



Sign Maintenance Instructions

This guide describes common maintenance procedures for your Aurora, Polaris or Light Box Sign.

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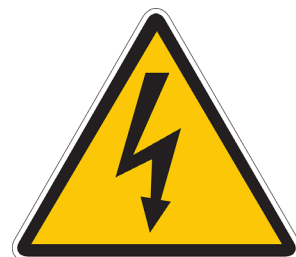
1. Preventative Maintenance

Our signs have been designed and manufactured to provide years of trouble-free operation. This section describes some preventative maintenance steps that may be needed from time to time.

1.1 How to Open a Sign for Servicing

Danger - Electrical Hazard. Contact with high voltage may cause serious injury or death. Always disconnect power to the unit prior to servicing.

Turn off power and lock out, using your lockout/tagout (LOTO) procedures, before servicing.



1.1.1 ID Cabinet Sign

- Remove the aluminum retainer (molding) on one end of the sign. These are fastened to the sign frame with aluminum screws.
- Some sign faces are also held in place by screws through the sign face flange. Retainers and screws must then be removed from each end.
- Slide out the entire sign face to reveal the fluorescent lamps.

1.2 Checking for Leaks

It is critical to keep water from entering the sign cabinet. Check the cabinet for signs of leakage, paying particular attention to any holes, like those for lifting points or mounting poles, where water may leak in. Re-apply a silicone sealant periodically as needed.

Important: DO NOT fill any drain holes along the bottom of the sign cabinet

1.3 Ventilation and Fans

It is good practice to check the fans and ventilation any time the sign is being serviced. Signs have temperature sensors in the sign controllers that monitor internal cabinet temperature. If the internal temperature reaches 152°F (67°C), the display is turned off, which stops the heat generation by the electronics. This over-temperature condition may occur if the sign installation has compromised the ventilation or if an excessive number of fans have failed. Ventilation can also be compromised by obstructions to airflow. For example: leaves, dirt, rodents, insects or birds.



Image 4.5

1.4 Surge Protection

Check all internal surge suppressors and/or fuses when a sign is being serviced. Surge suppressors are installed on all power DIN rails throughout a sign. A faulty surge suppressor will have a red or orange indicator. A good surge suppressor will have a white or green indicator. If a faulty surge suppressor is found, obtain a replacement by contacting support.



Image 4.7



Image 4.6



Image 4.8

1.5 Cleaning Louvers and LED Modules

The louvers and modules do not require any regular cleaning. However, if you choose to clean the louvers or LED modules, please use a mild soap and rinse with plain water. DO NOT use a cloth to wash the modules as this will bend the LEDs.

1.6 Powering Down

DO NOT turn the sign off or put it on a timer. The sign is designed to have power supplied to it at all times, except during maintenance or service. Do not shut the sign down overnight, on weekends or during other times of disuse. The sign uses very little electricity when not playing data and allowing it to continue to run - although blank - keeps the fans running and avoids moisture build-up, protecting the electronics inside the sign.

1.7 Frequency

We recommend the preventative measures that we've listed in sections 1.2 - 1.4 every 3 months. If there are any questions, please contact our Customer Satisfaction Team at 1-800-285-2504.

1.8 Sign Face and Defender Cleaning and Maintenance

The MAKROLON® SL is the translucent polycarbonate portions of your sign, including the sign face, logo area and vandal cover. The proprietary UV-resistant surface on the MAKROLON® SL sheet significantly improves the long-term performance of your sign. Clean periodically with proper procedures and use compatible cleaners to prolong service life. For general cleaning, it is recommended that the following instructions and cleaning agents be used.

Cleaning Procedures

- Rinse polycarbonate sheet with lukewarm water.
- Wash sheet with mild soap and lukewarm water.
- Use a soft cloth or sponge and gently wash with an up and down motion.
- Rinse the cloth or sponge and change the water often.
- DO NOT SCRUB or use paper towels, brushes, or squeegees; the surface treatment on MAKROLON® SL sheet is not mar-resistant.
- Repeat rinse and dry with a soft cloth (preferably a microfiber cloth) to prevent water spotting.



Compatible Cleaning Agents

Windex with Ammonia-D®, JOY®, PALMOLIVE LIQUID®, Top Job®, Naphtha VM&P, Kerosene (Neleco-Placer), Isopropyl Alcohol.



Image 4.10



Image 4.11



Image 4.12



Image 4.13



Image 4.14



Image 4.15

DO NOT USE:

Isopropanol, Butyl Cellosolve, Formula 409®, Lysol® or Pine-Sol® on the treated surface.

Graffiti Removal, Dried Egg, Spray Paint, Permanent Marker

- A. Butyl Cellosolve (for removal of paints, marking pen inks, lipstick, etc...). The use of masking tape, adhesive tape or lint removal tools works well for lifting off old weathered paints.
- B. To remove labels, stickers, and the like, the use of kerosene or VM&P naphtha are generally effective. If the solvent will not penetrate sticker material, apply heat (hair dryer) to soften the adhesive and promote removal.

1.9 Cabinet and Frame Cleaning and Maintenance

Powder coat paint offers superior color and gloss retention along with graffiti, chip, and impact resistance. The best method of cleaning is by regular washing of the coating using a solution of warm water and mild detergent. All surfaces should be cleaned using a soft cloth or sponge, using nothing harsher than natural bristle brushes.

Cleaning Procedures

1. Rinse with water.
2. Wash with mild soap and water.
3. Use a soft cloth or sponge (DO NOT SCRUB).
4. Repeat rinse and dry with a soft cloth to prevent water spotting.

General Cleaning Tips

- Over-cleaning or excessive rubbing can do more harm than good.
- Strong solvents or strong cleaner concentrations can cause damage to painted surfaces.
- Avoid abrasive cleaners. Do not use household cleaners that contain abrasives on painted surfaces.
- Abrasive materials such as steel wool, abrasive brushes, etc. can wear and harm finishes.
- When using recommended solutions avoid drips and splashes. Remove run downs as quickly as possible.
- Avoid temperature extremes. Heat accelerates chemical reactions and may evaporate water from the solution. Extremely low temperature may give poor cleaning effects. Cleaning under adverse conditions may result in streaking or staining. Ideally, cleaning should be done in the shade at moderate temperature.
- Do not substitute a heavy duty cleaner for a frequently used mild cleaner.
- Do not scour painted surfaces.
- Never use paint removers, aggressive alkaline, acid or abrasive cleaners. Do not use

trisodium phosphate or highly alkaline or highly acidic cleaners. Always do a surface test.

- Follow manufacturer's recommendations for mixing and diluting any recommended cleaners.
- Never mix recommended cleaners.
- To prevent marring, make sure cleaning sponges, cloth, etc... are grit-free.

Waxing Your Sign

Upon its arrival, we recommend that you wax all painted surfaces of your new sign (cabinet, legs, cowling, trim, etc...) with an automotive wax. Occasional re-application of a wax polish maintains the look of your sign while slowing down the aging and weathering process. To maintain the finish of the painted surface apply a coat of clear car wax, once a year. Approved products to wax your sign are: Johnson Paste Wax®, Turtle Wax®, or Meguiar's® Glaze.

Image 4.19



Graffiti Removal, Dried Egg, Spray Paint, Permanent Marker

For best results, treat graffiti within the first 24 hours and use the appropriate solvent. Various solvents have different effects on various graffiti. Mild, nonabrasive solvents, like Mineral Spirits, should be tested beforehand. Then progress to more aggressive solvents like Acetone, Lacquer Thinner or a Paint Reducer, if necessary. Other solvents to use, 3M™ Bug & Tar (available at hardware stores) or WD-40® or Isopropyl Alcohol to clean graffiti, dried egg spray paint and permanent marker from the sign's painted metal surfaces.

Image 4.17 Image 4.18

Suggested Process for Removing Spray Paint Graffiti (the most common type of Graffiti)



Image 4.20



Image 4.21



Image 4.22



Image 4.23



Image 4.25



Image 4.15

- Test this process on a small, inconspicuous area before attempting this on the primary area of graffiti.
- Start at the top and move downward.
- When removing the graffiti, gently rub the area. Excess rubbing or pressure may negatively affect the paint.
- It is important to continually move over the substrate when removing graffiti.
- Use a soft lint-free cloth, changing frequently to ensure the best result.
- Repeat this step as many times as necessary to remove the graffiti.

2. Corrective Maintenance

2.1 Replacing the Sign Face

If you ever feel the need to replace your old logo you will not need to replace the entire sign.

ID Cabinet

- See Section 1.1, for instruction to “Open a Sign for Servicing”.
- Replace with the new face.
- Replace the retainer along with any screws that may be in the face.

2.2 Fluorescent Lamps

A fluorescent lamp or a fluorescent tube is a low-pressure mercury-vapor gas-discharge lamp that uses fluorescence to produce visible light. An electric current in the gas excites mercury vapor which produces short-wave ultraviolet light that then causes a phosphor coating on the inside of the lamp to glow. A fluorescent lamp converts electrical energy into useful light much more efficiently than incandescent lamps.



Image 4.30

Fluorescent lamp fixtures are more costly than incandescent lamps because they require a ballast to regulate the current through the lamp, but the lower energy cost typically offsets the higher initial cost.

Because they contain mercury, many fluorescent lamps are classified as hazardous waste. The United States Environmental Protection Agency recommends that fluorescent lamps be segregated from general waste for recycling or safe disposal, and some jurisdictions require them to be recycled.

2.2.1 Changing Fluorescent Lamps

Replace the burned out lamp with an equivalent high-output lamp (T-12, Cool White, High-Output Rapid-Start Lamps). These can be purchased at a local electrical supply store. The lamp information will be printed on the end of the lamps. For example FxxT12/CW/HO, where xx is the length of the bulb in inches.

If this information is no longer legible and it is not written on the label on the side of your sign, call 1-800-285-2504, and we will provide you with the information you need.

It is recommended that you never turn your sign off. The small amount of heat generated by the large lamps and ballasts will reduce or eliminate harmful condensation, and they will last longer. The cost of the electricity is nominal and will likely be less than lamp and ballast replacement.

- See Section 1.1, for instruction to “Open a Sign for Servicing”.
- Remove any electrical tape securing the lamps in the sockets. There is no need to re-tape new lamps as they were taped to protect them during shipping. Remove the lamps by pushing the spring-loaded socket in at an angle then sliding that end of the tube out; or “roll out” non-spring loaded sockets.
- Replace the burned out lamp.
- Replace both the face and the retainer along with any screws that may be in the face.

2.2.2 Changing Ballast

The ballast controls the power flow to the fluorescent lamps. Depending upon the model of the sign, one or more ballasts are required for each sign.

- See Section 1.1, for instruction to “Open a Sign for Servicing”.
- Remove the raceway around the ballast to expose the power connections.
- Disconnect the power wires.
- Remove the ballast from the raceway by removing the two (2) – 1/4” hex head screws at either end of the Ballast.
- Replace the ballast.
- Close the sign.



Image 4.32

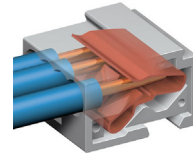


Image 4.33



Image 4.34

If your sign fails to illuminate, or if sections of the sign involving more than one lamp are dark, follow these simple steps:

- If the entire sign fails to light, check the power source to the sign and electrical connections.
- If individual lamps fail, use the procedure for replacing lamps and make sure that all lamps are firmly seated in their sockets.
- Record the model numbers of all ballasts within the sign.

If your ballast is under warranty, please contact customer support at 1-800-285-2504 with the model number for further instructions.

2.2.3 Troubleshooting Fluorescent Lamps

PROBLEM	POSSIBLE CAUSE	SOLUTION
A lamp is out.	Lamp burned out. Loose lamp. Bad connection.	Change lamps. Tighten lamps in the socket. Check connections.
Several lamps are out.	Lamp burned out. Loose lamp. Bad ballast.	Change lamps. Tighten lamps in sockets. Test ballast.
The sign is out.	Individual lamp(s) burned out. Power off. Bad electrical connection to sign. Bad ballast.	Check each lamp. Turn power on. Check wiring. Test ballast.

2.3 LED Lamps

An LED Lamp is a light-emitting diode (LED) product which is assembled into a lamp (or light bulb) for use in lighting fixtures and exceeds the output of standard T-12 lamps to the sign face. LED lamps have a lifespan and electrical efficiency several times longer than that of incandescent lamps and are significantly more efficient than fluorescent lamps.



Image 4.35

Unlike fluorescent lamps (e.g. tubes and compact fluorescent lamps or CFLs), LEDs come to full brightness without the need for a warm-up time; the life of fluorescent lighting is also reduced by frequent switching on and off. The initial cost of an LED is usually higher. Degradation of LED dye and packaging materials reduces light output to some extent over time. Our LED lamps are made to be a directly compatible drop-in replacement for our fluorescent lamps.

LED chips need controlled direct current (DC) electrical power; a power supply is required to convert alternating current from the supply to the regulated low voltage direct current used by the LEDs.

2.3.1 Changing Out LED Lamps

1. See Section 1.1, for instruction to “Open a Sign for Servicing”.
2. Disconnect the power wires from the Wago® terminal connector to one side of the LED lamp.
3. Remove two (2) – 1/4” hex head screws from either end of the lamp.
4. Replace the LED lamp.
5. Close the sign.

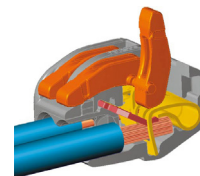


Image 4.37



Image 4.36



Image 4.38



Image 4.39

2.3.2 Changing Out LED Lamp Power Supply

1. See Section 1.1, for instruction to “Open a Sign for Servicing”.
2. Remove the raceway around the power supply to expose the power connections.
3. Disconnect the power wires from the Wago® Terminal connector.
4. On the DC side, the red wire is positive (+), the black wire is negative (-).
5. On the AC side, the brown wire is hot/line and the blue wire is neutral.
6. Remove the power supply from the raceway by removing the two (2) – 1/4” hex head screws at either end of the power supply.
7. Replace the power supply.
8. Close the sign.



Image 4.41



Image 4.40

2.3.3 Troubleshooting LED Lamps

- ☐ Check power to sign.
- ☐ Check AC power connection to the power supply (brown is hot and blue is neutral).
- ☐ Check polarity on the DC side red is positive (+) and black is negative (-).
- ☐ Check the wire connection on each LED lamp.

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Clanton, AL 35045

FCC Notice

All components have been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

The user is cautioned that any changes or modifications not expressly approved by the party responsible for FCC compliance could void the user's authority to operate the equipment.

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