ILMOR

June 2025

OWNER'S MANUAL

ILMOR ENGINES

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ENGINE AND ENGINE CONTROLS/CABLE

CAUTION! Inspect engine and engine cables before starting engine, or allow engine to cool after shutting down. Failure to do so may result in burns from hot engine components.

LOOSE OR MISSING HARDWARE

1. Ensure the engine is OFF and the engine safety starting switch is disconnected. Leave the throttle/shift control lever in neutral. Operate bilge blower for at least 4 minutes with engine compartment cover open.
2. Inspect the engine, engine components, and mounts for loose/missing hardware. If concerning items are found, contact an authorized Ilmor Sales and Service Center for maintenance.

CHECK FOR KINKS, WEAR, AND INTERFERENCE OF THROTTLE AND SHIFT CABLES

Follow each control cable and feel for any kinks or wear on the outer jacket. Immediately replace the cable if any sign of cable damage is found. Contact an authorized Ilmor Sales and Service Center for further assistance.

Check Transmission Shift Cable

FUEL AND EXHAUST SYSTEMS

DANGER! If at any time during operation there is an unexplained odor, or if anyone onboard shows signs of unexplained drowsiness or sleepiness, immediately shut down the engine and determine if the odor or unexplained behavior is the result of malfunctions in the fuel or exhaust systems.

NOTE: This is a preliminary inspection only. Operator and onboard personnel should stay alert while boating for any signs of fuel or exhaust leaks.

3. Ensure the engine is OFF and the engine safety starting switch is disconnected.
4. Open the engine compartment and inspect the fuel and exhaust systems for leaks, gaps, or cracks. If issues are found, do NOT start the engine. Contact an Ilmor certified service center immediately to repair the issue prior to starting the engine.
5. Start engine and check for fuel and exhaust leaks.
6. If any leaks, gaps, or cracks are discovered in the fuel or exhaust system once the engine is running, shut the engine down immediately, and have the vessel repaired by an authorized Ilmor Sales and Service Center before returning to normal service.

NEW ENGINE BREAK-IN

DANGER! Prior to operating engine, open engine compartment and check for fumes, leaks, or presence of fluids. If clear, operate bilge blower for at least 4 minutes before starting engine and when at idle or slow-running speed after starting the engine. This will remove any explosive gasoline and/or battery fumes that may be in the engine compartment. Failure to do so may result in explosion or fire, resulting in serious injury or death.

WARNING! Never operate the engine without an adequate, uninterrupted supply of water to the engine's cooling system. If the engine operates without water in the cooling system, the exhaust system will overheat which could potentially create an onboard fire. Damage(s) caused by improper usage void the product warranty and may also result in serious injury and/or death.

CAUTION! Ensure there is ample room around the boat when trying to start the engine. Contact with other boats, docks, shallow waterway bottoms, or debris may result in serious injury and/or damage to boat that is not covered under warranty.

NOTICE: Failure to follow new engine break-in and operating procedures as described in this manual will void the warranty. Before operating the boat for the first time, read this Owner's Manual completely, as well as the boat manufacturer's Owner's Manual.

Proper break-in of the engine and transmission is critical to ensuring long powertrain life. Proper new engine break-in procedures during the first 25 operating hours for a sterndrive and first 50 for an inboard. This will ensure maximum powertrain performance.

The break-in period allows the engine and transmission components to properly seat components and start normal wear.

Although the Ilmor powertrain may have been lake-tested by the boat manufacturer, the break-in period starts when the retail consumer takes possession of the boat. For break-in and maintenance recommendations, please follow the instructions provided in this Owner's Manual.

NOTICE: Ilmor engines are filled with break-in oil from the factory. It is imperative to have an authorized Ilmor Sales and Service Center change the break-in oil in a sterndrive at or before 25

When operating the engine, be sure to monitor the instrument panel gauges closely. Gauges are the first line of defense against engine damage. Well before serious damage occurs to an engine, gauges can alert the operator to circumstances that can lead to major damage.

Adjusting and varying engine speeds can also help the engine during break-in. Keeping engine at a constant speed for more than 3 or 4 minutes at a time places undue stress on the engine's internal components.

Continue break-in operations with vessel at planing speeds. Planing speeds should be achieved with steady shift/throttle advancement. Avoid fast throttle advances that causes propeller slip. "Hole Shot" throttle advances need to be avoided during break-in.

Some powertrain vibrations are normal during operation. Any abnormal vibrations or unusual noises may be signs of additional problems that are not registered by the engine management system. Do not ignore these signs. It is highly recommended to have an authorized Ilmor Sales and Service Center inspect the system annually.

STERNDRIVE INITIAL HOURS OF OPERATION (PRE-25 HOURS)

DANGER! Prior to operating the engine, open engine compartment to vent and inspect for any presence of any explosive fluids. If the compartment is visibly clear, operate bilge blower for at least 4 minutes before starting engine. This will assist in removing explosive fluids that may be in the engine compartment. Failure to do so may result in explosion or fire, resulting in serious injury or death.

1. Start the engine and allow the engine speed to stabilize (600-800 rpm). Also, allow the engine temperature to warm to normal operating temperature. (See SPECIFICATIONS chapter in this manual for specific operating temperatures of each engine model.)
2. Move the throttle/shift control lever forward to plane the boat smoothly and quickly. Return the lever towards a slower engine speed once the boat is on plane.

3. Vary the engine speed for the first hour without exceeding 3,000 rpm, and carry only a light load in the boat. Reduce throttle/shift control lever to idle (neutral) occasionally for a cool-down period. Continue to operate the boat in this manner until the break-in period is complete (at or before 25 operating hours).
4. The boat MUST be returned to an authorized Ilmor Sales and Service Center for mandatory scheduled service between at or before 25 hours of operation.

CONTINUED STERNDRIVE INITIAL HOURS OF OPERATION (POST-25 HOURS)

1. After engine break-in period and scheduled service have been completed, engine may be operated more continuously at speed, but never beyond the maximum advertised speed. It is always advisable to give the engine an occasional cool-down period.
2. Throughout the life of the engine, allow for a warm-up period before operation. Abuse of the engine and transmission are never covered under warranty. Regular maintenance as outlined in this Owner's Manual is very important to ensure a long, trouble-free powertrain life.
3. Subsequent oil changes should be performed per the maintenance schedule outlined in this manual or quarterly if the boat is not used regularly. (See MAINTENANCE chapter in this manual for more details.)

NOTICE: Only use Ilmor-specified engine oil. Failure to follow the engine oil recommendation listed in this Owner's Manual can result in accelerated engine wear and engine component failure. Engine damage due to incorrect oil usage, oil changes, and oil levels, or other failure to follow engine oil procedures can be costly and may void the warranty.

INBOARD INITIAL HOURS OF OPERATION (PRE-50 HOURS)

DANGER! Prior to operating the engine, open engine compartment to vent and inspect for any presence of any explosive fluids. If the compartment is visibly clear, operate bilge blower for at least 4 minutes before starting engine. This will assist in removing explosive fluids that may be in the engine compartment. Failure to do so may result in explosion or fire, resulting in serious injury or death.

1. Start the engine and allow the engine speed to stabilize (600-800 rpm). Also, allow the engine temperature to warm to normal operating temperature. (See SPECIFICATIONS chapter in this manual for specific operating temperatures of each engine model.)
2. Move the throttle/shift control lever forward to plane the boat smoothly and quickly. Return the lever towards a slower engine speed once the boat is on plane.
3. Vary the engine speed for the first hour without exceeding 3,000 rpm, and carry only a light load in the boat. Reduce throttle/shift control lever to idle (neutral) occasionally for a cool-down period. Continue to operate the boat in this manner until the break-in period is complete (at or before 50 operating hours).
4. The boat MUST be returned to an authorized Ilmor Sales and Service Center for mandatory scheduled service between at or before 50 hours of operation.

CONTINUED INBOARD INITIAL HOURS OF OPERATION (POST-50 HOURS)

1. After engine break-in period and scheduled service have been completed, engine may be operated more continuously at speed, but never beyond the maximum advertised speed. It is always advisable to give the engine an occasional cool-down period.
2. Throughout the life of the engine, allow for a warm-up period before operation. Abuse of the engine and transmission are never covered under warranty. Regular maintenance as outlined in this Owner's Manual is very important to ensure a long, trouble-free powertrain life.
3. Subsequent oil changes should be performed per the maintenance schedule outlined in this manual or quarterly if the boat is not used regularly. (See MAINTENANCE chapter in this manual for more details.

NOTICE: Only use Ilmor-specified engine oil. Failure to follow the engine oil recommendation listed in this Owner's Manual can result in accelerated engine wear and engine component failure. Engine damage due to incorrect oil usage, oil changes, and oil levels, or other failure to follow engine oil procedures can be costly and may void the warranty.

AFTER EACH USE

FLUSH THE ENGINE

1. Place a flushing device on the engine seacock on the bottom of the hull. Some applications may have an engine flushing attachment hose connection on the deck of the boat. Please review the boat manufacturer's Owner's Manual. Turn the water supply ON and start the engine.

2. Cycle engine speed from idle to 2,000 rpm in 10-second intervals, allowing the engine to reach operating temperature. The engine needs to be at the operating temperature for a minimum of 15 minutes. The water supply flow rate may need to be adjusted if engine will not warm up; it must warm up to open the thermostat, which is required for proper flushing. If the engine will not warm up, remove thermostat and flush engine with fresh water for 5 minutes while cycling the engine speed from idle to 2,000 rpm in 10-second intervals. Fresh water boats should be flushed when going to storage or not being used for periods in excess of 30 days.

NOTICE: Brackish or salt water boats should be flushed with fresh water after every use. Failure to flush powertrain components regularly may result in cooling system issues and void of product warranty.

LONG TERM STORAGE

Ilmor recommends STA-BIL fuel stabilizer if the boat consumes less than a tank of fuel every 30 days. Today's fuels are more susceptible to degradation, and the use of a quality stabilizer helps ensure fewer problems if the boat is used only on a limited basis.

If boat has not been operated for more than 30 days and fuel is present in the tank (even stabilized fuel), the engine may run with reduced performance until the existing fuel has been used. Ilmor is not responsible for repairs to components that are damaged from poor-quality fuel as this is not covered under the engine warranty.

NOTICE: Perform proper storage procedures when storing boat. Extended storage with fuel in the system can affect fuel stability and may require system inspection and fuel filter replacement when the boat returns to service. Fuel systems on all boats equipped with Ilmor engines MUST be properly prepared for storage periods exceeding 30 days, as outlined in this Owner's Manual. Owners are encouraged to seek assistance from an authorized Ilmor Sales and Service Center to properly prepare the powertrain for periods of inactivity exceeding 30 days. Damage due to improper storage or winterizing preparations is not covered under warranty.

FUELING THE ENGINE

DANGER! Never start the engine(s) if gasoline odor is present, or if a gasoline leak appears along the fuel line, fuel tank, in the bilge, or around the engine. Gasoline and gasoline vapors may cause fire or an explosion when starting the engine, which can result in serious injury or death. If gasoline is found, remove the ignition key(s) and call an authorized boat and/or Ilmor Sales and Service Center for repair. Avoid spilling gasoline when fueling. If gasoline is spilled, immediately wipe up all traces with dry rags and dispose of rags properly on-shore.

WARNING! All fuel system lines and connections must meet the requirements of U.S. Coast Guard (USCG) regulations. Hoses must meet or exceed SAE Standard J1527 DEC85, and hoses used for fuel delivery must meet or exceed specification in USCG regulations, Sec. 183.540 for recreational boating. All fuel hoses must meet the 15 g/m2 limit for fuel permeation. All plumbing for the fuel system on Ilmor engines, and the boats in which Ilmor authorizes placement, must meet or exceed all requirements. Failure to do so may result in serious injury or death. Replace fuel system parts with only Ilmor-authorized parts.

WARNING! Inspect the entire fuel system for leaks and/or deterioration prior to operation, especially after substantial periods of non-use or storage. Ensure inspection includes fuel tank, fuel lines, fuel pump, regulator, fuel rails, carbon canisters, and all fuel system fittings. Never operate engine when any fuel component shows any indications of corrosion, leaks, deterioration, swelling, hardening, or softening. Notify an authorized Ilmor Sales and Service Center and/or boat manufacturer's dealer for replacement parts prior to operating the boat.

The boat fuel system has been specifically developed for use in a marine environment. A number of marine-specific safety measures are incorporated in the fuel system from tank to lines to connections. Please note, these measures include pressurized fuel lines that do not include user-serviceable parts.

Any fuel system services and repairs must be performed by authorized service personnel only with specialized tools and replacement parts that meet the manufacturer's Original Equipment Manufacturer (OEM) specifications.

Ilmor recommends a daily inspection to ensure no fuel lines are leaking. Never start the boat if there is evidence of fuel leaks or fumes.

Throughly read the boat manufacturer's Owner's Manual section on fueling for additional information and details. This is a critical component of safe and enjoyable boating.

1. Once the vessel has overcome its trailing wake and the engine speed is between 600-800 rpm, gradually reduce the throttle to the NEUTRAL gear position to stop the boat. Once the vessel has overcome its trailing wake and the engine speed has stabilized at its idle rpm, move the throttle/shift lever to the NEUTRAL position. When performing this action, be sure to reduce throttle fast enough to bring the vessel to a stop before the target, but also slow enough to not allow trailing wake to overtake boat stern.

NOTICE: Trailing wakes may cause unwanted forward movement, wash into the boat, and/ or potentially cause engine damage not covered by warranty.

2. With engine speed at idle rpm and shift position in NEUTRAL, move throttle/shift lever to the REVERSE position to counteract any forward movement, if required. Additional REVERSE throttle may be necessary to achieve quicker results. Never exceed 1,000 rpm in REVERSE unless in an emergency.

3. Shift between FORWARD - NEUTRAL - REVERSE positions appropriately and as necessary until the vessel has stopped completely at the desired location.

See the boat Owner's Manual for additional stopping tips and support.

OTHER CONSIDERATIONS

Wide-open throttle exists to allow boaters to get out of dangerous encounters or situations, but it represents the upper limit of the engine's capacity. This places undue strain on the engine components and should be used in EMERGENCY SITUATIONS ONLY.

See also the boat manufacturer's Owner's Manual for operational hints and tips that can enhance the enjoyment of the boat's and powertrain's integration.

HEAVY DUTY USAGE

Heavy usage is defined as operators using the vessel under ANY of the following conditions:

- A loaded vessel with additional ballast and/or weight to achieve total maximum capacity over the OEM specification.
- A commercial or training purposes vessel as defined in the Ilmor warranty.
- A vessel operating at water temperatures below 55°F (13°C).
- A vessel operating at elevations greater than 6,000 feet (1,830 meters) above sea level.
- A vessel operating at, or above, 5,000 RPM for more than 5% of total boating time.

NOTE: Vessels operating within these conditions will be required to have more frequent service intervals as specified.

COMMERCIAL USAGE

Commercial use is defined as any work or employment-related use of the product, or any use of the product that generates income, for any part of the warranty period, even if the product is only occasionally used for such purposes.

MAINTENANCE SCHEDULE

Ilmor recommends that maintenance is performed by an authorized Ilmor Sales and Service Center. Service technicians there have proper equipment, training, and resources to best meet service needs. Please note that routine maintenance is not covered by the Ilmor Limited Warranty. For details, consult limited warranty statement.

Installation, repair, servicing, or operation of any Ilmor products must comply with federal, local, and international boat building standards (ABYC, USCG, RCD, etc.). Always maintain safety as a priority when using or servicing Ilmor products. Apply caution and refer to local and federal regulations when using Ilmor products.

These statements are recommended guidelines. The operator or service professional must determine whether or not the boat and/or Ilmor product is safe to operate, according to circumstances and good judgment. If there is any doubt, please seek assistance from an authorized Ilmor Sales and Service Center.

In addition to the routine services addressed earlier, there are a number of other maintenance procedures that require periodic attention. The following table indicates the maintenance schedule:

INBOARD SCHEDULED MAINTENANCE CHART

Service Items	*Maintenance items are best performed by a Certified Ilmor Sales and Service Center.*													
	I = Inspect							R= Replace						
	Before Each Use	Annually (Beg. Of Season)	First 25 Hours	First 50 Hours	Every 50 Hours	Every 75 Hours	Every 100 Hours	Every 125 Hours	Every 150 Hours	Every 300 Hours	Every 500 Hours	Every 2 Years	Every 3 Years	Every 5 Years
Air Filter / Spark Arrestor		I										R		
Anodes		I			I							R		
Coolant Pressure Cap (Closed Cooled Only)									R					
Cooling System Crossover Tube (MPI Only)									I	R			R	
Engine & Transmission Coolers		I												
Engine Coolant (Closed Cooled Only)	I[1]	I[1]	I[1]									R		
Engine Oil & Filter	I[1]	R		R[4]	R*									
Intercooler Coolant (Supercharged 6.2L Only)	I[1]	I[1]	I[1]									R		
Powertrain Alignment		I	I						I					
Pressure Relief Valve (Open Cooled Only)		I			I		R					R		

INBOARD SCHEDULED MAINTENANCE CHART

Maintenance items are best performed by a Certified Ilmor Sales and Service Center.

I = Inspect | R= Replace

Service Items	Before Each Use	Annually (Beg. Of Season)	First 25 Hours	First 50 Hours	Every 50 Hours	Every 75 Hours	Every 100 Hours	Every 125 Hours	Every 150 Hours	Every 300 Hours	Every 500 Hours	Every 2 Years	Every 3 Years	Every 5 Years
Raw Water Pump Assembly (All models)		I	I						I	R				R
Raw Water Pump Impeller		R[3]				R[3]								
Raw Water Pump Impeller (6.0L MPI & 5.3L GDI HO)		I*						R				R		
Raw Water Pump Impeller (Supercharged 6.2L)		R*		R[4]	R									
Serpentine Belt and Tensioner		I								R*				
Spark Plugs & Wires		I[2]							R					
Supercharger Drive Belt and Tensioner (Supercharged 6.2L Only)		I								R*				
ZF Transmission Oil and Filter	I	R*		R[4]						R*				

*	If the engine is subject to heavy usage, it is required to perform these maintenance items at half the time of the interval shown. Heavy usage is defined as operators using their vessel under the following conditions: loaded with additional ballast and/or weight to achieve total maximum capacity over the OEM specification, commercial or training purposes as defined in the Ilmor warranty, at water temperatures below 55°F (13°C), at elevations greater than 6000 feet (1830 meters) above sea level, full throttle operation for more than 5% of total boating time. Vessels operating under these conditions will be required to have more frequent service intervals as specified.
1	Check for contamination and leaks. Check for fluid fill level. If the level dropped below minimum indicator, top the fluid to the recommended fluid level.
2	Inspect spark plug wires for chafing and heat damage.
3	Inspect the following engine models for corrosion/damage of the Raw Water Pump - Woodruff Key (PV05722). Replace the raw water pump impeller and woodruff key if necessary. Engines: MV8 5.7L, MV8 6.0L, MV8 6.2L, 6.0L MPI-S, 7.4L MPI-S, 7.4L MPI.
4	Recommended service between 10-50 hours.

ONE DRIVE® SCHEDULED MAINTENANCE CHART

Maintenance items are best performed by a Certified Ilmor Sales and Service Center.

I = Inspect | R= Replace

Service Items	Before Each Use	Annually (Beg. Of Season)	First 25 Hours	Every 50 Hours	Every 75 Hours	Every 100 Hours	Every 125 Hours	Every 150 Hours	Every 300 Hours	Every 500 Hours	Every 2 Years	Every 3 Years	Every 5 Years
Air Filter / Spark Arrestor		I									R		
Anodes		I		I							R		
Coolant Pressure Cap								R					
Cooling System Crossover Tube (MPI-S Only)								I	R			R	
Crankshaft Mounted Raw Water Pump Assembly		I	I					I	R				R
Drive Oil & Filters	I[1]	R	R[4]					R*					
Drive Trim Pump Fluid	I[1]								R				
Engine Coolant	I[1]	I[1]	I[1]								R		
Engine Fluid Coolers		I											
Engine Oil & Filter	I[1]	R	R[4]		R*								
Fuel / Water Separator		R						R*					
High Pressure Fuel Filter (MPI-S Only)								R*					
Power Steering & Drive Trim Hoses		I[1]	I[1]					I[1]					
Power Steering Fluid	I[1]								R				
Powertrain Alignment		I	I					I					

ONE DRIVE® SCHEDULED MAINTENANCE CHART

Maintenance items are best performed by a Certified Ilmor Sales and Service Center.

I = Inspect | R= Replace

Service Items	Before Each Use	Annually (Beg. Of Season)	First 25 Hours	Every 50 Hours	Every 75 Hours	Every 100 Hours	Every 125 Hours	Every 150 Hours	Every 300 Hours	Every 500 Hours	Every 2 Years	Every 3 Years	Every 5 Years
Raw Water Pump Assembly (Pulley Driven)		I	I					I	R				R
Raw Water Pump Impeller		R[3]			R[3]								
Serpentine Belt		I							R*				
Spark Plugs & Wires		I[2]						R					
Trim Pump Relays Dielectric Grease		R				R							

*	If the engine is subject to heavy usage, the minimum gasoline fuel requirement is Unleaded 90 (R+M)/2 Octane up to 10% Ethanol. Heavy usage is defined as operators using their vessel under the following conditions: loaded with additional ballast and/or weight to achieve total maximum capacity over the OEM specification, commercial or training purposes as defined in the Ilmor warranty, at water temperatures below 55°F (13°C), at elevations greater than 6000 feet (1830 meter) above sea level, and/or engine speeds of 5000 RPM or more for more than 5% of total boating time.
1	Check for contamination and leaks. Check for fluid fill level. If the level dropped below minimum indicator, top the fluid to the recommended fluid level.
2	Inspect spark plug wires for chafing and heat damage.
3	Inspect the following engine models for corrosion/damage of the Raw Water Pump - Woodruff Key (PV05722). Replace if necessary. Engines: MV8 6.0L, MV8 6.2L, 6.0L MPI-S, 7.4L MPI-S, 7.4L MPI.
4	Recommended service between 10-25 hours.

CUSTOM SCHEDULED MAINTENANCE CHART

Maintenance items are best performed by a Certified Ilmor Sales and Service Center.

I = Inspect | R= Replace

Service Items	Before Each Use	Annually (Beg. Of Season)	First 25 Hours	Every 50 Hours	Every 75 Hours	Every 100 Hours	Every 125 Hours	Every 150 Hours	Every 300 Hours	Every 500 Hours	Every 2 Years	Every 3 Years	Every 5 Years
Air Filter / Spark Arrestor		I								R			
Anodes		I		I						R			
Coolant Pressure Cap								R					
Cooling System Crossover Tube (MPI-S Only)								I	R			R	
Crankshaft Mounted Raw Water Pump Assembly		I	I					I	R				R
Drive Oil & Filters	I[1]	R	R[4]					R*					
Drive Oil & Filters (Venom Drive)	I[2]	R	R[5]	R*									
Drive Trim Pump Fluid	I[1]							R					
Engine and Transmission Coolers		I											
Engine Coolant	I[1]	I[1]	I[1]							R			
Engine Oil & Filter	I[1]	R	R[4]	R*									
Fuel / Water Separator		R						R*					
High Pressure Fuel Filter (MPI-S Only)								R*					
Intercooler coolant (Supercharged engine(s) only)	I[1]	I[1]	I[1]							R			
Power Steering & Drive Trim Hoses		I[1]	I[1]					I[1]					
Power Steering Fluid	I[1]							R					
Powertrain Alignment		I	I					I					
Raw Water Pump Assembly (Crankshaft Mounted Only)		I	I					I	R				R

CUSTOM SCHEDULED MAINTENANCE CHART

Maintenance items are best performed by a Certified Ilmor Sales and Service Center.

I = Inspect | R= Replace

Service Items	Before Each Use	Annually (Beg. Of Season)	First 25 Hours	Every 50 Hours	Every 75 Hours	Every 100 Hours	Every 125 Hours	Every 150 Hours	Every 300 Hours	Every 500 Hours	Every 2 Years	Every 3 Years	Every 5 Years
Raw Water Pump Assembly (Pulley Driven)		I	I					I	R				R
Raw Water Pump Impeller		R[3]			R[3]								
Raw Water Pump Impeller (6.0L MPI & 5.3L GDI HO)		I*					R			R			
Raw water pump impeller (Supercharged engine(s) only)		R*		R[4]									
Serpentine Belt and Tensioner		I						R*					
Spark Plugs & Wires		I[2]						R					
Supercharger Drive Belt and Tensioner (Supercharged Engine(S) Only)		I						R*					
Trim Pump Relays Dielectric Grease		R				R							
ZF Transmission - Oil and Filter	I[1]	R	R[4]					R*					

*	If the engine is subject to heavy usage, the minimum gasoline fuel requirement is Unleaded 90 (R+M)/2 Octane up to 10% Ethanol. Heavy usage is defined as operators using their vessel under the following conditions: loaded with additional ballast and/or weight to achieve total maximum capacity over the OEM specification, commercial or training purposes as defined in the Ilmor warranty, at water temperatures below 55°F (13°C), at elevations greater than 6000 feet (1830 meter) above sea level, and/or engine speeds of 5000 RPM or more for more than 5% of total boating time.
1	Check for contamination and leaks. Check for fluid fill level. If the level dropped below minimum indicator, top the fluid to the recommended fluid level.
2	Inspect spark plug wires for chafing and heat damage.
3	Inspect the following engine models for corrosion/damage of the Raw Water Pump - Woodruff Key (PV05722). Replace if necessary. Engines: MV8 6.0L, MV8 6.2L, 6.0L MPI-S, 7.4L MPI-S, 7.4L MPI.
4	Recommended service between 10-25 hours.

COMMERICAL/HEAVY DUTY SCHEDULED MAINTENANCE CHART

Maintenance items are best performed by a Certified Ilmor Sales and Service Center.

I = Inspect | R = Replace

Service Item	Before Each Use	Annually (Beg. of Season)	First 25 Hours	Every 25 Hours	Every 50 Hours	Every 75 Hours	Every 100 Hours	Every 125 Hours	Every 150 Hours	Every 300 Hours	Every 500 Hours	Every 2 Years	Every 3 Years	Every 5 Years
Air Filter / Spark Arrestor	I											R		
Anodes		I			I							R		
Coolant Pressure Cap (Closed Cooled Only)									R					
Cooling System Crossover Tube (MPI Only)									I	R			R	
Crank Mounted Raw Water Pump		I	I	I						R				
Engine and Transmission Cooler		I												
Engine Coolant (Closed Cooled Only)	I	I	I									R		
Engine Oil and Filter	I	R	R	R										
Powertrain Alignment		I	I						I					
Pressure Relief Valve (Open Cooled Only)		I										R		
Raw Water Pump Impeller		R			R									R
Raw Water Pump Impeller (6.0L MPI Only)		R						R						
Raw Water Pump Impeller (Supercharged 6.2L Only)		R			R									

COMMERICAL/HEAVY DUTY SCHEDULED MAINTENANCE CHART

Maintenance items are best performed by a Certified Ilmor Sales and Service Center.

I = Inspect | R = Replace

Service Item	Before Each Use	Annually (Beg. of Season)	First 25 Hours	Every 25 Hours	Every 50 Hours	Every 75 Hours	Every 100 Hours	Every 125 Hours	Every 150 Hours	Every 300 Hours	Every 500 Hours	Every 2 Years	Every 3 Years	Every 5 Years
Serpentine Belt and Tensioner		I								R				
Spark Plugs and Wires		I							R					
Supercharger Drive Belt and Tensioner		I								R				
ZF Transmission Oil and Filter	I	R			R									

*	If the engine is subject to heavy usage, it is required to perform these maintenance items at half the time of the interval shown. Heavy usage is defined as operators using their vessel under the following conditions: loaded with additional ballast and/or weight to achieve total maximum capacity over the OEM specification, commercial or training purposes as defined in the Ilmor warranty, at water temperatures below 55°F (13°C), at elevations greater than 6000 feet (1830 meters) above sea level, full throttle operation for more than 5% of total boating time. Vessels operating under these conditions will be required to have more frequent service intervals as specified.
1	Check for contamination and leaks. Check for fluid fill level. If the level dropped below minimum indicator, top the fluid to the recommended fluid level.
2	Inspect spark plug wires for chafing and heat damage.
3	Inspect the following engine models for corrosion/damage of the Raw Water Pump - Woodruff Key (PV05722). Replace the raw water pump impeller and woodruff key if necessary. Engines: MV8 5.7L, MV8 6.0L, MV8 6.2L, 6.0L MPI-S, 7.4L MPI-S, 7.4L MPI
4	Recommended service at 25 hours +/- 2 hours.

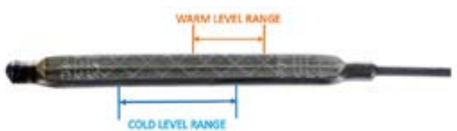
CHECK ENGINE OIL (WARM)

An accurate engine oil level reading will occur only after the engine has run for at least 5 minutes at idle. Run engine while boat is in body of water.

1. After operating the engine at idle for at least 5 minutes, turn engine off and disconnect engine safety-starting switch.
2. Open engine compartment. Engine oil dipstick is located on the side of the engine.
3. Allow approximately 5 minutes before checking. Remove dipstick and wipe it off on a clean rag.
4. Reinsert dipstick. Wait 5 seconds and remove dipstick for reading. Check that oil level is between the ADD and FULL marks on the dipstick.
5. Add oil if necessary through the oil fill neck and only enough to bring oil within the two marks, see picture below. Oil level below the ADD mark or above the FULL mark may result in damage to the engine that may not be covered by the warranty. (See the SPECIFICATIONS chapter for engine oil type.)

CAUTION! Do not use oil additives.

6. Install dipstick and ensure it is properly seated to prevent oil loss.



CHECK TRANSMISSION FLUID/OIL LEVEL

Transmission requires lubrication to function properly. See an authorized dealer to verify the type of transmission in the boat. The amount of transmission fluid/oil varies according to the model. See requirements for transmission fluid/oil in the transmission manufacturer's manual.

NOTICE: Always use the recommended transmission fluid/oil. Ilmor recommends the use of Shell Rotella T4 15W-40˚ for all Inboard transmission applications. For Sterndrive applications, please reference the Ilmor One-Drive Owners Manual. Damage to the engine by use of low-quality or non-recommended transmission fluid/oil as listed for V-Drive and direct drive transmissions will void the warranty. Overfill or underfill may also result in serious damage to the engine and is not covered under warranty.

SERPENTINE BELT

INSPECT SERPENTINE BELT

CAUTION! Check belt before starting engine, or allow engine to cool after shutting down. Failure to do so may result in burns from hot engine components.

On engines with serpentine belt systems, belt tension is maintained by the automatic belt tensioner.

1. Ensure engine is OFF and the engine safety starting switch is disconnected. Leave the throttle/shift control lever in neutral. Open engine compartment and locate the serpentine belt.

2. Check serpentine belt tension at the top, midway between the circulating pump pulley and the alternator pulley. The belt should be tight enough so that it will deflect no more than 1/4 to 1/2 in. (6 to 13 mm) when pressed with the thumb or finger.

3. If the belt tension is too loose, or too tight, service is required. This should be scheduled at an authorized Ilmor sales and service center as soon as possible.

NOTE: If the belt is too tight, excessive belt and bearing wear can occur. If the belt is too loose, slippage can occur, resulting in low alternator output and rapid belt wear.

4. Visually check serpentine belt system.
   - Ensure the belt lies between the accessory pulley edges and is seated within the groves of the pulleys.
   - Check the belt alignment on the pulleys.
   - Check belts for signs of wear, such as cracking, fraying, splits, or brittle places.
   - Look for missing grooves or places where the belt's layers have separated.
   - Look for a buildup of rubber deposits, as well as worn spots that could catch the belt and cause it to break.
5. Visually inspect the pulleys for surface damages, cracks, cuts, rust, and pitting.
6. Listen for irregular audible noises near the engine belt drive area. These sounds likely mean the serpentine belt is worn, loose, or damaged, or there is water on the pulley system surfaces. Slick spots can cause a belt to slip and may be a precursor to overheating and belt cracking. See an authorized Ilmor Sales and Service Center if audible noises exist after replacement.

REPLACE SERPENTINE BELT

NOTE: A properly installed serpentine belt will be automatically adjusted by the belt tensioner. When the belt is off, attention should also be given to the wear condition of the grooves on the underside of the belt where it makes contact with the pulleys. If unsure of the wear pattern, check against a new belt. If the belt is too loose and/or too tight, this can cause electrical and mechanical systems to malfunction. This could occur during operations, and strand the boaters. Therefore, this maintenance function should be taken very seriously. If there is any uncertainty, seek assistance from an authorized Ilmor Sales and Service Center.

NOTICE: If the serpentine belt comes off or wears through, catastrophic engine failure may occur. Do not operate the engine without a properly installed serpentine belt. Any resulting damage will not be covered by the warranty.

1. A serpentine belt routing label is placed on the front of the engine for identifying the correct belt routing. If the label is missing, do NOT operate or service the belt until a label is furnished, or correct routing of the belt is identified and understood.
2. Using an appropriately sized socket wrench, remove tension from the belt by moving the tensioner to the maximum travel position.
3. Remove serpentine belt by unwrapping it from each of the pulleys.
4. Inspect serpentine belt for wear.
5. After determining the serpentine belt replacement needs, reinstall and route the serpentine belt according to the belt routing label affixed to the engine.

6. Ease the tensioner back into place and ensure that the belt is properly routed around all of the pulleys.
7. Listen for irregular audible noises near the engine belt drive area. These sounds likely mean the serpentine belt is worn, loose, or damaged, or there is water on the pulley system surfaces. Slick spots can cause a belt to slip and may be a precursor to overheating and belt cracking. See an authorized Ilmor Sales and Service Center if audible noises exist after replacement.

CLEAN ENGINE COMPARTMENT TO PREVENT CORROSION

The engine compartment should receive a good, general cleaning of the interior as well as the engine and transmission exteriors. There is reward in the cleaning beyond enhancing the overall value of the boat. Cleaning with simple soap and water may reveal if any corrosion has occurred.

CAUTION! Always cover the spark arrester before cleaning to ensure water does not enter throttle body or intake! Be sure to avoid electrical components and connection of water exposure.

Corrosion can occur in any type of water and on any metal surface, even when components are stainless steel. Corrosion is of particular concern for boats that will be operated in salt water, even if the system is closed cooling. Salt water may still enter the engine compartment due to the engine compartment cover being open to vent carbon monoxide and prevent explosive fumes. Also, the exhaust system will always be subject to contact with salt water in these conditions.

Galvanic corrosion, or electrolysis, is the decomposition of metal due to the effects of electrolytic action. When two dissimilar metals are immersed in a conductive fluid such as salt water, an electric current is produced, much like the action of a battery. As the current flows, it takes with it tiny bits of the softer metal. If left unchecked, severe damage may occur over time.

A boat properly prepared for operation in salt water will have sacrificial anodes mounted on the transom, and possibly elsewhere underwater. These anodes are intended to reduce the effects of galvanic corrosion to critical metal areas of the boat. The sacrificial anodes should be checked regularly, and when significant erosion is shown, the anodes should be replaced. More information regarding the sacrificial anodes is contained in the boat manufacturer's Owner's Manual.

NOTICE: Always properly clean the engine and transmission if exposed to salt water. Exposure to salt water causes corrosion, leading to significant damage to metal, including stainless steel. If evidence of corrosion shows on the engine, carefully clean the engine and transmission with fresh water and a mild soap solution after use in salt water. A protective marine oil may be applied to exposed metal to halt the acceleration of corrosion. Failure to properly clean boat or address boat corrosion matters will void product warranty.

INSPECT AND CLEAN THE BATTERY CONNECTIONS AND HOLD-DOWNS

CAUTION! Always wear protective glasses or goggles and protective clothing when working around batteries. Follow battery manufacturer's instructions on safety and maintenance procedures. Failure to do so may result in severe injury.

1. Check the battery post connections to ensure they are clean and tight.
2. If not, loosen and remove negative terminal connection first. Avoid metal contact between both battery connections at the same time. Tools such as wrenches and pliers may cause spark if the battery terminals are bridged.
3. Remove battery hold-downs and remove the battery from the boat.
4. Clean any corrosion from the battery posts and connections with a battery terminal cleaning brush, or by using a plastic bristle brush and a premixed solution of baking soda and warm distilled water (for every three parts of baking soda, mix one part of distilled water). Use care to avoid allowing the solution to enter the battery vents.
5. Remove all corrosion material from the boat, wipe the battery clean, and dry with a disposable rag. Note that this is a generic cleaning method. Battery manufacturers may specify other methods of cleaning. Verify with the battery manufacturer's website the correct cleaning method before undertaking any cleaning.
6. Reconnect positive terminal first, and then the negative. Tighten the terminals.

CAUTION! Take care to reattach battery cables correctly to avoid reverse polarity.

7. Coat both terminals completely with a thin layer of marine grease to protect against water or any potentially corrosive substance. Be sure the rubber boot covers the positive terminal completely.

NOTICE: Never install accessories or add-on equipment not approved by Ilmor. Add-on equipment may adversely affect the alternator output or overload the electrical system. Any damage caused as a result will not be covered by the warranty.

The boat manufacturer specifies a type of marine battery with a certain level of cold-cranking amps at 0°F (-18°C). Check the boat manufacturer's Owner's Manual to determine what this specification is.

Before disconnecting the battery, ensure ignition key and all accessories are in the OFF position. Take care to reattach battery cables correctly to avoid reversed polarity, which is addressed in the electric system section in the FUNCTIONS and DESCRIPTION chapter of this manual.

STORAGE AND WINTERIZING

Proper storage and/or winterizing preparations are just as important as how a powertrain is maintained in use. Since special preparations are necessary, the boat owner should have the work done by an authorized Ilmor Sales and Service Center. Damage that occurs from improper storage and/or winterizing is not covered under warranty and must be avoided. If the boat is stored or not used for more than 6 months, one of the recommended fuel stabilizers should be used. If a fuel stabilizer is not used, the fuel will need to be replaced. Follow scheduled maintenance chart as well.

NOTICE: Do not use fogging oil in Ilmor engines. This will damage the catalysts and can void the engine warranty.

NOTICE: It is recommended the engine be started and run up to temperature, and the powertrain re-winterized every 6 months of storage.

Engine winterizing requires changing the engine oil/filter, draining all raw water from the cooling system and adding marine/RV an-tifreeze to all raw water engine components.

WARNING! Always follow the boat manufacturer's instructions on how to properly winterize the fuel tank prior to storage. Leaking of fuel into the boat and potentially into the storage area could result in substantial damage to the boat, and contact with any spark (such as a flame-producing pilot light in a heater) could also result in property damage and serious injury or death.

*Please follow the fuel stabilizer manufacturer recommendations for terms of usage and expiration.

CAUTION! Failure to correctly winterize the engine may result in catastrophic engine failure not covered under Ilmor warranty, or personal injury. Please see the nearest authorized Ilmor Sales and Service Center for assistance.

NOTICE: Always perform the proper storage procedures when storing the boat. Extended storage with fuel in the system can affect fuel stability and may require system inspection and fuel filter replacement when boat returns to service. Fuel system on all boats equipped with Ilmor MV8 engines MUST be properly prepared for storage periods exceeding 1 month. Damage due to improper storage or winterizing preparations is not covered under warranty.

FUEL SYSTEM TREATMENT

WARNING! Always follow the boat manufacturers instructions on how to properly winterize the fuel tank prior to storage.

A fuel stabilizer such as STA-BIL, may also be used during long-term storage and winterizing the engine. Follow the directions provided by the stabilizer's manufacturer.

Oil Storage/Winterizing

Contaminates in used oil can cause engine damage during storage. Perform an oil change and run the engine to operating temperature to allow new oil recirculation.

Cooling System Storage and Winterizing

Cooling system storage/winterizing requires draining and flushing raw water components with marine/RV antifreeze.

NOTICE: All components which raw water flows through must be drained.

The following steps are recommended for draining of raw water components:
Because this process should be completed while the engine is cool (in order to avoid burns,) it is recommended that this check be completed prior to starting the engine.

1. Drain exhaust manifolds of raw water by removing the two lower cooling hoses connected to the 90° fittings.
2. Drain engine block of raw water.
   - For open cooled 5.7L MPI applications: Remove knock sensor/drain plugs from both sides of the engine block.
   - For 6.0L MPI, 6.2L MPI and 7.4L MPI applications: Remove drain plugs from both sides of engine drain hoses.
   - All GDI closed cooled, Supercharged 6.2L, and stern drives engines do not require draining of the engine block.
3. Drain heat exchanger or TCC of raw water.
   - Open cooled systems will have an oil/transmission heat exchanger. Remove the drain plug and allow the cooler to completely drain.
   - Supercharged 6.2L closed cooling system will have an oil, transmission, Intercooler, and engine Heat exchanger. Remove the lowest 1.5" hose from each and allow the coolers to drain completely. For best results compressed air should be blown through each cooler to confirm Raw water has been removed for the coolers.
4. Reinstall cooling hoses, engine block drain plugs and heat exchanger end caps/drain plug after all raw water has been drained.
5. Fill all components of raw water system with a non-toxic -50°F (-45°C), -60°F (-51°C) or -100°F (-73°C) marine/RV antifreeze. Freeze protection level will depend on climate location.
6. Marine/RV antifreeze will provide freeze protection to water pockets that did not drain and necessary corrosion protection. There are two methods for filling your engine with antifreeze:

Open Cooled System

1. Close thru-hull water pick-up seacock.
2. Fill engine block and heads from thermostat housing. Remove both exhaust header feed hoses. Lift either the port or starboard hose as high as possible and fill until full. The other removed hose allows air to purge.
3. Fill port and starboard exhaust manifolds by removing thermostat hose ends. Lift hose end as high as possible and fill until full.
4. Fill sea strainer if not full.

Closed Cooled System

1. Close thru-hull water pick-up seacock.
2. Fill raw water components by removing both 1 in. hoses from exhaust downturn adapters. Lift either the port or starboard hose as high as possible and fill until full. This should fill the raw water side of the engine heat exchanger, oil/transmission heat exchanger, raw water pump and sea strainer. The sea strainer may need to be opened to purge air.
3. Fill sea strainer if not full by end of procedure.
4. Fill downturn exhaust adapters with 1/4 to 1/2 gal (1 to 2 L) of antifreeze.
5. Reinstall hoses.

SEA STRAINER WINTERIZING

To prevent damage due to frost in the wintertime, the water must be drained, or the installation must be filled with anti-freeze.

Remove the lid and unseat the transparent body from the mount to drain the strainer; the housing is not equipped with a drain plug.

BATTERY WINTERIZING

Check the battery and/or boat manufacturer's requirements.

RECOMMISSIONING AFTER STORAGE/ WINTERIZING

Ilmor recommends recommissioning after storage/winterizing be performed by an authorized Ilmor Sales and Service Center. Service technicians there have the proper equipment, training, and resources to best meet any service needs.