

# WHELEN<sup>®</sup>

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## Operating Procedures: SmartArrow Messenger™ Control Head (MGC02)

# Automotive: Sirens/Switches

### Safety First

This document provides all the necessary information to allow your Whelen product to be properly and safely installed. Before beginning the installation and/or operation of your new product, the installation technician and operator must read this manual completely. Important information is contained herein that could prevent serious injury or damage.

- **Proper installation of this product requires the installer to have a good understanding of automotive electronics, systems and procedures.**
- **If mounting this product requires drilling holes, the installer MUST be sure that no vehicle components or other vital parts could be damaged by the drilling process. Check both sides of the mounting surface before drilling begins. Also de-burr any holes and remove any metal shards or remnants. Install grommets into all wire passage holes.**
- **If this manual states that this product may be mounted with suction cups, magnets, tape or Velcro™, clean the mounting surface with a 50/50 mix of isopropyl alcohol and water and dry thoroughly.**
- **Do not install this product or route any wires in the deployment area of your air bag. Equipment mounted or located in the air bag deployment area will damage or reduce the effectiveness of the air bag, or become a projectile that could cause serious personal injury or death. Refer to your vehicle owners manual for the air bag deployment area. The User/Installer assumes full responsibility to determine proper mounting location, based on providing ultimate safety to all passengers inside the vehicle.**
- **For this product to operate at optimum efficiency, a good electrical connection to chassis ground must be made. The recommended procedure requires the product ground wire to be connected directly to the NEGATIVE (-) battery post.**
- **If this product uses a remote device to activate or control this product, make sure that this control is located in an area that allows both the vehicle and the control to be operated safely in any driving condition.**
- **Do not attempt to activate or control this device in a hazardous driving situation.**
- **It is recommended that these instructions be stored in a safe place and referred to when performing maintenance and/or reinstallation of this product.**
- **FAILURE TO FOLLOW THESE SAFETY PRECAUTIONS AND INSTRUCTIONS COULD RESULT IN DAMAGE TO THE PRODUCT OR VEHICLE AND/OR SERIOUS INJURY TO YOU AND YOUR PASSENGERS!**

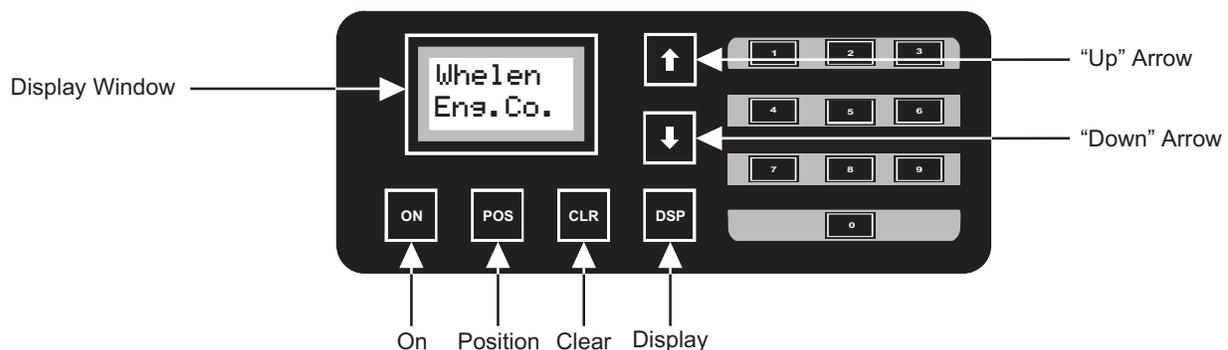
**For warranty information regarding this product, visit [www.whelen.com/warranty](http://www.whelen.com/warranty)**

## Introduction...

This manual will outline the procedures necessary for operating the Whelen Messenger Display with the Messenger Control Head (model MGC02). This guide should be read thoroughly so that the operator will understand all of the functional aspects of the device and be able to immediately generate desired messages during emergency situations.

## Section I: The MGC02 Controls

The MGC02 is comprised of an LCD display window and sixteen soft-touch buttons involving control options, scrolling keys and a punch-in keypad.



These buttons perform the following functions:

- ON** - The ON button activates the MGC02 and prepares the system for message display. This button is also used to turn the MGC02 off.
- POS (Position)** - In a vehicle with both a front and rear facing Messenger display, the POS button's primary function is to specify which display will generate the desired message. In a vehicle with a single Messenger display, the POS button activates the "Last Message" feature (see Section III for a detailed explanation of this feature).
- CLR (Clear)** - Pressing the Clear button selects a "Blank Screen" message to be the next message displayed. If the Display button is immediately pressed, the message currently being displayed will be terminated and replaced with the "Blank Screen" message.
- DSP (Display)** - When the DSP button is pressed, the selected message is displayed.
- "UP" Arrow** - When in the Select mode, this button scrolls up through the list of available messages. While scrolling, the name of each message will appear in the Display Window. When the desired message is shown in this window, press the DSP button to generate it on the Messenger display.
- "Down" Arrow** - When in the Select mode, this button scrolls down through the list of available messages. While scrolling, the name of each message will appear in the Display Window. When the desired message is shown in this window, press the DSP button to generate it on the Messenger display.

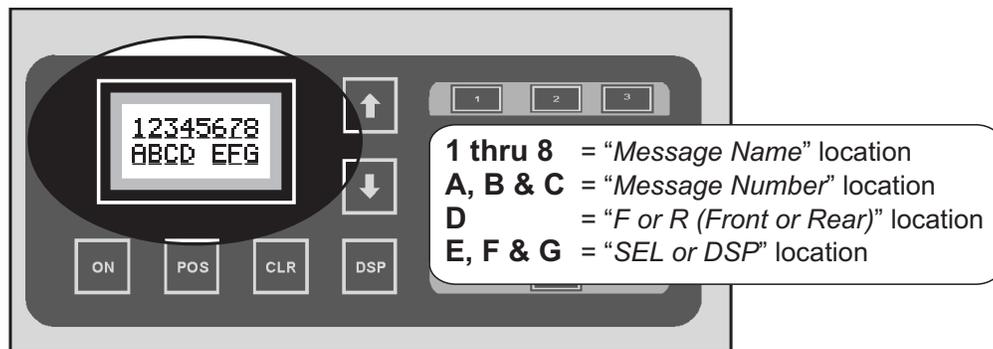
## # Keypad

- The keypad allows messages to be selected by entering the message numbers in directly. When the message number is entered, press the DSP button to generate it on the Messenger Display Window.

## Display Window

- The display window provides the operator with all the information necessary to properly control the Messenger. The following illustration explains the data structure of the Display Window:

## Section II: Basic Operations

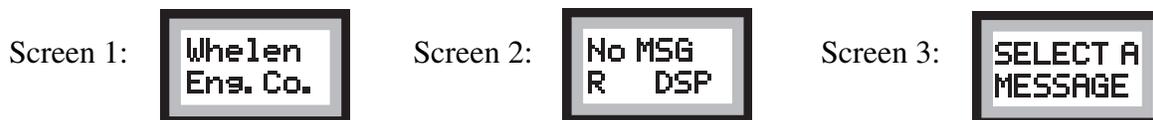


## Displaying a message

In this section, the procedure for displaying a message on a vehicle with a single, rear-facing Messenger display will be outlined (see Section IV for information on multiple Messenger controls).

### 1. Press the ON button.

When the MGC02 is turned on, the Messenger system undergoes an initialization process to confirm its proper operation and to ensure that communication between the Messenger display and the MGC02 has been established. As the MGC02 is initialized, the display window will sequence through three screens with the following text:



Screen 2 provides the operator with three important pieces of information.

- A) That no message (a blank display) is presently selected ("No MSG")
- B) That a rear-facing Messenger has been detected ("R")
- C) That the MGMxx is displaying the selected message ("DSP")

Screen 3 prompts the operator to select a message.

### 2. Select the desired message using either of the scroll buttons or the Keypad.

The scroll buttons (Up/Down arrows) will now be used to scroll through the list of available messages. While scrolling, the display window provides the operator with the 8-character

message title given to the message when it was created. When the desired message's title is shown in the display window, proceed to step 3.

**or**

Use the keypad to type the specified message to be displayed. After the numbers are pressed the display screen will show that the select option is activated (“SEL”) and it will display the message title. As the desired message appears in the screen, proceed to step 3.

### **3. *Press the DSP button.***

When the display button has been pressed, the selected message will then appear on the Messenger display.

The display screen of the MGC02 will show the name of the message, whether the message is being shown on a forward- or rear-facing (F or R) Messenger display and an indication that the MGC02 is in display mode (DSP).

## **To Change from one message to another**

1. Display a Message as outlined above.
2. Press either the Up or Down arrow buttons to scroll through the list of available messages or select a message directly by using the Keypad.
3. When the desired message is shown, press the DSP (Display) button. The selected Message is now displayed.

## **To Clear the Messenger display**

### **1. *Press the CLR or “0” button.***

When the Clear or “0” button is pressed, the blank “No MSG” message is selected.

### **2. *Press the DSP button.***

When the Display button is pressed, the currently selected message is displayed on the Messenger. In this case, the Messenger will be blank.

## **Section III:**

### **Other MGC02 Features**

#### ***Backlight Control***

The MGC02 control head offers two backlight features, each independent of the other. They are activated as follows:

- The LCD Display Window is backlit when the MGC02 is turned on.

- The MGC02 buttons are also backlit. This backlight feature is controlled *via* the Yellow wire from the control head. This wire is typically connected to a +12VDC source that is activated with the vehicle's ignition switch.

### ***Last Message Recall***

*NOTE: The last message recall feature is only available when a single Messenger sign is installed.*

The MGC02 provides the operator with the ability to easily recall the last message displayed. To illustrate the procedure, let us suppose that a message is currently being displayed. The operator then changes the current message to a different message as outlined in Section II. To re-display the previous Message, press the POS button and then the DSP button. The previous Message is now displayed.

This process can be repeated, so that the operator can toggle back and forth between these two Messages.

### ***Pursuit Mode***

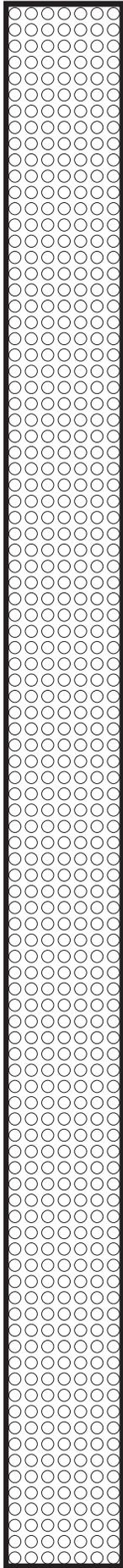
Each Messenger Display has a message programmed which will be displayed when the Pursuit Mode option is activated. By grounding the Pursuit Input (BROWN wire), the control head will automatically display the programmed pursuit message when powered up. To initiate this option, this line must be wired to the slide switch on a primary control head. When pursuit mode is switched off from the primary control head, the MGC02 will clear the display and remain on.

For example: When the operator flips the switch to activate a strobe or flash beams, the MGC02 will power up and display the selected pursuit message. When the operator terminates the strobe or flash beams, the MGC02 will remain on and the Messenger display will clear.

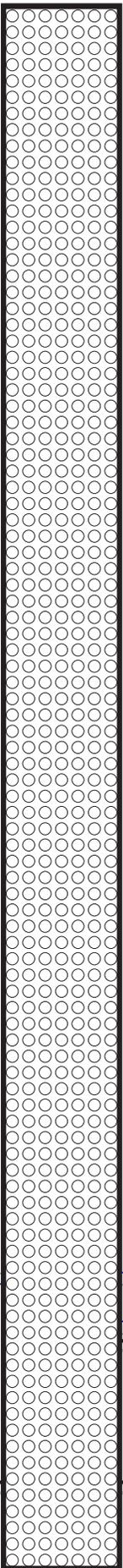
## **Section IV:**

### **Controlling Multiple Messengers (Front & Rear)**

If the vehicle in question has two Messenger displays installed, the operator will perform all of the necessary procedures in the same manner outlined for a single Messenger. However, before any changes can be effected, the operator must first specify which display is being changed. By pressing the POS button, the operator can toggle between the front and rear display. When the LCD Display Window shows the desired Messenger ("F" or "R"), the operator can then continue with the necessary procedure.

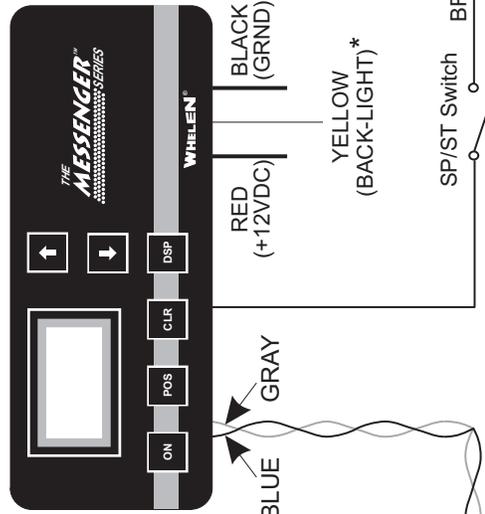


**Front Messenger**



**Rear Messenger**

**MGC02**



NOTE: The wires from the Messenger control head are shown individually for illustration purposes only. The actual wires are connected to a common, 6-position connector.

NOTE: Refer to the Messenger Control Head Installation Manual for fusing instructions.

\* Connect this wire to a +12VDC source that is activated with the vehicle's ignition switch.

