

AMAREW[®]



EMPOWERS YOU

Thank you for choosing our XM-series.



Figure A

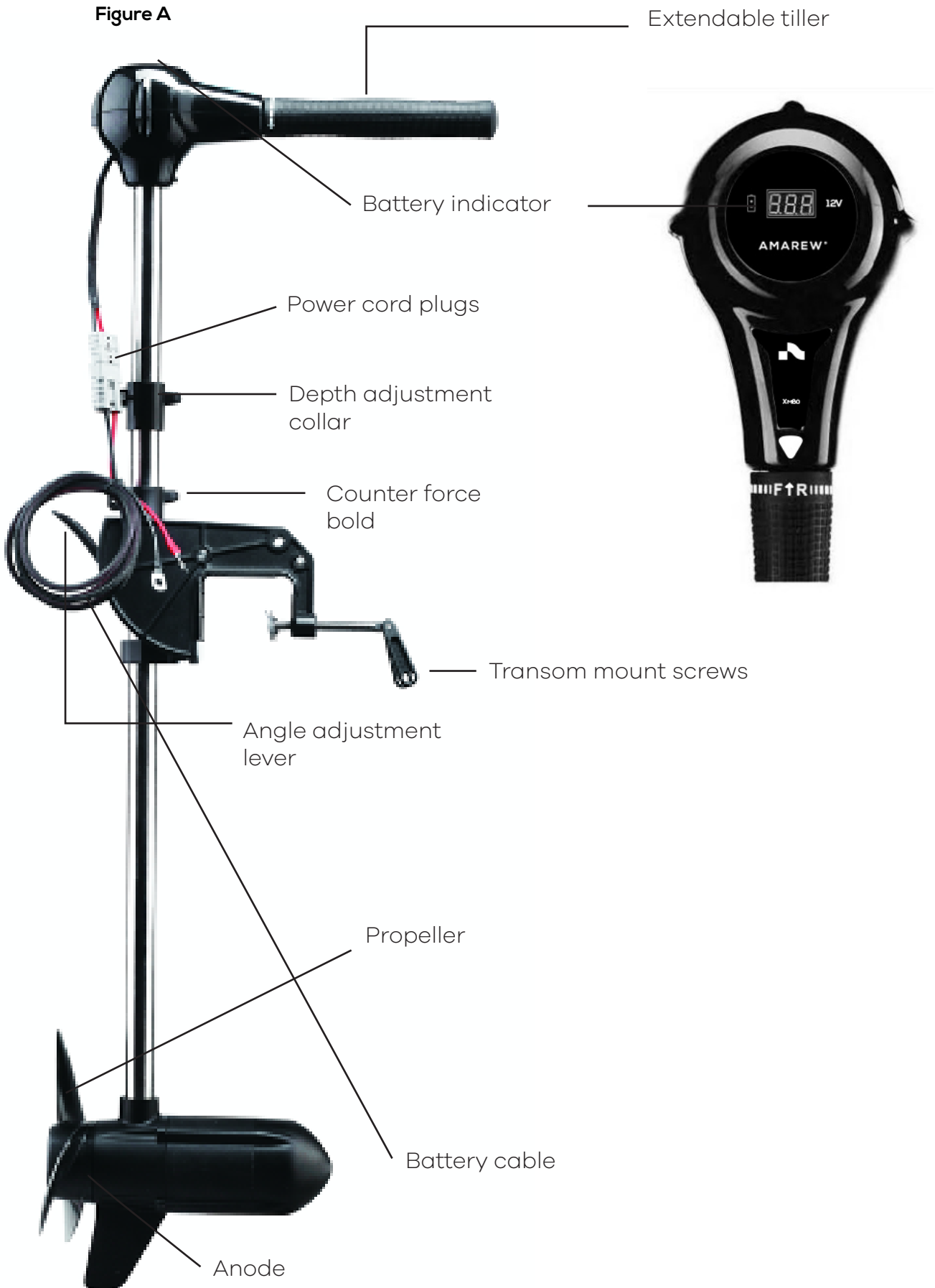




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General information

Congratulations! Thank you for choosing an AMAREW® electric outboard motor. We hope you will love using it. AMAREW® electric outboard motors are designed and developed by our specialized engineering team. After years of effort, we have succeeded in producing superior electric outboard motor series that fit various customers' requirements and provide a high level user experience.

Please read and retain this manual before using your motor. This manual contains information that describes the procedures for a safe operation and the daily maintenance of your electric outboard motor. A safe operation will prevent personal injuries and product damage.

Safety information

Do not allow children (<18 years old) to operate the trolling motor. Do not modify the unit in any way or add accessories that are not intended for this product. Never fully submerge the unit. If the unit is accidentally submersed, disconnect the battery(ies) and leave it to dry.

Warning: Always disconnect the power cables from the motor when replacing the propeller, removing debris around the propeller, charging the battery(ies), transporting the boat or when the motor is not in use.

Benefits

1. Extraordinary longevity: AMAREW® XM-series Brushless Technology increases the lifetime of the motor by more than 5 times in comparison to a brushed motor. The maintenance is also more simple and cost effective.
2. Highly efficient energy saving motor: AMAREW® XM-series utilize a specialized brushless DC motor proven to have over 85% efficiency. Moreover, the brushless technology is 30-60% more efficient than any brushed motor and 100-200% more efficient than a motor, proven engine.
3. Super quiet: AMAREW® XM-series produce less than 55dB and creates absolutely no noise pollution at all. Comparatively, gasoline engines produce over 65dB.
4. Light weight: AMAREW® XM-series (at the same output power) are 20% lighter than any brushed outboard motor.



5. Large adjustable handle: The adjustability and maneuverability of the handle allow maximum comfort and performance.
6. Robust mounting system: AMAREW® XM-series are designed with durability in mind. Especially the mounting system, which we have introduced, is very strong.
7. Stall protection: AMAREW® XM-series are unlike many others on the market, because they come fitted with the latest AMAREW® XM stall protection technology.
8. Overheat protection: The safety and wellbeing of our customers is our number one priority. That's why we designed the overheat protection system, just in case of the unlikely scenario that the product overheats.
9. Low voltage security: AMAREW® XM-series also come with low voltage security, which protects the battery from being drained relentlessly. It ensures that you are always able to reach the shore and that you will enjoy a maximum battery lifetime.
10. Start protection: AMAREW® XM-series comes equipped with "start protection" to protect your engine and your safety during starting.
11. Stepless speed variation: Due to the high-quality design the engine can seamlessly transition from incredibly low speed to maximum speed.
12. Reverse connection protection: Last but definitely not least is the reverse connection protection, which we believe is an essential part of the AMAREW® XM-series.

AMAREW® XM Technology

The AMAREW® XM-series come with a unique AMAREW® XM Brushless Technology. In comparison: Most other electric motors generate rotation power through sliding carbon brushes, which get worn out quickly and easily. These motors also consume a lot more power and generate substantially more heat and emissions. However, AMAREW® XM-series uses a specialized brushless electric motor, which generates power from magnetic fields solely. Therefore, AMAREW® XM-series are the most reliable and stable choice, as well as being lighter and more efficient.



Usage instructions

Propeller installment:

Make sure the propeller and the pin are aligned correctly. Otherwise the propeller cannot be properly fixed. Place the propeller, washer and locknut respectively. Then hold the propeller with one hand and use a wrench or a spanner to tighten the locknut with your other hand, by turning it clockwise (see figure B).

Warning: Always disconnect the power when installing the propeller. Watch out for the sharp edges of the propeller during the installation.

Attaching the motor to your boat:

Attach the motor to the stern of the boat by tightening the two transom mount screws (see figure A) securely while taking care not to over tighten them. To adjust the angle of the motor after you have attached it to the stern of the boat, hold the motor shaft with one hand and tap the angle adjustment lever (see figure A) with the other hand. Adjust to the desired angle and then release the lever to its original position.

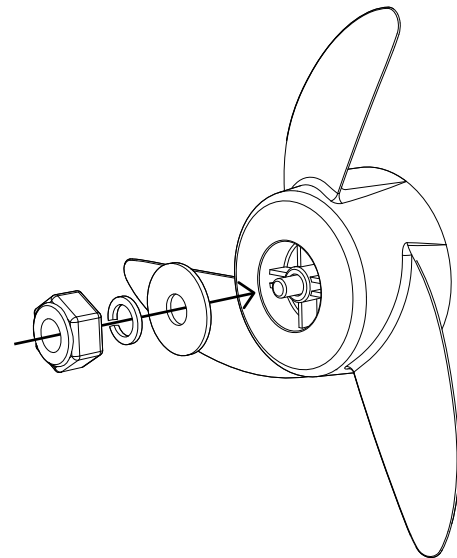
Warning: When adjusting the angle of the trolling motor, make sure the area between the shaft and the hull of the boat is clear, as you might get injured! When mounting or detaching the trolling motor, make sure that the battery is disconnected.

Depth and steering adjustment:

Grasp the shaft with one hand and unscrew the depth adjustment collar (see figure A) using the other hand. Then adjust the motor to the desired depth and securely retighten the depth adjustment collar. Adjust the steering force according to your needs by loosening or tightening the counter force bolt (see figure A).

Warning: The motor can only be used in waters with a depth of at least 80 cm.

Figure B





Connecting a battery:

Before connecting the motor's cables to the battery terminals, ensure that the tiller is in the zero ("↓") position and stand clear of the propeller. Make sure that the battery terminals are clean, as a clean connection will minimize power waste and extracts maximum power from the battery. If required, connect the batteries in series first.

Then connect the red battery cable to the positive (+) terminal and the black battery cable (see figure A) to the negative (-) terminal and check that the wiring is connected correctly. Last, connect the power cord plugs (see figure A). You will hear the "dido" sound. The motor is now powered up.

Warning: Remember to always disconnect the motor from the battery(ies) before the motor leaves the water, as a rotating propeller can cause personal injury.

Battery indicator:

The battery indicator (see figure A) displays the actual battery voltage in Volt. The remaining battery capacity depends on the type and the specifications of the battery that is being used. Please refer to your battery specifications in order to obtain a thorough understanding of the remaining power.

Warning: Make sure to understand the capacity per output voltage of your battery(ies), as the motor will only have limited power once the battery(ies) is drained.

Speed control:

Make sure the speed handle scale is in the zero position. In the zero position, you will hear the "dido" sound, after connecting the motor to a battery. This means that the motor control program is working correctly and that the motor can be started any time. You can now adjust the speed stepless, according to your wish, by turning the tiller. The "F" direction represents "Forward" and the "R" direction represents the "Reverse". The telescopic tiller can be extended up to 14cm, to accommodate your needs, simply by pulling out the handle.

Warning: If the extendable tiller (see figure A) is not in the zero position, the motor will not start. This is designed to protect the user.



Advanced features

1. Low voltage protection: When the voltage displayed is below 10V (XM80) or 20V (XM120 or higher), the motor will enter the low voltage protection mode: power output will be reduced to 50% in order to protect the battery.
2. Overheat protection: when the propeller is entangled by items or materials that are not cuttable, the motor could overheat. When the temperature of motor reaches 110°C, the motor will go to the temperature protection mode: Power output will be reduced to 50% in order to protect the motor.
3. Stall protection: When the propeller stalls, the motor will enter the stall protection mode: the power output will be reduced to 6A to protect the motor.
4. Start protection: When connecting the motor to the battery make sure to set the speed handle scale in the zero position to start the motor properly. Otherwise, the motor will not start.
5. Reverse connection protection: If the wire connection is reversed, the motor will not start.

Replacing the propeller

Make sure the propeller and the pin are aligned correctly. Otherwise the propeller cannot be properly fixed. Place the propeller, washer, the spring washer and locknut respectively. Then hold the propeller with one hand and use a wrench or a spanner to tighten the locknut with your other hand.

Hold the propeller with one hand and loosen the propeller locknut by turning it counter clockwise with your other hand, by using a wrench or a spanner. Pull the washers and the propeller straight off (see figure B). If the propeller is stuck, grasp one blade with one hand and tap lightly on the backside of the opposite blade with a rubber mallet until the propeller comes off. If the propeller pin is bent or broken, replace it. Align the new propeller with the propeller pin. Reinstall the propeller, the washer, the spring washer and the locknut by tightening the locknut clockwise.



Calibrating the tiller

If the "dido" sound does not go off when the motor and the battery(ies) are connected, even with the tiller handle in the zero position, open the top cover and check if the screw of the potentiometer is loose. If the potentiometer is loose, adjust the potentiometer to the "O" position. Last, close back the top cover by retightening the screws.

Warning: During this calibration adjustment the propeller should not be installed, in order to avoid any injury.

Maintenance

1. Before each use, make sure to check the wiring. Check for loose connectors, wire rust, scratches and cracks in the cables and connectors. Clean the connectors if they are not 100% clean and replace the cables and connectors whenever necessary.
2. After each use, wash the engine thoroughly with fresh water. Especially after usage in salt water.
3. Every month, add grease to all the moving parts in order to prevent corrosion.
4. When the propeller breaks, remove the propeller and replace the pin (see next section).
5. Every year or every 150 hours of usage (whichever comes first), inspect the anode by removing the propeller. If the anode has significant wholes, pits or missing parts, replace the anode.

Warning: A lack of maintenance on the wiring and connectors may cause the wiring and connectors to overheat or even burn.

Warning: Remember to wash the motor with fresh water each time after it has been used it in salt water, as it this greatly reduces the possibility of corrosion.

Storage

When storing the motor, lubricate all moving parts and screws and store it in a well ventilated, dry area. Do not leave the motor outside in the winter for long periods, as this will damage the lower unit.



Trouble shooting

Problem	Solution
Speed loss	1: Check for line or weed on the propeller.
	2: Check the battery status.
	3: Check the battery terminals, the battery cable and the power cord plugs.
Motor noise/shake	1: Check for line or weed on the propeller.
	2: Check whether the propeller is secure and not damaged.
	3: Check the shaft to ensure it is not bent. Detach the propeller en run the motor to visually make sure that the shaft is not shaking. If the shaft is damaged, contact your dealer.
Loss of speed setting	1: Check the battery terminals, the battery cable and the power cord plugs.
	2: The tiller might need to be recalibrated. See previous section or contact your dealer.
Tight steering	1: Loosen the counter force screw, apply lubricant and readjust.



Technical data

Amarew® electric outboard motor	XM80	XM80R	XM120	XM120R	XM160	XM160R
Input power in W	735		1470		2000	
Propulsive power in W	480		1000		1365	
Static thrust in lbs	80		120		160	
Efficiency at maximum thrust in %	65		68		68	
Peak efficiency in %	≥83		≥85		≥83	
Voltage in V	12		24		24	
Maximum current in A	60		60		80	
Maximum propeller speed in rpm	1100		1350		1500	
Total weight in kg	9.0		11.0		12.0	
Control	Tilt + Extendable Tiller	Tilt + Remote control	Tilt + Extendable Tiller	Tilt + Remote control	Tilt + Extendable Tiller	Tilt + Remote control
Speed control (FWD/REV)	Variable					
Shaft length in cm	90 (adjustable)					
Battery gauge	Yes					
Overheat protection	Yes					
Low-voltage protection	Yes					
Stall protection	Yes					
Start protection	Yes					
Reverse connection protection	Yes					



3 Year warranty

Limited warranty coverage (1 year)

AMAREW® warrants its products against defects in material or workmanship. This warranty offers coverage for one year from the date of purchase, depending on the specific parts for which warranty is requested (see the table below). The reference for the coverage period is the product serial number together with your original proof of purchase. The repair or replacement of parts or the provision of service under this warranty, does not extend the duration of the warranty compared to the original expiration date.

Extended warranty (+2 years)

Please register your product on www.amarew.com/warranty within 30 days after your purchase, in order to increase the one year limited warranty coverage with an additional two year limited warranty coverage.

Conditions that must be met in order to obtain warranty coverage

Warranty coverage is available only from authorized AMAREW® dealers and resellers. Routine maintenance, as discussed in this manual, is mandatory to maintain warranty coverage.

How to obtain warranty coverage

Please return the product to an authorized dealer for inspection if the product is not working properly. A proof of purchase must be shown in order to obtain warranty. The dealer then takes care of inspection and any necessary repairs.

If the services provided are not covered by the warranty, the buyer must pay for all labor, all material and all other expenses related to the provided service. The buyer has to pay for all related transportation and / or travel time.



What is not covered

This warranty does not cover routine maintenance, adjustments, normal wear, damage due to misuse, abnormal use, use of the product that is not specified in this manual, renunciation, immersion, installation in a way that is not specified in this manual, improper handling, improper maintenance or repair, use of an accessory or part that is not made or sold by AMAREW®, or the modification and/or removal of parts.

The following table provides information about which parts are covered by warranty and for which period:

Row	Warranty parts	Warranty coverage period	Extended warranty coverage period
1	Motor rotor, magnet and other electrical parts	1 Year	3 Year
2	Speed controller	1 Year	3 Year
3	All other parts that are not mentioned in row 1 and 2	No warranty	No warranty