Aviation Ground Fuel Handling Solutions
Aircraft Refueling Equipment and Hoses

EVT Aerocon
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

Parker Velcon
ENGINEERING YOUR SUCCESS.
Cla-Val hydrant pit valves and pressure couplers are utilized to safely deliver fuel to refueling trucks equipped with Cla-Val nozzles designed to mate with the underwing pressure refuelling adaptors.

In addition to an extensive product range, Cla-Val also offers the best customer service in the industry, backed by knowledgeable field support professionals with decades of experience. An in-house team of Aviation Fueling Engineers work to develop new solutions and continuously improve the products you rely on to operate your aircraft fueling systems.
CONTENTS
Commercial Refueling Nozzles ............. 4
Hose End Pressure Control Valves ........ 6
Strainer Ball Valve ............................. 7
Pressure Control Coupler .................... 8
Hydrant Pit Valves ............................. 10
In-line Pressure Control Valve ............. 12
Aircraft Fueling Hoses ....................... 14
Commercial Refueling Nozzle

FEATURES AND BENEFITS:

- Designed in accordance with SAE AS5877
- Connects to MS24484 Single Point Adapter
- Six Slot Connection Head
- Low Pressure Drop
- Integrated Durable Swivel Joint
- Narrow profile for ease of access to areas with limited space
- All Aluminum and Stainless Steel Construction

DESCRIPTION

The Cla-Val 347GF Nozzle is designed in accordance with SAE AS5877 and is constructed entirely of aluminum and stainless steel, with fuel resistant Nitrile, Acetal and Polyurethane seals. All aluminum surfaces are anodized or coated to prevent corrosion. No copper, zinc, or alloys thereof are used in construction. The 347GF Nozzle connects to an aircraft “single point adapter” conforming to specification MS24484.

The 347GF Nozzle is designed to maximize safe refueling operations. The internal interlock system, fully contained within the nozzle body, results in a smaller and thinner nozzle that can easily connect to all aircraft, including smaller regional or private jets that have minimal space in or around their refueling ports. The internal interlock prevents the nozzle from opening until a positive connection to an aircraft single point adapter is made. In addition, when connected to an aircraft single point adapter, the 347GF Nozzle cannot be rotated or removed until the operating lever is first rotated to the fully closed position. A spring loaded safety lock prevents the nozzle from being connected to an aircraft adapter in an unsafe or incomplete manner.

The Cla-Val 347GF Nozzle is also designed to simplify refueling operations. This lightweight design reduces the physical stresses involved in connecting the Nozzle to the aircraft by featuring a six slot connection head, making it much easier to connect to a three-lug aircraft single point adapter. The connection head features high strength, hardened Stainless Steel components to assure superior durability to withstand the toughest, most abusive environments. Reduced flow resistance was a focus throughout the design of the nozzle and all related components and accessories so that pressure drop would be minimal, thus reducing refueling times.
CREATE COMPLETE MODEL NUMBERS FOR VARIOUS APPLICATIONS

It is easy to customize a 347GF Refueling Nozzle to meet special requirements. Complete model numbers always begin with “347GF”. Add your option selections to this base model number, following the flow chart above from left to right. See example below.

**MODEL NUMBERING SCHEME**

- **347GF-7**
- **G**
- **S**
- **V**
- **M**
- **100**
- **Q**
- **D**
- **V**
- **25**
- **N**
- **R**

**AVAILABLE OPTIONS**

- **C** - CIRCULAR HANDLE
- **H** - SHORT STRAIGHT HANDLES
- **L** - LONG STRAIGHT HANDLES
- **7** - HANDLES WITH 7° BEND
- **15** - HANDLES WITH 15° BEND
- **G** - GROUNDING CABLE
- **V** - VACUUM BREAKER
- **S** - STOWAGE BAR
- **R3C** - 35 PSIG
- **R4C** - 45 PSIG
- **R5C** - 55 PSIG
- **R6C** - 65 PSIG
- **R3** - 35 PSIG
- **R4** - 45 PSIG
- **R5** - 55 PSIG
- **R6** - 65 PSIG

**OPTIONS**

The nozzle can also be supplied with add-on accessories such as the 349GF Strainer Ball Valve.

### 349GF Strainer Ball Valve

Allows for visual check of strainer without fuel spills, helping to protect personnel and the environment.

Operating Temperature Range: -40° to 130° F
Hose End Pressure Control Valve

FEATURES AND BENEFITS:

- Unique one-piece stainless steel piston is stronger and more durable than aluminum pistons
- Larger Springs improve pressure control
- Four different pressure settings available
- Durable anodized aluminum body

DESCRIPTION

The Cla-Val 348GF Hose End Pressure Control Valve (HEPCV) is a direct acting pressure regulator. It is designed for use in aircraft refueling to protect the receiving aircraft from excess pressure and damage due to pressure surges. It is bolted to Cla-Val 347GF Aircraft Refueling Nozzle at the end of a delivery hose or a Pantograph used to refuel jet aircraft under pressure.

The Cla-Val 348GF HEPCV is designed and constructed of high strength aluminum and stainless steel. It utilizes the latest in low friction seal technology. Due to the design of the internal components, the 348GF provides the best possible surge pressure protection available for aircraft refueling. The use of large diameter springs gives the 348GF superior hose end pressure regulation. Also, the overall pressure drop through the fully open 343GF is the lowest available. Both of these features contribute to shorter refueling times. The piston of the 348GF is a one piece design made of stainless steel, a Cla-Val exclusive providing a high level of durability.

The 348GF HEPCV features a flanged inlet for connection to other flanged Cla-Val refueling components (such as a Pantograph, a D-1 swivel joint or 343GF HEPCV), and a flanged outlet that bolts directly to the inlet of the 347GF Nozzle. The 348GF will also bolt to older Carter® Brand Nozzles that utilize flanged connections. Four standard pressure control settings are available; 35 psig, 45 psig, 50 psig and 55 psig. Other pressure settings can be easily accommodated by special order.

347GF COMMERCIAL NOZZLE CONFIGURATIONS
Strainer Ball Valve

FEATURES AND BENEFITS:

- Quarter turn, full port Ball Valve
- Strainer fits within ball
- Side port allows for visual checking of Strainer with no fuel spillage
- Side port opens for Strainer cleaning with minimal exposure to uncontained fuel
- Bolts to Cla-Val model 341GF and 347GF Nozzles
- Ball and Strainer can be reversed for de-fuel operations. Safety lock prevents unintentional reversal
- Strong enough to withstand hydrostatic hose testing in closed position
- Swivel joint inlet with internal threads allows for connecting to delivery hose

DESCRIPTION

The CLA-VAL Model 349GF is a quarter-turn hose end ball valve with three functions. In the normal flowing position, fuel flows through the full-port Ball and through the Strainer within the Ball. In the inspection position, the ball valve is in the closed position and the Strainer can be visually checked for contamination (if fitted with the optional Glass Cover). The Cover can be removed and the Strainer removed from within the Ball for cleaning. In the third position, the Ball and Strainer are reversed for de-fueling operations. There is a safety lock that must be overcome to turn the Ball to the defuel position.

Standard features of the 349GF Strainer Ball Valve are a Bump Ring and solid Aluminum Side Port Cover. A Glass Inspection Cover is optional.

The 349GF comes with a Swivel outlet or a flanged outlet.

MODEL NUMBERING

Configure the Model Number as shown below to include the desired optional features:

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>349GF-</td>
<td></td>
</tr>
<tr>
<td>20N - 2&quot; NPT ADAPTER</td>
<td></td>
</tr>
<tr>
<td>20B - 2&quot; BSPP ADAPTER</td>
<td></td>
</tr>
<tr>
<td>25N - 2.5&quot; NPT ADAPTER</td>
<td></td>
</tr>
<tr>
<td>25B - 2.5&quot; BSPP ADAPTER</td>
<td></td>
</tr>
<tr>
<td>30N - 3&quot; NPT ADAPTER</td>
<td></td>
</tr>
<tr>
<td>30B - 3&quot; BSPP ADAPTER</td>
<td></td>
</tr>
<tr>
<td>B - BLANK COVER</td>
<td></td>
</tr>
<tr>
<td>G - GLASS COVER</td>
<td></td>
</tr>
<tr>
<td>40 - 40 MESH</td>
<td></td>
</tr>
<tr>
<td>60 - 60 MESH</td>
<td></td>
</tr>
<tr>
<td>100 - 100 MESH</td>
<td></td>
</tr>
<tr>
<td>C - COMMERCIAL FLANGE OUTLET</td>
<td></td>
</tr>
</tbody>
</table>
Pressure Control Coupler

FEATURES AND BENEFITS

- Complies with EI Specification 1584 3rd Edition (JIG approval pending)
- Pneumatic or Hydraulic Deadman Options
- Accurate Nozzle Pressure Regulation
- Excellent Surge Pressure Control
- Deadman and Fuel Sense Connections Conveniently Located
- Bleed Valve(s) supplied, on the Pilot Block

DESCRIPTION

The Cla-Val Model 353GF Pressure Control Coupler is a hydrant coupler used in jet aircraft refueling operations. It connects to a hydrant pit valve or hydrant pit adapter to allow pressurized fuel to flow from an underground pipeline and into the receiving aircraft. It incorporates a Deadman operated, direct acting pressure regulator that protects the receiving aircraft from excess pressure and from damage due to pressure surges.

The 353GF has been designed and tested to comply with all requirements of EI 1584 “Four Inch Hydrant System Components and Arrangements.” The Coupler makes a very robust connection to any 4 inch API style hydrant pit valve or hydrant adapter. This connection greatly exceeds the side-pull requirements of the EI Bulletin 1584. Yet, because of the use of hardened Stainless Steel balls to make this connection, the Coupler can easily turn when connected to remove stress on the intake hose connected to the outlet of the Coupler.

Additionally, Bleed Valves are provided on the side of the Pilot Block so that entrapped air in the Fuel Sense hose and Hydraulic Deadman hose (if Option H is selected) can easily be purged. These Bleed Valves feature an outlet sized for a 1/8 inch diameter hose that can be slid onto the outlet of the Bleed Valve to direct the bled fuel into a catch container, thereby eliminating fuel spillage during the purging.

When pressure is applied to the deadman port on the top of the Coupler, the pressure regulating valve opens to allow flow into the receiving aircraft. The opening time is controlled by a fixed, non-adjustable orifice, conforming to the requirements of EI 1584. Failing (relieving) the Deadman pressure causes the 353GF Pressure Control Coupler to close. For Couplers with Option A (Air Deadman), the closing time is adjustable beyond a range of 0.5 second to 2.0 seconds. This adjustment is located on the side of the Pilot Block on the top of the Coupler. For Couplers with Option H (Hydraulic Deadman), closing time is a function of the Deadman plumbing system on the refueling vehicle.

The 353GF is a remote sense regulator. It controls the pressure connected to the Fuel Sense port on the top of the Coupler. Ideally, the Fuel Sense source will be a Venturi that is adjusted to simulate the pressure in the refueling Nozzle connected to the receiving aircraft. (Otherwise, the Fuel Sense source should be as close to the Nozzle on the refueling vehicle as is practicable.) This “Nozzle pressure” is then adjustable by regulating the Deadman pressure. Raising the Deadman pressure increases the Nozzle pressure. The difference between the Deadman
pressure and the resultant Nozzle pressure is about 20 psig.

The Model 353GF Pressure Control Coupler is supplied with a Folding Operating Lever. The Lever is spring loaded so that it folds against the body of the Coupler when not in use to prevent damage during handling and transportation.

The Cla-Val Model 353GF Pressure Control Coupler is designed and constructed of high strength aluminum and stainless steel. Both the large and small pistons within the Coupler are made of stainless steel, a Cla-Val exclusive, providing for superior, long lasting sealing and a high level of durability. It also utilizes the latest in low friction seal technology to ensure accurate operation. The overall pressure drop through the fully open Model 353GF Pressure Control Coupler is the lowest available. This allows for the fastest possible refueling cycles.

Specific additional equipment is required for Couplers with Option H, Hydraulic Deadman.

PRESSURE CONTROL COUPLER TO FIT 4 INCH API STYLE HYDRANTS
DIMENSIONS IN INCHES

MODEL NUMBERING

353GF-2 A C F 2N

2B - 2.5 INCH BSPP OUTLET THREAD
2N - 2.5 INCH NPT OUTLET THREAD
3B - 3 INCH BSPP OUTLET THREAD
3N - 3 INCH NPT OUTLET THREAD
4B - 4 INCH BSPP OUTLET THREAD
4B - 4 INCH NPT OUTLET THREAD

F - FLAG STICK HOLDER
C - CARRIAGE ASSEMBLY
A - AIR DEADMAN
H - HYDRAULIC DEADMAN
2 - SECOND EDITION
3 - THIRD EDITION
Hydrant Pit Valve

DESCRIPTION

The Model 352GF Hydrant Pit Valve is a piston style, Deadman operated on/off valve designed for use in aircraft refueling hydrant systems. The Model 352GF Hydrant Pit Valve can be ordered with either a Manual Deadman Pilot or a Pneumatic Deadman Pilot. When fitted with a Pneumatic Pilot, an optional Emergency Air Release Lanyard Manual override can be added to provide a way to close the Pit Valve even with Deadman air pressure actively applied.

The outlet of the Model 352GF Hydrant Pit Valve can be connected to by any 4 inch API hydrant pit coupler, such as the Cla-Val Model 351GF-15 Hydrant Coupler and 353GF Pressure Control Coupler. It complies with the requirements of EI Specification 1584 Third Edition. The upper API Body of the Model 352GF Hydrant Pit Valve is made of hardened Stainless Steel. The lower body is made of Ductile Iron. Aluminum is not used for these critical pressure containing components.

It incorporates a servicing valve which allows for the removal of the pilot for service without the need to de-pressurize the delivery system. The Model 352GF Hydrant Pit Valve is small enough to fit into a 13 inch pit box with the use of an offset adapter plate.

FEATURES AND BENEFITS:

- Conforms to EI Bulletin 1584 Third Edition
- Pneumatic or Manual Deadman operated
- Optional Emergency Air Release Lanyard for the Pneumatic Deadman Version
- Optional Excess Flow Shut-off for Both the Pneumatic and Manual Deadman Versions
- Body of Ductile Iron and Stainless Steel – No Aluminum
- Fits Within 13 Inch Diameter Pits
- Three Year Warranty
MATERIALS SPECIFICATION

<table>
<thead>
<tr>
<th>Material</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Material</td>
<td>Ductile Iron ASTM A536 65-45-12</td>
</tr>
<tr>
<td>API Adapter</td>
<td>Stainless Steel (Grade 410 - hardened to Brinnell 345/365)</td>
</tr>
<tr>
<td>Pilot Valve</td>
<td>Aluminum</td>
</tr>
<tr>
<td>Seals</td>
<td>Nitrile and Fluorocarbon</td>
</tr>
<tr>
<td>Poppet</td>
<td>Hard Anodized Aluminum</td>
</tr>
<tr>
<td>Piston</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>Dust Cap</td>
<td>Polyurethane Company</td>
</tr>
<tr>
<td>Corrosion Protection</td>
<td>Electroless Nickel-Plated to MIL-C-26047 (4 to 6mm penetration)</td>
</tr>
</tbody>
</table>

WARRANTY

Three Years

ORDERING INFORMATION

Option letters and numbers may be combined with the basic unit, except as noted, to customize the valve to fit specific installation requirements.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Pit Valve 4” Inlet ANSI 150</td>
</tr>
<tr>
<td>6</td>
<td>Pit Valve 6” Inlet ANSI 150</td>
</tr>
<tr>
<td>A</td>
<td>Air/Fuel Pilot</td>
</tr>
<tr>
<td>M</td>
<td>Manual Pilot</td>
</tr>
<tr>
<td>O</td>
<td>Emergency Release</td>
</tr>
<tr>
<td>R</td>
<td>Adapter Assembly 4” x 6”</td>
</tr>
<tr>
<td>S4</td>
<td>4 Mesh Strainer 4” and 6”</td>
</tr>
<tr>
<td>S6</td>
<td>6 Mesh Strainer 4” and 6”</td>
</tr>
<tr>
<td>S20</td>
<td>20 Mesh Strainer 4” and 6”</td>
</tr>
</tbody>
</table>

ORDERING EXAMPLE

352GF-4AOS4

Standard pit valve with 4” inlet flange ANSI 150 with pneumatic operated pilot valve and lanyard override s/w stone guard on inlet

APPLICATION
In-Line Pressure Control Valve

FEATURES AND BENEFITS:

- Deadman Operated
- Externally Sensed Pressure Regulation
- Various Pilot Options: Air, Fuel, Electric (coming soon!)
- Deadman Pressure Setting Controls Delivery Pressure
- 4-Inch ANSI 150 Flanges
- Victaulic Adapters Available
- Lightweight Aluminum Body
- Internal Pistons are Stainless Steel for better performance
- 1,200 Gallons per minute maximum required flow rate

DESCRIPTION

The Cla-Val Model 354GF Valve is used to control fuel pressure delivered into an aircraft thru an under wing refueling nozzle. The 354GF is intended for use on various forms of aircraft refueling vehicles.

The 354GF In-line Pressure Control Valve is a direct acting piston valve controlled by an external deadman device. When the deadman signal is “On” (applied), the valve opens to deliver fuel downstream. Opening times vary by application and are preset to be between 5 and 10 seconds. When the deadman signal is release/removed, the valve closes. Closing time is adjustable, but is set at the factory for between 2 and 5 seconds. Closing speed can also be adjusted to control overshoot (the volume of fuel that passes through the valve after the deadman signal is removed and when the valve fully closes).

TECHNICAL DATA

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Design Pressure</td>
<td>225 psig (15.5 bar)</td>
</tr>
<tr>
<td>Burst Pressure</td>
<td>400 psig (27.58 bar)</td>
</tr>
<tr>
<td>Rated Flow</td>
<td>1,200 gpm (4500 l/min)</td>
</tr>
<tr>
<td>Pressure Drop</td>
<td>4.7 psid @ 1,000 gpm</td>
</tr>
<tr>
<td>Opening Time</td>
<td>5 - 10 sec. (factory set)</td>
</tr>
<tr>
<td>Closing Time</td>
<td>2 - 5 sec. (adjustable)</td>
</tr>
<tr>
<td>Overshoot</td>
<td>&lt; 5% of flow</td>
</tr>
<tr>
<td>Repeatability</td>
<td>± 3 psig (.21 bar)</td>
</tr>
<tr>
<td>Surge Pressure Control</td>
<td>&lt; 120 psig (8.27 bar)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40 - 120°F (-40 - 48.9°C)</td>
</tr>
</tbody>
</table>

PRINCIPLES OF OPERATION

A Pilot Block on the top of the 354GF provides a connection point for the deadman supply pressure (fuel or compressed air) and for the Fuel Sense line. The 354GF provides a means of controlling (regulating) fuel pressure at a remote sensing point on the refueling vehicle, such as a Venturi. The desired delivery pressure is set by the deadman pressure source. There is an approximately 20 psid difference (bias) between the deadman pressure supplied and the resulting delivery pressure. For instance, a deadman pressure of 70 psig will result in a delivery pressure setting of about 50 psig.

The 354GF not only controls delivery pressure, but also reacts quickly to control pressure surges. Components within the Pilot Block assure steady pressure regulation without hunting, yet can react to surges in delivery pressure by causing the 354GF to close quickly.
to limit delivery pressure surges to below 120 psig. This simple, yet effective design replaces the need for complicated servos used on competing products.

This 4 inch In-line Valve is rated for 1,200 gpm maximum. As an added environmental protection, the 354GF features a manual bleed valve on the Pilot Block to which a bleed hose can be easily attached so that bleeding air from the Valve does not result in a fuel spillage.

The 354GF In-line Pressure Control Valve is constructed of aircraft-grade Aluminum and Stainless Steel. This very rugged design can withstand a high level of abuse and still reliably function in critical applications. As an example, the internal Pistons of the 354GF are made from cast 303 Stainless Steel.

**DIMENSIONS IN INCHES**
Whether twin-seater or commercial jet, cargo plane or helicopter, all conventional aircraft have one thing in common: they need fuel to operate. And that requires a method of delivery that is efficient, effective and utilizes hose assemblies that can deliver the fuel safely and reliably.

Parker, the world's leading supplier of fluid conveyance systems and components, now offers Gold Label Aircraft Fueling Hose and hose assemblies to fit the most demanding aircraft industry fuel delivery applications.

Designed to provide long service life to keep downtime to a minimum, the Gold Label product offering is flexible and lightweight, yet robust. Gold Label Aircraft Fueling Hose is suitable for a variety of applications and fuel types, and is available in continuous lengths up to two hundred feet.

Parker aircraft fueling hose meets the needs of a range of markets, from private to commercial to military applications. Manufactured in the U.S.A., Gold Label Aircraft Fueling Hose meets current published industry standards and hose assemblies are factory-tested and certified.

**FUEL DELIVERY APPLICATIONS**

Gold Label Aircraft Fueling Hose handles the following fueling applications:

- **Over-the-wing fueling** - used by small- and medium-sized aircraft, with aviation gasoline supplied through a hose attached to a dispenser.

- **Under-the-wing fueling** - used by large commercial cargo and passenger aircraft, with jet fuel supplied by a mobile dispenser cart connected to a fuel tanker or an in-ground hydrant system. For larger aircraft, jet fuel is supplied through an adjustable elevated service platform, called a jac-riser, connected to a mobile dispenser cart that is supplied by an in-ground hydrant system.

- **Side or aft helicopter fueling** - aviation gasoline or jet fuel is supplied through a hose attached to a dispenser.

**Industry Standards for Aircraft Fueling Hose**

<table>
<thead>
<tr>
<th>Industry Standard</th>
<th>7776</th>
<th>7776CT</th>
<th>7777</th>
</tr>
</thead>
<tbody>
<tr>
<td>EI 1529 Type C, Grade 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EI 1529 Type C, Grade 2</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EI 1529 Type C-CT, Grade 2</td>
<td>YES</td>
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<td></td>
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<tr>
<td>EI 1529 Type E, Grade 2</td>
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<td>EN 1361</td>
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<tr>
<td>NFPA 407</td>
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<td>YES</td>
</tr>
</tbody>
</table>

API (American Petroleum Institute); BS (British Standard); EI (Energy Institute); EN (Europeen de Normalisation); NFPA (National Fire Protection Association)

Contact Parker for quotation of military specification aircraft fueling hose.

NOTE: API and BS have agreed to the transfer of responsibility to EI and EN respectively, of a portfolio of aviation fuel handling equipment standards and recommended operational/safety practices. A number of these documents had already been produced and published jointly by the two organizations. Aircraft fueling hose offered by Parker meets required specifications and performance criteria and may reference multiple organization designations during the transition period.

**Aircraft Fueling Applications**

<table>
<thead>
<tr>
<th></th>
<th>7776</th>
<th>7776CT</th>
<th>7777</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bottom Loading</td>
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<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Defueling</td>
<td>*</td>
<td>*</td>
<td>YES</td>
</tr>
<tr>
<td>Ground Fueling</td>
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<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Hydrant</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Jac-Riser</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Over Wing</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Service Trucks</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Tank Transfer</td>
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<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Under Wing</td>
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<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

* Limited. See product specifications.
FUEL TYPES

Parker Gold Label Aircraft Fueling Hose is designed and manufactured for use with most common aviation fuels such as Jet A, Jet A1, JP5, JP8 and 100LL Avgas (see chart), incorporating a premium grade nitrile tube specifically formulated to handle the high aromatic content of aviation fuel, with minimal permeation.

- **Aviation gasoline (avgas)** – a high octane/low flash point fuel specially formulated to maintain its liquid phase (rather than vaporizing) at high altitude. The low flash point provides lower ignition properties, and the liquid phase of the fuel prevents vapor lock in the onboard fuel delivery system. It is typically used to power small private or commercial aircraft that incorporate piston engines. Avgas is available in two primary grades: Standard avgas (lead gasoline) and LL avgas (low-lead gasoline); these fuels are often dyed to identify them for proper use.

- **Jet Propellant (JP)** – primarily a kerosene-based jet fuel specially formulated for larger commercial, private or military aircraft incorporating gas-turbine engines. The high flash point provides safer storage and transportation properties. Jet fuel is available in a variety of formulations, and is typically clear or straw-colored.

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### Aircraft Fuel Compatibility

<table>
<thead>
<tr>
<th></th>
<th>7776</th>
<th>7776CT</th>
<th>7777</th>
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<tbody>
<tr>
<td><strong>Aviation Gasoline (Avgas)</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>• 100</td>
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<tr>
<td>• 100LL</td>
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</tr>
<tr>
<td><strong>Jet Propellant</strong></td>
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<td></td>
</tr>
<tr>
<td>• Jet A</td>
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<td>YES</td>
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</tr>
<tr>
<td>• Jet A-1</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>• Jet B</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>• JPTS (high altitude)</td>
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</tr>
<tr>
<td>• JP4</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>• JP5</td>
<td>YES</td>
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<tr>
<td>• JP8</td>
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SAFETY FEATURES

**Static Protection**

Avgas and jet fuel molecules create friction and a subsequent static charge when flowing through hose. Unless properly drained/grounded, this charge could build and create a spark that ignites fuel or fuel fumes.

All Parker Gold Label Aircraft Fueling Hose is manufactured with static conductive rubber compounds and/or a dual wire helix suitable for conducting an electrical charge to ground. Factory-fabricated hose assemblies are also tested for hydrostatic pressure and electrical conductivity.

**Spillage Control**

Aviation fuel is extremely flammable. Fuel spillage creates the risk of environmental harm and fire or explosion, leading to property damage, personal injury or death. A dispensing system equipped with a deadman control incorporates a hand-held electric, hydraulic or pneumatic handle/switch that is connected to a cable or hose reel assembly and then to a fuel flow control valve. The deadman control prevents fuel from flowing until the handle/switch is engaged; when the handle/switch is released, the fuel flow stops.

To minimize accidental spillage, Parker offers Deadman and Twin Sensing hoses in industry-standard sizes, lengths and color combinations for reliable service in this application.
Gold Label® Aircraft Fueling Hose
Series 7776

Series 7776 is excellent for high-pressure top deck reel and platform type fueling equipment. The premium nitrile tube minimizes permeation and will not contaminate product going through the hose. Also suitable for defueling service at low pressures (suction/vacuum rating to 8 in. Hg).

**Tube:** Black nitrile
**Reinforcement:** Multiple textile plies
**Cover:** Black static conductive nitrile; wrapped finish
**Temp Range:** -40°F to +180°F (-40°C to +82°C)
**Brand Method:** Embossed, and black letters on gold stripe
**Brand Example: (embossed)** PARKER 7776-2000-0001 EI 1529/2005 TYPE C GRADE 2 NFPA 407 EN 1361/2004 YYQX WP 2068 KPa (300 PSI)
**Design Factor:** 4:1
**Industry Standards:** EI 1529:2005, Type C, Grade 2; NFPA 407:2007; EN 1361:2004

**Applications:** Aircraft fueling with avgas and jet fuel
**Compare To:** Contitech Elaflex HD-C, Veyance Jet Ranger & Wingcraft; Semperit 48137 TAPC

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<th>ID (mm)</th>
<th>Reinf Plies</th>
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<th>OD (mm)</th>
<th>Approx Wt (lbs/ft)</th>
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**Packaging:** Coils (bulk hose available only to Parker Select Aircraft Fueling Hose Assembly Fabricators)
**Coupling Recommendation:** Permanently attached; non-sparking internally expanded brass stems, brass or stainless steel ferrules
**Factory Assemblies:** Per customer requirement; assemblies are hydrostatically pressure tested to 600 psi, tested for electrical conductivity, and certified

**Stock:** “Y” indicates stocked item; “N” indicates non-stocked item. Stock status subject to change. Contact Parker Customer Service.
# Gold Label® Cold Temperature
## Series 7776CT

Series 7776CT is excellent for high-pressure top deck reel and platform type fueling equipment. The proprietary rubber compounds enable this hose to stay flexible in extreme low temperatures. The premium nitrile tube minimizes permeation and will not contaminate product going through the hose. Also suitable for defueling service at low pressures (suction/vacuum rating to 8 in. Hg).

**Tube:** Black nitrile  
**Reinforcement:** Multiple textile plies  
**Cover:** Black static conductive nitrile; wrapped finish  
**Temp Range:** -55°F to +180°F (-48°C to +82°C)  
**Brand Method:** Embossed, and gold letters on green stripe  
**Brand Example: (embossed)** PARKER 7776CT-2000-0001 EI 1529/2005 TYPE C-CT GRADE 2 NFPA 407 YYQX WP 2068 KPa (300 PSI)  
**Design Factor:** 4:1  
**Industry Standards:** EI 1529:2005, Type C-CT, Grade 2; NFPA 407:2007  
**Applications:** Aircraft fueling with avgas and jet fuel  
**Compare To:** Contitech Elaflex HDLT-C

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<th>OD (in)</th>
<th>OD (mm)</th>
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<th>Max Rec WP (psi)</th>
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**Packaging:** Coils (bulk hose available only to Parker Select Aircraft Fueling Hose Assembly Fabricators)  
**Coupling Recommendation:** Permanently attached; non-sparking internally expanded brass stems, brass or stainless steel ferrules  
**Factory Assemblies:** Per customer requirement; assemblies are hydrostatically pressuretested to 600 psi, tested for electrical conductivity, and certified

* Stock: “Y” indicates stocked item; “N” indicates non-stocked item. Stock status subject to change. Contact Parker Customer Service.
Gold Label® Jac-Riser
Series 7777

Series 7777 acts as a flexible connection for jet fuel supplied through an adjustable elevated service platform, called a jac-riser, connected to a mobile dispenser cart that is supplied by an in-ground hydrant system. The dual wire helix provides flexibility, kink resistance and full suction capability for both fueling and defueling/unloading service. The premium nitrile tube minimizes permeation and will not contaminate product going through the hose.

Tube: Black nitrile
Reinforcement: Multiple textile plies with dual wire helix
Cover: Black static conductive nitrile; wrapped finish
Temp Range: -40°F to +180°F (-40°C to +82°C)
Brand Method: Embossed, and black letters on gold stripe
Brand Example (embossed): PARKER 7777-3000-0001 EI 1529/2005 TYPE E GRADE 2 NFPA 407 EN 1361/2004 YYQX WP 2068 KPa (300 PSI)
Design Factor: 4:1
Applications: Aircraft fueling and defueling/unloading with avgas and jet fuel
Compare To: Contitech Elaflex TW; Eaton Carter 64405; Semperit 56132 TAPE

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<th>ID (mm)</th>
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<th>OD (mm)</th>
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Packaging: Coils (bulk hose available only to Parker Select Aircraft Fueling Hose Assembly Fabricators)
Coupling Recommendation: Permanently attached; internally expanded carbon steel or stainless steel stems, carbon steel or stainless steel ferrules
Factory Assemblies: Per customer requirement; assemblies are hydrostatically pressure tested to 600 psi, tested for electrical conductivity, and certified

* Stock: “Y” indicates stocked item; “N” indicates non-stocked item. Stock status subject to change. Contact Parker Customer Service.
Deadman Twin Sensing Hose
Series 7139

- Tube: Black nitrile
- Reinforcement: Multiple textile spirals
- Cover: Green and red Neoprene; smooth finish
- Temp Range: -30°F to +200°F (-34°C to +93°C)
- Brand Method: White ink
- Brand Example: (Red hose only): PARKER SERIES 7139 DEADMAN TWIN HOSE 1/4 ID (6.4 MM) 200 PSI MAX WP MADE IN USA (DATE CODE)
- Design Factor: 4:1
- Industry Standards: None applicable
- Applications: Air hose incorporated in pneumatic closed-circuit control systems associated with aircraft refueling operations
- Compare To: Carter 64406; Veyance Deadman Aircraft Refueling

Deadman Twin Sensing hose is a flexible air conduit incorporated in pneumatic closed-circuit control systems designed to prevent fuel spills during aircraft fueling operations. The hose is connected to air-actuated shut-off valves which are controlled by the aircraft refueling operator at all times during refueling operations. When the operator engages the handle/switch, fuel flows. When the operator releases the handle/switch – either accidentally or intentionally - fuel delivery automatically shuts off at the operator-end of the hydrant or truck refueling system.

Twin Sensing Hose
Series 7140

- Tube: Black nitrile
- Reinforcement: Multiple textile spirals
- Cover: Green and yellow Neoprene; smooth finish
- Temp Range: -30°F to +200°F (-34°C to +93°C)
- Brand Method: White ink
- Brand Example: (Green hose only): PARKER SERIES 7140 TWIN SENSING HOSE 3/8 ID (9.5 MM) 250 PSI MAX WP MADE IN USA (DATE CODE)
- Design Factor: 4:1
- Industry Standards: None applicable
- Applications: Air hose incorporated in pneumatic closed-circuit control and data systems associated with aircraft refueling operations
- Compare To: Carter 64407; Veyance Refueling Sensing

Parker Twin Sensing hose is a flexible air conduit used in aircraft fueling systems that incorporate underground hydrants commonly found at large metropolitan airports. Twin sensing hose operates between the vehicle dispenser control system and the hydrant coupler/control valve, supplying data to monitor the flow and pressure of fuel being pumped into the aircraft.

Twin sensing hose lines are bonded to prevent separation and maximize flexibility. The hose features a high grade oil resistant nitrile tube combined with an abrasion, oil and weather resistant Neoprene cover.

### Part Number Specifications

<table>
<thead>
<tr>
<th>Part Number</th>
<th>ID (in)</th>
<th>ID (mm)</th>
<th>Reinf/Plies</th>
<th>OD (in)</th>
<th>OD (mm)</th>
<th>Approx Wt (lbs/ft)</th>
<th>Drum/Reel OD (in)</th>
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Aircraft Fueling Hose Assemblies

Parker Gold Label Aircraft Fueling Hoses are available as factory assemblies to meet specific customer requirements. Bulk hose is available only to Parker Select Aircraft Fueling Hose Assembly Fabricators.

Couplings are permanently attached by an internal expansion process that provides secure retention and a full-flow of fuel through the hose. The coupling stems are brass, carbon steel or stainless steel, and are available in rigid male pipe or swivel female end styles.

Ferrules are available in brass, carbon steel or 304 stainless steel. These materials are fuel, oil and weather resistant.

All Parker aircraft fueling hose assemblies are fabricated only by Parker or Parker Select fabricators.

All assemblies are tested for electrical conductivity and hydrostatically tested to twice the working pressure, per EI 1529 requirements. A certification document is shipped with each hose assembly.