INSTALLATION INSTRUCTIONS

MicroComm DXL

SMK-126 and SMK-136 Speaker/Microphone Kit

1 Intent & Scope

The SMK-126 and SMK-136 Speaker/Microphone kits provide a variety of master station components that are used with an MAI-625 Master Audio Interface. This document describes the installation procedure for the SMK-126 and SMK-136 Speaker/Microphone Kits.

2 SMK-126

2.1 Description

The SMK-126 Speaker/Microphone kit is a pre-assembled kit mounted on a two-gang faceplate. The kit provides a loudspeaker, microphone, PTT switch and volume control potentiometer for connection to an MAI-625. Two versions of the SMK-126 are available, one with a flush mount microphone and one with a gooseneck microphone. Installation requires the cut out of a rectangular opening and drilling four holes for mounting the faceplate to a desk-top console or control panel. The kit includes a seven foot cable with RJ-25 plugs at either end for connecting the SMK to the MAI.

2.2 Panel Preparation

The SMK-126 is pre-assembled and requires the faceplate to be mounted in an opening on a panel or in a standard 2-gang back box. The following diagram shows the rectangular opening cut out and location of the 4 holes required for mounting the SMK-126 on a panel. The minimum opening of the cut out should be 3.63"W x 2.88"H x 1.50" D.

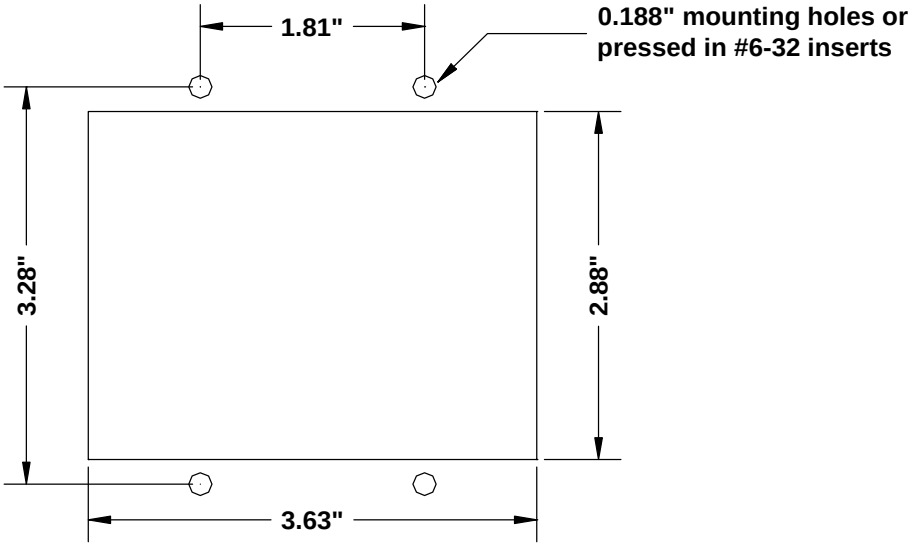

Figure 1 Panel Openings to Install a SMK-126

2.2.1 Mounting

The following diagram shows the front view of the SMK-126 with a flush mount microphone and the relative position of the faceplate to the rectangular opening.

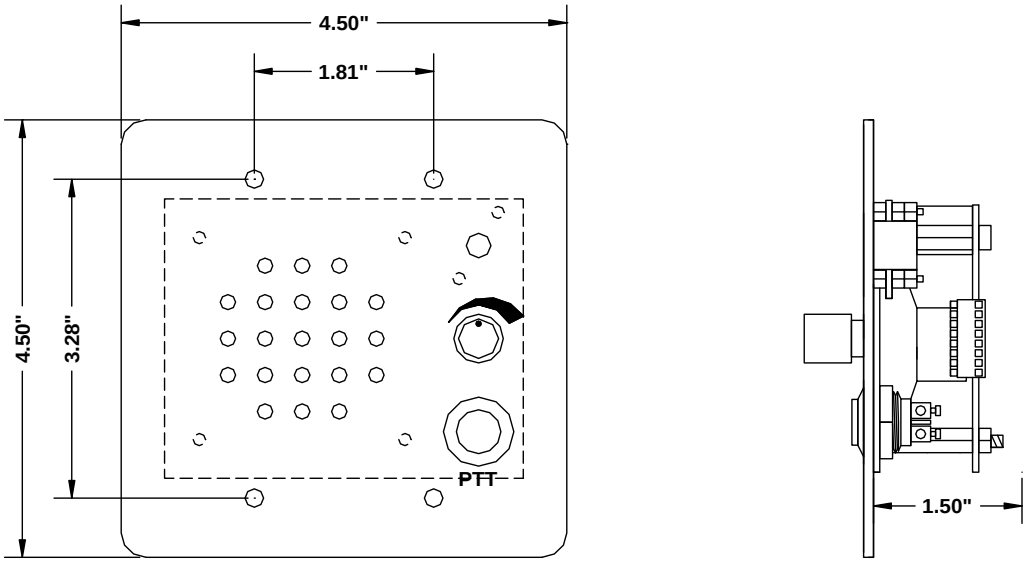

Figure 2 SMK-126 Prewired Speaker/Microphone Kit with Flush Mounted Microphone

Attach the SMK-126 to the panel using the #6-32 screws, nuts and star washers provided.

3 SMK-136

3.1 Description

The SMK-136 provides the same components as the SMK-126 but as a kit of parts to facilitate custom mounting in a console or control panel. The loudspeaker, microphone, volume control and PTT switch are terminated with 12" pigtails. These wires will be connected to the screw terminals of the junction box with an RJ-25 jack. When the installation is complete, the loudspeaker will be protected from physical damage by the offset in the panel faceplate and the baffle-plate perforations and a flush mount microphone is protected by a fine perforated stainless steel baffle plate. Two versions of the SMK-136 are available with either a flush mount microphone or a gooseneck microphone.

The SMK-136 Speaker/Microphone Kit consists of the following parts:

- 7 foot line cord
- one (1) speaker baffle plate
- one (1) loudspeaker with pigtail leads.
- one (1) foam rubber gasket.
- four (4) thin flat #6 washers.
- four (4) thick #6 flat washers

- four (4) #6 star washers.
- four (4) #6-32 machine nuts.
- one (1) PTT switch with pigtails
- one (1) junction box with RJ-25 jack
- one (1) 2" black wire
- one (1) Marrette connector

Depending on the optional choice of microphone the remainder of the kit will consist of the parts listed in i) or ii).

i) Gooseneck Microphone

- Gooseneck microphone with 12" pigtails including mounting nut and lock washer

ii) Flush Mount Microphone

- one (1) rubber shock mount
- one (1) microphone with 12 " pigtails
- one (1) perforated stainless steel baffle plate
- six (6) #4-40 nuts

3.2 SMK-136 Panel Preparation

The SMK-136 consists of a loudspeaker, microphone, volume control and press-to-talk switch, each terminated with 12" (30 cm) pigtails. The console or control panel where the speaker/microphone kit is to be mounted must be prepared prior to installation. That preparation includes:

- drilling perforation holes for the loudspeaker
- mounting studs or holes for the loudspeaker
- drilling a hole for the microphone
- mounting studs or holes for microphone (flush mount microphone only)
- drilling a hole for the volume control potentiometer
- drilling a hole for the PTT switch
- mounting a surface mount RJ-25 inside the console

3.2.1 Loudspeaker Perforations

An array of twenty one (21) holes must be drilled in the console or control panel faceplate for transmission of the loudspeaker signal from the unit to the operator. Each hole is 0.156" (5/32'") diameter.

The following diagram shows the layout and spacing requirements for the loudspeaker perforations and the relative position of the four studs used to attach the gasket, baffle plate and speaker.

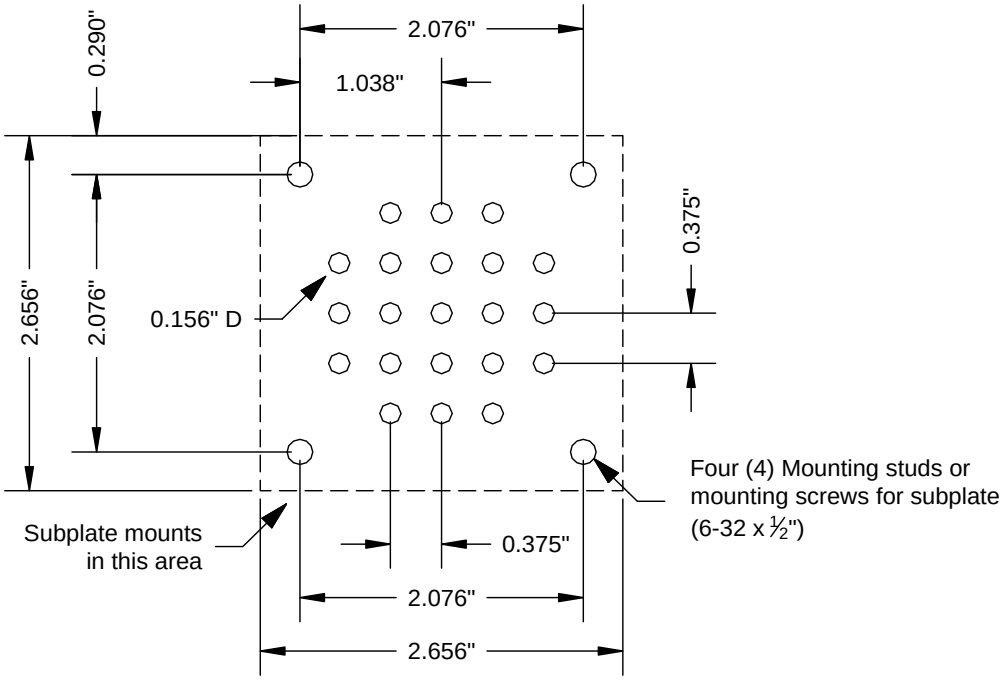

Figure 3 SMK-136 Loudspeaker Perforation holes and mounting stud location

3.2.2 Loudspeaker Mounting Studs

Mounting of the SMK-136 requires that four 6-32 x 1/2″ studs be provided on the mounting panel faceplate. These may be pressed into the faceplate, welded to the rear of the panel, or take the form of machine screws passing through the faceplate to the sub-plate. Instead of welded or pressed in studs #6-32 machine screws can be used and require the drilling of four 0.138″ diameter (approximaitly 9/64″) holes.

3.2.3 Microphone Mounting Holes

3.2.3.1 Gooseneck Microphone

A single hole (0.390″ diameter) must be drilled in the mounting panel faceplate to install a gooseneck microphone.

3.2.3.2 Flush Mount Microphone

A flush mount microphone requires a 0.25″ hole to allow sound to reach the microphone and it requires two #4-40 1/2″ studs to hold the protective screen and the rubber shock mount microphone holder in place. The position of the studs relative to the microphone opening is shown in the following diagram.

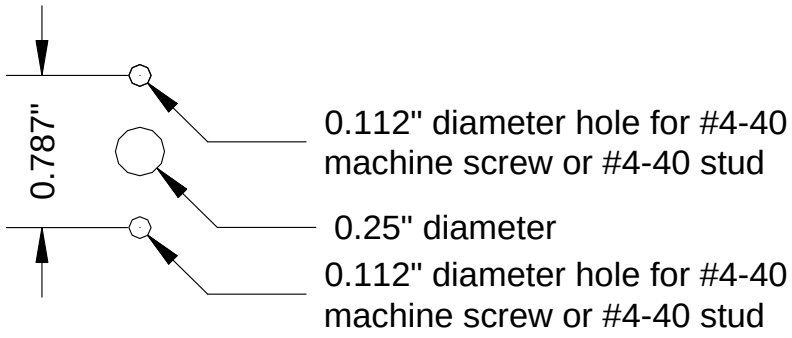

Figure 4 Flush mount microphone relative hole and stud locations

The studs can be welded or pressed into holes drilled in to the panel or holes can be drilled for use with machine screws. The studs must extend 1/2″ behind the panel.

3.2.4 Volume Control

The volume control requires a 0.398″ (13/32″) hole or if a suitable punch is available the following opening is preferred to a circular opening.

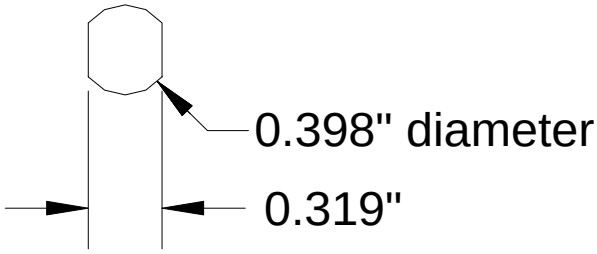

Figure 5 Cut out for Volume Control Potentiometer

3.2.5 Press-to-Talk (PTT) Switch

To install the PTT switch a 0.638″ (41/64″) diameter hole is required.

3.2.6 Relative Positions of Speaker, Microphone, Volume Control and PTT Switch.

The loudspeaker, microphone, volume control and PTT switch can be mounted on the console or control panel in any location that is preferred by the user. The junction box must be located within 12″ of each of these components or the installer will need to be extended the pigtail leads.

3.3 SMK-136 Assembly

3.3.1 Mechanical Installation of Baffle Plate and Speaker

Once the mounting panel has been prepared, the following describes the installation procedure for the baffle plate and loudspeaker of the SMK-136 kit.

- place the foam rubber gasket against the rear of the mounting panel. Note that the gasket has cut outs for the mounting studs and flat washers.
- next place the thick flat washers on the mounting studs and into the cut out holes of the gasket
- next, place the baffle plate against the mounting gasket.

- then, place one thin flat washer on each of the mounting studs.
- install the loudspeaker with the flat washers between the sub-plate and the loudspeaker frame.
- then, install one star washer on each of the mounting studs.
- finally, secure the assembly with the four #6-32 machine nuts.

The following diagram shows the completed assembly of the baffle plate and loudspeaker

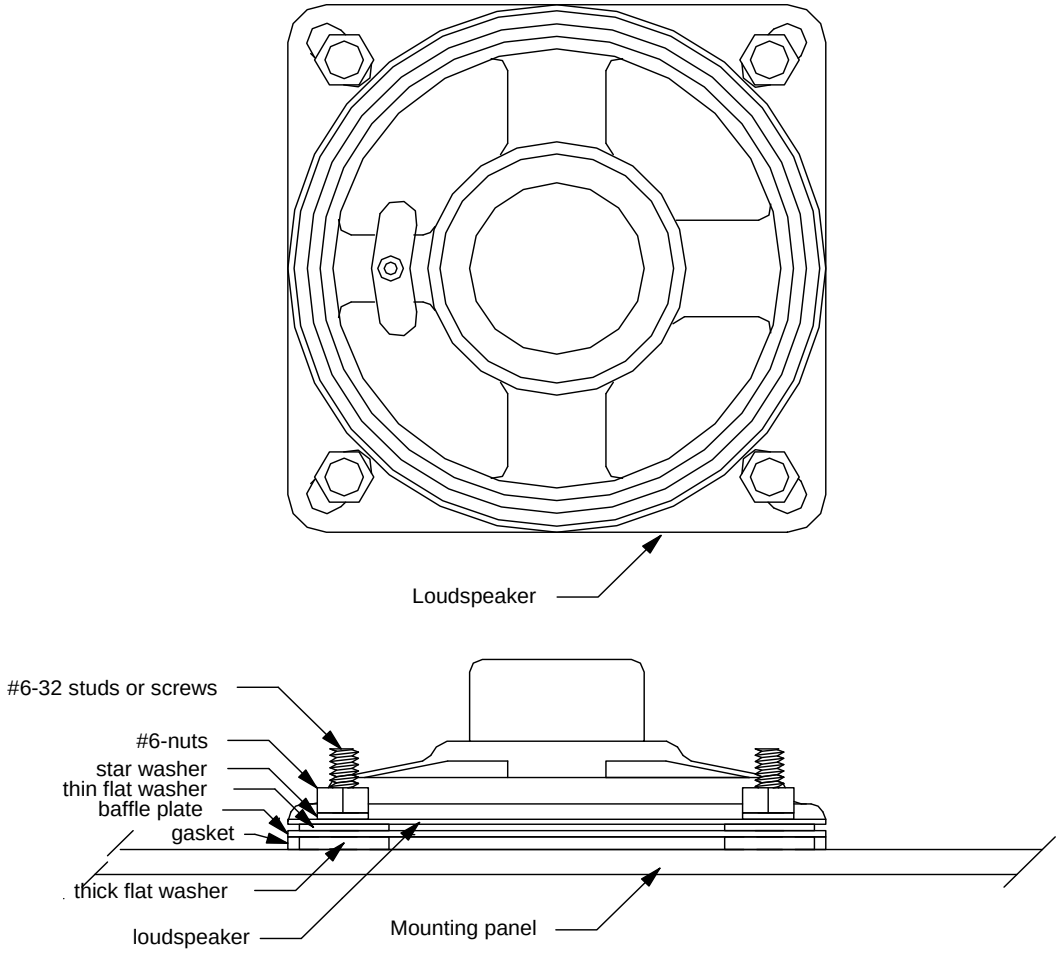

Figure 6 SMK-136 – Mounting Baffle Plate and Loudspeaker

3.3.2 Gooseneck Microphone Mounting

Insert the rubber washer onto the base of the gooseneck microphone and insert the microphone into the panel opening from the front, then insert the lock washer and nut and tighten until locked in place.

3.3.3 Flush mount Microphone Assembly

The assembly of the flush mount microphone is shown in the following diagram. The following assembly steps are required:

- place the perforated baffle over the two studs.
- install #4-40 nuts on each of the two #4 studs. These nuts hold the screen in place and act as a spacer for the shock mount.
- install the rubber shock mount with the small opening closest to the panel.

- install the second nut and finger tighten until it holds the shock mount firmly in place.
- install the third nut and while holding the second nut in place tighten the top nut to lock the two nuts together.
- press the electret microphone into the shock mount.

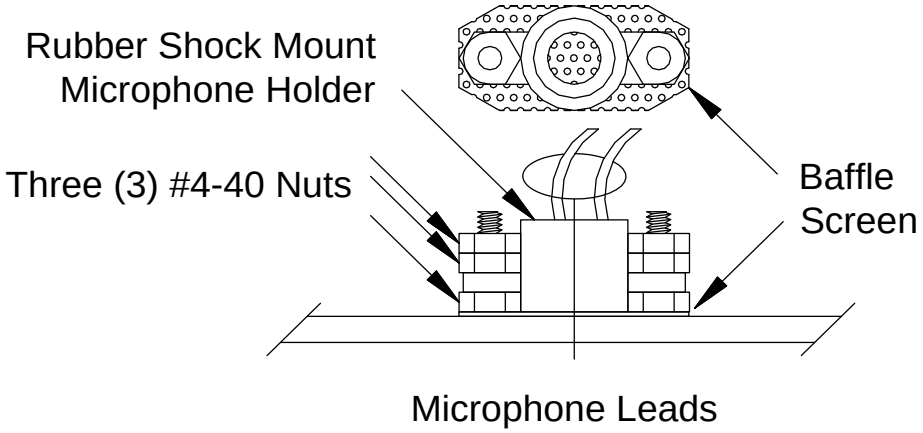

Figure 7 Assembly Details for Flush Mount Microphone

3.4 Junction Box Wiring and Installation

The loudspeaker, microphone, PTT switch and volume potentiometer are provided with 12" pigtail leads and should be connected to the RJ-25 junction box as follows.

1. Locate a position for the RJ-25 surface mount junction box within reach of the speaker, microphone, PTT switch and volume control pigtail wires. Use the adhesive pad on the junction box and press it into place. Alternatively you can use the two screws provided to mount the unit. (Note the screws that are supplied with the RJ-25 jack are meant to screw into a wood surface.)

2. A common configuration of the surface mount RJ-25 is shown in the following diagram. The colors indicated are the colors of the wires that run from the screw terminals to the RJ-25 female jack.

Note: the wire color indicates which RJ-25 pin is connected to that wire, not the terminal position. If there is any question then check continuity with an ohmmeter. Different manufacturers use different conventions for the internal wiring of the junction box.

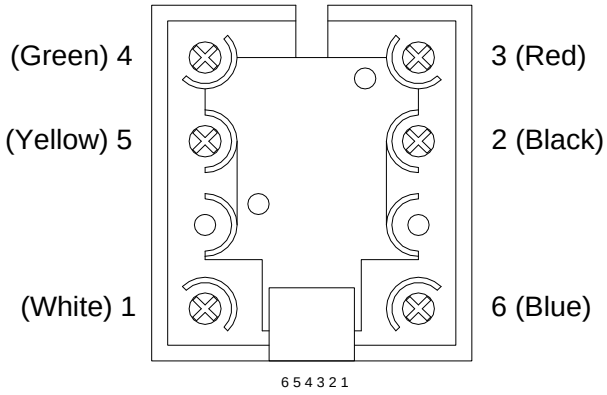

Figure 8 Surface Mount RJ-25 Junction Box – Cover Removed

The following table shows how the various 12″ leads are to be connected to the junction box.

RJ-25 Pins	RJ-25 Wire Color	Signal	Wire Colors of Pigtail Leads
1	White	Mic +	Red(Flush Mount) or White (Gooseneck)
2	Black	Push to Talk (PTT+)	Yellow
3	Red	Spk +	Green
4	Green	Spk -	Black
5	Yellow	Vol +	Orange
6	Blue	Mic -, (PTT-), Vol -	Black (Flush Mount), Black (Gooseneck) Yellow (PTT), Orange (Volume Control)

Table 1 RJ-25 Wiring

Note that four wires are connected to the terminal with the RJ-25 blue wire. Use the 2″ black wire lead supplied with the kit to connect to the RJ-25 terminal and then connect the 3 pigtail wires to this wire using the Marrette connector.

The 6-pin female RJ-25 jack and its pin numbers is shown in the following diagram.

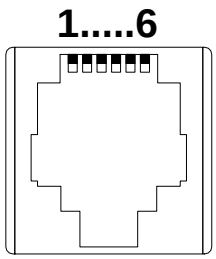

Figure 9 RJ-25 Female Jack

A seven foot RJ-25 patch cable is supplied with the SMK-126 or SMK-136 and connects the surface mount RJ-25 wall jack and the RJ-25 jack located on the MAI-625.