

User Manual Turbine Series - Single



GRIFFIN GTB228, GTB341, GTB455, GTB681 Series Fuel Filter / Water Separator for Diesel Engines

Griffin's GTB228, GTB341, GTB455, GTB681 series of fuel filter / water separators are designed for powerful diesel engines and transfer pumps, efficiently protecting precision engine components from dirt, rust, algae, asphaltines and varnishes. Griffin's unique **MICROBLOC**[®] multigrade filtration media also efficiently separates water from fuel. A clear bowl allows for visual inspection of water and contaminants removed from fuel by the filter.

Griffin filters remove contaminants and separate water using a four stage process:

- 1. Centifugal Action:** Larger solid contaminants and free water are separated
- 2. Coalescing Action:** Smaller water droplets and solid contaminants are filtered out by **MICROBLOC**[®] multigrade filtration media, causing them to coalesce together and fall into the collection bowl
- 3. Micro Action I:** Micro action filtration removes the smallest water droplets and solid contaminants from fuel
- 4. Micro Action II:** A second micro action filtration ensures nearly 100% pure fuel filtration

THIS MANUAL CONTAINS IMPROTANT INFORMATION REGARDING THE SAFETY, OPERATION, MAINTENANCE AND INSTALLATION OF THIS PRODUCT. PLEASE REFER TO THE CHART ON THE RIGHT FOR SPECIFIC INFOMATION ON YOUR FILTER.

INSTALLATION INSTRUCTIONS

(Please read before installation)

Before Installation of Filter Assembly:

1. Make sure that you have all the tools and components necessary to install your filter;
2. Ensure that your workspace is well lit and has sufficient ventilation;
3. Confirm that the engine is off, batteries have been disconnected, and that surfaces are cool to the touch;
4. Extinguish any open flames, cigarettes, or other ignition sources.

Mounting your filter: Please refer to the mounting hole pattern dimensions on the right when drilling holes or positioning the unit. The filter should be mounted vertically with the T-handle at the top and the clear plastic bowl at the bottom. Use a level to make sure the filter does not tilt more than 10°.

Installation:

The filter assembly should be installed between the fuel tank and fuel pump inlet. For proper operation and optimum water separation efficiency, the filter assembly should be installed on the suction (vacuum) side of the fuel pump inlet between the horizontal plane of the bottom of the fuel tank and the inlet of the fuel pump. Ensure that the fuel hose is not pinched during installation.

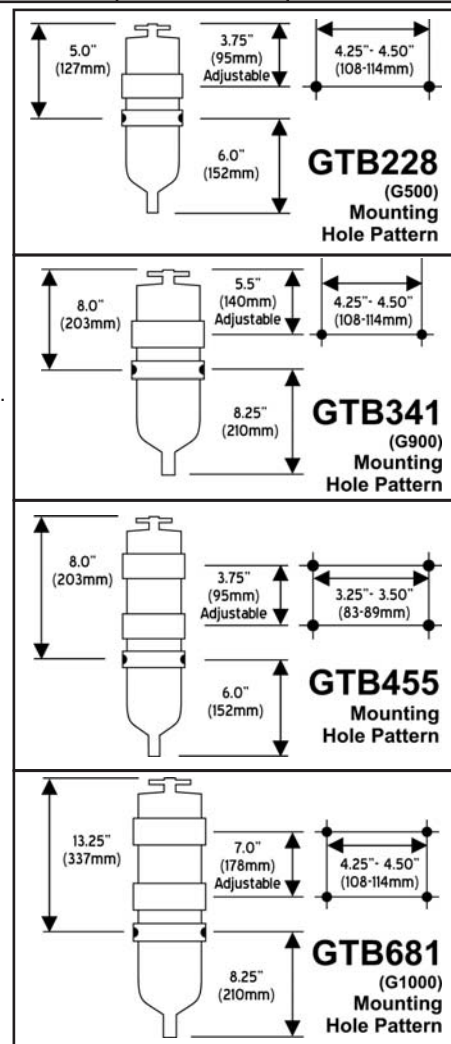
There are three recommended for installation of the filter assembly:

1. Fuel tank level with filter(vacuum-side installation): This is the preferable location for installation. The ideal location for installation of the filter assembly is between the horizontal plane of the bottom of the fuel tank and the inlet of the fuel pump.
2. Fuel tank above filter: If filter assembly is installed below the fuel tank you must install a shut-off valve between the fuel tank and filter inlet to permit shut-off of fuel line during servicing and replacement of filter cartridges.
3. Fuel tank below filter (vacuum-side installation): If filter assembly is installed above the fuel tank you must install a shut-off valve with little or no restriction in order to maintain prime.

Regardless of installation location:

1. Remove all other vacuum side fuel filters in order to minimize restrictions in fuel flow; non-removable filters should be serviced with new filter cartridges.
2. Maintain proper space above (5" or 12.7cm) and below (2" or 5.1cm) the filter assembly to allow for easy maintenance of the filter assembly, element replacement and water draining.
3. Ensure that the filter assembly and fuel lines are not mounted near a heat source or sharp edges.
4. Avoid making kinks in the fuel line; do not make sharp bends with a flexible fuel line; where possible use 90° elbow instead of two 45° elbows.
5. It is recommended that you use the maximum size fuel line.

SPECIFICATION	GTB228	GTB341	GTB455	GTB681
Maximum flow rate	60 gph / 228 lph	90 gph / 341 lph	120 gph / 455 lph	180 gph / 681 lph
Height	11.6" / 295mm	16.2" / 412mm	14.4" / 365mm	22" / 559mm
Width	4.5" / 115mm	6" / 152mm	4.5" / 115mm	6" / 152mm
Depth	4.8" / 122mm	7" / 178mm	4.8" / 122mm	7" / 178mm
Weight, Dry	2.8 lbs / 1.3kg	6.6 lbs / 3kg	4.2 lbs / 1.9kg	10 lbs / 4.5kg
Port size standard	3/4 - 16" UNF	7/8" - 14" UNF	3/4 - 16" UNF	7/8" - 14" UNF
Fittings required	#8 O-ring boss	#10 O-ring boss	#8 O-ring boss	#10 O-ring boss
Clean pressure drop	0.25psi / 1.72kPa	0.35psi / 2.4kPa	0.25psi / 1.72kPa	0.48psi / 3.3kPa
Overhead space required	3.5" / 89mm	5" / 127mm	6.5" / 165mm	10" / 254mm
Temperature rating	-4° / +250°F -20° / +121°C	-4° / +250°F -20° / +121°C	-4° / +250°F -20° / +121°C	-4° / +250°F -20° / +121°C
Replacement	GTB22	GTB34 / G2040	GTB45	GTB68 / G2020
Cross reference	500FG	G900 / 900FH	None	G1000 / 1000FH



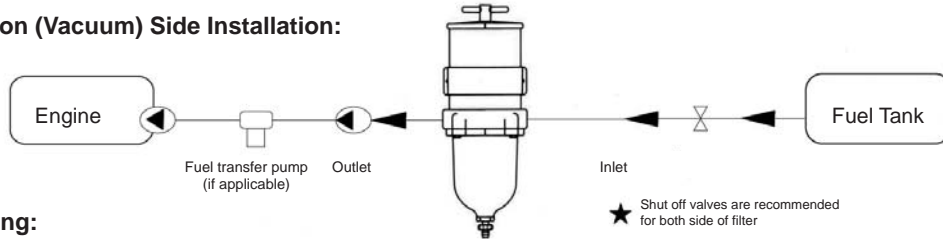
Turbine Series - Single (continued)

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for Diesel Engines



GRIFFIN[®]
FUEL FILTER / WATER SEPARATOR
www.griffinfilter.com

Suction (Vacuum) Side Installation:



Priming:

Remove the lid and fill the filter with clean fuel. Coat the O-ring with fuel and use the T-handle to tighten the lid by hand, do not use any tool. If applicable, refer to your machine instructions / user manual to complete the fuel priming. Start engine and check for leaks.

Troubleshooting:

An untightened lid or restriction in the fuel line will cause engine power loss and make the engine difficult to start. If the filter does not prime or it is hard to hold prime or air bubbles are visible in the clear bowl, check the T-handle and drain valve, and check the connection of all fittings. Make sure that the fuel line is not pinched or clogged with contaminants. If there is an in-tank strainer, make sure it is not clogged with contaminants.

If you still are encountering difficulties with the operation of your filter, please contact your Griffin distributor or representative.

Maintenance:

The level of contamination of your fuel will determine how often it is necessary to check the level of contaminants and to drain water from the unit. We suggest inspection and/or draining (if necessary) of the collection bowl of water daily and replacement of the element every 12000-20000 kilometers. If the level of contaminants in your fuel is known to be high, or you are experiencing power loss, it is recommended that you replace the element as soon as possible.

Suggestion: Always carry a new Griffin element.

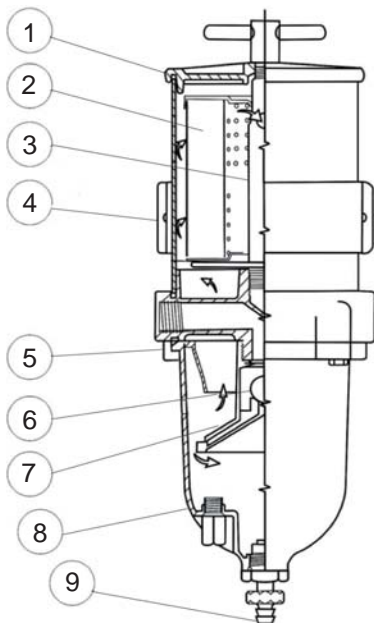
Draining:

Open the drain valve to drain the water and contaminants. If necessary, open the lid and fill with clean fuel to wash. Replace the lid and tighten the T-handle by hand. Start engine and check for leaks.

Warning: Do not leave the water drain valve open too long as it could drain the entire filter and possibly the entire fuel system.

Element Replacement:

Only Griffin's original **MICROBLOC**[®] multigrade filtration media provides the best water separation function. The elements are designed to be removed by hand via twisting the pull-handles. It is easy to replace and maintain during service. Every Griffin original element comes with new O-rings. Replace the element and the lid O-ring. Coat the O-ring with clean fuel and use the T-handle to tighten the lid by hand. Start engine and check for leaks.



GTB228 / GTB341 / GTB455 / GTB681 REPLACEMENT PARTS LIST

Item	Description	Part No.
1	T-Handle / Lid Assembly:	GTB228 / GTB455 PTHLA24
		GTB341 / GTB681 PTHLA36
	One Piece Lid Assembly:	GTB228 / GTB455 PLA24
		GTB341 / GTB681 PLA36
	T-Handle O-ring:	GTB228 / GTB455 POR24
		GTB341 / GTB681 POR36
	Lid Gasket:	GTB228 / GTB455 PLG24
		GTB341 / GTB681 PLG36
2	GTB228 Rpl. Element:	2 micron GTB22-2
		10 micron GTB22-10
	GTB341 Rpl. Element:	2 micron GTB34-2/G2040-2
		10 micron GTB34-10/G2040-10
GTB455 Rpl. Element:	2 micron GTB45-2	
	10 micron GTB45-10	
GTB681 Rpl. Element:	2 micron GTB45-30	
	10 micron GTB68-2/G2020-2	
		GTB68-10/G2020-10
		GTB68-30/G2020-30
3	Return Tube:	GTB228 / GTB455 PRT24
		GTB341 PRT34
		GTB681 PRT68
4	Mounting Bracket Kit:	GTB228 / GTB455 PMBK24
		GTB341 / GTB681 PBCB36
5	Bowl Ring for Water Collection :	GTB228 / GTB455 PBR24
		GTB341 / GTB681 PBR36
6	Check Ball and Seal Kit:	GTB228 / GTB455 PCBSK24
		GTB341 / GTB681 PCBSK36
7	Turbine and Centrifuge Kit:	GTB228 / GTB455 PTCK24
		GTB341 / GTB681 PTCK36
8	Clear Bowl & Water Sensor Port:	GTB228 / GTB455 PCB24/GCB5-2
		GTB341 / GTB681 PCB36/GCB910-2
9	Water Drain Valve:	GTB228 / GTB455 PWDV24
		GTB341 / GTB681 PWDV36
10	Fittings: Barbed Elbow	GTB228 / GTB455 size M14 x 1.5 PFB24-1415
		GTB341 / GTB681 size 7/8" - 14 UNF PFB36-78
	Barbed Straight	GTB228 / GTB455 size M14 x 1.5 PFB24-1415
		GTB341 / GTB681 size 7/8" - 14 UNF PFB36-78
11 (Opt items)	Seal Service Kit:	GTB228 / GTB455 PSSK24
		GTB341 / GTB681 PSSK36
	Water Probe (metal):	GTB228 / GTB341 / GTB455 / GTB681 PWPM01
	Water Sensor alarm with water probe:	GTB228 / GTB341 / GTB455 / GTB681 PALM
	Heater:	GTB228 / GTB455 PHT24
		GTB341 / GTB681 PHT36
	Handle Gauge:	GTB228 / GTB341 / GTB455 / GTB681 PAU2436H
Metal bowls are recommended for gasoline applications:	GTB228 / GTB455 PMB24	
	GTB341 / GTB681 PMB36	
	(or order marine version MAC series)	

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