

# A Technical Analysis of All Fisher Receivers and Speakers



# The Fisher 701 ■ 250 Watt ■ 4 Channel ■ Stereo AM/FM Receiver

The Fisher 701 is by far the most advanced receiver ever developed by the Fisher Engineering Laboratories. This is the receiver of the 1970's; the first fully compatible four channel stereo receiver. The two extra channels add a new exciting dimension to the sound for true four-channel stereo reproduction. In addition the Fisher patented Wide Surround® concept, creates 4-channel sound from conventional two-channel stereo program material. A truly magnificent instrument, the Fisher 701 incorporates the latest technological advances and engineering breakthroughs.

## THE FOUR-CHANNEL CONCEPT

When listening to a concert, you hear not only the sound coming from the orchestra, but also the sound bouncing off the walls of the auditorium. The result is a natural reverberation with fractional delay between the direct sound and the reflected sound. This enhances the spacious-

ness of the listening environment and hence the appeal of the music. Thus, the most natural way to reproduce special sound is to use four microphones, two pointing at the stage to pick up the direct or front sound and two pointing towards the rear to trap the reflected sound. These four channels of music when fed into four speakers, one placed in each corner of the room, will most nearly duplicate the original listening environment. This is four-channel sound — the Fisher Wide Surround® concept.

While four-channel tapes and tape recorders are a reality, four-channel stereo broadcasts are still in the experimental state; a number of different systems is being considered. The Fisher 701 has been designed to be completely compatible with every known system of four-channel broadcasts. Jacks in the rear of the set, as well as a plug-in multiplex receiver section, are provided so that whatever system is accepted, you'll be

ready to use it with the 701. This model has been designed not only as a four-channel receiver but as a state-of-the-art 2-channel receiver as well. The patented Wide-Surround® control allows you to create the four-channel effect using conventional stereo program materials from FM broadcast, phonograph records or stereo tapes.

## THREE METHODS OF TUNING

1. Autoscan® touch tuning... The 701 incorporates a newly developed and improved version of Fisher's highly acclaimed Autoscan®, the automatic station scanner. It affords effortless scanning of the FM band at the touch of two buttons, one for continuous scan, the other for one station advance. Completely electronic with no motors, gears or moving parts, Autoscan is absolutely silent as it moves across the FM dial, yet it tunes more accurately than it could be possible even using dual meters or a scope.

2. Remote Control... station selection using the



Autoscan® circuit may also be accomplished by means of an accessory Remote Control unit (Fisher RK-40) which provides convenient tuning from a remote position in a listening area.

3. Manual Tuning...Fisher's ultra-smooth flywheel mechanism assures effortless AM/FM tuning across the large illuminated easy-to-dial scale. The illuminated dial pointer makes accurate tuning even easier.

### SUPERIOR SENSITIVITY

The sensitivity of the Fisher 701 is conservatively rated at 1.7 uV insuring that even the weakest of stations will be received in amazing clarity. The FM section has been designed using only IC's as active elements. The IF plus multiplex section contains five IC's comprising a total of fourteen amplifying stages. This will insure pleasurable listening at the threshold noise level with complete suppression of any possible interference.

### MAXIMUM SELECTIVITY

Bringing in a station is one thing, keeping it separate from a strong adjacent station is another. The latter function is called selectivity and the incredible selectivity of the 701 is achieved through the use of not one but two multipole filters, one with 5 high-Q toroidal resonators. These resonators are permanently tuned and will never require alignment.

### THE WIDE BAND AM

The AM IF section is equipped with two ladder type ceramic filters of exceptionally high selectivity. These filters insure vastly improved reception of distant AM stations and in addition eliminate annoying whistles. These filters provide optimum bandwidth for unmatched AM reception.

### MUTING

At the touch of a button all interstation noise and hiss on FM is completely eliminated.

### AUTOMATIC STEREO SWITCHING

The patented Fisher Stereo Beacon circuit lights to indicate whether the incoming program is mono or stereo for automatic switching to the correct mode of operation. Undesired switching between these modes by noise or distorted signals is totally eliminated. The mode of operation either mono, two-channel stereo or four-channel stereo is shown by illuminated mode selector lamps.

### LOUDNESS CONTOUR CONTROL

At low volume levels, the lower bass and upper treble tones become less pronounced to the ear.

Compensation for this phenomenon is automatically provided by the loudness contour circuit. This control restores the lower bass and upper treble frequencies on the front, rear, or both channels to provide full tonal balance and enhanced musical enjoyment at low volume levels.

### HIGH FREQUENCY CONTROL

At the touch of a button, this circuit eliminates undesired high frequency noises, such as record scratch, tape hiss, whistles and other similar sounds which degrade your enjoyment. The circuit works on the front, rear or both channels.

### BAXANDALL TONE CONTROLS

Highly sophisticated Baxandall feedback type controls insure perfect balance of the tonal spectrum. The bass and treble frequencies are emphasized or de-emphasized with subtle graduations; boom and shrillness are completely eliminated, leaving only the uncolored and undistorted musical content. These controls work on the front, rear and both channels.

### TAPE MONITOR

The 701 has four recorder outputs and four monitor inputs. Simultaneous monitoring and recording of tapes is possible on all four channels. This exclusive feature allows you to create the four-channel effect, Wide Surround® sound, with conventional stereo program material. Two phones jacks, one for the front channel and one for the rear channel, are provided.

### MASSIVE POWER

The 701 delivers 250 watts of music power, 40 watts RMS per channel using a newly developed Darlington output circuit for virtually distortionless power. Identical power is provided on all four channels as is required for the playback of modern music pieces, the "Now" sound and electronic music. On classical pieces, the rear channels are used for the reproduction of the reflected sound which can be set at a lower level. The 701 can drive any four speakers effortlessly to concert levels. In addition to driving four speakers in the main listening area, the 701 will also drive four speakers in another room giving you four-channel stereo in any two rooms of your home.

There are separate volume controls for both the front and rear channels and there is a Wide Surround® switch that lets you play normal, 2-channel stereo through one set of 2 speakers, while the same information modified plays through the second set of 2 speakers, creating the acoustics of a concert hall from conventional stereo program sources.

## TECHNICAL SPECIFICATIONS

### FM TUNER SECTION

Usable Sensitivity (IHF Standard)	1.7 uV
Harmonic Distortion (at 400 Hz, 100% modulation)	less than 0.35%
Signal-to-Noise Ratio (at 100% modulation and 1 mV input)	66 db
Selectivity, Alternate Channel	65 db
Spurious Response Rejection (at 100 MHz)	105 db
Image Frequency Rejection (at 100 MHz)	68 db
IF Frequency Rejection (at 100 MHz)	80 db
FM Stereo Separation (at 400 Hz)	36 db
Capture Ratio, IHF, at 1 mV	1.5 db

### AM TUNER SECTION

Sensitivity	10 uV
Selectivity (at 1 MHz and ± 10 kHz)	50 db
Image Frequency Rejection (at 1 MHz)	40 db
IF Frequency Rejection (at 1 MHz)	55 db

### AMPLIFIER SECTION

Music Power (at 1 kHz, 8 ohms)	250 watts
RMS Power (at 1 kHz, 8 ohms)	40 watts each channel
Total RMS Power	160 watts
Harmonic Distortion (at 1 kHz)	0.5%
IM Distortion (60/7000 Hz, 4:1, SMPTE)	0.8%
Power Bandwidth, IHF (at 8 ohms)	20 to 25,000 Hz
Sensitivity (for rated output at 8 ohms)	
Phono	2.7 mV
Auxiliary 1 and 2	200 mV
Monitor	300 mV
Recorder Output (30% FM Mod)	400 mV
Hum and Noise (below rated output)	
Volume at minimum	-90 db
Phono Low (6-mV reference)	-60 db
Auxiliary (400-mV reference)	-65 db
Frequency Response	
Phono Low	30 to 15,000 Hz ± 2 db
Auxiliary	20 to 25,000 Hz ± 1.5 db
Power Amplifier Section	15 to 40,000 Hz ± 1.5 db

### Maximum Input Signal

(at 1% THD)	
Phono Low	50 mV
Auxiliary	3.5 volts

### Input Impedance

Phono Low	50 k ohms
Auxiliary	175 k ohms

### Damping Factor (1 kHz)

Speaker Impedance 8 ohms	greater than 10
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### Control Tracking Error (0 to -50 db)

	Less than 2 db
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### Separation (at 1 kHz, L to R, R to L)

Phono	greater than 45 db
Auxiliary	greater than 50 db

### Bass Control Range (at 50 Hz)

	24 db
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### Treble Control Range (at 10 kHz)

	24 db
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### Subsonic Filter

	12 db per octave below 10 Hz
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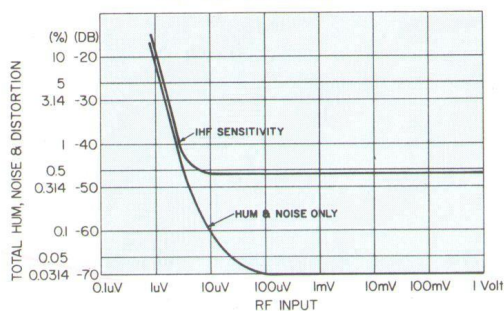
### High-Frequency Filter

(12 db per octave)	-3 db at 5,000 Hz
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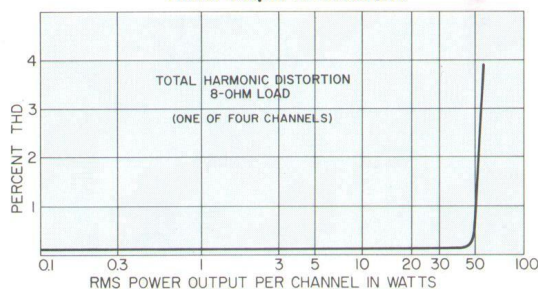
### GENERAL

Dimensions (including control panel and AM antenna)	16 1/16" wide 5 1/4" high 1 1/4" deep
Weight	35 lbs.

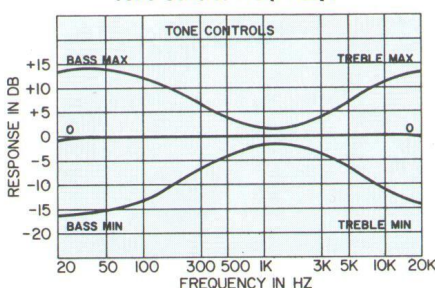
FM-IHF Sensitivity



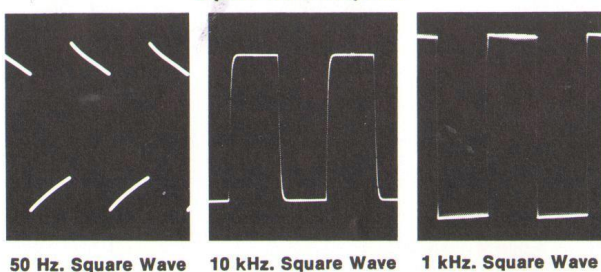
Power Output vs. Distortion



Tone Control Freq. Resp.



Square Wave Response



# The Fisher 500-TX

## 200-Watt AM-FM Stereo Receiver

Engineering leadership of thirty two years in creating the finest receiving equipment has reached its culmination in the Fisher 500-TX. This powerful AM-FM Stereo Receiver is truly the connoisseur's dream, incorporating every state-of-the-art feature, such as:

### FOUR METHODS OF TUNING

- 1 • **Manual**...Fisher's ultra-smooth flywheel mechanism assures effortless AM and FM tuning across the large, illuminated, easy-to-read dial scale.
- 2 • **Pushbutton**...Fisher's TUNE-O-MATIC® Memory Tuning provides instant selection of any one of your four favorite FM stations, simply by pushing a button. This is accomplished by four separate tuning mechanisms and four individual dials with separate control knobs on the front panel. Perfectly matched varactor diodes (variable capacitance or "tuning" diodes) select the exact frequency to which

each memory is pre-set, assuring precise tuning each time the station is selected. Drift or deviation from the pre-set position is avoided, since the signal frequency is "locked-in".

- 3 • **AUTOSCAN® Touch Tuning**...is the remarkable FM tuning mode which affords effortless scanning of the FM band in both directions, at the touch of a button. Completely electronic, with no motors or moving parts, this unique circuit uses the same varactors previously described to tune either one station at a time, or station after station in continuous sequence. AUTOSCAN tunes in complete silence and will lock onto each station with unerring accuracy, to a degree unmatched by any conventional tuning method.
- 4 • **Remote Control**...Station selection using the AUTOSCAN circuit may also be accomplished by means of an accessory unit (Fisher RK-30) which provides convenient tuning from a re-

mote position in the listening area. The RK-30 is a hand-held remote control with 20 feet of flexible cable which permits the user to select stations without leaving his seat.

### HIGHEST SENSITIVITY

The sensitivity of the 500-TX is rated at 1.7  $\mu$ V, representing the all-important factor in the outstanding ability of the tuner to provide strong and clear reception of even the weakest signals. The FM front end consists of a 4-gang circuit incorporating four newly developed varactor diodes plus dual-gate MOSFETs in the RF and mixer stages. A highly efficient AGC circuit effectively prevents overload and distortion in very strong signal areas, such as cities, even though signals as high as one volt (1,000,000 microvolts) are received!

### HIGHEST SELECTIVITY

Clean reception of weak, distant stations located



adjacent in frequency to very strong local stations is provided by a crystal filter in the FM-IF stage of the tuner. Previously available only in the most expensive communications and military receivers, this filter is utilized to its fullest advantage in the 500-TX to pull in distant stations with "crystal" clearness. A distinct advantage of crystal filters, as compared with conventional filter coils, is never needing alignment.

The AM-IF section is equipped with a 4-resonator ladder-type ceramic filter of exceptionally high selectivity. This filter assures vastly improved reception of distant AM stations and, in addition, eliminates annoying whistles. It provides optimum bandwidth for vastly superior AM reception.

The AM section also features a 3-gang variable capacitor, a tuned RF and a mixer section using a newly developed dual-transistor circuit to minimize noise and prevent overloading.

### MUTING

At the touch of a button, interstation noise and hiss are completely eliminated. The circuit is pop-free and silent at all times.

### AUTOMATIC STEREO SWITCHING

The patented Fisher STEREO BEACON® Circuit\* indicates whether the incoming program is mono or stereo and automatically switches to the correct mode of operation. Undesired switching between these modes, caused by noise pulses, or distorted signals, is eliminated.\*U.S. Pat.#3290443

### LOUDNESS CONTOUR CONTROL

It is a physiological fact that when the volume control is at a low level, lower bass and upper treble tones appear less pronounced to the ear. This is because of the ear's reduced sensitivity to the extremes of the audible spectrum. Compensation for this phenomenon is automatically provided by the Loudness Contour Circuit. In the 'on' position, this control will automatically increase lower bass and upper treble tones to provide fully balanced hearing and enhanced musical enjoyment even at relatively low volume.

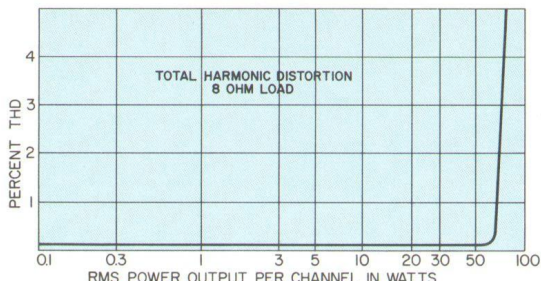
### LOW FILTER

At the touch of a finger, a special circuit removes unwanted low frequency noises, such as turntable rumble, tone arm resonance, and similar annoying sounds.

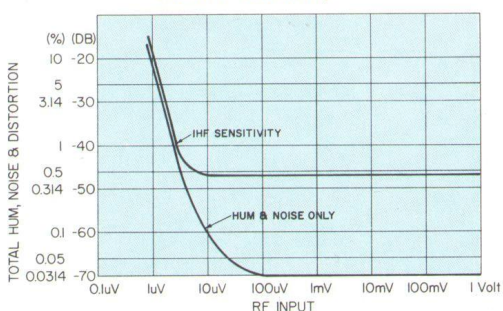
### HIGH FILTER

Another circuit, this time at the high end of the spectrum, eliminates record scratch, tape hiss, high frequency whistles and similar sounds which can degrade performance.

Power Output vs. Distortion



FM-IF Sensitivity



### BAXANDALL TONE CONTROLS

This type of treble and bass control is the most sophisticated ever developed for high fidelity use. By means of feedback, bass and treble frequencies are emphasized or de-emphasized, starting at the extreme ends of the audio spectrum. Subtle, gradual increases provide the most realistic reproduction without distortion of the musical content. Boom and shrillness are completely eliminated, leaving only the uncolored and undistorted musical content.

### TAPE MONITOR

Simultaneous monitoring and recording of tapes being made through tape machines with separate record and playback heads is possible. The signal is perceived and taken directly from the playback head during the actual recording, permitting the operator to hear the signal and assess its quality as it is being taped. Needed changes in the recording level can be made immediately. The Tape Monitor input is of the high-impedance type to prevent attenuation of the incoming signal.

### POWER TO SPARE!

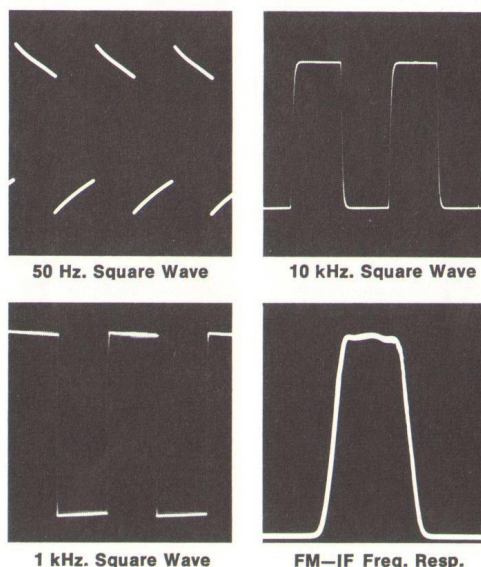
With 200 Watts ( $\pm 1$  db) of Music Power, the 500-TX is able to drive two separate stereo speaker systems. One can be installed in the main listening area, such as living room or den. The other can be placed in a playroom, den, or bedroom. In addition, a third mono speaker can be set up in still another room in the house.

All systems can be used simultaneously, or one at a time, as desired. The power-derived third channel can be used for the most spectacular sound experience of all, by installing a 3-channel stereo system in any room in the house.

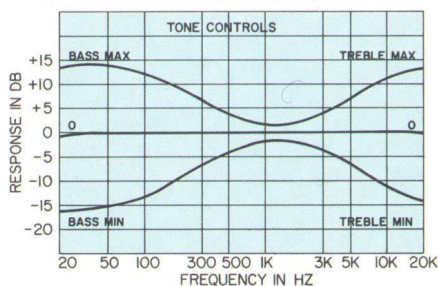
### PRIVATE LISTENING

A stereo headphone jack is provided on the front panel. This jack is constantly connected regardless of speaker switch position.

Square Wave Response



Tone Control Freq. Resp.



## TECHNICAL SPECIFICATIONS

### FM TUNER SECTION

Usable Sensitivity (IHF Standard)	1.7 uV
Harmonic Distortion (at 400 Hz, 100% modulation)	less than 0.4%
Signal-to-Noise Ratio (at 100% modulation and 1 mV input)	65 db
Selectivity, Alternate Channel	70 db
Spurious Response Rejection (at 100 MHz)	100 db
Image Frequency Rejection (at 100 MHz)	65 db
IF Frequency Rejection (at 100 MHz)	80 db
FM Stereo Separation (at 400 Hz)	38 db
Capture Ratio, IHF, at 1 mV	1.5 db

### AM TUNER SECTION

Sensitivity	10 uV
Selectivity (at 1 MHz and $\pm 10$ kHz)	80 db
Image Frequency Rejection (at 1 MHz)	70 db
IF Frequency Rejection (at 1 MHz)	65 db

### AMPLIFIER SECTION

Music Power (at 1 kHz, 8 ohms)	200 watts
IHF Dynamic Power (8 ohms)	75/75 watts
RMS Power (at 1 kHz, 8 ohms)	65/65 watts
Harmonic Distortion (at 1 kHz)	0.5%
IM Distortion (60/7000 Hz, 4:1, SMPTE)	0.8%
Power Bandwidth, IHF (at 8 ohms)	8 to 35,000 Hz
Sensitivity (for rated output at 8 ohms)	
Phono Low	2.5 mV
Phono High	10.0 mV
Auxiliary	250 mV
Monitor	300 mV
Recorder Output (30% FM Mod)	400 mV
Hum and Noise (below rated output)	
Volume at minimum	-90 db
Phono Low (6-mV reference)	-60 db
Auxiliary (400-mV reference)	-65 db
Frequency Response	
Phono Low	30 to 15,000 Hz $\pm 2$ db
Auxiliary	20 to 25,000 Hz $\pm 1.5$ db
Power Amplifier Section	15 to 40,000 Hz $\pm 1.5$ db
Maximum Input Signal (at 1% THD)	
Phono Low	50 mV
Auxiliary	4.5 volts
Input Impedance	
Phono Low	50 k ohms
Auxiliary	175 k ohms
Damping Factor (1 kHz)	
Speaker Impedance 8 ohms	greater than 30
Control Tracking Error (0 to -50 db)	Less than 2 db
Separation (at 1 kHz, L to R, R to L)	
Phono	greater than 45 db
Auxiliary	greater than 50 db
Bass Control Range (at 50 Hz)	24 db
Treble Control Range (at 10 kHz)	24 db
Subsonic Filter	12 db per octave below 10 Hz
Low-Frequency Filter (12 db per octave)	-3 db at 50 Hz
High-Frequency Filter (12 db per octave)	-3 db at 5,000 Hz

### GENERAL

Dimensions (including control panel and AM antenna)	16 $\frac{1}{8}$ " wide 4 $\frac{3}{8}$ " high 14 $\frac{1}{2}$ " deep
Weight	30 lbs.
Power Consumption, Maximum	240 watts/320 VA

# The Fisher 450-T

## 180-Watt AM-FM Stereo Receiver

A truly magnificent unit, with a vast array of features and a huge power reserve. Ideal for the dedicated audiophile, as well as all those to whom the life-like reproduction of a variety of entertainment and educational materials on records, tape and FM is an important part of daily living.

### THREE METHODS OF TUNING

**1 • AUTOSCAN® Touch Tuning...** the superbly accurate FM tuning mode which, at the touch of a button, provides effortless scanning of the entire FM band. Completely electronic, making use of varactors (tuning diodes) instead of motors or moving parts, this unique circuit tunes in stations either one at a time, or in a continuous sequence. Tuning is accomplished in complete silence, without clicks or pops, and with a degree of accuracy unmatched by any conventional tuning method.

**2 • Manual...** Ultra-smooth flywheel tuning across the extra-wide, illuminated dial, with easy-to-read numerals, is quick and practically effortless.

**3 • Remote Control...** Station selection by means of the AUTOSCAN circuit is also easily accomplished by means of the accessory Remote Control Unit (Fisher RK-40), included at no extra charge in the price of the 450-T. The hand-held unit, with its twenty foot length of cable, is easily attached to the 450-T and will not interfere with any other controls.

### EXTREME SENSITIVITY

The ability of the 450-T to bring in even the weakest FM signal is truly phenomenal. It is conservatively rated at 2.0 uV. Even remote FM stations will "snap in" with amazing clarity and presence.

### BALANCE

To match different types of speaker systems, or adjust for program content which may be out of balance, the 450-T provides a Balance control on the front panel. By rotating the control right or left, true balance of the stereo speaker system or its audio content is easily achieved.

### ELIMINATION OF NOISE

A muting switch permits station selection without pop or hiss. Annoying background noises are completely eliminated.

### AUTOMATIC STEREO SWITCHING

Fisher's patented STEREO BEACON® Circuit\* lights up to indicate that the incoming program is being broadcast stereophonically or monophonically and automatically switches to the correct mode of operation. Undesirable switching between these modes of operation, which may

\*U.S. Patent #3290443



be triggered by noise pulses or distorted signals, is completely eliminated.

### LOUDNESS CONTOUR CONTROL

When the volume control is set to lower levels, the upper treble and lower bass frequencies become less pronounced to the ear. This is due to the ear's reduced sensitivity to these frequencies. The Loudness Contour circuit overcomes this by automatically increasing lower bass and upper treble tones by just the amount needed for properly balanced hearing.

### BAXANDALL TONE CONTROLS

This type of tone control circuit makes use of feedback to boost or cut bass and treble frequencies subtly and gradually, starting at the extreme ends of the audio spectrum. The result is a highly transparent sound without boom or harshness even when bass and treble controls are fully advanced.

### TAPE MONITOR

Tape monitoring facilities permit simultaneous monitoring and recording of tapes in connection with tape recorders having separate record and playback heads. The signal is taken directly from the playback head during the actual recording session, permitting critical evaluation and immediate change in level whenever needed. The Tape Monitor input is of the high impedance type, thereby preventing attenuation of the incoming signal.

### SEPARATE SPEAKER SWITCHES

Separate main and remote speaker switches permit maximum versatility in the operation of a number of stereo speaker systems. The main speaker system may be used, or the remote speaker system, or both, simultaneously. Alternatively, both speaker systems may be switched off for private listening with stereo headphones without interfering with the activities of other members of the household.

### TREMENDOUS POWER

The 450-T provides 180 Watts ( $\pm 1$  db) of Music Power, more than enough to drive two separate stereo speaker systems simultaneously. One system can be used in the main listening area, while the other can be operated in a bedroom, den, or patio.

### TWO RECORDER OUTPUTS

The 450-T provides a total of two recorder outputs per channel, permitting parallel operation of recording units (for example, a reel-to-reel and a cassette recorder).

### AUXILIARY INPUTS

Included are two auxiliary input positions, switchable by the front panel selector switch. This permits selective operation of two signal sources in addition to phono, AM and FM.

### FM LOCAL PUSHBUTTON

Very strong signals are sometimes encountered adjacent to local broadcasting stations, for which a special pushbutton is provided on the front panel of the 450-T. This permits the station to be received with perfect clarity by preventing overload. In ordinary use, it is returned to the "off" position to permit the receiver to operate with maximum sensitivity.

### PRIVATE LISTENING

A stereo headphone jack is provided on the front panel for private listening. This jack is constantly connected regardless of speaker switch position.

## TECHNICAL SPECIFICATIONS

### FM TUNER SECTION

Usable Sensitivity (IHF Standard)	2.0 $\mu$ V
Harmonic Distortion (at 400 Hz, 100% modulation)	0.5%
Signal-to-Noise Ratio (at 100% modulation and 1 mV input)	65 db
Selectivity, Alternate Channel	45 db
Spurious Response Rejection (at 100 MHz)	90 db
Image Frequency Rejection (at 100 MHz)	55 db
IF Frequency Rejection (at 100 MHz)	70 db
FM Stereo Separation (at 1 kHz)	38 db
Capture Ratio, IHF	2.5 db

### AM TUNER SECTION

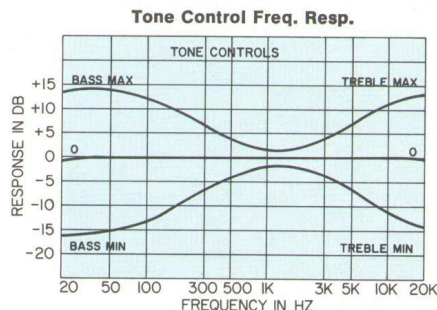
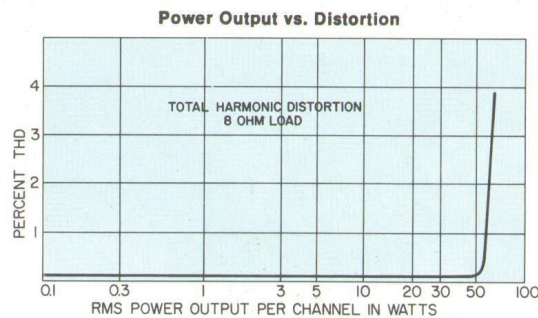
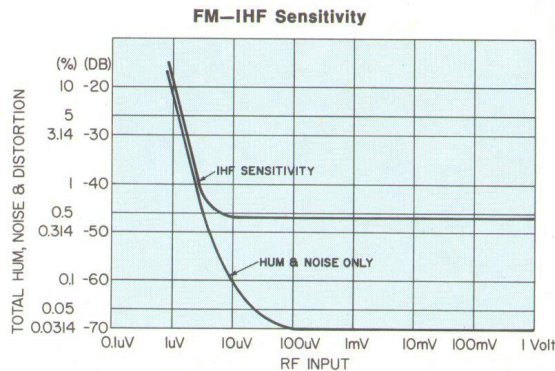
Sensitivity	10 $\mu$ V
Selectivity (at 1 MHz and $\pm 10$ kHz)	50 db
Image Frequency Rejection (at 1 MHz)	40 db
IF Frequency Rejection (at 1 MHz)	55 db

### AMPLIFIER SECTION

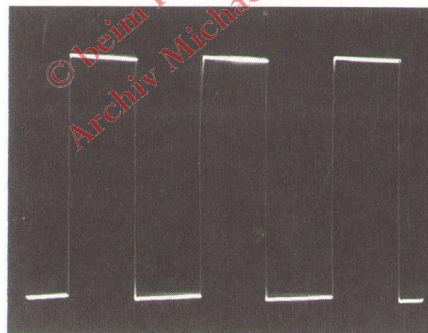
Music Power (at 1 kHz, 8 ohms)	180 watts
IHF Dynamic Power (8 ohms)	65/65 watts
RMS Power (at 1 kHz, 8 ohms)	55/55 watts
Harmonic Distortion (at 1 kHz)	0.5%
IM Distortion (60/7000 Hz, 4:1, SMPTE)	0.8%
Power Bandwidth, IHF (at 8 ohms)	10 to 30,000 Hz
Sensitivity (for rated output at 8 ohms)	
Phono Low	2.5 mV
Phono High	7.5 mV
Auxiliary	250 mV
Monitor	160 mV
Recorder Output (50% FM Mod)	400 mV
Hum and Noise (below rated output)	
Volume at minimum	-90 db
Phono Low (6-mV reference)	-60 db
Auxiliary (400-mV reference)	-65 db
Frequency Response	
Phono Low	30 to 15,000 Hz $\pm 2$ db
Auxiliary	20 to 25,000 Hz $\pm 2$ db
Maximum Input Signal (at 1% THD)	
Phono Low	45 mV
Auxiliary	3.0 volts
Input Impedance	
Phono Low	50 k ohms
Auxiliary	200 k ohms
Monitor	100 k ohms
Damping Factor (1 kHz)	greater than 30
Control Tracking Error (0 to -50 db)	Less than 2 db
Bass Control Range (at 50 Hz)	24 db
Treble Control Range (at 10 kHz)	24 db
Subsonic Filter	12 db per octave below 10 Hz

### GENERAL

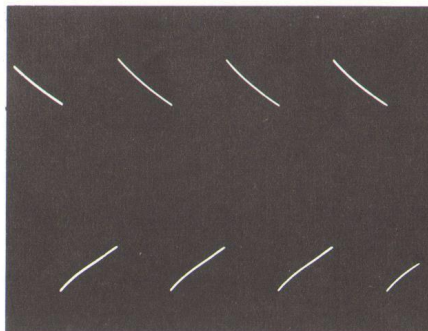
Dimensions (including control panel and AM antenna)	15 $\frac{1}{2}$ " wide 4 $\frac{5}{8}$ " high 14 $\frac{1}{4}$ " deep
Weight	25 lbs.
Power Consumption, Maximum	240 watts/320 VA



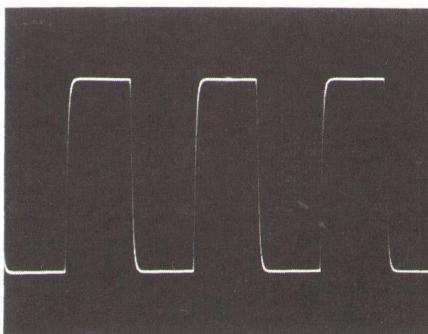
Square Wave Response



1 kHz. Square Wave



50 Hz. Square Wave



10 kHz. Square Wave

# The Fisher 250-TX

## 120-Watt AM-FM Stereo Receiver

An excellent Stereo Receiver, moderately priced and deservedly the most popular AM-FM unit ever produced by Fisher. The value leader in its price class, it offers a full range of convenience features along with more than enough power to drive separate main and remote stereo speaker systems simultaneously.

### TWO METHODS OF TUNING

**1 • TUNE-O-MATIC®** Memory Tuning instantly selects any one of your five favorite FM stations, snapping them in at the push of a button. Five separate tuning mechanisms are controlled by five pushbuttons coupled to individual dial faces on the front panel. Perfectly matched varactors (voltage-controlled tuning diodes) tune to the exact frequency at which each memory is pre-set, providing precise center-of-channel tuning each time the station is selected.

**2 • Manual...** A heavy flywheel plus an extra-wide, easy-to-read dial to permit fast, accurate tuning across the entire AM-FM band.

### OUTSTANDING SENSITIVITY

The sensitivity of the Fisher 250-TX, conservatively rated at 2.0  $\mu$ V, is outstanding in its class. It will bring in stations previously out of range with amazing clarity and critical definition.

### ELIMINATION OF DRIFT

To prevent unwanted 'drift' of the FM signal and to enhance quality FM reception, the 250-TX features an Automatic Frequency Control (AFC) which locks the desired station in 'electronically'. Also provided is an 'Off' position for tuning to weak signals.

### ELIMINATION OF NOISE

A front-panel pushbutton operates the muting

circuit, permitting smooth tuning of stations without the usual background chatter and noise.

### AUTOMATIC STEREO SWITCHING

Fisher's patented STEREO BEACON® Circuit\* lights up to indicate that the incoming program is being broadcast stereophonically or monophonically and automatically switches to the correct mode of operation. Undesirable switching between these modes of operation, which may be triggered by noise pulses or distorted signals, is completely eliminated. \*U.S. Patent #3290443

### LOUDNESS CONTOUR CONTROL

When the 250-TX is being operated at low volume, the tones at the extreme ends of the audio spectrum seem to be less pronounced to the ear. This is because the ear is less sensitive to sound at the extremes of the audio spectrum. The Loudness Contour circuit overcomes this



automatically by increasing lower bass and upper treble tones by just the right amount to provide fully balanced hearing.

### BAXANDALL TONE CONTROLS

Baxandall type tone controls use a feedback circuit for practically distortionless bass and treble boost and cut, with subtle gradations starting at the extremes of the audible spectrum. The result is a highly transparent sound without boom or harshness even if bass and treble controls are fully advanced.

### TAPE MONITOR FACILITIES

Tape monitoring facilities permit simultaneous monitoring and recording of tapes in connection with tape recorders having separate record and playback heads. The signal is taken directly from the playback head during the actual recording session, permitting critical evaluation and immediate change in level whenever needed. The Tape Monitor input is of the high impedance type, thereby preventing attenuation of the incoming signal.

### SEPARATE SPEAKER SWITCHES

Separate switches for main and remote speakers provide maximum versatility and enjoyment in the use of speaker systems in the home. The main speaker system may be used, or the remote speaker system, or both may be used simultaneously. Alternatively, both speaker systems may be switched off for private listening with stereo headphones without interfering with the activities of other household members.

### BALANCING STEREO SPEAKERS

To match different types of speaker systems, or adjust for program content which may be out of balance, the 250-TX provides a Balance control on the front panel. By rotating the control right or left, true balance of the stereo speaker system or its audio content is easily achieved.

### VERY HIGH POWER

120 Watts ( $\pm 1$  db) of Music Power will drive even the most inefficient stereo speaker systems to full volume, with considerable reserve for realistic production of peaks in orchestral music. In addition, enough power is available to drive a separate stereo speaker system in another area of the home, either simultaneously or alone.

### FM LOCAL POSITION

In certain localities, very strong signals may be encountered because of the proximity of a local broadcasting station. One of the positions on the Selector switch is labelled 'FM Local' and puts into effect a circuit which prevents overload. As a result, strong stations are received with complete clarity. Ordinarily, the switch is turned to FM to permit the receiver to operate with maximum sensitivity.

### PRIVATE LISTENING

A stereo headphone jack is provided on the front panel for private listening.

## TECHNICAL SPECIFICATIONS

### FM TUNER SECTION

Usable Sensitivity (IHF Standard)	2.0 $\mu$ V
Harmonic Distortion (at 400 Hz, 100% modulation)	0.5%
Signal-to-Noise Ratio (at 100% modulation and 1 mV input)	65 db
Selectivity, Alternate Channel	45 db
Spurious Response Rejection (at 100 MHz)	90 db
Image Frequency Rejection (at 100 MHz)	55 db
IF Frequency Rejection (at 100 MHz)	70 db
FM Stereo Separation (at 1 kHz)	38 db
Capture Ratio, IHF	2.8 db

### AM TUNER SECTION

Sensitivity	10 $\mu$ V
Selectivity (at 1 MHz and $\pm 10$ kHz)	50 db
Image Frequency Rejection (at 1 MHz)	40 db
IF Frequency Rejection (at 1 MHz)	55 db

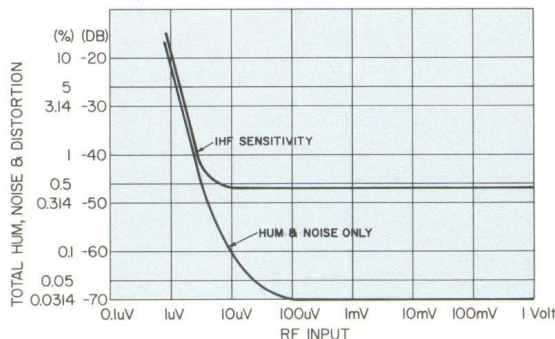
### AMPLIFIER SECTION

Music Power (at 1 kHz, 8 ohms)	120 watts
IHF Dynamic Power (8 ohms)	48/48 watts
RMS Power (at 1 kHz, 8 ohms)	35/35 watts
Harmonic Distortion (at 1 kHz)	0.5%
IM Distortion (60/7000 Hz, 4:1, SMPTE)	1.0%
Power Bandwidth, IHF (at 8 ohms)	20 to 25,000 Hz
Sensitivity (for rated output at 8 ohms)	
Phono Low	2.5 mV
Phono High	7.5 mV
Auxiliary	250 mV
Monitor	160 mV
Recorder Output	400 mV
Hum and Noise (below rated output)	
Volume at minimum	-90 db
Phono Low (6-mV reference)	-60 db
Auxiliary (400-mV reference)	-65 db
Frequency Response	
Phono Low	30 to 15,000 Hz $\pm 2$ db
Auxiliary	20 to 20,000 Hz $\pm 2$ db
Maximum Input Signal (at 1% THD)	
Phono Low	45 mV
Auxiliary	3.0 volts
Input Impedance	
Phono Low	50 k ohms
Auxiliary	220 k ohms
Monitor	100 k ohms
Damping Factor	greater than 30
Control Tracking Error (0 to -50 db)	Less than 2 db
Bass Control Range (at 50 Hz)	24 db
Treble Control Range (at 10 kHz)	24 db
Subsonic Filter	12 db per octave below 20 Hz

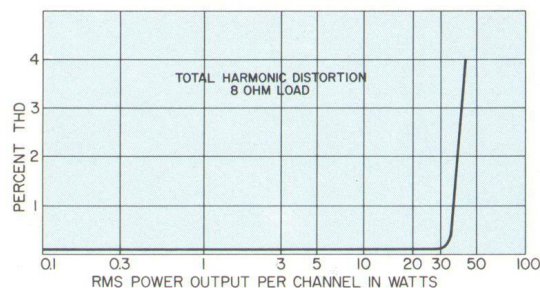
### GENERAL

Dimensions (including control panel and AM antenna)	15½" wide 4½" high 12¾" deep
Weight	20 lbs.
Power Consumption, Maximum	140 watts/150 VA

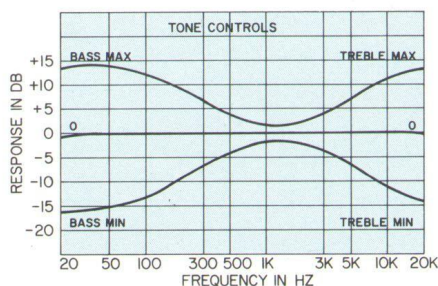
FM—IHF Sensitivity



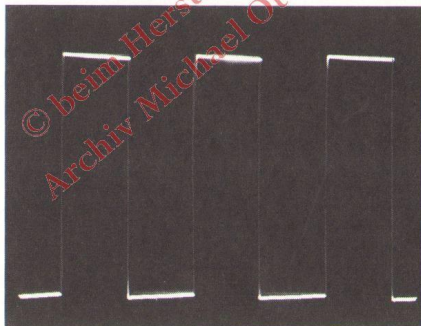
Power Output vs. Distortion



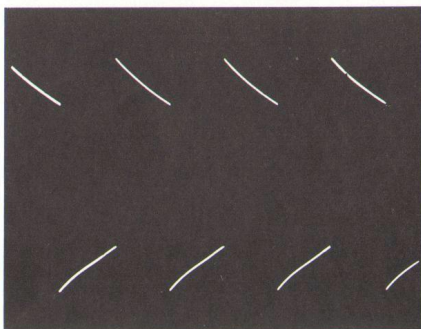
Tone Control Freq. Resp.



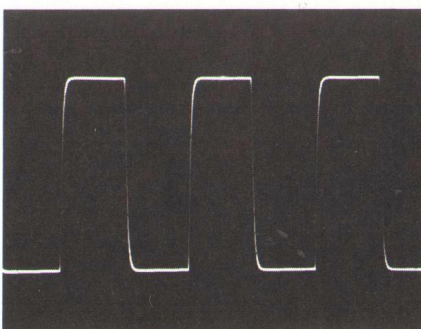
Square Wave Response



1 kHz. Square Wave



50 Hz. Square Wave



10 kHz. Square Wave

# The Fisher 210-T

## 110-Watt AM-FM Stereo Receiver

A solid-state AM-FM Stereo Receiver, incorporating an extremely sensitive FM tuner with FET's and IC's, a full function control panel and a high powered amplifier. Despite its moderate cost, the 210-T includes every essential feature required for quality stereophonic reproduction in the home as well as many unique circuits exclusive with Fisher.

### TUNING

An extra-heavy flywheel mechanism provides smooth, effortless tuning of the entire AM-FM band across the extra-wide, easy-to-read dial.

### EXCELLENT SENSITIVITY

The usable-sensitivity of the 210-T is conservatively rated at 2.0 uV, a tribute to its advanced engineering design, making use of the superior performance characteristics of Field Effect Transistors (FET's) and Integrated Circuits (IC's). The result is the ability of the 210-T to bring in even

the most distant FM signals with unbelievable clarity and definition.

### WIDE-BAND AM TUNER

A high-performance, wide-band AM tuner features Automatic Gain Control to prevent overload and distortion in strong local signal areas.

### AUTOMATIC STEREO SWITCHING

Fisher's exclusive patented STEREO BEACON Circuit\* indicates whether the incoming program is stereo or mono and switches to the correct mode of operation automatically. Switching back and forth between these modes, sometimes triggered by noise pulses or distorted signals, is completely eliminated. \*U.S. Patent #3290443

### LOUDNESS CONTOUR SWITCH

When the 210-T is operated at low volume settings, it is desirable to boost the frequencies at the extreme ends of the audio spectrum to com-

pensate for lack of sensitivity of the ear under these conditions. The Loudness Contour circuit overcomes this natural deficiency by supplying just the right amount of bass and treble boost needed for fully balanced hearing.

### BAXANDALL TONE CONTROLS

Feedback type Baxandall bass and treble tone controls provide distortionless bass and treble boost and cut, with subtle gradations starting at the extremes of the audio spectrum. Listening enjoyment and tonal realism are enhanced without artificial 'boom' or 'harshness'.

### TAPE MONITOR FACILITIES

A Tape Monitor Switch on the front panel permits simultaneous monitoring and recording of tapes being made through tape recorders with separate record and playback heads. The signal is taken directly from the playback head, permitting changes in level during the recording, when-



ever needed. The high impedance input precludes attenuation of the signal.

### SEPARATE SPEAKER SWITCHES

Main and remote speakers can be selected by individual switches, providing maximum versatility and enjoyment throughout the home. The main system, or the remote speaker system, or both, may be switched on or off, as desired. In addition, stereo headphones may be used for private listening and both systems turned off.

### BALANCING SPEAKERS

A Balance Control on the front panel facilitates precise emphasis and de-emphasis of sound coming from the right or left speaker systems for perfect stereophonic balance. In the same way, unbalanced audio content from an FM station, a record, or tape, may also be balanced.

### HIGH POWER AMPLIFIER

The 210-T includes a high-powered amplifier system capable of delivering 110 Watts ( $\pm 1$  db) music power, sufficient for even the most inefficient speaker systems. Enough power reserve is available to drive additional speaker systems in the den, bedroom, or any other room in the home.

### FM LOCAL POSITION

In metropolitan areas, very strong signals are sometimes encountered adjacent to broadcasting stations. A position on the Selector switch is labelled 'FM Local' and activates a circuit which prevents signal overload in these areas. Strong signals, as a result, are received with clarity. In ordinary operation, the switch is turned to 'FM' to permit the receiver to operate with maximum sensitivity.

### PRIVATE LISTENING

A stereo headphone jack on the front panel permits private listening without interference with other members of the household.

## TECHNICAL SPECIFICATIONS

### FM TUNER SECTION

Usable Sensitivity (IHF Standard)	2.0 $\mu$ V
Harmonic Distortion (at 400 Hz, 100% modulation)	0.6%
Signal-to-Noise Ratio (at 100% modulation and 1 mV input)	65 db
Selectivity, Alternate Channel	45 db
Spurious Response Rejection (at 100 MHz)	90 db
Image Frequency Rejection (at 100 MHz)	55 db
IF Frequency Rejection (at 100 MHz)	70 db
FM Stereo Separation (at 1 kHz)	35 db
Capture Ratio, IHF	2.8 db

### AM TUNER SECTION

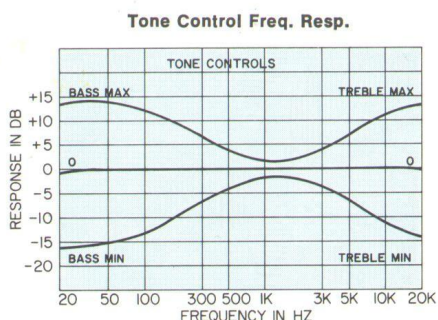
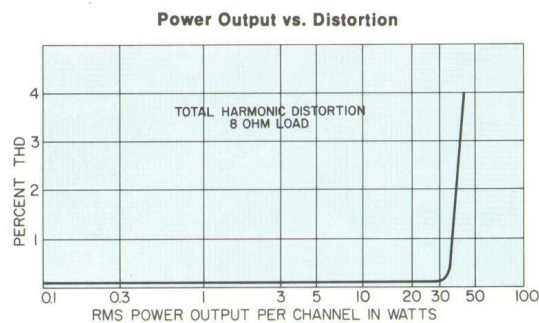
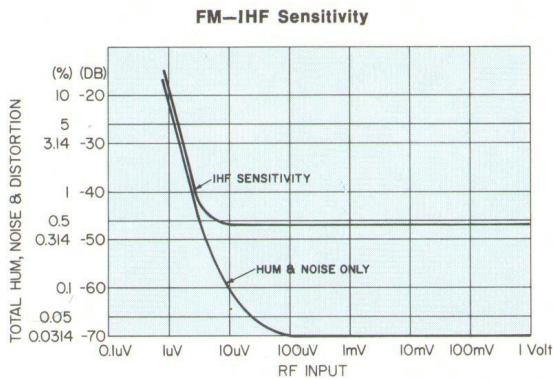
Sensitivity	10 $\mu$ V
Selectivity (at 1 MHz and $\pm 10$ kHz)	50 db
Image Frequency Rejection (at 1 MHz)	40 db
IF Frequency Rejection (at 1 MHz)	55 db

### AMPLIFIER SECTION

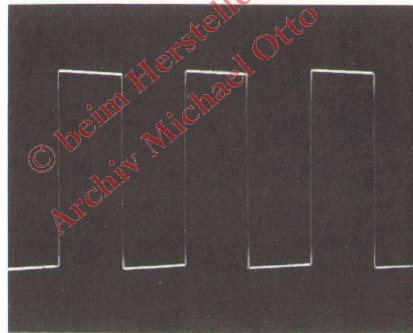
Music Power (at 1 kHz, 8 ohms)	110 watts
IHF Dynamic Power (8 ohms)	45/45 watts
RMS Power (at 1 kHz, 8 ohms)	33/33 watts
Harmonic Distortion (at 1 kHz)	0.5%
IM Distortion (60/7000 Hz, 4:1; SMPTE)	1.0%
Power Bandwidth, IHF (at 8 ohms)	25 to 25,000 Hz
Sensitivity (for rated output at 8 ohms)	
Phono Low	2.5 mV
Phono High	7.5 mV
Auxiliary	250 mV
Monitor	160 mV
Recorder Output	400 mV
Hum and Noise (below rated output)	
Volume at minimum	-85 db
Phono Low (6-mV reference)	-55 db
Auxiliary (400-mV reference)	-65 db
Frequency Response	
Phono Low	35 to 15,000 Hz $\pm 2$ db
Auxiliary	20 to 20,000 Hz $\pm 2$ db
Maximum Input Signal (at 1% THD)	
Phono Low	45 mV
Auxiliary	3.0 volts
Input Impedance	
Phono Low	50 k ohms
Auxiliary	150 k ohms
Damping Factor	greater than 10
Control Tracking Error (0 to -50 db)	Less than 2 db
Bass Control Range (at 50 Hz)	24 db
Treble Control Range (at 10 kHz)	24 db
Subsonic Filter	12 db per octave below 20 Hz

### GENERAL

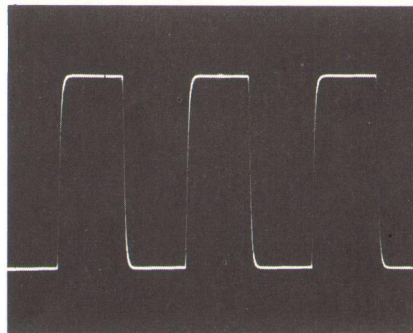
Dimensions (including control panel and AM antenna)	15 1/2" wide 4 3/8" high 12 3/4" deep
Weight	20 lbs.
Power Consumption, Maximum	140 watts/150 VA



Square Wave Response



1 kHz. Square Wave



10 kHz. Square Wave

# The Fisher 202

## 100-Watt AM/FM Stereo Receiver

The new Fisher 202 represents a milestone in the technology of high fidelity. Never has so much high-quality electronics been packed into such a complete package for such a moderate price. Fisher's research in the area of low-cost solid-state performance has finally paid off in a big way.

### TUNING

Tuning is accomplished with the aid of an extra-heavy flywheel mechanism, which lets you tune smoothly and effortlessly across the FM dial. And an illuminated dial pointer helps you see the stations you're tuning in.

### WIDE-BAND AM TUNER

For years, AM sections, even when they were part of expensive receivers, got short shrift. So it may surprise you to learn how good the 202's AM section is. Sensitivity? 10 microvolts. Selectivity? 44 dB. Image rejection? 40 dB.

Sounds more like FM than AM specifications, right?

Even on the 202, our lowest-priced AM/FM stereo receiver, AM sounds almost as good as FM mono.

### HIGH SENSITIVITY

Years ago only the best tuners around had a usable sensitivity rating (IHF-FM) as low as this Fisher's 2.5  $\mu$ V. Today, Fisher achieves this kind of extreme sensitivity with the help of Field Effect Transistors and Integrated Circuits. (2.5  $\mu$ V is sensitive enough to pull in those weak, distant signals, and make them sound like strong, local stations.)

### MUTING

At the touch of a button, interstation noise and hiss on FM are completely eliminated. The circuit is pop-free and silent at all times.

### ILLUMINATED PROGRAM SELECTOR

The Fisher 202 has a program selector that lights up to show you which program-source you've chosen: phono, FM, AM, or your choice of two auxiliary inputs (use one for cassette tape, the other for reel-to-reel, if you like).

### AUTOMATIC STEREO SWITCHING

Fisher's exclusive Stereo Beam<sup>®</sup> circuit indicates whether the incoming program is stereo or mono, and switches to the correct mode of operation automatically.

### LOUDNESS CONTOUR SWITCH

When the 202 is operated at low volume settings, it is desirable to boost the frequencies at the extreme ends of the audio spectrum to compensate for lack of sensitivity of the ear under these conditions. The loudness contour circuit overcomes this natural deficiency by supplying



just the right amount of bass and treble boost needed for fully balanced hearing.

### BAXANDALL TONE CONTROLS

Feedback type Baxandall bass and treble tone controls provide distortionless bass and treble boost and cut, with subtle gradations starting at the extremes of the audio spectrum. Listening enjoyment and tonal realism are enhanced without artificial 'boom' or 'harshness'.

### TAPE MONITOR FACILITIES

A tape monitor switch on the front panel permits simultaneous monitoring and recording of tapes being made through tape recorders with separate record and playback heads. The signal is taken directly from the playback head, permitting changes in level during the recording, whenever needed. The high impedance input precludes attenuation of the signal.

### SPEAKER SELECTOR CONTROL

For added versatility, the 202 incorporates a speaker selector control that permits you to choose whether to listen to your main speakers, your remote speakers, or both sets of speakers simultaneously. In addition, stereo headphones may be used for private listening and both systems turned off.

### BALANCING SPEAKERS

A balance control on the front panel facilitates precise emphasis and de-emphasis of sound

coming from the right or left speaker systems for perfect stereophonic balance. In the same way, unbalanced audio content from an FM station, a record, or a tape, may also be balanced.

### POWERFUL AMPLIFIER

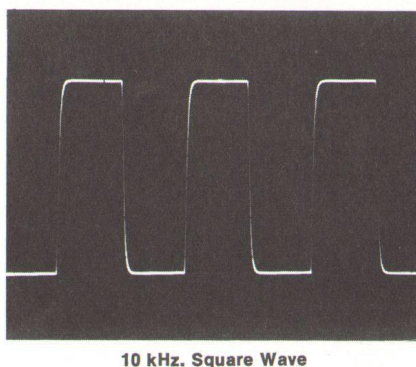
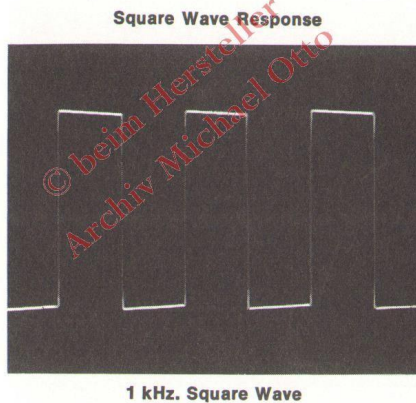
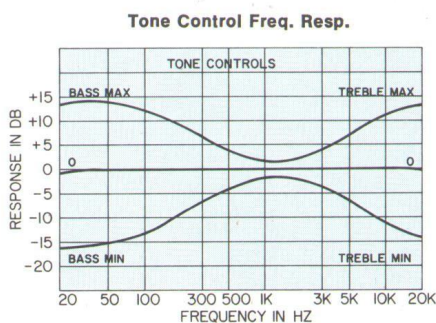
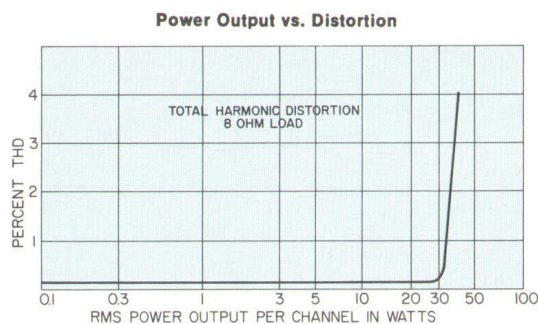
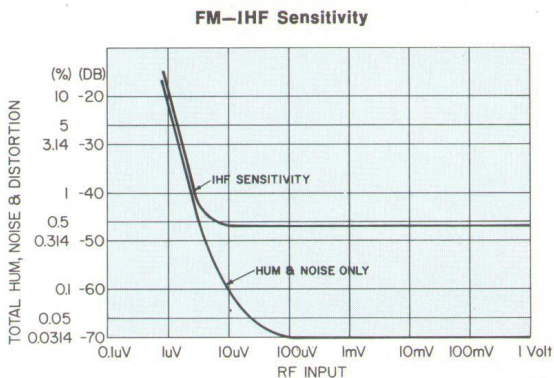
The 202 includes a powerful amplifier system capable of delivering 100 watts music power, enough to drive not one, but two pairs of speaker systems at concert levels without distortion.

### THE APPEARANCE

Some people think the new Fisher 202 is the most beautiful component Fisher has ever produced, regardless of price. Now we're not casting aspersions on the rest of the Fisher line, which has been widely imitated. But the 202, with its black-out panel and lighted dial pointer, has a certain simplicity about it.

### PRIVATE LISTENING

A stereo headphone jack on the front panel permits private listening without interference with other members of the household.



## TECHNICAL SPECIFICATIONS

### FM TUNER SECTION

Usable Sensitivity (IHF Standard)	2.5 uV
Harmonic Distortion (at 400 Hz, 100% modulation)	0.6%
Signal-to-Noise Ratio (at 100% modulation and 1 mV input)	64 db
Selectivity, Alternate Channel	42 db
Spurious Response Rejection (at 100 MHz)	75 db
Image Frequency Rejection (at 100 MHz)	50 db
IF Frequency Rejection (at 100 MHz)	70 db
FM Stereo Separation (at 1 kHz)	35 db
Capture Ratio, IHF	3 db

### AM TUNER SECTION

Sensitivity	15 uV
Selectivity (at 1 MHz and $\pm 10$ kHz)	44 db
Image Frequency Rejection (at 1 MHz)	40 db
IF Frequency Rejection (at 1 MHz)	48 db

### AMPLIFIER SECTION

Music Power (at 1 kHz, 8 ohms)	100 watts
IHF Dynamic Power (8 ohms)	40/40 watts
RMS Power (at 1 kHz, 8 ohms)	28/28 watts
Harmonic Distortion (at 1 kHz)	0.5%
IM Distortion (60/7000 Hz, 4:1, SMPTE)	0.8%
Power Bandwidth, IHF (at 8 ohms)	25 to 20,000 Hz
Sensitivity (for rated output at 8 ohms)	
Phono Low	2.5 mV
Phono High	8 mV
Auxiliary 1 and 2	200 mV
Monitor	200 mV
Recorder Output	350 mV
Hum and Noise (below rated output)	
Volume at minimum	-92 db
Phono Low (6-mV reference)	-60 db
Auxiliary (400-mV reference)	-65 db
Frequency Response	
Phono Low	30 to 15,000 Hz $\pm 2$ db
Auxiliary	25 to 20,000 Hz $\pm 2$ db

Maximum Input Signal (at 1% THD)	
Phono Low	50 mV
Phono High	160 uV
Auxiliary 1 and 2	4.5 volts
Input Impedance	
Phono Low	47 k ohms
Auxiliary 1 and 2	150 k ohms
Monitor	150 k ohms
Damping Factor	40
Control Tracking Error (0 to -50 db)	Less than 2 db
Bass Control Range (at 50 Hz)	24 db
Treble Control Range (at 10 kHz)	24 db
Subsonic Filter	12 db per octave below 20 Hz

### GENERAL

Dimensions (including control panel and AM antenna)	15 $\frac{1}{2}$ " wide 4 $\frac{3}{8}$ " wide 14 $\frac{1}{4}$ " deep
Weight	18 $\frac{1}{2}$ lbs.
Power Consumption, Maximum	90 watts/110 VA

# The Fisher TX-2000

## 150-Watt Stereo Master-Audio Control Amplifier

The Fisher TX-2000 is a professional stereo control amplifier that houses highly sophisticated audio control and amplifying facilities in one compact, elegantly styled unit. The amplifier's high power and inherent flexibility make it the ideal control center of a complete home or commercial entertainment system.

### PLENTY OF POWER

150 watts of music power is more than enough to drive not only a main pair of speaker systems at full concert volume, but a third, center-channel speaker, plus a pair of remote, or extension speakers (that's five speakers in all). And when we say 150 watts, we mean 150 *clean* watts. Harmonic distortion at rated output is 0.5% or less. IM distortion is 0.8% or less. And the power bandwidth is extremely wide: 22 to 24,000

Hz. Frequency response of the power amplifier section is from 10 to 60,000 Hz (plus 0, minus 2dB). That's hard to beat.

### EXTREMELY VERSATILE CONTROLS

One reason many audiophiles prefer a separate control amplifier is its versatile controls. And the TX-2000 is as versatile as any hi-fi enthusiast could desire. There are, of course, separate ganged volume controls. Separate ganged Baxandall tone controls, bass and treble, for each channel. (Baxandall controls provide distortionless bass and treble boost and cut, with subtle gradations starting at the extremes of the audio spectrum. Listening enjoyment and tonal realism are enhanced without artificial 'boom' or 'harshness'.) There's a tape-monitor control that permits you to playback either stereo channel

separately, or together. Its direct tape monitor feature permits one to check instantly the quality of the material being taped, and make adjustments without changing cable connections. There's also a balance control to adjust the volume of one channel with respect to the other. There are separate switches for main speakers, remote speakers, or the center channel speakers. And there's a mono/stereo switch.

### HIGH FILTERS

The TX-2000 has not one, but two high filters, giving you three ways to cut back unwanted treble (hiss, clicks, scratches). For a slight attenuation of treble, press High Filter 2. For a more extreme cutback, press High Filter 1. And for extreme attenuation of treble, press both High Filters together.



## LOW FILTER

This is the filter that eliminates rumble, hum, or other irritating low-pitched noises. It will reduce these unwanted sounds without appreciably affecting the desired low-pitched tones in the program material.

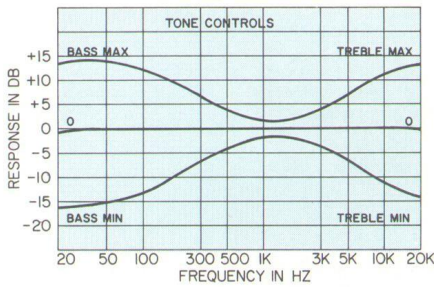
## LOUDNESS CONTOUR

To compensate for the apparent thinning out of music and speech at low volume levels, the TX-2000 has a loudness contour switch. With the switch in, the extreme bass and treble frequencies are boosted by a predetermined amount to restore body and brilliance to the program material.

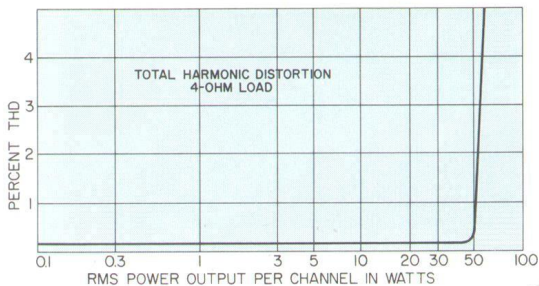
## CENTER CHANNEL OUTPUT

In a large room, when the left and right stereo channels are spread apart more than is normal, a ping-pong effect, rather than a blend of the two stereo channels, sometimes occurs. To compensate for this, the TX-2000 provides a center channel output, which combines left and right channels and feeds them to a center channel speaker. This fills in the 'hole' and eliminates the ping-pong effect.

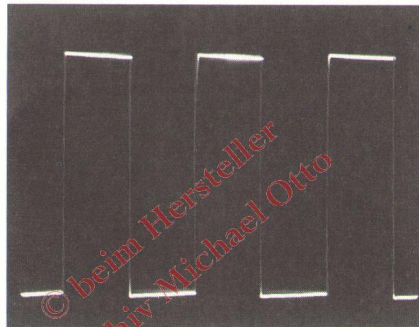
Tone Control Freq. Resp.



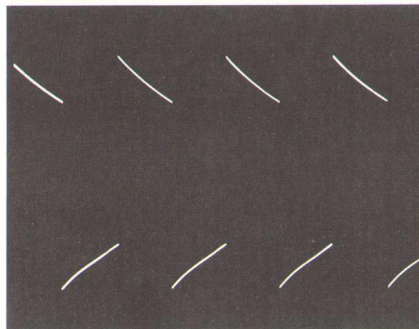
Power Output vs. Distortion



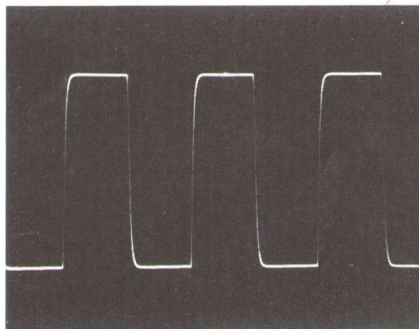
Square Wave Response



1 kHz. Square Wave



50 Hz. Square Wave



10 kHz. Square Wave

## TECHNICAL SPECIFICATIONS

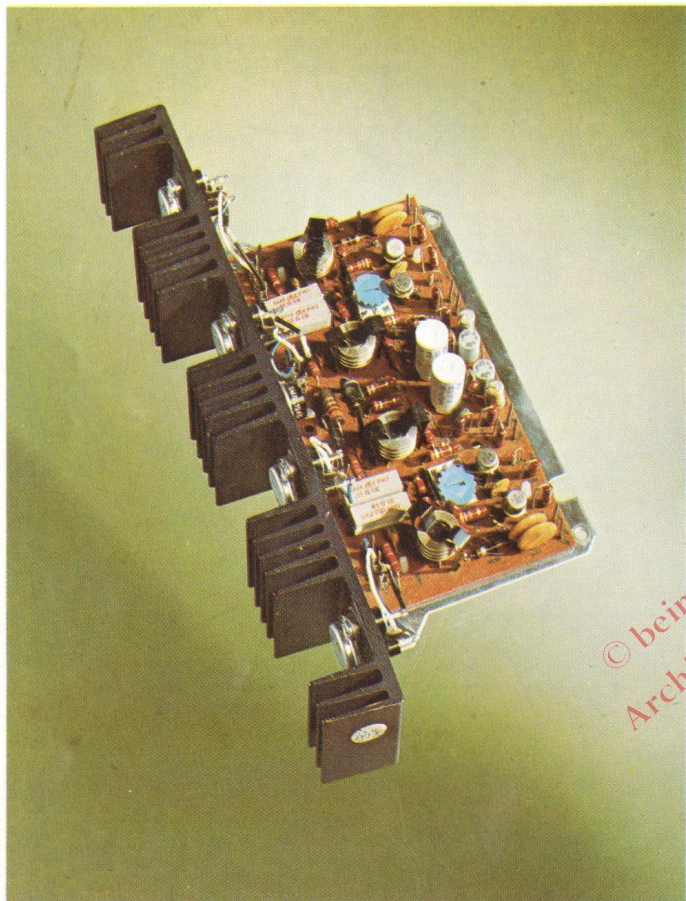
### AMPLIFIER SECTION

Music Power (at 1 kHz, 4 ohms)	150 watts
IHF Dynamic Power (4 ohms)	60/60 watts
RMS Power (at 1 kHz, 4 ohms)	50/50 watts
Harmonic Distortion (at 1 kHz)	0.5%
IM Distortion (60/7000 Hz, 4:1, SMPTE)	0.8%
Power Bandwidth, IHF (at 8 ohms)	22 to 24,000 Hz
Sensitivity (for rated output at 8 ohms)	
Phono Low	2.0 mV
Phono High	7.5 mV
Tape Head	1.8 mV
Tuner	200 mV
Auxiliary 1 and 2	200 mV
Monitor	250 mV
Recorder Output Low	200 mV
Recorder Output High	400 mV
Hum and Noise (below rated output)	
Volume at minimum	-90 db
Phono Low (6-mV reference)	-65 db
Auxiliary (400-mV reference)	-66 db
Frequency Response	
Phono Low	35 to 15,000 Hz ± 1 db
Auxiliary	20 to 40,000 Hz ± 1.5 db
Power Amplifier	10 to 60,000 Hz +0, -2 db
Maximum Input Signal (at 1% THD)	
Phono Low	40 mV
Auxiliary	3.5 volts
Input Impedance	
Phono Low	50 k ohms
Tape Head	100 k ohms
Auxiliary 1 and 2	150 k ohms
Damping Factor	greater than 10
Control Tracking Error (0 to -50 db)	Less than 2 db
Separation (at 1 kHz, L to R, R to L)	
Phono	greater than 50 db
Tape Head	greater than 50 db
Auxiliary	greater than 50 db
Bass Control Range (at 50 Hz)	26 db
Treble Control Range (at 10 kHz)	26 db
Subsonic Filter	12 db per octave below 20 Hz
Low-Frequency Filter (12 db per octave)	-3 db at 100 Hz
High-Frequency Filter 1 (18 db per octave)	-3 db at 4,000 Hz
High-Frequency Filter 2 (18 db per octave)	-3 db at 8,000 Hz

### GENERAL

Dimensions (including control panel and AM antenna)	15½" wide 4¼" high 12¾" deep
Weight	24 lbs.
Power Consumption, Maximum	215 watts/204 VA

## Advanced and Exclusive Features of Fisher Receivers

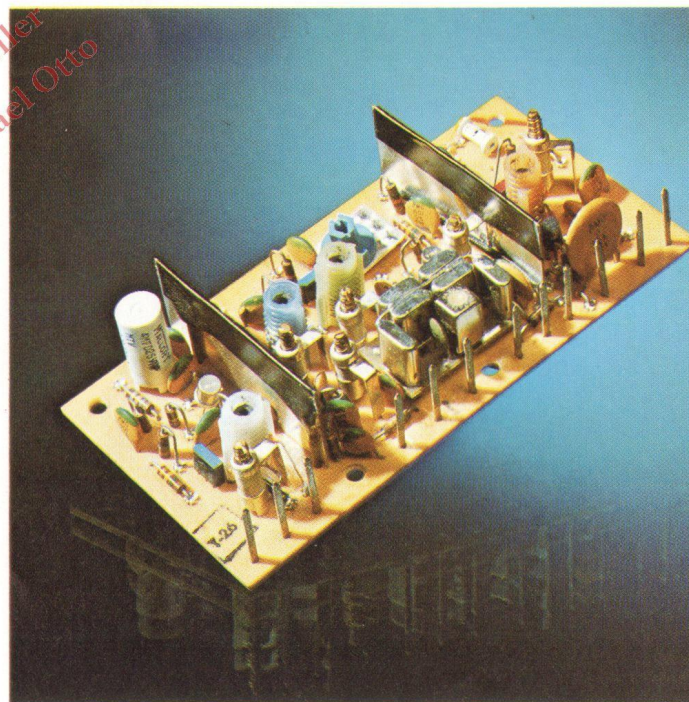


### Power Amplifier Module Plus Heatsink

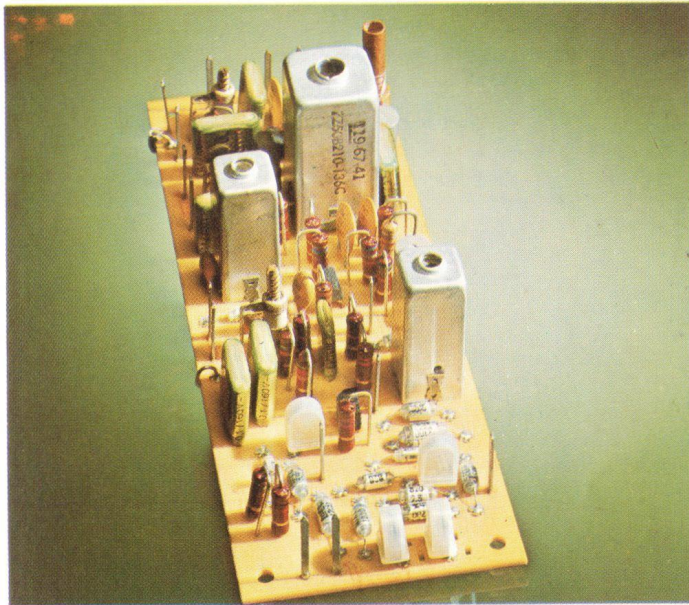
Fisher Radio was the first to make use of the highly advanced complementary-symmetry output circuit on a large production scale. This resulted in power levels greater than 50 watts, utilizing transistors of extreme power bandwidth. Massive heat-sinks serve to dissipate the heat generated when full power is drawn. Extreme stability and a high safety factor under all operating conditions, including high ambient temperatures, is further assured by the specification of silicon only for all transistors and T/C diodes. In addition, Fisher's exclusive TRAN-SIST-O-GARD® fast-acting protection circuit (patent pending) permits continuous operation under unfavorable load conditions and eliminates the possibility of damage to power drivers and output transistors that might be caused by momentary shorting of speaker leads. Furthermore, four special, extremely fast fuses are incorporated into the DC-coupled output stages, protecting the speakers against possible damage in case of transistor failure. The omission of low-frequency, power-limiting output coupling capacitors assures the extremely crisp, well-defined bass tones indicative of perfect transient response.

### Four-Gang Diode-Tuned FM Front-End

Fisher's exclusive AUTOSCAN® and TUNE-O-MATIC® circuits incorporate the most modern tuning devices known, Varactor Diodes, which operate as an electrical rather than mechanical variable capacitor. This approach, in combination with strong AFC action, results in unprecedented accuracy of tuning, far superior to any mechanical method. Overload protection against powerful, unwanted stations of up to 1 volt (1,000,000 microvolts) field strength is assured by four tuned RF circuits along with the use of an AGC-controlled dual-gate MOSFET in the RF stage. Weak, distant stations adjacent to strong local stations are separated and protected from interference by a 4-resonator, bridge-type, highly selective crystal filter. This front end effectively utilizes the most up-to-date means for achieving state-of-the-art RF and IF selectivity, interference rejection and protection from undesirable signals.

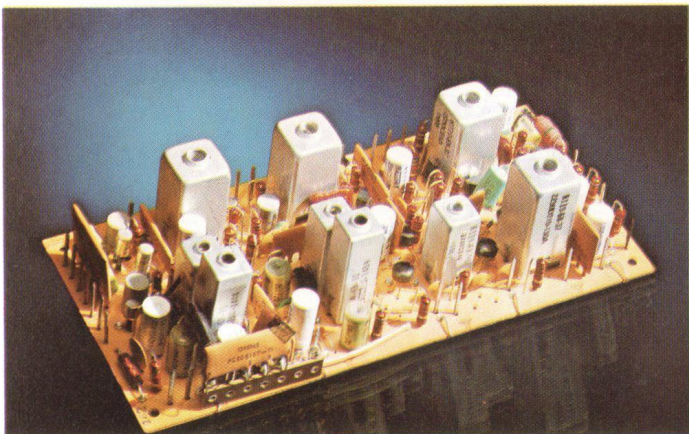


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Archiv Michael Otto



#### Dual Transistor AM Front End With Ceramic Filter

A total of three tuned circuits, rather than the usual two, provides highest RF selectivity, image and interference rejection across the AM band. A tuned RF stage is the key to superb long-distance reception. In addition, a four-resonator, ladder-type ceramic filter assures sharp and clean reception of the many distant stations crowding the AM band after sundown. The dual transistor circuit in the RF and Mixer stages permits signals as high as 3 volts (3,000,000 microvolts) to be received at the shielded Ferrite antenna, without overload.

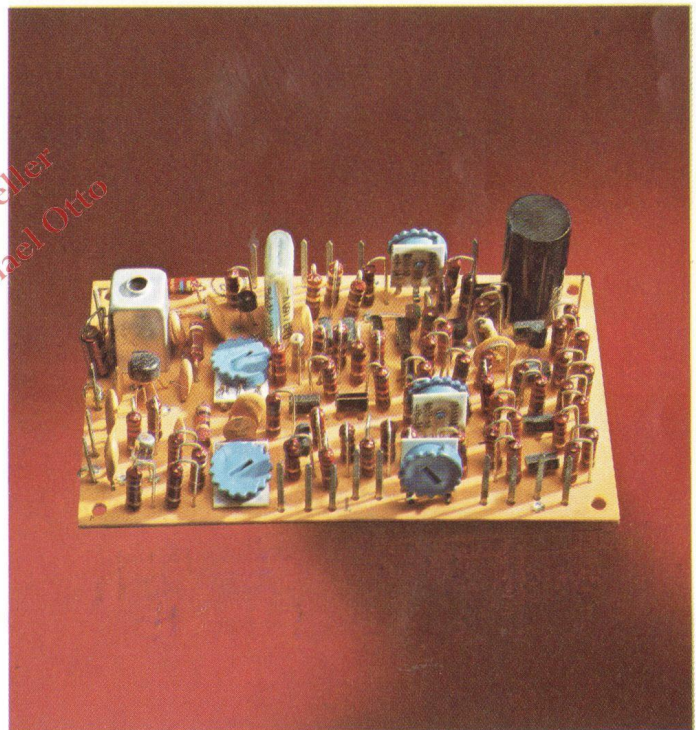


#### FM and AM IF and Multiplex Section

This module provides high gain and excellent selectivity in combination with the front end. Fast-acting IC's suppress even severe AM interference or man-made static, providing impeccable reception. For optimum stereo reception and fidelity, a highly advanced circuit eliminates nuisance triggering of the mono/stereo mode caused by spurious signals. Stereo separation reaches the theoretical limits, with more than 40 db at 1 kHz. and better than 30 db at 15 kHz.

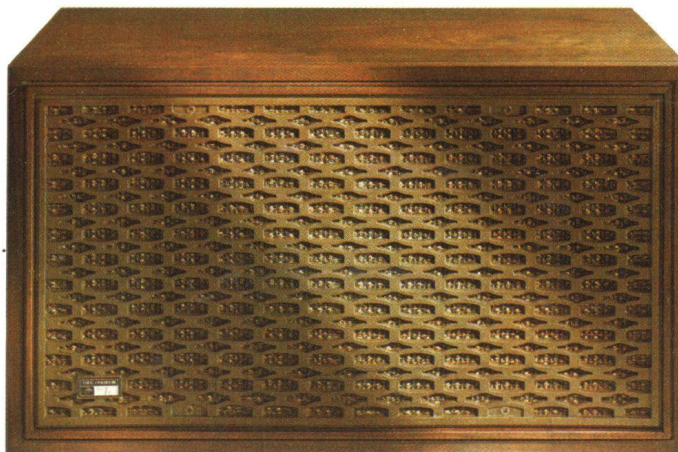
#### AUTOSCAN Electronic Tuning

Fisher's AUTOSCAN electronic tuning circuit (for which a patent application has been made) works in conjunction with two pushbuttons. One tunes from station to station; the other continually scans the dial of a meter calibrated in FM frequencies. The same operations can also be accomplished with a remote wire tuning control, designated RK-30 for the 500-TX and RK-40 for the 450-T receiver. Tuning by AUTOSCAN is far more accurate than manual tuning, even in conjunction with the most accurate tuning meter. AUTOSCAN is truly an invaluable convenience feature when scanning the entire FM band.



# Fisher

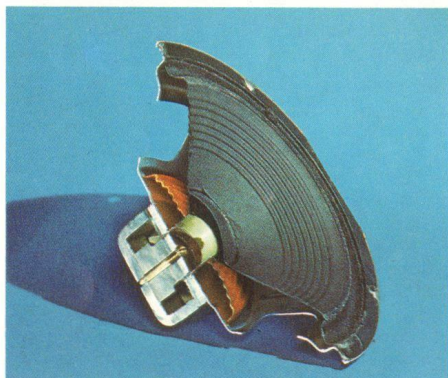
## HIGH FIDELITY SPEAKER SYSTEMS



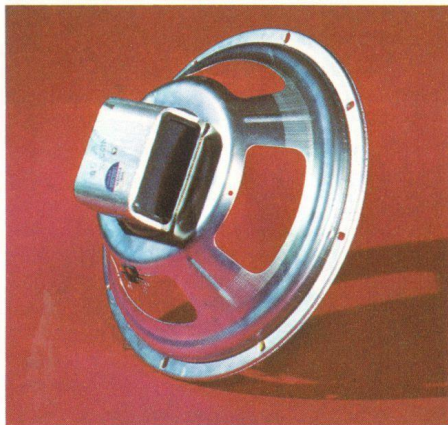
**ENGINEERED ENCLOSURES** Each speaker enclosure is engineered to enhance the full capabilities of the speaker system. The entire cabinet is constructed of heavily-braced sheets of non-resonant  $\frac{3}{4}$  inch compressed flake board to eliminate the resonances found in conventional plywood. The enclosure is tightly sealed and completely filled with ACOUSTIGLAS® to provide a high degree of damping. The fine contemporary furniture design, hand-rubbed finishes and deluxe fretwork grilles of the XP-66K and XP-7K will enhance the decor of any room.

### ACOUSTIC SUSPENSION WOOFER

All Fisher component speaker systems use an acoustic suspension woofer incorporating Fisher's exclusive "Free Piston" design. This "Free Piston" design, coupled with an extremely compliant butyl rubber or butyl impregnated surround and a specially treated cone, assures fundamental bass response down to 30 Hz. without doubling or distortion.

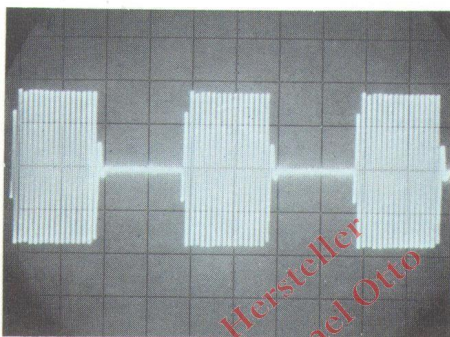


The free air resonance of these massive woofers ranges from 38 to an unbelievable 10 Hz! A unique voice coil design provides high power handling capacity.



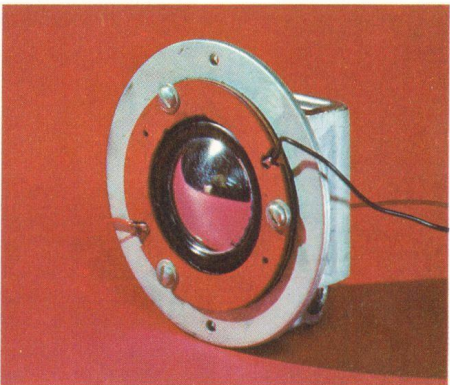
### MASSIVE MAGNET STRUCTURE

For precise control of the rigid, compliantly suspended moving cone, Fisher component speakers incorporate a massive magnet structure with a newly developed high flux-density *super Alnico* magnet which has almost twice the field strength of conventional ceramic magnets. The result is unsurpassed transient response and clean definition of even the most complex musical passages.



### PERFECT SOUND REPRODUCTION

The characteristic Fisher sound—extreme transparency, precise reproduction of transients and complete lack of coloration—is fully apparent in the faithful reproduction of tone burst wave forms. There is no 'artificial' sound since the broad frequency response, which extends from 30 Hz. to above 20,000 Hz., is achieved without resorting to response-affecting cabinet shapes. This is proven in the total absence or ringing and spurious responses which would otherwise appear in the tone bursts.

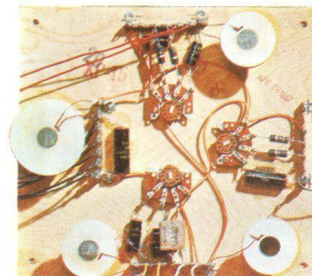


### EXTENDED BANDWIDTH TWEETERS

Specially designed, sealed back tweeters provide excellent frequency response to beyond the limits of human hearing. Their low voice coil mass assures uniform and natural sounding highs as well as unusual clarity and transparency in the reproduced sound. The unique soft-dome tweeters feature an impregnated cotton or formed mylar dome diaphragm for wide dispersion of the sound throughout the listening area. By using a soft dome with high internal damping rather than a rigid diaphragm, all high-frequency resonances and the resultant coloration of sound are eliminated.

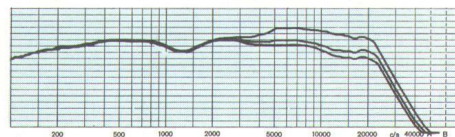
### ULTRA COMPLIANT MID-RANGE SPEAKERS

The mid-range speakers utilize a butyl impregnated half-roll surround to assure flawless reproduction of this all-important frequency spectrum. This advanced butyl-impregnated suspension system provides exceptional compliance of the cone to achieve extreme clarity and overall smoothness of reproduction. Each mid-range driver is sealed by its own airtight enclosure to avoid acoustical interference from the woofers in the same system.



### LOW-LOSS CROSSOVER NETWORKS

All Fisher speaker systems use only the highest quality capacitance and inductive elements to achieve lowest losses and smooth transition at each of the crossover points. The sharp-cutoff 6 to 12 db per octave networks prevent interactions at the crossover points. Exclusive bandpass filters rather than conventional roll-off networks assure that each speaker will handle only those frequencies it can reproduce with optimum response.



### PRECISION STEP CONTROLS

Individual step controls provide precise 3 to 4 db level changes in the mid-range and treble spectrum of the Fisher speaker systems. Their true attenuator design does not affect the critical speaker damping characteristics. The wide dynamic range of these controls allows perfect matching of the speakers to the acoustic environment in the user's listening area.

## The Fisher XP-44B

### LITTLE GIANT® Free-Piston Speaker System

The Fisher XP-44B speaker system provides a degree of bass response unexpected from so small an enclosure. The specially developed 6-inch woofer utilizes an advanced butyl rubber surround to provide bass response down to 39 Hz. This surround was developed in connection with the Fisher Engineering Laboratories and eliminates cone edge distortion, the major source of annoying cone breakup in compact bookshelf systems. A 3-inch extended bandwidth tweeter incorporates a low-mass cone for smooth high frequency response out to 19,000 Hz., with the low-loss crossover network separating the frequencies at 1,500 Hz.

## The Fisher XP-55B

### Compact Free-Piston Speaker System

The Fisher XP-55B compact bookshelf system incorporates an 8-inch woofer with a long-throw voice coil and an extremely compliant butyl-impregnated half-roll surround to provide bass down to 37 Hz. A 3-inch extended bandwidth cone tweeter utilizes a special fiber cone to eliminate annoying distortions caused by cone resonances. This advanced design driver provides wide angle dispersion and smooth high frequency reproduction up to 20,000 Hz. A unique low loss crossover network divides the audio spectrum at the crossover point of 1,500 Hz.



## The Fisher XP-56

### 2-Way Free-Piston Speaker System

The Fisher XP-56 is a compact bookshelf speaker system in a beautifully constructed, walnut-veneer cabinet. The XP-56 is fully capable of reproducing the entire audio spectrum, from 35 Hz to 20,000 Hz. The XP-56 has an 8-inch woofer with a large magnet structure, a long-throw voice coil and an extremely compliant butyl-impregnated half-roll surround to provide bass down to 35 Hz. The tweeter is 3 inches in diameter and the cone is made of a special fiber that eliminates distortions caused by cone resonances. Crossover takes place at 1,500 Hz, smoothly, unnoticeably.

This is another example of how modern technology and Fisher engineering has made possible extremely good sound reproduction from a speaker that measures only 11½-inches x 21 inches by 9 inches deep, and weighs only 20 pounds.

## The Fisher XP-65

### Free-Piston Three-Way Speaker System

The Fisher XP-65 reproduces the entire audio spectrum from an incredibly low 33 Hz to beyond the limits of human hearing (20,000 Hz). The XP-65 is capable of such fantastic bass because it has high-efficiency bass driver with a heavy magnet structure and a highly compliant half-roll surround. Crossover takes place at 600 Hz, at which point the sealed, separately enclosed 5-inch mid-range driver smoothly takes over. Crossover from mid-range to treble occurs at 3,000 Hz. The treble speaker is an extremely wide-dispersion cone-type tweeter that provides transparent and brilliant reproduction of the high end of the audio spectrum. The low-mass tweeter cone accounts for the especially good transient response the speaker delivers. A special fibrous damping material prevents annoying distortion caused by cone resonance.



## The Fisher XP-66B

### Free-Piston Three-Way Speaker System

The brand new XP-66B three-way bookshelf speaker system provides smooth, balanced sound at moderate cost. A 12-inch free piston woofer handles bass frequencies down to 32 Hz without doubling or distortion. The free air resonance of this woofer is an incredible 18 Hz. The mid-range frequencies are reproduced by a 5-inch driver which uses a new resonance-free cone material to assure faultless performance. A 3-inch extended bandwidth cone tweeter provides extremely wide dispersion and smooth upper treble response to 20,000 Hz. (Also available with fretwork grille as model XP-66K).

## The Fisher XP-60B

### Free-Piston Bookshelf Speaker System

The all new Fisher XP-60B features a unique 10-inch woofer with a double width, compliant half-roll butyl impregnated surround to provide a free air resonance of 20 Hz. When enclosed in its full-size, airtight enclosure, fundamental bass response extends down to 35 Hz, without doubling or distortion. A 3-inch extended bandwidth cone tweeter is designed with a low mass and high internal damping for extremely wide dispersion and astonishing purity of tone out to 20,000 Hz. This specially designed tweeter has the remarkable ability to sustain ultra high frequencies without coloration or break-up.

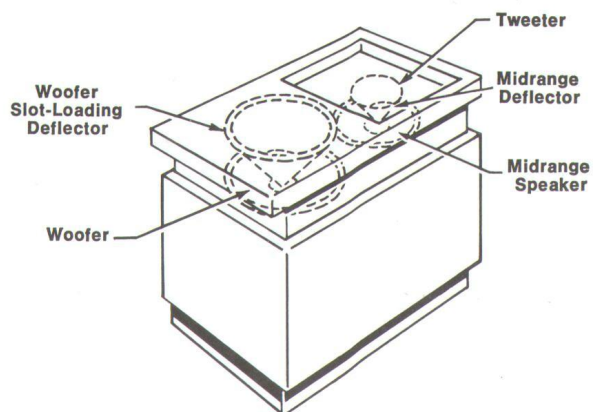
At modest cost, the Fisher XP-66B and XP-60B are truly remarkable speaker systems, offering life-like reproduction of the most complex musical passages.



## The Fisher WS-70 and WS-80

### Omnidirectional Speaker Systems

At last, Fisher has solved the speaker-placement problem. By creating a speaker that can be placed anywhere in a room, and still give maximum dispersion: the WS-70 and WS-80. "WS" stands for Wide Surround®, and really tells the whole story. Each speaker disperses sound in a 360-degree circle, so that you get fantastic stereo separation. The omnidirectional concept has also contributed to the totally new look of these speakers. The design is modern, elegant, functional. The WS-80 is the world's first 3-way omnidirectional speaker, with 8-inch woofer, 5¾-inch mid-range, and 3-inch tweeter. It reproduces the audio spectrum from 35 to 20,000 Hz, which is everything you can hear. The WS-70 is a 2-way system with a 6-inch woofer and a 3-inch tweeter. Its frequency response from 39 to 19,000 Hz.



Sectional View of a Fisher WS-80  
Omnidirectional 3-Way Speaker System



## The Fisher XP-7B

### Free-Piston Four-Way Speaker Systems

The new Fisher XP-7B speaker system incorporates the latest advances in acoustical engineering in a four-way, five-speaker system. Each speaker in this system provides optimum response within its assigned frequency range for full-bodied sound reproduction. The 12-inch woofer utilizes a specially designed butyl rubber surround to provide bass response from 30 to 350 Hz. The 5¾-inch lower mid-range driver reproduces frequencies from 350 to 800 Hz while a newly developed 5¾-inch upper mid-range driver handles frequencies from 800 to 3500 Hz with the utmost clarity and definition. Two 3-inch wide-dispersion tweeters reproduce the frequencies from 3500 Hz up to an amazing 20,000 Hz. A precision three-step treble balance control allows for matching the speaker to any listening environment. (This speaker is also available with fretwork grille as model XP-7K).

## The Fisher XP-9C

### Free-Piston Four-Way Speaker System

The brand new Fisher XP-9C is the result of a major technological breakthrough in speaker design by the Fisher Engineering Laboratories. This is the first bookshelf system to provide proper loading for a 15-inch ultra-compliant woofer in so compact an enclosure. This woofer utilizes a 2½-inch voice coil and a massive 12-pound magnet structure. The free air resonance of this woofer is an unbelievable 10 Hz. Two matched 5-inch mid-range drivers provide exceptional response, completely free of distortion, from 500 to 1200 Hz. A hemispherical dome tweeter covers the frequencies from 1200 Hz to 5000 Hz. A dome super-tweeter reproduces the frequencies above 5000 Hz to the limits of audibility with outstanding clarity and presence. A three-step treble balance control allows for exact adjustment of treble speaker response.



## The Fisher XP-16

### The World's Most Sophisticated Speaker in the World's Most Beautiful Cabinet

We asked our engineers to design the world's most advanced speaker system. We asked the master craftsmen who design the Fisher radio phonographs to come up with the world's most beautiful speaker cabinets.

And we took these sophisticated speakers and matched them with these beautiful cabinets. The result: the new *four-way* Fisher XP-16 console-model speakers. The ultimate speaker in the ultimate cabinet. Actually, there are three cabinets from which to choose. One is in selected walnut veneers, in a contemporary style that goes with any room decor. The second is an authentic Mediterranean design, in hand-rubbed pecan woods. The third is a country French furniture style in beautiful cherry-finished hardwoods and solids.

Inside those elegant cabinets are the following state-of-the-art components: Each contains not one, but two matched 12-inch woofers with massive 5-pound magnet structures. An 8-inch mid-range speaker with an impressive 3-pound magnet structure. A 1½-inch mylar dome tweeter. And a ¾-inch horn super tweeter. Cross-overs take place at 250, 2,500, and 7,000 Hz. And the overall frequency response is from an incredibly low 28 Hz to an incredibly high 24,000 Hz. Each speaker will handle up to 60 watts rms (120 watts music power).

Who says a good speaker can't be beautiful?



## The Fisher XP-18

### Consolette Four-Way Speaker System

The Fisher XP-18 is the finest speaker system ever designed for home use. A massive 18-inch woofer is one of the largest bass speakers used in a high fidelity component speaker system. The high flux density 12 $\frac{3}{4}$ -pound magnet structure provides critical magnetic damping that produces an amazingly solid non-resonant bass with fundamental response down to 30 Hz. An 8-inch lower mid-range unit with a high compliance butyl-impregnated surround assures superb reproduction of the frequencies between 150 and 1500 Hz. A 5 $\frac{3}{4}$ -inch upper mid-range speaker reproduces the frequencies from 1500 to 3000 Hz. with outstanding clarity and presence. The upper limits of the audible spectrum are handled by two matched 2-inch dome tweeters, each with the specially designed Fisher metallized mylar dome. These dome tweeters provide a full 150 degrees of sound distribution. Three precision step controls allow for adjustment of the mid-range and treble speakers to the acoustic conditions of the room.



## The Fisher HP-100

### Stereo Headphones

The new Fisher HP-100 stereo headphones are the result of a major technological breakthrough. The HP-100 uses high density foam cushions to completely cover the driver elements and special design acoustic delay slots rather than the conventional airtight seal to maintain proper bass loading. As a result, the phones rest lightly against the ear and eliminate the sensation of being "locked-in" with all its attendant discomforts. The unique design of the driver element, which is based on studio-quality dynamic microphone technology, provides uniform response from 18 to 22,000 Hz. **Sensitivity:** 2 Milliwatts for 100 dB  $\pm$  5 dB sound level. **Maximum Permissible Power Input:** 0.7 watt. **Nominal Impedance:** 50 Ohms. **Cable Length:** 8 feet. **Weight:** 10 Ounces.

## The Fisher HP-60

### Stereo Headphones

Easily the finest headphone in its class, the Fisher HP-60 features a broadband listening range from 30 to 18,000 Hz. with an unmeasurable distortion level below 0.1%. These highly sensitive headphones require only 1 milliwatt to reproduce a rich, full-bodied sound of 100db intensity. Individual LEVEL controls on each earcup provide a convenient means of correcting for imbalances in the musical content and adjusting the sound volume without having to leave your listening position. Extra thick foam-cushioned cups and an easily adjustable vinyl-covered headphone assure comfortable fit. **Sensitivity:** 1 Milliwatt for 100 db  $\pm$  5 dB sound level. **Maximum Permissible Power Input:** 0.5 watt. **Nominal Impedance:** 8 Ohms. **Cable Length:** 8 feet. **Weight:** 15 Ounces.



# Technical Specifications of Fisher Speaker Systems

	The Fisher XP-44B	The Fisher XP-55B	The Fisher XP-56	The Fisher XP-60B	The Fisher XP-65	The Fisher XP-66B	The Fisher XP-7B	The Fisher XP-9C	The Fisher XP-16	The Fisher XP-18	The Fisher WS-70	The Fisher WS-80
Frequency Response	39-19,000 Hz	37-20,000 Hz	35-20,000 Hz	35-20,000 Hz	33-20,000 Hz	32-20,000 Hz	30-20,000 Hz	28-22,000 Hz	28-24,000 Hz	30-22,000 Hz	39-19,000 Hz	35-20,000 Hz
Maximum Amplifier Music Power	20 Watts	30 Watts	30 Watts	30 Watts	30 Watts	40 Watts	50 Watts	60 Watts	60 Watts	60 Watts	20 Watts	30 Watts
Bass Speaker Diameter	6 inches	8 inches	8 inches	8 inches	10 inches	12 inches	12 inches	15 inches	(2) 12 inches	18 inches	6 inches	8 inches
Voice Coil Diameter	1 inch	1 inch	1 inch	1 inch	1 inch	1 inch	2 inches	2½ inches	2 inches	2 inches	1 inch	1 inch
Free Air Resonance	38 Hz	38 Hz	38 Hz	20 Hz	20 Hz	18 Hz	15 Hz	10 Hz	15 Hz	14 Hz	38 Hz	38 Hz
Magnet Structure	2 pounds	2 pounds	2 pounds	2 pounds	2 pounds	2 pounds	6 pounds	12 pounds	5 pounds	12¾ pounds	2 pounds	2 pounds
Mid-Range Speaker Diameter	—	—	—	—	5 inches	5 inches	5¾ inches	(two) 5 inches	8 inches	8 inches	—	5¾ inches
Voice Coil Diameter	—	—	—	—	¾ inch	¾ inch	1 inch	¾ inch	1½ inches	1½ inches	—	1 inch
Magnet Structure	—	—	—	—	½ pound	½ pound	2 pounds	½ pound	3 pounds	4½ pounds	—	2 pounds
Upper Mid-Range Speaker Diameter	—	—	—	—	—	—	5¾ inches	—	—	5¾ inches	—	—
Voice Coil Diameter	—	—	—	—	—	—	1 inch	—	—	1 inch	—	—
Treble Speaker Diameter	3 inches	3 inches	3 inches	3 inches	3 inches	3 inches	(two) 3 inches	1½ inches (dome)	1½ inches (dome)	2 inches (two domes)	3 inches	3 inches
Voice Coil Diameter	9/16 inch	9/16 inch	9/16 inch	9/16 inch	9/16 inch	9/16 inch	9/16 inch	1½ inches	—	1½ inches	9/16 inch	9/16 inch
Super Tweeter Diameter	—	—	—	—	—	—	—	1½ inches (dome)	¾ inch (horn)	—	—	—
Voice Coil Diameter	—	—	—	—	—	—	—	1½ inches	—	—	—	—
Sound Dispersion	90 degrees	90 degrees	90 degrees	90 degrees	90 degrees	90 degrees	90 degrees	120 degrees	150 degrees	150 degrees	omni-directional	omni-directional
Crossover Frequencies	1500 Hz	1500 Hz	1500 Hz	1000 Hz	600, 3000 Hz	500, 1000 Hz	350, 800, 3500 Hz	500, 1200, 5000 Hz	250, 2500, 7000 Hz	150, 1500, 3000 Hz	1500 Hz	400, 1500 Hz
Impedance	8 ohms	8 ohms	8 ohms	8 ohms	8 ohms	8 ohms	8 ohms	8 ohms	8 ohms	8 ohms	8 ohms	8 ohms
Dimensions	8¼" x 15¼" x 6¼" deep	10" x 20" x 7½" deep	11½" x 21" x 9" deep	13" x 23" x 10" deep	13" x 23" x 10" deep	13¾" x 24½" x 12" deep	14" x 24½" x 11½" deep	16¼" x 27½" x 13" deep	27½" x 31½" x 19¼" deep	30½" x 29½" x 16½" deep	15½" x 16½" x 9½" deep	18" x 18¾" x 11" deep
Weight	15 pounds	18 pounds	20 pounds	25 pounds	27 pounds	33 pounds	40 pounds	55 pounds	105 pounds	105 pounds	16 pounds	24 pounds
Cabinet	Walnut (Vinyl)	Walnut (Vinyl)	Walnut	Walnut	Walnut	Walnut	Walnut	Walnut	W, Med, CF	Walnut	Walnut (Vinyl)	Walnut

## Technical Experts Comment on Fisher Superiority!

### AUDIO

"The Fisher 500-TX is a top-grade receiver whose performance might easily challenge that of even some of the better separate tuners and amplifiers in Fisher's own line or in competing ones."

"All the wonderful tuning convenience features cannot obscure the fact that it's a powerhouse of an amplifier capable of excellent transient response and truly big, clean sound."

"In the case of the AutoScan circuit, the unit is designed to stop at the precise center-of-channel point. Therefore, the meter can be used to indicate frequency rather than signal strength. Clever dual illumination (alternatively) of the upper and lower halves of the meter scale clearly tells the user which function the meter is performing at any instant. The remarkable thing about this system is that there are no moving parts! Nothing moves except the pointer on a dual-purpose tuning meter."

"Station lock-in is flawless. That is, when the AutoScan stops on a station, it stops on the exact center of that channel. The photograph shows the detector "S" curve obtained using the AutoScan and letting it "home in" on our signal. Note that it locked in on the precise center of the curve. This test, by the way, is far more severe than would be encountered in normal station selection. AutoScan is probably more accurate in tuning to center of desired channel than can be accomplished manually."

### HIGH FIDELITY

"The 500-TX is, at this writing, the top-of-the-line receiver from Fisher; it certainly strikes us as a top unit for any line."

"Offers outstandingly high performance as both tuner and amplifier plus the unusual option of tuning in broadcasts in three possible ways; by ordinary manual tuning, by pushbuttons (called Tune-O-Matic), and by electronic scanning of the FM band (called AutoScan). You can embellish this novel tuning method with yet another convenience—that of remote control."

"If the features and styling of the 500-TX are unusually luxurious, they are matched by the actual electronic performance of the set as both a tuner and an amplifier."

"Distortion generally is way down, and signal-to-noise ratio shows an excellent 68 dB. Capture ratio is very high at 1.3 dB."

"In our cable FM test, the set logged a very high total of 57 stations, of which 40 were considered suitable for critical listening or off-the-air taping."

### STEREO REVIEW

"The Fisher XP-7 speaker system has a response that is notable for its extreme smoothness over the entire range. From 1,000 to 15,000 cps, it is flat within  $\pm 2.5$  dB, which is about as smooth as we have ever measured in a "live" room. The Fisher XP-7 sounds as smooth as its curves look. All in all, the Fisher XP-7 is an effortless, fine-sounding speaker, with a natural, balanced musical quality."

### HIGH FIDELITY NEWS

"To sum up, the Fisher 500-TX is, unequivocally, the best equipment of its kind we have had the good fortune to evaluate. It is tastefully styled, obviously easy to service (although so far as we can see unlikely ever to be in need of it and the performance figures speak for themselves. It is in every way a credit to its designers and manufacturers... nothing that could contribute to performance has been omitted."





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2300 Kiel, den 14. Jan. 1970  
KP-Harsch/Pl

VERTRAULICH!

Nettopreise ohne MWST - nur für den Fachhandel

THE FISHER-Programm

<u>Receiver</u>	<u>A</u>	<u>Festpreis</u>
175-T	DM	DM 1.298,--
250-T	DM	DM 1.990,--
400-T	DM	DM 2.320,--
500-TX	DM	DM 2.995,--
<u>Verstärker</u>		
X 100 A	DM	
TX 50	DM	
TX 1000	DM	
<u>Lautsprecher</u>		
XP 55 b	DM	
XP 66	DM	
XP 7	DM	
XP 9 b	DM	
XP 18	DM	
<u>Gehäuse</u>		
50 UW	DM	
60/80 UW	DM	
90 UW	DM	
<u>Fernbedienung</u>		
RK-30	DM	
<u>Hallgerät</u>		
K-10	DM	

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HiFi-Classic.de

=====  
Auslauftyp: Receiver 160-T

Sonderpreis: DM

Hark