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Fluid-Power Additive Injection



Over **11,000** Systems Installed -WORLDWIDE-

- **Guaranteed** even, accurate **blending**
- Systems available for **every flow range**
- **Custom** built to suit
- Sturdy, rugged construction, **built to last**
- Inject **single** or **multiple additives**
- Three year "flange-to-flange" **warranty!**

[Request Quote](#)

Fluidpower

Fixed-Point Additive Injection

**Model
 150**
 For low-flow
 Deliveries



- No power or meter required
- Even and accurate blend
- Responds accurately to flow rate changes
- Can inject up to (2) additives at different injection ratios simultaneously
- Installs easily in small spaces
- 7-75 GPM

The **Model 150** offers the ability to inject single or dual additives at lower flow rates (7

**Model
 600**
 Refueler and
 Hydrant Injector



- No power or meter required
- Even and accurate blending
- Responds accurately to low flow rate changes
- Can inject up to (4) additives at different injection ratios simultaneously
- Installs easily in small spaces
- 20-250 GPM

The **Model 600** is our most popular unit and

include self-fueling cabinets, home heating oil delivery trucks, dye injection and low-flow aviation fuel delivery trucks.

flow rates (**20 to 250 gallons per minute**) typically found in aviation refuelers, hydrant systems, heating oil delivery trucks, dye injection and bulk receipt injection.

Model 800 Refueler and Hydrant Injector



- Precision blending across a broad product flow range
- Simple, economical installation
- Passive, automatic operation
- Can inject up to (4) additives at different injection ratios simultaneously
- 4" 150# RF connection standard
- 75-700 GPM

The **Model 800** offers precision injection of additives meeting the requirements of delivery terminals, high-volume delivery (**75 to 700 gallons per minute**) vehicles and truck loading racks. Self contained and requires no product meters or pulsers.

Model 1000 Terminal and Pipeline Injector



- Even and accurate blending
- No power or meter required
- Handles injection point pressures up to 300 psi
- Can inject up to (4) additives at different injection ratios simultaneously
- 6" 150# RF connection standard
- 100-1,100 GPM

The **Model 1000** is simply a larger version of our very popular series Model 600 or 800. It meets the requirements of delivery terminals, and high-volume delivery vehicles (**100-1,100 gallons per minute**). It offers precise and accurate blending every time.



Terminal and Pipeline Systems

Terminal and Pipeline Injectors

These models can deliver up to 4 additives. They offer precision injection of additives meeting the requirements of delivery terminals, high volume delivery vehicles and refineries. As with all fluid power units, **no outside power source is necessary**. They can be custom-built and installed to meet the needs of our clients. They are a **completely self-contained** unit that offers totally unassisted injection.

CONSTRUCTION MATERIALS

- Carbon Steel fabrication or optional: stainless steel
- Metering Pump: All wetted parts 300 series stainless steel
- Elastomers: Aflas[®], Viton[®], and Teflon[®]; other elastomers available upon request
- Mechanical Seal: Carbon on Ceramic, optional Tungsten on Carbon
- Upgrade to Hammonds "Smart" Monitoring System



SPECIFICATIONS

- Flooded suction required
- Number of additives: 1 Standard, up to 4 optional
- 8" to 20" 150# RF Flanges connection standard (other connections available, consult factory for details)
- Injection ratios: 0-4000ppm, depending upon application
- Product temperature range: -40°F to 120°F (-40°C to +50°C)
- Maximum product line pressure: 150 psi. Higher pressures available with upgraded HP Housing and Seals
- Product viscosities: up to 10,000 ssu
- Fuels, oils, additives and liquid gases
- Duty cycle: intermittent

Model 1400

300-1,500 GPM

Model 1600

500-2,000 GPM

Model 2000

600-4,000 GPM

Model 2400

1000-8,000 GPM

Fluidpower

Custom Engineered Systems

Custom Skids and Injection Systems

What about a self-contained skid with custom accessories? Hammonds can provide you with a skid that will handle whatever requirements you need to get the job done. Talk to us about your specific requirements, and our engineers can help you assemble a skid that will meet all of your job requirements. From our **smallest Model 150 to the largest Model 2400**, we can integrate the options and accessories you need to make your fueling system truly unique.



SPECIFICATIONS

- Fixed or mobile skid installations
- DOT compliant trailers
- Weather enclosure panels
- Stainless steel additive tanks
- Hose reels
- Pressure control valves
- Product meter and additives meter integration
- Data communication provisions to your specification
- Custom epoxy paint, CARC and Powdercoating to your specification

Fluidpower

Strategic Deployment Skid

Model 4T-4A Additive Injection Skid

The **4T-4A** utilizes Hammonds proven additive injection systems to **produce military specification JP-8 jet fuel** by injecting FSII, CI/LI and SDA additives into commercially available Jet A fuel. Each additive is delivered **continuously** and is **blended evenly** at ratios from 1-2500 ppm.



TALK ABOUT TOUGH! The Hammonds **4T-4A** and **TPI-4T-4A-1** additive injection systems are designed to be deployed via military aircraft into remote and often dangerous, rough conditions. The units are built to withstand the punishment of these conditions and to provide our aircraft with safe, quick and dependable additive injection under extremely difficult conditions.

SPECIFICATIONS

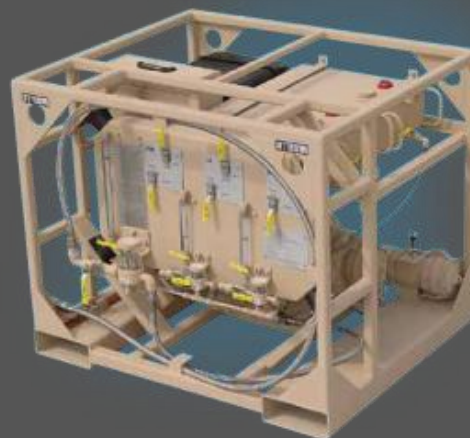
- Model 800-2L-1P7-1P7 additive injection system
- Lightweight 1" round tube frame for easy portability
- Proportionately blends FSII, CI and SDA to make JP-8 from commercially available Jet-A-fuel (MIL-T-83133)
- 6 gallon stainless steel additive tank for CI
- 6 gallon stainless steel additive tank for SDA
- Siphon assembly and hose for remote connections of 55 gallon drum for FSII
- Combination suction calibration and sight flow indicators
- Two man carry
- Dry weight: 342 lbs.
- Mobile cart base available as an option
- 75-700 GPM

Model TPI-4T-4A-1 Additive Injection Skid

The **TPI-4T-4A-1** picks up where the 4T-4A leaves off. This system, while providing the same product flow and additive delivery characteristics, goes one step further in terms of rugged dependability. The frame is heavier and **stronger** to survive **deployment from an aircraft**. The complete injection system is **shock mounted** with extra accessories provided to **enable delivery of additized fuel** in the most remote locations.

SPECIFICATIONS

- Model 800-2L-1P7-1P7
- Heavy-duty 2" square tube frame
- 4" Cam-lock product connections
- Proportionately blends FSII, CI and SDA to make JP-8 from commercially available Jet-A-Fuel (MIL-T-83133)
- Shock-mounted system for extreme deployment conditions
- 6 gallon stainless steel additive tank for CI
- 6 gallon stainless steel additive tank for SDA
- Syphon assembly and hose for remote connections of 55 gallon drum for FSII
- Separate suction calibration gauges and sight flow indicators for each additive for easy field calibration and adjustments
- Separate sample probe assembly
- 75-700 GPM



- Complete tool set for field service
- B-2 refractometer test kit for FSII concentration
- Dry weight: 920 lbs.

Fluidpower

Portable Additive Injection

Model SPI Single-Point Injector



- Single additive injection
- 25-250 GPM

The **SPI Single-Point Injector** brings precision blended fuel to the end of your fueling hose, anywhere, anytime. Originally developed for our military, this **suitcase-sized portable device** can be connected to any aircraft with a standard single-point fueling receptacle providing accurate, automatic blending of additives. The SPI uses the same proven fluid-powered technology as our famous Model 600 refueler mounted injectors. Additives can be drawn from a separate container or stored in a sealed septum bottle. When additive is required, the injector is attached to the aircraft and the fueling hose attached to the injector inlet. **Injection is automatic** as fuel passes through the injector's fluid-powered motor. Aircraft owners can now custom-blend their fuel in order to insure complete dispersion of additives.

Model PHC1 Portable Hand Cart



- Single additive injection
- 7-75 GPM or 20-250 GPM

The **PHC1 Portable Hand Cart** is designed to support either single-point or over-wing fueling and includes a Hammonds Fluid-Powered injector, additive storage, a hose leading from the injector to the aircraft and the appropriate fueling nozzle. A hose from a refueler, fueling cabinet or fuel farm connects to the inlet of the cart and fuel is delivered to the aircraft through the hose and nozzle mounted on the cart. **Fast, spill-proof connection** is insured by a dry break fuel hose connection into the cart. The lightweight walk-along cart stores everything required and is handled easily by one person. Since the flow of fuel powers and controls the injector, there is **no need for external power**, batteries or air, and the system is passive providing for automatic operation anytime fuel passes through the system.

Model HC Portable Hydrant Cart



- Inject up to 4 additives simultaneously
- Unique fluid-powered injection
- Product meters or pulsers not required
- Even and accurate blending
- Hammonds Model 600 fluid motor
- 12 gallon additive storage tank
- Inject ratios: 0-4,000 PPM (depending on application)
- 10' x 2" aviation fueling hose standard (other sizes available)

Sometimes an existing refueler or hydrant system is not the ideal point for injecting additives. Permanently installing an injector may limit the user's ability to offer flexibility in his additive program. The Hammonds **HC portable cart** is the answer. This system **can inject up to four additives** at any point in your fuel delivery system. Between transport and storage, storage and hydrant system, hydrant system and refueler, or refueler and aircraft, the HC portable injector **provides unlimited capability**. The standard unit is equipped as shown in the specifications. Single point or overwing connections can be matched to fit your exact application.

Model AC Portable Hydrant Cart



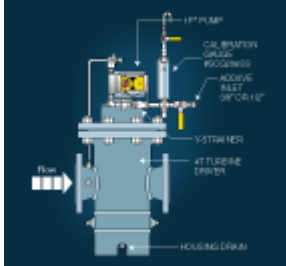
- Inject up to 4 additives simultaneously
- Unique fluid-powered injection
- Product meters or pulsars not required
- Even and accurate blend
- Precise injection ratios
- 55 gallon drum carriage
- Parking brake
- Injection ratios: 0-4,000 PPM (depending on application)

The **AC portable** additive system provides **precise ratio injection** of biocides, FSII (Fuel System Icing Inhibitor), corrosion inhibitors and anti-static compounds. Designed specifically for high rate, large volume transfers, these systems handle typical airline fueling operations. Although a 55 gallon drum capacity is standard, the AC cart can be ordered with **additive storage up to 110 gallons**, sufficient to treat multiple large volume transfers. **Operation is automatic** with nothing to turn on and off or adjust. A single point connection from the hydrant vehicle into the cart, and the cart single point fueling nozzle into the aircraft is all that is required. Single and dual hose arrangements are available.

Fluidpower

Turbine Additive Injection

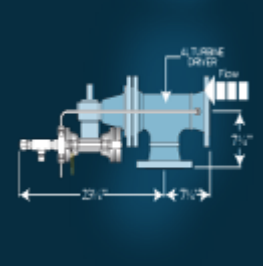
Model 4T Terminal & Hydrant Injector



- Unique fluid-powered turbine injection
- Product meters or pulsers not required
- Even and accurate blending
- Delivers up to 4 additives
- 200-750 GPM

The **4T Series** system offers single or multiple additive injection at flow rates typically found in fuel delivery terminals and transport trailer fill stands. The unique **turbine-powered fluid motor** responds precisely to changes in product volume even at lower product flow rates. Like all Hammonds injection systems, the 4T dispenses **precise quantities of additive at a continuous rate**, eliminating the "slugging" effect typically found in meter-pulsed injectors. The additive is injected just ahead of the driver, providing complete, consistent additive blending. The Model 4T is a **completely self-contained** unit that offers totally unassisted injection.

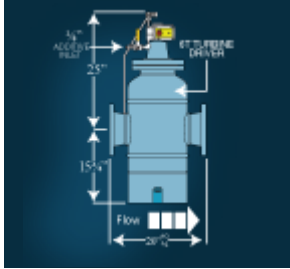
Model 4L Terminal & Hydrant Injector



- Unique fluid-powered turbine injection
- Product meters or pulsers not required
- Even and accurate blending
- Carbon steel fabrication with stainless steel optional
- 200-750 GPM

The **4L Series** system offers single or multiple additive injection at flow rates **typically found in fuel delivery terminals** and transport trailer fill stands. The unique turbine-powered fluid motor responds precisely to changes in product volume even at lower product flow rates.

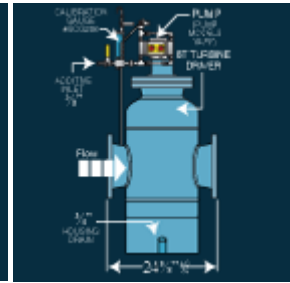
Model 6T Terminal & Hydrant Injector



- Product meters or pulsers not required
- Even and accurate blending
- Number of additives: 1 Standard; up to 4 optional
- 6" 150# connection standard (other connections available, consult factory for details)
- Injection Ratios: 0-4000 ppm depending upon application
- Product Viscosities: up to 10,000 ssu
- Fuels, oils, additives and liquid gases
- 400-1,200 GPM

The **6T Series** system offers **single or multiple additive injection** at flow rates typically found in fuel delivery terminals and transport trailer fill stands. The unique turbine powered fluid motor responds precisely to changes in product volume even at lower product flow rates. Like all Hammonds injection systems, the 6T dispenses **precise quantities of additive at a continuous rate.**

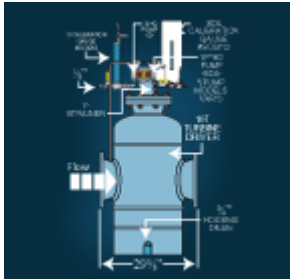
Model 8T Terminal & Hydrant Injector



- Unique fluid-powered turbine injection
- Product meters or pulsers not required
- Even and accurate blend
- 8" Hammonds turbine drive
- All carbon steel housing
- Heavy duty gear reducer
- 500-2,000 GPM

The **8T Series** system offers **single or multiple additive injection** at flow rates typically found in fuel delivery terminals, rail car loading/off loading and transport trailer fill stands. The unique turbine-powered fluid motor responds precisely to changes in product volume even at lower product flow rates. Like all Hammonds injection systems, the 8T dispenses precise quantities of additive at a continuous rate, **eliminating the "slugging" effect found in meter-pulsed injectors.**

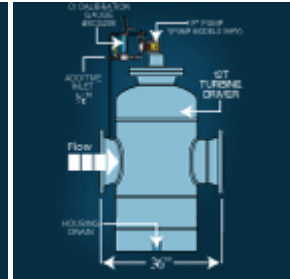
Model 10T Terminal & Hydrant Injector



- Unique fluid-powered turbine injection
- Product meters or pulsers not required
- Even and accurate blending
- 10" Hammonds "L" turbine drive
- All carbon steel housing
- Heavy duty gear reducer
- 700-3,000 GPM

The **10T Series** system offers **single or multiple additive injection** at flow rates typically found in fuel delivery terminals, rail car loading/off loading and transport trailer fill stands. The unique turbine-powered fluid motor responds precisely to changes in product volume even at lower product flow rates. Like all Hammonds injection systems, the 10T **dispenses precise quantities of additive at a continuous rate, eliminating the "slugging" effect found in meter-pulsed injectors.**

Model 12T Terminal & Hydrant Injector



- Unique fluid-powered turbine injection
- Product meters or pulsers not required
- Even and accurate blending
- 12" Hammonds "L" turbine drive
- All carbon steel housing
- Heavy duty gear reducer
- 1,500-8,000 GPM

The **12T Series** system offers **single or multiple additive injection** at flow rates typically found in fuel delivery terminals, rail car loading/off loading and transport trailer fill stands. The unique turbine-powered fluid motor responds precisely to changes in product volume even at lower product flow rates. Like all Hammonds injection systems, the 12T dispenses **precise quantities of additive at a continuous rate, eliminating the "slugging" effect typically found in meter-pulsed injectors.**



celebrating 36 years

3-YEAR WARRANTY

on ALL Fluid Powered Injectors

35 years and over 11,000 injectors makes you pretty confident,

...so confident, that Hammonds is offering the first bumper-to-bumper, flange-to-flange, **all inclusive 3-year warranty** for fluid powered additive systems; and if that's not enough, it can be extended indefinitely! All you have to do is operate any Hammonds fluid-powered system within advertised limits, perform the recommended yearly maintenance, and you're covered...completely covered.

But here's the best news. Even your old Hammonds system, including the first one we ever delivered, can be qualified for this new warranty. Allow our factory-trained personnel to remanufacture your system to "**zero-time**" specifications. Your old unit, regardless of the age, will be certified with a 3-year warranty, extendible for life. **The industry's best warranty.**

Client List

A partial list of companies using Hammonds Injection Systems...

- | | |
|---------------------------|----------------------|
| Air Canada | Jet Blue Airlines |
| Air National Guard | Koch Refining |
| Amoco Canada Petroleum | Lufthansa |
| Amtrac | Marathon Petroleum |
| Anheuser-Busch | Nalco |
| Bahrain National Oil | Pennzoil Products |
| Beechcraft | Phillips 66 |
| Boeing | Royal Dutch Airforce |
| British Airways | Samsung Chemicals |
| British Royal Air Force | Shell |
| Canadian Pacific Railroad | Shell Aviation |
| Chevron Texaco | Texaco Refining |
| CITGO Petroleum | U.S. Airforce |
| ConocoPhillips | U.S. Army |
| Continental Airlines | U.S. Border Patrol |
| Delta Airlines | U.S. Coast Guard |
| Embraer | U.S. Marines |
| Exxon Chemicals | U.S. Navy |
| ExxonMobil | Valero Refining |
| General Electric | |

Over 11,000 Systems Installed
WORLDWIDE