Siren Installation and Maintenance

The enclosed information will help you get the best performance
and service life from your B&M siren.

B&M sirens are designed to give a long service life with a minimum of attention.
In the event of unusual operation, first check the maintenance section
of this manual as most issues are resolved by following
simple maintenance procedures.

All new B&M sirens sold are covered by our exclusive 5-year warranty
against defects in materials or workmanship.

Please contact us directly for assistance with any
factory service needs.

B & M SIREN Manufacturing Co.
"It pierces the air"

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MANUFACTURERS OF SIRENS FOR EVERY WARNING AND SIGNAL USE
SINCE 1913

Siren Mounting and Sound Output

The siren should be mounted in a location that maximizes the projection of the warning signal while minimizing the occupant's exposure to excessive sound levels. This usually involves mounting the siren as far forward on the vehicle as possible.

The siren should be mounted so that all the stator ports are forward of the mounting surface. Never mount it in a manner that the stator ports are located behind the face of a bumper or other surface. This would greatly reduce forward sound projection and vastly increase the amount of sound being directed back toward the occupants. For the same reasons, the siren should not be mounted under the vehicle, in the engine compartment, or on the roof.

Care must be taken to ensure that installation of the siren does not damage or interfere with the operation of any vehicle components or safety systems.

Mounting location should be evaluated for its structural ability to support the siren and to resist the effects of vibration and other movement caused by rough roads, etc.
Some vehicles may require additional supports or brackets to securely mount sirens in certain locations.

Siren mounts which clamp the motor case should be tightened, with hand tools only, enough to secure the siren. Excessive over-tightening may damage the motor case.

WARNING:

B&M sirens comply with the applicable standards for sound output. By their nature, these sound levels may cause hearing damage through extended exposure unless proper measures are taken by the installer, employer, and operator.

It is the responsibility of the employer to ensure that all necessary measures are taken to prevent employee exposure to sound levels in excess of the OSHA standards, 29CFR; 1910.95, and any other relevant regulations. This may include specifying that apparatus manufacturers provide adequate sound dampening insulation on new vehicles, providing suitable hearing protection equipment such as communication headsets, and any combination of Personal Protective Equipment and related policy necessary to protect the employee. Employees must be instructed of their responsibility to protect their hearing by using protective equipment.

Warning labels are provided to be installed adjacent to siren controls and at other appropriate locations as a reminder for vehicle occupants to use hearing protection when operating sirens. Additional warning labels are available free upon request.

Proper wiring of the B&M siren

B&M sirens are wired differently than some other brands. Please pay careful attention to the wiring diagram and instructions to prevent malfunction.

The B&M automatic Non-Rolling Brake is spring applied, and must be energized to release it when the siren is to be used. It is recommended to wire the siren according to the factory wiring diagram, with control power being sourced from the vehicle headlight flasher control circuit or the 'code 3' position of the emergency response lighting controls.

Do not source control power directly from the battery switch or ignition switch as this will defeat the purpose of the brake and shorten its life. When properly wired and/or programmed, the siren floor switches will be disabled and the siren will stop automatically when the emergency response lighting or siren enable switch are turned off.
(This also prevents unintentionally using the siren without the emergency response lighting.)

Be sure to connect the siren solenoid main power cable directly to the main battery bank as shown in the wiring diagram.

Complaints of the siren drawing too much power and causing low voltage problems are usually due to the siren being connected to a vehicle body feed instead of directly to the batteries. This condition can also reduce the life of the siren motor.

Siren motor current draw is about 60 amps at full speed. Momentary inrush current is about 175 amps at startup. If desired the siren main power supply may be fuse protected. Bussmann AMG-200 fuse with FMG-211 fuse holder are recommended for this purpose.

The brake coil draws about 1.25 amps when it is energized to release the brake.
It is recommended to protect the control power circuit with a 15-amp fuse or circuit breaker.

If there are any questions or you have an unusual installation, please contact the factory for assistance.

Siren Care and Maintenance

The exterior of the siren may be cleaned with the same mild soap and water used for cleaning the vehicle body. Do not direct forceful streams of water into the siren. It is recommended to run the siren very briefly after washing to spin out any water that may have entered the rotor area. A large folded towel may be held over the front opening of the siren to minimize noise if desired.
The siren stator and covers are made of stainless steel and may be carefully buffed with an appropriate metal polish if desired to remove small scratches or dullness.

The B&M siren is a precision device with close tolerances and rotates at a high speed. Never insert any item into a rotating siren. Personal injury or serious damage may result.

The B&M automatic Non-Rolling Brake is spring applied to prevent the rotor from rolling with the wind during normal driving. When properly wired, the brake coil is energized to release it when the siren controls are armed. If one were to spin the siren by hand when it is not armed, they would notice that the siren does not coast freely. This is normal.

Due to the nature of its design, the Non-Rolling Brake does not bring the siren to an instant stop when applied. It may take more than a few seconds to stop a siren that is spinning at a high speed.

If the siren does not coast freely (counter-clockwise when viewed from the front) when the siren controls <u>are</u> armed, check for control power to the brake or a defective brake coil. Remove the brake as follows to confirm the siren coasts freely with the brake removed.

a) Turn off siren control power and disconnect the brake power lead.
b) Unscrew the brake using a rubber strap wrench or other method to avoid damaging the brake housing. (Do not use pliers or a pipe wrench.) Save the fiber shim(s) between the brake and stator.
c) Check the condition of the brake plunger and its phenolic pad as well as the spring. Clean as necessary.
d) Spread a <u>small</u> dab of grease onto the end of the brake plunger pad and reassemble in reverse order.

All bearings are lifetime lubricated. Attempting to add lubricant to the siren can cause malfunction, especially if it gets into the siren clutch.

The B&M Series M9/M10 Siren Clutch

The B&M siren clutch is a stout assembly, designed to work without lubrication of any kind. Occasionally, contamination with lubricant or other foreign material may cause the clutch to slip or chatter.

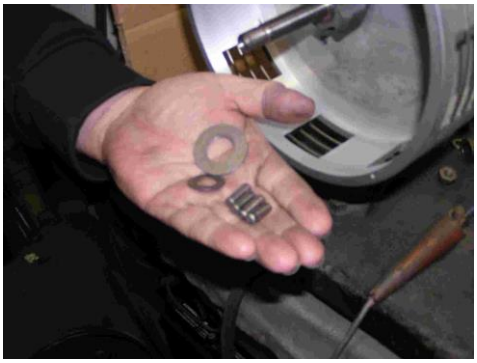
This is normally easily resolved by following the clutch maintenance procedure that follows, and may be performed without removing the siren from the vehicle.

For your safety, ensure that power to the siren is disabled prior to beginning this procedure.


1. Remove the siren front cover and rotor tip.


2. Remove cotter pin and castle nut.


3. Pull out the rotor, using care to catch the rollers which will probably fall out.



4. Collect the four rollers, roller retaining washer and shim(s). Occasionally the shim(s) will stick to the bearing inside the rotor.


5. Using a clean wiper, remove any lubricant or foreign material from the entire clutch assembly, including the hub, rollers, roller retaining washer and shim(s).

6. Also clean the clutch race and the rear face of the inner rotor bearing.

7. Dampen a clean wiper/swab with a small amount of denatured alcohol or other suitable solvent and clean any lubricant residue from these parts. Do not get solvent into the rotor bearing.

8. Carefully inspect the clutch hub, race and rollers. The working surfaces of these parts should be very clean. Any lubricant or other residue can cause malfunction.

   If the steel clutch components become rusted it is usually a sign of over-zealous hosing of the siren during vehicle washing, which should be discouraged. It may also be helpful to briefly run the siren after washing to spin out any water that found its way into the clutch.
   If necessary, light rust may be removed from the clutch components with careful use of a fine grade of ‘Scotch-Brite’ or similar mild abrasive pad. Be careful to keep any debris out of the rotor bearings.

9. Reinstall the roller retaining washer and shim(s) onto the shaft. (This is the only location for shims in this assembly.)

10. Make sure the brake plunger and spring have not moved out of position. Spread a small dab of grease on the face of the plunger pad.

11. Locate a fine wire or string about 24” long. Wrap it around the clutch hub and out through the back of one of the ports as shown.

12. Place the four rollers into their recesses in the hub so that they are retained by the wire or string. Seat each roller in its nest.

13. Slide the rotor onto the shaft. It may be necessary to use a screwdriver to align the spacer that is between the two rotor bearings.

14. Once the rotor is in place over the rollers, remove the wire or string before fully seating the rotor within the stator.

15. Install the castle nut. It should be screwed down finger-tight against the bearing, then backed off to the next slot for the cotter pin. If the nut is left tight, it will cause the bearings to bind.

16. Install a new cotter pin and bend one leg over the end of the shaft.

17. Install the rotor tip and screws, then the front cover and its screws. (Tighten the screws firmly, but with care to avoid stripping.)

Factory Service and Parts

If your siren eventually needs service or parts, please contact the factory for assistance. Due to the unusual requirements of siren service, the use of non-factory parts may reduce performance or damage your siren. **B&M Factory Parts** have been engineered to give the best performance and longevity.

WARNING: This product can expose you to chemicals including lead, which is known to the State of California to cause cancer. For more information, go to www.P65Warnings.ca.gov

Certain internal components are manufactured with small amounts of lead-based solder. Before performing maintenance or repair tasks beyond those covered in this manual, ensure that proper measures are taken to protect against exposure. Contact the factory for more information.

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EXAMPLE OF WARNING LABEL