

# Installation instructions & maintenance

**MARTIN-HORN®**  
... das Original!

## **MARTIN-HORN®** **2090 GM, 2091 GM and 2092 GM**

Pauses & warning signals for stationary equipment or for other areas of application

» two-part model with connection hose



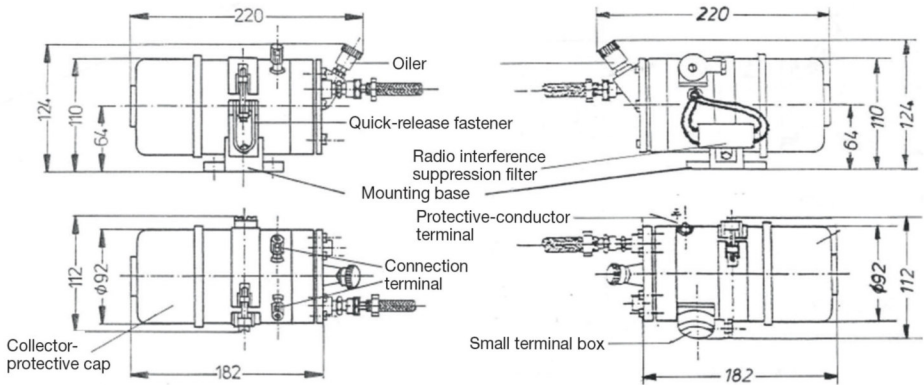
DEUTSCHE SIGNAL-INSTRUMENTEN-FABRIK  
Max B. Martin GmbH & Co. KG



# INSTALLATION AND MAINTENANCE INSTRUCTIONS

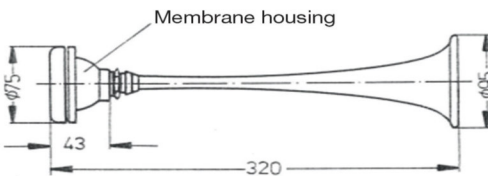
## 1. Description

- 1.1 **Electric blower:** A series-wound motor with centrifugal blower generates the compressed air for the acoustic horn(s). The motor can be supplied for
- a) 12 or 24 Volt DC normal
  - b) 42 or 230 Volt AC 50 Hz
- The power consumption is around 150 Watt. The connected values are indicated on the rating plate.
- 1.2 **Diaphragm acoustic horn:** Every diaphragm acoustic horn consists of a membrane housing and the actual acoustic horn.
- 1.3 Main dimensions
- 1.31 Electric blower for 12 or 24 Volt DC and for 42 and 230 Volt AC

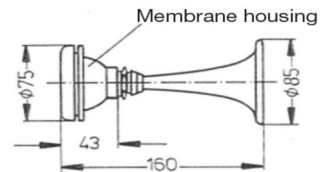


## 1.32 Acoustic horn

for MARTIN-HORN® 2090 GM

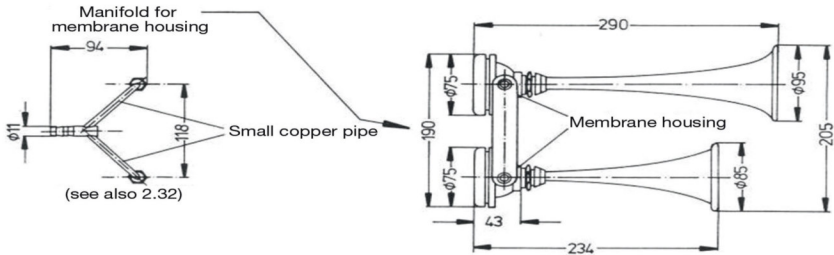


for MARTIN-HORN® 2091 GM



## 1.32 Acoustic horn

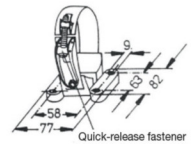
for MARTIN-HORN® 2092 GM



## 2. Installation

2.11 Secure the electric blower at a suitable point, i.e. protected from the influence of weather and temperature (protection class of blower: IP43), therefore not on the outside of the vehicle, device or on the external wall of a building. If external installation cannot be avoided, place the electric blower in an insulated and waterproof box with adequate ventilation. The oiler of the electric blower must never face downward.

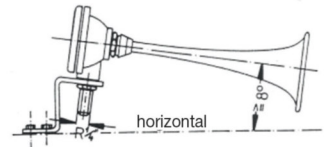
2.12 Open the quick-release fastener of the tensioning strap and remove the electric blower from the base. Secure the base to the desired spot. The reinforcement plate can be used as a drilling template. For details of the dimensions of the mounting base, see opposite.



2.13 Place the electric blower back into the mounting base and tension the quick-release fastener.

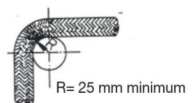
2.14 Attach the acoustic horn(s) such that any infiltrating spray or rain water can run off again.

2.15 The acoustic horn(s) can be attached to the outside of the vehicle or device or to the external wall of a building. Tilt the acoustic horn downward by at least 8°. There should be no other objects in front of the acoustic horn(s) to ensure that both sound and volume are not impaired.



### 2.16 Connecting hoses

The smallest bend radius is 25 mm. If the radius is even smaller, then too little or no air passes through.



2.17 A hose grommet and union nut and hose clamp is loosely attached at one end of every hose. If the hose is too long, cut the excess piece off at this end using tin snips.

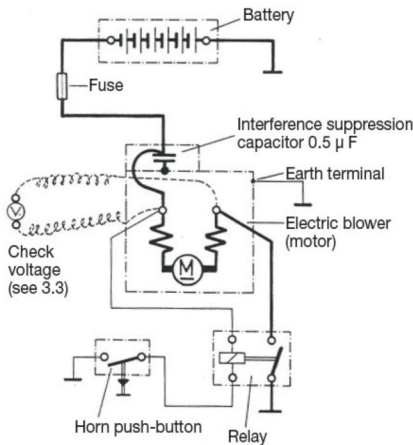
Then reattach the hose clamp, union nut and hose grommet in this order onto the shortened hose. Copper tubing with solder nipples can be used as an alternative to hoses at the ends. The copper tubing of the manifolds (for 2092 GM) are soft and can be bent closer together or pulled further apart by hand.



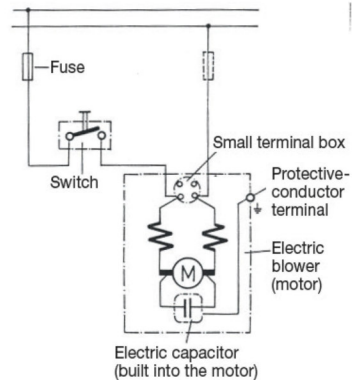
- 2.18 Pinch the lugs of the hose clamps together using pincer pliers, the grommet is now secure (see diagram).
- 2.19 Remove the protective plugs on the R1/4" screw connection of the electric blower and on the membrane housing(s). Tighten the union nuts of the hose. Ensure that no foreign objects enter the connecting pieces or hoses and that the connections are sealed.

### 3. Electrical connection

- 3.1 Circuit diagram for 12 and 24 Volt DC



- 3.12 Circuit diagram for 42 and 230 Volt AC



- 3.2 Nominal current, fuses and cable cross-sections for the heavily marked lines in the circuit diagram 3.11 for 1 MARTIN-HORN® 2090 GM, 2091 GM or 2092 GM shall be provided:

Nominal voltage	Current consumption	Fuse	Cable cross-section
12 Volt	12 A	16.0 A	4.0 mm Cu
24 Volt	6 A	6.3 A	2.5 mm Cu

The lines should be as short as possible. If the heavily marked lines are longer than 2 m, use the next thickest cross-section.

3.3 Check the voltage at the terminals of the electric blower. It should be at least 90% of the battery's nominal voltage when the horn is switched on. If it is less, then the lines, including those from the battery to the fuse, must be intensified or replaced with stronger ones, as per Table 3.2.

3.4 For voltages between 42 and 230 Volt, circuit diagram 3.12 and the following table apply:

for 1 MARTIN-HORN®

2090 GM, 2091 GM or 2092 GM shall be provided:

Nominal voltage	Current consumption	Fuse	Cable cross-section
42 Volt AC	5 A	6.3 A	1.5 – 2.5 mm
230 Volt AC 50 Hz	1 A	2.0 A	1.5 mm

Ensure that the specified horns are attached at a spot which is protected from spray (protection class of blower: IP43).

## 4. Maintenance

- 4.1 **Oiling the electric blower.** Every month, add a few drops of good quality, thin oil into the oiler with the red screw cap. It must be resin-free and acid-free and must have a relatively low setting point (below -40°C). A small bottle of this special oil is supplied with every MARTIN-HORN® and can be reordered at any time. Never use normal machine or engine oil.
- 4.2 **Cleaning the collector if necessary.** If the copper fins of the collector are heavily blackened or have turned green, strip the collector with a strip of emery cloth, approx. 15 x 150 mm in size, grain size 220, until it is shiny again.
- 4.3 If the horn, even after the blower has been oiled, does not produce a perfect sound, then you should send the entire diaphragm acoustic horn(s), or even better, the entire horn, to the factory for repair.



**When attaching the specified MARTIN horns, make sure that all persons present are not endangered in any way!**

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