

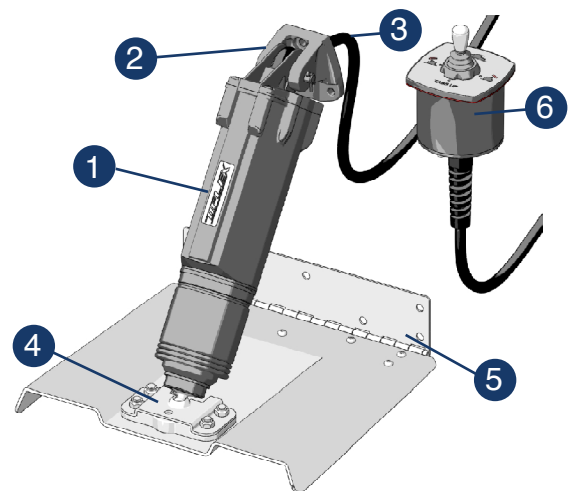
The use of the tabs allows the boat to maintain an adequate trim according to the different navigation conditions, optimizing the performance. If necessary (1), the tab drive rectifies and rebalances the boat trim (2), ensuring a higher engine efficiency and speed, a considerable fuel saving and navigation safety. The tabs fixed to the lower edge of the transom act as a movable extension of the boat hull, increasing the stability in several conditions.

Their **working principle** is the following: the water, flowing on the tab surface, causes the stern lifting as the tab is lowered. According to this principle, it is possible to change the tab lowering up to reaching a trim that can ensure an optimal performance for each situation.



TRIM TABS COMPONENTS

1	Actuator
2	Connection bracket to the transom
3	Electrical cable (2 m - 6.6 ft)
4	Connection bracket to the tab
5	Tab + hinge
6	Joystick - Control system



OPERATION

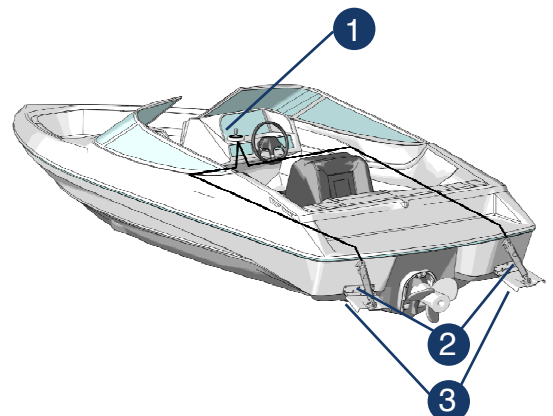
The **joystick** allows an easy use of the Trim Tab system. Thanks to this control system, the user can focus on the boat trim, regardless of the tab position.

The **electromechanical actuators (2)** that allow changing the **inclination angle of tab (3)** are controlled by means of the **joystick (1)** that is located on the dashboard or on the fly-bridge.

Joystick function description:

- By joggng the lever forward, the boat bow goes down;
- By joggng the lever backward, the boat bow goes up;
- By joggng the lever rightward, the boat tilts to starboard
- By joggng the lever leftward, the boat tilts to port

When running at idle or when the engine turns off, the electronic system enables the **AUTO LINE-UP** function automatically. It allows putting the tabs in rest position.



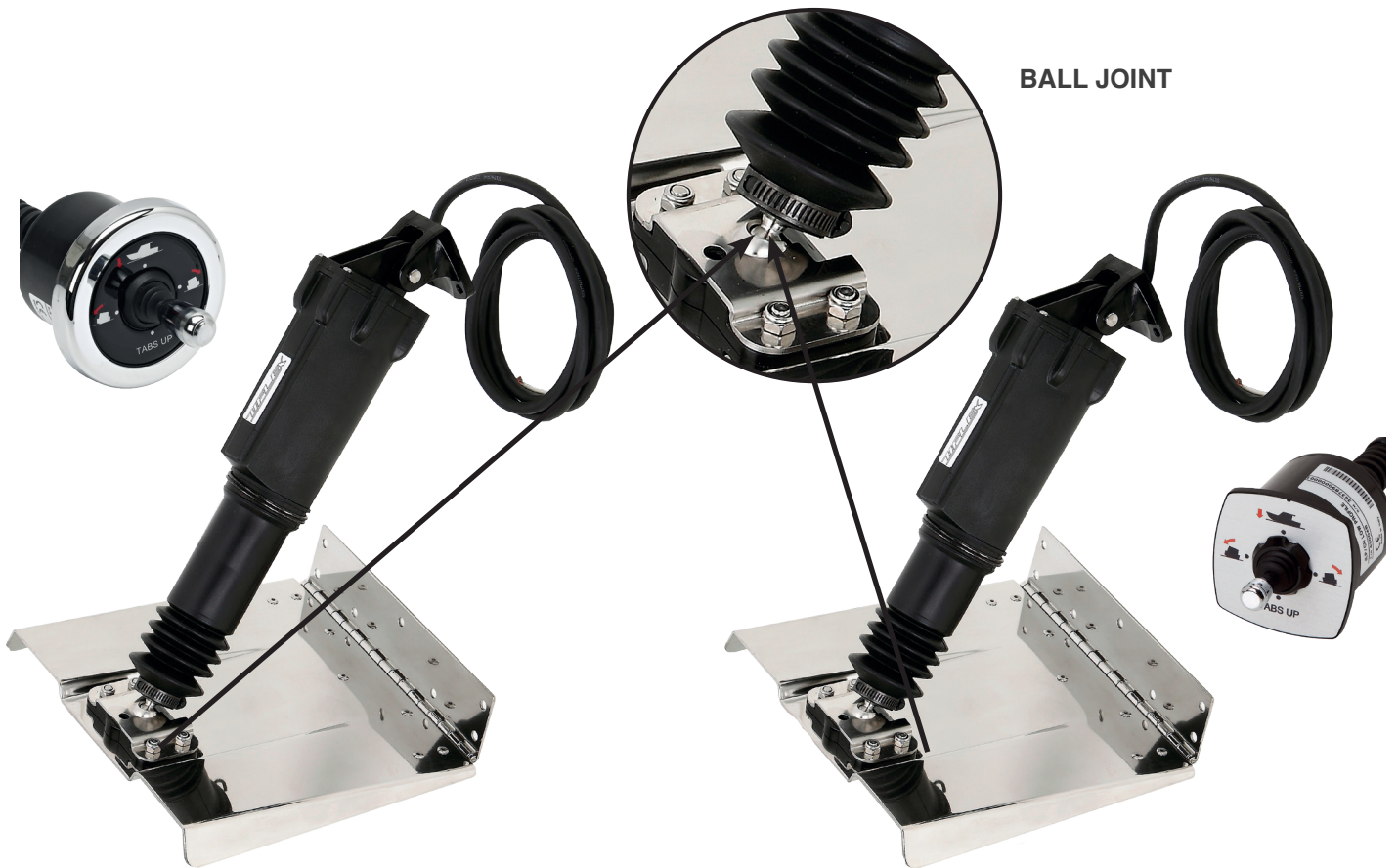
Improve fuel economy and passenger comfort with Uflex electromechanical trim tabs.

Featuring **electropolished stainless steel planes** and **low consumption, high speed, composite actuators**, these tabs are built to last in the most demanding sea conditions.

Uflex trim tabs have been specifically designed for **easy installation** using a quick connect bracket-actuator, requiring only one small hole per tab through the transom. The patented transom mounting bracket encapsulates the wiring to ensure protection against any wiring damage.

Uflex trim tab systems are available in **2 versions**:

- **MTT systems for standard installations**
- **MTC systems for compact installations**



MTT 12-CH + MIRROR POLISHED SS TABS

MTC 12-CH-LP + MIRROR POLISHED SS TABS

MTT AND MTC SYSTEMS - FEATURES AND BENEFITS

- Tab bracket with **ball joint**
- Operating system with hardened steel ballscrew, suitable to withstand high push loads.
- Prompt and easy control with the innovative use of our patented **Joystick** control
- **Auto Line-Up**: automatic flap re-alignment function
- Completely sealed thermoplastic resin tab actuators: maximum protection guaranteed by dual seals and a rubber bellow (patented)
- Stainless steel rod and tabs
- Innovative profile of the tabs increases the efficiency of the system
- Non polished stainless steel tabs also available (standard tabs only).
- Top of stainless steel tabs are mirror polished for higher resistance to marine environment.
- Patented hole hinge design allows for precise retrofit replacement with Lenco® and Bennett® same size tabs
- Fully maintenance free
- Voltage: 12V DC
- IP68 waterproof protection
- CE Certification
- Meets with the EN 60945 standards

Improve fuel economy and passenger comfort with Uflex electromechanical trim tabs.

Boats often become unbalanced to port or starboard due to wind, sea conditions, and weight transfer within the boat.

The innovative joystick by Uflex takes all the guesswork out of realigning the boat. A simple push of the joystick lever in the opposite direction of the “lean” of the boat is all you need to do.

Gone are the days of having to think about the current positions of the tabs and then push two rocker switches, hoping that you have the correct sequence, i.e. port up and starboard down or vice versa.

The Uflex joystick let's you drive like a pro!

- Makes adjusting the position of the boat more intuitive than traditional rocker switches
- Both trim actuators move simultaneously in opposite directions when pushing the joystick to port or to starboard

REALIGNING LEAN TO PORT OR STARBOARD

Because the joystick simultaneously activates both tabs in opposite directions when adjusting for a lean to port or starboard, the realignment of the boat occurs very quickly, and with optimal tab positioning in terms of efficiency.

REALIGNING BOW LIFT

Pushing the joystick up or down moves the tabs in the same direction. This changes the attitude of the boat bow up or down.

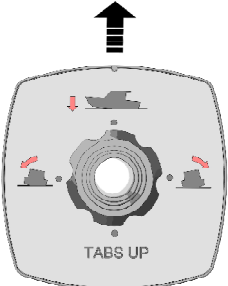
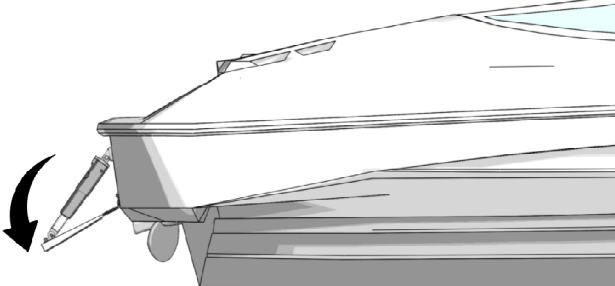
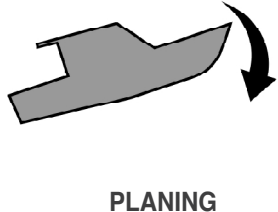
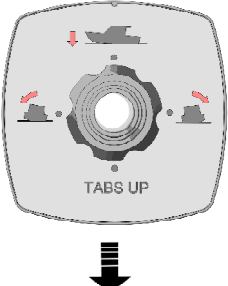
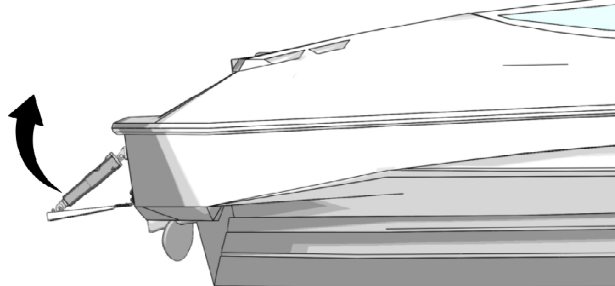
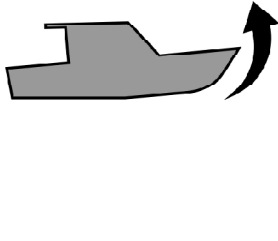
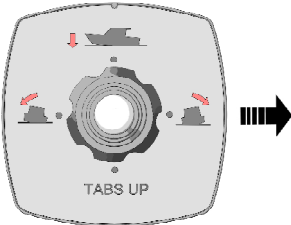
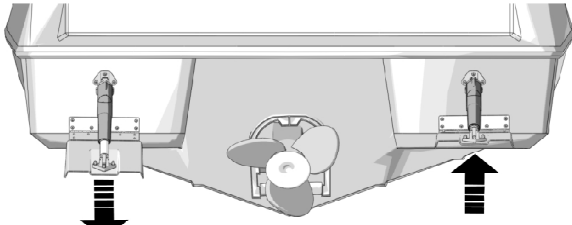
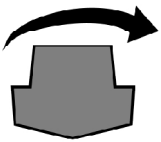
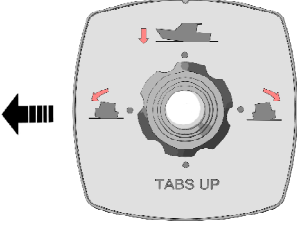
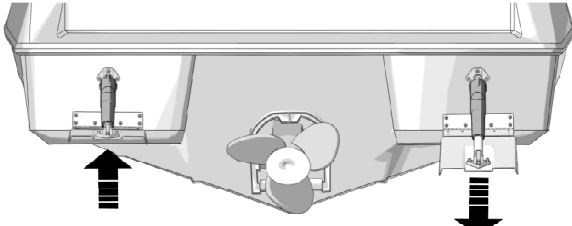
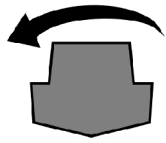
The unique profile of the Uflex planes offers greater efficiency and stern lift than traditional flat planes, often providing the opportunity to use a smaller size tab with the same performance of a larger flat plane.

Keep the boat on plane with lower engine RPM

IP68-rated, triple sealed 12VDC electro-mechanical actuators provide:

- One-piece actuator housing reduces the possibility of water intrusion
- Exclusive rubber boot protects internal primary seals from sea growth and high-pressure water
- Planetary gear actuator gearbox provides high efficiency and low amp consumption
- Tempered stainless-steel trapezoidal screw gives peak resistance to impact and high-torque loads
- The actuator upper bracket is prepared to route electrical cable through the transom



CHANGE WITH THE JOYSTICK	TAB MOVEMENT	CHANGE
 <p>TABS UP</p>		 <p>PLANING</p>
 <p>TABS UP</p>		
 <p>TABS UP</p>		
 <p>TABS UP</p>		

The electronic system can automatically enable an important function named “**Auto line-up**” which allows aligning the tabs at rest, without using the joystick.

Two different types of installation are available: engine key control or neutral safety switch control.

This function is provided with an inhibition device that prevent it from being enabled again for five minutes; after this time has passed, the “Auto line-up” function is available again.

- **Engine key**

When the engine key is turned and the control panel is switched off, the system enables the “Auto line-up” function, putting the tabs in rest position.

- **Neutral safety switch**

When the lever is put in engine neutral condition, the Neutral safety switch connected to the lever sends a signal that enables the “Auto line-up” function, so that the actuators close and the tabs return to the rest position.

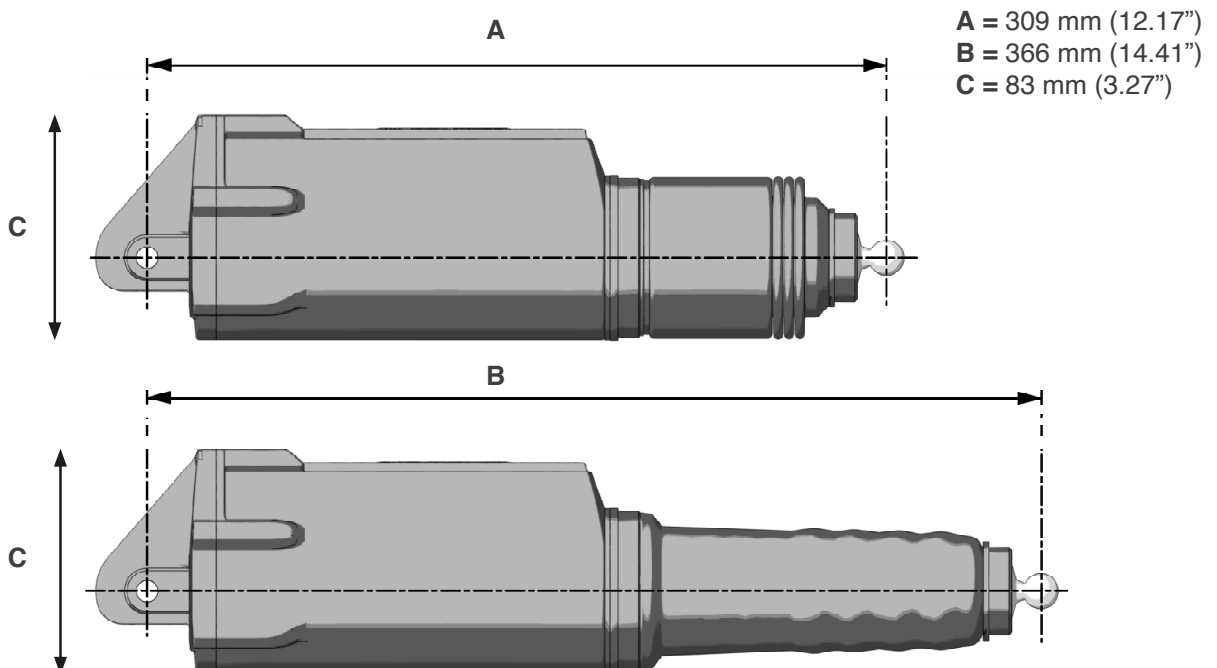


AT12 - 43160S

FEATURES

- 12 VDC Black actuator and brackets
- 1 m (3.28') wiring harness with Deutsch crimped pins included
- Stroke: 57 mm (2.25")

AT ACTUATOR FULLY CLOSED/OPEN



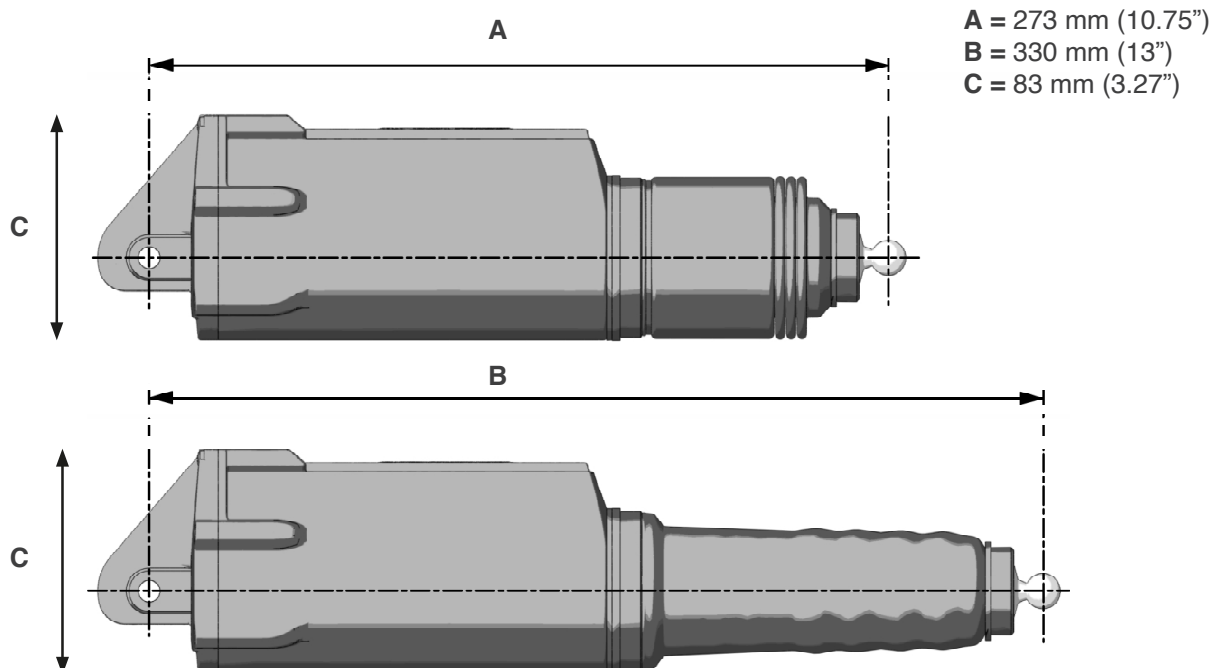


AC12 - 43001V

FEATURES

- 12 VDC Black actuator and brackets
- 1 m (3.28') wiring harness with Deutsch crimped pins included
- Stroke: 57 mm (2.25")

AC ACTUATOR FULLY CLOSED/OPEN





J/CH



JLP/CH



J/B



JLP/B

JOYSTICK CONTROL UNITS FOR SINGLE STATION:

J/CH - 41849Z chrome

J/B - 42855Z black (optional)

JLP/CH - 43004B chrome, low profile

JLP/B - 43005D black, low profile (optional)

J/B-LED - 43416B joystick control with led indicators

JOYSTICK CONTROL UNITS FOR DUAL STATION:

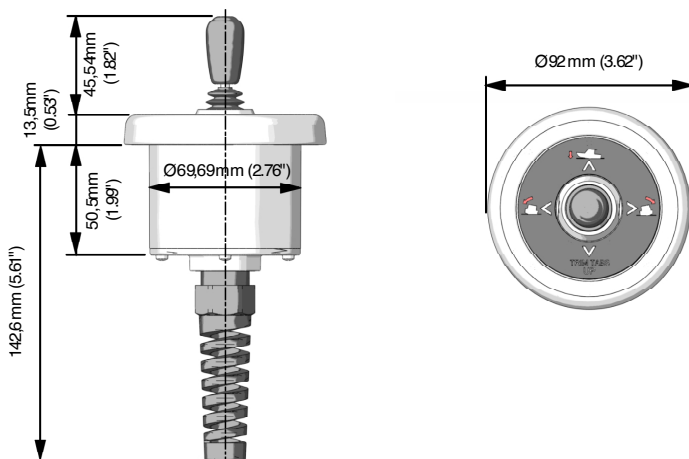
J/CH-2 - 42306 N chrome

J/B-2 - 42856 B black (optional)

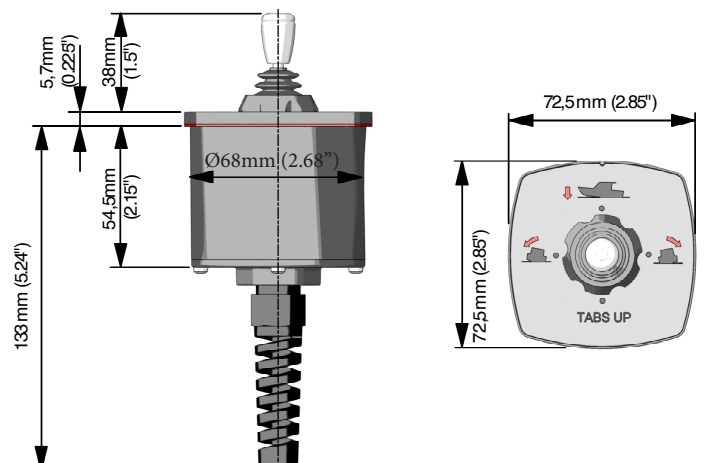
JLP/CH-2 - 43080 U chrome, low profile

JLP/B-2 - 43081 W black, low profile (optional)

- 70 mm (2.76") hole size
- 6 m and 9 m (19.7' and 29.6') extension wiring harness available with deutsch plugs included (optional)



J/CH and J/B dimensions



JLP/CH and JLP/B dimensions

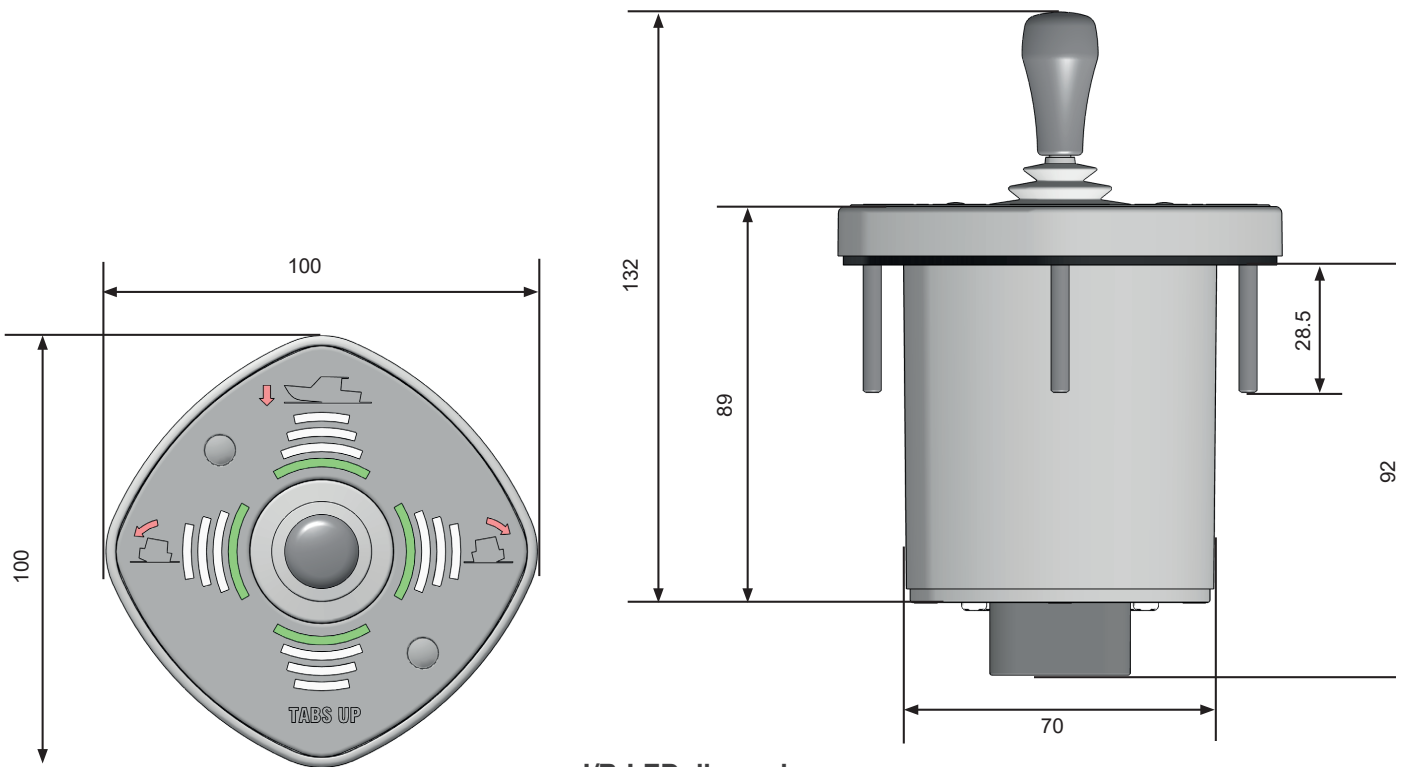


J/B-LED

JOYSTICK CONTROL WITH LED INDICATORS

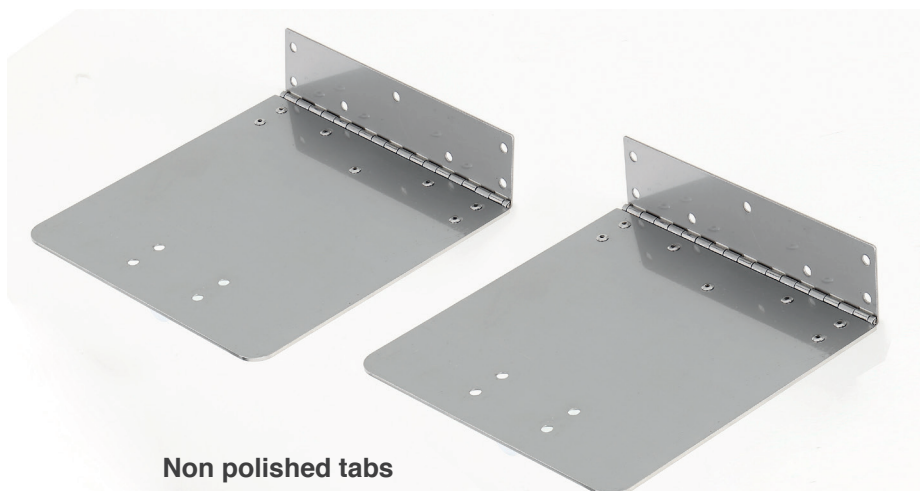
J/B-LED - 43416B joystick control with led indicators

- Main station compact control unit with joystick (PATENTED), **auto-line-up** function included (automatic flap re-alignment)
- 0.50 m (1.64") wiring harness included
- 70 mm (2.76") hole size



J/B-LED dimensions

STANDARD NON POLISHED TABS

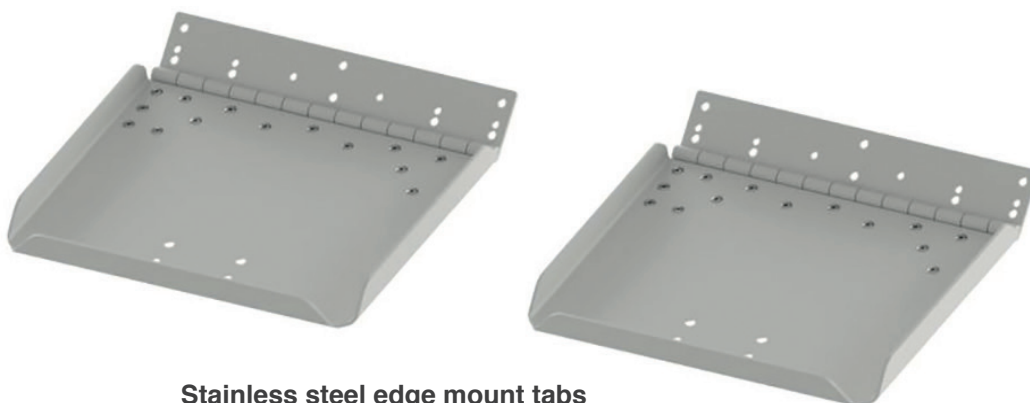


Non polished tabs

No need for new holes in case of Lenco® or Bennett® same size replacements.
They are not designed for use in racing applications.

MODEL	PART No.	DESCRIPTION	WEIGHT PER PAIR
NP99	42650E	Stainless steel tab pair 228,6 x 228,6 mm (9"x9")	3,3 kg (7.3 lbs)
NP129	42653L	Stainless steel tab pair 304,8 x 228,6 mm (12"x9")	4,0 kg (8.8 lbs)
NP1212	42651G	Stainless steel tab pair 304,8 x 304,8 mm (12"x12")	5,0 kg (11.0 lbs)
NP1218	42652J	Stainless steel tab pair 304,8 x 457,2 mm (12"x18")	7,4 kg (16.3 lbs)

STAINLESS STEEL EDGE MOUNT TABS



Stainless steel edge mount tabs

Stainless steel non polished trim tabs blades.
No need for new holes in case of Lenco® or Bennett® same size replacements.
The installation requires less transom height than standard and high performance blades.
They are not designed for use in racing applications.

MODEL	PART No.	DESCRIPTION	WEIGHT PER PAIR
NPE912	43630D	Stainless steel tab pair 228,6 x 304,8 mm (9"x12")	5,8 kg (12.8 lbs)
NPE129	43631F	Stainless steel tab pair 304,8 x 228,6 mm (12"x9")	5,6 kg (12.3 lbs)
NPE1212	43632H	Stainless steel tab pair 304,8 x 304,8 mm (12"x12")	7,2 kg (15.9 lbs)
NPE1218	43633K	Stainless steel tab pair 304,8 x 457,2 mm (12"x18")	10,8 kg (23.8 lbs)



Mirror polished stainless steel tabs

Stainless steel, mirror electro-polished trim tab blades.
 No need for new holes in case of Lenco® or Bennett® same size replacements.
 They are not designed for use in racing applications.

MODEL	PART No.	DESCRIPTION	WEIGHT PER PAIR
P99	41844N	Stainless steel tab pair 228,6 x 228,6 mm (9"x9")	2,8 kg (6.2 lbs)
P129	41845R	Stainless steel tab pair 304,8 x 228,6 mm (12"x9")	3,6 kg (7.9 lbs)
P1212	41846T	Stainless steel tab pair 304,8 x 304,8 mm (12"x12")	4,6 kg (10.1 lbs)
P1218	41847V	Stainless steel tab pair 304,8 x 457,2 mm (12"x18")	6,7 kg (14.8 lbs)

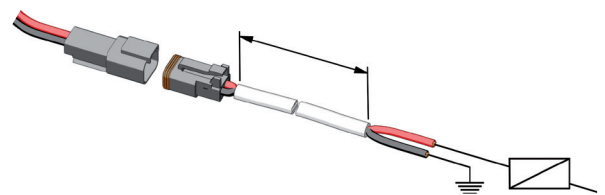
OPTIONAL COMPONENTS

KE20 - 42378R - Extension Wiring Harness Kit

Kit includes:

- one 16.4' (5,0 m) length wiring harness extension for the power cable
- two 19.7' (6,0 m) length wiring harness extensions for the actuator cables
- Deutsch plugs included

Extension for power cable



KE30 - 42379T - Extension Wiring Harness kit

Kit includes:

- one 16.4' (5,0 m) length wiring harness extension for the power cable
- two 29.5' (9,0 m) length wiring harness extensions for the actuator cables
- Deutsch plugs included

KEJ2-20 - 41853P

19.7' (6,0 m) extension wiring harness for a second station.
 Deutsch connectors included.

KEJ2-30 - 42375J

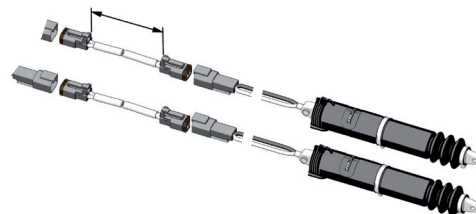
29.5' (9,0 m) extension wiring harness for a second station.
 Deutsch connectors included.

KEK-7- 42376L

6.6' (2,0 m) auto-line up extension wiring harness key frame.
 Deutsch connectors included.

KENS-7 - 42377N

6.6' (2,0 m) auto-line up extension wiring harness neutral safety.
 Deutsch connectors included.
 Not suitable for systems with joystick control with led indicators (J/B-LED).



Extension for actuator cables



The prepackaged UFLEX set includes:

- 1 pair of actuators complete with brackets
- 1 joystick.

The tabs are not included and sold separately: selected model has to be specified when ordering.

Not intended for use in racing applications.

CE Certification
Waterproof: IP68
EN60945 Certification

MODEL	PART No.	VOLT	DESCRIPTION
MTT 12-CH	43250T	12V DC	2 AT12 actuators, 12V DC + 1 chrome joystick
MTT 12-CH-LP	43251V	12V DC	2 AT12 actuators, 12V DC + 1 chrome low profile joystick
MTC 12-CH	43043M	12V DC	2 AC12 actuators, 12V DC + 1 chrome joystick
MTC 12-CH-LP	43044P	12V DC	2 AC12 actuators, 12V DC + 1 chrome low profile joystick

SPARE PARTS

MODEL	PART No.	DESCRIPTION
BRS-C	43039X	Bracket kit - Connection between AT or AC actuators and boat
BRT-C	43040F	Bracket kit - Connection between AT or AC actuators and tab
EP 5	42440T	Wiring harness extension for power cable 5,0 m (16.4')
EP 6	42302E	Wiring harness extension for actuator cable 6,0 m (19.7')
EP 9	42439J	Wiring harness extension for actuator cable 9,0 m (29.5')

ACTUATOR PART No.	BELLOWS KIT PART No.	BRACKET KIT PART No. (TAB SIDE)	BRACKET KIT PART No. (TRANSOM SIDE)
41839W	43094F	42296N	42298T
42937B	43094F	42296N	42298T
43001V	43724N	43040F	43039X / 43220H (Retrofit)*
43160S	43725R	43040F	43039X / 43220H (Retrofit)*
43276M	43724N	43040F	43220H
43280C	43094F	42296N	42298T
43302K	43725R	43040F	43220H
43432Z	43724N	43040F	43039X
43507E	43725R	43040F	43220H
42608F	43094F	42296N	42298T
43272D	43724N	43040F	43220H

* Part No. 43220H - see retrofit bracket explanation

RETROFIT BRACKET

BRS-T bracket will adapt AT12-AS12 actuator to pre-existing mounting holes on transom, in case of AS12 or of Lenco® replacement (until 2007).

BRS-T - 43220H - black bracket



ANODE KIT

Zinc alloy anode kit neutralizes the galvanic currents endangering the trim tabs. 2 anode kits are necessary for every 1 pair tab installation.

KA70 - 42441V

Ø 2.8" (70 mm) sacrificial anode kit for tab up to 12" x 12" size

KA90 - 42442X

Ø 3.5" (90 mm) sacrificial anode kit for tab 12" x 18" size

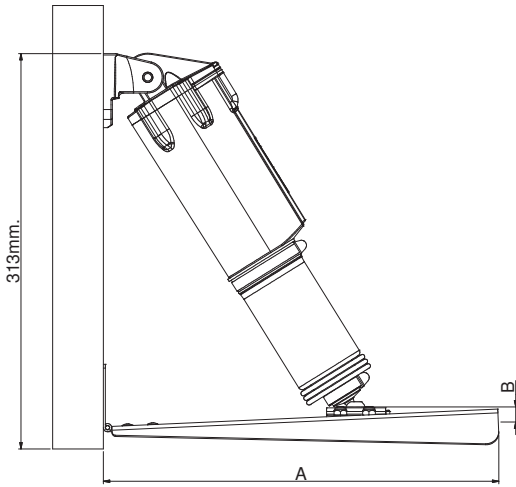


KA70



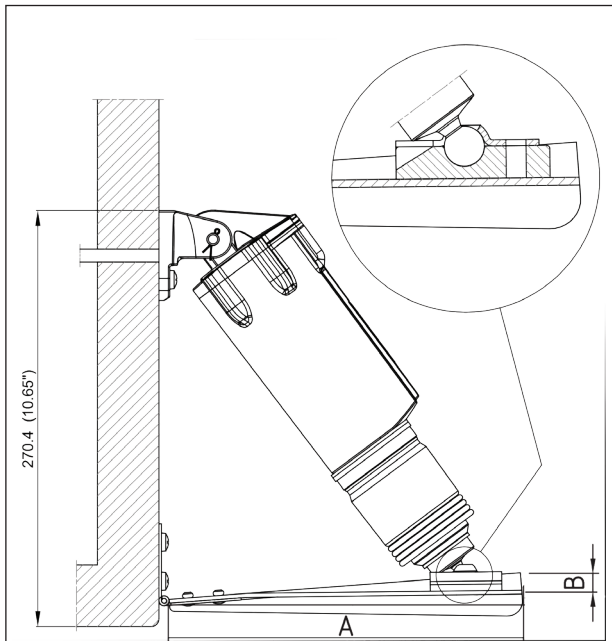
KA90

MTT INSTALLATION



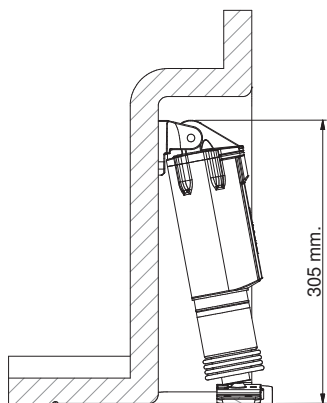
A: 228.6 mm - 9"
B: 19.5 mm - 0.77"

MTC TILTED INSTALLATION



A: 228.6 mm - 9"
B: 19.5 mm - 0.77"

MTC VERTICAL INSTALLATION



NOTE: dimensions could change in case of raked transom

MTT SYSTEMS - APPLICATION

BOAT LENGTH	BOAT LENGTH (m)	TAB SIZE L x l (")	TAB SIZE L x l (cm)	TRANSOM MINIMUM HEIGHT
14' - 18'	4,5 - 5,5	9" x 9"	22,8 x 22,8	31.03 cm (12.22")
16' - 25'	5,0 - 8,0	12"x 9"	30,5 x 22,8	31.03 cm (12.22")
18' - 30'	5,5 - 9,0	12" x 12"	30,5 x 30,5	31.03 cm (12.22")
26' - 36'	8,0 - 11,0	12" x 18"	30,5 x 45,7	31.03 cm (12.22")

MTC SYSTEMS - APPLICATION

BOAT LENGTH	BOAT LENGTH (m)	TAB SIZE L x l (")	TAB SIZE L x l (cm)	TRANSOM MINIMUM HEIGHT	
				TILTED INSTALLATION	VERTICAL INSTALLATION
14' - 18'	4,5 - 5,5	9" x 9"	22,8 x 22,8	27.04 cm (10.65")	30.5 cm (12")
16' - 25'	5,0 - 8,0	12"x 9"	30,5 x 22,8	27.04 cm (10.65")	30.5 cm (12")
18' - 30'	5,5 - 9,0	12" x 12"	30,5 x 30,5	27.04 cm (10.65")	30.5 cm (12")
26' - 36'	8,0 - 11,0	12" x 18"	30,5 x 45,7	27.04 cm (10.65")	30.5 cm (12")

NOTE: L= Tab length, l= Transom side.

These recommendations should be used as a general reference only. Final selection should be made with the assistance of a qualified installation technician. For any further information please contact our Technical Service

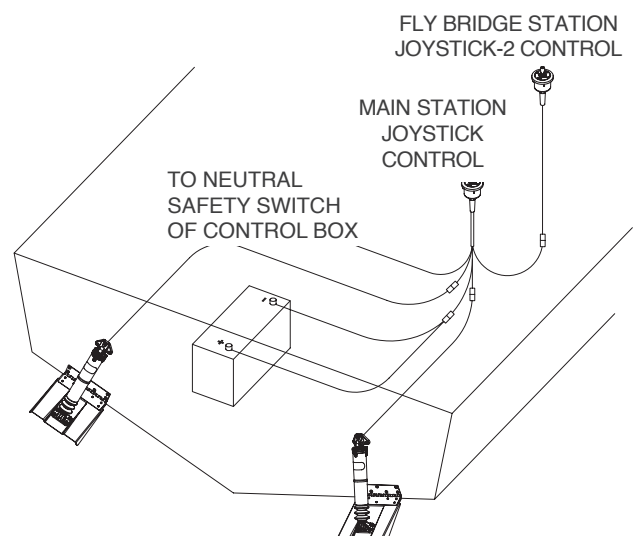
WARNING: The systems are not intended for use in racing applications

STANDARD COMPONENTS (SINGLE ACTUATOR PER TAB)

- 1 pair of electromechanical actuator complete with connection brackets and 2 m (6.56') wiring harness.
- 1 joystick control unit with 0.50 m (1.64') wiring harness
- 1 pair of stainless steel tabs. Tabs are sold separately: specify selected size when ordering

OPTIONAL COMPONENTS

- 1 extension wiring harness kit for the power cable and the actuator cables. Deutsch plugs included
- 1 second station joystick-2 control unit with 0.50 m (1.64') wiring harness
- 1 extension wiring harness (6 m and 9 m for second station). Deutsch plugs included.
- 1 extension wiring harness (2 m for auto-line up). Deutsch plugs included.
- 1 zinc alloy sacrificial anode kit to neutralize the galvanic currents on tabs (2 anode kits for every 1 pair tab installation)





aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



Marine Filtration Systems



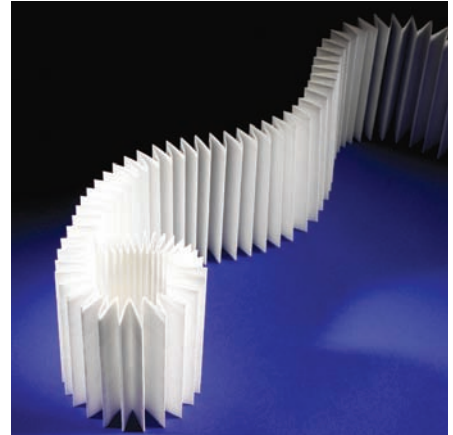
If It's Not A Genuine Racor Filter, you could be asking for trouble...

Issue	Concerns With Competitor Copies	Racor Commitment to Quality
Blocked Filter	Low quality media will perform poorly and can block 70% sooner than Racor media.	Racor uses propriety Aquabloc® media that meets or exceeds water removal and particle efficiency requirements for OEM fuel injection systems.
Bypassing	Poorly constructed filters may bypass internally allowing dirty fuel and water to reach the engine.	Racor uses high quality materials and production processes to ISO/TS16949 to eliminate bypass problems.
Split Or Leaking Seals	Poor quality seals will swell excessively, leak, and may deteriorate within the service period.	Racor uses high quality automotive grade gaskets and seals that are compatible with B20 bio-diesel (i.e. NBR, HNBR, and Viton®).
Dirty Fuel Reaching Engine	Inefficient filters will not protect the engine.	Racor replacement filters will perform as designed for the application.
Water In Fuel Reaching Engine	Very few, if any, copycat filters perform to original equipment specifications.	Racor uses the same media and materials in original equipment and replacement filters.
Cold Conditions	Poor quality pump diaphragms and seals will harden and cause leaking.	Racor uses high quality materials that are rated for operating temperatures of -40° to +255°F (-40° to +124°C).
Cracked Head Casting	Poor quality head castings cannot cope with extreme environmental conditions and vibrations.	Racor products are validated under extreme vibration and climatic conditions.
Contains Banned Substances	Some copy filters contain banned substances in the canister coating and plating.	Racor canisters contain no banned substances and are validated under extreme salt spray and climatic conditions.
Cracked Clear Bowl	Copycat filter bowls are often made from poor quality material that will crack under extreme temperature, chemical exposure, or continuous vibrations.	Racor uses a unique durable clear plastic bowl material with high clarity, excellent UV protection, low and high temperature resistance, is impact resistant, and is impervious to all fuel types.
Filter Accessories	Unauthorized Racor copies do not always offer accessories. If they do, they are likely not tested.	Racor has a wide range of filter accessories that are validated for integrity, EMC compatibility, and safety.

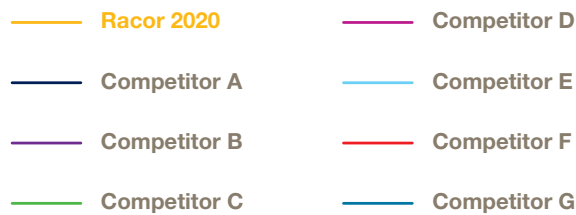
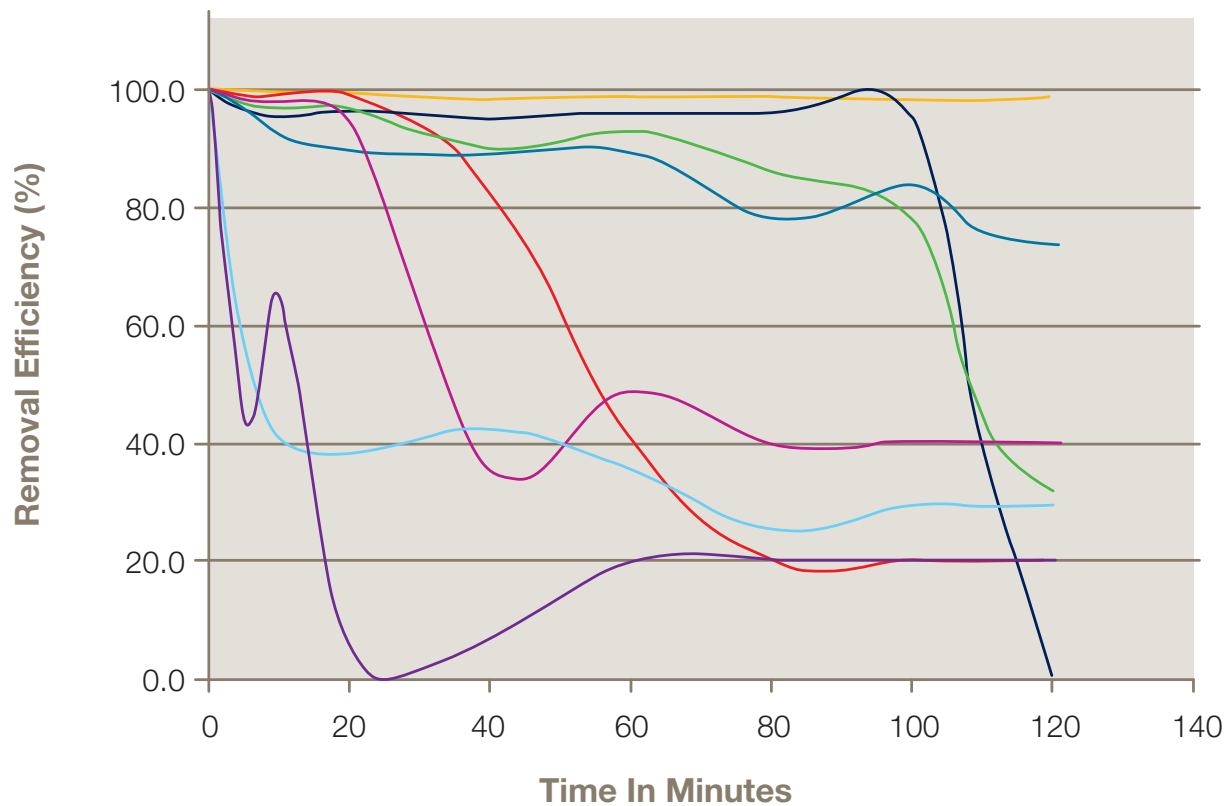
Water Separation Efficiency

The critical performance factor for any fuel filter is the water separation efficiency. The graph below shows the performance level of Racor products versus some competitor copies. Racor water separators out perform all competitors during testing.

Be aware that some of these competitor products fail to remove some particulates from the fuel and put the engine system in danger.



Test Results



Fuel Filtration



Duplex units offer mariners the peace-of-mind of having a clean filter in reserve. Rough seas can stir up tank sediment which will quickly clog a single fuel filter.

With Racor, a simple turn of a valve puts a clean filter back on-line. Servicing of the clogged filter can then be preformed even with the engine running.



Legendary Diesel Fuel Filtration

When engines demand heavy-duty, high-capacity water separation and fuel filtration, the Turbine Series is the most complete, efficient, and reliable engine protection you can install. Symbolizing Racor's continuing commitment to the science of filtration, the Turbine Series has established its position as the filter/separator often imitated, but never equaled. Models that include an aluminum bowl or stainless steel shield meet ASTM FS1201 certification, are UL-listed, American Bureau of Shipping, Veritas, Det Norske Veritas, ISO 10088, and USCG accepted. For severe service, all-metal bowls should be specified.

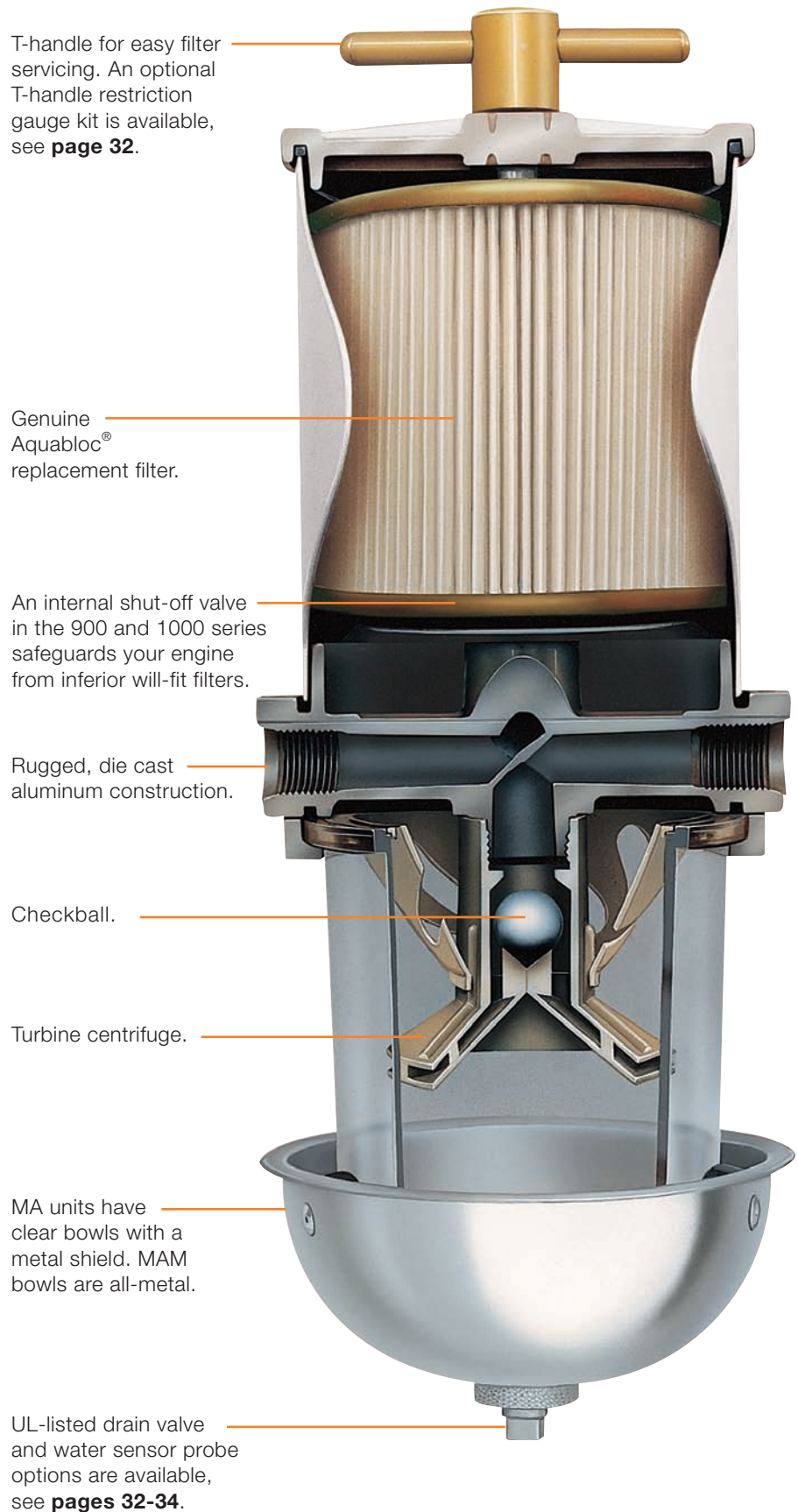
Paired with our famous and genuine Aquabloc® filters, the Racor Turbine Series is still the preferred brand for serious sailors globally.

The Inside Story

1 As fuel enters, it moves past the internal check valve, then through the turbine centrifuge where it flows in a spiraling direction, spinning off large particulates and water droplets. Being heavier than fuel, they fall to the bottom of the bowl.

2 Smaller water droplets bead-up along and on the sides of the internal components and on the surface of the Aquabloc® filter. When large enough, they too fall into the high-capacity bowl to be drained as needed.

3 Besides repelling water asphaltenes, algae, rust, and tiny solids from fuel. Aquabloc® filters are waterproof, so they remain effective longer, that saves you money.



Make certain that you replace your Turbine Series assemblies only with Genuine Racor Aquabloc® filters. While many others try to imitate the construction and performance of Aquabloc® filters, only the genuine article delivers the fit and performance specified by engine manufacturers, and guarantees that your Racor filter/water separator will deliver the protection you count on.

For convenience, end-caps are color-coded for easy identification and application.

- Red** = 30 micron, primary filtration.
- Blue** = 10 micron, secondary filtration.
- Brown** = 2 micron, final filtration.

The top cap includes handles for easy servicing and a filter bypass button for emergencies.

Aquabloc® media is a blend of high-grade cellulose compounded with engineered fibers, and a special chemical treatment. Water will not cling to the filter, Aquabloc® repels it.



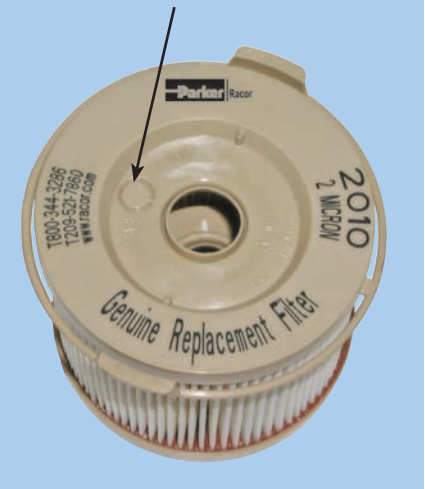
Aquabloc® Filters

Besides removing asphaltenes, water, gums, and varnishes, Aquabloc® filters out tiny particles of dirt and algae from diesel fuel. Aquabloc® filters have polymer end-caps that will not corrode, ever.

With an Aquabloc® replacement filter, you get a complete kit with all the seals you need. And not just any seals, but specially-formulated, Racor-engineered seals.

Always carry extra Racor fuel filters as one tankful of dirty fuel can quickly clog a filter.

Many Racor filters include an emergency bypass.



Order only genuine Aquabloc® replacement filters.

2020	TM	-OR
Select Filter 2010 (500 Series), 2040 (900 Series), or 2020 (1000 Series)	Select a Micron Rating SM = 2, TM = 10, or PM = 30	Must have "-OR" in part number (includes o-rings)

Electric Primer Pump Kit

Racor's electric primer pump kit can be retrofitted to many of the Racor 900 or 1000 Turbine Series fuel filters/water separators already in service.

The filter pump is an innovative and proprietary system consisting of a 100 micron pre-screen filter, a flow bypass circuit, and an innovative roller cell pump powered by a 12 or 24 vdc Racor brushless motor.

When the switch is activated the fuel is drawn into the pre-screen, then pumped through the housing, refilling the unit with fresh, clean, dry fuel.

When not in use, the filter pump system is bypassed and the Racor fuel filter/water separator functions normally.



The complete primer pump kit includes a wiring harness and controller switch.

Order Part Number:

- **RKP1912** for 12 vdc systems
- **RKP1924** for 24 vdc systems



The unitized assembly is only 3.3 in. (8.4 cm) tall and kit is easily retrofitted to a 900 or 1000 series filter. For Racor duplex or triplex filter systems, only one primer pump is needed.

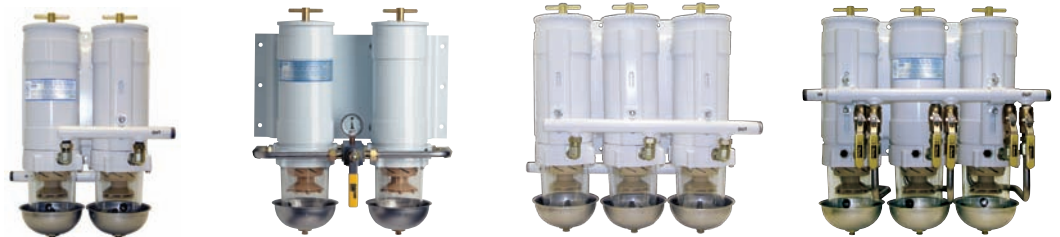
Note: Do not use in continuous duty applications.

Marine Turbine Series Fuel Filters



Model	500MA	900MA	1000MA	75500MAX	75900MAX
Max. Flow Rate (One filter on-line) (Two filters on-line)	60 GPH (227 LPH) N/A	90 GPH (341 LPH) N/A	180 GPH (681 LPH) N/A	60 GPH (227 LPH) 120 GPH (454 LPH)	90 GPH (341 LPH) 180 GPH (681 LPH)
Height	11.5 in. (29.2 cm)	17.0 in. (43.2 cm)	22.0 in. (55.9 cm)	11.5 in. (29.2 cm)	17.0 in. (43.2 cm)
Width	5.8 in. (14.7 cm)	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)	14.5 in. (36.8 cm)	18.8 in. (47.8 cm)
Depth	4.8 in. (12.2 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	9.5 in. (24.1 cm)	11.0 in. (27.9 cm)
Weight (approx.)	4 lbs (1.8 kg)	6 lbs (2.7 kg)	17 lbs (7.7 kg)	17 lbs (7.7 kg)	23 lbs (10.4 kg)
Port Size (metric optional) ¹	3/4"-16 SAE 16 mm x 1.5	7/8"-14 SAE 22 mm x 1.5	7/8"-14 SAE 22 mm x 1.5	3/4"-16 SAE N/A	7/8"-14 SAE N/A
Clean Pres. Drop	0.3 PSI (0.02 bar)	0.34 PSI (0.02 bar)	0.49 PSI (0.03 bar)	0.70 PSI (0.05 bar)	1.7 PSI (0.12 bar)
Max. Operating Pressure ²	15 PSI (1.03 bar)	15 PSI (1.03 bar)	15 PSI (1.03 bar)	15 PSI (1.03 bar)	15 PSI (1.03 bar)
Replacement Filter	2010 Series	2040 Series	2020 Series	2010 Series	2040 Series
Overhead Clearance	4.0 in. (10.2 cm)	5.0 in. (12.7 cm)	10.0 in. (25.4 cm)	4.0 in. (10.2 cm)	5.0 in. (12.7 cm)
Ambient Temperature Range	-40° to +255°F (-40° to +124°C)				
Maximum Fuel Temperature	190°F (88°C)				

Notes: Units are available with metal bowls, add "M" after MA, i.e. 1000MAM. ¹ Use (*) for metric port threads, i.e. *500MA, *900MA, and *1000MA. ² Vacuum installations are recommended.



Model	731000MA	751000MAX	771000MA	791000MAV
Max. Flow Rate (One filter on-line) (Two filters on-line) (Three filters on-line)	N/A 360 GPH (1363 LPH) N/A	180 GPH (681 LPH) 360 GPH (1363 LPH) N/A	N/A N/A 540 GPH (2044 LPH)	180 GPH (681 LPH) 360 GPH (1363 LPH) 540 GPH (2044 LPH)
Height	22.0 in. (55.9 cm)	22.0 in. (55.9 cm)	22.0 in. (55.9 cm)	22.0 in. (55.9 cm)
Width	16.5 in. (41.9 cm)	18.0 in. (45.7 cm)	18.0 in. (45.7 cm)	21.5 in. (54.6 cm)
Depth	12.0 in. (30.5 cm)	11.0 in. (27.9 cm)	11.0 in. (27.9 cm)	11.8 in. (30.0 cm)
Weight (approx.)	26 lbs (11.8 kg)	30 lbs (13.6 kg)	39 lbs (17.7 kg)	52 lbs (23.6 kg)
Port Size	3/4"-14 NPT	7/8"-14 SAE	1"-11.5 NPT	3/4"-14 NPT
Clean Pres. Drop	1.7 PSI (0.12 bar)	3.7 PSI (0.26 bar)	1.7 PSI (0.12 bar)	2.5 PSI (0.17 bar)
Max. Operating Pressure ³	15 PSI (1.03 bar)	15 PSI (1.03 bar)	15 PSI (1.03 bar)	15 PSI (1.03 bar)
Replacement Filter	2020 Series	2020 Series	2020 Series	2020 Series
Overhead Clearance	10.0 in. (25.4 cm)	10.0 in. (25.4 cm)	10.0 in. (25.4 cm)	10.0 in. (25.4 cm)
Ambient Temperature Range	-40° to +255°F (-40° to +124°C)			
Maximum Fuel Temperature	190°F (88°C)			

Notes: Units are available with metal bowls, add "M" after MA, i.e. 1000MAM. ³ Vacuum installations are recommended.

Compact and Versatile Systems for Main Propulsion and Genset Applications

Cost-Effective

Cost-effective designs for on-engine or remote mounting. Complete assemblies available in all-metal bowls.

High-Capacity

Hand-operated fuel priming pumps are integral to many Racor diesel spin-on series models, a feature that allows for removal of unwanted air from the filter and engine fuel system.

Environmentally Friendly

Metal bowls are reusable, impact-resistant, and virtually indestructible. When it's time for service, only the filter is replaced—the bowl and drain plug are reused. The long life-cycle of Racor bowls saves you money and reduces the environmental impact through disposal of less material.

Note: Use metal bowl versions for all marine engine room applications.

Easy Upgrades

Water-in-fuel (WIF) sensors are available to alert operators to drain accumulated water from the bowl.

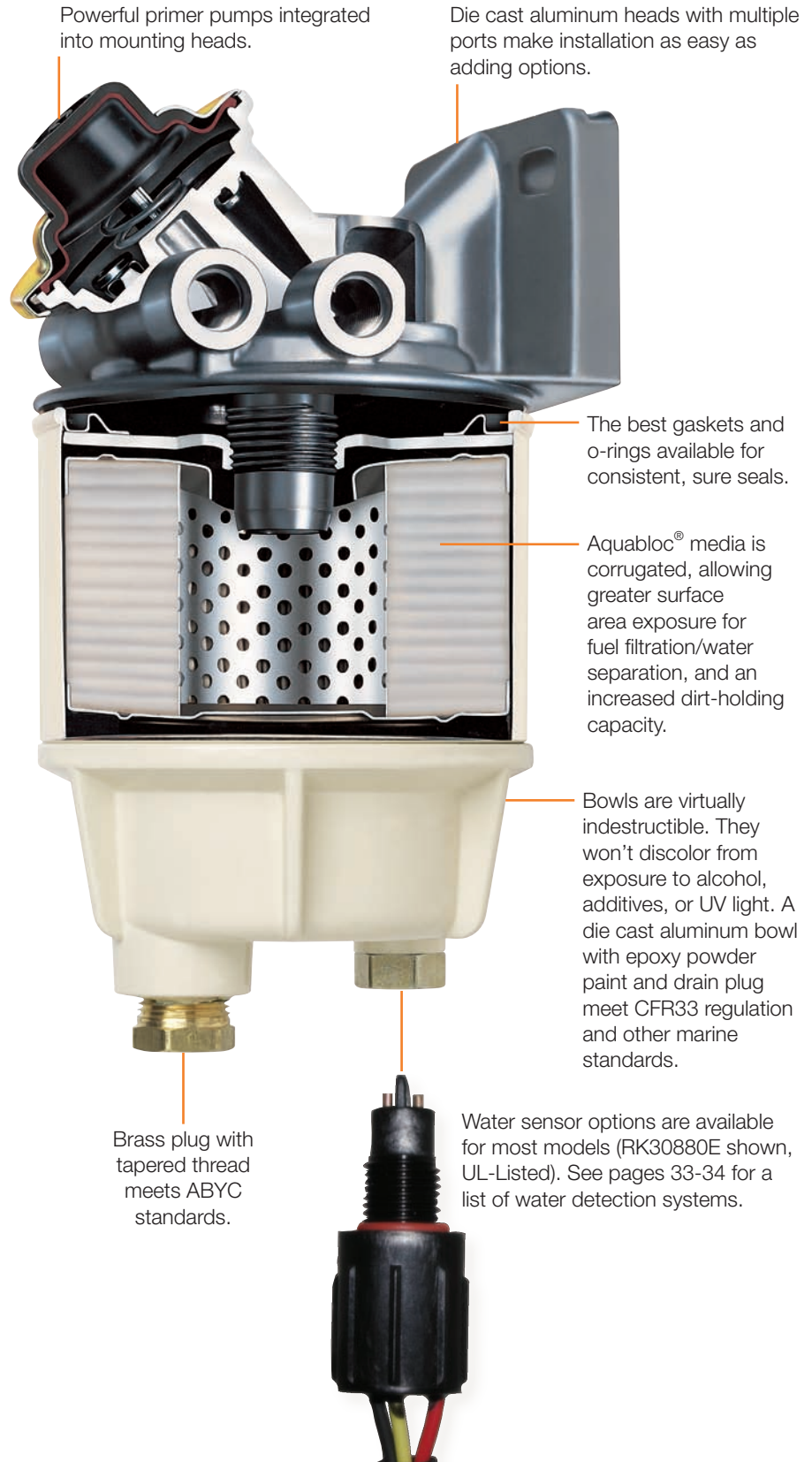
Corrosion-Resistant Construction

Advanced technology means bowls will not deteriorate from water collection, alcohol-blended fuels, exposure to harsh additives, salt spray, or UV light.

Safety First

Racor's UL-listed filters meet ABYC, ASTM, ISO, and many other global standards for filters used in marine engine rooms.

Diesel Spin-on Series



Diesel Spin-on Filters



Racor Aquabloc® Spin-on Fuel Filters Are Available in Color Coded 2, 10, or 30 Micron Ratings.

- P** = 30 micron, primary filtration.
- T** = 10 micron, secondary filtration.
- S** = 2 micron, final filtration.

Aquabloc® Spin-on Fuel Filters

Besides removing asphaltenes, water, gums, and varnishes, Aquabloc® filters out tiny particles of dirt and algae from diesel fuel.

With an Aquabloc® replacement filter, you get a complete kit with all the seals you need. And not just any seals, but specially-formulated, Racor-engineered seals.

Always carry extra Racor fuel filters as one tankful of dirty fuel can quickly clog a filter.

Please specify carefully – there are important differences among Spin-On Series features which effect performance and application.



Specifications	215RMAM	230RMAM	245RMAM	445MAM10	460MAM10	490MAM10	4120MAM10
Maximum Flow Rate	15 GPH (57 LPH)	30 GPH (114 LPH)	45 GPH (170 LPH)	45 GPH (170 LPH)	60 GPH (227 LPH)	90 GPH (341 LPH)	120 GPH (454 LPH)
Maximum PSI ¹	30 PSI (2.1 bar)	30 PSI (2.1 bar)	30 PSI (2.1 bar)	15 PSI (1.0 bar)	15 PSI (1.0 bar)	15 PSI (1.0 bar)	15 PSI (1.0 bar)
Clean Pressure Drop	0.12 PSI (0.01 bar)	0.3 PSI (0.02 bar)	0.6 PSI (0.04 bar)	0.2 PSI (0.01 bar)	0.3 PSI (0.02 bar)	0.4 PSI (0.03 bar)	0.5 PSI (0.03 bar)
Port Size	1/4"-18 NPTF	1/4"-18 NPTF	1/4"-18 NPTF	3/8" NPTF	3/8" NPTF	3/8" NPTF	3/4" SAE
Primer Pump	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Replacement Filter	R15TUL	R20TUL	R25TUL	S3204TUL	S3211TUL	S3201TUL	S3201TUL
Number of Ports	3	3	3	4	4	4	4
Water Sensor Option	RK30880E						
Height	7.7 in. (19.6 cm)	9.0 in. (22.9 cm)	10.5 in. (26.7 cm)	9.4 in. (23.9 cm)	10.8 in. (27.4 cm)	12.8 in. (32.5 cm)	12.8 in. (32.5 cm)
Width	3.9 in. (9.9 cm)	3.9 in. (9.9 cm)	4.0 in. (10.2 cm)	4.5 in. (11.4 cm)	4.5 in. (11.4 cm)	4.5 in. (11.4 cm)	4.5 in. (11.4 cm)
Depth	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)	4.8 in. (12.2 cm)	4.8 in. (12.2 cm)	4.8 in. (12.2 cm)	4.8 in. (12.2 cm)
Weight (approx.)	1.2 lbs (0.5 kg)	2.0 lbs (0.9 kg)	2.2 lbs (1.0 kg)	2.9 lbs (1.3 kg)	3.1 lbs (1.4 kg)	3.3 lbs (1.5 kg)	3.3 lbs (1.5 kg)
Ambient Temp Range	-40° to +255°F (-40° to +124°C)						
Maximum Fuel Temp	190°F (88°C)						

¹ Pressure Installations are applicable up to the maximum PSI shown, vacuum installations are recommended.



The patented P Series Diesel Fuel Conditioning Module (for vacuum side applications only) was developed for application in any diesel engine fuel injection system. P Series assemblies are available in three sizes and all feature 3/8" NPT fuel ports. This innovative and modular fuel filter/water separator incorporates low-pressure fuel system components into a single package. It supplies clean, dry fuel to the fuel system and serves as a repriming system.

Fuel Conditioning Module



Durable, 12 vdc roller-cell electric fuel pump offers the benefit of an electric, on-demand, priming pump.

A fuel filter/water separator and primer pump in one unit.

High-performance Aquabloc® cartridge-style filter media is environmentally friendly and incinerable.



Important Note: ABYC standards allow for installation outside of the engine room only.

Specifications	P3	P4	P5
Maximum Flow Rate	30 GPH (114 LPH)	40 GPH (151 LPH)	50 GPH (189 LPH)
Clean Pressure Drop	0.4 PSI (0.03 bar)	0.5 PSI (0.03 bar)	0.8 PSI (0.06 bar)
Max. Pump Output (at 14.4 volts)	40 GPH (151 LPH)	40 GPH (151 LPH)	40 GPH (151 LPH)
Standard Fuel Port Size (SAE J476)	3/8"-18 NPT	3/8"-18 NPT	3/8"-18 NPT
Total Number of Ports Available	2	2	2
Fuel Inlets	1	1	1
Fuel Outlets	1	1	1
Replacement Filter			
2 micron	R58060-02	R58095-2	R58039-2
10 micron	R58060-10	R58095-10	R58039-10
30 micron	R58060-30	R58095-30	R58039-30
Minimum Service Clearance	2.5 in. (6.4 cm)	2.5 in. (6.4 cm)	2.5 in. (6.4 cm)
Height	7.7 in. (19.6 cm)	9.0 in. (22.9 cm)	11.5 in. (29.2 cm)
Depth	5.2 in. (13.2 cm)	5.2 in. (13.2 cm)	5.2 in. (13.2 cm)
Width	4.8 in. (12.2 cm)	4.8 in. (12.2 cm)	4.8 in. (12.2 cm)
Weight (dry - approx.)	3.4 lbs (1.5 kg)	3.8 lbs (1.7 kg)	4.2 lbs (1.9 kg)
Maximum Pump Outlet Pressure	10 PSI (0.7 bar)	10 PSI (0.7 bar)	10 PSI (0.7 bar)
Features			
Water Sensor	Standard	Standard	Standard
Heater ¹	Standard	Standard	Standard
Pressure Regulator (10 PSI)	Standard	Standard	Standard
Ambient Temp Range	-40° to +255°F (-40° to +124°C)		
Maximum Fuel Temperature	190°F (88°C)		

Vacuum installations are recommended. ¹ Not for use with gasoline applications.

How To Order (The example below illustrates how part numbers are constructed).

P4	2	10	N	H
Specify Model P3 (for 30 GPH) P4 (for 40 GPH) P5 (for 50 GPH)	Must be in part number. Specifies a 12 vdc pump.	Specify micron rating: 02, 10, or 30	Must be in part number. Specifies 3/8" NPT ports.	Must be in part number. Specifies a 12 vdc 150 watt heater.

Fuel Polishing Module

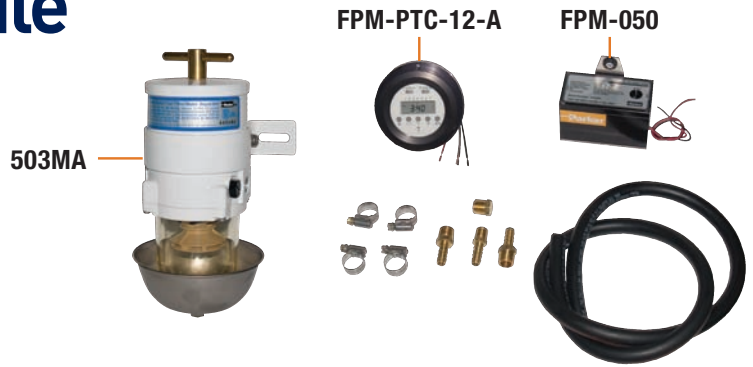
Daily buildup of condensation in a diesel fuel system can lead to fuel contamination through bacteria growth. Parker's new FPM installation kits combat the daily accumulation of water in the fuel system, preventing corrosion and other problems. Regular use of a Racor Fuel Polishing Module (FPM) maximizes the effectiveness of a Racor fuel filter/water separator while keeping power consumption to a minimum.

Choose From Two Kits

FPM-051 Kit: Includes a FPM-050 Fuel Polishing Module, a Racor 503MA Turbine Series fuel filter/water separator, a USCG approved fuel hose, and fittings.

OR

FPM-052-A Kit: Includes a FPM-050 Fuel Polishing Module, a Racor 503MA fuel filter/water separator, USCG approved fuel hose, fittings, and a stylish black anodized FPM timer that enables you to program the fuel polishing system to run while unattended (#FPM-PTC-12-A).



Specifications	FPM-050
Filtration Rate	50 gal/day (189 L/day)
Power Requirements	< 2 W (< 3 A-hrs/day)
Internal Pressure Drop	< 0.5 PSI (< 0.03 bar)
Voltage Requirements	10-16 VDC, 12 VDC nominal
Approx Dimensions (Body) (Body with Bracket)	3.87" L x 2.47" W x 2.14" D 3.87" L x 4.48" W x 2.14" D
Inlet/Outlet Ports Recirculation Port	3/8" NPTF 1/4" NPTF
Weight	< 2 lbs (< 0.9 kg)
Acceptable Fuels	Diesel, Biodiesel, Kerosene

Note: Pump and FPM timer can be purchased separately.

Filter Funnels



Caution for Users: Petroleum products flowing over a plastic surface generate static electricity. Caution should be taken to ensure that the RFF is grounded to reduce static electricity buildup and reduce the chance of explosions or fire. Electrically bond the funnel by using a wire with a metal clip on each end and clamp one to the upper rim of the funnel and the other to the fueling source. For example, the metal gas can or nozzle from the pump.

Fuel Filter Funnel

Racor Filter Funnel (RFF) is a heavy-duty, fast-flow, filter-in-a-funnel that separates damaging free water and contaminants from gasoline, diesel, heating oil, and kerosene.

The RFF family of products is capable of removing free water and solids down to 0.005 inches and allows you to visually inspect the integrity of your fuel supply as you refuel.

The RFF family is manufactured using industrial-grade black electro-conductive polypropylene. Carbon powder is injected into the plastic so that the RFF will conduct static electricity. The grounding capability of the RFF is an important safety feature. Always use proper fuel handling procedures and follow local, state, and federal regulations.



Every Time You Squeeze The Trigger, You Threaten Your Engine's Life.

No matter how carefully gasoline is handled or stored, dirt, rust, gums, algae, and water are going to find their way in, and just a few drops can leave you dead in the water. Racor gasoline fuel filter/water separators with Aquabloc® media remove virtually 100% of damaging water and solids, allowing engines to run with more power and greater efficiency. Install a Racor mounting head or spin directly onto your existing filter head to protect your engine and improve its performance. Spin on a Racor fuel filter/water separator, for the life of your engine.

The Most Complete Protection on the Water

Being on the water is fun, having water in your fuel is not. And more than ever today's high-performance gasoline inboard and outboard engines require clean, dry fuel. Racor filters offer the improved features and peace-of-mind that come with our quality fuel filter/water separators.

- Clear contaminant collection bowl with drain valve for outboards only
- 10 micron Aquabloc® media is standard
- High capacity and long life
- Rated 98% efficient at 10 micron per SAE test procedures
- Corrosion-resistant construction.
- Metal bowl units for inboard powered boats meet 33 CFR and USCG regulations
- Meets ABYC standard for gasoline-powered vessels
- New 2 micron option

Integral primer pump versus the old primer bulb for outboards



Racor innovation leads the market again. The new 490R-RAC-01 gasoline fuel filter/water separator with integral primer pump (for outboards only) eliminates the need to install a primer bulb in the fuel line.



Specifications	120R-RAC-01	120R-RAC-02	320R-RAC-01	320R-RAC-02	490R-RAC-01	660R-RAC-01	660R-RAC-02	3120R-RAC-32
Max. Flow Rate	30 GPH (114 LPH)	30 GPH (114 LPH)	60 GPH (227 LPH)	60 GPH (227 LPH)	90 GPH (341 LPH)	90 GPH (341 LPH)	90 GPH (341 LPH)	120 GPH (454 LPH)
Filter (10 micron) (2 micron)	S3240 N/A	S3240TUL N/A	S3227 S3228SUL	S3228TUL S3228SUL	S3227 S3228SUL	S3232 N/A	S3232TUL N/A	S3232TUL N/A
Center Threads	M18 x 1.5	M18 x 1.5	1"-14	1"-14	1"-14	1"-14	1"-14	1"-14
Port Size	1/4"-18 NPTF	1/4"-18 NPTF	1/4"-18 NPTF	1/4"-18 NPTF	3/8"-18 NPTF	3/8"-18 NPTF	3/8"-18 NPTF	1/2"-14 NPTF
Height	6.5 in. (16.5 cm)	6.0 in. (15.2 cm)	9.4 in. (23.9 cm)	9.0 in. (22.9 cm)	9.9 in. (25.1 cm)	11.0 in. (27.9 cm)	10.5 in. (26.7 cm)	10.4 in. (26.4 cm)
Width	3.2 in. (8.1 cm)	3.2 in. (8.1 cm)	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)	4.5 in. (11.4 cm)	4.2 in. (10.7 cm)	4.2 in. (10.7 cm)	4.0 in. (10.2 cm)
Depth	3.2 in. (8.1 cm)	3.2 in. (8.1 cm)	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)	4.8 in. (12.2 cm)	4.5 in. (11.4 cm)	4.5 in. (11.4 cm)	5.0 in. (12.7 cm)
Weight (approx.)	1.1 lbs (0.5 kg)	1.2 lbs (0.5 kg)	2.0 lbs (0.9 kg)	2.0 lbs (0.9 kg)	2.6 lbs (1.2 kg)	3.0 lbs (1.4 kg)	3.0 lbs (1.4 kg)	2.0 lbs (0.9 kg)
Clean Pressure Drop	0.2 PSI (0.01 bar)	0.2 PSI (0.01 bar)	0.6 PSI (0.04 bar)	0.6 PSI (0.04 bar)	1.0 PSI (0.07 bar)	0.6 PSI (0.04 bar)	0.6 PSI (0.04 bar)	0.2 PSI (0.01 bar)
Max. Working Pressure¹	7.0 PSI (0.5 bar)	7.0 PSI (0.5 bar)	7.0 PSI (0.5 bar)	7.0 PSI (0.5 bar)	7.0 PSI (0.5 bar)	7.0 PSI (0.5 bar)	7.0 PSI (0.5 bar)	7.0 PSI (0.5 bar)
Service Clearance (under bowl)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)
Ambient Temp Range	-40° to +255°F (-40° to +124°C)							
Max. Fuel Temperature	190°F (88°C)							

¹ Pressure installations are acceptable up to the maximum PSI shown. Racor filter/separators will not separate oil from gasoline in blended fuel mixtures.

Marine Rated Hose

No-Skive Hose and Fittings

- No-Skive hose and fittings do not require removal of the outer hose cover, eliminating premature failure caused by skiving too long or short.
- Use of No-Skive hose and fittings keeps outer cover intact, protecting vulnerable wire wrap during fitting assembly.
- Cushioned grip increases hose life - supporting cushion of compressed rubber between gripping threads on fitting reduces wire movement, minimizing stress.
- High-tensile steel wire braid.
- Corrosion Protection - steel wire braid of No-Skive hose is never exposed because outer rubber cover is not removed before assembling fitting.
- No-Skive fittings allow socket threads to penetrate outer hose cover, and grip the wire braid of the hose.
- Simple two step assembly—attach socket to hose, thread nipple to socket.
- Packaged in 350-foot reels or 50-foot kits.
- Passed 2 1/2 minute fire test.
- 500 PSI working pressure.



Parker Marine Hose is a USCG-rated hose for gasoline, diesel, lube oil, and hydraulic systems for commercial and recreational applications.

As you'd expect, it delivers test-proven performance in a wide operating temperature range and constant working pressure. It is of a long-lasting reinforced construction, kink and cut resistant, and compatible with a variety of standard 100R5 fittings.

Fire-Resistant Marine Hose Meets SAE J1527, Type A, Class 1, and SAE J1942 Standards

#	⊙		⊙		↗		⌒		↘		kg		UHg	
	Hose I.D.		Hose O.D.		Working Pressure		Burst Pressure		Min. Bend Radius		Weight (per foot)		Inches of Mercury	
Part Number	in.	cm	in.	cm	PSI	mPa	PSI	mPa	in.	cm	lbs/ft	kg/m	Hg	kPa
CGH-5	1/4	0.6	0.6	1.5	500	3.4	2000	13.8	1	2.5	0.19	0.09	20	68
CGH-6	5/16	.8	0.7	1.8	500	3.4	2000	13.8	1 1/4	3.2	0.23	0.10	20	68
CGH-8	13/32	1.0	0.8	2.0	500	3.4	2000	13.8	1 3/4	4.5	0.28	0.13	20	68
CGH-10	1/2	1.3	0.9	2.3	500	3.4	2000	13.8	2 1/4	5.7	0.39	0.18	20	68
CGH-12	5/8	1.6	1.1	2.8	500	3.4	2000	13.8	2 3/4	7.0	0.47	0.21	20	68
CGH-16	7/8	2.3	1.2	3.0	500	3.4	2000	13.8	3 1/2	8.9	0.41	0.19	20	68

TERCOO

ROTATING BLASTER

Removes rust, tar, epoxy, paint & adhesives

Suitable for steel, iron, concrete & stone

Amazing sandblasted results

Natural rubber disk with tungsten carbide tips

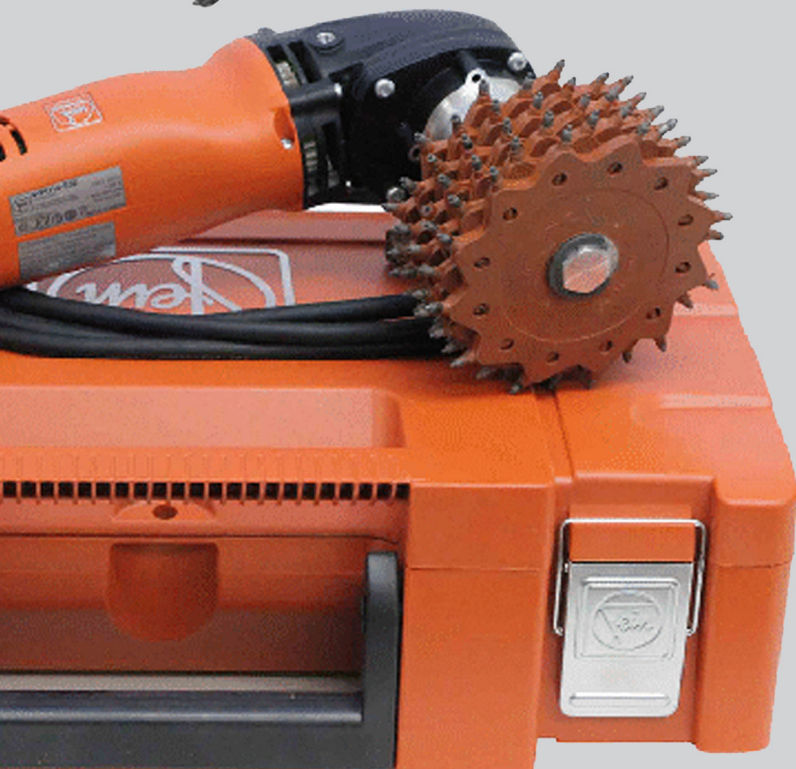
Creates no heat or friction

Clean to use



Available in:

- ◆ Single Disk
- ◆ Double Disk
- ◆ Multi Disk
- ◆ Fein 8 Disk Multi Tool



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