FlowTech Fueling

the future of fueling is now

HYDRAU-FLO®

Non-pressure Fueling System

Safety Solutions for Liquid Filling

- Significantly reduce fuel costs
- Increase equipment productivity
- Improve operator safety
- Minimize environmental impacts
Pressurized Fueling
*(currently the industry standard)*

System Components

1. Fuel Nozzle
2. Fuel Receiver
3. Tank Vent
Disadvantages of pressurized fueling

- System relies on 10 – 14 psi tank pressure to shut off fuel nozzle
- Overriding the system causes fuel spillage and extreme tank pressurization leading to prolonged tank damage and the possibility of tank failure
- Over time, vast quantities of fuel is spilled on the ground negatively impacting the environment by contaminating soil and water
- Fuel spillage endangers operator safety while fuel accumulation creates a fire hazard and unsafe work conditions
Pressurized Fueling Procedure

Begin Fueling
Attach nozzle to fuel receiver and turn on nozzle.
Pressurized Fueling Procedure

During Fueling
Fuel enters tank while air escapes through the standard tank vent.
Fueling Complete

The fuel level closes the air passage through the vent causing the tank to pressurize to 10 – 14 psi shutting off the fuel nozzle.
Pressurized Fueling Procedure

Operator Override

The operator usually reactivates the nozzle to ensure the tank is completely full.

This results in:
- BULGED TANK
- SPLIT SEAMS
- FUEL SPILL
- OPERATOR EXPOSURE
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• Increase equipment productivity
• Improve operator safety
• Minimize environmental impacts
The standard components of the system are:

- Float Control Valve
- Fuel Inlet Valve
- Pilot Hose

*these components can be used in conjunction with a standard fuel nozzle and receiver.*
Float Control Valve (FCV)

- Constructed of aircraft grade aluminum
- The FCV is installed in the top of the fuel tank
- Air is vented from the tank out of the top of the float
- Provides reliable nozzle shutdown once maximum fuel level is achieved
- FCV cannot be overridden
FCV Options

- Roll over & anti-surge protection to prevent spillage from vehicle motion
- 3 micron filtered breather option *(pictured at left)*
- Low tank clearance solution
- Various maximum fuel level settings
Fuel Inlet Valve (FIV)

- Constructed of aircraft grade aluminum
- The FIV can be installed anywhere between the fuel point and the tank
- Unique design allows for direct flow into the tank, minimizing foaming
- Capable of handling up to 225 gpm @ 40 psi (direct flow)
- Simple yet durable design ensures long lasting, reliable operation
• The pilot line is the hydraulic link between the float control valve and the fuel inlet valve

• External mounting is recommended to allow installation and maintenance without draining the fuel tank

• Pilot line can be reinforced with stainless steel braided hose cover and secured to the tank using magnetic anchors

• Internal mounting is also available
How Fueling Works with HYDRAU-FLO

Safety Solutions for Liquid Filling

Begin Fueling
Attach nozzle to fuel receiver and turn on nozzle.
During Fueling

Fuel enters the tank through the FIV while air escapes through the FCV. During this process, a small orifice in the piston of the FIV directs a small stream of fuel up the pilot line and through the FCV creating a constant bleed into the tank. This flow ensures that the fuel pressure behind the piston remains lower than the fuel pressure opening the piston.
Fueling Complete
When the fuel level in the tank reaches the maximum fill point the FCV closes, blocking the bleed from the pilot line into the tank. This equalizes the fuel pressure on both sides of the piston in the FIV. This hydraulic balance allows the spring behind the piston to close the FIV which causes the fuel nozzle to shut off. The tank is not pressurized and the operator can not override valve.
Non-pressure Fueling Systems
Installed by FlowTech on every make & model in mining today!
Installation in half the time with the FlowTech Tool Kit
Wiggins® Fueling Systems

Pressurized

Tank must be pressurized to shut-off fuel nozzle causing fuel spillage and tank damage.

Non-pressurized

Unable to withstand the harsh conditions found at a typical mine this system is prone to constant failure due to particulate contamination and diesel foaming.

Fast Fill® Systems

Both systems require draining the fuel tank for installation and maintenance. Limited installation options make it difficult to install on many makes and models.

CAT® Fueling System

Tank must be drained for installation and maintenance. Components are plastic and prone to failure.
Customer List

FlowTech customers currently using the Hydrau-Flo® Fueling System include:

- **Peabody Energy**
  - North Antelope Rochelle Mine
  - School Creek Mine
  - Caballo Mine
  - Rawhide Mine
  - Lee Ranch Mine
  - El Segundo Mine

- **Alpha Natural Resources**
  - Eagle Butte Mine
  - Belle Ayr Mine

- **Kiewit Mining Group**
  - Buckskin Mine
  - Walnut Creek Mine
  - San Miguel Mine

- **Komatsu Equipment Co.**
  - Gillette, WY

- **Cate Equipment Co.**
  - Gillette, WY

- **Western Fuels Wyoming**
  - Dry Fork Mine

- **North American Coal Corp.**
  - Coteau Freedom Mine
  - Coyote Creek Mine
  - Sabine Mine

- **American Colloid**
  - Colony, WY

- **Freeport -McMorran**
  - Climax Mine

- **Halliburton – BMP**
  - Colony, WY

- **Cloud Peak Energy**
  - Cordero Rojo Mine
  - Antelope Mine
  - Spring Creek Mine

- **Arch Coal Co.**
  - Black Thunder Mine

- **Black Hills Power Corp.**
  - Wyodak Mine

“*We have FlowTech install the Non-pressure Overflow Protection System on all our equipment. It’s a must have!”*

Russ Goodsell – Alpha Coal

*FlowTech Fueling*

*customer satisfaction guaranteed*
rooted in the past & ready for the future
has installed over 700 non-pressure fuel systems since 2007, preventing more than 3 million gallons of diesel spillage and providing its customers over 9 million dollars in fuel savings!