

HEATHKIT®

world's largest manufacturer of electronic kits

MARCH 1965

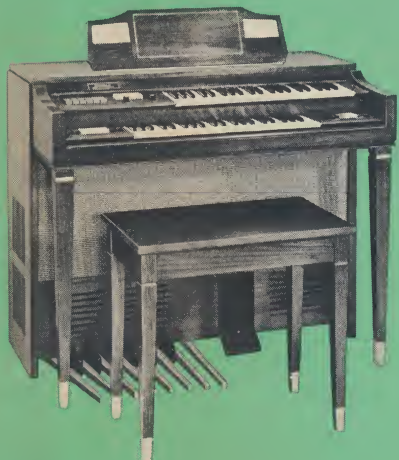
Amateur photography can be "professional". Get perfect prints everytime with the Heathkit Fotoval pg. 17.



The fun of a home workshop is yours with Heathkit Test Instruments, pp. 41-45



Appreciation of good music begins with good equipment—choose Heathkit Stereo/Hi-fi pp. 21-34



This is the year you create your "own live music" with a Heathkit organ. See pp. 3-4



Make your business & personal life more efficient & convenient with Heathkit Citizen's Band. See pp. 14-16



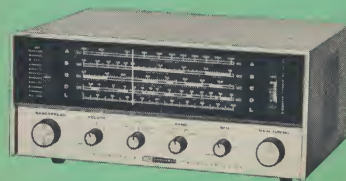
This is the year for you to learn more about the exciting world of electronics. See pp. 18-20.



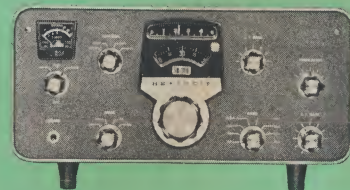
Take to the water with the fun & safety of Heath marine electronics. See pp. 10-13



The family will enjoy watching their favorite TV shows in the best of living color! See pg. 5



Tune in the world with Heathkit Shortwave radio! See pp. 6-7



Talk to the world with famous Heathkit Amateur Gear. See pp. 35-40



Add auto repair to your skills. See Heathkit Car Accessories pp. 8 & 9

This Is The Year For You To Begin A New Hobby—Choose from Heath's 11 product lines—over 250 different, top-quality kits to add more fun at big savings!

Heath Company, Benton Harbor, Michigan 49023 • Plant Location: St. Joseph, Michigan • Copyright 1965, Heath Company

CATALOG SUPPLEMENT 800/53



HEATHKIT®

... OFF TO MORE SHOWS WE GO!
During the months of March and April, we will exhibit products at the following shows:

March 1-5

Pittsburgh Conference on Analytical Chemistry & Applied Spectroscopy at the Penn Sheraton Hotel, Pittsburgh, Pa. — educational & test instrument lines.

March 22-25

Institute Of Electronics & Electrical Engineers Show at the Coliseum, New York, N.Y. — all Heathkit products.

March 27-31

National Science Teacher's Association Convention at the City Auditorium, Denver, Colo. — educational & test equipment.

April 6-8

Midwest Chemical Exposition at Cobo Hall, Detroit, Mich. — educational & test equipment.

April 9-10

Dayton Ham-vention at Wampler's Arena, Dayton, Ohio — all amateur radio gear.

April 10-14

Federation of American Societies For Experimental Biology Meeting at Convention Hall, Atlantic City, N.J. — educational & test equipment.

April 24-25

New England A.R.R.L. Convention at the New Ocean House, Swampscott, Mass. — amateur radio gear.

Factory personnel will be on hand to answer your questions. If you plan to attend any of these shows, be sure to drop by and see us.

ARE YOU MOVING?

Then be sure to drop us a line and tell us your new address. All Heathkit catalogs and flyers are mailed third class, and therefore

INDEX

GENERAL PRODUCTS	3 to 8, 17, 19
Electronic Organs.....	3, 4
B & W TV.....	4
Color TV.....	5
TV Antennas & accessories.....	5
Shortwave Radios.....	6
AM, FM, FM Stereo Radios.....	6, 7
Motor Speed Control.....	8
Soldering Iron.....	8
Fotoval Computer System.....	17
Intercoms.....	17
Hobby Tools & Accessories.....	19
AUTOMOTIVE	8, 9
Garage Door Opener.....	8
Battery Chargers.....	8
Transistor Ignition System.....	9
Electronic Ignition System.....	9
New! Torque Fire Electronic Ignition System.....	9
Ignition Analyzer.....	9
Miles-Per-Gallon Meter.....	9
Tester Set.....	9
MARINE	10 to 13
Radiotelephones.....	10, 11
Antennas, Radiophone.....	10, 11
Deck Speaker.....	10
Foghorn/Hailer.....	11
Kenlog Sailboat Speedometer.....	11
Depth Sounder.....	12
Radio Direction Finder.....	12
Fuel Vapor Detector.....	13
Power Converter.....	13
Tachometer.....	13
Rudder Position Indicator.....	13
Electrical Ground System.....	13
CITIZEN'S BAND RADIO	14 to 16
CB Transceivers.....	14, 15
Antennas.....	16
Walkie-Talkies.....	16
Complete Systems.....	15

not forwarded by the post office. To insure that you receive all future Heathkit literature, let us know when and where you move.

SPACE AGE HOBBY

A few days ago we received a letter from a Navy Astronautics Group mentioning that the Heathkit AA-21 transistor amplifier is standard equipment in their operational tracking facilities. We've always said that building a Heathkit is truly a "space-age" hobby!

LAST CALL!

Attn: GD-232 Organ Owners! Here's your last chance to add the banjo, mandolin, & balalaika effects of Variable Repeat Percussion to your organ. Quick and simple to install.

Order Kit GDA-232-4, 5 lbs...\$9.95

Attn: GR-53 Color TV Owners! If you purchased your set without UHF, here's your last opportunity to add the Heathkit GRA-53-2 UHF tuner. Shipping weight is 3 lbs., and the price \$20.00

Attn: Hi-Fi Fans! This is your last chance to add the AA-11 Stereo Preamplifier to your system — see pg. 27! Also this is the last time unfinished bases for record changers & turntables will be offered — see ppg. 28 & 29!

A FEW HINTS ON WARRANTY REPLACEMENTS

In order to give you faster service on warranty replacement parts, a special parts order form is now furnished with your kit. In addition, we include a metal tag, marked with a series no., to be mounted permanently on the chassis. Please use the new parts order form when requesting warranty parts, and refer to both model and series numbers. Also include all invoices with your request to help avoid delay.

EDUCATIONAL	18, 20, 46, 47
IMPScope.....	20
Learn-By-Doing Kits.....	18
Analog Computer.....	20
Classroom Servo-Meter.....	20
Malmstadt-Enke Series Instruments.....	47
STEREO/HI FIDELITY	21 to 34
Accessories.....	26, 29, 30, 33, 34
Stereo Receiver.....	21
Amplifiers.....	22 to 27
Cartridges.....	29
Furniture.....	34
Headphones.....	32
Record Changers & Turntables.....	28, 29
Speakers.....	31, 32, 33
Tape Recorders.....	30
Tuners.....	22 to 26
AMATEUR RADIO	35 to 40
Accessories.....	35, 36, 38, 39, 40
Receivers.....	37, 38
Linear Amplifiers.....	38
Transceivers.....	35, 36
Transmitters.....	37, 38
Headset.....	36
Antennas.....	36
Power Supplies.....	35, 36
Spectrum Monitor.....	39
Signal Monitor Scope.....	39
TEST INSTRUMENTS	41 to 46
Meters.....	43, 44
Oscilloscopes.....	42
Generators.....	41, 44
Probe Kits.....	42, 43
Tube Testers.....	44
Tester/Checker.....	44
Power Supplies.....	45
Servo-Chart Recorder.....	46
Voltage Reference Source.....	46
Capacitor Checker.....	45
Visual-Aural Signal Tracer.....	45

LETTER FROM THE PRESIDENT



Dear Friends:
Many thanks to all of you who wrote in response to my January letter. We are now more convinced than ever that there is no substitute for direct communication in a business like ours. For instance, in January I expressed confidence in our ability to handle your service problems. This confidence was based on an enlarged service organization combined with steadily declining total complaints. Encouraging as these facts are, they do not tell the whole story—but your letters do.

Much to our surprise, almost half of the mail addressed to me was in appreciation of our efforts. Another quarter provided us with product suggestions, while the balance served to remind us that customers are not statistics. By its very nature, each customer problem is unique, specific, immediate—even though the underlying cause for the complaint may relate to broad policy matters.

As long as we have a single dissatisfied customer who wants to work out a problem with us, we have not attained our goal. Perhaps we never will, but please continue to write us. The more we know of how you feel about Heath, both good and bad, the better we can serve you.

Sincerely,

C. M. Kirkland
C. M. Kirkland President

HEATHKIT ELECTRONIC CENTERS

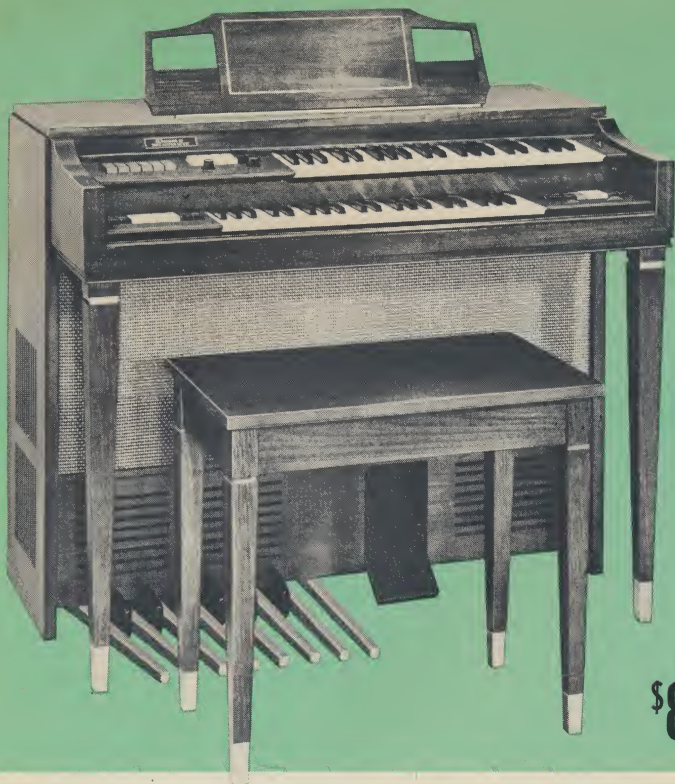
Chicago, Illinois 3462-66 W. Devon Ave. Phone: 583-3920	Los Angeles, California 2309 S. Flower Street Phone: RI-9-0261
Denver, Colorado 2901 Sheridan Blvd. Phone: 238-2348	San Diego, California 1300 Market Street Phone: 234-0293

HEATHKIT AUTHORIZED SERVICE CENTERS

United Sound & Television Co. (two locations) 5036 Venice Blvd. Los Angeles, California & 2010 W. Lincoln Ave. Anaheim, California	Southern Authorized Factory Service 62 N. 27th Ave. Miami, Florida Expert Electronics 7201 S. Western Ave. Chicago, Illinois
Radio Electronics 374 Brannan Street San Francisco, California	Park Armature Company 1218-30 Columbus Ave. Boston, Mass.
Photo Electronics 1300 Market Street San Diego, Calif. & 1027 University Avenue San Diego, California	Electronic Servicerent of N.Y. 65-37 Queens Blvd. Woodside, New York & Scientific Radio-TV/Hi-Fi (two locations) 4122 E. Madison St. Seattle, Washington & 5418 1/2 Sand Point Way NE Seattle, Washington
Mystic Cove Marine Radio 13505 Ball Way Marina Del Rey Venice, California	

Heath Company, Benton Harbor, Michigan—Plant Location: St. Joseph, Michigan

Affiliated Companies: Daystrom Ltd., Cooksville (Toronto) Canada • Daystrom Ltd., Gloucester, England • Heathkit Gerate GmbH, Sprendlingen Bei Frankfurt/Main, Germany
• Daystrom S.A., Geneva, Switzerland • Daystrom S.A., Zurich, Switzerland • Daystrom Overseas GmbH., Vienna, Austria



GD-983
\$849⁰⁰

World's Best Buy In Electronic Organs . . . Heathkit®/Thomas "Coronado" Transistor Organ!

- 17 beautiful, rich organ voices • Two full-size 44-note keyboards
- A built-in 2-speed Leslie plus 2-unit Main speaker system • 28 notes of melodious chimes . . . hundreds of chime variations • 13-note heel & toe pedalboard, range C thru C • Reverb for concert hall realism • Sustain on keyboards & pedals for a variety of special effects • Vibrato for warmth & beauty • New Stereo Chorus Control to create exciting "stereo" effects • Color-tone Attack & Repeat Percussion to produce additional voice effects • Treble Accent for added brilliance • Manual Balance to adjust relative volume of the two keyboards • Pedal Volume to adjust bass pedal loudness • Expression pedal to adjust volume to any degree • Headset outlet to play without disturbing others • A full 5-year warranty on transistor tone generator boards . . . the heart of the organ • Luxurious full-bodied walnut finished cabinet . . . hand-crafted, hand-rubbed, completely assembled

Full Features . . . No Extras To Buy . . .

Easy To Build & Play . . . Saves Hundreds Of Dollars!

Every Organ Feature You've Ever Dreamed Of! Just look what you create on this superb instrument!

- 1) 17 True Organ Voices . . . Diapason 16' & 8', Bass Clarinet 16', English Horn 8', Violin 8', Oboe 8', Bourdon 16', Flute 8', Flute D'Amour 4', Quint 5½', Saxophone 8', French Horn 8', Cello 8' and Chimes . . . all at the simple touch of a tab!
- 2) 2 Separate Speaker Systems . . . a built-in 2-speed rotating Leslie plus two 12" Main speakers. With the Leslie system you create the beauty of a full "theatre" organ, or the rich randomness of sound adaptable for religious music. And by playing both systems at once, you produce an exciting "stereo" effect.
- 3) 28 Notes Of Chimes . . . worth \$500 to \$2000 as an extra on other organs. Create hundreds of chime variations.
- 4) Color-Tone Attack, Repeat & Sustain Percussion . . . the only organ to give you all three to create an infinite number of beautiful musical effects. You can vary the rate of repeat percussion & select short or medium sustain.
- 5) Two Full 44-Note Keyboards . . . conform to standard organ specifications. The tilted upper manual overhangs to bridge the two manuals easily.
- 6) Manual Balance . . . to adjust relative volume & accentuate either manual.
- 7) 13-Note Heel & Toe Pedalboard . . . range C thru C.
- 8) Pedal Sustain . . . for special rhythm effects such as a string bass.
- 9) Pedal Volume Control . . . continuously variable . . . allows regulating bass pedal volume to suit the mood of the music.
- 10) Vibrato Switch . . . adds warmth & beauty.
- 11) Expression Pedal . . . to adjust volume from softest whisper to full majesty.
- 12) Reverb . . . to add concert-hall realism.

13) Treble Accent Tab . . . adds new clarity & brightness to solo work.

14) Headphone Outlet . . . play any time without disturbing others.

15) All-Transistor 75-Watt EIA Peak Power Amplifier . . . assures wide dynamic range, clear clean treble and full organ bass.

16) Pre-Tuned Tone Generator . . . to tune the organ, no special musical "ear" needed.

17) Transistor Tone Generator Boards . . . warranted for 5 years.

18) Luxurious Hardwood Cabinet & Bench . . . handcrafted & handrubbed with full-bodied walnut finish.

19) Compact Size . . . only 36" H. x 44" W. x 24" D.

No Extras, Nothing More To Buy! Everything you need for complete playing versatility is included. There are *no* speakers, amplifiers or other "hidden necessities" to add as with other organ kits. It's *all* there at *one* price . . . even the bench!

Saves Hundreds Of Dollars! You can pay as much as \$1000 more for other makes, and still not enjoy as many features as the GD-983. You actually save up to \$400 over the factory assembled version.

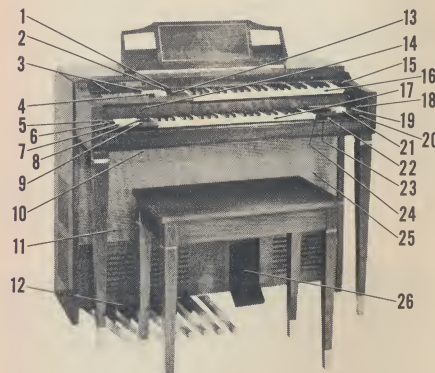
Truly A Professional Organist's Dream With A Beginner's Simplicity! And yet, you don't have to be an electronics wizard to build it, nor a professional organist to play it. Famous "Heath-Engi-nuity" reduces assembly to simple steps that require *no* special talents, tools or knowledge. And the famous Thomas "Musical Fun Book" is included to start you playing many favorites fast.

Play As You Pay! Only \$125 down, as little as \$27 a month. Order yours now!

Kit GD-983, Organ & matching walnut bench, 242 lbs. . . \$125 dn., as low as \$27 mo. \$849.00 Export model available for 115/230 VAC, 50-60 cps; write for prices.

Typical Reaction To The GD-983!
"I would like to say how pleased my family and I are with the GD-983. It performs perfectly."

Truman Krumholz
Springfield, Mo.



1. Sustain Tab 2. Reverb 3. Swell Keyboard Voices
4. On-Off And Pedal Volume 5. Pedal Tab 6. Pedal Sustain Tab 7. Great Keyboard Voices 8. Vibrato Tab 9. Treble Accent Tab 10. Headphone Jack
11. Leslie Speaker 12. Pedalboard 13. Manual Balance 14. Pilot Light 15. Chimes 16. Swell Keyboard 17. Great Keyboard 18. Leslie Rotor Switch
19. Leslie-Main Speaker Tab 20. Stereo Chorus 21. Color-Tone Percussion Tabs 22. Percussion Repeat Rate 23. Percussion Delay Tabs 24. Repeat Percussion Tab 25. Main Speakers 26. Expression Pedal

Self-Teacher Recorded Lessons . . . Save \$30!

Can't play a note? Learn quickly & easily at your leisure with this complete 48-lesson course on four 12" LP records. Includes music book with many old-time favorites. Provides firm basis of musical knowledge. Manufacturer's list price \$50.
GDA-232-2, recorded lessons, 5 lbs. \$19.95

5-Year Warranty!

The transistorized plug-in tone generator boards, the heart of the organ, are warranted for five years. You buy with confidence when you buy a Heathkit version of the Thomas Organ. Replacement upon prepaid return of undamaged board to the Heath Company.

Hear It Perform Yourself!

Send for your 7", 33½ rpm Deluxe Organ Demonstration Record. Prove to yourself that the GD-983 has everything you've dreamed of in an organ. Use order blank in center of flyer & enclose 50c to cover handling & postage.

GDA-983-2, demonstration record 50c

This Is The Year For You To Begin A New Hobby — Choose from Heath's 11 product lines

**"It Plays Beautifully
And My Family Is Enjoying
It Immeasurably"*. . .
Heathkit/Thomas All-
Transistor "Largo"
Organ!**

- Ideal for home, apartment, chapel or school
- Ten true organ voices • Variable repeat percussion . . . produces banjo, mandolin, balalaika effects • 13-note heel & toe bass pedals
- 2 overhanging 37-note keyboards • All-transistor 75-watt EIA peak music power amplifier & speaker • Transistorized plug-in tone generators . . . warranted for 5 years • Hand-crafted walnut cabinet

*The Above Quote Came From Mr. George J. Agamemnon of Burlington, N.C. It is typical of the many enthusiastic comments we receive from GD-232B owners. Mr. Agamemnon also said: "I am most pleased with the final product. It is a credit to your engineering staff. In addition the assembly instructions are very clear and easy to follow, which makes the assembly task enjoyable and simple."

Think Of The Fun Your Entire Family will have assembling and playing this beautiful instrument. Requires no special skills or knowledge to build . . . takes around 50 hours. You even tune the organ with the pre-tuned tone generator . . . no "musical" ear needed! And the factory-assembled walnut cabinet is ready for installation of the sub-assemblies as you complete them . . . measures a compact 41 $\frac{1}{4}$ " H x 39 $\frac{3}{4}$ " W x 21 $\frac{1}{2}$ " D. You save up to 50% over comparable organs!



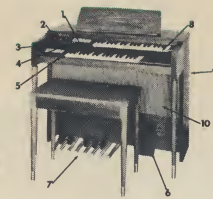
GD-232B
\$349⁹⁵

(less bench)

Develops A Knowledge & Appreciation Of Music! Ideal for teaching both youngsters & grown-ups, yet hosts an array of professional features to please the advanced player. Great for livening up parties . . . teens love the rhythm & bounce of its many musical effects. For a wholesome family project, choose the GD-232B now!

Kit GD-232B, Organ, 158 lbs. . . \$35 dn., as low as \$23 mo. \$349.95
GDA-232-1, matching walnut bench, 19 lbs., \$3 dn., \$5 mo. \$24.95
Export model available for 115/230 VAC, 50-60 cps; write for prices.

Attention Heathkit Organ Owners . . . Last chance to add Variable Repeat Percussion to your Heathkit Organ with this easy-to-install kit. GDA-232-4, 5 lbs. Only \$9.95



Compare These Professional Features!

1. 10 True organ voices; trombone, reed, flute, oboe, cornet, violin, saxophone, horn, viola, diapason
2. Variable Repeat Percussion; produces banjo, marimba, mandolin, and balalaika effects
3. Variable Bass Pedal Volume Control
4. Manual Balance Control; adjusts volume of keyboards in any degree for solo work
5. Variable Vibrato
6. Standard Expression Pedal; adjusts volume from soft to full
7. 13-note Heel & Toe Bass Pedals
8. Overhanging Keyboards; each with 37 notes, range C thru C9
9. Beautiful Walnut Cabinet; modern styling, hand-rubbed, hand-crafted
10. All-Transistor Amplifier & Speaker • Transistorized for longer life, better tone, trouble-free operation.

Complete Self-Teacher Recorded Lessons . . . Only \$19.95!

Can't play a note? Learn quickly & easily at your leisure with this complete 48 lesson course on four 12" LP records. Includes music book with many old-time favorites. Provides a firm basis of musical knowledge. Save \$30.05!

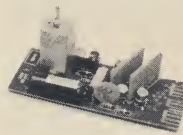
GDA-232-2, lessons, 5 lbs., Mfrs. list \$50. \$19.95

Like To Hear It Perform?

Then send 50c to cover postage & handling and ask for the 7"—33 $\frac{1}{3}$ rpm demo record no. GDA-232-5. You'll convince yourself!

5-Year Warranty

The transistorized plug-in tone generator boards, the heart of the organ, are warranted for five years. You buy with confidence when you buy a Heathkit version of the Thomas Organ. Replacement upon prepaid return of undamaged board to the Heath Company.



**Heathkit All-Channel 23" Hi-Fi Black & White TV...
Installs In Wall Or Cabinet...Assembles In Just 12 Hours!**



GR-22A
\$199⁰⁰

(less cabinet & mask)

- All-channel (2-83) reception • 16 tube, 5 diode circuit gives 30 tube performance • High definition 23" tube with anti-glare bonded safety glass • Spark-gap socket for picture tube protection • Deluxe Nuvistor VHF tuner • Transistorized UHF tuner • 20,000 volt picture power • Transformer power supply • Line Circuit Breaker, filament & B+ protection • Line thermistor for long tube life • Gated Automatic Gain Control & Noise Canceller for peak reception • Wide-band circuitry with 5 interference traps • DC restorer • Hi-Fi cathode follower output for hi-fi system • Hi-Fi sound power output for speaker • Tubes alone list over \$135 • Easy circuit board construction—pre-built tuner, IF strip and hi-voltage sections • 1-year warranty on picture tube, 90 days on all other parts

"The Picture Is Very Clear, Almost Like A Glossy Photograph" — High Fidelity magazine. "Needless to say, we have browsed around in many quarters only to find that the GR-22A far surpasses all commercial TV's, even the well-known name brands on the market . . . the needle sharp picture on the screen is comparable to a 16 x 20 screen of projected movie film . . . the sound attuned to impressive dynamic range and superb quality without distortion is so pleasing to listen to that one is unaware of being in a room but rather seated in a concert hall"—Mr. Charles Leonetti, Tampa, Florida. What has stimulated such enthusiasm? The finest, heavy-duty parts, advanced circuitry and famous Heath-Engineering. And it's yours to enjoy at a price far below comparable deluxe models.

Save On Maintenance Costs, Too! With the manual's circuit diagrams and "Servicing Hints" section, plus the familiarity you gain through assembly, you're able to make repairs & adjustments yourself should it ever be necessary!

And It's So Easy To Assemble! Requires no special skills or knowledge. Goes from parts to picture in just 12 hours. And for easy adjustment, all controls are front-panel mounted.

Custom Or Cabinet Installation! Choose the chassis & tubes, and the handsome custom wall mask (GRA-22-5 opposite) for mounting in a wall or custom cabinet. Or choose the modern Heathkit walnut cabinet that blends with any decor. Do it now!

Kit GR-22A, chassis & tubes, 81 lbs. . . \$20 dn., \$17 mo. \$199.00

GR-22A SPECIFICATIONS—Picture size: 23" overall diagonal, approximately 282 sq. in. Reflection: Magnetic, 90°. Focus: Electrostatic. Antenna input impedance: 300 ohm balanced. Tuning range: VHF TV Channels 2-13 & UHF Channels 14-83. Picture IF carrier frequency: 45.75 mc. Sound IF carrier frequency: 41.25 mc. Sound IF: 4.5 mc. Video response: to 3.2 mc. Sound cathode follower: Output impedance, 3 k ohm. Frequency response, ± 1 db 50-15,000 cps. Harmonic distortion, less than 1%. Output Voltage 2V. Audio output: Output impedance, 8 ohms, Output Power, 2 watts. Frequency response ± 2 db 50-15,000 cps. Harmonic distortion, less than 3%. Power requirements: 105 V to 125 V, 60 cycles AC, 210 watts. Size required for mounting: 19" H x 29 $\frac{1}{8}$ " W x 17" D.



**Custom
TV Wall
Mount Mask**

Unfinished, ready for the finish of your choice. Includes $\frac{3}{4}$ " chassis mounting board. Cut & drilled to accept chassis & tube. Size: 20 $\frac{3}{8}$ " H. x 30 $\frac{5}{8}$ " W. x 1-11/16" D. Required mounting space dimensions: 19" H. x 17 $\frac{1}{2}$ " D. x 28 $\frac{1}{8}$ " W.

GRA-22-5, TV wall mount, 13 lbs. . . \$3 dn., \$5 mo. \$24.95
GR-62B, TV set, & wall mount, 91 lbs., Save \$5.95 . . . \$22 dn., \$19 mo. \$218.00

Deluxe Heathkit TV Cabinet

(Illust. above). Rich walnut finish matches modern Heathkit Hi-Fi cabinets, pg. 34. Includes mask, chassis mount, board, & 6" x 9" speaker . . . ready for chassis installation. Measures 36" W. x 32 $\frac{3}{8}$ " H. x 20 $\frac{1}{2}$ " D.

GRA-22-1, Walnut TV cabinet, 65 lbs. . . \$9 dn., \$9 mo. \$89.95
GR-52A, TV set, & walnut cabinet, 144 lbs., Save \$9.95 . . . \$28 dn., \$24 mo. \$279.00

Proof That A Heathkit Color TV Gives You More!

Quality! Mr. B. E. Lanning, Long Beach, California: "Reception on our Heathkit color set is superior to any other color set I have seen regardless of price." TV Serviceman E. C. Van Dyke, Baltimore: "After constructing Kit #GR-53A, I can truthfully say that I have never seen a color television look so good!"

Savings! Mr. Henry Oleski, Trumbull, Conn.: "Prior to purchasing your kit, I scouted around the local dealers, TV establishments, comparing known set features, styling & prices. You have my word I have not seen one unit under the \$700 bracket that compares to all around styling, performance and simplicity of operation."

Maintenance! Science & Mechanics Magazine: "Built-in servicing circuits are valuable aids in getting the set operating for the first time & eliminating expensive service calls & bills when realignment or part replacement is needed later on."

Ease Of Assembly! Mrs. Joseph Gesswein, Bethesda, Maryland: "If a housewife with 3 children under 4 years old can successfully build it in her few spare moments, it has to be good."

Only Color TV You Can Install 3 Ways!

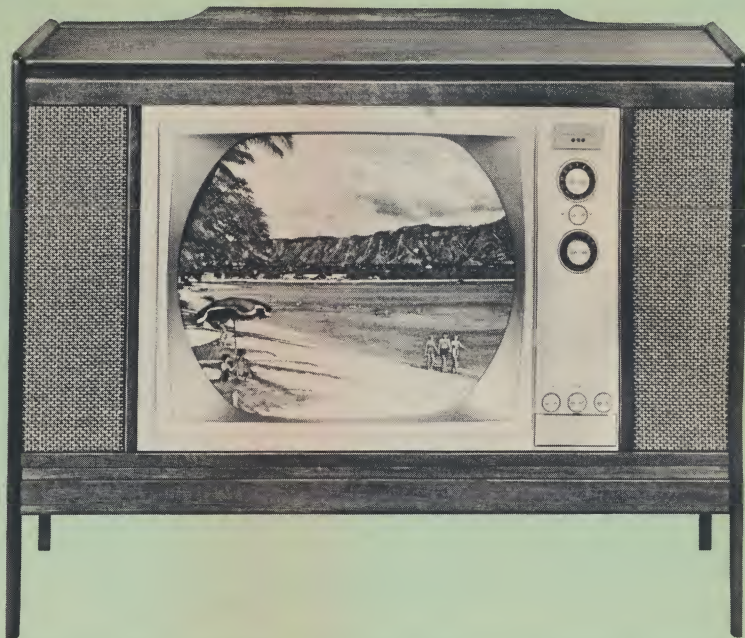


1. In a wall
2. In your custom cabinet
3. In either factory-built Heath cabinet

GR-53A
\$399.00

(less cabinet)

You Can't Buy A Better Color TV At Any Price!



Deluxe Heathkit 21" All-Channel High Fidelity Color TV . . . Exclusive High Performance Features . . .

Assembles In Just 25 Hours . . . Saves Up To \$200 On Initial Cost Alone!

• **Exclusive Built-In Service Center . . .** Includes degaussing coil & built-in dot generator to demagnetize, adjust & maintain set • 26-tube, 8-diode circuit • Deluxe Standard-Kollsman VHF tuner with push-to-tune fine tuning for individual channels • New transistor UHF tuner • High definition 70° 21" color tube with anti-glare bonded safety glass • Tubes alone list at over \$260 • 24,000 volt regulated picture power • Automatic color control & gated automatic gain control for peak performance • Tuners, I.F. and high voltage assemblies factory-built, aligned and tested . . . just simple circuit boards to wire . . . goes from parts to picture in about 25 hours • Circuit breaker protected • Line Thermistor for longer tube life • Transformer operated • Two hi-fi outputs plus tone control • Chassis and tubes mount on sturdy one-piece metal support for easy set-up and servicing • Can be custom-mounted in wall or cabinet or installed in optional Heathkit walnut or hardboard cabinets • 1-year warranty on picture tube, 90 days on all other parts

Exclusive Heath Features For Unequaled Performance! No matter how many of your hard-earned dollars you pay for another brand of color TV, none can equal the performance of the Heathkit GR-53A. Why? All color sets require minor periodic adjustments to maintain peak performance. The Heathkit GR-53A is the only set with a "Built-In Service Center" that provides the facilities for perfect picture adjustments. The simple-to-follow instructions and detailed color photos show you exactly what to look for and how to achieve it. In addition, the "Convergence Control Center" enables you to converge your set anytime . . . eliminates color fringing or overlap. And an exclusive "Mobile Degausser" allows demagnetizing the tube whenever you decide color purity needs it.

Overall Result? Beautiful, true-to-life color pictures day in and day out . . . and no costly color TV service calls for simple picture alignment! And since you maintain the set yourself, a costly service contract isn't required. Heath warrants the picture tube for 1 year, all other parts for 90 days.

More High Performance Features!

1) Deluxe turret-type VHF tuner with Nuvistor front-end for low noise and push-to-fine tune that "remembers" so you don't have to readjust

each time you return to a channel. 2) Bonded face, etched, safety glass. Insures reflection-free pictures. 3) Tone control & two hi-fi sound outputs. One to drive set's speaker, the other your stereo amplifier. 4) World's most elaborate construction manual. Makes you an expert on picture adjustment & trouble shooting. As one GR-53A owner put it, "the manual is worth a lifetime of warranties on ordinary sets."

Goes Together In 25 Hours! No special skills or knowledge needed. Simply wire 3 circuit boards, mount the parts, connect the wiring harness, and adjust the picture.

Convenient Time-Pay Plan! Only 10% down & the rest in easy monthly installments. See order blank for details. Then order yours . . . now!

Kit GR-53A, all parts including chassis, tubes, mask, UHF & VHF tuners, mounting kit and specially shielded, extended range 6" x 9" speaker. 127 lbs. . . \$40 dn., as low as \$23 per mo. \$399.00

Assembled GRA-53-7, walnut wood cabinet, 85 lbs. . . \$12 dn., \$11 mo. \$115.00

Assembled GRA-53-6, walnut-finished hardboard cabinet, 52 lbs. . . \$5 dn., \$5 mo. \$49.00

Deluxe Walnut Cabinet! (above) Finest TV furniture . . . matches Heath contemporary hi-fi cabinets (pg. 34). Fits within 3" of wall (most cabinets leave a 7" gap). Crafted of ¾" walnut solids & veneers w/hand-rubbed finish. Deluxe 6" x 9" speaker with 6.8 oz. magnet adds a second speaker for top performance when GR-53A chassis is installed. Size: 44" W x 32¾" H x 23¾" D. (26½" D. including tube rear cover).

GRA-53-7, 85 lbs. . . \$12 dn., \$11 mo. \$115.00

GR-53A SPECIFICATIONS—Picture size: 21" round, approx. 265 sq. in. Deflection: Magnetic 70°. Focus: Electrostatic. Convergence: Magnetic. Antenna input impedance: 300 ohm balanced. Picture IF carrier frequency: 45.75 mc. Sound IF carrier frequency: 41.25 mc. Color sub-carrier: 42.17 mc. Sound IF frequency: 4.5 mc. Tuning range: VHF TV Channels 2-13, UHF 14-82. Sound cathode follower: Output impedance; 3K. Frequency response: ±1 db, 50-15,000 cps. Harmonic distortion: less than 1%. Output voltage: 2 V. Audio output: Output impedance: 8 ohms. Output power: 2 watts. Frequency response: ±2 db, 50-15,000 cps. Harmonic distortion: Less than 3%. Power requirements: 110 V to 130 V, 60 cycle AC, 300 watts. Wall mounting space required: 23¼" D x 22¼" H x 28" W.

Economy Cabinet . . . \$49.00!

Attractive, low cost. Constructed of walnut-finished wood & hardboard; tapered wood legs with brass finish ferrules & glides. GR-53A's speaker mounts behind grille cloth on left of cabinet. Cabinet size: 37¾" W x 33¼" H x 26¼" D.

GRA-53-6, 52 lbs. . .

\$5 dn., \$5 mo. \$49.00



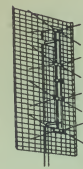
JFD Log-Periodic LPV-11 VHF TV Antenna

• Receives color & black & white up to 125 miles • Higher forward gain, sharper directivity, lower VSWR — down to 1.2 to 1 • Front to back ratio of 35 db • Gold finished • 11 elements GDP-124, 11 lbs. (Antennas express or motor freight only) Mjtrs. list \$39.95 Only \$23.45



Taco 4-Bay Model 3044 TV Bow-Tie UHF Antenna

• Open vee type • Pivot mount for rigid locking to existing mast • Mesh reflector of galvanized 12 gauge with 1" x 1½" squares GDP-233, 5 lbs. . . Mjtrs. list \$8.75 . . . Net \$5.14



Alliance Tenna-Rotor . . . Save \$16.50!

• 5-wire bridge circuit . . . unaffected by motor current, cable length, or line voltage • Rotates 360°—instantly reversible • Magnetic brake • Life lubricated • Moisture sealed • 115 v. AC, 60 cps GDP-214, 12 lbs. . . . \$23.45



— over 250 different, top-quality kits to add more fun at big savings!

Discover A New World of Excitement With Heathkit® Shortwave Radio!

Low-Boy Styling . . . Low Cost . . . Top Performance . . . New Heathkit Shortwave Receiver!

- Covers 550 kc to 30 mc—includes broadcast plus 3 short wave bands • New 5" round speaker • New easier-to-read & lighted bandspread tuning dial • New relative signal strength indicator • New "low-boy" cabinet styling • Illuminated 7" slide-rule dial • 4-tube superhet circuit plus two rectifiers • Simple circuit board construction • Built-in broadcast antenna

The Whole World At Your Fingertips! Hear live broadcasts from Germany, Peru, dozens of foreign countries . . . thrill to the somber tones of Big Ben from London . . . get the exact time from station WWV in Washington, D. C. . . pick up the Voice of America as it's beamed to countries behind the iron curtain . . . listen to Radio Moscow nervously defend its position in Viet Nam . . . tune in ham operators, ship-to-shore radio, & popular AM radio . . . all on this single, general-coverage receiver!

A Deluxe Heathkit "Mohican" Shortwave Portable Receiver!

- Powerful 10-transistor, 6-diode circuit • Tunes 550 kc to 32 mc in five bands • Fixed-alignment ceramic IF "transfilters" for best selectivity • Completely self-contained for portability, yet can operate on 117 v. AC with XP-2 accessory @ \$9.95

Rugged, Compact, Ready To Go Anywhere! Ready to circle the globe at the spin of a dial to bring you broadcasts from Spain, Moscow, Tokyo, countless foreign shortwave stations . . . amateur radio operators . . . marine & weather broadcasts . . . AM radio. *Radio-Electronics* magazine said this about the GC-1A: "The SWL fan has, in the Mohican, a receiver with portability, sensitivity, selectivity, and versatility far beyond most receivers used for this purpose." **Deluxe Features Insure Highest Performance!** Besides those listed above, the GC-1A boasts zener diode voltage regulation . . . smooth fly-wheel tuning, lighted slide-rule dial & tuning meter for precision tuning . . . BFO control for code & SSB reception . . . 50" telescopic antenna . . . electrical bandspread for maximum station separation . . . headphone jack for private listening . . . complete controls . . . handsome 2-tone green metal cabinet to withstand rough handling. Requires RF generator for final alignment. *Kit GC-1A, 18 lbs. . . \$10 dn., \$9 mo. . . \$95.00* *Kit XP-2 . . . 117 VAC plug-in power supply, 2 lbs. . . \$9.95*

GC-1A SPECIFICATIONS — IF Frequency: 455 kc. Frequency coverage: 550 kc to 32 mc in 5 bands with calibrated bandspread scales (oscillator tuning) for 80, 40, 20, 15 and 10 meter amateur bands and 11 meter citizens band. **Selectivity:** 3 kc wide at 6 db down. **Sensitivity:** 10 uv broadcast band, 2 uv shortwave bands for 10 db signal-to-noise ratio. **Output:** 400 milliwatts max. **Battery life:** Up to 400 hours normal intermittent service using 8 standard size "C" cells. **Dimensions:** 6 7/8" H x 12" W x 10" D.

GR-64
\$39⁹⁵



Compare These Advanced Features! Besides the ones listed opposite, there's a high voltage, transformer-operated power supply for peak receiver efficiency; a BFO control for code & SSB transmissions; "velvet touch" 16 revolution tuning knob . . . electrical bandspread for maximum station separation . . . plus a headphone jack for private listening.

You'll Like The "Low-Boy" Styling, Too! Masculine gray, sleek-silhouette metal cabinet with a midnight black front panel accented with green & white band markings . . . makes an attractive addition to any room.

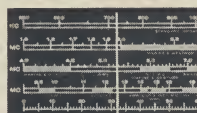
Fun To Build, Fascinating To Use! Ideal for beginner's and avid SWL's alike. Order your GR-64 now!

Kit GR-64, 13 lbs. . . \$4 dn., \$5 mo. . . \$39.95

GR-64 SPECIFICATIONS—Frequency range: 550 kc to 30 mc in four bands. Short wave, broadcast bands clearly marked on dial. **Controls:** General coverage tuning, Bandspread tuning, Bandswitch, Noise Limiter—ON/OFF, Phone-Standby-CW switch, BFO control, Audio Gain, AC-ON/OFF, Headphone jack, Q-multiplier input. **Power requirements:** 105-125 V 50/60 cycles AC, 30 watts. **Dimensions:** 13 1/2" W x 6" H x 9" D.



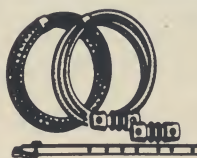
New High Voltage, Transformer-Operated Power Supply. Provides peak receiver efficiency, safe "shock-free" operation.



Big 7-inch Tuning Dial. Covers 550 kc to 30 mc in four bands with Shortwave & Amateur Bands clearly marked plus an extra "logging" scale.



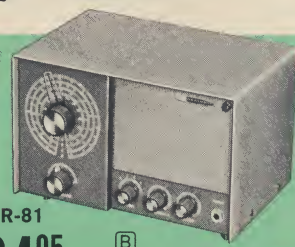
New Bandspread Tuning Bar. Lighter bar for easier, faster bandspread reading.



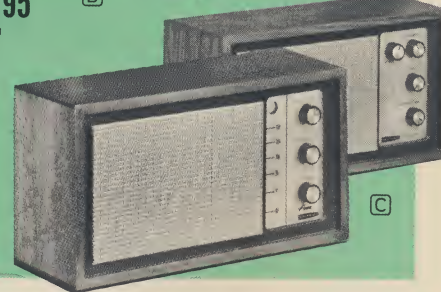
Short Wave Antenna Kit
Consists of 75 ft. long-wire antenna, 30 ft. lead-in wire, porcelain insulators and grounding hardware with complete instructions. Ideal for use with Heathkit GR-64 & GR-81 Shortwave receivers!
GRA-72, 2 lbs. . . \$1.45



GC-1A
\$95⁰⁰



GR-81
\$24⁹⁵



FM Stereo Pair
\$109⁹⁰

B Low-Priced Beginner Shortwave Listener's Radio!

- Covers 140 kc to 18 mc in 4 bands • Transformer operated for safety • Built-in speaker & headphone jack • Easy to assemble . . . takes around 6 hours

Open New Horizons Of Listening Pleasure! Enjoy the thrill of listening to international shortwave stations, 160, 80, 40, & 20 meter amateur bands . . . low frequency marine & aircraft stations . . . government stations . . . and popular AM radio. Features simple 3-tube regenerative circuit for fast assembly; provisions for long & short antennas; "shock-free" transformer-operated power supply; front-panel controls, & beige metal cabinet. Order yours now!
Kit GR-81, 11 lbs. . . \$3 dn., \$5 mo. . . \$24.95

GR-81 SPECIFICATIONS—Frequency coverage: 140 kc to 18 mc on four bands. **Tube complement:** 12AT7 Detector/1st Audio 50C5 Audio Output, 35W4 Rectifier. **Power requirements:** 105-125 V 50/60 cycle AC only, 30 watts. **Fused. Controls:** Main tuning (calibrated), Bandspread, Bandswitch, Regeneration, on/off volume, phone jack. **Dimensions:** 10" W x 7" H x 7" D.

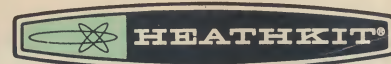
C Compact Size, Big Set Sound . . . FM Stereo Pair!

- Monophonic FM table radio covers 88 to 108 mc • Receives FM stereo when used with matching GRA-21-1 stereo converter • Large 6" x 9" speakers • Automatic frequency control • Preassembled, prealigned tuning unit speeds assembly • Handsome walnut cabinets

Ideal For Bookshelf, Table, Student's Dorm, any limited space area! GR-21 FM radio can be used separately for mono FM . . . includes lighted slide-rule dial, magic "eye" tuning, built-in antenna, switched AC power socket for accessory power, separate tone & volume controls, external antenna terminals & safe transformer operation. The matching GRA-21-1 may be placed up to 15' away to maximize the "stereo" effect. Both walnut cabinets measure a compact 15" L. x 8" H. x 6" D. Order both units now!
Kit GR-21, FM Table Radio 18 lbs. . . \$6 dn., \$6 mo. . . \$59.95
Kit GRA-21-1, Stereo Converter, 17 lbs. . . \$5 dn., \$5 mo. . . \$49.95

This Is The Year For You To Begin A New Hobby — Choose from Heath's 11 product lines

New! Deluxe All-Transistor AM Portable



... Modern Designer Styling, "Big-Set" Performance, Low Operating Cost!

- Tuned RF stage • 6-silicon transistor, 2-diode circuit gives 8-transistor performance • Uses standard flashlight batteries . . . only 1/10 operating cost of typical pocket-size portables • Large 4" x 6" oval speaker for "big-set" sound • New easy-to-read slide-rule dial • Vernier tuning • RF stage & double-tuned I.F. stage for greater sensitivity & selectivity • Big 1/2" diameter built-in rod antenna for distant station pickup • Handsome black simulated leather case • Simple circuit board construction

New Designer Styling . . . As Functional As It Is Beautiful! That's the new 1965 Heathkit AM Portable . . . ready to go anywhere to bring you countless hours of popular broadcast listening! You'll like its compact shape, its light weight, its easy-to-carry handle, its convenient "thumb-touch" controls, its chrome plated plastic frame, anodized aluminum grill, its easy-to-read slide-rule dial, its rich black simulated leather case . . . you'll be proud to use it anywhere!

And The Sound? Crisp, clear & bold thanks to its 4" x 6" oval speaker . . . can't be matched by miniatures. Its 6-transistor, 2-diode circuit assures instant play, long unchanging life and extra power. A big 1/2" diameter built-in rod antenna pulls in distant stations with ease. And the RF stage and double-tuned I.F. stage provides extra sensitivity and selectivity.

Economical To Use! Operates at 1/10 the cost of typical pocket-size portables . . . save enough to purchase another radio in less than 2 years of normal everyday use! Runs on 6 inexpensive size "D" flashlight batteries (not included) . . . protected against corrosion by a plastic battery holder! Its audio output stage is diode biased for top performance over a wide temperature range, and with low battery voltage.



GR-24
\$29⁹⁵

Quick & Easy To Assemble! Features fast, stable circuit board construction . . . goes together in just a few evenings! Choose yours now!

Kit GR-24, 6 lbs. . . \$3 dn., \$5 mo. \$29.95

GR-24 SPECIFICATIONS—Tuning range: 535-1620 kc. IF frequency: 455 kc. Sensitivity: 50 uv/m for 10 db signal-to-noise ratio at 50 mw output. Audio output: 250 mw @ 10% distortion. Speaker: 4x6" oval permanent magnet type. Battery: 9 v; 6 "D" flashlight cells. Current drain: No signal: 11 ma; 50 mw audio output: 41 ma. Dimensions: 3 3/4" D x 8 3/4" W x 7" H (overall).

1/10 Operating Cost Of Miniatures!

The GR-24 operates as long on 6 "D" flashlight batteries as pocket-size portables do on 21 miniature batteries.

Curious About Kit Building? Convince Yourself With This Low-Cost All-Transistor AM Portable . . . Includes FREE Tool Kit & Battery!

- 6 transistor, 3 diode circuit for instant, dependable operation • Simple circuit board construction assures your success • 4" x 6" speaker for "big-set" performance • Rugged simulated tan leather case • Compares to portables costing \$40 or more

Discover The Fun Of "Do-It-Yourself" Electronics! You'll be surprised how easy it is! The simple-to-follow instructions, large exploded diagrams, and fast circuit board construction take you from parts to programs in just 4 to 6 hours! Everything you need is included . . . solder, soldering iron, wire stripper, screwdriver . . . even a powerful 9-volt battery that gives up to 300 hours of enjoyable listening!

Result? A Handsome, High Quality Portable At Considerable Savings! Features a big 4" x 6" speaker for clear, distortion-free tone you can't get with miniature radios . . . 6-transistor, 3 diode circuit for instant operation, extra power . . . built-in ferrite rod antenna to receive distant stations . . . prealigned coil & I.F. transformers to assure top performance . . . and modern, simulated tan leather case. Discover why countless people from all walks of life enjoy this fascinating hobby—order your GR-151A now!

Kit GR-151A, radio, tool kit & battery, 5 lbs. \$21.95



GR-151A
\$21⁹⁵

Tired Of The Usual Radio Fare? Take Along The Good Listening Of FM With This All-Transistor Portable!

- 10-transistor, 2-diode circuit • Automatic frequency control • Three IF limiters • Push-pull output stage • Big 4" x 6" speaker • Vernier tuning • Tone control • Telescoping whip antenna • Simple to build

An Entertaining Companion! That's the "go-anywhere" GR-61. Enjoy classical or standard favorites at the beach, on a camping trip, anywhere your fancy takes you. And what a sense of pride & satisfaction you'll experience when you "show-off" this style-winning portable to friends & relatives!

Boasts Deluxe Features For Hi-Fi Component Performance! A powerful 10-transistor, 2-diode circuit with 3 I.F. stages deliver full fidelity, complete quieting. The treble-cut control assures finer

tone. And the AFC "snaps-in" stations with little or no dead zone between them. High sensitivity & a 34" telescoping antenna insure strong station pickup. Operates 300 to 500 hours on single 9-volt battery. Prealigned I.F. transformers & tuning unit, plus fast circuit board construction make assembly quick & simple. Order yours now!

Kit GR-61, 6 lbs. . . \$5 dn., \$5 mo. \$47.95

GRA-131-1, Self-contained, leakproof battery for above, 2 lbs. \$1.10

GR-61 SPECIFICATIONS—Tuning range: 88 MC to 108 MC. IF frequency: 10.7 MC. Audio output: 250 milliwatts. Loudspeaker: 4" x 6" permanent magnet. Tone control: Treble-cut. Recommended battery: 9 volt. Long-life, leak-proof, NEDA #1612, Eveready #2356. Battery life: 300 to 500 hours. Dimensions: 7 3/4" H x 10" L x 4" D (overall). Styling: Sun-tan simulated leather case, curved beige plastic grille.



GR-61
\$47⁹⁵

For Better Road Performance, Economy, Choose

Eliminate This ...



No More Straining, Struggling, Groping When You Own A Heathkit Garage Door Opener Semi-Kit!

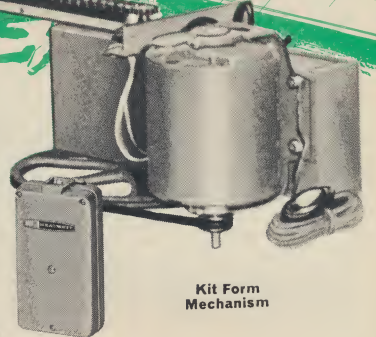
- New VHF portable "wireless" transmitter—so compact it fits in pocket & purse, or attaches to car's sun visor • No car battery drain • No permanent under-hood installation • New VHF receiver—installs in your garage in mere minutes • Operates at greater ranges—no CB interference • Easy one-man installation • Operates overhead track and most jamb & pivot doors up to 8' high • Foolproof safety device automatically disengages door when obstructed • Automatically turns on garage light when door is opened • Just assemble mechanism—transmitter & receiver are completely assembled, ready to use • No FCC license required—complies with FCC regulations • 2 year warranty on receiver & transmitter

Your Garage Door Opens & The Light Goes On with just a touch of a button on the new "wireless" transmitter as you pull into your driveway. Another touch of the button once you are safely inside, and the door closes automatically, securely. Especially convenient for Mom and the elder members of your household! A time delay on the mechanism-operated light allows plenty of time to enter the house or switch on the main lights.

New Factory Assembled VHF Electronics! The pocket-size transmitter offers portability and handling ease... clip to sun visor, or store in glove compartment. And since it's wireless, there's no complicated, cumbersome mounting under the hood or dash... simple to move from car to car! Features self-contained battery power to eliminate drain on car's battery. And the new superregenerative receiver with RF stage takes just a few minutes to install in your garage. No license is required... system operates on 230 to 290 megacycles.

A Unique Safety Device On The Mechanism releases the door automatically when obstructed. Mechanism assembles quickly, easily, and may be purchased separately for push-button operation from house or garage. Automatic light feature may be extended to control driveway, patio lights, etc. Order yours now!

GD-20A
\$124⁹⁰



- KIT MECHANISM SPECIFICATIONS**—125" long x 8 3/4" high x 13" wide. 100# max. operating force. Operates overhead track and most jamb & pivot doors up to 8' high. 117 V. AC. 1/4 H.P. motor. Fused.
- VHF TRANSMITTER SPECIFICATIONS**—Powered by two Eveready #E-91 alkaline batteries. Uses one of six modulation frequencies approx. 16 kc, 18 kc, 20 kc, 22 kc, 24 kc, 26 kc. CK5676 RF osc. tube, 2N270 audio osc. transistor. 5 1/2" H x 3" W x 1 3/8" D.
- VHF RECEIVER SPECIFICATIONS**—117 VAC, 10 watts. 6AB4 RF amplifier, 12A7 detector-amplifier, 12A7 amplifier-rectifier, 5696 relay control. RF frequencies approx. 230 mc, 240 mc, 250 mc, 260 mc, 270 mc, 280 mc, 290 mc. 5 3/4" H x 6" W x 6 1/2" D.
- GD-20A, 69 lbs... mechanism, (1) transmitter, (1) receiver ... \$13 dn., \$11 mo... \$124.90
 - GD-20B, 70 lbs... mechanism, (2) transmitters, (1) receiver ... \$15 dn., \$12 mo... \$144.90
 - Kit GDA-20-3 Heathkit mechanism, 61 lbs... \$7 dn., \$7 mo... \$69.95
 - GDA-20-4, (1) Transmitter, (1) Receiver... 8 lbs... \$6 dn., \$5 mo... \$54.95
 - GDA-20-5, (2) Transmitters, (1) Receiver... 9 lbs... \$8 dn., \$7 mo... \$74.95

A Add Longer Life To Bits & Blades With A Heathkit Motor Speed Control!

- Silicon Controlled Rectifier with feedback circuit slows motor, yet maintains high torque power • Use with drills, saws, mixers, any power tool with a universal AC-DC motor rated at 15 amps or less • Adjustable control dials desired motor speed • Prolongs life of drill bits, blades and other attachments • Easy to build... Easy to use

Also Use With Sabre Saws, food mixers & blenders, sewing machines, sanders, movie projectors, fans, lathes, vibrators, etc. Helps cut through toughest steel or hardest wood *without* ruining bit or blade. Black & beige aluminum cabinet. Order now!

Kit GD-973A, 3 lbs... \$17.50

GD-973A SPECIFICATIONS—CURRENT CAPACITY: Any universal motor powered device with a nameplate rating of 115 volts, 15 amperes or less. (Will not operate induction motors.) **Idle power consumption:** 3 watts. **Front panel controls:** Power switch, speed control. **Power source:** 105-125 v. AC, 60 cps. **Dimensions:** 6" L x 3 1/4" W x 3 1/2" H.

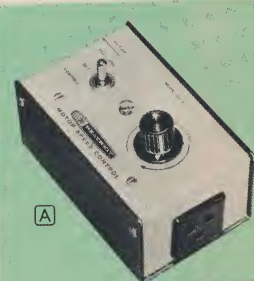
B Soldering Iron Kit... Lightweight, Easy-To-Handle!

Ideal For Kit-Building or any "tight" soldering work! Features 6 volt, 25-watt GE midget-type industrial soldering iron with an iron-clad tip that *won't* corrode or require frequent tinning. Provides selection of 8 heat ranges... handles any soldering job from low-heat circuit board to hot, heavy-duty chassis work. Excellent heat recovery time. Includes transformer-operated power supply & protective metal cage. Order now!

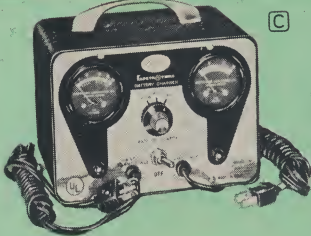
Kit GH-52, 5 lbs... \$14.95

Kitbuilder's Special!

- 1 lb. Bag Of Assorted Extra Heathkit Hardware... Nuts, Bolts, Washers, Etc.! Only \$2 With Any Heath Co. Order.
- GH-14, 1 lb... \$2.00



GD-973A
\$17⁵⁰



GDP-132
\$28⁶⁸



GH-52
\$14⁹⁵



GDP-122
\$14⁷³

C Electrotone C-100 Battery Charger... Save \$28.27!

Fulfills Every Charge Need! 3 charging rates... slow, medium, fast. Delivers up to 10 amps. Voltmeter checks battery condition, shows if battery is 6 or 12 v., & indicates cut-off setting of generator. Easy to use... just plug into cigarette lighter socket or use copper-plated 50 amp. clips for direct charging. Circuit breaker protected. Selenium rectifiers. UL approved. 1-year guarantee.

Model GDP-132, 9 lbs... \$3 dn., \$5 mo.
... \$56.95 list... Only \$28.68

D Save Over \$15 On This Electrotone G-60 Battery Charger!

Ideal For Shop, Home, Garage, Or Boat! Delivers up to 8 amps. Features full-wave high density selenium rectifiers; 6 or 12 v. output. Ammeter continuously monitors rate of charge. Automatic reset circuit breaker protects charger & battery. Copper-plated 50 amp. clamps permit direct charging. Ventilated case. UL approved. Guaranteed 1 year. Completely assembled.

Model GDP-122, 8 lbs... \$29.75 list... \$14.73

This Is The Year For You To Begin A New Hobby — Choose from Heath's 11 product lines

Heathkit® Auto Accessories!



NEW! NELI Torque Fire® . . . The Only All-Silicon Electronic Ignition System!

- Provides fewer tune-ups, longer plug life, greater gas economy, instant starts in all-weather • Cannot be damaged by improper installation • Takes only 5 minutes
 - Transfer from car to car . . . present system is left intact • Operates on 6, 12 or 24 v. DC, pos. or neg. gnd. . . . any car or truck
- Use On Auto, Marine Or Stationary Engines with battery ignition systems! Provides maximum horsepower. Fires plugs under all conditions. Cleans points each time you start car. Zener regulated voltage protects coil. Requires no special test equipment to tune. No temperature limitations, can be mounted on firewall if desired. Takes only 5 minutes to install—not a kit! Built-in test light assures reliability. Guaranteed 50,000 miles or 3 years.

Model GDP-95, 3 lbs. . . \$7 dn., \$6 mo. \$62.50

GDP-95
\$62⁵⁰



GDP-134
\$34⁹⁵

Save 50% On This Kit Form NELI "Trans-nition"® System!

- 4-transistor, zener-diode protected circuitry • Operates on 6 or 12 v. DC systems—installs easily on all cars, foreign & domestic • Built-in conversion plug for switching to conventional ignition system when necessary • Completely sealed against moisture, corrosion, etc. • Simple to assemble and install

Better Mileage, Easier Starting, & Longer Life To Engine and ignition system parts are the claims made by the leading automotive magazine editors for transistor ignition systems. The basic principle involved is replacing your present ignition coil with a special design coil & transistor circuit to produce a much "hotter" spark.

Easy To Install! Just mount & connect the color-coded leads & by-pass relay. Includes instructions, ballast resistor, all mounting hardware, wire, terminals & high output coil . . . nothing else to buy! A regular \$69.95 value . . . save \$35! Order yours now!

Kit GDP-134, 7 lbs. . . \$4 dn., \$5 mo. \$34.95



IO-20
\$89⁹⁵

Diagnose Ignition Troubles With This Heathkit Ignition Analyzer!

- Spots ignition troubles—shows results of corrective action • Just flip a switch to select any of 4 different patterns without switching leads • Expand any view horizontally or vertically for a "closer look" • Easy to use—detailed instruction provided for assembly and operation

Become An Ignition Expert! Whether you work with automobiles for a living or for relaxation, you'll find the IO-20 a valuable accessory. Shows shorted plugs, bad points, defective wiring, worn distributor parts, incorrect dwell time, etc. Complete manuals show what to look for on the big 4½" screen, how to isolate trouble. May be used with external DC to AC inverter. Simple to build & use. Corrosion-resistant aluminum cabinet. Compact . . . 8" H x 9½" W x 16" D. Order now!

Kit IO-20, 17 lbs. . . \$9 dn., \$9 mo. \$89.95
Export model available for 115/230 VAC, 50-60 cps; write for prices.

IO-20 SPECIFICATIONS—Rpm Range: 400-5000 rpm. Displays: Secondary, Primary, Parade, Superimposed. Screen size: 4½" diameter. Dwell measurement: 4, 6 & 8 cylinder calibration on face plate. Pattern height: Secondary circuit, approx. 1". Primary circuit, 6 volt system ¾", 12 volt system 1". Vertical expand ratio: 2 to 1. Horizontal expand ratio: 10 to 1. Cable length: 12' pick-up clamp, 2' ground, primary and secondary clips. Power requirements: 105-125 V, 50/60 cycles AC, 30 watts.



ID-11
\$14⁹⁵

GDP-83
\$11⁹⁵

Low Cost Heathkit Timing Light . . . Accessory To IO-20 Analyzer!

- Produces intense white light • Hard rubber case—10' connecting cable • Simple to assemble

Easy To Use! Simply plug into the IO-20 Ignition Analyzer . . . produces an intense white light that shows timing marks on the engine even in brightly-lighted areas. Features a speed range of 0-1250 flashes per minute (0-2500 rpm for 4-cycle engines). Measures 6" H x 7½" L x 2" W.

Kit ID-11, 3 lbs. \$14.95

For Engine Tune-Up & Repair, Choose This Gilbert-Davis 4-Unit Tester Set!

Ideal For "Do-It-Yourselfers" & Professionals! Features Remote Starter with push button & long neoprene lead wires; Compression Tester, reads 0-300 lbs., short stem with 15° offset for back cylinders; Fuel Pump Tester with 3-color dial calibrated 0-30 in. for vacuum & 0-7 lbs. pressure; Engine Timing Light with plastic case and long leads. Not a kit, ready to use!

Model GFP-83, 4 lbs. \$11.95



GDP-222
\$57⁵⁰

For A Dramatic Improvement In Your Car's Gas Mileage . . . Add This Miles Mfg. Electronic Miles-Per-Gallon Meter!

- Shows mpg your car is delivering • Computes mpg 1000 times each mile • Find most economical speed
- Everything is included, ready to install—not a kit

A "First" In Motoring History! Now you can "see" just how many miles per gallon you are getting . . . see the effects of weather, different brands of gas and oil, and your own style of driving. With this new Miles-Per-Gallon Meter installed in your car, you'll find that you just naturally drive for better mileage. And the savings you gain more than pay for the meter in a short time, as you learn the economies of best cruising speed, smooth acceleration, etc. The lighted indicator mounts on the dash or steering column . . . reads like a speedometer, but in miles per gallon! The fuel transmitter inserts between the speedometer and its cable; the coordinator mounts under the dash. For "automatic" driving economy, order your MPG meter now!

GDP-222, 3 lbs. . . \$6 dn., \$6 mo. Now \$57.50



Heath Marine Electronics...Quality Equipment



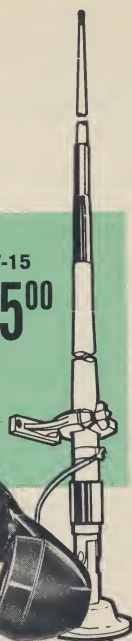
Heath-Built 150-Watt Radiophone...dollar per watt, dollar per feature... you can buy no better! Compare and see!



- 150-watt power input • 8 crystal-controlled transmit & receive channels • Covers marine bands 2-5 mc; also receives AM broadcast band • 15-watt deck hailing capability • All-transistor receiver for low battery drain, includes R.F. stage & ceramic Transfilters® for greater sensitivity & selectivity • Completely assembled & tested



MWW-15
\$425⁰⁰



150 Watts Of Input Power!... gives you safe, dependable communications with maximum range... reaches out to other ships, the Coast Guard, & local telephone company... up to 150 miles away! FCC type accepted for commercial (party boat) use.

8 Crystal-Controlled Transmit & Receive Channels... give you the "room" you need in crowded marine bands... covers 2-5 mc.

All-Transistor Receiver... for long, dependable service life and low battery drain (only 0.6 amp.). R.F. stage for greater sensitivity (compare S/N ratio!), Transfilters® for greater selectivity. Tunes AM broadcast band. Provision for external monitor speaker.

15 Watt Deck Hailer Amplifier... excellent for docking, calling to tender, working with fleet.

Tough Transistorized Power Supply... no troublesome vibrator... no tubes. Circuit breaker protection.

Receive/Transmit Panel Power Meter... indicates relative strength of received signal and transmitted power output. Shows at a glance that your rig is "loading up," that you're getting full power. Spots troubles before they happen!

Smart Styling... with marine finishes. Corrosion-resistant. Rust-proof aluminum cabinet. Compact.

Complete With Installation/Operating/Service Manual... discusses in plain talk how to use your radiotelephone... includes all necessary information, FCC forms, regulations, & applications. Instructions for installation by FCC-licensed technician.

Assembled MWW-15, 28 lbs... \$43 dn., as low as \$25 mo. \$425.00
Extra transmit & receive crystals (specify), 1 lb. each \$2.95

24' Radiotelephone Antenna... with laydown swivel base & high impact side mount. Ready to install.

MDP-74, 13 lbs... \$7 dn., \$7 mo. \$69.95
(Antennas express or motor freight only).....

MWW-15 SPECIFICATIONS—RECEIVER: Frequency range: Marine, 2-5 mc. Broadcast, 540-1620 kc. Sensitivity: (providing 10 db S/N ratio or better) Marine channels, 2 microvolts; Broadcast, 10 microvolts. Audio output: 3 watts to internal speaker/provision for external speaker; 15 watts to PA "deckcall." Transistor complement: (2) 2N1526 R.F. Amplifier & Mixer; (3) 2N1525 Marine Crystal Oscillator, 2nd. I.F. & 3rd. I.F.; (1) T1364 1st I.F.; (3) 2N1274 AGC Amplifier, 1st & 2nd Audio; (2) R265A(2N1039) Audio Output; (4) SP838, (2) Modulator—(2) Power Inverter; (11) Diodes. TRANSMITTER: Frequency range: 2-5 mc marine bands. RF Input: 150 watts. RF Output: 80 watts. Transmitter tube complement: (1) 12BY7 Colpitts Oscillator; (1) 6HF5 Power Amplifier. Power requirements: 12 volts DC. Receiver only, 0.6 amp. Standby, 2.9 amp. Transmit, 20 amps. Dimensions: 6 1/2" H x 11 1/4" W x 17" D.

Heath-Built 25-Watt Radiophone...Outboard Mariners Order Complete Package For "Install-It-Yourself" Savings!

- Choose complete system for owner installation or separate unit for technician installation • 4 crystal-controlled transmit & receive channels • Covers 2-3 mc marine & standard AM bands • 10-transistor, 5-diode, 3 tube circuit • Built-in heavy-duty transistor power supply • FCC type accepted • Factory assembled & tested, ready to install

Get Complete MWW-13AS Package... includes famous Heath instruction manual written in plain talk, discussing complete installation; plus FCC type accepted 25-watt factory assembled Heath-Built MWW-13A radiotelephone, 13' antenna, antenna and ground cables, crystals for 2 channels, plus all necessary FCC rules, forms, and applications. Manual discusses how to use your radiotelephone, how to get maximum efficiency, and gives service instructions for FCC licensed technicians.

A Rugged And Ready Unit... the MWW-13A's powerful 25-watt transmitter and 8-transistor receiver with 4 crystal-controlled channels and heavy duty power supply provide reliable communications up to 25 miles... keep you in touch with the Coast Guard, other ships, and the local telephone company. Low battery drain (receiver, 0.35 amps.; standby, 1.2 amps.; transmit, 5 amps.) means longer operation from battery alone in the event of engine failure—the time when you really need a radiophone!

Handles Most Communications Requirements... the MWW-13A provides 4-channel marine communications (crystals for 2182 and 2683 kc furnished), and broadcast AM radio for weather and entertainment. For factory tune-up, specify additional two channels desired.

Ideal Medium Cruising Range Radiotelephone... the MWW-13A is compact to stow away in your outboard, small cruising sailboat, or auxiliary.

For Greater Safety, Greater Peace Of Mind, Greater Savings—Including Lower Insurance Rates—Choose the Heathkit MWW-13A now!

Assembled MWW-13AS, Complete system for do-it-yourself installation on outboard powered boats, includes radiophone, antenna & instructions, 19 lbs... \$19 dn., \$17 mo. \$189.95

Assembled MWW-13A, Radiophone for technician installation only, 17 lbs... \$17 dn., \$14 mo. \$164.95

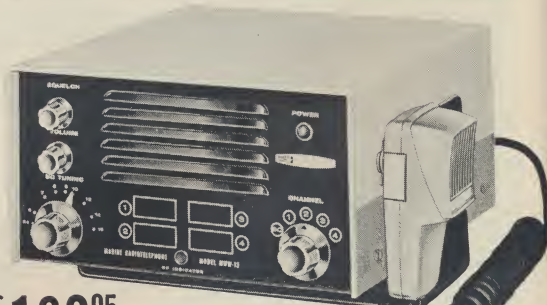
MDP-93, 13' Fiberglass Antenna only, 6 lbs... \$4 dn., \$5 mo. \$34.95 (express or motor frt. only).....

MDP-103, Swivel lay-down base mt., 2 lbs... \$9.95

Extra transmit & receive crystals (specify) 1 lb. each \$2.95

University Deck Speaker—Only \$20.29

Weatherproof horn projector with rugged "any angle" swivel mount. Ideal for use with above Radiotelephone for deck monitoring of receiver or hailing purposes. Specs: 25 watts, 8 ohms, 200-13,000 cps. Color, gray. Model MDP-104, 5 lbs., mfrs list \$34.50. Net \$20.29



\$189⁹⁵ MWW-13AS



MWW-13A SPECIFICATIONS—Frequency range: 2-3 mc. Broadcast: 550-1600 kc. Receiver sensitivity for 10 DB S/N ratio: Marine—3 microvolts—Broadcast—10 microvolts. Audio output: 3 watts to internal speaker. Transistor complement: (1) 2N1525 Mixer; (1) 2N1525 Oscillator; (1) T1364 1st I.F.; (1) 2N1274 1st Audio; (3) 2N1039 Audio Driver & Power Converters; (2) 2N1525 2nd & 3rd I.F.'s; (2) 2N301 Audio Output & Modulator; (6) diodes, AVC overload, Squelch, Noise Limiter & Detector. Transmitter RF input: 25 watts. RF Output: 13 RF watts. Transmitter tube complement: (1) 6AK6 Oscillator; (2) 6AQ5 amp. Power requirements: 12 V DC, receiver only, .350 amps.; standby, 1.2 amps.; transmit, 5 amps. Dimensions: 4 1/2" H x 8 1/4" W x 10 1/2" D.

For Extended Cruising . . . For Commercial Or Party Boat Use . . . Here's The 75-Watt Radiotelephone For You!

75 Watts, The Easy Way . . . the MWW-14's components operate well below their ratings. This means dependable power to you! . . . means crisp, clean, solid-copy communications over the maximum usable distance.

It Looks Like A Ship's Radiotelephone Should Look . . . the MWW-14 is styled in black & white with sea blue & gray accents to complement your pride of ownership.

Built To Meet The Demands Of Marine Use . . . the MWW-14 is a marine radiotelephone, through and through. It's built to resist moisture and high humidity . . . rugged to meet commercial-boat standards. Finishes are chosen to resist corrosion . . . the cabinet is of rustproof aluminum . . . and the operating panel was especially designed to meet the requirements of ship-board communications. FCC type accepted for commercial (party boat) use.

It Performs Where Performance Counts—On Your Boat! . . . Circuit breaker protection eliminates the chance of a blown fuse when communications are critical. Solid-state power supply means no troublesome vibrators. 15 watt deck hailer amplifier aids immeasurably in docking, fueling, hailing other craft, or working with a tender. Panel meter indicates relative strength of received signals, and continuously monitors transmitter power. Adjustable squelch control and automatic noise limiter hush background noise during standby. Panel meter and dials are back-lighted for nighttime operation.

A Good Companion . . . Stalwart Shipmate . . . the MWW-14 has provisions for 6 marine channels . . . the calling-distress frequency, 2182 kc, and ship-to-ship frequency, 2683 kc, have crystals provided. (Specify additional channels). The MWW-14 provides you with an able-bodied hand when you need it . . . communications on six channels . . . monitor on 2182 kc while under way . . . news and entertainment from AM broadcast while at anchor.

Owner's Manual Is Complete . . . gives all the information you need, plus hints on good operation. Includes instructions for installation by FCC-licensed technician.

Assembled MWW-14, 28 lbs. . . \$28 dn., \$24 mo. \$279.95

Extra Transmit & Receive Crystals (specify), 1 lb. each \$2.95

18' Radiotelephone Antenna . . . with laydown swivel base & high impact side mount. 2-3 mc band.

MDP-13, \$5 dn., \$6 mo. . . (Antennas express or motor freight only). . \$59.95



MWW-14
\$279⁹⁵



- 75 watt power input • 6 crystal-controlled transmit & receive channels • Covers marine bands 2-5 mc; plus AM broadcast band • 15 watt deck hailing capability • All-transistor receiver has low battery drain—RF stage & ceramic Transfilters® for high sensitivity & selectivity • Completely assembled and tested

MWW-14 SPECIFICATIONS—RECEIVER: Frequency Range: Marine, 2-5 mc. Broadcast, 540-1620 kc. Sensitivity: (providing 10 db S/N ratio or better) Marine channels, 2 microvolts; Broadcast, 10 microvolts. Audio Output: 3 watts to internal speaker/provision for external speaker; 15 watts to PA "deckcall". Transistor Complement: (2) 2N1526 RF amplifier & mixer; (3) 2N1525 Marine crystal oscillator, 2nd IF & 3rd IF; (1) T1364 1st IF; (3) 2N1274 AGC amplifier, 1st & 2nd Audio; (2) R265A (2N1039) audio output; (4) SP838, (2) Modulator—(2) Power Inverter; (11) diodes. Transmitter: Frequency Range: 2-5 mc marine bands. RF Input: 75 watts. RF Output: 40 watts. Transmitter Tube Complement: (1) 12BY7 Colpitts oscillator; (1) 6HF5 power amplifier. Power Requirements: 12 volts DC. Receiver only, 0.6 amp. Standby, 2.9 amp. Transmit, 16 amps. Dimensions: 6 1/2" H x 11 1/4" W x 17" D.



MD-24
\$79⁹⁵



Get 3 Vital Marine Functions In One Low-Cost Unit—Heathkit Foghorn/Hailer/Boat Horn

- Just flip a switch to use as a fog horn, deck hailer, or boat horn • All-transistor 30-watts peak circuit . . . powerful, dependable • Weatherproof horn speaker for deck mounting • Fused for protection • Gimbal mounting bracket for versatile installation • Marine styled in black, gray & white • Fast, stable circuit board construction

Use It As A Foghorn! . . . The new MD-24 provides a powerful warning tone that penetrates the foggy atmosphere for more than a mile. Just set the function switch to "foghorn" and the electrically-timed tone sounds for six seconds, rests for twenty seconds, then recycles.

Use It As A Deck Hailer! . . . projects your voice up to several hundred yards. Excellent for docking, fueling, and hailing other boats.

Use It As A Boat Horn! . . . just push the panel-mounted horn button to warn other craft, and signal for bridge openings.

Reliable Performance . . . Easy To Install! . . . powerful all-transistor circuitry assures dependable performance at all times. Runs cool with no component deterioration as with tube-type units.

Kit MD-24, Includes basic unit, plus PTT mike, & 10" deck speaker, 11 lbs. . . \$8 dn., \$7 mo. . . \$79.95

MD-24 SPECIFICATIONS—Output power: 30 watts peak, 20 watts continuous. Fog horn sequence: 6 seconds on, 20 seconds off. Cable furnished: 20' speaker cable. Power requirements: 12 v. DC, 4.0 amps. Max. (horn sounding), less than 0.1 amp. no signal. Overall size: 4 1/8" H x 6 1/2" W x 6" D. Color styling: White, gray & black. Cabinet: Aluminum.

When Seconds Count . . . Trim With KENLOG!

- Completely assembled & tested, ready to install—designed by Mr. T. W. Kenyon • A must for racing & navigation • Accurate within 2% upon simple calibration after installation • Linear dial calibration, 1 to 10 knots • Detects changes in speed of 1/100 knot • All-transistor circuitry for dependability, long life

Trim For Optimum Speed with the KENLOG Electronic Sailboat Speedometer. Records extremely low as well as minute speed changes.

Extremely Accurate, Highest Quality Components! The MDP-84 is manufactured by Kenlab, Inc., and consists of a meter with 4" panelescent illuminated dial, a component housing, and a non-fouling hull fitting. All-transistor circuitry.

Versatility Of Operation! Runs on any 12 v. DC source, and draws only 0.04 amp. Includes all hardware, and 18' of 3-wire connection cable, and complete instructions.

Famous KENMILE Distance Computer And New KENWIND Wind Indicator Also Available! KENMILE, used in conjunction with the KENLOG, records distance traveled in nautical miles. New KENWIND, used on America's Cup defender "Constellation", indicates apparent wind direction without erratic movement due to boat motion. Complete details & prices on the KENLOG, KENMILE, and KENWIND yours free by simply dropping us a note or card. Do it now!

MDP-84, KENLOG, 13 lbs. . . \$34 dn., as low as \$20 mo. \$340.00

MDP-94, KENMILE, 5 lbs. . . \$35 dn., as low as \$20 mo. \$350.00



KENLOG
SPEEDOMETER
MDP-84
\$340⁰⁰

KENMILE
DISTANCE
COMPUTER
MDP-94
\$350⁰⁰



Greater Safety & More Fun Afloat...



Kit Form or
Factory Assembled

MR-21A
\$109⁹⁵

For Safe, Sure, All-Weather Navigation . . . Heathkit "Mariner" 3-Band Radio Direction Finder

- Covers Beacon/Consolan, AM, & Marine telephone bands • All-transistor circuitry for dependability, & long life • Independent built-in battery power supply • Simple to build—complete with factory built & aligned "front-end" tuner & prewired component package

Cruise With Safety. Your "Mariner" is always ready to show you exactly where you are . . . provide you with weather bulletins . . . and double as a communication receiver in emergencies. Power is self-contained—dependent of boat's power plant for extra safety.

Cruise Relaxed—Navigate By Radio. Your "Mariner" and your compass are your two most valuable navigation instruments . . . a must for cruising! All three extra-sensitive bands of the MR-21A provide longer range, and better performance. The automatic gain control offers a deeper null for easier, more accurate bearing measurements. Position bearings are easily read on the 6½" compass rose located beneath the rotary loop antenna. **Resolve The Problem Of The Double Null.** The "Mariner's" sense circuitry gives true directions by resolving the problem of double null common in many other RDF's. Sensitivity control increases accuracy of the "tune-null" tuning meter . . . large slide-rule dial makes station selection easy, and for added convenience during nighttime use, dial and meter are lighted through spring-return switch.

Enjoy Off-Shore Cruising. Your "Mariner" will keep you in constant touch with the mainland via AM radio . . . entertain you and your crew on long voyages and at those isolated anchorages.

Add This Attractive Unit To Your Boat. The rust-resistant metal cabinet is "marine" styled in black, white, gray & blue . . . makes a handsome addition to any boat. Easy to build! . . . the "Mariner" goes together easily with a pre-wired component package and preassembled, prealigned tuner. Components lay out in real Bristol fashion for easy building. Order yours today!

Kit MR-21A, 14 lbs. . . \$11 dn., \$10 mo. \$109.95
Assembled MRW-21A, 14 lbs. . . \$16 dn., \$14 mo. \$159.95

MR-21A SPECIFICATIONS—Beacon band: 188 to 410 kc. **Broadcast band:** 535 to 1620 kc. **Marine band:** 1650 to 3450 kc. **Sensitivity for 6 DB signal-to-noise ratio:** BC band, 40 uv/meter; Beacon band, 120 uv/meter; Marine band, 25 uv/meter. **Normal bearing accuracy:** ±3°. **BFO:** 455 kc, switch-selected. **Speaker:** 4" x 6" weatherproofed. **Power requirements:** 9 volts from 6 standard size "D" flashlight batteries. **Battery drain:** 90 ma @ 350 mw max. output level. **Battery life:** 500-1000 hours. **Dial light:** Spring-return switch operated. **Null & Tuning indicator:** 0-1 ma meter. **Transistors:** (1) 2N409 Sense amplifier; (1) T1363 RF amp.; (1) 4JX-1D925 Oscillator; (1) 2N1526 mixer; (5) 2N1274 AGC amp., audio amp., audio output, & BFO oscillator; (2) T1364 1st & 2nd I.F.; (1) crystal diode detector. **Dimensions:** 10" H x 10" W x 8½" D including base and loop.

Gunkholing—Navigating Shoals—Entering Unfamiliar Harbors— Locating Schools Of Fish—Double Checking Charted Position . . . When You Can't Afford To Guess . . . Choose The Heathkit Depth Sounder

- Greater depth reaching ability—down to 200' on hard bottoms • Sensitive all-transistor circuit—instant operation, reliable performance • Self-contained or boat battery powered for added convenience • Simple, stable circuit board construction • External power connection & switch on rear panel for easy access

Protects Your Boat. Often wondered about the depth of your sailing water and worried about running aground? There's no need to if your boat is equipped with an all-transistor Heathkit Depth Sounder. It "senses" shoal depths with 5% accuracy on all readings! Probes down to 200' on hard sandy bottoms, 100' on soft muddy bottoms.

A Valuable Aid. Locates schools of fish and indicates type of marine terrain by quality of return echo. Provides an extra navigational reference.

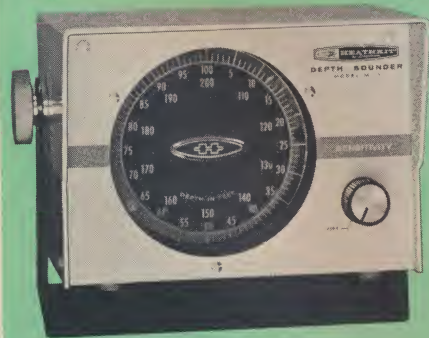
Compare These Features With Other, More Costly Units! An all transistor circuit puts your MI-11A in operation instantly . . . keeps it operating faithfully, accurately. Large black shaded dial with big white numerals reads easily. Attractive rustproof metal cabinet has nautical gray, white, black & blue color styling. A gimbal mounting bracket permits installation virtually anywhere!

2-Way Power Supply Offers Added Versatility! A new rear-panel mounted internal-external battery switch permits easy selection of either self-contained or boat battery operation. For simple connection to the boat's 12v. battery, a new power plug is mounted on the rear panel . . . save sounder's 9 standard "C" flashlight batteries (not included) for emergency use! Also included is a waterproof transducer that installs through the hull or outboard with accessory transducer mount (optional). Ignition interference is reduced with improved cable shielding.

Assembles In Just 4 To 6 Hours with stable, fiberglass circuit board construction . . . takes no special skills or knowledge. Order now!

Kit MI-11A, 8 lbs. . . \$7 dn., \$7 mo. \$69.95
Assembled MIW-11A, \$10 dn., \$9 mo. \$99.95
Accessory transducer mount; Model MIA-11, 2 lbs. \$8.95

MI-11A SPECIFICATIONS—Dial: 0-200 feet in one foot divisions. **Range:** 0-200 feet on hard bottoms, 0-100 feet on soft bottoms. **Frequency:** 200 kc. **Sounding rate:** 1440 soundings per minute, or 24 per second. **Accuracy:** Within 5% of actual depth. **Depth indication:** Neon lamp flashing at 0 feet and again at indicated depth. **Transducer:** Barium titanate ceramic element encased in a waterproof housing with solid brass fittings; attached 15 foot length of 2 conductor shielded cable. May be mounted permanently to the hull or temporarily with a transom mount. **Controls:** Combined ON/OFF-Sensitivity. **Power supply:** 13.5 volts from nine self-contained size C flashlight cells, or external 12 volt battery. Flashlight cells are contained in three leakproof plastic housings. **Battery drain:** 100 milliamperes. **Average battery life:** Up to 25 hours intermittent operation. **Dimensions:** 7¼" W x 5½" H x 7½" D.



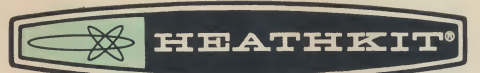
Kit Form or
Factory Assembled

MI-11A
\$69⁹⁵



MIA-11
\$8⁹⁵

Heathkit® Marine Electronics!



Heathkit Rudder Position Indicator ... Saves Fuel ... Makes Dock Maneuvering Easier

- Continuously shows rudder position up to 40° port & starboard
- Stops rudder drag—eliminates excessive fuel consumption
- Operates on 6 or 12 v. DC systems
- May be panel-mounted
- Easy to build, simple to install

Particularly Useful On Dual-Engine Craft! Save fuel! ... Compensate for current and wind by adjusting engines rather than rudder to maintain proper heading. Excellent for docking, maneuvering in currents and minimum steerageway.

Kit MI-14, 4 lbs. ... \$3 dn., \$5 mo. \$27.50

MI-14 SPECIFICATIONS—Accuracy: ±3% of full-scale meter deflection. Input voltage: 6 or 12 volts DC, Zener diode regulated. Current drain: (Nominal) 280 milliamperes. Meter: Indicates rudder position: PORT, FORWARD, STARBOARD. (May be installed in cabinet or panel mounted). Connecting cable: 3 wire shielded, 25 ft. Controls: Sending and Meter Adjust Controls. Dimensions: Overall (Meter cabinet) 3 3/8" W x 3 3/4" D x 3-1/16" H. Finish: Marine white & black.

Heathkit Fuel Vapor Detector ... A "Must" for Safety!

- Detects combustible gas fumes
 - Provides visual warning
 - May be connected to alarm or blower
 - May be connected to disable ignition
 - Built-in fail-safe
- Protect Your Boat From Fire And Explosion! Meter shows "Safe-Dangerous-Explosive." Relay may be used to both "open" and "close" circuits—For example: Disable ignition and sound warning buzzer. Dependable, all-transistor circuit includes test switch to clear detector element, plus fail-safe design. Clear, concise manual provides "proof" test procedure.

Kit MI-41, 4 lbs. ... \$4 dn., \$5 mo. \$39.95

MI-41 SPECIFICATIONS—Voltage: 12 V DC. Current: 1.0 amp. Panel size: 5" x 3-7/16". Depth: 3 3/8". Detector head size: 1 1/2" round x 2 1/2" long. Length of interconnecting cable supplied: 15'. Audible alarm capability: Yes. Meter indicator: Yes. Color: Marine White & Black. Material: Aluminum. Temp. range: —20° C to +80° C.

Heathkit Power Converter ... Provides Shore-Side Power Afloat!

- Converts 6 or 12 volt battery power to square wave 117 v. AC
 - Delivers up to 175 watts for small electrical devices
 - All transistor circuit
 - Two AC receptacles
- For Boat, Trailer, Car. Provides household power for incandescent lamps, electric shavers, etc., from 6 or 12 v. batteries. Not recommended for TV, tape recorders, record players, compressor-type refrigerators, etc., which require high starting current and/or standard sine wave current. Write for detailed applications bulletin.

Kit MP-108 lbs., \$3 dn., \$5 mo. \$29.95

Assembled MPW-108 lbs., \$4 dn., \$5 mo. \$39.95

MP-10 SPECIFICATIONS—Power source: 6 or 12 volt storage battery. Power output: Nominal 117 volt, 60 cycle AC; 12 volt operation, 175 watts continuous, 240 watts max.; 6 volt operation, 120 watts continuous and max. Input current for continuous ratings: 6 volt operation, 25 amperes; 12 volt operation, 16.5 amperes.

Heathkit All-Transistor Tachometer ...

Excellent for Synchronizing Engines On Dual-Engine Craft

- All-transistor circuit for maximum versatility & accuracy (2%)
- Operates on 6, 12, 24, or 32 V. DC systems
- 2 switch-selected ranges
- Lighted dial for easy night reading
- Simple to build & install

Works on all inboard or outboard marine and auto engines (1-6 cylinder, 2 cycle or 1-16 cylinder, 4 cycle) that use standard (not transistorized) coil & distributor ignition systems. Features switch selection of 0-4000 & 2-8000 rpm ranges, plus wiring option for 0-2000 & 0-4000 rpm. 2 transistors, Zener diode. Unaffected by normal voltage or temp. variations. Ball & socket mount. Pos. & neg. ground.

Kit MI-31A, 3 lbs. ... \$3 dn., \$5 mo. \$24.95

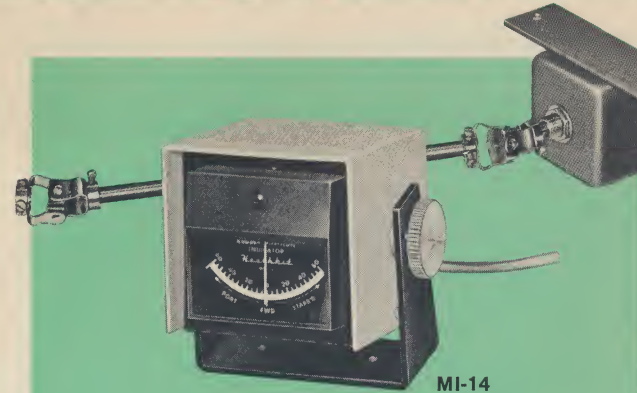
Dependable Marine Radio Requires A Good Ground!

Improve Your Radio Range With This Heathkit Ground System

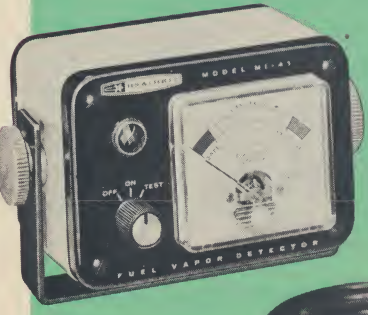
- Provides 13.8 sq. ft. of grounding surface
- Simple, foolproof keel installation
- Simple thru-hull connection to ground system
- Ideal for single or dual engine equipped boats

More Than Adequate For Most Boat Electrical Systems! Two 8' heavy-gauge copper tubes, tapered at ends, minimize water resistance, require only bolting thru keel (min. length 9", max. thick. 5") & 1 thru-hull fitting. Does not affect balance, steering or maneuverability of craft. Corrosion-proof. Won't catch on rocks, logs, etc. Improves operating range of your radiotelephone.

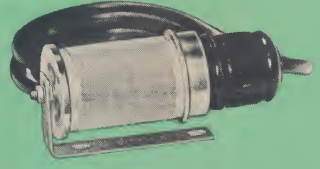
Kit MD-14, 19 lbs. (Motor freight or Express only), \$3 dn., \$5 mo. \$29.95



MI-14
\$27⁵⁰



MI-41
\$39⁹⁵



Kit Form or
Factory Assembled

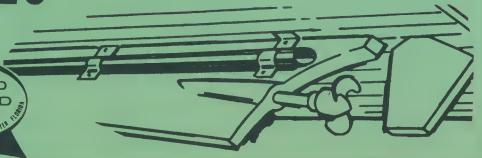


MP-10
\$29⁹⁵



MI-31A
\$24⁹⁵

MD-14
\$29⁹⁵



— over 250 different, top-quality kits to add more fun at big savings!

Quality Heathkit® CB Gear..



GW-12A
\$39⁹⁵

Economy Heathkit "One-Channel" CB Transceiver!

- One channel crystal controlled transmitter & receiver • Sensitive superhet circuit • Built-in squelch & noise limiter • Convenient PTT microphone • Easy to build

Solid 1-Channel CB Communications in one low cost package. Ideal for mobile fleets where only one channel is needed... no missed calls or unnecessary usage! Features built-in AC power supply, & provision for plug-in accessory DC power supply. Handsome 2-tone brown metal cabinet. Includes push-to-talk microphone, & crystals (specify channel no.). FCC license required.

Kit GW-12A (AC only)

10 lbs... \$4 dn., \$5 mo. \$39.95

Assembled GWW-12A (AC only)

10 lbs., \$5 dn., \$5 mo., was \$69.95, now \$50.00

Kit GW-12D (AC & DC)

13 lbs... \$5 dn., \$5 mo. \$44.95

Assembled GWW-12D (AC & DC)

12 lbs., \$6 dn., \$5 mo., was \$74.95, now \$55.00

GENERAL DESCRIPTION—Receiver sensitivity: 1 uv signal at antenna input produces 10 db signal to noise ratio. Transmitter section: power input to final RF amplifier; does not exceed 5 watts. **Nominal Power Requirements:** 117 v. AC operation, 50 watts; 6 v. DC, 8 amps; 12 v. DC, 4 amps. **Dimensions:** 5 3/8" H x 8 3/4" W x 8" D.



GW-22A
\$59⁹⁵

Low-Cost Heathkit 5-Channel Transceiver ... Deluxe Operating Convenience!

- 5 crystal-controlled transmit & receive channels • Superhet receiver with RF stage • Built-in squelch & automatic noise limiter • Push-to-talk microphone • Easy to build

Use It Anywhere! Farm, home, car, business, etc. You can rely on the GW-22A to give you years of dependable performance whenever and wherever you need it... at a price well below comparable models.

Compare These Features! 5 crystal-controlled transmit & receive channels... sensitive superhet receiver with RF stage... built-in squelch & automatic noise limiter... convenient push-to-talk circuitry... external connectors for an extra speaker if desired... and handsome 2-tone brown metal cabinet. Includes PTT mike, power cable, crystals for 1 channel (specify channel no.) & FCC license application. Order yours now!

Kit GW-22A (117 v. AC)

13 lbs... \$6 dn., \$6 mo. \$59.95

Assembled GWW-22A (120 v. AC)

13 lbs., \$7 dn., \$7 mo., was \$89.95, now \$70.00

Kit GW-22D (6 or 12 v. DC)

13 lbs... \$7 dn., \$6 mo. \$64.95

GENERAL DESCRIPTION—Receiver: 5-tube superheterodyne with RF stage, crystal-controlled, on up to 5 of the 23 channels as determined by the particular crystal(s) installed. **Sensitivity:** 1/2 microvolt for a 10 db signal-to-noise ratio. **Transmitter:** Power input to final RF amplifier, nominal 5 watts. **Nominal Power Requirements:** GW-22A—117 volts, 50/60 cps AC, 50 watts; GW-22D—6 volts DC, 8.0 amperes; 12 volts DC, 4.5 amperes. **Dimensions:** 9 1/4" D x 6 1/4" H x 9 1/2" W.



MW-34
\$89⁹⁵

Proof That Your Dollar Goes Farther At Heath . . .

Modern MW-34 Transceiver With 4 New CB Features!

- New front-panel crystal socket—allows quick, convenient changing of transmit crystal on one channel • New spotting switch—generates a signal to aid in tuning receiver to exact frequency of transmit crystal • New TVI filter—minimizes interference in TV receivers • New calibrated "S" meter • 5 crystal-controlled transmit-receive channels • 3-way power supply—6 or 12 v. DC or 117 v. AC • R.F. stage for high performance reception • Styled in handsome Heathkit marine motif

4 Advanced Features You Asked For!

(1) The new Heathkit MW-34 boasts 5 crystal-controlled transmit & receive channels with a new front-panel socket to allow quick, easy changing of one transmit crystal without removing the cabinet. Lets you transmit on all 23 channels, if you wish.

(2) A spotting switch, used with variable receiver tuning, for receive function. The spotting switch turns on the transmitter oscillator without going on the air, thus generating a signal for tuning the receiver to exactly the same frequency as the transmitter.

(3) A TVI filter—built in to minimize interference with nearby TV sets.

(4) A new calibrated "S" meter which automatically shifts from transmitter to receiver to indicate signal strength & relative power output.

Ideal For Boat, Car & Home! With its compact size, 3-way power supply (117 v. AC, 6 or 12 v. DC) and gimbal mounting bracket, the MW-34 installs virtually anywhere you wish to set up CB communications. Its rust-resistant black &

white metal cabinet matches Heathkit marine gear.

More Deluxe Operating Conveniences! Variable receiver tuning of all 23 channels, vernier tuning action, lighted dial, superhet receiver with RF stage, adjustable squelch & automatic noise limiter, built-in speaker & PTT mike.

Simple To Build! New 2-color, step-by-step instructions speed assembly... takes no special skills or knowledge. Includes PTT mike, AC & DC power cords, crystals for 1 channel (specify). FCC license required. Order yours now!

Kit MW-34, 16 lbs... \$9 dn., \$9 mo. \$89.95

MW-34 SPECIFICATIONS—RECEIVER: 5-tube superheterodyne circuit with RF stage, squelch & automatic noise limiter. **Variable receiver tuning:** Any one of 23 Citizen's Band channels selected by front panel variable tuning dial (frequencies 26.965 to 27.255 mc). **Crystal-controlled receiver tuning:** Any five of 23 Citizen's Band channels determined by particular crystals installed in unit. **Intermediate frequency:** 455 kc. **Sensitivity:** 1/2 uv for 10 db signal-to-noise ratio. **Selectivity:** 5 kc @ 6 db down from peak response. **Audio response:** 300 to 2500 cps ±3 db. **Input impedance:** 50 to 70 ohm. **TRANSMITTER SECTION:** **Nominal power input to final RF amplifier:** 5 watts. **Frequency control effectiveness:** Within .005% of crystal frequency over ambient temperature range of -20 to +130° F. **Modulation:** AM plate modulation automatically limited to less than 100%. **Output impedance:** 50 to 70 ohm. **GENERAL SPECIFICATIONS**—Meter: For receiving, S9 scale indication corresponds to approximately 30 microvolts signal input. Usable deflection is obtained with signals as small as 2 microvolts. **External controls:** Volume/Off-On; Squelch; Selector switch with five crystal receive positions & provisions for 23 transmit channels by using external mounted crystal socket on front panel; Spot switch. **Power requirements:** 105-125 volts, 50/60 cps, AC 72 watts. 12 volts DC, 4.5 amperes; 6 volts DC, 9 amperes. **Dimensions:** Overall: 4 3/8" H x 8 3/8" W x 11" D.



Spotting Switch

Operates with front-panel crystal socket, & generates a signal to tune receiver to exact frequency of selected crystal.



Calibrated "S" Meter!

Indicates strength of received signal & relative power output.



Front-Panel Crystal Socket

Enables changing transmit crystal to any of 23 CB channels without removing cabinet.



TVI Filter

Minimizes interference with TV sets operating in surrounding area.



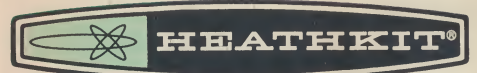
Variable Receiver Tuning

Illuminated... permits tuning all 23 channels with smooth vernier action.

Versatile Fixed or Mobile Operation!



GW-42
\$119⁹⁵



Modern Styling . . . Easy To Build! Includes an attractive 2-tone brown metal cabinet, push-to-talk microphone, AC & DC power cables, & crystals for one channel (specify). FCC license required. Order yours now!
Kit GW-42, 23 lbs. . . \$12 dn., \$11 mo. . . \$119.95

Heathkit "Master Station" CB Transceiver . . . Deluxe Features For Complete Versatility!

- 5 crystal-controlled transmit & receive channels
- Built-in 4 tone selective call circuitry
- All-channel receiver tuning
- Built-in 3-way power supply
- Adjustable squelch
- Switchable automatic noise limiter
- Simple to assemble

You're In Complete Command of any 2-way CB radio set-up when you own the GW-42 "Master Station" transceiver. Every feature incorporated into this deluxe unit is designed to provide maximum versatility & performance . . . to shorten the time & distance required for efficient personal, farm, or business operation. Its cost? Only \$119.95. Compare!

Ready To Go Anywhere! Car, truck, barn, home, office. Its versatile 3-way power supply operates on 117 v. AC, 6 or 12 v. DC. And its 5 crystal-controlled transmit & receive channels and 23-channel variable receiver tuning offer plenty of operating capability. The receiver boasts a 1/2 uv sensitivity. In addition there's a powerful 5-watt input transmitter, switchable automatic noise limiter, plus a large slide-rule dial with planetary drive & built-in tuning meter for precise station selection.

Built-In 4-Tone Selective Call! Permits individual call of up to 4 units on any CB channel . . . 92 possible combinations! Also eliminates unwanted CB conversations . . . receives calls only from units operating on same selective call frequency.

GW-42 GENERAL DESCRIPTION — RECEIVER SECTION: 6 tube superheterodyne circuit with RF amplifier, squelch, noise limiter, variable or crystal receiver tuning, tuning meter and built-in tone squelch with four front panel selected tones. **Tuning range:** (Crystal) Up to 5 switch selected channels (Variable); Tunes all 23 channels. **Intermediate frequency:** 455 kilocycles. **Sensitivity:** 1/2 microvolt or less for a 10 db signal to noise ratio. **Selectivity:** 40 db attenuation of adjacent channel 10 kc away. **TRANSMITTER SECTION:** Nominal power input to final RF amplifier: 5 watts. **Frequency control:** 3rd overtone quartz crystal as selected by the 5 position channel selector switch. **Frequency control effectiveness:** Operating frequency will be within .005% of nominal crystal frequency over an ambient temperature range of -20 +130 degrees F. **Modulation:** AM plate modulation, automatically limited to less than 100%. **Output impedance:** 50-70 ohm. **ONE SQUELCH SECTION:** Frequency control: Resonant reed relay; with reeds used for generation of calling tone and frequency selection during monitoring. **Controls:** Volume on/off; Receiver tuning Channel Selector; Tone Selector, Call switch, Squelch, Channel Selector; Noise limiter on/off, Reset time control; Power selector. **Power requirements:** AC at 105-125 volts, 60 cycles, 70 watts; 6VDC at 9 amps; 12VDC at 5 amps. **Dimensions:** 5 7/8" H x 17 1/2" W x 10 1/2" D.

Heathkit 5-Watt CB Transceiver With Built-In Selective Call!



- 5 crystal-controlled transmit & receive channels
- 4-tone selective call circuitry
- Superhet receiver with RF stage
- Built-in squelch & automatic noise limiter
- Simple to build & operate

GW-32A
\$84⁹⁵

Added Performance! Basically the same as the GW-22 (pg. 14), except for the addition of selective call circuitry . . . eliminates unwanted CB conversations, stops annoying speaker hiss & noise during standby, permits individual call of up to 4 units on same frequency! Includes push-to-talk microphone, power cable, and crystals for one channel (specify). FCC license required.
Kit GW-32A (117 v. AC), 15 lbs.

\$9 dn., \$8 mo. \$84.95
Kit GW-32D (6 or 12 v. DC), 15 lbs.
\$9 dn., \$9 mo. \$89.95

GENERAL DESCRIPTION—Receiver: 5-tube superheterodyne with RF stage, crystal-controlled, on up to 5 of the 23 channels as determined by the particular crystal(s) installed. **Sensitivity:** 1/2 microvolt for a 10 db signal-to-noise ratio. **Transmitter:** Power input to final RF amplifier, nominal 5 watts. **Nominal power requirements:** GW-32A—117 volts, 50/60 cps AC, 50 watts; GW-32D — 6 volts DC, 8.0 amps.; 12 volts DC, 4.5 amps. **Dimensions:** 9 1/4" D x 6 1/4" H x 9 1/2" W.

Choose A Complete CB Station For Extra Savings!

LOWEST COST! Mobile & Fixed Station System with Accessories . . .
Save \$11.85 . . . Only \$99.95



Mobile Station Kit GW-12D Reg. \$44.95

Fixed Station Kit GW-12A Reg. \$39.95

Two Push-To-Talk Microphones

DC Power Supply for Mobile Operation Included with GW-12D

Ground-Plane Fixed Station Antenna (Model CBF-1) Reg. \$17.95



Four crystals included, two for each transceiver

Complete Package \$99⁹⁵

Save \$11.85
Order #CBS-1, 36 lbs.
\$10 dn., \$9 mo.

New Fiberglass Mobile Antenna (Model GY-12) Reg. \$8.95

15' Coax cable for Mobile Antenna
50' Coax cable for Fixed Antenna

NEW! 5-Channel Mobile & Fixed Station CB System With Selective Call . . . Save \$19.76!

Mobile Station Kit GW-32D Reg. \$89.95

Fixed Station Kit GW-32A Reg. \$84.95

Two Push-To-Talk Microphones

New Roof-Top "Mobile" Antenna (Model GDP-25, reg. \$15.40)

Complete CB Package \$199⁹⁵

Save \$19.76 from reg. price.
Order Model CBS-3, 50 lbs.
\$20 dn., \$17 mo.

15' Coax cable for Mobile Antenna; 50' Coax cable for Fixed Antenna

New "Base Station" antenna (Model GDP-15, reg. \$29.36)

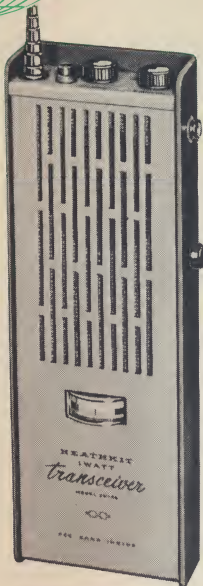


Powerful, Heathkit® Walkie-Talkies!

1-Watt Walkie-Talkie Ends Frequent Battery Replacement!

GW-52
\$74⁹⁵

(pair \$139.95)



- Includes \$20 rechargeable battery
- Up to 3-mile inter-unit communications
- 10 transistor, 2-diode circuit
- Crystal-controlled transmit & receive
- Adjustable squelch & automatic noise limiter
- Built-in 117 v. AC charger
- Rustproof, all-metal case

Slim, Rugged & Reliable! Ready to provide instant 2-way communications for added fun, safety & efficiency outdoors. Operates up to 3 miles between units... greater distances with external antenna or a 5-watt base station.

Deluxe Operating Features! Like the 10-cell nickel-cadmium battery that recharges from built-in 117 v. AC charger to eliminate frequent battery replacement... special power cord for recharging from car's 12 v. battery... superhet receiver with RF stage... built-in battery charge condition meter... leather shoulder & elastic hand straps for handling convenience.

Lightweight, Easy To Build! Housed in 2-tone green aluminum case. Includes battery, power cords, earphone, FCC license information & crystals for one channel (specify).

Kit GW-52, 4 lbs... \$8 dn., \$7 mo... \$74.95

Kit GW-52-2 (pair), 8 lbs... \$14 dn.,

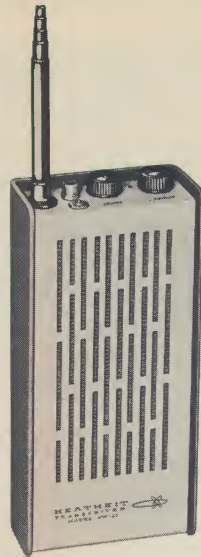
\$12 mo... \$139.95

GW-52 SPECIFICATIONS — Receiver — Sensitivity: 1/2 microvolt for 10 db signal-to-noise ratio. Selectivity: 7 kc at 6 db. Audio power output: 250 milliwatts. Transmitter: Input power to final stage: 1 watt nominal. Battery: 12.5 V. (500 mah rechargeable nickel cadmium; 12 hrs. use per charge). Battery life: 1500 hrs. min. 5000 hrs. likely in normal usage. Charging source: 117 VAC or 12 VDC. Antenna: 35" whip type, completely collapsible into cabinet, or external. Earphone jack: Miniature-type (earphone supplied). Cabinet dimensions: 10-15/16" H x 3 3/8" W x 1-11/16" D.

Deluxe 9-Transistor Walkie-Talkie... Hundreds Of Uses For Business & Pleasure!

GW-21A
\$39⁹⁵

(pair \$74.95)



- Up to 1 mile inter-unit operation
- Anyone can use it... no license required
- Crystal-controlled transmit, superhet receive
- Built-in squelch & automatic noise limiter
- Rust-resistant aluminum case

Ideal For Hunters, Farmers, CB'ers... anyone who needs portable short-range communications. Features superhet receiver with RF amplifier for strong, clear reception everytime; squelch & automatic noise limiter; and high efficiency transmitter for powerful signals.

Easy To Build & Use with fast circuit board construction, easy On/Off volume & squelch controls, & push-to-talk switch. Uses 9-volt battery that lasts up to 75 hours (not included). 2-tone green aluminum case with carrying strap. Includes accessory antenna jack, earphone & crystals for 1 channel (specify).

Kit GW-21A, 3 lbs... \$4 dn., \$5 mo... \$39.95

Kit GW-21-2 (pair) 6 lbs... \$8 dn.,

\$7 mo... \$74.95

GWA-30, Battery Set (2), 1 lb... \$2.95

GW-21A SPECIFICATIONS — Receiver: Crystal-controlled superheterodyne. Sensitivity: 1 uv for 10 db s/n ratio. Transmitter: Crystal-controlled, any channel 2 to 23 in 11 meter citizens band (unlicensed). RF input power: 100 milliwatt. Battery: 9 volt. Antenna: 35" whip. Circuit: 9 transistor, 2 diode. Dimensions: 8" H x 3 3/8" W x 1 1/2" D.

4-Transistor Walkie-Talkie... Only \$35 A Pair!

GW-31
\$19⁹⁵

(pair \$35.00)



- Operates 1/4 mile or more between similar units
- Built-in battery power
- No license, forms, tests or age limit
- Crystal-controlled transmitter — super-regenerative receiver
- Compact—fits easily in pocket, purse
- Sturdy steel case

Pocket-Size & Power-Packed! That's the compact, easy-to-handle GW-31. Ideal for anyone from Mom to the Boy Scout in your family... requires no tests, license or minimum age to operate. And it's so easy to operate, too. Only two controls—Off/On volume control & a push-to-talk switch—provide instant operation. Communicates "loud & clear" 1/4 mile or more between units. And a single 9-volt battery (not included) powers the unit up to 75 hours. Attractively styled in a brown & beige metal case.

And You'll Like Its Low Price! \$19.95 each... only \$35 a pair! Includes crystal for 1 channel (specify). Order yours now!

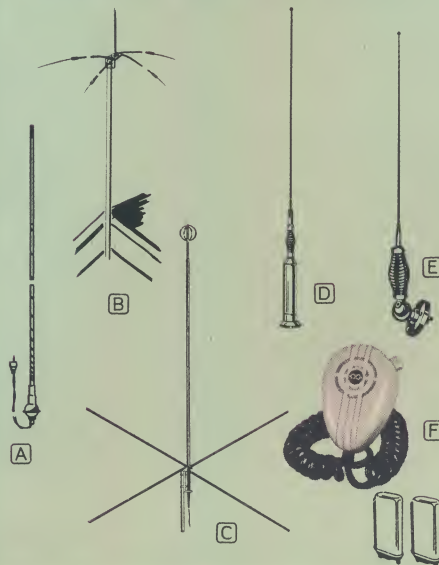
Kit GW-31... 2 lbs... \$19.95

Kit GW-31-2 (pair), 4 lbs., \$4 dn., \$5 mo. \$35.00

GWA-30: Battery Set. (2)... 1 lb... \$2.95

GW-31 SPECIFICATIONS — Receiver: Super-regenerative detector. Sensitivity: Usable with signals as low as 4 uv at antenna. Transmitter: Crystal-controlled, any channel 2 to 23 (unlicensed) in 11 meter citizens band. RF input power: 90 milliwatt. Battery: 9-volt. Antenna: 36" whip. Circuit: 4-transistor. Dimensions: 5 7/8" H x 3 1/8" W x 1 1/2" D.

Special CB Accessory Values!



A Model GY-12 Cowl Mount Mobile Antenna, 2 lbs... \$8.95. 48" fiberglass whip. Patented rocker support for 8-point ground. Complete with 15' RG-58U cable and connector.

B Model CBF-1 Ground Plane Antenna, 7 lbs... \$17.95. Non-directional 1/4 wave antenna measuring 9'4" from bracket bottom to radiator top. Includes 50' RG-58AU cable and clamp.

C Model GDP-15, Antenna Specialists M-117 Base Station CB Antenna, 16 lbs... \$29.36. Super Magnum; Omni-directional full 1/2-wave radials for max. RF decoupling.

D Model GDP-25, Antenna Specialists M-125 Rooftop Mobile Antenna, 4 lbs... \$15.40. Stainless steel spring; 3/8" "snap-in" mount; includes 20' RG 58/U cable & connector.

E Model GY-21 Ball Mount Mobile Antenna, 6 lbs... \$15.95. Two section 102" stainless steel whip with cadmium plated spring base and swivel ball mount, 20' RG-58U cable.

F Model GH-12 Microphone, 2 lbs... \$6.95. Push-to-talk type with tailored response for crisp communications. Complete with coiled cable, less connector.

Extra Transmit & Receive Crystals, 1 lb. (specify base/mobile or handheld transceiver)... ea. \$2.95



Unique Heath/Mitchell Fotoval™ System!

Now Produce Uniform-Quality Prints In Less Time At Lower Cost With This New Darkroom Computer!

- Accurately & scientifically indicates correct exposure times & photographic paper grades
- Cuts darkroom time, reduces paper costs, speeds your enlarging
- Quickly produce correctly exposed prints everytime
- Gimbal mounting bracket allows installation in any position
- Completely safe lighted to permit easy darkroom reading of meter indications
- Simple to assemble and operate

The First Print Is The Print! Unbelievable? Not with the revolutionary Heath/Mitchell Fotoval Computer System in your darkroom. Just one simple standardizing procedure, and you start producing any amount of beautiful black & white prints quickly, economically. No more wasting expensive paper... no more long, laborious hours in the darkroom... no more guessing which paper grade to use, or how long to expose each print. Imagine the savings in time, paper and money!

How Does It Work? With the unique 35 mm Test Negative, you quickly & simply determine accurate exposure times for each type & grade of paper or variable contrast filter. You then record this information on the computer scales provided. Next select the desired paper type & surface, and insert the corresponding computer scale into the Fotoval. Place the negative you wish to print in the enlarger. With the light-sensitive probe, positioned on the desired detailed black, adjust the meter to full scale using the enlarging lens diaphragm. Then meter the most desirable detailed highlight, and read the exposure time & paper grade (or filter) directly from the computer. Expose for the indicated time and develop. That's all there is to it. All prints will have uniform contrast & density.

Prints Can Be Developed Anytime By Anyone! Since all variables are held constant, you keep making prints while someone else, regardless of experience, develops the prints you've already made! Even the novice will enjoy remarkable results.

Fast & Easy To Assemble! You'll find the Fotoval Computer as easy to build as it is to use... requires no special skills or knowledge. Order yours now!

Kit PM-14, 8 lbs... \$9 dn., \$9 mo..... \$89.00



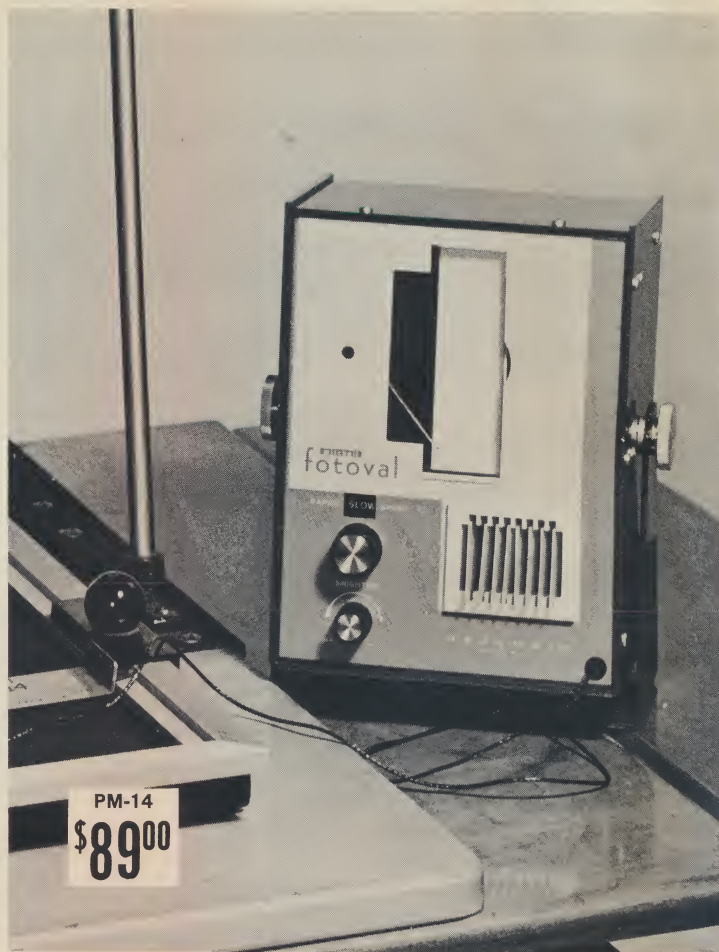
Fotoval Calibration Negative. Use only for initial system calibration. Determines correct exposure time for each contrast grade of paper. Allows you to determine the best choice for every negative.

Once calculations are made & recorded on computer scale, they are used for all future printing as long as developing process remains the same.

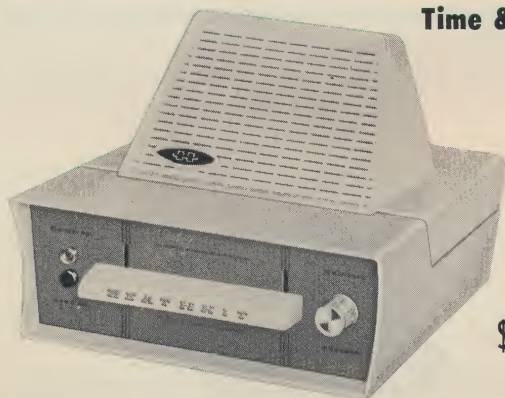


Light-Sensitive Probe! Incorporates all important switching, no need to manipulate computer.

Used for measuring extremely small areas of light when scanning negatives for desired shadow & highlight details. Shaped to fit and function easily in your hand... stays put when placed on working surface... fits into corner of easel. Magnetized base for added handling ease!



Time & Step Savers... Heathkit Intercoms!



GD-51A
\$22⁹⁵

Heathkit Portable "Wireless" Intercom... Plugs In Anywhere!

- No connecting wires between units... just plug into nearest AC or DC outlet
- All-transistor circuit—built-in AC power supply
- Switch-selection of 2 operating frequencies
- Add as many units as you wish anytime
- Attractive 2-tone beige plastic cabinets
- New variable squelch to hush background noise

Simple To Use... Portable! Plug it in, push the large press-to-talk bar, and talk. Saves valuable time & steps, eliminates annoying shouting. Use any number anywhere as long as they all operate on same 117 v. AC power line! **Ideal For Baby-Sitting & Dictation!** Press-to-talk bar has a spring-return to listen, & a "dictate" hold position for keeping tabs on baby or for predominately one-way transmissions. All-transistor circuit insures instant operation, long life... adjustable squelch minimizes background noises. Easy to build. Choose a pair now!

Kit GD-51A-2 (pair), 10 lbs... \$5 dn., \$5 mo..... \$45.90

Kit GD-51A (one station), 5 lbs..... \$22.95

GD-51A SPECIFICATIONS—Power requirements: 105-125 V. 50/60 cycle AC or DC. Standby power: 2.5 watts. Transmit frequency: 220 kc & 180 kc (switch selected). Size: 6 1/4" H x 8" W x 7 1/2" D.



Complete System
\$44⁸⁵



Indoor-Outdoor Intercom System... Ideal For Homes, Offices, Commercial Institutions!

- Master unit handles up to 5 remote stations
- Weatherproof outdoor remote
- Powerful one-watt output for crisp, clear communications
- Compact, designer-styled cabinets

Provides An Added Measure Of Household Safety! With this versatile Heathkit Indoor-Outdoor Intercom system you know who's calling before opening the door. You'll especially appreciate this added security late at night or when you're alone! And since the master handles up to 5 remotes, you enjoy instant 2-way communications anywhere in your home.

Private Call Or Paging! Ideal for clinics, hospitals, factories, etc. Master unit features selective and all-call switches for private inter-unit communications or paging entire remote group. Also any 2 remotes can communicate. Each remote includes 50' of 3-conductor wire & matching beige plastic cabinet. Weatherproof outdoor remote features rustproof, specially-coated speaker, doorbell button and 50' of 2-wire cable. Order the complete set now!

Kit GD-121 Master Station, 6 lbs... \$3 dn., \$5 mo..... \$29.95

Kit GD-131 Indoor Remote, 4 lbs..... \$8.95

Kit GD-141 Outdoor Remote, 2 lbs..... \$5.95

SPECIFICATIONS—Power requirements: 117 v AC 50/60 cycles 2.5 watts (idling), 3.5 watts (full output). Transistors: four 2N1274. Dimensions: 6 1/4" H x 8" W x 7 1/2" D (master), 5" H x 8" W x 6" D (indoor remote), 5 1/4" x 4 1/2" panel size (outdoor remote).

This Is The Year For You To Begin A New Hobby — Choose from Heath's 11 product lines



Explore the Exciting World of Electronics with Heath Educational Kits



EF-1-4
\$39⁹⁵

"How To Understand & Use Your Vacuum Tube Voltmeter"

Learn the theory, advantages and applications of the Vacuum Tube Voltmeter . . . use this Heathkit combination kit and textbook. A special power supply lets you learn-by-doing, experiments are outlined in the text. Material in the text is arranged to assist the beginner and the professional alike. Real value, and an opportunity to get the most out of your VTVM.

Kit EF-1, Text and special power supply (for VTVM owners), 3 lbs. \$8.95
Kit EF-1-4, includes EF-1 and IM-13 VTVM, p. 43, 10 lbs. . . \$4 dn., \$5 mo. . . \$39.95
Kit EF-1-3, includes EF-1 and IM-11 VTVM, p. 43, 8 lbs. . . \$4 dn., \$5 mo. . . \$32.50



EF-2-3
\$62⁹⁵

"How To Understand & Use Your Oscilloscope"

Take the mystery out of using the oscilloscope. Discover how this versatile instrument can help you solve many of your electronic problems. Test chassis with spring-clip components can be re-used practically without limit—excellent for classroom setup. You'll want to make the text a permanent part of your library. The oscilloscope will become your favorite test instrument with the help of this kit.

Kit EF-2, Text and special chassis & parts, 4 lbs. \$9.95
Kit EF-2-3, includes EF-2 and IO-21 3" Oscilloscope, pg. 42, 16 lbs. . . \$7 dn., \$6 mo. . \$62.95
Kit EF-2-4, includes EF-2 and IO-12 5" Oscilloscope, pg. 42, 28 lbs. . . \$9 dn., \$8 mo. \$84.95



EF-3-3
\$61⁹⁵

"How To Understand & Use Your Signal Generator"

Get the most out of your signal generator. This easy-to-understand text covers general electronic theory, plus theory, function and use of RF and Audio frequency generators. It is perfect for home study, the classroom, or the reference library. Test chassis provides oscillator, amplifier, and many other experimental circuits. Solderless connectors permit re-use of components.

Kit EF-3, Text and special test chassis, 2 lbs. \$11.95
Kit EF-3-2, includes EF-3 and IG-102 RF Signal Generator, pg. 41, 9 lbs. . . \$4 dn., \$5 mo. \$37.95
Kit EF-3-3, includes EF-3 and IG-82 Sine-Square Generator, pg. 44, 16 lbs. . . \$7 dn., \$6 mo. \$61.95



EK-1
\$19⁹⁵

Basic Electricity Kit . . . excellent first kit for the new experimenter!

Learn by doing! Whether an adult or student, here is the perfect way to learn about electricity and electronics. Learn the principles of voltage, current, and resistance, and at the same time, build a handy volt-ohm-milliammeter. Kit designed by a science educator. Youngsters and adults can enjoy a whole new world of electronics that can lead to a profitable career.

Basic Electricity (EK-1), 4 lbs. \$19.95

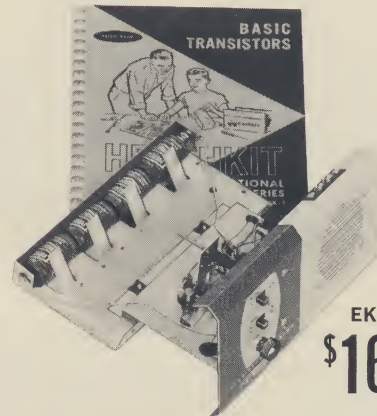


EK-2A
\$19⁹⁵

Basic Radio Course—2 Parts

Complete text with kit . . . makes understanding radio easy . . . start by building simple crystal receiver . . . improve it chapter by chapter. Result: a regenerative tube-type receiver! In Basic Radio Part II you progress step-by-step through more advanced circuits. Result: You build a 2-band superheterodyne receiver! Part I and Part II combine theory and actual construction and experimentation to make learning really exciting. Try them . . . you'll discover real satisfaction.

Basic Radio Part I (Kit EK-2A), 7 lbs. . . \$19.95
Basic Radio Part II (Kit EK-2B), 4 lbs. . \$19.95
Accessory Cabinet AK-8: For completed receiver, 3 lbs. \$3.95



EK-3
\$16⁹⁵

Basic Transistor Kit . . . provides two-station intercom

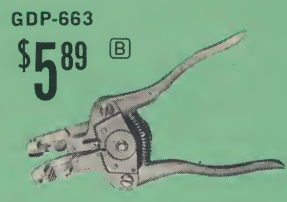
Coordinated text and kit construction leads through a series of experiments—how transistors work, why they're necessary, what their association is to circuitry. No difficult mathematics, yet provides thorough background. Result: Basic understanding for troubleshooting and advanced theory, plus useful two-station intercom. Excellent background for transistorized computer electronics.

Basic Transistors (EK-3), 4 lbs. . . . only \$16.95

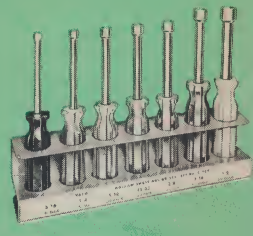
Handy Workshop Helpers!



A
490-26
\$5.83



GDP-663
\$5.89 **B**



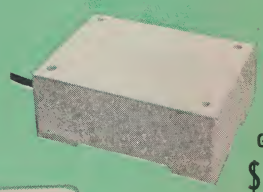
E
GDP-204
\$6.42



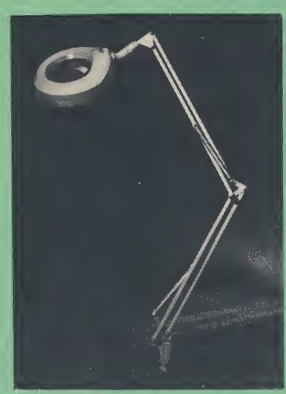
F GDP-584
\$15.88



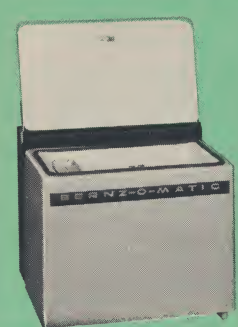
GDP-595 **D**
\$19.45



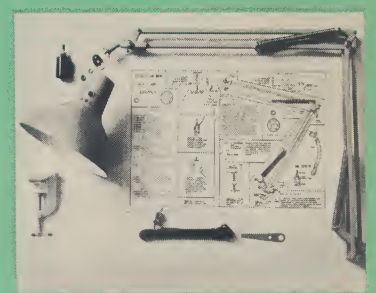
H
GDP-331
\$19.40



C
GDP-64
\$21.95



I
MDP-23
\$49.95



G GDP-202
\$9.95

- A Weller 8200 Dual-Heat Soldering Gun**
 - Instant switching from high (140 watts) to low (100 watts) • Prefocused spotlight illuminates work • Includes gun, soldering aid, cleaning brush, radio solder
 - Model 490-26, 3 lbs. \$5.83
- B Speedex Wire & Cable Stripper Model 766-1 . . . Save \$4.00!**
 - Precision tool, simple to use • Insert wire into jaws, squeeze handle—insulation comes off just that fast! • Graduated jaws accept No. 10, 12, 14, 16, 22 wire • Manufactured by General Cement
 - Model GDP-663, 2 lbs. . . Mfrs. list \$9.95 Only \$5.89
- C Luxo CMK-1A Lamp Kit . . . Ideal For Shop Or Industry!**
 - Ideal for visual accuracy on printed circuits & reading parts numbers • Excellent magnification & cool shadow-free light • Portable • U.L. approved • 110-120 v. AC, 60 cycle • Easy to build • Less bulb
 - Kit GDP-64, 5 lbs. \$21.95
- D New! Blonder-Tongue, All-Transistor UHF Converter BTX-99!**
 - Adds all UHF channels 14 to 83 to any TV set • Ideal for prime signal areas • In many areas performs well with indoor antenna • All-transistor circuit provides maximum signal power & drift-free, distortion-free performance • U.L. approved.
 - GDP-593, 3 lbs. \$19.45
- E Vaco Hollow Shaft Nut Driver Set No. S-700**
 - 7 drivers • Hollow-shafts for nut installation on switches, controls • Store in

- self-supporting metal rack • Color-coded tough plastic handles • Sizes—3/16", 1/4", 5/16", 11/32", 3/8", 7/16", 1/2"
- Model GDP-204, 3 lbs. \$6.42
- F Shopmate Model 1838 3/8" Drill**
 - 1/4 hp., 3.4 amp motor • No-load 1000 rpm, full-load 600 rpm • Drills 3/8" steel, 1" hardwood • 3-jaw geared chuck w/key • Lock-type trigger • 6' cord
 - GDP-584, 6 lbs. \$15.88
- G Z-Lyte Model 210 Incandescent Extension Lamp**
 - A snap to build . . . just attach socket, shade & cord, the precision spring-balanced extension arm is completely assembled • Has 45" reach, 360° sweep, vented shade • Clamps to desk or table • U.L. approved • Less bulb
 - Kit GDP-202, 6 lbs. . . Mfrs. list \$14.50 Only \$9.95
- H Transistorized Blonder-Tongue FM-TV Booster, IT-4**
 - Dependable, trouble-free • Accepts 4 FM & TV sets simultaneously. 300 ohm input & output • Easy to install • 1 5/8" x 2 7/8" x 4"
 - GDP-331, 1 lb. Only \$19.40
- I BERN-Z-O-MATIC TX-2000 Portable Electric Refrigerator**
 - Convenient, goes anywhere • Holds 15 lbs. of food & beverages • Operates on 117 v. AC for office, cottage, motel use; and 12 v. DC for boat, car, trailer.
 - High impact plastic case w/foam insulation • 14 3/4" L x 12 1/4" W x 13 1/4" H.
 - MDP-23, 21 lbs. . . Mfrs. list \$64.95 . . . \$5 dn., \$5 mo. \$49.95

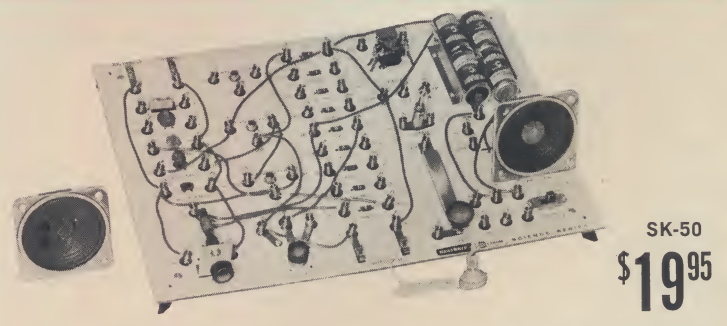
Here's The Laboratory For Your Junior Scientists . . . The Heathkit Experimenter Electronic Workshop "19"

19 Different Electronic Units! Imagine the fun he'll have playing with a code flasher, burglar alarm, public address system, 5 transistor radios, electronic eye, TV silencer, metronome, wireless code and voice transmitter, etc. . . . all made by him on one giant circuit board. Circuit changes are easy to make and components can't get lost for they mount permanently on the circuit-workboard. All power is provided by safe, inexpensive flashlight batteries (not included).

Easy Instructions! Complete explanations of how-to-build, plus the "how" and "why" of each experiment in everyday, non-technical language.

Complete Feature-Packed Kit! Includes circuit board, 3 transistors, crystal earphone, two 3" cone-type speakers, a photo cell, relay, tuneable coil, potentiometer, resistors, capacitors, all hardware, solderless connectors, screwdriver, and instructions. A real bargain at this low price . . . order one for your youngster today.

Kit SK-50, 4 lbs. \$19.95



SK-50
\$19.95

- Ideal Gift for youngsters of all ages • Makes 19 different, fascinating electronic transistor units • Provides countless hours of educational fun
- "Solderless" spring-type connectors for fast, easy circuit changes • Uses safe flashlight battery power • Simple, cartoon-illustrated instructions and educational operating principles in non-technical language

Heathkit® Electronics Puts Modern Instrumentation In Your Classroom—Within Your Budget



IMPSCOPE Brings New Insight To Life-Science Classes

Lets Students "See" Physiological Phenomena

Kit Form
or
Factory
Assembled

EV-3

\$160⁰⁰

WHAT IT DOES

IMPSCOPE With Accessories . . .

- Clearly Demonstrates EKG
- Shows Human EKG
- Shows Frog Sciatic Nerve Impulse
- Shows Frog EKG
- Shows Plethysmographic Pressure Display
- Plus Many More Lab And Classroom Uses



Included With IMPSCOPE

- Input termination and calibrator
- Human EKG electrodes • EKG paste • Connecting leads

IMPSCOPE Achieved Immediate Success In High School Biology Classes . . .

Has Become An Integral Part Of Many College Physiology Courses

• Brings the most recent physiological instrumentation techniques to the student in the classroom • A complete teaching package consisting of a high-gain oscilloscope with built-in stimulator, laboratory sourcebook, and many accessories • Priced for multiple lab usage in biology & physiology courses in both general science and medical curriculums • Instruments and techniques developed under Project IMPSCOPE, funded by the NSF and sponsored by the University of California, Berkeley • Ideal laboratory adjunct to classroom material created by the BSCS program • Instruments and accessories available in either easy-to-assemble kit form or factory assembled & tested • Complete set of human EKG electrodes and EKG paste supplied • Not intended for medical diagnostic use

IMPSCOPE Is An Inexpensive Instrument for the study of physiological phenomena of man and common invertebrates. Investigates electrical activity of heart, nerves, muscles, & brain. It consists of a high-gain oscilloscope with a built-in stimulator, and can be augmented with accessories to perform many additional functions for the study of biology and physiology.

IMPSCOPE Brings Modern Instrumentation into your classroom, fulfilling a vital need in the teaching of life science. Can be easily understood by high school students!

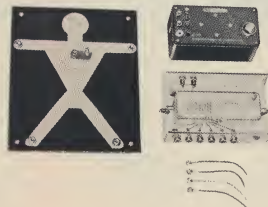
Kit EV-3, 29 lbs. . . \$16 dn., \$15 mo. \$160.00
Assembled EVW-3, 27 lbs. . . \$25 dn., \$22 mo. \$250.00
Export model available for 115/230 VAC, 50-60 cps; write for prices.

EV-3 SPECIFICATIONS—VERTICAL AMPLIFIER: Sensitivity: Switch selected; 200 microvolt, 1 millivolt, and 5 millivolts per centimeter. Variable from 200 microvolts to 5 millivolts per centimeter. Bandwidth: ± 3 db from 0.25 to 2500 cps. Input: Balanced. HORIZONTAL: Sweep frequency (rate per centimeter): Slow, 0.15 to 5 sec. Medium, 7.5 milliseconds to 0.2 sec. Fast, 0.5 to 1.0 milliseconds. Stimulator: Rate: 6 to 30 stimuli per second. Recurrent stimulus or single stimulus with pushbutton—indicator light on front panel. Stimulus duration: 0.25 to 6 milliseconds. May be increased with an external capacitor—jack provided. Power requirements: 70 watts, 105-125 volts, 50/60 cps AC. Dimensions: Overall, 11½" W x 7½" H x 19½" D. Net weight: 17½ lbs.

IMPSCOPE Accessories

EVA-3-1

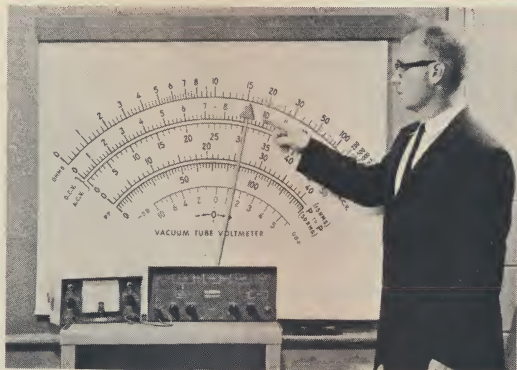
\$35⁰⁰



Accessory Package

- Plethysmograph • Nerve chamber • EKG vector dolly • Frog EKG electrodes

EVA-3-1, Accessory Package: Includes nerve chamber, vector dolly, plethysmograph, frog electrodes & manual of instructions. 3 lbs. \$35.00
EVW-3-1, Factory Assembled Accessories, 3 lbs. \$50.00



Kit Form
or
Factory
Assembled

Classroom Demonstration Servo-Meter . . . Order With Heath EUW-24 VTVM For Extra Savings!

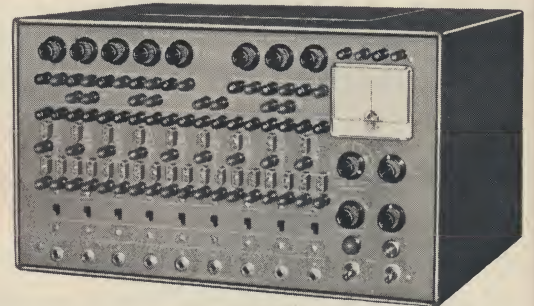
Connect To VOM or VTVM Meter For Servo Drive. 3x4 Foot Scale. Kit EV-2, 23 lbs. . . \$10 dn., \$9 mo. \$99.95
Assembled EVW-2, 20 lbs. . . \$16 dn., \$14 mo. \$159.95
Special Combination Offer!
Model EVS-1 (EVW-2 Servo-Mechanism & EUW-24 VTVM), factory assembled & tested, 29 lbs. . . \$20 dn., \$17 mo.
Reg. \$222 value! Only \$199.00

EV-2 SPECIFICATIONS—Dimensions: Servo-Mechanism: 7½" H x 15¼" W x 7¾" D. Chart Housing: 45" L x 3" H x 2" D. Chart: 7 ft. L x 44" W, roller type. Material: 2-color "Texoprint" plastic-impregnated. Input: 10-300 mv full scale (0-10 volts—0-100 volts with proper voltage dividers at input terminals not supplied). Error: Less than 3% of full scale at 200 mv, 5% of full scale at 10 mv. Reference system: Mercury cell. Reference Cell Life: 300 hours (approx.). Max. Source Resistance: 50K ohm. Power requirements: 105-125 V AC, 60 cycle, 50 watts. Fuse: 1 ampere slow-blow.

Educational Electronic Analog Computer Kit

EC-1

\$199⁹⁵



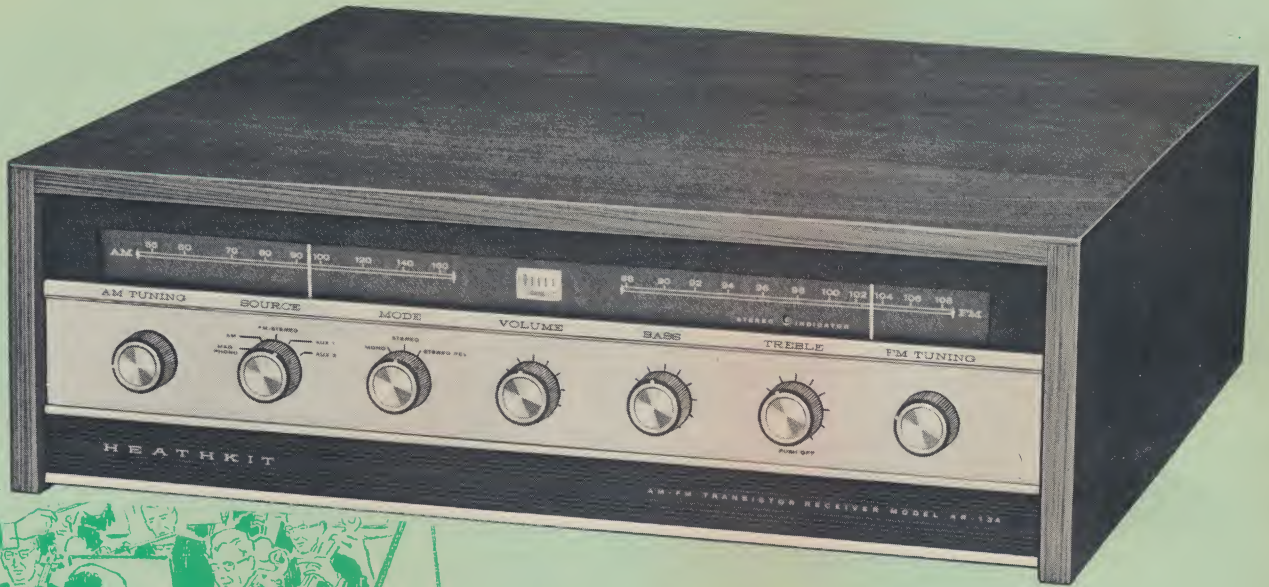
- Ideal for teaching & training • Solve complex mathematical problems • 9 DC operational amplifiers—open loop gain of 1000 • Versatile in performance and application

Features 9 DC operational amplifiers with provision for balancing without removing problem setup; 3 meter ranges; built-in power supplies, including 3 initial condition supplies; repetitive oscillator and 5 coefficient potentiometers with terminals on panel. Will handle scores of computer problems. Kit EC-1 . . . 49 lbs. . . \$20 dn., \$17 mo. \$199.95
Export model available for 115/230 v. AC, 50-60 cps; write for prices.

EC-1 SPECIFICATIONS—Amplifiers: Open loop gain approximately 1000. Output—60 +60 volts at .7 ma. Power supplies: ± 300 volts at 25 ma electronically regulated, variable from +250 to +350 by control with meter reference for setting +300 volts. Negative 150 volts at 40 ma regulated by VR tube. Repetitive operation: Multivibrator cycles a relay of adjustable rates (0.1 to 15 cps), to repeat the solution any number of times; permits observation of effect on solution of changing parameters. Meter: 50-0-50 uA movement. Power requirements: 105-125 volts, 50/60 cycles, 100 watts. Dimensions: 19½" W x 11½" H x 15" D.

Here's How You Can Save up to \$200.00 on Your All-Transistor Stereo Receiver

AR-13A
\$195⁰⁰



Compare Features And Price— You'll Choose The AR-13A For Value And Performance

- AM/FM/FM Stereo tuning • Stereo preamplifiers • 40-watts stereo power • Sleek-silhouette styling • Walnut cabinet • 40 watts continuous sine-wave power—66 watts IHF Music Power, ± 1 db from 15 to 30,000 cps • Stereo indicator signals automatically when stereo is received • "Beat-free" tape recording—outputs are filtered • Dual tandem controls for simultaneous adjustments of volume, bass, and treble of both channels • Separate control for dual-channel balance • Three stereo inputs • 46-transistor, 17-diode circuitry for cool, instant, economical operation, and the crisp, natural beauty of "transistor" sound • Preassembled, pre-aligned "front-end" and AM-FM I.F. strip aid construction • AM tuner features high-gain RF stage and High-Q rod antenna • FM tuner has built-in line cord antenna, plus switch for external antenna • AFC for easy tuning.

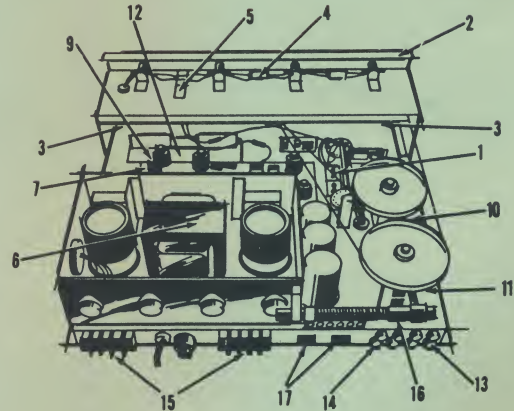
Heathkit builder Carl Pearson of Blue Island, Illinois suggests we write an ad for the AR-13A as follows: "Try the all new, completely transistorized Heathkit AR-13 for true-to-life sound." "Build the AR-13 and convince yourself", he goes on. "You've never heard it so good." We modestly agree. In Fact, We Invite You To Compare... Go Ahead!... Compare the Heathkit AR-13A with Stereo Receivers costing as much as \$200.00 more... You'll see there's no greater value in a stereo receiver—anywhere!

Get Power To Spare! Enjoy the clean, cool 40-watts of transistorized audio power. (The AR-13A includes the same AA-22 amplifier circuitry that Julian P. Hirsch raved about in the Nov. '64 issue of Hi-Fi/Stereo Review.) You'll experience the total realism of transistor sound... of hum-free operation... of less than 1% intermodulation even when the unit is operated at nearly twice its rated output!

Choose The Performance Leader! Solid-state circuit automatically routes the signal through the built-in stereo adapter—no manual operation. Local-distance switch prevents overloading. Automatic Frequency Control provides positive tuning. Smooth, flywheel tuning, tuning meter, and lighted AM & FM slide-rule dials offer pinpoint tuning. Transformer power supply assures a solid, full power at all frequencies, and during heavy audio power demands.

Move Up To The Heathkit AR-13A. It's your best buy in stereo receivers. Here's What "Radio-TV Experimenter" Says About The AR-13A A detailed editorial review in the February-March issue concludes with, "Comparing the AR-13A on a feature versus dollar basis, one cannot help but admit that the receiver is a rock-bottom dollar buy, about the best you can hope for in the solid-state market place." Be sure to see this article for a full critique of the AR-13A.

Kit AR-13A, 34 lbs... \$20 dn., \$17 mo... \$195.00
Export model available for 115/230 VAC, 50-60 cps; write for prices.



The Latest "Solid-State" Circuitry & Features!

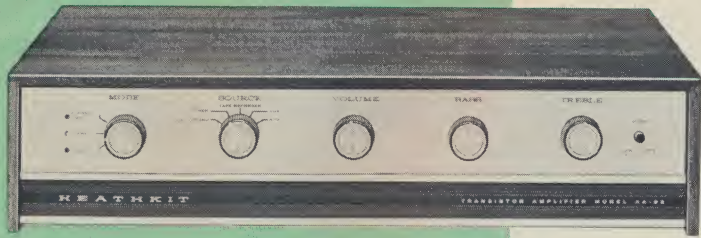
1. Pre-assembled pre-aligned AM/FM IF strip
2. Anodized extruded aluminum front panel
3. Flywheel tuning
4. Tuning meter
5. Stereo indicator light
6. Transformer operated power supply
7. Built-in stereo demodulator
8. Built-in line antenna FM (not shown)
9. 19 kc and 38 kc output filter
10. Pre-assembled, prealigned FM front end
11. AM RF amplifier stage
12. Circuit modules
13. Three stereo inputs
14. Low impedance tape recorder outputs
15. Transformerless 4, 8, and 16 ohm outputs
16. AM rod antenna
17. Switched and unswitched line outputs.

Important: The AR-13A Is Exempt From Any Special System Discount.

AR-13A SPECIFICATIONS — AMPLIFIER: Power output per channel (Heath Rating): 20 watts/8 ohm load, 13.5 watts/16 ohm load, 9 watts/4 ohm load. [IHF Music Power Output]: 33 watts/8 ohm load, 18 watts/16 ohm load, 12 watts/4 ohm load @ 0.7% THD, 1 kc. **Frequency response:** ± 1 db from 15 cps to 30 kc @ rated output; ± 3 db from 10 cps to 60 kc @ rated output. **Harmonic distortion (at rated output):** Less than 1% @ 20 cps; less than 0.3% @ 1 kc; less than 1% @ 20 kc. **Intermodulation distortion (at rated output):** Less than 1%, 60 & 6,000 cps signal mixed 4:1. **Hum & noise:** Mag. phono, 50 db below rated output; Aux. inputs, 65 db below rated output. **Channel separation:** 40 db @ 20 kc, 60 db @ 1 kc, 40 db @ 20 cps. **Input sensitivity: (for 20 watts output per channel, 8 ohm load):** Mag. phono, 6 MV; Aux. 1, .25 v; Aux. 2, .25 v. **Input impedance:** Mag. phono, 35 K ohm; Aux. 1, 100 K ohm; Aux. 2, 100 K ohm. **Outputs:** 4, 8, & 16 ohm and low impedance tape recorder outputs. **Controls:** 5-position Selector; 3-position Mode; Dual Tandem Volume; Bass & Treble Controls; Balance Control; Phase Switch; Input Level Controls (all inputs except Aux. 2); Push-Pull ON/OFF Switch. **FM: Tuning range:** 88 mc to 108 mc. **IF frequency:** 10.7 mc. **Frequency response:** ± 3 db, 20 to 15,000 cps. **Capture ratio:** 3 db. **Antenna:** 300 ohm balanced (internal for local reception). **Quieting sensitivity:** 1 1/2 uv for 20 db of quieting, 2 uv for 30 db of quieting. **Bandwidth:** 325 kc @ 6 db down with 1000 uv input. **Image rejection:** 35 db. **IF rejection:** 70 db. **AM suppression:** 35 db. **Harmonic distortion:** Less than 1%. **STEREO MULTIPLEX:** Bandpass: $\pm 1/4$ db, 50 to 53,000 cps. **Channel separation:** (SCA Filter Off) 30 db, 50 to 2,000 cps. 25 db at 10 kc. **19 KC & 38 KC Suppression:** 45 db down from rated output at 1 kc. **SCA Rejection:** 35 db down from rated output. **AM Tuning range:** 535 to 1620 kc. **IF frequency:** 455 kc. **Sensitivity:** 30 uv @ 600 kc; 9 uv @ 1000 kc. **Bandwidth:** 8 kc @ 6 db down. **Image rejection:** 40 db @ 600 kc. **IF rejection:** 55 db @ 1000 kc. **Harmonic distortion:** Less than 2% with 1000 uv input, 400 cps with 30% modulation. **Hum & noise:** 40 db. **Overall dimensions:** 17" L x 5 1/2" H x 14 1/4" D. **Power requirements:** 105-125 volts, 50-60 cps AC, 30 watts idling, 110 watts max.



Big Solid-State Sound, Sleek Silhouette



AA-22 **\$99⁹⁵**

More From J. Hirsch On The AA-22!

"Intermodulation distortion was about 0.5% up to 10 watts, and only 1% at 38 watts per channel with both channels driven" . . . "I operated it at full power for long periods, and frequently overdrove it mercilessly, without damage to the transistors, and with no change in its performance measurements."

AA-22 SPECIFICATIONS—Simultaneous power output per channel: (Heath Rating) 20 watts/8 ohm load, 13 watts/16 ohm load, 9 watts/4 ohm load. (IHF music power output) 33 watts/8 ohm load, 18 watts/16 ohm load, 16 watts/4 ohm load @ 0.7% THD, 1 kc. **Power response:** ±1 db from 15 cps to 30 kc @ rated output. ±3 db from 10 cps to 60 kc @ rated output. **Harmonic distortion:** (at rated output) Less than 1% @ 20 cps, 0.3% @ 1 kc, 1% @ 20 kc. **Intermodulation distortion:** (at rated output). Less than 1%, 60 and 6,000 cps signal mixed 4:1. **Hum and noise:** Mag phono, 50 db below rated output. Aux inputs 65 db below rated output. **Channel separation:** 40 db @ 20 cps, 60 db @ 1 kc, 40 db @ 20 kc. **Input sensitivity:** (for 20 watts output per channel, 8-ohm load), Mag phono, 6 mv; Tuner, 250 mv; Tape Recorder, 250 mv; Aux 1, 250 mv; Aux 2, 250 mv. **Input impedance:** Mag phono, 35 K ohm; Tuner, 100 K ohm; Tape Recorder, 100 K ohm; Aux 1, 100 K ohm; Aux 2, 100 K ohm. **Outputs:** 4, 8 and 16 ohm and tape recorder outputs. **Controls:** 5-position selector switch, 3-position mode switch, dual-tandem volume, bass and treble controls, phase switch, input level controls, push-on push-off switch. **Semi-conductor complement:** 20 transistors, 10 diodes. **Power requirements:** 105-125 volts, 50-60 cycles AC, 25 watts idling, no signal; 105 watts, full power output @ 120 volts with no load on AC receptacles. **Power outlets:** 2 AC receptacles, 1 switched, 1 unswitched. **Dimensions:** 15 5/8" W x 3 3/4" H x 11 1/2" D (allow 1 1/2" extra for rear projections).

Praise Winner . . . Low-Cost Heathkit 40-Watt All-Transistor Stereo Amplifier!

• 20-transistor, 10-diode circuit • Delivers full 66 watts IHF Music Power, 40 watts continuous at ±1 db from 15 to 30,000 cps • Less than 1% distortion • 5 stereo inputs for any program source • Secondary controls concealed & protected under hinged lower front panel • Handsome pre-assembled walnut cabinet . . . modern low-silhouette styling . . . matches Heathkit AJ-33A tuner

What Have Audio Experts Like Julian D. Hirsch Learned About The AA-22? In the Nov. issue of HI-FI/STEREO REVIEW, Mr. Hirsch said: "The AA-22 is almost unique among amplifiers at or near its price, since it delivers more than its rated power over the entire range from 20 to 20,000 cps" . . . "The power response curve of this amplifier is one of the flattest I have ever measured" . . . "Its RIAA phono equalization was one of the most precise I have ever measured" . . . "The hum and noise of the amplifier were inaudible."

How About AA-22 Owners? John M. Libenow, Los Angeles, Calif. said: "Its construction details, its excellent chassis layout, its good looks, and wonderful performance (as well as versatility and ease of operation) have left me little more to desire." Isn't this the performance you want in a transistor amplifier? It's yours . . . for only \$99.95 including cabinet!

Handles Any Program Source! 5 stereo inputs accommodate stereo mag. phono, stereo-mono tuners, stereo tape recorders, & 2 auxiliary sources. There are outputs for 4, 8, & 16 ohm speakers, plus tape recorders. A transformerless output circuit assures greater stability and efficiency. Front panel controls include a 5-position selector switch, 3-position mode switch, dual-tandem volume, bass & treble controls and push-push power switch. All secondary controls (input level controls, balance control & speaker phase switch) are concealed under the hinged lower front panel . . . eliminates accidental setting changes.

Modern Styling! Beautiful factory-built walnut cabinet with extruded aluminum brushed gold front panel . . . enriches any surroundings.

Kit AA-22, 23 lbs. . . \$10 dn., \$9 mo. \$99.95
Export model available for 115/230 VAC, 50-60 cps; write for prices.

Matching All-Transistor AM/FM/FM Stereo Tuner . . . Crisp, Clean Styling & Sound!

• 23-transistor, 8-diode circuitry • Built-in stereo demodulator • AFC for positive tuning • Stereo indicator light • Filtered stereo outputs • Stereo phase control for maximum separation, minimum distortion • Includes luxurious walnut cabinet . . . matches AA-22 amplifier

What's Your Listening Pleasure? The quiet beauty and realism of FM and FM Stereo, or the music, news and sports of popular AM? You enjoy it all on the versatile AJ-33A. And pulling power? RADIO-ELECTRONICS magazine in a recent review of the AJ-33A said: ". . . it will get any station that can possibly be pulled in." And AJ-33A owner Mr. James E. Skibo, Bethlehem, Pa. wrote: ". . . with no external antenna on either AM or FM, I find that I can receive AM for a five-hundred radius and FM for a hundred mile radius! Stereo too! Now that is what I call a tuner!"

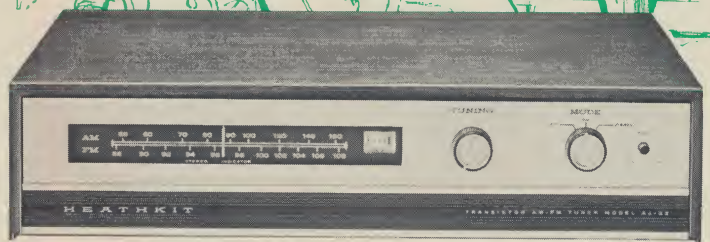
What Makes This Performance Possible? A superbly designed 23 transistor, 8 diode circuit that produces a natural, distortion-free sound without microphonics . . . assures cool, instant operation . . . provides a long life with no component deterioration . . . and lowers power consumption.

Advanced Features Add Convenience, Versatility! Like the built-in stereo demodulator; automatic stereo indicator light; AGC for steady volume . . . no blasting or fading; adjustable FM squelch to obliterate annoying between-station noise when tuning; AFC that "snaps-in" FM stations; and a Stereo Phase Control that maximizes station separation, minimizes distortion. For direct, beat-free stereo recording, both channel outputs are filtered. And a tuning meter, illuminated slide-rule dial, and flywheel tuning assure precise station selection. The voltage-regulated power supply offers high stability.

Luxurious Walnut Cabinet Included! With the extruded brushed gold-anodized front panel, it enriches any room's surroundings. Assembly is quick and easy with the prebuilt, prealigned FM "front-end" and AM-FM I.F. circuit. Choose both units now!

Kit AJ-33A, 17 lbs. . . \$10 dn., \$9 mo. \$99.95

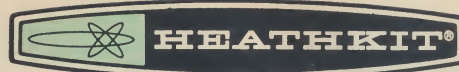
AJ-33A SPECIFICATIONS—FM SECTION: Tuning range: 88 to 108 mc. Intermediate frequency: 10.7 mc. Antenna: 300 ohm balanced or built-in line type. Output impedance (Emitter follower): Variable to 300 ohms. Output voltage: 1.5 volts. Quieting sensitivity: 2 uv for 20 db; 3 uv for 30 db. Audio frequency response: 20-15,000 cycles ±3 db. Harmonic distortion: Less than 1%. Image rejection: 35 db. Capture ratio: 3 db. AM suppression: 35 db. Hum & noise: 50 db. MULTIPLEX SECTION: Converter



AJ-33A **\$99⁹⁵**

bandpass: ±1/4 db 50 to 53,000 cps. Channel separation: 30 db from 50 to 2 kc and 25 db at 10 kc. AM SECTION: Tuning range: 535 to 1620 kc. Intermediate frequency: 455 kc. Usable sensitivity: 8 uv @ 1000 kc. Antenna: Built-in rod with provision for external straight wire. Output voltage: 0.25 V. with 90% modulation. Image rejection: 40 db @ 600 kc. Harmonic distortion: Less than 2% (30% mod. @ 1 mv input). Hum & noise: 40 db. GENERAL SPECIFICATIONS: Tuning indicator: Meter. Controls: Tuning; Right Channel level; Left Channel level; FM squelch; Stereo converter—balance, separation and phase. Switches: Mode, AFC, Noise filter, SCA filter, local-distance. Transistors & diodes: 23 transistors, 8 diodes. Power supply: Transformer operated, full wave rectifier. Power requirements: 105-125 volts, 50/60 cycles, 7 watts. Dimensions: 15 5/8" W x 3 3/4" H x 11 1/2" D.

Styling, Small Heathkit® Price!



Deluxe Heathkit 70-Watt All-Transistor Stereo Amplifier . . .

New Walnut Cabinet Styling . . . Advanced Features . . . Unbeatable Value!



AA-21C
\$149⁹⁵

AA-21C SPECIFICATIONS—Power output per channel: (Heath Rating) 35 watts/8 ohm load, 26 watts/16 ohm load, 18 watts/4 ohm load; (IHF music power output) 50 watts/8 ohm load, 34 watts/16 ohm load, 25 watts/4 ohm load @ 0.7% THD, 1 kc. Frequency response: ± 1 db from 13 cps to 25 kc @ rated output; ± 3 db from 8 cps to 40 kc @ rated output. Harmonic distortion (At rated output): Less than 1% @ 20 cps, 0.5% @ 1 kc, 2.0% @ 20 kc. Intermodulation distortion (At rated output): Less than 1%, 60 & 6,000 cps signal mixed 4:1. Hum & noise: Tapehead, 40 db below rated output; Mag. phono, 45 db below rated output; Aux. inputs, 60 db below rated output; Tape monitor, 70 db below rated output. Channel separation: 40 db min. @ 20 kc, 55 db min. @ 1 kc, 50 db min. @ 20 cps. Input sensitivity: (For 35 watts output per channel, 8 ohm load) Tapehead, 2 mv; Mag. phono, 3 mv; Tuner, 250 mv; FM Stereo, 250 mv; Aux., 250 mv; Tape Monitor, 0.6 V. Input impedance: Tapehead, 60 k ohm; Mag. phono, 30 k ohm; Tuner, 100 k ohm; FM Stereo, 100 k ohm; Aux., 100 k ohm; Tape monitor, 47 k ohm. Outputs: 4, 8, & 16 ohms and low impedance tape recorder outputs. Controls: 5-pos. Selector (dual-concentric), 5-pos. Mode switch, dual-concentric Volume, Bass & Treble controls, Tape monitor sw., Loudness sw., Phase sw., Input level controls (all inputs except Tape Head & Tape Monitor inputs), Push-Push on/off switch. Semiconductor complement: 26 Transistors, 10 diodes. Power requirements: 105-125 volts, 50-60 cycles AC. 35 watts idling, no signal; 200 watts, full power out, @ 120 volts with no load on AC receptacles. Power outlets: 2 AC receptacles, 1 switched, 1 unswitched. Dimensions: 16" W x 5 1/2" H x 14" D.

- New, richly warm walnut cabinet styling
- 26 transistor, 10 diode circuitry for smooth, uncompromising power response . . . 13 to 25,000 cps ± 1 db at 35 watts per channel (50 watts IHF music power)
- Concert hall realism, cool, instant operation, complete freedom from microphonics
- Encapsulated, epoxy-covered circuit modules for fast, simple assembly
- Matches AJ-43C tuner in styling, performance

Instantaneous Bursts Of Power As The Music Demands . . . clean, uncompromising "solid" sound . . . cool, instant hum-free operation . . . long, unchanging transistor life! This is the advanced performance of the deluxe Heathkit AA-21C. All for only \$149.95—why pay more?

Plenty Of "Transistor" Power! The AA-21C boasts a 26 transistor, 10-diode circuit that yields 70 watts continuous, 100 watts IHF music power at ± 1 db from 13 to 25,000 cps. All controls are front-panel mounted . . . include a 5-position dual-concentric source switch, 5-position mode switch, dual-concentric volume, bass & treble controls. There are plenty of input & output connections to handle any program source, and 4, 8 & 16 ohm speaker impedances. Circuit safety is assured with 5 bi-metal circuit breakers . . . no fuses to replace! A transformerless output circuit & multiple feedback loops assure fine fidelity and low distortion levels.

New Styling Enriches Any Decor! Sleek, rich walnut cabinets. Clean, uncluttered charcoal gray upper front panels. Soft, refracted panel lighting. A hinged lower front panel conceals all secondary controls to avoid accidental system setting changes . . . add to the neat, modern appearance!

Easy To Assemble! All preamplifier circuits are encapsulated in 6 epoxy-covered modules, completely wired & sealed, ready for simple installation. And with 5 stable circuit boards, your AA-21C goes together in a few evenings.

Kit AA-21C, 29 lbs. . . \$15 dn., \$13 mo. \$149.95
Export model available for 115/230 VAC, 50-60 cps; write for prices.

Attention AA-21 & AJ-43 owners! You can now purchase a walnut cabinet to match the new AJ-43C or AA-21C. Fits either AJ-43 or AA-21. Model AE-11, walnut cabinet, 8 lbs. \$12.95

Everything Sounds "Naturally" Better On This

Deluxe-Styled All-Transistor AM-FM-FM Stereo Tuner!

- New modern walnut cabinet styling enhances any decor
- 25 transistor, 9 diode circuitry for clean, pure "transistor sound," heat & hum free operation
- AM/FM/FM stereo tuning
- Automatically switches to stereo
- Automatic stereo indicator light
- Filtered left & right channel outputs for beat-free stereo recording
- Stereo phase control for maximum separation, minimum distortion
- Concealed, convenient-to-reach secondary controls
- Style mate of the AA-21C amplifier

Your Ears Perk Up! Your eyebrows raise. You break into a big grin. Those programs you like so well sound different from a Heathkit AJ-43C Stereo Tuner. They take on a new dimension. The sound is cleaner, truer, more robust. Notice the freedom from distortion & hum; the crisp, natural reproduction that only transistors can achieve; the cool, instant operation. Notice the host of operating conveniences, the luxurious new walnut cabinet styling. Notice the price tag . . . a low \$129.95!

Enjoy The Latest Features! Convenience features like the solid-state switch circuit that automatically routes the signal through the built-in adapter whenever FM stereo is received. And the stereo indicator lights automatically. You don't lift a finger! The secondary controls are protected, yet convenient to reach under the hinged lower front panel. You simply touch the unique "push-push" panel to turn the AJ-43C on or off.

Versatile Performance! An Automatic Gain Control keeps volume constant . . . the AFC assures positive tuning . . . a Stereo Phase Control assures maximum station separation with minimum distortion. Both channels are filtered for direct, beat-free stereo recording. And the emitter-follower output stages eliminate high frequency losses. Individual AM & FM tuning meters, lighted slide-rule dial, and flywheels assure easy tuning. The power supply is transformer operated.

Simple To Build! Assembly proceeds swiftly with the factory-built & aligned front-end FM tuner and 4-stage FM I.F. circuit board. For natural solid-state sound at a realistic price, choose a matched pair now!

Kit AJ-43C, 19 lbs. . . \$13 dn., \$11 mo. \$129.95



AJ-43C
\$129⁹⁵

AJ-43C SPECIFICATIONS—FM SECTION (Monaural Only): Tuning range: 88 to 108 mc. Intermediate frequency: 10.7 mc. Antenna: 300 ohms balanced, internal line antenna provided. Quieting sensitivity: (400 cps, 100% mod.) 1.5 uv for 20 db of quieting; 2 uv for 30 db of quieting; 3 uv for full quieting, 40 db. Image rejection: 35 db. IF rejection: 75 db. Capture ratio: 3 db. AM suppression: 35 db. Bandwidth (Complete Tuner): 325 kc at 6 db down, 1000 uv input. Detector bandwidth (Peak-to-Peak): 600 kc. Harmonic distortion: Less than 1% (IHF). Hum & noise: (Complete tuner) 55 db below full quieting (IHF). Output impedance: (Emitter Follower) Variable to 3000 ohms. Output voltage: 1 V. @ 1000 uv, 400 cps 100% mod. FM STEREO CONVERTER SECTION: Converter bandpass: 50 cps to 53,000 cps, $\pm 1/4$ db. Channel separation: 40 db @ 50 cps to 2,000 cps; 30 db @ 10,000 cps; 20 db @ 15,000 cps. 19 KC suppression: 50 db down. 38 KC suppression: 45 db down. SCA rejection: 30 db min. 64 kc to 70 kc. Hum & Noise: 55 db down. Output voltage: 1 V. @ 100 uv input, 400 cps, 100% mod. Output impedance: (Emitter Follower) Variable to 3000 ohms each channel. AM SECTION: Tuning range: 535 to 1620 kc. Intermediate frequency (IF): 455 kc. Sensitivity: 600 kc, 7 uv for 10 db S/N; 1000 kc, 4 uv for 10 db S/N; 1400 kc, 3 uv for 10 db S/N. Antenna: Built-in rod with provisions for external straight wire. Image rejection: 50 db at 600 kc; 70 db at 1400 kc. IF rejection: 55 db at 600 kc; 65 db at 1400 kc. 10 KC rejection: 40 db. Harmonic distortion: Less than 2%. Hum & noise: 30 db below 30% mod. Output impedance: (Normal) Variable to 3000 ohms; (Aux.) Variable to 4000 ohms. Output voltage: 1 volt nominal. Dimensions: 16" W x 5 1/2" H x 14 1/4" D.

— over 250 different, top-quality kits to add more fun at big savings!

For The Finest in "Tube-Type" Stereo, Choose



AJ-41
\$119⁹⁵

- Built-in FM multiplex adapter
- Broad-band circuitry for full fidelity
- Automatic FM Stereo indicator light
- Adjustable Automatic Frequency Control for locked-in reception
- Stereo phase control for maximum separation and lowest distortion
- Adjustable FM squelch circuit for low noise between stations
- Preassembled tuning unit, prealigned coils

- Hi-Fi rated at 50 watts (25 watts per channel)
- 5 stereo inputs
- Versatile controls
- Mixed channel center speaker output
- Separate monophonic phono input
- Easy circuit board assembly
- Matches the AJ-41 tuner in styling and performance

AA-100
\$84⁹⁵



Deluxe AM/FM/FM Stereo Tuner . . . Incomparable Value In "Tube-Type" Tuners!

Complete Listening At Your Command! Maximum fidelity AM . . . beautifully clear and quiet FM . . . or the enveloping realism of FM stereo all at your fingertips when you own the AJ-41! Add Convenience, Deluxe Features, And An "Easy-On-The-Budget" Price! These are the reasons the AJ-41 is your best buy in a "tube-type" tuner. Compare these features . . . an automatic stereo indicator silently lights when stereo is received . . . a built-in stereo adapter—just flip a switch to choose desired program source . . . adjustable automatic frequency control to snap-in stations with little or no dead zone between them . . . cathode follower outputs to minimize hum & high frequency losses . . . a stereo phase control for maximum separation from any station . . . individual AM & FM tuning meters, lighted slide-rule dial and flywheel tuning for easy, precise station selection . . . a switch to choose normal or maximum fidelity AM . . . built-in antenna for local stations, plus terminals for external antenna connection . . . and handsome, luggage tan vinyl clad steel cabinet to enrich any surroundings—matches the AA-100 amplifier! And It's So Simple To Build! With 3 easy-to-wire circuit boards and a pre-assembled & aligned "front-end." Requires no special skills or knowledge. Choose yours now!

Kit AJ-41, 27 lbs. . . \$12 dn., \$11 mo. \$119.95

AJ-41 SPECIFICATIONS—FM: Tuning range: 88 mc to 108 mc. I. F. frequency: 10.7 mc. Frequency response: ±2 db, 20 to 20,000 cps. Antenna: 300 ohm balanced (for internal or local reception). Output voltage: Nominal .5 volts (with 3 uv 30% modulation in). Quieting sensitivity: 2 uv for 20 db of quieting, 20 uv for full quieting (40 db). Maximum deviation sensitivity: 5 uv; (400 cycle 100% modulation). Deviation sensitivity: 20 kc (1100 uv in). Harmonic distortion: Less than 1% (1100 uv 400 cycle 100% modulation). Image ratio: 40 db. AFC correction factor: 12 db. Amplitude modulation suppression: 25 db. Hum & Noise: 40 db below 30% modulation (20 uv in). **SPECIFICATIONS MULTIPLEX—Audio frequency response:** ±2 db, 50 to 15,000 cps. Sub-carrier bandpass: ±3 db 23,000 to 53,000 cps. Channel separation: 30 db. Hum & Noise: —55 db (relative to 1 volt rms output.) Output impedance: Cathode follower, variable to 4,000 ohms (each channel). **SPECIFICATIONS AM—Sensitivity, narrow bandwidth position:** 1400 kc, 3 uv; 1000 kc, 4 uv; 600 kc, 8 uv (standard IRE dummy antenna, .1 volt RMS reference output). Sensitivity change, narrow to broad position: —5 db. I.F. bandwidth, narrow: 14 kc, 6 db down. Broad: 20 kc, 6 db down. Image ratio: 1400 kc 50 db; 600 kc 75 db. Harmonic distortion: Less than 1%. Hum & noise: 35 db below 30% modulation (1000 kc unmodulated with 100 uv in). I. F. rejection ratio: 1400 kc 42 db; 600 kc 38 db. Power supply: Transformer operated, 117 v., 50-60 cycle, 100 watts. Dimensions: 5 1/4" H x 15 1/2" W x 14 1/4" D.

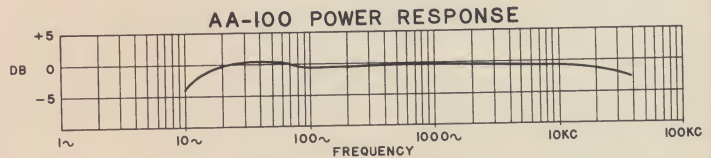
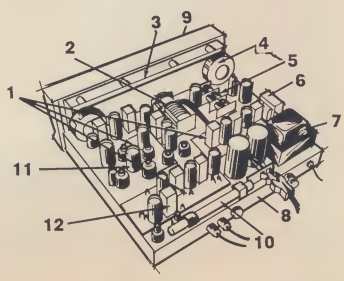
Versatility, Modern Styling, & Low Cost Make This Deluxe 50-Watt "Tube-Type" Stereo Amplifier the Value-Leader Of The Industry!

Plenty Of Power For Any Stereo Task! 50 honest "Heath-Rated" watts (60 watts IHF music power) at ±1 db from 30 to 15,000 cps . . . more than enough to handle any amplifying need. And with 5 pairs of inputs, (magnetic cartridge, AM & FM tuners, stereo tape recorder, FM stereo tuner & auxiliary) the AA-100 easily handles any program source. Features 4, 8 & 16 ohm speaker impedances, plus left, right & center channel speaker outputs. **Plenty Of Fingertip Controls!** Preamplifier input level controls . . . power amplifier input level controls . . . hum controls . . . mode selector, speaker phase reversal switch, balance & separation controls . . . ganged volume controls . . . & separate concentric bass & treble tone controls. Puts you in complete command! **Plenty Of Modern, Designer Styling!** Attractive tan vinyl-clad steel cabinet with polished aluminum trim & soft refracted lighting . . . matches the AJ-41 Tuner! Builds quickly with fast circuit board construction! With both the AA-100 & AJ-41, you have an unbeatable value in performance and price . . . Order yours now!

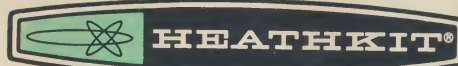
Kit AA-100, 35 lbs. . . \$9 dn., \$8 mo. \$84.95
Export model available for 115-230 v. AC, 50-60 cps; write for prices.

AA-100 SPECIFICATIONS—Channels: 2. Power output: 50 watts (25 w. per channel) Heath Hi-Fi Rating: 60 watts (30 w. per channel) IHF Music Power Output (0.7% THD, 1 kc). Power response: ±1 db from 30 cps to 15 kc at 25 watts output per channel. Harmonic distortion: Less than 0.5% at 25 watts, 1 kc. Less than 2% at 25 watts, 30-15,000 cps (each channel). Intermodulation distortion: Less than 1% at 25 watts, 60 and 6,000 cps signals mixed 4:1 (each channel). Hum and noise: Mag phono, 55 db below 25 watts output at 6 mv sensitivity. Tape Head, 35 db below 25 watts output. Tuner and aux. inputs 70 db below 25 watts output. Channel separation: 42 db min. at 1 kc. Input sensitivity: For 25 watts output per channel; mono mag. phono, 1.5 mv; stereo mag. phono, 1.5 mv; tape head, 1 mv; tuner, 0.2v.; aux. 1 & 2, 0.2v. Input impedance: Mag phono, 47 K ohms (may be changed); tape head, 470 K ohms; tuner & aux., 250 K ohms each. Outputs: 4, 8 and 16 ohms; cathode follower tape recorder outputs. Damping factor: 15. Controls: Function switch (4-position); selector switch (6-position); balance control (total range, 16 db); separation control; ganged level controls; dual-concentric bass & treble controls; phase and power switch. Tube complement: 2-6F86, 4-12AX7, 2-7199, 4-7591, 1-GZ34, 1 selenium bias rectifier. Power requirements: 105-125 volts, 50-60 cycles, 150 watts. Power outlets: 2 AC receptacles, 1 switched, 1 unswitched. Dimensions: 5" H x 15 1/4" W x 13 1/2" D. (allow 1" for cables at rear).

1. 3 Circuit Boards for easy assembly.
2. Three-section AM tuning capacitor.
3. Illuminated slide-rule tuning dial.
4. Flywheel tuning for easy station selection.
5. Prealigned FM tuning unit.
6. L-C power supply.
7. Heavy duty power transformer.
8. High capacity filters for hum-free performance.
9. FM stereo separation control.
10. Built-in AM rod-antenna.
11. Prealigned coils.
12. Built-in Multiplex circuitry.



From This Heathkit® Selection!



Enjoy FM Stereo In A Compact, Low-Price Tuner!

- Built-in FM stereo circuit • FM stereo indicator light
- Stereo phase control for maximum separation, minimum distortion
- Adjustable AFC for locked-in reception
- Bar-type "Eye" tuning indicator
- Filtered stereo tape recorder outputs
- Easy circuit-board assembly



AJ-12 \$69⁹⁵

AM/FM/FM Stereo Listening At Traditional Heathkit Savings!

- Built-in multiplex converter • FM Stereo Indicator Light
- Variable AFC for locked-in reception
- 2 bar-type "eye" tuning indicators
- Stereo Phase Control for minimum distortion, maximum separation
- Filtered stereo tape recorder outputs



AJ-32 \$89⁹⁵

Recognized For Its Performance & Value . . . Heathkit 28-Watt Stereo Amplifier!

- Two hi-fi rated 14-watt channels, preamps and power amps
- Operates stereo or monophonic
- Accepts four stereo music sources
- Front panel controls
- Patented Heath Ultra-Linear® circuit
- Matches Heathkit AJ-12 & AJ-32 Tuners



AA-151 \$59⁹⁵



AJ-11 \$69⁹⁵

"I Believe That Its Quality Could Never Be Exceeded In Its Own Price Range." That comment from AJ-12 owner, Mr. James Totten, Lincoln Park, Michigan. Mr. Totten also went on to say: ". . . I'm listening to it right now through the model AA-151 (amplifier, see below) and its sound is unsurpassed." The reason for this performance? Famous Heath Engineering that provides features found only on units costing twice the AJ-12's low price. Features like the built-in FM multiplex converter . . . stereo indicator light . . . stereo phase control for maximum stereo separation . . . automatic frequency control . . . bar-type "eye" tuning indicator for pinpoint tuning . . . edge-lighted slide-rule dial . . . smooth flywheel tuning . . . filtered stereo tape recorder outputs . . . fast circuit board construction . . . prealigned, pre-built "front-end" . . . tan vinyl-clad steel cabinet with charcoal gray front panel and polished trim. Check its specs . . . then order yours now!

Kit AJ-12, 19 lbs. . . \$7 dn., \$7 mo. \$69.95

SPECIFICATIONS—FM SECTION: Tuning range: 88 mc—108 mc. Intermediate frequency: 10.7 mc. Antenna: Balanced input for external 300 ohm antenna. Internal line antenna. Output voltage (30 microvolts—30% Mod.): 1 volt. Image ratio (30 microvolts—30% Mod.—98 mc):—45 db. Harmonic distortion (25 microvolts—100% Mod.—98 mc): Less than 1%. IF rejection (98 mc):—65 db. FM audio response (20-20,000 cps): ±1 db. AFC correction factor (Full AFC): 100 kc per volt. AM suppression:—27 db. Hum and noise (25 microvolts, 30% Mod.):—48 db. Quieting Sensitivity: 20 db—2½ microvolts; 30 db—3½ microvolts; 48 db—30 microvolts (max. quieting). **FM STEREO CONVERTER SECTION:** Audio frequency response: ±2 db from 50 to 15,000 cps. Sub-carrier bandpass: ±3 db from 23,000 to 53,000 cps. Channel separation: 30 db or more at 1 kc; 25 db or more at 10 kc. Hum and noise:—55 db relative to 1 volt rms output. Output impedance (Cathode Follower): Variable to 4000 ohms, each channel. Outputs: Left Channel—Right Channel. Size: 5¼" H x 15¼" W x 10½" D.

Just Flick A Switch! And enjoy the music, news & sports of popular AM . . . or relax to the soothing beauty of FM . . . or thrill to the concert-hall realism of FM stereo. With the AJ-32 you enjoy complete listening in one compact unit at a compact price!

Complete Controls Assure Full Performance! An AM fidelity switch selects desired bandwidth for maximum selectivity or fidelity. The level controls allow adjustment to the input needs of your amplifier. Individual AM & FM "bar" tuning eyes & flywheels provide pinpoint tuning. An automatic frequency control snaps in FM stations for clearest reception. **More Operating Conveniences!** Like cathode follower outputs to minimize hum & high frequency losses; built-in antennas for local stations, plus external antenna connectors; filtered stereo tape recorder outputs; and a squelch control to hush between-station noise. Includes handsome tan vinyl-clad steel cabinet . . . matches AA-151 below. Easy to build with assembled & prealigned "front-end." Order yours now!

Kit AJ-32, 23 lbs. . . \$9 dn., \$9 mo. \$89.95

AJ-32 SPECIFICATIONS—AM SECTION: Tuning range: 550 kc—1600 kc. Intermediate frequency: 455 kc. Usable sensitivity (normal position): 1400 kc—10 microvolts (20 db of quieting); 1000 kc—15 microvolts (20 db of quieting); 600 kc—40 microvolts (20 db of quieting). IF bandwidth: Normal—6 db—7 kc; Maximum—6 db—12 kc. AM antenna: Built-in rod antenna with provisions for external antenna and ground. Output voltage (750 microvolts—30% Mod.): 1 volt. Image rejection: 1400 kc—40 db; 1000 kc—50 db; 600 kc—60 db. Harmonic distortion: (750 microvolts—95% Mod.): Less than 1%. Hum and noise: (5000 microvolts, 30% Mod.): 30 db. IF rejection: 1400 kc—30 db; 600 kc—50 db. **FM SECTION:** Tuning range: 88 mc—108 mc. Intermediate frequency: 10.7 mc. Antenna: Balanced input for external 300 ohm antenna. Internal line antenna. Output voltage (30 microvolts—30% Mod.): 1 volt. Image ratio (30 microvolts—30% Mod.—98 mc):—45 db. Harmonic distortion (25 microvolts—100% Mod.—98 mc): Less than 1%. IF rejection (98 mc):—65 db. FM audio response (20-20,000 cps): ±1 db. AFC correction factor (Full AFC): 100 kc per volt. AM suppression:—27 db. Hum and noise (25 microvolts, 30% Mod.):—48 db. Quieting sensitivity: 20 db—2½ microvolts; 30 db—3½ microvolts; 48 db—30 microvolts (max. quieting). **FM STEREO CONVERTER SECTION:** Audio frequency response: ±2 db from 50 to 15,000 cps. Sub-carrier bandpass: ±3 db from 23,000 to 53,000 cps. Channel separation: 30 db or more at 1 kc; 25 db or more at 10 kc. Hum and noise:—55 db relative to 1 volt rms output. Output impedance (Cathode Follower): Variable to 4000 ohm, each channel. Outputs: Left Channel—Right Channel. Size: 5¼" H x 15¼" W x 11" D.

"My Wife & I Recently Finished Our AA-151 Amplifier". . . "we were most pleased with its construction." "It's another example of your fine engineering". . . "Many of our friends comment about its fine sound and great looks": Robert R. Tyrrell, Cloverdale, Calif. A typical reaction to the AA-151. Typical reasons why you should join the thousands who have made this unit an audiophile favorite.

Let's Take A Closer Look! The AA-151 features 28-watts of power (32 watts IHF music power) inputs to handle any program source (mag. or crystal phono, tuner or auxiliary), patented Ultra-Linear® output circuit, a 6-position mode switch to allow independent or combined choice of right or left stereo signals, and accessory AC outlets.

Styling Matches AJ-12 & AJ-32 Tuners! The steel cabinet is clad in tan vinyl with a charcoal gray front panel & polished trim. Assembles easily too, with simple step-by-step instructions. Order yours now!

Kit AA-151, 29 lbs. . . \$6 dn., \$6 mo. \$59.95

Export model available for 115-230 VAC, 50-60 cps; write for prices.

AA-151 SPECIFICATIONS—Channels: 2. Power output: 28 watts (14 w. per channel) Heath Hi-Fi Rating: 32 watts (16 w. per channel) IHF Music Power Output (0.7% THD, 1 kc). Power response: ±1 db from 20 cps to 20 kc at 14 watts output per channel. Harmonic distortion: Less than 2%, 30 cps to 15 kc at 14 watts output per channel. Intermediate distortion: Less than 2% at 14 watts output per channel using 60 cps and 6 kc signal mixed 4:1. Hum and noise: Mag. phono input, 55 db below 14 watts; Tuner and crystal phono 65 db below 14 watts. Channel separation: Better than 45 db. Input sensitivity: For 14 watt output each channel (tone controls in "Flat" position); mag. phono, 0.004 volts at 1 kc; crystal phono, 0.2 volts; tuner and aux., 0.2 volts. Outputs: 4, 8 and 16 ohms. Damping factor: 10:1. Controls: Dual clutched volume, ganged bass; ganged treble; 4-position source selector; 6-position mode selector; speaker phasing switch. Tube complement: 2-6EU7, 2-6AU6, 2-6AN8, 4-EL84/6BQ5, 1-GZ34/5AR4. Power requirements: 117 volts, 50-60 cycles, 130 watts. Power outlets: 2 AC receptacles, 1 switched, 1 unswitched. Dimensions: 15¼" W x 5¼" H x 11" D.

Value-Priced AM/FM Monophonic Tuner . . . Easy To Build, Easy To Own!

Money Saver! Handsome monophonic performer . . . brings in AM or FM signals! Has output for FM stereo adapter; individual AM & FM tuning "eyes"; adjustable Automatic Frequency Control for locked-in reception; prealigned "front-end" for easy assembly. Styling & specifications for AM and FM are similar to the AJ-32 (above).

Kit AJ-11, 21 lbs. . . \$7 dn., \$7 mo. \$69.95

Export model available for 115/230 VAC, 50-60 cps; write for prices.

Get More Performance Per Dollar!

Decorator-Styled FM/FM Stereo Tuner . . . Priced For The Budget-Minded!

Here's Quality At A Moderate Price! Only \$49.95 . . . AFC locks on station, stereo indicator light, edge lighted slide-rule dial, smooth flywheel tuning, filtered outputs for stereo tape recording plus prebuilt, prealigned "front-end". Construction is fast & simple! Mocha brown, all-steel cabinet with neutral beige front panel and black trim accents. Team with matching AA-32 Amplifier (below). Order now!

Kit AJ-13, 14 lbs. . . \$5 dn., \$5 mo. \$49.95
Export model available for 115/230 VAC, 50-60 cps; write for prices.

AJ-13 SPECIFICATIONS—Tuning range: 88 to 108 mc. Intermediate frequency: 10.7 mc. Quieting sensitivity: 2½ uv for 20 db of quieting; 3½ uv for 30 db of quieting; 6 uv for 40 db of quieting (full quieting). Audio frequency response: Mono—±1 db from 20 to 20,000 cps. Stereo—±2 db from 50 to 15,000 cps. Antenna: Balanced input for external 300 ohm antenna. Hum & noise: 50 db for 1000 uv, 100% modulation. Output impedance: 47 K ohm. Output voltage: 1 volt for 1000uv, 100% modulation 98 mc input. Outputs: Left and right channels. Harmonic distortion: 1% or less for 1000 uv, 100% modulation 98 mc input. Image ratio: 40 db for 30 db of usable sensitivity at 100% modulation 98 mc input. Capture ratio: 8 db for 1000 uv, 100% modulation, 98 mc input. IF rejection: 55 db at 98 mc. AFC correction: 100 kilocycles per volt. AM suppression: —27 db. Subcarrier bandpass: ±3 db from 23,000 to 53,000 cps. Channel separation: 25 db or more at 1000 cps. Tube complement: 6C9 RF amplifier, mixer, osc.; (3) 6AU6 1st and 2nd IF amplifier and limiter; (2) 12AU7 19 kc amplifier, cathode follower and subchannel amplifier, oscillator/doubler; 6BN8 ratio detector, audio amplifier. Front panel controls: Tuning; selector switch, power off-FM-stereo; AFC switch, off-on. Power supply: Transformer operated, with silicon diode rectifiers. Power requirements: 105-125 V. AC, 50/60 cps, 35 watts. Dimensions: Overall; 13½" W x 4-11/16" H x 9½" D.

Matching 16-Watt Stereo Amplifier . . . Compatible With Magnetic & Ceramic Cartridges!

Versatile—Matches AJ-13 Stereo Tuner (above) . . . mounts on shelf or in wall! Full 16-watts continuous, 20-watts IHF music power at ±1 db from 30 to 30,000 cps. 4 stereo inputs handle mag. & ceramic phono cartridges, tuner, auxiliary. Complete controls, two push-pull power output stages plus two 4-stage preamps. Transformer-operated power supply, full-wave double silicon-diode circuit.

Kit AA-32, 16 lbs. . . \$4 dn., \$5 mo. \$39.95
Export model available for 115/230 VAC, 50-60 cps; write for prices.

AA-32 SPECIFICATIONS—Simultaneous power output per channel: 8 watts (16 watts total); IHF Music Power Output per channel: 10 watts (20 watts total), Frequency response: ±1 db from 30 cps to 30,000 cps at rated output. Harmonic distortion: (at rated output) 2% @ 30 cps, 0.7% @ 1000 cps, 2% @ 15,000 cps. Intermodulation distortion: (at rated output) Less than 3% using 60 and 6000 cps mixed 4:1. Hum and noise: Mag. phono input 46 db below output. Aux. input, 65 db below rated output. Channel separation: 42 db @ 30 cps, 45 db @ 1000 cps, 30 db @ 15,000 cps. Input sensitivity: Mag. phono, 6 mv; Cer. phono, 250 mv; Tuner, 250 mv; Aux., 250 mv. Input impedance: Mag. phono, 47 K ohm; Cer. phono, 2.2 meg.; Tuner 470 K ohm; Aux. 470 K ohm. Outputs: 4, 8, and 16 ohm. Damping factor: 9. Feedback: 18-db. Tube complement: 3-6EU7 and 4-ECL-86 (6GW8). Power requirements: 105-125 V., AC 50-60 cps, 85 watts at 120 volts. Dimensions: 13½" W x 4-11/16" H x 9½" D.



AJ-13
\$49.95

- Built-in FM stereo circuitry • FM stereo indicator light • Automatic Frequency Control • Preassembled, prealigned "front-end" & point-to-point wiring for fast, easy construction • New mocha brown, beige & black color styling . . . matches AA-32 Amplifier below



AA-32
\$39.95

- Four stereo inputs . . . magnetic & ceramic cartridges, tuner & auxiliary
- Furnishes 16 watts of continuous stereo power—IHF Music power output of 20 watts • Refreshingly styled in mocha brown and beige with black trim accents • Full-range controls . . . found only on more expensive equipment • Easy to build . . . goes from parts to performance in just a few evenings

Enjoy A New Dimension In AM Hi-Fi Listening With This Low Cost AM Tuner!

- Extra-sensitive superhet circuit with tuned RF stage • Fidelity switch chooses normal or maximum bandwidth • Built-in transformer operated power supply with silicon rectifier for safety and long life • 10 kc whistle filter • Voltage doubler detector for lowest distortion • Quick & simple to build • New mocha brown, beige & black color styling • Matches AA-13 & AA-23 amplifiers (opposite page)

Kit AJ-53, 10 lbs. . . \$3 dn., \$5 mo. \$27.95
Export model available for 115/230 VAC, 50-60 cps; write for prices.

AJ-53 SPECIFICATIONS—Tuning range: 550 kc to 1600 kc. Intermediate frequency: 455 kc. Sensitivity (for 20 db quieting IHF standards): 1000 kc—25 uv. IF bandwidth (6 db down): NORMAL—7 kc; MAXIMUM—16 kc. Output impedance (cathode follower): 5000 ohms. Input signal for 1 volt output: 7 uv—30% mod. 1000 kc. Image ratio: 1000 kc—57 db. Harmonic distortion (750 uv 95% mod.): Less than 2%. Hum and noise (5000 uv—30% mod.): 36 db. IF rejection: 1000 kc—69 db. Power supply: Transformer operated (fused). Power requirements: 117 V AC, 50/60 cycles at 19 watts. Dimensions: Overall—including cabinet and feet, 4-11/16" H x 13½" W x 5½" D.

Newly Styled FM Tuner . . . Can Be Converted For Stereo!

- Broad-band circuitry, converts to stereo with AC-11 Multiplex Converter (below) • New mocha brown & beige color styling with black trim • 5 tube circuit—9 tube function • Automatic Frequency Control for drift-free reception • Easy to build with factory assembled "front-end" tuner, prealigned IF transformers & encapsulated circuit module • Matches AA-13 & AA-23 amplifiers (opposite page)

Kit AJ-63, 11 lbs. . . \$4 dn., \$5 mo. \$39.95
Export model available for 115/230 V. AC. 50-60 cps; write for prices.

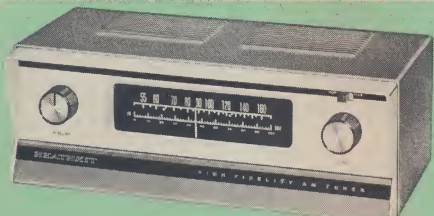
AJ-63 SPECIFICATIONS—Tuning range: 88 to 108 mc. Quieting sensitivity: 2.5 uv for 20 db of quieting; 3.5 uv for 30 db of quieting; 25 uv for maximum quieting (38 db). IF frequency: 10.7 mc. Image ratio: 40 db. AFC correction factor: 75 kc per volt. AM suppression: 25 db. Frequency response: ±2 db, 20-20,000 cps. Harmonic distortion: Less than 1.5%, 1100 uv, 400 cycles 100% modulation. Intermodulation distortion: Less than 1%, 60 cycles and 6 kc; mixed 4:1 1100 uv, 30% modulation. Antenna: 300 ohms unbalanced. Output impedance: 600 ohms (cathode follower). Output voltage: Nominal .5 volt (with 30% modulation, 20 uv signal). Power requirements: 105-125 volts, 50/60 cycles AC at 30 watts. Overall dimensions: 4-11/16" H x 13½" W x 7" D.

Add Stereo To Your FM Tuner With This Heathkit Multiplex Converter!

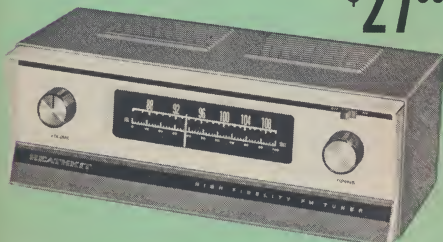
- Use with any FM tuner having multiplex output • Compact . . . fits anywhere • Styled to match Heathkit tuners • Built-in power supply • Easy to build . . . easy to operate
- Features Built-In Power Supply with silicon rectifier, 3 tubes, & prealigned coils. Balanced diode detector assures low distortion. Convert now . . . order yours today!

Kit AC-11A, black, 4 lbs. . . \$3 dn., \$5 mo. \$24.95
Kit AC-11B, tan, 4 lbs. . . \$3 dn., \$5 mo. \$24.95

AC-11 SPECIFICATIONS—Audio frequency response: ±2 db 50 to 15,000 cps. Subcarrier bandpass: ±4 db 23,000 to 53,000 cps. Channel separation: 30 db. Hum and noise: —55 db (relative to 1 volt rms output). Input impedance: 470 K ohms. Output impedance: 3000 ohms each channel (cathode follower). Input: MULTIPLEX (from tuner). Input signal voltage: .4 volt minimum (from multiplex output of FM tuner). Outputs: LEFT CHANNEL; RIGHT CHANNEL. Switch and controls: OFF-ON switch; CHANNEL SEPARATION control; LEFT CHANNEL LEVEL control; RIGHT CHANNEL LEVEL control. Power requirements: 117 volts AC 50/60 cps, 12 watts. Size: 3¾" H x 3¾" W x 9¾" D.



AJ-53
\$27.95



AJ-63
\$39.95



AC-11A
\$24.95

With Heathkit® Stereo/Hi-Fi!



Heathkit 14-Watt Mono Amplifier . . . Unbeatable Value!

- New mocha brown & beige color styling with black trim • Patented Heath Ultra-Linear® circuit • Hi-Fi rated 14-watt output • 30 to 15,000 cps response ±1 db at full rated output
- Separate bass & treble controls • Three inputs for any program source • Easy to build • Matches AJ-53 & AJ-63 tuners (opposite page)

Kit AA-13, 17 lbs. . . \$3 dn., \$5 mo. \$29.95

Export model available for 115/230 VAC, 50-60 cps; write for prices.

AA-13 SPECIFICATIONS—Power output: 14 watts Heath Hi-Fi Rating; 16 watts IHF Music Power Output (2% THD, 1 kc). Frequency response: ±1 db 30-15,000 cps, 14 watts output. Harmonic distortion: Less than 2%, 30 cps to 15 kc, at 14 watts output. Intermodulation distortion: 2% or less at 14 watts output using 60 and 6000 cps signals, 4:1. Hum & noise: Mag. phono input, 50 db below 14 watts; Tuner and crystal phono, 60 db below 14 watts. Input sensitivity: For 14 watts output; mag. phono, 0.004 v at 1 kc; crystal phono, 0.2 v; tuner 0.25 v with tone controls, flat. Output: 4, 8 and 16 ohms. Damping factor: 10:1. Controls: 3-position function selector switch, bass and treble tone controls, volume control. Power requirements: 117 v, 50-60 cycles, 55 watts. Dimensions: 4-15/16" H x 13 1/2" W x 10 1/2" D.

Heathkit 25-Watt Mono Amplifier . . . All Around Hi-Fi Performance!

- Hi-Fi rated at 25 watts continuous power, 30 watts IHF music power rating • New mocha brown & beige color styling with black trim • Four front-panel selected inputs • ±1 db from 30 to 15,000 cps power response • Separate bass & treble controls • Bookshelf size for limited space installations • Easy to build • Matches AJ-63 & AJ-53 tuners (opposite page)

Kit AA-23, 20 lbs. . . \$5 dn., \$5 mo. \$42.95

Export model available for 115/230 VAC, 50-60 cps; write for prices.

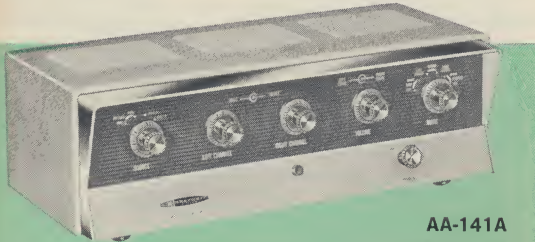
AA-23 SPECIFICATIONS—Power output: 25 watts Heath hi-fi rating; 30 watts IHF music power rating (0.7% THD @ 1 kc). Frequency response: ±1 db, 30 cps to 15 kc, at 25 watts output. Harmonic distortion: Less than 2%, 30 cps to 15 kc at 25 watts output, and less than 0.7% at 1 kc at 25 watts output. Intermodulation distortion: Less than 2% at 25 watts using 60 cps and 6000 cps signals 4:1. Hum & noise: Microphone, —60 db or better; Mag. Phono, —53 db or better; Xtal Phono, —55 db or better; Auxiliary, —60 db or better. Input sensitivity: For 25 watts output with tone controls flat; Microphone, 9 mv; Mag. phono, 5 mv (at 1 kc); Xtal Phono, 120 mv; Auxiliary, 200 mv. Outputs: 4, 8, and 16 ohms. Damping factor: 9. Controls: 4-position selector switch, volume control, bass control and treble control with on/off switch. Power requirements: 105-125 volts, 50-60 cps, 120-135 watts. Power outlets: 1 AC receptacle, unswitched. Indicator: Neon pilot light. Dimensions: 13 1/4" W x 4-15/16" H x 9 1/2" D.

AA-13

\$29⁹⁵



AA-23 \$42⁹⁵



AA-141A

\$34⁹⁵

Heathkit Low Cost Stereo Preamplifier

- 8 inputs • Cathode follower outputs • Self-powered • Baxandall-type tone controls • Matches AJ-12 and AJ-32 tuners, p. 25

Kit AA-141A, 11 lbs., \$4 dn., \$5 mo. \$34.95

Export model available for 115/230 VAC, 50-60 cps; write for prices

AA-141A SPECIFICATIONS—Channels: 2. Inputs (each channel): Mag Phono, Xtal Phono, Aux 1, Aux 2. Outputs (each channel): Power amplifier, tape recorder. Frequency response: (with the volume control at maximum and the Bass and Treble controls set approximately to the mid position): ±1 db from 20 to 20,000 cps. Harmonic distortion: (at 2.5 volts rms output, using AUX 1 or 2 input): .1% or less. Intermodulation distortion: (at 2.5 volts equivalent rms output using AUX 1 or 2 inputs): .1% or less. Channel separation: 45 db or better 20 to 20,000 cps. Hum and noise (below 2.5 volts RMS): Mag. Phono, 55 db (or better); Xtal Phono, 65 db (or better); Aux 1 and 2, 65 db (or better). Tube complement: 6-6EU7 tubes. Controls and switches: Source Selector Switch, Bass controls, Treble controls, Volume controls, Mode selector switch (left amp, right amp, mono left source, mono right source, stereo norm, stereo rev). Power (off-on), Filament balance (left channel and right channel). AC receptacles: 1-switched, 117 V AC, 375 watts maximum. 1-unswitched, 117 V AC, 375 watts maximum. Power supply: Transformer-operated, using two selenium rectifiers in a voltage doubler arrangement. Power requirements: 117 volts, 50-60 cps AC, 19.7 watts. Dimensions: 15 1/4" W x 5 1/2" H x 7-13/16" D (overall).

Enjoy Push-Button Convenience With This Deluxe Stereo Preamplifier!

- Push-button selected inputs • Basic controls on front panel • Secondary controls behind hinged lower front panel • Self-powered • Controlled center channel • Matches AJ-41 Tuner, p. 24

Kit AA-11, 20 lbs. . . \$9 dn., \$8 mo. \$84.95

Export model available for 115/230 VAC, 50-60 cps; write for prices.

AA-11 SPECIFICATIONS—Inputs: 5 stereo each channel and 3 monophonic. Outputs: One low impedance to power amplifier and one low impedance to tape recorder in each channel plus a "derived center channel" monophonic output. Frequency response: ±0.5 db, 20 to 20,000 cps. Harmonic distortion: Max. .05% @ 2.5 volts output. Intermodulation distortion: Max. .09% @ 2.5 volt output. Hum and noise: Relative to 2.5 V rms output; 6 mv input at Mag. phono input, 60 db or better. Channel separation: 1 kc, 36 db or better. Rumble filter: 3 db down at 42 cycles, 12 db attenuation per octave. Scratch filter: 3 db down at 6 kc, 20 db attenuation per octave. Baxandall tone controls: 12 db boost, 16 db cut at 20 cps; 12 db boost, 20 db cut at 20,000 cps. Controls: Separate Bass & Treble, each channel; Volume-Loudness, Blend, Balance, Rumble Filter, Scratch Filter, Volume-Loudness switch, Stereo Mono switch, 9 push-button Source Selector switch, Phase-Reversal switch, and Channel Reversal switch. Tube complement: (8) 12AX7, (2) 12AT7. Power requirements: 117 V AC, 50-60 cycles. Dimensions: 5 1/2" H x 11 1/2" D x 15 1/2" W.

80-Watt Stereo Power Amplifier . . . Only A Dollar A Watt!

- Two 40-watt hi-fi rated channels • Fixed bias for lowest distortion • Front panel controls • Extra mixed-channel center speaker output

Kit AA-121, 40 lbs., \$8 dn., \$8 mo. \$79.95

Export model available for 115/230 VAC, 50-60 cps; write for prices.

AA-121 SPECIFICATIONS—Channels: 2. Power output: 80 watts (40 w. per channel) Heath Hi-Fi Rating; 98 watts (49 w. per channel) IHF Music Power Output (0.7% THD, 1 kc). Power response: ±0.5 db, 20-20,000 cps, at 40 watts output per channel. Harmonic distortion: 1.5% or less, 20-20,000 cps, at 40 watts output per channel. Intermodulation distortion: 0.5% or less at 40 watts output per channel, 60 and 6,000 cps mixed 4:1. Hum and noise: 85 db below 40 watts output. Channel separation: 70 db or better at 1 kc. Input sensitivity: 0.95 volts rms for 40 watts output per channel. Outputs: 4, 8, 16, and 32 ohms per channel; center speaker terminals can be used with 4, 8 or 16 ohm speakers. Damping factor: 16:1, 8 and 16 ohm taps; 12.5:1, 4 ohm tap. Controls: A Channel; bias voltage, level, B Channel; bias balance, bias voltage, level. Function selector; phase and power switches. Tube complement: 2-6AN8; 4-EL34, 4 silicon diode rectifiers, 1 selenium bias rectifier. Power requirements: 117 v, 50-60 cycles, 180-320 watts. Power outlets: 2 AC outlets; 1 switched, 1 unswitched. Color and finish: metallic bronze, expanded metal dust cover; black chassis with ivory lower front panel. Dimensions: 7 1/4" H x 15" W x 11" D.

Ideal For A Second Music System . . . Low Cost Mono Amplifier!

- Built-in preamplifier • Two switch-selected inputs • Separate bass, treble & volume controls • 3-watt output, ±1 db from 60 to 15,000 cps • Less than 3% distortion at rated output • Output taps for 4, 8 & 16 ohm loads • Satin black & ivory color styling • Simple to build & operate

Kit AA-191, 7 lbs. \$16.88

Export model available for 115/230 VAC, 50-60 cps; write for prices.

AA-191 SPECIFICATIONS—Power output: 3 watts, Heath Utility Rated. Power response: ±1 db 60 cps to 15,000 cps at 3 watts output. Harmonic distortion: Less than 3%, 60-15,000 cps at 3 watts output. Intermodulation distortion: Less than 3% at 3 watts output, 60 and 6,000 cps signal mixed 4:1. Hum and noise: 70 db below 3 watts. Input sensitivity: 0.15 v for 3 watts output, crystal phono and tuner. Outputs: 4, 8 and 16 ohms. Controls: bass, treble, volume, input selector switch, on-off switch. Power requirements: 117 v 60 cycles, 49 watts. Color and finish: Satin black, ivory face panel. Dimensions: 9 1/2" W x 3 3/4" H x 6" D.



AA-11

\$84⁹⁵



AA-121

\$79⁹⁵



AA-191

\$16⁸⁸

— over 250 different, top-quality kits to add more fun at big savings!



Choose A New Advanced Changeover

New Garrard Type A70... Ultimate Expression Of The Famous Garrard-Engineered Automatic Turntable Concept!

- Exclusive pusher platform offers automatic play without compromise... safest automatic record principle ever developed
- Completely new dynamically balanced tone arm for improved tracking capability & resistance to external shock
- New adjustable stylus pressure & tracking force
- Full-sized, heavy-balanced cast "sandwich" turntable
- New adjustable bias compensator
- New lightweight shell
- New ultra-sensitive "frictionless" Delrin® trip assembly
- Double-shielded 4-pole shaded motor
- 4 speeds, automatic or manual

Dramatic New Styling & Performance! Features of the new Garrard A70 lend a professional touch to an excitingly handsome instrument. Easily handles today's high compliance cartridges. Boasts a new foam rubber spring cushion, plus a stereo wired Amplok plug for simple lead connection. Luxury styled in iridescent charcoal

gray. Completely assembled. Choose a cartridge (see list, pg. 29) for only 1c more!

- ADP-104, 23 lbs., turntable... \$9 dn., \$8 mo. \$84.50
 - ADP-104, 24 lbs., turntable with choice of 1c offer cartridge, page 28 (specify by model no.)... \$9 dn., \$8 mo. \$84.51
 - ADA-61-1, 1 lb. Garrard LRS3 45 rpm spindle. \$3.80
 - ADA-63-2, 4 lbs., unfinished base, 16¹/₁₆" W x 13¹/₁₆" D x 3" H. \$4.95
 - ADA-63-3, 4 lbs., walnut base, 16¹/₁₆" W x 13¹/₁₆" D x 3" H. \$5.50
- ADP-104 SPECIFICATIONS**—Speeds: 16²/₃, 33¹/₃, 45 & 78 rpm. **Motor:** 4-pole shaded, double shielded. **Tracking:** Will track with "professional" model cartridges. **Color:** Iridescent charcoal gray and chrome. **Wiring:** Stereo, 4-pin/5-wire system w/separate ground connection for hum elimination. **Cables furnished:** Line cord and 2 audio. **Power requirements:** 100-130 volts, 60 cycles AC. **Dimensions:** Requires mounting space 16¹/₂" W., 13¹/₄" D., 6¹/₂" above and 2⁷/₈" below top of motor board.



ADP-104
\$84⁵¹

(with 1c cartridge)

New Garrard AT60 Automatic Turntable... "High-Priced" Turntable Features At Low Cost!

- Tubular tone arm is counterweight-adjusted & dynamically balanced with a built-in stylus gauge
- Automatic intermix record operation
- New automatic bias compensator tracks lightest & most compliant cartridges accurately and without distortion
- Heavy cast, oversize turntable... dynamically balanced and non-magnetic
- Lightweight cut-away shell accepts all cartridges
- 4 speeds, automatic or manual

Premium Features Offer Professional Performance! Enjoy performance you'd expect only from far more expensive turntables. Besides the features listed above, the new AT 60 has a double-shielded 4-pole shaded motor, tonearm safety catch, tubular overarm, new super-sensitive DuPont Delrin® trip mechanism to offset friction, and track & trip high compliance cartridges at minimal tracking force, plus a stereo-wired Amplok plug. And you'll like its new control panel

styling and rich iridescent charcoal gray color. Choose a cartridge (pg. 29) for only 1c more! Completely assembled.

- ADP-114, 15 lbs., turntable... \$6 dn., \$6 mo. \$59.50
 - ADP-114, 16 lbs., turntable and choice of any 1c offer cartridge, page 28 (specify by model no.) \$6 dn., \$6 mo. \$59.51
 - ADA-114-1, 1 lb. ... Garrard LRS10 45 rpm spindle. \$3.80
 - ADA-53U, 4 lbs. ... unfinished wood base. \$4.45
 - ADA-53W, 4 lbs. ... walnut finished base. \$4.95
- ADP-114 SPECIFICATIONS**—Speeds: 16²/₃, 33¹/₃, 45 & 78 rpm. **Motor:** 4-pole shaded, double shielded. **Tracking:** Will track all cartridges, including high compliance models. **Color:** Special iridescent charcoal gray. **Wiring:** Stereo, 4-pin/5-wire system w/separate ground connection for hum elimination. **Cables furnished:** Line cord, 2 audio cables. **Power requirements:** 100-130 volts, 60 cycles AC. **Dimensions:** Requires mounting space 15¹/₂" W x 13¹/₈" D x 4⁷/₈" below top of motor board.



ADP-114
\$59⁵¹

(with 1c cartridge)

New Garrard Model 50 Automatic Turntable... Top Performance At An Easy-To-Afford Price!

- Counter weighted tone arm automatically tracks high quality cartridges... a first in popular-priced turntables
- New oversize turntable and handsome mat cover for better record support
- Compact... fits any cabinet or component installation
- Plays all 4 speeds automatically or manually
- Automatically mixes records of different sizes & same speed
- DuPont Delrin® "frictionless" trip mechanism
- Completely assembled

Economy-Minded? Choose The Model 50! Features 4-pole shaded motor with a dynamically balanced rotor for constant speed without vibration or hum... new simple "finger-touch" stylus adjustment... stereo-wired Amplok plug... new control panel styling... lightweight cut-away shell. Choice of cartridge (pg. 29) for only 1c more!

- ADP-124, changer only, 13 lbs. ... \$5 dn., \$5 mo. \$44.50
- ADP-124, with choice of any 1c cartridge, page 28 (specify by model no.), 14 lbs. ... \$5 dn., \$5 mo. \$44.51
- ADA-114-1, 1 lb. ... Garrard LRS10 45 rpm spindle. \$3.80
- ADA-53U, Garrard matching base (unfinished), 4 lbs. ... 14⁵/₈" W x 12³/₄" D x 3" H. \$4.45
- ADA-53W, Garrard matching base (walnut), 4 lbs. ... 14⁵/₈" W x 12³/₄" D x 3" H. \$4.95

ADP-124 SPECIFICATIONS—Speeds: 16²/₃, 33¹/₃, 45 & 78 rpm. **Motor:** 4-pole, hum shielded. **Tracking:** Tracks per cartridge specifications. **Color:** Gray and silver. **Wiring:** Stereo, Amplok plug. **Cables furnished:** Line cord and 2 audio. **Power requirements:** 110-130 volts, 60 cycles AC. **Dimensions:** 14¹/₄" W x 12¹/₂" D x 4⁷/₈" above and 2⁷/₈" below top of motor board.



ADP-124
\$44⁵¹

(with 1c cartridge)

From This Wide Selection!



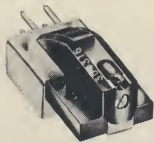
ADP-25
\$144⁹⁰



ADP-94
\$99⁵¹
With 1c Cartridge



ADP-24
\$99⁵¹
With 1c Cartridge



Ortofon SPU/T "Magnetic"

Not Included In 1c Offer! High compliance and low inertia of the Ortofon stylus give virtually undistorted reproduction with very small tracking force required — even at extreme frequencies! "Prime diamonds" are employed which will last indefinitely under normal use & minimize record wear. Choose yours now!

Model AD-64H, 1 lb. . . \$5 dn., \$5 mo. . . \$50.00

AD-64H MANUFACTURER'S SPECIFICATIONS—Frequency response: 20-20,000 cps. Output: 7 mv per channel at 1 kc/cm. Separation: 20-25 db. Load impedance: 50,000 ohms. Stylus: 0.7 mil diamond. Compliance: 10 x 10⁻⁶ cm/dyne. Tracking force: 1-2 grams.

New! Rek-O-Kut Professional Model B-12GH Turntable And Model S-320

Micropoise® Tone Arm For The Dedicated Audiophile!

- 3 speeds . . . 33 $\frac{1}{3}$, 45, & 78 rpm rim-driven
- Ideal for broadcasting studios, professional musicians and audiophiles • Precision-built hysteresis synchronous motor . . . lifetime lubricated
- Includes famous Rek-O-Kut S-320 stereo tone-arm with exclusive Omni-Balance

A Favorite Of Musicians, Audiophiles, & Audio Engineers Everywhere! Features a heavy-duty, hermetically oil-sealed hysteresis synchronous motor for locked-in accuracy of rotational speed regardless of power line fluctuation and load; unique self-lubricating, ball-bearing suspension of the micro-finished turntable shaft—the closest approach to friction-free motion; a precision-machined turntable of special aluminum alloys with resonance-inhibiting properties. Model S-320

Micropoise® stereo tonearm features exclusive Omni-Balance for perfect static and dynamic balance with any cartridge; has tubular aluminum arm with die-cast cartridge shell.

Model ADP-25, turntable & tonearm, 22 lbs. . . 15 dn., \$12 mo. \$144.90
Model ADA-25W, walnut base, 10 lbs. . . \$18.95

TURNTABLE SPECIFICATIONS—Speeds: 33 $\frac{1}{3}$, 45 & 78 rpm. Flutter & wow: .09% rms. Motor type: Heavy-duty hysteresis synchronous, life-lubrication. Color: Decorator gray and 2-tone aluminum. Power requirements: 117 v. AC, 60 cycles AC. Dimensions: 17 $\frac{3}{4}$ " wide, 16" deep, height above deck 3", 4 $\frac{1}{4}$ " below. **TONEARM SPECIFICATIONS**—Tracking: 1 gram or less. Tracking Error: Less than 1°. Bearings: Horizontal & Vertical—chrome steel balls. Resonance: 9-12 cps. Cartridge shell: Plug-in, 4-wire type.

New Garrard Lab 80 Stereo Automatic Transcription Turntable . . .

A New Precedent In Record Playing Equipment!

- Dynamically balanced "Afrormosia wood" tone-arm with integral manual cueing device and adjustable tracking force • New adjustable bias compensator tracks the lightest & most compliant cartridges accurately & without distortion • New massive, non-magnetic 12" turntable with anti-static mat • New isolated motor suspension

- Insures professional reproduction of 33 $\frac{1}{3}$ & 45 rpm records • Anti-skate protection • Delrin® "frictionless" trip mechanism • Completely assembled

Provides Instant Trip At Virtually Zero Force! New 5-point foam-damped spring suspension system protects unit from feedback & external jarring. Static & dynamic balancing prevents wow & rumble. Convenient fingertip controls. For a penny more, choose a cartridge from list below.

ADP-94, 20 lbs., turntable only . . .

\$10 dn., \$9 mo. \$99.50

ADP-94, 20 lbs., turntable and choice of any 1c offer cartridge below, (specify by model no.) . . .

\$10 dn., \$9 mo. \$99.51

ADA-94-1, 1 lb., Garrard LRS9

45 rpm spindle \$3.80

ADA-94U, 4 lbs., unfinished base,

16 $\frac{1}{2}$ " W x 13 $\frac{3}{4}$ " D x 4 $\frac{1}{4}$ " H. \$5.95

ADA-94W, 4 lbs., walnut finished base,

16 $\frac{1}{2}$ " W x 13 $\frac{3}{4}$ " D x 4 $\frac{1}{4}$ " H. \$6.50

ADP-94 SPECIFICATIONS—Speeds: 33 $\frac{1}{3}$ & 45 rpm. Motor: 4-pole shaded, completely isolated. Tracking: Tracks per cartridge specifications. Color: Special iridescent charcoal gray. Wiring: Stereo. 4-pin, 5-wire system with separate ground connection for hum elimination. Cables Furnished: Line cord, 2 audio cables. Power requirements: 100-130 volts 60 cycles AC. Dimensions: 17" W x 14 $\frac{1}{4}$ " D x 5 $\frac{1}{2}$ " above and 3 $\frac{1}{2}$ " below motor board.

New Dual 1009 Auto/Professional Turntable . . . Tracks At $\frac{1}{2}$ Gram, Trips At Zero!

- Automatic tone arm tracks below $\frac{1}{2}$ gram, yet trips at zero • Permits almost 90° tilt without spilling a note • Anti-skate record protection • Less than 2/10 gram stylus force increase from first to last record • 7 $\frac{1}{2}$ lb. dynamically-balanced platter • 4 speeds, automatic or manual • Automatically shuts off amplifier after play • Can be started manually while record is rotating or at a standstill • Completely assembled

A New Advance In Turntables & Separate Tone-arm! Other features include a Dual Continuous Pole motor that provides exacting speed within 0.1% even with a line voltage variation beyond 10%. Tracking error less than 0.4°/inch; vertical tracking angle increases less than 6°. Soft-sprung footing isolates chassis from shock & feedback. Order a cartridge for only 1c more.

ADP-24 changer only, 22 lbs. . .

\$10 dn., \$9 mo. \$99.50

ADP-24, changer & choice of any 1c offer cartridge below (specify by model no.), 22 lbs. . .

\$10 dn., \$9 mo. \$99.51

ADA-24W, oiled solid walnut base, 3 lbs. . . \$11.95

ADA-24-1, 45 rpm spindle, 2 lbs. \$4.80

ADP-24 SPECIFICATIONS—Speeds: 16 $\frac{2}{3}$, 33 $\frac{1}{3}$, 45 and 78 rpm. Turntable speed: All 4 speeds accurate within 0.1% with one to ten records. Motor type: 4-pole induction, shock & vibration shielded. Type of drive: Friction. Tracking force variations: Less than 0.2 grams from 1st to 10th record. Record capacity: Up to 10 records. Record sizes: 7", 10", 12". Control functions: Manual Speed Selector; Manual Record Size Selector; Stop/Start Manual/Automatic switch. Dimensions: 10 $\frac{1}{2}$ " x 12 $\frac{3}{4}$ " x 6" clearance above, 3" below. Power requirements: 117 VAC, 60 cps.

Special 1c Offer Cartridges With Changer Orders! Specify By Model No.

Shure M7/N21D "Dynetic"



AD-44B Manufacturer's Specifications: Frequency Response: 20-20,000 cps. Output: 8 mv/channel. Separation: 30 db. Load impedance: 47,000 ohms. channel stereo—22,000 ohms for monaural. Stylus: 0.7 mil diamond. Compliance: 9.0 x 10⁻⁶ cm/dyne in all directions. Tracking force: 2 grams optimum. Model AD-44B, 1 lb. \$17.95

Pickering V-15 "Magnetic"



AD-74J Manufacturer's Specifications—Frequency response: 20 to 20,000 cps. Output: 1.5 mv per cm/sec of recorded level. Load resistance: 47,000 ohms. Stylus: .7 mil diamond. Tracking force: 1 to 5 grams. Vertical tracking angle: 15° Certified for optimum performance with 15° RIAA Vertical Tracking Standards. Model AD-74J, 1 lb. \$17.95

Empire 880P "Magnetic"



AD-54G Manufacturer's Specifications: Frequency response: 6-30,000 cps. Output: 8 mv/channel. Separation: 30 db. Load impedance: 47,000 ohms. Stylus: 0.6 mil diamond. Compliance: 30 x 10⁻⁶ cm/dyne. Tracking force: $\frac{1}{2}$ -3 grams. Model AD-54G, 1 lb. \$19.95

New! Sonotone 9TAFHC-SD "Ceramic"



AD-15K Manufacturer's Specifications—Frequency response: 20 to 20,000 cps. Output: .20 volt. Separation: 30 db. Load impedance: 1 to 5 megohms. Stylus: 0.7 mil diamond, 3 mil sapphire. Compliance: 15 x 10⁻⁶ cm/dyne. Tracking force: 1.5-3 grams for professional arms; 3-4 grams for changers. Model AD-15K, 1 lb. \$7.26



Semi-Kit Stereo Tape Recorders!

Heathkit 4-Track Stereo Tape Recorder . . . Installs Easily In Your Hi-Fi System!



AD-22A
\$139⁹⁵

- Now in semi-kit form . . . rugged, die-cast tape mechanism comes factory assembled . . . you build only the electronics
- Listen to or record 4-track stereo or monophonic tapes at speeds of 3 3/4 or 7 1/2 ips
- Two inputs per channel with mixing controls permit professional recording results
- Two recording type vu meters for precise level settings
- Concentric clutched level controls permit separate or simultaneous adjustments of the stereo channels for proper balance and volume
- Easy to build with sturdy circuit board construction of the electronics section
- Free head alignment tape included
- Plays back through external power amplifiers & speakers

Semi-Kit AD-22A, factory-assembled mechanism, and kit-form electronics for playback & record, 23 lbs. . . \$14 dn., \$12 mo. . . was \$159.95 . . . \$139.95

ADA-22-1, tan carrying case for AD-22A, 9 lbs. . . \$4 dn., \$5 mo. . . \$37.50

AD-22A SPECIFICATIONS—Tape speeds: 7 1/2 ips and 3 3/4 ips. **Wow and flutter:** .2% at 7 1/2 ips, .3% at 3 3/4 ips. **Signal-to-noise ratio:** 45 db or better at normal recording level. **Harmonic distortion (Record-Play):** 1% or less. **Frequency response:** ±3 db, 40 to 15,000 cps @ 7 1/2 ips, ±3 db, 40 to 10,000 cps @ 3 3/4 ips. **Inputs:** Microphone, Line. **Input sensitivity (For Normal Recording Level):** 5 millivolts for Microphone, 160 millivolts for Line. **Output:** 600 ohm cathode follower. **Output level:** 1 volt. **Bias erase frequency:** 75 kc with push-pull oscillator. **Record level indicator (Each Channel):** VU-type meter. **Digital counter:** Zero reset with 3 digits. **Controls & Switches:** Power switch (off-on); Rewind—forward control (rewind-neutral-forward); Function control (neutral-play-record); Push-to-record interlock button; record mode switch (left-right-stereo); playback level control, one for each channel, clutched type; record level control, left and right channel controls for microphone and line inputs, clutched type. **Power requirements:** 105-125 volts, 60 cps, 65 watts nominal. **Power supply:** Transformer operated, half-wave voltage doubler. **Color combination:** Beige deck & copper-tone control panel. **Dimensions:** Overall: 12" W x 15" D x 8" H. Mounting cutout required: 11 1/8" W x 14 3/4" D. 7" required below deck and 1 1/2" required above mounting surface.

Heathkit Portable 4-Track Stereo Recorder . . . Goes With You Anywhere!

- Prebuilt tape mechanism simplifies and shortens assembly
- Includes all amplifiers . . . use as independent recorder to drive stereo system or separate speakers
- Each speaker wing features 5" woofer & 3" cone-type tweeter with 8' cables for separation
- Records & plays 4-track stereo & mono tapes • 7 1/2 & 3 3/4 ips speeds
- Microphone & line inputs
- Clutched, concentric level & tone controls
- Bar-type level indicators
- Pre-assembled portable case with lift-top lid & swing-out detachable speaker wings
- Free alignment tape

Adds More Fun To Leisure-Time Activities! Use as an independent recorder to drive your stereo system or separate speakers! Circuitry employs

5 dual-purpose tubes and 2 crystal diodes, plus transformer power supply. Order yours now!

Semi-Kit AD-72A, 51 lbs. . . \$16 dn., \$14 mo. was \$179.95 . . . \$159.95

AD-72A SPECIFICATIONS—Record-play and erase head: 4-track stereo. **Tape speeds:** 7 1/2 and 3 3/4 ips. **Frequency-power response:** 7 1/2 ips, 50-15,000 cps ±3 db @ 2 watts; 3 3/4 ips, 50-10,000 ±3 db @ 2 watts. **Harmonic distortion:** Less than 2% at full output. **Wow and flutter:** .2% @ 7 1/2 ips, .3% @ 3 3/4 ips. **Fast forward and rewind time:** Less than 100 sec. for 1200 foot reel. **Maximum reel size:** 7 inches. **Input sensitivities:** Microphone (1 meg.) 1 millivolt; Line (500 K ohm) 100 millivolts. **Motor:** Shaded 4-pole induction. **Monitor:** Low impedance stereo headphones. **Controls:** Function, (Neutral-Play-Record, with interlock); Rewind-Neutral-Forward; Record Mode, (Left, Right, or Stereo); Level (Record and Play, clutched); Tone, (Playback only, clutched). **Power requirements:** 105-125 volts, 60 cps, 85 watts nominal. **Dimensions:** (including speakers) 19 1/2" W x 15 3/4" D x 9 3/4" H.



AD-72A
\$159⁹⁵

SONY Sterecorder "600" . . . 4-Track Stereo Tape Recorder!

- Plays & records 4-track stereo and mono tapes at 7 1/2 & 3 3/4 ips
- 3-head design provides multiple sound track recording
- Tape & source monitor switch • Mag. phono & FM stereo inputs
- Two VU meters • Automatically shuts off at end of reel
- Separate level controls for mike & line mixing
- Pause control & digital counter
- Uses 7" reels
- Includes carrying case & 2 Sony dynamic mikes

GDP-164, 48 lbs. . . \$30 dn., \$25 mo. . . \$299.50

GDP-164 SPECIFICATIONS—Power requirements: 80 watts 110-117 V. AC, 60 cycles. **Tape speeds:** 7 1/2 & 3 3/4 ips. **Frequency Response:** 30-18,000 cps, ±2 db 50-15,000 cps @ 7 1/2 ips. **Signal-to-Noise Ratio:** Better than 50 db. **Flutter & Wow:** Less than 0.17% @ 7 1/2 ips; less than 0.25% @ 3 3/4 ips. **Erase Bias Frequency:** 100 kc. **Inputs:** 2 high level line; 2 microphone or magnetic phono (switch-selected). **Outputs:** 2-0 db 600 ohm line, 600 ohm high level binaural monitor. **Dimensions:** 16 3/4" W x 18 1/4" H x 9" D.

SONY Model 200-A Portable Sterecorder!

- 4-track stereo & mono record & playback
- Sound on sound performance
- 2 VU meters
- Dynamically balanced capstan flywheel
- Pause control & digital counter
- FM stereo inputs
- Built-in stereo preamps & power amps
- Uses 7" reels
- Complete with carrying case & 2 dynamic mikes

GDP-184, 28 lbs. . . \$17 dn., \$15 mo. . . \$169.50

GDP-184 SPECIFICATIONS—Power requirements: 70 watts 117 volts 60 cycles. **Tape speeds:** 7 1/2 and 3 3/4 ips. **Frequency response:** 50-14,000 cps @ 7 1/2 ips; 50-10,000 cps @ 3 3/4 ips. **Flutter & wow:** Less than 0.19% @ 7 1/2 ips; less than 0.25% @ 3 3/4 ips. **Signal to noise ratio:** Better than 45 db. **Level indication:** Two VU meters. **Input provisions:** 2 microphone, 2 high level. **Output provisions:** Preamp, two 600 ohm high level. Power amp, two 8 ohm external speakers and stereo headsets. **Dimensions:** 15 1/2" W x 13 3/8" D x 7" H.

SONY Model 250 All-Transistor Sterecorder

- Transistorized for instant operation, long life
- 4-track stereo record & playback
- 2 VU meters
- Automatically shuts off at end of reel
- Dynamically balanced capstan flywheel
- Automatic tape lifter
- Simple single-knob operation for all functions
- Attractive walnut cabinet base

GDP-174, 17 lbs. . . \$12 dn., \$11 mo. . . \$119.50

GDP-174 SPECIFICATIONS—Power requirements: 115 volts 60 cycles. **Tape speeds:** 7 1/2 and 3 3/4 ips. **Flutter & wow:** 0.19% @ 7 1/2 ips; 0.25% @ 3 3/4 ips. **Frequency response:** 50-14,000 cps @ 7 1/2 ips. **Signal to noise ratio:** 50 db or more. **Inputs:** Microphone and line per channel. **Outputs:** High level line per channel. **Dimensions:** 14 1/2" W x 6 1/2" D x 9" H.

New! SONY Voice Command Battery Recorder "905"

- Starts & stops at sound of your voice
- AGC for constant volume
- Functions as 2 recorders—4 1/2 lb. recording unit detaches from amplifier/speaker base to tape & play anywhere
- Compact recording unit also plays back on amp./spkr. base which recharges recorder's batteries at same time
- Instant stop control
- Remote stop/start switch on mike
- Includes amplifier/speaker system, mike & leather case

GDP-224, 8 lbs. . . \$13 dn., \$11 mo. . . \$129.50

GDP-224 SPECIFICATIONS—Power Requirements: Recorder—4 nickel cadmium AA batteries (Eveready 1446 or equiv.). **Frequency response:** 90-9,500 cps. **Reel Size:** Up to 3 3/4 inches provides over 1 hour recording time. **Speeds:** 3 3/4 and 1 1/2 ips. **Inputs:** Microphone and auxiliary. **Outputs:** Monitor, external speaker. **Dimensions:** 8 3/8" W x 6 1/2" D x 6 1/2" H.



GDP-164
\$299⁵⁰



GDP-184
\$169⁵⁰

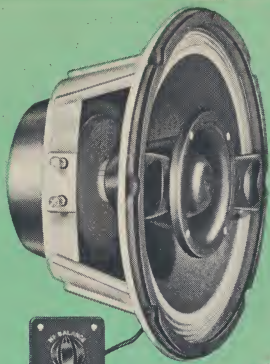
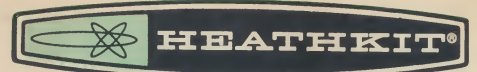


GDP-174
\$119⁵⁰



GDP-224
\$129⁵⁰

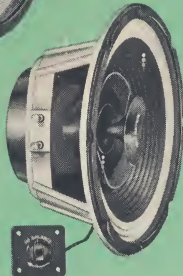
Exclusive Heathkit® Speakers!



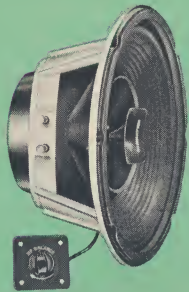
AS-183
\$49⁹⁵



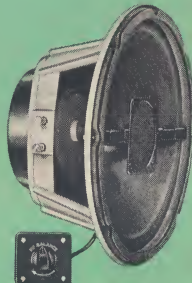
AS-173
\$39⁹⁵



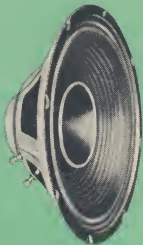
AS-163
\$29⁹⁵



AS-153
\$19⁹⁵



AS-143
\$9⁹⁵



AS-133
\$14⁹⁵



AS-123
\$9⁹⁵



AS-113
\$4⁹⁵

Audiophile Favorite . . .

12" 2-Way High Compliance Speaker . . . Tops In Performance & Value!

Connoisseur Quality Throughout! Finest materials available for tonal realism . . . smooth 20 to 15,000 cps frequency response . . . high compliance edge-damped woofer cone . . . low crossover frequency . . . reflexed-horn high frequency unit . . . 1½" & 1" voice coils . . . die-cast metal frame! Features tan & cinnamon color styling, polarized binding posts, 1-year guarantee, & separate level

control. Cabinet recommendations included. Order a pair for extra savings!

Model AS-183, 15 lbs. . . \$5 dn., \$5 mo. . . \$49.95
Model AS-183-2, 30 lbs. . . \$10 dn., \$9 mo.

Special pair price \$95.00
AS-183 SPECIFICATIONS—Size: 12". Impedance: 8 ohms. Power rating: 30 watts. Frequency response: 20-15,000 cps. Cone resonance: 25 cps. Magnet weights: 1¼ lbs., 4.65 oz.

12" Deluxe 3-Way High Compliance Speaker . . .

Edge-Damped Woofer Offers Superior Bass!

Everything You Want In A Speaker & More! Enjoy superb reproduction throughout the entire 35 to 15,000 cps range. Features a high compliance, edge-damped woofer cone for rich, deep bass . . . a high frequency cone for mid-range realism . . . a special tweeter for crystal-clear highs. Handles up to 25 watts program material. Polarized speaker terminals provide proper phasing. Boasts 1¾ lb. ceramic annular-ring magnet, built-in crossover

network, separate level control, 2-tone cinnamon & tan styling, & 1-year guarantee. Order a pair!

Model AS-173, 14 lbs. . . \$4 dn., \$5 mo. . . \$39.95
Model AS-173-2, 28 lbs. . . \$8 dn., \$7 mo.

Special pair price \$76.00

AS-173 SPECIFICATIONS—Size: 12". Impedance: 8 ohms. Power rating: 25 watts. Frequency response: 35-15,000 cps. Cone resonance: 40 cps. Magnet weights: 1¼ lbs., 2½ oz.

12" 3-Way Coaxial Hi-Fi Speaker . . .

Quality Engineered For High Efficiency!

Features True Coaxial Design with three separate radiating elements . . . woofer, tweeter and special-design horn tweeter. Enjoy smooth sound transmission thanks to the mechanical & electrical crossover networks. Heavy, die-cast frame construction assures precise alignment of speaker elements, and the high efficiency ceramic annular-ring magnets provide trouble-free performance. Has polarized speaker terminals, separate level control, 1-year

guarantee, and cinnamon & tan color styling. Includes cabinet recommendations. Order a pair!

Model AS-163, 12 lbs. . . \$3 dn., \$5 mo. . . \$29.95
Model AS-163-2, 24 lbs. . . \$6 dn., \$6 mo.

Special pair price \$57.00

AS-163 SPECIFICATIONS—Size: 12". Impedance: 8 ohms. Power rating: 20 watts. Frequency response: 40-15,000 cps. Cone resonance: 60 cps. Magnet weights: 13 oz., 1 oz. Voice coil sizes: 1½" and 1".

Exceptional Value . . . 12" Two-Way Coaxial Hi-Fi Speaker!

Full-Range Sound At Tremendous Savings! True coaxial design features separate woofer & tweeter with a built-in capacitive crossover network. High frequency level control permits balancing of highs & lows to fit room acoustics. Other features include rigid die-cast metal frame, polarized binding posts, cinnamon & tan color styling, and 1-year

guarantee. Includes cabinet recommendations.

Model AS-153, 10 lbs. \$19.95
Model AS-153-2, 20 lbs. . . \$4 dn., \$5 mo.

Special pair price \$38.00

AS-153 SPECIFICATIONS—Size: 12". Impedance: 8 ohms. Power rating: 15 watts. Frequency response: 50-15,000 cps. Magnet weights: 10 oz., 1.47 oz. Voice coil sizes: 1" and 9/16".

Low-Cost 12" Hi-Fi Speaker . . . Only \$9.95!

For The Budget-Minded Hi-Fi Fan! Covers the 50 to 12,000 cps frequency range. Features dual cones driven by a single voice coil, mechanical crossover network, polarized binding posts, and space-saving annular-ring magnet & pressed steel frame construction. Its shallow 4¾" depth makes

it ideal for wall or ceiling construction. Includes cabinet recommendations & 1-year guarantee.

Model AS-143, 5 lbs. \$9.95

AS-143 SPECIFICATIONS—Size: 12". Impedance: 8 ohms. Power rating: 14 watts. Frequency response: 50-12,000 cps. Cone resonance: 60 cps. Magnet weight: 10 oz. Voice coil size: 1".

8" Two-Way Coaxial High Fidelity Speaker . . . Value Designed!

Top Value In An 8" Speaker! Boasts true coaxial performance with separate cone woofer & tweeter, plus built-in capacitive crossover network and high frequency level control. Sturdy die-cast frame assures a lifetime of dependable performance. Polarized binding posts for proper phasing. Measures only 3¾" deep . . . ideal for small space enclosures. Attractive cinnamon & tan color styling. Includes

multi-speaker connection instructions, 1-year guarantee & recommended cabinet dimensions.

Model AS-133, 6 lbs. \$14.95

Model AS-133-2, 12 lbs. . . \$3 dn., \$5 mo.

Special pair price \$28.50

AS-133 SPECIFICATIONS—Size: 8". Impedance: 8 ohms. Power rating: 12 watts. Frequency response: 50-14,000 cps. Cone resonance: 70 cps. Magnet weights: 10 oz., 0.68 oz. Voice coil sizes: 1" and 9/16".

8" Dual-Cone Hi-Fi Speaker . . . Extra Range, Low Price!

Ideal Where Space Is At A Premium! Only 3½" deep . . . perfect for "in-wall" custom installations & shallow cabinets! Features husky die-cast frame; polarized binding posts for proper phasing; dual-cone design for wide frequency response; and 10-ounce annular-ring magnet for extra power handling capability. Cinnamon & tan color styling.

Complete with cabinet recommendations & 1-year guarantee. Order a pair for extra savings!

Model AS-123, 5 lbs. \$9.95

Model AS-123-2, 10 lbs. . . Special pair price \$19.00

AS-123 SPECIFICATIONS—Size: 8". Impedance: 8 ohms. Power rating: 12 watts. Frequency response: 50-12,000 cps. Cone resonance: 70 cps. Magnet weight: 10 oz. Voice coil size: 1".

Low Cost 8" Space-Saver Speaker!

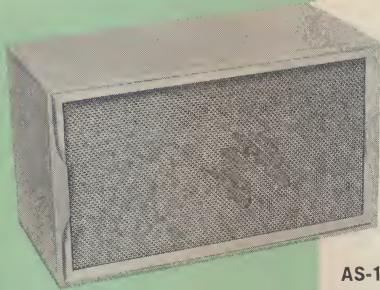
Just The Speaker For Extension Applications! Use in high fidelity and background music systems, or as a replacement speaker in radios, TV, etc. Features dual-cone design, annular-ring magnet, heavy-gauge pressed-metal frame, polarized screw-type terminals. Only 3" deep for easy mount-

ing in small spaces & enclosures. Includes 1-year guarantee & cabinet recommendations.

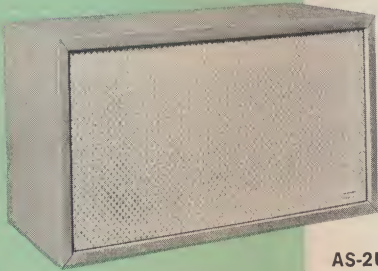
Model AS-113, 3 lbs. \$4.95

AS-113 SPECIFICATIONS—Size: 8". Impedance: 8 ohms. Power rating: 10 watts. Frequency response: 60-10,000 cps. Magnet weights: 4.8 oz. Voice coil size: 1".

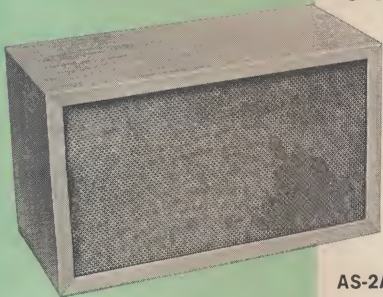
Heathkit® Speaker Systems For Any Size



AS-10U
\$59⁹⁵



AS-2U
\$69⁹⁵



AS-2AU
\$89⁹⁵

Easy To Buy, Easy To Drive . . . Low-Cost Acoustic Suspension Speaker System!

- 10" acoustic suspension woofer, two 3 1/2" cone-type tweeters • Takes only 10 watts to drive, yet handles up to 40 watts • Pre-assembled cabinets in two finishes • Simple to assemble • Use vertically or horizontally

An Acoustic Suspension System You Can Afford! That's the AS-10 with extended bass, smooth high frequency response plus the low distortion that has made acoustic suspension systems an audiophile favorite the world over. Covers the 30 to 15,000 cps frequency range, and includes a high frequency control and L-C crossover network. Compact, preassembled cabinets available unfinished or in walnut.

Kit AS-10U, unfinished, 41 lbs. . . \$6 dn., \$6 mo. \$59.95
Kit AS-10W, walnut, 42 lbs. . . \$7 dn., \$6 mo. \$64.95

AS-10 SPECIFICATIONS—Frequency response: ± 5 db, 30 to 15,000 cps. Impedance: 16 ohms. Recommended amplifier power: 10 to 40 watts. Enclosure: Infinite baffle, sealed. Speakers: Woofer, 10" Acoustic Suspension, Syntox 6 ceramic magnet; Tweeter, two 3 1/2" cone units in dispersed array, 1.47 oz. Alnico 5 magnets. Crossover: L-C network, 2250 cps. Control: High frequency level. Dispersion: 90° horizontal. Cabinet: Factory assembled 3/4" furniture-grade plywood. Dimensions: 13 1/2" H x 24" W x 11 1/2" D.

Now Save Even More On This Heathkit Acoustic Suspension Speaker System!

- 10" acoustic suspension woofer, two 5" cross-fired tweeters manufactured by Acoustic Research, Inc. • Wide-range sound with compact speaker versatility • Easy to build with preassembled cabinet

Smooth Sound From A Compact Performer! Features 10" acoustic suspension woofer and 1 lb. Alnico 5 magnet to deliver extended bass frequency response . . . 2000 cps L-C crossover network & specially treated 5" cross-fired tweeters for unusually clear high frequency distribution . . . compact, fit-anywhere size. Simply install speakers in preassembled cabinet, connect leads, sit back & enjoy distortion free sound! Order a pair for stereo!

Kit AS-2U, unfinished, 45 lbs. . . was \$72.95 . . . \$7 dn., \$7 mo. Only \$69.95

AS-2U SPECIFICATIONS—Frequency response: ± 5 db, 40 to 15,000 cps. Crossover frequency: 2,000 cps. Recommended amplifier power: 20 to 40 watts RMS. Nominal impedance: 8 ohms. Tweeter: Two 5" cone units, specially treated and equalized, in dispersed array, 2.15 oz. Alnico 5 magnet. Woofer: 10" Acoustic Suspension, 1.1 lb. Alnico 5 magnet. Resonant Frequency (mounted) 58 cps. Crossover: L-C network. Horizontal dispersion: 90°. Size: 24" W x 13 1/2" H x 11 1/2" D.

Deluxe Heathkit Acoustic Suspension System . . . Exceptional Value!

- Added super tweeter for extended high frequency response • Built-in crossover networks • High frequency level controls • 10" suspension woofer, two 5" cross-fired tweeters, plus 1 3/8" dome-type super-tweeter—all genuine Acoustic Research, Inc. manufactured units • Preassembled cabinets—unfinished or walnut

What Makes This Speaker System Different? The addition of a specially designed super tweeter that extends the range of this system to full 40 to 20,000 cps. For you this means enjoying distortion-free reproduction over the entire frequency range . . . from the high-pitched shrill of a clarinet to the full impact of a kettle drum.

Choose a pair for stereo now!

Kit AS-2AW (finished walnut), 49 lbs. . . \$10 dn., \$9 mo. \$96.50
Kit AS-2AU (unfinished, white hardwood), 51 lbs. . . \$9 dn., \$9 mo. \$89.95

AS-2A SPECIFICATIONS—Frequency response: ± 5 db, 40 to 20,000 cps. Impedance: 8 ohms. Recommended amplifier power: 20 watts minimum. Enclosure: Infinite baffle, sealed. Speakers: Woofer, 10" Acoustic Suspension, 1.1 lb. Alnico 5 magnet; Mid-range, two 5" cone units, in dispersed array, 2.15 oz. Alnico 5 magnets; Super-tweeter, 1 3/8" dome-type construction. Crossover: L-C network, 2000 & 7500 cps. Controls: Individual levels for tweeter and mid-range speakers. Dispersion: 90° horizontal. Cabinet: Factory assembled 3/4" furniture-grade plywood. Dimensions: 13 1/2" H x 24" W x 11 3/4" D.

Ready For The Best? Heathkit "Legato Compact" Offers Finest Performance At A Realistic Price!

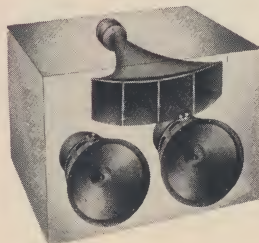
- Speakers cover 30-22,000 cps • 800 cps crossover network—completely assembled • Can be driven by as little as 3 watts, handles up to 30 watts • Preassembled cabinet in walnut finish, ready for speaker installations • Styling matches AE-20 center cabinet, p. 34

Masterpiece Of Performance, Styling & Quality! Known by audiophiles everywhere for its acoustical excellence . . . known by audio engineers everywhere as an achievement in sound technology. Two 12" Altec Lansing "high-compliance" low-frequency speakers cover the 30 to 800 cps range . . . a specially designed Altec Lansing exponential horn and high frequency driver combine to recreate the 800 to 22,000 frequency range. Special 800 cps crossover network is factory assembled, ready for easy installation in acoustically balanced cabinet.

Completely Efficient! Allows use of amplifiers with power output as low as 3 watts . . . handles program material up to 30 watts. Walnut-finished cabinet constructed of 3/4" furniture-grade plywood.

Kit AS-21W, walnut, 142 lbs. . . \$24 dn., \$21 mo. \$239.95
Kit AS-31, everything except cabinet, 54 lbs. . . \$19 dn., \$16 mo. \$184.95

AS-21 SPECIFICATIONS—Frequency response: 30 to 22,000 cps. Impedance: 16 ohms. Capacity: 30 watts. Enclosure: Modified Infinite baffle. Speakers: Low frequency, two Altec Lansing 12" high compliance woofers, 1 1/2 lb. magnets; High frequency, one Altec Lansing 800 cycle exponential horn and driver, .53 lb. magnet. Crossover: 800 cycle constant K type, assembled. Control: high frequency shelving. Dispersion: 90° horizontal. Cabinet: Factory assembled furniture-grade 3/4" plywood. Dimensions: 32" W x 19" D x 32 1/2" H.



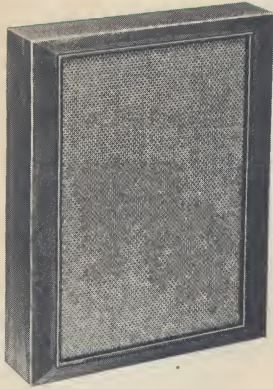
AS-21W
\$239⁹⁵

HIGH FREQUENCY DRIVER and specially designed exponential horn by Altec Lansing with .53 lb. magnet . . . covers 800 to 22,000 cps . . . provides 90° horizontal distribution.

LOW FREQUENCY SPEAKERS by Altec Lansing . . . famous, high compliance, 12" speakers with 1 1/2 lb. magnets . . . cover 30 to 800 cps.

CROSSOVER NETWORK by Altec Lansing . . . 800 cps constant K shelving type.

Budget, or Sound Requirement!



AS-22U **\$49⁹⁵**

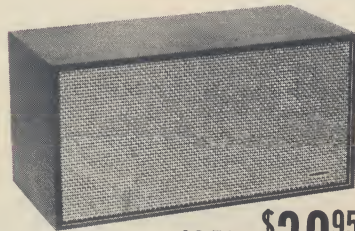
Slim, Trim, Installs Anywhere . . . Heathkit "Profile" 3-Way Hi-Fi Speaker System!

- Three specially-designed speakers—10", 6", 3½" • 5" slim . . . ideal for floor, shelf, or wall installation • Factory assembled, tube-tuned bass reflex cabinet • Big sound hi-fi performance

Solves Small Space Installation Problems! Only 5" deep, 25" high and 19½" wide . . . set it on the floor, suspend on a wall, or tuck horizontally or vertically into book-cases or shelves. Inside its compact cabinet is a special inverted-design 10" woofer with a 1 lb. Alnico magnet for crystal-clear reproduction of frequencies up to 2250 cps crossover point . . . a 6" closed-back speaker with a 2 oz. magnet to handle mid ranges . . . and a 3½" closed-back tweeter with a 2 oz. magnet to produce the "highs." Factory assembled cabinets unfinished or in walnut. Hangers & felt feet included. Order yours now!

Kit AS-22U, unfinished, 35 lbs. . . \$5 dn., \$5 mo. \$49.95
Kit AS-22W, walnut, 35 lbs. . . \$6 dn., \$5 mo. \$54.95

AS-22 SPECIFICATIONS—Frequency response: ±5 db, 55 to 12,500 cps. Crossover frequency: 2250 cps. Recommended amplifier power: 10 to 25 watts. Nominal impedance: 8 ohms. Woofer: 10" special inverted design. 1.1 lb. Alnico V magnet. Mid-range: 6" closed back, 2.15 oz. Alnico V magnet. Tweeter: 3½" closed back, 2.15 oz. Alnico V magnet. Cabinet: Bass reflex, tube-tuned, factory assembled of ¾" furniture grade plywood. Dimensions: 19½" W x 25½" H x 5" D.



AS-51U **\$39⁹⁵**

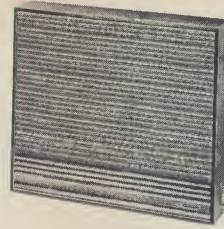
Heathkit 2-Way Hi-Fi Speaker System . . . A Favorite Of Thousands!

- Specially designed speakers . . . 8" woofer & compression-type tweeter with flared horn • Built-in crossover network • Tweeter level control • Factory assembled cabinets available in 2 finishes

Tried & True Performer! Covers the 50 to 12,000 cps range at ±5 db with two specially-designed speakers . . . an 8" woofer and true compression-type tweeter with exponential horn. Features built-in 1600 cps crossover network, tweeter power level control, 16 ohm speaker impedance, and 25 watt power rating. Can be used with amplifiers having as little as 3 watts power. Special tweeter mounting board may be rotated for wide angle dispersion in either vertical or horizontal positions. Assembles in an evening . . . just mount speakers and wire crossover network. Everything else is prebuilt. Order 2 for stereo!

Kit AS-51U, unfinished, 28 lbs. . . \$4 dn., \$5 mo. \$39.95
Kit AS-51W, walnut, 28 lbs. . . \$5 dn., \$5 mo. \$46.95

AS-51 SPECIFICATIONS—Frequency response: ±5 db, 50 to 12,000 cps. Crossover frequency: 1600 cps. Power rating: Program Material—25 watts. Single Frequency—15 watts. Nominal impedance: 16 ohms. Speakers: Low Frequency—8" Jensen (special design) 6.8 oz. Alnico 5; High Frequency—Jensen compression driver with exponential horn (special design), 4.7 oz. Alnico 5. L-PAD—level control for high frequency driver. Dimensions: 11½" H x 23" W x 11¾" D.



AS-193U **\$22⁵⁰**

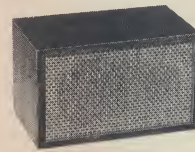
Extra-Thin Heathkit 2-Way 3-Speaker System!

- 5¾" woofer and two 3" tweeters • Compact—ideal for wall, shelf or table installations • 65-14,000 cps frequency response • Factory assembled cabinets in two finishes

Big Speaker Sound, Miniature Cabinet! Fits on table, wall, or book-case . . . yet performs like a speaker twice its size! Provides smooth, wide-range response . . . 65 to 14,000 cps!

Kit AS-193U, unfinished, 12 lbs. \$22.50
Kit AS-193W, walnut, 12 lbs. . . \$3 dn., \$5 mo. \$24.95

AS-193 SPECIFICATIONS—Impedance: May be used with amplifier having 4, 8, or 16 ohm output. Frequency range: 65-14,000 cps. Crossover frequency: 4,000 cps. Speaker power rating: 6 watts. Higher rated amplifiers, adjusted for reasonable listening levels, may be used. Adequate room sound with 1 watt to speaker. Nom. woofer size: 5½" cone type. Dimensions: 12¾" H x 15¾" W x 2¾" D.



AS-81U **\$17⁵⁰**

Low Cost Hi-Fi 2-Speaker System!

- 6" woofer & 3" tweeter • Quick, easy assembly • Factory assembled cabinets unfinished or in walnut

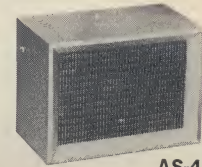
Compact, Yet Provides Wide-Range Performance! High compliance woofer features a mass-loaded cone that's matched to enclosure for good bass response. Cone-type, closed-back tweeter prevents speaker interaction. Ideal for small enclosures.

Kit AS-81U (unfinished) . . . 8 lbs. \$17.50
Kit AS-81W (walnut) . . . 8 lbs. \$19.95

AS-81 SPECIFICATIONS—Frequency response: ±5 db from 70 to 14,000 cps. Crossover frequency: 4000 cps. Recommended amplifier power: 6 watts. Nominal impedance: 8 ohms. Cabinet: Type, infinite; Dimensions: 10¾" W x 6½" H x 6-3/16" D; material, ½" veneer plywood. Speakers: Tweeter, 3" cone type, 8 ohms, .53 oz. Alnico 5 magnet; Woofer, 5½" cone type, 8 ohms, 10 oz. Syntox #6 magnet. Crossover: Capacitor type.

For The Budget-Minded . . . Low-Cost Hi-Fi Speaker System!

- 6" x 9" extended range dual-cone speaker • Compact, easy to assemble & install • 70-16,000 cps • Factory-assembled cabinets in two finishes



AS-41U **\$10⁹⁵**

Versatile . . . Well-Designed! Use as an extension to other rooms or as center fill-in speaker for a stereo system. Compact, fits most anywhere. Features 70-16,000 cps response, & 12 watts peak power rating.

Kit AS-41U (unfinished) . . . 9 lbs. \$10.95
Kit AS-41W (walnut) . . . 9 lbs. \$12.95

AS-41 SPECIFICATIONS—Frequency response: 70 to 16,000 cps. Impedance: 8 ohms. Capacity: 12 watts. Enclosure: Rear vented box. Speaker: 6" x 9" extended range dual cone, 6.8 oz. Alnico 5 magnet. Cabinet: Factory assembled, furniture-grade ½" plywood. Dimensions: 8" H x 11" W x 6½" D.

Enjoy Armchair Comfort & Private Listening Convenience!



A New! Roanwell Stereo/Hi-Fi Headset

New & improved Roanwell headset offers better bass response, thicker cushions for more comfortable acoustic seal, less distortion, and an extra long cord to allow more freedom of movement. Features identical driver units used in manned space flights! 4-wire design eliminates amplifier phasing problems in stereo.

Model ADP-102A, 3 lbs. \$4 dn., \$5 mo. \$37.50

ADP-102A SPECIFICATIONS — Drivers: Moving coil, dynamic. Sensitivity: 110 db, ref. .0002 dynes/cm², for 100 mw. Frequency response: 10-18,000 cycles. Distortion: less than 1% with 100 milliwatt input. Impedance: 20 ohms. Connectors: Spade terminals. Cord: 4-wire cable 20 ft. long.

B Telex ST-11 Stereo Headset

Relax and enjoy your favorite music anywhere in the room without destroying the "true" stereo effect! Soft, pliable foam rubber muffs shut out "unwanted" outside noise . . . helps develop excellent bass response and wide frequency range! Comfortable, lightweight! Easy-to-clean stainless steel headband and yoke. Order your now!

Model ADP-92, 2 lbs. \$23.92

ADP-92 SPECIFICATIONS — Driver element: Dynamic. Sensitivity: better than 95 db. Frequency response: 16 to 15,000 cps. Impedance: 8 ohms for use with 3 to 16 ohm sources. Power input: 15 milliwatts, 1 watt maximum. Cord: 4-wire 12 ft. long with spade terminals. Color: Tan and Brown.

C New! Stereo Headphone Control Box

Enjoy the convenience of simply switching from speaker to private headphone listening without leaving the comfort of your favorite chair with the new AC-13 control box. It's versatile . . . connects to any amplifier regardless of power and has standard jacks to accommodate any impedance stereo headset! Allows separate control of 2 headphone sets, plus individual adjustment for each ear! Includes 15' of cable and assembles easily in 1½ hours. Compact size . . . 3" W x 6" D x 3¼" H . . . fits anywhere! For more relaxed "private" listening, order yours now!

Kit AC-13, 3 lbs. \$9.95

Exclusive Heathkit® Stereo Furniture!



- Beautifully finished in stunning salem-maple • Exclusively styled, a special Heathkit design • Custom-designed for Heathkit stereo components
- Holds most hi-fi/stereo components
- Factory assembled, ready to use

AE-13S EQUIPMENT ACCOMMODATIONS AND SIZES: Cabinet, overall: 28" H x 36" W x 18 3/4" D. **Changer compartment:** 17" W x 16" D x 5 3/4" H. Mounting board is uncut and can be adjusted in height to accept all record changers sold by Heath and also AD-22A tape equipment; lid has adjustable friction-loaded support. **Record-tape recorder compartment:** 14 1/4" H x 17" W x 17 1/4" D for record storage; space is convertible with accessory sliding drawers to accommodate Heath AD-22A tape recorder. **Shelf compartments:** Top shelf, 6 3/4" H x 17" W x 15 7/8" D. Middle shelf, 6" H x 17" W x 15 7/8" D. Bottom shelf, 9" H x 17" W x 17" D. Shelves accept any Heath stereo or mono tuner, stereo or mono preamplifier, or stereo or mono combination amplifier.

A Heathkit Early American Stereo/Hi-Fi Center . . . Adds A Touch Of Tradition To Any Room!

Beautifully Styled In A Special Heathkit Motif! This richly crafted Heathkit Stereo / Hi-Fi furniture, combines the beauty and styling of Early American with a modern low silhouette, compact size and practical component layout. Enriches any room with a touch of luxury and good taste.

Masterfully Fashioned Of Special-Selected Woods! Sturdily constructed with maple veneers and solids . . . all beautifully finished in popular salem-maple! The overall effect is enhanced by the handsomely styled "Lancaster-Antique" solid-brass handles.

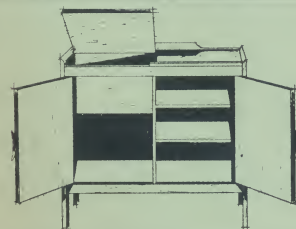
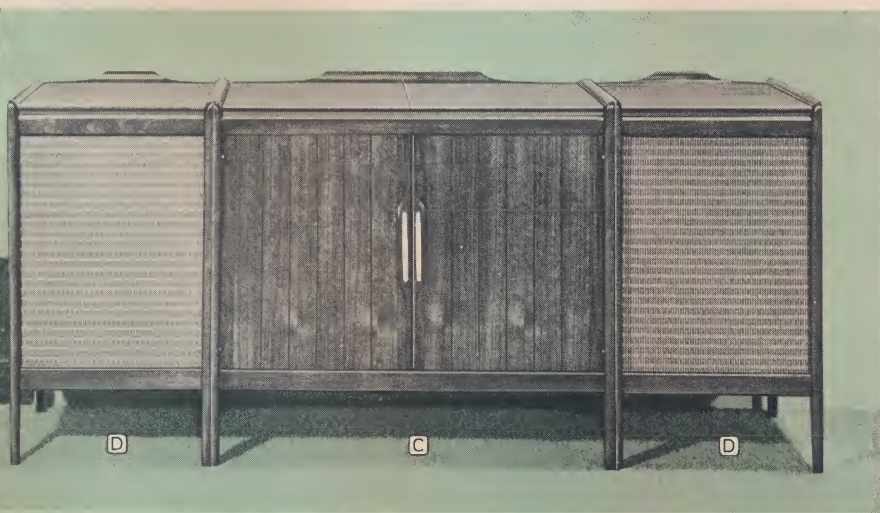
Completely Factory Assembled & Finished! Ready to accommodate Heathkit components, and will accept most any make or model Stereo/Hi-Fi equipment. Make your home entertainment center the center of attraction in your home . . . order this beautiful furniture now!

Model AE-13S, 77 lbs. . . \$12 dn., \$11 mo. \$115.00
Model AEA-13-1, Matching uncut recorder drawer (7" H. x 16" W. x 16 1/2" D., wood 3/4" thick), 15 lbs. \$20.00

B Match This Cabinet To Any 12" Or 15" Speaker For Best Tone!

Matches AE-13S Equipment Center In Styling, Quality & Finish! Handles 12 or 15 inch speakers, and has a 3 3/8" x 10 1/8" slot for horn tweeter. Tube vented design matches cabinet to speaker. Completely factory assembled and finished. Measures 18 1/4" W x 18 3/4" D x 28" H. Use of attractive spindle grille optional. Order a matching pair now.

Model AE-23S, 55 lbs. . . \$6 dn., \$5 mo. Each \$55.00



- Custom designed for Heathkit Stereo/Hi-Fi components . . . accommodates most makes • Beautifully finished in modern walnut . . . or available for custom finishing • Factory assembled, ready to use • Speaker cabinet can be matched to any 12" or 15" speaker for best tone

AE-20 EQUIPMENT ACCOMMODATIONS AND SIZES—Cabinet, overall: 36" W x 32 3/8" H x 19" D. **Changer compartment:** 17" W x 15 3/4" D, mounting board is uncut and can be adjusted in height to accept all record changers sold by Heath, and also AD-22A tape equipment; lid has adjustable friction-loaded support. **Record-tape recorder compartment:** 14 1/2" H x 17" W x 17" D, for record storage; space is convertible with accessory sliding drawers below to accommodate Heath AD-22A tape recorder. **Shelf compartment:** (2) each 17" W x 6" H x 17" D (inside shelf 14" deep); either shelf accepts any Heath Stereo or Mono tuner, Stereo or Mono preamplifier or stereo or mono combination amplifier. **Power amplifier compartments:** 8 3/4" H x 17" W x 15 7/8" D inside; accepts any Heathkit stereo or mono amplifier.

C A Home Entertainment Center Of Attraction . . . Modern Heathkit Stereo/Hi-Fi Cabinetry!

Like The Clean, Flowing Lines Of Modern Styling? Then you'll love this skillfully crafted Equipment Center. It's truly a masterpiece of luxurious furniture you'll be proud to place in your home! Solidly constructed of fine woods, the AE-20 is accented with clean, eye-arresting relief touches with slim, curved brass handles on each door to highlight the "sculptured" effect. Comes completely factory assembled, ready to hold your stereo/hi-fi components. Matching uncut tape recorder drawers optional. Choice of unfinished or handrubbed walnut finish. Order yours now.

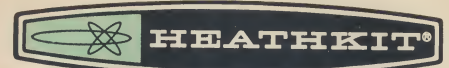
Model AE-20U (unfinished), 81 lbs. . . \$8 dn., \$8 mo. \$79.95
Model AE-20W (walnut), 82 lbs. . . \$10 dn., \$9 mo. \$99.50
Model AEA-12-3, unfin., uncut recorder drawer, 7" H x 16" W x 16 1/2" D, wood 3/4" thick, 15 lbs. \$18.95
Model AEA-12-4, walnut, uncut recorder drawer, 7" H x 16" W x 16 1/2" D., wood 3/4" thick, 15 lbs. \$19.95

D Matching Speaker Cabinet . . . Mates With Any 12" or 15" Speaker For Best Tone!

With the addition of the matching AE-40 speaker cabinets, you have a complete music system both in beautifully styled furniture and total stereo performance. Handles either 12 or 15 inch speakers. Also has a 3 3/8" x 10 1/8" slot for a horn tweeter. Factory assembled. Measures 18 1/2" W x 19" D x 32 3/8" H.

Model AE-40U (unfinished), 60 lbs.
\$4 dn., \$5 mo. Each \$37.95
Model AE-40W (walnut), 58 lbs.
\$5 dn., \$5 mo. Each \$44.95

The Finest In Ham Radio Kits!



- Operate SSB on either 80, 40, or 20 meters
- 200 watts P.E.P. input • LSB on 80 & 40, USB on 20 • Crystal filter SSB generation • Complete transceiver operation • ALC, AVC, and S-meter • Built-in VOX & push-to-talk circuitry
- Stable low frequency VFO • 2 kc dial calibration—6" bandspread—vernier tuning

Heathkit "Single-Bander" SSB Transceivers

Compact, Lightweight, Uncluttered Styling . . . make these units ideal for mobile operation or for that "corner of the living room" station. Necessary accessories are antenna, power supply, speaker, microphone, and crystal calibrator . . . see below!

Features To Delight Any Amateur! Include a deluxe 14-tube superheterodyne receiver with 1 uv sensitivity, 2.7 kc selectivity, and slow AVC action . . . provision for simple plug-in connection of HRA-10-1 100 kc crystal calibrator (optional) for accurate band-edge markings. Features assure excellent SSB reception! 200 watts of PEP input power cuts through QRM. Built-in VFO is in the 1.5-1.8 mc. range, and temperature compensated for high stability. VOX circuit permits "no hands" operation. Automatic level control gives the audio real sock! The "Single-Bander" you choose will give you many "5 by 9" reports. **Designed For Fast, Easy Assembly!** Heavy-duty circuit board and pre-cut wiring harness cut average wiring time to only 15 hours. Order your "Single-Bander" today.



HW-12
\$119⁹⁵

- Kit HW-12: 80-meter, 15 lbs. . . \$12 dn., \$11 mo. \$119.95
- Kit HW-22: 40-meter, 16 lbs. . . \$12 dn., \$11 mo. \$119.95
- Kit HW-32: 20-meter, 15 lbs. . . \$12 dn., \$11 mo. \$119.95
- GH-12, Push-to-talk and VOX microphone . . . 2 lbs. \$6.95
- Kit HRA-10-1, Plug-in kc crystal calibrator . . . 1 lb. \$8.95

HW-12 SPECIFICATIONS—RF input: 200 watts PEP. **Sideband generation:** Crystal lattice bandpass filter method. **Stability:** 200 cps per hour after warm-up. **Carrier & unwanted sideband suppression:** 45 db. **Frequency coverage:** HW-12, 3.8—4.0 mc; HW-22, 7.2—7.3 mc; HW-32, 14.2—14.35 mc. **Receiver sensitivity:** 1 uv for 15 db (S+N); N ratio. **Receiver selectivity:** 2.7 kc @ 6 db, 6.0 kc @ 50 db. **Output:** 50 ohm fixed (unbalanced). **Operation:** HW-12 & HW-22, LSB; HW-32, USB. **Audio output:** 1 watt @ 8 ohms. **Mike input:** Hi-Z. **Panel controls:** Frequency, final tune, function (OFF-PTT-VOX-TUNE), RF gain, AF gain (pull for crystal calibrator), VOX gain, meter. Front panel screw-driver adjust for S-meter and VOX delay. **Rear panel controls:** Mike gain, tune level, final bias. **Tube complement:** Fourteen tube heterodyne circuit; (3) 6EA8's mic. amp., VOX relay amp., IF amp., RF amp., Recvr. mixer; (5) 6AU6's, VFO, VOX amp., IF amps., Xmtr. mixer; (1) 6BE6, VFO isolator (HW-12), Het. osc. and mixer (HW-22 & HW-32); (1) 12BY7 Driver; (1) 12AT7 Xtal. osc., product det.; (1) 6EB8 Audio amp. and output; (2) 6GE5 RF output. **Power requirements:** 800 VDC @ 250 MA peak, 250 VDC @ 100 MA, —130 VDC @ 5 MA, 12 VAC or VDC @ 3.75 amperes. **Cabinet dimensions:** 6 1/4" H x 12 1/4" W x 10" D.

Heathkit Transistorized "Mobile" DC Power Supply

• Solid-state circuitry • High efficiency toroidal transformer • 1500 cps switching frequency • Circuit breaker protection • Ideal for most popular SSB Transceivers
Specially Designed For SSB Operation . . . with emphasis on maximum dynamic regulation. Husky solid-state circuitry. Features encapsulated "Deltamax-core" toroidal transformer, circuit breakers in primary and filament lines, & relay control of primary power. Silicon rectifiers. Versatile output voltage . . . low ripple. Neat, compact design, and all cables included. Although designed for Heath gear, the HP-13 is well suited to power many other rigs.

Kit HP-13 DC Power Supply . . . 7 lbs., \$6 dn., \$6 mo. \$59.95

HP-13 SPECIFICATIONS—Input voltage: 12 to 14.5 volts DC (for negative ground only). **Input current:** 25 amperes maximum with full load. **High voltage output:** 800 volts DC, no load; 750 volts DC @ 250 ma. AC ripple: Less than 1% @ 250 ma. Duty cycle: Continuous up to 150 ma; 50% up to 300 ma. **Low voltage output:** (high tap) 310 volts DC, no load; 300 volts DC @ 150 ma, (low tap) 265 volts DC, no load; 250 volts DC @ 150 ma. AC ripple: Less than .05% @ 150 ma. Continuous duty cycle to 175 ma. **Adjustable bias voltage:** —40 to —130 volts DC @ 20 ma max. Duty cycle: Continuous. **Switching frequency:** 1500 cps (approx.). **Ambient temperature:** —10° to 122° F. **Dimensions:** 7 3/4" W x 7-5/16" L x 2 3/8" D. All voltages referenced at 13VDC input.

Heathkit AC Power Supply

• Excellent dynamic regulation • Low AC ripple • Long-life silicon rectifiers • Provision for remote switching • Ideal for use with Heathkit and most other makes of SSB gear

Here's The Versatile Power Supply to Operate A Wide Range Of Equipment From 120 v. AC. Furnishes HV, LV, and filament voltages for fixed or portable operation. Features long-life silicon diode rectifiers, provision for remote switching of primary circuits. Furnishes a choice of 300 v. or 250 v. DC, adjustable or fixed bias, and 6.3 or 12.6 v. AC filament voltage. Primary line is fused.

Kit HP-23 AC Power Supply, 19 lbs. . . \$4 dn., \$5 mo. \$39.95

Export model available for 115/230 VAC, 50-60 cps; write for prices.

HP-23 SPECIFICATIONS—Power requirements: 120 volts AC, 50-60 cycles, 350 watts maximum. **High voltage output:** 820 volts DC no load; 700 volts DC @ 250 ma. ±10%. AC ripple: Less than 1% @ 250 ma. Duty cycle: 150 ma continuous, to 300 ma @ 50%. **Low voltage output:** (High tap) 350 volts DC, no load; 300 volts DC @ 150 ma ±10%, (Low tap) 275 volts DC, no load; 250 volts DC @ 100 ma ±10%. Less than .05% AC ripple @ 150 ma, continuous duty to 175 ma. **Fixed bias:** —130 volts DC, ±10%, no load; —100 volts DC @ 20 ma. **Adjustable bias:** —40 to —80 volts DC @ 1 ma maximum. Less than .5% AC ripple. **Filament voltage:** 6.3 V AC @ 11 amps; 12.6 V AC @ 5.5 amps. **Dimensions:** 9" L x 4 3/4" W x 8 3/4" H.

Heathkit Mobile Speaker Kit

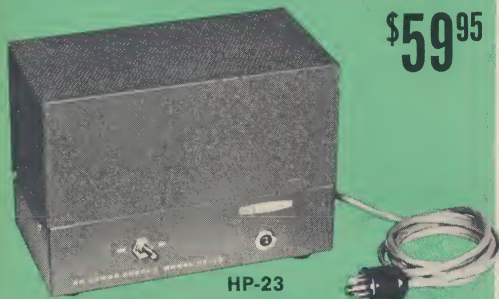
• Ideal for use with all Heathkit mobile & fixed station equipment • 8 ohm 4" x 6" oval speaker for excellent tone quality • Handsome steel cabinet in green wrinkle finish • Measures only 6 1/2" W x 4 3/4" H x 2 1/2" D • Complete with gimbal mount for easy mobile installation

Neat, Compact, designed for use with all types of mobile & fixed-station amateur gear. Rugged steel cabinet includes gimbal mounting bracket for easy under-car dash installation. Bracket wing nuts allow tilting to any angle & permit easy removal for fixed operation. Color styled in green wrinkle finish to match current Heathkit Amateur Radio equipment.

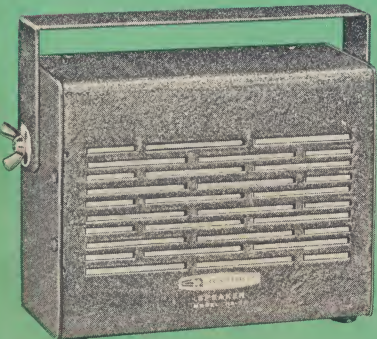
Kit HS-24, 4 lbs. \$7.00



HP-13
\$59⁹⁵



HP-23
\$39⁹⁵



HS-24
\$7⁰⁰



World's Largest Selection



HW-10
\$199⁹⁵

"Shawnee" Transceiver Provides All-Around Performance On Six Meters

- Everything you need . . . transmitter, receiver and power supply . . . all in one compact, easy to use unit
- Operates mobile or fixed with built-in 3-way power supply
- Tracked VFO and exciter stages for single-knob tuning
- Built-in low pass filter
- Panel "S" meter
- "Spotting" Switch
- Delivers 10-watts RF output to antenna—6360 final
- Convenient push-to-talk microphone included

A Complete Six Meter Station In A Single Unit! Transmitter features a built-in temperature-stabilized VFO tracked to exciter and final stages for single-knob tuning over any 500 kc band segment. The receiver features double-conversion with the first oscillator crystal-controlled, and voltage regulation on all oscillators for high stability.

Built-In 3-Way Power Supply! 117 v. AC and 6 or 12 v. DC. Quick disconnect plugs with AC & DC cables permit fast, simple change to either mobile or fixed-station operation. A primary fused relay controls all power to the transceiver in mobile operation. Mounting bracket included for mobile installation. Order yours now!

Kit HW-10 (6 meter), 35 lbs. . . \$20 dn., \$17 mo. \$199.95

HW-10 SPECIFICATIONS—RECEIVER SECTION—Frequency coverage: 49.8 to 54.9 mc. **IF Frequencies:** Double conversion—First IF, 22 to 26 mc (tunable); Second IF, 2 mc. **Noise figure:** 6 db or less. **Sensitivity:** .5 microvolts of input signal will provide an output signal better than 10 db over the noise level. **Squelch sensitivity:** Less than 1 microvolt. **Selectivity:** 15 kc at 6 db down. **Image rejection:** Better than 70 db. **IF rejection:** 50 db. **Input impedance:** 50 to 72 ohm, unbalanced. **Audio power output:** 3 watts (receiver operation); 15 watts (public address operation). **Headphone jack:** Low impedance, accepts PL-55 type plug (standard 2-conductor 1/4" sleeve). **External speaker socket:** 8 ohm impedance, accepts RCA type phono plug. **TRANSMITTER SECTION—Frequency coverage:** 49.8 to 54.0 mc (crystal or VFO control). **Modulation:** .01 volts minimum at 1000 cps=100%. **RF Power output:** 8 watts nominal AM, 10 watts nominal CW, 50 ohm nonreactive load. **Distortion:** 10% or less, with 100% modulation at 1000 cps. **Output impedance:** 50 to 72 ohm, unbalanced. **Low pass filter:** 54 mc cutoff frequency. **Key jack:** Accepts PL-55 type plug (standard 2-conductor 1/4" sleeve). **Crystal sockets:** Accepts FT-243 type holders, pin diameter .093", pin spacing .486". **Microphone:** High impedance ceramic element push-to-talk type with coil cord. **Crystals:** (Not furnished) 8 mc fundamental range (8.333 to 9.000 mc for 6 meter band). **GENERAL—Power requirements:** Input voltage: 6.3V DC, 12.6V DC, 117V AC. Transmit—14.5 amps., 7.5 amps, 120 watts. Receive—8.5 amps, 4.5 amps, 60 watts. **Cabinet dimensions:** 6" H x 10" D x 12" W.



Sharpe Headset—First Choice Of Mobile Operators And "Net" Traffic Handlers—Keeps Hands Free

Designed For Operating Ease . . . with high-output ceramic mike for positive VOX operation, adjustable boom, comfortable padded earpiece, and adjustable headband.

Easy To Connect! High impedance mike, and 500-ohm headphone permit versatile use. 8' twin-shielded cable. Less mike connector.

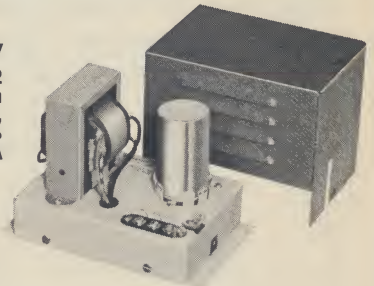
Model HDP-14A, 2 lbs. . .

\$3 dn., \$5 mo. \$30.00

Heathkit Mobile Vibrator Power Supply

- Operates from 6 or 12 volt DC source
- Silicon diode rectifiers
- Small, compact—easy to install
- Ideal for use with HW-29A & 30 transceivers below

GP-11
\$16⁸⁸



Convenient Transmitter Or Receiver Power . . . GP-11 provides 250 volts DC @ 100 ma . . . sufficient to operate most receivers and many small transmitters or transceivers.

Recommended For HW-29A & 30 Below . . . with provisions for remote on/off switching.

Kit GP-11, 6 lbs. \$16.88

GP-11 SPECIFICATIONS—Power requirements: 6 volt version, 6.3 VDC @ 6.5 amperes; 12 volt version, 12.6 VDC @ 3 amperes for rated output. **Power output:** 250 VDC @ 100 ma. **ICAS. Power rectifier:** Two silicon diodes in voltage doubler circuit. **Vibrator:** Mallory type 1610 or equivalent. **Vibrator frequency:** Approximately 115 cps. **Overall dimensions:** 4 1/2" H x 6 1/2" W x 4 1/2" D.



Low-Cost 6 & 2 Meter VHF Transceivers . . . Go VHF For Less Than \$50.00!

- Ideal for CAP, MARS, local net or emergency operations
- Crystal-controlled transmitter—5 watt input
- HW-30 2-meter model capable of operation on new USCG Auxiliary frequency 143.28

HW-29A
\$44⁹⁵

A Complete Transceiver . . . Lunch Box Size! Feature crystal-controlled transmitters with straight-through final. Crystals are in 8 mc range. Receivers are super-regenerative with RF stage. 1 microvolt sensitivity! Built-in 117 v. AC power supply. Easy To Operate—Fixed/Mobile. Press-to-talk switch is on front panel. Ceramic microphone, meter jack, and power cables for mobile operation are included. Use GP-11 for mobile power.

Kit HW-29A (6 meter), 9 lbs. . . \$5 dn., \$5 mo. \$44.95

Kit HW-30 (2 meter), 9 lbs. . . \$5 dn., \$5 mo. \$44.95

36

This Is The Year For You To Begin A New Hobby — Choose from Heath's 11 product lines



Hy-Gain Topper Mobile Antennas

Unprecedented Performance For Amateur Mobile Communications. The Hy-Gain Topper consists of a 3' mast section and any of three antenna elements for 75, 40, or 20 meter operation. Result is high efficiency on each band. Fits Standard Mounts. Base of mast has 3/8" x 24 threaded stud. And 3' mast is hinged at the center to permit fold-over. Top of mast has unique quick-disconnect feature permitting simple removal or change of radiating elements without tools.

HDP-34: 75 meter antenna (Hy-Gain TL-75), 3 lbs. . . . \$11.95

HDP-44: 40 meter antenna (Hy-Gain TL-40), 2 lbs. . . . \$9.95

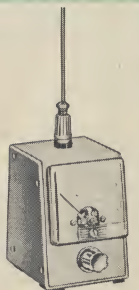
HDP-54: 20 meter antenna (Hy-Gain TL-20), 2 lbs. . . . \$7.95

HDP-24: Mast for antenna above (Hy-Gain TM-36), 3 lbs. . . \$7.95

Heathkit RF Power Meter Provides Handy, Quick Transmitter Check

- Shows relative power output of transmitter
- Requires no tuning
- Ideal for mobile or fixed station use

Continuous indication of relative power output of transmitter . . . samples RF field near the transmitter antenna. Range: 100 kc to 250 mc. Sensitivity: 0.3 volts RMS at sampling antenna for full scale deflection. 200 ua meter movement. Kit PM-2, 2 lbs. \$12.95



Of Amateur Radio Equipment



**SPECIAL
COMBINATION OFFER**

\$160⁰⁰

SAVE \$16.85

**Model AMS-14: Includes DX-60A
Transmitter, HR-10 Receiver,
and HDP-64 Antenna. 50 lbs.**



Heathkit HR-10 Amateur Band Receiver An Excellent Performer For The Beginning Ham

- Amateur band coverage only for maximum stability & accuracy • Tunes SSB, AM & CW signals on 80 through 10 meter bands • Prebuilt, pre-aligned tuning unit for fast, simple assembly • Lattice-type crystal filter for high selectivity • Superheterodyne receiver with RF stage for extra sensitivity • Complete controls for full operating convenience • Attractive low-silhouette styling with green-gray color combination

Starter, Stand-By, Or Full-Time Performer . . . build the HR-10! You'll enjoy building and using it. Covers 80 through 10 meters. Each band is individually calibrated, and an illuminated slide-rule dial assures accurate frequency settings. There's an RF stage within the 7-tube superheterodyne receiver for extra high sensitivity. For sharp selectivity, a half-lattice crystal filter is included. Also, a specially-designed diode detector and a beat-frequency oscillator (BFO) provide clean AM, CW and SSB reception.

Get The Performance You Find In "Expensive" Receivers! The HR-10 has a built-in "S" meter, provisions for plug-in 100 kc crystal calibrator, accessory power socket, 8 and 500 ohm audio outputs, separate RF and AF gain controls, and BFO tuning. Additional controls include: antenna trimmer, bandswitch, xtal calibrator, on/off, standby-recv, AVC on/off, automatic noise limiter, and main tuning dial.

HR-10 Assembles Quickly, Easily. "Front-end" tuning unit is pre-assembled, and prealigned.

Kit HR-10, 20 lbs. . . \$8 dn., \$8 mo. \$79.95

Kit HRA-10-1 Plug-in 100 kc crystal calibrator, 1 lb. \$8.95

Kit HS-24, Mobile Speaker, 4 lbs. . . (Pg. 38) \$7.00

Export model available for 115/230 VAC, 50-60 cps; write for prices.

HR-10 SPECIFICATIONS—Frequency coverage: 80 through 10 meters. **IF frequency:** 1681 kc. **Sensitivity:** 1 uv for 10 db signal-to-noise ratio. **Image rejection:** 40 db or better. **Selectivity:** 3 kc at 6 db, 9 kc at 40 db. **Input impedance:** 50 to 75 ohm, coaxial. **Audio output impedance:** 8 or 500 ohm. **Tube complement:** 6BZ6, (2) 6EA8, 6BA6, 6BJ7, 6EB8, 6X4. **Power requirements:** 117 volts AC, 50/60 cycles, 50 watts. **Dimensions:** 13 3/4" W x 11 1/2" D x 6 1/2" H.

Heathkit Phone & CW Transmitter . . . Companion Piece To The HR-10

- 90 watts phone or CW—80 through 10 meters • Neutralized 6146 final amplifier • Built-in low pass filter • Grid block keying—easy access to crystal sockets • May be run at reduced power for novice operation • Transmitter mate of the HR-10

Start Right, Stay Right With The DX-60A! If you're a novice, the DX-60A is for you! Operate it at the required 75 watts (crystal control) for novice class CW . . . and later when you get your general class phone license, go to VFO control & use the DX-60A's full 90 watts of power! Ideal also for the low power or CW operator. You'll like the fine components, clean circuit layout, and rugged construction. Assembles in just a few evenings with easy-to-follow instructions & precut wiring harness!

Compare—See Why You Get More For Your Money With The DX-60A! Check these features . . . low-pass filter to suppress harmonic interference; final amplifier, neutralized for high stability; outstanding keying characteristics with grid block keying; four crystal position selection or external variable frequency oscillator (VFO) for coverage of 80 through 10 meter amateur bands.

Additional Performance Features! Front panel meter with switch shows final grid or plate current . . . single-knob bandswitching and pi-network tuning provide easy tune-up. No transmitter in this price range will offer you more.

Kit DX-60A (crystals not included), 25 lbs. . . \$8 dn., \$8 mo. . . \$79.95

Export model available for 115/230 VAC, 50-60 cps; write for prices.

DX-60A SPECIFICATIONS—Power input: 90 watts peak, controlled carrier phone or CW. **Output impedance:** 50-75 ohm (coaxial). **Output coupling:** Pi-network. **Operation:** CW or AM phone—crystal or VFO control. **Band coverage:** 80 through 10 meters. **Power Requirements:** 105-125 V., 50-60 cps, 225 watts. **Dimensions:** 13 3/4" W x 11 1/2" D x 6 1/2" H.

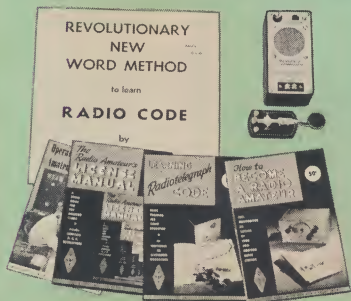
Hy-Gain 18V Vertical Antenna

18'. Covers 80 thru 10 meters. 52 ohm coax feed. Self-supporting. HDP-64, 5 lbs. (Antennas express or motor freight only) \$16.95



A New World Of Amateur Radio Awaits You!

Learn About It In This Complete, Low Cost Course!



Obtain Your FCC License Fast . . . study at home in your spare time! Course includes 4 authentic American Radio Relay League handbooks: "How To Become A Radio Amateur"; "Radio Amateur's License Manual"; "Learning The Radio-Telegraph Code"; "Operating an Amateur Radio Station"; and code oscillator kit. Plus—3 records that teach code by revolutionary "word-method." Begin at 13 words-per-minute, continue at same rate increasing only word complexity. Develops high proficiency!

HDP-22, Amateur Radio Starter Group, 6 lbs. Save \$3.00. \$15.95

HDP-32, Code Records only . . . 2 lbs. \$9.50

HDP-42, ARRL Books only (4) . . . 2 lbs. \$2.00

Kit CO-1, Oscillator plus Key only . . . 2 lbs. \$7.95



Heathkit HG-10 Variable Frequency Oscillator "Work VFO 80 through 2 meters!"

HG-10
\$34⁹⁵

- Perfect VFO for DX-60A transmitter
- Will drive most other transmitters—provides 5 volts RMS output • Smooth vernier tuning has 28 to 1 ratio • "Spot" switch for off-the-air tuning

Now! . . . work VFO on all bands . . . enjoy the operating convenience of being able to QSY anywhere within the bands. Styled to match the DX-60A, the HG-10 will compliment any outfit. Rugged, stable design. Keys beautifully.

Kit HG-10, 11 lbs. . . \$4 dn., \$5 mo. \$34.95



SB-400 **\$325⁰⁰**



SB-200 **\$200⁰⁰**

Heathkit SB-400 SSB Transmitter The Perfect "Mate" To The SB-300

- Built-in power supply • Complete transceive capability with SB-300 Receiver
- Linear Master Oscillator frequency control • Built-in antenna change-over relay
- All crystals supplied for complete 80-10 meter coverage • Automatic level control for higher talk power, minimum distortion • 180 watts PEP SSB, 170 watts CW crystal filter type SSB generation • Operates SSB (upper or lower sideband) & CW • VOX & PTT control in SSB operation, VOX operated CW break-in • Crystal controlled heterodyne oscillators • 1 kc dial calibration —100 kc per dial revolution • Dial bandwidth equal to 10 feet per megacycle • 500 kc coverage per bandwidth position • Switched 120 V AC for external antenna relay • Sturdy, lightweight, heavy-gauge aluminum construction throughout • Neat, modern "Low-Boy" styling • Variable loading

It's Not Just Flattery . . . when you get those 5 by 9 signal reports from your SB-400 . . . it's just a confirmation of the Heath quality of design, and of your care in assembly.

CQ Magazine Reviews The SB-400 . . . After a rigorous review in the December, 1964 issue of CQ, Wilfred M. Scherer, W2AEF, said, "The performance, features and high quality of the SB-400 makes it a worthwhile investment which will not only justify the work and time required for its assembly, but which also will provide the enjoyment and satisfaction of putting your own gear together into a high-class affair and in having a piece of equipment the equal of which probably would cost considerably more if it were factory built."

Save Up To 50% . . . when you assemble your Heathkit SB-400. Listen to what other hams are saying on the air . . . compare the price, features, and specifications for yourself . . . you'll want to make the SB-400 your rig!

Kit SB-400, 33 lbs. . . \$33 dn., as low as \$22 mo. \$325.00

Export model available for 115/230 VAC, 50-60 cps; write for prices.

HDP-21, Special SSB Mike, 4 lbs. . . \$3 dn., \$5 mo. \$29.40

SB-400 SPECIFICATIONS—Emission: SSB (upper or lower sideband) and CW. Power input: 170 watts CW, 180 watts P.E.P. SSB. Power output: 100 watts (80-15 meters), 80 watts (10 meters). Output impedance: 50 to 75 ohm—less than 2:1 SWR. Frequency range: (mc) 3.5—4.0; 7.0—7.5; 14.0—14.5; 21.0—21.5; 28.0—28.5; 28.5—29.0; 29.0—29.5; 29.5—30.0. Frequency stability: Less than 100 cps per hr. after 20 min. warmup. Carrier suppression: 55 db below peak output. Unwanted sideband suppression: 55 db @ 1 kc. Intermodulation distortion: 30 db below peak output (two-tone test). Keying characteristics: Break-in CW provided by operating VOX from a keyed tone (Grid block keying). CW sidetone: 1000 cps. ALC characteristics: 10 db or greater @ 0.2 ma final grid current. Noise level: 40 db below rated carrier. Visual dial accuracy: Within 200 cps (all bands). Electrical dial accuracy: Within 400 cps after calibration at nearest 100 kc point (all bands). Backlash: Less than 50 cps. Oscillator feed-through mixer products: 55 db below rated output (except 3910 kc crossover which is 45 db). Harmonic radiation: 35 db below rated output. Audio input: High impedance microphone or phone patch. Audio frequency response: 350 to 2450 cps \pm 3 db. Power requirements: 80 watts STBY, 260 watts key down @ 120 V AC line. Dimensions: 14 $\frac{1}{2}$ " W x 6 $\frac{1}{2}$ " H x 13 $\frac{1}{2}$ " D.

Heathkit SB-200 Kilowatt Linear Amplifier 1000 Watts For Only \$200.00

- 1200 watts P.E.P. input SSB—1000 watts CW • 80 through 10 meter band coverage • Built-in SWR meter—Antenna relay—Solid-state power supply • Automatic Level Control (ALC) • Shielded, fan-cooled amplifier compartment
- Pre-tuned cathode input circuit for maximum efficiency & low distortion
- Circuit-breaker power supply protection—no fuses • Designed for 120/240 volt operation

Bigger Than A Breadbox? . . . Just A Little Bit. This compact unit is styled to take its place with the SB-300 receiver and SB-400 transmitter on your desk top. It can be driven by most 100 watt SSB & CW excitors. And is designed for 120 or 240 v. AC.

Loaded With Features. Such as the pre-tuned cathode input circuit for maximum efficiency and low distortion . . . Automatic Level Control output for automatic exciter control . . . two heavy-duty 572B/T-160L final amplifier tubes, fan-cooled for maximum life . . . complete shielding for TVI protection and stability . . . separate pi-network output coils for 80-20 & 15-10 . . . conservatively rated solid-state power supply for long life and dependability . . . circuit breaker protection . . . built-in antenna relay for operating convenience (antenna is automatically switched to exciter when linear is turned off) . . . built-in panel meter that measures SWR, Relative Power, plate current, grid current, and high voltage . . . sturdy, but lightweight, one piece aluminum chassis that is partitioned for extra strength and isolation.

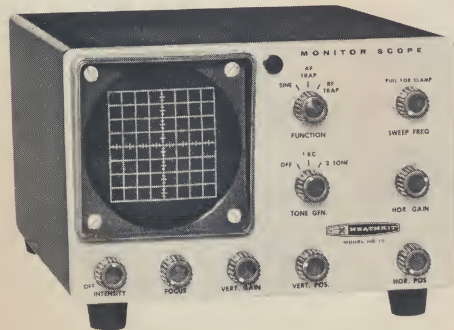
Kit SB-200, 42 lbs. . . \$20 dn., \$17 mo. \$200.00

SB-200 SPECIFICATIONS—Band coverage: 80, 40, 20, 15 & 10 meters. Maximum power input: 1200 watts P.E.P. SSB, 1000 watts CW. Driving power required: 100 watts. Duty cycle: SSB, continuous voice modulation; CW, 50% (key down time not to exceed 5 min.). Third order distortion: 30 db or better at 1000 watts P.E.P. Output impedance: 50 to 75 ohm unbalanced; variable pi-output circuit. SWR not to exceed 2:1 Input impedance: 52 ohm unbalanced; broad-band pretuned input circuit requires no tuning. Meter functions: 0-100 ma grid current, 0-1000 ma plate current, 0-1000 relative power, 1:1 to 3:1 SWR, 1500 to 3000 volts high voltage. Front panel controls: Load; Tune; Band; Relative Power Sensitivity; Meter Switch. Grid-Plate-Rel. Power-SWR-HV; and Power Switch, on/off. Tube complement: Two 572B/T-160-L (in parallel). Power requirements: 120 volts AC @ 16 amperes (max.), 240 volts AC @ 8 amperes (max.). Cabinet size: 14 $\frac{1}{2}$ " W x 6 $\frac{1}{2}$ " H x 13 $\frac{1}{2}$ " D. Net weight: 35 lbs.

USE HEATH'S EASY TIME-PAY PLAN

Order the equipment you need now! . . . pay for it in easy monthly installments! Only 10% down on all orders from \$25 to \$500. Up to 18 months to pay on orders over \$300. Write for credit details on orders over \$500.

HO-10 Signal Monitor . . . Lets You "See" Transmitted And Received Signals



HO-10 **\$59⁹⁵**

- Displays envelope, AF and RF trapezoid patterns • Specially designed for amateur radio use • Automatic switching on transmitted & received envelope patterns • Built-in two-tone test oscillator • 4-position RF level attenuator • Handles power inputs from 5 watts to 1 kilowatt • Simple to connect in antenna system feed line • Attractive dark-green perforated cabinet with light gray front panel and contrasting dark-green knobs & scope bezel

Shows The Quality Of Signal You Transmit . . . through display of RF/AF envelope or trapezoid patterns, the HO-10 reveals over-modulation, non-linearity, and other forms of radiated signal distortion. Use it as a full-time monitor for percent of modulation, and as a test instrument for tuning up new rigs. The HO-10 shows signal quality for AM, CW, and SSB emission . . . handles frequencies to six meters, and power to 1 kw. Can also be used with CB gear with slight circuit change as described in manual.

Shows The Quality Of Signals You Receive . . . Switch the HO-10 from transmitted to received signals, and give "complete" signal reports on the air. Works with receiver IF's up to 500 kc only.

Assembly Manual Is Complete . . . shows how to use your HO-10 to best advantage . . . how to interpret signal waveforms.

Kit HO-10, 13 lbs. . . \$6 dn., \$6 mo. \$59.95

Export model available for 115/230 VAC, 50-60 cps; write for prices.

HO-10 SPECIFICATIONS—Vertical response: \pm 3 db from 10 cps to 500 kc. Sensitivity: 500 mv per inch deflection. Input resistance: 50 k ohm. Horizontal response: \pm 3 db from 3 cps to 30 kc. Sensitivity: 800 mv per inch deflection. Input resistance: 1 megohm. Sweep generator: Recurrent type: 15 to 200 cps (variable). Tone oscillators: Approximately 1000 cps and 1700 cps. Output voltage: 15 mv (nominal). GENERAL: Frequency coverage: 160 through 6 meters (50-75 ohm coaxial input). Power limits: 5 watts to 1 kilowatt output. Front panel controls: Function Selector, Sweep Frequency, Tone Generator, Horizontal Gain, Horizontal Position, Vertical Position, Vertical Gain, Focus, Intensity/Off. Rear control: Xmr, Atten. Attenuates 0 to 24 db at approximately 6 db per step. Power supply: Transformer operated, fused 1/2 amp. Power requirements: 105-125 VAC, 50/60 cps. 35 watts. Dimensions: 5 $\frac{1}{4}$ " H x 7 $\frac{3}{8}$ " W x 11" D.

Amateur Gear!



SB-300 **\$265⁰⁰**

Heathkit SB-300 Amateur Receiver The High Performance Receiver You Can Afford

- Complete coverage of 80 through 10 meter amateur bands with all crystals furnished, plus provision for VHF converters
- Crystal-controlled front-end for same rate tuning on all bands
- 1 kc dial calibrations—100 kc per dial revolution
- Bandspread equal to 10 feet per megacycle
- Tuning dial to knob ratio approx. 4-to-1
- Provision for transceive operation with matching SB-400 Transmitter
- Professional styling & features at 60% savings

Heathkit Builders Comment On The Performance Of The SB-300 . . . Al Tschirhart, Houston, Texas, says, "Many hours of pleasure are foreseen now that I have completed assembly of the new SB-300 Sideband Receiver. The quality of material, accuracy, sensitivity, and selectivity make it one of the finest receivers I have had the pleasure of owning." And Express Plans For The Future . . . "I am the proud owner of an SB-300 receiver," Heathkit builder Peter Von Sivers of San Lorenzo, California says. "The assembly went very fine, thanks to good instructions. I don't have to tell you about the good performance . . . you know all about it! It has a lot of higher priced receivers beat in every way! Hope to get the SB-400 some day!"

Talking About The Performance Of The SB-300 . . . apparently is "the thing" nowadays, so we invite you to write for the complete schematic and specifications. Why not compare them with other receivers . . . then order your SB-300 today!

Kit SB-300, less speaker, 22 lbs. . . \$27 dn., \$22 mo. \$265.00
SBA-300-1 Optional AM crystal filter (3.75 kc), 1 lb. \$19.95
SBA-300-2 Optional CW crystal filter (400 cps), 1 lb. \$19.95
Export model available for 115/230 VAC, 50-60 cps; write for prices.

SB-300 SPECIFICATIONS—Frequency range (megacycles): 3.5 to 4.0, 7.0 to 7.5, 14.0 to 14.5, 21.0 to 21.5, 28.0 to 28.5, 28.5 to 29.0, 29.0 to 29.5, 29.5 to 30. **Intermediate frequency:** 3.395 megacycles. **Frequency stability:** Less than 100 cps per hour after 20 min. warmup under normal ambient conditions. Less than 100 cps for $\pm 10\%$ line voltage variation. **Visual dial accuracy:** Within 200 cps on all bands. **Electric dial accuracy:** Within 400 cps on all bands after calibration at nearest 100 kc point. **Backlash:** No more than 50 cps. **Sensitivity:** Less than 1 microvolt for 15 db signal-plus-noise/noise ratio for SSB operation. **Modes of operation:** Switch selected; LSB, USB, CW, AM. **Selectivity:** SSB: 2.1 kc at 6 db down, 5.0 kc at 60 db down (crystal filter supplied). AM: 3.75 kc at 6 db down, 10 kc at 60 db down (crystal filter available as accessory). CW: 400 cps at 6 db down, 2.5 kc at 60 db down (crystal filter available as accessory). **Spurious response:** Image and IF rejection better than 50 db. Internal spurious signals below equivalent antenna input of 1 microvolt. **Audio response:** SSB: 350 to 2450 cps nominal at 6 db. AM: 200 to 3500 cps nominal at 6 db. CW: 800 to 1200 cps nominal at 6 db. **Audio output impedance:** Unbalanced nominal 8 ohm speaker and high impedance headphone. **Audio output power:** 1 watt with less than 8% distortion. **Antenna input impedance:** 50 ohms nominal. **Muting:** Open external ground at Mute socket. **Crystal calibrator:** 100 kc crystal. **Front panel controls:** Main tuning dial; function switch; mode switch; AGC switch; band switch; AF gain control; RF gain control; preselector; phone jack. **Rear apron connection:** Accessory power plug; HF antenna; VHF #1 antenna; VHF #2 antenna; mute; spare; anti-trip; 500 ohm; 8 ohm speaker; line cord socket; heterodyne oscillator output; LMO output; BFO output; VHF converter switch. **Tube complement:** (1) 6BZ6 RF amplifier; (1) 6AU6 Heterodyne mixer; (1) 6AB4 Heterodyne oscillator; (1) 6AU6 LM osc.; (1) 6AU6 LMO mixer; (2) 6BA6 IF amplifier; (1) 6AU6 Crystal calibrator; (1) 6HF8 1st audio, audio output; (1) 6AS11 Product Detector, BFO, BFO Amplifier. **Power supply:** Transformer operated with silicon diode rectifiers. **Power requirements:** 120 volts AC, 50/60 cps, 50 watts. **Dimensions:** 14 $\frac{1}{8}$ " W x 6 $\frac{3}{8}$ " H x 13 $\frac{3}{8}$ " D. **Net weight:** 17 lbs.



\$19⁹⁵
each

6 & 2 Meter Converters! 6-meter model extends coverage of SB-300 from 48 to 54 mc (50 to 52 mc with crystal supplied); 2-meter extends coverage from 142 to 150 mc (144 to 146 mc using crystal supplied). Uses 6DJ8 cascode amplifier for low noise factor & high sensitivity. Applied AGC provision allows strong signal handling capability. Easy to build & install. Use with any receiver providing appropriate voltages & 10-meter coverage.
SBA-300-3 (6 meter), 2 lbs. \$19.95
SBA-300-4 (2 meter), 2 lbs. \$19.95

6 & 2 Meter Converters Plug-In To Extend Tuning Range of SB-300

SBA-300-3 SPECIFICATIONS — **Sensitivity:** (signal-plus-noise/noise in db) AM, less than 0.1 uv for 6 db @ 3750 cps bandwidth; SSB, less than 0.1 uv for 10 db @ 2100 cps bandwidth; CW, less than 0.1 uv for 15 db @ 400 cps bandwidth. **Noise figure:** 5 db or less. **Frequency:** Input, 48 to 54 mc (50 to 52 mc with crystal supplied). Output, 29 to 30 mc. **Bandpass:** Essentially flat over 2 mc segment from 48 to 54 mc. **Image rejection:** 50 db or better @ 6 mc. **IF rejection:** 40 db or better @ 28 mc. **Crystal:** 22 mc $\pm 0.005\%$, 3rd overtone. **Tube complement:** 6DJ8 cascode RF amplifier, 6EA8 oscillator-mixer. **Power requirements:** 120 v. @ 12.5 milliamperes, 6.3 v. AC @ 815 milliamperes. **Dimensions:** Overall, 2 $\frac{3}{8}$ " W x 5 $\frac{1}{4}$ " L x 3 $\frac{3}{4}$ " H.

SBA-300-4 SPECIFICATIONS — **Sensitivity:** (signal-plus-noise/noise in db) AM, less than 0.2 uv for 6 db @ 3750 cps bandwidth; SSB, less than 0.2 uv for 12 db @ 2100 cps bandwidth; CW, less than 0.2 uv for 20 db @ 400 cps bandwidth. **Noise figure:** 7 db or less. **Frequency:** Input, 142 to 150 mc (144 to 146 mc with crystal supplied); output, 28 to 30 mc. **Bandpass:** Essentially flat over any 2 mc segment from 142 to 150 mc. **Image Rejection:** 80 db or better at 88 mc. **IF rejection:** 50 db or better at 29 mc. **Crystal:** 38.67 mc $\pm .003\%$, 3rd overtone. **Tube Complement:** 6DJ8 cascode RF amplifier, 6EA8 oscillator-triplexer-mixer. **Power requirements:** 130 V. DC @ 12.5 milliamperes, 6.3 V. AC @ 815 milliamperes. **Dimensions:** Overall, 2 $\frac{3}{8}$ " W x 5 $\frac{1}{4}$ " L x 3 $\frac{3}{4}$ " H.

Heathkit "Ham-Scan" Spectrum Monitor . . . Finds Openings In QRM!



HO-13 **\$79⁰⁰**

- Adds "sight" to "sounds" of amateur operations
- Operates with all IF frequencies listed below
- Monitors up to 100 kc of band spectrum—50 kc on either side of the signal to which you are tuned
- Ideal for spotting band openings, checking carrier & sideband suppression, or identifying splattered received signals
- Identifies signals as to AM, CW or SSB types
- Attractive dark-green perforated cabinet with light gray front panel and contrasting dark-green knobs & scope bezel
- Easy to assemble!

Eliminates Hunting And Tuning For Band Opening! No more time wasted hunting across the band for an opening. "Ham-Scan" visually shows all signals within the receiver bandpass and up to 50 kc above and below the frequency to which you are tuned. The display follows the receiver as you tune across the band . . . shows band conditions on each side of your operating frequency.

Kit HO-13, 12 lbs. . . \$8 dn., \$8 mo. \$79.00
Export model available for 115/230 VAC, 50-60 cps; write for prices.

HO-13 SPECIFICATIONS—Receiver IF: 455, 1600, 1650, 1681, 2075, 2215, 2445, 3000, 3035, 3395 kc. **RF Amplifier—Response:** ± 0.5 db at ± 50 kc from receiver IF, IF—350 kc. **Sensitivity:** Approx. 50 uv input for 1" vertical deflection at full gain setting. **Horizontal Deflection—Sweep Generator:** Linear saw-tooth, recurrent-type (internal). **Frequency:** 10 to 50 cps, variable. **Sweep width:** 30 kc or less, to 100 kc $\pm 20\%$, continuously variable. (Approx. 15 kc to 100 kc for 455 kc IF). **Resolution:** 2 kc (frequency difference between two 1" pips whose adjacent 3 db points coincide. Measured at slowest sweep speed and at 30 kc sweep width). **Power supply:** Transformer operated, fused at $\frac{1}{2}$ ampere. **Power requirements:** 120 volts AC, 50/60 cps, 40 watts. **Controls:** On-Off/Intensity, Focus, Horizontal gain, Sweep width, Pip center, Horizontal position, Pip gain, Vertical position, Sweep frequency/AGC, astigmatism. **Dimensions:** 5 $\frac{1}{4}$ " H x 7 $\frac{3}{8}$ " W x 11" D.

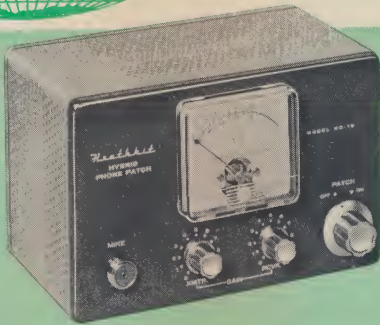
over 250 different, top-quality kits to add more fun at big savings!



Amateur Radio Accessories

Hybrid Phone Patch . . . Complete Features For Best Results!

Ideal For Use During Emergency Situations! Or help people here at home talk to loved ones overseas. Transfer conversations to 600 ohm telephone lines swiftly and efficiently. Operates with virtually all transmitters and receivers, including transmitters with automatic voice control (VOX). A single on/off function switch and separate transmit/receive gain controls provide simple operation. Use with 3 to 16 ohm speakers and Hi-Z microphone input. Add to the service of your rig by choosing this easy-to-install phone patch. Kit HD-19, 4 lbs. . . \$3 dn., \$5 mo. \$29.95



HD-19
\$29⁹⁵

Heathkit "Q" Multiplier . . . Ideal For Today's Crowded Airwaves!

Increases Receiver Selectivity And Signal Rejection Capability! Provides effective "Q" of 4000. Use with any AC-DC or transformer operated receiver with an I.F. frequency between 450 and 460 kc. Permits peaking or rejecting a signal on AM, CW, or SSB. Both peak and notch positions are tunable to any point in the receiver's I.F. bandpass. Produces sharply peaked I.F. curve for CW reception, broad-peaked I.F. for phone operation or a deep rejection-notch to eliminate a closely interfering signal. Built-in power supply. Kit HD-11, 3 lbs. \$14.95
Export model available for 115/230 v. AC, 50-60 cps; write for prices.



HD-11
\$14⁹⁵

Heathkit Reflected Power Meter

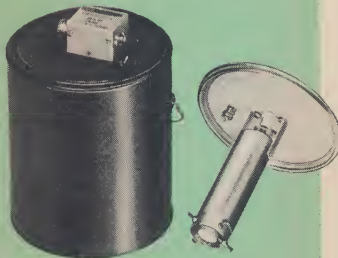
An Accessory No Amateur Station Should Be Without! Shows proper antenna/transmission line match to assure maximum efficiency and signal output. Checks forward and reflected power indicating SWR (standing wave ratio) from 1:1 to 3:1 and percent reflected power on built-in meter. Handles well over 1 kilowatt peak power. Operates on 160 through 6 meters. A sensitivity control permits adjustment of full-scale meter reading without reducing transmitter output. May be left in antenna system feed-line at all times. For 50 or 75 ohm coax cable. Choose yours today!
Kit HM-11, 3 lbs. \$15.95



HM-11
\$15⁹⁵

Heathkit "Cantenna" Transmitter Dummy Load!

Simplifies Servicing & Testing! With the Heathkit "Cantenna" you can forget about FCC violations, TV interference and QRM while servicing or testing Amateur and Commercial transmitting equipment. Handles power up to 1 kilowatt. A coax connector provides simple connection to transmitter, and a phono jack allows relative power measurements with any standard VOM or VTVM. Features special oil-cooled temperature-stable resistive element. 50-ohm impedance only. Less than 1.5 V.S.W.R. One gallon capacity (oil not included).
Kit HN-31, 3 lbs. \$9.95



HN-31
\$9⁹⁵

Heathkit Solid-State "Tunnel Dipper" . . . Unique In Amateur Radio!

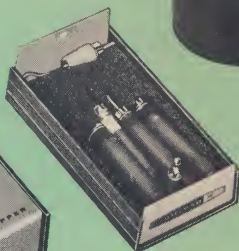
A Notable Achievement In Electronic Design! Functions similarly to the usual grid-dip meter, but has the advantages of advanced solid-state circuitry. Features all-transistor circuit with a tunnel diode oscillator . . . 6 color matched coils & dial scales . . . vernier gear-drive tuning . . . durable epoxy-coated plug-in coils . . . protective cover with built-in storage space for coils. Covers 3 to 260 mc. Functions as sensitive RF detector (wavemeter). Ideal for checking resonant frequencies of tuned circuits, antennas, etc. . . identifying parasitics . . . tuning traps & filters and many more applications in amateur & service work. Easy to build. Less battery (one penlite cell).
Kit HM-10A, 3 lbs. . . \$4 dn., \$5 mo. \$34.95



HM-10A
\$34⁹⁵

100 kc Crystal Calibrator . . . Operates Anywhere!

Ideal For Calibrating Communication Receivers & VFO's! Produces accurate signals every 100 kc from 100 kc to over 54 mc. Easy to use . . . simply connect to receiver's antenna terminals, and switch on. Transistorized and battery powered for portability. Uses 9 v. battery (not included, uses one NEDA type 1600). Includes 100 kc crystal with 0.005% tolerance.
Kit HD-20, 1 lb. \$14.95

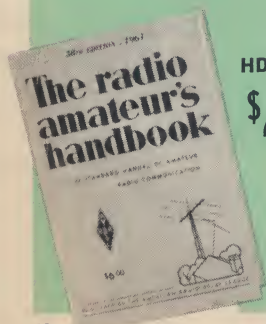


HD-20
\$14⁹⁵



1965 Radio Amateur's Handbook

Latest Edition! Covers all phases of theory, construction and operating principles. Includes "plain-talk" info on basic electronics, HF, VHF and UHF equipment; AM, CW and SSB gear; antennas; workshop practices; vacuum tube data, etc. Get your copy now!
HDP-293, 3 lbs. \$4.00



HDP-293
\$4⁰⁰

Special SSB "Ham" Microphone

Ideal For Use With SB-400 Or Any Transmitter! Special response, 300 to 3,000 cps favors voice frequencies for clear, sharp SSB communications. Mike stand has grip-to-talk switch with lock position. Hi-Z output. Rugged die-cast zinc case. Complete with wiring diagrams for use with any rig. Cables included.
HDP-21, 4 lbs. . . \$3 dn., \$5 mo. \$29.40



HDP-21
\$29⁴⁰

Heathkit® Test Gear!



TV Sweep Alignment Generator . . . Speeds Alignment Of FM & TV Receivers!

• Stable, all-electronic sweep circuit • Complete FM & VHF TV coverage—3.6 to 220 mc • Built-in crystal & variable marker oscillators • Versatile, easy to operate, reliable
 Produces Wide Range Sweeps With Excellent Linearity & Stability! Fixed & variable attenuators give smooth control of signal output to allow alignment of high gain stages without danger of overloading. Crystal included provides output at 4.5 mc & multiples thereof for calibrating built-in variable marker oscillator.

Kit IG-52, 14 lbs. . . \$7 dn., \$7 mo. \$67.95
 Export model available for 115/230 VAC, 50-60 cps; write for prices.

IG-52 SPECIFICATIONS—Output impedance: 50 ohms terminated at both ends of cable. Sweep deviation: Continuously variable from 0-4 mc lowest max. deviation to 0-42 mc highest max. deviation (depending on base frequency). Crystal marker: 4.5 mc and multiples thereof. Variable marker: 19 mc to 60 mc on fundamentals, 57 mc to 180 mc on harmonics. External marker terminals: Provided on panel. Attenuators: Step-switch controls sweep and marker oscillators together, plus variable controls for each output. Blanking: Converts return trace into zero reference line, phasing control also provided. Cables: 3 supplied, output, scope horizontal, scope vertical. Power requirements: 105-125 VAC, 60 cycles, 50 watts. Dimensions: 13" W x 8½" H x 7" D.

Heathkit Color Bar & Dot Generator . . . Simplifies Color & B/W TV Servicing!

• Produces 6 different patterns for picture adjustment • 10 vertical color bars • Special shading bar pattern for screen & background adjustments • Crystal-controlled for accuracy & stability

Best Buy In Color TV Service Instrument! Provides instant switch selection of 6 different patterns . . . white dots, crosshatch, vertical bars, horizontal bars, 10 color bars & a special shading pattern. Crystal-controlled sync pulses lock patterns firmly on screen for linearity, color or convergence adjustments. Complete with crystals, test lead & instructions. Easy to build.

Kit IG-62, 13 lbs. . . \$7 dn., \$6 mo. \$64.95
 Export model available for 115/230 VAC, 50-60 cps; write for prices.

IG-62 SPECIFICATIONS—RF output frequency range: TV channels 2 through 6. Output voltage: Variable from 100 to 100,000 microvolts. Sound carrier: Crystal controlled, unmodulated, 4.5 mc away from picture carrier; off-on switch provided. Video output: Positive or negative output variable from 0-10 volts peak-to-peak open circuit. Modulation: White dot pattern, cross hatch pattern, horizontal bars, vertical bars, 10 vertical color bars, shading bar pattern. Power requirements: 117 VAC, 50/60 cycles, 70 watts. Dimensions: 13" W x 8½" H x 7" D.

Heathkit FM Stereo Generator . . . Adds Extra Profits To Service Operations!

• Provides virtually all signals required for trouble-shooting & alignment of multiplex adapters, FM tuners & receivers • Switched selection of 400 cps, 1000 cps, 5000 cps, 19 kc, 38 kc & 65 kc or 67 kc SCA signals • Built-in marker oscillator for I.F. and dial tracking checks

A Self-Contained FM Service Center! Produces an audio or composite stereo signal for multiplex adapter adjustments . . . an RF carrier for tuner & receiver adjustments . . . a "phase-test" function for accurate adjustment of sub-carrier transformers . . . a variable level crystal-controlled 19 kc (±2 cps) pilot signal to check lock-in range of stereo receivers, and built-in sweep & marker signals for overall RF & IF alignment. Complete with test leads, and detailed stereo alignment instructions.

Kit IG-112, 11 lbs. . . \$10 dn., \$9 mo. \$99.00
 Export model available for 115/230 VAC, 50-60 cps; write for prices.

IG-112 SPECIFICATIONS—RF Signal output: Center frequency: 100 mc adjustable by approx. ±2 mc. Pilot modulating frequency: 19 kc ±2 cps. FM Modulation: Left channel (stereo), right channel (stereo), Phase test (left plus right channel in phase), Monophonic FM. Deviation: Adjustable to 75 kc. Sweep rate: (use for RF and IF alignment) 60 cps. Sweep width: (use for RF and IF alignment) Adjustable to 750 kc. RF Attenuator range: 60 db in 20 db steps. Crystal-controlled markers: 10.7, 90.95, 96.30, 101.65, & 107 mc. Composite signal output: Left channel (stereo); Right channel (stereo). Phase test (left plus right channels in phase). Audio output: 400, 1000, & 5000 cps; 19 kc (±2 cps), 38 kc, & SCA (65 or 67 kc). Distortion: (At 400, 1000 & 5000 cps) Less than 5%. Front panel controls: 19 kc pilot level control, deviation—sweep width—composite level—audio level control, function switch, frequency switch, & RF attenuator switches. Rear panel adjustments: Balance adjust, 38 kc sync, pilot level adjust, & SCA frequency switch. Chassis adjustments: Oscillator adjust, frequency adjust & modulation adjust. Power requirements: 105-125 volts AC, 50/60 cps, 35 watts. Dimensions: 10¼" H x 8" D x 13" W.

Heathkit RF Signal Generator . . . A Valuable Addition To Any Test Bench!

• Covers 100 kc to 220 mc in 6 bands • Large, accurately calibrated dial scales • Prewired, prealigned coil/handswitch assembly • Modulated or unmodulated RF output • 400 cps signal for audio tests

Countless Applications In Radio & TV Service Work! Provides all essential generator facilities for fast, easy alignment of RF & IF circuits in AM tuners and receivers. Achieves 2% accuracy on all bands for pinpoint frequency settings. RF output controlled by both fixed-step & variable attenuators. Internal 400 cps signal with 10 volt output available separately for audio tests.
 Kit IG-102, 6 lbs. . . \$3 dn., \$5 mo. \$27.95
 Export model available for 115/230 VAC, 50-60 cps; write for prices.

See pg. 18 for combo with EF-3 Applications Series, 9 lbs., \$4 dn., \$5 mo. \$37.95

IG-102 SPECIFICATIONS—Frequency range: Band A, 100 kc to 320 kc; Band B, 310 kc to 1.1 mc; Band C, 1 mc to 3.2 mc; Band D, 3.1 mc to 11 mc; Band E, 10 mc to 32 mc; Band F, 32 mc to 110 mc. Calibrated harmonics: 110 mc to 220 mc. Accuracy: 2%. Output: Impedance, 50 ohms; Voltage, 100,000 uv. Modulation: Internal, 400 cps, 30% depth; External, approx. 3 V across 50 k ohms for 30%. Audio output: Approx. 10 V open circuit. Power requirements: 105-125 V 50/60 cycles AC, 15 watts. Dimensions: 6½" W x 9½" H x 5" D.

Laboratory RF Generator . . . Ideal For Design & Development Work!

• Metered output voltage and % modulation • Operates on fundamentals—100 kc to 30 mc in five bands • Double shielding of all oscillator circuits • Easy to build

Professional Quality Throughout! Ideal for stage gain measurements and RF alignment work. Features transformer operated power supply . . . generous filter design and voltage regulation for smooth plate voltage . . . 50 ohm generator output impedance . . . and variable modulation from 0 to 50% at 400 cycles internally, between 60 to 10,000 cps externally.

Kit IG-42, 15 lbs. . . \$6 dn., \$6 mo. \$56.95
 Export model available for 115/230 VAC, 50-60 cps; write for prices.

IG-42 SPECIFICATIONS—Frequency ranges: Band A, 100 to 290 kc; Band B, 280 to 1000 kc; Band C, 0.95 to 3.1 mc; Band D, 2.9 to 9.5 mc; Band E, 9 to 31 mc. RF output: Impedance, 50 ohms—Voltage, 100,000 microvolts max. Attenuator: 10:1 per step, 5 steps—Fine, 10:1 continuous, indicated on meter. Amplitude modulation: CW, internal 400 cycles or external audio frequencies. Modulation depth: 0 to 50% variable, indicated on meter. Power requirements: 105-125 V. 50/60 cycles. Dimensions: 13" W x 8½" H x 7" D.



IG-52
\$67.95



IG-62
\$64.95



IG-112
\$99.00



IG-102
\$27.95

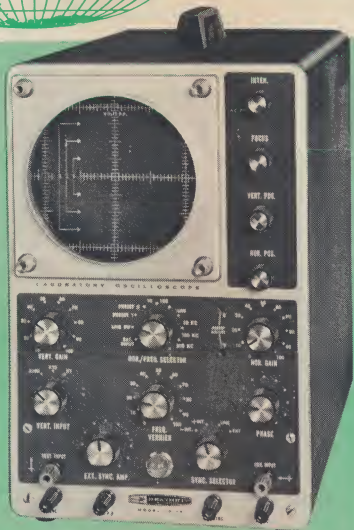


IG-42
\$56.95

over 250 different, top-quality kits to add more fun at big savings!



Professional Test & Lab Equipment



IO-12
\$76⁹⁵

Heathkit "Extra-Duty" Wide-Band 5" Oscilloscope!

- Full 5 mc bandwidth for color TV servicing • Heath patented sweep circuit—10 cps to 500 kc • Push-pull vertical & horizontal output • Two circuit boards & wiring harness for fast, easy assembly • Available kit or wired

Thousands In Use Across The Nation! Service shops, laboratories, schools, industry and home workshops at home & abroad attest to its fine performance. Boasts clear, sharp pattern displays . . . excellent linearity and lock-in characteristics . . . wide band amplifiers . . . peak-to-peak calibration reference . . . automatic sync circuit . . . Z-axis input . . . positive trace position controls . . . and much more for versatile performance.

Kit IO-12, 24 lbs. . . \$8 dn., \$7 mo. \$76.95
Assembled IO-12, 24 lbs. . . \$13 dn., \$11 mo. \$126.95
Export model available for 115/230 VAC, 50-60 cps; write for prices.

IO-12 SPECIFICATIONS—Vertical Sensitivity: 0.025 volts RMS per inch at 1 kc. Frequency response (referred to 1 kc level): ±1 db 8 cps to 2.5 mc; +1.5 to -5 db, 3 cps to 5 mc; response at 3.58 mc, -2.2 db. Rise time: 0.08 micro-seconds or less. Input impedance: (AT 1 KC) 2.7 megohms at X1, 3.3 megohms at X10 and X100. Horizontal sensitivity: 0.3 volts RMS per inch at 1 kc. Frequency response: ±1 db 1 cps to 200 kc; ±3 db 1 cps to 400 kc. Input impedance: 4.9 megohms at 1 kc. Sweep generator: Range—10 cps to 500 kc in five steps, variable, plus any 2 switch-selected preset sweep frequencies in this range. Synchronizing: automatic lock-in circuit using self-limiting synchronizing cathode follower. Power requirements: 105-125 volts 50/60 cycles AC at 80 watts; fused. Dimensions: 14 1/8" H x 8 3/8" W x 16" D.



IO-10
\$89⁹⁵

Heathkit "Space-Saver" 3" DC Oscilloscope . . . Ideal For AC Or DC Applications!

- Identical DC or AC coupled vertical & horizontal amplifiers • DC to 200 kc bandwidth • Recurrent sweep generator, 5 cps to 50 kc in four ranges • Small, compact, easy to carry

Excellent Where Extremely Low Sweep Rates Are Desired! Features front-panel mounted external capacitance binding posts for lower sweep rates. Ideal for tests "on" or "away" from the test bench. Serves many applications in medical and industrial fields as well as general service work. Other features include 3RP1 CR tube, special-alloy CR tube shield to minimize trace distortion, regulated power supply, astigmatism control, and less than 5° phase-shift between channels.

Kit IO-10, 16 lbs. . . \$9 dn., \$9 mo. \$89.95
Export model available for 115/230 VAC, 50-60 cps; write for prices.

IO-10 SPECIFICATIONS—(Vertical and horizontal channels identical): Bandwidth; DC to 200 kc (2 db point). Sensitivity: 0.1 V (peak-to-peak) per 1/4" (uncalibrated). Attenuator: 3-position, compensated type. Gain control: Continuously variable. Input impedance: 3.6 megohms shunted by 35 mmf. Coupling: Either AC or DC, switch-selected. Relative phase shift between channels: Less than 5°. Sweep generator (Recurrent type): Linear saw-tooth produced by multi-vibrator type generator covering 5 cps to 50 kc in four overlapping ranges. "External capacitance" binding post for lower sweep rates. Sync provision: Either internal or external, switch-selected. Power requirements: 105-125 V 50-60 cycle AC at 100 watts max. Dimensions: 7 3/8" H x 4 3/8" W x 11" D.



IO-21
\$54⁹⁵

Heathkit "General Purpose" 3" Oscilloscope . . . An Ideal "First" Scope!

- Push-pull vertical & horizontal amplifiers • Wide range sweep—20 to 100,000 cps • Automatic sync • Retrace blanking • Clean open circuit layout for easy assembly

Compact . . . Lightweight . . . Versatile! Fills hundreds of daily requirements in servicing! Ideal for home workshop, ham shack, or an extra scope for all-around use . . . perfect for students or beginners just starting in electronics. Other features include input sensitivity of .25 volts RMS/inch peak-to-peak deflection at 1 kc; focus & astigmatism controls for sharp, fine trace; well-rated power supply & special alloy neck shield for 3RP1 CR tube to minimize trace distortion.

Kit IO-21 . . . 11 lbs. . . \$6 dn., \$5 mo. \$54.95
Export model available for 115/230 VAC, 50-60 cps; write for prices.
See pg. 18 for comb. offer with EF-2 Applications Course

IO-21 SPECIFICATIONS—(Vertical and horizontal amplifiers identical): Frequency response: ±2 db, 2 cps to 200 kc. Sensitivity: .25 volts RMS/inch P-P deflection at 1 kc. Input impedance: 10 megohms shunted by 20 uuf. (Direct connection to vertical CRT plates on rear panel). Sweep generator: Range, 20-100,000 cps. Automatic sync, retrace blanking. Tube complement: (1) 3RP1 (CR tube), (4) 12AU7 (deflection amplifiers), (1) 12AX7 (sweep generator), (1) 6X4 (LV rectifier), (1) 1V2 (HV rectifier). Controls: Gain controls, Horizontal & Vertical; Centering controls, Horizontal & Vertical; Frequency Vernier; Horizontal Input, Sweep Range switch. (Focus and Astigmatism controls mounted on chassis). Power requirements: 105-125 volts AC, 50-60 cycle, 40 watts. Dimensions: 9 1/2" H x 6 1/2" W x 10" D.

SCOPE PROBE ACCESSORIES

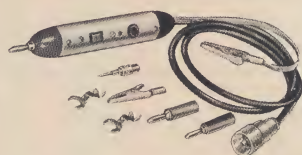


337-C
\$3⁵⁰

Scope Modulator Probe Kit

Adds versatility to oscilloscope applications by permitting visual observation of the modulation envelope waveform of RF and IF signals. Useful in both radio and TV servicing in checking for distortion and presence or absence of modulation. Functions as an AM detector . . . passes only modulation of signal. Voltage limits are 30 volts RMS, 500 volts DC.

Kit 337-C . . . 1 lb. \$3.50
Assembled 337W-C . . . 1 lb. \$4.50



PK-1
\$4⁹⁵

Low-Capacitance Oscilloscope Probe Kit

An essential aid for high frequency work! The PK-1 minimizes loss of gain, circuit loading or distortion due to overloading of scope input. A switch on the probe body provides direct or X10 attenuated operation and an adjustable trimmer capacitor provides proper match to scope input. Kit includes an assortment of connectors to match most oscilloscope terminals.

Kit PK-1 . . . 1 lb. \$4.95



ID-22
\$23⁹⁵

Heathkit Electronic Switch Kit

Extends oscilloscope operation by permitting simultaneous observation of two different signals on CR tube screen. Produces both signals alternately at any one of four switching rates. Position control allows superimposing or separating signals for comparison purposes. ±1 db from 0 to 100 kc.

Kit ID-22 . . . 7 lbs. \$23.95
Export model available for 115/230 VAC, 50-60 cps; write for prices.

This Is The Year For You To Begin A New Hobby — Choose from Heath's 11 product lines—

At Up To 50% Savings!



World's Most Popular Vacuum Tube Voltmeter . . . Heathkit IM-11!

- Single test probe for all measurements • 7 AC, 7 DC, 7 Ohms ranges • Easy to read, 4 1/2" 200 ua meter • 1% precision resistors • Frequency response ± 1 db from 25 cps to 1 mc • Easy, stable circuit board construction

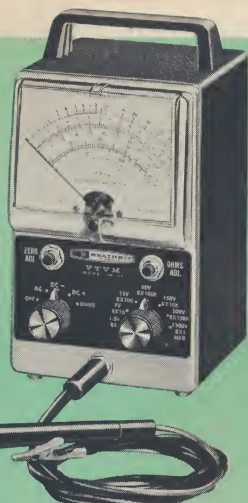
Measures AC Volts (RMS), AC volts (peak-to-peak), DC volts, resistance and decibels. Front-panel controls include a rotary function switch, a rotary range selector, and Zero & Ohms adjust controls. Compare its features & specs (test leads & probe included).

Kit IM-11, 5 lbs. . . \$3 dn., \$5 mo. \$24.95
 Assembled IMW-11, 5 lbs. . . \$4 dn., \$5 mo. \$39.95
 Export model available for 115/230 VAC, 50-60 cps; write for prices
 See page 18 for comb. offer with EF-1 Applications Course, 9 lbs. . . \$4 dn., \$5 mo. \$32.50

IM-11 SPECIFICATIONS—Meter scales: DC & AC (RMS): 0-1.5, 5, 15, 50, 150, 500, 1500 volts full scale. AC peak-to-peak: 0.4, 14, 40, 140, 400, 1400, 4000. Resistance: 10 ohm center scale x1, x10, x100, x1000, x10K, x100K, x1 meg. Measures .1 ohm to 1000 megohms with internal battery. Meter: 4 1/2" 200 ua movement. Multipliers: 1% precision type. Input resistance DC: 11 megohms (1 megohm in probe) on all ranges. Circuit: Balanced bridge push-pull using twin triode. Accuracy: DC $\pm 3\%$, AC $\pm 5\%$ of full scale. Frequency response: ± 1 db 25 cps to 1 mc (600 ohm source). Tubes: 12AU7, 6AL5. Battery requirements: 1.5 volt, size "C" flashlight cell (not included). Power requirements: 105-125 volt 50/60 cycle AC, 10 watts. Dimensions: 7 3/4" H x 4-11/16" W x 4 1/8" D.

Kit Form or
Factory Assembled

IM-11
\$24⁹⁵



Heathkit "Service Bench" VTVM . . . For "Fuss-Free" Testing!

- Measures AC volts, DC volts, resistance & db • Separate 1.5 & 5 volt AC scales for high accuracy • Gimbal mounting bracket for easy under-shelf, bench top or wall mounting • Tilts to any angle for best viewing • Big 6" 200 ua meter • Single test probe for all measurements • 1% precision resistors

Engineered Right, Shaped Right, Priced Right For "In-Shop" Servicing! No more confusing tangle of test leads thanks to single AC/Ohms/DC test probe. Simple to operate . . . just a function selector and range selector, separate Zero & Ohms adjust controls. All calibration controls accessible through front-panel.

Kit IM-13, 7 lbs. . . \$4 dn., \$5 mo. \$32.95
 Assembled IMW-13, 7 lbs. . . \$5 dn., \$5 mo. \$49.95
 Export model available for 115/230 VAC, 50-60 cps; write for prices
 See Page 18 For Comb. Offer With EF-1 Application Kit, 10 lbs. . . \$4 dn., \$5 mo. \$39.95

IM-13 SPECIFICATIONS—Meter scales DC & AC (RMS): 0-1.5, 5, 15, 50, 150, 500, 1500 volts full scale (1.5 and 5 volt AC ranges read on separate scales). Ohmmeter: Scale with 10 ohm center x1, x10, x100, x1000, x10K, x100K, x1 meg. Measures 1 ohm to 1000 megohms with internal battery. Dividers: 1% precision type. Meter: 6" 200 ua movement. DC Input resistance: 11 megohms (1 megohm in probe) on all ranges. AC Input impedance: 1 megohm shunted by 40 uuf (measured at input terminals). Circuit: Balanced bridge (push-pull) using twin triode. Accuracy: DC $\pm 3\%$, AC $\pm 5\%$ of full scale. Frequency response: ± 1 db 25 cps to 1 mc (600 ohm source). Tubes: 12AU7, 6AL5. Battery: 1.5 volt size "C" flashlight cell. Power requirements: 105-125 volts 50/60 cycle AC 10 watts. Dimensions: 5" H x 12-11/16" W x 4 3/4" D.

Kit Form or
Factory Assembled

IM-13
\$32⁹⁵



For Precision AC Work, Choose This Heathkit Lab AC VTVM!

- 10 voltage ranges—0.01 to 300 volts RMS full scale • Extended frequency, ± 1 db from 10 cps to 500 kc • 10 megohm input impedance for high accuracy • Calibrated db scale for audio measurements

Accurate Low-Level AC Measurements! From 1 millivolt to 300 volts RMS. VU-type ballistic damping of meter movement, high input impedance, wide frequency response, high sensitivity & excellent stability assure outstanding results in every application.

Kit IM-21, 5 lbs. . . \$4 dn., \$5 mo. \$33.95
 Assembled IMW-21, 5 lbs. . . \$6 dn., \$5 mo. \$52.95
 Export model available for 115/230 VAC, 50-60 cps; write for prices

IM-21 SPECIFICATIONS—Frequency response: ± 1 db 10 cps to 500 kc, ± 2 db 10 cps to 1 mc, all ranges. Ranges: Ten ranges from 0.01 to 300 volts RMS full scale. Decibels: ten switch selected ranges from -40 db to +50 db in 10 db steps. Total range -52 to +52 db, meter scale -12 to +2 db. (0 db = 1 mw in 600 ohms). Input impedance: 10 megohms shunted by 12 uuf on ranges 10 to 300 volts, 10 megohms shunted by 22 uuf on ranges .01 to 3 volts. Tube complement: (1) 6AW8, (1) 6EJ7/EF-184. Accuracy: Within 5% of full scale. Power requirements: 105-125 volts AC, 50-60 cycles, 10 watts. Dimensions: 7 3/4" H x 4-11/16" W x 4 1/8" D.

Kit Form or
Factory Assembled

IM-21
\$33⁹⁵



Heathkit Portable 20,000 Ohms/Volt VOM . . . Versatile!

- Measures voltage, current & resistance • 35 meter ranges on 2-color scale • Sensitive 50 micro-ampere 4 1/2" meter • 1% precision resistors for accuracy & stability • Polarity reversing switch—eliminates transferring test leads • Molded plastic case

Ideal Meter For All-Around Service Applications! Provides wide voltage, current, resistance & db ranges to cover virtually any service requirement. Compact, battery powered . . . use for field or test bench applications. Test leads included. Less batteries.

Kit MM-1, 5 lbs. . . \$3 dn., \$5 mo. \$29.95

MM-1 SPECIFICATIONS—Sensitivity: 20,000 ohms/volt DC, 5,000 ohms/volt AC. Range AC & DC volts: Full scale, 1.5, 5, 50, 150, 1500, 5000. Direct current: 150 microamperes, 15, 150, 500 milliamperes, 15 amperes. Ohmmeter: 0.2 ohms to 20 megohms in three ranges. Decibels: -10 to +65 db. Resistors: 1% precision type. Accuracy: $\pm 3\%$ of full scale. Controls: Range switch, Output—AC—DC—reverse DC switch. Ohms adjust control. Batteries: 1 type "C" cell, 4 penlight cells. Dimensions: 7 1/2" x 5 1/2" x 4".

MM-1
\$29⁹⁵



309-C
\$3⁵⁰

Etched Circuit RF Probe Kit

This handy RF probe may be used with any 11 megohm VTVM for RF measurements up to 250 megacycles. All parts are mounted on a circuit board for high stability and ease of assembly.

Kit 309-C, 1 lb. \$3.50
 Assembled 309W-C, 1 lb. \$4.50

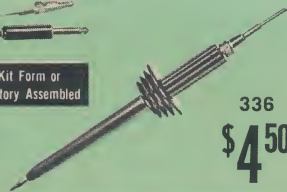
30,000 Volt DC High Voltage Probe Kit

Invaluable for TV service work or any other application where extremely high DC voltages are measured. Provides a multiplication factor of 100 on the DC ranges of any 11 megohm VTVM. Two-color sleek plastic probe body provides plenty of insulation for safety.

Kit 336, 1 lb. \$4.50
 Assembled 336W, 1 lb. \$5.50

Kit Form or
Factory Assembled

336
\$4⁵⁰



over 250 different, top-quality kits to add more fun at big savings!



Outfit With Heathkit® Test Gear ...

Heathkit Switch-Selected Audio Frequency Generator Produces Near-Perfect Sine Wave Signals

- Switch-selected output frequencies—10 cps to 100 kc • Less than .1 of 1% distortion—20 to 20,000 cps • Panel metered output is calibrated in volts & db • Output level and frequency accurate to within $\pm 5\%$

Ideal For All Audio & High Fidelity Testing Applications! Achieves near-perfect sine wave output with less than 0.1 of 1% distortion between 20 and 20,000 cps. Output level and frequency are accurate to within $\pm 5\%$, and the meter is calibrated in 8 full scale meter ranges. 3 rotary switches select two significant figures and a multiplier to determine audio frequency, permitting return to exact frequency previously measured.

Kit IG-72, 8 lbs. . . \$5 dn., \$5 mo. \$41.95
Export model available for 115/230 VAC, 50-60 cps; write for prices.

IG-72 SPECIFICATIONS—Frequency: 10 cps to 100 kc, switch selected, 2 significant figures and multiplier. Output: 6 ranges, 0 to .003, .01, .03, .1, .3, 1 volts RMS into external 600 ohm load or with internal load into Hi-Z, 2 ranges 0 to 3, 10 volts RMS into a minimum of 10,000 ohms, —60 db to +22 db in 8 steps —60 dbm to +2 dbm (0 dbm = 1 mw into 600 ohms). Distortion: less than .1%, 20 to 20,000 cps. Tubes: (1) 6AU6, (1) 6CL6, (1) 6X4. Power: 105-125 volts AC, 50/60 cycles, 40 watts. Dimensions: 9 1/2" W x 6 1/2" H x 5" D.

Heathkit Sine-Square Wave Generator For High-Fidelity And Lab Testing

- Covers 20 cps to 1 mc in 5 bands . . . from bottom of audio band to half way through the broadcast band • Less than .25% sine wave distortion • Less than .15 microsecond square wave rise time • Sine and square wave output available simultaneously

A Dependable Instrument For Audio Testing . . . both sine and square wave outputs may be used separately or simultaneously without affecting either waveform. Impedance of sine wave output is 600 ohms . . . square wave output, 50 ohms except in Hi-Z ranges.

Kit IG-82, 13 lbs. . . \$6 dn., \$5 mo. \$51.95
Assembled Model available as EUW-27, 13 lbs. . . \$10 dn., \$9 mo. . . . \$94.00
Export model available for 115/230 VAC, 50-60 cps; write for prices.

IG-82 SPECIFICATIONS—SINE WAVE: Frequency range: 20 cycles to 1 mc. Output volts (RMS): 0 to 10 volts, 0 to 1 volt, 0 to .1 volt, or 0 to .01 volt when working into a high impedance load. Source impedance: ($\pm 10\%$); 10 volt range, 0 to 3.5 k ohm; 1V, .1V and .01V range, 600 ohm. Distortion: Less than .25%, 20 to 20,000 cycles. Frequency response: ± 1.5 db 20 cycles to 1 megacycle. SQUARE WAVE: Frequency range: 20 cycles to 1 mc. Output volts: (P. to P.) $\pm 5\%$; 0 to 10 volt, 0 to 1 volt, 0 to .1 volt, into a high impedance load. Source impedance: ($\pm 10\%$); 10 volt range, 0 to 220 ohm; 1V and .1V ranges, 52 ohm. Rise time: less than .15 microsecond. GENERAL: Frequency accuracy: $\pm 5\%$. Power requirements: 105-125V AC, 50/60 cycles, 55 watts. Dimensions: 13" W. x 8 1/2" H. x 7" D.

Heathkit Laboratory Transistor Tester

- Ideal for servicing, design work, incoming inspection, production testing, etc. • Provides complete DC analysis of PNP & NPN transistors • DC gain (Beta, Alpha) read direct on calibrated scales • 15 ua basic range for leakage (Icbo, Icco) tests • Four lever switches for fast, easy test selection

Ideal For Servicing, Design Work, QC & Production Testing . . . features include provisions for external DC supply and meter ranges for higher voltages & current. Less batteries.

Kit IM-30, 9 lbs. . . \$6 dn., \$5 mo. \$54.88

IM-30 SPECIFICATIONS—Checks: Transistors up to 15 amps and diodes up to 1.5 amps. Tests: Shorts, DC Gain (Beta 0-300) (Alpha 0-.9967), Leakage (Icbo, Icco), Diode Forward and Reverse Current. Meter: Current Ranges: 15 ua, 150 ua, 1.5 ma, 15 ma, 150 ma, 1.5 A, 15 A; Voltage Ranges: 1.5 V, 5 V, 15 V, 50 V, 150 V (100 K ohm/volt). Power supply: Internal, seven 1.5 volt size D batteries provide 1.5, 3, 4.5, 6, 7.5, 9 volts collector supply for gain or leakage and 1.5 volts for bias; External, 0-50 volts for gain, 0-150 volts for leakage and 1.5 volts for bias. Bias control: Permits any collector current from 10 ua to 15 amps for gain tests. Gain control: 3% wire-wound potentiometer has calibrated scales to give DC Beta and DC alpha directly when meter is at null. Lever switch: Four spring return levers will individually select the following tests: Base Current, Gain, Collector Voltage, Collector Current, Leak Voltage, Short Test, Icbo and Icco or diode currents. Two voltage selector switches: Gain and Leak Test Voltages can be individually preset at different voltage levels. Two current range switches: Collector and Leak currents can be individually preset on different ranges. Transistor and diode connections: Universal transistor socket and binding posts. External power supply connections: Binding Posts for Gain, Leak and Bias supplies.

Heathkit Mutual-Conductance Tube Tester Tests All Tubes With Lab Accuracy

- No finer tube tester in kit form anywhere! • Indicates Gm to 24,000 micro-mhos • Ultra-sensitive grid current test • Direct reading ohmmeter leakage test • Constant current heater supplies • Built-in switch-operated calibration circuit for high accuracy • Built-in adapter for testing Compactron, Nuovistor, Navar & 10-pin miniature tube types

Professionals involved in critical service and design work choose the Heathkit TT-1A. It offers sophisticated testing facilities at low acquisition cost. Accommodates all tube types regardless of base-pin connections, preventing obsolescence.

Kit TT-1A, 34 lbs. . . \$15 dn., \$13 mo. \$149.95

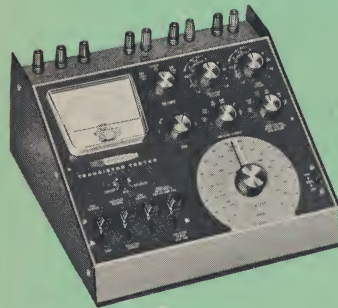
TT-1A SPECIFICATIONS—Power requirements: Voltage: 105-125, 60 cycle AC. Watts: 10-60 (dependent upon tube under test). Testing circuits: Gm: mutual conductance for amplifiers, 0-24,000 micromhos. Emission: rectifiers and diodes. Leakage: direct reading ohmmeter. Grid current: 1/4 microampere sensitivity. Voltage regulator: firing voltage and regulation tolerance. Low power thyatron: grid characteristics, conduction capabilities. Eye tubes: control grid characteristics. Line voltage adjustment: Continuously variable. Roll chart mechanism: Constant tension, free rolling, dual thumbwheel operated, illuminated. Dimensions: Cabinet (outside): 17 1/4" W x 13 1/2" H x 8" D. Panel & chassis: 17" W x 12 3/4" H x 5 1/2" D.



IG-72
\$41.95



IG-82
\$51.95



IM-30
\$54.88



TT-1A
\$149.95



IT-21
\$44.95

Heathkit Tube Checker . . . Fills All Daily Service Requirements

- Latest design features and professional styling • Tests most all tube types including new Compactron, Nuovistor, Novar and 10-pin miniatures • Multi-colored "bad-?-good" meter scale • Constant tension, free-rolling roll chart mechanism • Color-coded wiring harness for fast, easy assembly

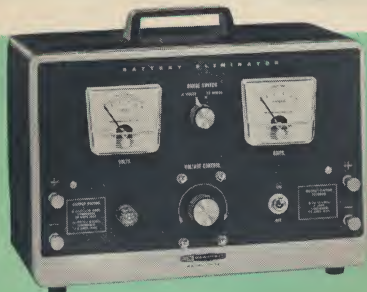
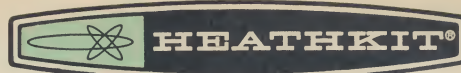
Modern Tube Tester . . . tests virtually all tube types encountered in everyday radio and TV servicing.

Convenient Roll-Chart And Test Meter are illuminated for easy reading of data.

Kit IT-21, 12 lbs. . . \$5 dn., \$5 mo. \$44.95

IT-21 SPECIFICATIONS—Tests: Emission, short, leakage, open element, filament continuity. Sockets: 4-pin, 5-pin, 6-pin, 7-pin combination and pilot light, 7-pin miniature, octal, locktal, 10-pin miniature, 9-pin novar, 12-pin compactron, 5-pin nuovistor, 7-pin nuovistor. Meter: 1 ma, BAD-?-GOOD scale, illuminated. Line voltage adjustment: Step type. Roll chart mechanism: Constant tension, free-rolling, thumbwheel operation, illuminated. Filament voltage: .63, 1.4, 2, 2.35, 2.5, 3.15, 4.2, 4.7, 5, 6.3, 7.5, 9.45, 12.6, 19.6, 25, 32, 50, 70, 110 V AC. Element test voltages: 30, 100, 250 V AC. Power requirements: 105-125 V AC, 50/60 cycles. Dimensions: 5 1/2" x 8 1/2" x 13".

You'll Save Up To 50%



IP-12
\$47⁵⁰



IP-32
\$56⁹⁵



IP-20
\$72⁹⁵



IT-11
\$29⁹⁵



IT-12
\$19⁹⁵

Heathkit Visual-Aural Signal Tracer The Trouble-Shooter's Right Hand!

• Traces RF, IF and audio signals • Locates noisy and intermittent components • Convenient audio-RF probe with switch • Doubles as a utility amplifier or test speaker • Ideal for "safe" testing of transistor circuits
Signals are traced visually with an "electron-eye" tube indicator or audibly with the built-in speaker . . . a single probe does the job for both RF and audio testing . . . and even the most sensitive transistor circuits can be tested safely, since no voltage is applied to the circuit under test. This versatile instrument should be on the test bench of every troubleshooter!
Kit IT-12, 6 lbs. \$19.95
Export model available for 115/230 VAC, 50-60 cps; write for prices.

IT-12 SPECIFICATIONS—Power supply: Transformer operated. Power requirements: 117 volts 50/60 cycles AC, 25 watts. Tube complement: 12AX7, 12CA5, 1629. Speaker: 3 1/2" PM. Probe and test leads: 4' input lead for RF and audio with switch on probe body, 2-3' panel test leads with alligator clips. Dimensions: 4 1/2" W x 7 1/2" H x 4" D.

Heathkit "Low-Ripple" Battery Eliminator A "Must" For Servicing Mobile Equipment

• Convenient switch-selection of 6 or 12 volt DC power • Special ripple filter circuit holds AC ripple to less than .3% • Panel metered output voltage & current • Doubles as a convenient battery charger • Heavy-duty well-rated components throughout

Provides 6 Or 12 Volt Power . . . for test-bench operation of mobile equipment. Special 0.3% ripple output provides smooth DC for transistorized and hybrid radios.

Kit IP-12, 17 lbs. . . \$5 dn., \$5 mo. \$47.50
Export model available for 115/230 VAC, 50-60 cps; write for prices.

IP-12 SPECIFICATIONS—Continuously variable output: 6 volt range: unfiltered, 10 amp continuous, 15 amp maximum; filtered, 5 amp continuous, less than .3% ripple. 12 volt range: unfiltered, 5 amp continuous, 7.5 amp maximum; filtered, 5 amp continuous, less than .3% ripple. Power requirements: 105-125 volts 50/60 cycles AC at 200 watts. Dimensions: 13" W x 8 1/2" H x 7" D.

Heathkit Variable-Voltage Regulated Power Supply Sets Value Standard For Research, Design, & Development Work

• Furnishes B+, Bias, & Filament voltages • DC output variables from 0 to 400 volts • Separate panel meters monitor output voltage & current • Output terminals isolated for safety in AC/DC work

Saves time and labor at the test bench and in the laboratory . . . no need to build up separate power supplies for experimental gear. Plus, high voltages can be switched "off" while filament voltages remain "on," saving valuable warm-up time.

Kit IP-32, 17 lbs. . . \$6 dn., \$6 mo. \$56.95
Assembled IPW-32, 18 lbs. . . \$9 dn., \$8 mo. \$84.95
Export model available for 115/230 VAC, 50-60 cps; write for prices.

IP-32 SPECIFICATIONS—Output: 0-400 volts regulated DC at 0-100 ma cont., 125 ma intermittent, 0 to -100 volts DC at 1 ma variable bias voltage, 6.3 volts AC at 4 amps., filament voltage. Regulation: Output variation less than 1% from no load to full load. Output variation less than 1% for a ±10 v. change at 117 V. AC input. Ripple: Less than 10 millivolts RMS, ripple, jitter and noise. Output impedance: Less than 10 ohms, DC to 1 mc. Meters: Voltmeter 0-400 V or 0-150 V.; Milliammeter 0-150 ma. Dimensions: 13" W x 8 1/2" H x 7" D.

Heathkit "Solid-State" Regulated DC Power Supply—0.5 to 50 Volts @ 1.5 Amperes With Less Than 150 Microvolts AC Ripple!

• All-transistor solid-state circuitry • Relay protected against short circuit & overload • Four current ranges, 50 MA, 150 MA, 500 MA & 1.5 A. • Adjustable current limiter, 30 to 100% on each range • Series type voltage regulator, zener diode reference

A Tremendous Value In A DC Supply! Husky solid-state circuitry provides an extended range of voltages with current up to 1.5 amperes. Meter is switched for voltage or current readings.

Kit IP-20, 13 lbs. . . \$8 dn., \$7 mo. \$72.95
Export model available for 115/230 VAC, 50-60 cps; write for prices.

IP-20 SPECIFICATIONS—Input: 105-125 volts 60 cps; 150 watts at full load (50V, 1.5A). Output: 0.5-50 volts DC; 1.5 amps max. DC. Load regulation: ±15 millivolts, can be adjusted for no change. Line regulation: (105 to 125 VAC): Less than .005% change. Ripple & noise: Less than 150 microvolts. Transient response: Less than 25 microseconds. Output impedance: Less than .1 ohm DC to 10 kc; Less than .5 ohms 10 kc & up. Overload protection: Current limiter & relay. Meter: 3 1/2", 1 ma, 50 ohm. Current ranges: 50 ma, 150 ma, 500 ma, 1.5 amp. Voltage ranges: 5V, 15V, 50V. Front panel controls: On/Off, coarse voltage switch, fine voltage adjust, Current range switch, Current limit adjust, Meter slide switch, DC regulation, Reset Standby toggle switch. Output terminals: (3), plus (+), minus (-), chassis ground. Dimensions: 9 1/2" H x 6 1/2" W x 11" D.

Heathkit Capacitor Checker

• Tests all capacitor types • Low bridge voltage for safe testing of miniature electrolytics • 16 leakage testing voltages • Direct reading scales—no involved calculations • Measures resistance from 5 ohms to 50 megohms • Measures capacitance from 10 uuf to 1,000 mfd • Comparator circuit—measures "L," "C," or "R" with external standard • Calibrated power factor control • "Eye" tube null & leakage indicator

All Measurements Are Made On Direct-Reading Scales. No involved calculations required! Measures resistance from 5 ohms to 50 megohms in 3 ranges, capacitance from 10 uuf to 1,000 mfd in 4 ranges. Leakage and shorts are immediately detected by an "eye" tube indicator. 16 leakage testing voltages and 3 leakage sensitivities allow testing of capacitors at their rated voltages. A unique "leakage" test switch automatically discharges condensers after test, to eliminate shock hazard to the operator. Order your Heathkit IT-11 now for faster, easier servicing!

Kit IT-11, 7 lbs. . . \$3 dn., \$5 mo. \$29.95
Export model available for 115/230 VAC, 50-60 cps; write for prices.

IT-11 SPECIFICATIONS—Test circuit: AC bridge, powered through special bridge transformer by an internal 60 cycle supply or by an external audio generator with 10 volts output. Upper frequency limit: 10 kc. Capacitance, 4 ranges: 10 uuf to .005 mfd; .001 mfd to .5 mfd; .1 mfd to 50 mfd; 20 mfd to 1000 mfd. Capacitor leakage: DC test voltages from 3 to 600 volts in 16 steps. Resistance, 3 ranges: 5 ohms to 5000 ohms; 500 ohms to 500 K ohms; 50 K ohms to 50 megohms. Comparator circuit: External standard R, L or C; Max. Ratio 25-1. Power supply: Transformer-operated, half-wave rectifier. Power requirements: 105-125 volts AC, 50/60 cycles, 30 watts. Dimensions: 9 1/2" high x 6 1/2" wide x 5" deep.

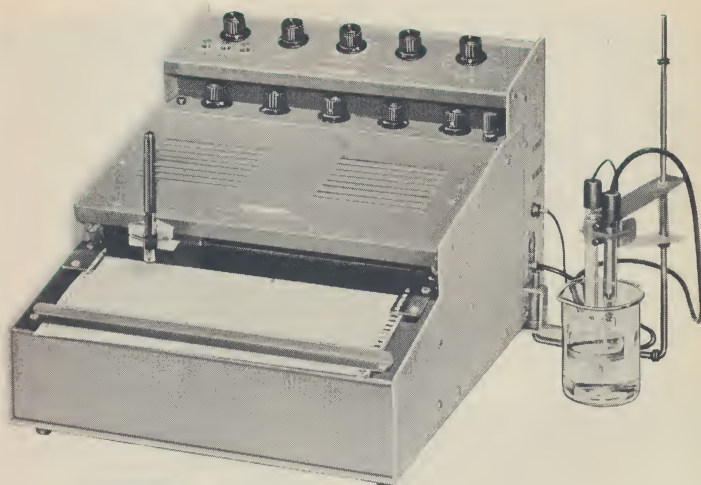
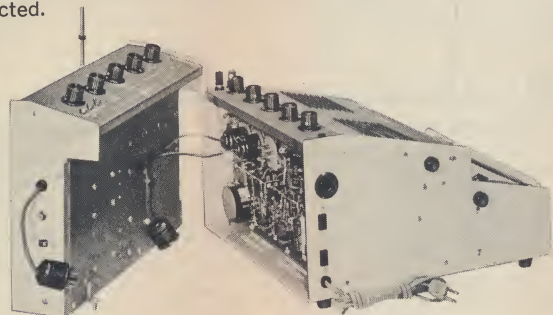
over 250 different, top-quality kits to add more fun at big savings!

Factory-Built Precision Research



pH Module Controls

Complete, easy to operate. Regular controls on Chart Recorder are inactivated when pH module is connected.



Send For FREE Brochure!

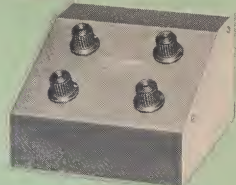
A brochure describing the functions and applications of the EUW-301 pH Recording Electrometer in detail is yours FREE by simply dropping a note or card with your name & address to the Heath Company, Benton Harbor, Michigan 49023.

NEW! Heath-Built pH Recording Electrometer... Ideal For Research, Laboratory Courses, and Routine Testing!

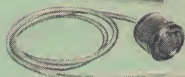
Complete Line Of Accessories!



EUA-20-17
Buffer Assortment . . . \$8.00
Buffer solutions by Mallinckrodt. Includes one pint each of pH 4.01, 7.00, and 10.00 buffers plus a 150 ML bottle of saturated KCl solution for refilling reference electrodes. In unbreakable plastic bottles.



EUA-20-12
pH Test Box \$25.00
Provides precise switch-selected voltages equal to pH potentials over the 0-14 range at various solution temperatures.



EUA-20-16
Temperature Probe . . . \$18.00
Provides automatic temperature compensation of the EUW-301 Recording pH Electrometer. Simple plug-in connection.

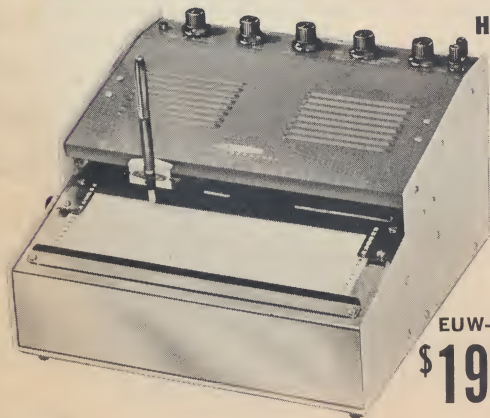
EUA-20-14
Glass Electrode \$25.50
Beckman #41263 general purpose electrode covering a range of 0-11 pH and 5-80° C. Lead length 30".

EUA-20-15
Reference Electrode . . \$20.00
Beckman #39170 fiber junction calomel electrode. Lead length 30".

Compare These Versatile Features!

- **Multi pH Ranges!** Full scale pH spans of 1, 2, 5, 10 and 14. Any 1 pH unit, 2 pH units (etc.) over entire pH region of interest can be switched for full scale on 10" scale or recorder chart.
 - **Multi MV Ranges!** Full-scale millivolt spans of ± 50 , 100, 200, 500, 1000 and 1400. There are 14 calibrated 50 mv increments of zero suppression that can be switched in on all millivolt spans.
 - **Direct Reading!** pH is read directly from a 10" scale; expanded ranges are made direct reading by interchangeable scales (e.g. 6.000-8.000 pH, etc.).
 - **Versatile Recording Speeds!** Chart with 10" grid on 120' roll moves at selected rates. Standard rate of 2"/min.; other chart speeds as low as 2"/hr. and as high as 12"/min. are available with interchangeable motors.
 - **Scale Readability!** 0.1% of full-scale span (e.g. 0.001 pH on span of 1 pH, 0.01 pH on 10 pH, 0.05 MV on span of 50 MV, etc.).
 - **Highly Accurate!** Better than 0.5% of any calibrated full span, 0.005 pH on span of 1.
 - **Temperature Compensation!** Calibrated 0 to 100° C manual control. May be automatically controlled by accessory Thermistor probe.
 - **Completely Assembled & Tested!** Made of the finest components, and factory tested to insure you of many years of faithful performance.
- EUW-301, pH Recording Electrometer, 26 lbs. (pH electrodes not included) . . . \$30 dn., \$26 mo. \$300.00*
EUA-20-11, pH Module only, 8 lbs (converts Heath EUW-20A Servo-Recorder to pH Recording Electrometer) . . . \$13 dn., \$11 mo. . . \$125.00
EUA-301-1, Parts Kit (chopper, three 5-prong plugs and back cover) to convert recorder in EUW-301 to standard EUW-20A chart recorder \$20.00

Heath-Built Servo Chart Recorder . . . Ideal For Research, Education & Control Applications!



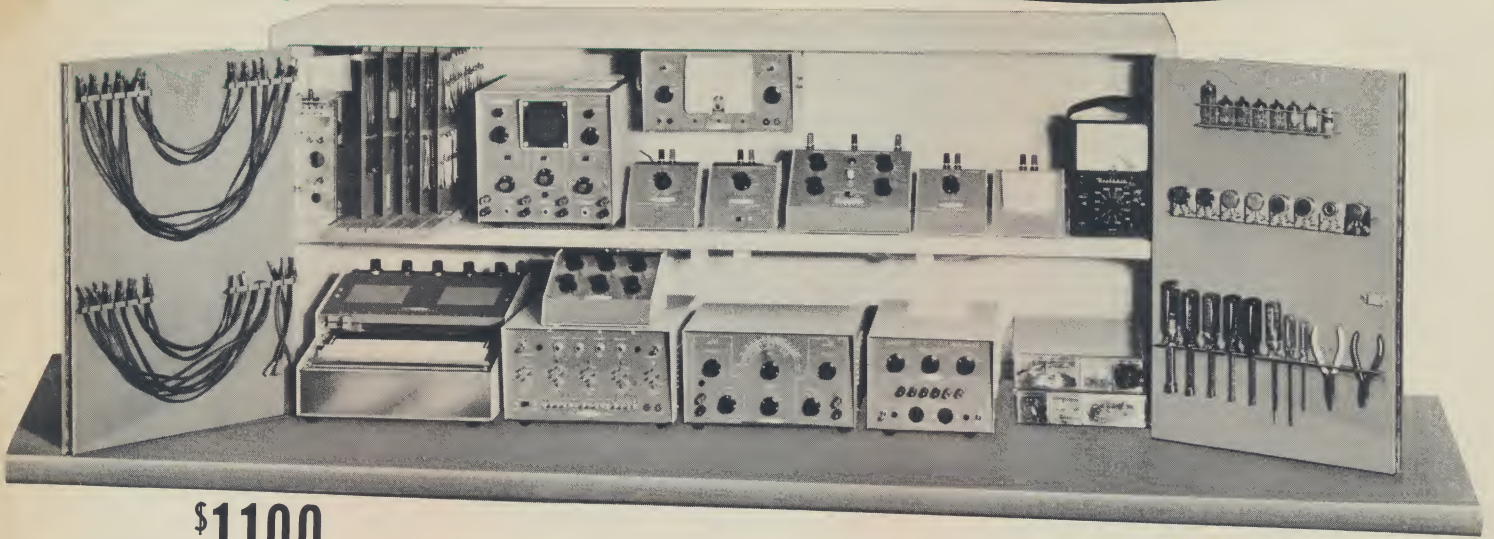
EUW-20A
\$199⁰⁰

- Completely assembled, tested, ready to operate
- Ideal for lab & school use
- True potentiometric input on all ranges (10, 25, 50, 100 & 250 mv)
- Plug-in 5-pin connectors for special ranges
- Rapid chart advance, pen lift, paper tear-off guide

Chemists, physicists, medical researchers, engineers, etc., all have many uses for this precision lab-type self-balancing potentiometric recorder. It can be used to record pressure, speed, temperature, strain, pH light radiation, and many other phenomena, when connected to suitable transducers, and is easily modified for multi-purpose applications as a servo system.

Three 5-pin connectors enable rapid modification for use in new research and development problems, and blank adapter chassis are available for the construction of special circuits for specific laboratory functions. Optional chart motors are also available at low cost for specific time scales required. Features include a special standby circuit to prolong limited life components such as the mercury reference cell and chopper, and a practical clip-on cartridge-type pen that makes it easy to obtain multi-color charts.

EUW-20A, 23 lbs. . . \$20 dn., \$17 mo. \$199.00
EUA-20-1, blank plug-in adapter chassis, 4 lbs. \$9.00



\$1100
EU-100A

Malmstadt-Enke Instrumentation Lab by Heath!

A Coordinated System Of Instruments, Accessories & Text For Educational & Research Purposes

• A complete electronics lab for scientists & engineers • All equipment factory wired & tested • Ideal for teaching electronics to both graduate and undergraduate scientists • Perfect for every day use in research labs • "Solderless" spring-clip connectors in experimental parts groups allow fast, easy circuit changes • Authoritative Malmstadt-Enke textbook "Electronics For Scientists" • Multi-purpose units with features not matched at any price

Complete, Coordinated Electronics Laboratory! Consists of special experimental chassis and parts, factory-assembled test & lab instruments, and an informative textbook . . . fills countless requirements in scientific, educational and research applications. The EU-100A "Malmstadt-Enke Instrumentation Lab" was engineered by Heath in association with Dr. Howard Malmstadt, University of Illinois, and Dr. Christie Enke, Princeton University . . . originators of the system and authors of the widely acclaimed text, "Electronics For Scientists."

Ideal For All Sciences! Provides chemists, physicists, engineers, medical scientists, biologists, students and research workers with a firm working knowledge of circuits and modern instrumentation that will prove invaluable in their work.

Widely Accepted In Academic And Industrial Labs! Used by colleges, universities and industrial institutions at all levels . . . technician, undergraduate, graduate and post-doctoral.

Special-Purpose Instruments! Many units within the EU-100A station serve multi-purpose applications. For example, the EUW-20A Servo-Chart Recorder is useful in learning about servo systems and null-point recorders . . . recording pressure, speed, temperature, strain, light radiation, etc. in research or development labs when used with suitable transducers . . . and can be modified with a simple plug-in adapter to provide a sensitive and accurate pH meter for research & control labs.

Desk-Top Cabinet Provides Neat, Efficient Use & Storage! The optional cabinet (illustrated above) holds all EU-100A components and instruments. Everything is in line-of-sight and at fingertip control. 10 labeled instrument power outlets are controlled by a single on/off switch. Sturdy brackets keep tools, leads and all other parts within easy reach. Requires 30" x 60" desk or bench space. Entire system can be set up and operating within a few hours after delivery.

Purchase As A Group Or Separately! All components are available as a complete system, may be purchased separately in select groups, or as individual units for specific applications.

Special Book Combination Offer! Discover the many practical uses of the famous Malmstadt-Enke Lab Series. Order both the EUA-11 manual and EUP-11 text, "Electronics For Scientists," and get the manual FREE! It's a regular \$14 value for only \$11.50. Order No. EUP-11 (EUA-11 manual available separately at \$2.50).



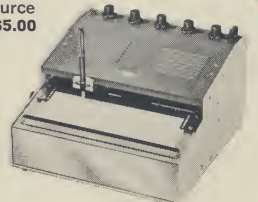
Operational Amplifier System
Model EUW-19A . . . \$135.00



Universal Power Supply
Model EUW-15 . . . \$75.00



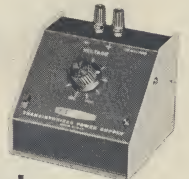
Voltage Reference Source
Model EUW-16 . . . \$65.00



Servo Chart-Recorder
Model EUW-20A . . . \$199.00



Transistorized Power Supply
Model EUW-17 . . . \$20.00



Lab Meter with Shunts
Model EUW-18 . . . \$22.00

Buy The Complete M-E Station And Save!

EUA-11 Manual	.....	\$2.50
EUP-11 Text, "Electronics for Scientists"	.....	\$11.50
EU-13A Universal Experimental Chassis & Parts	.....	\$177.00
EU-14A Special Experimental Chassis & Parts	.....	\$64.00
EUW-15 Assembled Universal Power Supply	.....	\$75.00
EUW-16 Assembled Voltage Reference Source	.....	\$65.00
EUW-17 Assembled Transistorized Power Supply	.....	\$20.00
EUW-18 Assembled Lab Meter With Shunts	.....	\$22.00
EUW-19A Assembled Operational Amplifier System	.....	\$135.00
EUW-20A Assembled Servo Chart-Recorder	.....	\$199.00
EUW-24 Assembled VTVM	.....	\$62.00
EUW-25 Assembled DC Oscilloscope	.....	\$163.00
EUP-26 Assembled Weston 980 VOM	.....	\$55.00
EUW-27 Assembled Sine & Square Wave Generator	.....	\$94.00
EUW-28 Assembled Resistance Substitution Box	.....	\$16.00
EUW-29 Assembled Capacitance Substitution Box	.....	\$14.00
EUW-30 Assembled Decade Resistance	.....	\$34.00
GH-10 Deluxe Tool Kit	.....	\$19.95
Total	.....	\$1228.95
EU-100A Special Group Price (Includes all items above)	.....	\$1100.00
(Educational Institutions qualify for additional group discount)		
Export models available for 115/230 VAC, 50-60 cps; write for prices.		
Optional bench top cabinet is available.		

FREE FOLDER!

Gives full descriptions of entire Malmstadt-Enke Lab System and components. Complete with specifications and prices. Write for your free copy today.

A NEW CONCEPT
IN ELECTRONICS
EDUCATION AND
RESEARCH
INSTRUMENTATION

4 New Heath Products You Asked For!

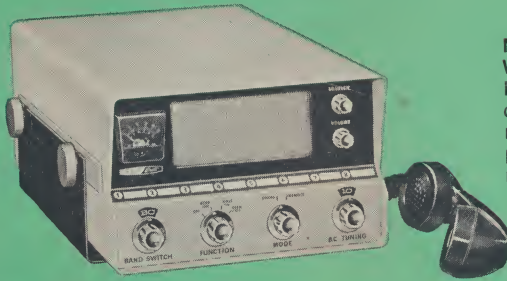
New! Deluxe All-Transistor AM Portable ... High Sensitivity ... Low Operating Cost!



Requires only 1/10 operating cost of typical pocket-size portables! Boasts new easy-to-read slide-rule dial ... big 1/2" diameter built-in rod antenna ... RF stage & double-tuned I.F. stage for greater sensitivity and selectivity. See pg. 7 for details.

New Marine Units For Better Boating At Lower Cost!

2



New Heath-Built 150-Watt Transistorized Radiophone! 8 crystal-controlled transmit & receive channels ... provisions for complete remote operation. See pg. 10.

3



New Heath-Built 75-Watt Transistorized Radiophone! Covers 2-5 mc Marine & AM bands ... 6 crystal-controlled transmit & receive channels. See pg. 11.

4



New Heathkit Foghorn/Hailer/Boat Horn! All-transistor 30-watt circuit ... weatherproof horn speaker ... easy to build & use. See pg. 11.

All prices quoted are Net F.O.B. Benton Harbor, Michigan and apply to United States and Possessions only. Prices and Special Offers herein effective March 15, 1965. All prices and export prices slightly higher, Dealer and export prices slightly higher.

26
NELSON T
BOX 1546
POUGHKEEPSIE
N Y

Do We Have Your Correct Name And Address?
Your name and address appear in our records as shown on this cover. If this is right, will you please write your name and address exactly this way on every order. This will help us to avoid errors and to handle your orders promptly. If your name and address is wrong as shown here, please cut out the address portion, make necessary corrections, and mail it to us.

HEATH COMPANY
Benton Harbor, Michigan 49023

THIRD CLASS

Postmaster: Do not return if undeliverable.

BULK RATE
U.S. POSTAGE
PAID
Benton Harbor, Mich.
Permit No. 273

HEATH COMPANY

Benton Harbor, Michigan 49023

ORDER FORM

PHONE • 616-983-3961

FAX—BENTON HARBOR, MICHIGAN

TWX—616-983-3897

1 PLEASE PRINT OR WRITE NAME AND ADDRESS PLAINLY

NAME _____
 ADDRESS _____
 CITY STATE ZIP _____

PLEASE DO NOT WRITE IN THIS SPACE

2 SHIP TO ANOTHER ADDRESS? Give directions here.

STREET ADDRESS _____
 CITY STATE ZIP _____

4 IF YOU HAVE MOVED SINCE YOUR LAST ORDER—write your old address here:

STREET ADDRESS _____
 CITY STATE ZIP _____

3 CHECK HOW YOU WANT ORDER SHIPPED ▶ Parcel Post *Motor Freight Express
 (100 lb. min. chg.)

5 TO HELP US SERVE YOU BETTER, will you please answer the following questions?

What type of Heathkit interests you most? Hi Fi Instruments
 Amateur Radio Marine
 Other _____

ON EXPRESS ORDERS if station is in different town than your post office address, show name of town where shipment should be sent:

TOWN STATE _____

What new Heathkits would you like us to make? _____

6 IS THIS YOUR FIRST ORDER? _____

SHD.	B. O.	QUAN.	MODEL	KIT DESCRIPTION	WT.	PRICE EA.	TOTAL
PLEASE DO NOT WRITE IN THIS SPACE	PLEASE DO NOT WRITE IN THIS SPACE						
PLEASE DO NOT WRITE IN THIS SPACE	PLEASE DO NOT WRITE IN THIS SPACE						
PLEASE DO NOT WRITE IN THIS SPACE	PLEASE DO NOT WRITE IN THIS SPACE						
PLEASE DO NOT WRITE IN THIS SPACE	PLEASE DO NOT WRITE IN THIS SPACE						
PLEASE DO NOT WRITE IN THIS SPACE	PLEASE DO NOT WRITE IN THIS SPACE						
PLEASE DO NOT WRITE IN THIS SPACE	PLEASE DO NOT WRITE IN THIS SPACE						
PLEASE DO NOT WRITE IN THIS SPACE	PLEASE DO NOT WRITE IN THIS SPACE						

IMPORTANT. Please use a separate sheet for all correspondence, to assure a prompt reply to your letter.

All prices quoted are net F.O.B. Benton Harbor, Michigan, and apply to the United States, F.P.O. and A.P.O. areas.

All prices and specifications subject to change without notice. Orders F.P.O. and A.P.O. must include sufficient postage.

C.O.D. ORDERS must be accompanied by 20% deposit. Delivering carrier will require cash or certified check in payment of C.O.D. amount.

PARCEL POST ORDERS should include postage for weight shown. **TIME PAYMENT ORDERS** except A.P.O.'s and F.P.O.'s will be shipped express or motor freight.

Transportation costs for all express or motor freight shipments will be collected at the time of delivery.

SEE REVERSE SIDE for time pay details on orders of \$25 or more.

***MOTOR FREIGHT CHARGES** will not be less than \$4.41, as you pay for 100 lbs. Since rates vary with localities, consult your local truck line.

PLEASE DO NOT WRITE IN THIS SPACE

7 TYPE OF ORDER (CHECK ONE)

CASH
Please use registered mail for currency.

C.O.D.
20% deposit required.

TIME PAY.
10% down payment required
(larger down payment reduces payments & charges)

ADD ON
If previous time pay customer, give current account number _____

9 TOTAL AMOUNT OF ORDER.

Add sales tax on all deliveries in the State of Michigan.

Amount for parcel post. Do not remit for express charges.

Amount due Heath from previous order.

TOTAL AMOUNT

10% DOWN PAYMENT

Ship. Bal. C.O.D. 20% deposit required

UNPAID BALANCE (total order less down payment)

8 MERCHANDISE ORDERED

FROM CAT. NO. _____

800/53-1

Open Your Heath Account - Liberal Terms

NOTICE TO BUYER:

Mail Order/Retail Installment Contract

Do not sign this contract before you read it. Under the law you have the following rights among others:

A. To pay off in advance the full amount due.

B. Under certain conditions to redeem the property, if repossessed for a default.

Time Payments are available to anyone in the U.S. or FPO and APO areas. Residents of Puerto Rico and other U. S. possessions. Write for details!

LIBERAL TERMS! 10% down on orders of \$25 to \$500 (larger down payments reduce monthly payments and carrying charges). Up to 18 months to pay on orders over \$300. Write for details on orders over \$500.

HERE'S ALL YOU DO . . .

- 1 Fill out order blank in the catalog.
- 2 Sign your name in the Time Payment Agreement below, fill in the Credit Statement and the monthly payment (see chart).
- 3 Send the above to the Heath Company, Benton Harbor, Michigan . . . we'll take care of the details.

"ADD ON" Purchases—Once your credit is established and you have made at least three payments, you can "add-on" purchases of \$25.00 or more with no down payment. List the items you want on the reverse side, check (7) the "add on" box and give your account number. Be sure to sign the Time Payment Agreement, and send to us with your original Payment Book.

EASY PAYMENT CHART

Unpaid Balance	Carrying Charge	Up To 12 Monthly Payments*	Unpaid Balance	Carrying Charge	Up to 12 Monthly Payments*	*All monthly payments are for the amount shown; last payment is for the odd amount remaining due.
Up to \$20.00	\$ 2.00	\$ 5.00	\$250.01-260	\$26.00	\$24.00		Up to 18 Months
\$ 20.01-30	3.00	5.00	260.01-270	27.00	25.00	Carrying Charge
30.01-40	4.00	5.00	270.01-280	28.00	26.00		Monthly Payment*
40.01-50	5.00	5.00	280.01-290	29.00	27.00	\$46.50
50.01-60	6.00	6.00	290.01-300	30.00	28.00	48.00
60.01-70	7.00	7.00	300.01-310	31.00	29.00	49.50
70.01-80	8.00	8.00	310.01-320	32.00	30.00	51.00
80.01-90	9.00	9.00	320.01-330	33.00	31.00	52.50
90.01-100	10.00	10.00	330.01-340	34.00	32.00	54.00
100.01-110	11.00	11.00	340.01-350	35.00	33.00	55.50
110.01-120	12.00	11.00	350.01-360	36.00	34.00	57.00
120.01-130	13.00	12.00	360.01-370	37.00	35.00	58.50
130.01-140	14.00	13.00	370.01-380	38.00	36.00	60.00
140.01-150	15.00	14.00	380.01-390	39.00	37.00	61.50
150.01-160	16.00	15.00	390.01-400	40.00	38.00	63.00
160.01-170	17.00	16.00	400.01-410	41.00	39.00	64.50
170.01-180	18.00	17.00	410.01-420	42.00	40.00	66.00
180.01-190	19.00	18.00	420.01-430	43.00	41.00	67.50
190.01-200	20.00	19.00	430.01-440	44.00	42.00	69.00
200.01-210	21.00	20.00	440.01-450	45.00	43.00	70.50
210.01-220	22.00	21.00	450.01-460	46.00	44.00	72.00
220.01-230	23.00	22.00	460.01-470	47.00	45.00	73.50
230.01-240	24.00	22.00	470.01-480	48.00	46.00	75.00
240.01-250	25.00	23.00	480.01-490	49.00	47.00	76.50
			490.01-500	50.00	48.00	78.00

10% min. down payment—larger down payment reduces payments & charges

On orders over \$500, write for details.

TIME PAYMENT AGREEMENT

NOTE: Time payment agreement cannot be accepted from persons under 21 years of age. If you are under 21, have this form filled out by a person of legal age, regularly employed or engaged in business. He can make the purchase for you, and will be responsible for payment.

TO: HEATH COMPANY BENTON HARBOR, MICHIGAN

Enclosed is a deposit of \$_____ on the Easy Payment cost of the equipment on the reverse side. I will pay \$_____ each month to you at the above address starting 30 days after shipment, until the total time payment price is paid.

Title to and right of possession of said equipment shall remain with you until all payments have been made. Upon default on any payment due on this contract, the full amount unpaid hereon, at your option, shall become immediately due and payable and you may either hold me liable for said amount or repossess the equipment. If you shall repossess, all payments made may be retained as rent for the use and depreciation of said equipment. The loss, injury or destruction of the equipment after I have received it shall not operate as payment or in any manner release me from any obligation hereunder.

If this order is not accepted, you shall refund the down payment with notice of non-acceptance. Acceptance shall be effected when the equipment designated on the reverse side hereof is shipped to me. I certify that all statements in the Credit Statement set forth below are true and complete and are made for the purpose of obtaining credit. This contract is to be governed by the laws of the State of Michigan.

Enter Date: _____ Sign Here: _____

CREDIT STATEMENT

(IMPORTANT: Please fill in completely. Omissions and errors cause delays.)

PRINT FULL NAME _____ Age _____ Military Serial No. _____ (if serviceman)

WIFE'S NAME _____ Names of Children and ages _____

Residence _____ City _____ State _____ How Long _____

Own or Buying Landlords If Owned Name Mtg. Held By _____ Rent _____ Live with Parents _____ No. of Rooms _____ Paid Monthly \$ _____ Phone No. _____

Street _____ City _____ State _____

Previous Address _____ City _____ State _____ How Long _____

Previous Landlord _____ Address _____

Employed by _____ Street _____ City _____ State _____

Position _____ How Long _____ Dept. or Badge No. _____ Salary \$ _____

Previous Employer _____ Street _____ City _____ State _____ How Long _____

Wife's Employer _____ Street _____ City & State _____

Position _____ How Long _____ Dept. or Badge No. _____ Salary \$ _____

Other Income—Give Details _____ Total Family Income \$ _____

Your Bank _____ Address _____ Type of Account _____

CREDIT REFERENCE (Give 2 Merchants, Firms or Finance Companies with whom you do or have done business.)

First Credit Reference _____ Address _____ Present Balance \$ _____ Monthly Payment \$ _____

Second Credit Reference _____ Address _____ Present Balance \$ _____ Monthly Payment \$ _____

Nearest Relative _____ Address _____ Relationship _____ (Do not list those with whom you are living)