

## **REDI-TANKS Fuel Tanks Information & Recommendations**

### **Emissions-related Installation Instructions**

#### **PERMANENT INSTALLATION**

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To obtain optimal performance from your Moeller Marine fuel tank, it is important that you follow these installation guidelines closely.

1. Follow all applicable ABYC, ISO, NMMA, and USCG regulations and recommendations.
2. The fuel tank must be fully supported in its installed position.
3. The fuel tank should be installed securely. The installed fuel tank shall not bounce, shift, or move as this will cause chaffing. The fuel tank shall not be allowed to be scraped, cut, or punctured because of a loose installation or manufacturing debris.

**IMPORTANT:** Neoprene padding should be added to any area where the surface of the tank makes contact with a surface that may cause chaffing. **DO NOT COMPRESS NEOPRENE PADDING!**

4. Allow 3% expansion of the fuel tank in all directions. Hydrocarbon swell occurs when gasoline or diesel fuel soaks into the fuel tank material. (**Example:** Initial size 40"L x 24"W x 18"H = Expanded size 41.2"L x 24.7"W x 18.5"H) Design the fuel tank compartment to allow growth equally. Hold down brackets / braces must be installed to prevent damage to the fuel tank even after hydrocarbon expansions occur.
5. **DO NOT** remove dust caps until you are ready to install the fuel tank. Dust caps are provided to limit dirt, dust, water or any other foreign substance from getting into the fuel tank.
6. Fuel tank placement should be carefully considered, as certain environmental factors can increase fuel temperature, leading to potential degradation of fuel integrity and related problems.
7. **DO NOT** deform the tank during installation. Methods of deforming the fuel tank also include: walking, standing, or applying excessive weight onto the fuel tank.
8. **DO NOT** solid plumb fuel lines to the fuel tank use only flexible lines.
9. **DO NOT FOAM THE FUEL TANK IN PLACE!**
10. **NEVER** modify the fuel tank. Use only fittings which come with the tank, or fittings approved by Moeller Marine.
11. **DO NOT** attempt to patch or repair holes or punctures in fuel tank.
12. Fuel tank temperatures need to be stabilized to room temperature for 24 hours before testing or installation.

**Improper installation may cause performance problems such as:** Leaks, Loss of Capacity, Sender Inaccuracy, and Fuel Starvation.

**Additional Suggestions:** Mount the tank in an accessible area. Fuel tank fittings should be installed so they are readily accessible. Installations that warrant removal of walls, floors, structure, or other systems may be warranted at a prorated rate.

**IMPORTANT:** Fuel system or propulsion damage resulting from the improper installation of the fuel tank, will not be covered under the limited warranty.

"REMEMBER - THESE ARE GUIDELINES FOR THE PERMANENT INSTALLATION OF FUEL TANKS, AND THAT THE BUILDER IS ULTIMATELY RESPONSIBLE FOR THE PROPER INSTALLATION OF TANKS."

#### **OPERATING TEMPERATURES**

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Moeller Marine fuel tanks are capable of operation within an ambient temperature range from -40°F (-40° C) to 176°F (80°C).

**IMPORTANT:** Fuel tanks temperatures must be limited to 150°F (66° C) when not in operation. Processes that include dry heating of the fuel tank beyond 150°F (66° C) should be discontinued immediately. Fuel tanks subjected to temperatures in excess of 150°F (66° C) when not in operation, could be considered as damaged, and may not be covered under the limited warranty.

## PERMEATION

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Permeation is a natural phenomenon of gasoline in a cross-linked polyethylene fuel tank. Permeation is the result of gasoline fumes escaping from the fuel tank, not the loss of liquid fuel.

### **Several precautions need to be addressed when using a cross-linked polyethylene fuel tank:**

- Fuel (gasoline) vapors settle to the lowest point in the compartment, therefore, a means for removing the fumes is required. See ABYC Standards Section H-2 for specifics.
- A covered boat will not allow these fumes to escape, so build up of these fumes is inevitable. Caution should be taken when a boat's fuel tank contains fuel and is covered for an extended period of time. A boat cover should never cover the fuel tank's exterior vent fitting(s).
- Fuel vapors will migrate to any compartment open to the fuel tank. The smell of fuel vapors does not necessarily mean that there is a leak in the fuel tank, but a closer inspection should be performed.
- Fuel vapors may be absorbed by other objects located in compartments where fuel vapor may migrate.

**Following the above precautions, a cross-linked polyethylene fuel tank will provide years of service.**

## PRESSURE TESTING

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Moeller Marine fuel tanks are tested in accordance to Title 33 CFR, Section 183.510. After installation, fuel tank and fuel system pressure testing must be done in accordance with applicable laws. Fuel tank temperatures need to be stabilized to room temperature for 24 hours before pressure testing.

### **IMPORTANT: Unrestrained pressure testing may cause damage or deformation to the fuel tank.**

Fuel tank testing outside of the boat structure or prior to permanent installation requires the use of a fixture(s) to simulate the intended installation or to restrain each tank surface within 1 inch of the print specification. Failure to utilize control fixtures may cause unintended surface deformation, causing leaks and permanent fuel tank damage. **DO NOT** exceed 3 psi for pressure testing.

## STORAGE

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Moeller Marine fuel tanks are manufactured from UV stable material. Fuel tanks may be stored outside, as long as steps are taken to prevent damage to the fuel tank, any fittings or components exposed on the fuel tank, and to prevent intrusion of foreign substances. This includes limiting exposure temperatures to -40°F (-40° C) to 150° F (66° C). Fuel tank temperatures need to be stabilized to room temperature for 24 hours before installation or pressure testing. If extended storage of the tanks is needed, Moeller Marine recommends that you cover the fuel tanks. **DO NOT ALLOW ICE OR SNOW BUILDUP.**

First In First Out (FIFO) procedures should be followed as with any inventory.

## TOLERANCES

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The Association of Rotational Molders recognizes wall thickness tolerances of plus/minus 20% for rotational molded products. Other wall thickness variations may be present due to design configuration.

Environmental and molding conditions result in variation of size and capacity of the fuel tank. Moeller recognizes size and capacity tolerances of plus or minus 1-1/2 % of specified dimension or capacity. First article parts may exhibit additional shrinkage of the plastic, causing larger than 1-1/2% variation. This is common to break-in of a new or revised mold.

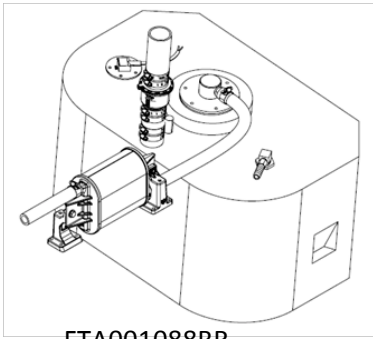
## Tank Specific Information & Recommendations

1. All tank specific information and recommendations for angle and tilt were performed such that for all tanks, any of the walls of the tanks can face the front of the boat.
2. Tanks sold as complete units with sender, pick-up, Fill Limit Vent Valve (FLVV) and Grade Valve (GRV) as required.
3. Systems designed in conjunction with Attwood Marine Products.
4. The Carbon Canister, Inlet Check Valve (ICV), deck fill, and P-Trap Vent must be purchased as separate components from an Attwood supplier.
5. For coverage by Attwood warranty and guaranty, all components in the system must be Attwood.
6. If the ICV and/or carbon canister is located in the engine compartment, a heat shield for that component will be required per the installation instructions.
7. Carbon canister location / packaging to be determined by boat manufacturer in coordination with Attwood per the installation instructions.
8. Hose length and routings to be determined by boat manufacturer in coordination with Attwood to satisfy intent of the system relative to regulatory requirements.
9. Installation instructions can be found at [www.attwoodmarine.com](http://www.attwoodmarine.com) by clicking on Fuel, Integrated Fuel Systems, Components for EPA Certified Fuel systems or Attwood can be contacted via email at [attwoodinfo@attwoodmarine.com](mailto:attwoodinfo@attwoodmarine.com).

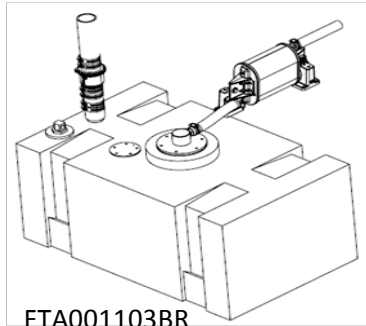
Diurnal Tank #	Old Tank	Gallons	Style	Dimensions of Tank (inch)						Static Float Angle X Degrees Bow Up (gallons)											
				Length	Width	Height	Overall Height (fill neck, dog house)	FLVV# Shut-off Height (inch)	@ 93% of tank volume (gal)	0°		1°		2°		3°		4°		5°	
										At FLVV shutoff height	Useable Volume	At FLVV shutoff height	Useable Volume	At FLVV shutoff height	Useable Volume	At FLVV shutoff height	Useable Volume	At FLVV shutoff height	Useable Volume	At FLVV shutoff height	Useable Volume
FTA001088BR	FT1512	12	Comp*	23	15	11.75	14.5	320	1399	1268	1268	1201	1268	1218	1268	1234	1268	1241	1268	1244	1268
FTA001103BR	FT1999	15	Cube	26	16	11.75	14.5	320	1751	1595	1595	1510	1595	1544	1595	1567	1595	1575	1595	1579	1595
FTA001092BR	FT2143	18	Comp*	34	925	21.14	23.52	320	1942	1899	1899	1846	1901	1855	1904	1863	1906	1871	1908	1879	1911
FTA001108BR	FT2399	23	Cube	24	20	14	15.41	320	25.17	2362	2362	2262	2365	2299	2367	2327	2369	234	2372	2347	2374
FTA001099BR	FT2599-3	21	Flat	47	1803	7.5	10.25	094	23.10	2307	2307	2129	2307	2147	2307	2166	2306	2183	2306	2196	2303
FTA001091BR	FT2631	23	Cube	20.75	1888	17.75	19.32	320	24.52	2344	2344	2263	2344	2275	2344	2288	2344	2295	2296	2297	2343
FTA001109BR	FT2926	26	Belly	43	25.75	8	11.45	169	27.38	2595	2595		2595		2595		2594		2591		2579
FTA001122BR	FT3418	28	Belly	60.25	26.5	7.38	10.20	228	34.60	3041	3041	2933	31.1	3051	3125	314	3191	3164	3166	3142	3129
FTA001102BR	FT3509-1	30	Belly	48	23.38	8.5	10.50	138	32.66	3134	3134	3033	3134	3048	3134	3061	3133	3072	3131	309	3124
FTA001093BR	FT3525BR	32	Cube	28.5	20.5	17.5	20.10	320	35.73	3353	3353	3234	3399	3287	3444	3337	3485	3376	3521	3407	3553
FTA001089BR	FT3549	30	Comp*	37.5	20.99	16.63	18.76	320	33.05	3086	3086	2956	3131	3056	3157	3121	3219	3117	3262	3217	3305
FTA001110BR	FT4018	33	Cube	26	20.5	18.5	21.25	320	37.23	3446	3446	3335	3446	3374	3446	3402	3446	3412	3446	3417	3446
FTA001105BR	FT5008	41	Belly	59	28	8.75	10.50	169	47.28	4138	4138		4269		44		4531		4637		4701
FTA001106BR	FT5033	45	Belly	56.75	26.66	10.6	12.86	169	46.24	4566	4566	4462	4604	4557	4624	4586	4623	4585	4599	456	4567
FTA001104BR	FT5899	51	Tall Flat	44	21.5	15.75	18.75	229	55.10	5249	5249	5060	5299	5167	5267	5348	5398	5336	5448	5396	5498
FTA001129BR	FT8202	73	Flat	66.88	27.44	11.69	14.19	138	76.70	7628	7628	7349	7628	7328	7628	7302	727	7628	7621	7224	7599

\* Compartment

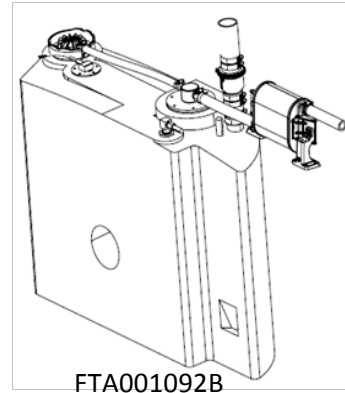
# FLVV – Fluid Level Vent Valve



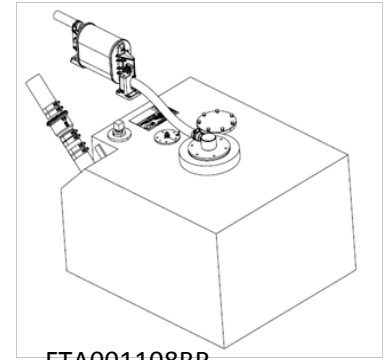
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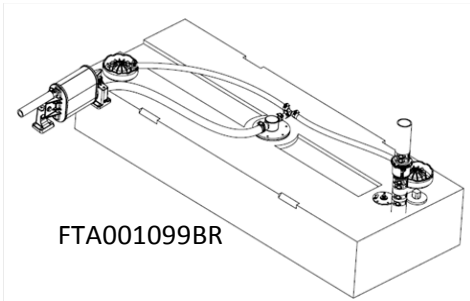
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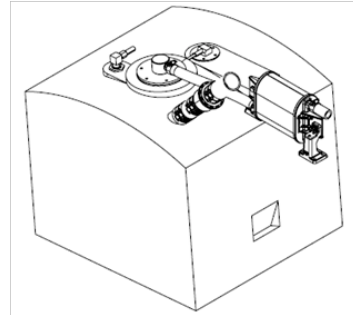
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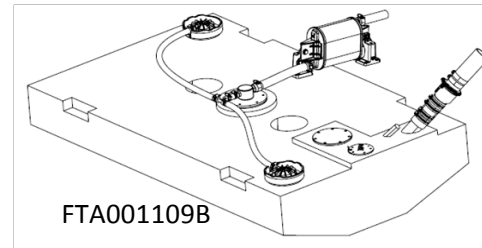
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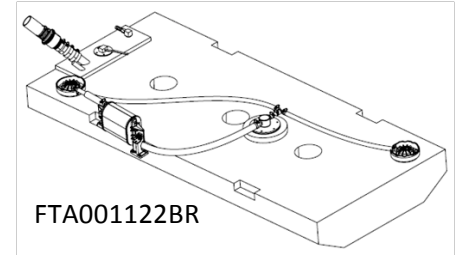
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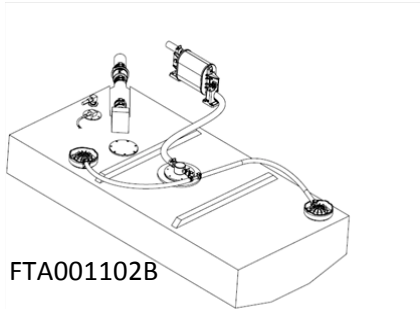
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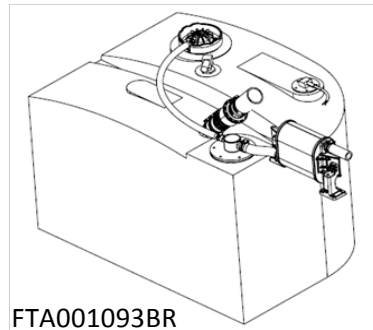
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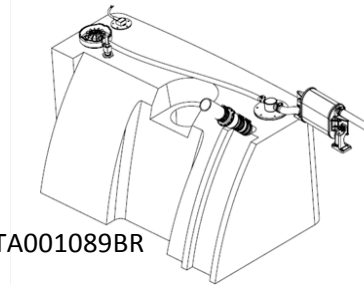
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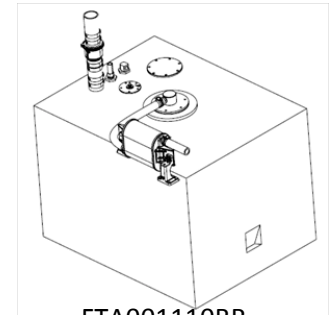
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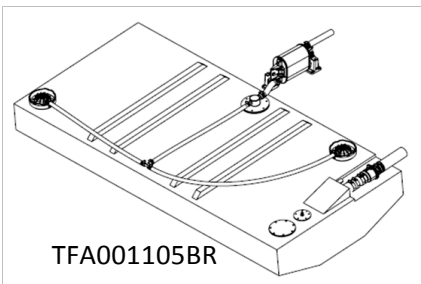
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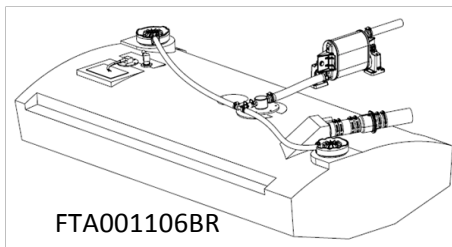
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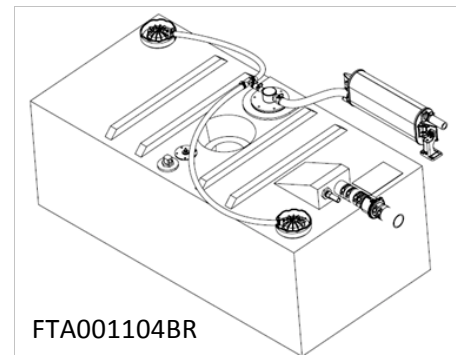
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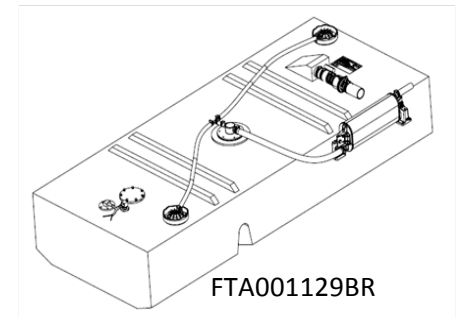
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