



— SERIES — **850GF**

# Bottom Loader Pantograph



## Refueling of tank trucks with bottom loading connection

The Cla-Val PANTOGRAPH Model "Bottom Loader" is designed for bottom loading of all refueling trucks without using hoses.

### DESCRIPTION

The Pantograph is used for bottom loading of refueling trucks. In conjunction with a Cla-Val Control Valve, Cla-Val Nozzle, with the capability to fill refueling units at flow rates up to 600 GPM. Pantograph consists of several sections, which are connected to each other by CLA-VAL Flanged Swivel Joints. The dispensing end consists of a swivel joint/pipe combination, which is counterbalanced by an adjustable spring device, it can be coupled to a tank truck with heights adjustable from of 1 ft. (0,3 m) 4 ft (1,2 m) above street level.

In the stored position the Pantograph is retracted in order to save space. The design of CLA-VAL Pantographs is a modular system. **Variations to the standard design are possible.**

### SPECIFICATIONS

Diameter: 3"(DN 80), 4"(DN 100), 6"(DN 150)  
Pressure class: PN 10, 125 lbs  
Pipe material: Stainless steel,  
Total length: 9' (3,0 m)

### MATERIALS

Stainless steel

### EQUIPMENT

Combination of Flanged Swivel Joints type C-GE-3F, 3"(DN80), 3 bearings, double sealed, made of stainless steel, non-lubricated and maintenance free, Type C-GE-3F/M, 4 bearings, double sealed, made of stainless steel, non-lubricated.

- 3-year leakage free warranty
- Cla-Val Refueling Nozzle
- Counterbalance unit
- Locking device



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# Refueling/Defueling Pantograph



- Maximum Protection Against Environmental Leakage
- 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
- Low-Profile and High-Lift Designs Available

The Cla-Val Model 850AF Pantograph is the ultimate aviation fueling device. Hard-piped to eliminate the liabilities associated with rubber hose, the Cla-Val 850AF Pantograph sets the industry standard for maintenance-free operation, higher flow rates, and design versatility in refueling systems.

The structural integrity of the Cla-Val 850AF Pantograph ensures maximum service life and maintenance-free operation. It is constructed of stainless steel piping and valves connected by rugged, multi-axis swivel joints for easy

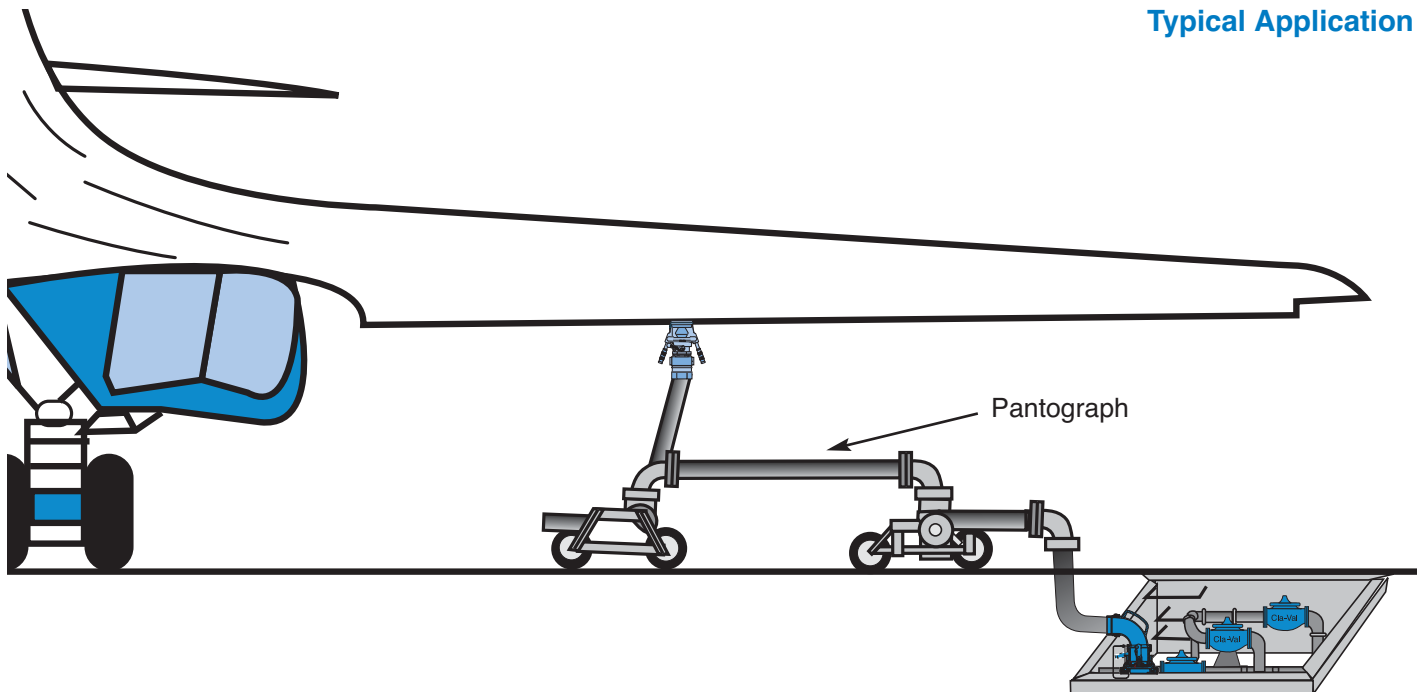
maneuvering. These high-performance swivels require no lubrication and retain their integrity during the most demanding applications, including towing the pantograph from site to site.

The Cla-Val 850AF Pantograph achieves higher flow rates and shorter refueling times than refueling systems that utilize hoses or hose reels. The lower internal flow resistance of pipe allows the pantograph to deliver fuel with a lower overall drop in pressure.

The Cla-Val 850AF Pantograph offers designs for small loading racks, low-wing

or fuselage refueling, and even high-lift designs for refueling the largest aircraft flying today. The pantograph extends to reach remote delivery points and then retracts for compact storage. It can be located above ground or mounted in below-grade pits. It can be configured for permanent installation or as a tow rig for portable applications. Portability is enhanced by the use of heavy-duty casters and wheels, making the Cla-Val 850AF Pantograph easy to maneuver for fast refueling or defueling of fixed-wing aircraft, helicopters, or tank trucks.

## Typical Application



**CLA-VAL**

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