



## ***DEF BASIC BULK SYSTEM***

### ***Owner's Manual***

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*Bridgeview Manufacturing Inc.*



## INFORMATION

Serial Number (beside filter)	
Date of Purchase	
Dealer	
DEF Supplier	
Phone Number	

Afterburner DEF is certified by API (American Petroleum Institute)

All Afterburner DEF produced by Bridgeview Fluid Solutions meets or exceeds stringent quality criteria known as ISO 22241.

All Afterburner DEF is verified by independent accredited lab before it is offered for sale.

As a customer, you can rest assured that the Afterburner DEF you put in you tank is exactly what is required by your equipment manufacturer for your Selective Catalytic Reduction (SCR) system to operate properly.

**Call Bridgeview Fluid Solutions to book your next fill**

(306) 745-2711

[www.afterburnerdef.com](http://www.afterburnerdef.com)



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## INTRODUCTION

This owner's manual is for the DEF (Diesel Exhaust Fluid) Basic Dispenser Unit and Bulk Storage Tank by Bridgeview Fluid Solutions.

DEF is a highly pure blend of automotive grade urea and de-ionized water. It is highly susceptible to contamination during manufacturing, transportation, and storage. Take precautions to prevent contamination. Only use API certified DEF supplied by Bridgeview Fluid Solutions.

**DO NOT OPEN THE TANK, OR REMOVE THE FILL CAP.** This will allow for potential contamination.

### IMPORTANCE OF QUALITY

ISO 22241			
Specification	Limits	Units	Why Important
Urea	31.8-33.2	% by weight	
Density (at 77°F)	9.05-9.09	pounds/gal	
Refractive Index (at 77°F)	1.3814-1.3843		
Alkalinity (as Ammonia)	max .2	% by weight	Determines shelf life
Insoluble's	max .002	% by weight	
Calcium	max .00005	% by weight	Clogs spray nozzles
Magnesium	max .00005	% by weight	
Aldehyde	max .0005	% by weight	Forms gummy deposit in exhaust pipe
Sodium	max .00005	% by weight	
Potassium	max .00005	% by weight	
Phosphate	max .00005	% by weight	
Biuret	max .3	% by weight	
Aluminum	max .00005	% by weight	Will damage catalyst
Iron	max .00005	% by weight	
Copper	max .00002	% by weight	
Zinc	max .00002	% by weight	
Chromium	max .00002	% by weight	
Nickel	max .00002	% by weight	

### Teaspoons required to make a 4,800 gallon tanker of DEF non-compliant under ISO 22241

Copper	0.1 Teaspoons
Zinc	0.1 Teaspoons
Chromium	0.1 Teaspoons
Nickel	0.1 Teaspoons
Phosphorus	1.1 Teaspoons
Calcium	1.3 Teaspoons
Iron	0.3 Teaspoons
Aluminum	0.7 Teaspoons
Magnesium	1.2 Teaspoons
Sodium	2.1 Teaspoons
Potassium	2.3 Teaspoons





## STORAGE

For maximum shelf life (up to 3 years), the following conditions should be maintained:

- Avoid prolonged storage above 25° C (77° F). This will shorten the shelf life of the fluid.
- Avoid subjecting to low temperatures below -11° C (12° F). DEF will freeze below this temperature, and while it will not damage the fluid itself, it may damage the components.
- Ideal temperature between -5° C (23° F) and 20° C (68° F)

Constant Storage Temperature	Shelf Life (in Months)
10° C (50° F)	36
25° C (77° F)	18
30° C (86° F)	12
35° C (95° F)	6
40° C (104° F)	2

- The shelf life should be calculated based on the batch date on your receipt.
- Store out of direct sunlight. If outside, it should be shaded.

## Set-up

It is preferable to set up the DEF tank in a climate controlled area (no sun, cold, or excessive heat).

- Position the tank in the desired location and rotate so that the fittings on the top will be accessible. This is the fill point;
- Slide the base of the dispenser under the tank so that the tank will hold it in place.
- Connect the discharge hose from the tank to the "IN" port of the filter. Fasten with a hose clamp (located on the camlock cap on top of the tank).
- Plug the two electrical ends together between the tank and dispenser. Twist to lock.
- Plug the other electrical end into a grounded 120 volt circuit (minimum 15 A breaker).
- Fill tank (contact Bridgeview Fluid Solutions to book a fill).
- Flush the system by running 20 L (5 gal) through to remove any contaminants.



## **Winterization**

Because DEF freezes at  $-11^{\circ}\text{C}$  ( $12^{\circ}\text{F}$ ), it is highly recommended to store the bulk tank in a heated area during winter. This is especially necessary if DEF is required for use during winter. If the tank is going to be stored outside during winter or temperatures below  $-11^{\circ}\text{C}$  ( $12^{\circ}\text{F}$ ), it must be winterized accordingly.

- NEVER fill DEF tank with any kind of antifreeze.
- Remove as much DEF from the tank as possible. The bottom 6" can not be pumped out.
- Disconnect dispenser from power source.
- Disconnect the rubber hose from the top of the lid and uncoil the discharge hose.
- Drain the discharge hose by holding the nozzle open until it stops dripping.
- Remove the filter cartridge and tip the stand on its side until it stops dripping. Inspect the cartridge at this time. Replace if necessary.
- Remove the 6 nuts holding the pump to the tank lid.
- Remove the pump and tip up-side-down until it stops dripping.
- Lift side of tank (beneath lid) and block up about 6" so the remaining DEF pools away from the pump.
- Reinstall pump and reconnect all hoses. Clean the pump, pipe, and wire with a microfiber rag and de-ionized water (contact BFS for supplies) before reinstalling.



## FEATURES AND OPERATION

The DEF dispenser from Bridgeview Fluid Solutions (BFS) acts like a standard fuel dispenser. The 19 mm nozzle is specially suited for DEF applications. This nozzle features an automatic shut-off to prevent overfilling. BFS also offers a high flow nozzle consisting of a ball valve and 1" nozzle to make full use of the pump capacity.

All DEF dispensed runs through a filter to ensure purity of product. This is very important to the on-board SCR systems. The DEF is also metered through a digital flow meter to make it easier to keep track of usage. This meter can be configured to readout in Litres, Gallons, Pints, and Quarts. It is factory set to read in Gallons, but can be changed. Follow the steps outlined in the attached K24 Electronic Meter manual.

The submersible pump (located in the tank) ensures that positive pressure is maintained and that air does not go through the flow meter and cause inaccuracies. A check valve above the pump ensures positive pressure in the hose by trapping liquid between the pump and nozzle when not running. An orifice located between the pump and check valve allows the pump to cycle DEF even while the handle is closed.

The pump should never be ran dry. This means that the DEF level in the tank should never be below 6". If you are running low, contact Bridgeview for a refill.

The pump is turned on and off with a switch located on the front of the dispenser. This switch features an automatic timer that will shut the pump off after 15 minutes. This will prevent burn out of the pump if accidentally left on.

### ***Normal operation procedure:***

- Push reset button on flow meter.
- Push "ON" button to start pump.
- Remove handle from storage position and place nozzle into desired container.
- Pull trigger on nozzle handle.
- When container is full, release nozzle handle, and return to storage position. Neatly hang excess hose on the hanger.
- Push "OFF" button to stop pump.
- Check dispensed volume.



## SERVICE AND MAINTENANCE

Very little service or maintenance is required to keep your DEF dispenser operational.

The following steps should be taken:

- Flush the system after each fill or if the tank is opened for any reason. Run approximately 20 L (5 gallons) through to flush out any contaminants.
- Check and replace the filter on a regular basis (once per year), or if the flow seems restricted, Contact Bridgeview Fluid Solutions at (306) 745-2711 to order a replacement cartridge.
- The flow meter operates using batteries. When the batteries are low, a battery symbol appears on the screen. If this happens, remove the back plate and replace using two AAA batteries..

### Service Intervals

Time Period	Service
First Month and Every Tank Fill	Flush system (20 L)
12 Months	Check DEF Filter
18 Months	Check Flow Meter Batteries





## SPECIFICATIONS

Flow Rate:	14 GPM (19mm DEF Nozzle) 21 GPM (ball valve)
Discharge Hose:	1" x 25 ft 19mm Nozzle, Automatic Shut-off Optional High Flow Ball Valve
Fill Connection:	1.5" Camlock on Tank Lid Optional dispenser fill for taller tanks
Vent:	2" Pressure/Vacuum
Filter:	1 Micron, Replaceable
Shut-off Timer:	15 Minutes (from start)
Flow Meter:	Resets between fills, tracks total Litres, Gallons, Quarts, or Pints
Tank:	5670 L (1250 Imperial Gallon) Vertical, High Density Polyethylene Level visible through wall Stainless Steel Lid
Power Supply:	120V, 15A Breaker