

Alter HERO JR's "personality" using simple 17-key keypad



Moves about and avoids obstacles while remaining in your company



Guards specific areas or your home against intruders with sensitive detectors



Wakes you up at the time you select, even allows you two 10-minute snoozes



Discover the fun and enjoyment of owning your own personal robot... HERO JR., as he entertains you, your family and friends



Meet HERO JR. — the home and personal robot with an entertaining personality

HERO JR. is fully preprogrammed with speech output, light and sound sensors, an ultrasonic sonar, drive and steering motors and an on-board computer control system.

Low kit price of
\$599⁹⁵
with voice

- Has a dynamic personality consisting of six traits
- Sing songs, tells nursery rhymes, plays games
- Performs tasks at specific times in the future
- Guards your home and challenges intruders
- Wakes you up on time and announces special dates
- Lets you modify his personality as desired
- Add capabilities with additional plug-in cartridges

Meet the first affordable, personal robot with a dynamic personality... HERO JR. A very friendly robot, HERO JR. will fit right in with your family and into your home. He sings songs, plays games, tells nursery rhymes, recites poems, guards your home and he can even wake you in the morning. Without supervision or help, HERO JR. will explore his surroundings and will seek to remain near his human companions. HERO JR.'s personality is preprogrammed and doesn't require any computer programming skills to operate.

HERO JR.'s personality consists of six individual traits. Each trait is assigned a level of priority depending on how frequently or how seldom you want each task performed. You can change the Robot's personality by simply changing the priority level of any given trait. Press the SET-UP key and select a level of activity from zero to nine for each trait. This gives you the unique capability of modifying HERO JR.'s behavior to fit any situation.

The traits comprising HERO JR.'s dynamic personality include: singing songs like "Daisy" and "America"; speaking preprogrammed English phrases; exploring and moving about, using his sensors to avoid most obstacles and seeking out humans; playing games such as "Cowboys and Robots," "Let's Count" and "Tickle Robot"; telling a nursery rhyme; and gabbing in "Roblish" (a robot gibberish that sounds like English). All routines are stored in 32K of built-in ROM. Additional functions can be easily added to HERO JR. through optional plug-in cartridges.

In addition to these six traits, HERO JR. has an internal clock with a 100-year calendar that even compensates for Daylight Savings Time (if observed in your area). With this time-keeping ability, HERO JR. can act as an alarm clock and awaken you at a specified time. After your wake-up call, the Robot listens to be sure you are awake or permits two ten-minute snoozes if you desire. You can also make HERO JR. announce the day of the week, date and time at predetermined intervals or just at one important time and date. With his on-board 2K of RAM, HERO JR. can store and then remind you of birthdays and anniversaries, or other calendar events — up to sixteen dates per year.

To see, hear and speak, and to move about; HERO JR. uses a light sensor, ultrasonic sonar and motion detector, sound detector, speech synthesizer and an internal clock which are controlled by an on-board computer using a Motorola 6808 microprocessor. The light sensor has an adjustable 256-part resolution range and a 30-degree reception angle. A Polaroid ultrasonic sonar transceiver is used for the Robot's sonar and motion detector which is accurate from four inches to 26 feet. The sound sensor has a 256-part adjustable resolution range and a 200-5000 Hz bandwidth. An optional infrared sensor easily installs to add superior heat/motion detection capability.

Show off HERO JR.'s many talents to your friends using the single-button DEMO feature. In this mode, a built-in "Robot Variety Show" demonstrates the Robot's ability to see, hear, speak, tell time and move. You can even participate in the show as HERO JR. tells you what to do and when.

HERO JR. can perform other very useful tasks, including security guard. In this mode, HERO JR. will guard your home against intruders with a coded security system. You can even leave HERO JR. in the Guard mode while you are at home. If you are detected by one of the Robot's sensors, you simply respond with the proper password when requested by the Robot. Should an intruder be detected, the Robot gives a verbal warning and requests the password. If you own the Heath GD-2800 Security System (page 20), HERO JR. can activate a GDA-2800-3 RF Security Transmitter (page 20) when it challenges someone and an incorrect password or no response is given. HERO JR. can guard a specific area or patrol randomly around the house.

HERO JR. also has another human-like characteristic, it can go to sleep. This occurs randomly as part of his personality and allows the Robot to conserve battery power by keeping only critical circuits energized. You can make HERO JR. go to sleep with the SLEEP switch or by activating the Wake-Up Alarm feature.

HERO JR. can duplicate all English sounds using its built-in Votrax SC-01 phoneme synthesizer. This permits the Robot to say just about anything. Volume and pitch

adjustments tailor the Robot's voice to whatever sounds best to you. All of HERO JR.'s vocabulary is preprogrammed for you.

Although HERO JR. normally speaks, sings and performs tasks between moving about at random, an optional wireless remote unit allows the Robot to be manually driven from place to place. HERO JR. will also speak while moving about on the remote control. Four buttons on the handheld RF remote transmitter control the Robot's forward and backward movement, stop, and left and right steering. The remote operates at 75 MHz and provides control from up to 150 feet away.

A number of easy-to-install accessories are available for HERO JR. Install the Infrared Motion Detector Accessory to improve HERO JR.'s ability to seek out humans and to detect intruders. An RS-232 Accessory allows you to program the Robot using a special BASIC language through the console of a video terminal or computer. Add two extra batteries to double HERO JR.'s operating time. And, extend HERO JR.'s capabilities even further by adding on the Cartridge Adapter Accessory. It enables you to plug in a variety of preprogrammed cartridges that expands HERO JR.'s list of routines, songs, games and phrases. Even a BASIC cartridge that will allow you to program the Robot through a home computer.

Once you understand all the facets of the Robot's personality, you can advance your skill level to that of "Robot Wizard" which permits HERO JR. to identify you by name. Other wizardry enables you to change the Robot's name, adjust the sensitivity of the light and sound sensors, and make HERO JR. measure distances and more. Learn secret passwords and become a Robot Wizard.

HERO JR. is powered by two six-volt rechargeable batteries that allow the Robot to operate from 4 to 6 hours, with an average amount of exploring. The batteries recharge overnight from a plug-in wall charger that's included with the kit. HERO JR. is 19 inches tall, weighs 21½ lbs. and can carry your favorite beverage (up to 10 pounds) on a 94 cubic inch compartment built into the top of his head. Three wheels, including a single rear drive and steering wheel, enable him to move about. HERO JR. is easily assembled in approximately twenty hours.

HERO JR. is also equipped with a 17-key keypad which permits the owner to modify the Robot's personality or initiate a special task. The alphanumeric keypad features clearly marked function keys including Sing, Play, Poet, Gab, Alarm, Guard, Help, Plan, Set Up and Enter. Eight data LEDs flash in time with his speech.

Kit RT-1, HERO JR., Shpg. wt. 32 lbs. 599.95

SAVER! Kit RTR-1-1, HERO JR. with RS-232 and Cartridge Adapter Accessories. Shpg. wt 35 lbs. 649.95

SAVER! Kit RTR-1-2, HERO JR. with Infrared Motion Detector, Remote Control, RS-232, and Cartridge Adapter Accessories, Shpg. wt. 38 lbs. 849.95

Accessory kits for HERO JR.:

RTA-1-1, Infrared Motion Detector Accessory detects rapid changes in temperature within a zoned range of approximately 35' long x 20' wide. Includes two window stickers that read "Warning, This Area Protected By A Security Robot." Shpg. wt. 1 lb. 119.95

RTA-1-2, Remote Control Accessory offers manual, wireless control of HERO JR.'s movements up to 150 feet away, operates at 75 MHz, Shpg. wt. 2 lbs. ... 179.95

RTA-1-3, RS-232 Accessory allows you to program HERO JR. in BASIC (RTC-1-8) from a terminal or computer (requires HCA-10 or HCA-11 RS-232 cable on page 95 and terminal emulation software such as CPS), Shpg. wt. 1 lb. 49.95

RTA-1-4, Two extra batteries, Shpg. wt. 5 lbs. 59.95

RTA-1-5, Cartridge Adapter, permits use of optional plug-in cartridges that increase HERO JR.'s capabilities. Includes additional 8K RAM, 1 lb. 49.95

Plug-in, preprogrammed cartridges for HERO JR. (all require the installation of the RTA-1-5 Cartridge Adapter Accessory):

RTC-1-2, Songs, Phrases and Rhymes #1 Cartridge increases HERO JR.'s vocal routines and automatically adds to the Robot's personality, 1 lb. 19.95

RTC-1-3, Animals, Blackjack and TicTacToe Cartridge enables you to play these additional games with HERO JR., Shpg. wt. 1 lb. 39.95

RTC-1-4, Special Occasions Cartridge adds songs for special occasions, includes two versions of Happy Birthday (one using master's name), Jingle Bells and Auld Lang Syne, Shpg. wt. 1 lb. 19.95

RTC-1-5, Math Master Cartridge, a timed math game, Shpg. wt. 1 lb. 24.95

RTC-1-6, Riddle Robot/Tongue Twister Cartridge, Shpg. wt. 1 lb. 24.95

RTC-1-8, HERO JR. BASIC Cartridge contains special enhancements for speech, movement, sensors and integer math; and allows the owner to write programs using a video terminal or home computer running a terminal emulation program (such as CPS), requires RTA-1-3 RS-232 port, Shpg. wt. 1 lb. 49.95

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Christmas 1984



Heathkit

Helping you make things better

HERO® JR. entertains you with a dynamic personality

More than just a robot, HERO JR. has a personality that your family is sure to enjoy. Imagine having a personal robot that wakes you up in the morning and lets you indulge in a ten minute snooze. HERO JR. sings Happy Birthday to you, plays games with the kids, guides the family through an exercise routine and guards your home from intruders. This friendly robot even has a streak of independence – it randomly explores its surroundings and may seek to remain near human companions. HERO JR. will fit right in with your family and into your home.

You don't have to do a thing to enjoy HERO JR. The robot's personality is preprogrammed and it doesn't require any programming skills to operate. All routines are stored in memory. If you do wish to program HERO JR., you can with your home computer and optional RS-232 Accessory and BASIC Cartridge.

Now someone in the family will always have the correct time. HERO JR. has an internal clock with a 100-year calendar that can compensate for Daylight Savings Time. With this time-keeping ability, HERO JR. can act as an alarm clock. After your wake up call, it listens to be sure you are awake or permits two ten minute snoozes. HERO JR. can also announce the week day, date and time at predetermined intervals or just at one important time and date. With its 8K of RAM, HERO JR. can store and remind you of events such as birthdays and anniversaries – up to 16 dates per year. You'll never be embarrassed again by missing that important date.

HERO JR. will entertain you and your friends with a "Robot Variety Show." A DEMO key activates a built-in demonstration of the robot's ability to see, hear, speak, tell time and move. You can even participate in the show. To mimic human senses and speech, HERO JR. uses a light sensor, ultrasonic sonar, sound detector, speech synthesizer and an internal clock which are controlled by an on-board computer using a Motorola 6808 microprocessor. The sonar is accurate from 4½" to 13'. An optional infrared sensor adds superior heat/motion detection in a 35' x 20' area. HERO JR. duplicates all English sounds using its Votrax SC-01 phoneme synthesizer. Volume and pitch adjustments tailor HERO JR.'s voice to your liking. All of HERO JR.'s vocabulary is preprogrammed for you.

A 19" tall security guard, HERO JR. puts its sensors and voice to work protecting your home. The robot can be used with the GDA-2800 Security System (page 26). HERO JR. gives a verbal warning and asks for a password when its sensors detect a presence. The wrong response – or no response at all – causes HERO JR. to activate the security system.

Control HERO JR. with an optional wireless remote unit. The robot can be driven from place to place and will speak while under remote control. Normally, HERO JR. speaks, sings and performs tasks between randomly moving about. The Remote Control unit operates at 75 MHz up to 100'.

HERO JR. is powered by two six-volt rechargeable batteries and plug-in wall charger (included). The robot operates about 4 hours, with a normal amount of exploring. In the SLEEP mode, HERO JR. conserves battery power by keeping only critical circuits energized. HERO JR. can carry your favorite beverage or objects up to 10 lbs. in a 94 cubic inch compartment. You can easily modify HERO JR.'s personality to initiate a task through the built-in 17-key keypad. The keypad has clearly marked function keys including Sing, Play, Poet, Gab, Alarm, Guard, Help, Plan, Setup, and Enter. Eight LED's flash in time with speech. The kit HERO JR. is easily assembled in about 20 hours.



Guards your home against intruders with infrared motion detector



Moves about and avoids obstacles while remaining in your company



Wakes you at the time you select and even allows two 10-minute snoozes



Configurations:

Kit **RT-1** HERO JR. \$299.95, ship wt 32 lbs.

Assembled **RTW-1** HERO JR. with **RTA-1-1** Infrared Motion Detector, **RTA-1-2** Remote Control, **RTA-1-3** RS-232 and **RTA-1-5** Cartridge Adapter accessories \$499.95, ship wt 33 lbs.

Assembled **RTW-1-C** HERO JR. with **RTA-1-3** RS-232 and **RTA-1-5** Cartridge Adapter accessories \$399.95, ship wt 32 lbs.

SAVER Kit **RTR-1-5** Save on a HERO JR. with Infrared Motion Detector and Cartridge Adapter accessories *Separately* \$469.95 *Our System Price* \$299.95, ship wt 56 lbs.

SAVER Save 50% on all accessories and cartridges for HERO JR. when you buy them at the same time that you purchase the **RTW-1**, **RTW-1-C** or **RTR-1-5**.

Accessories:

Kit **RTA-1-1** Infrared Motion Detector \$119.95, ship wt 1 lb.

Kit **RTA-1-2** Remote Control \$179.95, ship wt 2 lbs.

Kit **RTA-1-3** RS-232 allows you to program HERO JR. in BASIC RTC-1-8 from a terminal, or computer (requires HCA-10 or HCA-11 RS-232 cable on page 101 and terminal emulation software) \$49.95, ship wt 1 lb.

Kit **RTA-1-4** Two extra batteries for extended range \$59.95, ship wt 5 lbs.

Kit **RTA-1-5** Cartridge Adapter plug-in cartridges. Includes 8K RAM \$49.95, ship wt 1 lb.

Plug-in Cartridges: (all require installed RTA-1-5)

RTC-1-1 Trivia Quotes plays like a popular trivia game. You guess which of four people made the statement \$39.95, ship wt 1 lb.

RTC-1-2 Songs, Phrases and Rhymes increases HERO JR.'s vocal routines and automatically adds to the robot's personality \$19.95, ship wt 1 lb.

RTC-1-3 Animals, Blackjack and Tic Tac Toe enables you to play these additional games with HERO JR. \$39.95, ship wt 1 lb.

Big picture and big sound put you right in the action

You'll think you're a part of that nostalgic old western or fast-paced drag race when television breaks the confines of your old set and comes to life on this 45"-diagonal screen. And, you'll enjoy the realism of big screen viewing without crowding your living room. The GR-4500 takes no more floor space than a console TV.

A big sound system matches the big picture. The innovative Multichannel Stereo Sound System processes multichannel television sound into exciting stereo. It also processes simultaneously telecast second audio programs or mono telecasts. The stereo power amplifier has an output of 5-watts RMS per channel with a frequency response from 100 Hz to 10,000 Hz into 8 ohms with 2% or less total harmonic distortion. You also get Bass, Treble and Balance controls. 6½" round woofers and 2½" tweeters provide dramatic sound. Audio input/output jacks allow you to run the sound through your own hifi system or run other audio equipment through the television's stereo.

The remote control features Parental Control, Flashback and VCR functions. Program the TV to make selected channels accessible only by entering a secret code. Touch the Flashback button to alternate viewing between two football games, and use the remote to operate Zenith VHS recorders. Channel number and the time are displayed on the screen at the touch of a button. Scan favorite programmed channels with the Channel Up/Channel Down buttons. Quartz-controlled electronic tuning ends the need for fine-tuning adjustments and locks on to 178 channels (except scrambled premium services). Liquid-cooled CRT's and optically-coupled lenses provide exceptional picture contrast and brightness. You can more easily view the TV because the special Black Matrix screen absorbs room light to reduce glare and reflections. Use the set as a monitor for your VCR, video camera or video disk player. Conveniently switch between video services with your remote or front panel controls with the GSZ-4600 Antenna Switch (page 21).

Three times the viewing area of a standard 25" TV, big stereo sound and the latest TV technology are yours in just 20 hours of kit building. All circuit boards except one are preassembled and the GR-4500 has a built-in crosshatch generator. Includes cabinet. Kit **GR-4500** Was \$1895.00, Now Only \$1695.00, 256 lbs., Mtr. Frt.

RTC-1-4 Special Occasions adds songs for special occasions, has two versions of Happy Birthday (one using master's name) and more \$19.95, ship wt 1 lb.

RTC-1-5 Math Master timed game \$24.95, ship wt 1 lb.

RTC-1-6 Riddle Robot/Tongue Twister \$24.95, ship wt 1 lb.

RTC-1-7 Philosopher lets HERO JR. say philosophical phrases, randomly or on command \$39.95, ship wt 1 lb.

RTC-1-8 HERO JR. BASIC contains special enhancements for speech, movement, sensors and integer math; and allows the owner to write programs using a video terminal or home computer running a terminal emulation program (requires RTA-1-3 RS-232 port) \$49.95, ship wt 1 lb.

RTC-1-9 HEROBICS Exercises offer 4 levels of difficulty and 10 exercises for the family \$29.95, ship wt 1 lb.

RTC-1-10 HERO JR. Programming Language allows programming through the keyboard \$39.95, ship wt 1 lb.

RTC-1-11 Musical Chairs Cartridge allows you to play the titled game plus Acey-Ducey and Robot Mind Reader with HERO JR. \$34.95, ship wt 1 lb.



Use your Visa or MasterCard credit card to purchase your kit!



Simulated TV picture