



SEASTAR
SOLUTIONS®

MARINE FUEL SOLUTIONS



BluSkies



INCA
MOLDED PRODUCTS



CUSTOM MOLDED FUEL TANKS

DIURNAL FUEL SYSTEMS

ULLAGE VALVES

CARBON CANISTERS

DECK FILLS

SYSTEM ACCESSORY COMPONENTS



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WHAT IS ROTATIONAL MOLDING?

Rotational plastic molding is an extremely versatile and economic process that relies on bi-axial rotation and heat to produce parts with exceptional strength. The finished result is a stress-free, lightweight and seamless design that is very durable.

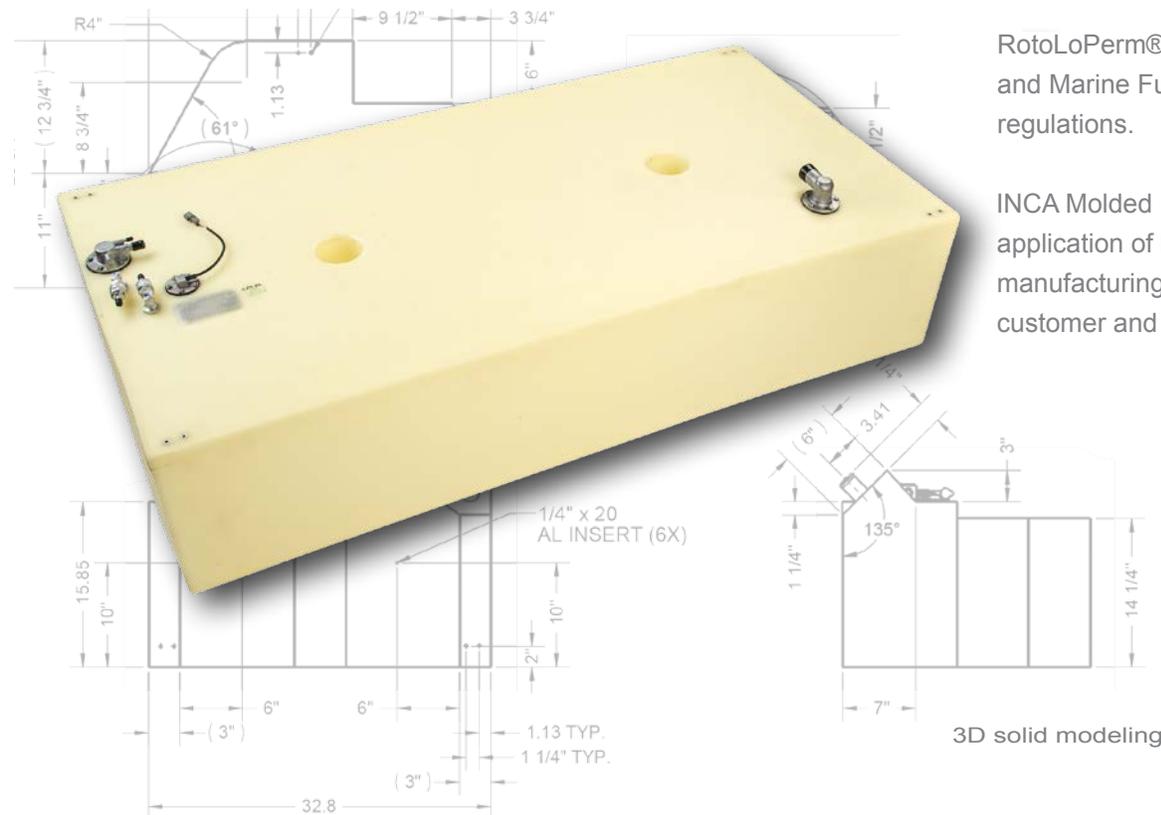
RotoLoPerm® - Multi-Layer Marine Fuel Tank Technology

RotoLoPerm® is Your Best Evaporative Emissions Solution To Reach Marine Fuel Tank Compliance.

INCA Molded Products has an exclusive marine licensing agreement with Centro Inc. of North Liberty, Iowa, to produce marine fuel tanks using its patented multi-layer RotoLoPerm process.

RotoLoPerm® complies with Clean Air Act and Marine Fuel Tank Permeation regulations.

INCA Molded Products customizes the application of RotoLoPerm® to the precise manufacturing specifications of each customer and has in-house engineering expertise to assist in developing the best design with special fittings for each marine fuel tank manufactured.



A variety of plastic resins are available to use, depending upon the product specifications, strength requirements and resistance to other substances required. Materials that may be selected include polyethylene, nylon, polycarbonate, polypropylene, polyvinylchloride (PVC) and custom formulated compounds. Multi-layer options combine various materials to open more applications

The flexibility of INCA's process allows for a wide range of shapes and sizes to be manufactured. The company also offers products in a wide range of colors. In addition, graphics can be molded directly in the product.

RotoLoPerm® Advantages

The RotoLoPerm® patented process XLPE/Barrier/XLPE combination technology offers these advantages over the traditional plastic marine fuel tank, metal fuel tank, and other competing low permeation technologies:

- Certified by design - Not subject to recall
- Ultra-low permeation levels
- Successfully passed standard marine fire test
- Excellent hot and low temperature impact strength properties
- Abrasion resistance
- Moldability
- Uses same rotomolding tooling with minor adjustments
- Cost-effective
- Retains the overall value of proven crosslink polyethylene fuel tank technology

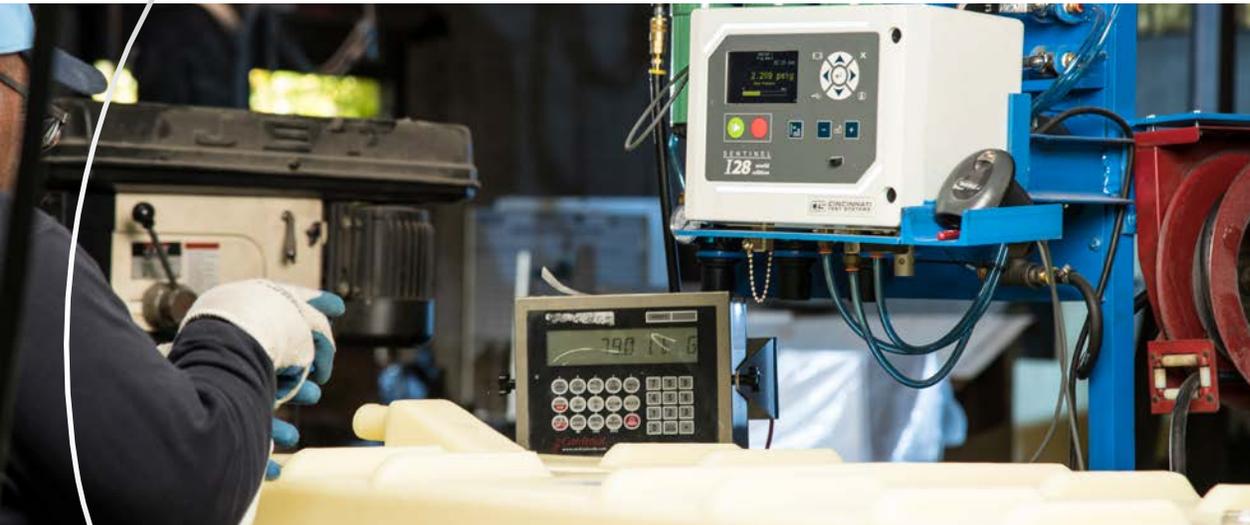
WHY USE ROTATIONAL MOLDING?

Many advantages make rotational molding the best choice for fuel tanks. One of the greatest advantages is the reduced cost of tooling. The cost of having a mold built for rotomolding is significantly less than for most other plastics processes.



Other benefits of rotational molding include:

- Capable of meeting EPA/CARB requirements
- Design flexibility to meet specifications
- One-piece seamless construction
- Metal inserts and fittings as integral parts
- Uniform wall thickness
- Resistance to corrosion
- Ribs and cones for stiffening
- Variety of colors and finishes
- Lightweight
- Excellent load-bearing properties
- U.V. resistance
- Product longevity



QUALITY



flexibility

What is RotoLoPerm®?

The RotoLoPerm® technology uses a special barrier layer between inner and outer layers of crosslinked polyethylene.

This material meets these standards for marine fuel tanks:

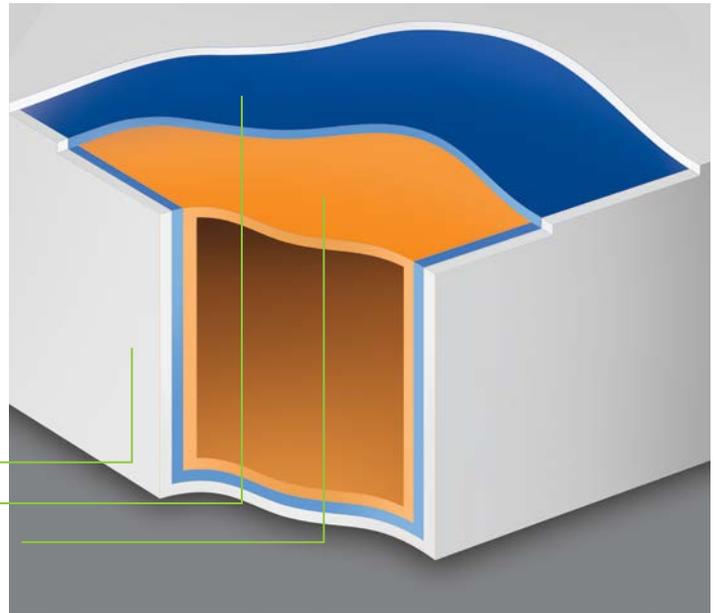
- EPA Evaporative Emissions standard
- CARB Executive Order
- U.S. Coast Guard and ABYC requirements

No additional permeation testing is needed for marine fuel tanks using RotoLoPerm®.

RotoLoPerm® is certified by design - Not subject to recall.

RotoLoPerm® Layers:

- 1 Outer XLPE Layer — UV/abrasion resistance
- 2 Middle Barrier Layer — Permeation resistance
- 3 Inner XLPE Layer — Impact/moisture and fuel resistance



Custom tank configuration



understanding liquids



WEIGHT, BALANCE AND BALLAST

INCA
MOLDED PRODUCTS

INCA
MOLDED PRODUCTS

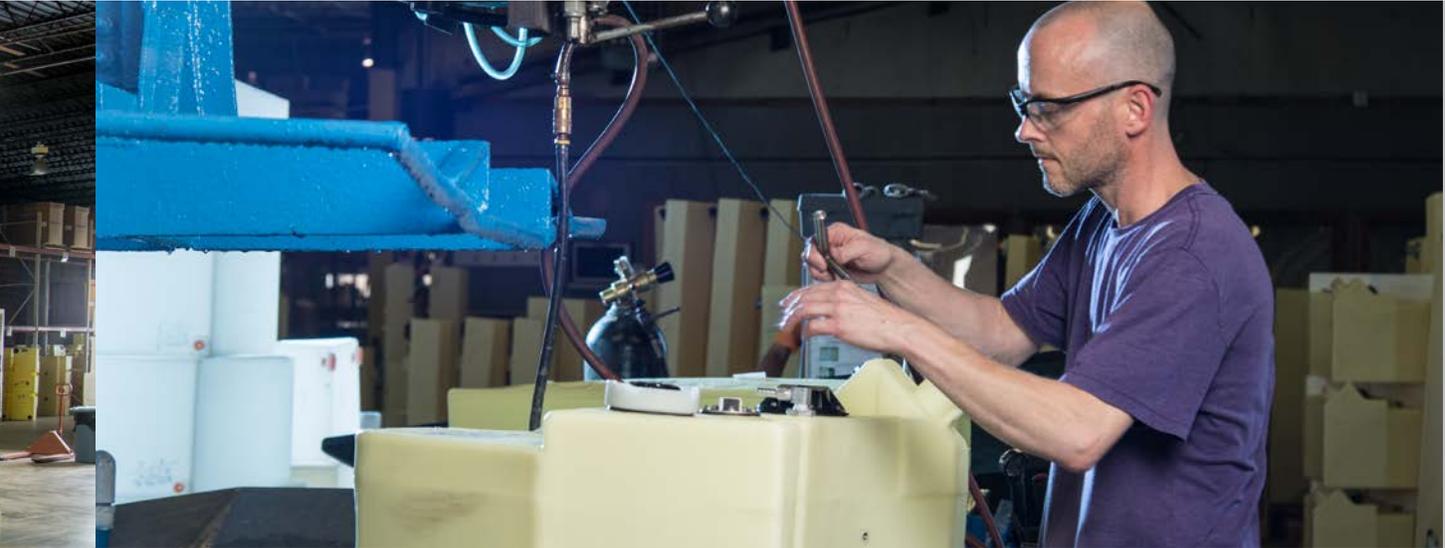
Crosslink Polyethylene Advantages

INCA Molded Products pioneered the development of custom rotationally molded plastic fuel tanks for the marine industry. Today, INCA has manufactured over 1.5 million fuel tanks for marine, agricultural, and industrial use.

The Crosslink Polyethylene tank technology offers many advantages over fuel tanks made of metal or other materials:

- Custom design and engineering, using Solid Works 3D Solid Modeling
- Design flexibility and configured to customers' requirements
- Uniform wall thickness

- Crosslink Polyethylene Resin (XLPE)—For fuel tanks of all types, gas and oil storage tank—to improve impact strength, provide higher stress crack resistance and enhance weatherability. (Contains a crosslinking agent that interacts in the molding cycle to form a crosslinked molecular structure that is ideal for gas and oil storage tanks, as well as trash containers and parts requiring maximum toughness or durability in cold temperatures. This material meets U.S.Coast Guard fire test requirements.)
- Impact strength
- Environmental stress-crack resistance
- UV stabilization for long-term outdoor protection
- Inserts and fittings able to be incorporated as integral components
- Integrally molded fill and vent
- Variety of colors and textures



ready for installation



- Economical tooling cost
- Hold down features
- Design-based testing—Fire test, shock test, pressure impulse test
- 100% (4.5 psi) pressure check on all tanks
- Product longevity
- Ready for finishing and installation

PRODUCT LONGEVITY

Warranty

INCA offers a two year warranty on each fuel tank.

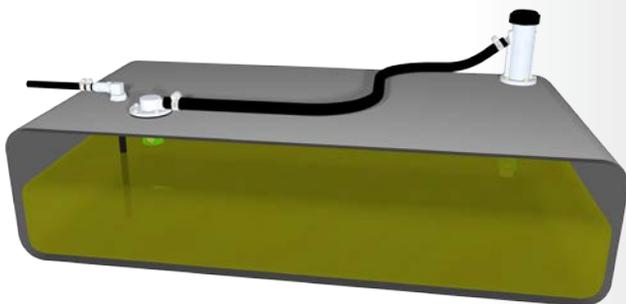
INTEGRATED FUEL SYSTEMS

An integrated fuel system consists of:

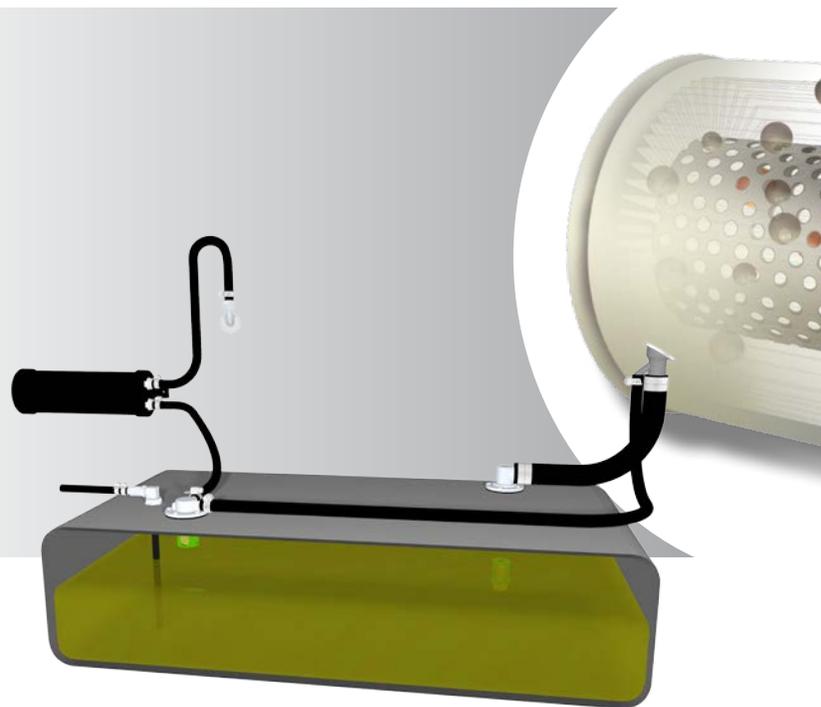
- A low permeation fuel tank, RotoLoPerm®.
- Tank mounted grade rollover valve(s).
- Tank mounted fluid level vent valve.
- Inlet check valve.
- Carbon canister system or pressure relief system.
- Automotive style refueling, automatic nozzle shut-off, fuel nozzle retention and CARB Phase II compatibility.
- Maximum engine fuel flow and minimize hot fuel handling issues.
- Overfill protection is included with each system, preventing the possibility of accidental system over-pressurization.
- Each system is engineered to ensure a lifetime of performance and virtually eliminate service and maintenance.

This system controls diurnal emissions as well as the fuel level of the tank. Overfilling of the tank, fuel spit back through the fill neck and vent tube are eliminated. These systems meet the requirements of the EPA, CARB, and ABYC H-24. INCA works with all of the major fuel system integrators to develop compliant integrated fuel systems.

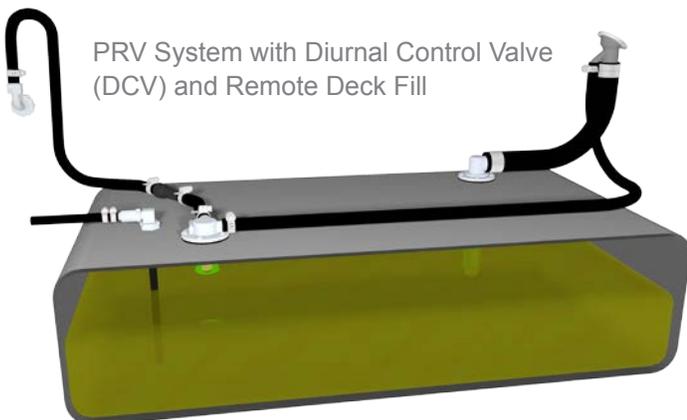
New Pressure Relief Fuel Systems Components



Tank Mounted Direct Fill PRV (Pressure Relief Venting) System



Passive-Purge (Canister) System with Remote Mounted Deck Fill



PRV System with Diurnal Control Valve (DCV) and Remote Deck Fill

Custom Fuel Lines also available

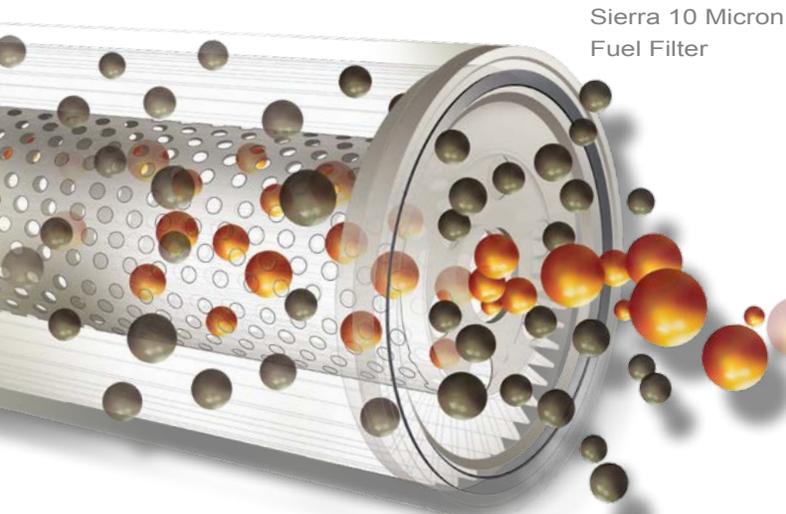
HOSE AND FUEL WATER SEPARATORS

Sierra fuel water separator filters

Today's marine engines work in a demanding environment. Increased levels of sophistication, coupled with ethanol fuel blends, necessitate the use of a high quality fuel filter. Engineered for today's stern drive and inboard engines, along with 2-cycle and 4-cycle outboard high and low pressure fuel systems; Sierra filters are the best in the business. Sierra filters are engineered to offer the ultimate in filtration, separation of water from the fuel supply and provide maximum fuel flow.

10 Micron Filtration – Over 90% Efficiency

Efficiency rating relates to the percentage of particles at a given size that a filter can capture. The higher the efficiency, the higher the percentage of dirt retained by the filter. Many filter manufacturers claim 10 micron filtration but do not guarantee the efficiency. Sierra does.



Sierra 10 Micron Fuel Filter

Stainless Steel or Aluminium Brackets Available

EPA/CARB Compliant Primer Bulbs

Sierra's EP series of primer bulbs are manufactured utilizing a special Fluoroelastomer compound which allows it to exceed the EPA's mandated 15g/m2/24hrs rating.



Stainless Fuel Water Separator Bracket



Fuel Filter



SAE J1527 Type A2

Size 5/8"

Fire-Acol Fuel Vent Hose - Series 369

Shields Fire-Acol Fuel Vent hose resists gasoline/alcohol blended fuel and is fire resistant. It features a weather/UV resistant NBR/PVC cover. Meets USCG type A2, SAE J1527 type A2, ISO 7840 type A2 and NMMA/CE type accepted standards.



Size range:
1/4" - 1/2"

Low Permeation Marine Fuel Hose - Series 368

Complies with EPA and CARB very low permeation requirements. Fuel feed (gasoline up to 85% ethanol blended fuels/diesel/all bio-diesel blends). Meets USCG type A1 15, SAE J1527 type A1-15, ISO 7840 type A1, and NMMA/CE type accepted standards.



Size range:
1 1/2" - 2 3/8"

Fuel Fill Hose - Series 350/355

Meets SAE J1527 type A2 and ISO 7840 type A2 NMMA/CE type accepted standards.



Size range:
5/16" - 3/8"

Silverado Fuel Hose - Series 337

Silverado 4000 fuel line is constructed with a non-permeable THV barrier layer, polyester reinforcement, and a CPE weather and UV resistant cover. Meets all current EPA and CARB standards. Meets SAE J1527 type B1-15.

ABOUT BLUSKIES

Headquartered in St. Charles Illinois, BluSkies is a market leader in the design, development and manufacturing of Original Equipment (OE) and aftermarket compliant marine fuel systems specifically designed for pleasure boat manufacturers.

The company's core focus is to provide innovative technology driven fuel system solutions to meet the real world challenges of a wide range of vessel applications.

WHAT IS A COMPLIANT MARINE FUEL SYSTEM?

A compliant marine fuel system is one that meets the performance, safety and environmental criteria outlined in government regulations and marine industry standards and practices. Due to these regulatory changes BluSkies has developed a series of new technologies to assist boat builders in establishing "diurnal" compliant marine fuel systems. These diurnal fuel systems manage fuel vapor containment, release and fuel delivery in a host of different installed system applications. A summary of sources of these standards are listed below.

ENVIRONMENTAL PROTECTION AGENCY (EPA) RULE SUMMARY

1. EPA regulations require that all fuel system components (including fuel tanks) be low permeation rated.
2. EPA regulations require that fuel vapor (hydrocarbons) emissions (or venting) be captured or treated prior to release to the atmosphere and fuel in a system should not reach areas that are non-low permeation rated.
3. EPA regulations require that no spit-back or well-beck event occur during refueling and the operator should be alerted when the fuel system is sealed.

United States Coast Guard (USCG) Rule Summary

1. USCG regulations require that all fuel tanks & system components be made from appropriate materials.
2. USCG regulations require that all fuel tanks & system components be installed in a safe manner using sound engineering practices.
3. USCG regulations require all fuel tanks & system components be installed in such a manner as to provide operators and the boating public with the safest possible boating environment and user experience.

American Boat & Yacht Council (ABYC) Standard Summary

1. ABYC publish safety and sound boat building practices standards based upon CFR33 & CFR40 for the purpose of interpretation and homologation.
2. These standards categorize CFR's into simple implementable methods for boat builders to follow.
3. These standards address installation, testing, fuel venting, refueling protocols etc., in an effort to assist boat builders to meet CFR's with minimal effort and expense.

ABYC H-24 (Gasoline)

1. ABYC safety and sound boat building practices standards for gasoline fuel systems include CFR40 1060 homologation.
2. This interpretation categorizes CFR40 into simple implementable methods regarding hydrocarbon (fuel vapor emissions).
3. This interpretation combines testing protocols to address both CFR 40 & 33.

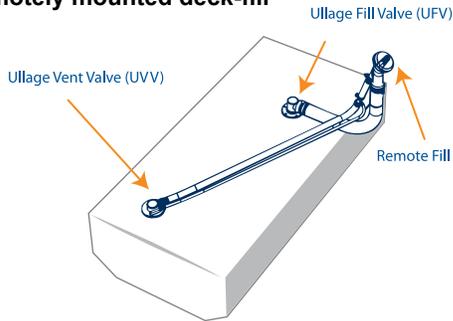
ABYC H-33 (Diesel)

1. ABYC safety and sound boat building practices standards for diesel fuel systems include CFR33 homologation.
2. This interpretation categorizes CFR33 into simple implementable methods transferable to diesel systems.
3. This interpretation includes requirements for expected diesel fuel system performance.

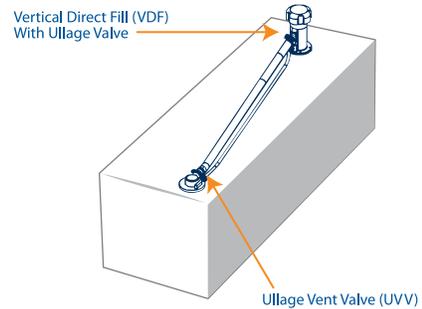
BLUSKIES DIURNAL FUEL SYSTEMS OVERVIEW

Compliant marine fuel system architectures can be broken down into 2 basic system categories (Passive Purge and Vapor Relief (Pressure)). BluSkies subsequently offers 6 basic iterations as identified on this page.

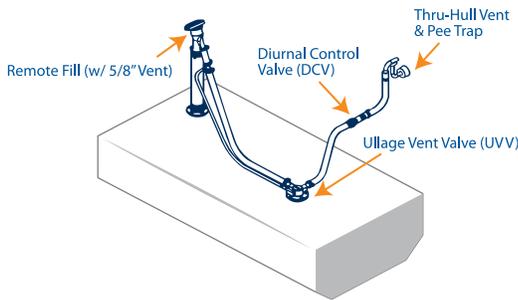
1. Pressure relief venting (PRV) using a remotely mounted deck-fill



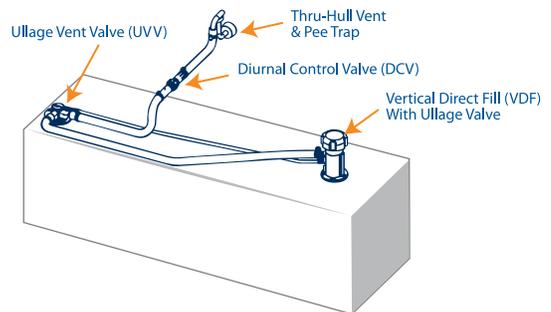
2. Pressure relief venting (PRV) using a direct tank mounted Vertical Direct Fill (VDF)



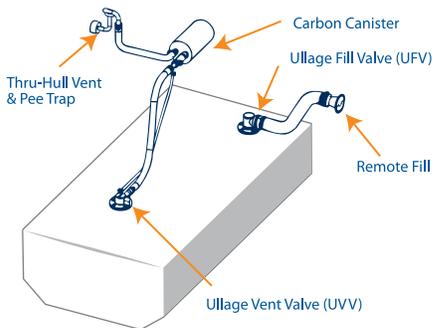
3. Pressure relief venting (PRV) using a Diurnal Control Valve (DCV) and a remotely mounted deck-fill



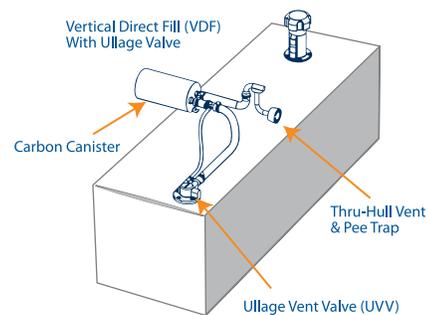
4. Pressure relief venting (PRV) using a Diurnal Control Valve (DCV) and a Vertical Direct Fill (VDF)



5. Passive purge (or carbon canister) using a remotely mounted deck-fill



6. Passive purge (or carbon canister) using a Vertical Direct Fill (VDF)



In most cases the simplest and most cost effective system is the vapor relief system. These systems hold back the vapors that can occur during diurnal temperature cycles (<1PSIG) with strategically placed valves, usually in the cap. These systems are most beneficial when there is little or no room for carbon canister installation.

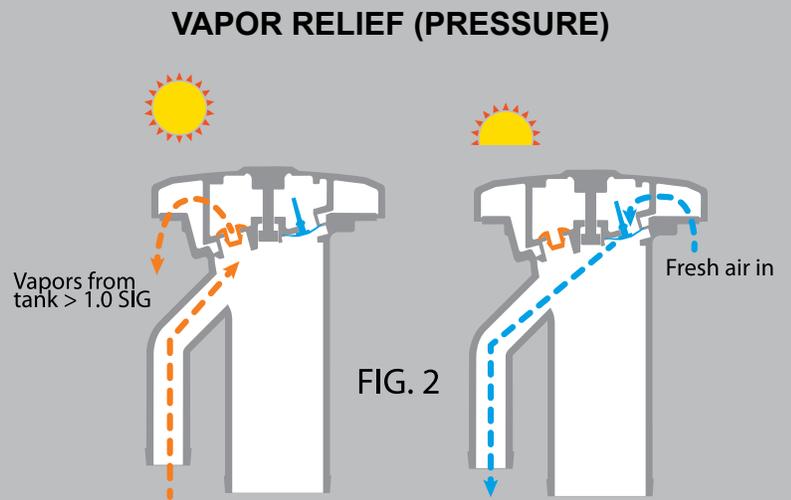
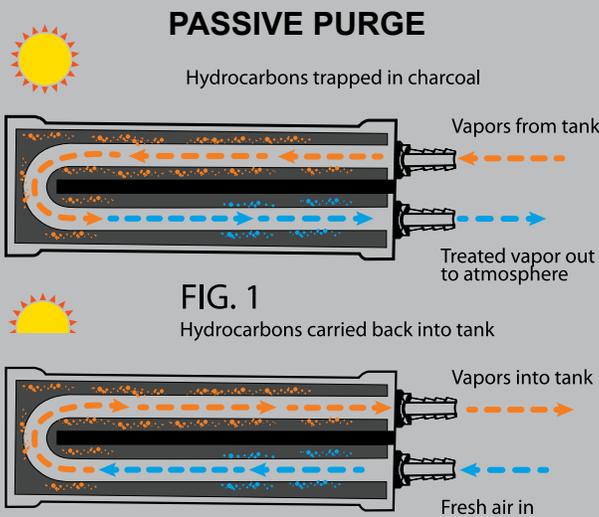
If the boat is produced to meet American Boat & Yacht Council (ABYC) standards, then the fuel tank & system must be designed so venting will be able to occur when the boat is tilted or listing. In many cases additional components such as grade vent valves and multiple outlet vent ullage valves may be needed based upon the individual system requirements.

BLUSKIES DIURNAL FUEL SYSTEMS OPERATION

Emissions And Vapor Management

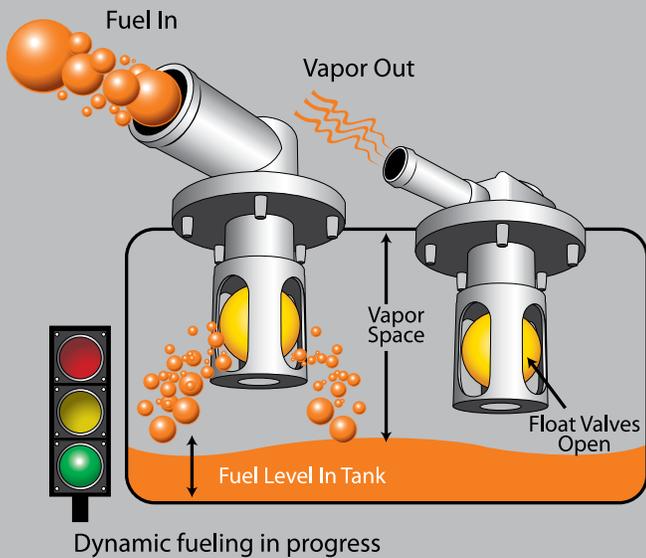
Based upon the location and time of year, the sun, during its orbital path around the USA subsequently causes the ambient temperature to rise and fall. This is referred to as the diurnal temperature cycle. If this diurnal temperature cycle creates sufficient heat to cause the temperature of gasoline in a gasoline tank to rise, then the gasoline will expand up to a maximum rate of ~5%. Additionally this event causes fuel vapors (or hydrocarbons) to vent off to atmosphere.

For marine fuel tanks/systems to be compliant to the Environmental Protection Agency (EPA) regulations, fuel vapors (emissions) from boats must not be allowed to evaporate unfettered through a fuel system vent during the heat of a diurnal temperature cycle. To manage these emissions boat builders have two basic options: 1. They can passively purge (FIG.1) the vapors by installing a series of charcoal filled canisters that treat/capture vapor (hydrocarbons) during diurnal venting. 2. They can manage these vapors via a vapor relief (FIG. 2) system that allows vapors to be released ~1PSIG (~2inHg). Both options create a small pressure (or back pressure) build up at diurnal peak temperature cycles and both options must carry a "Certificate Of Compliance" issued by the EPA.

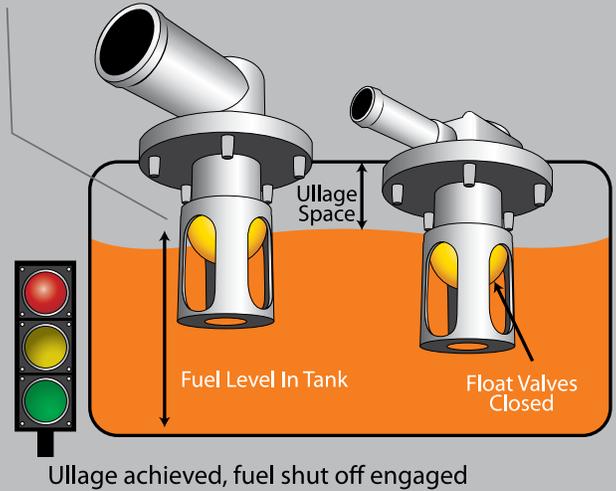


BlusKies

BlusKies



This ball valve eliminates the propensity for spit-back



Vapor Space (Ullage) And Refueling Management

Another fuel system necessity to remain EPA compliant is to keep elevated temperature gasoline from expanding into fuel system areas that are not low permeation rated or otherwise sensitive to raw fuel. A vapor (or ullage) space must be produced at the completion of the filling or refueling operation to ensure systems remain EPA compliant during the diurnal temperature cycle. To effectively manage this system function, BluSkies has created a series of valves that can mount to any marine fuel tank to achieve the appropriate fill level while maintaining ullage space of ~5%. Additionally these valves eliminate the propensity for refueling “spit-back” or tank “well-back”, which is another requirement of the EPA regulation. BluSkies primary ullage valves replace the existing fill and vent locations, while additional grade or tip level valves can be added to any tank to meet American Boat And Yacht Council standards (H-24) which allows vapor venting for boats slanting or sloping when stored, moored, parked or trailered.

The final decision on which system type and ullage valve type and placement that is best for your application should be based on application specific factors such as type and configuration of fuel tank, how much room there is on board for added components, how are the boats likely to be used and stored and of course cost.

Choose individual components to create a compliant system from the following pages or you can turn to our specialists for sound guidance and direction as you go through the process of choosing the appropriate system for your particular vessel application.

ULLAGE (VAPOR SPACE) VALVES

BluSkies patented "ullage valves" provide 3 functions for a compliant marine fuel system.

- The primary function is to drive fuel up the fill hose to activate the automatic fuel nozzle shut off during refueling.
- Their secondary function is to maintain an exact expansion space within installed marine fuel tanks. This space allows for fuel expansion as the diurnal temperature rises and protects sensitive system components from contamination.
- Additionally, BluSkies ullage valves provide the best spit-back and well-back protection of any marine fuel system. Lastly they provide adequate venting for vessels to meet ABYC H-24 Standards.



BK44100000
Vent, 90° Body
Single Outlet



BK44200000
Vent, 90° Body
Dual Outlet



BK58200000
Vent, 90° Body
Dual Outlet



BK58100000
Vent, 90° Body
Single Outlet



BK04200000
Fill, 45° Body



BK04100000
Fill, 90° Body



BK04000000
Fill, Vertical Body

DIRECT FILLS

- Maintains expansion space within installed marine fuel tanks.
- Activates automatic fuel nozzle shut off
- Built in anti spit-back chamber
- Only “direct fill” approved for use with vapor managed or canister vent systems.
- Easy access for “Jerry Can” filling
- High refueling fuel flow rated > 14GPM
- Valved cap manages vapor and vacuum equilibrium (Eliminates the need for additional valves in many instances)
- Meets and exceeds all EPA, CARB & USCG regulations.
- Meets and exceeds all ABYC and marine industry standards

Tethered Ratcheting Self-Venting Cap



Part No.	Size	Description	Hose Barb	GRD
DF52500000	5.25"	Direct Fill w/PRV	5/8" Hose Barb	-
DF85000000	8.50"	Direct Fill w/PRV	5/8" Hose Barb	-
DG52500000	5.25"	Direct Fill w/PRV	5/8" Hose Barb	w/ GRD
DG85000000	8.50"	Direct Fill w/PRV	5/8" Hose Barb	w/ GRD
DS52500000	5.25"	Sealed Direct Fill	5/8" Hose Barb	-
DS85000000	8.50"	Sealed Direct Fill	5/8" Hose Barb	-
VD52500000	5.25"	Direct Fill w/PRV	5/8" & 1/4" Hose Barb	-
VD85000000	8.50"	Direct Fill w/PRV	5/8" & 1/4" Hose Barb	-
VG52500000	5.25"	Direct Fill w/PRV	5/8" & 1/4" Hose Barb	w/ GRD
VG85000000	8.50"	Direct Fill w/PRV	5/8" & 1/4" Hose Barb	w/ GRD
VS52500000	5.25"	Sealed Direct Fill	5/8" & 1/4" Hose Barb	-
VS85000000	8.50"	Sealed Direct Fill	5/8" & 1/4" Hose Barb	-



DIRECT FILL CAPS

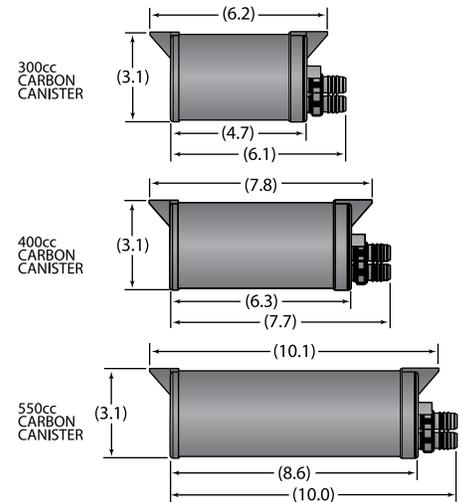
Part No.	Description
BK0700063	Pressure-Relief Direct Fill Cap with Tether
BK0700067	Pressure-Relief Direct Fill Cap
BK0700065	Direct Fill Cap Tether
BK0700075	Sealed Direct Fill Cap



BKDFTK
Direct Fill Pressure Test Kit

CARBON CANISTERS

- Designed to meet stringent CARB and EPA requirements.
- Superior efficient use of Carbon Bed to allow for OE packaged smaller canisters.
- Canisters and ports can be designed/configured to meet your specific needs.
- Carbon canisters are designed to be compatible with the harsh marine environment.
- Insulated models available for engine compartment mounting.



Part No.	Description
BK0550001	52/182 Gallons Maximum Capacity 300CC
BK0550011	52/182 Gallons Maximum Capacity 300CC w/ Heat Wrap
BK0550002	69/242 Gallons Maximum Capacity 400CC
BK0550012	69/242 Gallons Maximum Capacity 400CC w/ Heat Wrap
BK0550003	95/333 Gallons Maximum Capacity 550CC
BK0550013	95/333 Gallons Maximum Capacity 550CC w/ Heat Wrap

DECK FILLS

Available in a variety of composite and stainless steel combinations, for use with gasoline, diesel, water and waste. Gasoline versions meet or exceed all EPA, CARB, & ABYC regulations and standards. Gasoline versions are EPA certified and can be used to comply with diurnal mandates outlined in 40CFR Parts 1060.



Selecting a Diurnally Managed Deck Fill

1. 30° Body (Model Yr. 2015)
15° Body
Straight Body
2. Stainless Steel Body
Composite Body
3. Composite Black Cap
Stainless Steel Cap
4. GAS
 DIESEL
 WASTE
 WATER

Selecting an Always Sealed Deck Fill

1. **Standard**
Stainless Steel Body
Stainless Steel Cap
2. Straight Body
30° Body
3. With 5/8" Vent
W/O 5/8" Vent

DECK FILLS (CONTINUED)

DECK FILL - GAS SIZE 1.5"				
Part No.	Description	Body Style	Cap Style SS Gas	Cap Style Comp Gas
BK0110001	Deck Fill-Vent Combo w/PRV	15 degree Composite Body		X
BK0110004	Deck Fill-Vent Combo w/PRV	15 degree Composite Body	X	
BK0110011	Deck Fill-Vent Combo w/PRV	Straight Composite Body	X	
BK0110015	Deck Fill-Vent Combo w/PRV	Straight Composite Body		X
BK0110020	Deck Fill-Vent Combo w/PRV	35 degree Composite Body		X
BK0110025	Deck Fill-Vent Combo w/PRV	35 degree Composite Body	X	
BK0160001	Deck Fill-Vent Combo w/PRV	Straight SS Body	X	
BK0160005	Deck Fill-Vent Combo w/PRV	15 degree SS Body	X	
BK0170001	Deck Fill	Straight SS Body -Handle Cap		
BK0170002	Deck Fill	30 degree SS Body Handle Cap		
BK0170003	Deck Fill-Vent Combo	Straight SS Body -Handle Cap		
BK0170004	Deck Fill-Vent Combo	30 degree SS Body Handle Cap		

DECK FILL - DIESEL SIZE 1.5"				
Part No.	Description	Body Style	Cap Style SS Gas	Cap Style Comp Gas
BK0110008	Deck Fill-Vent Combo w/PRV	15 degree Composite Body	X	
BK0110014	Deck Fill-Vent Combo w/PRV	Straight Composite Body	X	
BK0160002	Deck Fill-Vent Combo w/PRV	Straight SS Body	X	
BK0160008	Deck Fill-Vent Combo w/PRV	15 degree SS Body	X	

DECK FILL - WATER SIZE 1.5"				
Part No.	Description	Body Style	Cap Style SS Gas	Cap Style Comp Gas
BK0110009	Deck Fill-Vent Combo w/PRV	15 degree Composite Body	X	
BK0110013	Deck Fill-Vent Combo w/PRV	Straight Composite Body	X	
BK0160003	Deck Fill-Vent Combo w/PRV	Straight SS Body	X	
BK0160006	Deck Fill-Vent Combo w/PRV	15 degree SS Body	X	
BK0160007	Deck Fill-Vent Combo w/PRV	15 degree SS Body	X	

DECK FILL - WASTE SIZE 1.5"				
Part No.	Description	Body Style	Cap Style SS Gas	Cap Style Comp Gas
BK0110010	Deck Fill w/PRV	15 degree Composite Body	X	
BK0110012	Deck Fill w/PRV	Straight Composite Body	X	
BK0160004	Deck Fill w/PRV	Straight SS Body	X	

SYSTEM ACCESSORY COMPONENTS

The accessory items listed in this section are critical miscellaneous items needed to build a complete compliant system. Additional versions / styles / sizes of the items shown may also be available.



BK0280025

Diurnal Control Valve



High Flow Fuel Valve (For use with vapor relief systems)

Part No.	Description
BK0280004	1PSI Anti Siphon Demand Valve (ASDV) 3/8" NPT, 3/8" Barb
BK0280005	1PSI Anti Siphon Demand Valve (ASDV) 1/2" NPT, 3/8" Barb
BK0280006	1PSI Anti Siphon Demand Valve (ASDV) 1/2" NPT, 1/2" Barb
BK0280007	1PSI Anti Siphon Demand Valve (ASDV) 1/2" NPT, 1/4" Barb
BK0280008	1/2 PSI Anti Siphon Valve 3/8" NPT 3/8" Barbed
BK0280009	1 PSI Anti Siphon Valve 1/2" NPT 1/2" Barbed



Grade Vent Valves

Part No.	Description
BK0280010	Grade Vent Valve 1/4" Hose Barb with Gasket (GVV)
BK0280015	Grade Vent Valve 3/8" NPT x 5/8" Hose Barb



Barbed Tee Fittings

Part No.	Description
BK0280037	1/4" x 1/4" x 1/4" N White
BK0280039	5/8" x 5/8" x 1/4" N White
BK0280043	5/8" x 5/8" x 5/8" N White

MOTORIZED BALL VALVE

When used as part of a compliant fuel system, these high quality motorized ball valves (MBV's) ensure adherence to ABYC marine safety standards.

Strength

While the durable polymer housing ensures IP rating, the stainless steel body makes the MBV's ideal for high moisture and corrosive salt water environment applications.

Motor

12 Volt, fast operating and extremely reliable, these MBV's have visual indication of open and closed positions.

Safety

The MBV's automatically default to closed position in the event of power loss or when the ignition is turned off.

Seal

Viton seals make these MBV's ideal for high ethanol fuel blends.

Robust

Up to 50,000 cycles.

Benefits

1. Essential for marine systems, these MBV's come standard with manual override.
2. With a standard 1/2" internal diameter, these MBV's are ideal for high flow applications as seen on today's large horse power motors with high GPH fuel consumption rates.
3. Installed at or close to the fuel tank these MBV's prevent potential head or diurnal pressure from being transferred to the fuel supply line.



Motorized Ball Valve 1/2" P# TBA

Product Size	NPT 1/2"
Maximum Working Pressure	188 PSI
Rated Voltage	DC12V
Wiring Control Method	CR2 02 for Spring Return Valve, Signal Feedback Function
Working Current	≤80MA (500 mA shown on the lable reflects the minimum current of external power)
Open/Close Time	≤3-5S
Life Time	50,000 cycles
Valve Body Material	304 Stainless Steel
Actuator Material	Proprietary Engineered Plastics
Sealing Material	Viton
Actuator Rotation	90°
Max. Torque Force	1.5 lbf.ft
Cable Length	12 inches
Environment Temperature	5°F - 122°F
Liquid temperature	36°F - 248°F
Manual override	Yes
Indicator	Yes
Protection class	IP67
Wire length	12"
End connector	'Optional' Deutsch (Female)

How To Operate The Manual Override Feature

1. Manual override is only permitted to use when the power is off.
2. "O"- open, "S"- close.
3. Lift the button and turn it left or right, gently.
4. Press the button back down after power on.
5. Visual indicator valve position; the line is parallel (with pipe), when the valve is open and vertical when the valve closed.

FUEL PRIMERS

Compatible with current ethanol blended fuels. Epa / carb certified assemblies are available.



- EPA And CARB Compliant
- Exceeds All ABYC Standards
- Simple Palm Pump Priming (P3)
- Proprietary Piston Seal Technology
- Rugged Durable Construction
- Delamination Proof Design
- Will Not Kink Or Fold Flat
- Will Not Shrink Or Swell
- High Ultraviolet Resistance
- 5 Psi Back-pressure Relief System
- Spring Loaded Check Valves (Primes At Any Angle)
- Integrated Hose Barbs
- Consistent Priming Performance
- Primes Easily At 0° (F) - 135° (F)
- High Fuel Flow Rated
- Five Year Warranty
- Patented Technology

GASOLINE FUEL SYSTEM VALIDATION & TESTING SERVICES

BluSkies offers one of the marine industry's most comprehensive validation and compliant fuel capacity optimization services. These comprehensive evaluations include the following value added services:

1. Calculation of tank and system capacity, identification and indication of optimum fuel ullage component placement to maximize capacity with minimal or zero deck/tool modification or vessel structural intrusion.
2. Computer simulation modeling to ensure that each fuel systems operational design criteria meets American Boat & Yacht Council (ABYC) H-24 tilt study and venting protocols including system safety and functional design standards.
3. Physical functional system refueling validation that each system meets American Boat & Yacht Council (ABYC) H-24 spit-back and well-back GPM refueling standards. (Representative system tested at BluSkies facility).
4. BluSkies will provide you comprehensive reports to keep on file, which includes a certificate of compliance for each fuel system (family) needed for boat builders to comply with CFR 40 (EPA regulation).



DIESEL FUEL SYSTEMS

BluSkies ullage valves can be a simple viable solution in the development of ABYC compliant diesel fuel system. System matching is available with one of our many deck fill options.

ABYC H33 States That:

The installed fuel system shall be designed so that a fuel temperature rise of 60°F (33°C) shall not cause liquid fuel to spill into the boat or the environment(A fuel system designed to contain five percent fuel expansion is one method of meeting this requirement).

The fuel vent system shall be designed to prevent spilling liquid fuel into the boat, or the environment, when tested while fueling the boat in accordance with the boat manufacturer's instructions.

There must be no blow back of fuel through the fill fitting when filling at a rate of 9 gpm (34 lpm) from 1/4 to 3/4 of the capacity on the tank label. For fuel tanks of 25 gallons (95 liters) capacity or less, the fill rate may be reduced to 6 gpm (23 lpm).

Call for additional information on BluSkies Diesel Systems.

ABYC H33 COMPLIANT



FUEL SYSTEM COMPATIBILITY

BluSkies fuel system components have been tested and validated as compatible when used together as a complete system. BluSkies components perform beyond the operational parameters required to meet Environmental Protection Agency (EPA) and American Boat & Yacht Council (ABYC) refueling, spit-back, ullage, venting and fuel supply protocols.

BluSkies ullage valves function to effectively manage refueling requirements when used in conjunction with a BluSkies deck fill per CFR40 Part 1060.101(f) (3) (i) & (ii). BluSkies Anti-Siphon Demand Valve (ASDV) keeps fuel in the fuel tank during pressure cycles per ABYC H24.15.9. When used in conjunction with a BluSkies deck-fill the ASDV has a combined maximum KPa value of 6. It is not known what the KPa value is used with a non BluSkies deck fill.

BluSkies fuel system components have not been tested or validated used in conjunction with non-BluSkies fuel systems.

Use of BluSkies individual components on non-BluSkies fuel systems is NOT recommended and may:

1. Void warranty protection.
2. Invalidated EPA compliance.
3. Impede engine performance.
4. Impede fuel system performance.

BluSkies fuel systems are not limited by fuel tank/boat type or size. These systems are installed on runabouts, pontoon boats, cruisers and fishing boats of all kinds etc. including some of the largest and fastest power boats in the US.

Because of BluSkies fuel components are system matched, BluSkies boasts the highest refueling rates of any system currently available, which results in a user experience with the highest rated customer satisfaction.

