can be open end steam cleaned up to 50 psi (3.5 bar) at 212°F/100°C.

Working Pressure: 200 psi, Burst Pressure Minimum 4:1

Available Sizes: 1" through 4"

*Consult your LGG Industrial representative for more information



200 PSI UHMW Chemical Hose

Advantages: Handles a broad range of chemicals

Applications: Chemical application in Petrochemical and Chemical

refineries

Tube: Natural UHMW Liner

Reinforcement: High tensile spiral-plied textile cords with embedded

steel helix wires

Cover: Corrugated EPDM rubber compound, green

Temperature Ranges: -40°F to 250°F* (-40°C to 121°C) **Working Pressure:** 200 psi, Burst Pressure Minimum 4:1

Available Sizes: 3/4" through 4"

*Consult your LGG Industrial representative for more information





150 PSI Tank Truck Hose

Applications: Very flexible and lightweight suction and delivery

hose for hydrocarbon fuels and minerals oils having an aromatic content of maximum 50% by volume

Tube: Black NBR rubber compound

Reinforcement: High tensile spiral-plied textile cords with embedded

steel helix wires

Cover: Corrugated CR rubber compound, black

Temperature Ranges: -22°F to 176°F (-30°C to 80°C) **Working Pressure:** 150 psi, Burst Pressure Minimum 4:1

working Fressure.

Available Sizes: 2" through 6"

Water Hose



150 PSI Water Suction and Discharge Hose

Applications: Chemical application in Petrochemical and Chemical

refineries

Tube: Tan Modified XLPE Liner

Reinforcement: Spiral-plied synthetic fabric with steel wire helix

Cover: Corrugated EPDM rubber compound, black

Temperature Ranges: -40°F to 250°F (-40°C to 121°C). Can be open end steam cleaned up to 50 psi (3.5 bar) at 212°F/100°C.

200 psi, Burst Pressure Minimum 4:1

Working Pressure: 200 psi, Burst Pressur

Available Sizes: 1" through 4"

Large Bore Hose Connections



Female Cam & Groove



Fixed & Floating Flanges



Male Cam & Groove



Victaulic Groove



Male NPT Threads

LPG Hose



350 PSI NBR LP Gas Delivery Hose

Applications: Premium LPG Transfer hose

Tube: Smooth extruded nitrile (NBR) tube developed

specifically to resist tube cracking caused by the

transfer of LPG

Reinforcement: Multiple braids of high tensile textile reinforcement

Cover: Superior abrasion resistant neoprene, pin-pricked

black cover

Temperature Ranges: -40°F to 180°F (-40°C to 82°C)

Working Pressure: 350 psi, Burst Pressure Minimum 5:1

Available Sizes: 1" through 2"

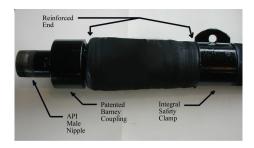
LPG Hose Connections





Male NPT Threads

Decoking Hose



High Pressure Decoking Hose

Tube: Nitrile Copolymer – highly oil resistant

Reinforcement: Multiple plies of high tensile brass coated steel

cables. The textile carcass is made of multiple plies of high tensile synthetic fabric. The cushion layers are made of Synthetic Copolymer designed to add body and provide uniform separation of hose elements to

control twist.

Cover: Neoprene Copolymer designed to resist external

environmental elements and effects of abrasion and cutting commonly found in decoking operations

Suggested Fittings: Flanges are RTJ ANSI Series 1500# or 2500# (or per

customer requirements). All couplings and flanges

are full flow without restrictions (3 ½" I.D.).

Temperature Ranges: -40°F to 176°F (-40°C to 80°C)

Metal Hose



One Wire and Two Wire SS Metal Flex Hose

Advantages: Sustainable hose solution with universal chemical

resistance. Non gas permeable and vibration

resistant.

Applications: Corrugated stainless steel metal hose with braided

stainless steel overbraid hose for extreme

temperature and chemical resistance. Good for high

pressure applications.

Tube: Formed corrugated tube, 321 or 316L, specialty

materials available upon request

Cover: Single or Double Braid Stainless Steel 304 overbraid

Temperature Ranges: High temperatures (550°C / 1022°F max)

Fittings: Multiple Coupling Connections. Male pipe, Female

pipe fixed and swivel, JIC Male and Female, ANSI

Flanges Fixed and Floating

Available Sizes: ½" through 10"

Loading Arms and Other Products



Marine Arms



Rail Arms



Truck Arms



Gangways



Swivel Joints



Couplers & Other Accessories

LGG Industrial provides expertise, service, and accessories for all Loading Arm Products.

Gate Valves



1 In. Gate Valve
Stainless
Flanged End
Class 150



2 In. Gate Valve 600RF12SHFlanged End
Class 600



3 In. Gate Valve 301RF8Flanged End
Class 300



Forge Steel Gate Valves
Sizes Available: 0.25-2 in.
Conventional Port
Class 800

Globe Valves

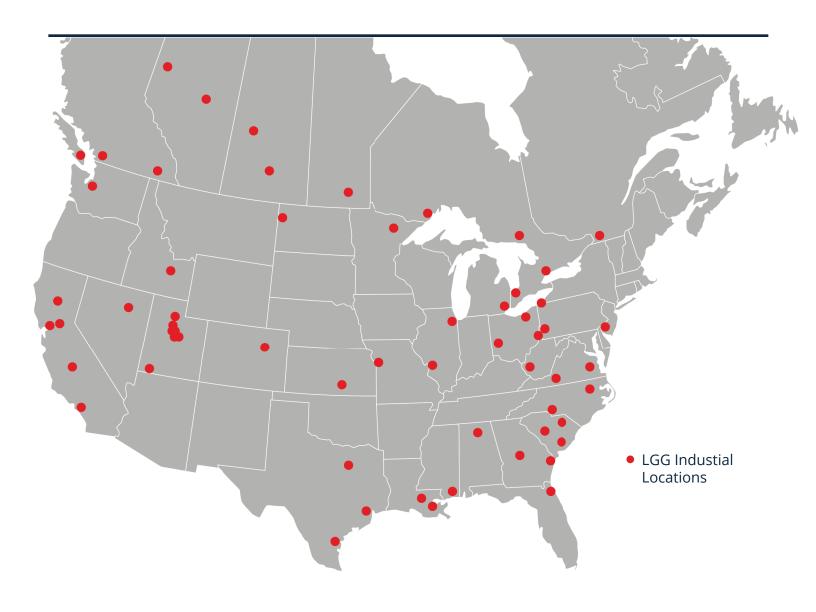


Forge Steel OS&Y Globe Valves Sizes Available: 0.25-2 in. Class 800

Check Valves



4 In. Check Valve 152RF8Flanged End
Class 150



LGG Industrial offers a complete line of products including:

- Fluid Transfer Solutions
- Fluid Power Hose Solutions
- Material Handling Solutions

LGG Industrial Industries Served:

- Aggregate
- Agriculture
- Chemical
- Food & Beverage
- Grain

- Mining
- OEM
- Oil & Gas
- Power Generation
- Primary Metals

- Pulp & Paper
- Refining & Petrochemical
- Rental
- Tire

