Aviation Ground Fueling Solutions

for Commercial and Military Applications
Fueling/Refueling Nozzles & Accessories

**Military Underwing Refueling Nozzles**
- For pressurized underwing or fuselage refueling of military jets
- Conforms to MIL-N-5677
- Connects to MS24484 single point adapters
- Dual swivel action of the D-3 swivel inlet allows it to convert from a 45° degree elbow to a straight-through inlet
- Durable, compact swivel joint for easier connections, even on worn adapters
- Safety interlock uses square pins for mating to square slots on aircraft adapters
- Stainless steel bayonet ring for long, dependable service life
- Lowest nozzle pressure drop
- Unique guard bar protects the operating handle while providing a convenient hand grip
- Durable hard-anodized aluminum and stainless steel construction

Model 341GF-D3

**Commercial Underwing Refueling Nozzle**
- Streamlined design allows for easy connection to any aircraft, even the newer, smaller private and regional jets with reduced sized refueling ports
- Safety interlock uses square pins for mating to square slots on aircraft adapters
- Designed per SAE AS5677
- Connects to MS24484 Single Point Adapter
- Six Slot Connection Head
- Integrated Durable Swivel Joint
- Stainless steel bayonet ring for long, dependable service life
- Unique guard bar protects the operating handle while providing a convenient hand grip
- Durable hard-anodized aluminum and stainless steel construction
- Light Weight and compact size
- All Aluminum and Stainless Steel construction
- Secure connection, even on worn adapters
- Lowest nozzle pressure drop

Model 347GF

**Hose-End Shut-Off and Strainer Ball Valve**
- Strainer Ball Valve bolts to the inlet of Cla-Val Model 341GF and 342GF Nozzles
- Full port, quarter turn ball valve with strainer mounted within the ball
- Eliminates fuel spill when checking hose end strainer
- Inspection port on side of valve body gives access to strainer without draining hose
- Optional glass inspection cover allows for quick visual inspection without removing the strainer
- Ball can be reversed for defuel operation, preventing damage to strainer
- Commercial version has swivel joint and threaded inlet with NPT or BSPP threads
- Military version has male QD inlet to fit to existing hoses and pantographs

Model 349GF
**Fueling Valves & Accessories**

**352 Series Hydrant Pit Valve**
- Conforms to API Bulletin 1584, Third Edition
- Pneumatic or manual deadman operated
- Optional manual override for the pneumatic deadman version
- Optional excess flow shut-off for both the pneumatic and manual deadman configurations
- Fits within 13-inch diameter pits
- Stainless steel and ductile iron body - no aluminum
- Backed by three-year factory warranty

**Dry-Break Quick Disconnect**
- For easy nozzle removal from delivery hose to inspect or clean the strainer
- Unique butterfly valve configuration provides extremely low pressure drop
- Disconnecting automatically closes the valve
- Reconnecting automatically opens the valve
- Durable hard-anodized aluminum body
- Contains up to 600 psig when closed

**Hose End Pressure Control Valve**
- A direct acting pressure regulator that provides both pressure control and surge protection
- Special one-piece stainless steel piston provides greater durability and strength than standard aluminum pistons
- Three different pressure settings available
- Double sealed to prevent leakage
- Can be mechanically or hydraulically blocked out
- Durable hard-anodized aluminum body

**Hydrant Coupler**
- For connection to any API style hydrant pit adapter or hydrant pit valve to allow pressurized delivery of fuel to aircraft
- Conforms to API Bulletin 1584
- Large radius elbow provides lower pressure loss
- Rugged carrying handle
- Available with either 4” elbow or transition elbow for 3” discharge connections
- Coupler can swivel 360° after connection to adapter

**Pressure Control Coupler**
- For connection to any API style hydrant pit adapter or hydrant pit valve to accurately control fuel pressure delivered to aircraft
- Conforms to API Bulletin 1584
- Pneumatic deadman operated
-准确 pressure regulation and reliable surge pressure control
- Conveniently located fuel bleed screw and folding operating lever
- Available with 3” or 4” discharge connection
- Coupler can swivel 360° after connection to adapter

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Model 352GF

Model 344GF

Model 343GF

Model 351GF
Automatic Control Valves

40 Series Combination Rate of Flow and Fuel Shut-Off Valve
- Installed where flow is limited to a preselected maximum for optimum pump control
- Fail-Safe construction
- Solenoid emergency shut-off
- Adjustable maximum flow rate setting
- No packing glands assure leak proof service
- Available in aluminum, cast steel, stainless steel or ductile iron

40 Series Non-Surge Check Valve with Flow Limiting Feature
- Protects pumps against reverse flow
- Surge-free operation
- Adjustable opening and closing rates
- Fail-safe operation
- Limits flow to a pre-set maximum
- Factory sized for proper performance
- Available in aluminum, cast steel, stainless steel or ductile iron

129 Series High Level Shut-Off Valve
- Installed in the fill line to either underground or above ground fuel storage tanks
- Pilot control and hydraulically operated by line pressure, closing fully when tank is full
- Provides accurate, repeatable high level shut-off
- Can be serviced without removal of valve from line
- No packing glands assure leak-proof service
- Fail-safe operation
- Position indicator is standard
- Available in aluminum, cast steel, stainless steel or ductile iron
**50 Series Back Pressure Control Valve**
- Opens rapidly for maximum relief protection
- Maintains constant upstream pressure to close limits, and maintains preselected pressure during periods of low demand
- Controls surge created by the starting of a pump
- Modulates to maintain constant back pressure
- No packing glands assure leak-proof service
- No lubrication required
- Tight sealing single seat

**90 Series Pressure Reducing Valve**
- Maintains constant downstream pressure
- Closes quickly to prevent downstream surge when flow is stopped suddenly
- Deadman control
- Surge control prevents damage to refuelers
- Used in conjunction with Cla-Val Bottom-Loading Pantograph
- Fail-Safe operation

**40 Series Combination Rate of Flow and Fuel Shut-Off Valve with Check Valve**
- Installed where flow is limited to a preselected maximum for optimum filter separator control
- "Fail-Safe" construction
- Adjustable maximum flow rate setting
- No packing glands assure leak proof service
- Available in aluminum, cast steel, stainless steel or ductile iron
**Additional Ground Support Equipment**

**CFF21 Series Flanged Float Control**
- Completely automatic operation
- Automatically actuates a water drain valve to close when it senses rapid accumulation of water in the sump in excess of the capacity of the drain valve
- No lubrication or adjustments required
- Compact and easy to install
- Built-in float ball
- Control tester allows in-service testing of the pilot operation and integrity of the float ball
- Conforms to rigid military specifications

**X69 Series Flow Compensating Venturi**
- Emulates the delivery pressure at the refueling nozzle, regardless of change in flow rates
- Adjustable pressure drop compensation
- Accurate at any flow rate
- Two separate adjustable outputs
- Both adjustments located on top of body
- Internal adjustment valves
- Durable hard-anodized aluminum body

**Models X130A and X134H Hydraulic & Pneumatic Deadman Controls**
- Hand held control for remote operation of pressure activated fueling valves
- Comfortable pistol grip design
- Anodized red for greater visibility
- Spring loaded, normally closed
- Supplies pressure only when manually activated
- Direction of flow is clearly marked

**Series 850 Aircraft Refueling & Defueling Pantograph**
- Maximum protection against environmental leakage
- Enables higher flow rates and shorter refueling times
- Stainless Steel piping
- All Stainless Steel non-lubricated swivel joints
- Heavy-duty wheels and casters
- Galvanized steel support structures
- Spring-tension counterbalances
- Virtually no maintenance required
- Low profile design for small aircraft or fuselage refueling
- High-lift design available for even the largest of aircraft
- Can be located above ground or mounted in below grade pits

**Series 850 Bottom Loader Truck Fueling Pantograph**
- Used for bottom loading of aircraft refueling trucks
- Eliminates the need for hoses
- Can be coupled to a tank truck with heights adjustable from of 1 ft. to 4 ft above street level
- Works in conjunction with a Cla-Val control valve and nozzle to fill refueling units at flow rates up to 600 gpm
- When in the stored position, the Pantograph is retracted in order to save space
- Variations to the standard design are possible
A History of Excellence and Service

Since 1936, Cla-Val has produced the world’s highest quality automatic control valves and aviation fueling products for a diverse array of applications and market places. Our unique blend of engineering expertise, quality materials and sophisticated manufacturing processes has earned Cla-Val a reputation for excellence throughout the United States and around the world.

Cla-Val’s tradition of innovation began in World War II when we built the world’s first control valves that allowed fuel-water separators to automatically eliminate water from aviation fuel, preventing catastrophic failure in aircraft engines. Later, Cla-Val worked with the US Air Force to improve the speed and efficiency of aircraft refueling; and again with the commercial aviation industry to develop the first pressurized hydrant refueling system. Today, Cla-Val has become the standard bearer for technical expertise and performance, continuing to introduce innovative products that improve the safety and efficiency of commercial and military aviation fueling worldwide.

Manufacturing and Technical Expertise

All Cla-Val products are made from the highest quality materials and backed by the best warranty in the industry. Because of our in-house foundries, Cla-Val is able to manufacture products in more than 50 different varieties of metals and grades.

To help ensure that our customers receive the technical and product support they need, we conduct the industry’s most comprehensive engineering and application seminars. We also offer in-depth end-user training programs to help our customers derive the maximum benefit from their product investment.

With strategically located distribution centers and sales offices throughout the world, Cla-Val is the ideal source for superior technical know-how, unparalleled customer service and the finest quality products.

Engineering Capabilities

One of Cla-Val’s most unique characteristics is the strong focus we place on continuous improvement in our products. This focus is personified by our in-house Engineering Department. They work hand-in-hand with our customers to develop real-world solutions to help them meet their operational challenges, such as the new D-3 Swivel Inlet for nozzles used in aircraft fuselage and underwing fueling applications.

Beyond analyzing and understanding our customers’ existing requirements, Cla-Val Engineering uses the latest in solid modeling design software to develop new products to meet the ever-changing requirements of the industries we serve. To further enhance the value we provide, our Manufacturing Engineers continually work to develop and implement the latest technologies in our production and foundry facilities to ensure that all of our products are crafted with the highest possible quality, precision and accuracy.

Certifications & Approvals

Cla-Val aviation and ground fueling products are designed and manufactured in accordance with applicable industry standards and our own rigorous in-house quality program.

- API Bulletin 1584, Third Edition for hydrant pit valves
- CE# 0036 for automatic control valves
- AF-System Safety Engineering Analysis for refueling pantographs
- NSN for refueling nozzles
- ATEX for fueling nozzles and control valves

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Cla-Val manufactures superior quality automatic control valves in production facilities located around the world. These facilities, coupled with sales offices and distribution centers in the United States, Canada, Switzerland, United Kingdom and France, enable Cla-Val to provide world-class product support to our customers wherever they are, whenever they need it.

In addition to our state-of-the-art manufacturing and foundry facilities in the US, Cla-Val Canada also supports North American customers in a diverse array of industries with superior quality products and services and is one of the continent’s leading high volume OEM suppliers.

Our manufacturing operation in Lausanne, Switzerland, backed by an expert team of engineers and customer service professionals, provides outstanding product and technical support to customers throughout Europe and the Middle East.

Cla-Val UK Ltd. serves the United Kingdom and South Africa with an unparalleled level of customer service and technical expertise. Primary markets include waterworks, fire protection, aviation fueling and industrial processing facilities.

Cla-Val France, with offices just outside of Lyon and in Toulouse, is one of the leading suppliers of automatic control valves in France. Serving diverse markets ranging from aviation fuel truck manufacturing to water utility companies, Cla-Val France brings a unique combination of industry experience, technical expertise and product know-how to customers in the French marketplace.

**A World of Applications**

In addition to serving the aviation ground fueling industry, Cla-Val has provided the finest quality automatic control valves to the following markets for more than seventy years.

**Waterworks Distribution:** Cla-Val is the leading provider of automatic control valves and related products for the waterworks industry in the US and around the world. Our extensive product line includes pressure reducing valves, pressure relief valves, water savings products, remote and electronic control valves and a myriad of other products to ensure water system efficiency and reliable operations.

**Industrial/Wastewater:** Our extremely versatile automatic control valve, so prevalent in the waterworks industry, can also be customized to meet the demands of virtually any industrial fluid handling or wastewater application.

**Fire Protection:** Cla-Val fire protection products are specified by engineers and architects around the world, performing with reliability and precision in fire suppression systems on offshore oil platforms, industrial facilities and in high-rise buildings.

**Marine:** Cla-Val’s marine products are designed to meet the exacting requirements of military and commercial shipboard applications including fire protection systems, aircraft fueling and seawater service. Their rugged construction and top quality materials help to ensure long life, minimal maintenance and precision performance.