

J30 - Rhapsody Scheduled Maintenance

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Bottom Painting – Annually in Spring Before Launching

Materials – Approximately 1 Gallon Interlux Blue VC Offshore, vibration sander, 3M Green Scrubbing Pad, 400 grit sandpaper, Lint Free foam paint roller, masking tape, rags, paint thinner

1. Use green scrubbing pad to go over entire painted surface, making sure no bumps or dead marine growth is left. Sand with 400 grit paper any difficult areas
2. Wipe down surface with rags and paint thinner to remove all dust
3. Apply masking tape to create straight line near waterline
4. Use roller to evenly apply bottom paint
5. Let paint dry and obtain additional jack stands and blocks for those in the area where the bottom is painted
6. Setup blocks and jack stands adjacent to those to be replaced and transfer the load to the new stands.
7. Prepare and paint the patched where the covered areas were similar to above

Winterize – Annually in Fall

Head

Materials – ½ Gallon RV Antifreeze (Propylene Glycol), ½ Gallon fresh water

1. Flush head with fresh water then pump holding tank dry
2. Pour RV Antifreeze into toilet bowl (forward cabin port side).
3. Place pump lever in “Pump Dry” position and manually pump antifreeze mixture through the lines until antifreeze is visible through hull discharge

Fresh Water Tanks

Materials – ½ Gallon RV Antifreeze (non-toxic Propylene Glycol)

1. Empty most of tank using sink pumps.
2. Add RV Antifreeze to fresh water tank (main cabin port side under forward seat cushion)
3. Use sink pump in head and galley until you see antifreeze in sink.

Battery

Materials – 1/2” wrench, baking soda, grease, rags

1. Disconnect cables from terminals (main cabin port side under seat cushion just aft of sink) and leave batteries onboard.
2. Clean terminals with a solution of baking soda and water
3. Preserve terminals with light coat of grease and reconnect for winter so bilge pump can be operated

Chill Box

Materials – Spray disinfectant, clean rag

1. Remove all contents for winter, and wipe down inside with disinfectant to prevent mildew.
2. Make sure drain at bottom is clear

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Equipment Removal – Store in clean dry place

1. Pull all cushions and store in clean dry place off boat
2. Remove Radio, GPS and Autopilot
3. Remove all sails – fold and store in dry place (Repairs if needed at Thurston Sails, 112 Tupelo St., Bristol)

Standing Rigging

Material – white or clear silicone caulk, screwdriver, pliers

1. Loosen the turnbuckles approximately 2.5 turns on the port and starboard standing rigging and keep backstay loose for the winter.
2. Lift chain-plates under standing rigging. Dig out old caulk and clean surface. Re-caulk and replace chain-plates.

Lines

1. Remove all surface lines from line locker (port side of cockpit).
2. Wrap fittings in a towel and wash in washing machine with bleach.
3. Hang to dry, inspect and repair or replace as necessary
4. coil and store for winter

Hull Fittings

Material – Grease & Grease Gun, rags, spanner wrench (in top stair step)

1. Grease all hull fittings and associated valves (Engine cooling suction under starboard seat cushion adjacent to engine, Sanitary Overboard and Head inlet - port side by mast step has grease fittings epoxied – lubricate valve with grease on a rag pushed in via a stick from below the hull), The hull valves have hex head screws on the body. Remove the screws, pack valves with grease, and replace screws.



Engine Cooling Suction

Sanitary Overboard

2. Remove, clean and lightly coat surface and threads of cap on fill connections (Diesel fill under anchor cover starboard side, Sanitary pump-out station on port foredeck). Replace caps when complete.

Yanmar 2GM Diesel Engine Oil Change

Tools Required: “Pela 2000” Oil Vacuum Pump with dipstick suction, rags

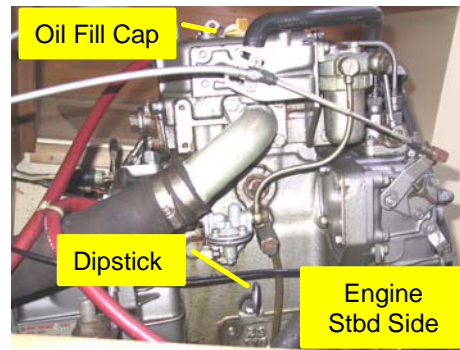
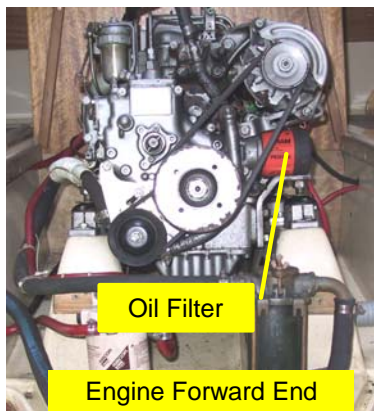
Note: oil filter should be hand tight only, but if it is too tight, you’ll need an oil filter wrench to loosen it

Parts Required: Oil (2) Quarts 10W-30 Oil SAE CB, CC or better rating, Oil Filter Yanmar Part No. 119660-35150 (Fram PH3593A, Purolator PL14459, AC PF1127, Motorcraft FL-810, Castrol CMP3593A, Quaker State QS3593B)

1. Operate engine to ensure block and oil are warm (not too hot, as you don’t want to melt the oil collection container)
2. Remove engine access cover and slide to forward part of cabin

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- Loosen Oil filler cap on top of engine for venting. Remove crankcase dipstick and insert oil vacuum pump suction into dipstick pipe.
- Operate hand pump 5 to 10 strokes to create vacuum. Oil will collect in pump holding container.
- Pump should drain crankcase dry, then remove suction tube dipstick hole
- Put rags under oil filter (port side of engine) to catch oil drips and unscrew filter. Remove old oil filter. Clean up excess oil. Apply thin film of oil to the gasket on the replacement filter, and install new filter. Hand tighten only, approximately $\frac{3}{4}$ turn after rubber gasket contacts seating surface
- Fill crankcase with 1 quart oil. Check oil level to make sure it is in acceptable range and add oil as appropriate.
- Insert and seat dipstick. Tighten Oil Fill cap on top of engine.
- Start engine and let it run for 2 minutes – check for oil leaks and correct as necessary.
- Stop Engine and let sit for 2 minutes so oil drains to crankcase, then check oil level. Top off oil level as necessary (probably ~ 1/2 quart additional). Note the crankcase capacity is specified as 2.0 Liters (1 Liter = 1.05 quarts). The oil filter also has some volume that needs to be filled that is not included in the crankcase capacity.
- Replace engine access cover
- Dispose of oil in a proper waste oil collection facility



Yanmar 2GM Diesel Engine Cooling System

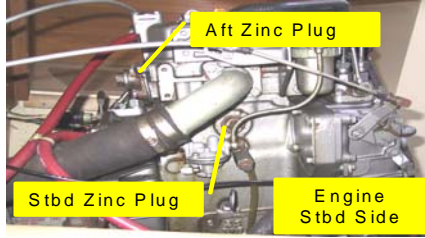
Materials – 1 Gallon RV Antifreeze (Propylene Glycol), Replacement Zincs Yanmar Part No. 27210-200300 (2 required), Replacement Thermostat Gasket Yanmar Part No. 104211-49160, 1 Gallon fresh water, 2 gallon bucket, Screw Driver, 15/16” Socket Wrench with breaker bar, Teflon Tape, Wire Brush

This requires 2 people – 1 at engine, 1 in cockpit at engine controls

- Remove engine access cover and slide to forward part of cabin
- Shut Hull Valve for Engine Cooling Water located under starboard seat cushion adjacent to engine (handle is parallel to hull when shut)
- Loosen hose clamp and disconnect water intake (Black hose) from hull fitting, and pull hose from engine side through hole in bulkhead so and place in bucket.
- Remove thermostat and clean
- Replace thermostat flange without thermostat, but with gasket – store thermostat in plastic bag on top of engine.

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6. Remove zinc plug assemblies on engine block using 15/16" socket wrench. Clean zincs with wire brush and replace if more than 50% of the zinc has eroded. Replace using Teflon tape on threads.



7. Add to bucket with engine cooling suction hose 50/50 antifreeze / fresh water.
8. Start Engine and run for approximately 30 seconds until antifreeze comes out from exhaust discharge at stern of boat
9. Stop Engine
10. Replace thermostat and tighten flange with thermostat and new gasket
11. Run hose back through hole in bulkhead and replace on hull valve, then tighten hose clamp. Leave the hull valve shut
12. Pump bilges and make sure they are dry (bilge pump in cockpit)

Preparations to Launch – Annually in Spring

Fire Extinguishers

1. Inspect and recharge as necessary fire extinguishers – Aft port side by engine, and forward cabin

Fresh Water Tanks

Materials – Fresh Water and Hose

1. Empty tank using sink pumps in head and galley.
2. Add about 1 gallon of fresh water to tank (main cabin port side under forward seat cushion), filling
3. Use sink pump in head and galley and pump tank dry.
4. Using hose, fill fresh water tank to desired level.

Battery

Materials – 1/2" wrench, battery charger, grease, rags

1. Charge batteries using 12V battery charger.
2. Make sure battery disconnect switch is in "Off" position
3. Using rags wipe battery terminals and cable terminals clean (main cabin port side under seat cushion just aft of sink).
4. Connect cables from terminals to batteries and tighten.
5. Place light coat of grease on terminals to prevent corrosion.

Chill Box

Materials – Spray disinfectant, clean rag

1. Wipe down inside with disinfectant
2. Make sure drain at bottom is clear

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3. Keep well stocked with quality beer

Equipment Replacement

1. Replace all cushions
2. Reinstall Radio, GPS and Autopilot – check electrical connections, including those at base of mast
3. Bring sails onboard – Install Main and store #1 Jib, #3 Jib & Spinnaker in bow compartment
4. Replace all surface lines in the line locker port side of cockpit

Standing Rigging

Material – screwdriver, pliers

1. Tighten the turnbuckles slightly on the standing rigging. These get adjusted per tuning guide once boat is in the water.

Hull Fittings

Material – Grease & Grease Gun, rags, spanner wrench (in top stair step)

1. Grease all hull fittings and associated valves (Engine inboard under starboard seat cushion adjacent to engine, Head inlet (port side by mast step), Sanitary Overboard)
2. Remove, clean and lightly coat with oil surface and threads of cap on fill connections (Diesel fill under anchor cover starboard side, Sanitary pump-out station on port foredeck). Replace caps when complete.

Shaft Zincs

Materials – 1” Shaft Zinc (Qty 2), emery cloth, allen wrench, hammer

1. Remove old shaft zincs
2. Use emery cloth to remove oxidation from shaft so a good electrical connection can be made
3. Using allen wrench, attach Zincs to shaft
4. Use hammer to lightly tap Zincs so that small copper contact is splayed onto shaft.
5. Retighten allen screws

Yanmar 2GM Diesel Engine Cooling System

Materials –Replacement Water Pump Impeller Yanmar Part No. 104211-42070, Replacement Water Pump Gasket Yanmar Part No. 104211-42090, 1 Gallon fresh water, 2 gallon bucket, Screw Driver,

This requires 2 people – 1 at engine, 1 in cockpit at engine controls

1. Remove engine access cover and slide to forward part of cabin
2. Shut Hull Valve for Engine Cooling Water located under starboard seat cushion adjacent to engine (handle is parallel to hull when shut)
3. Loosen hose clamp and disconnect water intake (Black hose) from hull fitting, and pull hose from engine side through hole in bulkhead so and place in bucket.
4. Remove water pump by loosening swing bolts and removing V-belt. Loosen hose clamps at water pump and remove.
5. Remove cover on back of water pump. Remove the pump impeller noting the direction of rotation arrow for when the new impeller is installed. Clean pump, back

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cover and gasket surfaces. Coat inside pump casing with grease. Coat new impeller with grease and install with direction of rotation arrow consistent with impeller that was removed. Replace cover with new gasket and tighten bolts evenly.

6. Reinstall hoses, tighten hose clamps, then reinstall pump and V-belt. Adjust tension on V-belt and tighten water pump swing bolts.
7. Insert engine cooling suction hose in bucket full of fresh water.
8. Start Engine and run for approximately 30 seconds until fresh water comes out from exhaust discharge at stern of boat
9. Stop Engine
10. Run hose back through hole in bulkhead and replace on hull valve, then tighten hose clamp. Leave the hull valve shut until boat has been launched.
11. Pump bilges and make sure they are dry (bilge pump in cockpit)

Yanmar 2GM Diesel Engine

Materials – 2 Gallons fresh water, baggie, 2 gallon bucket, WD-40, Screw Driver

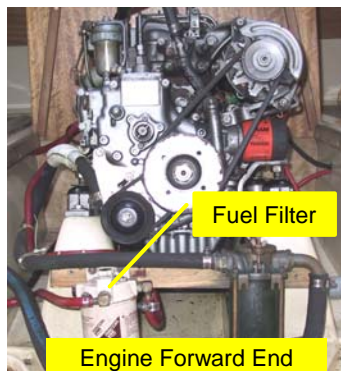
This requires 2 people – 1 at engine, 1 in cockpit at engine controls

1. Remove engine access cover and slide to forward part of cabin
2. Check oil level in engine and transmission – top off as necessary (transmission uses SAE 20W30 Oil)
3. Spray WD-40 lubricant on ends of throttle cable and shutoff cable attempting to lubricate between the moving line and stationary jacket.
4. Stop Engine
5. Replace water intake hose on hull fitting and tighten hose clamp. If boat is out of water, leave the hull valve shut until boat is launched
6. Pump bilges and make sure they are dry (bilge pump in cockpit)

Yanmar 2GM Diesel Engine Fuel & Air Filters

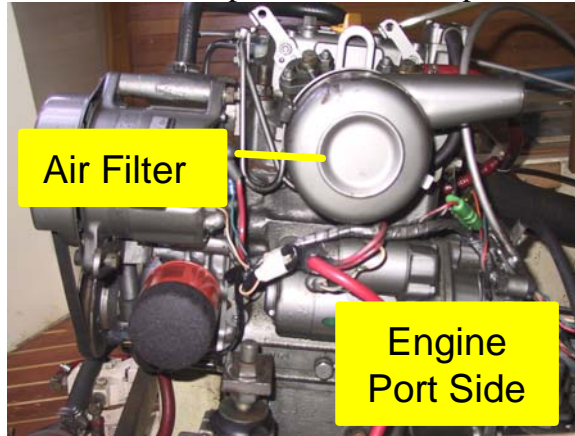
Materials – Fuel Filter Racor Part No. R24S (2 Micron) – to be replaced with R24T (10 Micron) when spare cartridges are used up, Diesel Fuel Additive, Wrench

1. Make sure engine starts and runs prior to changing filters so you are not troubleshooting multiple problems.
2. Remove engine access cover and slide to forward part of cabin
3. Replace fuel filter (forward part of engine starboard side) unscrew filter, then fill replacement filter with diesel fuel before screwing in place to minimize air lock in fuel system. The plastic bowl on bottom of filter must be wiped with a rag to clean it and transferred to the new filter. Hand tighten $\frac{3}{4}$ turn after gaskets make contact when replacing filter.



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4. Add Diesel Fuel winter treatment to fuel tank
5. Top off fuel tank with diesel fuel
6. Open compression reliefs and crank engine for 30 seconds. Vent fuel system while cranking at suction to high pressure fuel pump (distributor at top) using nylon screw on top of Racor fuel filter as handle to manually prime system
7. Remove air filter, clean with compressed air then replace it.



8. Clean excess oil from around engine with rags
9. Start engine to make sure there are no fuel leaks, run for 2 minutes then secure

Other Periodic Maintenance

Wood Finishes

1. Tiller Handle – sand and polyurethane every two years
2. Main Cabin Inside Deck – Satin finish polyurethane every other year
3. Forward Cabin Inside Deck – Satin finish polyurethane every year
4. Inside trim – gloss polyurethane as required (last done 2006)
5. Topside Teak – sand and apply Sealtol Teak Oil (Sikkens) two coat process. Color coat first, then clear coat on top