



# **FORESPAR<sup>®</sup>**

**MARINE PRODUCTS THAT PERFORM**

• *Marelon Plumbing Systems*



• *Remote Operated Valves*

• *Water Strainers*



• *Vented Loops*



• *Smart Valves*



• *Ball Valves*



**FORESPAR<sup>®</sup>**  
**MARELON**

# **2007-08**

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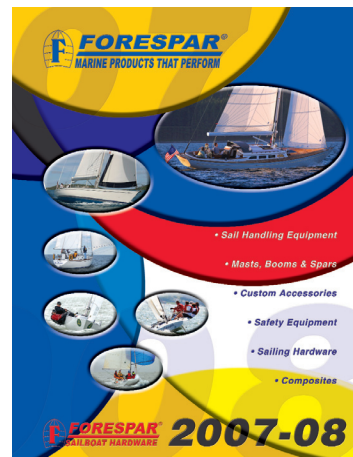
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# TABLE OF CONTENTS

<b>ABYC STANDARDS</b> . . . . .	<b>3</b>	<b>Tank Vent</b> . . . . .	<b>14</b>
<b>ANTI-VENTURI T-HULL</b> . . . . .	<b>10</b>	<b>Threaded Valves</b> . . . . .	<b>11</b>
<b>CARGO MATE™</b> . . . . .	<b>20</b>	<b>Thru-Hull Connectors</b> . . . . .	<b>7</b>
<b>CHOCKS, LINE</b> . . . . .	<b>17</b>	<b>Vented Loop</b> . . . . .	<b>9</b>
<b>CLEATS</b> . . . . .	<b>17</b>	<b>Y-Valves &amp; Connectors</b> . . . . .	<b>9</b>
<b>ELECTRONIC SWICH PANEL</b> . . . . .	<b>3</b>	<b>Water Strainers</b> . . . . .	<b>16</b>
<b>HINGES</b> . . . . .	<b>17</b>	<b>SMART VALVE SYSTEM</b> . . . . .	<b>2</b>
<b>LANOCOTE®</b> . . . . .	<b>17</b>	<b>TABLE PEDESTAL SYSTEM</b> . . . . .	<b>18</b>
<b>MARELON® COMPARISON CHART</b> . . . . .	<b>3</b>	<b>TRANSOM STEP</b> . . . . .	<b>17</b>
<b>MINI GALLEY®</b> . . . . .	<b>19</b>		
<b>MOTOR MATE™</b> . . . . .	<b>20</b>		
<b>NOVA LIFT™, NOVA LIFT WITH WINCH</b> . . . . .	<b>20</b>		
<b>PLUMBING</b>			
<b>Ball Valves</b> . . . . .	<b>5</b>		
<b>Deck Fills</b> . . . . .	<b>15</b>		
<b>Drains</b> . . . . .	<b>14-15</b>		
<b>Elbows</b> . . . . .	<b>8</b>		
<b>Engine Flush Out</b> . . . . .	<b>16</b>		
<b>Flowtech Performance Valve</b> . . . . .	<b>16</b>		
<b>Miscellaneous Plumbing</b> . . . . .	<b>15-16</b>		
<b>Scoop Strainers</b> . . . . .	<b>5</b>		
<b>Seacocks, Flange Mounting</b> . . . . .	<b>6</b>		
<b>Tailpipes</b> . . . . .	<b>8</b>		

FOR SAILBOAT PRODUCTS SEE SAILBOAT CATALOG



## LIMITED WARRANTY

1. Marelon products manufactured by Forespar Products Corporation warrants all products to be free from defects in material and workmanship under normal use and with normal maintenance for a period of thirty six (36) months from the date of initial sale to end user or installation by an OEM. The Limited Warranty is extended to the original retail purchaser of product direct or vessel equipped with Marelon components by an authorized Marelon OEM. Warranty does not run to any subsequent purchaser. Proof of purchase is required.
2. It is a condition of this Limited Warranty that the product has been given reasonable care, and that damage has not resulted from improper installation, accident, negligence or misuse including undersized product for performance required or from unauthorized alterations or disassembly.
3. All claims under this Limited Warranty must be made directly to Forespar Products Corporation at the address set forth within thirty (30) days after discovery of the defect. Forespar Products Corporation may require any product claimed to be defective to be returned to its factory for examination, transportation charges prepaid.
4. The obligations of Forespar Products Corporation under this Limited Warranty are limited to repairing or replacing such products which shall be determined by Forespar Products Corporation to have been defective in materials or workmanship. Forespar Products Corporation does not under any circumstances assume responsibility for any incidental or consequential damages incurred in connection with use of its products.

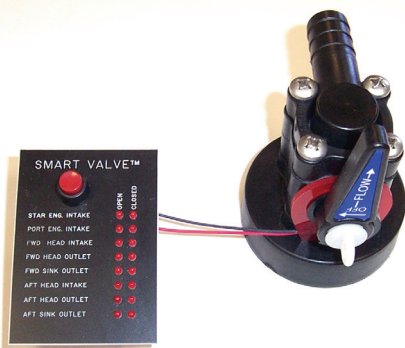
5. Forespar Products Corporation reserves the right to improve its products through changes in design and/or material without incurring any obligation to incorporate such changes in products already completed, sold and/or in the hands of purchasers.
6. Exclusion of Warranties: This Limited Warranty is in lieu of all other express Warranties, and shall expire thirty six (36) months from date of initial sale. Any implied Warranty, including the Warranty of Merchantability and fitness for a particular purpose, is limited to the duration of this Limited Warranty.
7. Some states do allow limitations on how long an implied Warranty lasts or the exclusion of incidental or consequential damages, so the above limitations or exclusion may not apply to you. This Warranty gives you specific legal rights and you may also have other rights which vary from state to state.
8. The following items are excluded from this Warranty:  
Thru-Hull screens-all styles. Vented Loop duck bill vents-all sizes. Valves locks-all sizes. Smart Valve and Smart Valve ROV valve handle sensors-all sizes. Smart Valve and Smart Valve ROV circuit boards-all sizes. #920178 clear covers for MF 810 Water Strainer (#906066). Flowtech Performance Valves #'s 905106 and 905109.

# SMART VALVE™ & SMART VALVE ROV™

## SMART VALVE™

The **Smart Valve™** provides the safety and assurance of a visual display panel showing which seacock is open or closed-without having to go below and pull up floorboards to make a visual inspection. Sensors, factory installed, on any new single port, Marelon Integrated Plumbing System flange mounted valve use state-of-the-art sensing technology to monitor the valve's handle position. Display panels use red and green LED lights to indicate which valve is open (green LED) or closed (red LED). Simple two wire lead from each valve makes installation easy. Power is supplied directly to the panel only. Panels are offered in 4, 8 and 12 valve combinations with valve use names (i.e. "Head Intake") engraved on each panel.

**Please use Smart Valve™ order form for ordering instructions and to note valve names for engraved panel.**



Part No.	Model
930150	4 valve/panel
930151	8 valve/panel
930152	12 valve/panel

**Please specify 12v or 24v systems**

*For OEM valve installations only*



Smart Valve Panel



Typical Smart Valve Installation

## SMART VALVE ROV™

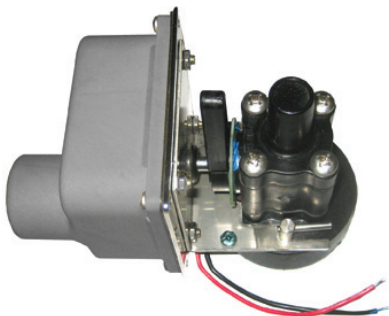
### FORESPAR® HAS TAKEN SEACOCK CONTROL TO A NEW LEVEL.

With the success of the **Smart Valve™**, the next logical step was to make valves remote controlled. **Forespar®** can now offer the **Smart Valve ROV™** (Remote Operated Valves) to boat builders wishing to offer their customers the added convenience of operating their seacocks from the helm (or wherever you wish to mount the control panel) all without the need to go below, get on your knees and reach into the bilge to open or close the valve(s).

Powerful sealed motors open or close the valve(s) with a push of a button. Any valve suitable for **Smart Valve™** sensors can be made (at the factory) to be remote operated. Four wires (two for the sensors, two for the motor) are lead to the **Smart Valve ROV™** panel that is custom engraved and has the red and green LED indicator lights. As with the **Smart Valve™**, power is supplied directly to the control panel only. ROV panels come in 4 & 8 valve sizes only.

**Forespar®** can also supply **Smart Valve ROV™** Systems that can be used with the new, state-of-the-art power distribution & systems integration "CAN-BUS" type systems.

**Please use Smart Valve ROV™ order form for ordering instructions and to note valve names for engraved panel.**



Part No.	Model
930145	1/2" - 3/4" valves
930146	1" - 1-1/4" valves
930147	1-1/2" - 2" valves

*For OEM valve installations only*

**Please specify 12v or 24v systems**

## OPTIONAL ELECTRONIC PANEL

### For Use With Smart Valves™ Or Smart Valve ROV™ Systems

This optional electronic relay board can control up to four electrical devices. You can now wire your engine starter switch to this board so if the engine seacock is closed, the engine will not start until the valve is opened, either manually with the **Smart Valve™** or remotely with the **Smart Valve ROV™**. This feature will eliminate operator errors such as turning on the macerator pump before opening the holding tank discharge seacock or starting the generator before opening the intake seacock. These costly repairs can be eliminated with Smart Valve™ technology installed on your **Marelon®** seacocks. The Optional Device Control boards are in "gangs" of four switches only. Use one or all four. Simple "plug and play" via simple phone cord style jacks make this addition simple. The boards mount behind the electrical panel or dash board out of view.



These Smart Valve™ systems allow the OEM boat builder a wide range of options to mix and match remote controlled valves (ROV's) with indicated (open/closed) valves on the same vessel. Add to this the electrical device "defeat" option and the vessels operation and safety is greatly enhanced as will the boat owner's piece of mind. These systems are ideal for chartered vessels or multiple owner vessels as one does not have to remember how the "partner" left the status of the valves.

All **Smart Valve™** and **Smart Valve ROV™** Systems are compatible with the new "CAN-BUS" power distribution systems allowing even more "Systems Integration" and features to the OEM boat builder.

#### Part No. Model

930153

Device Enable/Disable Feature

Please specify 12v or 24v systems

## A.B.Y.C H-27, Seacocks, Thru-Hull Connections And Drain Plugs

And

### ISO/DIS 9093-2 STANDARD, Small Craft - Seacocks & Thru-Hull Fittings - Non-Metallic

THE FORESPAR MARELON BALL VALVES AND THRU-HULL FITTINGS MEET AND EXCEED THE ABYC H-27 AND ISO 9093-2 STANDARDS AS PRESENTLY WRITTEN IN ALL RESPECTS.

As to Physical Property Requirements:

	ABYC Standard	ISO Standard	Marelon Properties
Tensile Strength:	75mPa 10,900 psi	60mPa 9,715psi	121mPa 17,500psi
Flexural Mod.:	3480mPa 505,000psi	2700mPa 391,500psi	4826mPa 700,000psi
Impact Strength:	None	9Kj/m	117j/m

As to Strength Test: 2224N 500lbs.

1500N 337lbs.

2224N 500lbs

## MARELON COMPARISON CHART

	U.V. Degradation	Corrosion Resistance	Abrasion Resistance	Tensil Strength**	Flexural Modulus***	ABYC* Req.	U.L.* Req.	Total Score
MARELON	10	10	10	10 (27,000psi)	10 (1,300,000mPa)	10	10	70
NYLON	6	10	5	10 (12,000psi)	4 (410,000mPa)	0	0	35
ACETAL	5	10	6	5 (10,000psi)	5 (450,000mPa)	0	0	31
PVC	3	10	2	3 (5,015psi)	3 (434,000mPa)	0	0	21
POLYPROPYLENE	8	10	7	2 (4,150psi)	2 (75,000mPa)	10	10	29
BRONZE	10	4	10	10 (35,000psi)	10 (15,000,000mPa)	10	10	64
BRASS	10	0	10	10 (45,000psi)	10 (11,000.00mPa)	0	0	40

\* MINIMUM PHYSICAL PROPERTIES REQUIRED FOR APPROVAL ARE: Tensil strength 10,900psi 75mPa, Flexural modulus 500,000psi 3480mPa

\*\* Value by test to ASTM D638 (American Society of Testing & Materials) Marelon is a registered trademark of Forespar Products Corp.

\*\*\* Value by test to ASTM D790 (American Society of Testing & Materials)

## MARELON®

- ***For Use Above And Below Waterline***
- ***Precision Molded Plumbing Systems***
- ***Complete Freedom From Corrosion***
- ***U.L. Approved***
- ***A.B.Y.C. Approved***
- ***Forespar® “93” series of valves and thru-hull fittings meet all design criteria and exceed all mechanical property requirements specified by the International Standards Organization (ISO150/188) “Small Craft-Seacocks and Thru-hull Fittings-Part 2: Non-Metallic”***

## MARELON®

**Marelon®** is a proprietary formulation of polymer composite compounds using **DuPont®** resins and additives to produce a superior marine-grade product.

### **Benefits to builders include:**

- *Lightweight, yet extremely strong injection-molded parts*
- *Complete freedom from any corrosion*
- *Complete freedom from electrolysis or reaction to any metals*
- *Outstanding operating temperature range (-22° to +176° F.)*
- *Uses in deck hardware (cleats, chocks) and marine plumbing*
- *Outstanding U.V. resistance and color fix*
- **Marelon®** valves offer an unprecedented variety of designs
- *Long term reliability*

### **Benefits to the Boat Owner include:**

- *No bonding (electrical) required*
- *Configurations to fit tight machinery spaces*
- *Minimal maintenance requirements*
- *Ease of installation with standard tools*
- *Accepts adhesives and coatings (bottom paints) easily*
- *Can be used on aluminum, steel, wood or FRP hull forms*
- *Excellent chemical resistance to harsh bilge cleaners*
- *Can be used with or on any metal fittings*
- *Long term reliability*



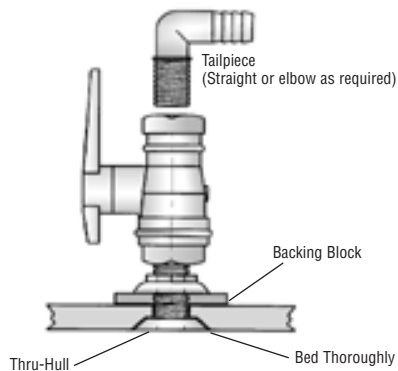
## FORESPAR'S MF 850

Forespar's MF 850 series of Ball Valves are precision molded in high strength **Marelon**<sup>®</sup>. Their great strength, light weight, and complete freedom from corrosion and electrolysis make them the ideal valve for controlling inlet and outlet water requirements above and below the waterline.

Our engineers opened and closed one of our 3/4"(19.05mm) valves 11,000 times, then submerged it in water with an air line pressurized to 40 p.s.i. connected to it. The result was an absolutely leak free condition with no evidence of wear on internal seals.

All valves sold throughout the U.S.A. have N.P.T. type threads. If specified, B.S.P. are available on valves sold outside of America.

The temperature range of **Marelon**<sup>®</sup> is: -40° F to +176° F or -40° C to +80° C



### VALVE MAINTENANCE

All our valves are non-corrosive, but like any moving part in a marine environment, they require regular inspection and lubrication.

Do not fail to actuate the handle and lubricate the seals on a regular schedule (water pump grease or even mineral oil will lubricate seals).



MF 850

Part No.	Model No.	Thread Size	Body Dia.	Body Length	Length w/Handle
905100	MF 850 1/2"	1/2"(12.7mm)	1-7/8"(47.62mm)	3"(76.2mm)	4"(101.6mm)
905101	MF 850 3/4"	3/4"(19.05mm)	1-7/8"(47.62mm)	3"(76.2mm)	4"(101.6mm)
905102	MF 850 1"	1"(25.4mm)	2-3/4"(69.85mm)	4-3/4"(120.65mm)	5-1/2"(139.7mm)
905103	MF 850 1"-1/4"	1-1/4"(31.75mm)	2-3/4"(69.85mm)	4-7/8"(123.82mm)	5-3/4"(146.05mm)
905104	MF 850 1"-1/2"	1-1/2"(38.1mm)	3-1/2"(88.9mm)	5"(127mm)	7-1/2"(190.5mm)
905105	MF 850 2"	2"(50.8mm)	4-1/4"(107.95mm)	5-7/8"(149.22mm)	8"(203.2mm)

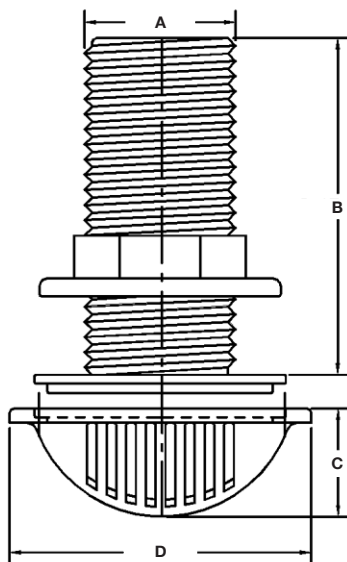
### LIMITED WARRANTY

Forespar<sup>®</sup> accepts no responsibility for valve or thru-hull components which are improperly installed, tampered with or have inadequate access for service and maintenance.

## SCOOP STRAINERS

These high-strength, high-speed, strainers are also made of non-corrosive **Marelon**<sup>®</sup>. Two piece construction allows for greater ease in installation. Available in 3/4"(19.05mm) and 1-1/4"(31.75mm) thread sizes.

**NOTE:**  
Now available in white only



Part No.	Model No.	Thread Size	A	B	C	D
906059	MF 867 3/4	3/4"(19.05mm)	1-1/32"(26.18mm)	2-1/4"(57.15mm)	1"(25.4mm)	3-1/8"(79.37mm)
906060	MF 868 1-1/4	1-1/4"(31.75mm)	1-5/8"(41.27mm)	2-15/16"(74.42mm)	1"(25.4mm)	3-3/8"(85.72mm)
906061	MF 865 3/4	screen only			1"(25.4mm)	3-1/8"(79.37mm)
906062	MF 866 1-1/4	screen only			1"(25.4mm)	3-3/8"(85.72mm)

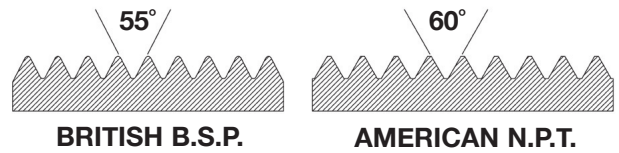
Screens only can be epoxied to the hull to eliminate additional holes in the gel-coat. Scoop screens can also be used over other thru-hulls (flush head styles are best) whenever a force feed is required.

# FLANGE MOUNTING SEACOCKS

## A WORD ON THREAD FORMS

The American standard for tapered or parallel threads have a thread flank angle of 60°. The British standard for tapered or parallel threads have a thread flank angle of 55°. Identification can also be made by inspecting the root and crest of the threads. The truncation of the root and crest of British standard threads are flat. The truncation of the root and crest of British standard threads are round.

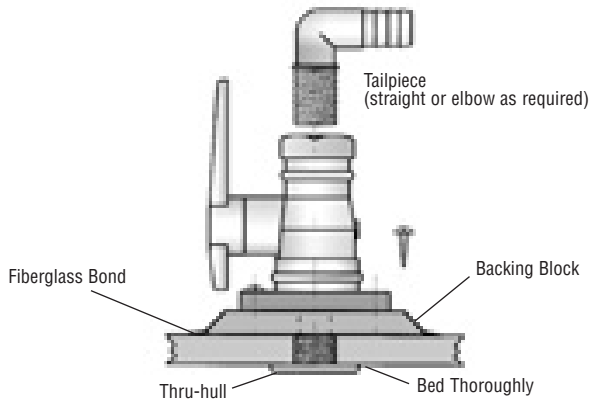
**Forespar®** offers a wide selection of extremely strong and reliable marine grade plumbing fittings. You will find each product to be carefully designed for ease of installation, versatility in application as well as unsurpassed durability.



MF 849

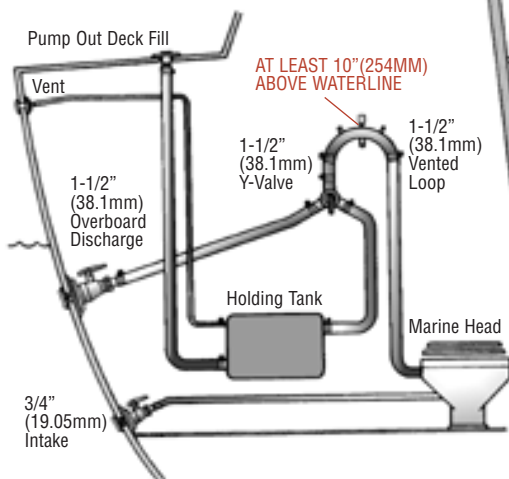


Courtesy of Gemini Catamaran

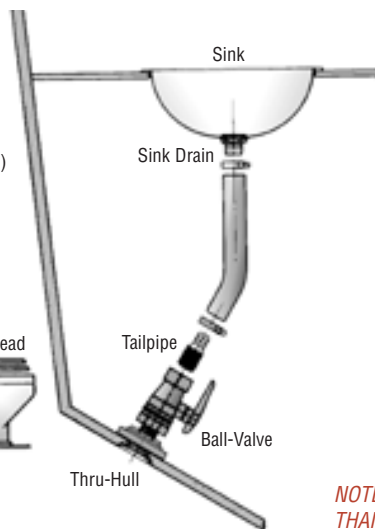


Part No.	Model No.	Thread Size	Height	Height w/Handle	Base
904009	MF 849 1/2	1/2"(12.7mm)	3"(76.2mm)	4"(101.6mm)	3"(76.2mm)
904010	MF 849 3/4	3/4"(19.05mm)	3"(76.2mm)	4"(101.6mm)	3"(76.2mm)
904011	MF 849 1-1/2	1-1/2"(38.1mm)	5"(127mm)	8"(203.2mm)	6"(152.4mm)

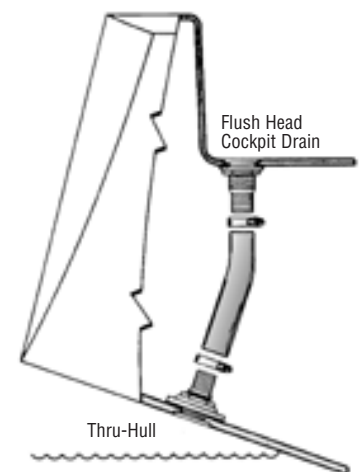
### TYPICAL HEAD INSTALLATION



### SINK DRAIN INSTALLATION



### COCKPIT DRAIN INSTALLATION



**NOTE: IF A THRU-HULL IS TO BE INSTALLED LESS THAN 6"(152.4mm) ABOVE WATERLINE, A BALL-VALVE OR SEACOCK MUST ALSO BE USED.**



# THRU-HULL CONNECTORS

**Forespar**® series of Thru-Hull Connectors are precision molded in high strength **Marelon**®. Their great strength, light weight and complete freedom from corrosion and electrolysis make them the ideal Thru-Hull Connectors for use above or below the waterline. All Thru-Hull Connectors must be installed with proper bedding compound. We recommend a maximum torque setting of 20 lb/ft. for Series 250, Series 251 and Series 253 Thru-Hull Connectors. The 'S' notation in our model numbers (eg. CF 250S 1/2), indicates a Thru-Hull Connector that has been fitted with a screen.



## 250 SERIES

### FULL THREADED/FLUSH HEAD

Part No.	Model No.	Thread Size	Length
906000	CF 250 1/2	1/2"(12.7mm)	2"(50.8mm)
906001	CF 250S 1/2	1/2"(12.7mm)	2"(50.8mm)
906002	CF 250 3/4	3/4"(19.05mm)	2.25"(57.15mm)
906003	CF 250S 3/4	3/4"(19.05mm)	2.25"(57.15mm)
906004	CF 250 1	1"(25.4mm)	2.375"(60.32mm)
906005	CF 250S 1	1"(25.4mm)	2.375"(60.32mm)
906006	CF 250 1-1/4	1-1/4"(31.75mm)	3"(76.2mm)
906007	CF 250S 1-1/4	1-1/4"(31.75mm)	3"(76.2mm)
906008	CF 250 1-1/2	1-1/2"(38.1mm)	3"(76.2mm)
906009	CF 250S 1-1/2	1-1/2"(38.1mm)	3"(76.2mm)

**'S' DENOTES SCREENED**



## 251 SERIES

### FULL THREADED/MUSHROOM HEAD

Part No.	Model No.	Thread Size	Length
906010	CF 251 1/2	1/2"(12.7mm)	2"(50.8mm)
906011	CF 251S 1/2	1/2"(12.7mm)	2"(50.8mm)
906012	CF 251 3/4	3/4"(19.05mm)	2.25"(57.15mm)
906013	CF 251S 3/4	3/4"(19.05mm)	2.25"(57.15mm)
906014	CF 251 1	1"(25.4mm)	2.375"(60.32mm)
906015	CF 251S 1	1"(25.4mm)	2.375"(60.32mm)
906016	CF 251 1-1/4	1-1/4"(31.75mm)	3"(76.2mm)
906017	CF 251S 1-1/4	1-1/4"(31.75mm)	3"(76.2mm)
906018	CF 251 1-1/2	1-1/2"(38.1mm)	3"(76.2mm)
906019	CF 251S 1-1/2	1-1/2"(38.1mm)	3"(76.2mm)
906020	CF 251 2	2"(50.8mm)	3"(76.2mm)
906021	CF 251S 2	2"(50.8mm)	3"(76.2mm)

**'S' DENOTES SCREENED**



## 253 SERIES

### HOSE TAILPIPE/MUSHROOM HEAD

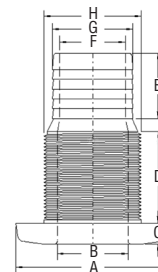
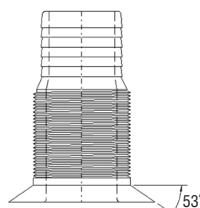
Part No.	Model No.	Hose I.D.
906022	CF 253 1/2	1/2" - 5/8"(12.7 - 15.87mm)
906023	CF 253S 1/2	1/2" - 5/8"(12.7 - 15.87mm)
906024	CF 253 3/4	3/4"(19.05mm)
906025	CF 253S 3/4	3/4"(19.05mm)
906026	CF 253 1	1"(25.4mm)
906027	CF 253S 1	1"(25.4mm)
906070	CF253 1-1/8	1-1/8"(28.57mm)
906071	CF253S 1-1/8	1-1/8"(28.57mm)
906028	CF 253 1-1/4	1-1/4"(31.75mm)
906029	CF 253S 1-1/4	1-1/4"(31.75mm)
906030	CF 253 1-1/2	1-1/2"(38.1mm)
906031	CF 253S 1-1/2	1-1/2"(38.1mm)
906032	CF 253 2	2"(50.8mm)
906033	CF 253S 2	2"(50.8mm)

**'S' DENOTES SCREENED**

## FLUSH HEAD DRAIN

Part No.	Model No.	Thread Size & Hose I.D.	Thread Length
906038	CF254 1-1/4	1-1/4"(31.75mm)	1 3/4"(44.45mm)
906036	CF 254 1-1/2	1-1/2"(38.1mm)	1 3/4"(44.45mm)
906037	CF 254S 1-1/2	1-1/2"(38.1mm)	1 3/4"(44.45mm)
906034	CF 254 2	2"(50.8mm)	1 3/8"(34.92mm)
906035	CF 254S 2	2"(50.8mm)	1 3/8"(34.92mm)
906039	CF 254 1-5/8	1-5/8"(41.27mm)	1 3/8"(34.92mm)

**'S' DENOTES SCREENED**

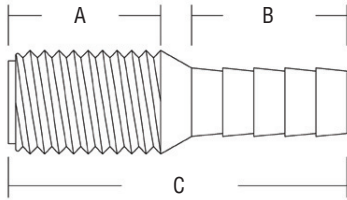


SERIES SIZE	A	B	C	D	E	F	G	H
<b>250</b>								
1/2"(12.7mm)	2.375(60.32mm)	.430(10.92mm)	.335(8.5mm)	2.000(50.8mm)	N/A	N/A	N/A	.810(20.57mm)
3/4"(19.05mm)	2.430(61.72mm)	.665(16.89mm)	.320(8.1mm)	2.250(57.15mm)	N/A	N/A	N/A	1.015(25.78mm)
1"(25.4mm)	2.835(72mm)	.875(22.22mm)	.320(8.1mm)	2.375(60.32mm)	N/A	N/A	N/A	1.285(32.63mm)
1-1/4"(31.75mm)	2.820(71.63mm)	1.115(28.32mm)	.325(8.25mm)	3.000(76.2mm)	N/A	N/A	N/A	1.635(41.52mm)
1-1/2"(38.1mm)	2.810(71.37mm)	1.380(35.05mm)	.320(8.1mm)	3.000(76.2mm)	N/A	N/A	N/A	1.850(46.99mm)
<b>251</b>								
1/2"(12.7mm)	1.500(38.1mm)	.448(11.37mm)	.256(6.5mm)	2.125(53.97mm)	N/A	N/A	N/A	.810(20.57mm)
3/4"(19.05mm)	2.084(52.93mm)	.690(17.52mm)	.335(8.5mm)	3.093(78.56mm)	N/A	N/A	N/A	1.028(26.11mm)
1"(25.4mm)	2.345(59.56mm)	.880(22.35mm)	.288(7.31mm)	2.400(60.96mm)	N/A	N/A	N/A	1.282(32.56mm)
1-1/4"(31.75mm)	2.650(67.31mm)	1.110(28.19mm)	.345(8.76mm)	2.950(74.93mm)	N/A	N/A	N/A	1.615(41.02mm)
1-1/2"(38.1mm)	2.940(74.67mm)	1.360(34.54mm)	.345(8.76mm)	2.950(74.93mm)	N/A	N/A	N/A	1.850(46.99mm)
<b>253</b>								
1/2"(12.7mm)	1.506(38.25mm)	.505(12.82mm)	.265(6.73mm)	1.490(37.84mm)	.975(24.76mm)	.439(11.15mm)	.657(16.68mm)	.812(20.62mm)
3/4"(19.05mm)	2.100(53.34mm)	.670(17.01mm)	.325(8.25mm)	1.677(42.59mm)	1.028(26.11mm)	.535(13.58mm)	.770(19.55mm)	1.015(25.78mm)
1"(25.4mm)	2.350(59.69mm)	.958(24.33mm)	.295(7.49mm)	1.695(43.05mm)	1.085(27.55mm)	.797(20.24mm)	1.015(25.78mm)	1.280(32.51mm)
1-1/4"(31.75mm)	2.675(67.94mm)	1.194(30.32mm)	.327(8.3mm)	1.818(46.17mm)	1.280(32.51mm)	1.021(25.93mm)	1.273(32.33mm)	1.615(41.02mm)
1-1/2"(38.1mm)	2.933(74.49mm)	1.350(34.29mm)	.345(8.76mm)	1.875(47.62mm)	1.280(32.51mm)	1.258(31.95mm)	1.530(38.86mm)	1.850(46.99mm)
2"(50.8mm)	3.511(89.17mm)	1.842(46.78mm)	.375(9.5mm)	1.875(47.62mm)	1.350(34.29mm)	1.610(40.89mm)	2.018(51.25mm)	2.320(58.92mm)
<b>254</b>								
1-1/4"(31.75mm)	2.805(71.24mm)	1.164(29.56mm)	.316(8.02mm)	1.500(38.1mm)	1.280(32.51mm)	.945(24mm)	1.260(32mm)	1.615(41.02mm)
1-1/2"(38.1mm)	2.805(71.24mm)	1.406(35.71mm)	.316(8.02mm)	1.500(38.1mm)	1.280(32.51mm)	1.115(28.32mm)	1.475(37.46mm)	1.850(46.99mm)
2"(50.8mm)	3.525(89.53mm)	1.672(42.46mm)	.325(8.25mm)	1.500(38.1mm)	1.300(33.02mm)	1.480(37.59mm)	2.018(51.25mm)	2.320(58.92mm)

# ELBOWS & TAILPIPES

## TAILPIPES / HOSE CONNECTORS

Our Tailpipes are also made from high-strength glass-reinforced **Marelon**®. Perfect choice for joining hose lines to **Forespar**® Ball Valves and Seacocks.



Part No.	Model No.	Thread Size	Tailpipe Dia.	A	B	C
905006	CF 252 1/2	1/2"(12.7mm)	5/8"(15.87mm)	1"(24.4mm)	1"(24.4mm)	2-1/4"(57.15mm)
905007	CF 252 3/4	3/4"(19.05mm)	3/4"(19.05mm)	1"(24.4mm)	1"(24.4mm)	2-3/8"(60.32mm)
905008	CF 252 1	1"(24.4mm)	1"(24.4mm)	1-1/2"(38.1mm)	1-1/16"(26.98mm)	2-7/8"(73.02mm)
905009	CF 252 1-1/4	1-1/4"(31.75mm)	1-1/4"(31.75mm)	1-5/8"(41.27mm)	1-1/4"(31.75mm)	3-1/4"(82.55mm)
905010	CF 252 1-1/2	1-1/2"(38.1mm)	1-7/16"(36.51mm)	1-7/16"(36.51mm)	1-1/8"(28.57mm)	2-5/8"(66.67mm)
905011	CF 252 2	2"(50.8mm)	2"(50.8mm)	1-11/16"(42.88mm)	1-1/4"(31.75mm)	3-1/4"(82.55mm)
905016	CF 252 1-1/8	1"(24.4mm)	1-1/8"(28.57mm)	1"(24.4mm)	1-1/16"(26.98mm)	2-7/8"(73.02mm)



## TAPERED PIPE THREADS

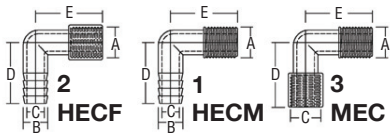
Part No.	Model No.	Thread For Size	Tube I.D.
910146	HC 4x4	1/4"(6.35mm)	1/4"(6.35mm)
910147	HC 4x5	1/4"(6.35mm)	5/16"(7.93mm)
910148	HC 4x6	1/4"(6.35mm)	3/8"(9.52mm)
910149	HC 4x8	1/4"(6.35mm)	1/2"(12.7mm)
910150	HC 6x6	3/8"(9.52mm)	3/8"(9.52mm)
910154	HC 6x8	3/8"(9.52mm)	1/2"(12.7mm)
910156	HC 8x8	1/2"(12.7mm)	1/2"(9.52mm)
910157	HC 8x12	1/2"(12.7mm)	3/4"(12.7mm)
910158	HC 12x8	3/4"(19.05mm)	1/2"(12.7mm)
910159	HC 12x12	3/4"(19.05mm)	3/4"(19.05mm)
910160	HC 12x16	3/4"(19.05mm)	1"(24.4mm)
910168	HC 20x24	1-1/4"(31.75mm)	1-1/2"(38.1mm)

## ELBOWS

Molded from high-strength **Marelon**®. Dimension 'A' indicates pipe thread size.



Part No.	Model No.	A	B	C	D	E	
1	901000	HECM 8	1/2"(12.7mm)	5/8"(15.87mm)	7/16"(11.11mm)	2"(50.8mm)	1-1/2"(38.1mm)
	901001	HECM 12	3/4"(19.05mm)	3/4"(19.05mm)	1/2"(12.7mm)	2-1/8"(53.97mm)	1-5/8"(41.27mm)
	901002	HECM 16	1"(24.4mm)	1"(24.4mm)	5/8"(15.87mm)	2-1/2"(63.5mm)	1-7/8"(47.62mm)
	901003	HECM 20	1-1/4"(31.75mm)	1-1/4"(31.75mm)	7/8"(22.22mm)	2-3/4"(69.85mm)	2-5/16"(58.72mm)
	901004	HECM 24	1-1/2"(38.1mm)	1-1/2"(38.1mm)	1-1/16"(26.98mm)	3-1/4"(82.55mm)	2-3/4"(69.85mm)
901005	HECM 32	2"(50.8mm)	2"(50.8mm)	1-1/2"(38.1mm)	3-5/8"(92.07mm)	3-1/4"(95.25mm)	
2	901006	HECF 8	1/2"(12.7mm)	5/8"(15.87mm)	7/16"(11.11mm)	2"(50.8mm)	1-5/8"(41.27mm)
	901007	HECF 12	3/4"(19.05mm)	3/4"(19.05mm)	9/16"(14.28mm)	2-3/16"(55.56mm)	1-3/4"(44.45mm)
	901008	HECF 16	1"(24.4mm)	1"(24.4mm)	5/8"(15.87mm)	2-1/2"(63.5mm)	1-7/8"(47.62mm)
	901009	HECF 20	1-1/4"(31.75mm)	1-1/4"(31.75mm)	7/8"(22.22mm)	2-3/4"(69.85mm)	2-1/2"(63.5mm)
	901010	HECF 24	1-1/2"(38.1mm)	1-1/2"(38.1mm)	1-1/8"(28.57mm)	3-1/8"(79.37mm)	2-3/4"(69.85mm)
	901011	HECF 32	2"(50.8mm)	2"(50.8mm)	1-9/16"(39.68mm)	3-5/8"(92.07mm)	3-1/4"(82.55mm)
3	920207	MEC 8	1/2"(12.7mm)		1/2"(12.7mm)	1-5/16"(33.33mm)	1-7/16"(36.57mm)
	920336	MEC 12	3/4"(19.05mm)		3/4"(19.05mm)	1-5/8"(41.27mm)	1-5/8"(41.27mm)



## FEMALE THREADED BARBED HOSE FITTING

This fitting is also made of high strength glass-reinforced **Marelon**®.

Part No.	Model No.
901014	1/2"(12.7mm) FPT to 1/2"(12.7mm) HOSE BARB
901015	3/4"(19.05mm) FPT to 3/4"(19.05mm) HOSE BARB
905012	1-1/2"(38.1mm) FPT to 3/4"(19.85mm) HOSE BARB
905013	1-1/2"(38.1mm) FPT to 1"(24.4mm) HOSE BARB
905015	1-1/2"(38.1mm) FPT to 1-1/8"(28.57mm) HOSE BARB
905014	1-1/2"(38.1mm) FPT to 1-1/2"(38.1mm) HOSE BARB



Courtesy of Regal Boats

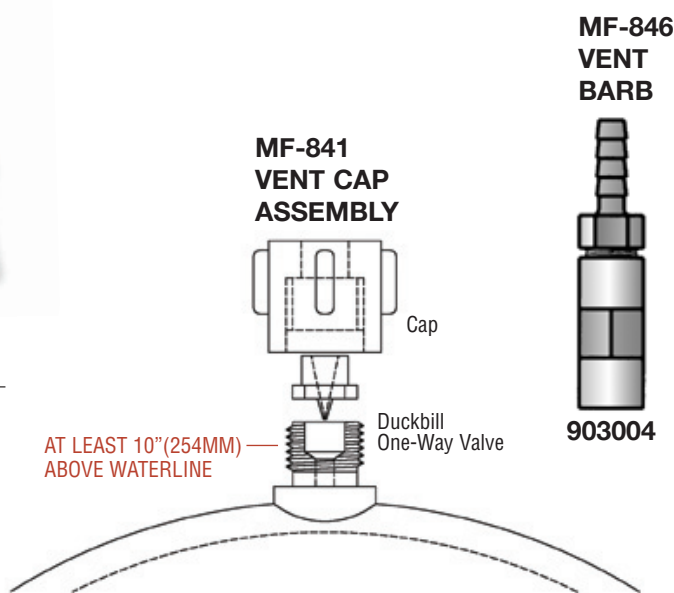
# VENTED LOOPS, Y-VALVES & CONNECTORS

## VENTED LOOPS

Installing one of our vented loops will ensure that fluids will not siphon from tank to tank. Vented Loops are commonly used in the marine toilet system and engine cooling system. The simple valve system incorporated in the top of the loop allows air to enter the line when not in use, yet effectively seals as water or other fluid passes through. Molded in **Marelon**<sup>®</sup>, neither vent nor loop will corrode. The duckbill one way valve is designed to seal properly if particulate matter is present in fluids. The new MF-846 vent barb assembly option can be used in lieu of the standard MF-841 cap/duckbill. This option allows venting to the outside of the hull via a 1/4"(6.35mm) hose.



Part No.	Model No.	Barb Size	Height	Width
903000	MF 840	1-1/2"(38.1mm)	5-1/4"(133.35mm)	7-3/4"(196.85mm)
903001	MF 842	3/4"(19.05mm)	4-1/2"(114.3mm)	3-3/4"(95.25mm)
903002	MF 841	Vent Cap Assembly		
903003	MF-843	5/8"(15.87mm)	4-1/2"(114.3mm)	4"(101.6mm)
903004	MF-846	Vent Barb Assembly		
903007	MF-844	1"(25.4mm)	7"(177.8mm)	9"(228.6mm)
903008	MF-845	1/2"(12.7mm)	5-1/4"(133.35mm)	4-1/4"(107.95mm)
903009	MF-847	1-1/8"(28.57mm)	7"(177.8mm)	9"(228.6mm)



## 'Y' VALVES

**Forespar**<sup>®</sup> 'Y'-Valves and Connectors are molded from **Marelon**<sup>®</sup>. Offering an improved, stronger handle design, our valves are available in 1"(25.4mm) and 1-1/2"(38.1mm) barb size. 'Y'-Valves are an essential piece of equipment when the flow of water or other fluids are required to be conveniently diverted, as in a marine head application where a holding tank is utilized. They are easily mounted to a bulkhead. The valves are operated by a simple 120° movement. Positive stops are provided between positions. Replacement parts are available.

## 'Y' CONNECTORS

Our 'Y' Connectors can be used for connecting fluid lines. End plate may be removed for blockage relief etc. O-ring seal ensures leak free performance and is safe under pressure working conditions up to 40 P.S.I. Available with or without mounting flange.

**IT IS NOT RECOMMENDED TO INSTALL Y-VALVES BELOW THE WATERLINE**



Part No.	Model No.	Flange	Barb Size
902002	HYCF 16	Yes	1"(25.4mm)
902003	HYC 16	No	1"(25.4mm)
902004	HYCF 24	Yes	1-1/2"(38.1mm)
902005	HYC 24	No	1-1/2"(38.1mm)

## 'Y' VALVES

Part No.	Model No.	Barb Size
902000	MF 852	1-1/2"(38.1mm)
902001	MF 853	1"(25.4mm)
902006	'Y'-Valve Parts Kit (fits 1 & 1-1/2")	
902007	MF 854	3/4"(19.05mm)
902008	MF 855	1-1/8"(28.57mm)

# MARELON® PLUMBING SYSTEM

## FORESPAR'S® MARELON® INTEGRATED PLUMBING SYSTEM

Exceeding ABYC recommendations and meeting all UL standards; its unique design provides easy installation in a wide variety of valve configurations. It allows the OEM to design systems never before possible.

All Marelon® integrated valves are sold as a complete system. The assembly consists of thru-hull, valve body and tailpipe barb or female pipe thread end. The thru-hulls use a buttress style thread for exceptional strength and are not compatible with any other valves. Thru-hulls cannot be sold or used separately. All valves have one part number for the complete assembly. Each valve is factory assembled and pressure tested. Forespar® cannot be responsible for valves disassembled and modified or reassembled improperly.

In case of an emergency, all non-screened thru-hull style valves are supplied with a handle cap/bung that is designed to plug the thru-hull from the outside. This plug can be put in place while the vessel is in the water. The valve can then be removed from the king-nut and any blockage cleared. **Warning** – Never leave a boat unattended while bung is in place and valve is disassembled. This bung plug is for temporary use only. The bung can also be used during Winter storage to keep debris from collecting or insects from nesting inside thru-hull.

Per ABYC/UL requirements, a flat surface approximately the same diameter as the king-nut is needed inside the hull for proper installation. All valves are full port. The I.D. of the hose barb is carried thru the ball so there is no restriction of flow.

### Temperature Range

-40° F to +176° F

-40° C to +80° C



### “LOCKING HANDLE OPTION”

Locking handle option for integrated Seacocks 1”(25.4mm) through 2”(50.8mm) sizes

Forespar offers an optional locking plate installed at the factory on any “93” series Integrated Seacocks. These new locking plates allow the handle to be set in the closed position and a pad-lock used to positively lock the valve closed. This new feature will satisfy the USCG requirements for locking overboard discharged head system seacocks in the closed, no discharge position.

### Part No

930136 Optional handle lock for 1”(25.4mm) & 1 -1 1/4”(31.75mm)

930137 Optional handle lock for 1 1/2”(38.1mm) & 2”(50.8mm)

Note: - Forespar does not supply the padlock. Valve locks are not sold separately and are not a retrofit item.

## “ANTI-VENTURI T-HULL”

Custom tooled by Forespar®, these new thru-hulls have been tested on boats at varying rpm's and turn rates up to 45 mph. On a 3/4" generator intake line with this thru hull fitted, 0" to -5" of vacuum was noted. This did not present a pressure situation which could potentially push water past the vanes of an older impeller and flood the cylinders or starve it of cooling water. The unique notch and lowered ramp in the leading edge (photo #1-front) provides a force-feed effect. To keep this force from overwhelming equipment impellers, the exit slot (photo #2-back) allows water flow to exit at a controlled rate. Installed and tested by the Monterey Boats team of engineers.

The new Forespar® “Anti-Venturi” head thru hull for use with the 1/2” & 3/4” Marelon® Integrated Plumbing Systems seacocks (“93” series flange style valves) is available now in 3/4”. These have the Integrated Plumbing Systems buttress style thread-form to fit the Integrated System flanged seacocks only. To order this option on any flanged style Marelon® integrated valve add a “V” after the valves 6 digit part number.

Part No.	Description
930171	Anti-Venturi T-Hull

“NEW”

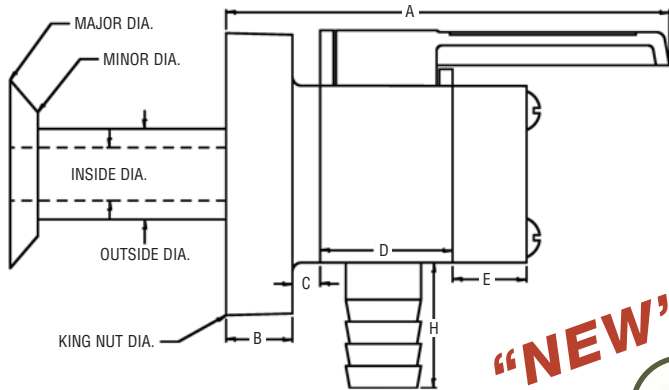
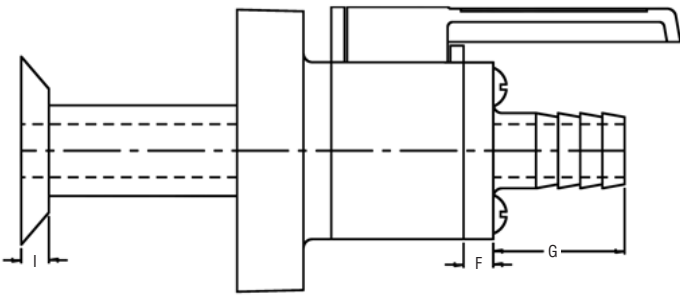
Back View



Front View

Arrow Indicates Water Flow Direction

## MARELON® INTEGRATED PLUMBING SYSTEMS HOSE BARB "93" SERIES



**"NEW"**

Mushroom style thru-hull connectors available with chrome plated head or Marelon®.



DIMENSION	1/2" & 3/4" (12.7mm)&(19.05mm)	1"25 & 1-1/4" (25.4mm)&(31.75mm)	1-1/2" & 2" (38.1mm)&(50.8mm)
MAJOR DIA.	1.73(43.94mm)	2.20(55.88mm)	2.79(70.86mm)
MINOR DIA.	1.28(32.51mm)	1.70(43.18mm)	2.18(55.37mm)
OUTSIDE DIA.	1.1(27.94mm)	1.6(40.64mm)	2.1(53.34mm)
INSIDE DIA.	.62(15.74mm)	1.05(26.67mm)	1.64(41.65mm)
KING NUT DIA.	3.13(79.50mm)	3.75(95.25mm)	4.21(106.93mm)
A	4.48(113.79mm)	6.19(157.22mm)	7.63(193.80mm)
B	.91(23.11mm)	.98(24.89mm)	1.10(27.94mm)
C	.48(12.19mm)	.31(7.84mm)	.23(5.84mm)
D	1.20(30.48mm)	1.87(47.49mm)	1.57(39.87mm)
E	.52(13.20mm)	.75(19.05mm)	1.35(34.29mm)
F	.53(13.46mm)	.75(19.05mm)	.78(34.29mm)
G	1.31(33.27mm)	1"=1.25 (25.4mm)=(31.75mm) 1-1/4"=1.50 (31.75mm)=(38.1mm)	1.50(38.1mm)
H	1.44(36.57mm)	1.50(38.1mm)	1.75(44.45mm)
I	.24(6.09mm)	.23(5.84mm)	.24(6.09mm)

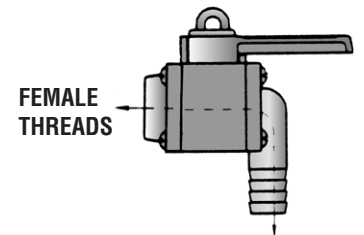
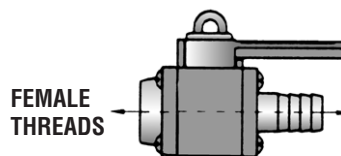
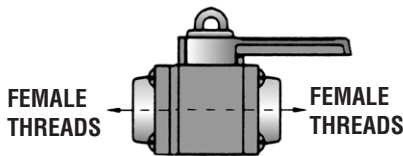
ALL DIMENSIONS IN INCHES

### HOSE BARB INNER (I.D.) DIMENSIONS: ("93" SERIES ONLY)

- 1/2" (12.7mm) - .462" (11.73mm)
- 3/4" (19.05mm) - .52" (13.20mm)
- 1" (25.4mm) - .790" (20.06mm)
- 1-1/4" (31.75mm) - 1.05" (26.67mm)
- 1-1/2" (38.1mm) - 1.25" (31.75mm)
- 2" (50.8mm) - 1.54" (39.11mm)

### MARELON® THREADED VALVES

These valves are designed to meet the needs of builders and owners who require the benefits of the Marelon® integrated plumbing system, with female threads. This valve works great with A.N.P. Thru-Hulls. Forespar® offers this threaded valve in three of our most widely used configurations with N.P. T. or B.S.P threads.

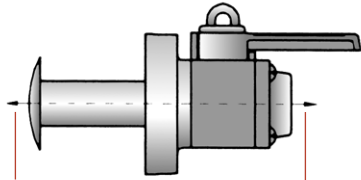


Valve P/N	Size
933332	1/2"(12.7mm)
933333	3/4"(19.05mm)
933334	1"(25.4mm)
933335	1-1/4"(31.75mm)
933336	1-1/2"(38.1mm)
933338	2"(50.8mm)

Valve P/N	Size
933342	1/2"(12.7mm)
933343	3/4"(19.05mm)
933344	1"(25.4mm)
933345	1-1/4"(31.75mm)
933346	1-1/2"(38.1mm)
933348	2"(50.8mm)

Valve P/N	Size
933352	1/2"(12.7mm)
933353	3/4"(19.05mm)
933354	1"(25.4mm)
933355	1-1/4"(31.75mm)
933356	1-1/2"(38.1mm)
933358	2"(50.8mm)

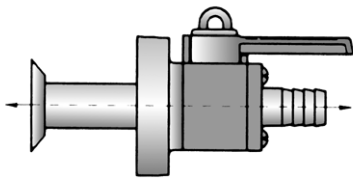
## Original Equipment Manufacture - OEM SALES ONLY



Arrows Indicate Water Flow Direction

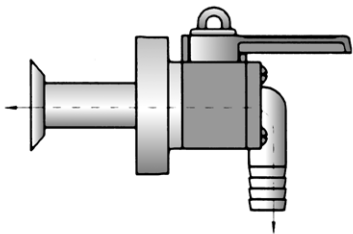
Mushroom Thru-Hull Size	Flush Thru-Hull Size	Mushroom Screened Thru-Hull Size	Flush Screened Thru-Hull Size
931132 1/2"(12.7mm)	932132 1/2"(12.7mm)	937332 1/2"(12.7mm)	936332 1/2"(12.7mm)
931133 3/4"(19.05mm)	932133 3/4"(19.05mm)	937333 3/4"(19.05mm)	936333 3/4"(19.05mm)
931134 1"(25.4mm)	932134 1"(25.4mm)	937334 1"(25.4mm)	936334 1"(25.4mm)
931135 1-1/4"(31.75mm)	932135 1-1/4"(31.75mm)	937335 1-1/4"(31.75mm)	936335 1-1/4"(31.75mm)
931136 1-1/2"(38.1mm)	932136 1-1/2"(38.1mm)	937336 1-1/2"(38.1mm)	936336 1-1/2"(38.1mm)
931138 2"(50.8mm)	932138 2"(50.8mm)	937338 2"(50.8mm)	936338 2"(50.8mm)

## OEM SALES ONLY



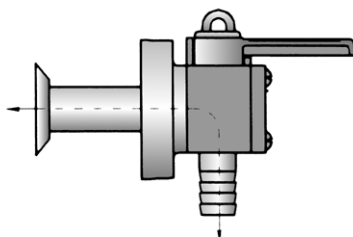
Mushroom Thru-Hull Size	Flush Thru-Hull Size	Mushroom Screened Thru-Hull Size	Flush Screened Thru-Hull Size
931142 1/2"(12.7mm)	932142 1/2"(12.7mm)	937342 1/2"(12.7mm)	936342 1/2"(12.7mm)
931143 3/4"(19.05mm)	932143 3/4"(19.05mm)	937343 3/4"(19.05mm)	936343 3/4"(19.05mm)
931144 1"(25.4mm)	932144 1"(25.4mm)	937344 1"(25.4mm)	936344 1"(25.4mm)
931145 1-1/4"(31.75mm)	932145 1-1/4"(31.75mm)	937345 1-1/4"(31.75mm)	936345 1-1/4"(31.75mm)
931146 1-1/2"(38.1mm)	932146 1-1/2"(38.1mm)	937346 1-1/2"(38.1mm)	936346 1-1/2"(38.1mm)
931148 2"(50.8mm)	932148 2"(50.8mm)	937348 2"(50.8mm)	936348 2"(50.8mm)

## OEM SALES ONLY



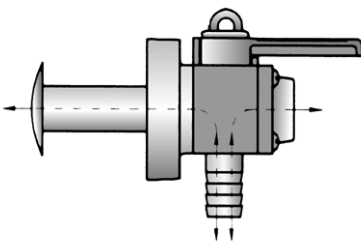
Mushroom Thru-Hull Size	Flush Thru-Hull Size	Mushroom Screened Thru-Hull Size	Flush Screened Thru-Hull Size
931152 1/2"(12.7mm)	932152 1/2"(12.7mm)	937352 1/2"(12.7mm)	936352 1/2"(12.7mm)
931153 3/4"(19.05mm)	932153 3/4"(19.05mm)	937353 3/4"(19.05mm)	936353 3/4"(19.05mm)
931154 1"(25.4mm)	932154 1"(25.4mm)	937354 1"(25.4mm)	936354 1"(25.4mm)
931155 1-1/4"(31.75mm)	932155 1-1/4"(31.75mm)	937355 1-1/4"(31.75mm)	936355 1-1/4"(31.75mm)
931156 1-1/2"(38.1mm)	932156 1-1/2"(38.1mm)	937356 1-1/2"(38.1mm)	936356 1-1/2"(38.1mm)
931158 2"(50.8mm)	932158 2"(50.8mm)	937358 2"(50.8mm)	936358 2"(50.8mm)

## OEM SALES ONLY



Mushroom Thru-Hull Size	Flush Thru-Hull Size	Mushroom Screened Thru-Hull Size	Flush Screened Thru-Hull Size
931262 1/2"(12.7mm)	932262 1/2"(12.7mm)	937462 1/2"(12.7mm)	936462 1/2"(12.7mm)
931263 3/4"(19.05mm)	932263 3/4"(19.05mm)	937463 3/4"(19.05mm)	936463 3/4"(19.05mm)
931264 1"(25.4mm)	932264 1"(25.4mm)	937464 1"(25.4mm)	936464 1"(25.4mm)
931265 1-1/4"(31.75mm)	932265 1-1/4"(31.75mm)	937465 1-1/4"(31.75mm)	936465 1-1/4"(31.75mm)
931266 1-1/2"(38.1mm)	932266 1-1/2"(38.1mm)	937466 1-1/2"(38.1mm)	936466 1-1/2"(38.1mm)
931268 2"(50.8mm)	932268 2"(50.8mm)	937468 2"(50.8mm)	936468 2"(50.8mm)

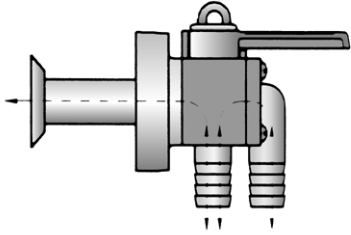
## OEM SALES ONLY



Mushroom Thru-Hull Size	Flush Thru-Hull Size	Mushroom Screened Thru-Hull Size	Flush Screened Thru-Hull Size
931232 1/2"(12.7mm)	932232 1/2"(12.7mm)	937432 1/2"(12.7mm)	936432 1/2"(12.7mm)
931233 3/4"(19.05mm)	932233 3/4"(19.05mm)	937433 3/4"(19.05mm)	936433 3/4"(19.05mm)
931234 1"(25.4mm)	932234 1"(25.4mm)	937434 1"(25.4mm)	936434 1"(25.4mm)
931235 1-1/4"(31.75mm)	932235 1-1/4"(31.75mm)	937435 1-1/4"(31.75mm)	936435 1-1/4"(31.75mm)
931236 1-1/2"(38.1mm)	932236 1-1/2"(38.1mm)	937436 1-1/2"(38.1mm)	936436 1-1/2"(38.1mm)
931238 2"(50.8mm)	932138 2"(50.8mm)	937438 2"(50.8mm)	9364382"(50.8mm)

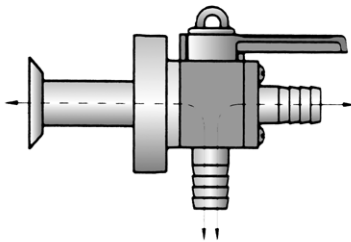
FORESPAR® "93" SERIES OF VALVES AND THRU-HULL FITTINGS MEET ALL DESIGN CRITERIA AND EXCEED ALL MECHANICAL PROPERTY REQUIREMENTS SPECIFIED BY THE INTERNATIONAL STANDARDS ORGANIZATION (ISO 150/188) "SMALL CRAFT-SEACOCKS AND THRU-HULL FITTINGS-PART 2: NON-METALLIC"

## Original Equipment Manufacture - OEM SALES ONLY



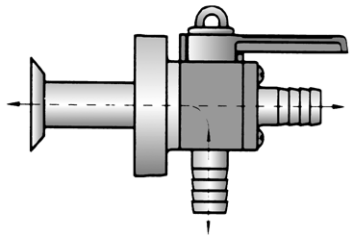
Mushroom Thru-Hull Size	Flush Thru-Hull Size	Mushroom Screened Thru-Hull Size	Flush Screened Thru-Hull Size
931252 1/2"(12.7mm)	932252 1/2"(12.7mm)	937452 1/2"(12.7mm)	936452 1/2"(12.7mm)
931253 3/4"(19.05mm)	932253 3/4"(19.05mm)	937453 3/4"(19.05mm)	936453 3/4"(19.05mm)
931254 1"(25.4mm)	932254 1"(25.4mm)	937454 1"(25.4mm)	936454 1"(25.4mm)
931255 1-1/4"(31.75mm)	932255 1-1/4"(31.75mm)	937455 1-1/4"(31.75mm)	936455 1-1/4"(31.75mm)
931256 1-1/2"(38.1mm)	932256 1-1/2"(38.1mm)	937456 1-1/2"(38.1mm)	936456 1-1/2"(38.1mm)
931258 2"(50.8mm)	932258 2"(50.8mm)	937458 2"(50.8mm)	936458 2"(50.8mm)

## OEM SALES ONLY



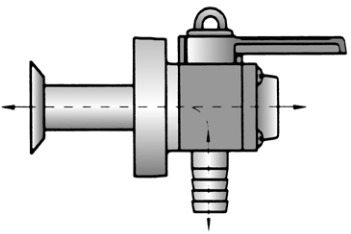
Mushroom Thru-Hull Size	Flush Thru-Hull Size	Mushroom Screened Thru-Hull Size	Flush Screened Thru-Hull Size
931242 1/2"(12.7mm)	932242 1/2"(12.7mm)	937442 1/2"(12.7mm)	936442 1/2"(12.7mm)
931243 3/4"(19.05mm)	932243 3/4"(19.05mm)	937443 3/4"(19.05mm)	936443 3/4"(19.05mm)
931244 1"(25.4mm)	932244 1"(25.4mm)	937444 1"(25.4mm)	936444 1"(25.4mm)
931245 1-1/4"(31.75mm)	932245 1-1/4"(31.75mm)	937445 1-1/4"(31.75mm)	936445 1-1/4"(31.75mm)
931246 1-1/2"(38.1mm)	932246 1-1/2"(38.1mm)	937446 1-1/2"(38.1mm)	936446 1-1/2"(38.1mm)
931248 2"(50.8mm)	932248 2"(50.8mm)	937448 2"(50.8mm)	936448 2"(50.8mm)

## OEM SALES ONLY



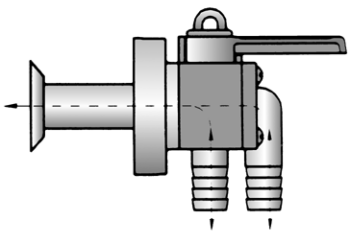
Mushroom Thru-Hull Size	Flush Thru-Hull Size	Mushroom Screened Thru-Hull Size	Flush Screened Thru-Hull Size
931542 1/2"(12.7mm)	932542 1/2"(12.7mm)	937642 1/2"(12.7mm)	936642 1/2"(12.7mm)
931543 3/4"(19.05mm)	932543 3/4"(19.05mm)	937643 3/4"(19.05mm)	936643 3/4"(19.05mm)
931544 1"(25.4mm)	932544 1"(25.4mm)	937644 1"(25.4mm)	936644 1"(25.4mm)
931545 1-1/4"(31.75mm)	932545 1-1/4"(31.75mm)	937645 1-1/4"(31.75mm)	936645 1-1/4"(31.75mm)
931546 1-1/2"(38.1mm)	932546 1-1/2"(38.1mm)	937646 1-1/2"(38.1mm)	936646 1-1/2"(38.1mm)
931548 2"(50.8mm)	932548 2"(50.8mm)	937648 2"(50.8mm)	936648 2"(50.8mm)

## OEM SALES ONLY



Mushroom Thru-Hull Size	Flush Thru-Hull Size	Mushroom Screened Thru-Hull Size	Flush Screened Thru-Hull Size
931532 1/2"(12.7mm)	932532 1/2"(12.7mm)	937632 1/2"(12.7mm)	936632 1/2"(12.7mm)
931533 3/4"(19.05mm)	932533 3/4"(19.05mm)	937633 3/4"(19.05mm)	936633 3/4"(19.05mm)
931534 1"(25.4mm)	932534 1"(25.4mm)	937634 1"(25.4mm)	936634 1"(25.4mm)
931535 1-1/4"(31.75mm)	932535 1-1/4"(31.75mm)	937635 1-1/4"(31.75mm)	936635 1-1/4"(31.75mm)
931536 1-1/2"(38.1mm)	932536 1-1/2"(38.1mm)	937636 1-1/2"(38.1mm)	936636 1-1/2"(38.1mm)
931538 2"(50.8mm)	932538 2"(50.8mm)	937638 2"(50.8mm)	936638 2"(50.8mm)

## OEM SALES ONLY



Mushroom Thru-Hull Size	Flush Thru-Hull Size	Mushroom Screened Thru-Hull Size	Flush Screened Thru-Hull Size
931552 1/2"(12.7mm)	932552 1/2"(12.7mm)	937652 1/2"(12.7mm)	936652 1/2"(12.7mm)
931553 3/4"(19.05mm)	932553 3/4"(19.05mm)	937653 3/4"(19.05mm)	936653 3/4"(19.05mm)
931554 1"(25.4mm)	932554 1"(25.4mm)	937654 1"(25.4mm)	936654 1"(25.4mm)
931555 1-1/4"(31.75mm)	932555 1-1/4"(31.75mm)	937655 1-1/4"(31.75mm)	936655 1-1/4"(31.75mm)
931556 1-1/2"(38.1mm)	932556 1-1/2"(38.1mm)	937656 1-1/2"(38.1mm)	936656 1-1/2"(38.1mm)
931558 2"(50.8mm)	932558 2"(50.8mm)	937658 2"(50.8mm)	936658 2"(50.8mm)

FORESPAR® "93" SERIES OF VALVES AND THRU-HULL FITTINGS MEET ALL DESIGN CRITERIA AND EXCEED ALL MECHANICAL PROPERTY REQUIREMENTS SPECIFIED BY THE INTERNATIONAL STANDARDS ORGANIZATION (ISO 150/188) "SMALL CRAFT-SEACOCKS AND THRU-HULL FITTINGS-PART 2: NON-METALLIC"

# MISCELLANEOUS PLUMBING

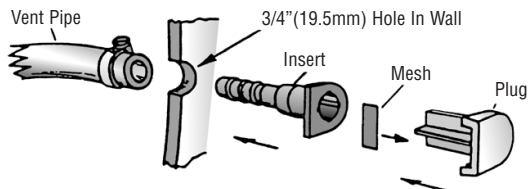
## TANK VENT

A new idea in fuel tank vents. For hulls with solid cores only. Unit press-fits into 3/4" (19.5mm) hole without the need of a nut. The stainless steel screen will not corrode and has no plating to chip. For 5/8" (15.87mm) hose.



Part No.	Model No.
907029	MF 610

## TANK VENT INSTALLATION



## SINK WASTES

Available in straight and 90° configurations, these drains are designed for 1" and 3/4" tubing. Models SW-3, SW-4 and SW-6 are bright chrome plated, non-corrosive plastic.

Part No.	Model No.	Tail	Flange	Cut-Out
907000	SW-1	Straight—For 1" (25.14mm) I.D.	1-3/4" (44.45mm)	1-5/16" (33.33mm)
907014	SW-2	90°—For 1" (25.14mm) I.D.	1-3/4" (44.45mm)	1-5/16" (33.33mm)
907015	SW-3	Straight—1-1/2" (38.11mm) screw	2-7/8" (73.02mm)	2" (50.8mm)
907016		Replacement Sink Stopper		
907017	SW-4	90° - For 1" (25.14mm) I.D.	2-7/8" (73.02mm)	2" (50.8mm)
907013	SW-5	(same as SW-1, for 3/4" (19.05mm) I.D.)	1-3/4" (44.45mm)	1-5/16" (33.33mm)
907022	SW-6	Straight—For 1" (25.14mm) I.D.	2-7/8" (73.02mm)	2" (50.8mm)
907027	SW-7	(same as SW-6, for 3/4" (19.05mm) I.D.)	2-7/8" (73.02mm)	2" (50.8mm)



## UTILITY DRAIN — D-1

Fully threaded acetal utility drain.  
Thread length: 1-3/8" (34.92mm)  
Thread size: 1" (25.14mm)



Part No.	Model No.
907028	D-1



Courtesy of Boston Whaler



## OUTBOARD WELL DRAIN

The **Forespar**® outboard well drain offers a corrosion proof, easy-to-install replacement for the old fashioned brass fitting. Can also be used as a chafe guard to lead hose, wiring, steering cables, etc. through bulkheads, floor timbers and fiberglass panels. Barbs on O.D. ensure positive locking action. Designed to fit 1" (25.14mm) diameter hole. Flange is 1-1/4" (31.75mm) dia. Usable length is 2-1/2" (63.5mm).



Part No.	Model No.
907006	MF 795

## GARBOARD DRAIN

For newer, thicker transoms, **Forespar**® designed a drain & plug assembly to fit up to 1-3/4" (44.45mm) thick transoms. Our **Marelon**® female 3/4" (19.05mm) elbows or female threaded barbed hose fitting (see page 40) can be screwed onto the end for hose attachment if needed. All **Marelon**® construction insures years of corrosion free use.



Part No.	Description
906081	GARBOARD DRAIN

## GARBOARD DRAIN

GD-S #906075 (short) Usable length with 5 threads engaged is 2-1/2" (63.5mm) maximum, 1-7/16" (36.51mm) minimum.

GD-L #906076 (long) Usable length with 5 threads engaged is 3-1/4" (82.55mm) maximum, 2-1/2" (63.5mm) minimum.

Diameter of the flange (both ends) is 2" (50.8mm). Diameter of the body (female threaded unit) is 1-3/16" (30.16mm). This is the diameter of the hole needed to install the unit through the transom.

The screw style plug with gasket comes with it standard. Color of the Marelon material is white (like all our T-hulls).

## DRAIN PLUG

Molded from **Forespar's** **Marelon**® and fitted with a neoprene seal; the **Forespar**® Drain Plug is carefully designed to not deteriorate and crack with age.



Part No.	Model No.
907001	MF 790

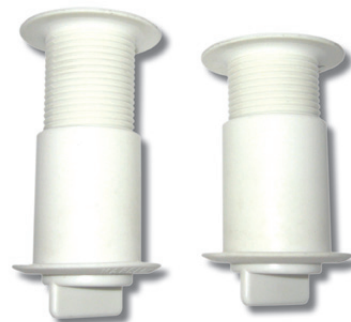
## DECK FILLS

Molded in **Marelon**® for lifetime durability, **Forespar**® Deck fills are available in three color-coded models. Each clearly marked for use with either water, fuel or waste. Easy-open cap is fitted with nylon retainer cord and rubber 'O'-ring to ensure a safe and efficient seal. Suitable for 1-1/2" (38.1mm) I.D. hose. Deck flange is 4" (101.6mm) dia. Cutout: 2-1/8" (53.97mm). Hose barb length: 3" (76.2mm).

Part No.	Model No.	For use with:
907002	MF 830 F	Fuel
907003	MF 830 W	Water
907004	MF 830 WST	Waste
153000	Waste Adapter for 1.5" (38.1mm) threads	



MF 830 Series



**"NEW"**

Part No.	Description
906075	GARBOARD DRAIN (Short)
906076	GARBOARD DRAIN (Long)

# MISCELLANEOUS PLUMBING

## WATER STRAINER

This water strainer is made of **Marelon**® (same material as our valves). It features a new universal mounting bracket and clear polycarbonate lid for ready inspection. The stainless steel strainer basket can be easily removed for cleaning. Intake and exit ports are 1-1/2"(38.1mm) ANP threads standard. Reducers for 3/4"(19.05mm) I.D. hose are available separately. Diameter: 6.3"(160.02mm) Height: 6.1"(154.94mm). The flow rate is 40 GPM(151.41l/m) with 1-1/2"(38.1mm) ports. (SEE REDUCERS AND ADAPTERS SHOWN ON THIS PAGE)

The new mounting bracket allows the strainer exit port to be positioned in the proper direction by simply loosening the bracket clamp and rotating the entire housing. This will allow the OEM or aftermarket customer greater flexibility in installation.



Part No.	Model No./Description
906066	MF 810 Water Strainer
906067	MF 811 Gasket Set
906065	s/s Basket only
920178	Clear Cover only

## WATER STRAINER REDUCERS/ADAPTERS



Part No.	Model No.	Thread
901045	FTC 8	1/2"(12.7mm) female
901046	FTC 12	3/4"(19.05mm) female
901042	FTC 16	1"(25.14mm) female
901044	FTC 20	1-1/4"(31.75mm) female
901043	FTC 24	1-1/2"(38.1mm) female
901041	FTC 32	2"(50.8mm) female
901040	MTC 12-8	3/4"(19.05mm)-1/2"(12.7mm) male
901050	MTC 12-12	3/4"(19.05mm)-3/4"(19.05mm) male
901051	MTC 16-12	1"(25.14mm)-3/4"(19.05mm) male
901047	MTC 24-16	1-1/2"(38.1mm)-1"(25.14mm) male
901048	MTC 24-20	1-1/2"(38.1mm)-1-1/4"(31.75mm) male
901049	MTC 24-24	1-1/2"(38.1mm)-1-1/2"(38.1mm) male
910062	RB 24-16	1-1/2"(38.1mm) male- 1"(25.14mm) female
910063	RB 24-12	1-1/2"(38.1mm) male -3/4"(19.05mm) female

## ENGINE FLUSH OUT VALVE

Engines running in salt or brackish water need to be flushed with fresh water after use to prevent costly corrosion during Winter or off-season storage. **Forespar**® has designed a single valve system that makes this maintenance procedure simple.

This Seacock/Y Valve configuration includes a brass garden hose connection to facilitate regular fresh water engine flushing valve includes thru-hull that must be used. A quick and easy way to flush inboard engine systems... an often difficult maintenance task.



Diameter	Mushroom	Mushroom Screened
1"(25.14mm)	931274	937474
1-1/4"(31.75mm)	931275	937475
1-1/2"(38.1mm)	931276	937476
2"(50.8mm)	931278	937478

Description	P/N
Folwtech™ Valve Mark I	905106
Folwtech™ Valve Mark II	905109

**(Original Equipment Manufacturer SALES ONLY)**

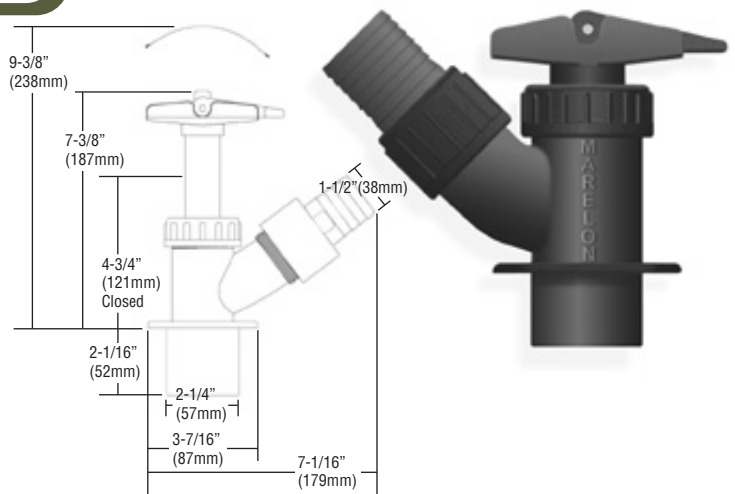
**VALVE COMPONENTS ARE NOT COMPATIBLE WITH ANY OTHER MANUFACTURERS' PRODUCT**

## THE RACER'S CHOICE FLOWTECH™ PERFORMANCE VALVE

**Flowtech**™ free flow sea valves incorporate the valve body, thru-hull and the choice of all three sizes of hose pipe connections all in one set. These high performance valves are available for 3/4"(19.05mm), 1"(25.14mm) & 1-1/2"(38.1mm) hose sizes. The **Flowtech**™ valve pipe can be faired smooth to the boat's outer skin so that when the valve is closed, the internal plunger and valve pipe creates a flush, fair & fast outer surface. Made of **Marelon**®



Volvo 60 Flowtech™ Installation



# LANOCOTE®, MARELON® CLEATS & CHOCKS

## LANOCOTE®

**HOW DOES LANOCOTE® WORK?** LanoCote® works on these five basic principals: displaces water, absorbs corrosion, forms moisture barrier, penetrates and has high lubricity. LanoCote® prevents dissimilar metal galvanization. LanoCote® is extremely effective in preventing and stopping corrosion on all types of metals under all environmental conditions. Formulated to withstand salt water marine conditions, LanoCote® is particularly useful in preventing thread seizure due to all types of corrosion on boats and machinery. Applied during assembly, LanoCote® will greatly assist in easy dismantling years later. An example would be anchor shackles which are regularly immersed in salt water. LanoCote® also combats galvanization where dissimilar metals are fastened together, such as stainless steel fittings on alloy masts etc.

## CHOICE OF MARINE PROFESSIONALS

## LONG TERM CORROSION CONTROL



Part No.	Model	Offered In
770001	LanoCote® 4 oz. Jar	12 Packs Only
770002	LanoCote® 7 oz. Aerosol Spray Can	12 Packs Only
770003	LanoCote® 16 oz. Jar	Sold as Each

LanoCote® is a Registered Trademark of Lanocote, Inc.

## ASSORTED CLEATS

Molded from high-strength Marelon®, Forespar's cleats have been thoroughly tested by independent laboratories and manufacturers of yachts and power boats all over the world. Their strength, light weight and low cost have contributed to their increased use in the marine industry. **The use of Marelon® allows our cleats to take up the curve of a deck without breaking, while maintaining strength and resisting abrasion — will not soften on hot days or freeze in winter.**

### 3"(76.2mm) - 8"(203.2mm) CLEATS



Part No.	Model No.	Hole Dia.	Size
941018	MF 761/3	5/32"(3.97mm)	3"(76.2mm)
941016	MF 762/4	3/16"(4.76mm)	4"(101.6mm)
941013	MF 763/5	3/16"(4.76mm)	5"(127mm)
941014	MF 764/6.5	1/4"(6.35mm)	6.5"(165.1mm)
941015	MF 765/8	1/4"(6.35mm)	8"(203.2mm)

### 5"(127mm) & 6"(152.4mm) CLEAT



Part No.	Model No.	Hole Dia.
941000	MF 751/5	3/16"(4.76mm)
941001	MF 751/6	3/16"(4.76mm)

### LOW PROFILE 6"(152.4mm) CLEAT

Part No.	Model No.	Hole Dia.
941006	MF 766/6	1/4"(6.35mm)



## LINE CHOCKS — 3-1/2"(88.9mm) & 6"(152.4mm)



Part No.	Model No.	Hole Ctrs.	Hole Dia.
950001	MF 755	3-1/2"(88.9mm)	3/16"(4.76mm)
950000	MF 770	6"(152.4mm)	1/4"(6.35mm)

## TRANSOM STEPS/HANDLE

6-5/8"(168.27mm) long x 2-9/16"(65.08mm) deep



Part No.	Model No.	Hole Dia.
890017	MF 750 BLACK	1/4"(6.35mm)

## MOLDED HINGES

Forespar® hinges are precision molded in a special grade of very strong Marelon® and have a stainless steel hinge pin. They may be used on interior or exterior surfaces as they are U.V. stabilized. Do not confuse these with other makes of "plastic" hinges.



Part No.	Model No.	Size
890007	MF 600 B	3"(76.2mm) X 1 3/8"(34.92mm)
890009	MF 601 B	2 1/4"(57.15mm) X 1 3/8"(34.92mm)
890011	MF 602 B	1 1/2"(38.1mm) X 1 3/8"(34.92mm)

# TABLE PEDESTAL SYSTEMS

## TABLE PEDESTAL SYSTEMS

The **Forespar**® Table Pedestal System features the choice of gas charged, non-gas high/low and fixed length table pedestals and incorporates bases molded from our exclusive light weight and corrosion resistant **Marelon**®. This polymer composite material assures that the table bases will not corrode, blister or crack in the marine environment.

Forespar's table systems feature top quality gas lifting springs and a positive locking device. Columns are marine grade anodized aluminum. Surface bases are available in powder coated "hammer-tone" silver or molded "teak-look" finish. Flush bases are "hammer-tone" silver only.

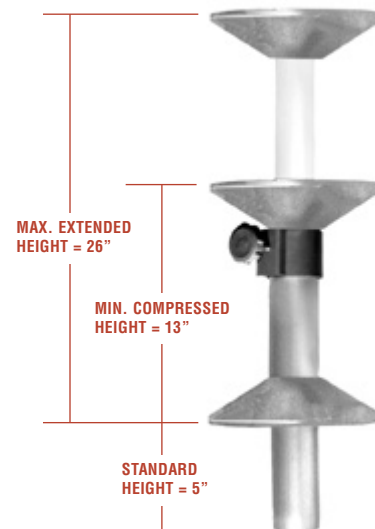
### SPECS

The bases are 9-3/4" diameter. The standard gas and non-gas high/low systems are 13" collapsed measured from the flange of each base with a 5" bury below the sole. The lower base is epoxied to the tube. Maximum height is 26". The base can be moved up or down upon request however, the overall length of the tubes stays constant. For example if you request a 2" bury, you will have a 16" collapsed height(see diagram). The upper mounting flange is a tapered "slip fit" to the tube. This may also be epoxied for added stability and strength. All tube is sold by the inch and includes any/all tapers required.

Part No.	Model
161001	Gas spring set-silver coated surface bases
161004	Gas spring set-"teak-look" surface bases
161003	Non-gas high/low set-silver coated surface bases
161006	Non-gas high/low set-"teak-look" surface bases
164021	3"(76mm) silver coated surface base only
164009	3"(76mm) "teak-look" surface base only
164011	2-3/8"(60mm) silver coated surface base only
164008	2-3/8"(60mm) "teak-look" surface base only
164034	3"(76mm) plug/cap/cover
164035	2-3/8"(60mm) plug/cap/cover
170001	2-3/8"(60mm) fluted aluminum tube*
170002	3"(76mm) fluted aluminum tube*
170003	2-3/8"(60mm) brown anodized fluted aluminum tube
170004	3"(76mm) brown anodized fluted aluminum tube



## STANDARD DIMENSIONS



**29" MAXIMUM FIXED LENGTH**

## MINI-GALLEY® 2000

The **Mini-Galley® 2000** is a compact, versatile, fully gimballed marine stove. This modern, attractive unit includes a low profile mounting bracket which allows the entire stove to be easily detached and stowed when not in use. It features an all stainless steel gimballed "basket" with springs that secure the cooking pot. The **Mini-Galley® 2000** allows cooking under adverse weather conditions in the cockpit or below. The burner can be turned off and on instantly with no preheating or priming necessary. A disposable propane cartridge gives up to 8 hours of hot, clean heat. A simple valve permits any flame intensity. Designed to accept U.S. Department of Transportation approved self-sealing propane bottles. This handy compact stove is ideal for small cruisers and racers where space is at a premium. On larger yachts, the **Mini-Galley® 2000** is a quick, simple alternative for heavyweather cooking, late night watches or quick hot drinks while underway. It is ideal for any yacht sail, power, racer or cruiser.

### SPECIAL FEATURES:

- EASY TO RELOAD SELF-SEALING FUEL CANISTER \*
- DOUBLE GIMBALING
- STAINLESS STEEL CONSTRUCTION
- INSTANT HOT HEAT
- COMPACT-STOWS EASILY
- ACCEPTS U.S. DEPT. OF TRANSPORTATION APPROVED PROPANE BOTTLES
- PROPANE BOTTLES AVAILABLE WORLDWIDE \*
- 1000-5000 BTU

### SET INCLUDES:

- 1 QT. STAINLESS STEEL COOKING POT
- STAINLESS STEEL MINI FRYING PAN

Part No.	Model No.
150002	MG-2000 <b>MINI-GALLEY® 2000</b>
150001	Optional S/S Tea Pot
150003	Optional Aluminum 6 Cup Percolator
156012	Optional 350 Mounting Flange (See Page 32)
150007	Mounting Bracket Only (Options Sold Separately)

### Optional 6 Cup Percolator



### Optional Tea Pot



### Pot & Pan Included



### DIMENSIONS

Diameter: 8"  
 Height: 7" (Without fuel canister)  
 Weight: 1.5 lbs. (Including mounting bracket)

\* **Forespar®** does not sell the D.O.T. approved propane canisters. They are available from your marine hardware dealer, camping supplies or major department stores in the U.S. and Canada. For European or other cartridges sold outside of the United States, an adapter may be needed for the various threaded canister tops sold outside of North America. These adapters should be secured prior to any long distance voyages outside the U.S. and may vary from country to country. **Forespar®** has designed this unit for use with U.S./ D.O.T. propane cartridges and cannot be responsible for their availability outside the U.S.

# NOVA LIFT™, MOTOR MATE™ & CARGO MATE™

## NOVA LIFT™

Forespar's Nova products combine elegant styling with superb strength and function. The Patented Nova Lifts use internally led purchase to keep the lifting arm centered over the load. Other brands swing left and right without control. Another valuable feature is the internal lead to your cockpit winch where you have loads of lifting power to make the job easy! **No external block & tackle.**

**Nova Lift™** comes with a stainless steel lower mounting tube that will accommodate 30" height rails. Vessels with rails higher than 30" will require the use of a deck pad (not included) to raise the installation to the proper height.

The **Nova Lift™** with winch is ideal for trawlers and motor yachts where sailboat winches are not available.

Part No.	Description
153311	<b>Nova Lift™</b>
153312	<b>Nova Lift™ With Winch</b>
153308	Outboard Motor Sling
153387	1-1/4" Rail Adaptor
153303	Plastic Outboard
	Motor Mount - 1" Rail
153318	2-5" Optional Stand Off Bracket

### 220 lbs. Maximum Load

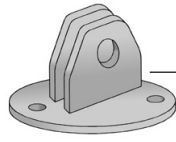
Overall length of arm = 52"  
(Removed for storage)

Arm height above top  
of Mount Tube = 31"

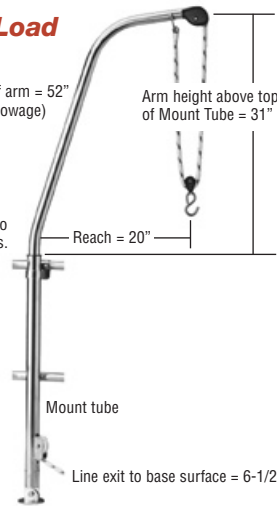
Systems come with a clamp to  
suit standard 1" diameter rails.

Optional 1-1/4" Rail Clamp  
P/N 153387

### Stand Off Bracket



Foot Base  
Diameter = 3"  
Max. angle = 60°  
3 x 1/4" holes  
Base Swivels



**Nova  
Lift™**



**Nova  
Lift™  
With  
Winch**



## CARGO MATE™

This heavy duty white powder coated aluminum heavy lifter mounts and dismounts with ease. **CargoMate™** stows neatly in a quality bag, and complete tackle is included. Winch drum capacity provides for 13 vertical feet of lift.

With greater lift capacity, the unit should be thru-deck mounted on sailboats and coaming or transom/swim step mounted on power boats. Deck flange and universal base mount provided as standard. 33" column extensions available.

- **The Big Brother to Motor Mate™**
- **Lifting capacity: 250 lbs.**
- **Integral ratchet type winch provides 15 to 1 lift ratio.**
- **For both Power & Sail.**

**Boom length: 34"**  
**Assembled height: 54"+**  
**Weight: 32 lbs.**



Part No.	Description
153200	Cargo Mate™
153207	33" Extension Tube
153209	Storage Bag*
153230	Deck Mounting Flange*
153233	Power Boat Mounting Ring

\*Included with CARGO MATE™

## MOTOR MATE™

Features heavy duty anodized aluminum, powder coated white for added corrosion resistance. The unit stores in its own 31" X 6" bag. Comes with tackle and will lift anything from the dinghy to the cockpit (or vice-versa) up to 100 lbs. Great for the dinghy motor, but also good for SCUBA tanks, ice, duffel bags, groceries, etc.

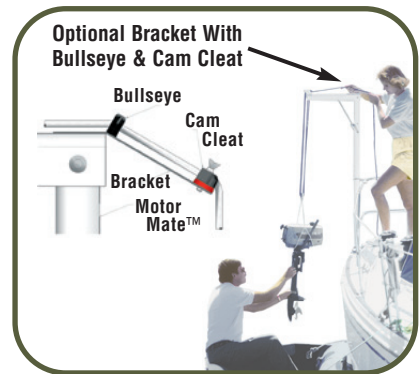
The **Motor Mate™** uses a **Railfast®** mounted ring on the rail and a "toe" on the cockpit coaming directly under the rail.

- **Light-Weight, Portable, Compact**
- **Ideal for Lifting Outboard Motors, Sea Bags, SCUBA Gear**
- **Lifting Capacity: 100 lbs. (the weight, approximately, of a 15 hp. outboard)**
- **Works Great for Both Power Boats & Sailboats**

**Boom length: 20"**  
**Assembled height: 54"**  
**Weight: 12 lbs.**

Part No.	Description
153100	Motor Mate™
153104	Base Mount *
153105	Rail Mount *
153130	Cam Cleat Bracket
153109	Vinyl Bag *

\*Included with MOTOR MATE™



# ABYC Standards, Forespar® Policies and Contacts

## ABYC H-27 SEACOCK, THRU-HULL CONNECTION, AND DRAIN PLUG STANDARDS

Based on ABYC's assessment of the state of existing technology, and the problems associated with achieving the goals of this standard, ABYC recommends compliance with this standard for all boats, associated equipment, and systems manufactured after July 31, 1998.

### 27.1 PURPOSE

These standards and recommended practices are guides for the selection of materials, design, construction, and installation of seacocks, thru-hull connections, drain plugs, and other fittings that penetrate the hull at or below the maximum heeled waterline.

### 27.2 SCOPE

These standards and recommended practices apply to all boats, with exceptions noted in H-27.5.1.

### 27.3 REFERENCED ORGANIZATIONS

ABYC - American Boat & Yacht Council, Inc., 3069, Solomon's Island Road, Edgewater, MD 21037, PH: (410) 956-1050

ANSI - American National Standards Institute, 1430 Broadway, New York, NY 10018, PH: (212) 354-3300

ASTM - American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103, PH: (215) 299-5400

UL - Underwriters Laboratories Marine Department, POB 13995, 12 Laboratory Drive, Research Triangle Park, NC 27709, PH: (919) 549-1400. Obtain standards from Global Engineering Documents, Inc., 15 Inverness Way East, Englewood, CO 80112, PH: (800) 854-7179 (US and Canada), PH: (303) 397-7956 (outside US and Canada), Fax (303) 397-2740

### 27.4 DEFINITIONS

**Drain Plug** - Removable plug that allows the draining of the bilge. **Maximum heeled waterline** - The level of the water on the hull when the hull is inclined to, (a) an angle of 7°, for powerboats, or (b) for sailboats, the level of the sheer amidships. **Seacock** - A type of valve used to control intake or discharge of water through the hull. It is operated by a lever type handle usually operating through a 90° arc, giving a clear indication of whether it is open or shut. **Thru-hull** - A fitting designed to accept pipes, hoses, or valves to allow the passage of water in or out of a vessel.

### 27.5 REQUIREMENTS - IN GENERAL

**27.5.1** All piping, tubing, or hose lines penetrating the hull below the maximum heeled waterline, under all normal conditions of trim and heel, shall be equipped with a seacock to stop the admission of water in the event of failure of pipes, tubing, or hose. **EXCEPTIONS: 1. Boats that conform to the level flotation requirements of ABYC standard H-8, Buoyancy in the Event of Swamping, may use seacocks, or other means, to stop the admission of water in the event of failure of pipes, tubing or hose lines penetrating the hull below the waterline. 2. Self-draining cockpit drains that discharge above the waterline with the boat in the static floating position and meet the requirements of 27.5.1.1. 3. For exhaust systems installations see ABYC P-1, Installation of Exhaust Systems For Propulsion and Auxiliary Engines.**

**27.5.1.1** Self-draining cockpit drains that are not equipped with a seacock shall use reinforced piping or hose that resists kinking and collapse.

**27.5.2** Seacocks shall be designed and constructed to meet ANSI/UL 1121, *Marine Through-Hull Fittings and Sea-Valves*.

**27.5.3** Thru-hull fittings shall be designed to meet ANSI/UL 1121, *Marine Through-Hull Fittings and Sea-Valves*. **EXCEPTION: Spuds or flanged fittings bolted to the hull, integral with, or mechanically fastened to the hull, and formed with a material compatible with the hull.**

**27.5.4** If a boat is fitted with a drain plug, the following requirements shall apply:

**27.5.4.1** Attachment of the drain plug body to the hull shall be permanently water tight, and constructed to prevent the plug body from loosening when the plug is inserted or loosened for draining.

**27.5.4.2** The use of expandable type drain plugs shall be limited to boats equipped with flotation in compliance with ABYC H-8, *Buoyancy in the Event of Swamping*.

**EXCEPTION: In wooden boats only, the use of tapered, soft-wood plugs for bilge draining purposes is acceptable.**

**27.5.4.3** Expandable type plugs shall be adjusted and designed to prevent inadvertent disassembly. **NOTE: One method of effecting this is by crimping or distorting the threaded ends of adjusting stem.**

### 27.6 MATERIALS

**27.6.1** All materials shall be galvanically compatible and resist degradation by salt water, petroleum products, UV light, ozone, cleaning compounds likely to be encountered, marine growth, and the effects of heat aging.

**27.6.2** Copper-based alloys shall meet the requirements of the 10 Day Moist Ammonia Air Stress Cracking Test in UL1185, *Portable Marine Fuel Tanks*.

**27.6.3** All plastic fittings shall meet the following minimum physical properties:

**27.6.3.1** A minimum tensile strength greater than 10,900 psi (75 mPa), when tested to ASTM D638; and

**27.6.3.2** A flexural modulus greater than 500,000 psi (3,480 mPa), when tested to ASTM D790; and

**27.6.3.3** Shall contain ultraviolet light inhibitors. **NOTES: 1. All values are for dry as molded samples in natural color. Addition of colorants or other additives may change the physical property values. 2. Thru-hull fittings that meet the requirements of 27.5 may be marked "ABYC H-27."**

### 27.7 INSTALLATION

**27.7.1** A seacock shall be securely mounted so that the system will withstand a 500 pound static force applied for 30 seconds to the inboard end of its connecting fitting, at any point in its most vulnerable direction, without the system failing to perform as intended.

**27.7.2** Seacocks shall be readily accessible as installed, and so oriented that their handles are easy to operate.

**27.7.3** If a flanged seacock is used, its flange shall be securely mounted to the hull. **NOTE: A sea chest, backing block, thru-hull, or spud, welded or bonded securely to the hull, shall be considered an acceptable hull structure for mounting a seacock.**

**27.7.4** If installed, drain plugs shall be installed in what is expected to be the lowest portion of the bilge when the boat is in storage.

**27.7.4.1** Drain plugs shall be accessible.

**27.7.5** Provision shall be made to minimize galvanic corrosion of those devices incompatible with the hull material. See ABYC E-9, *Direct Current (DC) Electrical Systems On Boats*, and ABYC E-2, *Cathodic Protection*.

**27.7.5.1** On metal hulled boats, metal thru-hull fittings shall be galvanically compatible with the hull plating or shall be electrically insulated from the hull plating.

**27.7.5.2** Metallic thru-hull fittings and drain plugs, installed below the normal accumulation of bilge water, shall be bonded to the boat's common ground point to minimize stray current corrosion. See ABYC E-2, *Cathodic Protection*.

## RETURNED MERCHANDISE

No returns will be accepted without prior agreement from Forespar® including instructions on method of shipment and return authorization number. Customized merchandise is not returnable. Any unused, undamaged merchandise accepted for return will be subject to a 20% return and handling charge.

## REPAIRS

Repairs necessary due to accident, misuse or normal wear and tear, will be made at customers request. Charges for such repairs will include published price of replacement parts and reasonable labor costs. All merchandise being returned for repair must be shipped prepaid and include return address and repair instructions.

**A Return Authorization Number from our Customer Service department is required.**

Forespar® is a registered trademark of Forespar Products Corporation.

Product pricing, design and specifications are subject to change without notice.

## WEBSITE

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

## EMAIL

Customer Service  
sales@forespar.com

## CATALOG DESIGN BY

Mink Graphic Design  
(714) 434-1405

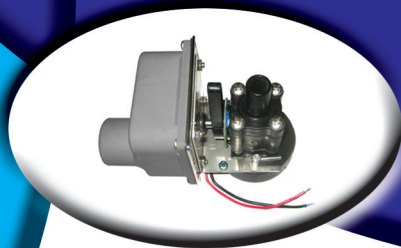
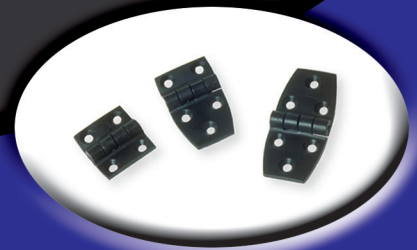
Catalog Price  
\$2.00

Catalog Printed in Hong Kong



# **FORESPAR<sup>®</sup>**

**MARINE PRODUCTS THAT PERFORM**



**FORESPAR<sup>®</sup>**  
**MARELON**



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