

**LISK**  
G.W. Lisk Company, Inc.



# PRECISION CONTROL

**Solenoids Controls for Industrial  
or Mobile Hydraulic Applications**



LISK SOLENOIDS FOR YOUR INDUSTRIAL, MOBILE, AND PROPORTIONAL APPLICATIONS.



## WET PIN SOLENOIDS

Wet pin solenoids are designed to operate industrial and mobile hydraulic valves. The moving components of the solenoid are contained in a pressure tight tube assembly, eliminating dynamic seals and potential leaks. Additional advantages include superior life due to hydraulic fluid lubrication of the armature, easy coil replacement without the opening of the hydraulic system, and the ease of valve assembly. Seven basic sizes combined with many optional features allow these solenoids to be tailored to meet your specific requirements. Custom designs are welcome.

## CHOICE OF PROVEN DESIGNS

### ON-OFF

These solenoids are conventional using high force over short working strokes to achieve either full flow or zero flow from the valve. These solenoids are ideal for a wide range of AC or DC power applications.

### PROPORTIONAL

For constant force over the working stroke, these solenoids provide valve designers the ability to develop electrically operated flow or pressure control valves. Their ability to predictably repeat and infinitely vary flow or pressure outputs from zero to maximum is accomplished by altering the electrical current into the coil. LVDTs can also be added for high precision and repeatability.

### PREMIUM MATERIALS AND COMPONENTS ENSURE MAINTENANCE FREE PERFORMANCE.

We custom design and manufacture our components to meet the demanding requirements for operation in environments. We pay special attention to material selection, coatings, and plating. Only premium components designed to withstand extreme operating conditions are used.



## TECHNICAL OVERVIEW

### COMMON OPTIONS

#### Tube Options

Choice of manual override buttons:

- No Override
- Stainless Steel Override
- Various Seal Compounds
- Extended Length
- Treaded
- Palm Button
- Boot Seal

Custom Mounting Thread

Flange Mount

Fixed Push Rod

Captive Push Rod

High Pressure

Slow Response

Cartridge Valve Style

Bleed Screw

LVDT Directly Mounted For Closed Loop Systems

Industrial Plating's

High Frequency Response

Custom Force/Stroke Curves

Push/Pull

Internal Spring



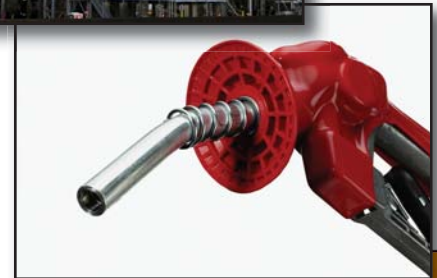
Transportation



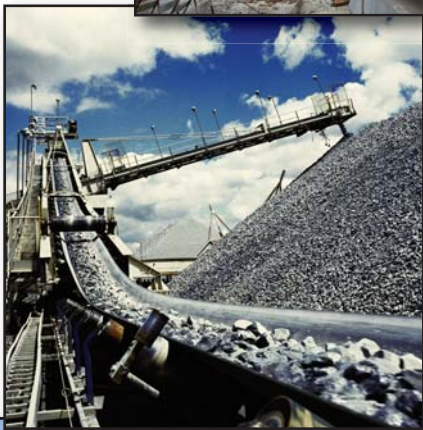
Construction



Refining



Dispensing



Mining



Renewable  
Energy



Agriculture

## TECHNICAL OVERVIEW CONTINUED:

### Coil Options

Choice of electrical termination; such as:

- Leads
- Conduit With Leads
- 2 Spade
- Internal Ground
- Jet Plug
- Kostal
- Plug-In
- Environmental Sealed

High and Low Power

Short and Long Length

UL/CSA Recognized Insulation

Intermittant Duty

Thru Bolt Mounting

Various Voltages

Rectified/Varistor

Arc Suppression

AC Immune

Waterproof

Customized Lisk proportional and on-off solenoid designs are used in many industrial, commercial, aerospace, and mobile applications. Contact G.W. Lisk or Lisk Ireland Ltd. for further information about the right solenoid to fit your requirements.



## OVER 90 YEARS OF EXPERIENCE AND INNOVATION

In 1910, George Washington Lisk opened a small sheet metal shop on a portion of land that our current U.S. plant now occupies. The Main Campus is over 400,000 square feet (37,000 square meters) with supporting facilities in both the US and international locations.

The initial move into what is now our primary manufacturing facility came in 1949 with the introduction of SOLENOIDS. The design, development, and manufacturing of these coil-based products has been our focus ever since.

Building on the expertise and experience gained in both solenoids and valves, the company progressed into the design and manufacture of solenoid operated valves for specialized markets. Lisk's solenoid valve design and manufacturing expertise has continued to grow as applications have emerged and developed. The continued progression of product lines led to a hazardous-duty range of solenoid valves.

As our company has expanded, so have our engineering and manufacturing capabilities, which include a complete machine shop, welding, assembly and plating, complemented by a wide range of environmental, mechanical, and non-destructive testing facilities. These assets enable us to produce all parts from prototype to production.

No application is too small or too large for our consideration. We produce low volume, highly specialized designs as well as high volume, mass-produced products.

## TOTAL IN-HOUSE CAPABILITY FOR DESIGN DEVELOPMENT AND MANUFACTURE.

Our philosophy of maintaining complete control of the design, manufacture, and quality of Lisk products has led to a substantial investment in equipment, facilities, and training. This enables delivery of every order to specification, on time and on budget.

**CNC WINDING MACHINES. COMPUTER AUTOMATED TEST STANDS.** Reduces the time and costs associated with manual testing as well as eliminating any possibility of operator error.

**COMPUTER AIDED DESIGN.** Featuring 3D capability.

**FINITE ELEMENT ANALYSIS.** Vibration, shock, temperature, magnetic, flow, heat transfer and stress.

**GENERAL SCREW MACHINES.** Six spindle, eight spindle chucking, and bar machines.

**CNC MACHINES.** Multi-axis, vertical and horizontal turning and milling as well as automatic manufacturing cells.

**MISC.** With blanking and forming presses up to 55 ton. 2, 4 and 20 ton machines. Surface, centerless cylindrical and on-center grinding. Annealing and heat treating. Thermal deburring.

**PLATING.** Cadmium, zinc, electroless nickel, zinc phosphate, chemical film on aluminum, anodize, passivate, Zinc Nickel and others.

**PRESSURE MOLDING.** Transfer and injection coil overmolding.



**WELDING/BRAZING.** Electron beam, gas tungsten arc welding, laser, induction, heliarc, spot welding, and brazing.

**NDT TESTING & MATERIAL ANALYSIS.** Non-Destructive Testing services that includes x-ray, visual, Dye Penetrant inspection, and Material Composition.

**ENVIRONMENTAL TESTING.** Including, but not limited to shock, vibration, salt spray, humidity, high (1000F) and low (-150F) temperatures, altitude to 100,000 feet, and other testing as required.

**HYDRAULIC TESTING.** Up to 75HP, 60,000 PSI, with a multitude of fluids.

**PACKAGING.** Commercial, military, environmental storage, custom, VPCI, and returnable packaging and cleaning.

**R & D LABORATORY.** Electrical characteristics, operational performance including pneumatic and hydraulic pressure/flow stands, response time, life cycling, evaluation of new processes, features, and new product development are just a few of the many "in-house capabilities".

**INTERNATIONAL STANDARDS.** Lisk meets and/or exceeds many international certification standards. Please inquire for our latest certifications.

**MANUFACTURING ENGINEERING.** In house Tool/Machine design and build capabilities. Fully trained technical staff for troubleshooting/repair of machinery and automated equipment to minimize downtime.

## A WORKFORCE DEDICATED TO CONTINUOUS IMPROVEMENT, PROBLEM PREVENTION AND TOTAL CUSTOMER SATISFACTION.

Our investment in equipment and facilities is just part of our commitment to customer satisfaction. We demonstrate this commitment through the utilization of statistical process controls, Lean Manufacturing programs, training of suppliers and in-house personnel.

It is this level of commitment and investment that makes Lisk respected in the design and manufacture of Valves, Solenoids, LVDT's and Flame Arrestors. Whatever your application -- Sub-Sea petroleum extraction, transportation and refining, power generation, fuel dispensing and emission control -- our teams are eager to satisfy your requirements every step of the way.

“The result: dedication of every Lisk employee to defect-free products.”



Linear

Rotary

Proportional

Wet-pin

Solenoid Valves

Flame Arrestors

LVDT

Hazardous Location Valves



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