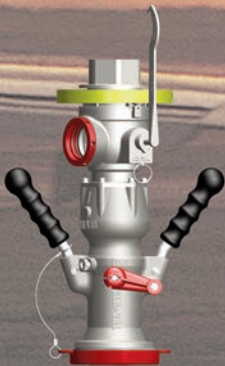




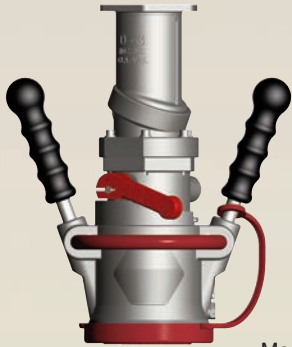
Aviation Ground Fueling Solutions



for Commercial and Military Applications

Fueling/Refueling Nozzles & Accessories

Military Underwing Refueling Nozzles

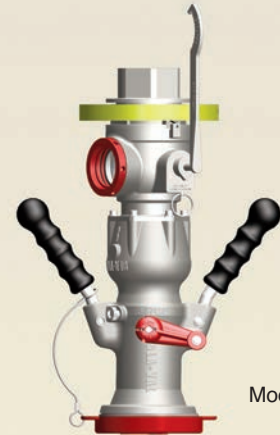


Model 341GF-D3

- For pressurized underwing or fuselage refueling of military jets
- Conforms to MIL-N-5877
- 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

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 AS5877
- 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



Model 349GF

- Strainer Ball Valve bolts to the inlet of Cla-Val Model 341GF, 342GF and 347GF 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

Sexless Couplers

- Created for tactical US Army fueling systems
- Interchangeable with similar 2-inch or 3-inch couplings manufactured by other suppliers
- Provides drip-tight sealing
- Constructed of aircraft-grade aluminum and stainless steel
- Sexless configuration is designed to mate with any two couplings, allowing for the connection of hose assemblies, regardless of end fitting
- Designed per A-A-59377A
- A variety of adapter connections available including flat MS flanges; Camlok fittings; and NPT adapters

Model 380GF - 2-inch



Model 380GF - 3-inch

Fueling Valves & Accessories



Model 352GF

352 Series Hydrant Pit Valve

- Conforms to EI 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

In-Line Pressure Control Valve



Model 354GF

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



Model 344GF

- Controls fuel pressure delivered into aircraft through an underwing nozzle
- Deadman operated
- Externally sensed pressure control
- Various pilot options (air, fuel, electric)
- Lightweight aluminum body
- Stainless steel internal pistons
- 1,200 gpm max. required flow rate



Model 343GF

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 EI style hydrant pit adapter or hydrant pit valve to allow pressurized delivery of fuel to aircraft
- Conforms to EI 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



Model 351GF



Model 353GF

Pressure Control Coupler

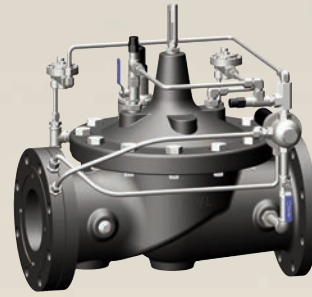
- For connection to any EI style hydrant pit adapter or hydrant pit valve to accurately control fuel pressure delivered to aircraft
- Conforms to EI Bulletin 1584
- Pneumatic deadman operated
- Accurate pressure regulation and reliable surge pressure control
- Conveniently located fuel bleed screw and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

visit www.cla-val.com for more information on Cla-Val top quality aviation ground fueling equipment

Automatic Control Valves

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



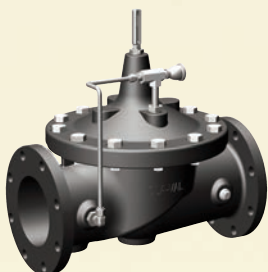
Model 40-30



Model 43-37

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



Model 129-01

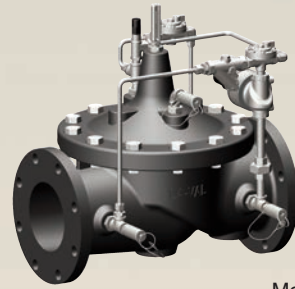
129 Series High Level Shut-Off Valve

- 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

Automatic Control Valves

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

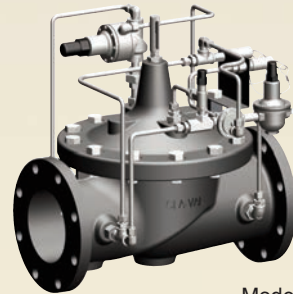


Model 50-48



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



Model 90AF4A-3



Model 40-36

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



Model CFF 21-H2



Model X69

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



Model X130A



Model X134H

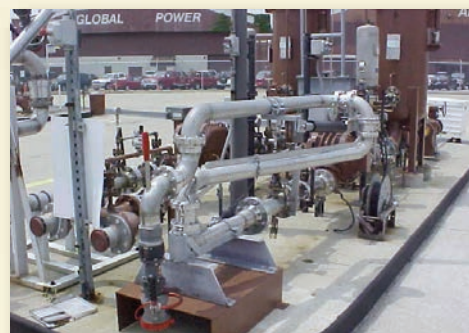


Series 850 Aircraft Refueling & Defueling Pantograph

- 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 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 marketplaces.

Cla-Val's tradition of innovation for the aviation ground fueling industry began during 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.



Global Headquarters:
Costa Mesa, California



European Headquarters:
Lausanne, Switzerland

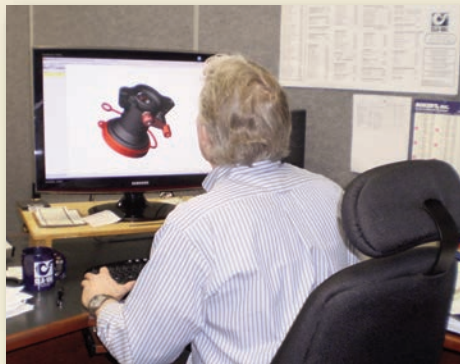
Manufacturing and Foundry Capabilities



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.



Engineering Capabilities



One of Cla-Val's most unique characteristics is the strong focus we place on continuous improvement in our products. This is personified by our in-house Engineering Department.

Cla-Val Engineers work hand-in-hand with our customers to develop real-world solutions to help them meet their operational challenges.

from concept to reality



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.

- EI 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**

Global Capabilities. Local Expertise.



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 located in Lyon, 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-five 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.



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