

Wiggins Service Systems
Work Faster, Cleaner, Safer

Since 1967, operators of heavy off-road equipment have relied on the Wiggins Service Systems to provide faster and safer fueling of diesel powered machinery. Today, Wiggins Service Systems are standard factory equipment on most large mining and construction vehicles produced worldwide. With rising costs associated with worker injury, hazardous material remediation, and the increasing cost of diesel fuel, the Wiggins Service System is an essential tool for all off-highway equipment.

Incorporating a "dry break" fueling nozzle, the Wiggins system allows service personnel to fuel

WIGGINS Service Systems

vehicles with both feet on the ground. Delivering fuel at rates up to 150 gallons per minute, the Wiggins system provides cost savings by fueling at a rate six times faster than with the traditional "splash fueling" method,

Advantages of the Wiggins Refueling System

- Faster fueling up to 150 G.P.M.
- Reduced spillage with the automatic shut-off system
- Safer operation because refueling is done from ground level
- Reduced foaming which permits filling tanks fully

while greatly reducing the risk of injury due to slips and falls by service personnel. The bottom fill concept also reduces foaming, which previously resulted in partial fuel loads requiring vehicles to return to the fueling point multiple times during each work shift.

Wiggins systems for crankcase oil change, transmission fluid service, hydraulic oil maintenance and cooling fluid fill produce similar productivity increases. In addition, the automatic shut-off, no spill, closed loop fueling system reduces costs associated with cleaning fluid spills.

More than 90% of all large mine operations use Wiggins Service Systems. Wiggins is the world wide leader in fast diesel fueling technology.

How It Works

The Wiggins "fast fuel" System is based on the simple concept of using a sealed vehicle tank to allow a small amount of back pressure to build up and automatically shut off the nozzle. A receiver is mounted on the tank, located near the bottom. Bottom filling helps eliminate foaming which can occur during top fueling "splash fill".

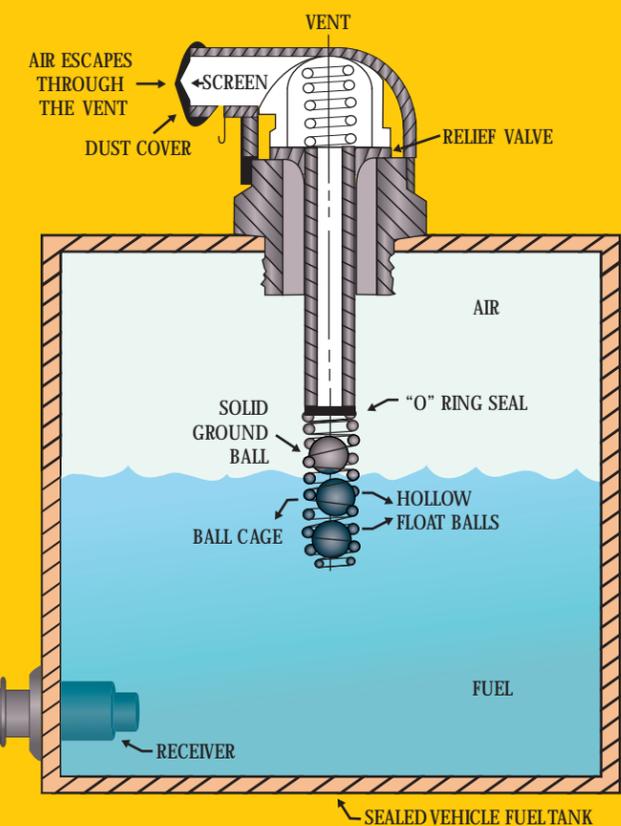
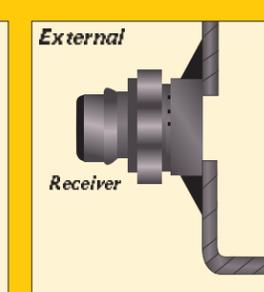
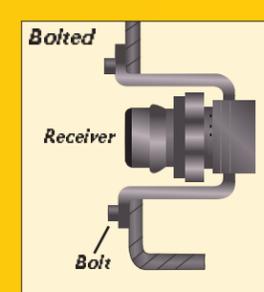
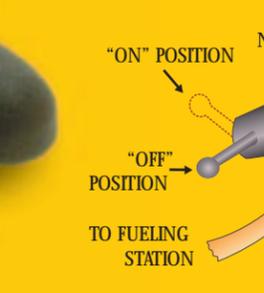
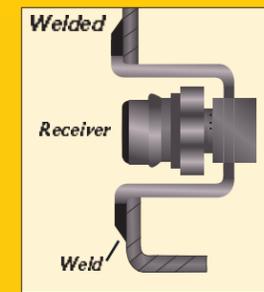
WIGGINS Service Systems

The Wiggins ZZ9A1 nozzle is attached to the receiver, the handle is turned to the "ON" position, and fuel begins to fill the fuel tank at a rate up to 150 gallons per minute. As fuel enters the tank, it forces the air inside the tank to exit through the Wiggins vent. When the fuel level nears the top of the tank, the "hollow floating balls"

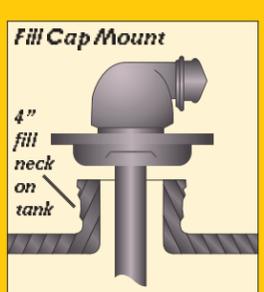
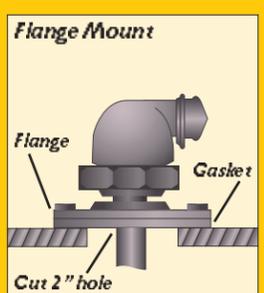
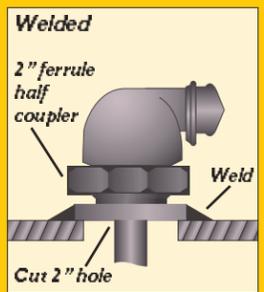
force the third "solid ball" to seal against the vent "stem", sealing the tank and stopping the air flow out of the tank. As fuel continues to flow, pressure inside the tank builds until it reaches 8 to 10 PSIG. At 8 to 10 PSIG, the nozzle automatically shuts off. The nozzle shut off is gradual, preventing a hammer effect which could damage the fuel line. The nozzle can then be removed, and is ready to fuel the next vehicle!



Mounting Receivers:
There are four ways to mount receivers (complete installation instructions, see Bulletin WIS-4).



Mounting Vents:
There are three ways to mount vents (for complete installation instructions, see Bulletin WIS-4).



WIGGINS Non-Pressurized Fast Fuel Systems

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The JN125 – Fuel at 135 GPM

Wiggins Service Systems continues to lead the industry with innovative new products. We have recently introduced our second non-pressurized fast fuel system the JN125.

The JN125 allows you to use your existing Wiggins nozzle but does not pressurize the fuel tank.

Easy to Install

- Several mounting configurations to match vehicle installation
- Can be mounted on any type of fuel tank including plastic or thin wall tanks
- Wiggins retrofit installations are as easy as 1-2-3. No tank modification required:

1. Unscrew Wiggins receiver, screw in JN125 receiver
2. Unscrew Wiggins vent, screw in JV125 jet vent
3. Connect the two hoses between the receiver and jet vent
4. You are done in less than 30 minutes!

Flexible

- New applications are also easy to install. Multiple fittings and mounting configurations are available. Let Wiggins help you design a mounting configuration to fit your equipment

Fast

- Works with existing Wiggins fueling nozzles
- Delivers fuel up to 135 GPM
- Vehicles spend less time fueling and more time working

Clean

- No spill – Dry break coupling
- Designed for use in environmentally sensitive areas
- Overfill protection prevents fuel spills, reduces costs

Safe

- Most mounting configurations allow fueling to be completed while operator stands on the ground
- Reduces risk of worker injury due to slips and falls
- System is fully vented to atmosphere at all times – no pressure in tank



- Does not rely on failure – prone floats or valves; the Wiggins jet sensor has no moving parts increasing reliability

The VR300 – Fuel at 300 GPM

The VR300 system is also non-pressurized and has a flow capacity of up to 300 gallons per minute.

Non-pressurized systems allow operators to use Wiggins high flow fueling systems on vehicles with lightweight or composite fuel tanks.

Easy to Install

- Can be mounted directly on fuel tank, or in remote location
- Several manufacturers have equipped their vehicles to accept the VR300 mounting
- Options include air/fuel separator and vapor collection and return systems

Fast

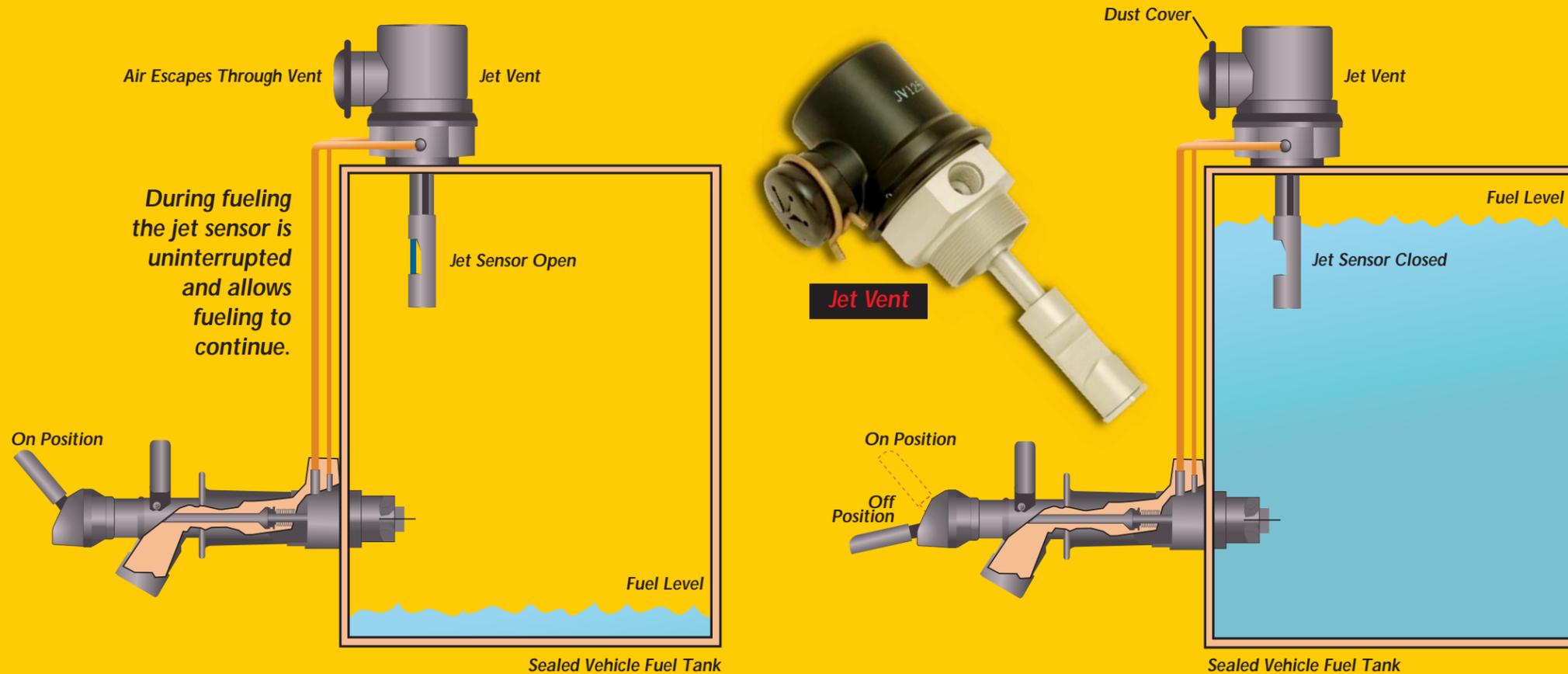
- Designed for vehicles with large fuel tanks
- Fuel at rates up to 300 GPM
- Spend less time fueling and more time working

Clean

- Interlock feature prevents spills from disconnecting nozzle during fueling
- Positive shut off – cannot be overfilled, shut – off cannot be overridden
- Unique cam-lock nozzle attachment assures a leak – proof seal between nozzle and receiver.

Safe

- Uses same jet sensor technology as JN125
- Nozzle includes full tank indicator display
- Proven reliability – hundreds of units in use world wide



When the fuel level is higher than the jet sensor, the jet is interrupted and the system shuts off.

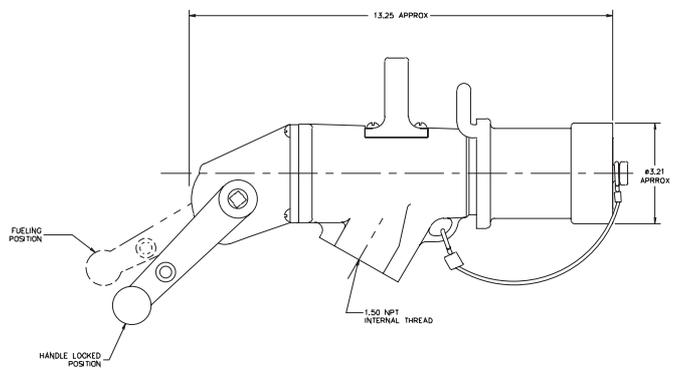
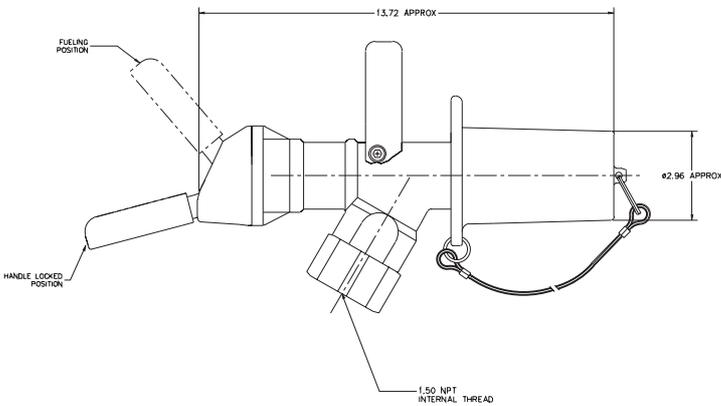
WIGGINS Fuel Nozzles



ZZ9A1



ZZF150



KR91
Actuating
Assembly
Replacement
Kit



KR92
Latching
Mechanism
Replacement
Kit



KR93
Housing Handle
Replacement
Kit



K150-1
Carrying
Handle
Replacement
Kit

K150-2
Socket
Sub-Assembly
Kit



K150-3
Actuating
Handle
Replacement
Kit



ZZ9A1 - Data Table

Flow Rate (gpm)	Pressure Drop	Operating Pressure	Weight (lbs)
25	1.0 psi	1.25 psig max.	5.75
60	4.0 psi	1.25 psig max.	5.75
100	9.0 psi	1.25 psig max.	5.75
125	14.0 psi	1.25 psig max.	5.75
150	24.0 psi	1.25 psig max.	5.75

ZZF150 - Data Table

Flow Rate (gpm)	Pressure Drop	Operating Pressure	Weight (lbs)
25	2.0 psi	1.25 psig max.	7.9
60	4.0 psi	1.25 psig max.	7.9
100	9.0 psi	1.25 psig max.	7.9
125	14.0 psi	1.25 psig max.	7.9
150	21.0 psi	1.25 psig max.	7.9

WIGGINS Accessories

Nozzle Adapters for the ZZ9A1



**Straight ZN6A
Adapter Tube**

**90° ZN6B
Adapter Tube**



Bulk Fuel Coupling

ZS5 Nozzle (Mates w/ZN2A)

The ZS5 Bulk Transfer Nozzle is designed to mate with the ZN2 receiver. It can be used to drain a fuel tank for servicing, or to transfer fuel from one tank to another. The end fitting is the same 2-inch NPT female fitting as the ZZ9A1.



For more information on the fast fuel systems, and authorized Wiggins Service System Distributors, or to see what is new, please log onto our web-site www.adelwiggins.com



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WIGGINS Fuel Tank Vents

ZV10

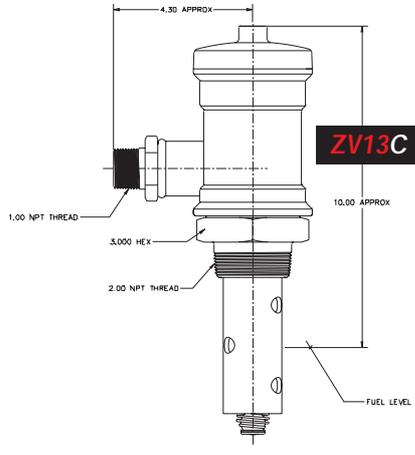
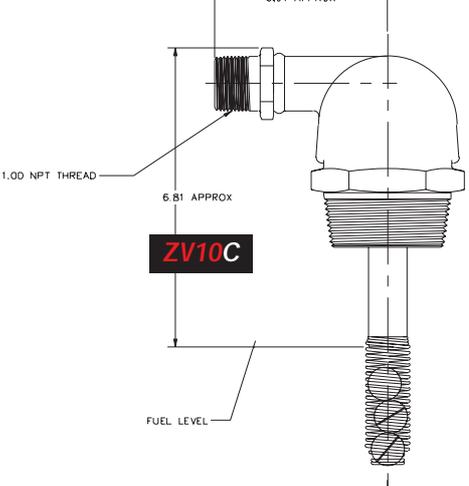
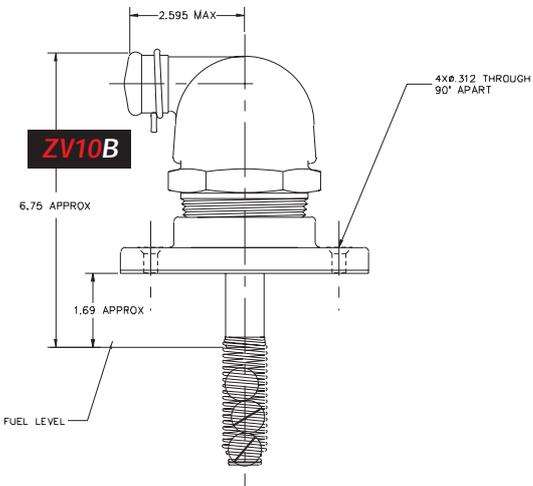
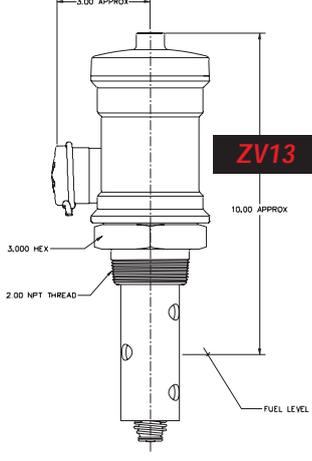
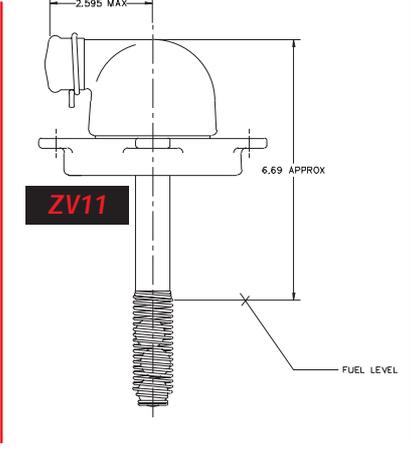
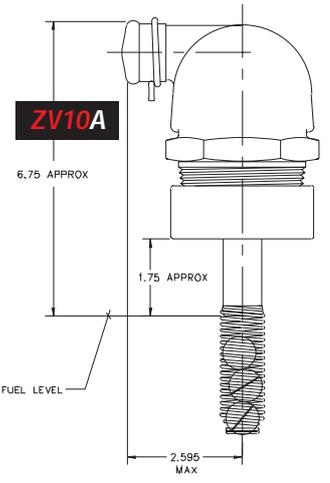
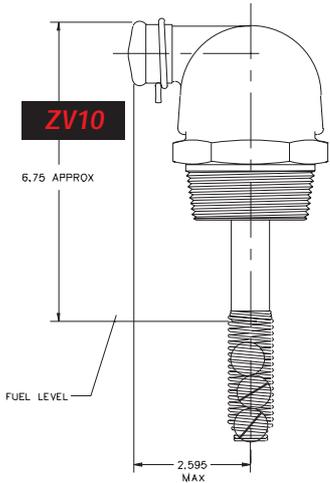


ZV11



Anti-Vandalism

ZV13



Data Table

Vent Model	Mounting Style	Length	Pressure Relief	Rebuild Kit Number
ZV10	Pipe Thread	9.375"	10.2 - 12.9 psi	K30285
ZV10A	Welded Half-Coupling	9.375"	10.2 - 12.9 psi	K30285
ZV10B	Flange/Gasket	9.375"	10.2 - 12.9 psi	K30285
ZV10C	Same as ZV10 w/Threaded Outlet	9.500"	10.2 - 12.9 psi	K30285
ZV10F	Same as ZV10 w/Long Stem	12.50"	10.2 - 12.9 psi	K30285
ZV11	Gas Cap Mount	9.312"	10.2 - 12.9 psi	K30285
ZV11A	Gas Cap Mount w/Long Stem	12.50"	10.2 - 12.9 psi	K30285
ZV13	Vented Pipe Thread	12.00"	10.4 - 11.3 psi	N/A
ZV13C	Same as ZV13 w/Threaded Outlet	12.00"	10.4 - 11.3 psi	N/A
ZV13F	Long Stem	14.70"	10.4 - 11.3 psi	N/A

WIGGINS Fuel Receivers

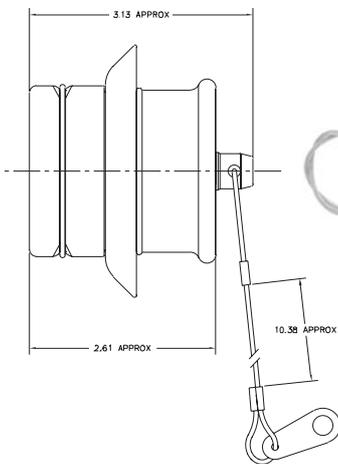
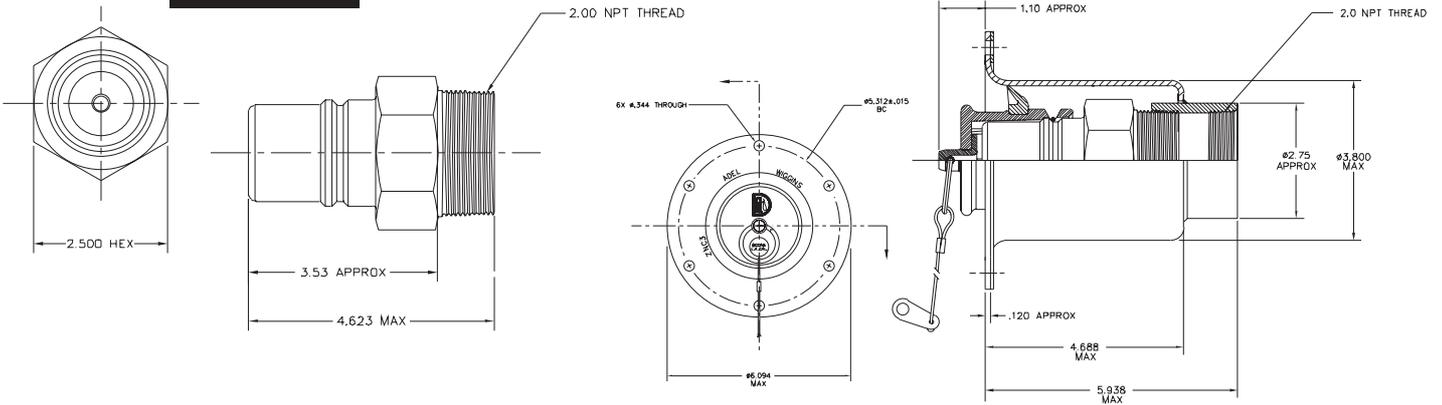


ZN2A

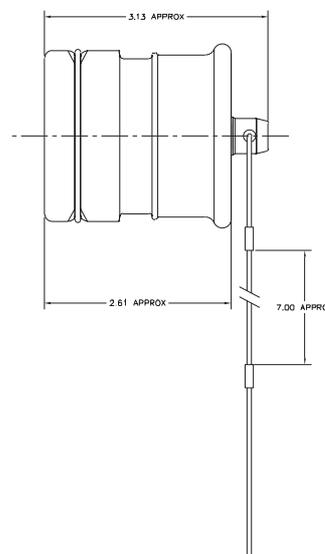


ZNC4

For Bolt-On Option, Order ZNC3



ZC-20BP



ZC-20EP

Data Table

Receiver	Application	Poppet Color
ZN2A	Standard for most applications and mountings	Clear
ZN2B	Light spring compensates for head pressure	Blue
ZN2D	Heavy spring to avoid premature shut-off	Red
ZN2AC	Stainless-Steel version of ZN2A	Clear
ZNC2A	Same as ZN2 with cap	
ZNC3	Bolt on version	
ZNC4	Weld on version	



ZNC2A

**ELIMINATES NEED
TO DRAIN FUEL TANK**



PREVENTS FUEL THEFT

WIGGINS ZN2CV CHECK VALVE RECEIVER

The integrated check valve in Wiggins ZN2CV is designed to prevent losing fuel from the receiver when the poppet is actuated and allowing nipple replacement without draining the tank.



BENEFITS:

ALLOWS REPLACEMENT OF NIPPLE WITHOUT DRAINING FUEL TANK PROVIDES FUEL THEFT DETERRENT

- *Designed to interchange with ZN2A*
- *Easy installation and removal*
- *No modifications required*
- *Same flow rates as ZN2A*
- *Integrated check valve*

FEATURES:

- *Common interface (both the nipple and the threaded mount) with ZN2A*
- *Replaceable nipple*
- *User-friendly installation kit provides easy installation/removal*

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5000 Triggs Street, Los Angeles, CA 90022 • (323) 881-7646 • Fax: (323) 269-3759 • www.fastfueling.com



**ELIMINATES NEED
TO DRAIN FUEL TANK**



PREVENTS FUEL THEFT



ZN2CV INSTALLATION KIT

KZN2CV-1 Installation kit includes:

- **INSTALL/REMOVAL TOOL FOR CHECK VALVE AND/OR NIPPLE**
- **DRAIN STEM – FOR TANK DRAINING OPTION**
- **INSTRUCTIONAL SHEET**



ZN2CV REBUILD KIT

ZN2CV-100 Rebuild Kit includes:

- **NIPPLE SUB-ASSEMBLY**
- **O-RING**
- **INSTRUCTIONAL SHEET**

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