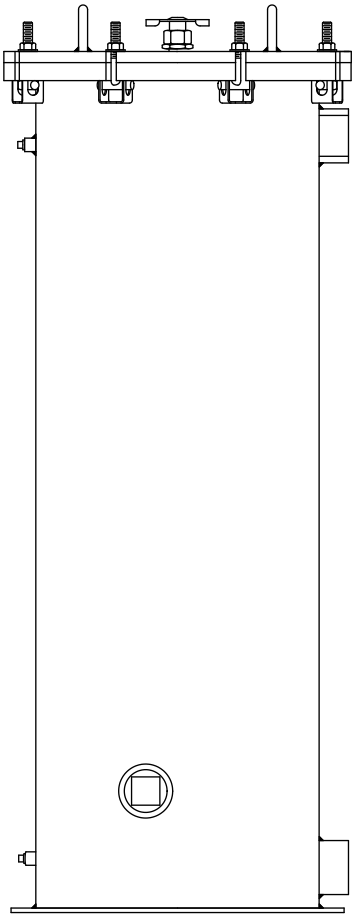
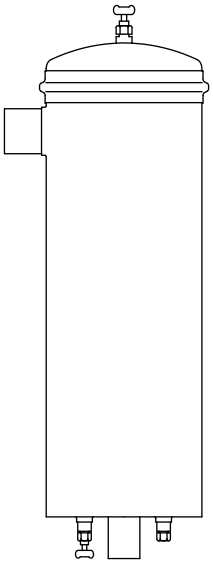
Stationary Fuel Coalescers





Introduction

To appreciate the 99% water and dirt removal efficiency of the Fleetguard ® Stationary Fuel Coalescer, it is important to understand why you need it in the first place.

Water in Fuel

Inconsistencies in diesel fuel handling, storage and delivery all contribute to water in fuel. Water can also enter underground storage tanks through deteriorated tank walls, vents, or through filler tubes. Changes in temperature and additions of warmer fuel can cause condensation to form and collect at the bottom of the tank. But, whatever the cause, water in fuel exists and it exists in two forms.

A static holding tank accumulates free water. You can see free water as large droplets or as a layer found at the bottom of the tank. However, once vibration or movement occurs in the fuel system, free water breaks down into very small droplets and emulsifies with the fuel. The fuel pump also breaks down free water. The result is emulsified water, water droplets small enough to escape detection by the unaided eye. In fuel, it will have a milky appearance.

Water Contamination of Either Type Spells Danger to Your Engine

Diesel injection systems consist of precision components with extremely close tolerances that rely completely on the diesel fuel for lubrication. Water causes a multitude of difficulties both for the fuel system as well as for the engine itself. Water can lead to scored pump surfaces, destruction of the injector nozzle, premature valve wear, and cracked cylinder liners – just to name a few of the possible problems.

Sulfur, in concentrations as high as 0.5% in today's fuels, combine with water to form corrosive acids which not only damage the fuel injection system, they also find their way into the lubricating oil. The result? Premature bearing wear.

Water combined with diesel fuel during storage, encourages bacterial growth. This factor is significant in untimely engine fuel filter plugging.

Optimum engine life and economic performance depend upon having pure fuel delivered to the combustion chambers.

The Benefits

- Lower maintenance costs
- Longer engine operating life
- Better fuel economy
- Reduced exhaust emissions

These are all good reasons to eliminate all water present in your fuel supply. The Stationary Fuel Coalescer helps you achieve and keep your fuel dry.

Water Removal

Many devices claim 100% water removal. The majority of these devices fall into two categories: mechanical or pleated separators. Mechanical separators usually employ centrifugal action or static deflection to remove larger drops of free water from diesel fuel. Pleated paper separators use a single stage, water-repellent paper to separate the large drops of free water from the fuel passing through the media. These two methods of fuel/water separation remove free water but have little or no effect on emulsified water. However, many fuel systems contain more emulsified water than free water.

The Difference Between a Coalescer and a Water Separator

In short, a Coalescer removes both free and emulsified water. The practical removal of each type of water mandates the use of coalescence. The dictionary definition of coalescence it: ...to grow together; to unite into one body or mass.

To accomplish coalescence, the Stationary Fuel Coalescer uses inside out flow dynamics that has a first stage of fibrous media that allows fuel to pass through, but attracts and "stores" the emulsified water. These tiny droplets of water unite, or coalesce, to form larger droplets of free water. This free water is then released to a second stage of water repellent media where it can be easily separated from the fuel.

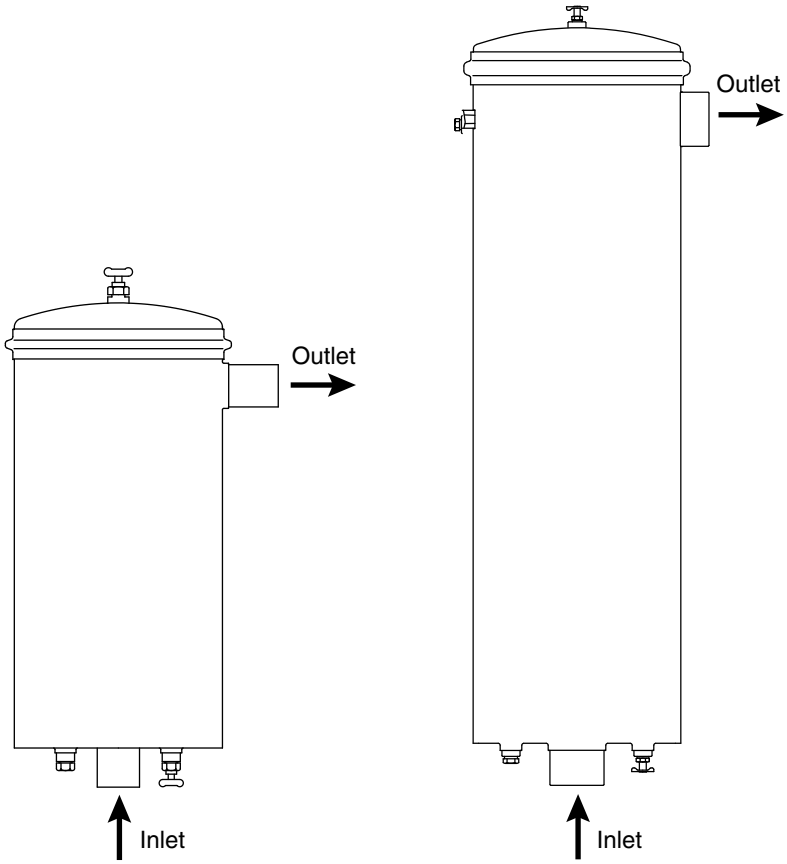
The Coalescer uses this two-stage process for water removal. The coalescer stage turns all water into free water. The free water passes through to the separator stage. The separator removes the free water and drops it into a collection sump.

Stationary Fuel Coalescers come in two styles, a single element wall or engine mounted design and a floor standing multiple element commercial model. A wide range of accessories are also available to fit your specific application.

Unlike conventional separators, these units can be installed on either the pressure side (emulsified water) or suction side (free water) of the transfer or fuel pump.

Stationary Fuel Coalescers have excellent contaminant efficiency, in addition to water removal capabilities and will remove water indefinitely until they become plugged with contaminants. Water removal efficiency is unaffected by the filtration process.

Coalescers Feature Inside-Out Flow

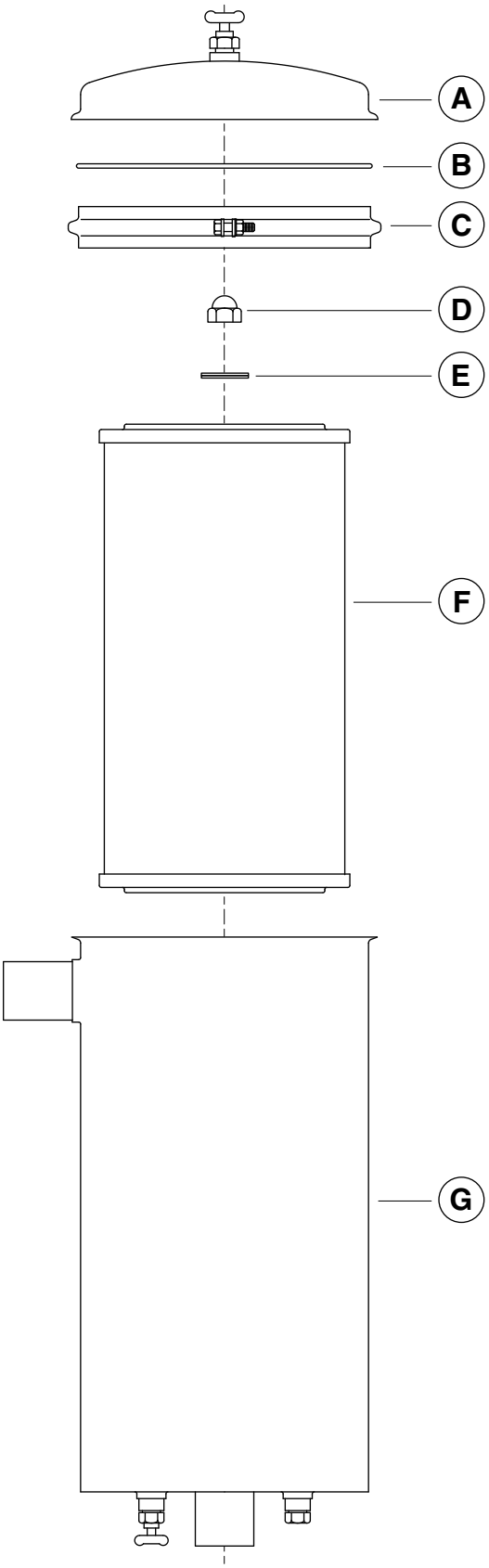


Specifications

Housing Part Number	Design Pressure lb/in² (kPa)	Flow Rate* gal/min (L/min)	Pressure Drop** in Hg (kPa)
91284N	75 (517.1)	6 (22.7)	2.5 (8.5)
91293N	75 (517.1)	15 (56.8)	2.5 (8.5)

* Clean filter at rated flow, based on #2 Diesel fuel.

** Change filter at 5 PSID (34.5 kPa) above initial pressure drop.



Parts List

Part	Description	Part Number	
		91284N	91293N
A	Cover Assembly	Q80039	Q80749
B	O-Ring	Q58403	Q58878
C	Band Clamp	Q53087	Q52874
D	Seal Nut Assembly	Q53776	Q53473
E	Gasket	Q58031	Q58403
F	Filter Element	88471N	88473N
G	Housing	91284N	91393N

Ordering Information

Housing Part Number	Filter Element
91284N	88471N
91293N	88473N

Auto Drain Accessories

Part Number	Accessory
Q62197	Control Unit (12-24 VDC)
Q71131	Connecting Wire
Q71132	Water Probe

Note: All threee accessories are required for initial installation.

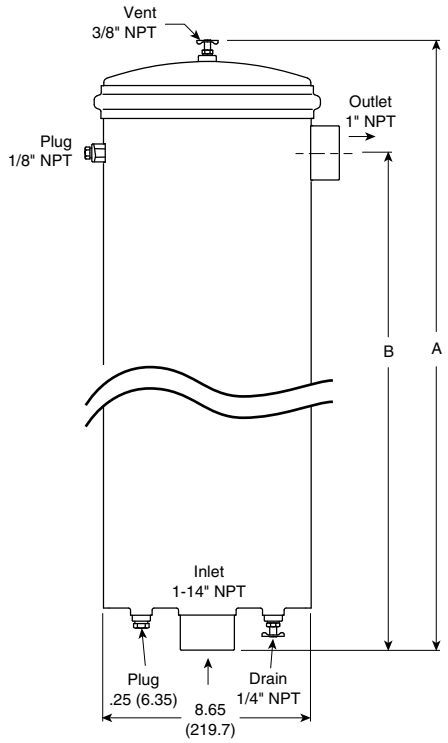
Replacement Elements

Part Number	Description
88471N	Two-stage coalesing element
88473N	Two-stage coalesing element

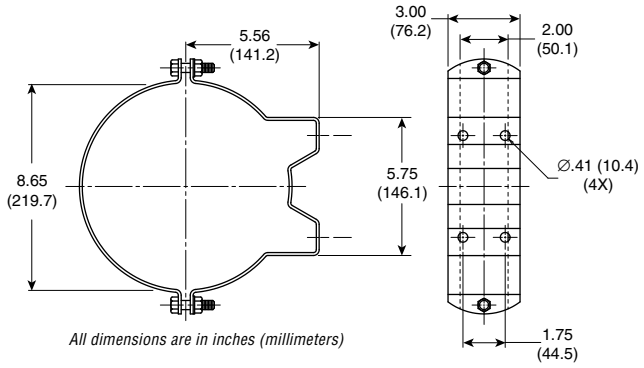
Filter Efficiency

- H_2O removal efficiency is 99% for free H_2O per SAE J1839
- H_2O removal efficiency is 99% for emulsified H_2O per SAE J1488
- Contaminant efficiency is B_5 = 100

Mounting / Dimensions

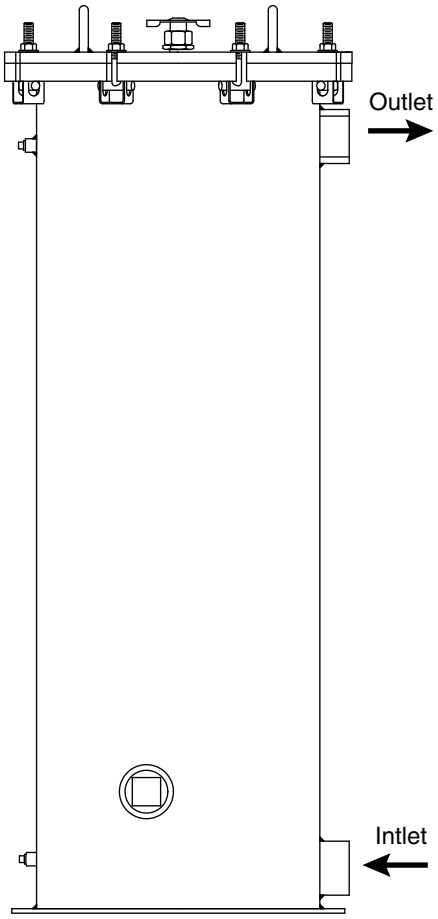


Part Number	A Height in (mm)	B Inlet Height in (mm)
88471N	21.5 (546.1)	32.46 (822.5)
88473N	16.62 (442.2)	27.5 (698.5)



All dimensions are in inches (millimeters)

Coalescers Feature Inside-Out Flow

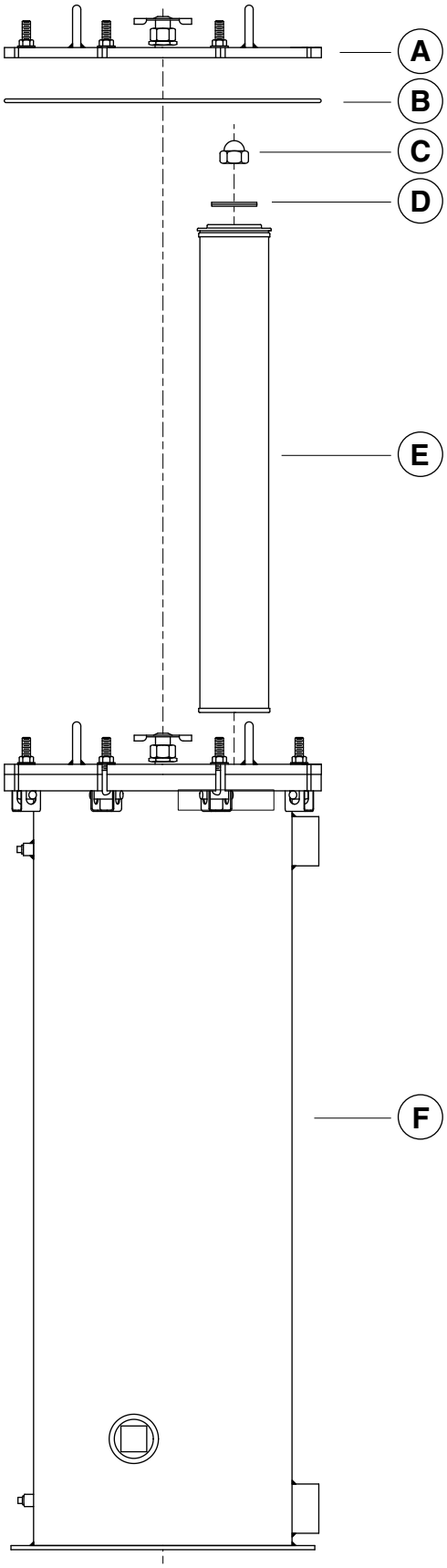


Specifications

Part Number	Design Pressure lb/in² (kPa)	Flow Rate* gal/min (L/min)	Pressure Drop** in Hg (kPa)
91292N	75 (517.1)	100 (378.5)	3.5 (11.9)

* Clean filter at rated flow, based on #2 Diesel fuel.

** Change filter at 5 PSID (34.5 kPa) above initial pressure drop.



Parts List

Part	Description	Part Number
A	Cover Assembly	Q80660
B	O-Ring	Q79058
C	Seal Nut Assembly	Q53779
D	Gasket	Q58878
F	Filter Element	88472N
G	Housing	91292N

Ordering Information

Housing Part Number*	Filter Element
91292N	88472N

Auto Drain and Heating Accessories

Part Number	Accessory
Q62022	120 VAC Control Module
Q62023	Electrical Enclosure for Q62022
Q62189	Water Sensor Probe (with 10' (3.1 m) Connection Wire)
Q62050	120 VAC – 1000 W Heater

Note: Q62022 and Q62197 controls can operate either Q62189 or Q71132 water probe for interchange between 12-24 VDC and 120 VAC use.

Note: Auto drain requires all three accessories (Q62022, Q62023 and Q62189) for initial installation

Replacement Filter

Part Number	Description
88472N	Two-stage coalesing element

Filter Efficiency

- H_2O removal efficiency is 99% for free H_2O per SAE J1839
- H_2O removal efficiency is 99% for emulsified H_2O per SAE J1488
- Contaminant efficiency is B_5 = 100

Mounting / Dimensions