



**INSULATED
WRENCH**



BATTERY CHARGER



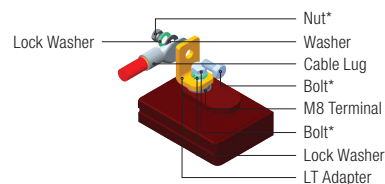
BAKING SODA
(Sodium Bicarbonate)



VENTILATION

BATTERY CONNECTION

- If using washers to connect the wire connections, ensure the connection is in direct contact with the lead surface of the terminal.
- Ensure the washer is placed on top of the wire connection (between the connection and the nut).
- Do not place the washer between the terminal and the connection as this creates high resistance and can cause terminal meltdown.



TORQUE VALUES

- Tighten all cable connections to the specified values*, ensuring proper contact with the terminals. Over-tightening can result in terminal breakage and loose connections, which may result in meltdown or fire.

*Consult comprehensive User's Guide on www.trojanbattery.com/pdf/TrojanBattery_UsersGuide.pdf for detailed information.

TERMINAL PROTECTION

- Keep terminals clean and dry to avoid corrosion. Terminal protector spray is recommended.



- Over 200 years of combined engineering expertise.
- Full range of advanced Deep-Cycle Flooded, AGM, Gel, and Li-ion batteries.
- Quality components for reliability and performance.
- Industry-leading return on investment and low cost of ownership.
- Outstanding technical and customer service.
- Trojan's battery testing procedures adhere to both BCI and IEC test standards.
- Global – sold in over 120 countries.



CHARGING FORWARD

**LEARN MORE AT
www.trojanbattery.com**

Your Local Trojan Battery Representative.



800.423.6569 +1.562.236.3000

TROJANBATTERY.COM

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TRJN0246_QSG_AGM_082019



AGM BATTERY QUICK START USER'S GUIDE

BATTERY INSTALLATION & MAINTENANCE



BATTERY INSTALLATION MAINTENANCE AND INSTALLATION EQUIPMENT NEEDED



GOGGLES



PROTECTIVE CLOTHING



GLOVES



**DISTILLED OR
TREATED WATER**
(ONLY FOR TERMINAL CLEANING)

SAFETY

- Always wear protective clothing, gloves and goggles.
- Do not smoke near batteries.
- Keep sparks, flames and metal objects away from batteries.
- Use insulated tools when making battery connections.
- Electrolyte is a solution of acid and water, so avoid skin contact. If acid contacts skin or eyes, flush with water immediately and contact a medical professional.
- Ensure the cable connections to the terminals are properly tightened.
- Do not lay objects on top of battery.
- Always charge and handle batteries in a well-ventilated area.
- Never add acid to a battery.
- Never remove or alter AGM vent caps.



BATTERY ORIENTATION

- Unlike flooded batteries, AGM batteries may be placed and installed upright or on their sides.

PREVENTATIVE MAINTENANCE

FOLLOW THESE TIPS TO ENSURE THE LIFE OF YOUR TROJAN AGM BATTERY

INSPECTION

- Inspect battery at regular intervals. The tops of the batteries and terminal connections should be clean, dry, and free of dirt or corrosion.

WATERING

- AGM batteries, sometimes referred to as sealed batteries, do not have free flowing electrolyte or removable vents and lose very little water during charging. **Because of their construction, AGM batteries are considered non-spillable and maintenance free since no watering is required.**

WARNING: Water should NEVER be added to deep-cycle AGM batteries.

CLEANING

- Clean the top of the battery, terminals and connections with a cloth or brush and a sodium bicarbonate solution (1 cup of baking soda to 1 gallon of water (150g/1L)).
- Rinse with water and dry with a clean cloth.
- Keep the area around batteries clean and dry.

CHARGING

- Proper charging will maximize battery performance.
- Both under and over-charging can reduce the life of the battery.
- Do not discharge your battery more than 80% to prevent over-discharging and damaging the battery's internal components.
- Avoid charging at temperatures above 122°F (50°C).

EQUALIZING (flooded batteries only)

- AGM Batteries do not have free flowing electrolyte and therefore do not experience stratification. **As a result, AGM Batteries do not require equalizing.**

WARNING: Do not equalize deep-cycle AGM batteries.

STORAGE

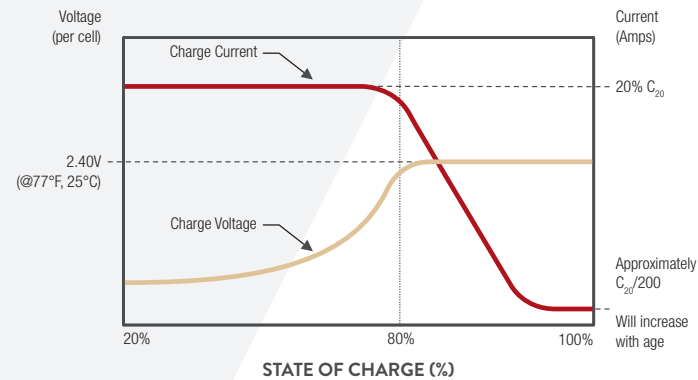
- Fully charge batteries before placing in storage.
- Store in a cool, dry location, protected from the elements.
- Batteries self-discharge during storage. Monitor the voltage every 2-3 months.
- In high temperatures (greater than 90°F or 32°C) monitor the voltage every 1-2 months as batteries will self-discharge faster.
- Stored batteries should be given a boost charge when they are at or less than 75% State of Charge (SOC).
- After storage, recharge before use.

CHARGE VOLTAGE SETTINGS

AGM BATTERIES - NORMAL CHARGING PARAMETERS @ 25°C (77°F)			
TROJAN BATTERY LINE	MAXIMUM CHARGE CURRENT (% OF C ₂₀)	MAXIMUM ABSORPTION PHASE TIME (HOURS)	FINISH CURRENT (% OF C ₂₀)
Motive AGM	20%	2	-

DEEP-CYCLE AGM BATTERIES - CHARGER VOLTAGE SETTINGS (@25°C, 77°F)			
SYSTEM VOLTAGE	12 VOLT	24 VOLT	48 VOLT
Absorption Voltage (2.40 VPC)	14.4	28.8	57.6
Float Voltage (2.25 VPC)	13.5	27	54
Temperature Compensation (°F) (-2.8 mV/cell x (T _{battery} - 77))	-16.8 mV x (T _{battery} - 77)	-33.6 mV x (T _{battery} - 77)	-67.2 mV x (T _{battery} - 77)
Temperature Compensation (°C) (-5.0 mV/cell x (T _{battery} - 25))	-30 mV x (T _{battery} - 25)	-60 mV x (T _{battery} - 25)	-120 mV x (T _{battery} - 25)

RECOMMENDED TROJAN DEEP-CYCLE AGM CHARGING PROFILE



TECHNICAL SUPPORT

CALL TROJAN BATTERY TECHNICAL SUPPORT:

United States and Canada: 800-423-6569, dial ext. 3045

International: +1-562-236-3045

ON THE WEB:

<https://www.trojanbattery.com/tech-support/>

AGM STATE OF CHARGE AS A MEASURE OF OPEN-CIRCUIT VOLTAGE

PERCENTAGE CHARGE	SPECIFIC GRAVITY	CELL	6 VOLT	8 VOLT	12 VOLT
100	1.295	2.14	6.42	8.56	12.84
75	1.265	2.09	6.27	8.36	12.54
50	1.215	2.04	6.12	8.16	12.24
25	1.155	1.99	5.97	7.96	11.94
0	1.125	1.94	5.82	7.76	11.64

*Although the specific gravity cannot be measured in a VRLA battery, an approximate value can be useful in determining the freezing point of electrolyte.

Battery Terminal
Clean & Remove
Corrosion

Battery Top
Keep Clean

