

# 400 MAM Series

## Fuel Filter/Water Separators

Instruction Part Number 22490 Rev. A



Marine 400 MAM Series spin-on fuel filter/water separators are available in four sizes to fit any engine compartment.

The mounting heads feature four ports (2 inlets and 2 outlets), a unitized mounting bracket for mounting versatility and a built-in, hand operated fuel priming pump to simplify servicing and repriming procedures.

Also featured on these assemblies are Aquabloc® water repelling filters that remove sediment down to 10 micron, a vent plug to remove trapped air, and a metal water and sediment collection bowl.

Model numbers include:

**445MAM10**

45 Max. GPH (170 LPH),

**460MAM10**

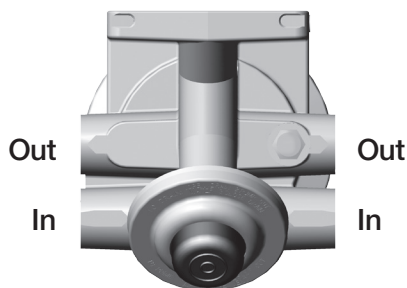
Max. 60 GPH (227 LPH),

**490MAM10**

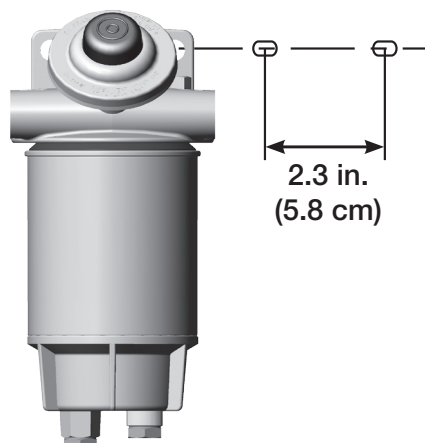
Max. 90 GPH (341 LPH),

**4120MAM10 and 4120MAM30**

Max. 120 GPH (454 LPH).



Top View



## Contact Information

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# Installation Guidelines

***Danger! Great care must be exercised to avoid potential fire hazards during installations on gasoline fuel systems. Do not smoke or permit open flames or sparks near the fuel system.***

Refer to Installation Diagram on page 4 prior to beginning installation.

1. Any secondary or pressure side filters located between pump and engine should be serviced and left in place.
2. Mount unit vertically on suction side of fuel pump, transfer pump, or non-removable filters, whichever comes first.
3. Ensure a suitable pipe thread sealing compound is used on NPT threads of fitting prior to installation into head. For mounting flexibility, there are two inlet ports and two outlet ports. Plated steel fittings are recommended. Plug unused ports with provided plugs—do not use tapes on NPT threads.
4. Use quality fuel hose in maximum fuel line size applicable to reduce potential fuel flow restrictions. Note: USCG accepted hose recommended.

## Priming

1. Use a wrench to loosen vent plug on mounting head, then prime filter by operating the hand primer pump until fuel purges out of vent port.
2. Close vent plug and tighten snugly.
3. Verify all other connections are tight.
4. Start engine and check for leaks. Correct as necessary with engine off.

If engine is difficult to start or runs rough, check that the drain, bowl, filter, port plugs, fittings or vent plug are securely tightened.

## Service

***Danger! When servicing fuel systems, extreme care must be exercised to avoid potential fire hazards. Do not smoke or permit open flames near fuel during servicing procedures.***

### Draining The Bowl

Water is heavier than fuel and will settle at bottom of bowl and appear different in color. In extremely humid conditions, take a fuel sample (in clear container) frequently, and drain as required if water is present.

1. Place a suitable container below unit to collect contaminants.
2. Close fuel tank valve, if applicable, then open drain plug at bottom of bowl. Note: a UL Listed drain valve kit is available—order part no. RK 19492.
3. Prime fuel system following the manufacturer's procedure - refer to Priming.

## Filter Replacement

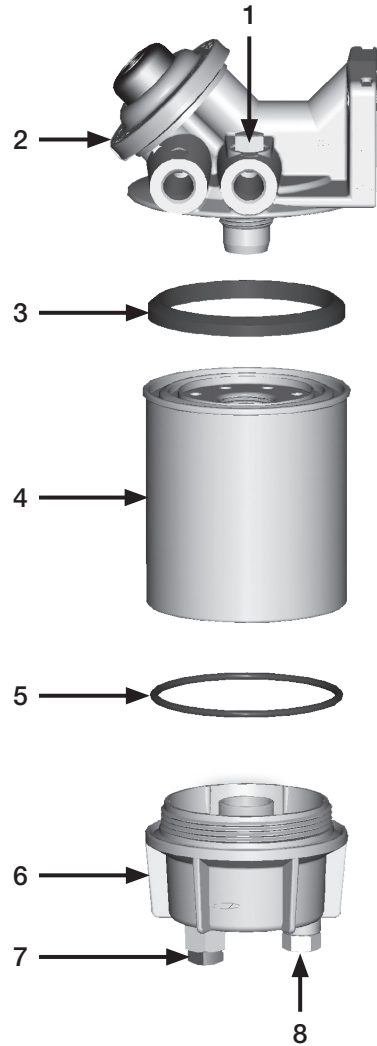
Filter replacement frequency is determined by contamination levels in fuels. Fuel flow to engine becomes restricted as filter slowly plugs with contaminants, resulting in noticeable power loss and/or hard starting. Replace filter annually, every 500 hours, or when there is a noticeable power loss, whichever comes first. Change filter as soon as possible. ***Note: always carry extra replacement filters as one tankful of excessively contaminated fuel can plug a filter.***

Clean any debris or dirt away from Racor head/filter joint prior to removal.

1. Place a suitable container below unit to collect contaminants.
2. Close valve at fuel tank, if applicable, open or remove drain (plug) to empty filter of fuel.
3. Spin filter and bowl off together (use a strap wrench on filter), then remove bowl from filter.
4. Clean, bowl O-ring gland and sealing surface of mounting head, of dirt, debris, or gums.
5. Apply lube oil to new seal and bowl O-ring supplied with new filter.
6. Place new seal onto top of new filter and O-ring into bowl gland.
7. Spin bowl onto filter, then both onto head. Tighten snugly by hand—do not use tools to tighten.
8. Prime fuel system following manufacturer's procedure - refer to Priming.

# Replacement Parts

<u>Part No.</u>	<u>Description</u>
1. <i>RK 10110</i>	Metal Vent Plug Kit (3/8" SAE)
2. <i>RK 22425</i>	Mounting Head Kit (445, 460, and 490 models)
<i>RK 22270</i>	Mounting Head Kit (4120 models)
3. <i>RK 22061</i>	Filter Gasket Kit
4. <i>S3204TUL</i>	10 Micron Replacement Filter (445)
<i>S3211TUL</i>	10 Micron Replacement Filter (460)
<i>S3201TUL</i>	10 Micron Replacement Filter (490 and 4120)
<i>S3201PUL</i>	30 Micron Replacement Filter (490 and 4120)
5. <i>RK 30076</i>	Bowl O-ring Kit
6. <i>RK 30495</i>	Metal Bowl Kit
7. <i>918-N4</i>	Steel Plug (1/4" NPT) - see <i>Drain Valve Kit</i>
8. <i>RK 20022</i>	Metal Water Sensor Port Plug (1/2"-20 SAE)



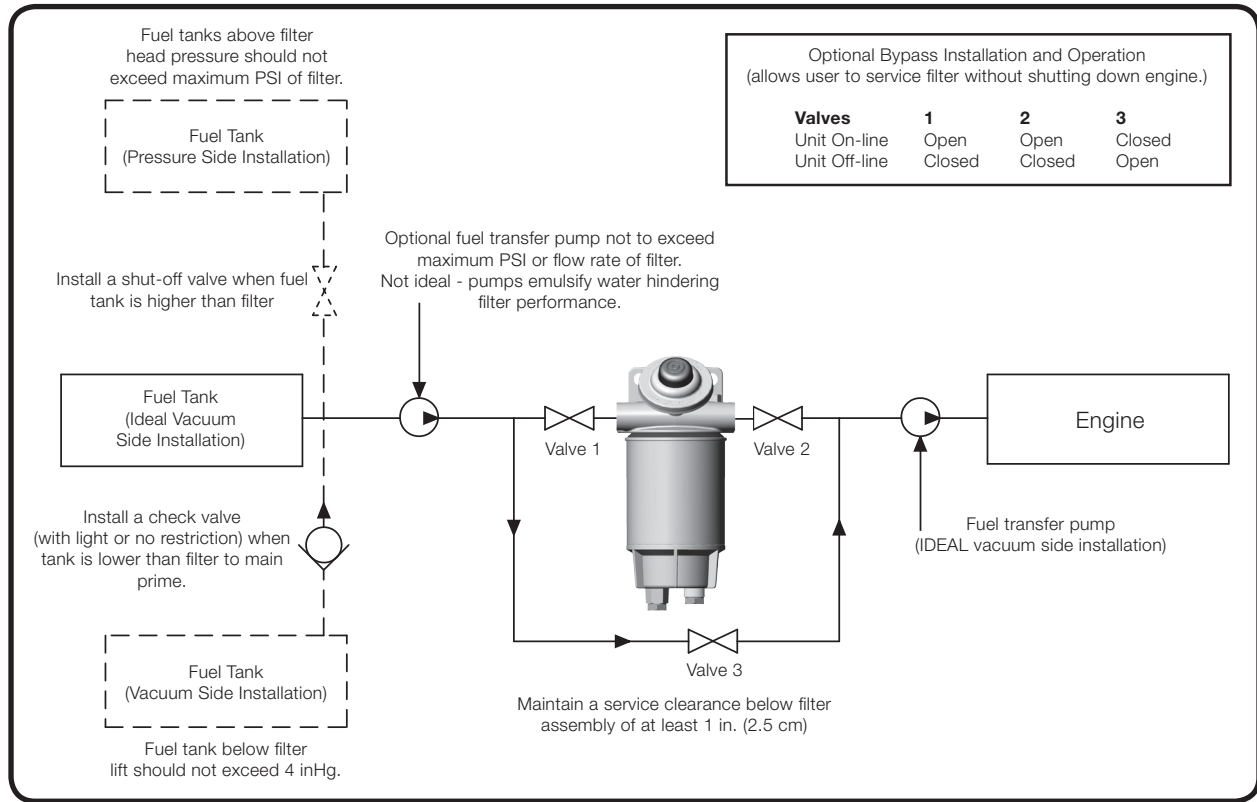
## Drain Valve Kit

*UL Listed drain valve kit.  
Part number RK 19492.*



Specifications	445MAM10	460MAM10	490MAM10	4120MAM10	4120MAM30
<b>Maximum Flow Rate</b>	45 GPH (170 LPH)	60 GPH (227 LPH)	90 GPH (341 LPH)	120 GPH (454 LPH)	120 GPH (454 LPH)
<b>Center Threads</b>	1"-14	1"-14	1"-14	1"-14	1"-14
<b>Port Size</b>	3/8" NPTF	3/8" NPTF	3/8" NPTF	3/4" SAE	3/4" SAE
<b>Number of Ports:</b>					
<b>Inlets</b>	2	2	2	2	2
<b>Outlets</b>	2	2	2	2	2
<b>Replacement Filter</b>	S3204TUL (10 micron)	S3211TUL (10 micron)	S3201TUL (10 micron)	S3201TUL (10 micron)	S3201PUL (30 micron)
<b>Height</b>	9.4 in. (23.9 cm)	10.8 in. (27.4 cm)	12.8 in. (32.5 cm)	12.8 in. (32.5 cm)	12.8 in. (32.5 cm)
<b>Width</b>	4.5 in. (11.4 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)
<b>Depth</b>	4.8 in. (12.2 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)
<b>Weight (dry)</b>	2.9 lb (1.3 kg)	3.1 lb (1.4 kg)	3.3 lb (1.5 kg)	3.3 lb (1.5 kg)	3.3 lb (1.5 kg)
<b>Clean Pressure Drop</b>	0.2 PSI (1.2 kPa)	0.3 PSI (2.1 kPa)	0.4 PSI (2.4 kPa)	0.5 PSI (3.1 kPa)	0.5 PSI (3.1 kPa)
<b>Maximum Pressure</b>	25 PSI (1.7 bar)	25 PSI (1.7 bar)	25 PSI (1.7 bar)	25 PSI (1.7 bar)	25 PSI (1.7 bar)
<b>Bowl Capacity</b>	2.0 oz (58 ml)	2.0 oz (58 ml)	2.0 oz (58 ml)	2.0 oz (58 ml)	2.0 oz (58 ml)
<b>Water Removal Efficiency</b>	99%	99%	99%	99%	99%
<b>Ambient Temp. Range</b>	-40° to +255°F (-40° to +124°C)				
<b>Max. Fuel Temperature</b>	190°F (32°C)				

# Installation Diagram



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