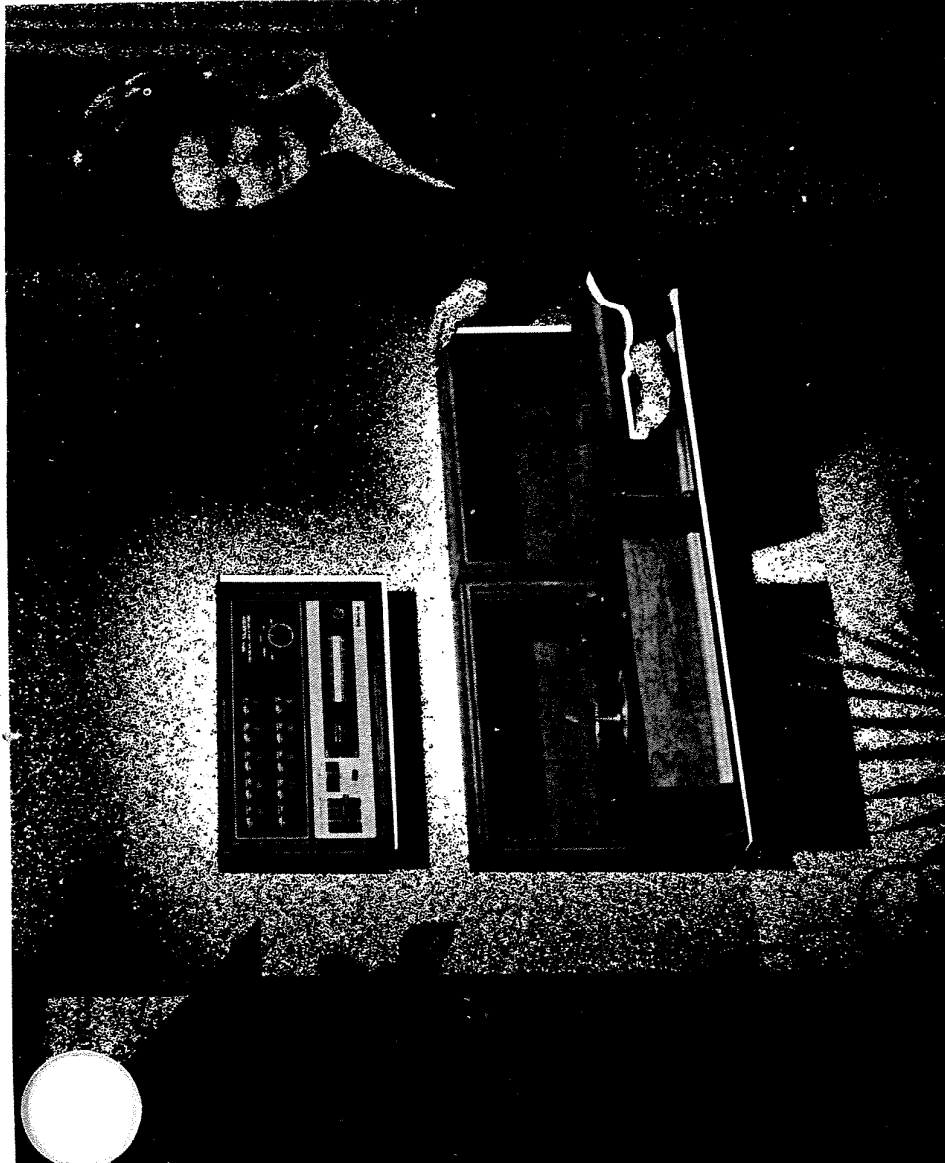


NuTone

Musicom[®]

SM-428

**Home Owner's
Operating
Manual**



**INSTALLER: Do not discard!
Hang this booklet on the Musicom Master Unit.**

Limited Warranty

NuTone products are warranted to be free from defects in material and workmanship for the "Warranty Period" which is (a) two years from date of original installation in the case of Garage Door Openers; (b) five years from date of original manufacture in the case of Motors employed in all NuTone Paddle Fans; and (c) twelve months from date of original installation in the case of all other NuTone products. Light bulbs, dial lights, record changer needles, batteries (with the exception of those specifically designated as rechargeable) and other consumable items, are not warranted or guaranteed in any manner for any length of time.

Our warranty does not cover damage or failure caused by Acts of God, abuse, misuse, abnormal usage, faulty installation, improper maintenance or any repairs other than those provided by a NuTone Authorized Service Center. **There are no obligations or liabilities on the part of NuTone or Scovill Inc. for consequential damages arising out of or in connection with the use or performance of the product or other indirect damages with respect to loss of property, revenues or profit, or costs of removal, installation or reinstallation. All implied warranties with respect to NuTone products, including implied warranties for merchantability and implied warranties for fitness, are limited in duration to (a) two (2) years from date of original installation in the case of Garage Door Openers; (b) five (5) years from date of original manufacture in the case of Motors employed in all NuTone Paddle Fans; and (c) twelve (12) months from date of original installation in the case of all other NuTone products.**

Some states do not allow the exclusion or limitation of incidental or consequential damages and some states do not allow limitations on how long an implied warranty lasts, so the above exclusions or limitations may not apply to you.

During the "Warranty Period", NuTone will repair or replace, at NuTone's sole option, free of charge, any defective parts returned prepaid to our closest NuTone Authorized Service Center, provided, however, NuTone will not be responsible for and will not pay for any costs or expenses relative to the removal or reinstallation of any product or any part of any product after the first 12 months of the "Warranty Period" have expired. Please provide the model number of the product, original date of installation and nature of difficulty being experienced. There will be charges rendered for product repairs made after our "Warranty Period" (as defined above) has expired. This warranty gives you specific legal rights and you may have other rights which vary from state to state.

For the name of your nearest NuTone Authorized Service Center, residents of the contiguous United States should call, Toll Free, 800-543-8687

Residents of Alaska, Hawaii and other locations outside the contiguous United States should write to NuTone Division, Scovill Inc., Madison and Red Bank Roads, Cincinnati, Ohio 45227 — Attention: Department of Consumer Relations.

PR-2899—Rev. 10-29-80

Important Facts

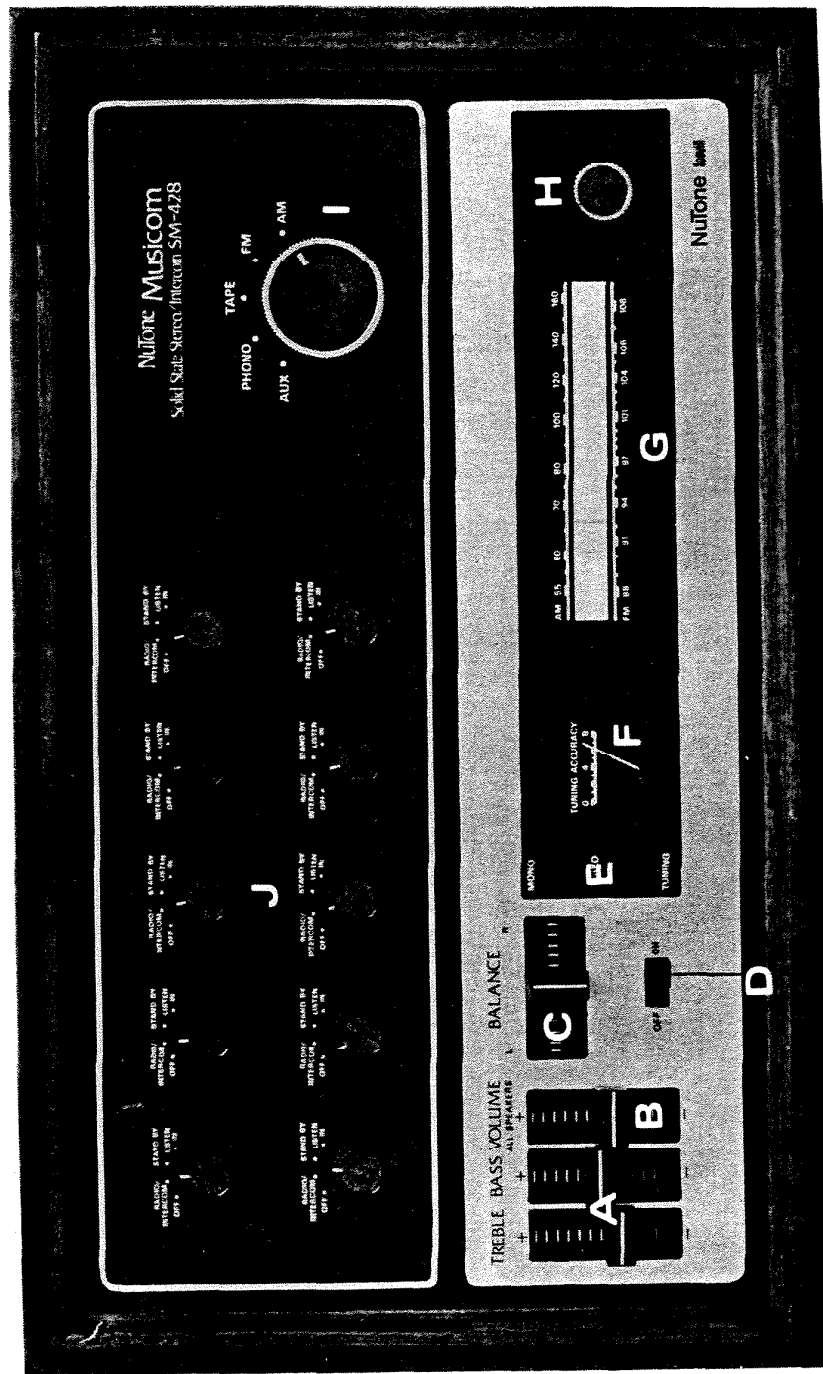
Read this first.

Before you operate the system, understand these 4 concepts. (1) The VOLUME ALL SPEAKERS control (page 4, ref. B) should be set just high enough to give adequate volume to all speakers, which have their volume controls set in NORMAL RANGE (page 7). (2) The Speaker Station Function Control (page 4, ref. J) control the function of each remote speaker station; if a speaker is not working, check to be sure its function control switch is set properly. (3) If the system is not working, first check to be sure the on/off switch (page 4, ref. D) is on. (4) The optional speaker/clock timer (page 13) will shut off the system when it is in either "wake" mode; if the radio is on but not heard, check the optional speaker/clock timer to be sure it is in the RADIO ON position. This Nuffone Radio-Intercom System is engineered with solid-state circuitry from components that have a history of proven quality. However, to enjoy the designed convenience and service from the system, you must operate it properly. Take a few minutes now to familiarize yourself with the correct operating procedures for the system.

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Location of Musicom Master Controls



Function of Musicom Master Controls

- A. TREBLE and BASS** — Adjust the tonal balance of the program source with these two controls.
- B. VOLUME (all speakers)** — Use this control to set the maximum volume for all the speaker stations in the system.
- C. BALANCE** — Adjust the output level of both channels at the same time. Sliding it left or right of center will maintain the output level of one channel as it decreases the output level of the other.
- D. OFF/ON** — Use this switch to turn the system on or off.
- E. MONO/STEREO** — Place switch in **STEREO** for all program sources, unless you wish to hear an entire stereo program at a mono speaker — then place this switch in **MONO** (all speakers will have mono response). When a radio station is broadcasting in stereo, the green indicator below this switch will light.
- F. TUNING ACCURACY** — This meter indicates the relative strength of any FM or AM radio broadcast. When tuning in a radio station, watch this meter to see when you have the strongest signal for the desired station.
- G. TUNING DIAL INDICATOR** — The illuminated slide rule dial points out call numbers clearly for ease in tuning. Upper scale: AM. Lower scale: FM.
- H. TUNING KNOB** — Use this knob to tune in your favorite radio stations.
- I. SELECTOR SWITCH** — Your Nufone SM-428 can provide you with a variety of entertainment programs: AM and FM radio, Record Changer (PHONO), 8-Track Tape Player (TAPE), and auxiliary equipment such as a tape recorder.
- J. SPEAKER STATION FUNCTION CONTROLS** — With these 10 controls, you control the function (OFF, RADIO/INTERCOM, STAND BY (intercom only) and LISTEN IN) of every speaker station in the system.

Two major parts

Think of your system as consisting of two major parts: the Master Unit and the Speakers. The Master Unit contains the AM/FM radio receiver and the electronic circuitry for stereo separation, intercom operation, amplification, and control of the speaker stations. Each speaker station is connected to the Master Unit and all functions of the speaker stations are controlled by it.

Three types of speakers

Three types of speakers can be used with this system: stereo, mono, and door speakers. Of the stereo speakers, some are installed inside the house and some outside, most use a separate remote control for volume and intercom operation, one stereo speaker Model has built in controls. Stereo speakers are the most commonly used speakers because the system is designed for stereo. However, mono speakers are ideal for location where you want intercom operation only. Mono speakers for the system include a 5" speaker, 8" speaker, and a 5" speaker/clock timer (digital alarm clock and speaker station combination). The SM-428 can use either of 5 different door speakers: 2 surface-mounted (one with a push button that connects to a door chime) and 3 recess-mounted (one with a door chime push button).

6.

Technical specifications

12 watts continuous average power, 6 watts per channel RMS, 100 Hz – 20 KHz @ less than 10% THD, 10 speaker load (2.5 ohms).

FM Sensitivity – 5uV.

FM Signal-to-Noise Ratio – 20uV @ 30db.

FM Image Rejection – 52 db.

FM I.F. Rejection – 85 db.

AM Sensitivity – 7 uV.

AM Signal-to-Noise Ratio – 120 uV @ 30 db.

AM I.F. Rejection – 32 db.

Multiplex Separation – 30 db @ 1 KHz.

Power Consumption – 22 watts, 120vAC, 60Hz.

Tape Input – 4 MV, 220 K-ohms; Output @ 50 MV, 8.3 ohms.

Phono Input – 20MV, 1.2 M-ohms; Output @ 50 MV, 8.3 ohms.

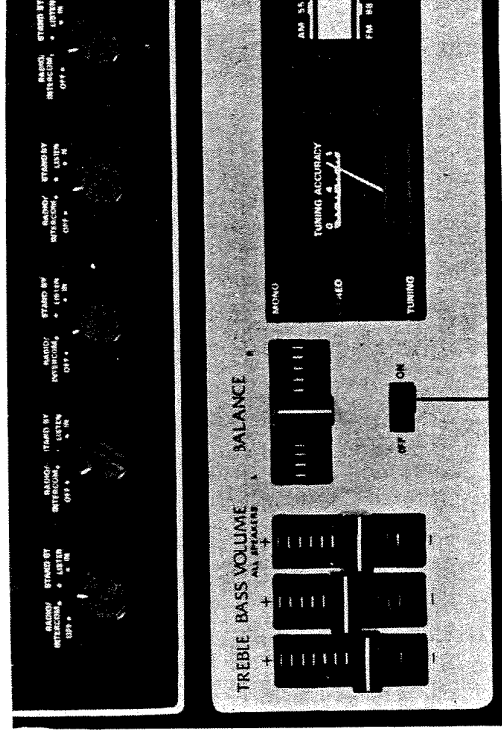
Auxiliary Input – 4MV, 220 K-ohms; Output @ 50 MV, 8.3 ohms.

Setting volume for entire system

1. Go to each Speaker Station and turn the VOLUME control to the complete clockwise position (maximum volume).
- NOTE: On stereo controls the outer knob is for the Channel A speaker (left), the inner knob is for the Channel B speaker (right).**
2. Return to the Master Unit. Slide the VOLUME (all speakers) control to its lowest position (minimum volume).
3. Turn the Selector Switch to AM or FM position.
4. Turn on the system with the OFF/ON switch.
5. Set the 10 Speaker Station Function Controls to RADIO/INTERCOM.
6. Slide the VOLUME (all speakers) control approximately 1/3 from the bottom, then turn in your favorite radio station.
7. Now, adjust the VOLUME (all speakers) control until you have enough volume at the Speaker Station requiring the highest volume (such as a large living room or family room).

8. Go to each Speaker Station and adjust the VOLUME control for the desired sound level.
9. Finally, adjust the TREBLE and BASS controls to please yourself.

CAUTION: If the VOLUME controls on the Speaker Stations are turned too low and the VOLUME (all speakers) control on the Master Unit is turned too high, distortion may result.



Setting functions for Speaker Stations

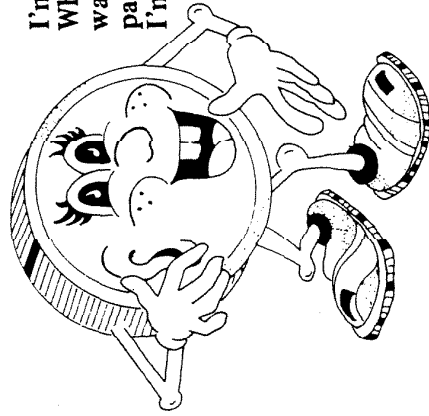
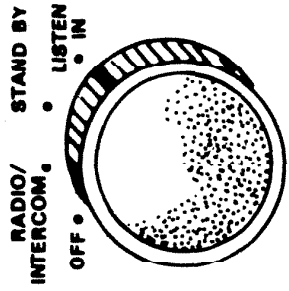
Your Master Unit has ten 4-position Speaker Station Function Controls. With these controls, you can set your Speaker Stations for OFF, RADIO/INTERCOM, STANDBY, and LISTEN IN.

OFF – With this setting, you can turn off any Speaker Station and it will not receive Intercom calls or Radio programs (or any optional program source). You may, however, make calls from Speaker Stations set in the OFF position and receive answers by pressing the **INSIDE/PATIO SPEAKERS** “LISTEN” button.

RADIO/INTERCOM – To Speaker Stations selected, this setting transmits Radio, Intercom, and optional programs from a Record Changer, 8-Track Tape Player, or auxiliary equipment. It will also receive the signal from an optional NuTone Electronic Door Chime.

STANDBY – You can shut off the Radio and other programs to any Speaker Station selected, but still allow those to receive and answer Intercom calls as well as make calls to other Speaker Stations.

LISTEN IN – To keep an “ear” on the children, or a sick member of your family... just set the Speaker Station nearest them to the **LISTEN IN** position. The Speaker Station will then relay sounds to all pre-selected Speaker Station set on **RADIO/INTERCOM**.



I'm in control!
Whatever function you
want for the inside or
patio speakers –
I'm your knob.

Making calls on your SM-428 Musicom

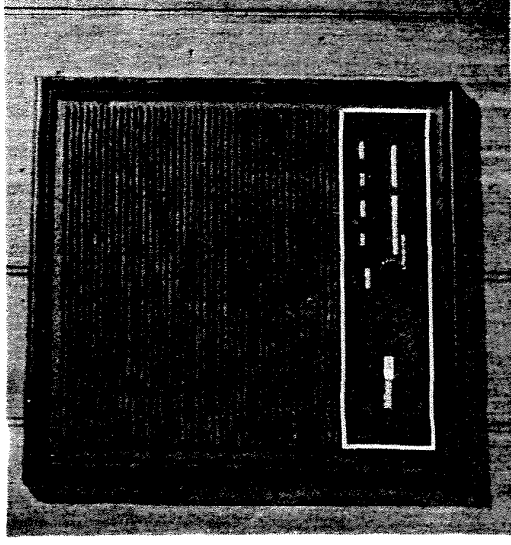
You can make calls from any Speaker Station at any time, as long as the entire system is turned ON at the Master Station.

Since your Nuffone Musicom is fully transistorized and when left on, ready for use (without transmitting program sources), uses only a little more electricity than an electric clock... it is desirable to leave your system on at all times.

1. Turn your Speaker Station VOLUME control to the full clockwise position.
2. TO TALK – press the INSIDE/PATIO SPEAKERS “TALK” button and hold while talking.

NOTE: Speak through the Channel A (left) stereo speaker. The Channel B stereo speaker does not transmit Intercom signals.

3. TO LISTEN – press the INSIDE/PATIO SPEAKERS “LISTEN” button and hold down so you can receive your reply. With the LISTEN button held down, persons can reply to your call without touching their Speaker Station controls.



Answering the door

You'll never have to open your door to strangers again. Answer the door within the security of your home.

And besides security, you'll save lots of steps and time by using the Musicom to answer the door.

To answer the door with the Musicom, follow the instructions under the previous heading, except this time use the buttons labeled "DOOR SPEAKERS."

“Listening-in” to a room or area

The “listen-in” feature of your Nuffone Musicom is ideal for keeping an “ear” on the children’s rooms or even someone confined to a bed.

At night, you can “listen-in” to your entire home from your bedroom speaker and be able to hear any disturbing noises.

1. For rooms or areas you want to “listen-in” on, set the speaker’s Function Control to the LISTEN-IN setting.
2. For speakers from where you wish to “listen-in,” set those speakers’ Function Control to RADIO/INTERCOM or STAND BY.

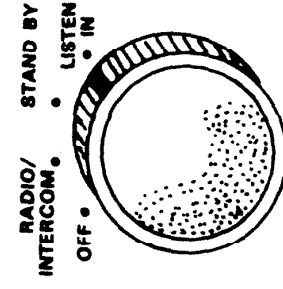
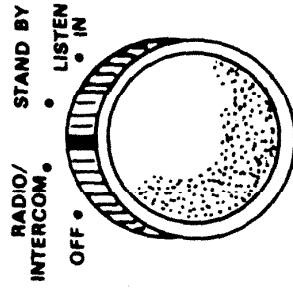
IMPORTANT: Only speakers set in RADIO/INTERCOM will hear sounds transmitted from the speakers set on LISTEN-IN.

3. Be sure the Master Unit is switched on, otherwise, the speakers set on LISTEN-IN will not transmit any sounds.
4. With the Master Unit switched on, one of its functions will be operating (AM or FM radio, phono, tape, or aux.). If you do not wish to hear any program, set the Selector Switch to PHONE, TAPE, or AUX, but do not turn on the component.

Remember:

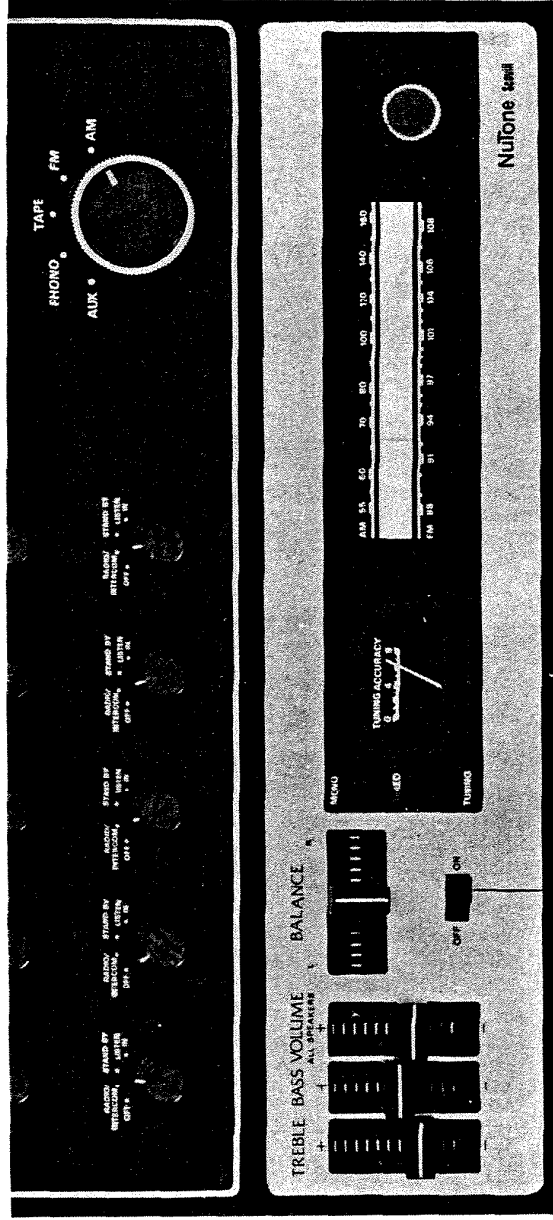
Only the Channel A (left speaker) is used for intercom, therefore, the “listen-in” intercom feature will be transmitted over the Channel A speakers.

To enjoy the “listen-in” intercom feature, the Master Unit must be switched on.



Operating the radio

1. Be sure the Master Unit is switched on.
2. Place the Selector Switch in AM or FM.
3. Place the MONO-STEREO switch in STEREO for all program sources.
NOTE: If you want to listen to an FM stereo program from a mono speaker, place the MONO/STEREO switch in MONO — the mono speaker will then provide combined Channel A and Channel B programming (but, of course, not in stereo). When the MONO/STEREO switch is in MONO, all the speakers in your system will have only mono response.
4. Adjust the volume.
5. Tune in the desired station. Watch the TUNING ACCURACY meter to see when you have the strongest signal for the station (the further to the right, the stronger the radio signal).

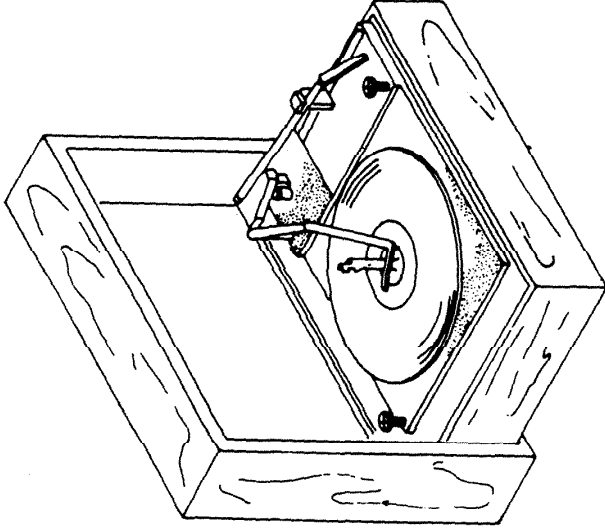
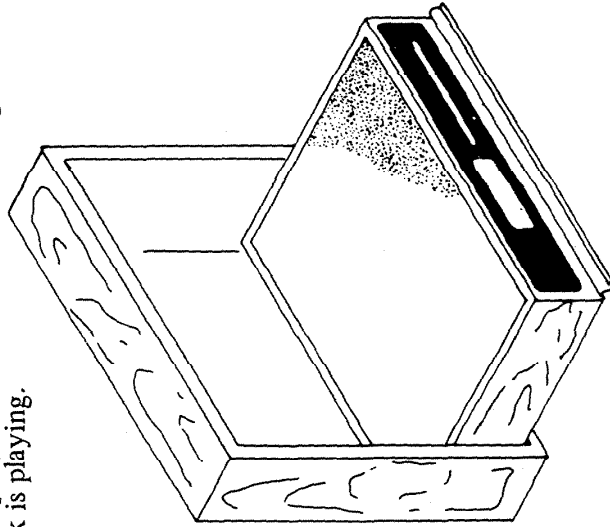


Fold-away accessories

Optional Record Changer and 8-Track Tape Player are ingeniously designed for handsome appearance as well as convenience. They tilt out for use, fold back to save space.

MODEL TP-96 8-TRACK TAPE PLAYER

Precision-engineered and designed. Hinged-door cartridge slot dust protector. Automatically adjusts to monaural or stereo system, to play an entire 8-track cartridge or any single program track. Four indicator lights show which track is playing.



MODEL RC-91-1 STEREO-MONAUURAL RECORD CHANGER

Jam-proof mechanism, lightweight tone arm, easy-to-use controls for 'off-on' and 'reject.' Plays records of all speeds. Automatic-play for 7", 10", 12" records. Pause-cue control. High-performance ceramic cartridge with diamond and sapphire styli. Tone arm locks in place after automatic shut-off. Removable center spindle; 45 RPM adaptor is included.

More accessories

See your local NuTone Sales Outlet for these optional accessories. For the name of your nearest NuTone Sales Outlet, call toll free 1-800-543-8687 (in Ohio, 1-800-582-2030), or write to: NuTone Division -- Scovill, Madison and Red Bank Roads, Cincinnati, Ohio 45227, Attention: Department of Consumer Relations.

ELECTRONIC CHIME

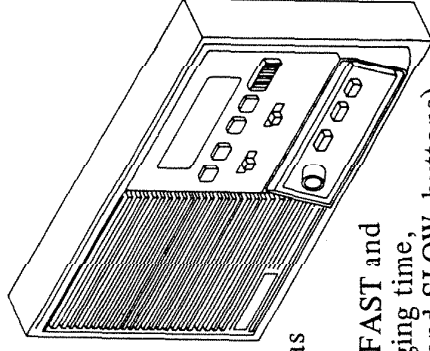
More luxury and convenience in your household. . . A NuTone Electronic Door Chime connected to your Intercom System will be heard through the Intercom Speakers. So when a caller rings your Door Chime you can hear it from any part of your home.

TO ADJUST THE VOLUME — set the Selector Switch on AM or FM Radio. Select a station with clear reception and ring Chime. The Chime should be heard clearly at any speaker station set on RADIO/INTERCOM while the radio is playing. Adjust the volume control on the Chime base plate to the volume you wish.

SECURITY SYSTEM

Sound protection for your family and your possessions! Security through your Musicom System. . .

NuTone's Security/Fire Alarm System including an Electronic Horn Alarm can also be connected to your Musicom System to sound the alarm signal through the system speakers.



SPEAKER/CLOCK-TIMER

The NuTone speaker/clock timer is a combination intercom speaker and alarm clock. The speaker controls work the same as the standard intercom speaker. The clock controls work as follows:

SET-LOCK — used to control the FAST and SLOW buttons ("set" — for charging time, "lock" — to inactivate the FAST and SLOW buttons).

FAST and SLOW — used to set the time display.

ALARM — to set alarm time, used in conjunction with the FAST and SLOW buttons.

SLEEP — to set the "pre-sleep" radio time (time before radio silences for the night, used in conjunction with the FAST and SLOW buttons).

DOZE — doze time after alarm, 9 minutes.

CONTROL SWITCH — "RADIO ON" position for normal radio/intercom operation. "WAKE TO ALARM" or "WAKE TO MUSIC" shuts off radio for entire system until wake up time.

IMPORTANT: Keep Control Switch in RADIO ON position at all times, except when setting alarm in either "wake" mode which shuts off the radio for the entire system.

NOTE: An owner's manual is supplied with the unit.

How to adjust radio volume for Listen-in Operation

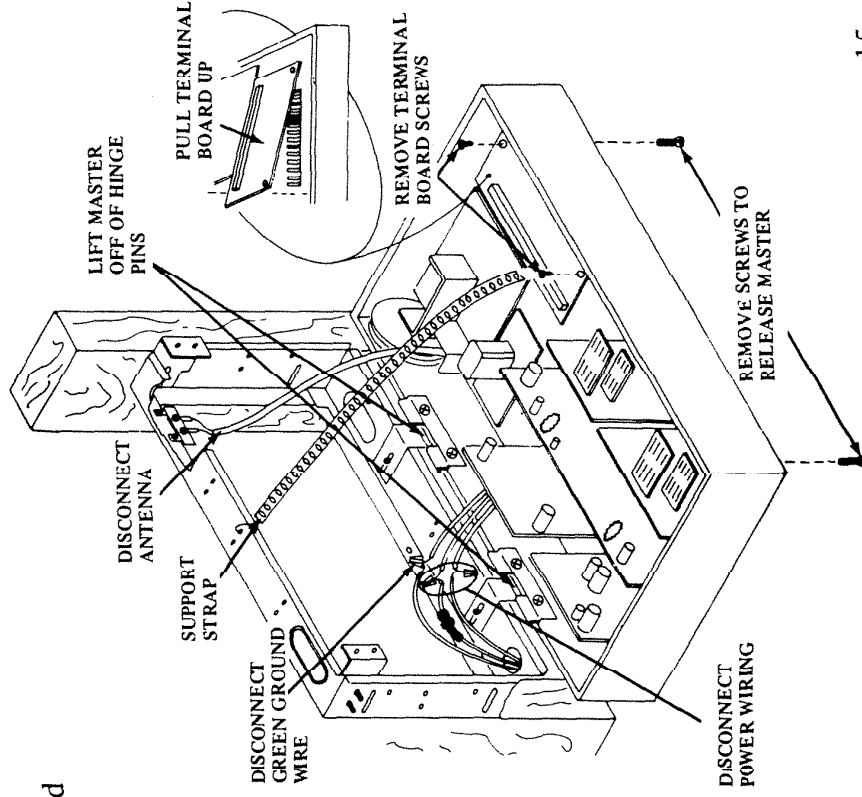
Whenever the radio tends to overpower transmissions from a remote speaker in the listen-in mode, follow these instructions to get the proper balance between them.

1. Set system volume control to mid-rotation.
2. Set master to tape or phono position.
3. Turn volume control for each remote speaker and speaker in master station to the middle of the normal range.
4. Set master to AM or FM and tune to a strong AM or FM station.
5. Adjust system volume control for a desired listening level.

Removing Master Unit for service

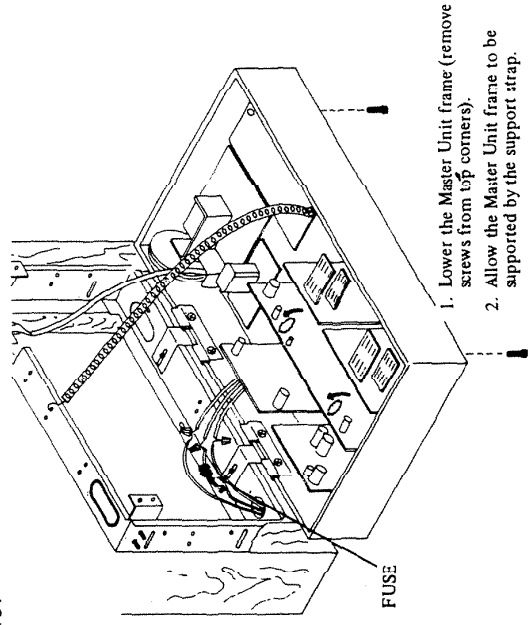
Your Master Unit has been designed for easy removal should service be required. To remove Master Unit, follow the instructions below.

1. Turn the OFF/ON switch OFF to turn off power to the Master Unit.
2. Shut off the house current to the Master Unit.
3. Remove the two screws from the upper corners of the Master Unit panel. Holding the panel, allow it to drop forward. The support strap should hold it in place.
4. Disconnect the power wiring. Place insulating tape around the wires coming from the wall.
5. Disconnect the green ground wire.
6. Disconnect the antenna wires from the antenna terminal strip.
7. Remove the retaining screws from the wiring terminal board. Get a firm grasp on the wiring terminal board and gently lift it from the panel by working one side free.
8. Place the terminal board (with wiring attached) into the rough-in frame.
9. Grasp the sides of the Master Unit and lift up to disengage hinge pins.



Troubleshooting Guide **Read before calling Service Center.**

TROUBLE	POSSIBLE REMEDY
1. System not working.	<ol style="list-style-type: none"> 1. Be sure the on/off control on the Master Unit is on. If the radio dial lights are not on, the master is probably not receiving household current. Check house fuse or circuit breaker. NOTE: The Master Unit has a fuse assembly in the power wiring. If the Master does not have power even though house current is being supplied, this fuse may be blown. Replace fuse with Type AGC 3, 3 Amp (3/4" x 1 1/4"). See drawing below for fuse location and replacement procedure.
2. No radio. Intercom working.	<ol style="list-style-type: none"> 2. Optional speaker/clock timer may be in either "wake" mode. Be sure the optional speaker/clock timer is in the RADIO ON mode. See page 13.
3. Low or distorted radio volume.	<ol style="list-style-type: none"> 3. Volume controls may not be set properly. See page 7.
4. Low or no intercom volume from a remote speaker set in "listen-in".	<ol style="list-style-type: none"> 4. See page 14 for remedy to this problem.
5. Speaker squealing.	<ol style="list-style-type: none"> 5. The VOLUME control on the master may be set too high; reduce this setting (see page 7). If two speakers are located too close to one another, this may cause the noise; reduce the volume of one or both of the speakers.
6. Poor FM radio reception.	<ol style="list-style-type: none"> 6. Be sure the master's antenna is connected to the in-house antenna. See page 15 for location of this connection.



Product specifications subject to change without notice.



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