CONGRATULATIONS!

Your purchase of an M&S music and communications system is an investment that will provide years of enjoyment and service for your customer.

M&S audio products are backed with more than 40 years of experience in the design and manufacture of precision acoustical equipment for the home. To ensure that your customer receives the high-quality music and voice reproduction that the system is designed to deliver, it is important that each step of the installation be done carefully. If you follow the step-by-step illustrated instructions below, the result will be a successful professional-quality installation. In the event you need troubleshooting assistance, please call our technical staff at 1-800-366-9422.

INSTALLATION INSTRUCTIONS ROUGH-IN MC902

Tools required: Power drill with 1" auger, #2 Phillips screwdriver, wire stripper/cutter and tape measure.

DOs & DON'Ts

- **USE ONLY M&S SYSTEMS BRAND CABLE** as called out in these instructions. The cable is designed and constructed with electrical characteristics necessary for proper audio performance. **Important: The use of non M&S Systems brand cable will void the product warranty!** *Note: All M&S Systems cable has M&S Systems and the part number printed on it!*
- **DO** follow all local building codes.
- **USE MS7XSC** cable for intercom only stations.
- **USE MS3XSC** cable for music volume controls.
- **USE MS2SXSC** cable for music satellite speakers.
- **DO NOT EXCEED 350 FEET** of cable for any one run or **2000 FEET** for the entire system.
- **USE MS4DCXSC** for door stations.
- **RUN A SINGLE CABLE** from the master unit location to each room station or control (Home Run). **DO NOT LOOP CABLE** from one station to another. Looping will cause electronic feedback.
- **DO NOT STAPLE CABLES!** Staples cause shorts.
- **DO NOT SPLICE CABLES**. Splices are unreliable and defeat the signal isolation properties of the cable.
- **KEEP CABLES AT LEAST 18 INCHES FROM FLUORESCENT LIGHT FIXTURES, DIMMER CONTROLS, AND ALL OTHER WIRING.** This includes AC wiring, security cable, and other control wires. These can cause a "hum" or "buzzing" sound in the intercom.
- Keep cables away from objects such as heating and air conditioning ducts, metal construction plates, and anything else with sharp edges that can damage the cables.
- **DO NOT RUN CABLES IN METAL CONDUIT.** This can change the electrical characteristics of the cables. Cables can be run in a metal conduit if using shielded cable MS7XSC, MS3XSC, MS2SXSC and MS4DCXSC.
- Outside cable runs should be underground through PVC conduit. This cable is not weatherproof, therefore, it must be protected.
- If extra cables are run for possible future speaker additions, care must be taken that these cables do not get connected to the master unit. Unterminated cables (no station) connected to the master unit will cause electronic feedback that will damage the master unit.

The rough-in installation should be made during new construction prior to the application of wall covering material. However,retrofit instructions are included where applicable.

WALL HOUSING H9X AND HC9X

DOs & DON'Ts

Careful consideration should be used when determining wall housing location. **DO NOT** install wall housing in the following locations:

- **DO NOT** Install wall housing in return air ducts.
- **DO NOT** install wall housing in exterior walls
- **DO NOT** Install wall housing underneath cabinets or over counter tops.
- **DO NOT** install wall housing in stud cavities with other 120/240 appliances.
- **DO NOT** install wall housing within 18" of dimmers, fluorescent light fixtures, security wiring and other control wiring.
- **DO NOT** install wall housing within 2" of room corners

Install the plastic standoffs into the holes in the back of the wall housing as shown in figure 1. These standoffs must be installed prior to mounting the wall housing. They will be required to mount the modular chime during the finish-out phase of the installation.

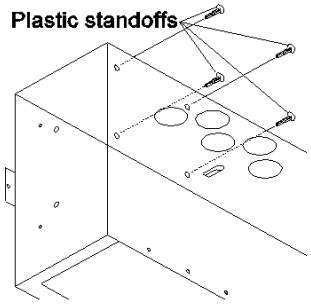

Figure 1 - Chime module mount standoffs

Locate wall housing H9X or HC9X (Combo). Position back side of wall housing flush with back of 2X4 stud approximately 52" high for H9X or 45" high for HC9X. The wall housing is designed to be supported by 16" on center (OC) studs. If stud spacing is greater than 16" OC, nail additional sections of wood to provide the necessary support.

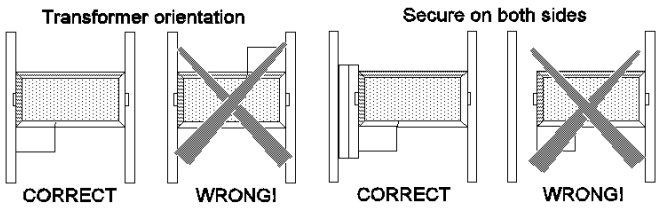

Figure 2 - wall housing orientation

Have a qualified electrician run a dedicated 120VAC/60Hz-line with an earth ground connection from the power panel to the wall housing. The MC902 requires a dedicated power source to assure no interference from other equipment caused by looped power circuits. The earth ground is necessary for proper AM radio reception.

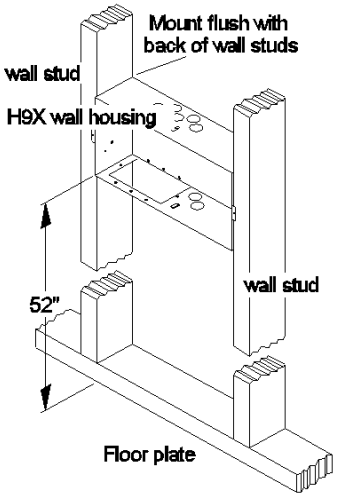

Figure 3 - H9X Rough-in

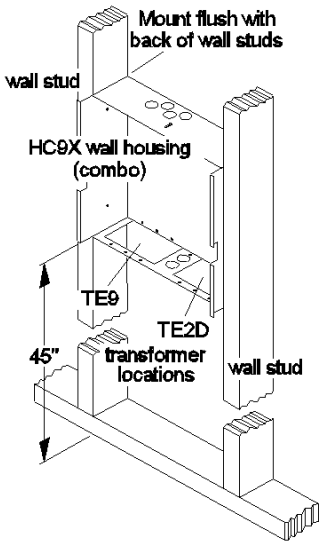

Figure 4 - HC9X Rough-in

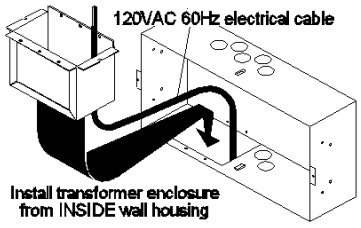

Figure 5 - Transformer enclosure installation

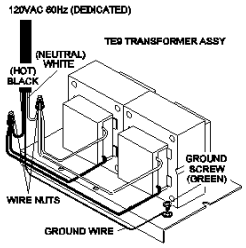

Figure 6 - Transformer wiring

Drop transformer enclosures from inside the wall housing into the transformer enclosure openings at the bottom of the wall housing. For HC9X combo wall housing loop power wire from the TE9 transformer enclosure to the TE2D transformer enclosure following the same procedure as above.

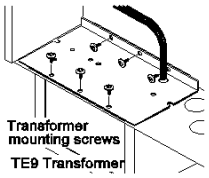

Figure 8 - Transformer installation H9X wall housing

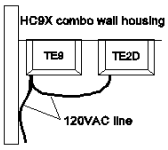

Figure 7 - 120VAC wiring

ANTENNAS

Isolate the antenna leads from the intercom cables by running them through a separate hole in the ceiling plate and in the top of the wall housing. If grouped together, the intercom cables can shield the antenna leads resulting in poor radio reception. Keep the antenna leads away from metal duct work and aluminum backed insulation. These can also shield the antenna leads. If metal siding or roofing materials are used, an outside antenna installation may be required for radio reception.

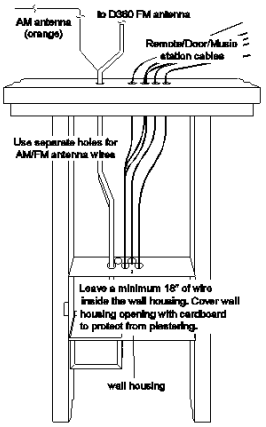

Figure 9 - Antenna installation

INTERCOM STATIONS

DOs & DON'Ts

Careful consideration should be used when determining room station locations. **DO NOT** install room stations in the following locations:

- **DO NOT** install stations in return air ducts.
- **DO NOT** install stations in exterior walls. Insulation materials will change speaker range and efficiency. Temperature changes in the wall will reduce speaker life.
- **DO NOT** install stations in saunas. They will not withstand the extreme heat and moisture.
- **DO NOT** install stations in stud cavities with other wiring or appliances.
- **DO NOT** install intercom stations within 18" of dimmers, fluorescent light fixtures, security wiring and other control wiring.
- **DO NOT** install stations within 10 feet of other stations or master unit. This will cause acoustical feedback.
- **DO NOT** install stations on common walls with other stations or the master unit. This will cause acoustical feedback.
- **DO NOT** install stations facing other stations or the master unit. This will cause acoustical feedback.

At each intercom remote station location, nail or screw the NMR5 mounting ring to a vertical wall stud approximately 52" above the floor. RETROFIT: locate mounting rings at least 1" from studs.

From the master unit wall housing, run the MS7XSC cable to each remote station location. If the NSV94/NMV94 is to be installed run a MS3XSC from the master to the remote station also. Wrap approximately 12" of excess wire around a nail or screw at the speaker location to protect from dry wall damage. Secure cables at the master. For patio intercom stations, follow the same procedure for indoor remote intercom stations except use the NME5 metal enclosure instead of the NMR5.

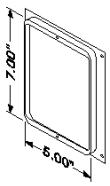

Figure 11 - NMR5 mounting ring

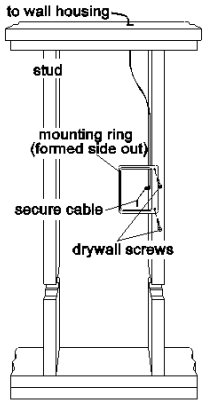

Figure 10 - Remote station Rough-in

MUSIC VOLUME CONTROLS

Run a MS3XSC cable from the master unit to each music volume control location. Run MS2SXSC cable from the volume control to each respective satellite speaker location. Allow 18 inches of excess cable on each end. Secure the wires from drywall damage. Secure cables at master.

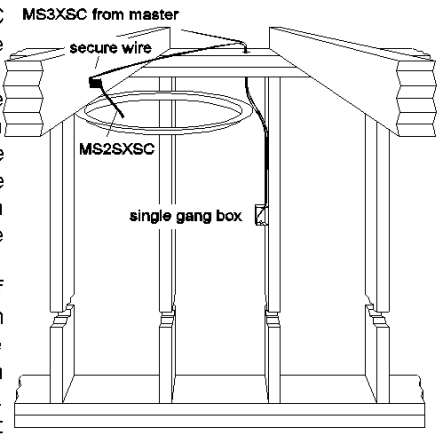

Figure 12 - Volume control rough-in

MUSIC STATIONS (STEREO)

Attach two MR8 mounting rings to studs approximately 52" from the floor. Existing constuction: Cut a 8.25" wide by 9.75" high hole in the wall at least 1" from a stud.

NOTE: It is preferred to mount each speaker pair on the same wall. **DO NOT** install one speaker in an insulated wall and the other in a non-insulated wall. This will adversely affect tonal balance!

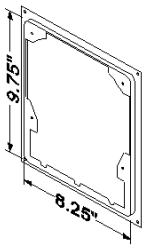

Figure 13 - MR8 mounting ring

Run a MS3XSC cable from the master unit to each left channel music station location. Run MS2SXSC cable from each left channel music station location to each respective right channel music station location. Allow 18 inches of excess cable on each end. Secure the wires from drywall damage. Secure cables at master.

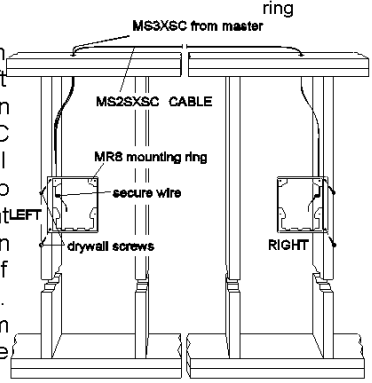

Figure 14 - Stereo wall speaker rough-in

MUSIC STATIONS (MONO)

Attach one MR8 mounting ring stud approximately 52" from the floor. RETROFIT: locate mounting rings at least 1" from studs. Run a MS3XSC cable from the master unit to each music station location. Allow 18 inches of excess cable on each end. Secure the wires from drywall damage. Secure cables at master.

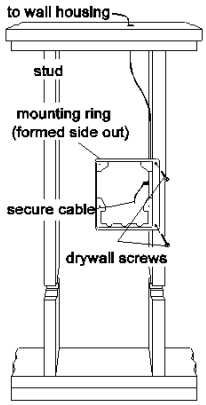

Figure 15 - Remote station Rough-in