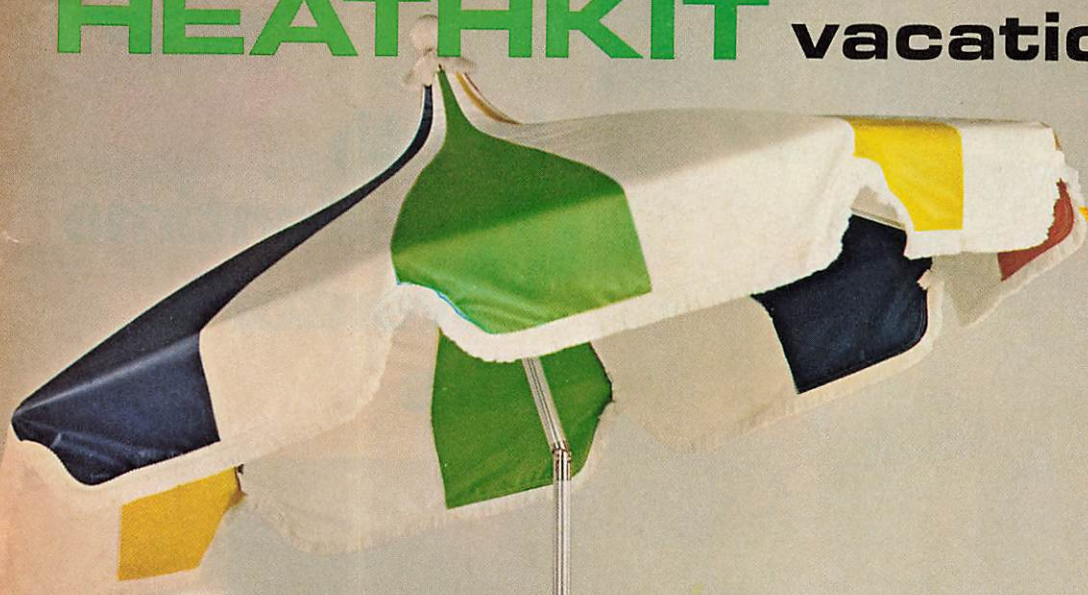


HEATHKIT vacationtime '71



HEATH
Schlumberger

Benton Harbor, Mich. 49022.
Factory mail order catalog 800/13



89⁹⁵

The Heathkit Fish Spotter knows where this year's trophies are!

It's the best value in electronic fishing. No other fish spotter on the market offers so much at such a low price. The Heathkit MI-29 gives the discerning angler all the features he looks for in spotters costing twice as much. It is capable of detecting schools or individual fish, indicating underwater terrain type, reading depth to 200 ft. Designed for carefree operation under the most demanding conditions and it's housed in a weatherproof all-metal case.

"Stow-and-go" portability. Completely self-contained, the Heathkit Fish Spotter is powered by two 6-volt DC lantern batteries — available almost anywhere — and it utilizes solid-state circuitry for minimum drain. Cells last up to 80 hours in normal use. Portable transducer can be suspended over the side of the boat, or quickly installed on the hull with the suction-cup mount supplied.

Features that help you find 'em fast! The MI-29 provides the exclusive Heath Noise Rejection circuit that lets you place the transducer near the engine without ignition interference; adjustable sensitivity control for achieving maximum signal while eliminating multiple echoes; sun-shielding case; glare-free dial, and weather resistant operation manual. In 8-10 hours you can have yours together in time for the next expedition.

Kit MI-29, with transducer, 8 lbs., mailable. **89.95**

MI-29 SPECIFICATIONS — Range: 0 to 200 feet on hard bottom. **Sounding:** Rate 1440 per minute or 24 per second. Frequency, approximately 200 kHz. **Accuracy:** Within 5% of actual depth. **Depth indication:** Neon lamp flashes at zero and again at the indicated depth from the object. **Transducer:** Barium titanate ceramic element encased in a watertight housing. **Controls:** Sensitivity, with on-off switch. Noise Rejection level. **Power requirements:** 120 milliamperes at 12 VDC. **Batteries:** 2 required (not supplied). 6V Lantern type NEDA #908 or 916, Burgess F4M, Eveready #409 or 509, Ray-O-Vac #941. **Dimensions:** 6 1/8" W x 7" H x 10 1/8" D. **Net weight:** 6 1/2 lbs.



Heath Vacationtime Adventure Kits



The GD-48 Metal Locator turns vacations into treasure hunts!

With the Heathkit GD-48 Metal Locator you'll bring back booty from every trip. Detects ferrous objects below ground as small as a dime. And the GD-48 is priced below many other locators that offer less.

Rewarding fun for the whole family! Instead of the common beat frequency system, requiring the

user to interpret frequency changes in a constant tone, the GD-48 is silent until the presence of metal disturbs the field of the search coils. Then it signals the operator through the built-in speaker or optional earphones, with the volume increasing as the "treasure" is approached. Meter helps estimate size and depth of find. You can set the Heathkit Metal Locator to work at a specific level, combing the surface for small objects or probing deeper for larger items. Features all solid-state circuitry for lightweight, dependable operation with minimum power drain. Typical battery life is 80 hours. Has telescoping shaft for "take-along" portability.

Kit GD-48, 6 lbs., mailable. **69.95**

GDA-48-1, 9-volt battery, 1 lb., mailable **1.50**

GD-396, Superex 2000 ohm headphones, 1 lb., mailable. **4.50**

GD-48 SPECIFICATIONS — Frequency: Search oscillator, 100 kHz; modulation, 650 Hz. **Dimensions:** Coil housing, 10 1/2"; height (extended), 36"; height (collapsed), 26". **Power source:** 9 volt battery (NEDA #1602 or equivalent).



69⁹⁵

Capture the spirit of Summer on the Heathkit Hilltopper!

Big bike born to the back country! The Heathkit GT-101 Hilltopper is the off-the-roader that rides, handles and looks like a cycle. Designed from the ground up for superiority, the GT-101 combines a strong heavy duty frame, powerful drive train and sophisticated suspension to form a two-wheeler that eats up the most brutal trail, yet gets you there and back in comfort. And it's a portable trail bike at heart, with fold-down handlebars, fold-up footpegs so it'll stow in the camper, trailer or trunk. Finished in brilliant metallic gold with plenty of chrome, the Heathkit Hilltopper is a proud packhorse when standing still, a high-spirited thoroughbred on the move!

Gutsy 4-cycle power. The Tecumseh 5-h.p. engine gives you all the charging performance you need to traverse any terrain, and there's no need to pre-mix oil and gasoline. Built-in alternator powers optional running lights, and the spark arresting muffler (forestry service approved) takes the worry out of timberland traveling. And it's one of the quietest units on the market! Power is transmitted via a load-sensing automatic torque converter for no-shift going whether you're hauling game or cruising open country.

Takes on the toughest trails!

The 13-gauge tubular steel frame with integral splash pan and crash bar takes all the bouncing and twisting the trail can hand out, yet helps insulate you from hidden logs or rocks in thick underbrush. The big-bike suspension — 16" telescoping front fork and adjustable rear shocks — not only smooths the way, but gives you a more tractable, easier handling machine. The huge 18x8.50x8 low-pressure flotation-type rear tire cuts a wide path, providing sure-gripping traction up the steepest grades, over rocks, sand and even snow. The oversized 5.30x4.50x6 front tire has rounded contours for quicker steering, better stability in the turns.

Leaves the others trailing behind! The Heathkit Hilltopper has the rider in mind. The controls are up front, on the handlebars... twist throttle, ignition-off switch, and front and rear brake handles. And there's the molded-plastic seal-vent gas tank, heavy gauge wrap-around fenders, optional running lights and, for snowgoing, an optional front-wheel ski. Get your Hilltopper all-season stormer, now!

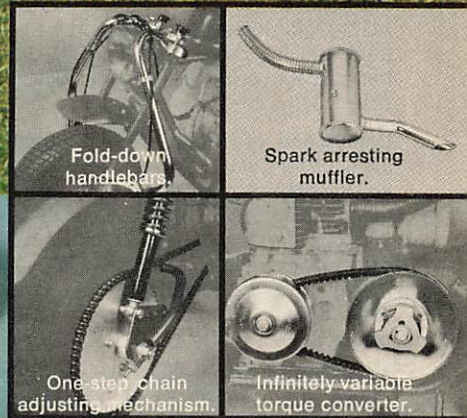
Kit GT-101, 177 lbs., Express/Frt. **299.95**
GTA-101-1, ski accessory, 12 lbs., Express/Frt. **19.95**
GTA-101-2, running lights, 5 lbs., available. **19.95**

GT-101 SPECIFICATIONS: Clutch: Centrifugal. Crankcase oil capacity: 19 ounces. Transmission: Automatic asymmetric torque converter. Speed range: Approx. 0 to 35 mph. Gear ratio: From 5.8 to 1, to 23 to 1. Load capacity: 400 lbs. Gas tank capacity: 4 1/3 quarts. Gas consumption: Approx. 3 hrs. per tank (approx. 80 mpg). Brake: 4 1/2" internal expanding front brakes; external contraction band-type jackshaft mounted rear brake. Suspension: Front telescoping, spring-loaded forks; Rear-swing arm shock absorbers, mechanically damped. Front tire size: Low-pressure tubeless, 5.30x4.50-6. Rear tire size: Low-pressure tubeless, 18x8.50-8. Color: Bronze with white engine. Dimensions: Length (overall), 61"; with ski, 73". Width (at handlebars), 24". Hgt. (at handlebars), 39"; (at seat), 27 3/4". Wheel base: 44".



299⁹⁵

Optional head & tail light kit.



The Boonie Bike gets you on the trail on a budget!

The economical Heathkit GT-18 Boonie Bike has features that'll surprise you. Dependable Briggs & Stratton 5-h.p., 4-cycle engine; 2-speed chain drive transmission; 7/8" tubular steel frame with skid pan; giant 18x8.50x8 rear tire. Easily assembles in an evening. Order yours, now!

Kit GT-18, 142 lbs., Express/Frt. **179.95**
GTA-18-1, ski accessory, 12 lbs., Express/Frt. **19.95**
GTA-18-2, horn & light kit, 9 lbs., available. **29.95**
GTA-18-3, battery charger, 2 lbs., available. **6.95**
GTA-18-4, spark arresting muffler, 3 lbs., available. **9.95**

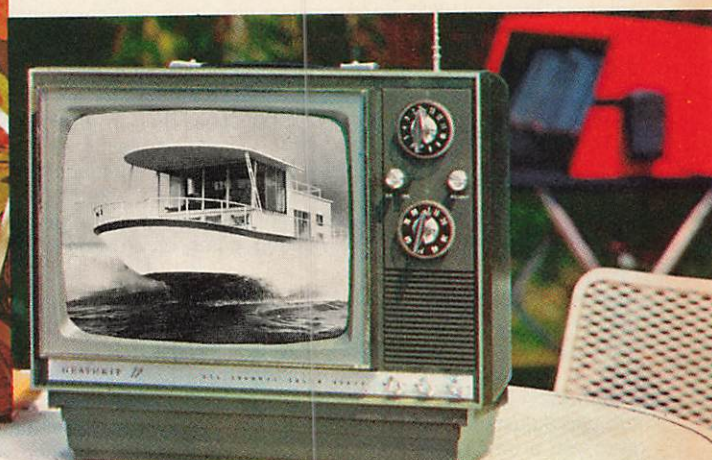
GT-18 PARTIAL SPECIFICATIONS: Clutch: Centrifugal. Crankcase oil capacity: 1 1/4 pt. Transmission: 2 speed. Speed range: Hi 0-30 mph; Lo 0-15 mph. Gear ratio: Lo Speed 15 to 1; Hi Speed 7.5 to 1. Load capacity: 400 lbs. Gas consumption: Approx. 2 hrs. per tank (approx. 60 miles). Approx. 80 mpg. Brake: Bendix 5" internal expanding. Front suspension: Spring-loaded front suspension. Front tire size: 5.30x4.50-6. Rear tire size: 18x8.50-8. Color: Blue & White. Dimensions: Length (overall): 59"; with ski, 70". Width (at handlebars): 24 1/2". Hgt. (at handlebars) 35 1/2", (at seat): 25 1/2". Wheel base: 42".

Now Only

179⁹⁵



"Pick Up And Go" Portables



All the color you can handle . . . 349.95!

Built for unrivaled performance at home or away! Unlike so-called "bargain-price" portables, the Heathkit GR-169 color receiver is designed around the same advanced solid-state circuitry and quality components that account for the superior picture and sound in Heathkit consoles. The GR-169 is a miniature version of the renowned Heathkit GR-370 (see pg. 61), modified just slightly to accommodate the 14" (diagonal) screen.

Provides the precision controls of the costliest console! The GR-169 incorporates all the secondary controls found in the best of the big sets: Color, Tint, Contrast, Horizontal & Vertical Hold, Height, AGC, Color Killer, Dots and Screen adjustments. And they're all up front for fast, precise tuning. Plus, there's front-panel switch-controlled degaussing so you can quickly demagnetize your GR-169 after moving it from one location to another.

Unmatched reception, picture quality, reliability. Heathkit solid-state design sets the GR-169 apart from any other color portable you've seen. A total of 48 transistors, 45 diodes, 3 ICs and just 2 tubes (picture and high voltage rectifier) form the basic circuitry. What's more, the GR-169 utilizes a high resolution circuit & adjustable noise limiting; exclusive FET solid-state VHF tuner for lower noise, cross modulation, and far greater sensitivity plus a solid-state 3-stage IF which provides increased gain, for a better overall picture.

Assembles with modular simplicity! Plug-in circuit boards, transistors and ICs permit fast, trouble-free assembly. And the famous Heathkit manual makes the project a joy, detailing each operation, step by step.

Can be serviced by you, at home! The GR-169 kit includes a handy volt-ohm meter, built-in dot generator and the comprehensive manual with supplementary troubleshooting procedures so you can perform normal periodic adjustment and servicing. And the circuit board modules are covered by Heath's 48-hour warranty, too. (See pg. 62.) Order your GR-169, now!

Kit GR-169, 69 lbs., Express/Frt. **349.95**

GR-169 SPECIFICATIONS — Picture Size: 102 sq. in. viewing area. Deflection: Magnetic, 90°. Focus: Electrostatic. Convergence: Magnetic. Antenna Input Impedance: VHF — 300 ohm balanced or 75 ohm unbalanced; UHF — 300 ohm balanced. Tuning Range: VHF — Channels 2-13; UHF — Channels 14-83. Picture IF Carrier: 45.75 MHz. Sound IF Carrier: 41.25 MHz. Color IF Subcarrier: 42.17 MHz. Sound IF Frequency: 4.5 MHz. Video IF Bandwidth: 3.58 MHz. Audio Output: Power — 1 watt, Impedance — 8 ohms. Power Requirements: 110-130 VAC 130 watts. Dimensions: 16" H x 20½" W x 16" D. Net Weight: 48 lbs.

B&W TV that plays where you play . . . 124.95!

Wherever you find your fun — on the beach or boat, in a camper or cabin — the Heathkit GR-104A 12" (diagonal) B&W TV can go along. Indoors, it plugs into a standard 120 VAC outlet. On the road or afloat, it operates on your 12-volt car or boat battery. Outdoors, it can be fitted with the optional battery pack for the ultimate in self-contained portability. There's even an optional sun shield for no-glare viewing under the summertime sun.

Rugged Dependability for Carefree Performance! The GR-104A has many of the maximum performance features found on much larger sets — automatic gain control for steady, jitter-free picture, VHF "memory" fine tuning, dual speed UHF tuning — and reliable solid-state circuitry with dual circuit breaker protection, built-in antennas, pre-assembled and aligned tuners. One year warranty on picture tube.

Kit GR-104A, 35 lbs., mailable **124.95**

Kit GRA-104-1, rechargeable battery pack & sun shield, 9 lbs., mailable **42.95**

GRA-104-2, sun shield only, 1 lb., mailable **1.95**

GR-104A SPECIFICATIONS: Picture Size: 74 sq. in. viewing area, picture diagonal 12". Deflection: Magnetic, 110 degrees, 20 mm neck. Focus: Electrostatic. Antenna Input Impedance: 300 ohm balanced. Tuning Range: VHF TV Channels 2 thru 13, UHF TV Channels 14 thru 83. Picture IF Carrier: 45.75 MHz. Sound Carrier: 41.25 MHz. Sound IF Carrier: 4.5 MHz. Video Response: To 3.5 MHz. Audio Power Output: 500 milliwatts into 24 ohm load. Controls (front panel): UHF coarse tuning; UHF fine tuning, VHF channel selector, VHF fine tuning. OFF/On volume, brightness, contrast, vertical hold, horizontal hold. Controls (rear panel): Vertical linearity, Vertical height, Low voltage adjust, AGC. Transistor & Diode Complement: 36 transistors, 26 diodes, 1 picture tube. Power Requirements: 110-130 volts AC @ 0.35 amperes, 40 watts; 12 volts DC @ 1.7 amperes, 20 watts. Overall Size: 11½" H, 15¾" W, 9½" D. Net weight: 20 lbs.

New swivel wall shelf for GR-169 or GR-104A...



Mounts on any wall, saves floor space. Shelf swivels for most convenient viewing angle. Platform finished in walnut; pale brass plated tubing. Platform 24" W x 15¾" D.

GRA-169-1, 15 lbs. **18.95**

Simulated Color Pictures

Color Picture Tubes Warranted For 2 Full Years.



Radios with the sounds of Summer!

(A) Heathkit AM-FM solid-state portable. Timely AM, easy-going FM — in a battery-powered portable that plugs-in too, with the optional 117 V. 60 Hz AC converter. Sensitive 12 transistor circuit; 4" x 6" speaker; prealigned AM-FM front end; 3 IF stages; tone control; built-in AM antenna; telescoping FM antenna; AFC on FM, AGC on AM; built-in phone jack & earphone; brown simulated leather case.

Kit GR-17, 6 lbs., mailable **43.95**
GRA-43-1, converter/charger, 1 lb., mailable **6.95**

GR-17 SPECIFICATIONS — AM SECTION — Tuning Range: 535 kHz-1620 kHz. **IF:** 455 kHz. **Sensitivity:** 200 microvolts per meter for 20 dB signal-to-noise ratio. **FM SECTION:** Tuning Range: 88-108 MHz. **IF:** 10.7 MHz. **Sensitivity:** Better than 5 microvolts for 30 dB quieting. **Audio Output:** 350 mW. **Size:** 8 $\frac{3}{4}$ " W x 6 $\frac{3}{4}$ " H x 4" D.

(B) Heathkit solid-state AM portable. An entertaining beachmate that brings you all the "now" AM sounds. Push-pull audio output stage for clean sound even when the batteries are low, big $\frac{1}{2}$ " diameter ferrite rod antenna. Uses "D" flashlight cells (not included).

Kit GR-24, 5 lbs., mailable **28.25**

GR-24 SPECIFICATIONS — Tuning Range: 535-1620 kHz. **IF:** 455 kHz. **Sensitivity:** 50 μ V/m for 10 dB signal-to-noise ratio at 50 mW output. **Audio Output:** 250 mW. **Speaker:** 4" x 6" oval permanent magnet type. **Size:** 3 $\frac{3}{4}$ " D x 8 $\frac{3}{4}$ " W x 7" H.

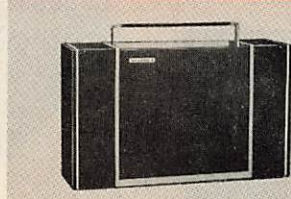
(C) Heathkit 10-band AM-FM-Shortwave portable. Ten bands bring the world along with you. Solid-state circuit; 2 built-in antennas (ferrite rod in handle and 5' telescoping whip); battery saver switch; lighted rotating tuning dial; logging scale; headphone jack. Chrome, black & gold case with walnut accents.

Kit GR-43A, 19 lbs., mailable **159.95**
GRA-43-1, converter/charger, 1 lb., mailable **6.95**

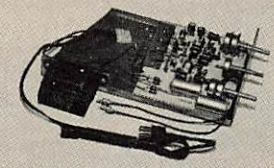
GR-43A SPECIFICATIONS — AM SECTION: Tuning Range: Longwave — 150-400 kHz. Broadcast — 550-1600 kHz. Shortwave — 2-4 MHz; 4-9 MHz; 31 M — 9.2-10.2 MHz; 25 M — 11.2-12.4 MHz; 19 M — 14.5-16.1 MHz; 16 M — 16.8-18.8 MHz; 13 M — 20.2-22.4 MHz. **Sensitivity:** At external antenna input for a 10 dB signal-plus-noise to noise ratio. Longwave — 12 μ V; Broadcast — 10 μ V; 2-4 MHz — 5 μ V; 4-9 MHz — 3 μ V; 31 M — 3 μ V; 25 M — 2 μ V; 19 M — 2 μ V; 16 M — 2 μ V; 13 M — 2 μ V. **IF:** 455 kHz. **FM SECTION:** Tuning Range: 88-108 MHz. **Sensitivity:** 1 $\frac{1}{2}$ μ V for 20 dB of quieting; 2 μ V for 30 dB of quieting; 3 μ V for 40 dB of quieting. **IF:** 10.7 MHz. **GENERAL:** **Audio Output:** Normal, 500 mW; Battery Saver, 160 mW. **Speaker:** 4x6". **Batteries:** 6 size D cells, 1 size C cell (not supplied). **Size:** 13 $\frac{1}{2}$ " W x 5 $\frac{1}{4}$ " D x 10 $\frac{5}{8}$ " H.

(D) Heathkit 6-transistor AM portable. The ideal kit for first-time builders. Heathkit manual, supplementary theory of radio, clearly marked circuit board give the novice a rewarding introduction to electronics. Receiver has 4" x 6" speaker, prealigned coil and IF transformer, built-in antenna, tan simulated leather case.

Kit GR-151B, 4 lbs., mailable **19.95**



Changer tilts up for toting.



Easy-to-build 18-w amplifier.

Big-voiced stereo that travels!

Component system sound you can carry! The Heathkit GD-109 portable stereo phonograph proves that a low-cost portable need not compromise on audio quality. Solid-state 18-watt stereo amplifier, dependable Maestro Model 55 4-speed changer, and two $\frac{1}{2}$ " high compliance speakers combine to reproduce a frequency range appreciably wider than is obtainable with other portables in the same size and price bracket.

Styled to move out with you! The GD-109 is as durable as it is good looking, with textured leather-like exterior that stands up to the rigors of travel. Changer folds down, speakers swing out and can be positioned up to 5' away from cabinet for better stereo separation. Entire kit assembles in 5-7 hours.

Kit GD-109, 47 lbs., Express/Frt. **79.95**

GD-109 SPECIFICATIONS — CHANGER: Speeds: 16, 33 $\frac{1}{3}$, 45 & 78 RPM. **Record Sizes:** 7", 10" & 12". **Stylus:** 0.7 mil diamond, 3 mil sapphire. **AMPLIFIER:** Power output: 18 watts, 9 watts per channel, EIA music power. **Frequency response:** \pm 3 dB, 30 Hz to 15 kHz. **Dimensions:** Overall, 14 $\frac{1}{2}$ " H x 7 $\frac{1}{2}$ " D x 24 $\frac{3}{8}$ " W. **Power requirements:** 120 V, 60 Hz AC, 25 watts.



Low-Cost Stereo to Go!

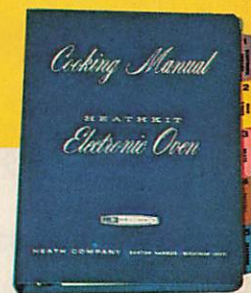
Features 4-speed changer for automatic or manual play, solid-state circuitry with ceramic cartridge and 4" x 6" speakers in "in-depth" cabinet for superior reproduction. Includes 45 rpm adapter spindle. Assembles in just 3-4 hours.

Kit GD-107, 38 lbs., Express/Frt. **54.95**

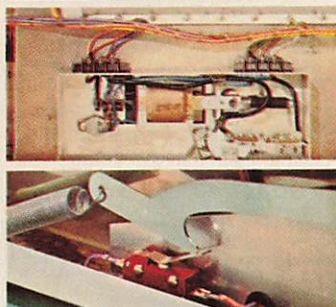
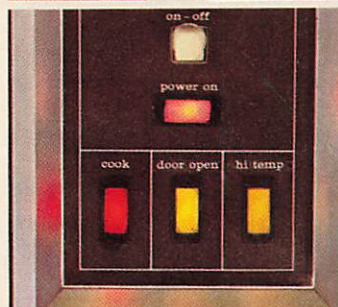
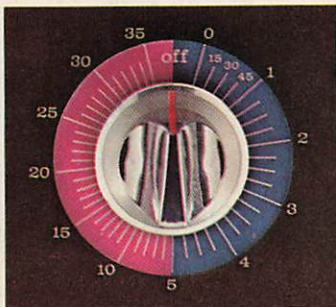
GD-107 SPECIFICATIONS — CHANGER: Speeds: 16, 33 $\frac{1}{3}$, 45 and 78 RPM. **Record Sizes:** 7", 10", and 12". **AMPLIFIER:** Power output: 3 watts, 1 $\frac{1}{2}$ watts per channel EIA music power. **Frequency response:** \pm 5 dB 100 Hz to 10 kHz. **Speakers:** Two 4x6", 25 ohm voice coils. **Dimensions:** 15" H x 8 $\frac{1}{2}$ " D x 25 $\frac{3}{4}$ " W. **Power requirements:** 120 V, 50 Hz AC, 15 watts.



Save \$20
Deluxe
Heathkit
Microwave
Oven—379⁹⁵



More features for less money!



Give Mom a vacation from the kitchen!

Now, a full-featured microwave oven . . . in easy-to-build kit form, so you get deluxe features for less money. Prepares meals in minutes. No pre-heating — just pop the food in the oven, set the timer, and cook. You have a baked potato in 4 minutes, baked beans in 7, a 5-lb. roast in 45! For entertaining — or fixing leftovers — dishes prepared earlier can be quickly reheated. Frozen foods can be defrosted in 2-3 minutes per pound, and often left to cook in their original containers! Invisible microwaves, similar to radar waves, instantly pass through foods, agitating the molecular structure and cooking with extreme speed. Included with each oven is a helpful, illustrated cookbook, written for Heath by Home Economist Ann Balcam . . . providing recipes and timing charts for your favorite dishes.

Cooks food quickly, coolly. Microwaves pass through glass, plastic, even paper utensils, so you can cook and serve on the same dishes. Oven and cookware remain cool! Splatters won't burn on. Everything cleans up with a damp cloth.

Cooks for less money. The Heathkit Oven uses standard household current, and since it cooks faster and more efficiently it uses less power than conventional ranges.

Stays home in style, or goes along! The handsome, low-profile cabinet sits neatly on a countertop, beneath cupboards — yet the oven cavity is one of the largest in the industry! And the Heathkit Microwave Oven goes anywhere there's a 120 VAC outlet. Its compact size is perfect for camper or boat. Optional roll-around cart with handy utensil-holding lower shelf adds convenience & mobility.

Feature for Feature, gives you more! Only the Heathkit GD-29 has 3 door interlocks; 2 electrical, 1 mechanical. The oven stops cooking when the door is opened, and the door cannot be opened unless interlocks are functioning! Front panel lights indicate "hi-temp", "cook" and "door-open" conditions. Other features are: a warm air purging device to eliminate condensation; vinyl-clad steel case; vapor-venting door, and long-life Litton magnetron tube.

Goes together easily. Using the incomparable Heathkit manual assembly is completed in just two or three evenings. Most of the work is mechanical, requiring only screw drivers, with very few solder connections. Order your GD-29 Microwave Oven, today — and turn cooking into a vacation.

Kit GD-29, 97 lbs., Express/Frt. 379.95

GDA-29-1, Cart of hardwood solids, walnut finish, sturdy 5/8" x 1" tubing and sealed-in disc casters, 31 5/8" H x 27" W x 15 5/8" D., 20 lbs., mailable 24.95

GD-29 SPECIFICATIONS — Power output: 650 watts minimum at 120 volts AC, 60 Hz. Frequency: 2450 MHz ±50 MHz. Microwave leakage: 1 mw/cm² or less. Magnetron tube: Litton Industries, type L-5201. Stirrer: 3-blade, rotates at approximately 65 rpm. Interlocks: Door guide microswitch, door latch switch. Timer: 0-35 minutes range split scale; 0-5 minutes in one-minute steps; 5-35 minutes in five-minute steps. Cooling: Forced air. Oven lamp: Fluorescent type F8T5/WW. Cooking space: 7 3/4" H, including glass tray, 15 1/2" W x 14" D. Power requirements: 110-120 VAC, 60 Hz, 15 amperes. Outside dimensions: 15 1/8" H, 25 1/2" W, 14 3/4" D (15 1/8" D including handle). Net Weight: 75 lbs.



Intercoms For Growing, Going Families!



Heathkit Mobilink Cab-to-Camper Intercom . . . 25.95

Makes vacation driving a pleasure! Fit out the camper or trailer rig with the Mobilink Intercom System and you have instant 2-way communication between the driver's area and your home on wheels. You keep track of everyone without taking your eyes off the highway. Mom's free for navigating while knowing the kids are secure in back. Mobilink is great for boats, too, or any application where 12-volt, 250 milliamp DC power is available.

Simple Single-Control Operation! Three-position switch at the cab-mounted master selects "Standby", "Talk" and "Monitor" functions. In "Standby" mode, it is open to receive calls from the remote unit. To initiate a call, the driver turns and holds the knob in the spring-loaded "Talk" position. Turning the indicator to "Monitor" enables those in the cab to listen to the remote for baby-sitting purposes. The camper-mounted remote also provides "Standby" and "Talk" settings, as well as a "Radio" position which permits use of the intercom as a remote speaker connected directly to the cab radio.

Assembles and Installs in a Jiffy! The GD-160 Mobilink kit includes both intercoms, brackets for horizontal or vertical mounting, 15' connecting cable. An optional quick-disconnect plug permits unhitching camper or trailer without disturbing intercom wiring.

Kit GD-160, 5 lbs., mailable **25.95**

GDA-160-1, quick-disconnect plug, 1 lb., mailable **2.50**

Indoor-Outdoor Home Intercom

Know what's happening on the home front without leaving the kitchen or your favorite easy chair! With Heathkit Indoor-Outdoor intercom components you design and build your personal communication system just the way you want it. GD-110 Master Intercoms accept up to six channel inputs, so that you have a seven intercom system. You can identify front-door visitors, monitor the nursery, talk to the gang at the pool or patio, etc. Several Masters with their Remotes can be interconnected to form even larger networks.

Keep an ear on the kids! Masters can be wired to monitor any four of the six channels while individual Remote Units can be rendered "private" to shut out any monitoring. Master controls include channel selectors; "All Call", for paging, emergency alert, locating children; "Dictate" which holds open spring-loaded "Talk" button for extended conversation. Indoor Remote stations have "Talk" and "Dictate" modes. Both Master and Remote indoor units are finished in attractive mist green; fit on countertop, desk or table, or mount on wall.

Goes outdoors, too! The weatherproof outdoor Remote is activated by the Master station and has no external controls. Kit includes hardware and double-stick tape for easy installation.

Kit GD-110, Master Station, 4 lbs., mailable **39.95**

Kit GD-120, Indoor Remote, 3 lbs., mailable **12.95**

Kit GD-130, Outdoor Remote, 3 lbs., mailable **9.95**

GDA-110-2, 100' cable for indoor units, 2 lbs., mailable **5.95**

GDA-110-4, 100' cable for outdoor unit, 3 lbs., mailable **2.95**

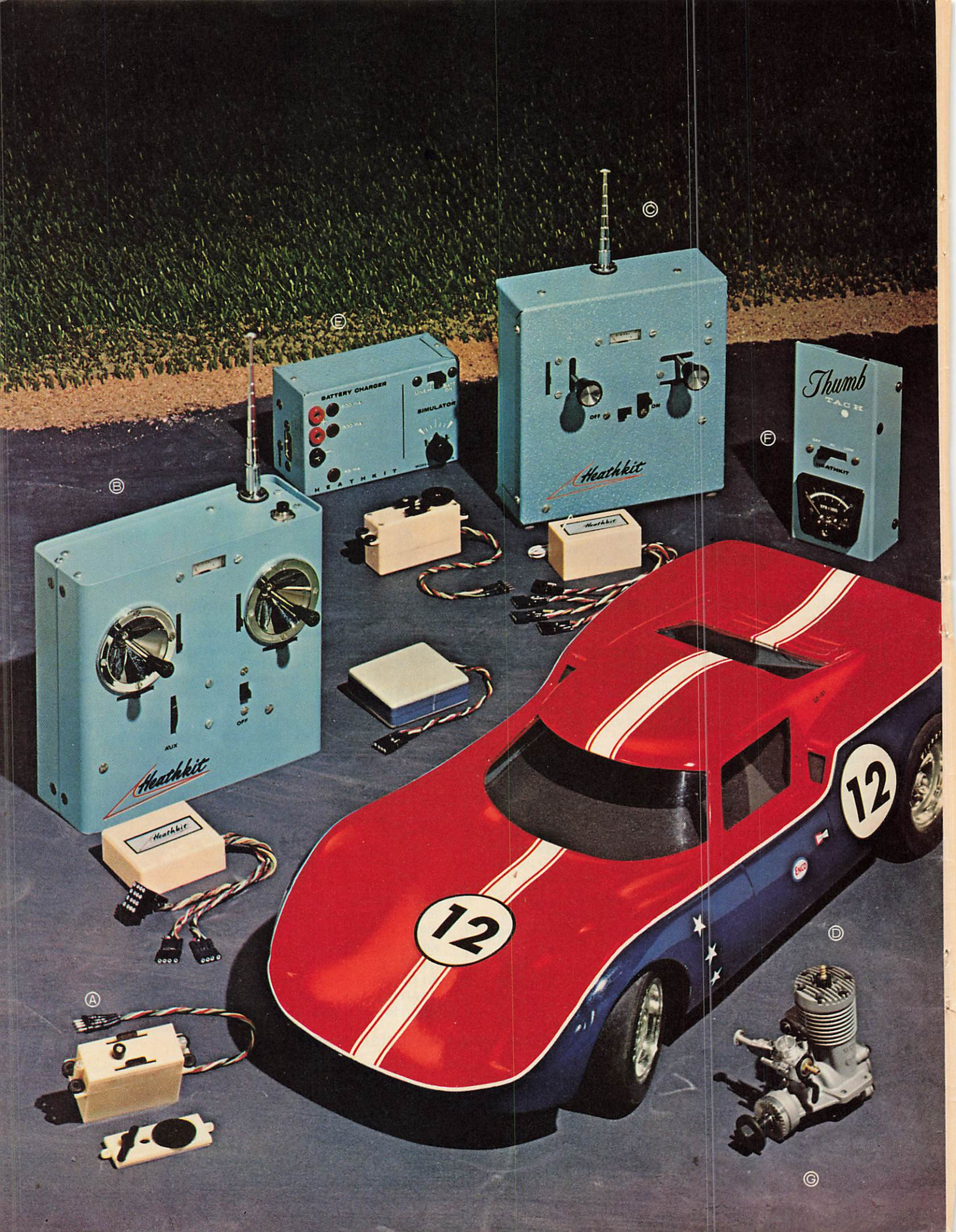
"Wireless" Intercoms that install in seconds!



The Heathkit GD-51A "wireless" home intercom system installs as quickly as you can plug the stations into household wall outlets. There are no connecting wires between units — operates on 105-125 V, 50-60 Hz, AC or DC. Push the spring-loaded bar to talk, release it to listen. A "Dictate" position holds open the talk mode for extended 1-way communication or for monitoring. The GD-51A system features all transistor circuitry, a choice of 2 operating frequencies, variable squelch to quiet background noise, 2-tone beige plastic cabinets. And you can add stations as you grow. Just build 'em and plug 'em in!

Kit GD-51-2, 2 stations, 15 lbs., mailable **48.50**

Kit GD-51A, single station, 5 lbs., mailable **24.95**



B

E

C

F

A

D

C



Make It An R/C Summer!

Ⓐ New Heathkit Miniature IC Servo . . . 24.95

Extremely compact, high-reliability design. The new Heath IC servo gives all the versatility and capability of any digital proportional servo . . . yet delivers it in 25% less space and 30% less weight. One tiny integrated circuit takes the place of 7 transistors and over ten resistors and capacitors. The IC, variable ceramic feedback element, glass epoxy circuit board and nylon gears & outer case provide rugged reliability. Linear and rotary outputs and versatile mounting make the GDA-19-41 a universal servo for cars, planes & boats. Fully compatible with any Heath R/C system and many other brands as well.

Kit GDA-19-41, 1 lb., mailable 24.95

GDA-19-41 SPECIFICATIONS: Input signal: Pulse 1-2 msec wide, 4 V P-P. Thrust: 3 lbs. at rack; 24 in./oz. at rotor. Travel time: 0.6 seconds. Linear output travel: 1/2" end to end. Rotary output travel: 90 degrees rotation. Temperature range: 0 to 160 degrees F. Power requirements: Battery - 4.8 V DC. Idle current - 15 mA. Stall current - 450 mA. No load current - 80 mA. Gear train backlash: Less than .002". Mechanical output: 1 rotary arm; 1 rotary wheel; 2 linear racks. Position accuracy: 1.0%. Dimensions: 1 5/8" H x 7/8" W x 2 1/2" long (length includes mounting ears; height includes outputs). Net weight: 1.75 oz.

Ⓑ Now . . . choose the famous GD-19 5-channel system with either standard servos or the new miniature IC servos

New GD-19M system with 4 miniature IC servos provides lighter 13 oz. flying weight for improved performance, faster take-off . . . see above for complete servo description. GD-19 system uses 4 standard servos to give 16 oz. flying weight. Both systems have these high performance features in common. Slim-line transmitter with factory-assembled, high output RF stage . . . Kraft sticks that give exact control and easy change of servo travel and operation mode. Miniaturized receiver in a virtually indestructible high impact nylon case fits almost anywhere . . . 3 ceramic IF filters increase selectivity and eliminate IF alignment. Double-tuned front end, RF amplifier & dual AGC give interference-free reception. Built-in transmitter charging circuit charges both transmitter & receiver flat-pack nickel cadmium batteries with one cord. Other features include choice of bands, exclusive Heath terminal blocks and fast, enjoyable assembly with the famous Heath manual and soldering iron supplied. For low cost, high value flying, get your GD-19M or GD-19 system now.

System Kit GD-19M, all parts including 4 miniature IC servos; specify frequency desired; 11 lbs., mailable 224.95

System Kit GD-19, all parts including 4 standard servos; specify frequency desired; 11 lbs., mailable 199.95

Kit GDA-19-1, transmitter, battery, charging cord, specify frequency; 6 lbs., mailable 86.50

Kit GDA-19-2, receiver only, specify frequency; 1 lb., mailable 49.95

Kit GDA-19-3, receiver battery pack only; 1 lb., mailable 9.95

Kit GDA-19-4, one standard servo only; 1 lb., mailable 19.95

Kit GDA-19-41, one IC miniature servo only; 1 lb., mailable . . . 24.95

GD-19 SPECIFICATIONS - TRANSMITTER - RF Carrier Frequency: 1 channel, crystal controlled on 27, 53, or 72 MHz. Temperature: 0° to +160° F. Controls: 5 channels; 4 with trim, on-off switch. Power supply: Internal 9.6 volt nickel-cadmium battery. Rechargeable. Dimensions: 6 3/8" H x 6 3/4" W x 2 1/4" D. Temperature range: 0° to +160° F. Power Supply: Heath GDA-19-3 battery pack. Controls: On-Off switch. Dimensions: 2 5/8" H x 2" W x 2 1/2" D. Net receiver weight: 2.3 oz. GENERAL: Complete airborne system weight: 16.6 oz. (1 receiver, 1 receiver battery, 1 switch, 4 servos).

Ⓒ Low-cost Heathkit 3-channel propo rig . . . 129.95

High performance at low, low cost . . . an unbelievable bargain in a 3-channel rig. Ideal for newcomers to R/C . . . perfect for cars, boats, small planes & gliders. Powerful 500 mW input transmitter with factory assembled and aligned RF section gives top performance, easy assembly. Trim controls leave sticks always centered. Servo travel is quickly reversed. Switch-locked transmitter for extra safety. Miniature receiver housed in a rugged nylon case. Ceramic IF filters provide sharp selectivity and end alignment forever. Interference-free reception and high noise immunity are assured by double-tuned front end, RF amplifier and dual AGC. Rechargeable nickel-cadmium flat pack batteries give up to four full hours of R/C flying or racing. Sys-

tem includes two high resolution variable capacitor servos, each with two linear & a rotary output. Nothing else to buy . . . complete with transmitter, receiver, rechargeable nickel-cadmium batteries, two servos, plugs, cables, connectors, charging cord . . . even a soldering iron to do the fast, easy assembly.

System Kit GD-57, all system parts, and free soldering iron, specify frequency, 8 lbs., mailable 129.95

Kit GDA-57-1, transmitter, battery, charging cord; specify frequency desired, 5 lbs., mailable 54.95

Kit GDA-57-2, receiver only, specify freq., 3 lbs., mailable . . . 34.95

Kit GDA-19-3, receiver battery pack only, 1 lb., mailable 9.95

Kit GDA-19-4, one variable capacitor servo only, 1 lb., mailable 19.95

GDA-57-1 SPECIFICATIONS: TRANSMITTER - RF Carrier Frequency: One frequency, crystal-controlled on 27 MHz, 53 MHz or 72 MHz. Operating Temperatures: 0 to +160 degrees F. Controls: Three channels; two with trim on front panel and one without trim on rear panel for easy hand operation. Power Supply: Internal 9.6 volt nickel-cadmium battery. Rechargeable simultaneously with receiver battery at 40 to 50 mA from 120 volt. Dimensions: 6 1/2" H x 6 1/8" W x 2 1/4" D.

GDA-57-2 SPECIFICATIONS - RECEIVER - RF Carrier Frequency: One frequency crystal controlled on 27 MHz, 53 MHz or 72 MHz. Operating Temperature: 0 degrees to +160 degrees F. Power Supply: Heath GDA-19-3 Battery Pack. Dimensions: 1 1/8" H x 1 3/4" W x 2 1/2" L. Net Receiver Weight: 2.0 oz. Servo Channels: 3. GENERAL: Complete System Weight: 12.0 oz. (1 receiver, 1 receiver battery, 1 switch, 2 servos).

GD-19 & GD-57 SYSTEMS SPECIFICATIONS:

GDA-19-3 SPECIFICATIONS - RECEIVER BATTERY - Type: Nickel-cadmium. Rechargeable. Voltage: +2.4 V and +4.8 V outputs. Dimensions: 5/8" H x 2 1/8" W x 2 3/8" D. Net weight: 3.9 oz.

GDA-19-4 SPECIFICATIONS - SERVO: Thrust: 3 lbs., minimum. Transit Time for 5/6" Travel: 0.7 seconds. Linear Output Travel: 5/8" end-to-end 1/2" nominal. Rotary Output Travel: 0 to +100 degrees. For GDA-19-41 specifications, see above. Mechanical Output: 1 - rotary arm, 1 - rotary wheel, 2 - linear arms. Dimensions: 1 3/4" H x 1 1/8" W x 3 1/4" L. (length includes mounting ears; height includes arms). Net Weight: 2.5 oz. Frequencies Available: 27 MHz (11 meters) - 26.995, 27.045, 27.095, 27.145 & 27.195. 53 MHz (6 meters) - 53.100, 53.200, 53.300, 53.400, 53.500. 72 MHz (4 meters) for R/C planes only - 72.080, 72.240, 72.400, 72.560 & 75.640. (NOTE: An amateur radio operator's license is required for 6 meter operations. Class C Citizen's Band license required for 27 and 72 MHz.)

Ⓓ Heathkit "Spectre" R/C Car . . . 39.95

The most popular R/C car on the market . . . and it's easy to see why. "Spectre" tracks and corners like a cat . . . at scale speeds up to 200 mph! Chrome plated steel chassis, adjustable caster and toe-in, independent front suspension, special formula rubber tires, 5.5:1 gearing and high torque combine to produce the best handling R/C car ever designed. And "Spectre" will outlast other cars too . . . snap-on high impact plastic body . . . simple coil spring suspension . . . dustproof, oilproof box inside protects your R/C gear . . . locking tires . . . husky gear design . . . locking hardware. Kit is complete with body, chassis, wheels & tires, fuel tank, R/C equipment case, gears, axles, servo linkages, all hardware, decals, manual.

Kit GD-101, R/C car only, 11 lbs., mailable 39.95

Assembled GDA-101-2, Veco .19 R/C engine, 1 lb., mailable . 29.95

GD-101 SPECIFICATIONS - GENERAL - Chassis: 16 gauge chrome plated steel. Body: GT-Sports, 1/8 scale, high-impact plastic. Drive: Gear driven, live rear axle. Gear Ratio: 5.5:1. Clutch: 1" centrifugal type, adjustable. Brake: Neoprene-cork shoe. Suspension: Front coil spring. Front tire: 3" x 1.125". Rear tire: 3.250" x 1.375". Weight: 6 lbs. 6 oz. (approximately) without radio equipment. Engine Requirements: .15 to .23 cubic inches (2.5 to 3.5 cubic centimeters) displacement, R/C throttle glow plug model airplane engine. Fuel tank capacity: 4 ounces. Approximate running time (1 tank of fuel): 15 to 30 minutes depending on average running speed. Speed: 0 to 25 mph (0 to 200 mph scale). CAR DIMENSIONS - Wheelbase: 12". Track (front): 7 1/8". Track (rear): 7 1/4". Length: 19 3/4". Height (body): 5". Width (body): 8 7/8". Ground clearance: 3/8".

Ⓔ New Heathkit R/C Servo Simulator . . . 19.95

A versatile, low cost accessory for any R/Cer. Provides two functions: replaces transmitter & receiver for making servo adjustments . . . just plug in servo . . . runs from either optional internal battery or 120 VAC line. Can also be used to charge both receiver & glow plug batteries from 120 VAC line. Lamps indicate charging rate.

Kit GD-206, 2 lbs., mailable 19.95

Kit GDA-19-3, receiver battery pack only, 1 lb., mailable 9.95

Ⓕ Heathkit "Thumb" Tach . . . 19.95

Two RPM ranges: 0-5000, 0-25,000. Precision circuitry keeps tach accurate even with aging battery. Ideal for needle valve adjustments, selection of glow plugs, gears & props . . . permits peaking engine for RPM changes you can't hear.

Kit GD-69, 2 lbs., mailable 19.95

Veco .19 Engine, ideal for "Spectre" car. Two air mixture adjustments for precise fuel metering and low-speed idle. Engine supplied assembled, with glow plug.

Assembled GDA-101-2, 1 lb., mailable 29.95

GDA-101-2 SPECIFICATIONS - Bore: 0.634 in. Stroke: 0.633 in. Displacement: 0.199 cu. in. Compression ratio: 8:1. Power: 0.45 BHP @ 12,500 RPM. Net weight: 7 1/2 oz.



Dear Friends:

"Consumerism" has become a popular word recently, but to Heath it always has been a vital part of our business philosophy. That it is more than a word to us is evident in our constant attention to quality in product and service...evident in the high value of each kit...evident in the hundreds of thousands of dollars we spend each year to give you meaningful warranty of product, free technical consultation, and superior after-sale service.

The photo here illustrates just one example of Heath's consumerism at work. Shown are Don Rupley, Chief Engineer of Heath TV labs, and his top TV engineers, Roger Brockway, Ivan Mertes and Joe Ludlam, conducting a recent 5-day seminar on color TV service and maintenance. Their "students" are twenty-eight service technicians from 26 Heathkit Electronic Centers in 16 states and two Canadian provinces. They participated in the course as part of a continuing program to provide quality service for all Heathkit customers.

It's another way we make sure the superior performance of your Heathkit product continues to please you. The kind of service you want is always available at any Heath service facility, whether your kit was purchased by mail order or from any Heathkit Electronic Center.

Sincerely,

D. W. Nurse

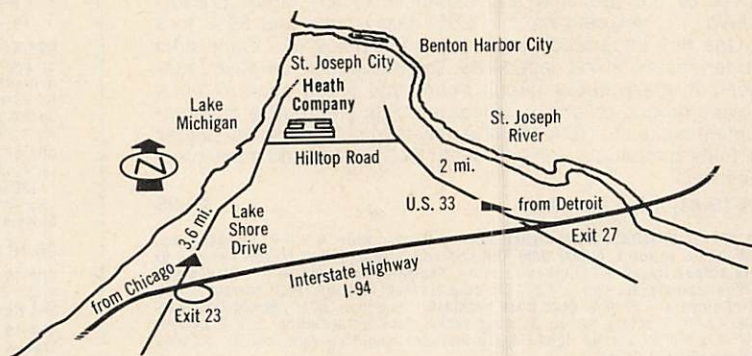
DAVE NURSE,
President

HEATHBITS

On Vacation? Take a Heath Company plant tour.

Tours through the 365,000 sq. ft. Heath facility begin June 1, daily at 10:00 a.m. and 2:00 p.m. Eastern Standard Time and continue through the summer until August 31. For your convenience, the sales room in the front of the building provides complete display, demonstration and sales of all Heathkit products...at low mail order prices. Sales room hours are 8:30 to 5:00 Monday through Friday, Saturday

9:00 to 3:00. Heath is located on Hilltop Road at the south edge of St. Joseph, just 3.6 miles north of exit 23 of Interstate-94 from Chicago...or 2 miles from exit 27 if you're coming from Detroit on Interstate-94. If you're in the area to enjoy the famous parks, waters and numerous tourist attractions in the Midwest, please stop by to see us.



ATTENTION all Heathkit tube-type color TV owners (except GR-53)

The following procedure is recommended for all Heathkit tube-type color TVs which incorporate the transistorized vertical retrace blanking circuit: inspect the 120,000 ohm resistor (R-851) in the retrace blanking circuit. If this is a 1/2 watt component, replace it with a 1 watt resistor of the same value. This change prevents loss of light on the screen. The new part can be obtained free from our Technical Correspondence Group by asking for part number 1-64-1.

INDEX

	PAGE
AMATEUR RADIO: SSB, novice rigs, accessories for the shack	51-55
AUTOMOTIVE: Tune-up meter, ignition analyzer, tachometer	12-13
2-way radio, siren	20
cab-to-camper intercom	7
CITIZENS BAND: mobile radio	20
EDUCATIONAL: radio, electricity, transistor "how-to" courses	21
Computer	47
GUITAR AMPLIFIERS: 25 to 120 watts, distortion booster	15
HEATHKIT JR: electronic workshops, guitar amps, phonograph	16
HOME IMPROVEMENT: electronic oven, intercoms	6-7
security systems	11
garage door openers	12-13
MARINE: radiotelephone, depth sounder, hailer, power inverters, fish spotter, vapor detectors	18-19
ORGANS, ELECTRONIC: Heathkit/Thomas spinet & theater instruments	14
PHOTOGRAPHIC: color & B&W computers, timers, trays	16
RADIO, GENERAL: shortwave	17
police, aircraft, marine	19
portables	5
table models	11
R/C MODELING: R/C car, 3 & 5 channel systems, tach, servo simulator	8-9
SCIENTIFIC INSTRUMENTS: Spectroscopy system, chart recorder, counter, function generator	48-50
SERVICE EQUIPMENT: multimeters, counters, scopes, etc.	38-47
STEREO/HI-FIDELITY: receivers, amps, speakers, turntables, compacts	22-25
portable phonographs	5
TOOLS	21
TELEVISION: solid-state color, tube-type color, antennas & towers	56-63
portable color & B&W	4

HEATHKIT ELECTRONIC CENTERS

(Sales and Service)

CALIFORNIA

Anaheim, 92805
330 E. Ball Road
Phone: 714-776-9420

El Cerrito, 94530
6000 Potrero Avenue
Phone: 415-236-8870

La Mesa, 92041
8363 Center Drive
Phone: 714-461-0110

Los Angeles, 90007
2309 S. Flower St.
Phone: 213-749-0261

Redwood City, 94063
2001 Middlefield Rd.
Phone: 415-365-8155

Woodland Hills, 91364
22504 Ventura Blvd.
Phone: 213-883-0531

COLORADO

Denver, 80212
5940 W. 38th Ave.
Phone: 303-422-3408

GEORGIA

Atlanta, 30305
5285 Roswell Road
Phone: 404-252-4341

ILLINOIS

Chicago, 60645
3462-66 W. Devon Ave.
Phone: 312-583-3920

Downers Grove, 60515

224 Ogden Ave.
Phone: 312-852-1304

MARYLAND

Rockville, 20852
5542 Nicholson Lane
Phone: 301-881-5420

MASSACHUSETTS

Wellesley, 02181
165 Worcester St.
Phone: 617-237-1510

MICHIGAN

Detroit, 48219
18645 W. Eight Mile Rd.
Phone: 313-535-6480

MINNESOTA

Hopkins, 55343
101 Shady Oak Rd.
Phone: 612-938-6371

MISSOURI

St. Louis, 63123
9296 Gravois Ave.
Phone: 314-638-5100

NEW JERSEY

Fair Lawn, 07410
35-07 Broadway (Rte. 4)
Phone: 201-791-6935

NEW YORK

Jericho, L.I., 11753
15 Jericho Turnpike
Phone: 516-334-8181

New York, 10036

35 W. 45th Street
Phone: 212-765-4590

OHIO

Cleveland, 44129
5444 Pearl Rd.
Phone: 216-886-2590

Woodlawn, 45215

10133 Springfield Pike
Phone: 513-771-8850

PENNSYLVANIA

Philadelphia, 19149
6318 Roosevelt Blvd.
Phone: 215-288-0180

Pittsburgh, 15235

3482 Wm. Penn Hwy.
Phone: 412-824-3564

TEXAS

Dallas, 75201
2715 Ross Avenue
Phone: 214-826-4053

Houston, 77027

3705 Westheimer
Phone: 713-623-2090

WASHINGTON

Seattle, 98121
2221 Third Ave.
Phone: 206-682-2172

WISCONSIN

Milwaukee, 53216
5215 W. Fond du Lac
Phone: 414-873-8250

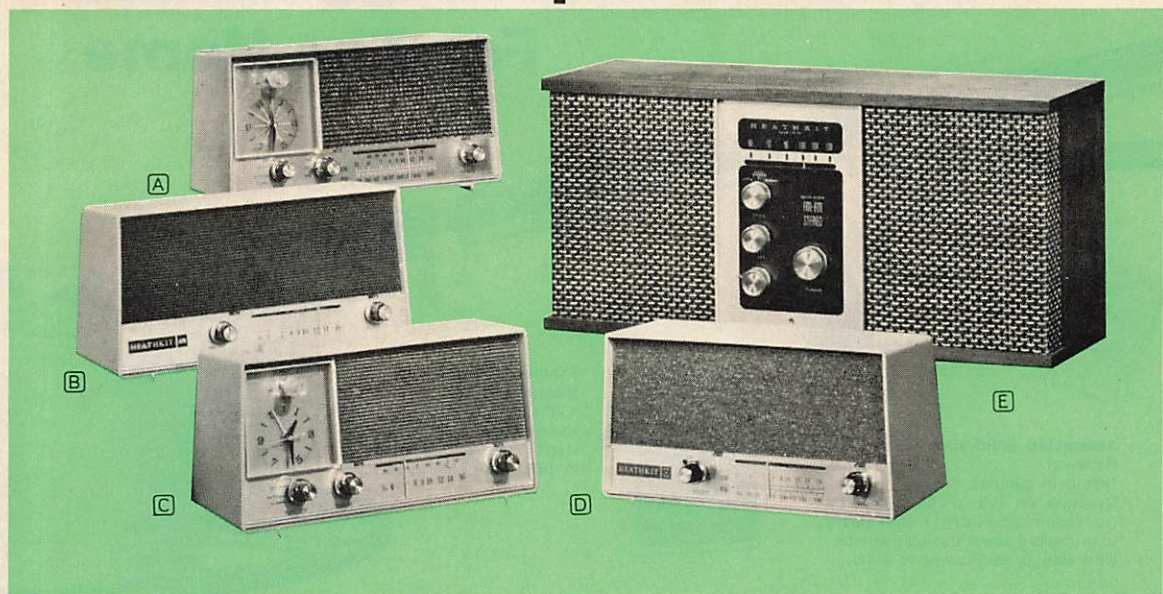
All Heathkit Electronic Centers are units of Schlumberger Products Corporation, Heathkit Electronic Center Prices Slightly Higher.

AFFILIATED COMPANIES: Heath Company, 1480 Dundas Hwy. East, Mississauga, Ontario, Canada • Schlumberger Overseas GmbH, A-1120 Wien XII, Meidlinger Hauptstrasse 46, Austria • Heath (Gloucester) Ltd., Bristol Rd., Gloucester, England • Societe d'Instrumentation Schlumberger, 57, rue de Paris, 92 Bagneux, France • Heathkit-Geräte GmbH, Robert-Bosch-Strasse, 32-38, 6079 Sprendlingen, West Germany • Schlumberger Svenska AB, Vesslevägen 2-4, Lidingsö 1, Sweden • Schlumberger Messgerate A.G., 8040 Zurich, Badenerstrasse 333, (Postfach 139), Switzerland • Schlumberger Instrumentation S.A., 15 rue du Jeu de l'Arc, 1211 Geneve 6, (B.P. 189, Geneve-Eaux-Vives), Switzerland.

For the names of authorized distributors elsewhere, contact:
Heath Company, International Division, P.O. Box 310, St. Joseph, Mich. 49085, U.S.A.



Summer Home Improvement Kits



Heathkit® table radios for every room

A Solid-state AM-FM clock radio. "Snooze Alarm" wakes you to music in the morning, 10 minutes before the alarm goes off. Enjoy the clear, bright sound of FM, or news & weather on AM with just a turn of a knob. Auxiliary clock-controlled 1200 watt socket on rear panel for perking coffee in the morning. Back-lighted clock dial for easy reading at night. Built-in AM & FM antennas. AGC on AM; AFC on FM. Fast, easy circuit board assembly. Compact powder blue cabinet measures just 5 $\frac{3}{8}$ " H x 10" W x 4 $\frac{7}{8}$ " D. Color coordinated grille cloth supplied or custom design your own. Order an easy way to get up in the morning . . . the Heathkit GR-58.

Kit GR-58, 6 lbs., available 49.95

B Solid-state AM table radio . . . 7-transistor, 3-diode circuit assures top performance, long life. Automatic gain control keeps volume constant. Ferrite rod antenna, extra untuned RF stage and high sensitivity for excellent reception. Husky audio output to the big 3x5" speaker for clean, natural sound. Full wave transformer power supply eliminates annoying line hum. Styled in handsome gold & brown with matching grille cloth supplied . . . or design your own to match drapes or carpet. An excellent "first" kit . . . easy, enjoyable with the famous Heathkit manual. Measures 5 $\frac{1}{4}$ " H x 10" W x 4 $\frac{7}{8}$ " D.

Kit GR-28, 5 lbs., available 24.95

C Solid-state AM clock radio features "Snooze Alarm" that wakes you up with music ten minutes before the alarm goes off. Auxiliary rear panel clock-controlled 1200 W socket ideal for perking coffee, turning lights on. Back-lighted clock dial is easily

read at night. High sensitivity, extra untuned RF stage and built-in antenna. AGC provides constant volume under varying signal conditions. Attractive coral cabinet with matching grille . . . or add your own grille. Compact . . . 5 $\frac{3}{8}$ " x 10" W x 4 $\frac{7}{8}$ " D.

Kit GR-38, 6 lbs., available 32.95

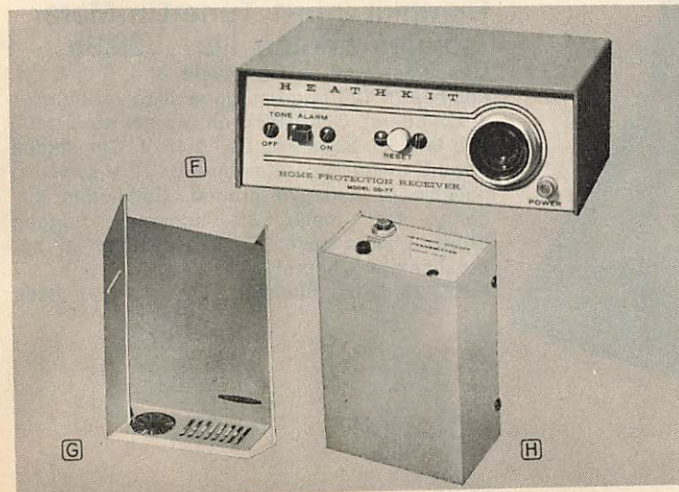
D Solid-state AM-FM table radio delivers the clear, refreshing sound of FM . . . news, weather & "pop" sound of AM. AFC on FM for drift-free tuning . . . AGC on AM keeps volume constant. Built-in AM & FM antennas for better reception. Backlighted clock dial for easy reading in the dark. Avocado green cabinet with matching grille cloth or design your own grille. 5 $\frac{1}{4}$ " H x 10" W x 4 $\frac{7}{8}$ " D.

Kit GR-48, 5 lbs., available 39.95

E Deluxe solid-state FM-FM Stereo table radio . . . an inexpensive, fun project to put the pleasing sound of stereo FM in any room of the house. Automatic frequency control provides drift-free tuning. High 5 uV sensitivity delivers impressive station-pulling power. Automatic switching to stereo and stereo indicator light provided. Adjustable phase control for maximum stereo separation. Two 5 $\frac{1}{4}$ " wide-range speakers and 2 $\frac{1}{2}$ watts (EIA) of audio provide life-like stereo reproduction. Adjustable tone control allows you to vary the sound to suit your taste, from deep, rich bass to clean, natural highs. Assembled & aligned front end for better performance, easier assembly. Attractive walnut finish wood cabinet included blends easily with any decor. Measures just 19" W x 9 $\frac{1}{4}$ " H x 6 $\frac{1}{2}$ " D. Easy 10 hour assembly.

Kit GR-36, 24 lbs., available 69.95

Heathkit Home Protection keeps you safe & sound!



F "Early warning" Receiver Alarm alerts you in time! For use with the Heathkit Fire Detector/Transmitter and Utility Transmitter. Emits piercing tone to raise the soundest sleeper. Has "fail-safe" continuously charged nickel-cadmium battery to trigger alarm in case of power failure.

Kit GD-77, 4 lbs., available 49.95

G Fire Detector/Transmitter triggers Receiver Alarm upon detecting very low density smoke or 133°F. heat. "Fail-safe" circuit, adjustable smoke sensitivity. Remote heat sensors can be added.

Kit GD-87, 4 lbs., available 49.95

H Utility Transmitter accepts any switch or sensor that produces a closed circuit, such as Heathkit GDA-97-1 miniature magnetic-reed switch or GDA-97-2 miniature micro switch for doors and windows, or GDA-97-3 133°F. heat sensor switch. "Fail-safe" circuit.

Kit GD-97, 3 lbs., available 34.95

GDA-97-1, 1 lb., available 1.80

GDA-97-2, 1 lb., available 2.00

GDA-97-3, 1 lb., available 2.25

Heathkit Auto-Suggestions For The Home



Assembled Solid-State UHF Receiver

Install in minutes in your garage. Operates on 290 to 320 megahertz . . . requires no license. Selectable tone coding prevents interference with similar neighborhood units.

Assembled solid state transmitter.

150' range. Battery powered. Hand held or clips on visor. Same unit as shown in deluxe system opposite.

The Heathkit chain-drive R/C door opener keeps you out of the weather for only 99.95

Just push a button and raise the garage door! In rain, sleet, snow or dead of night you stay safe and sound inside the car—greeted by a welcoming light that goes on when the door goes up. Drive in, touch the button on the pocket-size wireless transmitter again, and the door closes securely behind you. A time delay mechanism keeps things bright until you're out of the car and into the house. There's no more convenient, no safer way to come home—for you and especially for Mom.

All you assemble is the mechanism! The compact UHF transmitter, with handy overhead visor clip, and the garage receiver are shipped ready to use. The famous Heathkit manual shows you how to put together the mechanism and install the 1/4-h.p. electric motor and chain assembly. You save money in the bargain!

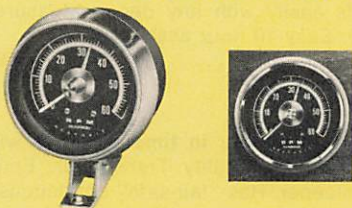
Safer than a conventional manual door assembly! With the Heathkit GD-179, the door is automatically disengaged from the

motor if obstructed, and release pressure is fully adjustable. The spring-loaded system also serves to hold the door tightly closed.

- Kit GD-179A**, system with 1 transmitter, 63 lbs., Express/Frt. **99.95**
- Kit GD-179B**, system with 2 transmitters, 63 lbs., Express/Frt. **109.95**
- Kit GDA-20-3**, mechanism only, 61 lbs., Express/Frt. **54.95**
- GDP-99**, transmitter, 1 lb., mailable. **17.95**
- GDP-149**, 1 transmitter, 1 receiver, 2 lbs., mailable **49.95**
- GDP-159**, 2 transmitters, 1 receiver, 2 lbs., mailable. **59.95**

Transmitter specifications same as pg. 13.
KIT MECHANISM SPECIFICATIONS: 125" L x 8 5/8" H x 13" W, 100 lbs. max. operating force. Operates overhead track and most jamb & pivot doors up to 8' high. 117 V. AC 1/4 HP motor. Fused. **UHF RECEIVER SPECIFICATIONS:** RF Frequencies: Approx. 290-320 MHz modulated with 12 to 23 kHz. Useful Temperature Range: -50° to +140°F. Size: Approx. 4 1/2" x 3 1/4" x 1 5/8". Power Requirements: 117 VAC, 60 Hz.

Heathkit solid-state Tachometer . . . 29.95



Can be used with any spark-type ignition system (1-6 cyl., 2 cycles; 2-8 cyl., 4 cycle). Two RPM ranges, 0-6000 & 0-9000. Temperature compensated for ±5% accuracy from 0° to 120°F. Wide angle 250° edge lighted dial with white indicator, adjustable pointer non-scratch glass face. Black and chrome case, 4 1/4" H, 3" D. Panel mount requires 3 1/4" hole with 2 1/4" depth.

- Kit MI-18-1**, panel model, 3 lbs., mailable. **29.95**
- Kit MI-18-2**, with case, 3 lbs., mailable. **32.95**



Heathkit 3-in-1 Tune-Up Meter isolates engine ills . . . 29.95

Measures dwell on all 4-cycle, 3, 4, 6 or 8 cyl. engines (0-120 degrees depending on number of cylinders). Gives RPM on two scales, 0-1500 and 0-4500. Measures DC, 0-15 V. Car engine powers meter. Operates on 6 or 12 V systems, positive or negative ground. Solid-state circuitry. 4 1/2" meter, 3% accuracy. Rugged brown plastic case. ID-29 assembles in approximately 5 hours!

- Kit ID-29**, 5 lbs., mailable. **29.95**

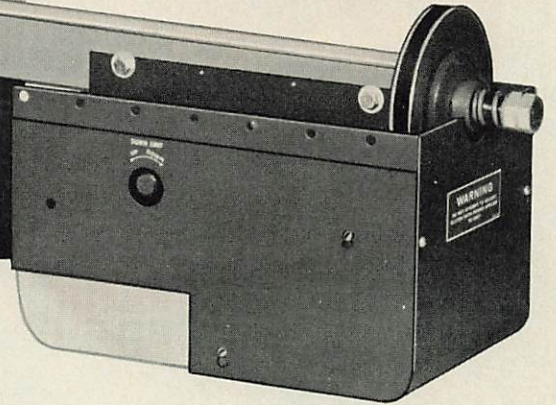


Assembled solid-state transmitter
Hand held or clips on visor. Operates door up to 150' away. Battery powered.



Assembled

Assembled solid-state UHF receiver
Adjustable tone coding prevents interference from neighboring units.



Heathkit screw-drive R/C door opener . . . there's no nicer way to come home

Opens the door, lights the light right from your car! The compact push-button UHF transmitter that stays in your pocket or purse, or clipped to the overhead visor, is your personal electronic key. The Heathkit 209 system utilizes a dependable 8½' screw mechanism with ¼ h.p. electric motor. There's no chain to break or stretch, no sprockets to wear—and it never needs oiling. It opens and closes 7½' overhead track, jamb and pivot doors smoothly and quietly.

Installation versatility. The GD-209A hardware is designed to operate with the UHF transmitter and receiver included with kit on frequencies from 290—320 MHz at 5 MHz channel spacing, modulated with a tone of 12—23 kHz with 1 kHz channel spacing to prevent interference. However, the mechanism lends itself to optional methods of operation, such as the pushbutton (included with kit), or customer designed key actuated driveway switch.

Goes together in an evening! Assembly is fast and easy. All electronics are factory wired and aligned, ready to use. Point-to-point wires have attached push-on connectors, which attach to terminals. And the GD-209 installs overhead in a few hours!

For the sake of convenience and added security, order yours today.

- Kit GD-209A**, system with 1 transmitter, 66 lbs., Express/Frt. **139.95**
- Kit GD-209B**, system with 2 transmitters, 66 lbs., Express/Frt. **149.95**
- Kit GDA-209-1**, mechanism only, 61 lbs., Express/Frt. **99.95**
- Kit GDA-209-2**, adaptor for jamb & pivot doors, 3 lbs., available. **7.95**
- GDP-99**, transmitter, 1 lb., available. **17.95**
- GDP-119**, 1 transmitter, 1 receiver, 2 lbs., available. **44.95**
- GDP-129**, 2 transmitters, 1 receiver, 2 lbs., available. **59.95**

KIT MECHANISM SPECIFICATIONS: 120" long x 12" high x 9" wide. 117 VAC ¼ HP. **Open and Close Time:** Approximately 11 seconds. **Safety:** Door travel reverses, returns to full open position, and stops if obstructed while closing. **Mounting Clearance:** 3" above highest point of door travel. **Safety Lamp:** 75 watt max., automatically turns on when mechanism is activated. Delay circuit keeps lamp on for approx. 90 sec. after motor stops. **UHF TRANSMITTER SPECIFICATIONS:** Powered by standard 9-volt transistor type battery. **RF Frequencies:** 290 to 320 MHz. **Useful Temperature Range:** —50°F. to +140°F. **UHF RECEIVER SPECIFICATIONS:** Powered by 24 VAC from opener mechanism. Usable on any mechanism having 24 volt AC NEC class II circuit. **R.F. Frequencies:** 290 to 320 MHz. **Useful Temperature Range:** —50°F to +140°F.



Ignition work's made easy with this Heathkit Analyzer!

Spots shorted plugs, bad points, faulty coil or condenser. Great for the garage, or use it on the road with the MP-10 Power Inverter (pg. 19). Gives instant selection of primary or secondary patterns in parade or superimposed displays without lead switching. Views expanded for detailed analysis to 10-to-1 horizontal, 2-to-1 vertical. Use with any engine having conventional (non-transistor or capacitive discharge) system. Green enameled aluminum case, 8" H x 9½" W x 16" D.

Kit IO-20, 19 lbs., available. **109.95**

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, ground and secondary clip leads extend 2' beyond pick-up clamp. **Power requirements:** 105-125 V, 50/60 Hz. AC, 30 watts.

Hanson Basic Tester Set

Includes Model 1604 Remote Starter Switch with push button & long leads . . . Model 1605 Compression Tester that reads 0-300 lbs.; 15° offset to reach back cylinders . . . Model 1606 Vacuum/Fuel Pump Tester with 2½" 3-color dial, calibrated 0-30 inches for vacuum and 0-7 lbs., for pressure . . . Model 1603 Engine Timing Light with molded plastic case, long leads & rubber covered connectors.

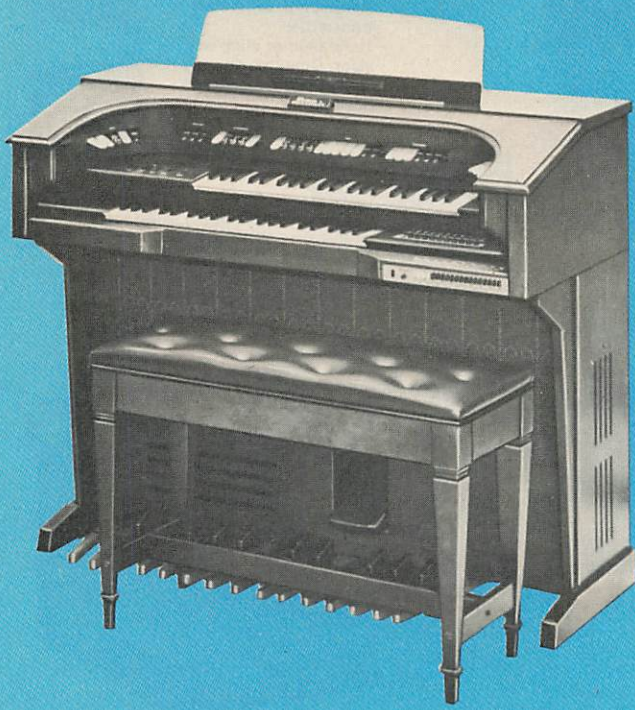
GFP-83, 4 lbs., available. **12.95**



Timing Light Kit

Especially designed for use with the IO-20. Speed range of 0-1250 flashes per minute (0-2500 rpm for current conventional 4-cycle engines). Comes complete with 10" of cable. Measures 6" H x 7½" L x 2" W.

Kit ID-11, 3 lbs., available. **21.95**



A vacation-time project for the entire family . . . the new Heathkit "Legato" 25-pedal organ . . . \$1,495

Designed exclusively for Heath by famous Thomas Organ craftsmen, the new "Legato" provides a universe of sound at your fingertips . . . and hundreds of dollars in savings over comparable organs. Now your whole family can enjoy building and playing this remarkably versatile musical instrument.

15 manual voices, 4 pedal voices . . . any or all at the flip of a tab. SOLO: Diapason, Bass Clarinet, Trumpet, Tibia 16'; English Horn, Oboe, Violin, Tibia 8'; Tibia 4' & 2'. ACCOMPANIMENT: Diapason, Saxophone, French Horn, Oboe Horn, Cello 8'. PEDAL: Diapason 16'; Major Flute, Bass Clarinet, String Bass 8'. You'll quickly learn a variety of voicing combinations—Spanish guitar, zither, bagpipes, calliope, etc . . . musical moods ranging from timeless classical to today's hard rock . . . show-tunes to religious music.

Exclusive Thomas Color-Glo Keys and comprehensive Thomas Organ Course supplied (includes instruction book, headphones and dozens of pieces of sheet music) will have you playing complete, professional sounding songs in minutes.

200 watts peak power from separate solid-state amplifiers . . . one for the Leslie system, one for the main system.

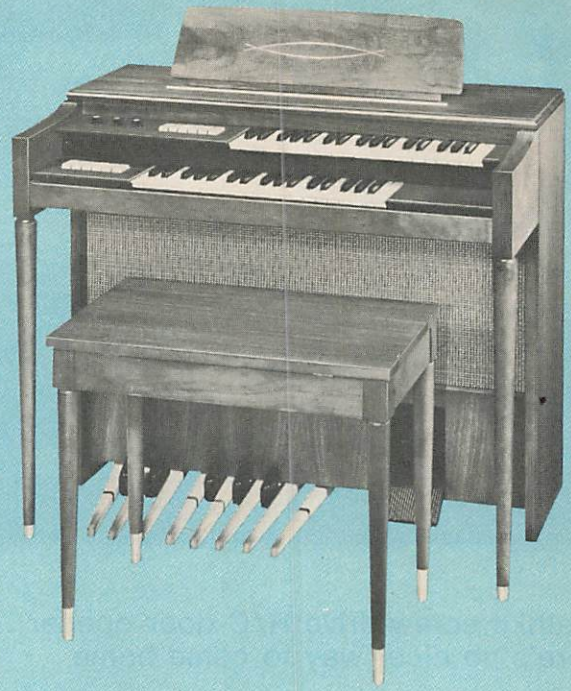
"Stereo" sound . . . 2-speed rotating Leslie plus two 12" main speakers. Add voicing variety by playing some voices thru the Leslie, others thru the main system. The Leslie lets you create the liquid tremolo beauty of the theater organ, and also provides a second channel with just a flip of a tab, creating a rich "stereo" effect.

Other features include two 44-note overhanging keyboards. Accompaniment manual range 8'—F1 to C5; solo manual 16', 8', 4', 2'—F1 to C7. 25-note heel & toe pedalboard, range 16' & 8'—C0 to C3. Selective repeat percussion . . . selective attack percussion . . . keyboard & pedal sustain . . . variable vibrato . . . reverb . . . stereo headphone jack . . . plus luxurious walnut finish cabinet & bench included. Measures 47½" H x 47½" W x 25" D. **Invest now** in this fun-filled vacation project for your family . . . and enjoy many years of musical enjoyment at substantial savings. Order your new Heathkit "Legato" organ now.

Kit TO-101, 285 lbs., Express/Frt. (less Bandbox & Playmate) **1495.00**

TOA-101-3, Thomas Organ Course, 9 lbs., mailable **29.95**

TOA-101-4, 7", 33⅓ rpm demonstration record **ppd. 50c**



Low cost Heathkit/Thomas spinet organ . . . 489.95

Easy to play . . . just turn on the Color-Glo lights and match the colors on the keys and pedals with the colors on the music. And the comprehensive Thomas Organ course included will have you playing in minutes.

Ten organ voices. Select trombone, flute, reed, oboe, cornet for solo work . . . saxophone, violin, horn, viola & diapason on the lower manual . . . heighten them with vibrato, accentuate them with repeat percussion . . . all at the touch of a tab.

Additional professional features include two 37-note keyboards, 13-note heel & toe pedalboard . . . 75 watt peak power solid-state amplifier . . . 12" speaker system . . . impressive 41¼" H x 39¾" W x 21½" D. oiled walnut finish cabinet & bench included. Easy 50 hour assembly with the famous Heath instruction manual and the assembled & tuned tone generator. Order your new Heathkit spinet organ now.

Kit GD-325D (less Bandbox & Playmate), 172 lbs., Express/Frt. **489.95**

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

GDA-325-1, 7", 33⅓ rpm demonstration record **ppd. 50c**

Bandbox & Playmate accessories

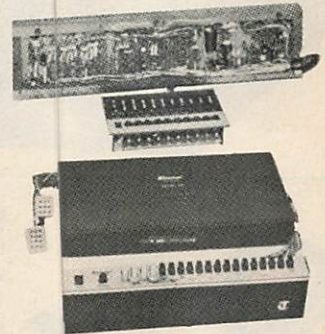
Add the full orchestra sound of Band Box Percussion to any Heathkit/Thomas organ. Gives bass drum, 2 bongos, castanets, brush and crash cymbals, blocks, claves, snare drum and drum roll effects.

Kit TOA-101-1, 9 lbs., mailable **160.00**

Drawer and slides required to add Band Box to GD-232, GD-325 & GD-983 models. Order **TOA-101-5**, 4 lbs., mailable **49.95**

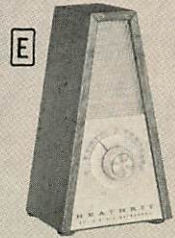
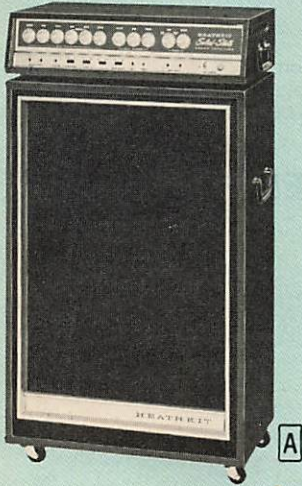
Playmate kit adds 15 different rhythms to organ & Band Box . . . 3 different waltzes, fox trot 2/4, boogie 6/8, swing, bossa nova, rock, watusi, samba, beguine, cha cha, rumba, tango, bolero. Requires Band Box for operation.

Kit TOA-101-2, 6 lbs., mailable **195.00**





Heathkit® Music-Makers For Summer Fun



(A) Super-Amp is here! 120-watts of solid-state power . . . built-in harmonic modifier, tremolo & reverb . . . optional matching speaker system

Delivers a giant 120 watts of EIA music power . . . 240 watts peak power into two TA-17-1 speaker systems (or other 4 ohm load)—enough soul-searing sound to break any crowd loose from their moorings. Drives any 4 to 16 ohm speaker combination capable of withstanding its awesome power.

Professional performance features comparable to amplifiers costing much more. Compare this list of standard features to those on other units. Built-in switchable Harmonic Modifier gives that "fuzzy" mod sound . . . no external modifier to buy. Special Brightness switch produces the sharp, brassy sound so popular. Tremolo variable in both rate and depth. Separate bass and treble boost. Dual spring-type variable reverb built-in. Dual foot-switch for hands-free on/off control of tremolo & reverb. Three separate channels with two inputs for each; guitar, bass guitar & combo rogans, microphone/phonograph. Special "test-as-you-build" features minimizes errors, makes assembly easier. Rugged black vinyl-covered compressed wood cabinet. 120 VAC.

Optional matching speaker system features two specially-designed 12" woofers with 27 ounce magnets and fiberglass voice coils to handle every watt the TA-17 is capable of producing. Special horn driver delivers extra brilliance and penetration. Rugged compressed wood cabinet covered in durable black vinyl with metal corners, extruded aluminum front frame, carrying handles and built-in casters. Measures 25 $\frac{7}{8}$ " W x 14 $\frac{1}{2}$ " D x 38" H. Includes 20' cable.

Kit TA-17, amplifier only, 53 lbs., Express/Frt. **175.00**
Kit TA-17-1, one speaker system, 116 lbs., Express/Frt. . . **120.00**

(B) The monster bass amp! The 120-watt TA-38 . . . \$185

It delivers what you need . . . 120 watts EIA, 240 watts peak power of the tightest, crispest bass you've ever heard. Full range control too . . . Bass, Treble, Volume, Depth, Presence, Power, Line Reverse controls and two bass inputs are all front panel mounted

for convenience. The extremely wide range tone shaping controls give a wide variety of musical effects, and the inputs will accept virtually any bass instrument . . . bass guitars, combo organs, even amplified brass & reeds. Two special design 12" speakers in the sealed sound chamber pack an incredible 6 $\frac{3}{4}$ lbs. of magnet assembly between them . . . and can handle every watt the amp can deliver. In just 15 hours you can create a monster . . . order your TA-38 now.

Kit TA-38, 130 lbs., Express/Frt. **185.00**

(C) 25-watt 2-channel guitar amp . . . 119.95

All solid-state design provides high reliability, long life. Delivers a solid 25 watts EIA music power, 60 watts peak. Two 2-input channels . . . one for accompaniment, microphone, etc. . . . second for special effects. Lead & solo guitar has double spring variable reverb & tremolo with variable rate & depth. Two foot switches in die cast housing for hands-free control of reverb & tremolo. Line reversing switch minimizes line hum. Two special heavy-duty 12" speakers with ceramic magnets last and last. Sturdy $\frac{3}{4}$ " black vinyl covered wood cabinet measures 28" W x 9" D x 19 $\frac{3}{4}$ " H.

Kit TA-16, 52 lbs., Express/Frt. **119.95**

(D) Distortion booster kit . . . 17.95

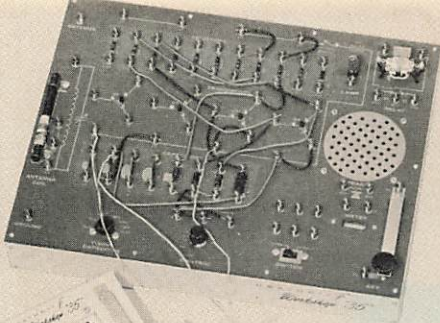
Add that unique effect to your sound . . . just plug in between your guitar & amplifier. Housed in a convenient footswitch . . . push the switch to add the distortion . . . push again to play it straight. Tone & disortion degree conrols. Runs on 1.5 V AA penlie cell (not supplied).

Kit TA-28, 4 lbs., mailable. **17.95**

(E) Keep the beat with this Heathkit Electronic Metronome . . . 9.95

Just two controls . . . front panel knob turns unit on & adjusts tempo from 40 to 210 beats per minute. Rear panel control adjusts volume. Chart on bottom of cherry-finished birch cabinet relates tempos in various time signatures to beats per minute. Easy one evening assembly. Requires two 9 V batteries (NEDA #1602) not supplied.

Kit TD-17, 2 lbs., mailable. **9.95**



Ⓐ



Ⓑ



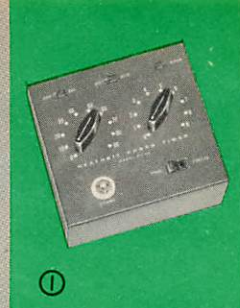
Ⓒ



Ⓓ



Ⓔ



Ⓛ

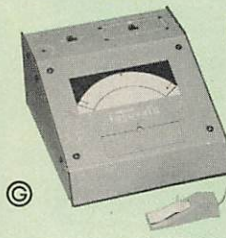


Ⓜ

Buy This...

FREE Color Probe converts computer to color capability. Reg. 46.00 value. See below.

Get this FREE



Ⓒ



Ⓜ

**Ⓐ Heathkit Jr.®
Electronic Workshop "35" . . . 24.95**

A summer of discovery. Watch the youngsters have hours of fun while learning about & using basic electronic components . . . discovering how modern solid-state circuits work. Connections are solderless spring-terminals; circuits run on four safe "D" cells (not supplied). Experiments include Code Flasher, Rain Alarm, Listening Device, PA Amplifier, Intercom, Code Oscillators, Electronic Organ, Burglar Alarm, Metronome, Siren, Transistor Radios, Code & Voice Transmitters, Capacity Relay and 18 more interesting, educational experiments. Help your youngsters discover the world of electronics . . . order the JK-18 now.

Kit JK-18, 11 lbs., mailable 24.95

**Ⓑ Heathkit Jr.®
Electronic Workshop "19" . . . 14.95**

Contains cartoon-illustrated principles of operation and simple, non-technical instructions for 19 projects. Includes code flasher, burglar alarm, PA system, transistor radios, electronic timer, TV silencer, electric eye, metronome, code & voice transmitters, electronic flasher, intercom, audio signal injector, capacity & voice operated relays. Solderless, spring-type connectors. Operates on four "C" cells (not included).

Kit JK-27, 4 lbs., mailable 14.95

Ⓒ Heathkit Jr.® Guitar amplifier . . . 29.95

Delivers a solid 9 watts EIA power . . . 18 watts peak power thru an 8" speaker. Variable rate & depth Tremolo for unusual effects . . . separate volume & tone controls. Two inputs handle solo & accompaniment. Easy 5 hour assembly. Measures 13½" W x 5⅞" D x 14" H. A good start for a budding young musician.

Kit JK-37, 14 lbs., mailable 29.95

Ⓓ Heathkit Jr.® 4-speed phonograph . . . 21.95

Plays all four speeds of mono records in 7, 10 & 12" sizes. Complete with crystal cartridge with universal sapphire stylus. Just two simple controls . . . selector level for turntable speed, volume-on/off control. 45 rpm adapter included. Cabinet covered in ivory & desert gold polyethylene. A perfect starter kit for the pre-teener.

Kit JK-17, 11 lbs., mailable 21.95

**Ⓔ Heath/Mitchell
Colorval® II Computer . . . 89.95**

Improved features. Enlarger light passing thru the scan pack on top of the color probe is adjusted so that the reflected spot (a reflection of area under study) is seen in a small mirror on the probe. This spot is compared to the adjustable neutral reference light surrounding it. The area under study is rendered neutral by adjusting enlarger printing pack. Other improvements: permanent scan filter; visual color-integrating scrambler for integrating color negatives visually; precision exposure probe; simplified testing system; test negatives; special filter mosaics.

Kit PM-17A, includes Color Wheel & 35 mm b/w test neg., 8 lbs., mailable 89.95

Ⓛ Heath/Mitchell Color Canoe . . . 19.95

Simple, one-piece stainless steel design produces quality color prints equal to processors costing hundreds of dollars. Self-leveling; chemicals never touch your hands. Develops print face up. Use for b/w. Type R color and films (color, b/w litho etc).

PD-18, 8x10", 3 lbs., mailable 19.95

PD-28, 11x14", 6 lbs., mailable 26.95

PD-38, 16x20", 11 lbs., Express/Frt. 39.95

**Ⓒ Ⓜ Save \$46 on this Fotoval® Computer
& Color Probe Combination Offer
(limited time only).**

Save darkroom time, cut paper costs, speed enlarging with the Fotoval® Computer. Automatically determines paper grade & exposure time. Get fast conversion to complete color capability with FREE accessory Color Probe kit during this limited time offer.

Kit PM-18, w/35 mm test neg., 7 lbs., mailable 69.95

PMA-18-1, Color Probe Accessory, 2 lbs., mailable . . . Reg. 46.00 . . .

FREE with the purchase of each PM-18 Fotoval Computer . . . for limited time only.

Ⓛ Heathkit Photo Timer . . . 34.50

Gives accurate exposure control of all contact or enlarging operations. Two switch-selected ranges; up to 99 seconds in 1 second steps, 9.9 seconds in 0.1 second steps. Repeatable to 2%. AC outlets for enlarger & safelight. All electronic.

Kit PT-15, 4 lbs., mailable 34.50



Heathkit deluxe 9-band receiver . . . 259.00

Our finest shortwave receiver . . . a communications-quality piece of gear for the serious SWL. Features 10 switch-selected bands; 49, 41, 31, 25, 19 & 16 meter shortwave . . . 11 meter CB . . . 80, 40 & 20 meter amateur. 5 kHz crystal filter supplied for excellent AM, CW & SSB reception . . . optional SSB & CW filters available for even better reception.

Famous Heath SB-Series features . . . like true linear tuning with 1 kHz dial calibration from the assembled & aligned Linear Master Oscillator . . . rock-solid stability . . . built-in switch-selected automatic noise limiter . . . separate RF & AF gain controls . . . calibrated "S" meter . . . separate diode (AM) & product (SSB/CW) detectors . . . built-in 100 kHz crystal calibrator . . . front panel headphone jack . . . easy 20 hour assembly with only a VTVM needed for alignment. For the finest shortwave listening money can buy, choose the superb SB-310.

- Kit SB-310**, less speaker, 24 lbs., mailable **259.00**
- Kit SB-600**, 8 ohms, 6"x9" speaker & cab., 7 lbs., mailable . . . **19.95**
- SBA-301-2**, deluxe CW filter, 1 lb., mailable **21.95**
- SBA-310-1**, SSB filter, 1 lb., mailable **23.95**
- SBA-310-2**, deluxe SSB filter, 1 lb., mailable **39.95**
- SBA-310-3**, 13 & 15M modification kit, 1 lb., mailable **9.95**

SB-310 SPECIFICATIONS — Frequency range (Megahertz): 3.5 to 4.0; 5.7 to 6.2; 7.0 to 7.5; 9.5 to 10.0; 11.5 to 12.0; 14.0 to 14.5; 15.0 to 15.5; 17.5 to 18.0; 26.9 to 27.4. **Sensitivity:** Less than 0.3 uV for 10 dB signal-plus-noise to noise ratio for SSB operation. **Selectivity:** AM, 5.0 kHz @ 6 dB down, 15 kHz max. @ 60 dB down (crystal filter supplied). CW, 400 Hz @ 6 dB down; 2.0 kHz max. @ 60 dB down (crystal filter available as an accessory). SSB, 2.1 kHz @ 6 dB down; 5.0 kHz max. @ 60 dB down (deluxe SSB crystal filter available as an accessory), or 2.1 kHz @ 6 dB down; 7.0 kHz max. @ 60 dB down (regular SSB crystal filter available as an accessory). **Power requirements:** 105-125 or 210-250 V AC, 50-60 Hz, 50 watts. **Cabinet dimensions:** 14 7/8" W x 6 5/8" H x 13 3/8" D. **External connections:** Front panel: phones. Rear apron: antenna, mute 500 ohm audio output, speaker 8 ohm, hi-fi output, 1 spare socket, line cord socket. **Tube complement:** 10 tubes (13 functions). **Diode complement:** 8.

Our lowest priced shortwave receiver . . . 29.95

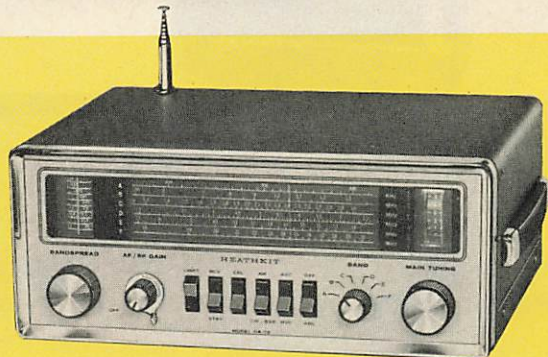


Ideal for the beginning shortwave listener, the GR-81 features 4-band capability, from 140 kHz to 18 MHz. Bandspread tuning makes it easy to separate closely-spaced stations. Other features include external antenna connections; transformer-operated power supply; headphone jack; built-in speaker; green & beige metal cabinet.

- Kit GR-81**, 12 lbs., mailable **29.95**

GR-81 SPECIFICATIONS — Frequency coverage: 140 kHz to 18 MHz on four bands. **Tube complement:** 12A7 Detector/1st Audio, 50C5 Audio Output, 35W4 Rectifier. **Power requirements:** 105-125 V 50/60 Hz only, 30 watts. **Fused Controls:** Main tuning (calibrated), Bandspread, Bandsplit, Regeneration; on/off volume, phone jack. **Dimensions:** 10" W x 7" H x 7" D.

DX This Summer With Heathkit® Shortwave



Versatile 6-band SWL portable . . . 129.95

Dozens of uses . . . for SWLs who appreciate solid-tuning . . . for hams who need a reliable standby receiver . . . for campers, hunters, travelers and vacationers who need a portable ready to go when they are. Features 190 kHz to 30 MHz coverage in six switch-selected bands. AM or SSB/CW reception at a touch of a switch. Automatic volume control keeps volume constant . . . switchable automatic noise limiter means quieter reception. Loaded with professional versatility; relative signal strength meter, external antenna connection, receive/standby switch, muting connection, headphone jack, built-in 500 kHz crystal calibrator. Runs on its own rechargeable nickel-cadmium battery with built-in charger. Built-in carrying handle and whip antenna. For solid SWL capability and portable convenience, order your GR-78 today.

- Kit GR-78**, 14 lbs., mailable **129.95**

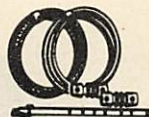
GR-78 SPECIFICATIONS — Frequency coverage: Band A, 190 kHz-410 kHz; Band B, 550 kHz-1300 kHz; Band C, 1.3 MHz-3.0 MHz; Band D, 3.0 MHz-7.5 MHz; Band E, 7.5 MHz-18.0 MHz; Band F, 18.0 MHz-30 MHz. **Meter:** Indicates relative signal strength. **Intermediate frequency:** Band A thru E: 455 kHz; Band F (Double conversion): 1st IF, 4.034 MHz; 2nd IF, 455 kHz. **Sensitivity:** 0.2 uV to 10 uV depending on band and portion thereof. **Selectivity:** 7.5 kHz ±1 @ 6 dB down. **Audio output:** 300 milliwatts @ 10% distortion. **Battery:** 9.6 VDC 500 mAh Nickel-Cadmium rechargeable. **Battery charge rate:** The battery is always being charged at 20 to 25 mA when the built-in trickle charging circuit is connected to an external power source with the Receiver turned off. A full battery charge will be maintained if the Receiver is connected to an external power source and used an average of 5 hours daily at a normal listening level. **Overall size:** 6 1/4" H x 11 1/2" W x 9" D. *Signal level for 10 dB signal + noise/noise ratio.

SWL accessories



SWL Guide. 1971 edition . . . lists worldwide SW, FM, TV stations, call signs, frequencies & addresses. 372 pages.

- GDP-315**, 2 lbs., mailable **6.95**



Long Wire Antenna. Includes a 75' long wire antenna with 30' of lead-in, all insulators & hardware.

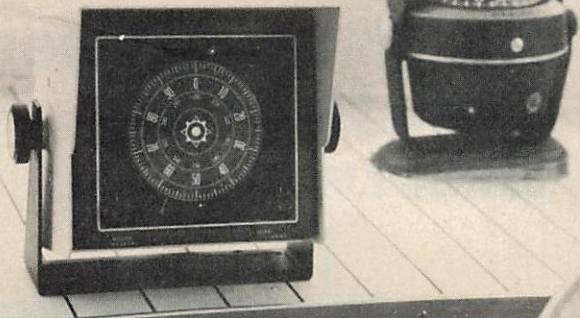
- GRA-72**, 2 lbs., mailable **2.95**



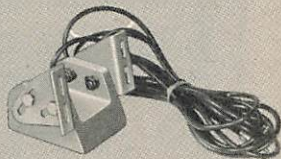
Superex Headphones . . . ideal for all Heath SWL receivers except GR-43A. Dual coils; wide headband; 2 k ohm impedance.

- GD-396**, 1 lb., mailable **4.50**

Heathkit Marine Gear



MI-19 thru-hull transducer.



MI-19-2 high-speed transom mount transducer.

Heathkit® Depth Sounder—still just 79.95!

Precision performance at a practical price! Comparable to, or better than, popular depth sounders costing considerably more, the Heathkit MI-19, in easy-to-assemble kit form, is within reach of the boater on a budget.

Brings the bottom to the bridge. The Heathkit Depth Sounder shows depth down to 200 ft. Shows varying terrain and vegetation. Detects and gives separate read-out for underwater floating logs and similar obstacles. Even spots schools of fish!

Dependable solid-state circuitry gives the MI-19 maximum reliability with minimum power drain. There's an Adjustable Sensitivity Control that lets the skipper set the sounder for maximum signal strength without extraneous echoes. Heath's exclusive built-in Noise Rejection circuit permits installation of the transducer close to the engine without ignition interference. The MI-19 can be powered by ship's 12 VDC system or an external 12 VDC lantern battery.

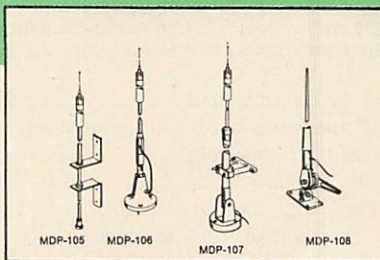
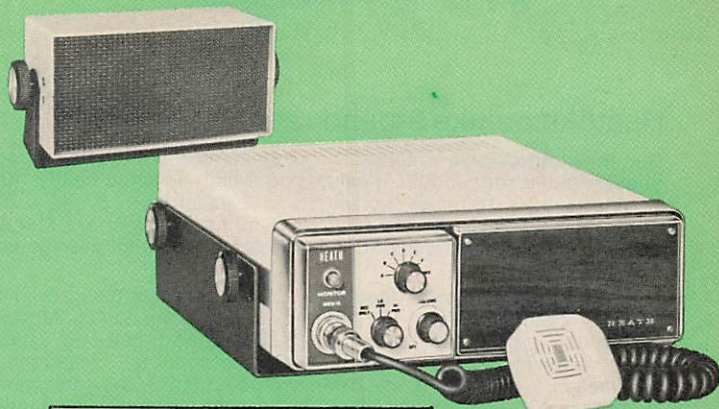
Seaworthy design includes such features as the sun-shielded calibrated dial, corrosion-resistant metal cabinet, stainless steel hardware, waterproof transducer with marine brass fittings. You choose either thru-hull transducer for permanent large-boat installation, or high-speed transom-mount transducer for smaller craft. Either transducer adaptable to cofferdam installation.

Kit MI-19-1, with thru-hull transducer, 6 lbs., mailable. . . . **79.95**

Kit MI-19-2, with transom transducer, 8 lbs., mailable. . . . **79.95**

MI-19-1 & -2 SPECIFICATIONS—Range: 0 to 200 feet on hard bottom. **Sounding:** Rate, 1440 per minute or 24 per second. Frequency, Approximately 200 kHz. **Accuracy:** Within 5% of actual depth. **Depth indication:** Neon lamp flashes at zero and again at the indicated depth from the object. **Transducer:** Barium titanate ceramic element encased in a watertight housing. **Controls:** Sensitivity, with on-off switch. Noise Rejection level. **Transistor and diode complement:** 9 transistors, 5 diodes. **Power requirements:** 120 milliamperes at 12-14 VDC with one return pulse. **Dimensions:** 6 1/8" W x 5 3/8" H x 5 3/4" D. **Net weight:** 4 1/2 lbs.

Kit MI-19-2 has high speed transom mount transducer for installation on outboards and smaller craft.



Value leader in VHF/FM communications!

Heath MWW-18 FCC Type-Accepted Radiotelephone uses the latest solid-state design with tubes in transmitter output stage.

Has 25 W output, maximum FCC allowable, with 1 W for in-harbor use. True 6-channel capability permits placing channels in high or low band in any combination, any sequence. Seventh channel: receive only for ESSA monitoring. Low 60 mA current drain in squelched receive makes it ideal for small boats. Plug-in control head and optional remote control accessory (15' cable & hardware) permit low cost custom installation. Stainless steel hardware, cadmium plated chassis meets all EIA temperature-vibration standards. Factory assembled, MWW-18 includes crystals for channels 6 and 16, microphone, gimbal mount, speaker. Order with crystals of your choice.

Assembled MWW-18, with channels 6 & 16, 28 lbs., mailable **499.95**

MWA-18-1, Remote Control Accessory Package, 4 lbs., mailable. **19.95**

MWA-18-2, handset accessory, 3 lbs., mailable. **49.95**

MDP-106, 4 1/2' 3 dB gain deck mt. antenna, 5 lbs., mailable. **29.95**

MDP-105, 4' 3 dB gain mast mt. antenna, 4 lbs., mailable. **24.95**

MDP-108, 9' fiberglass whip 6 dB gain antenna, 5 lbs., Express/Frt. **49.95**

MDP-107, 14' deck mt. antenna 3 dB gain, 12 lbs., Express/Frt. **59.95**

Weather (WX) Channel Receive only, 1 lb., mailable. **8.50**

Environmental Channel 15 receive only, 1 lb., mailable. **8.50**

Extra Transmit & Receive Crystals, pair, specify channel, 1 lb, mailable. **17.00**

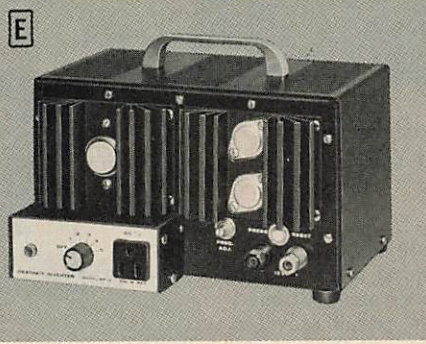
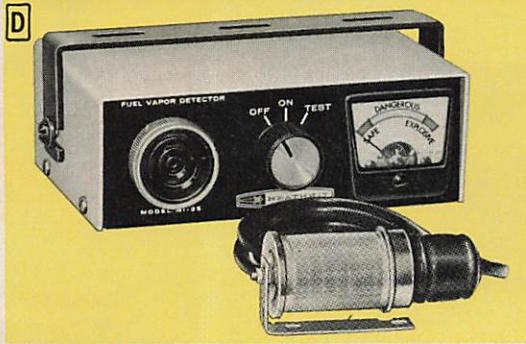
Add \$17.00 per additional channel for factory installed crystals (this permits owner installation of the radiophone).

MWW-18 PARTIAL SPECIFICATIONS—**TRANSMITTER**—Emission: 16F3 (± 5 kHz deviation FM). Frequency range: 156.275-157.425 MHz. Modulation: Phase modulation ±5 kHz deviation. Modulation limiting: Automatic. Frequency accuracy: ±0.001%. **RECEIVER**—Type: Single conversion, superheterodyne. Frequency range: Two bands with two front ends, 156.275-157.425 MHz and 161.600-162.550 MHz. IF Amplifier frequency: 10.7 MHz. Sensitivity: 0.35 uV or better for EIA usable sensitivity. Squelch: 0.2 uV or better for max. sensitivity. Selectivity: 15 kHz @ 6 dB, 28.8 kHz @ 60 dB. **Audio output:** 2 watts for less than 10% distortion. **GENERAL**—Size: 4 1/4" H x 13" W x 15" D. (Installed in mtg. brackets.) **Weight:** 22 1/2 lbs. **Primary power:** Voltage: 13.6 VDC nominal. Current: Transmit, high power, 10 amps. **Antenna impedance:** 50 ohms resistive.

MWW-18 TUNE-UP & SERVICE

Call your local Heathkit Electronic Center, the Heath factory, or RCA Service Co. for the location nearest you.

...For A Carefree Season At Sea!



A 5-function solid-state Foghorn-Hailer . . . 89.95

It's a foghorn, hailer, boathorn, listener, intercom! Powerful 55 W amplifier. Foghorn rate and duration controls. "Listen" and "Hail" separate gain controls. Optional remote speaker for ship's intercom. Has new coupling circuit for greater acoustical efficiency; increased immunity to feedback and ignition interference; low-profile deck horn speaker. Includes weather resistant horn, 20' speaker cable, gimbal mount. Marine white with blue trim.

Kit MD-19A, with horn speaker, 16 lbs., available . . . 89.95
 Kit MDA-19-1, remote speaker, 2 lbs., available . . . 9.50

MD-19A SPECIFICATIONS—Output Power: 55 watts peak. Boat Horn Frequency: Approximately 530 Hz. Foghorn frequency: Approximately 390 Hz. Foghorn rate: Approximately 2 to 90 seconds, variable. Foghorn duration: Approximately 2 to 20 seconds, variable. Speaker: 8 ohm weather resistant horn. Microphone: Ceramic with push-to-talk switch. Controls: Call volume; Listen volume; Station select; Function; Foghorn rate and duration. Power requirements: 12 VDC nominal, 4.5 A maximum. Idle current: 750 mA or less. Dimensions: 4¾" H x 9¾" W x 7¼" D. Color: White wrinkle and dark blue. Net weight (including horn): 9 lbs. 9 oz.

B Marine, weather, police & fire portable . . . 49.95

Receives narrow and wide band FM, 152-174 MHz, with 2.0 uV sensitivity. Has controls for 6-to-1 vernier tuning, single channel crystal (crystal not supplied), squelch. All solid-state construction. Portable battery operated. Includes carrying handle that doubles as stand, built-in whip antenna, external antenna jack, rugged brown leatherette case.

Kit GR-88, 5 lbs., available . . . 49.95
 Kit GRA-88-1, accessory AC power supply, 2 lbs., available . . . 7.95

C Useful aircraft band portable receiver . . . 49.95

All solid-state receiver for aircraft band, 108-136 MHz, with 1.5 uV sensitivity. Controls for vernier tuning, single channel crystal (crystal not supplied), squelch. Has brown leatherette carrying case with convertible handle/stand, built-in whip antenna and external antenna jack. Accessory AC power supply available.

Kit GR-98, 5 lbs., available . . . 49.95
 Kit GRA-88-1, accessory AC power supply, 2 lbs., available . . . 7.95

D Visible & Audible Fuel Vapor Detector . . . 44.95

Meter shows "Safe-Dangerous-Explosive" conditions and the audio alarm sounds when gasoline fumes are present. Fully transistorized circuit has "Fail-safe" provision that triggers alarm when any component fails; built-in relay circuits for control of bilge blower or additional warning devices.

Kit MI-25, 3 lbs., available . . . 44.95

MI-25 SPECIFICATIONS—Voltage: 12 V DC, +10%. Current: 1.0 amp nominal. Panel size: 2-1/16" H x 5-11/16" W. Depth: 5". Detector head size: 1½" round x 2½" long. Length of interconnecting cable supplied: 15'. Color: Marine white & black. Material: Aluminum. Temp. range: -30° C. to +50° C. Audio alarm: 2500 Hz.

E Heathkit Power Inverter . . . 119.95

Delivers up to 500 W intermittent, 400 W continuous. Adjustable AC output (square wave) is regulated at 60 Hz to operate high current, high wattage devices (operates anything within power rating except motor driven devices with high starting currents). 12-14.5 VDC operation.

Kit MP-14, 38 lbs., available . . . 119.95

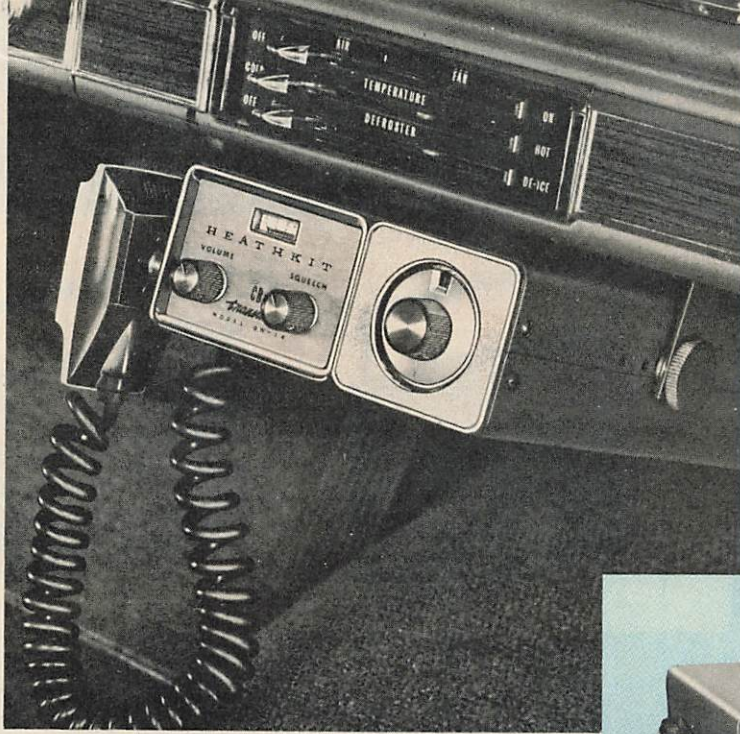
MP-14 SPECIFICATIONS—Input voltage: 12 to 14.5 V. DC two wire isolated from ground. Specification voltage: 13.0 V. DC. Input current: 4 ampere, no load; 40 ampere at 400 watt load. Allowable ambient temperature: 0°F. to 125°F. Efficiency: 80% (approx.) Output voltage: Switch selected—120, 135, 150, 165 & 180 V. AC. Output power: 400 watts continuous up to 100°F.; 300 watts continuous up to 125°F.; 500 watts intermittent; 15 minutes "on"—15 minutes "off" at 100°F. max. Frequency: 60 Hz, adjustable. Frequency regulation: Load—1% no load to 400 watts; Input—2%, 12 to 14.5 V. DC; Temperature—3%, 0°F. to 125°F. Wave form: Square wave. Protective circuits: Input—50 ampere circuit breaker, DC polarity reversal diode. Size: 9½" W x 7¾" H x 6¾" D.

F Budget priced Power Inverter . . . 32.50

Converts 6 or 12 V battery power to square wave 117 VAC. Delivers up to 175 W continuous for small electric appliances. All transistor circuit, with two AC receptacles. Not recommended for tape recorders, record players or compressor-type refrigerators requiring high starting current or sine wave AC.

Kit MP-10, 8 lbs., available . . . 32.50

MP-10 SPECIFICATIONS—Power source: 6 or 12 volt storage battery. Power output: Nominal 117 volt, 60 Hz 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.



At home or away—keep in touch with this Heathkit® 5-watt CB transceiver . . . 89.95

The compact, solid-state GW-14A delivers instant, reliable two-way communications from car to car, home to office. 23-channel capability with crystal-controlled reliability. The 14 transistor, 6 diode circuit provides instant operation, long life and minimum battery drain—draws a modest 0.75 amps in transmit mode . . . only 0.12 amps on receive. Husky 3-watts RF minimum output insures reliable communications over maximum range.

Easy operation. Just three controls; on/off/volume control, lighted channel selector and adjustable squelch that eliminates background noise, yet allows signals through loud and clear. Features 0.5 uV sensitivity for solid copy; automatic noise limiter for minimizing ignition and motor noise; built-in speaker; ceramic PTT microphone; gimbal mount for easy, out-of-the-way installation in car, truck, or camper.

Enjoyable assembly. All solid-state design and rugged circuit board construction, combined with the famous Heath manual, mean fast, easy assembly . . . you'll be on the air in just a few short evenings. For extra versatility and savings, order two systems and deduct 5% with the Heath system discount.

Kit GW-14A, 8 lbs., less crystals, mailable 89.95

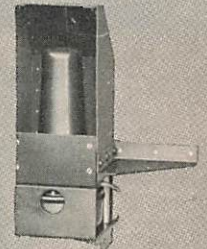
GWS-14A System: GW-14A plus 23 channel crystal pack, 9 lbs., mailable 159.95

Kit GWA-14-1, AC power supply, 5 lbs., mailable. 14.95

GWA-14-2, 23 channel crystal pack, 1 lb., mailable 79.95

GW-14A SPECIFICATIONS—RECEIVER SECTION: Intermediate frequency: 455 kHz. Sensitivity: ½ uV or less for a 10 dB signal plus noise to noise ratio. Selectivity: Adjacent channel attenuation is down 30 dB. Audio power output: 3 watts minimum. **TRANSMITTER SECTION:** Nominal power input to final RF amplifier: 5 watts. Frequency control: 3rd overtone quartz crystal as selected by the 23-position channel selector switch. Frequency control effectiveness: Operating frequency will be within .005% of nominal crystal frequency over an ambient temperature range of -20 to +130 degrees F. Modulation: High level AM limited to less than 100%. Output impedance: 50 ohms nominal. Output circuit: Twin "PI" matching network. Power output: 3 watts minimum into 50 ohm load. **GENERAL—Controls:** Squelch; off/on volume; channel selector. **Tuning meter:** For receiving, S-9 corresponds to approximately 100 uV signal input. For transmitting, the meter indicates the presence of power output and modulation peaks. **Power requirements:** Positive 12 volt system (13.5 volts); receiver current drain, standby—120 mA; transmitter current drain—750 mA. **Dimensions:** 2 7/8" H x 7" W x 11" D.

Vacation Time Kits For Your Car



A valuable addition to your authorized emergency vehicle ... the Heathkit GD-18 Siren/PA system

Performance with the best . . . at half the cost. Compare features . . . compare performance . . . compare cost. Many police, fire and emergency vehicle owners already have—and they chose the Heath GD-18. Here's why . . .

Functions as an electronic siren . . . boasts a full 55 watts of power with adjustable pitch. If you need the siren and the PA is in use, just release the mike button and press the manual button on the panel for an instant burst of siren—without resetting the function switch.

Functions as a PA system with 20 watts of power for booming voice communication.

Functions as a radio call alert . . . lets you hear calls away from your vehicle.

Choice of speakers . . . either concealed or exposed horn. Each provides high efficiency, wide dispersion and response. Concealed speaker requires 4 1/2" x 4 1/2" x 13" behind grille. Order your GD-18 system now and discover high performance at low cost.

Kit GD-18 Siren/PA Amplifier, 6 lbs., mailable 54.95

Assembled GDA-18-1, exterior horn, 10 lbs., mailable 49.95

Kit GDA-18-2, concealed horn, 10 lbs., mailable 49.95

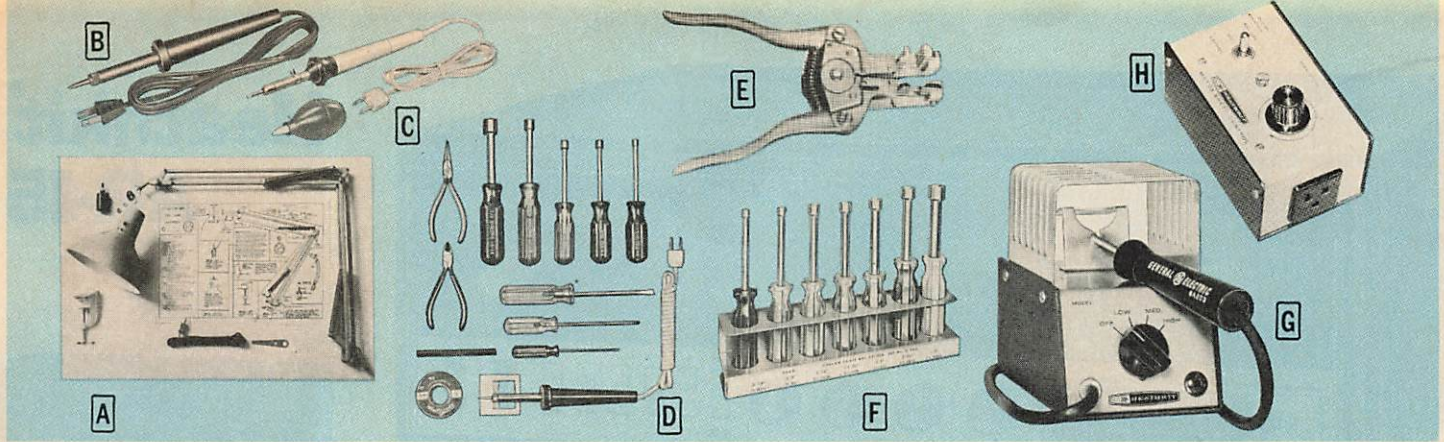
GD-18A (GD-18 & exterior horn), 16 lbs., mailable 99.95

GD-18B (GD-18 & concealed horn), 16 lbs., mailable 99.95

GD-18 SPECIFICATIONS—Siren Output Power: 55 watts, normal intermittent duty. **PA or Radio Output Power:** 20 watts continuous. **Wail Frequency Range:** Approx. 550 Hz to 1300 Hz (pitch control at center). **Wail Sweep Rate:** Approx. 6 sec. per cycle. **Yelp Sweep Rate:** Approx. 1/3 sec. per cycle. **Radio Input Sensitivity:** 0.3 volts RMS min. for rated output. **Speaker Requirement:** 16 ohm, 75 watt (nominal) weatherproof, horn loaded driver. **Controls:** Gain (PA and Radio); manual siren button (in PA only); Function selector switch: provision for external remote manual siren switches; Siren pitch adjust; Radio input level adjust. **Power Requirements:** 12 to 15 VDC, pos. or neg. ground; 5.5 amp. max. **Idle Current:** 1.25 amp. or less. **Dimensions:** 7 3/8" D x 8 3/8" W x 2-3/16" H (less gimbal bracket). **Finish:** Gunmetal gray, wrinkle finish.

GDA-18-1 SPECIFICATIONS—Impedance: 16 ohms. **Frequency Range:** 275 to 8000 Hz. **Dispersion:** 100 degrees. **Power Rating:** 75 watts. **Dimensions:** 8 3/4" Dia. x 8 7/8" H x 8-13/16" L. **Material:** Bell & base, aluminum. **Finish:** Corrosion resistant baked gray enamel. **Mounting Base:** Sand cast aluminum. **Net weight:** 7 lbs.

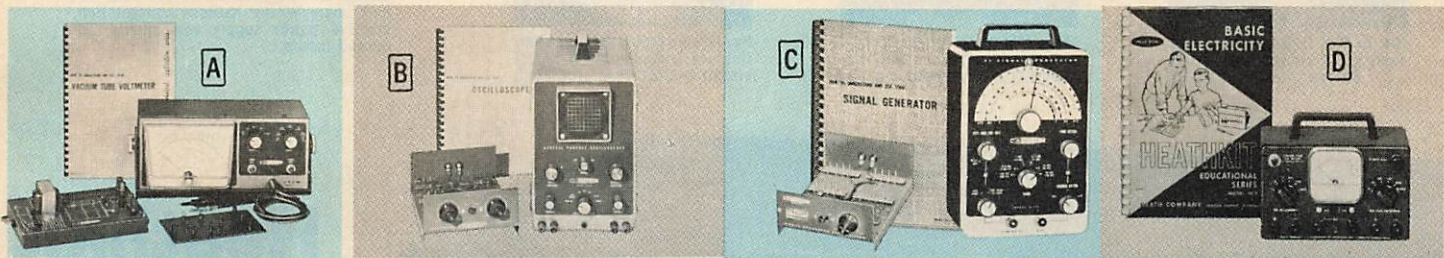
GDA-18-2 SPECIFICATIONS—Impedance: 16 ohms. **Frequency Range:** 300 to 3000 Hz. **Power Rating:** 75 watts. **Material:** Sheet metal enclosure. **Finish:** Corrosion resistant baked gray enamel. **Dimensions:** 4 1/2" H x 4 1/2" D x 13" W. **Net Weight:** 8 lbs.



Heathkit tools make kit building easier

- A Z-Lyte extension lamp kit:** 45" reach, 360° sweep; vented shade, moveable base clamp. U.L. approved; bulb not included. **Kit GDP-202**, 5 lbs. (mfrs. list 14.50), mailable.....**11.95**
- B Weller W-PS 25-watt pencil soldering iron;** develops 860° heat fast, ready to go to work in seconds. U.L. and C.S.A. approved. **Model GDP-207**, 1 lb., mailable.....**4.95**
- C Heath solder/desolder set:** solders, desolders and strips wire. Squeeze-bulb makes desoldering a snap; heated V-slot wire stripper provided. **Model GDP-108**, 1 lb., mailable.....**9.95**
- D Kit builders tool set:** Combination wire stripper/diagonal side cutter midget long-nose pliers; three screwdrivers (3/32", 1/8", 3/16"); Weller W-PS soldering iron; 5 nut drivers (3/16", 1/4", 5/16", 3/8", 1/2"); nut starter; soldering aid; solder; and "Kit-Builder's Guide." **Model GH-25**, 4 lbs., mailable.....**19.95**

- E Speedex wire & cable stripper:** no. 10, 12, 14, 16, and 22 wire. **Model GDP-663**, 2 lbs., (mfrs. list 9.95), mailable.....**5.89**
- F Vaco hollow shaft nut driver set:** Seven drivers, most common nut sizes, 3/16", 1/4", 5/16", 11/32", 3/8", 7/16" and 1/2". Handles color-coded for easy identification. **Model GDP-204**, 3 lbs., mailable.....**6.95**
- G Heathkit soldering iron.** Low, medium and high heat ranges. 6' cord. 117 VAC. **Kit GH-17A**, 5 lbs., mailable.....**14.95**
- H Heathkit motor speed control:** Saves power, blades, bits, saws, etc. A feedback circuit lets you slow down power tools while maintaining almost full torque. **Kit GD-973A**, 3 lbs., mailable.....**17.50**



Health Educational Kit-Courses

A How to understand & use your vacuum tube voltmeter

Learn theory, advantages & applications of the VTVM. Special power supply & text lets you learn-by-doing. For beginner or professional.

- Kit EF-1**, text and special power supply (for VTVM owners), 3 lbs., mailable**10.95**
- Kit EF-1-5**, includes EF-1 and IM-18, 13 lbs., mailable.....**39.95**
- Kit EF-1-6**, includes EF-1 and IM-28, 15 lbs., mailable.....**49.95**
- Manuals Only for EF-1**, (single copy) **5.00**; (10 or more) ea. **3.00**

B How to understand & use your oscilloscope

Includes experimental chassis for constructing many different circuits. Change circuits as desired . . . special solderless spring-clip connectors. Large 150-page textbook for future reference.

- Kit EF-2**, text, special chassis & parts, 4 lbs., mailable.....**11.95**
- Manuals Only for EF-2**, (single copy) **5.00**; (10 or more) ea. **3.00**

C How to understand & use your signal generator

Text covers theory, function, and use of RF and AF generators. Textbook a valuable reference.

- Kit EF-3**, text and special test chassis & parts, 4 lbs., mailable**14.95**
- Kit EF-3-2**, includes EF-3 and IG-102, 17 lbs., mailable.....**44.95**
- Manuals Only for EF-3** (single copy) **5.00**; (10 or more) ea. **3.00**

D Basic/electricity kit/course

Learn about electricity and electronic theory, do interesting experiments to demonstrate principles, and you build a handy DC volt-ohm milliammeter.

- Kit EK-1**, 4 lbs., mailable.....**24.95**

E Basic radio—2 parts kit/course

Start by building a simple crystal receiver . . . improve it chapter by chapter. Result: a regenerative tube-type receiver! In Part II you learn more advanced circuits and build a 2-band superheterodyne receiver. Requires EK-1 meter or equivalent . . . EK-2A required for completion of EK-2B.

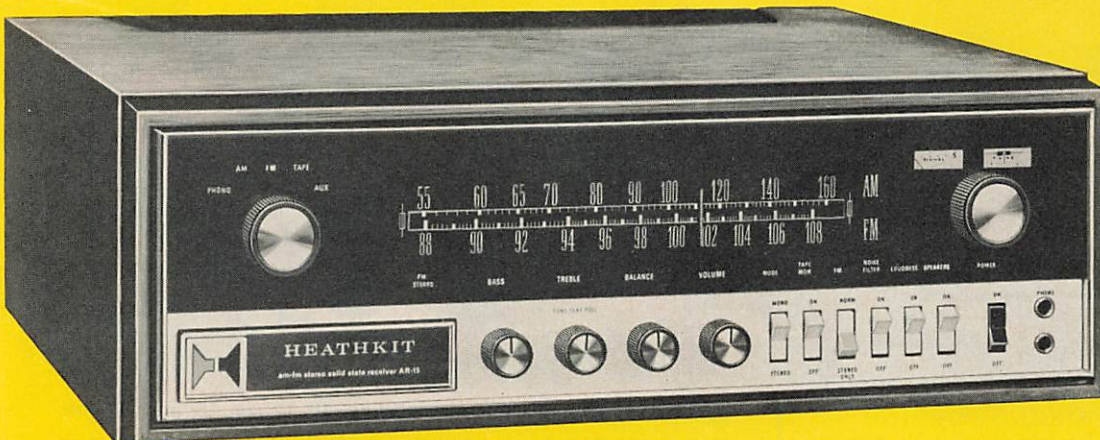
- EK-2A**, part I, 7 lbs., mailable.....**21.50**
- EK-2B**, part II, 5 lbs., mailable.....**21.50**
- AK-8**, cabinet for radio, 3 lbs., mailable.....**3.95**

F Basic transistors kit/course

Simple, thorough introduction to solid-state electronics. No difficult math involved. Builds a handy two-station intercom.

- Kit EK-3**, 4 lbs., mailable.....**19.95**

Heathkit[®] AR-15



Assembled & aligned FET tuner gives excellent sensitivity, high over-load capability.



Two crystal filters in the IF replace the usual transformers for unsurpassed selectivity.



Two tuning meters . . . one for signal strength one to put you on station frequency.



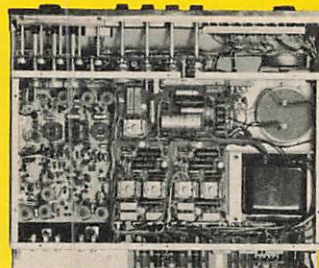
ICs in the IF amplifier stage replace 56 conventional parts . . . deliver hard limiting.



150 watts music power from 4 output transistors and extremely husky power supply.

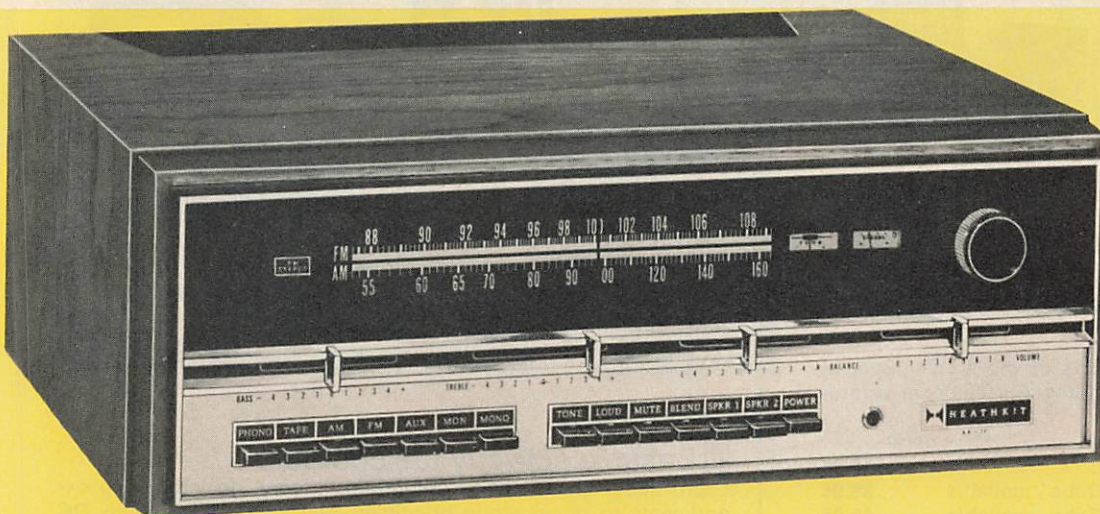
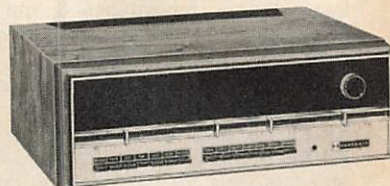


Positive circuit protection. Outputs are completely short-circuit and overload protected.



Inside the magnificent AR-15. Note circuit board/wiring harness construction, massive power supply components, recessed inputs.

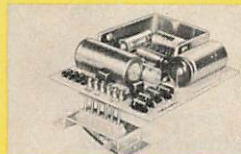
Heathkit[®] AR-29



FET FM tuner...preassembled & aligned. Delivers high sensitivity, no overloading.



Computer-designed L-C filter delivers more than 70 dB selectivity, minimum distortion.



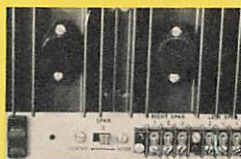
Plug-in fiberglass circuit boards for faster assembly — less chance for error.



Built-in test circuitry for fast, accurate initial set-up and servicing.

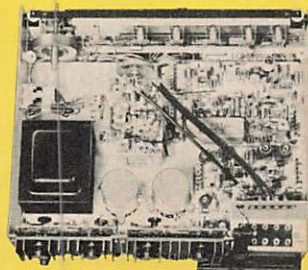


100 watts music power from massive power supply and 4 heat-sinked output transistors.



2-speaker system capability... stereo in two different locations or a "Center-Channel!"

A look inside the AR-29. Note ball-bearing flywheel tuning . . . massive power supply . . . plug-in circuit board design . . . recessed inputs.





The Finest Stereo Receivers Under The Summer Sun

The incomparable Heathkit AR-15 . . . 349.95

Still unquestionably the best! The AR-15 has been around awhile, but no one has been able to match it in terms of overall performance, extreme versatility, and maximum value. When we designed the AR-15, we knew it was the finest piece of audio engineering anyone had ever done . . . time hasn't changed that a bit. Like any masterpiece, the AR-15 just keeps looking (and sounding) better all the time. Compare for yourself . . .

Exclusive FET FM tuner . . . factory assembled and aligned to assure top performance . . . delivers IHF sensitivity of 1.8 uV or better.

Two crystal filters in the IF provide an extremely steep-sided bandpass to offer adjacent channel selectivity impossible to attain with conventional tuned circuitry . . . 70 dB minimum.

Powerful 150-watt amplifier section floats along effortlessly to deliver instant, clean power. Provides 150 watts IHF . . . 100 watts rms . . . drives the most inefficient speaker systems to awesome sound levels with room to spare. The unusual performance of the amplifier comes from a carefully designed, fully protected output section and a massive, regulated power supply that always delivers.

Other features include all solid-state circuitry, employing 69 silicon transistors, 43 diodes and two advanced ICs . . . stereo only switch . . . adjustable stereo threshold control for automatic switching to stereo & mono . . . loudness switch for full response listening even at low volume levels . . . automatic noise-operated FM squelch that eliminates noise before you can hear it . . . adjustable stereo phase control for maximum channel separation . . . magnetic phono inputs with a 98 dB dynamic range . . . two front panel stereo headphone

jacks for convenient private listening . . . individual input level controls for each channel of each input for constant volume when switching sources . . . external antenna connections for both 75 ohm coax and 300 ohm twinlead plus a built-in rod antenna for AM . . . two calibrated tuning meters that put you exactly on frequency with the best signal. And the exclusive built-in Heath self-service circuitry that allows you to check-out the entire receiver while assembling it, do initial set up and adjustment . . . and maintain it without external test equipment.

If you want the best receiver money can buy, this is it.

Unquestionably.

Kit AR-15 (less cabinet) 35 lbs., mailable **349.95**

Assembled ARW-15 (less cabinet) 35 lbs., mailable **240.00**

AE-16, walnut cabinet, 10 lbs., mailable **54.95**

AR-15 SPECIFICATIONS—AMPLIFIER—Music power (each channel): 8 ohms, 75 watts*; 4 ohms, 50 watts; 16 ohms, 45 watts. **Continuous power:** 8 ohms, 50 watts*; 4 ohms, 45 watts; 16 ohms, 35 watts. **Power bandwidth for 0.5% THD:** 6 Hz to 30 kHz*. **Frequency response (1 watt):** ±1 dB, 8 to 40 kHz. **Harmonic distortion:** 0.5% from 20 Hz to 20 kHz at 50 watts rms. **Intermodulation distortion:** 0.5% at 50 watts. **Damping factor:** 45. **Input sensitivity:** Phono 2.2 mV, Tape, Aux., and Tape Mon., 200 mV. **Hum & noise:** Phono, -60 dB; Tape & Aux., -65 dB. **Channel separation:** Phono, 45 dB; Tape & Aux., 55 dB. **Tape output impedance:** 120 ohms. **Input impedance:** Phono 51 k ohms. Aux., Tape & Tape Mon. 100 k ohms. **Tape output:** 0.17 volt output with 0.2 volt input. **FM SECTION—(Monophonic)—Tuning range:** 88 to 108 MHz. **Frequency response:** ±1 dB 20 to 15,000 Hz. **Sensitivity:** 1.8 microvolts*. **Selectivity:** 70 dB*. **Image Rejection:** 90 dB*. **Capture ratio:** 1.5 dB*. **AM suppression:** 50 dB*. **Harmonic distortion:** 0.5%*. **Intermodulation distortion:** 0.5%*. **Hum & noise:** -65 dB*. **Spurious rejection:** -100 dB*. **FM SECTION—(Stereophonic)—Channel separation:** 40 dB at mid-frequencies. **Harmonic distortion:** 1% at 1000 Hz with 100% modulation. **19 kHz and 38 kHz suppression:** 55 dB. **SCA suppression:** 50 dB. **AM SECTION—Tuning range:** 535 to 1620 kHz. **Sensitivity:** External antenna, 12 uV at 1000 kHz for 10 dB S+N/N. **Selectivity:** 20 dB*. **Image rejection:** 60 dB at 600 kHz*. **Harmonic distortion:** 1.5%. **Hum & noise:** -45 dB*. **GENERAL—AC outlet sockets:** One switched (350 watts max.), two unswitched (350 watts max.). **Power requirements:** 105-125 or 210-250 volts, 50/60 Hz AC 240 watts at full output. **Dimensions:** Overall — 16 7/8" W x 4 3/4" H x 14 1/2" D. *Rated IHF (Institute Of High Fidelity) Standards

The superlative Heathkit AR-29 . . . 299.95

An extraordinary value. The AR-29 reflects a heritage of solid-state engineering experience that could only come from the designers of the superb AR-15. Our intent was to produce the finest medium-power receiver ever made . . . and dozens of audio experts and thousands of customers agree that we did just that. Compare performance, features, specs and price . . . you'll agree too.

The world's finest medium-power stereo amplifier . . . delivers a husky 100 watts IHF . . . 70 watts rms . . . sufficient to drive even the most inefficient speaker systems. A massive, regulated power supply, 4 individually heat-sinked and totally protected output transistors and the best harmonic & IM distortion specs in the industry combine to deliver the cleanest, most accurate reproduction you're likely to hear at any price . . . frequency response is a ruler-flat line from 7 Hz to 60,000 Hz.

Individual input level controls for both channels of all inputs allow adjustment of levels so volume remains constant when switching inputs. Normally found on only the most high priced, professional quality equipment . . . and the Heathkit AR-29.

Concert-hall FM stereo. A factory assembled & aligned FM tuner delivers high 1.8 uV sensitivity to pull in stations you've probably never heard in your area. FET design provides superior overload characteristics. A tiny IC performs 4 different functions in the multiplex section to insure excellent stereo performance.

Computer-designed 9-pole L-C filter in the IF strip gives an ideally shaped bandpass with greater than 70 dB selectivity, superior separation and eliminates IF alignment forever.

Pushbutton "Blend" control instantly attenuates any on-station stereo FM hiss and high frequency noise.

Pushbutton "Mute" function attenuates between-station noise on FM without affecting tuner sensitivity.

AM that could be mistaken for FM. Three FET front end with two transistor IF give excellent sensitivity with large signal handling capability for startling AM performance. And the built-in AM rod antenna swivels so you can orient it for best reception.

Other features include modular plug-in circuit board design that speeds assembly and eliminates most chances for error. Exclusive Heathkit self-service circuitry lets you not only assemble, test & align your new AR-29, but also service it completely . . . right down to the smallest component.

Looking for extraordinary performance at a very ordinary price? When you turn on your new AR-29, you'll know you've found it.

Kit AR-29 (less cabinet) 34 lbs., mailable **299.95**

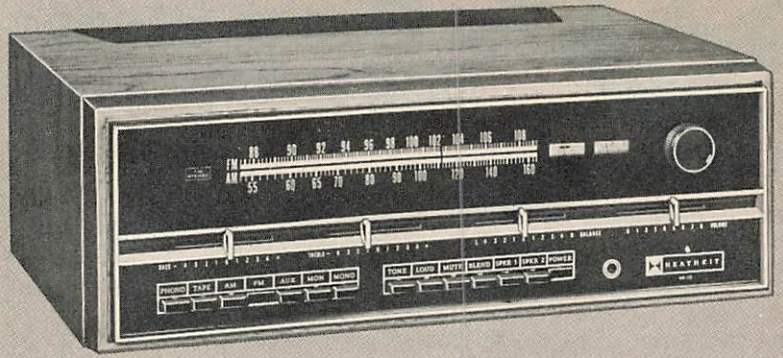
AE-19 oiled pecan cabinet, 9 lbs., mailable **19.95**

AR-29 SPECIFICATIONS—AMPLIFIER—Music power (each channel): 8 ohms, 50 watts*; 4 ohms, 35 watts; 16 ohms, 30 watts. **Continuous power:** 8 ohms, 35 watts*; 4 ohms, 30 watts; 16 ohms, 25 watts. **Power bandwidth for 0.25% T.H.D.:** 5 Hz to 30 kHz*. **Frequency response (1 watt):** -1 dB, 7 Hz to 60 kHz. **Harmonic distortion:** 0.25% from 20 Hz to 20 kHz at 35 watts rms. **0.1% at 1000 Hz at 1 watt. Intermodulation distortion:** 0.2% at 35 watts, 60 and 6000 Hz mixed 4:1. **0.1% at 1 watt. Damping factor:** 50. **Input sensitivity:** Phono: 2.2 mV (Overload 155 mV). Tape, Aux. & Tape Mon, 180 mV (Overload 10 volts). **Hum & noise:** Phono (10 mV ref.), -65 dB. Tape & Aux. (0.25 volt ref.), -75 dB. **Channel separation:** Phono, 50 dB. Tape & Aux., 60 dB. **Output impedance each channel:** 4 to 16 ohms. **Tape output impedance:** 50 ohms. **Input impedance:** Phono, 49 k ohm (RIAA Equalized). Aux., Tape & Mon, 100 k ohm. **Tape output:** 1 volt with 0.2 volt input. **FM, 3.8 volt with 100% modulation. FM SECTION—(Monophonic)—Tuning range:** 88 to 108 MHz. **Antenna:** Balanced for external 300 ohm antenna. Unbalanced 75 ohm. **Frequency response:** ±1 dB 20 to 15,000 Hz. **Sensitivity:** 1.8 Microvolts*. **Selectivity:** 70 dB*. **Image rejection:** 90 dB*. **Capture ratio:** 1.5 dB*. **AM suppression:** 50 dB*. **Harmonic distortion:** 0.5%*. **Intermodulation distortion:** 0.4%*. **Hum & Noise:** -60 dB*. **Spurious rejection:** -90 dB. **FM SECTION—(Stereophonic)—Channel separation:** 45 dB at mid-frequencies. **Frequency response:** ±1 dB from 20 to 15,000 Hz. **Harmonic distortion:** 0.5% at 1000 Hz with 100% modulation. **19 kHz and 38 kHz suppression:** 55 dB. **SCA suppression:** 55 dB. **AM SECTION—Tuning range:** 535 to 1620 kHz. **AM antenna:** Adjustable rod. **Connections for external ant. grd.** **Sensitivity:** External antenna, 20 uV at 1000 kHz for 20 dB S+N/N. **Selectivity:** 40 dB at 20 kHz. **Image rejection:** 60 dB at 600 kHz*. **45 dB at 1400 kHz*. IF rejection:** 50 dB*. **Harmonic distortion:** 2%*. **Hum & Noise:** -35 dB. **GENERAL—AC outlet sockets:** 1 switched (350 watts max.), 1 unswitched (350 watts max.). **Power requirements:** 105-125 or 210-250 volts 50/60 Hz AC 240 watts at full output. **Dimensions:** Overall — 16 3/4" W x 5 1/4" H x 14 1/2" D. *Rated IHF (Institute Of High Fidelity) Standards

*Rated IHF (Institute Of High Fidelity) Standards

More For Your Stereo Dollar At Vacationtime, Or Anytime... Heathkit AR-19... 239.95

- 60 watt AM-FM-FM Stereo Receiver
- All solid-state modular design



The definition of value... Heathkit AR-19. Advanced solid-state design... exceptional performance... easy assembly... low cost. Delivers a solid 60 watts IHF power, 40 watts RMS... extremely wide response of 6 to 35,000 Hz... distortion less than 0.25% at any power level. FM tuner sensitivity of 2 uV. Compare the cost of those specs against the competition!

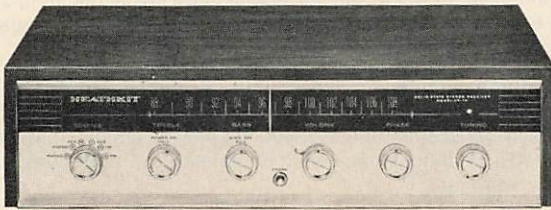
Complete control. Push button selection of phono, tape, AM, FM mono or stereo sources... of tone-flat contour, loudness, between-station muting, blending/canceling of on-station FM hiss, either or both stereo speaker systems. One-knob AM or FM tuning with ball-bearing smoothness. Linear motion controls for volume, bass, treble & balance. Individually adjustable controls for each channel of each input. Center tune and signal level meters.

Other features include assembled & aligned FM tuner & IF section; massive power supply; built-in test circuitry. Order your AR-19 now and discover the real meaning of value.

Kit AR-19, less cabinet, 30 lbs., mailable... 239.95
AE-19, oiled pecan cabinet, 9 lbs., mailable... 19.95

AR-19 SPECIFICATIONS—AMPLIFIER—Music Power (Each channel): 8 ohms, 30 watts*, 4 ohms, 20 watts; 16 ohms, 17 watts. Continuous power: 8 ohms, 20 watts*; 4 ohms, 20 watts; 16 ohms, 15 watts. Power bandwidth for 0.25% T.H.D.: 5 Hz to 30 kHz*. Harmonic distortion: 0.25% from 5 Hz to 20 kHz at 20 watts rms. Intermodulation distortion: 0.25% at 20 watts, 60 and 6,000 Hz mixed, 4:1. Channel separation: Phono, 50 dB, Tape & Aux., 55 dB. Output impedance (each channel): 4 to 16 ohms. **FM SECTION—(Monophonic)—**Tuning range: 88 to 108 MHz. Antenna: Balanced for external 300 ohm antenna. Unbalanced 75 ohm. Frequency response: ±1 dB, 20 to 15,000 Hz. Sensitivity: 2.0 microvolts*. Capture ratio: 2.5 dB*. AM Suppression: 50 dB*. Spurious Rejection: —90 dB*. **FM SECTION—(Stereophonic)—**Channel Separation: 35 dB at mid-frequencies. Frequency Response: ±1 dB from 20 to 15,000 Hz. Harmonic distortion: 1.5% at 1000 Hz with 100% modulation. 19 kHz and 38 kHz Suppression: 50 dB. **AM SECTION—**Tuning Range: 535 to 1620 kHz. Antenna: Adjustable rod. Sensitivity: Rod Antenna, 130 uV/M at 1000 kHz for 10 dB S+N/N. Selectivity: 25 dB at 10 kHz. Image rejection: 60 dB at 600 kHz*, 60 dB at 1400 kHz*. **GENERAL—AC Outlet Sockets:** One switched, one unswitched (350 watts max. each). Power Requirements: 105-125 or 210-250 volts 50/60 Hz AC. Dimensions: Overall—16¼" W x 5½" H x 14½" D. *Rated IHF (Institute of High Fidelity) Standards

Inflation-Fighting FM, Stereo

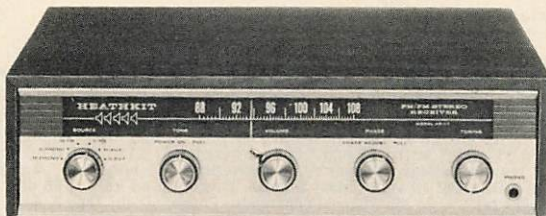


Heathkit 30-watt Stereo Receiver . . . just 119.95

Factory assembled & aligned FM tuner delivers 5 uV sensitivity for real station-pulling performance. **Features** front panel headphone jack, 6-position source selector for stereo or mono magnetic phono, auxiliary or FM; tandem bass & treble controls; concentric volume control; stereo phase control; stereo indicator.

Kit AR-14, less cabinet, 18 lbs., mailable... 119.95
AE-55 walnut veneer cab., 7 lbs., mailable... 12.95
AE-65, beige metal cabinet, 6 lbs., mailable... 3.95

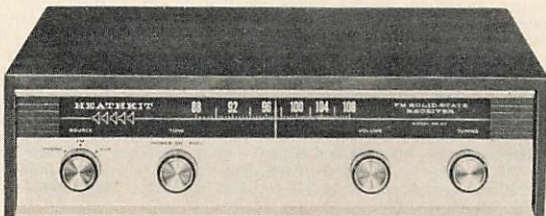
AR-14 PARTIAL SPECIFICATIONS: AMPLIFIER: Continuous Power Output: 10 watts per channel. Music Power Output (IHF): 15 watts per channel. Hum & Noise: Phono, —60 dB; Auxiliary, —63 dB. Frequency Response: 12 to 60,000 Hz ±1 dB; 6 to 100,000 Hz ±3 dB. Power Response: 15 to 50,000 Hz ±1 dB; 7 to 90,000 Hz ±3 dB. Total Harmonic Distortion: 0.5% or less @ 1 kHz. IM Distortion: Less than 1%. **FM: Hum & Noise (IHF):** —50 dB. Harmonic Distortion (IHF): 1% or less. Capture Ratio (IHF): 3 dB. **FM STEREO: Separation:** 30 dB @ 1 kHz. **GENERAL: Power Requirements:** 105-125 or 210-250 VAC, 50/60 Hz; 32 watts idling, 65 watts full output. No load on AC outlets. Dimensions: 15¼" W x 3¾" H x 12" D.



Heathkit 14 watt FM Stereo Receiver . . . only 72.95

Shop and compare. This 28 transistor, 7 diode circuit delivers 14 watts of music power with response of 25 to 35,000 Hz ±1 dB at full power with less than 1% distortion. Tuner sensitivity 5 uV. Only 12" wide and 3" high. Full controls. Front panel headphone jack. Assembled FM front end... easy circuit board completion. Drives 4-16 ohm speakers. For 110 or 220 VAC.

Kit AR-17, less cabinet, 9 lbs., mailable... 72.95
AE-25 walnut veneer cabinet, 5 lbs., mailable... 9.95
AE-35 beige metal cabinet, 4 lbs., mailable... 3.50



Heathkit 7 watt FM Mono Receiver . . . just 44.95

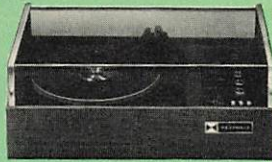
High fidelity FM for the cost of an ordinary table radio. A 13 transistor, 6 diode circuit offers 7 watts of music power, 5 watts continuous power with response of 25-60,000 Hz ±1 dB with less than 1% harmonic distortion. Drives efficient speakers of 4 to 16 ohms. Assembled FM front end has 5 uV sensitivity. Easy circuit board construction. 12" W x 3" H x 10¾" D. 110 or 220 VAC. 50-60 Hz.

Kit AR-27, less cabinet, 8 lbs., mailable... 44.95
AE-25 walnut veneer cabinet, 5 lbs., mailable... 9.95
AE-35 beige metal cabinet, 4 lbs., mailable... 3.50

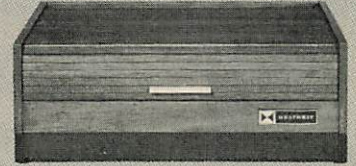
Heathkit® Stereo For The Fun Set



Optional see-thru smoked plastic cover with walnut sides is an attractive, low cost way to keep out dust.



Stylish tambour door disappears into oiled walnut cabinet.



Heathkit AD-27 FM-Stereo Compact . . . 169.95

Big component-quality sound . . . compact size and price. We used the highly praised AR-14 solid-state stereo receiver circuitry, modified it physically to fit the handsome walnut cabinet and combined it with the famous BSR McDonald 500A automatic turntable. The result is a component stereo in the truest sense. A full 30 watts of music power, 12-16,000 Hz response, less than 1% distortion, and the capability of driving any efficient 4-16 ohm speaker system means solid, clean stereo sound. Outstanding tuner selectivity, 5 uV sensitivity, 27 dB channel separation and smooth flywheel tuning add up to exciting FM stereo. The 4-speed BSR turntable comes complete with a Shure diamond stylus cartridge and provides a host of convenience features; cueing/pause control . . . anti-skate control . . . counterbalanced tone-arm . . . vernier stylus pressure adjustment. For a stereo system compact in price but not performance . . . order your AD-27 now. Order a pair of speaker systems at the same time and save 5% on the whole order. (see pg. 32.)

Kit AD-27, 50 lbs., Express/Frt. 169.95

AD-27 SPECIFICATIONS—FM SECTION: Tuning range: 88-108 MHz Antenna Input Impedance: 300 ohms, balanced input. Sensitivity: 5 uV.* **AMPLIFIER SECTION:** Continuous Power Output: 10 watts per channel. Music Power Output: 15 watts per channel.* Tape Output: 0.5 volt, with a 0.3 volt signal at the AUX input. Tape Output Impedance: 3500 ohms. Frequency Response (1 watt): 12 Hz to 60 kHz ±1 dB, 6 Hz to 100 kHz ±3 dB. Power Bandwidth: 5 Hz to 90 kHz. Input Sensitivity: Aux. 300 millivolts. Channel Separation: 45 dB or better at 1000 Hz. **GENERAL:** Power requirements: 105-125 or 210-250 volts. 50/60 Hz. Dimensions: 21 7/8" W x 7 7/8" H x 14-11/16" D.

*Rated IHF (Institute of High Fidelity) Standards.

Heathkit AD-17 Stereo Compact . . . 119.95

No ordinary compact . . . this famous Heathkit AA-14 stereo amplifier circuitry combined with a BSR McDonald 400 automatic turntable and Shure diamond stylus magnetic cartridge. Provides a full 30 watts music power to handle speakers like the AS-37A, AS-18 or AS-16 (page 31). Response from 12-60,000 Hz with less than 1% distortion. Inputs for tuner and tape recorder. 4-speed turntable handles 7, 10 & 12" records . . . boasts cue/pause control, anti-skate control, adjustable stylus pressure. For an extraordinary stereo compact at a very ordinary price order your AD-17 today.

Kit AD-17, 39 lbs., available 119.95

ADA-17-1, smoked plastic cover, 5 lbs., available 14.95

AD-17 SPECIFICATIONS: Same as AD-27 opposite, except without FM tuner. Size: 21 3/4" W x 8 1/4" H x 14-1/16" D.

The AD-19: stereo component performance . . . rich console styling . . . 289.95

Get it all together this summer . . . the startling realism of true stereo component sound . . . elegant Mediterranean oak styling . . . and remarkably low cost.

AR-14 circuitry delivers an honest 15 watts IHF per channel with low distortion. Factory assembled FM tuner provides clean, crisp FM performance over exceptional ranges. AFC ends drift; adjustable phase control for best stereo separation.

BSR McDonald 500A 4-speed turntable . . . auto or manual play . . . all record sizes . . . cue/pause control . . . adjustable anti-skate . . . comes complete with Shure diamond stylus magnetic cartridge . . . assembled.

Two full range speaker systems in tuned-port enclosures. 10" diameter woofer and 3 1/2" ring-damped tweeter. 60-16,000 Hz response.

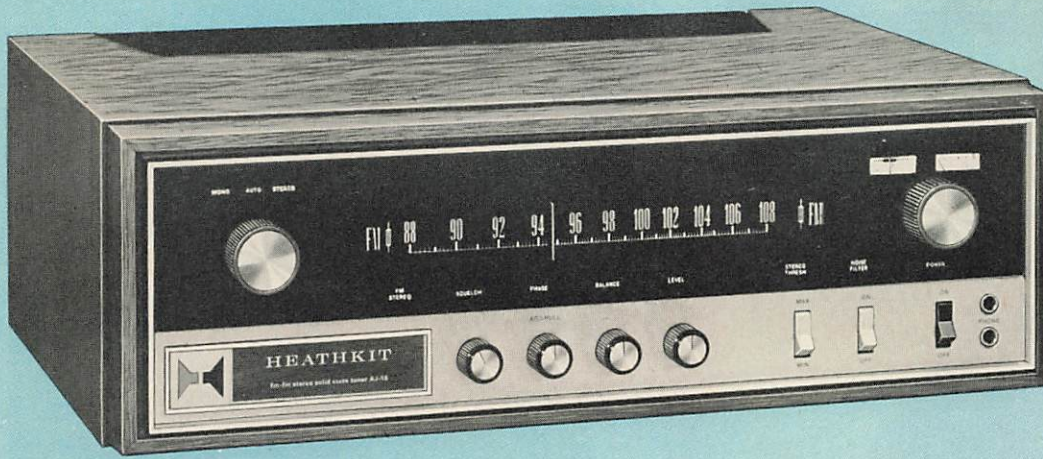
Luxurious Mediterranean cabinet . . . a work of art in dark oak veneer and solid-oak trim accented by antiqued brass hardware. Start your stereo summer now, with the exciting AD-19—it's now an even better buy.

Kit AD-19, 158 lbs., Express/Frt. 289.95

Not eligible for 5% system discount

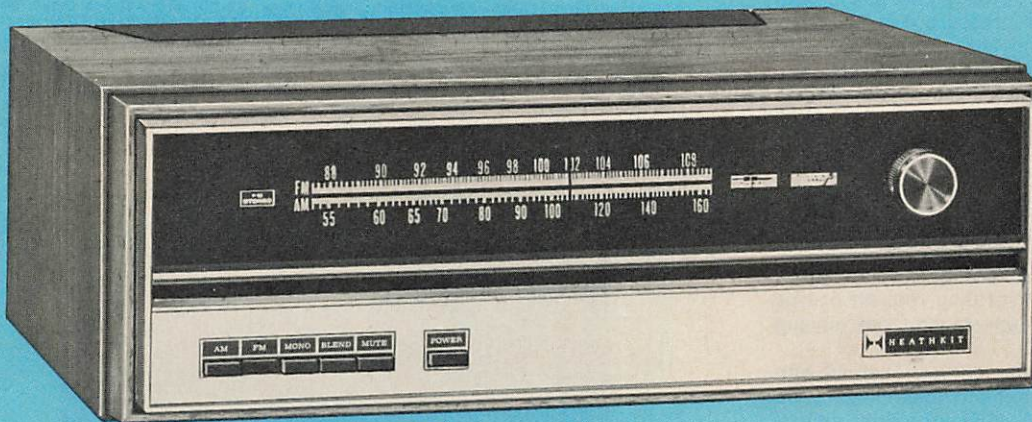
AD-19 PARTIAL SPECIFICATIONS—FM—Sensitivity: 5 uV. Capture ratio: 4 dB. **AMPLIFIER—IHF Music power output:** 15 watts per channel. Continuous power output: 10 watts per channel. Frequency response: (1 watt) 50-60,000 Hz. Power bandwidth: 12-90,000 Hz. Channel separation: 45 dB or better at 1 kHz. Harmonic distortion: (at full output) less than 1% from 12-60,000 Hz. Intermod. distortion: Less than 1% at full output. **SPEAKERS—Crossover frequency:** 2 kHz. **TURNTABLES—Speeds:** 4. Sizes: 7, 10 or 12". Cartridge: Shure M71, 6 mil spherical diamond; 1 1/2-3 grams. **POWER:** 105-125 or 210-250 VAC, 50-60 Hz. **SIZE:** 49 1/2" W x 27" H x 20 1/2" D.





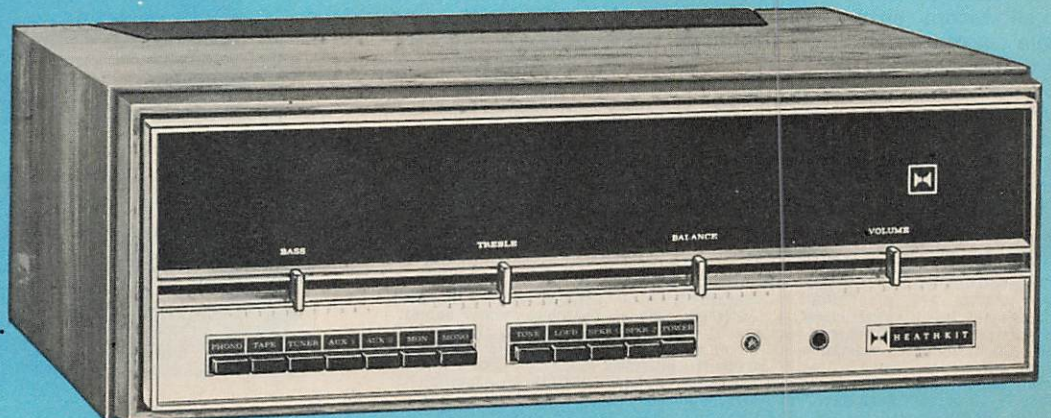
**Famous
AR-15
Stereo
"Separates"**

Save 5% on this AA-15
& AJ-15 combo with
the Heath System
Discount . . . see
page 32 for details.



**AR-29
Stereo
"Separates"**

The Heath System
Discount can save you
5% on the AJ-29 &
AA-29 . . . see page 32
for additional information.



Summer Quartet Of Stereo Values

The extraordinary tuner and amplifier sections of the highly praised Heathkit AR-15



Imaginative design from the remarkable AR-15 . . . features that make the AJ-15 an equally impressive performer. An exclusive design FET FM tuner with two FET RF amplifier stages and an FET mixer gives extremely high 1.8 uV sensitivity to pull in stations you've possibly never heard before. Crystal filters replace the usual IF transformers, providing extremely good (70 dB) selectivity and eliminating IF alignment forever. Two tuning meters are provided . . . one for signal strength, the other for tuning the station at exactly the center frequency. An automatic noise-operated squelch completely eliminates threshold and between-station noise . . . gives you virtually noise-free tuning across the entire FM band. Stereo threshold control allows you to set the maximum amount of stereo FM noise you will accept . . . and the AJ-15 automatically switches to mono if the noise level increases, and switches back when the noise subsides. Tired of hunting for that stereo station? The stereo-only switch lets you hear only those stations transmitting in stereo. Other features include stereo indicator, adjustable phase for maximum separation, two front panel headphone jacks and fast, enjoyable assembly with the famous Heathkit manual. For unsurpassed FM/FM stereo reception, order your AJ-15 now.

Kit AJ-15 (less cabinet) 18 lbs., mailable **189.95**

AE-18 walnut cabinet, 8 lbs., mailable **19.95**

AJ-15 SPECIFICATIONS—FM monophonic and stereo specifications same as AR-15. **Output Voltage:** Tape and Fixed, 1.5 V. rms nominal (100% modulation). Phone and Variable, 0 to 4 volts before clipping (100% modulation). **Output Impedance:** Tape and Fixed, approx. 9,000 ohms; Phone and Variable, 100 ohms. **AC Outlet Socket:** Unswitched, 350 watts max. **Power Requirements:** 105-125 or 210-250 volts 50/60 Hz AC 25 watts. **Dimensions: Overall:** 16 7/8" W x 4 3/4" H x 12 1/2" D.

Powerful solid-state amplifier from the AR-15 . . . delivers an enormous 150 watts of IHF music power . . . an honest 100 watts RMS—enough to drive even the most inefficient speaker systems or handle the most sudden peaks, without clipping or distortion. And that power is clean, quiet; both harmonic and IM distortion are less than 0.5% even at full output on both channels. Power bandwidth is an impressive 6 to 30,000 Hz. Response is virtually ruler-flat from 8 Hz to 40 kHz . . . one of the finest response curves of any stereo amp, regardless of price. Individual input level controls . . . a rarity on any amplifier at any price . . . allow you to adjust the input level of each channel of every input. Main and remote speaker switches and connections permit operation of a remote system anywhere, without turning the main system on, and vice versa. Two front panel stereo headphone jacks permit private listening at will. Handy tape monitor switch allows listening to either the source or recorded signal during tape recording. For flat amplifier response, you can disable the tone controls with the tone flat switch. Additional features include loudness switch, short-circuit-proof output transistors, a giant filtered and shielded power supply, "Black Magic" panel lighting and easy assembly with the famous Heathkit manual. For stereo reproduction at its finest, order your AA-15 now.

Kit AA-15 (less cabinet) 37 lbs., mailable **179.95**

AE-18 walnut cabinet, 8 lbs., mailable **19.95**

AA-15 SPECIFICATIONS—Amplifier specifications, except size, are same as AR-15. **Dimensions:** 16 7/8" W x 4 3/4" H x 12 1/2" D.

Superlative performance at modest cost . . .
stereo separates from the sophisticated AR-29.

The outstanding tuner section of the AR-29 . . . the AJ-29 features a preassembled, factory-aligned FET FM tuner that boasts sensitivity far better than its modest price would indicate; a remarkable 1.8 uV. A single IC in the multiplex section controls four different functions to assure excellent stereo reproduction. Three ICs in the IF section provide superior AM rejection capability, hard limiting, temperature stability and greater reliability. A computer-designed 9-pole L-C filter in the IF strip gives a perfectly-shaped bandpass with steep skirts to provide 70 dB selectivity, superior separation and the elimination of IF alignment forever. New "blend" function attenuates any on-station FM hiss or high frequency noise . . . just push a button. And a new "mute" function attenuates between-station noise on FM without affecting sensitivity.

Advanced AM circuitry delivers AM that could easily be mistaken for FM. Three field effect transistors in the AM RF section deliver superior sensitivity and large signal handling capacity for truly remarkable AM reception. Built-in AM rod antenna swivels to allow orientation for best reception.

Fast, easy assembly. Modular plug-in circuit board design, combined with the famous Heath step-by-step manual, assure virtually error-free assembly. And the built-in trouble-shooting meter and procedures in the manual allow exact initial set-up and adjustment without external test equipment. Add up the features and performance . . . compare the cost—for a really top performing, medium cost stereo tuner, there's only one choice. Order your AJ-29 now.

Kit AJ-29, 19 lbs., mailable **169.95**

AE-19 cabinet, 9 lbs., mailable **19.95**

AJ-29 SPECIFICATIONS: Identical to the tuner specifications for the AR-29.

100 watts of pure sound . . . that's the new Heathkit AA-29—the amplifier portion of the highly regarded AR-29 stereo receiver, with the addition of auxiliary and tuner inputs. Delivers a husky 100 watts IHF power . . . 70 watts RMS—enough to drive practically any speaker system available and still have ample reserves to handle sudden peaks and transients. A massive, fully regulated power supply, 4 individually heat-sinked & short-circuit protected power transistors and less than 0.25% harmonic and IM distortion at any power level add up to fidelity you're not likely to hear outside of live performances.

Complete inputs allow unmatched source switching versatility, and as an added convenience, both channels of all inputs (including tape monitor) are equipped with level controls to maintain constant volume when switching sources. Outputs for two separate speaker systems and center-channel fill-in capability provide extra versatility, and a front panel stereo headphone jack permits convenient private listening. Slider-type controls for Bass, Treble, Volume & Balance, plus push-button controls for all functions and inputs provide quick visual indication of all settings.

Modular plug-in circuit board design, built-in test circuitry including test probes & meter and the famous Heathkit manual combine to give fast, easy assembly, easy initial set-up and complete self-service capability. Compare specs and performance versus price. You'll find the Heathkit AA-29 a best-buy in a medium-power stereo amplifier.

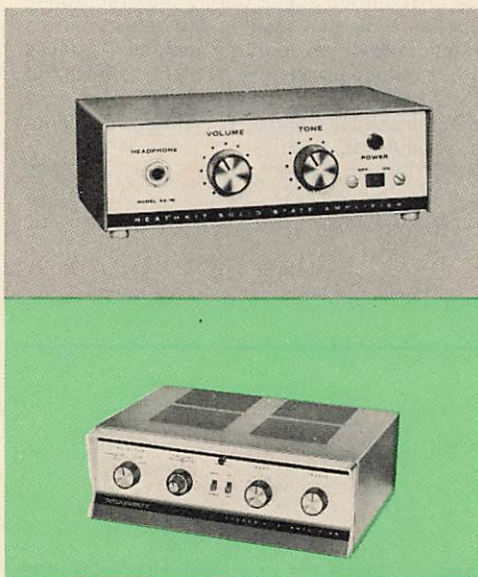
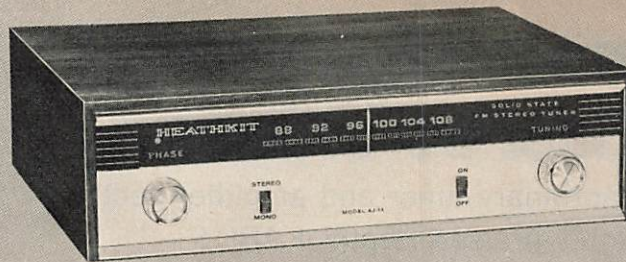
Order yours now.

Kit AA-29, 27 lbs., mailable **149.95**

AE-19, cabinet, 9 lbs. **19.95**

AA-29 SPECIFICATIONS: Identical to the amplifier specifications of the AR-29.

Fast Summer Projects... Low cost Heathkit Stereo



Heathkit solid-state 4-watt mono amp

A remarkable value...an ideal choice for adding background music to office, den or playroom. Drives any 4-16 ohm high efficiency speaker with power to spare. Excellent frequency response and low distortion. Inputs for ceramic phono cartridges, mono AM or FM tuners or tape recorders. Front panel headphone jack. Brown & beige metal cabinet included. 120/240 VAC.
Kit AA-18, 4 lbs., mailable.....**19.95**

Heathkit tube-type 20-watt stereo amp

Delivers a full 10 watts IHF music power per channel...drives any high efficiency 4-16 ohm speakers with ease. Low distortion and wide 30-30,000 Hz ± 1 dB response. Four stereo inputs: magnetic & ceramic cartridges, tuner and auxiliary. Dual tandem bass & treble controls; separate right & left channel volume controls. Metal cabinet in black, brown & beige included. 120/240 VAC wiring options.

Kit AA-32, 16 lbs., mailable.....**49.95**

Heathkit AJ-14 solid-state FM stereo tuner

The stereo tuner section from the famous Heathkit AR-14. All solid-state 14 transistor, 5 diode circuit provides clean, natural sound with less than 1% distortion. 5 μ V sensitivity. 4-stage IF provides selectivity comparable to units costing much more. Stereo Phase control. AFC provides drift-free tuning. Easy assembly. 120/240 VAC operation.

Kit AJ-14, 6 lbs. (less cabinet), mailable.....**57.95**

AE-25, walnut veneer cabinet, 5 lbs., mailable.....**9.95**

AE-35, beige metal cabinet, 4 lbs., mailable.....**3.50**

AJ-14 SPECIFICATIONS: Same as tuner section of AR-14, p. 24.

Heathkit AA-14 solid-state 30 watt stereo amplifier

The famous AR-14 stereo amplifier section...all solid-state circuit produces a full 15 watts IHF music power per channel with less than 1% harmonic distortion. Wide 15 to 50,000 Hz ± 1 dB response. Inputs for mono or stereo tuners, turntables or high level auxiliary sources. Tandem bass & treble controls. Front panel stereo headphone jack and speaker cutoff switch. Easy circuit board assembly in about 10 hours. 120/240 VAC operation.

Kit AA-14, 11 lbs. (less cabinet), mailable.....**67.95**

AE-25, walnut veneer cabinet, 5 lbs., mailable.....**9.95**

AE-35, beige metal cabinet, 4 lbs., mailable.....**3.50**

AA-14 SPECIFICATIONS: Same as amplifier section of AR-14.



(A) Telex "Adjustatone" Stereo Headset. Now you can enjoy the remarkable listening experience of stereo headphones at low cost. Excellent choice for "budget" or second systems. 10-15,000 Hz response.

Model ADP-135, 3 lbs., mailable.....**15.95**

(B) Telex ST-11 Stereo Headset. A medium-priced headphone to satisfy all but the most dedicated stereo purist. 16-15,000 Hz response.

Model ADP-92, 2 lbs., mailable.....**23.92**

(C) Koss Pro-4AA Stereo Headset...easily one of the finest stereo headphones available at any price. Extraordinary reproduction—recommended for use with very high quality systems.

Model ADP-1002, 2 lbs., mailable.....**59.00**

ADP-1002 SPECIFICATIONS: Driver element: Dynamic. Frequency response: 10-20,000 Hz. Impedance: 4 to 16 ohm sources. Distortion: Negligible at normal listening levels. Cord: Coiled, 10', 4-wire, 3-circuit plug. Color: Gray-bronze cups, black cushions & band.

(D) Heathkit stereo headphone control unit...a convenient way to extend the versatility of your hi-fi or stereo system. Allows connection of up to two sets of headphones. Dual concentric level control for balancing right & left channels. 20' cable supplied.

Kit AC-17, 3 lbs., mailable.....**7.95**



40 minute stereo cartridge included with your new GD-28. 16 instrumentals by famous Capitol Records artists. \$7.95 value.

Heathkit solid-state 8-track stereo tape player

A convenient, low cost accessory for any stereo system...ideal for background music in home or office. Just plug the GD-28 into the Tape, Tuner or Auxiliary inputs of your amplifier, insert the cartridge of your choice and listen. A metal tape splice automatically switches the playback head from one track to the next. For extra versatility, you can select the track you want to hear just by pushing the convenient slide switch. Pilot lamp indicates at a glance which track is playing. Fast, easy enjoyable assembly with the famous Heathkit manual and preassembled transport mechanism.

Kit GD-28, 10 lbs., mailable **\$59.95**

GD-28 SPECIFICATIONS — Cartridge: 8-track stereo. Tape speed: 3 $\frac{3}{4}$ " per second. Output (each channel): 300 mV at Standard Reference Level. Harmonic distortion: Less than 3%. Separation: Greater than 30 dB at 1 kHz. Frequency response: ± 6 dB, 50 Hz to 10 kHz. Wow & flutter: Less than 0.3%. Hum & noise: Better than -40 dB. Motor: 117 VAC synchronous. Power requirements: 105-125 VAC, 60 Hz, 45 watts (momentary). Cabinet: Simulated walnut grained vinyl clad wood. Dimensions: 10 $\frac{3}{8}$ " W x 4 $\frac{1}{2}$ " H x 8 $\frac{1}{4}$ " D. Net weight: 6 $\frac{3}{4}$ lbs.



Enjoy the sunny sound of Heathkit stereo

Heathkit Separate Hi-Fi Speakers

(A) 3-way high-compliance speaker

Features 12" unitary speaker with woofer, compression mid-range & horn-loaded compression tweeter. 80 watts peak power capability. 600 & 4000 Hz crossovers. Mid & high frequency level control. 1 year guarantee & cabinet recommendations included.

Model AS-27, 15 lbs., mailable . . . **\$79.50**
Pair (AS-27-2) 39 lbs., mailable . . **\$152.00**

AS-27 SPECIFICATIONS — Impedance: 8 ohms. Frequency response: 20-20,000 Hz. Cone resonance: 30 Hz. Magnet weights: 1 lb., 6.4 oz., 4.6 oz. Voice coil sizes: 1 $\frac{1}{2}$ " and 1".

(B) 2-way high-compliance speaker

12" high-compliance, edge-damped woofer with re-entrant horn tweeter. 1 $\frac{1}{2}$ & 1" voice coils. High frequency level control. 1 year guarantee.

Model AS-183, 15 lbs., mailable . . **\$54.95**
Pair (AS-183-2), 39 lbs., mailable **\$105.00**

AS-183 SPECIFICATIONS — Impedance: 8 ohms. Power rating: 30 watts. Frequency response: 20-15,000 Hz. Cone resonance: 25 Hz. Magnet weights: 1 $\frac{3}{4}$ lbs., 4.65 oz. Voice coil sizes: 1 $\frac{1}{2}$ " and 1".

(C) 3-way high-compliance speaker

12" high-compliance woofer with mid-range cone; special Heath-designed tweeter. 1 $\frac{3}{4}$ lb. ceramic magnet. High frequency level control. 1 year guarantee.

Model AS-173, 14 lbs., mailable . . **\$44.95**
Pair (AS-173-2), 37 lbs., mailable . **\$85.00**

AS-173 SPECIFICATIONS — Impedance: 8 ohms. Power rating: 25 watts. Frequency response: 35-15,000 Hz. Cone resonance: 40 Hz. Voice coil sizes: 1 $\frac{1}{2}$ " and 1".

(D) 12" 3-way coaxial speaker

Wide range response at low cost. Handles up to 20 watts. True coaxial design with woofer, midrange cone and special design horn tweeter. Electrical & mechan-

ical crossovers. High frequency level control. 1 year guarantee.

Model AS-163, 12 lbs., mailable . . **\$34.95**
Pair (AS-163-2), 32 lbs., mailable . **\$66.00**

AS-163 SPECIFICATIONS — Impedance: 8 ohms. Frequency response: 40-15,000 Hz. Cone resonance: 60 Hz. Magnet weights: 13 oz., 1 oz. Voice coil sizes: 1 $\frac{1}{2}$ " and 1".

(E) 12" 2-way coaxial speaker

Separate woofer & tweeter with capacitive crossover delivers 50-15,000 response, handles up to 15 watts. High frequency level control. 1 year guarantee.

Model AS-153, 10 lbs., mailable . . **\$24.95**
Pair (AS-153-2), 28 lbs., mailable . **\$46.00**

AS-153 SPECIFICATIONS — Impedance: 8 ohms. Cone resonance: 60 Hz. Magnet weights: 10 oz., 1.47 oz. Voice coil sizes: 1" and $\frac{3}{4}$ ".

(F) 8" 2-way coaxial speaker

50-14,000 Hz response from separate woofer & tweeter. Handles up to 12 watts. Separate high frequency level control. 1 year guarantee.

Model AS-133, 6 lbs., mailable . . . **\$19.95**
Pair (AS-133-2), 18 lbs., mailable . **\$38.00**

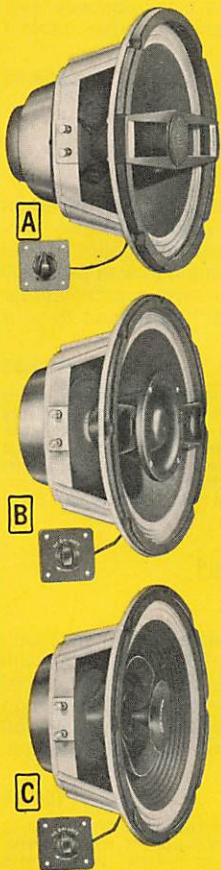
AS-133 SPECIFICATIONS — Impedance: 8 ohms. Cone resonance: 70 Hz. Magnet weights: 10 oz., 0.68 oz. Voice coil sizes: 1" and $\frac{3}{8}$ ".

(G) 8" dual cone speaker

Only 3 $\frac{1}{2}$ " deep...ideal for in-wall mounting or where space is tight. 50-12,000 Hz response. Handles up to 12 watts. 1 year guarantee. Ideal for playroom or den system.

Model AS-123, 5 lbs., mailable . . . **\$11.95**
Pair (AS-123-2), 15 lbs., mailable . **\$22.00**

AS-123 SPECIFICATIONS — Impedance: 8 ohms. Cone resonance: 70 Hz. Magnet weight: 10 oz. Voice coil size: 1".





An Oasis Of Sound For Summer Days



Ⓐ Heathkit/Bozak 3-way speaker system . . . 239.95

An outstanding medium efficiency system to team with your AR-15, AA-15, AR-29, AR-19 or AA-29. Utilizes famous Bozak 12" woofer, 6" midrange and two 2½" tweeters in an infinite baffle cabinet. Woofer has light, rigid, variable density felted paper cone with high compliance suspension to deliver clean, crisp bass to the threshold of hearing. Midrange has patented Bozak rigid metal diaphragm, and tweeters offer velvet smooth, natural response. Accepts 50 watts of program material with 8 ohms impedance. Mediterranean cabinet, factory finished and assembled in pecan, measures 29⅝" H x 27¾" W x 19⅞" D.

Kit AS-102, 112 lbs., Express/Frt. **239.95**

Ⓑ Heathkit/JBL speaker system . . . 184.95

Heath design know-how and JBL speakers combined in the classic bookshelf cabinet for a system that will do justice to your top-of-the-line components. The 14" woofer uses an inert, self-damping cone suspension and massive 11½ lb. magnet for clear, full bass down to 40 Hz. JBL 2" direct radiator produces sharp, lifelike highs. Factory assembled and finished cabinet. System assembles in one or two hours.

Kit AS-48, 68 lbs., Express/Frt. **184.95**

AS-48 SPECIFICATIONS — **Speakers:** 14" woofer, 4" voice coil, 11½ lb. magnet assy.; 2" piston-type direct radiator tweeter, 1.25 lb. magnet assy. **Frequency range:** 40-20,000 Hz. **Crossover:** LC-type, 2000 Hz. **Power rating:** 50 watts program material. **Impedance:** 8 ohms. **Control:** Three-position high frequency level control. **Cabinet:** Damped reflex, tube-ported. Oak veneer and furniture grade hardwoods, pecan finish. **Dimensions:** 14" H x 23½" W x 12" D. **Net weight:** 42 lbs.

Ⓒ Heathkit/Altec-Lansing 2-way system . . . 259.95

Another excellent choice for your AR-15, AA-15, AR-29, AR-19 or AA-29, this 2-way bass reflex system incorporates a high compliance 15" woofer and high frequency sectoral horn. Woofer uses special edge-wound copper-ribbon voice coil, and heavy cast aluminum frame for pure bass response. Sectoral horn and matching driver provide excellent dispersion characteristics of mid and high fre-

quencies. Rated at 50 watts, 8 ohms impedance. Has frequency level controls. Assembled and finished Mediterranean pecan cabinet (29⅝" H x 27¾" W x 19⅞" D).

Kit AS-101, 131 lbs., Express/Frt. **259.95**

Ⓓ Heathkit/Acoustic Research system . . . 189.95

The world renowned Acoustic Research AR-3a, with three drivers in sealed acoustic suspension enclosure — now in kit form! Gives virtually flat response from 30 Hz to 20,000 Hz. Has 12" woofer, special hemispherical dome midrange and tweeter combined with precisely engineered crossover network. Separate output level controls at rear of oiled walnut cabinet let you "custom tailor" the sound to your environment.

Kit AS-103, 66 lbs., Express/Frt. **189.95**

AS-103 SPECIFICATIONS: **Power requirements:** 25 watts (RMS) recommended minimum per channel. **Impedance:** 4 ohms nominal (2.75 ohms minimum at 1000 Hz). **Frequency range:** 30 Hz to 20,000 Hz. **Crossover frequencies:** 575 Hz and 5000 Hz. **Speaker complement:** One 12" acoustic suspension low-frequency driver (woofer); 3.3 lb. magnet assembly. One 1½" hemispherical dome midfrequency driver: 1.75 lb. magnet assembly. One ¾" hemispherical dome high-frequency driver (tweeter); 10 oz. magnet assembly. **Enclosure:** Acoustic suspension type. **Finish:** Oiled walnut. **Dimensions:** 25" H x 14" W x 11¾" D. **Net weight:** 53 lbs.

Ⓔ Heathkit/JBL medium-priced speaker system . . . 154.95

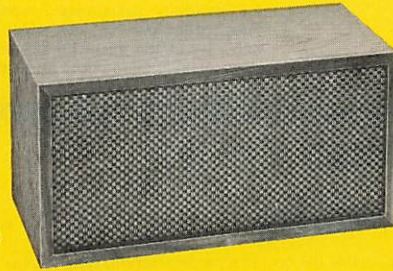
Economically priced, but designed for remarkable performance with even the most expensive components. Has 12" JBL woofer with large, 6¾ lb. magnet assembly for full bodied bass down to 45 Hz, and 2" direct radiator delivering natural sound up to 20,000 Hz. High frequency level control at rear of fine walnut finish cabinet lets you modify sound to your taste. Simple, one evening assembly. Cabinet, factory assembled and finished.

Kit AS-38, 49 lbs., mailable **154.95**

AS-38 SPECIFICATIONS — **Speakers:** 12" woofer, 6¾ lb. magnet assy.; 2" piston-type direct radiator tweeter, 1.25 lb. magnet assy. **Frequency range:** 45 Hz to 20 kHz. **Crossover:** LC type 2500 Hz. **Power rating:** 40 watts program material. **Impedance:** 8 ohms. **Control:** High Frequency Level. **Cabinet:** Damped reflex, tube-ported. Walnut veneer and furniture grade hardwoods, oiled finish. **Dimensions:** 14" H x 23½" W x 11¾" D.



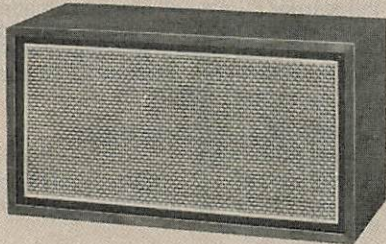
Ⓕ



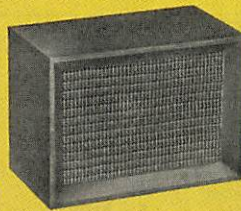
Ⓒ



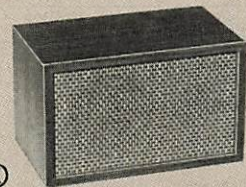
Ⓗ



Ⓙ



Ⓜ



Ⓚ

Ⓕ Heathkit AS-10 — the advantages of acoustic suspension for only 59.95

Here's the low distortion of an acoustic suspension system, at a low price. Enclosed in sealed infinite baffle is a 10" woofer with 1 lb. ceramic magnet and two 3 1/2" cone type tweeters in dispersed array. The system will function on as little as 10 watts but handles up to 40. Has high frequency level control, L-C 2250 Hz crossover network. Response 45 to 20,000 Hz, impedance 16 ohms. Cabinet is factory assembled with furniture grade 3/4" plywood, available in walnut finish or unfinished. Measures 13 1/2" H x 24" W x 11 1/2" D, can be used either horizontally or vertically. To assemble, just mount speakers and wire crossover. Build two for stereo in one evening.

- Kit AS-10U**, unfinished, 52 lbs., Express/Frt. **59.95**
- Kit AS-10W**, walnut finish, 52 lbs., Express/Frt. **64.95**

Ⓒ Heathkit AS-37A—a popular 2-way system for the home, priced at a low 41.95

This famous speaker system has two specially designed speakers, 8" woofer with 10 oz. ceramic magnet and compression type exponential horn tweeter. Uses 1600 Hz crossover. Rated 8 ohms impedance, 25 watts, 50-12,000 Hz response. Pre-assembled cabinet (11 1/2" H x 23" W x 11 1/8" D) is covered with a rich looking satin walnut polyester that's stain and fade resistant. Buy two for stereo, build both in one night.

- Kit AS-37A**, 29 lbs., Express/Frt. **41.95**

Ⓗ Heathkit AS-18 — a miniature acoustic suspension system for 34.95

Surprising performance from 8 1/4" H x 15 1/4" W x 6 1/2" D box. The 6" woofer delivers clean, crisp bass down to 60 Hz, while the 2 1/2" tweeter produces sparkling highs to 20,000 Hz. High frequency balance control lets you adjust the highs to suit your taste. Handles 25 watts program material, 50 watts peak. Has 8 ohm impedance, cross-

over frequency 3000 Hz. Walnut cabinet protected by clear vinyl covering. Buy two, and build them in an evening.

- Kit AS-18**, 14 lbs., mailable **34.95**

Ⓙ Heathkit AS-16 — a medium priced compact with acoustic suspension design . . . only 54.95

An 8" acoustic suspension woofer and 3 1/2" tweeter combine to deliver 45 to 20,000 Hz response with low distortion. Handles 25 watts of program material. Level control allows balancing highs. Compact size fits well on the bookcase, measures 10" H x 19" W x 8 1/4" D. Pre-mounted speakers, you just wire the 1500 Hz crossover network.

- Kit AS-16**, 22 lbs., mailable **54.95**

Ⓜ Heathkit AS-41 — a low cost speaker that extends your system for just 15.95

A 6" x 9" extended range speaker providing a wide 70-12,000 Hz response, handles up to 12 watts. Makes an excellent extension speaker, or use for channel fill-in. Rated impedance, 8 ohms. Choose finished or unfinished walnut cabinet, 8" H x 11" W x 6 1/2" D.

- Kit AS-41U**, unfinished, 9 lbs., mailable **15.95**
- Kit AS-41W**, walnut, 9 lbs., mailable **16.95**

Ⓚ Heathkit AS-81 — a 2-way space saver at a money saving 19.95

Here's a 2-way system that's small in size, small in price. The AS-81 uses a 6" woofer and 3" tweeter to deliver a remarkable 70-12,000 Hz frequency response. Capacitor crossover at 3000 Hz. Handles up to 6 watts. Choice of finished or unfinished walnut cabinet 6 1/2" H x 10 3/4" W x 6 3/16" D.

- Kit AS-81U**, unfinished, 15 lbs., mailable **19.95**
- Kit AS-81W**, walnut, 15 lbs., mailable **21.95**

HOW TO ORDER...THE EASY HEATHKIT® WAY

1. BY MAIL

Complete the simple-to-follow Heath order form — including the reverse side if you wish to use the Heath Revolving Charge plan. **Always Use The Same Name Whenever You Order.** Enclose your check or money order to cover the type of payment plan you've chosen. Include shipping charges **only** if item can be mailed Parcel Post (see Rate information, below). If your order is to be shipped REA or Motor Freight, do not include shipping charges. If you wish us to send your order to another address, be sure to fill out section 2 of the order blank.

2. BY TELEPHONE... New Improved Service

For kit or parts order **ONLY**... on time payment, COD, or commercial accounts call 616-983-7381 anytime day or night including weekends and holidays... for fast, personalized order service and information on kit availability.

For all other business...

kit building assistance, repair service, product info., order tracing, and if you would like to place an order at the same time, call 616-983-3961 weekdays from 8:00 a.m. to 4:30 p.m. EST for proper routing.

3. VISIT OUR FACTORY SALES/SHOWROOM

Heath is located on Hilltop Rd., in St. Joseph, Michigan. And our Sales/Showroom is open Mon. thru Fri. from 8:30 a.m. to 5 p.m. and on Saturdays from 9 a.m. to 3 p.m. You can take your kit with you, or arrange for shipment to your home. You'll see and hear Heathkit equipment in action, giving you an opportunity to make just the right selection for your needs.

HOW TO FIGURE SHIPPING COSTS MAILABLE ITEMS

How To Use Your Zip Code To Find Parcel Post Zone. To determine the cost of a parcel post shipment to your area, use the first three digits (prefix) of your zip code and find your zone in the Zone Chart. Then refer to the Parcel Post Rate Table below. For example, if your Zip Code is 10036, use the first 3 numbers...100... and Check The Chart below for your Parcel Post Zone, which is 5.

ZONE CHART

Zip Code Prefixes	Zone	Zip Code Prefixes	Zone	Zip Code Prefixes	Zone	Zip Code Prefixes	Zone	Zip Code Prefixes	Zone	Zip Code Prefixes	Zone
006-009	8	260-261	3	370-386	4	478	3	600-609	2	823-826	6
010-069	5	262-278	4	387	5	479-489	2	610-619	3	827	5
070-089	4	279	5	388	4	490-491	1	620-623	4	828-832	6
090-099	5	280-283	4	389-397	5	492	2	624-628	3	833	7
		284-285	5			493-495	1	629-668	4	834	6
100-108	5	286-293	4	400-406	3	496-499	3	669-679	5	835-838	7
109	4	294-295	5	407-409	4			680-687	4	840-847	6
110-119	5	296-297	4	410-412	3	500-516	4	688-693	5	850-864	7
120-123	4	298-299	5	413-422	4	520-524	3	700-722	5	865-884	6
124-126	5			423	3	525	3	723-727	4	890-898	7
127-128	4	300-303	4	424-426	3	526-527	4	728-768	5		
129	5	304	5	427-432	3	530-534	2	769	6	900-921	8
130-152	4	305-307	4	433-436	2	535-539	3	770-778	5	922-928	7
153	3	308-329	5	437-457	3	540	4	779-789	6	930-934	8
154-160	4	330-334	6	458	2	541-546	2	790-792	5	935	7
161	3	335-338	5	460-462	3	547-548	4	793-799	6	936-960	8
162-163	4	339	6	463-464	2	549	3			961	7
164-165	3	350-352	4	465-466	2	550-566	1	800-803	5	962-976	8
166-199	4	354	5	467-469	2	567	5	804-805	6	977-979	7
		355-359	4	470-472	3	570-572	4	806-807	5	980-987	8
200-232	4	360-361	5	473	2	573-588	5	808-816	6	988-994	7
233-237	5	362	4	474-475	3	590-597	6	820-822	5	995-999	8
238-259	4	363-369	5	476-477	4	598-599	7				

PARCEL POST RATES FOR MAILABLE ITEMS

Postal Regulations... limit parcel post shipments to 40 lbs., all zones. EXCEPTION: Shipments up to 70 lbs. will still be accepted to RFD addresses, and to APO numbers.

APO AND FPO Airlift Parcels... not over 30 lbs. and not over 60" length and girth combined can be sent "Airlift" for an additional \$1 fee; just figure regular surface rates, add \$1 for each kit 5 lbs. or over (but less than 30 lbs.), and mark "Airlift" on your order.

IMPORTANT

- Figure the postage charges for each model number separately using the indicated shipping weight for that model.
- Then, total the individual charges so determined and remit the full amount for Parcel Post.
- Shipping weights listed for model numbers shipped in more than one carton have been adjusted to provide correct postage remittance based on Parcel Post chart below.

Ship. Wt.	Zone 1 & 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9
2 lbs.	\$0.65	\$0.70	\$0.75	\$0.80	\$0.90	\$1.00	\$1.05	
3 lbs.	.75	.80	.85	.95	1.10	1.20	1.35	
4 lbs.	.80	.85	.95	1.10	1.30	1.40	1.60	
5 lbs.	.85	.90	1.05	1.20	1.45	1.65	1.90	
6 lbs.	.95	1.00	1.15	1.35	1.60	1.85	2.10	
7 lbs.	1.05	1.10	1.25	1.50	1.75	2.10	2.35	
8 lbs.	1.10	1.15	1.35	1.60	1.90	2.30	2.60	
9 lbs.	1.15	1.20	1.45	1.75	2.05	2.45	2.85	
10 lbs.	1.20	1.30	1.55	1.90	2.20	2.65	3.10	
11 lbs.	1.25	1.35	1.60	2.00	2.30	2.85	3.35	
12 lbs.	1.30	1.45	1.70	2.10	2.45	3.05	3.55	
13 lbs.	1.35	1.55	1.80	2.20	2.60	3.25	3.80	
14 lbs.	1.40	1.60	1.90	2.35	2.75	3.45	4.00	
15 lbs.	1.45	1.65	2.00	2.45	2.85	3.60	4.20	
16 lbs.	1.55	1.75	2.05	2.55	2.95	3.80	4.40	
17 lbs.	1.60	1.80	2.15	2.65	3.10	3.95	4.60	
18 lbs.	1.65	1.90	2.20	2.75	3.20	4.15	4.80	
19 lbs.	1.70	2.00	2.30	2.85	3.35	4.30	5.00	
20 lbs.	1.75	2.05	2.40	2.95	3.50	4.50	5.20	
21 lbs.	1.85	2.10	2.45	3.05	3.65	4.65	5.40	
22 lbs.	1.90	2.15	2.55	3.15	3.75	4.85	5.60	
23 lbs.	1.95	2.20	2.60	3.25	3.90	5.00	5.80	
24 lbs.	2.00	2.25	2.65	3.35	4.05	5.15	6.00	
25 lbs.	2.05	2.30	2.75	3.45	4.15	5.35	6.20	
26 lbs.	2.10	2.35	2.85	3.55	4.30	5.50	6.40	
27 lbs.	2.15	2.40	2.90	3.70	4.45	5.65	6.60	
28 lbs.	2.20	2.45	2.95	3.80	4.60	5.80	6.80	
29 lbs.	2.25	2.50	3.05	3.90	4.70	5.95	7.00	
30 lbs.	2.30	2.55	3.10	4.00	4.85	6.10	7.20	
31 lbs.	2.35	2.65	3.20	4.10	5.00	6.25	7.40	
32 lbs.	2.40	2.70	3.30	4.20	5.15	6.45	7.60	
33 lbs.	2.45	2.75	3.35	4.30	5.25	6.60	7.80	
34 lbs.	2.50	2.80	3.40	4.40	5.40	6.75	8.00	
35 lbs.	2.55	2.85	3.45	4.50	5.55	6.90	8.20	
36 lbs.	2.60	2.90	3.55	4.60	5.65	7.10	8.40	

C.O.D. Fees in Addition to Postage

Up to \$10.00	70 cents
\$10.01 to \$25.00	80 cents
\$25.01 to \$50.00	90 cents
\$50.01 to \$100.00	\$1.00
\$100.01 to \$200.00	\$1.10

Note: If C.O.D. shipment cannot be made in one package, we reserve the right to change routing. C.O.D. shipments cannot be made if balance is over \$200.00.

INSURED PARCEL POST (Add to Postage)

Liability	Fee
\$0.01 to \$15	\$.020
\$15.01 to \$50	\$.030
\$50.01 to \$100	\$.040
\$100.01 to \$150	\$.050
\$150.01 to \$200	\$.060

Liability for Insured mail is limited to \$200.

Ship. Wt.	Zone 1 & 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7	Zone 8	Zone 9
37 lbs.	2.65	3.00	3.65	4.70	5.75	7.25	8.60	
38 lbs.	2.70	3.05	3.70	4.80	5.90	7.45	8.80	
39 lbs.	2.75	3.10	3.80	4.90	6.05	7.60	9.00	
40 lbs.	2.80	3.15	3.85	5.00	6.15	7.75	9.20	
41 lbs.	2.85	3.20	3.95	5.15	6.25	7.95	9.40	
42 lbs.	2.90	3.25	4.00	5.25	6.40	8.10	9.60	
43 lbs.	2.95	3.30	4.10	5.35	6.55	8.25	9.80	
44 lbs.	3.00	3.35	4.15	5.45	6.65	8.40	10.00	
45 lbs.	3.05	3.40	4.20	5.55	6.80	8.55	10.20	
46 lbs.	3.10	3.50	4.30	5.65	6.90	8.70	10.40	
47 lbs.	3.10	3.55	4.40	5.75	7.00	8.90	10.60	
48 lbs.	3.15	3.60	4.45	5.85	7.15	9.05	10.80	
49 lbs.	3.20	3.65	4.50	5.95	7.30	9.20	11.00	
50 lbs.	3.25	3.70	4.60	6.05	7.40	9.35	11.15	
51 lbs.	3.30	3.80	4.70	6.15	7.50	9.50	11.35	
52 lbs.	3.35	3.85	4.75	6.25	7.65	9.65	11.55	
53 lbs.	3.40	3.90	4.80	6.35	7.80	9.80	11.75	
54 lbs.	3.40	3.95	4.90	6.45	7.90	9.95	11.90	
55 lbs.	3.45	4.00	4.95	6.55	8.00	10.10	12.10	
56 lbs.	3.50	4.10	5.05	6.60	8.10	10.25	12.25	
57 lbs.	3.55	4.15	5.15	6.70	8.25	10.40	12.45	
58 lbs.	3.60	4.20	5.20	6.80	8.40	10.55	12.60	
59 lbs.	3.65	4.25	5.25	6.90	8.50	10.70	12.80	
60 lbs.	3.65	4.30	5.35	7.00	8.60	10.85	12.95	
61 lbs.	3.70	4.35	5.45	7.05	8.70	11.00	13.10	
62 lbs.	3.70	4.40	5.50	7.15	8.85	11.15	13.30	
63 lbs.	3.75	4.45	5.55	7.25	9.00	11.30	13.45	
64 lbs.	3.80	4.50	5.60	7.35	9.10	11.45	13.65	
65 lbs.	3.85	4.60	5.70	7.45	9.20	11.60	13.80	
66 lbs.	3.90	4.65	5.80	7.50	9.30	11.75	13.95	
67 lbs.	3.95	4.70	5.85	7.60	9.40	11.85	14.15	
68 lbs.	3.95	4.75	5.90	7.70	9.55	12.00	14.30	
69 lbs.	4.00	4.80	5.95	7.75	9.65	12.15	14.50	
70 lbs.	4.05	4.85	6.05	7.85	9.75	12.25	14.65	

Note: These parcel post rates will be effective as of Nov. 14, 1970 and are subject to change without notice.

METHODS OF PAYMENT

1. IN CASH

Do Not Send Currency Or Postage Stamps... send personal check or money order.

2. C.O.D.

A 20% deposit is required on any C.O.D. order. The balance will be collected by the carrier. Payment must be made in cash, money order, or certified check (they will not accept personal checks). C.O.D. Shipments cannot be made if balance is over \$200.

3. NEW HEATH REVOLVING CHARGE PLAN

No money down. Up to 2 full years to pay. Two convenient payment plans. See order blank for details.

To Make "Add-On" Purchases. See order blank.

Non-Mailable Items

*REA EXPRESS & MOTOR FREIGHT INSTRUCTIONS FOR NON-MAILABLE ITEMS

For shipments exceeding parcel post limits. We suggest that you check with these local carriers to determine the service available for delivery in your area. Do not enclose money for Motor Freight or Express. Shipping charges will be collected by the carrier.

Please note that it may be necessary for us to change routings because of irregularities in service from our city, or at points of transfer en route.

PREMIUM ROUTINGS

We can ship via Air Parcel Post, Parcel Post Special Handling, or Special Delivery, Air Express, Bus or Air Freight, if you so request. Contact your local office for rates and delivery information.

IF YOU MOVE...

please send us your old address, and your new address including Zip Code. This will keep catalogs, correspondence, and your shipments coming without interruption.

If You Are Receiving Duplicate Copies of Heathkit catalogs, return the mailing labels of those copies you wish discontinued.

Save An Extra 5% By Ordering A Stereo System. Here's How... (1) order a stereo amplifier and stereo program source (tuner, turntable, GD-28 tape player) plus a pair of speaker systems; (2) a stereo receiver and a pair of speaker systems; (3) a stereo compact plus a pair of speaker systems. Order the complete system at the same time, and subtract 5% from the total price. (Discount does not apply to the Heathkit AD-19).

Other audio items related to the basic system and ordered at the same time (such as turntables, GD-28 tape player, cabinets, additional speakers or speaker systems, headphones, AC-17 headphone control, antenna) also qualify for the 5% discount.

HEATH REVOLVING CHARGE PLAN

ABOUT HEATH'S REVOLVING CHARGE PLANS

The "Cash Price" of merchandise on Heath's Revolving Charge Plans includes the cash price as listed on the page describing the merchandise, plus applicable sales tax, shipping charges, and less any advertised allowances. Regular or extended terms are the two plans available for your use. To use the extended plan, the balance must be at least \$400. The amount of your monthly installment can be determined from the chart at the right. The periodic rate for the *finance charge is 1 1/2 %* per month and is equal to an *annual percentage rate of 18%* before deducting payments & credits or adding purchases made during the current billing period. No down payment is required on new orders but one may be remitted if desired.

REGULAR REVOLVING CHARGE

PAY MONTHLY	CHARGE UP TO
\$10	\$150
15	200
20	250
25	300
30	350
35	400
40	450
45	500
50	550

HOW TO OPEN AN ACCOUNT

Just fill out the credit application, sign the Revolving Charge agreement, and mail to Heath with your order.

ADD-ON PURCHASES

List items you want on order blank, check the add-on box, and give your account number. Sign the Revolving Charge agreement, and send to us.

EXTENDED REVOLVING CHARGE

PAY MONTHLY	CHARGE UP TO
\$20	\$400
25	500
30	600
35	700
40	800
45	900
50	1,000
55	1,100
60	1,200

NOTICE TO BUYER:

1. Do not sign the contract before you read it.
2. The other side of this page is part of this contract.
3. NO **FINANCE CHARGE** IF PAID IN FULL IN 30 DAYS FROM CYCLE BILLING CLOSING DATE AS SHOWN ON STATEMENT.

Add \$5 for every \$100, or a portion thereof over \$1,200.

REVOLVING CHARGE AGREEMENT

TO: HEATH COMPANY, BENTON HARBOR, MICHIGAN 49022

I hereby purchase the merchandise listed on the reverse side at the time sale price which is the cash sale price including shipping charge and tax, if any, less down payment, if any, plus the *finance charge (annual percentage rate 18%)* which, in lieu of being added to this contract in total as of the date hereof will be added monthly at the *periodic rate of 1 1/2 % per month* on the previous months ending balance of my account before deducting payments & credits or adding purchases made during the current billing period. A minimum *finance charge* not exceeding 50¢ may be assessed on balances up to \$33. The highest level of my balance reflected by the payment chart will govern my monthly payment, beginning 30 days from the cycle closing date shown on the statement, until such time as the total unpaid balance of each purchase is fully paid (minimum \$10). If within 30 days from my billing date, I pay the full outstanding balance shown on my monthly statement, no *finance charge* on such balance, will be charged on any subsequent statement. I will not sell, transfer possession of, remove or encumber the property without your written consent: upon default on the terms of this agreement, you may declare my existing outstanding balance due and payable and you may repossess the property. If legal proceedings are commenced, I will be required to pay reasonable attorney's fees in such an amount as may be allowed by the court. My installments shall be applied as follows: In case of items purchased on different dates, the first purchase shall be deemed first paid for: In the case of items purchased on the same date, the lowest price shall be deemed first paid for. You are authorized to investigate my credit record and report to proper persons and bureaus my performance of this agreement.

Date _____

Sign Here _____

CREDIT APPLICATION

Check Revolving Charge Plan Desired
 Regular Extended

IMPORTANT: Please fill in completely. Omissions and errors cause delays. SIGN REVOLVING AGREEMENT ABOVE.

Mr. _____
 Mrs. _____
 NAME Miss _____
 (Please Print) (First Name) (Middle Initial) (Last Name)

ADDRESS _____

CITY _____ STATE _____ ZIP CODE _____ If Military Give Rank _____

Number of Dependents _____ How Long at Present Address _____ No. of Rooms _____ OWN RENT BOARD Monthly Rent or Mortgage Payments \$ _____

Former Address _____ City _____ State _____ How Long _____

Phone No. _____ AGE _____ MARRIED WIDOWED SINGLE DIVORCED Wife's First Name _____

Employer _____ Address _____ City _____ State _____

How Long _____ Occupation _____ Social Security No. _____ Military Serial No. (if serviceman) _____ EARNINGS \$ _____ Hr. Wkly.

Former Employer _____ How Long _____

Name of Wife's Employer _____ Address of Wife's Employer _____ WIFE'S WEEKLY INCOME \$ _____

Other Income — Give Details _____ TOTAL FAMILY INCOME \$ _____

Your Bank _____ Address _____ Type of Account _____

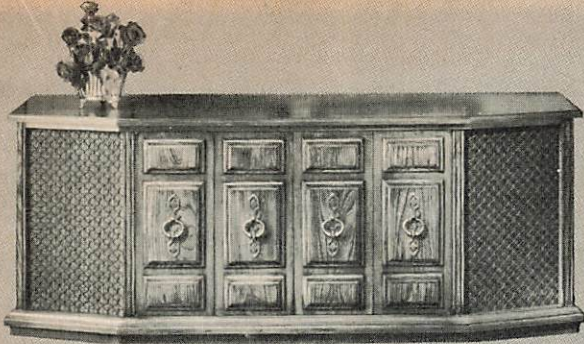
CREDIT REFERENCE: (Give 2 Merchants, Firms or Finance Companies with whom you do or have done business.)

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) (If Military give permanent mailing address)

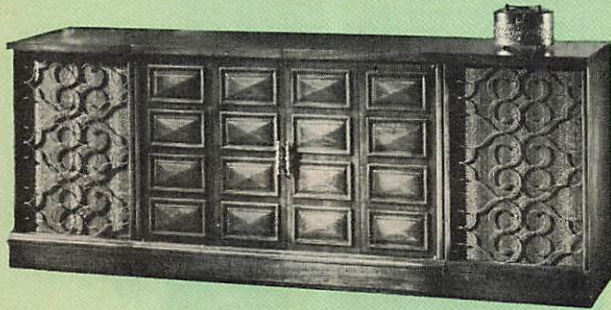




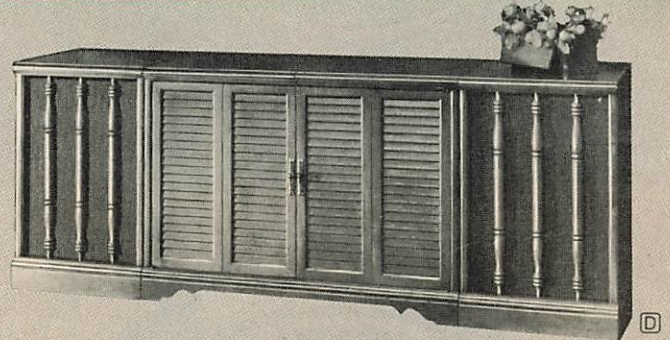
(A)



(C)



(B)



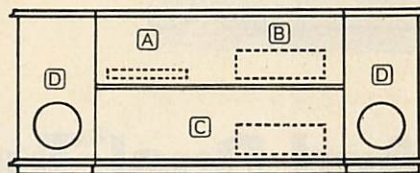
(D)

Put Your Components In Their Place In Fully-Crafted Heath Cabinets!

The impressive Heath Credenza . . . 189.95

(A) One-piece 5½' Mediterranean credenza, crafted in hickory veneers and solid oak trim, finished in oiled pecan. Adjustable shelf (A&B) for stereo receiver, cartridge or cassette deck, or separate tuner and amplifier. Below (C) is room for turntable and record storage. Ducted-port, reflex design speaker enclosures (D) have pre-cut 12" openings (see pg. 29 for speakers). Accessory drawers on ball bearing slides available.

- AE-101, credenza, 167 lbs., Express/Frt. 189.95
- AEA-101-1, changer drawer, 16 lbs., mailable 29.95
- AEA-101-2, cartridge, cassett drawer, 7 lbs., mailable 19.95

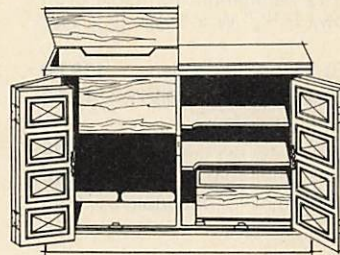


CABINET OVERALL: 66" W x 19¼" D x 26⅞" H. **SHELF COMPARTMENT:** (A & B) overall, 35⅞" W x 17½" D (shelf 15" D); adjustable shelf height: 5½", 6½", 7½", 8½". **LOWER COMPARTMENT:** (C): 35⅞" W x 17½" D x 12¼" H min. (with shelf at 8½"). **SPEAKER CABINET VOLUME:** (D): 2.3 cu. ft. (12" cut out). **CHANGER BASE:** 18½" W x 14" D x 5½" H. **TAPE PLAYER BASE:** 14" W x 12½" D.

Magnificent Mediterranean Group . . . \$350

(B) Three-piece grouping in selected solids and veneers with a dramatic pecan finish. Bi-fold doors have sculptured resin panels that won't chip, warp or crack; stately bronze handles. Top raises to reveal changer compartment, doors open to components. Adjustable shelves. Matching ducted-port speaker cabinets accept 8" or 12" speakers (installation instructions included), measures 28¾" H x 17¾" W x 18-3/16" D. See pg. 29 for speaker selection. Order a pair for stereo.

- AE-57, equipment cabinet, 109 lbs., Express/Frt. 170.00
- AEA-57-1, speaker cabinet, 68 lbs., Express/Frt. 90.00

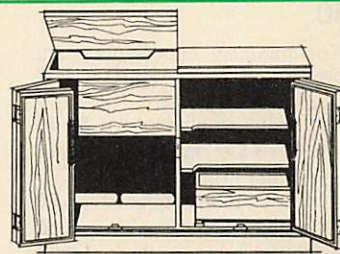


AE-57 EQUIPMENT CABINET ACCOMMODATIONS AND SIZES: Cabinet Overall: 40" W x 19-3/16" D x 28¾" H. Changer Compartment: 19" W x 16" D, mounting board is uncut and can be adjusted in height. Record-Tape Recorder Compartment: 19" W x 15" H x 16" D. Shelf Compartment: Overall interior dimensions: 19" W x 16" D x 23¾" H with two shelves adjustable 4, 5, 6, 10, 11, 12, 16, 17 or 18 inches from top.

Exciting Contemporary Group . . . \$285

(C) Smartly styled with rich walnut finish on fully crafted solids and veneers. Top lifts to expose changer compartment, bi-fold doors hide components. Decorative stately bronze handles. Matching speaker cabinet has wood-grain molded resin louvers that can't chip, crack or warp. Ducted port reflex design accommodates 8" or 12" speakers (installation instructions included), measures 28¾" H x 18" W x 19" D. Order two for stereo.

- AE-37, equipment cabinet, 108 lbs., Express/Frt. 145.00
- AEA-37-1, speaker cabinet, 70 lbs., Express/Frt. 70.00

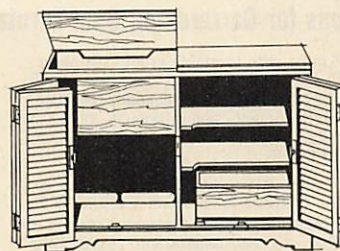


AE-37 EQUIPMENT CABINET ACCOMMODATIONS AND SIZES: Cabinet Overall: 40" W x 19" D x 28¾" H. Changer Compartment: 19" W x 16-3/32" D, mounting board is uncut and can be adjusted in height. Record-Tape Recorder Compartment: 19" W x 16-3/32" D x 15¾" H. Shelf Compartment: Overall interior dimensions, 19" W x 16-3/32" D x 24-3/16" H with two shelves adjustable 4, 5, 6, 10, 11, 12, 16, 17, or 18 inches from top.

Elegant Early American Group . . . \$315

(D) Traditional Salem-Maple finish on fine furniture solids and veneers, with louvered doors of molded resins. Lift-top changer compartment, bi-fold front doors swing away to reveal components. Stately bronze handles. Speaker cabinets display quality workmanship, with handsome wood spindle grille. Ducted port reflex installation for 8" or 12" speakers (see pg. 29). Speaker cabinet measures 28¾" H x 18" W x 19" D. Order two for stereo.

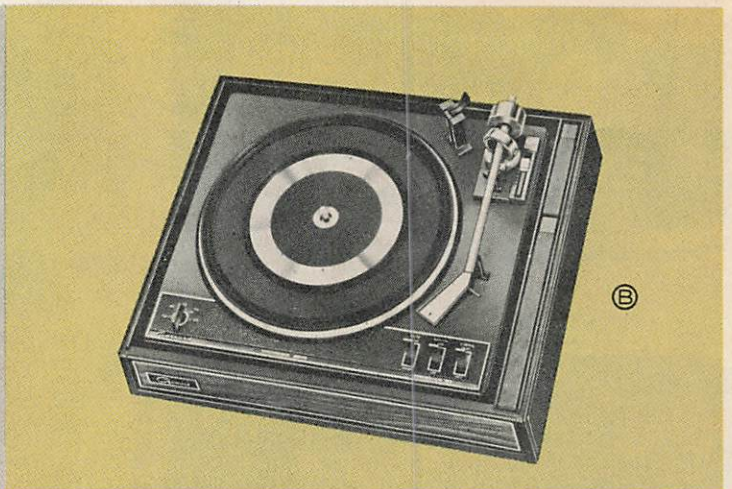
- AE-47, equipment cabinet, 104 lbs., Express/Frt. 155.00
- AEA-47-2, speaker cabinet, 67 lbs., Express/Frt. 80.00



AE-47 EQUIPMENT CABINET ACCOMMODATIONS AND SIZES: Cabinet Overall: 40" W x 19" D x 28¾" H. Changer Compartment: 19" W x 16" D, mounting board is uncut and can be adjusted in height to accept all record changers, turntables, and tape recorders sold by Heath; lid has friction-loaded hinges. Record-Tape Recorder Compartment: 19" W x 16" D x 15¾" H. Shelf Compartment: Overall interior dimensions, 19" W x 16" D x 24-3/16" H with two shelves adjustable 4, 5, 6, 10, 11, 12, 16, 17 or 18 inches from the top of the cabinet. Accepts any Heathkit receiver, tuner or amplifier.



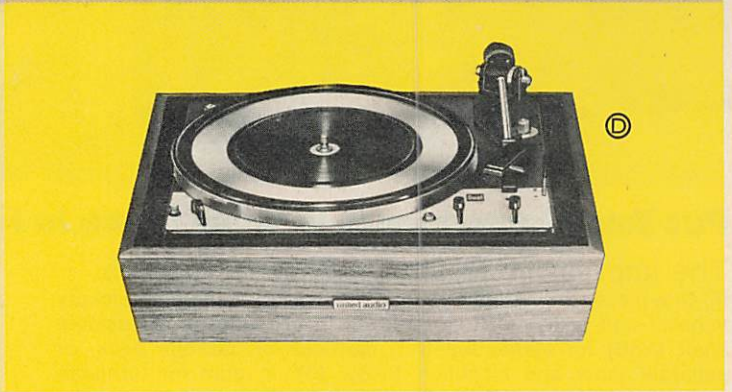
Ⓐ



Ⓑ



Ⓒ



Ⓓ

Garrard® And Dual® Turntables

Ⓐ Garrard SL-95B . . . 129.50

Has Syncro-Lab motor for precise turntable speed; automatic or manual play for 78, 45 & 33 $\frac{1}{2}$ RPM; 12" aluminum turntable. You choose either 1¢ or \$5 cartridge below. 15 $\frac{1}{16}$ " W x 14 $\frac{5}{8}$ " D x 4 $\frac{3}{8}$ " above motor board, 3" below.

- ADP-89**, turntable only (Garrard SL95B) 14 lbs., mailable . . . **129.50**
- ADA-47-3**, power-matic base, (Garrard B2P), 3 lbs., mailable . . **15.95**
- ADA-47-1**, coordinated base, simulated leather Ebony (Garrard B2), 3 lbs., mailable **6.50**
- ADA-47-4**, dust cover, (Garrard D2), 4 lbs., mailable **6.50**
- ADA-57-2**, 45 RPM spindle (Garrard LRS25), 1 lb., mailable . . . **3.80**

Ⓑ Garrard SL72B . . . 89.50

Plays all three speeds, automatically or manually. Has Syncro-Lab motor, special cartridge options below. 15 $\frac{1}{16}$ " W x 14 $\frac{5}{8}$ " D x 4 $\frac{3}{8}$ " above motor board, 3" below.

- ADP-79**, turntable only (Garrard SL72B), 13 lbs., mailable . . . **89.50**
- ADA-47-3**, power-matic base (Garrard B2P), 3 lbs., mailable . . **15.95**
- ADA-47-1**, coordinated base, simulated leather Ebony (Garrard B2), 3 lbs., mailable **6.50**
- ADA-47-4**, dust cover, (Garrard D2), 4 lbs., mailable **6.50**
- ADA-57-2**, 45 RPM spindle (Garrard LRS25), 1 lb., mailable . . . **3.80**

Ⓒ Dual 1219 . . . \$175

Manual or automatic operation for 78, 45 & 33 $\frac{1}{2}$ RPM. Has gimbal tonearm suspension; separate anti-skating adjustment for spherical and elliptical cartridges; cue-control; damped tonearm descent; elastically damped counterbalance; adjustable stylus overhang for minimum tracking error; full 12" diameter balanced 7-lb. platter; synchronous/continuous pole motor for exact speed; 6% speed adjustment for precise pitch in all three speeds. Choose 1¢ or \$5 cartridge below. 18 $\frac{1}{2}$ " W x 16" D x 8" H.

- ADP-49**, turntable only (Dual 1219), 23 lbs., mailable **175.00**
- ADA-49-1**, walnut base (Dual WB-19) 5 lbs., mailable **14.95**
- ADA-49-4**, dust cover (Dual DC-9), 3 lbs., mailable **12.95**
- ADA-39-2**, 45 RPM spindle (Dual AS-12), 1 lb., mailable **5.95**

Ⓓ Dual 1209 . . . 129.50

Offers manual or automatic play with 6% pitch control in all three speeds. Has separately calibrated anti-skating scales for spherical & elliptical styli; adjustable counter-balancing; stylus pressure adjustment; $\frac{1}{2}$ -gram tracking; cartridge options below. 15 $\frac{1}{2}$ " W x 13 $\frac{1}{2}$ " D x 8" H.

- ADP-39**, turntable only (Dual 1209), 18 lbs., mailable **129.50**
- ADA-39-1**, walnut base (Dual WB-12), 5 lbs., mailable **10.95**
- ADA-39-4**, dust cover (Dual DC-2), 3 lbs., mailable **10.95**
- ADA-39-2**, 45 RPM spindle (Dual AS-12), 1 lb., mailable **5.95**

Special 1¢ and \$5 cartridge options for Garrard and Dual Turntables



Shure M91E only \$5 more with turntable order—see above.
Model AD-68F, 1 lb., mailable **49.95**
MANUFACTURER'S SPECIFICATIONS—Frequency response: 20-20,000 Hz. Output: 5.0 mV. Separation: 25 dB. Load impedance: 47 k ohms. Stylus: 0.2x0.7 elliptical. Tracking force: $\frac{3}{4}$ to 1 $\frac{1}{2}$ grams.

Shure M93E only 1¢ more with turntable order—see above.
Model AD-58R, 1 lb., mailable **39.95**
MANUFACTURER'S SPECIFICATIONS—Frequency response: 20-20,000 Hz. Output: 6.2 mV. Separation: 25 dB. Load impedance: 47 k ohms. Stylus: 0.4x0.7 elliptical. Tracking force: 1 $\frac{1}{2}$ to 3 grams.



Empire 999SE/X only \$5 more with turntable order—see above.
Model AD-121, 1 lb., mailable **49.95**
MANUFACTURER'S SPECIFICATIONS—Frequency response: 8-32,000 Hz. Output: 8.0 mV. Separation: 35 dB. Load impedance: 47 k ohms. Stylus: 0.2x0.7 elliptical. Tracking force: $\frac{1}{2}$ to 1 $\frac{1}{2}$ grams.

Empire 999E/X only 1¢ more with turntable order—see above.
Model AD-126, 1 lb., mailable **39.95**
MANUFACTURER'S SPECIFICATIONS—Frequency response: 10-30,000 Hz. Output: 8.0 mV. Separation: 35 dB. Load impedance: 47 k ohms. Stylus: 0.3x0.7 elliptical. Tracking force: $\frac{3}{4}$ to 2 grams.

Best Buy Heath/BSR Turntables



89⁹⁵

Ⓐ AD-140 Heath/BSR McDonald ... 89.95

Factory assembled & tested, has 4-speed manual, semi-automatic or automatic modes; high torque synchronous motor; viscous damped cueing and pause control; low mass aluminum tone arm; dual range anti-skate control; vernier counter-balance adjustment. Automatic tone arm locks in "off" position. Stereo muting switch gives complete silence during change cycle. Complete with power base, dust cover, Shure M93E cartridge, 45 RPM adapter and all wiring. 15¼" W x 13⅝" D x 7¼" H.

Assembled AD-140, 14 lbs., mailable ... 89.95

Ⓑ AD-130 Heath/BSR McDonald ... 64.95

Has 4-speed manual, semi-automatic and automatic capability; high torque synchronous motor; viscous damped cueing/pause control; aluminum tone arm; oval range anti-skate control; micrometer stylus adjustment; slide-in cartridge holder; automatic locking tone arm. Includes base, dust cover, 45 RPM adapter and cables. 15¼" W x 13⅝" D x 7¼" H.

Assembled AD-130, 14 lbs., mailable ... 64.95

Ⓒ AD-120 Heath/BSR McDonald ... 44.95

Four-speed play, manual, semi-automatic or automatic. Has 4-pole induction motor; aluminum counter-weighted tone arm; slide-in cartridge holder; cue/pause control; variable anti-skate control; stylus force control and indicator. Includes base, dust cover, Shure M-75 magnetic diamond stylus cartridge, 45 adapter, cables. 13⅝" D x 7¼" H x 15¼" W.

Assembled AD-120, 14 lbs., mailable ... 44.95

Ⓓ GD-187 ... 29.95

For amplifiers with ceramic cartridge inputs, has complete instructions for conversion to magnetic cartridge units. Four-speed manual or automatic play. Ceramic cartridge has diamond stylus for LPs, sapphire for 78s, comes wired for stereo, can be rewired for mono. Includes 45 adapter. 6¼" H x 14⅝" W x 12½" D.

Assembled GD-187, 12 lbs., mailable ... 29.95



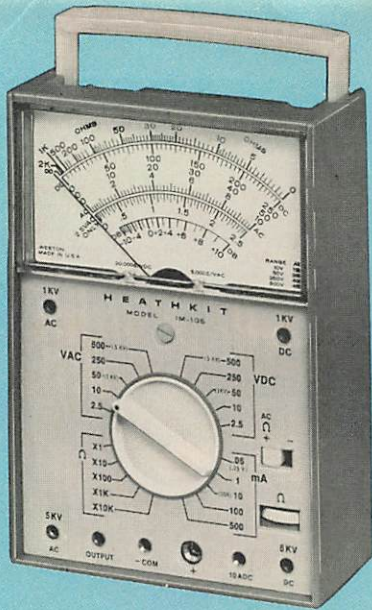
64⁹⁵



44⁹⁵

**Our Lowest Cost
Automatic Changer ... only 29.95**





- High impact Lexan® case
- Ruggedized taut-band meter
- Diode & fuse protected movement
- Separate 1 & 5 kV AC & DC inputs
- Portable . . . battery operated

New Heathkit portable general purpose VOM . . . 47.95

An extremely rugged, highly accurate VOM . . . designed to easily withstand the abusive treatment of field & bench service work . . . accurate enough for engineering, design and R&D work . . . low enough in cost so that even the most bargain-minded can afford it. That's the new Heathkit IM-105 . . . and this is the inside story.

High impact Lexan® case and diode & fuse protected ruggedized taut-band meter movement can suffer physical and electrical mistreatment and bounce back for more. The taut-band movement is inherently low-friction, resulting in highly repeatable, highly linear measurements. A 95° wide viewing area provides high resolution. The fuse in-line with the input connector is removable from the front panel for extra convenience.

High accuracy . . . delivers $\pm 3\%$ on all DC ranges . . . $\pm 4\%$ on all AC ranges . . . $\pm 3\%$ on all DC current ranges. 1% metal-film resistors on most ranges and thermistor compensation over a wide temperature range deliver accuracy unheard of at this low cost.

Ranges selected for maximum convenience & utility. A continuous rotation, 20 position switch gives instant selection of 8 DC volts ranges from 0.25 to 5000 V full scale . . . 7 AC ranges from 2.5 to 5000 V full scale . . . 6 DC current ranges from 0.05 mA to 10 amps full scale . . . 5 resistance ranges from x1 to x10k with a center scale factor of 20. For audio voltage measurements, 5 dB ranges are provided, from -10 to +50 dB. That's real capability!

Other professional features include DC polarity reversal switch, ohms zero adjustment by front thumbwheel, easy-to-build modular printed circuit board construction, self-storing handle and easy assembly. For the most versatile meter you can buy, order your new IM-105 now.

Kit IM-105, 4 lbs., mailable 47.95

IM-105 SPECIFICATIONS: DC VOLTAGE RANGES: 0.25, 2.5, 10, 50, 250, 500, 1000 & 5000 volts full scale. Accuracy: $\pm 3\%$ of full scale. Input resistance: 20,000 ohms per volt. AC VOLTAGE RANGES: 2.5, 10, 50, 250, 500, 1000 & 5000 volts full scale. Accuracy: $\pm 4\%$ of full scale. Input resistance: 5,000 ohms per volt. Input capacity: Less than 20 pF. Frequency response: 2.5, 10 & 50 volt ranges: $\pm 5\%$, 10 Hz to 100 kHz; 250, 500 volt ranges: $\pm 5\%$, 10 Hz to 50 kHz. DC CURRENT RANGES: 0.05, 1.0, 10, 100, 500 mA & 10 A full scale. Accuracy: $\pm 3\%$ of full scale. Voltage drop: Approximately 0.25 volts at full scale. RESISTANCE RANGES: x1 (20 center scale), x10, x100, x1k, x10k. Accuracy: ± 3 degrees of arc. Source voltage: x1 through x1k ranges: 1.5 volts. x10k range: 15 volts. DECIBEL RANGES: (0 dB = 1 milliwatt in 600 ohms): -10 to +50 dB. GENERAL: Voltage dividers: $\pm 1\%$ metal film resistors on most ranges. Meter: $4\frac{1}{2}$ ", 50 uA, ruggedized, taut-band movement. Meter protection: Combined fuse and diode overload protection. Meter temperature coefficient: 15 to 35 degrees C, $\pm 0.1\%$ (or 0.1 degree of arc) per degree C. Operating temperature range: 0-55 degrees C. Batteries (not supplied): One 1.5 V "D" cell (NEDA #14); one 15 V (NEDA #208). Dimensions: 5" W x 7" H x $2\frac{1}{4}$ " D. Net weight: 2 lbs. Test Leads: Supplied.



Brighten Up Your Bench With A New Heathkit® Meter

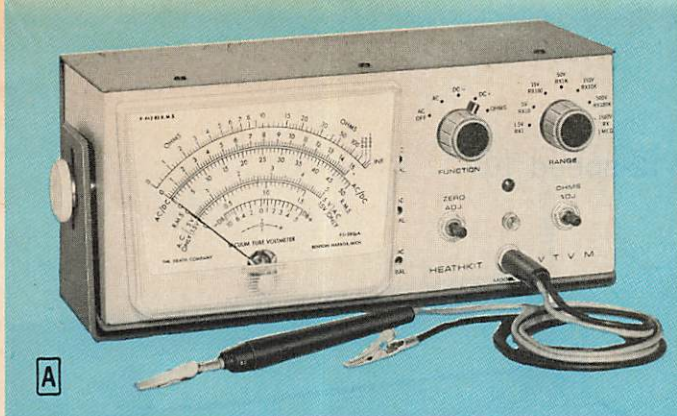


Lowest cost Heathkit solid-state Volt Ohm Meter . . . 21.95

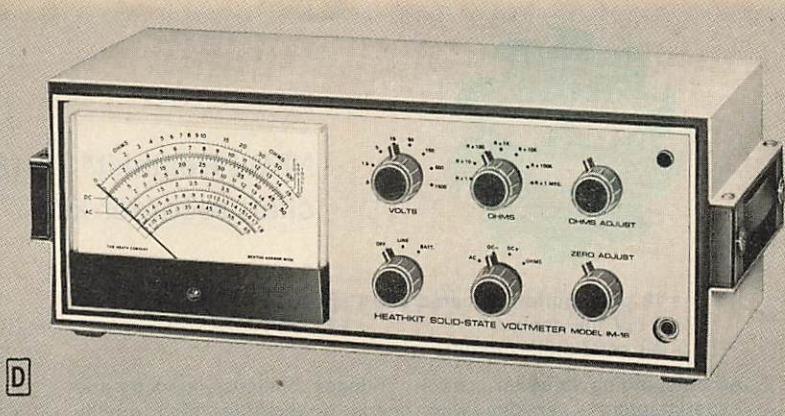
Just right . . . for homeowners, hams, servicemen, hobbyists, modellers—everyone. All solid-state with FET input. Continuous rotation 12 position function switch selects any of 4 AC ranges, 4 DC ranges or 4 ohms ranges that measure from 0.1 to 1000 megohms. Features include portable, battery operation . . . zero & ohms adjust controls . . . accessory probe jack . . . DC polarity reversing switch . . . three built-in test leads that store conveniently in the front of the rugged brown polypropylene textured case . . . fast, easy 3-5 hour assembly with the famous Heathkit manual. Check around before you buy—the IM-17 would be a real bargain at twice the price. Not recommended for use in RF fields.

Kit IM-17, 5 lbs., mailable 21.95

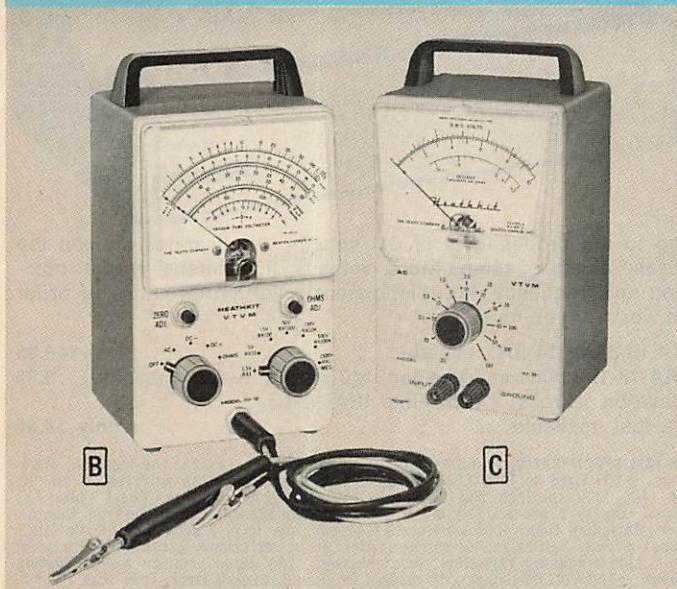
IM-17 SPECIFICATIONS—DC VOLTMETER: Four ranges: 0-1, 10, 100, 1000 volts full scale. Input resistance: 11 meg. on all ranges. Accuracy: $\pm 3\%$ of full scale. AC VOLTMETER: Four ranges: 0-1, 10, 100, 1000 volts full scale. Input resistance: 1 meg. on all ranges. Accuracy: $\pm 5\%$ of full scale. Frequency response: ± 1 dB, 10 Hz to 1 MHz. OHMMETER: Four ranges: Rx1, x100, x10k, x1 meg. POWER SUPPLIES: Ohms circuit: 1.5 V "C" Cell. Amplifier circuit: 8.4 V mercury cell (NEDA #1611), batteries not supplied. GENERAL: Meter: $4\frac{1}{2}$ ", 200 uA, 100° movement. Dimensions: $9\frac{1}{2}$ " W x $5\frac{1}{4}$ " H x $9\frac{1}{8}$ " D.



A

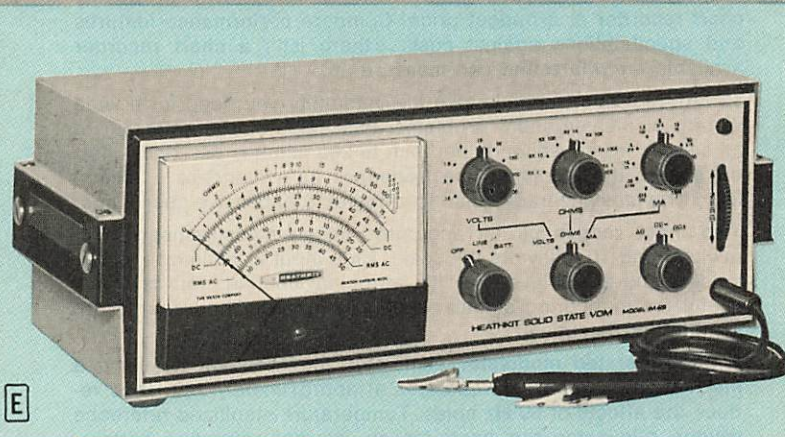


D

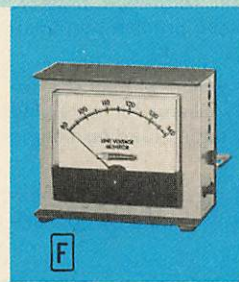


B

C



E



F



Etched Circuit RF Probe—11 meg. input; for RF measurements over 100 MHz; 1000 VDC max. at tip; 90 volts RMS RF max.
Kit PK-3, 1 lb., available **5.00**
Assembled PKW-3, 1 lb., available **7.00**
30 KV DC Probe for extremely high voltages; multiplier of 100 on DC ranges of 11 meg. input; 1100 megohm input for hi-Z circuits.
Kit 336, 1 lb., available **6.00**
Assembled 336W, 1 lb., available **7.50**

A Heathkit service bench VTVM

Same excellent performance as IM-18 (below) with extra convenience features: separate 1.5 & 5 VAC scales; 6" meter; front panel calibration controls; convenient gimbal mounting.
Kit IM-28, 7 lbs., mailable **39.95**
Assembled IMW-28, 7 lbs., mailable **59.95**

B Best buy Heathkit VTVM

One probe makes all measurements. 7 AC, 7 DC & 7 ohms ranges for wide versatility. Extended frequency response; measures RMS and P-P. Fast, easy assembly.
Kit IM-18, 5 lbs., mailable **29.95**
Assembled IMW-18, 6 lbs., mailable **54.95**

IM-18 SPECIFICATIONS—Meter scales: DC & AC (RMS): 0-1.5, 5, 15, 50, 150, 500, 1500 volts full scale. AC peak-to-peak: 4.0, 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. Meter: 4 1/2" 200 uA movement. Input resistance DC: 11 megohms (1 megohm in probe) on all ranges. Circuit: Balanced bridge (push-pull) using twin triode. Accuracy: DC ±3%, AC ±5% of full scale. Frequency response: ±1 dB, 25 Hz to 1 MHz (600 ohm source). Tubes: 12AU7, 6AL5. Battery requirements: 1.5 volt, size "C" flashlight cell (not supplied). Power requirements: 105-125 or 210-250 VAC, 50/60 Hz, 10 watts. Dimensions: 7 3/8" H x 4-11/16" W x 4 1/4" D.

C Heathkit laboratory AC VTVM

Extended accuracy in measuring low-level AC voltages. Calibrated scale for audio measurements; vu-type ballistic meter damping. Ideal for audio design & development, lab analysis, general servicing.
Kit IM-38, 5 lbs., mailable **41.95**
Assembled IMW-38, 6 lbs., mailable **57.95**

IM-38 SPECIFICATIONS—Frequency response: ±1 dB 10 Hz to 500 kHz, ±2 dB 10 Hz to 1 MHz, all ranges. Ranges: Ten ranges from 0.01 to 300 volts RMS full scale. Decibels: Total-range -52 to +58 dB, meter scale -12 to +2 dB (0 dB=1 mW in 600 ohms), ten switch selected ranges from -40 dB to +50 dB in 10 dB steps. Input impedance: 10 megohms shunted by 12 on pF on ranges 10 to 300 volts, 10 megohms shunted by 22 pF on ranges .01 to 3 volts. Accuracy: Within 5% of full scale. Power requirements: 105-125/210-250 VAC, 50-60 Hz, 10 watts. Dimensions: 7 3/8" H x 4-11/16" W x 4 1/8" D.

D IM-16 solid-state VOM

Wide range of scales; battery or line operation; easy assembly. Not recommended for use in RF fields.
Kit IM-16, 10 lbs., mailable **49.95**

E Deluxe Heathkit solid-state hi-Z VOM

Provides wide choice of functions and ranges: 9 AC & DC volts ranges; 11 AC & DC milliamp ranges; 7 resistance ranges. Not recommended for use in RF fields.
Kit IM-25, 11 lbs., mailable **85.00**
Assembled IMW-25, 11 lbs., mailable **120.00**

IM-25 SPECIFICATIONS—DC VOLTMETER—9 Ranges: 0.15, .5, 1.5, 5, 15, 50, 150, 500, 1500 volts full scale. Input resistance: 11 megohms on all ranges. Accuracy: ±3% of full scale. DC MILLIAMMETER—11 Ranges: 0-.015, .05, .15, .5, 1.5, 5, 15, 50, 150, 500, 1500 mA full scale. Input resistance: 0.10 ohm (1500 mA) to 10k ohm (.015 mA). Accuracy: ±4% of full scale. AC VOLTMETER—9 Ranges: 0-1.5, 5, 1.5, 5, 15, 50, 150, 500, 1500 volts full scale. Input resistance: 10 megohm shunted by 150 pF (measured at probe tip). Accuracy: ±5% of full scale. Frequency response: ±2 dB, 10 Hz to 100 kHz. AC MILLIAMMETER—11 Ranges: 0-.015, .05, .15, .5, 1.5, 5, 15, 50, 150, 500, 1500 mA full scale. Input Resistance: 0.1 ohm (1500 mA) to 10 k ohm (.015 mA). Accuracy: ±5% of full scale. OHMMETER—7 Ranges: 10 ohm center scale x1, x10, x100, x1k, x10k, x100k, x1 meg. Terminal voltage 70mV (not sufficient to cause diode junction conduction). Probe: Combined AC-OHMS-DC switching probe. Meter: 6", 200 uA 100" movement. Power supplies: Battery operation; "C" cells. Line operation; Transformer operated 1/2 wave circuit, operable on either 120 or 240 V AC, 50-60 Hz. Dimensions: 16 1/2" W x 5 7/8" H x 7 3/4" D.

F IM-103 line voltage monitor

Gives constant check of AC line voltage. 2% accuracy when calibrated from source of known accuracy. 90-140 VAC range. Not recommended for use in RF fields.
Kit IM-103, 3 lbs., mailable **15.95**

See pg. 21 for "How to use & understand your VTVM" kit/course.



NEW! Heathkit® IR-18M 12-speed 10" chart recorder kit

- 12 push-button selected chart speeds
- 1 mV full scale
- All solid-state circuitry

An outstanding value for schools, colleges, business, industry and experimenters... anyone who needs a versatile, high quality chart recorder at a budget price. Compare performance features and specifications against cost... there isn't a chart recorder available anywhere that can measure up.

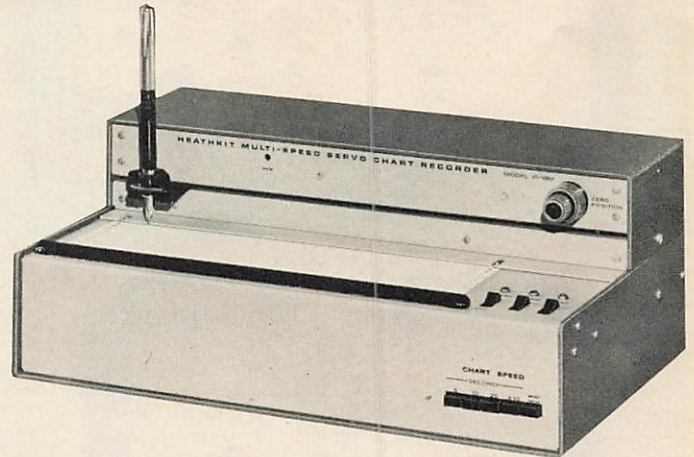
12 different chart speeds give the versatility you need for a wide variety of measurement problems. Fast push-button selection of all speeds from 5 seconds per inch to 200 minutes per inch. Chart drive uses the incoming line frequency as a standard... digital logic provides accuracy equal to complex & expensive gear trains.

Two input ranges permit accurate voltage measurements of 1 millivolt and 10 millivolts full scale. High input Z minimizes circuit loading and possible error. The 3-terminal floating input is highly useful for monitoring signals when the recorder and source are at different potentials.

A light-operated modulator eliminates the problems of using a mechanical chopper... operates at approximately 240 Hz to reduce the effects of 60 Hz noise. Temperature-stabilized reference voltage eliminates the need for an internal reference battery. Coarse & Fine zero position controls allow fast, precise pen positioning adjustments.

Other features include versatile pen holder which will accept virtually any writing instrument... especially useful for obtaining multi-colored plots. The hinged top makes paper loading simple and fast.

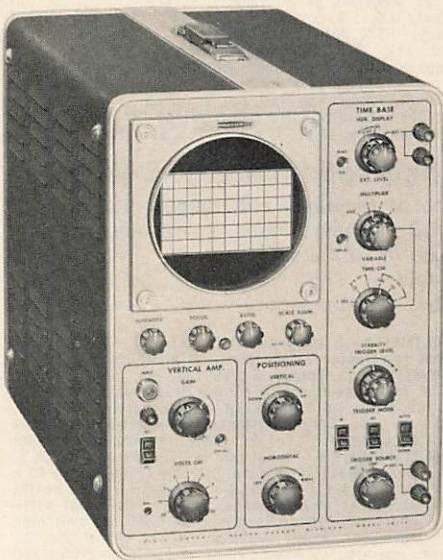
A wide variety of applications. The IR-18M can be used to measure and record any phenomena that varies with time by convert-



ing to the proper level of DC voltage. Applications include the measurement of temperature, velocity, light intensity, rpm, position and frequency. Put this low cost, high performance recorder to work for you now.

Kit IR-18M, 14 lbs., mailable.....**149.95**
 IRA-18-1, 3 rolls chart paper (140 ft/roll), 8 lbs., mailable...**9.95**
 Save on 12 rolls... order four IRA-18-1's,
 32 lbs., mailable.....**only 34.95**

IR-18M SPECIFICATIONS—Chart paper: Grid width, 10". Length, 140-foot roll. Markings, 0-100 right to left. Chart speed: 12 speeds, pushbutton selected. 5, 10, 20, 50, 100, 200 sec/inch and 5, 10, 20, 50, 100, 200 min/inch. Chart span: Two fixed ranges; 1 mV and 10 mV full scale. Pen: Standard cartridge-type fountain pen. Balancing time: Approximately 0.1 seconds per inch, 1 second full scale (10"). Input circuit: Self-balancing potentiometer. Input resistance: Essentially infinite at null. Line frequency rejection: (input shorted), 130 dB in common mode. Floating input: ± 100 VDC maximum with respect to ground. Overall error: Less than 1% full scale. Dead zone, less than 0.5% of full scale. Non-linearity, less than 0.5% of full scale. Maximum recommended source resistance: 100 k ohms. Reference source: Zener regulated supply. Power requirements: 120/240 VAC, 60 Hz, 14 watts or 120/240 VAC, 50 Hz, 16 watts. Fuse: 3/16 amp slow-blow (120 VAC). 1/10 amp slow-blow (240 VAC). Dimensions: 15" W x 6" H x 9 1/8" D. Net weight: 10 1/4 lbs.



Save 50.00
 Heathkit
 DC-8 MHz,
 triggered-
 sweep
 5" scope
\$225

Precision delay line circuitry allows the horizontal sweep to trigger ahead of the incoming vertical signal... the leading edge of the waveform is accurately displayed after the sweep is initiated. The delay line is capable of reproducing sharp rise time signals far beyond the high frequency limitations of the scope, assuring utmost ability for critical analysis of waveform characteristics.

Professional features at modest cost... versatility enough for the most demanding applications in service or industry. Calibrated vertical attenuator... 5x sweep magnifier... magnifier indicator lamp... external sweep and trigger inputs... accurately engraved 6 x 10 cm ruled graticule with variable intensity edge lighting for optimum results in scope photography.

Circuit board/wiring harness design and the famous Heathkit manual make assembly go quickly, easily. Alignment requires an accurate voltmeter, an accurate, fast rise time square wave generator and a sine wave signal source.

Kit IO-14, 53 lbs., Express/Frt.....**225.00**

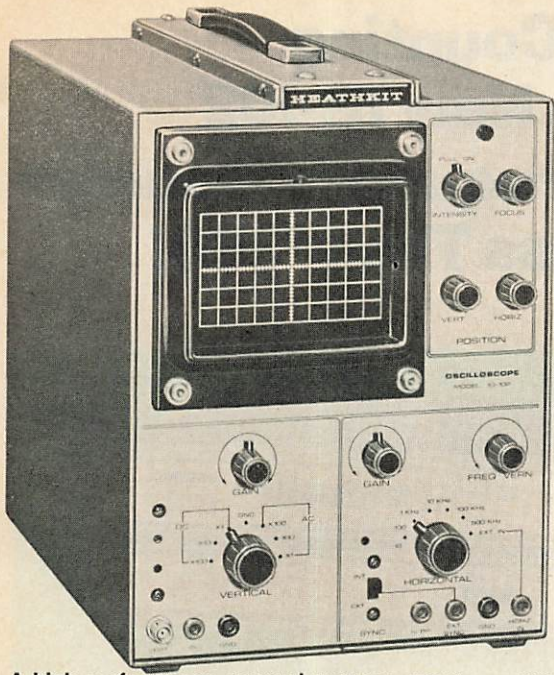
IO-14 SPECIFICATIONS—VERTICAL: Sensitivity: 0.05 V/cm AC or DC. Frequency response: DC to 8 MHz—3 dB or less. Rise time: 40 nsec or less. Input impedance: 1 megohm shunted by 15 pF. Attenuator: 9-position, compensated, calibrated in 1, 2, 5 sequence from 0.05 V/cm. Accuracy: $\pm 3\%$ on each step with continuously variable control (uncalibrated) between each step. HORIZONTAL: Time base: Triggered with 18 calibrated rates in 1, 2, 5 sequence from 0.5 sec/cm to 1 microsecond/cm with $\pm 3\%$ accuracy or continuously variable control position (uncalibrated). Sweep magnifier: x5. (Overall time base accuracy $\pm 5\%$ when magnifier is on.) Triggering capability: Internal, external, or line signals may be switch selected. Switch selection of + or - slope. Variable control on slope level. Either AC or DC coupling. "Auto" position. Horizontal input: 1.0 V/cm sensitivity (uncalibrated) continuous gain control. Bandwidth, DC to 200 kHz ± 3 dB. GENERAL: Power requirements: 285 watts, 115 or 230 VAC 50-60 Hz. Cabinet dimensions: 15" H x 10 1/2" W x 22" D, includes clearance for handle and knobs. Net weight: 40 lbs.

Assembled Low - Capacitance Scope Probe. x1 or x10 attenuation. DC to 25 MHz. 600 volts DC max. Spring-loaded notched tip. 1 megohm input.

Assembled PKW-2, 1 lb.,
 mailable**12.00**

Low Capacitance Scope Probe Kit. Provides direct or x10 attenuated operation; trimmer capacitor provides proper match to scope. Wiring options 3.3 megohm or 1 megohm.

Kit PK-1, 1 lb., mailable..**4.95**



New Heath 5" solid-state 5 MHz scope . . . 119.95



Frequency-compensated 3-position vertical attenuator accommodates varying input levels. A separate switch positions grounds the input to provide a zero reference line.

Five-position time base with vernier provides sweep ranges from 10 Hz to 500 kHz. External horizontal and sync connectors provided. A one volt P-P output gives a reference for comparison to unknown voltages.

Additional high performance features. The type 5DEP1 flat face CRT delivers a high visibility trace, and the 6 x 10 cm ruled graticule makes trace amplitude easy to determine. For added versatility, the CRT bezel can be easily replaced with a standard camera mount. Zener regulated power supplies. Styled in Heath beige & brown. Compact . . . only 16 1/4" D . . . fits on any bench with room to spare.

- Kit IO-102**, 29 lbs., mailable **119.95**
- Assembled IO-102**, 29 lbs., mailable **179.95**
- Assembled PKW-102**, 1 megohm scope probe, 1 lb., mailable. **19.95**

A high performance, general purpose scope . . . excellent for lab and classroom use . . . ideal for general service & design work in audio, TV and receiver circuitry.

Solid-state design for superior performance, longer life.

Wide DC-5 MHz response, 80 ns rise time and high 30 mV/cm sensitivity make the IO-102 a truly high performance, low cost scope. Switch-selected AC or DC coupling for added versatility.

IO-102 SPECIFICATIONS—VERTICAL CHANNEL—Sensitivity: 30 Mv/cm, uncalibrated. Frequency response: DC to 5 MHz, ± 3 dB. Rise time: 80 nanoseconds. Input impedance: 1 megohm shunted by 35 pF. Attenuator: 3-position, frequency compensated; x1, x10, x100. **HORIZONTAL CHANNEL—Sensitivity:** 0.1 V/cm. Frequency response: 1 MHz ± 3 dB. Input impedance: 1 megohm shunted by 50 pF. Sweep generator-type: Recurrent, automatic sync. Range: 10 Hz to 500 kHz in five switch-selected steps, continuously variable between steps. **GENERAL—Cathode ray tube:** Type, 5DEP1, green medium persistence phosphor. Viewing area, 6x10 cm. **Power supplies:** All solid-state rectifiers. All amplifier supplies regulated. **Power requirements:** 110-130 or 220-260 VAC, 50-60 Hz, 35 watts. **Overall dimensions:** 12 3/4" H x 9 1/4" W x 16 1/4" L, including knobs, handle, feet, etc. **Net weight:** 27 lbs.

Heathkit IO-10 compact 3" DC scope . . . 99.95

Offers exceptional features & versatility usually found only on much more expensive equipment. Capable of extremely slow sweep rates . . . as low as 5 Hz. Identical horizontal and vertical amplifiers . . . less than 5 degrees phase shift between channels. High 0.1 volt sensitivity with x1, x10 and x100 attenuation. A special alloy CRT shield minimizes trace distortion. An astigmatism control helps obtain sharp, clean traces. All critical voltages are fully regulated for additional display stability.

- Kit IO-10**, 16 lbs., mailable **99.95**
- Export model available for 115/230 VAC, 50/60 Hz, write for prices.

IO-10 SPECIFICATIONS—VERTICAL & HORIZONTAL CHANNELS IDENTICAL: Bandwidth: DC to 200 kHz (2 dB point). **Sensitivity:** 0.1 V (peak-to-peak) per 1/4" (uncalibrated). **Attenuator:** 3-position, compensated type; x1, x10, & x100. **Gain control:** Continuously variable. **Input impedance:** 3.6 megohms shunted by 35 pF. **Coupling:** Either AC or DC, switch-selected. **Relative phase shift between channels:** Less than 5°. **SWEEP GENERATOR (Recurrent type):** Linear sawtooth produced by multivibrator type generator covering 5 Hz to 50 kHz in four overlapping ranges. "External capacitance" binding post for lower sweep rates. **Sync provision:** Either internal or external, switch-selected. **GENERAL—Power requirements:** 105-125 V, 50-60 Hz AC at 100 watts max. **Dimensions:** 8 5/8" H x 4 5/8" W x 12 3/4" D.



Lowest cost Heathkit 3" scope . . . 79.95

Provides 5 MHz bandwidth . . . useful for a number of applications in engineering, lab, service bench or home workshop. High 30 mV P-P sensitivity. Recurrent, 4-range sweep provides 20 Hz to 200 kHz rates. x50 attenuator on vertical channel gain control. 1 V P-P output for reference. Horizontal sweep from internal, 60 Hz line or external source. Wide range automatic sync for added convenience, easier operation. Fully shielded CRT reduces interference. Compact . . . only 9 1/2" H x 5 1/2" W x 14 1/2" D . . . fits easily on any bench. Solid-state power supply; 120/240 VAC, 50/60 Hz wiring options. Easy circuit board-wiring harness assembly.

- Kit IO-17**, 16 lbs., mailable **79.95**

IO-17 SPECIFICATIONS—VERTICAL CHANNEL: Input impedance: 1 megohm shunted by 25 pF; x50 attenuator position, 1 megohm shunted by 15 pF. **Sensitivity:** 30 mV P-P/div. (uncalibrated). **Frequency response:** 5 Hz to 5 MHz ± 3 dB. **HORIZONTAL CHANNEL: Input impedance:** 10 megohm shunted by 15 pF. **Sensitivity:** 300 mV P-P/div. **Frequency response:** 2 Hz to 300 kHz ± 3 dB. **HORIZONTAL SWEEP GENERATOR:** Sweep generator: Recurrent type. **Frequency:** 20 Hz to 200 kHz in four overlapping ranges. **Retrace:** Blanked by a pulse from blanking amplifier. **Synchronization:** Automatic type.

Assembled hi-Z scope probe . . . 19.95

10 megohm/11.5 pF input Z. Compensation allows matching to any 1 megohm/15-47 pF scope. DC-30 MHz. 500 V AC or DC max.

- Assembled PKW-101**, 1 lb., mailable **19.95**

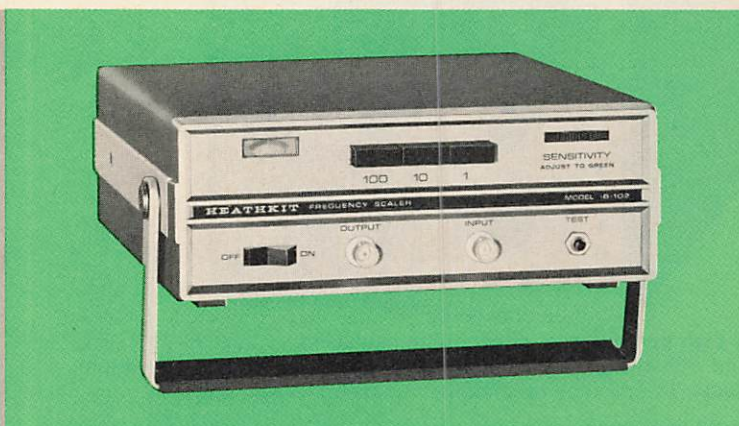
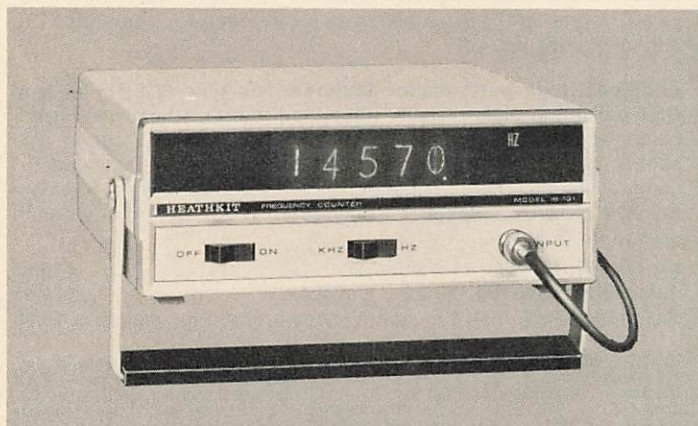
Scope demodulator probe kit . . . \$5

For distortion checks & observation of RF & IF signal modulation. Functions as an AM detector. 30 V rms, 500 VDC max.

- Kit 337-C**, 1 lb., mailable . . . **5.00**
- Assembled 337W-C**, 1 lb., mailable **6.50**



Now...Get 175 MHz Counting Capability With The New IB-102 Scaler And IB-101 Frequency Counter Combination For Less Than \$300!



The Heathkit IB-101: 15 MHz for just 199.95!

- Accurate counting to over 15 MHz
- All solid-state circuitry
- Wide range input without adjustment

A highly accurate, low cost counter for dozens of applications . . . engineering, R&D, radio & TV service. If you need accurate frequency measurement, you need the Heathkit IB-101.

Accurate counting from 1 Hz to over 15 MHz with 5-digit cold-cathode readout tubes. Computer-type integrated circuitry eliminates blinking readout . . . provides a rock-stable divider chain that never needs adjustment.

Overrange indicator and Hz/kHz switch give the IB-101's 5-digit readout the capability of an 8-digit counter. Set the range switch to kHz and read out to the nearest kHz. Push the switch to the Hz position and read down to the last Hz. Overrange & Hz/kHz indicators light up to give correct range and error-free measurement. You can make an 8-digit measurement to over 15 MHz in seconds.

Exclusive Heath-designed input circuit. A dual-gate, diode-protected MOSFET provides proper triggering over a wide range of input levels . . . without adjustment. Input Z is 1 megohm shunted by less than 20 pF to minimize loading. A special low drift, temperature compensated 1 MHz crystal oscillator provides a highly stable time base.

All solid-state circuitry . . . 26 ICs, 7 transistors, a MOSFET & 6 diodes provide easy 6-hour assembly, high reliability. All ICs and display tubes mount in sockets. Compare features, performance & price . . . the best value in counters is the Heath IB-101. Order yours today.

Kit IB-101, 7 lbs., mailable **199.95**

IB-101 SPECIFICATIONS: Frequency range: 1 Hz to greater than 15 MHz. Accuracy: ± 1 count \pm time base stability. Gate times: 1 millisecond or 1 second with automatic reset. **INPUT CHARACTERISTICS:** Sensitivity: 1 Hz to 1 MHz, less than 100 mV rms. 1 MHz to 15 MHz, less than 250 mV rms. After 30 minutes warmup. **Trigger level:** Automatic. **Impedance:** 1 Meg ohm shunted by less than 20 pF. **Maximum input:** 200 V rms, DC-1 kHz. Derate at 48 V per frequency decade. **TIME BASE:** Frequency: 1 MHz, crystal controlled. **Aging rate:** Less than 1 PPM/month after 30 days. **Temperature:** Less than ± 2 parts in 10⁷/degree C. 20 to 35 degrees C after 30 minutes warmup. $\pm .002\%$ from 0 to 40 degrees C. **GENERAL:** Readout: 5 digits plus overrange. **Ambient temperature range:** Storage, -55 to 80 degrees C; Operating, 0 to 40 degrees C. **Power requirements:** 105-125 or 210-250 VAC, 50/60 Hz, 8 watts. **Cabinet dimensions:** 8¼" W x 3½" H x 9" D not including handle. **Net weight:** 4½ lbs.

New 175 MHz Frequency Scaler . . . only 99.95!

- Accurate scaling, 2 MHz-175 MHz
- ECL & TTL integrated circuitry
- True input sensitivity control . . . not an attenuator
- Up to 3 V rms input capability

Extend the range of virtually any frequency counter to 175 MHz. Imagine having fast, accurate, reliable measurement capability into the VHF region for less than \$100! In combination with your existing counter, that's what the new IB-102 delivers. Ideal for anyone doing HF & VHF work . . . 2-way radio repair, hams & CBER's, audio & receiver service, RF design & R&D.

The new IB-102 will divide input frequencies from 2 MHz to 175 MHz with the scaled output fed to any compatible frequency counter with a 1 megohm input. Front panel switch-selection of 10:1 or 100:1 scaling ratios . . . resolution down to 10 Hz, with a counter having a 1 second time base. For use with frequencies within the range of the counter being used, a 1:1 switch position provides straight-thru counting without scaling.

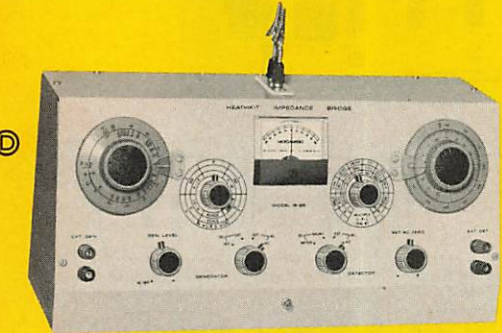
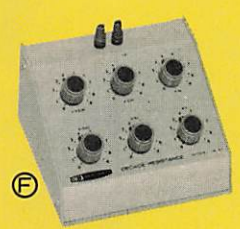
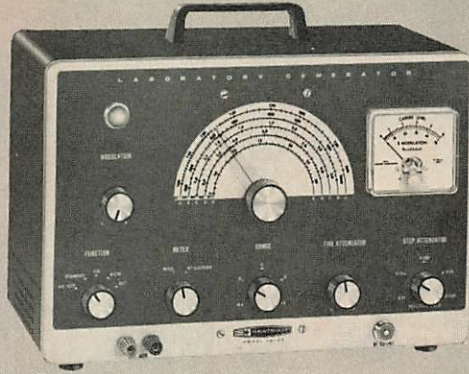
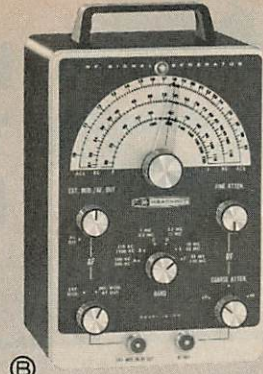
Exclusive Heath input circuit triggers at extremely low signal levels, increasing versatility greatly. At 100 MHz, for example, only 50 mV maximum is needed to trigger.

Easy operation. Once the division ratio is selected, just adjust the sensitivity control for a peak meter reading in the green portion of the scale, indicating an input level sufficient to obtain proper results. The Test Switch gives a quick, easy method of checking input level . . . just press it — if the frequency reading changes, the input level is too low or the sensitivity control is not adjusted properly.

Other features include all solid-state transistor/IC design, filtered & regulated power supplies, convenient carrying handle/tilt stand and easy 5-hour assembly. Add 175 MHz measurement capability to your bench now . . . order your new IB-102 scaler today.

Kit IB-102, 7 lbs., mailable **99.95**

IB-102 SPECIFICATIONS — Frequency Range: 2 MHz to 175 MHz. **Resolution:** Counter with 1 millisecond time base — divide by 10=10 kHz; divide by 100=100 kHz. Counter with 1 second time base — divide by 10=10 Hz; divide by 100=100 Hz. **Meter:** Green area indicates adequate signal level. **INPUT — Sensitivity:** 50 mV, 2 MHz to 100 MHz. 125 mV, 100 MHz to 175 MHz. **Impedance:** Divide by 1, same as frequency counter. Divide by 10 and 100, 50 ohms. **Amplitude (maximum):** 3 volts RMS. **OUTPUT — Amplitude (minimum):** 1 volt across 1 megohm and 20 pF load. **Rise Time:** 20 nanoseconds. **Fall Time:** 10 nanoseconds. **Offset from Ground:** Adjustable from zero to ± 500 millivolts. **GENERAL — Power Requirements:** 110-130 or 220-260 VAC, 50/60 Hz, 5 watts. **Ambient Temperature Range:** Storage, -55 degrees C to 80 degrees C. Operation, 10 degrees C to 40 degrees C. **Dimensions:** 8¼" W x 3½" H x 9" D (not including handle).



A Low distortion audio generator... 49.95

10 Hz to 100 kHz output with front panel switch selection. Less than 0.1% distortion from 20-20,000 Hz. 8 output ranges from 0 to 10 volts RMS.

Kit IG-72, 8 lbs., mailable **49.95**
Assembled IGW-72, 9 lbs., mailable **74.95**

IG-72 SPECIFICATIONS — Frequency: 10 Hz to 100 kHz, 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). **Power requirements:** 105-125 volts AC, 50/60 Hz, 40 watts. **Dimensions:** 9½" W x 6½" H x 5" D.

B General purpose RF generator... 31.95

Extended 100 kHz to 220 MHz range with 2% accuracy. Unmodulated and 400 Hz modulated output. 400 Hz output for audio checks.

Kit IG-102, 7 lbs., mailable **31.95**
 Export model available for 115/230 VAC, 50/60 Hz; write for prices.

IG-102 SPECIFICATIONS — Frequency range: Band A, 100 kHz to 320 kHz; Band B, 310 kHz to 1.1 MHz; Band C, 1 MHz to 3.2 MHz; Band D, 3.1 MHz to 11 MHz; Band E, 10 MHz to 32 MHz; Band F, 32 MHz to 110 MHz. **Calibrated harmonics:** 100 MHz to 220 MHz. **Output:** Impedance, 50 ohms; Voltage, 100,000 uV. **Modulation:** Internal, 400 Hz, 30% depth; External, approx. 3 V across 50 k ohms for 30%. **Audio output:** Approx. 10 V open circuit. **Power requirements:** 105-125 VAC, 50/60 Hz, 15 watts. **Dimensions:** 6½" W x 9½" H x 5" D.

C Precision Lab RF generator... 64.95

Fundamental output from 100 kHz to 31 MHz in five bands. Accurately metered output voltage & % modulation. Double-shielded oscillator circuits. Easy assembly.

Kit IG-42, 15 lbs., mailable **64.95**

IG-42 SPECIFICATIONS — RF output: Impedance, 50 ohms — voltage, 100,000 microvolts max. **Attenuator:** Coarse, 10:1 per step, 5 steps — Fine, 10:1 continuous, indicated on meter. **Amplitude modulation:** CW, internal 400 Hz or external audio frequencies. **Modulation depth:** 0 to 50% variable, indicated on meter. **Power requirements:** 115/230 VAC, 50-60 Hz. **Dimensions:** 13" W x 8½" H x 7" D.

D Heathkit impedance bridge... 89.00

Four separate bridge circuits measure resistance, capacitance, low & high Q inductance. Built-in generator and amplifier; battery-type vacuum tube circuitry for fast warmup. ½% resistors & silver-mica capacitors for higher accuracy. 120/240 VAC, 50/60 Hz operation. Requires headphones or scope for alignment.

Kit IB-28, 11 lbs., mailable **89.00**

E Solid-state sine-square wave generator... 67.50

1 Hz to 100 kHz sine wave output at 5% accuracy, less than 0.1% distortion from 10 Hz to 20 kHz. Square wave output from 5 Hz to 100 kHz, less than 50 ns rise time. Both outputs floating and available simultaneously. Switch-selected internal/external load. 120/240 VAC, 50/60 Hz. 5½" H x 13¼" W x 7" D.

Kit IG-18, 12 lbs., mailable **67.50**
Assembled IGW-18, 10 lbs., mailable **99.50**

IG-18 PARTIAL SPECIFICATIONS — GENERAL: Frequency selection: 0-100 switch (steps of 10), 0-10 switch (steps of 1), 0-1 control (vernier) & multiplier switch (x1, 10, 100, 1000). **SINE WAVE OUTPUT:** Output voltage: 8 ranges, 0.003 to 10 volts RMS (full scale) with 10 K ohm or higher external load. 6 ranges, 0.003 to 1 volt (full scale) with 600 ohm internal or external load. dB ranges: -62 dB to +22 dB, -12 dB to +2 dB on meter and -50 dB to +20 dB on amplitude switch in 10 dB steps. +2 dB max into 600 ohm load. (0 dB = 1 mw in 600 ohm). **Output variation:** ±1 dB 10 Hz to 100 kHz. **Output indication:** Two voltage and one dB scale on meter. **Output impedance:** 10 volt range: 0-1000 ohm; 3 volt range: 800-1000 ohm; 1 volt range and lower: 600 ohm. **Meter accuracy:** ±5% of full scale with proper load termination. **SQUARE WAVE OUTPUT:** Output voltage: (peak-to-peak): .1, 1, 10 volt into 200 ohm load or higher. **Output impedance:** .1 V and 1 V ranges: 52 ohm; 10 V range: up to 220 ohm.

F Decade Resistance Box... 29.95

Kit IN-17, 4 lbs., mailable **29.95**

IN-17 SPECIFICATIONS: Range: 1 ohm to 999,999 ohms in 1 ohm steps. **Resistors:** Precision ½% accuracy, 1 watt. **Minimum DC resistance:** .25 ohms or less at terminals with all switches set at zero. **Dimensions:** 7½" W x 5" H x 6½" D.

G Decade Capacitance Box... 19.95

Kit IN-27, 3 lbs., mailable **19.95**

IN-27 SPECIFICATIONS — Range: 100 pF to 0.111 μF increments of 100 pF. **Voltage rating:** 350 V, DC continuous; 500 V, DC intermittent; 1000 V, DC instantaneous test. **Accuracy of incremental capacity:** ±1%. **Stray capacitance:** 10 to 15 pF at terminals. **Dimensions:** 7½" W x 4" H x 5" D.

H Resistor Substitution Box... 7.95

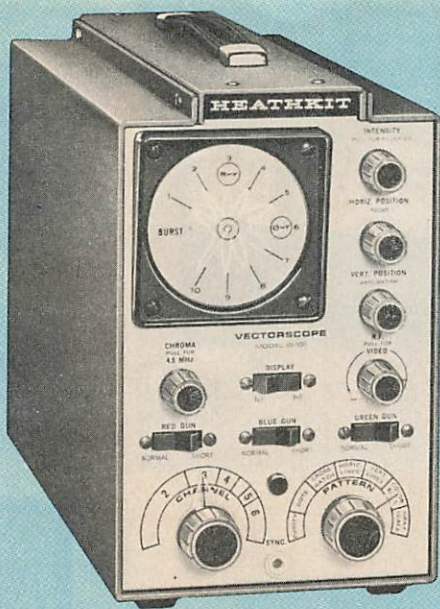
Kit IN-37, 2 lbs., mailable **7.95**

Provides switch selection of any one of 36 EIA standard 10% 1-watt resistors, from 15 ohms to 10 megohms. Hi/Lo switch, Case is 5½" L x 3½" W x 3" H.

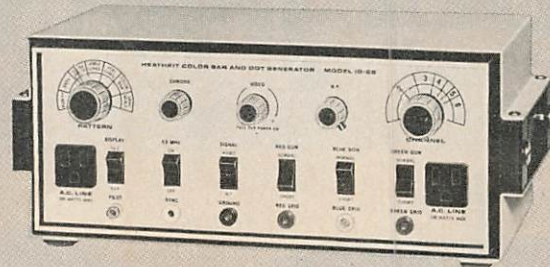
I Capacitor Substitution Box... 7.50

Kit IN-47, 2 lbs., mailable **7.50**

Select any of 18 EIA standard capacitors from 100 pF to .22 μF. All rated at 600 V except three lowest & two highest values, 500 & 400 V respectively.



Heathkit® TV Service Equipment



Complete chroma signal service capability with one instrument . . . Heathkit solid-state Vectorscope/Color Generator . . . 124.95

Accurately performs all chroma signal adjustments. The vector pattern indicates the ten color bars generated, amplified and demodulated by the color receiver circuitry . . . accurately represents the chroma signal fed to the CRT guns. Shows at a glance missing or weak colors . . . proper adjustment of burst phase transformer, reactance coil, oscillator coil and bandpass transformer. Color demodulation angle can also be checked.

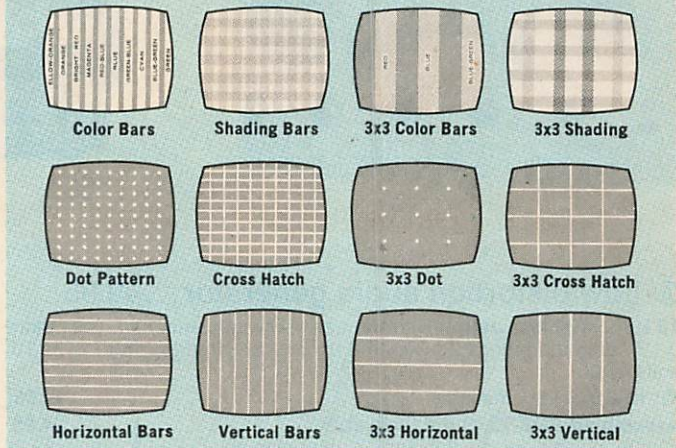
Produces 12 patterns plus a clear raster for purity adjustments. All patterns available at the turn of a knob, either in the familiar 9x9 display or the exclusive Heath 3x3 display. Divider chain adjustment & instability are eliminated completely . . . 15 J-K flip-flops and 8 gates count down from a crystal-controlled master clock oscillator.

Extra convenience . . . faster servicing. A Grid-Cathode switch on the rear panel enables all vector patterns to be displayed in the same relative position, regardless of how the CRT is driven. Variable front panel tuning for channels 2 thru 6 is also included. Plus and minus going video signals are available at the turn of the front panel control. For sync, chroma and in-circuit video difficulties there's a handy front panel sync output. A switchable front panel 4.5 MHz crystal-controlled sound carrier is also provided for sound trap adjustments. Shielded rear panel leads allow fast connection of RF signal to antenna terminals or video signals to video circuits. Other features include front panel gun shorting switches and lead-piercing grid jacks and two 500 watt grounded AC receptacles for connection of other test gear or TV set.

For faster, more profitable color TV service you need the Heathkit IO-101 . . . order yours now.

Kit IO-101, 12 lbs., mailable . . . 124.95

IO-101 SPECIFICATIONS—PATTERNS—Purity: Produces a snow-free raster for purity adjustments. **Dots*:** 9x9 produces a display of 110 small dots. 3x3 produces a display of nine dots for convergence adjustments. **Crosshatch*:** 9x9 produces a display of 11 vertical and 10 horizontal lines. 3x3 produces a display of three vertical and three horizontal lines for convergence and linearity adjustments. **Horizontal Lines*:** 9x9 produces a display of 10 horizontal lines. 3x3 produces a display of three horizontal lines for vertical linearity and pin-cushion adjustments. **Vertical Lines*:** 9x9 produces 11 vertical lines. 3x3 produces a display of 3 vertical lines for horizontal linearity and convergence adjustments. **Color Bars*:** 9x9 produces a display of ten standard color bars. 3x3 produces a display of three standard color bars. A visual fingerprint (voltage pattern) of all ten color bars in the form of a petal pattern is displayed for color circuit servicing. **Gray Scale:** Provides a wide bar crosshatch pattern with six shades of brightness for color gun level adjustments. **OUTPUT SIGNALS—Video:** Greater than ±1 volt peak-to-peak composite signal for composite signal injection beyond the video detector. **RF:** Variable to approximately 25,000 uV output, channels 2 through 6, for composite signal injection into the TV receiver antenna input terminals. **Sync:** Greater than 3.5 volts peak-to-peak signal for servicing sync circuits without video, or sets having separate video and sync demodulator phase adjustments. **GENERAL—Power Requirements:** 105-125 or 210-250 VAC, 50/60 Hz, 20 Watts. **Cabinet Dimensions:** 6¾" W x 9¼" H x 14½" D. *The number of dots, lines, and bars indicated for a 9 x 9 display is the number displayed if the receiver under test has no overscan.



Switch select any of these 12 patterns plus clear raster

The versatile Heathkit IG-28 . . . your best value in a solid-state color bar/pattern generator . . . 79.95

The best signal source for all color & B&W TV servicing . . . highly stable, extremely versatile . . . loaded with extra convenience features—all at a low kit price. Compare: you'll see the IG-28 is your best buy.

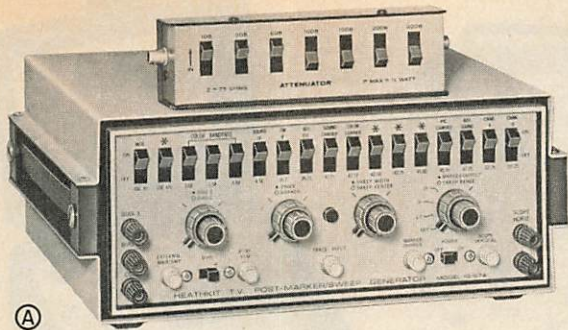
Produces 12 patterns plus clear raster . . . dots, cross hatch, vertical & horizontal bars, color bars and shading bars in the familiar 9x9 display . . . plus exclusive Heath 3x3 display of all these patterns. A crystal controlled master oscillator and associated logic circuitry provide a rock-stable divider chain that eliminates instability and adjustment forever.

Profit-producing versatility and convenience . . . full of those famous Heath extras that make your servicing faster, more accurate and profitable. Variable front-panel tuning for channels 2 thru 6 . . . plus and minus going video signals at a turn of a knob . . . a front panel sync output for chroma, in-circuit video and sync problems . . . two front panel AC outlets for other test equipment or TV set . . . built-in gun shorting circuits and grid jacks too. Plus vectorscope display capability as well: just add any service-type scope with ext. horizontal input. Start producing extra profits from your bench now . . . with the Heathkit IG-28.

Kit IG-28, 8 lbs., mailable . . . 79.95

Assembled IGW-28, 10 lbs., mailable . . . 114.95

IG-28 SPECIFICATIONS—Output signals: Video—Greater than ±1 volt peak-to-peak composite signal for composite signal injection behind the video detector. **RF—** Variable to 50,000 uV output, channels 2 through 6, for composite signal injection into the receiver antenna input terminals. **Sync—** Greater than 3.5 volts peak-to-peak signal for servicing sync circuits without video, or sets having separate video and sync demodulators. **Control Grids (3)—** Individual red, blue, and green control grid signals for viewing chroma signal demodulator phase adjustments. **Power supply:** Transformer operated, full-wave zener diode regulated. **Input—** 120 or 240 VAC, 50/60 Hz. **Output—** 3.6 VDC, 500 mA, zener diode regulated. **Dimensions—** overall: 13½" W x 5½" H x 8" D.

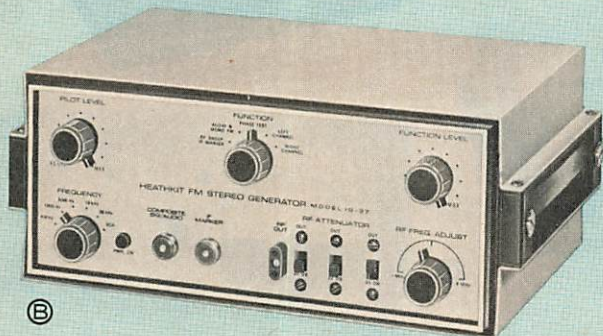


(A)



(C)

(D)



(B)

(A) Big value for little dollars . . . Heathkit IG-57A post-marker/sweep generator . . . \$135

Complete alignment jobs quickly & accurately . . . a scope, VTVM and the IG-57A are all you need to align virtually any modern B&W or color receiver. Check overall frequency response from the antenna terminals thru the tuner, IF, video detector to the color bandpass amplifier outputs. Sweep modulated picture carrier too . . . one at 45.75 for the tuner mixer input . . . another at 67.25 for the antenna terminal input. The exclusive Heathkit external attenuator allows setting bandwidth accurately in seconds without guessing 6 dB points.

15 crystal-controlled markers . . . 4 for color bandpass, 1 for FM IF, 8 for TV IF's from 39.75 to 47.25 . . . plus markers for channels 4 & 10 picture & sound carriers . . . accurately locate picture and sound carriers, 6 dB points and trap locations. Three sweep oscillators produce 5 ranges using harmonics . . . for color bandpass, FM IF, video IF bandpass, VHF channels 4 & 10. Compact size, convenient controls and choice of factory assembled or easy to assemble kit versions. Get top notch alignment facilities at low cost . . . order your IG-57A today.

Kit IG-57A, 15 lbs., available . . . \$135.00
Assembled IGW-57A, 15 lbs., available . . . \$199.00

IG-57A SPECIFICATIONS—Marker frequencies: 100 kHz. Marker frequencies, crystal-controlled: 3.08, 3.58, 4.08, and 4.50 MHz $\pm 0.1\%$. 10.7, 39.75, 41.25, 42.17, 42.50, 42.75, 45.00, 45.75, 47.25, 67.25 and 193.25 MHz $\pm 0.05\%$. Modulation frequency: 400 Hz. Input impedance: External Marker/Sweep, and Attenuator—75 ohms. Trace in—220 k ohms. Output impedance: Marker Output, Sweep Output, and Attenuator—75 ohms. Scope Vert.—1 k ohms. Bias voltage: Two individually adjustable supplies; Positive or negative polarity. Type of marker: Birdie. Controls: Bias controls; Marker/Trace—dual concentric; Sweep Width/Sweep Center—dual concentric; Marker Out—concentric with Sweep Range switch; and Phase. Switches: Rocker type—separate switch for each of the above listed frequencies; Blanking, On/Off; Trace Reverse; Modulation On/Off. Sweep frequency ranges and output voltage: LO Band—2.5 to 5.5 MHz ± 1 dB at 0.5 volts RMS (min.) fundamentals, and 10.7 MHz on harmonics. IF Band—38 to 49 MHz ± 1 dB, at 0.5 volts RMS (min.) fundamentals. RF band—64 to 72 MHz ± 1 dB at 0.5 volts RMS (min.) fundamentals and 192 to 198 MHz on harmonics. Attenuator: Total of 70 dB of attenuation in seven steps—1 dB, 3 dB, 6 dB, 10 dB, 20 dB, 20 dB and 20 dB. Power requirements: 120 volts, 60 Hz AC at 4.5 watts.

(B) For fast, easy FM equipment alignment choose the Heathkit IG-37 . . . \$79.95

The IG-37 has what you need . . . and at a low cost. Audio & composite stereo signals available for multiplex adjustments and an RF carrier modulated by these signals for tuner & receiver adjustments. For accurate adjustment of subcarrier transformers, use the phase test. Variable level crystal controlled 19 kHz pilot signal permits checking lock-in range of stereo receivers. Built-in sweep & marker signals for overall RF & IF alignment check. RF carrier

signal adjustable ± 2 MHz from the normal frequency to allow alignment on a clear portion of the band. Front panel controls select either right or left channel signals or phase test . . . no balancing required for equal channel modulation level. Switch-selection of frequencies, either direct or modulated RF, of 400 Hz, 1 kHz, 5 kHz, 38 kHz and one of two SCA frequencies. Get what it takes . . . get your IG-37 today.

Kit IG-37, 12 lbs., available . . . \$79.95

IG-37 SPECIFICATIONS—RF signal frequency: 100 MHz adjustable by approx. ± 2 MHz. Pilot modulating frequency: 19 kHz ± 2 Hz. FM modulation: Left channel (stereo), right channel (stereo), Phase Test (left plus right channel in phase), Monophonic FM. Deviation: Adjustable to 75 kHz. Sweep rate: (used for RF and IF alignment) 60 Hz. Sweep width: (used for RF and IF alignment) Adjustable to 750 kHz. RF attenuator range: 60 dB in 20 dB steps. Crystal-controlled markers: 10.7, 90.95, 96.30, 101.65 & 107 MHz. Composite signal output: Left channel (stereo); Right channel (stereo). Phase test (left plus right channels in phase). Audio output: 400, 1000 & 5000 Hz; 19 kHz (± 2 Hz); 38 kHz & SCA (65 or 67 kHz). Distortion: (At 400, 1000, & 5000 Hz) Less than 5%. Power requirements: 105-125, 210-230 volts AC, 50/60 Hz, 35 watts. Dimensions: 5 1/2" H x 9" D x 13 1/2" W.

(C) Heathkit IM-58 Harmonic distortion meter . . . \$65

Measures distortion to 1% full scale; accuracy $\pm 0.1\%$ distortion. 20-200,000 Hz frequency range; meter scales of 1, 3, 10, 30, 100%. VTVM scales of 1, 3, 10, & 30 V. Noise level measurements down to -60 dBm. 120/240 VAC, 50-60 Hz.

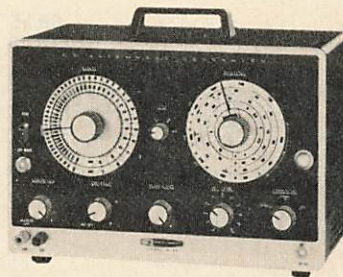
Kit IM-58, 13 lbs., available . . . \$65.00

(D) Heathkit IM-48 Audio intermodulation analyzer . . . \$69

3-in-1 instrument . . . AC VTVM, wattmeter, and intermodulation analyzer. Built-in high & low freq. signals & load resistors.

Kit IM-48, 9 lbs., available . . . \$69.00

IM-48 SPECIFICATIONS—Frequency response—AC VTVM: 10 Hz to 100 kHz ± 1 dB. Wattmeter: 10 Hz to 50 kHz ± 1 dB. I.M. analyzer high pass filter: 2000 Hz to 12,000 Hz. I.M. analyzer low pass filter: 10 Hz to 600 Hz. AC VTVM range: .01, .03, .1, .3, 1, 3, 10, 30, 100, 300 volts RMS full scale. dBm: -40 , -30 , -20 , -10 , 0, $+10$, $+20$, $+30$, $+40$, $+50$. Reads from -65 to $+52$ dBm. Wattmeter: 0.15 mW, 1.5 mW, 15 mW, 150 mW, 1.5 W, 15 W, 150 W, full scale. Maximum continuous power 25 watts, intermittent power to 50 watts. I.M. analyzer: 1%, 3%, 10%, 30%, 100% full scale. Input impedance—AC VTVM: 1 megohm or 4, 8, 16 or 600 ohm switch selected. I.M. analyzer: 1 megohm or 4, 8, 16 or 600 ohm switch selected. Wattmeter: 4, 8, 16, or 600 ohm internal load, 10,000 ohm across external load. Output impedance—low and high frequency output: 3000 ohm (600 ohm when shunted with 750 ohm resistor). Internal generator frequencies—low frequency, 50/60 Hz (line frequency); high frequency, approximately 6 kHz. Accuracy—AC VTVM and wattmeter: Within 5% of full scale. I.M. analyzer: Within 10% of full scale. Power requirements: 105-125 or 210-250 VAC, 50/60 Hz, 20 watts. Dimensions: 13" W x 8 1/2" H x 7" D.



Low cost TV & FM alignment generator . . . \$69.95

Provides all signal sources required for FM & TV alignment . . . TV front end channels 2-13. Controllable inductor sweep oscillator for stable, linear sweep, 3.6-200 MHz . . . 0-42 MHz max. sweep width. Built-in markers: 4.5 MHz crystal and multiples . . . 19 to 60 MHz variable (57-180 MHz on harmonics). Fixed step & variable attenuators.

Kit IG-52, 14 lbs., available . . . \$69.95

Export model available for 120/240 VAC, 50-60 Hz; write for prices.

Check Out These Heathkit Power Supplies & Testers!



(A)



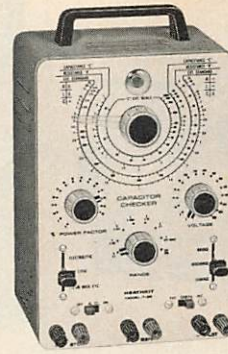
(D)



(B)



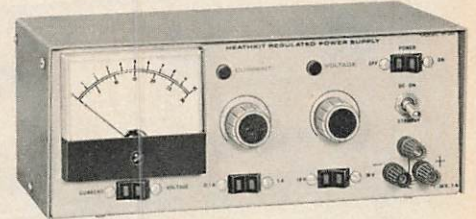
(C)



(E)



(F)



(G)

(C) Solid-state 0.5-50 VDC regulated supply... 79.95

Provides regulated DC voltage, output current limiting. Panel meter switches from voltage to current. Relay protected from short circuits & overloads. For higher outputs, connect several IP-27 supplies in series or parallel.

Kit IP-27, 16 lbs., mailable 79.95
Assembled IPW-27, 14 lbs., mailable 125.00

IP-27 SPECIFICATIONS — Input: 105-125 volts or 210-250 volts, 50/60 Hz; 135 watts at full load (50 V, 1.5A). Output: 0.5-50 volts DC; 1.5 amps. max. DC. Load regulation: ± 15 mV, can be adjusted for no change. Line regulation: For a 10% change in line voltage, less than .05% change. Ripple & noise: Less than 250 microvolts. Transient response: Less than 25 microseconds. Output impedance: Less than .075 ohms from DC to 10 kHz, less than .3 ohms 10 kHz & up. Overload protection: Current limiter & relay. Meter: $3\frac{1}{2}$ ", 1 mA, 50 ohm. Current ranges: 50 mA, 150 mA, 500 mA, 1.5 A. Voltage ranges: 5V, 15V, 50V. Front panel controls: On/Off-Coarse voltage switch, Fine voltage adjust, Current range switch, Current limit adjust, Meter rocker switch, Reset Standby toggle switch. Output terminals: (3), plus (+), minus (-), chassis ground. Dimensions: $5\frac{1}{8}$ " H x $13\frac{3}{4}$ " W x 9" D.

(E) Heathkit Capacitor Checker... 39.95

Direct reading scales measure capacitance from 10 μ F to 1,000 μ F in 4 ranges. Tests leakage from 3 to 600 V (low bridge voltage for safe tests of miniature electrolytics). Measures resistance from 5 ohms to 50 megohms in 3 ranges. Comparator circuit measures unknown L, C or R with external standard, max. ratio 25—1. Calibrated power factor control.

Kit IT-28, 7 lbs., mailable 39.95

(F) In-circuit transistor tester... 24.95

Checks transistors in or out of circuit. Measures transistor DC Beta out of circuit, range 2-100, 20-1000. Measures leakage out of circuit, range 0-5000 μ A. Tests diodes in or out for opens and shorts and identifies unknown leads. Matches and identifies NPN and PNP transistors. Can't harm circuits. Not for use with high power or switching transistors. $4\frac{1}{2}$ ", 200 μ A meter. Battery powered circuit (less batteries).

Kit IT-18, 4 lbs., mailable 24.95

(G) 1-30 VDC solid-state regulated supply... 47.50

Delivers up to 30 VDC at 1 amp with less than 50 mV variation and less than 20 mV using Remote Sensing. Two continuously variable, switch-selected voltage ranges (1-10 VDC & 1-30 VDC).

Kit IP-28, 9 lbs., mailable 47.50

IP-28 SPECIFICATIONS — Voltage output: 2 ranges; 1-10 and 1-30 VDC, continuously adjustable. Load regulation: Less than 50 mV variation from no load to full load (at front panel terminals) without remote sensing. Less than 20 mV variation from no load to full load at front or rear panel terminals when using remote sensing. Line regulation: Less than 25 mV variation in output voltage for 10% change in line voltage. Ripple & noise: Less than 5 mV. Current output: 1A maximum continuous load (0.75A max. continuous load below 5 V). Current limiting: 2 ranges; 10-100 mA & 10mA-1A, continuously adjustable. Transient response: 25 μ s. Output impedance: 0.3 ohms or less to 100 kHz. Meter accuracy: 3% of full scale. Meter ranges: One switch determines voltage or current reading. 2 voltage ranges: 0-10 V, 0-30 V. 2 current ranges: 0-100 mA, 0-1A. External programming: AC or DC programming. 5000 ohm load on DC. Power requirements: 105-125 or 210-250 VAC, 50/60 Hz, 50 watts, at full load. Dimensions: $10\frac{3}{4}$ " W x $4\frac{3}{8}$ " D x $6\frac{1}{2}$ " H overall. Net weight: 6 $\frac{1}{2}$ lbs.

(A) 6 & 12 VDC variable battery eliminator... 59.95

Switches to 6 or 12 VDC. Has separate filtered & unfiltered outputs, low AC ripple, separate voltage & current meters.

Kit IP-12, 18 lbs., mailable 59.95

Export model available for 115/230 VAC, 50-60 Hz; 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 Hz AC at 200 watts. Dimensions: $13\frac{1}{2}$ " W x $8\frac{1}{2}$ " H x 7" D.

(B) Variable 0-400 VDC regulated supply... 69.95

Separate filament & high voltage transformer permit switching all high voltages off while changing test circuit. Separate meters for simultaneous observation — voltmeter can be switched to monitor bias. AC & DC outputs isolated from ground and each other ($\frac{3}{4}$ " spacing).

Kit IP-17, 21 lbs., mailable 69.95

Assembled IPW-17, 19 lbs., mailable 110.00

IP-17 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., 12.6 volts at 2 amps. (25 VA max. AC load), 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 MHz. Meters: Voltmeter 0-400 V or 0-150 V; Milliammeter 0-150 mA. Power requirements: 105-125 V or 210-250 V, 50/60 Hz, 150 watts max. Dimensions: $5\frac{1}{8}$ " H x $13\frac{3}{4}$ " W x 11" D.

(C) Solid-state 1-15 VDC regulated supply... 21.95

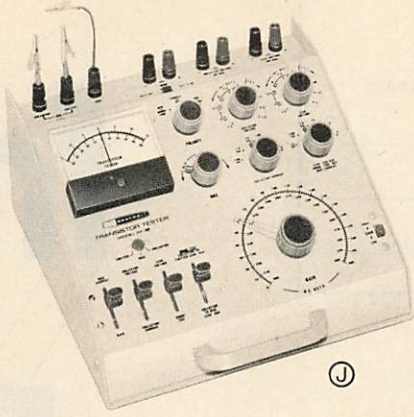
Ideal for transistor work, has regulated, adjustable voltage with current limiting, programming; "floating" outputs for positive or negative grounding. (Requires VOM for adjustment.)

Kit IP-18, 5 lbs., mailable 21.95

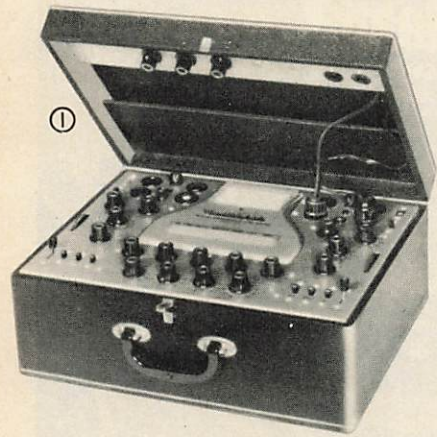
IP-18 SPECIFICATIONS — Voltage output: 1-15 VDC, continuously adjustable. Load regulation: Less than 50 mV variation from no load to full load. Line regulation: Less than 50 mV change in output voltage for a 10% change in line voltage. Ripple and noise: Less than 5 mV. Current output: 500 mA maximum continuous load. Current limiting: Adjustable from 10 mA to over 500 mA. Transient response: 25 microseconds. Output impedance: .5 ohm or less to 100 kHz. Power requirements: 105-125 or 210-250 VAC, 50/60 Hz, 15 watts at full load. Dimensions: $5\frac{1}{2}$ " W x $4\frac{3}{8}$ " H x $5\frac{3}{4}$ " D. Net weight: $3\frac{3}{4}$ lbs. Programming: AC or DC, 5000 ohm input resistance.



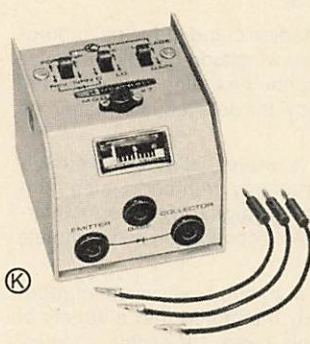
Ⓜ



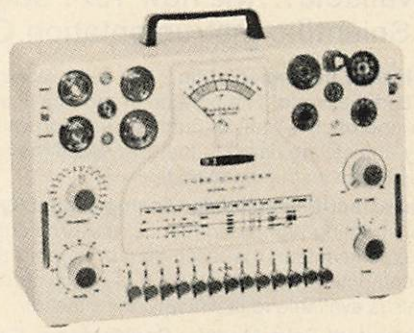
Ⓝ



Ⓛ



Ⓚ



Ⓛ

Ⓜ Visual-aural signal tracer...24.50
 Traces RF, IF and audio signals with switched RF/audio probe. Noise locator circuit spots noisy and intermittent parts in vacuum tube circuits. Built-in speaker for aural indication; "eye" tube for visual checks. Built-in high gain amp helps check cartridges, tuners and other sources. 120 VAC, 50-60 Hz.
Kit IT-12, 6 lbs., mailable **24.50**

Ⓝ Mutual-conductance tube tester... 189.95
 Has grid current test; constant-current heater supplies; built-in calibration circuits; roll-type tube data chart & adapter for compactron, nuvistor, novar & 10-pin miniature tubes.
Kit TT-1A, 33 lbs., Express/Frt. **189.95**

TT-1A SPECIFICATIONS — Power requirements: Voltage: 105-125, 60 Hz AC. Watts: 10-60. Testing Circuits: Gm: mutual conductance for amplifiers, 0-24,000 micromhos. Emission: rectifiers & diodes. Leakage: direct reading ohmmeter. Grid current, ¼ microampere sensitivity. Voltage regulator: firing voltage and regulation tolerance. Low power thyatrons: grid characteristics, conduction capabilities. Eye tubes: control grid characteristics. Line voltage adjustment: Continuously variable. Roll chart mechanism: Constant tension illuminated. Dimensions: Cabinet (outside): 17¾" W x 13½" H x 8" D. Panel & chassis: 17" W x 12¾" H x 5½" D.

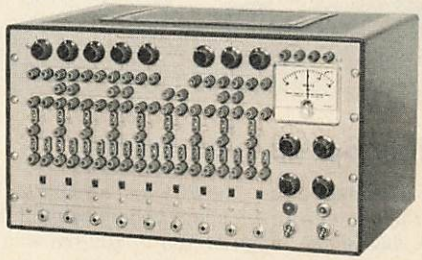
Ⓛ Lab transistor checker...64.95
 Complete DC analysis of PNP & NPN transistors up to 15 amps and diodes up to 1.5 amps.
Kit IM-36, 9 lbs., mailable **64.95**

IM-36 SPECIFICATIONS — 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 (not supplied) 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 0-5 volts for bias. Bias control: Permits any collector current from 10 uA to 15 amps for gain tests. Gain control: 3% wire-wound control has calibrated scales to give DC Beta 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, I_{cb0} and I_{ceo} or diode currents. Two voltage selector switches: Gain and Leak Test Voltages can be individually present at different voltage levels. Two current range switches: Collector and Leak currents can be individually preset on different adjacent ranges. Transistor and diode connections: Universal transistor socket and binding posts. External power supply connections: Binding posts for Gain, Leak and Bias supplies.

Ⓚ Portable transistor/diode checker...6.95
 Checks high & low power transistors, both NPN & PNP, for shorts, leakage, opens, and current gain. Checks forward and reverse current on diodes. Also serves as continuity checker. Uses two 1.5 V C cells (not supplied). 3⅞" H x 3⅞" W x 3¾" D.
Kit IT-27, 2 lbs., mailable **6.95**

Ⓛ Low cost tube checker...69.95
 Tests compactrons, nuvistors, novars, and miniatures. Lighted multi-color meter. Lighted tube data roll. Test with VTVM or VOM.
Kit IT-17, 12 lbs., mailable **69.95**

IT-17 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, loctal, 10-pin miniature, 9-pin novar, 9-pin miniature, 12-pin compactron, 5-pin nuvistor, 7-pin nuvistor. Meter: 1mA BAD-?-GOOD scale, illuminated. Line voltage adjustment: Step type. Roll chart mechanism: Constant tension, free-rolling, thumb-wheel 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 Hz. Dimensions: 13" W x 8½" H x 5½" D.



Heathkit Analog Computer...225.00
 The Heathkit EC-1 Analog Computer vividly illustrates the electronic analogies to mathematical problems. Helps solve such complexities as fluid flow, damped harmonic motion, and flight of a projectile in a viscous medium. Has 9 DC operational amplifiers; built-in regulated power supply — 3 initial condition power supplies; 5 variable-coefficient potentiometers; built-in oscillator for re-cycling computer through problem. Switching allows amplifier balance without removing problem setup. Provides a fascinating experience for students. Simple assembly and operation.
Kit EC-1, 57 lbs., mailable **225.00**

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. Negative 150 volts at 40 mA. Repetitive operation: Multivibrator cycles to repeat solution; permits observation of effect of changing parameters on solution. Power requirements: 105-125 or 210-250 V., 50-60 Hz, 100 watts. Dimensions: 19" W x 10½" H x 15" D.

HEATH COMPANY, Dept. 570-16
Benton Harbor, Michigan 49022

Please send my free copy of the 1971 Heath Scientific Instrumentation Catalog

Name _____

Address _____

City _____ State _____ Zip _____

Now available...the new 1971 edition of the Heath Scientific Instrumentation Catalog

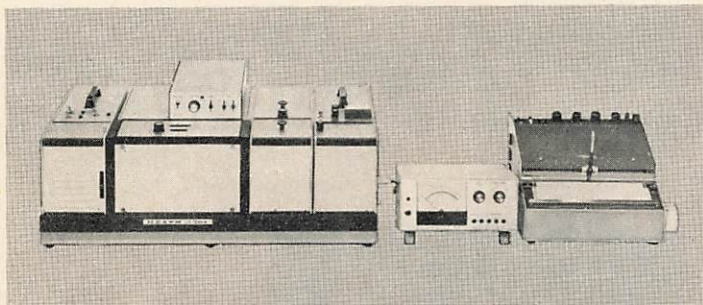
Heath Scientific Instrumentation...the value standard in academic and industrial laboratories around the world. The breadth of product lines in this new catalog clearly illustrates the Heath approach — that of putting precision where it counts, providing versatility and modularity and selling direct to the user. Send the coupon now for detailed information on the famous Heath instrumentation line.

Heath/Malmstadt-Enke Modular Analog-Digital System... a group that performs equally well in constructing high performance, research quality instruments or in performing hundreds of experiments in the teaching lab; in rapid testing of new digital ideas; or in interfacing to computers. A wide selection of circuit cards, modules, accessories and complete instruments is available to fit virtually any situation.

Heath/Malmstadt-Enke Modular Spectroscopy Systems...a unique new system of modular units, each with a specific function, that can be quickly integrated into a variety of high performance instruments...including single and double-beam UV-visible spectrophotometers; atomic absorption, atomic emission and atomic fluorescence spectrophotometers.

Catalog also includes the Malmstadt-Enke Instrumentation Labs, Berkeley Physics Lab, Heath test equipment and much more. Send for your free copy today, and discover that Heath alone offers you high quality compatible with low cost.

free

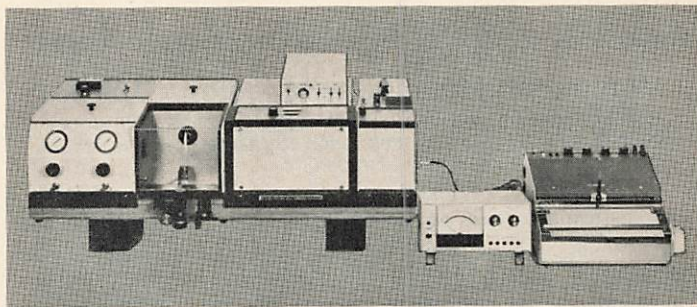


Heath 701 UV-Visible Spectrophotometer

Precision performance at a modest price. The 701 system is a high-performance instrument for use in absorption spectrophotometry in the UV-VIS region. It covers a wavelength range of 185 to 700 nm with a standard detector; range may be extended from 170 to 1000 nm with accessory detectors and nitrogen purging. Stray light is extremely low: less than 0.05% average and less than 0.1% maximum between 220 and 600 nm. Wavelength tracking accuracy is ± 0.1 nm; reproducibility is ± 0.02 nm. Line half-width is less than 0.05 nm. Bandwidth is continuously adjustable between 0.05 and 4 nm.

Other unique features include modular design common to all Heath spectrophotometric instruments...remote control capability built-in... digital controlled scanning...unusually large light-tight sample cell compartment...multiple readout options, including taut-band analog readout, digital readout with BCD output or multispeed strip-chart recorder. All readouts can be used simultaneously. Available with alignment base option for expansion to 703 AA or 707 Double Beam Systems.

For additional information on the Heath 701 UV-visible spectrophotometer, send for your free Heath Instrumentation catalog now.



Heath 703 AA-AE-AF Spectrophotometer

Atomic absorption...atomic emission...atomic fluorescence capability in a single instrument. The design of the 703 system is open-ended so that modifications are easily introduced which extend wavelength, increase sensitivity and accept special filters, lamps, burners and accessories.

Features of the EU-703-70 AA-AE-AF Module include front panel fuel and oxidant gauges and controls for the nebulizer-flame system...a flame compartment designed to accommodate a wide variety of nebulizer-burner systems including the total consumption burner supplied... precision micrometer adjustment system for accurate, reproducible XY, YZ flame positioning. A 4-lamp turret automatically positions and locks a given lamp on the optical axis; the lamp in position is automatically energized by the extremely stable, solid-state power supply, and lamp current is adjustable from 0 to 50 mA. The turret can easily be relocated in the rear compartment for fluorescence work. Special lamps and power supplies can readily be used. As with all Heath systems, a wide variety of readout modes is possible. For complete information on the 703 system, send for your free instrumentation catalog today.

New Heath 1 mV Solid-State Strip Chart Recorder

Outstanding versatility and performance at modest cost...that's the new EU-205B Strip Chart Recorder System. Compare these performance features and specifications against cost...you'll see that the new Heath recorder delivers more for less.

Multi-speed. Pushbutton selection of any of 23 different speeds, from 30 inches per minute to 0.2 inches per hour. Digital drive stepper motor provides highly accurate chart drive with none of the drawbacks of conventional mechanical systems, and the chart drive may be easily synchronized with external events.

18 calibrated ranges of 1, 2, 5, 10, 20, 50, 100, 200, 500 mV; 1, 2, 5, 10, 20, 50, 100, 200, 500 volts full scale. Continuously variable from less than 1 mV to greater than 500 volts.

True potentiometric input on 1 through 500 mV ranges. 10 megohm input Z on 1 through 500 volt ranges.

Accurate multi-range suppress. 15.1 full scales of suppress on all ranges.

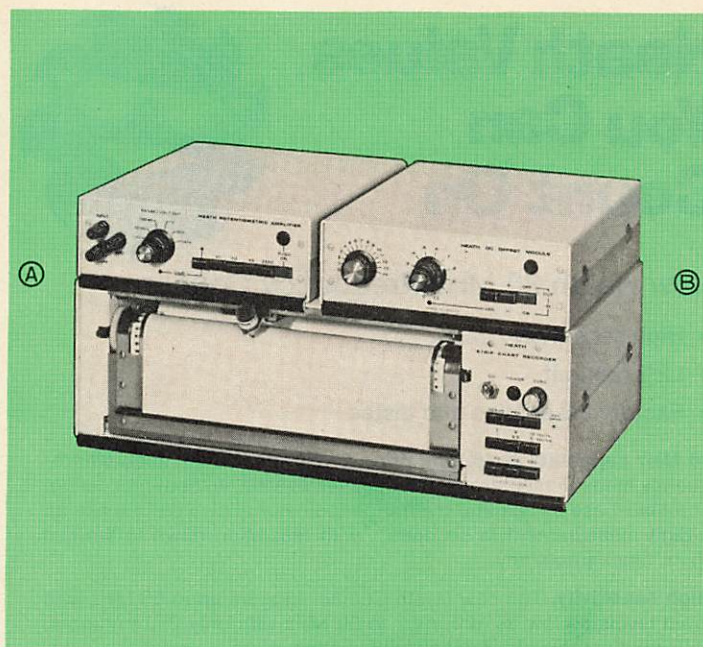
Fully programmable. Inputs include Chart Drive, Servo, Pen, Chart Control, Pen Motor. Outputs include Slidewire, TTL-compatible Chart Drive, Reference Supply, Zero Control, Chart & Servo "On" and Null Signal. Functions are easily controlled by logic circuits or contact closures.

Other features include removable 3-position writing table, easy conversion to metric chart paper for both Y and T axes, disposable pen and new latch 'n' lock design for modules. Send for your free brochure and investigate this unusual chart recorder value now.

Assembled EU-205B, 1 mV-500V chart recorder system, including EU-205-11 recorder, EU-200-01 Potentiometric Amplifier Module and EU-200-02 DC Offset Module, 40 lbs., mailable **675.00**

Assembled EU-205-11, recorder only, 21 lbs., mailable **420.00**

EU-205B SYSTEM SPECIFICATIONS — MECHANICAL: Chart Width: 10 inches or optional 25 cm. Chart Speeds: 23 speeds from 30 in/min to 0.2 in/hr., selected by 6 pushbuttons. Writing Panel: 3 positions — vertical and 30 or 45 degrees from vertical. Pen Lift: Electric pushbutton; provision for automatic remote control. Recorder Pen: Disposable, fiber tipped. Mounting: Bench type with provision for rack mounting with optional hardware. **ELECTRICAL (inch calibration):** Writing Speed: 20 in/sec. Ranges: 1, 2, 5, 10, 20, 50, 100, 200, 500 mV; 1, 2, 5, 10, 20, 50, 100, 200, 500 V full scale (10"). Maximum Input Voltage: 70 V, 500 mV range and below; 700 V on 1 V range and above. Overall System Accuracy: $\pm 0.2\%$. Type of Input: Floating; potentiometric on ranges 500 mV and below; input divider on ranges 1 V and above. Input Impedance: Potentiometric input (infinite at balance). 500 k ohms off null on 500 mV range and below; 10 megohms, 1 volt range and above. Offset: 0-15.1 full scales of suppress on all ranges, + or - polarity, calibrated steps & continuously adjustable. Offset Accuracy: $\pm 0.1\%$. **ELECTRICAL (cm calibration):**



(A) POTENTIOMETRIC AMPLIFIER MODULE

True potentiometric input on 1 to 500 mV ranges. 10 megohm input impedance on 1 to 500 volt ranges. Calibrated steps between decades for chart recorder output. Accuracy $\pm 0.1\%$ divider error plus offset (less than $\pm 5 \mu\text{V}$).

Assembled EU-200-01, 8 lbs., mailable **175.00**

(B) DC OFFSET MODULE

Designed to effectively expand the measuring range of the EU-200-01 module. Due to its high accuracy, it can also be used as a precision voltage source. Exclusive latch 'n' lock design. Rack-mountable.

Assembled EU-200-02, 7 lbs., mailable **100.00**

Writing Speed: 50 cm/sec. **Ranges:** 1.25, 2.5, 6.25, 12.5, 25, 62.5, 125, 250, 625 mV; 1.25, 2.5, 6.25, 12.5, 25, 62.5, 125, 250, 625 V full scale (25 cm). **Maximum Input Voltage:** 70 V, 625 mV range and below; 700 V on 1.25 V range and above. **Overall System Accuracy:** $\pm 0.2\%$. **Type of Input:** Floating; potentiometric on ranges 625 mV and below; input divider on ranges 1.25 V and above. **Input Impedance:** Potentiometric input (infinite at balance). 500 k ohms off null on 625 mV range and below; 10 megohms, 1.25 volt range and above. **Offset:** 0-15.1 full scales of suppress on all ranges, + or - polarity, calibrated steps & continuously adjustable. **Offset Accuracy:** $\pm 0.1\%$. **ELECTRICAL (common to both inch and cm calibration):** Switched Variable Gain: Allows full scale calibration at values between calibrated ranges. **Slidewire Linearity:** 0.1%. **Reference:** Temperature compensated zener diode with 0.002%/C° temperature stability rating. **Dead Zone:** Less than 0.1% of full scale. **Tracking Accuracy:** Pen tracks with slidewire within 0.1%. **Range Divider Error:** $\pm 0.1\%$. **Preamplifier Gain Error:** $\pm 0.1\%$ plus $\pm 5 \mu\text{V}$ input offset. **GENERAL:** Power Requirements: 105-125 or 210-250 VAC, 50/60 Hz, 60 watts. **Overall Dimensions:** 8 3/8" H x 17 3/8" W x 13 3/8" D with writing panel in 45° position.



New Heath Solid-State Dual Trace Scope

Complete dual-trace capability. Separate signal display in Ch. 1 or Ch. 2 modes...direct comparison display in alternate & chopped modes...X-Y mode for display of signals as a function of each other. Precisely-balanced input channels for X-Y mode; less than 1% phase shift to over 100 kHz.

Versatile triggering. Switch-selected AC or DC coupling. Auto triggering at the crossover point at a flip of a switch. + or - slope triggering switch-selectable. Internal, External & Line trigger inputs also available.

18 position time base switch in 1, 2, 5 sequence provides sweep from 0.5 sec/cm to 0.2 usec/cm, continuously variable between settings. 5x magnifier for detailed trace viewing.

DC to 15 MHz bandwidth & 24 nsec rise time permit analysis of high frequency signals & transients. Full bandwidth from 20 V/cm to 50 mV/cm in 1, 2, 5 sequence.

Additional features include sweep gate output...TTL-compatible external blanking input...standard camera mount bezel...8x10 cm flat-face CRT. Write for free spec sheet and compare this remarkable scope to the competition.

Assembled EU-70A, 35 lbs., Express/Frt. **595.00**

EU-70A SPECIFICATIONS — HORIZONTAL CHANNEL: Time Base: Triggered with 18 calibrated rates; 0.2 us/cm to 100 ms/cm in a 1, 2, 5 sequence, $\pm 3\%$. Continuously variable (uncalibrated) within the same range. **Sweep Magnifier:** X5 (time base accuracy is $\pm 5\%$ when the magnifier is being used). **External Horizontal Input:** 75 mv/cm (uncalibrated & not adjustable). 100 k ohm minimum input impedance, DC to 100 kHz. **Independent Linearity:** 2%. **VERTICAL CHANNEL:** Linearity: 3%. **Input Impedance:** 1 megohm shunted by 35 pF. **Maximum Input Voltage:** 600 VDC. **Sensitivity:** 0.05 volts/cm, AC or DC. **Frequency Response:** DC to 15 MHz, -3 dB with 4 cm deflection; DC to 10 MHz, -1 dB with 4 cm deflection. **Vertical Windows:** 2 min. **Rise Time:** 24 ns. **Overshoot:** Less than 10%. **Attenuator:** 9 positions in a 1, 2, 5 sequence. 0.05 volts/cm to 20 volts/cm, $\pm 3\%$. Variable gain (uncalibrated) through entire range. **Vertical Display in Sweep Mode:** Channel 1, Channel 2, Channel 1/2 alternately; or Channel 1 & Channel 2 chopped (100 kHz). **X-Y MODE:** Sensitivity: 0.05 volts/cm to 20 volts/cm, $\pm 3\%$. **Frequency Response:** -3 dB at 100 kHz. **Phase Shift Between Channels:** $\pm 1^\circ$ or less from DC to 100 kHz within gratule limits. **GENERAL:** Blanking In: TTL compatible (Logic 0 blank). **Gate Out:** 3.5 volts minimum. **Input Connections:** Vertical: coaxial, BNC. Horizontal: binding post. External trigger: binding post on 3/4" center with ground. **CRT Accelerating Potential:** 2200 VDC regulated. **CRT Type:** 8x10 cm, rectangular, flat-face. **Retrace Suppression:** DC-coupled unblanking of the CRT. **Graticule:** 8x10 cm grid, edge lighted. **Power Requirements:** 105-125 VAC or 210-250 VAC, 50/60 Hz, 60 watts. **Warm-Up Time:** CRT heating time approximately 30 seconds. For full calibration, approximately 15 minutes. **TRIGGERING:** Delay: 600 ns. **Auto:** Zero crossing $\pm 1/2$ cm. **Normal:** Adjustable over 10 cm. **AC:** 3 dB at 30 Hz, $\pm 1/2$ cm of zero crossing. **Source:** Channel 1, Channel 2 or Channel 1/2. **Sensitivity:** Internal, 1/2 cm. **External Sensitivity:** 100 mV minimum. **DIMENSIONS:** 10 1/2" W x 12 1/2" H x 15" D. **NET WEIGHT:** 28 lbs.

Heath Values You Can Count On



New Heath 80 MHz Frequency Counter

- High sensitivity
- LED readout
- Factory assembled and tested

80 MHz capability at 15 MHz price...delivers instant, accurate frequency measurement from 10 Hz to over 80 MHz, without prescaling. The time-base switch and overrange indicator allow you to make an 8-digit measurement in seconds...with resolution down to the last Hz \pm clock frequency.

High sensitivity. The new Heath Counter triggers up to 50 MHz with input levels as low as 100 mV...to 80 MHz with only 250 mV input. FET input completely eliminates input attenuators.

Superspeed Schottky TTL. The new Heath Counter marks one of the first commercial uses of the new Texas Instruments 74S Series superspeed Schottky TTL ICs...accounting for the extremely high speed and significant cost reduction.

New LED readout used for all 5 digits and overrange indication...gives high visibility readout...eliminates costly 170 V power supply...provides an average half-life in excess of 1 million hours...and the flat, single-plane display offers wide-angle reading with minimum fatigue.



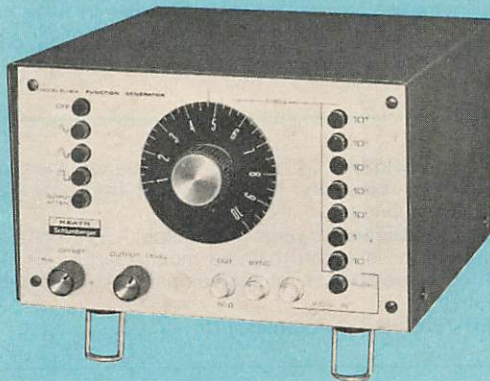
Extremely stable time base. While other counters with less range and higher price often use the incoming line frequency as a time base, the Heath SM-105A uses a highly stable 1 MHz crystal-controlled clock to produce exact time bases of 1 second or 1 millisecond. The crystal itself is accurate to ± 2 Hz, and overall time base accuracy is guaranteed to be ± 10 ppm or less from 0 to 40 degrees C., referenced at 25 degrees C.

Other features include rugged aluminum chassis, handy gimbal mount and quick change from 120 to 240 VAC operation. For maximum counting capability at low cost order your SM-105A now.

Assembled SM-105A, 6 lbs. (less cables & connectors),
mailable **\$350.00**

SM-105A SPECIFICATIONS — Frequency range: 10 Hz to over 80 MHz. Sensitivity (after 5 minutes' warmup): 100 mV RMS, to 50 MHz; 250 mV RMS, 50 MHz to 80 MHz. Input Impedance: 1 megohm shunted by less than 15 pF. Maximum Input Voltage: 15 V RMS (max. DC input is ± 50 volts). Time Base: 1 MHz ± 2 Hz; ± 10 ppm, 0°C to 40°C ambient referenced to 25°C. Readout: Five 7-segment light-emitting-diode displays plus one light-emitting-diode for overrange indication. Power Requirements: 120 V, 50/60 Hz, 12 watts (may be rewired for 240 volts). Dimensions: 9 $\frac{1}{4}$ " D x 6 $\frac{3}{4}$ " W x 2 $\frac{1}{4}$ " H. Net Weight: 3 $\frac{1}{2}$ lbs.

New Heath EU-81A Function Generator



- Sine, square and triangle output
- 0.1 Hz to 1 MHz in seven ranges
- Linear dial
- Front panel adjustable DC offset
- Voltage controlled oscillator

An extremely versatile lab and design tool...dozens of applications: provide sweep and/or modulating signals...test servo system response...use as a VCO in PLL systems...provide frequency multiplication...test amplifier response, distortion & stability...use as a variable BFO...a tone generator...a repetition rate generator.

Provides precise square, sine and triangle waveforms variable in seven decade steps from 0.1 Hz to 1 MHz...50 ohm BNC output. Clearly labeled pushbuttons and a large, easy to read linear dial make function and frequency selection fast, simple.

Additional high performance features include variable front panel DC offset...variable 20 dB output level...pushbutton 20 dB attenuator...TTL compatible front panel sync output...external voltage control or sweep at no extra cost. Send for a free spec sheet on the new EU-81A now...and discover that high quality lab instrumentation is available at low cost.

Assembled EU-81A, 8 lbs. **\$245.00**

EU-81A SPECIFICATIONS — Output: All modes, 50 ohm source, 10 V P-P into 50 ohm load. 20 V P-P open circuit. Adjustable DC offset continuously variable to maximum signal amplitude. Frequency range: 0.1 Hz to 1 MHz in 7 decades; continuously adjustable with linear dial. Triangular waveform: 95% linearity to 100 kHz. Sine waveform: Harmonic distortion — 1%, 5 Hz to 100 kHz ($\frac{1}{2}$ % typical); less than 2% to 1 MHz. Square wave: 125 ns rise or fall time. Waveform symmetry: $\pm 2\%$ to 100 kHz. Frequency dial accuracy: $\pm 3\%$ of full scale. Frequency stability after 1 hour with external voltage control: 1 Hz to 1 MHz, $\pm 0.05\%$ for 10 minutes; $\pm 0.3\%$ for 24 hours. 0.1 Hz to 1 MHz, $\pm 0.25\%$ for 10 minutes. Vertical precision: Triangular amplifier — 0.2 dB to 1 MHz. Square amplifier — 0.2 dB to 1 MHz. Sine amplifier — 0.2 dB to 100 kHz, down 3 dB at 1 MHz. External frequency control: Sweep mode, ± 10 V maximum into 10 k ohms. Voltage control mode, 0 to 10 V into 100 k ohms. Operating temperature: 10 to 40 degrees C. Power consumption: 18 watts. Power requirements: 120/240 VAC, 50/60 Hz. Dimensions: 5 $\frac{5}{8}$ " H x 8 $\frac{7}{8}$ " W x 11 $\frac{5}{8}$ " D. Net weight: 6 lbs.

All Heath Scientific Instrumentation Factory Assembled.

The Maxi-Rig: Heathkit SB-102/220



Heathkit SB-102 80-10M Transceiver...\$380

Improved stability & dial linearity. By using an all solid-state Linear Master Oscillator, we improved the already excellent stability & linearity of the "101"...the "102" stabilizes in half the time, and tracks more accurately than any other rig on the market.

Improved receiver. "102" delivers a (S+N)/N ratio of less than 0.35 uV for 10 dB...an increase that gives you solid copy longer.

Additional features: front panel selection of built-in 2.1 kHz SSB or optional 400 Hz crystal filters; built-in CW side-tone; built-in VOX; full coverage of 10 meters; complete metering facilities.

Kit SB-102, 24 lbs., mailable **380.00**

Kit SB-600, 8 ohm desk speaker, matches SB-Series gear; provides mounting space for AC supply, 7 lbs., mailable **19.95**

SBA-301-2, optional 400 Hz CW crystal filter, 1 lb., mailable... **21.95**

Kit HP-23A, AC power supply, 19 lbs., mailable **51.95**

Kit HP-13A, DC power supply, 7 lbs., mailable **69.95**

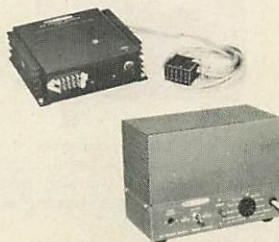
SBA-100-1, mobile mount, 6 lbs., mailable **14.95**

SB-102 PARTIAL SPECIFICATIONS—RECEIVER SECTION—SSB selectivity: 2.1 kHz min. at 6 dB down, 5 kHz max. at 60 dB down—2:1 nominal shape factor—6:60 dB. **CW selectivity:** (With optional CW filter) 400 Hz min. at 6 dB down, 2.0 kHz max. at 60 dB down. **Output impedance:** 8 ohm & high impedance. **Power output:** 2 watts with less than 10% distortion. **Spurious response:** Image and IF rejection better than 50 dB, internal spurious signals below equivalent antenna input of 1 microvolt. **TRANSMITTER SECTION: DC power input:** SSB: 180 watts PEP continuous voice; CW: 170 watts—50% duty cycle. **RF power output:** 100 watts on 80 through 15 meters; 80 watts on 10 meters (50 ohm non-reactive load). **Output impedance:** 50 to 75 ohms with less than 2:1 SWR. **Carrier suppression:** 50 dB down from single-tone output. **Unwanted sideband suppression:** 55 dB down from single-tone output at 1000 Hz reference. **Third order distortion:** 30 dB down from two-tone output. **RF compression:** (TALC): 10 dB or greater at 0.1 mA final grid current. **GENERAL—Frequency stability:** Less than 100 Hz per hour after 10 minutes' warm-up. Less than 100 Hz for $\pm 10\%$ line voltage variations. **Modes of operation:** USB, LSB, CW. **Dial resettability:** Within 200 Hz, all bands. **Electrical dial accuracy:** Within 400 Hz after calibration at nearest 100 kHz point. **Dial mechanism backlash:** Less than 50 Hz. **Calibration:** 100 kHz crystal. **Size:** 14 $\frac{7}{8}$ " W x 6 $\frac{5}{8}$ " H x 13 $\frac{3}{8}$ " D.

Solid-state mobile power supply for SSB rigs

Kit HP-13A, DC supply, 7 lbs., mailable **69.95**

HP-13A SPECIFICATIONS—Input voltage: 12 to 16 VDC (neg. ground only). **Input current:** 25 amp. max. full load. **High voltage output:** 800 VDC, 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 VDC, no load; 300 VDC @ 150 mA. (low tap) 265 VDC, no load; 250 VDC @ 150 mA. AC ripple: Less than .05% @ 150 mA. **Continuous duty cycle:** to 175 mA. **Adjustable bias voltage:** -40 to -130 VDC @ 20 mA max. **Duty cycle:** Continuous. **Switching frequency:** 1500 Hz (approx.). **Ambient temperature:** -10° to 122°F. **Dimensions:** 7 $\frac{3}{4}$ " W x 7 $\frac{1}{4}$ " L x 2 $\frac{3}{8}$ " D. All voltages referenced at 13 VDC.



Heathkit SB-220 2kW Linear...349.95

A complete 2 kW rig in a compact desk-top unit. The "220" uses a pair of conservatively rated Eimac 3-500Z's in grounded grid circuitry to provide up to 2000 watts PEP SSB input...and it can be loaded to a full 1 kW input on both CW and RTTY. A broadband pre-tuned pi-input delivers maximum efficiency with low distortion over 80 thru 10 meters. Requires only 100 watts drive.

Built-in solid-state power supply can be wired for either 120 or 240 VAC. Built-in circuit-breaker protection. Zener diode regulated operating bias reduces idling current for cooler running, extended tube life. Large quiet fan.

Fast, easy tune-up...set band-switch, push CW-Tune/SSB rocker switch to CW-Tune position, adjust Tune & Load controls for max. relative power. Push rocker switch to SSB position and you're ready with a full 2 kW PEP input...in the CW-Tune position you've got a full gallon on CW or RTTY.

Other features include ALC to the driving unit to prevent overdriving...front panel switch-selected monitoring of grid current, relative power and high voltage; easy, enjoyable 20 hour assembly.

Stop stumbling barefoot thru the QRM. Get your SB-220 now.

Kit SB-220, 69 lbs., mailable **349.95**

SB-220 SPECIFICATIONS—Band coverage: 80, 40, 20, 15 and 10 meters. **Driving power:** 100 W. **Max. power input:** SSB, 2000 W. PEP; CW, 1000 W.; RTTY, 1000 W. **Duty cycle:** SSB: Continuous voice modulation. CW: Continuous (maximum key-down 10 minutes). RTTY, 50% (maximum transmit time 10 minutes). **Third order distortion:** -30 dB or better. **Input impedance:** 52 ohm unbalanced. **Output impedance:** 50 ohm unbalanced; SWR 2:1 or less. **Front panel controls:** Tune, Load, Band, Sensitivity Meter Switch, Power, CW/Tune—SSB, Plate meter, Multi-meter (Grid mA, Relative Power and High Voltage). **Rear panel:** Line cord, circuit breakers (two 10 A), Antenna Relay (phono), ALC (phono), RF Input (SO-239), Ground post, RF Output (SO-239). **Tubes:** Two Eimac 3-500Z. **Power required:** 120 VAC, 50/60 Hz at 20 amp, max. 240 VAC, 50/60 cycles, at 10 amp. max. **Cabinet size:** 14 $\frac{7}{8}$ " W x 8 $\frac{1}{4}$ " H x 14 $\frac{1}{2}$ " D.

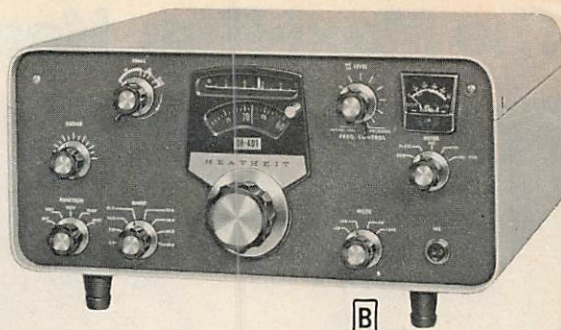
Fixed-station power supply for SSB rigs

Kit HP-23A, AC supply, 19 lbs., mailable **51.95**

HP-23A SPECIFICATIONS—Power requirements: 120/240 VAC, 50-60 Hz, 350 watts maximum. **High voltage output:** 820 VDC no load; 700 VDC @ 250 mA $\pm 10\%$. AC ripple: Less than 1% @ 250 mA. **Duty cycle:** 150 mA continuous to 300 mA @ 50%. **Low voltage output:** (High tap) 350 VDC, no load; 300 VDC @ 150 mA $\pm 10\%$, (Low tap) 275 VDC, no load, 250 VDC @ 100 mA, $\pm 10\%$. Less than .05% AC ripple @ 150 mA, continuous duty to 175 mA. **Fixed bias:** -130 VDC $\pm 10\%$, no load; -100 VDC @ 20 mA. **Adjustable bias:** -40 to -80 VDC @ 1 mA maximum. Less than .5% AC ripple. **Filament voltage:** 6.3 VAC @ 11 amps; 12.6 VAC @ 5.5 amps. **Dimensions:** 9" L x 4 $\frac{3}{4}$ " W x 6 $\frac{3}{4}$ " H.



A



B



C

Ⓐ Heathkit SB-303 solid-state receiver — nucleus of our famous SSB separates!

- 27 transistors, 1 IC on 8 plug-in circuit boards
- receives USB, LSB, AM, CW & RTTY, 80-10 meters
- 15 MHz reception
- dual gate MOSFET front end
- 3-position AGC (off-fast-slow)
- RF attenuator adjusts for optimum signal
- solid-state LMO with 1 kHz dial readout (factory assembled & aligned)

Kit SB-303, 21 lbs., mailable **319.95**

SBA-301-1, optional 3.75 kHz AM crystal filter, 1 lb., mailable ... **20.95**

SBA-301-2, optional 400 Hz CW crystal filter, 1 lb., mailable ... **21.95**

Kit SB-600, 8 ohm speaker, 7 lbs., mailable **19.95**

SB-303 SPECIFICATIONS—Frequency Range: (MHz): 3.5 to 4.0, 7.0 to 7.3, 14.0 to 14.5, 15.0 to 15.3, 21.0 to 21.5, 28.0 to 30. Intermediate Frequency (IF): 3.395 MHz. Frequency Stability: Less than 100 Hz drift per hour after 10 minutes warmup under normal ambient conditions. Less than 100 Hz drift for $\pm 10\%$ line voltage variation. Frequency Selection: Built-in Linear Master Oscillator. Modes of Operation: SSB, CW, AM, RTTY. Sensitivity: Less than 0.25 μV for 10 dB S+N/N for SSB operation. Overall Gain: Less than 1.5 μV input for 0.5 audio output (single tone SSB). AGC Characteristics: Blocking—Greater than 3.0 V CW/SSB/RTTY. Dynamic Range—Greater than 150 dB CW/SSB. RF Attenuator: Variable 0-40 dB nominal. Selectivity: SSB—2.1 kHz @ 6 dB down, 5.0 kHz maximum at 60 dB down (crystal filter available as an accessory). CW—400 Hz at 6 dB down, 2.0 kHz maximum at 60 dB down (crystal filter available as an accessory). RTTY—2.1 kHz at 6 dB down, 5.0 kHz maximum at 60 dB down (uses SSB crystal filter). Image rejection: 60 dB or better. IF Rejection: 3.395—greater than 55 dB, 8.595—greater than 50 dB. Spurious Response: All below 1 μV equivalent signal input. Temperature Ranges: 10°C to 50°C ambient. Dial Accuracy: Electrical—Within 400 Hz after calibration at nearest 100 kHz or 25 kHz point. Visual—Within 200 Hz. Calibration: Every 100 kHz or 25 kHz. Dial Accuracy: No more than 50 Hz. Antenna Input Impedance: 50 ohm nominal unbalanced. Audio Response: SSB—350 to 2450 Hz nominal at 6 dB. CW (with accessory filter)—800 to 1200 Hz nominal at 6 dB. AM (with accessory filter)—200 to 3500 Hz nominal at 6 dB. RTTY—1840 to 3940 Hz nominal at 6 dB. Audio Output Impedance: Speaker—8 ohm. Headphones—Low impedance. Audio Output Power: 4 watts at less than 10% distortion. Muting: Open external ground at Mute socket. Power Requirements: 120/240 VAC, 40 watts max. Front Panel Controls: Main tuning dial; function switch; mode switch; band switch; AGC switch; converter switch; AF gain/power on-off; RF gain/speaker disable; preselector; RF Attenuator. Circuit Board Controls: IF/Audio—Bias adjust; meter zero; meter full scale. Power Supply/BFO—+15 V adjust; 100 kHz adjust; RTTY—Wide shift; narrow shift; CW shift. Connections: Rear Panel—Phones; HF antenna; VHF antenna #1, VHF antenna #2; mute; anti-vox; speaker; HFO out; LMO out; BFO out; CW shift; four spare sockets; 3-wire line cord socket; accessory socket, VHF Converter, +15 DVC @ 25 mA, switched. RTTY Keyboard. Cabinet Dimensions: 12 $\frac{1}{4}$ " W x 6 $\frac{5}{8}$ " H x 13" D. Overall Dimensions (with knobs & feet installed): 12 $\frac{1}{4}$ " W x 7 $\frac{1}{8}$ " H x 14" D.

SB-401 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: (MHz) 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 Hz per hr. after 20 min. warmup. Carrier suppression: 55 dB below peak output. Unwanted sideband suppression: 55 dB @ 1 kHz. 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 Hz. ALC characteristics: 10 dB or greater @ 0.2 mA final grid current. Noise level: 40 dB below rated carrier. Visual dial accuracy: Within 200 Hz (all bands). Electrical dial accuracy: Within 400 Hz after calibration at nearest 100 kHz point (all bands). Backlash: Less than 50 Hz. Oscillator feedthrough or mixer products: 55 dB below rated output (except 3910 kHz crossover which is 45 dB). Harmonic radiation: 35 dB below rated output. Audio input: High impedance microphone or phone patch. Audio frequency response: 350-2450 Hz ± 3 dB. Power requirements: 80 watts STBY, 260 watts key down @ 120/240 V AC, 50/60 Hz. Dimensions: 14 $\frac{7}{8}$ " W x 6 $\frac{5}{8}$ " H x 13 $\frac{3}{4}$ " D.

Ⓒ Heathkit SB-200 1 kW Amplifier

Has 1200 W PEP SSB input, 1000 W CW. Solid-state power supply with circuit breaker. Metering for SWR, grid current, plate current, relative power, plate voltage. ALC output. Shielded, fan-cooled amplifier. Pre-tuned cathode input circuit.

Kit SB-200, 50 lbs., mailable **220.00**

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 $\frac{7}{8}$ " W x 6 $\frac{5}{8}$ " H x 13 $\frac{3}{4}$ " D. Net weight: 35 lbs.

Ⓑ Heathkit SB-401 SSB Transmitter

Covers 80-10 meters; USB, LSB & CW. Single front panel switch selects transceive or independent operation of "401" and 300-series receiver. Usable with any receiver when optional SBA-401-1 crystal group is installed. 120/240 VAC power supply.

Kit SB-401, 36 lbs., Express/Frt. **299.95**

SBA-401-1, crystal pack, 1 lb., mailable **29.95**



SB-620 "Scanalyzer" permits monitoring large segments of spectrum... makes it easy to spot openings. Narrow sweep widths of 10 & 50 kHz permit single signal analysis. Operates with virtually all receiver IF's.

Kit SB-620, 15 lbs., mailable **129.95**



SB-630 station console... actually 4 control/monitor units in one. Digital 24-hour clock reads hours, minutes, seconds. Built-in SWR bridge for proper matching. Phone patch; automatic, resettable 10-minute timer.

Kit SB-630, 10 lbs., mailable **79.95**



SB-610 signal monitor accurately displays transmitted AM, CW, RTTY & SSB signals 160 thru 6 meters, 15-1000 watts. Displays signal envelope, AF & RF trapezoid patterns; 2-tone test oscillator built-in.

Kit SB-610, 14 lbs., mailable **89.95**

The Heathkit HW-101 Transceiver... 249.95 — most popular low cost rig on the market!

Setting the industry standard as the HW-100, the HW-101 is a further refinement of that widely acclaimed transceiver. Heath engineers have improved the receiver circuitry and dial drive, and added front-panel SSB/CW filter selection. Overall performance is better — but the price remains unbelievably low!

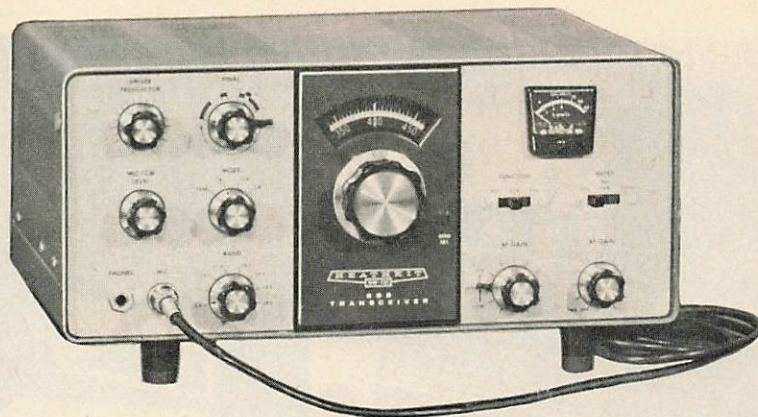
Sensitivity better than 0.35 μ V for 10 dB S+N/N has been obtained by refinements in the receiver circuit. Image and IF rejection are better than 50 dB.

36-to-1 knob to dial ratio in a new ball bearing drive mechanism delivers 34 smooth revolutions per 500 kHz band segment. Couple this with new preselector circuitry and thermal stabilized FET VFO with 5 kHz readout and you get rock-solid drift-free tuning from 80 through 10 meters. And the built-in 100 kHz crystal calibrator and zero reset button provide accurate, stable calibration.

Front-panel, crystal filter selection now lets you convert the HW-101 to CW reception at the flick of a switch. The optional SBA-301-2 crystal filter installs in minutes, giving the HW-101 the same remarkable two-way capability provided by its big brother, the Heathkit SB-102! The QRM. Built-in SSB crystal filter delivers 2.1 kHz selectivity at 6 dB down CW filter offers razor sharp 400 Hz selectivity to carve a QSO out of the QRM. Built-in SSB crystal filter delivers 2.1 kHz selectivity at 6 dB down for superior SSB copy.

Order your HW-101, today! Or send for a free specification sheet. Learn how Heath's taken its venerable HW-100 one step further!

Kit HW-101, 21 lbs., mailable	249.95
Kit HP-23A, AC power supply, 19 lbs., mailable	51.95
Kit HP-13A, DC power supply, 7 lbs., mailable	69.95
SBA-301-2, 400 Hz CW crystal filter, 1 lb., mailable	21.95
SBA-100-1, mobile mount, 6 lbs., mailable	14.95
Kit HS-24, mobile speaker, 4 lbs., mailable	8.95



HW-101 SPECIFICATIONS—RECEIVER: Sensitivity: Less than 0.35 microvolt for 10 dB signal-plus-noise to noise ratio for SSB operation. SSB selectivity: 2.1 kHz minimum at 6 dB down; 7 kHz maximum at 60 dB down (3.395 MHz filter). CW selectivity: (with optional SBA-301-2 CW crystal filter installed); 400 Hz min. @ 6 dB down; 2.0 kHz max. @ 60 dB down. Input: Low impedance for unbalanced coaxial input. Output impedance: 8 ohm speaker, and high impedance headphone. Power output: 2 watts with less than 10% distortion. Spurious response: Image and IF rejection better than 50 dB. TRANSMITTER: DC power input: SSB (A3J emission), 180 watt PEP (normal voice, continuous duty cycle). CW (A1 emission) 170 watts (50% duty cycle). RF power output: 100 watts on 80 through 15 meters; 80 watts on 10 meters (50 ohm non-reactive load). Output impedance: 50 ohm to 75 ohm with less than 2:1 SWR. Oscillator feed-through or mixer products: 55 dB below rated output. Harmonic radiation: 45 dB below rated output. Transmit-receive operation: SSB: PTT or VOX. CW: Provided by operating VOX from a keyed tone, using grid-block keying. CW side-tone: Internally switched to speaker or headphone in CW mode. Approximately 1000 Hz tone. Microphone input: High impedance with a rating of -45 to -55 dB. Carrier suppression: 45 dB down from single-tone output. Unwanted sideband suppression: 45 dB down from single-tone output at 1000 Hz reference. Third order distortion: 30 dB down from two-tone output. RF compression (TALC*): 10 dB or greater at .1 mA final grid current. GENERAL: Frequency coverage: 3.5 to 4.0; 7.0 to 7.3; 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 30.0 (megahertz). Frequency stability: Less than 100 hertz per hour after 45 minutes warmup from normal ambient conditions. Less than 100 Hz for $\pm 10\%$ line voltage variations. Modes of operation: Selectable upper or lower sideband (suppressed carrier) and CW. Dial calibration: 5 kHz. Calibration: 100 kHz crystal. Audio frequency response: 350 to 2450 Hz. Transistors: MPF105 FET—VFO, 2N3393—Voltage regulator. Rear apron connections: CW key jack; 8 ohm output; ALC input; Power and accessory plug; RF output; Spare. Power requirements: 700 to 850 volts at 250 mA with 1% maximum ripple; 300 volts at 150 mA with .05% maximum ripple; —115 volts at 10 mA with .5% maximum ripple; 12 volts AC/DC at 4.76 amps. Cabinet dimensions: 14 $\frac{1}{4}$ " W x 6 $\frac{1}{4}$ " H x 13 $\frac{3}{8}$ " D.

*Triple Action Level Control

80, 40, & 20 meter "Single-Banders" . . . 109.95 —SB gear that goes on vacation with you!

An economical base station, an unbeatable portable! Here's the SSB transceiver that made single-band operation so popular. Choose either 80, 40 or 20 meter version, providing 200 W P.E.P. input SSB. Use your "Single-Bander" in either fixed or mobile installation with the appropriate power supply (HP-23A or HP-13A).

Compact, highly functional design! Front panel has microphone input and gain control, as well as bias adjustment for fast changeover from fixed to mobile operation. Function switch position controls the optional HRA-10-1 crystal calibrator. Compatible 11-pin power plug accommodates HP-13A and HP-23A power supplies. Receiver has 10-tube superheterodyne with 1 μ V sensitivity, 2.7 kHz selectivity, and a slow AVC action for optimum SSB reception. Transceiver circuitry provides stable, smooth tuning with temperature-compensated 1.5 through 1.8 MHz VFO. High quality crystal lattice filter produces identical tuning characteristics for both upper and lower sideband signals — for clean transmitted signals with the carrier and unwanted sideband at least 45 dB down. Kit assembles easily — 90% of the components mount on circuit board, pre-cut wiring harness handles the remainder. Order your Heathkit "Single-Bander", today!

Kit HW-12A, 80-meter, 15 lbs., mailable	109.95
Kit HW-22A, 40-meter, 15 lbs., mailable	109.95
Kit HW-32A, 20-meter, 15 lbs., mailable	109.95
GH-12A, Push-to-talk and VOX microphone, 1 lb., mailable	8.95
Kit HRA-10-1, plug in 100 kHz crystal calibrator, 1 lb., mailable. . .	9.95
Kit HP-13A, DC Power Supply, 7 lbs., mailable	69.95
Kit HP-23A, AC Power Supply, 19 lbs., mailable	51.95
Kit HS-24, Mobile speaker, 4 lbs., mailable	8.95



SPECIFICATIONS—RF input: 200 watts PEP. Sideband generation: Crystal lattice band pass filter method. Stability: 200 Hz per hour after warm-up. Carrier & unwanted sideband suppression: 45 dB. Frequency coverage: HW-12A, 3.8–4.0 MHz; HW-22A, 7.2–7.3 MHz; HW-32A, 14.2–14.35 MHz. Receiver sensitivity: 1 μ V for 15 dB (S+N)/N ratio. Operation: LSB, USB. Audio output: 1 watt @ 8 ohms. Mike input: Hi-Z. 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-12A), Het. osc. and mixer (HW-22A & HW-32A); (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 $\frac{1}{4}$ " H x 12 $\frac{1}{4}$ " W x 10" D.



Get On The Summer Air With Heathkit Novice Gear



(B) The famous DX-60B phone & CW transmitter . . . 79.95

Run 75 watts CW input for novice operation . . . a full 90 watts phone or CW when you move up to general. Pi output provides fast, easy tune-up into any 50-75 ohm resistive load. Drive Level control, grid/plate current meter and Drive Tune control enable proper tune-up for maximum output, minimum harmonics, best quality audio. Four crystal sockets and provision for operation with external VFO such as the HG-10B below provide maximum operating versatility. Easy assembly . . . requires only a VTVM for alignment. Get on the air with a rig that'll last you a lifetime . . . order your DX-60B now.

Kit DX-60B, 24 lbs., less crystals, mailable 79.95

DX-60B 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: 120/240 V. AC, 50/60 Hz, 225 watts. Dimensions: 13 3/4" W x 11 1/2" D x 6 1/2" H.

(C) Work VFO on 80 thru 2 with the HG-10B . . . 44.95

Features separate, accurately calibrated scales for each band. Smooth 28:1 vernier tuning. Temperature-compensated circuitry for drift-free tuning. Provides 5 V rms (enough to drive most transmitters) in the 3.5-4, 7-7.425 and 8-9 MHz ranges. "Spot" switch for easy off-the-air tuning. Compatible with virtually all grid-block keyed transmitters (DX-60 series, HW-16) and most cathode-keyed transmitters (DX-40). Alignment requires a receiver of known accuracy covering either the 80-2 meter bands or 3.5 to 8.222 MHz range.

Kit HG-10B, 12 lbs., mailable 44.95

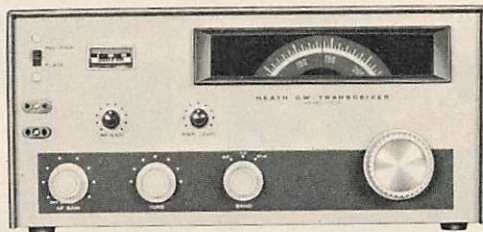
(A) The hot HR-10B 5-band receiver . . . 79.95

Ideal for the novice or beginning general class ham who demands top performance at a modest price. Tunes AM, CW & SSB, with excellent stability for CW & sideband. Full 80 through 10 meter coverage with each band separately displayed on the accurately calibrated illuminated slide-rule dial. Separate RF and AF gain controls provide extra convenience . . . BFO allows easy, fast sideband tuning. A high quality crystal lattice filter delivers sharp 3 kHz selectivity. 1 uV sensitivity provides capability that puts many more expensive receivers out of the QSO. Built-in "S" meter, switchable AVC and automatic limiter provide the versatility you expect in a first-rate communications receiver. Provision for the optional HRA-10-1 kHz crystal calibrator. Alignment requires an RF signal generator and VTVM. Put yourself on the air with the best . . . for less. Order your HR-10B today.

Kit HR-10B, less speaker, 20 lbs., mailable 79.95

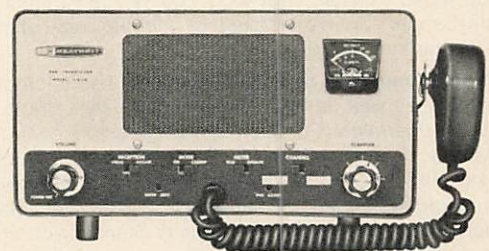
Kit HRA-10-1, plug-in 100 kHz crystal calibrator, 1 lb., mailable 9.95

HR-10B SPECIFICATIONS—Frequency coverage: 80 through 10 meters; IF frequency: 1681 kHz. Sensitivity: 1 uV for 10 dB signal-to-noise ratio. Image rejection: 40 dB or better. Selectivity: 3 kHz at 6 dB, 9 kHz 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: 120/240 V. AC, 50/60 Hz, 50 watts. Dimensions: 13 3/4" W x 11 1/2" D x 6 1/2" H.



The incomparable HW-16 CW rig . . . 99.95

The most popular CW rig on the air . . . and the reasons are clear. Provides ideal CW operation on the first 250 kHz of the 80, 40 & 15 M bands, with true break-in capability. Adjustable input, 50-90 watts. Two front-panel sockets for crystals; optional HG-10B above gives VFO transmit capability. Tunable receiver with crystal filter for razor sharp 500 Hz selectivity and hot sensitivity of less than 1 uV. Dual conversion RF amp. Built-in sidetone. Grid-block keying—ideal for use with HD-10 keyer opposite. Requires VTVM for alignment. Join the legions of HW-16 fans . . . today!
Kit HW-16, 25 lbs., mailable 99.95



HW-18 CAP SSB transceiver . . . 119.95

Provides 200 W SSB input, 40 W with carrier for AM compatibility. 0.005% frequency tolerance. Two crystal-controlled channels. 2.1 kHz selectivity; 0.5 uV sensitivity; 50 ohm output. PTT mike, speaker & mobile mount included. Requires VTVM & dummy load for alignment. Uses HP-13A or HP-23A power supplies, p. 51.

Kit HW-18-1, w/crystals for two channels, specify from list below, 16 lbs., mailable 119.95

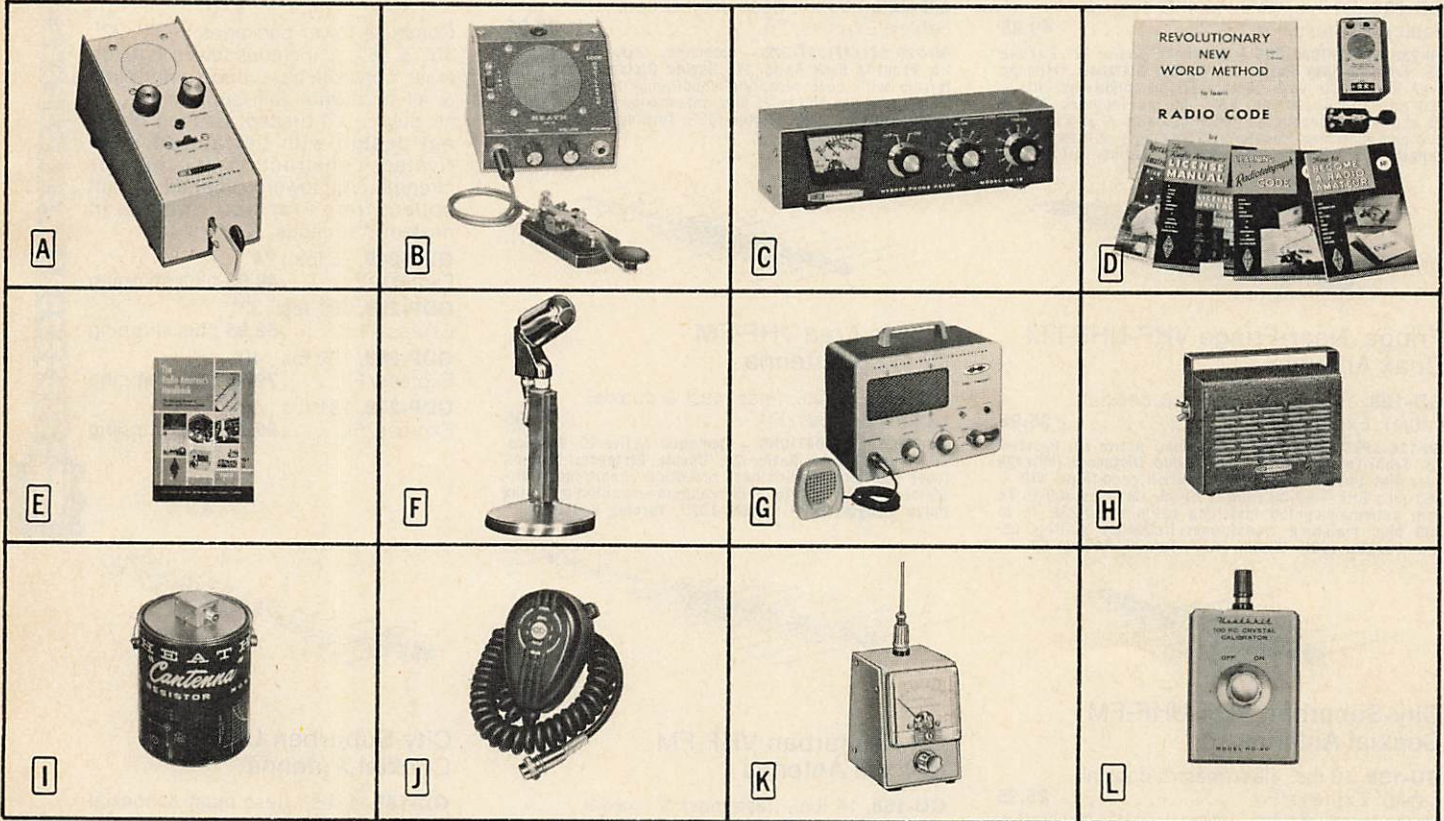
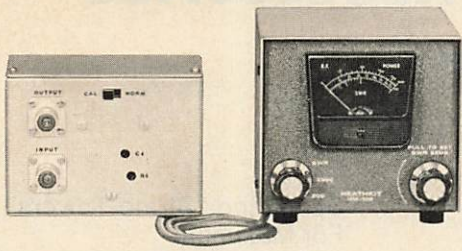
Assembled HWW-18-1, w/crystals for two channels, specify from list below, 16 lbs., mailable 179.95

CAP Crystals: 4406.0, 4466.0, 4469.0, 4509.0, 4583.5, 4586.5, 4601.0, 4604.0, 4628.5, 4631.5 kHz channel frequencies, 1 lb., mailable each 4.95

Heathkit Wattmeter/SWR Bridge . . . just 29.95

The most versatile shack accessory you can buy. With the new HM-102, there's no doubt about proper operation or tune-up. Two switch-selected ranges allow measurement of RF output from 10-200 and 100-2000 W . . . built-in calibrator gives 10% accuracy from 80-10 M. Built-in SWR capability for proper tune-up, transmission line to antenna Z matching . . . ideal for antenna experimenters. Negligible loss for permanent insertion into 50 ohm line. Remote detector permits placement of meter in any convenient location. (6 ft. of cable supplied.)

Kit HM-102, 4 lbs., mailable **29.95**
 HM-102 SPECIFICATIONS—Frequency range: 1.8 to 30 MHz. Wattmeter accuracy: $\pm 10\%$ of full-scale reading. Power capability: 10 to 2000 watts. Impedance: 50 ohms nominal. Connectors: UHF type S0-239. Dimensions: 5 $\frac{1}{4}$ " W x 5-1 $\frac{16}{16}$ " H x 6 $\frac{1}{2}$ " D. Net weight: 2 $\frac{1}{2}$ lbs.



A Solid-State Keyer

15-60 or 10-20 wpm. Solid-state switching. Right or left hand operation, adjustable paddle. Variable dot-space ratio. Adapts to semi-auto operation. Built-in sidetone & speaker. Built-in transformer supply isolates keyer; fused. Grid-block keying only for —105 V @ 35 mA max.

Kit HD-10, 6 lbs., mailable **39.95**

B Code Practice Osc.

Unijunction transistor with separate controls for tone & volume. Built-in speaker; headphone jack. Blinker light for visual monitoring. Includes key, phone plug, cord. Uses 2-9V & 1 "C" batteries, not supplied.

Kit HD-16, 3 lbs., mailable **9.95**

C Phone Patch

Has separate gain controls for receiver-to-line & line-to-transmitter audio. VU meters monitor audio level & null depth. 30 dB isolation between transmit & receive circuits. Matches 3-16 ohm speaker & hi-Z or 600 ohm inputs. PTT or VOX operation.

Kit HD-15, 3 lbs., mailable **24.95**

D Ham Starter Group

Give these to your youngsters—Group includes 4 ARRL handbooks, HD-16 code practice oscillator, 3 code-teaching records.

HDP-22, all above, 6 lbs., mailable **18.95**

HDP-32, records only, 3 lbs., mailable **9.50**

HDP-42, books only, 2 lbs., mailable **2.50**

Kit HD-16, osc. & key, 3 lbs., mailable **9.95**

E Amateur's Handbook

Favorite of thousands of hams & engineers for reliable, up-to-date info on radio communications & electronics. Covers theory, construction and operation of HF, UHF, FM and SSB equipment.

HDP-293, 3 lbs., mailable **4.50**

F Ham Desk Mike

High impedance dynamic mike recommended for SB-series gear.

Ideal SSB response. Grip-to-talk switch w/lock. Wiring diagrams & cables included.

HDP-21A, 4 lbs., mailable **29.95**

G VHF "Lunch Box"

The fastest way to VHF. Crystal controlled 5-watt AM transmitter with tunable superregen rcvr. with RF stage. 1 μ V sensitivity. Can operate on 143.28 Coast Guard Aux. freq. Ceramic mike included.

Kit HW-30, 2M, 9 lbs., mailable **49.95**

H Mobile Speaker

Rugged 8 ohm mobile speaker in steel forest green cabinet. Gimballed mount included. 6-11 $\frac{32}{32}$ " W x 4 $\frac{3}{4}$ " H x 2 $\frac{1}{2}$ " D.

Kit HS-24, 4 lbs., mailable **8.95**

I "Antenna"

A valuable shack addition. Provides 50 ohm non-inductive load with less than 1.5 SWR to 300 MHz. Coax fitting for transmitter; phono plug for rel. pwr. measurements. 1 gal. oil coolant capacity (oil not included) permits up to 1 kW power level.

Kit HN-31, 3 lbs., mailable **10.95**

J Mobile PTT Mike

Rugged, high impedance ceramic mike ideal for mobile work. Color matches SB & HW-Series gear. With cable, less connector.

GH-12A, 1 lb., mailable **8.95**

K Relative Power Meter

Frequency range 100 kHz to over 250 MHz. 0.3V rms sensitivity at antenna. Requires no power . . . operates from radiated signal. Magnetic base.

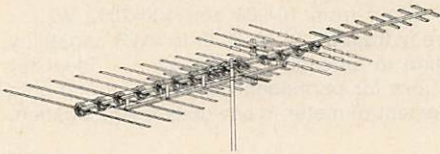
Kit PM-2, 2 lbs., mailable **12.95**

L Crystal Calibrator

Provides a signal every 100 kHz thru 54 MHz. Ideal for alignment, dial calibration, etc. Trimmer permits zero-beat with WWV. Uses 9 V battery, not included.

Kit HD-20, 1 lb., mailable **14.95**

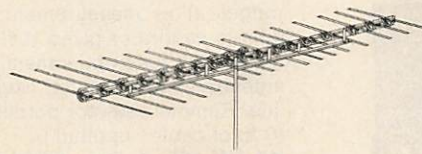
Heath TV Antennas & Accessories



Deep Fringe VHF-UHF-FM Coax Antenna

GD-239, 20 lbs., (less mast & coaxial cable), Express/Frt. **49.95**

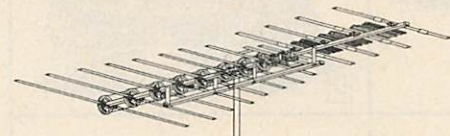
GD-239 SPECIFICATIONS — Elements: Active-12; Passive-43. **Front-To-Back Ratio:** 19. **Usable Distance:** (Mileage over flat terrain with best reception conditions) VHF — 180 mi.; UHF — 100 mi.; FM — 90 mi. Includes 300 to 75 ohm antenna-mounted matching balun & GD-298 75 to 300 ohm matching transformer/frequency splitter below. **Length:** 178". **Width:** 102". **Turning Radius:** 107".



Deep Fringe VHF-FM Coaxial Antenna

GD-229, 20 lbs., (less mast & coaxial cable), Express/Frt. **39.95**

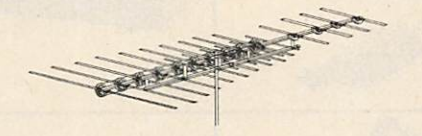
GD-229 SPECIFICATIONS — Elements: Active-10; Passive-21; **Front-To-Back Ratio:** 20. **Usable Distance:** (over flat terrain with best reception conditions) 200 mi.; FM — 90 mi. Includes 300 to 75 ohm antenna-mounted matching balun. **Length:** 183". **Width:** 102". **Turning Radius:** 107".



Fringe, Near-Fringe VHF-UHF-FM Coax Antenna

GD-128, 15 lbs., (less mast & coaxial cable), Express/Frt. **35.95**

GD-128 SPECIFICATIONS — Elements: Active-10; Passive-23. **Front-To-Back Ratio:** 18. **Usable Distance:** (Mileage over flat terrain with best reception conditions) VHF — 150 mi.; UHF — 80 mi.; FM — 70 mi. Includes 300 to 75 ohm antenna-mounted matching balun & GD-298 75 to 300 ohm matching transformer/frequency splitter below. **Length:** 120". **Width:** 102". **Turning Radius:** 80".



Fringe Area VHF-FM Coaxial Antenna

GD-219, 19 lbs., (less mast & coaxial cable), Express/Frt. **29.95**

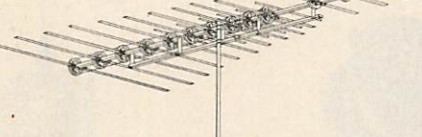
GD-219 SPECIFICATIONS — Elements: Active-10; Passive-13. **Front-To-Back Ratio:** 20. **Usable Distance:** 180 mi. (over flat terrain with best reception conditions) FM — 90 mi. Includes 300 to 75 ohm antenna-mounted matching balun. **Length:** 142". **Width:** 102". **Turning Radius:** 88".



City-Suburban VHF-UHF-FM Coaxial Antenna

GD-138, 10 lbs., (less mast & coaxial cable), Express/Frt. **25.95**

GD-138 SPECIFICATIONS — Elements: Active-10; Passive-7. **Front-To-Back Ratio:** 17. **Usable Distance:** (Mileage over flat terrain with best reception conditions) VHF — 100 mi.; UHF — 60 mi.; FM — 50 mi. Includes 300 to 75 ohm antenna-mounted matching balun & GD-298 75 to 300 ohm matching transformer/frequency splitter below. **Length:** 111". **Width:** 102". **Turning Radius:** 79".



City-Suburban VHF-FM Coaxial Antenna

GD-158, 14 lbs., (less mast & coaxial cable), Express/Frt. **27.95**

GD-158 SPECIFICATIONS — Elements: Active-8; Passive-9. **Front-To-Back Ratio:** 19. **Usable Distance:** (over flat terrain with best reception conditions) 150 mi.; FM — 70 mi. Includes 300 to 75 ohm antenna-mounted matching balun. **Length:** 120". **Width:** 102". **Turning Radius:** 79".

Spaulding "Strato-Towers" For Maximum Antenna Performance

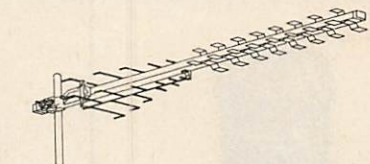
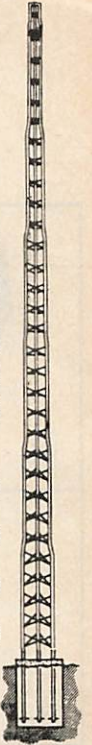
Complete tower packages in 24', 32', 40', & 48' . . . includes tower, 8 ft. top mast, concrete base stubs, rotor plate & all hardware. Self-supporting . . . no guys. "X" braced, beaded channel design with galvanized steel riveted construction for greater strength. All towers shipped freight collect from Frankfort, Indiana in nested 8' sections.

GDP-249, 73 lbs., 24', Express/Frt. **49.95** plus shipping

GDP-259, 101 lbs., 32', Express/Frt. **59.95** plus shipping

GDP-269, 139 lbs., 40', Express/Frt. **79.95** plus shipping

GDP-279, 181 lbs., 48', Express/Frt. **95.70** plus shipping



City-Suburban UHF Coaxial Antenna

GD-188, 4 lbs., (less mast & coaxial cable), mailable **9.95**

GD-188 SPECIFICATIONS — Elements: Active-11; Passive-8. **Front-To-Back Ratio:** 19. **Usable Distance:** 60 mi. (over flat terrain with best reception conditions). Includes 300 to 75 ohm antenna-mounted matching balun. **Length:** 46". **Width:** 8". **Turning Radius:** 44".

Coaxial Distributor for 4-room TV/FM network



Solid-state Jerrold design distribution amp takes single coax input from any all-channel antenna, amplifies all signals & feeds 4 outlets. Each terminates at surface mounted box or mount flush in electrical boxes. Everything supplied . . . 200' coaxial cable, connectors, crimping tool, 4 matching transformers/frequency splitters.

GD-248, 14 lbs., mailable **89.95**

Reception Proven Coaxial Cable For Color TV

GD-228, 50' coax, w/connectors and antenna boot installed, 3 lbs., mailable **7.95**

GD-238, 75' coax, w/connectors and antenna boot installed, 4 lbs., mailable **9.95**

GD-328, 100' coax, w/connectors and antenna boot installed, 5 lbs., mailable **11.95**

75-300 Ohm Matching Transformer/Splitter

Matches one all-channel 75-ohm coax downlead to separate 300 ohm VHF and UHF TV inputs. With hardware, instructions.

GD-298, 1 lb., mailable **4.95**

All Channel Coupler With FM Tap

For taking FM signal off coax line ahead of distribution system or TV set. 2.25 dB insertion loss, 12 dB isolation. Includes hardware, instructions.

GD-308, 1 lb., mailable **10.95**

75 Ohm Mixer-Splitter To Operate Two Sets

Operates two sets from one coax downlead, or combines two 75 ohm antennas into one lead. 12 dB isolation, instructions, hardware included.

GD-318, 1 lb., mailable **7.95**

Antenna Chimney Mount

Two 5' masts, chimney mount, 50 foot 300 ohm transmission line, standoffs, two 10 foot steel straps, complete instructions.

GD-208, 10 lbs., Express/Frt. **7.95**

Antenna Roof Mount Kit

Two 5' masts, mast base, 50 foot 300 ohm transmission line, 50 foot guy wire, all standoffs, screw eyes, wire clamps.

GD-218, 9 lbs., Express/Frt. **6.95**

Cornell-Dubilier AR-33 Antenna Rotator

Solid-state control operated by dial or set-and-forget pushbuttons. $\pm 1^\circ$ accuracy, heavy duty rotor, instructions included. (5-wire power cable not supplied.)

GDP-258, 16 lbs., mailable **49.95**

High Quality Alliance Tenna-Rotor

Rotates 360° in either direction, instantly reversible, magnetic braking. Sealed against moisture, lubricated for life. (5-wire power cable not supplied.)

GDP-214, 11 lbs., mailable **29.95**

Premium 82-Channel Indoor Antenna

Ideal where outdoor antenna would be difficult to install. 12 position selector provides optimum tuning on all channels.

GD-198, 3 lbs., mailable **10.95**

Price Slashed On Big Screen Color



CONTEMPORARY WALNUT CABINET
...factory assembled, finished in oiled walnut veneer. 31" H x 34½" W x 19" D.
Assembled GRA-295-1, 56 lbs., Express/Frt. **NOW 54.95**

Heathkit GR-681/681MX tube-type TV ... from 449.95

Take advantage of new low prices on this popular Heathkit tube-type color TV. The GR-681 offers Automatic Fine Tuning on all VHF and UHF channels, pushbutton channel advance and bridge-type low voltage power supply. And there's a choice of color picture tubes! Select either the new, brighter etched face tube (GR-681), or the Matrix tube as an option (GR-681MX).

Exact color reproduction. The premium quality, bonded face, etched glass 295 sq. in. picture tube delivers brighter, sharper, more natural color. Or select the Matrix tube option (p. 61) for even brighter reproduction. 24,000 volts of regulated picture power insures improved definition. Exclusive Heath "Magna-Shield" improves color purity... automatic gain control provides steady, jitter-free viewing... automatic color control reduces picture fading. Two year warranty on picture tube; 90 days on all other parts.

Has the features you want! Standard with the GR-681/681MX are: Automatic degaussing and mobile degaussing coil. Deluxe VHF turret tuner with "memory" fine tuning. Two-speed transistor UHF tuner for fast station selection, precise fine tuning. Two hi-fi outputs. And two VHF antenna inputs — 300 and 75 ohm.

Install it where you want it! In any of three beautiful Heath cabinets, or in a favorite old cabinet. Or build it into a wall or shelf for the custom "picture frame" look. And there's the optional "wireless" remote control unit for the ultimate in relaxing entertainment.

Service it yourself, too! The Heathkit GR-681/681MX is designed to let you do the periodic servicing and save your cash! The built-in dot generator and tilt-out convergence panel let you check and adjust dynamic convergence in minutes — for crisp, natural pictures. The manual shows how! Order your GR-681 or GR-681MX now, and take advantage of the recently reduced price.

Kit GR-681, AFT model, chassis, tubes, mask, tuners & speaker, 133 lbs., Express/Frt., Reg. 469.95 **NOW ONLY 449.95**

Kit GR-681MX, as above with Matrix tube, 133 lbs., Express/Frt. **NOW 459.95**

Assembled GRA-304-23, pecan Mediterranean cabinet above, 78 lbs., Express/Frt. **129.95**

Kit GR-295, chassis, tubes, mask, tuners & speaker, 131 lbs., Express/Frt. **419.95**

Kit GR-295MX, as above with Matrix tube, Express/Frt. **429.95**



CUSTOM WALL MOUNTING... assembly manual supplies all mounting dimensions and templates for control and speaker cutouts.



EARLY AMERICAN CABINET... factory assembled, finished in Salem Maple veneer. 29½" H x 37¼" W x 19¾" D.
Assembled GRA-303-23, 73 lbs., Express/Frt. **114.95**

GR-681 SPECIFICATIONS — Picture Size: Rectangular viewing area approx. 295 sq. inches. Deflection: Magnetic 90°. Focus: Electrostatic. Convergence: Magnetic & dynamic. Antenna Input Impedance: 300 ohm balanced, or 75 ohm unbalanced (VHF). Picture IF Carrier Frequency: 45.75 MHz. Sound IF Carrier Frequency: 41.25 MHz. Color Subcarrier: 42.17 MHz. Video IF Bandpass: 3.58 MHz. Sound IF Frequency: 4.5 MHz. Tuning Range: VHF channels 2-13, UHF channels 14-83. Sound Cathode Follower: Output impedance, 3K. Audio Output: Output impedance, 8 ohms. Power Requirements: 110-130 V., 60 Hertz AC, 330 watts. Chassis & Tube Dimensions Only: 20½" H x 25½" W x 19¾" D. Control panel assembly, 6½" H x 7⅞" H x 7" D. Required installation clearances are given in spec. sheet & manual.

Remote control makes summer days lazier!



Save yourself 20.00 in the bargain! At a new, reduced price, here's a wireless remote control for any rectangular tube Heathkit color TV. The all solid-state controller brings on-off, volume, color tint and VHF channel selection to your favorite armchair. Easy to build. Easy to use. Available for Heathkit Color TV models GR-681, GR-581, GR-481, GR-295, GR-227, GR-180 and GR-25.

Kit GRA-681-6, for GR-681 TV, 7 lbs., mailable **44.95**
Kit GRA-295-6, for GR-295 & GR-25, 9 lbs., mailable **49.95**
Kit GRA-227-6, for GR-581, 481, 227, 180 TV's, 9 lbs., mailable **49.95**



**Roll-Around
Satin Finish
Walnut Grain
Cabinet**

20³/₄" H x 31¹/₄" W
x 18⁵/₈" D, may be
used with 7³/₄" H
matching base
below.



GRA-203-20, table model, 46 lbs., Express/
Frt. 49.95
GRA-204-20, cart, 19 lbs.,
Express/Frt. 19.95
GRS-203-5, cart & cabinet, 65 lbs., Ex-
press/Frt. 59.95
GRS-203-6, cabinet & base, 59 lbs., Ex-
press/Frt. 59.95



**Save
\$30!**

Stunning Mediterranean cabinet . . . factory
assembled & finished in luxurious dark
oak. 29" H x 40" W x 19¹/₂" D.
Assembled GRA-227-2, 72 lbs., Express/
Frt. now only 79.95



**Save
\$10!**

Handsome contemporary cabinet blends
easily with any decor. Finished in hand-
rubbed oiled walnut. 29" H x 28¹/₄" W x
18¹/₄" D.
Assembled GRA-180-1, 41 lbs., Express/
Frt. now only 44.95



**Save \$3!
Roll-Around
Vinyl Clad
Walnut
Grained
Cabinet**

Factory assembled, 18⁵/₈" H x 27³/₈" W x
19¹/₂" D.
GRA-180-3, cabinet, 36 lbs.,
Express/Frt. NOW 24.50
GRA-180-4, cart, 23 lbs.,
Express/Frt. 19.95

Lower Prices On Tube-Type Color TVs

Save \$30 on the GR-227 & GR-581 color TVs

Two models of 227 sq. in. tube-type color TV . . . both at newly re-
duced prices. The GR-581 includes factory assembled Automatic
Fine Tuning that lets you get perfectly tuned pictures & sound at the
push of a button. GR-227 is without AFT. Both sets share the follow-
ing high performance features.

Premium quality picture tube standard . . . bonded face, etched
glass tube with anti-glare safety glass and improved phosphors for
better contrast, greater light output.

Exclusive Heath Magna-Shield surrounds the entire picture tube to
eliminate stray magnetic fields that ruin color purity. And built-in
automatic degaussing demagnetizes the picture tube each time the
set is turned on from a cold start to help keep colors pure.

Factory assembled & aligned tuners decrease assembly time, in-
sure superior performance. Memory fine tuning & gold/niborium
contacts standard on the VHF tuner; 2-speed tuning on UHF tuner.

3-stage IF assembly . . . supplied factory assembled & aligned for
easier assembly. Completely shielded to minimize external inter-
ference.

Other features include gated AGC to provide steady, jitter-free pic-
tures . . . automatic chroma control to reduce color fading . . . 75 &
300 ohm VHF antenna inputs . . . hi-fi sound output . . . three way in-
stallation . . . plus the exclusive Heath self-service common to all
Heathkit Color TVs. For the finest tube-type 227 sq. in. color TV any-
where, order your GR-581 or GR-227 today.

Kit GR-581, AFT model, 114 lbs., Express/Frt. now only 349.95

Kit GR-227, w/o AFT, 114 lbs., Express/Frt. now only 309.95

Save \$15! Contemporary Oiled Walnut Finish Cabinet (il-
lustrated above) Factory assembled. 31³/₄" W x 29⁵/₈" H x 19¹/₂" D.

GRA-227-1, 55 lbs., Express/Frt. NOW 49.95

GR-581 SPECIFICATIONS: Same as GR-681 p. 57 except without pushbutton channel
advance, and side pincushion circuit. Chassis & tube dimensions: 19¹/₄" H x 27⁵/₈"
W x 18" D. Viewing Area: 227 sq. in.

GR-227 SPECIFICATIONS: Same as GR-581 above except without AFT.

Save \$30 on the GR-481, \$20 on the GR-180

Heathkit GR-481 with AFT. Factory assembled & aligned automatic
fine tuning module delivers perfectly tuned picture and sound at a
push of a button . . . eliminates troublesome manual fine tuning
forever.

Assembled & aligned 3-stage IF assembly provides higher gain for
better overall picture quality. Completely shielded to reduce external
interference.

Bonded-face, etched glass color picture tube standard . . . the new
premium quality tube that delivers brighter, sharper, more colorful
pictures.

Factory assembled & aligned tuners to speed assembly, insure top
performance. Two speed UHF tuning; memory fine tuning and gold/
niborium contacts on VHF tuner.

Automatic chroma control reduces color fading. Gated AGC,
standard on all Heath sets, provides steady, jitter-free viewing.

Additional features include the exclusive Heath Magna-Shield that
blocks out color-ruining magnetic fields . . . automatic degaussing
. . . hi-fi sound output . . . 75 and 300 ohm antenna inputs — plus
exclusive Heath built-in self-service facilities that can save you hun-
dreds of dollars in service costs.

Kit GR-481, AFT model, 102 lbs., Express/Frt. 299.95

Kit GR-180, as above without AFT, 102 lbs., Express/Frt. 279.95

Save \$30! Early American Salem Maple Cabinet (illustrated above)

Factory assembled, measures 18¹/₄" D x 28¹/₄" W x 31³/₄" H.

GRA-180-2, 51 lbs., Express/Frt. NOW 64.95

GR-481 SPECIFICATIONS: Same as GR-681 p. 57 except without pushbutton channel
advance, and side pincushion circuit. Chassis & tube dimensions: 17¹/₄" H x 25⁷/₈" W
x 17¹/₂" D. Viewing area: 180 sq. in.

**Save \$20 on wire-
less remote control.**
Gives control of on/
off, volume, color,
tint & VHF channel
selection.
Kit GRA-227-6, 9
lbs., available NOW
ONLY 49.95



**Custom Install Your
481 or 180 model, in
a wall, bookcase, or
custom cabinet. It's
easy, we show you
how.**

Simulated Color Pictures



**Save \$20 on wire-
less remote con-
trol.** Gives control
of on/off, volume,
color, tint & VHF
channel selection.
Kit GRA-227-6, 9
lbs., available NOW
ONLY 49.95



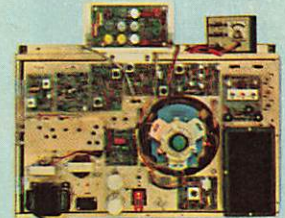
**Custom installation
of 227 or 581 mod-
els.** Only Heath
color TV offers you
the option of book-
case or wall instal-
lation.



New "Compact" Solid-State 18" Color TV...399⁹⁵



Striking Contemporary Cabinet, luxuriously finished in hand-rubbed oiled walnut. 18 $\frac{1}{4}$ " D x 28 $\frac{1}{4}$ " W x 29" H. Also accepts GR-180 and GR-481 color TVs. Assembled **GRA-401-18**, 41 lbs., Express/Frt. **59.95**



Compact, carefully-planned chassis. Note modular plug-in circuit boards along top. Factory assembled high voltage power supply is lower right; 3-stage IF assembly center left. Note husky, conservatively rated power supply components, lower left.

A compact, "big-screen" color TV. The new GR-269 is small enough to fit practically any room size or decor . . . yet large enough to deliver an excellent, fully viewable picture in any living room or rec room.

Exclusive Heathkit solid-state design . . . carefully engineered over five years to exacting performance and reliability standards. Four state-of-the-art Integrated Circuits, 48 transistors, 47 diodes and just two tubes (picture and high voltage rectifier) combine to deliver superb performance.

Modular . . . for some excellent reasons. Most of the circuitry in the new "269" mounts on 9 plug-in circuit boards on the rear of the swing-out chassis. You get faster, easier assembly with less chance for error . . . higher reliability . . . and much easier service and adjustment. All ICs and transistors plug into sockets for easy removal . . . a Heath exclusive. And the liberal Heath warranty fully explained on page 62 makes modular design an even better idea.

Automatic Fine Tuning — standard. The factory assembled & aligned AFT module gives you perfect picture and sound automatically, instantly . . . at just a push of the front panel button.

Solid-state VHF & UHF tuners — standard. The exclusive Heath designed VHF tuner uses advanced MOSFET circuitry to assure higher sensitivity, less noise and lower cross-modulation . . . gives you visibly superior reception, especially under marginal conditions. The UHF tuner uses hot-carrier diode design for lower noise and increased sensitivity. Both tuners are factory assembled & aligned for easier assembly and peak performance.

Solid-state 3-stage IF — standard . . . assembled & aligned. Delivers higher gain for better performance. Completely shielded.

"Instant-On" — standard. Just a pull of the power switch gives instant sound, pictures in seconds.

Switch-controlled degaussing — standard . . . a pull of the front-panel switch permits degaussing the set anytime to insure pure, clean color pictures always.

Other features include complete clearly labeled secondary controls on the rear chassis to expedite periodic service and adjustments . . . hi-fi sound output . . . 75 & 300 ohm antenna inputs . . . exclusive Heath Magna-Shield that screens out magnetic fields. Plus the famous Heath built-in self-service aids that allow you to completely maintain and service your set, right down to the smallest part.

This summer, enjoy the finest color viewing available at this modest price . . . order your new GR-269 today.

Kit GR-269, all parts including chassis, 180 sq. in. picture tube, mask, VHF & UHF tuners, AFT, speaker, 100 lbs., Express/Frt. . . . **399.95**

Assembled GRA-402-18 walnut-grained vinyl clad wood cabinet illustrated above. 25" W x 16 $\frac{3}{8}$ " H x 11" D. 33 lbs., Express/Frt. **27.50**

GRA-403-18 Roll-Around Cart above with walnut finished wood and pale brass accents. 27" W x 15 $\frac{5}{8}$ " D x 22" H. 23 lbs., Express/Frt. **19.95**

GR-269 SPECIFICATIONS: Picture Size: 180 sq. in. viewing area. Tube-type: Bonded face, non-etched. Deflection: Magnetic, 90°. Focus: Electrostatic. Convergence: Magnetic. Antenna Input Impedance: VHF — 300 ohm balanced or 75 ohm unbalanced; UHF — 300 ohm balanced. Tuning Range: VHF — Channels 2-13; UHF — Channels 14-83. Picture IF Carrier: 45.75 MHz. Sound IF Carrier: 41.25 MHz. Color IF Subcarrier: 42.17 MHz. Sound IF Frequency: 4.5 MHz. Video IF Bandwidth: 3.58 MHz. Audio Output Power: 1 watt, 8 ohm impedance. Power Requirements: 110-130 VAC, 140 watts. Dimensions: 15 $\frac{1}{2}$ " H x 24 $\frac{1}{2}$ " W x 18" D. Net weight: 68 lbs.

Color Picture Tubes Warranted For 2 Full Years.

Simulated Color Pictures

59

20" Solid-State Color TV...489.95 (less cabinet)



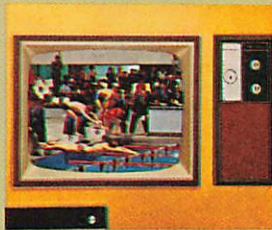
Wireless Remote Control . . . gives across the room control of on/off, channel selection, volume, color & tint. Easy assembly & installation.
Kit GRA-70-6, 6 lbs. mailable **64.95**



Luxurious Mediterranean cabinet . . . a fine example of furniture craftsmanship, finished in stylish pecan with statuary bronze handle. 27-31/32" H x 41 7/8" W x 19-9/16" D.
Assembled GRA-202-20, 85 lbs., Express/Frt. **119.95**



Handy Cart & Cabinet Assembled GRA-203-20 cabinet, 46 lbs., Express/Frt. **49.95**
GRA-204-20 roll around cart, 19 lbs., Express/Frt. **19.95**
GRS-203-5 cart & cabinet, 65 lbs., Express/Frt. **59.95**



Custom-mounting capability . . . build your new "270" into a wall or bookcase for a professional custom look. The comprehensive manual gives complete instructions.



GR-270 . . . excellent choice for smaller rooms

Modular plug-in circuit board design. Ten modular glass epoxy circuit boards snap in or out in seconds from the handy swing out rear chassis . . . greatly simplifies assembly and service.

All solid-state design using over 100 advanced devices and only two tubes (picture and high voltage rectifier) delivers visibly superior performance and reliability unmatched by conventional tube sets.

Premium quality 20" picture tube . . . the industry's finest 227 sq. in. bonded face, etched glass tube . . . delivers crisp, bright, more colorful pictures.

Automatic fine tuning standard . . . just push a button and the factory assembled & aligned AFT module locks in perfect picture & sound instantly, automatically.

VHF power tuning standard . . . convenient pushbutton scanning of all VHF channels and one preselected UHF channel.

Factory assembled & aligned 3-stage IF is completely shielded to eliminate external interference. Provides higher gain for improved overall picture quality.

Exclusive design solid-state VHF tuner uses an MOS Field Effect Transistor to deliver greater sensitivity, lower noise and less cross-modulation . . . gives noticeably better color reception especially under marginal conditions.

Other features include built-in automatic degaussing for maximum color purity at all times . . . automatic chroma control that eliminates color variations . . . adjustable noise limiting & gated Simulated Color Pictures

AGC to keep pulse-type interference minimized and maintain constant signal strength . . . high resolution circuitry for improved picture clarity and adjustable video peaking that lets you select the degree of picture sharpness you desire . . . "Instant On" that gives instant sound, pictures in seconds . . . adjustable tone control . . . hi-fi sound output . . . 75 & 300 ohm VHF antenna inputs.

Money-saving Heathkit self-service features combine to allow virtually complete owner servicing. Built-in dot generator, tilt-out convergence/secondary control panel, clearly labeled chassis controls and the comprehensive Heath manual combine to give easy, step-by-step self service. Volt-ohm meter supplied lets you troubleshoot and adjust the entire set, right down to the smallest part . . . without exotic test equipment or years of training.

Compare the GR-270 for features, performance, price. Then order your new "270".

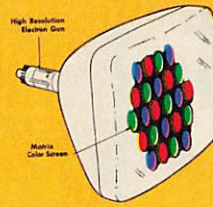
Kit GR-270, all parts incl. chassis, picture tube, mask, VHF & UHF tuners, AFT & spkr., 114 lbs., Express/Frt. . . . **489.95**

Assembled GRS-203-6, walnut finished, contemporary cabinet & base combo illustrated. Cabinet 20-31/32" H x 31-7/16" W x 18 5/8" D. 59 lbs., Express/Frt. **59.95**

GR-270 SPECIFICATIONS: Viewing Area: Approx. 227 sq. in. Picture Tube High Voltage: 25,000 V. Deflection: Magnetic, 90 degrees. Focus: Electrostatic. Convergence: Magnetic. Antenna Input Impedance: VHF, 300 ohm balanced or 75 ohm unbalanced. UHF, 300 ohm balanced. Tuning Range: VHF TV channels 2 through 13; UHF TV channels 14 through 83. Picture IF Carrier: 45.75 MHz. Sound IF Carrier: 41.25 MHz. Color IF Subcarrier: 42.17 MHz. Sound IF Frequency: 4.5 MHz. Video IF Bandwidth: 3.58 MHz. Hi-Fi Output: Output impedance, 1 k ohm. Frequency response, ±1 dB 50 Hz to 15 kHz. Harmonic distortion, less than 1% at 1 kHz. Output voltage, 0.3 V rms nominal. Audio Output: Output impedance, 4 ohm or 8 ohm. Output power, 2 watts. Power Requirements: 110 to 130 volts AC, 60 Hz, 240 watts. Net Weight: 101 lbs.

Color Picture Tubes Warranted For 2 Full Years.

23" Solid-State Color TV...539.95 (less cabinet)



Optional Matrix picture tube . . . new electron gun and matrix around phosphor dots combine to deliver brighter, more detailed pictures. Order your "370" with the matrix . . . you can see the difference!



Fashionable Mediterranean cabinet . . . handcrafted of fine furniture grade hardwoods . . . finished in flawless pecan with statuary bronze handle. 30-1/32" H x 47" W x 21" D. **Assembled GRA-304-23**, 78 lbs., Express/Frt. . . . 129.95



Contemporary walnut cabinet . . . fine veneers and solids combined with a beautiful hand-rubbed oiled walnut finish. 29-17/32" H x 35-13/16" W x 19 1/8" D. **Assembled GRA-301-23**, 60 lbs., Express/Frt. . . . 79.95



Custom-mount your new "370" in a wall, bookcase or closet door for a real conversation-starter. Manual includes simple installation details.

GR-370 . . . our most popular screen size

Exclusive Heath solid-state design under development for over 5 years . . . 45 transistors, 55 diodes, 2 SCRs, 4 advanced Integrated Circuits containing another 46 transistors and 21 diodes; two tubes (picture and high voltage rectifier) combine to provide exceptional performance and reliability.

Unique plug-in circuit board design. Ten modular plug-in circuit boards make assembly fast and easy, deliver higher reliability and make service simpler.

A host of standard features that you'd pay extra for anywhere else. Compare this list of superb convenience and performance features against other color TVs.

Solid-state VHF tuner . . . an exclusive Heath design using a MOSFET for greater sensitivity, less noise and visibly superior reception.

3-stage solid-state IF . . . delivers higher gain for better overall picture quality. Completely shielded to eliminate external interference. Factory assembled & aligned.

Pushbutton automatic fine tuning . . . locks in perfect picture and sound automatically, instantly. Factory assembled & aligned.

Pushbutton VHF power tuning . . . allows you to scan thru all VHF channels and one UHF channel in seconds.

Automatic chroma control . . . eliminates annoying color variations produced by different signal conditions.

Built-in automatic degaussing . . . automatically keeps colors pure.

Adjustable noise limiting and gated AGC keep pulse-type interference to a minimum and maintain constant signal strength.

"Instant On" provides instant sound, pictures in just seconds, all at the push of a button. Continuously heated picture tube filaments prolong picture tube life.

Adjustable video peaking . . . permits you to select the degree of picture sharpness you desire.

Variable tone control . . . allows varying the tone from deep, rich bass to crisp, pronounced highs from the 6x9" dual cone speaker.

Hi-Fi sound output for playing TV audio thru your hi-fi or stereo.

Premium quality 295 sq. in. bonded face etched glass picture tubes . . . the new brighter tube that delivers better contrast, brighter color. Guaranteed for two full years. Or choose the advanced new Matrix tube described above as a low cost option.

Two VHF Antenna inputs for connection of either 75 ohm coaxial or 300 ohm twin lead antenna connections.

Exclusive Heath self-service facilities built-in. Tilt-out convergence/secondary control panel, dots switch and clearly labeled chassis controls combined with the famous Heath manual, allow you to do normal periodic servicing yourself. Volt-ohm meter supplied permits you to troubleshoot your "370" right down to the smallest component . . . without technical knowledge . . . without costly service calls. And check the liberal Heath warranty plan on p. 62 also.

Put it all together and you've got the Heathkit GR-370 . . . one of the most sophisticated 23" sets on the market. Put it all together soon . . . by ordering your new "370" now.

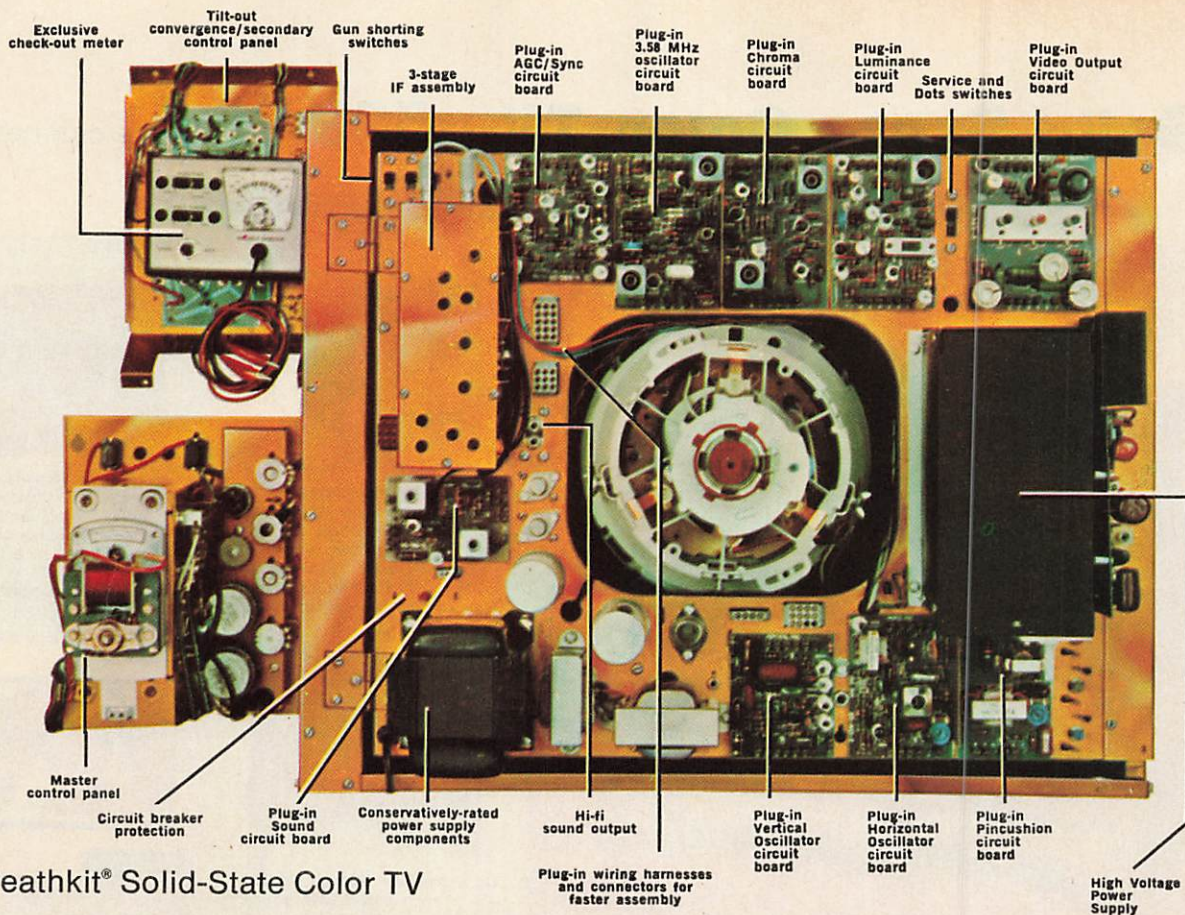
Kit GR-370, all parts, incl. chassis, picture tube, mask, VHF & UHF tuners, AFT & spkr., 124 lbs., Express/Frt. . . . **539.95**

Kit GR-370MX, GR-370 as above with Matrix picture tube, 124 lbs., Express/Frt. . . . **549.95**

Assembled GRA-303-23, Early American cabinet shown above. Assembled of hardwoods & veneers; finished in Salem Maple. 29-21/32" H x 37 1/4" W x 19 3/4" D. 73 lbs., Express/Frt. . . . **114.95**

GR-370 SPECIFICATIONS: Viewing Area: 295 sq. in. Net Weight: 114 lbs. All other specifications same as GR-270 opposite.

Simulated Color Pictures



Inside Heathkit® Solid-State Color TV



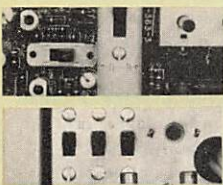
MODULAR CIRCUITRY:
Boards snap in and out for quick assembly, initial set-up, simple periodic adjustment.



TILT-OUT CONVERGENCE & SECONDARY CONTROL PANEL ON CABINET keeps seldom-used controls handy but hidden. Height, AGC, Color Killer, Tone, Peaking, Dots & Convergence controls are available for instant adjustment anytime.



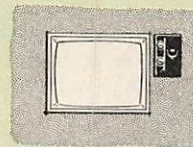
AUTOMATIC VERTICAL LINEARITY:
Designed into the set & automatically adjusted.



DOT GENERATOR & GUN SHORTING SWITCHES:
Built-in controls let you check & adjust convergence, purity & focus.



SPECIAL TOOLS:
Kit includes 2 nut drivers, torque handle, open end box wrench, nut starter & alignment wand.



3-WAY INSTALLATION:
Heathkit color goes in a wall, a bookcase, an heirloom, or handsome Heath cabinetry.

New Expedited 48-Hour No-Charge Warranty Service Plan for Solid-State TV Modules! Special service facilities have been established at the factory and all Heathkit Electronic Centers to expedite service and return of Solid-State TV circuit modules within two working days. During the 90-day warranty period, TV modules will be serviced or replaced with no charge for labor or parts. After the initial 90-day warranty period expires, TV modules will be serviced or replaced at a fixed charge of \$5.00 per module for labor and parts for a period of two years from date of original kit purchase. All picture tubes warranted for two full years.

Heathkit Color Remote Control

Wireless ultrasonic control for GR-371MX lets you turn set on and off, adjust volume, change VHF channels, adjust color and tint.

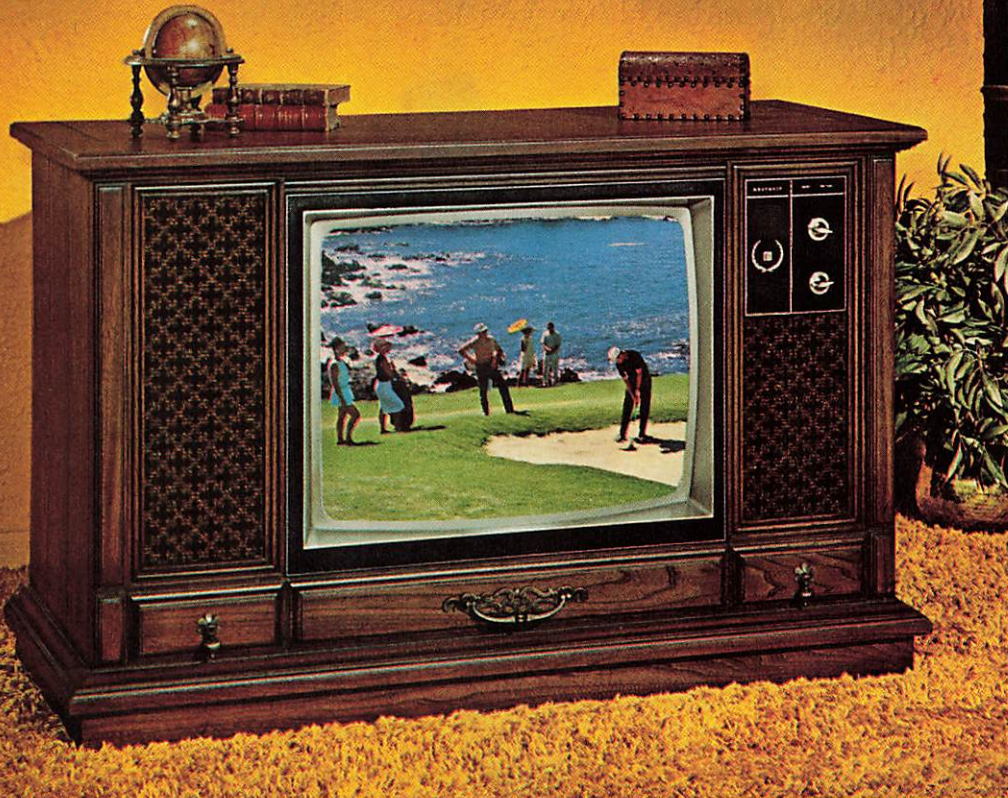
Kit GRA-70-6, 6 lbs., mailable64.95



HEATHKIT COLOR TV COMPARISON CHART

Model	Tube Size & Type	Viewing Area	Tube Face	Circuit Type	Modular Design	AFT	Adj. Video Peaking	Remote Available	Degaussing Type	Automatic Linearity	Picture Straightening	Separate Control Panel	Cabinet Optional	Hi-Fi Output	Self-Service	Price
GR-371MX	25v Matrix MTX-5	315 sq. in.	Etched Non-glare	Solid State	Yes	Yes	Yes	Yes	Auto	Yes	Top, Bottom, & Sides	Yes	Yes	Yes	Yes + Meter	\$579.95
GR-370MX	23v Matrix	295 sq. in.	"	Solid State	Yes	Yes	Yes	"	"	Yes	"	"	"	"	Yes + Meter	\$549.95
GR-370	23v Bright	295 sq. in.	"	Solid State	Yes	Yes	Yes	"	"	Yes	"	"	"	"	Yes + Meter	\$539.95
GR-681MX	23v Matrix	295 sq. in.	"	Tube	No	Yes	No	"	"	No	"	"	"	"	Yes	\$459.95
GR-681	23v Bright	295 sq. in.	"	Tube	No	Yes	No	"	"	No	"	"	"	"	Yes	\$449.95
GR-295MX	23v Matrix	295 sq. in.	"	Tube	No	No	No	"	"	No	"	"	"	"	Yes	\$429.95
GR-295	23v Bright	295 sq. in.	"	Tube	No	No	No	"	"	No	"	"	"	"	Yes	\$419.95
GR-270	20v Bright	227 sq. in.	"	Solid State	Yes	Yes	Yes	"	"	Yes	"	"	"	"	Yes + Meter	\$489.95
GR-581	20v Bright	227 sq. in.	"	Tube	No	Yes	No	"	"	No	T & B	No	"	"	Yes	\$349.95
GR-227	20v Bright	227 sq. in.	"	Tube	No	No	No	"	"	No	T & B	No	"	"	Yes	\$309.95
GR-269	18v Bright	180 sq. in.	Non-Etched	Solid State	Yes	Yes	No	No	Manual	Yes	T & B	No	"	"	Yes + Meter	\$399.95
GR-481	18v Bright	180 sq. in.	Etched Non-glare	Tube	No	Yes	No	Yes	Auto	No	T & B	No	"	"	Yes	\$299.95
GR-169	14v Bright	102 sq. in.	Non-Etched	Solid State	Yes	No	No	No	Manual	Yes	None	No	Incl.	No	Yes + Meter	\$349.95

Bring Summer's Color Indoors



Contemporary Walnut cabinet... factory assembled of fine furniture veneers and solids. Oil rubbed walnut finish. 29 $\frac{1}{2}$ " H x 35 $\frac{1}{2}$ " W x 19 $\frac{3}{8}$ " D.



Early American cabinet, factory-assembled of hardwoods & veneers, finished in Salem Maple. 30 $\frac{1}{2}$ " H x 38 $\frac{1}{2}$ " W x 19 $\frac{3}{4}$ " D.

The Heathkit 25" Solid-State Color TV with incomparable square-corner picture!

- Modular solid-state plug-in circuit board design
- Exclusive Heath MTX-5 25" rectangular picture tube
- Factory-assembled & aligned tuners, IF, AFT & high voltage section for easier assembly
- Exclusive owner-service capability

Here's the exclusive MTX-5 ultra-rectangular tube! The largest color picture in the industry — 25" diagonal — a full 315 sq. in. of viewing area! For the first time you see the complete transmitted image, with no wrap-around at the sides. The MTX-5 has a specially etched face plate to cut glare, increase contrast without sacrificing brightness. You get a sharper picture, purer colors, more natural flesh tones. The matrix screen around the phosphor dots eliminates reflected light.

Takes the hassle out of color TV beginning with "Instant-On" that brings you picture and sound in seconds, or can be overridden for normal "on-off" operation. VHF power tuning scans thru all 13 channels and one pre-selected UHF channel at the touch of a button. Automatic Fine Tuning is standard, too! Just push a button for perfect picture and sound — instantly, automatically, every time! Adjustable tone control lets viewers select their sound. And there's a hi-fi output for playing TV audio through your stereo/hi-fi system for truly remarkable entertainment.

Solid-state modular circuitry! The ultimate in color TV reliability starts with 45 transistors, 55 diodes, 2 silicon controlled rectifiers, 4 ICs containing another 46 transistors, 21 diodes and just two tubes (picture and high voltage rectifier). Major circuit functions are contained on individual plug-in glass epoxy boards to simplify assembly, service and adjustment. Special features include: Newly designed solid-state VHF tuner with MOS Field Effect Transistor for greater sensitivity, lower noise and cross-modulation. You get visibly superior reception, particularly in marginal conditions. Solid-state UHF tuner with hot-carrier diode design for greater sensitivity. 3-stage, solid-state IF that delivers higher gain for better overall picture quality. Automatic Chroma Control to keep color constant under different signal conditions. High resolution circuitry with adjustable video peaking so you select the degree of sharpness you want. Adjustable noise limiting and gated AGC to keep pulse-type interference to a minimum.

Service it at home! Only Heathkit color TV has this capability. With the built-in dot generator and tilt-out convergence panel you perform the periodic adjustments required of all color receivers. The kit contains a volt-ohm meter and complete trouble-shooting instructions, too!

Kit GR-371MX, TV less cabinet, 125 lbs., Express/Frt. **579.95**

GRA-404-25, assembled pecan Mediterranean cab. shown above (30 $\frac{3}{4}$ " H x 48 $\frac{1}{4}$ " W x 17 $\frac{3}{4}$ " D.), 87 lbs., Express/Frt. **134.95**

GRA-403-25, assembled Early American Cabinet (inset above), 75 lbs., Express/Frt. **119.95**

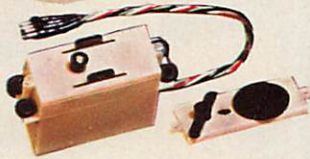
GRA-401-25, assembled Contemporary Walnut cabinet (inset above), 62 lbs., Express/Frt. **79.95**

GR-371MX SPECIFICATIONS: Viewing Area: 315 sq. in. All other specifications same as GR-370, p. 61.

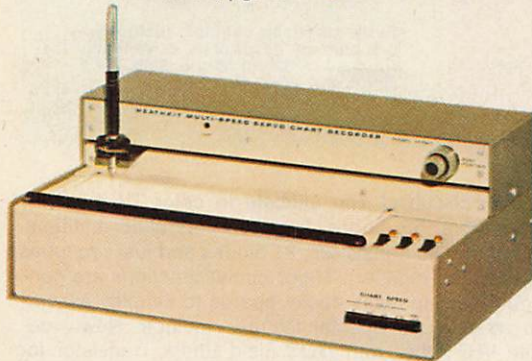
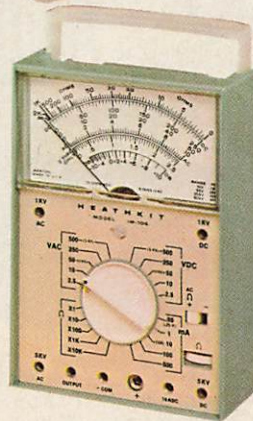
NEW under the sun from HEATH:



New compact IC Servo
for the RC modeler.
Kit GDA-19-41, pg. 9.



New portable
Volt-Ohm Meter
Kit IM-105, pg. 38.



New solid-state 12 speed 1 mV Chart
Recorder. Kit IR-18M, pg. 40.



New Heathkit 175 MHz
Scaler.
Kit IB-102, pg. 42.

HEATH COMPANY

a Schlumberger company
Benton Harbor, Michigan 49022

ADDRESS CORRECTION REQUESTED.

JOB OPPORTUNITIES AT HEATH

Electrical Engineers: for design and development in all product lines. Background should include B.S. in Electrical Engineering and solid-state circuit design experience with consumer-oriented products.

You will receive a good salary and generous fringe benefits while working in a vacation area on the eastern shore of Lake Michigan. If interested, write in confidence to Mr. Gary Kulkis, Heath Company, Benton Harbor, Michigan 49022.

All prices quoted are Mail Order, Net F.O.B. Benton Harbor, Michigan and apply to United States and Possessions only. Prices and Special Offers herein effective May 25, 1971. All prices and specifications subject to change without notice. Printed in U.S.A.

BULK RATE
U.S. POSTAGE
PAID
Heath Company

48063WBS07R115ZBEL ROC

ROGER D WEBSTER
115 BELLARMINE 1
ROCHESTER MI 48063