

Sporty's
JD-100 Air-Scan
Scanner/Receiver

Operator's Manual



sporty's[®]
pilot shop

Simplified Directions

1. Install the batteries.
2. Turn the unit on (rotate volume knob clockwise).
3. Enter the first five digits of desired frequency (2 2 5 0 0 for 225.000 MHz).
4. Listen.

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General Information

Introduction

This manual contains only operational information relative to Sporty's JD-100 Air-Scan® Scanner/Receiver. This manual is not intended as a service or maintenance manual and does not contain any theory or schematic diagrams.

Features

Sporty's JD-100 is a hand-held scanner/receiver. Ideal for use at airshows or your local airport. The JD-100 is equipped with the following features:

- 1000 VHF COMM frequencies(118.000 MHz to 142.975 MHz)
- 7200 UHF COMM frequencies (220.000 MHz to 399.975 MHz)
- Back-Lit Screen
- 20 Memory Channels
- Full Feature Scanner — Scan the 20 Memory Channels or the entire frequency range
- Key Lock
- Low Battery Indicator
- External Power Option
- Key Tone Feature
- Easiest to use hand-held scanner/receiver available

Warranty

Our Limited Warranty is simple. If, in its first five years, your JD-100 Scanner/Receiver fails due to defective workmanship or parts under normal use, we will replace it or repair it at our option.

The warranty does not apply to units subject to misuse, battery leakage, neglect or accidents. Nor does the warranty apply to units damaged by lightning, excess current, moisture, units repaired or altered outside the factory, units with altered or removed serial

numbers, or units used with accessories other than those listed in the Accessories section of this manual.

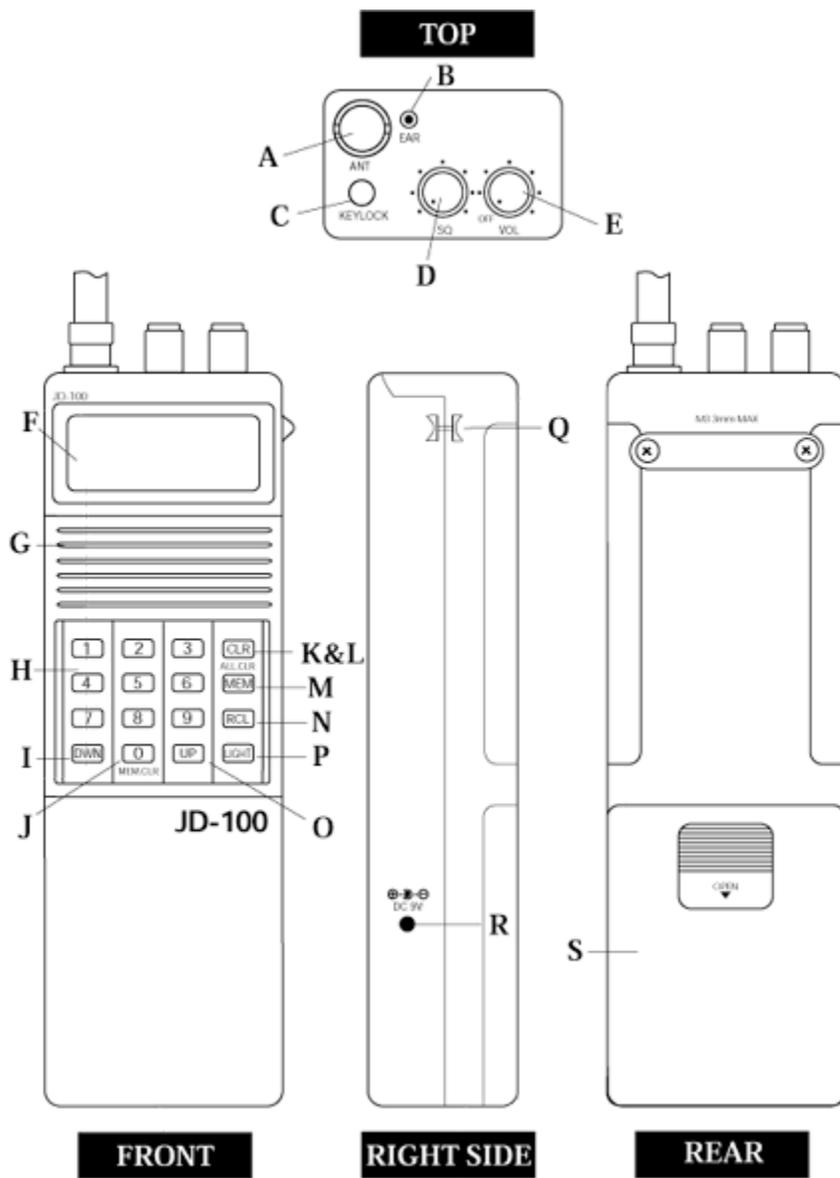
To have your unit serviced under this warranty, return it postage paid with proof of purchase to: Sporty's Pilot Shop, Clermont County Airport, Batavia, Ohio 45103-9747.

Note: When returning your unit for warranty service, do NOT include any accessories (carrying case, antenna, power adapter, etc.).

If your JD-100 is no longer under warranty, you may still have it serviced at Sporty's. Call Sporty's Customer Service at (513)735-9000 for instructions.

Precautions

- Never attempt to service this unit yourself. It should be referred to qualified service personnel. Please read the Warranty section in this manual.
- If liquid spills or some solid object falls into the unit, remove the batteries or external power adapter and have the unit checked by a qualified person before further operation.
- Never dispose of batteries in a fire. They may explode.
- Use only the approved external power adapters listed in the Accessories section of this manual.
- Do not leave the receiver near heat sources, such as radiators or air ducts, or place the receiver in an environment where the radio will be subjected to moisture, excessive dust, shock or mechanical vibration.
- Abrasive cleaners or chemical solvents may mar or damage the case. Clean the receiver with a soft cloth dampened with a mild detergent solution.
- If operating the receiver at temperatures outside the range of -14°F to 122°F (-10°C to 50°C), the LCD (screen) may not display the selected frequency. If the JD-100 is used in temperatures lower than the recommended range, the characters being displayed may change very slowly. These irregularities will disappear, with no harm to the JD-100, when operation is resumed within the recommended temperature range.



This section serves only to identify and briefly describe the JD-100's external features. Please see the Operating Instructions section for detailed instructions on the use of the JD-100.

Top View

- (A) Antenna Connector
The flexible rubber antenna is attached to this BNC connector.
- (B) Earphone Jack

A standard stereo style headphone may be plugged into this jack. The internal speaker is disabled when this jack is used.

- (C) **Key Lock**
This button is used to lock out inputs to the keyboard.
- (D) **Squelch**
Rotate clockwise to increase squelch and counterclockwise to decrease squelch.
- (E) **On/Off and Volume Control**
Combination on/off and volume control. Turn the knob clockwise from the OFF position to turn the unit on and to increase volume. Turn the knob counterclockwise to decrease volume and to turn the unit off.

Front View

- (F) **Screen**
This LCD displays the current frequency.
- (G) **Internal Speaker**
- (H) **Numeric Keypad**
These keys are used whenever the JD-100 requires a numeric input such as setting the frequency.
- (I) **Down Key**
This key is used to select the next lower frequency. It is also used to start a downward scan.
- (J) **Memory Clear Key**
This key is used to delete a selected memory channel.
- (K) **All Clear Key**
This key is used to delete all memory channels.
- (L) **Clear Key**
This key is used to clear erroneous key entries and to exit functions such as search, scan, and memory storage and recall.
- (M) **Memory Key**
This key is used to store frequencies in one of the 20 memory channels.
- (N) **Recall Key**

This key is used to recall stored frequencies from the 20 memory channels.

- (O) Up Key
This key is used to select the next higher frequency. It is also used to start an upward scan.
- (P) Light Key
This button activates the back lighting for the screen.

Right Side View

- (Q) Wrist Strap Pin
The wrist strap (included as standard equipment) attaches to this location.
- (R) External Power Jack
The JD-100 may be powered externally by plugging the optional 12/24 Volt Cigarette Lighter Power Adapter (#8634A), the 115 Volt Wall Power Adapter (#8633A), or the 230 Volt Wall Power Adapter (#8628A) into this location.

Rear View

- (S) Removable Battery Cover
To replace old batteries simply slide the cover down and remove it from the receiver. Then insert new batteries in proper position as indicated in the JD-100 battery compartment. Next replace the cover.

Manual Frequency Selection

The JD-100 will receive 1000 VHF COMM frequencies (118.000 MHz to 142.975 MHz) and 7200 UHF COMM frequencies (220.000 MHz to 399.975 MHz). The frequency currently selected is always displayed in the lower right-hand side of the JD-100's screen.

225.00

From the example above, the JD-100 is receiving 225.000 MHz. Please note the screen only displays two decimal places. If the desired frequency has a 0 or 5 in the second decimal place, such as 225.000 or 225.250, 0 is automatically selected for the third decimal place but not displayed. For these two frequencies the screen would display 225.00 and 225.25. If the desired frequency has a 2 or 7 in the second decimal place, such as 345.225 or 399.275, 5 is automatically selected for the third decimal place but not displayed. These frequencies would be displayed as 345.22 and 399.27.

To manually enter a desired frequency such as 118.700 MHz, enter 1 1 8 7 0 using the numeric keypad. As each digit is entered, the flashing cursor moves to the next digit. Five digits are always required to select a frequency. When the second decimal place is a 0, the 0 must always be entered to complete the frequency selection. That is why 118.700 MHz is selected by pressing 1 1 8 7 0 and not 1 1 8 7. The decimal is automatically placed after the third digit entered.

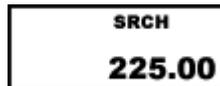
The JD-100 will return to the previous frequency if there is a pause of five seconds or more between key entries while entering a new frequency. The Clear Key may be pressed any time prior to entering the fifth digit to clear the digits entered and return to the previous frequency.

Any frequency outside of the range listed above will not be accepted. The JD-100 will beep when such a digit is entered. The unit will automatically return to its previous mode.

Frequency Search

To manually search through the frequency range (VHF and UHF), the Up Key or Down Key may be pressed at any time to select the next higher or lower frequency. The Up and Down Keys may be pressed repeatedly to continue changing the selected frequency.

To automatically search the entire COMM frequency range for a broadcasting signal, the Up Key or Down Key may be pressed and held for one second. The screen will display SRCH as seen below.



The frequencies will either scroll up or down depending upon whether the Up or Down Key was used to initiate the Search.

When a broadcasting signal is found, the JD-100 will stop temporarily on that frequency. If the broadcasting signal is cut off for more than two seconds, the Search will resume until another signal is found. When 142.975 MHz is reached during an upward Search, the Search automatically continues at 220.000 MHz. The Search continues in an upward direction until 399.975 is reached, then the Search continues at 118.000 MHz. Likewise, when 118.000 MHz is reached during a downward Search, the Search automatically continues at 399.975 MHz.

During a Search the frequency range 143.000 MHz to 219.975 MHz will not be searched.

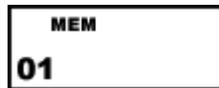
The Search may be canceled at any time by pressing the Clear Key. The direction of the Search may also be reversed at any time by pressing and holding the Up or Down Key (whichever is appropriate) for one second.

It is very important that the squelch be properly adjusted prior to initiating a Search. The background static received with the squelch off may be strong enough to disrupt a Search. If a Search gets “stuck” on a frequency with too much background noise, increase the squelch or press and hold the Up or Down Key for one second to skip that frequency and resume Searching.

Frequency Memory

The JD-100 has 20 memory channels. Memory channels contain one “P” (priority) which is the first memory channel and 19 memory channels numbered 01 to 19. These memory channels may be used to store those VHF and UHF frequencies used most often. Along with being the first memory channel, the priority channel has another convenient feature. The JD-100 will check the priority channel every 2 seconds and stay on the channel if there is activity. This feature allows you to listen to other channels and still not miss activity on your favorite frequency.

Select a desired frequency, such as 225.00, to be stored by using either manual frequency selection or frequency search. To store this frequency, press the Memory Key. The following screen will appear.



MEM
01

The first available memory channel will be displayed on the screen. In this example, memory channel 01 is the first available location, so we know a frequency is already stored in memory channel P. To store the frequency, press the Memory Key a second time.

You may also overwrite an existing memory channel or select an available memory channel other than the first one displayed. Once again, select the desired frequency and then press the Memory Key.

Now press either the Up or Down Key to scroll through the 20 memory channels. If a memory channel is already storing a frequency, the memory channel number and the stored frequency will be displayed.



MEM
02 122.70

Once the desired memory channel is selected, press the Memory Key and the frequency will be stored. If you are overwriting an existing memory channel the JD-100 will beep to let you know that a frequency is already stored there. You must push the Memory Key a second time to store the new frequency. Remember, the old frequency will be erased when your selected frequency is stored.

You may exit the memory function by pressing the Clear Key any time prior to storing the frequency (pressing the Memory Key the second time).

Memory Recall

To recall a frequency stored in a memory channel, press the Recall Key. The memory channel number or “P” and the corresponding frequency of the first memory channel that is being used will be displayed. This frequency immediately becomes the active frequency and is received by the JD-100.

01	225.00
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In this example, memory channel 01 is listed first, so we know that no frequency is currently being stored in memory channel P.

At this point you may select any stored memory channel by either pressing the Up or Down Key to scroll through the stored frequencies or by entering the memory channel number by using the Numeric Keypad. For example, to receive memory channel 08 you may either:

1. Press the Recall Key followed by the Up or Down Key to scroll to 08

or

2. Press the Recall Key followed by 0 8.

Once in the Recall function, the JD-100 stays in Recall until the Clear Key is pressed. This allows you to sequence your frequencies in the order you may wish to use them. For example, during an airshow you may wish to store the airport’s tower in memory channel P, military traffic in channel 01, civilian traffic in channel 02, and airshow control in channel 03. For this example you would press the Recall Key once followed by the Up Key for every frequency change instead of having to enter each frequency manually.

While in the Recall function the only entries accepted are Numeric Keypad entries between P and 19, the Up or Down Key or the Clear Key. All other inputs cause the JD-100 to beep. Remember, you may press the Clear Key at any time to exit the Recall function. Once you have left the Recall function, the JD-100 will remain on the last frequency that was being received.

Memory Scan

The Memory Scan function is very similar to the Search function, except it only scans those COMM frequencies stored in the memory channels. To Scan the memory channels, press the Recall Key to enter the Recall function. Then press and hold the Up or Down Key for one second to initiate either an upward or downward Scan. The word

SCAN will appear on the top of the screen and the memory channel number and frequency will be displayed on the bottom of the screen.

SCAN	
01	225.00

When a broadcasting signal is found, the JD-100 will stop temporarily on that frequency. If the broadcasting signal is cut off for more than two seconds, the Scan will resume until another signal is found.

The Scan may be canceled at any time by pressing the Clear Key. The direction of the Scan may also be reversed at any time by pressing and holding the Up or Down Key (whichever is appropriate) for one second.

Once you have pressed the Clear Key to exit a Scan, you are still in the Recall function. Press the Clear Key again to exit the Recall function. The JD-100 will remain on the last frequency received.

It is very important that the squelch be properly adjusted prior to initiating a Scan. The background static received with the squelch off may be strong enough to disrupt a Scan. If a Scan gets “stuck” on a frequency with too much background noise, increase the squelch or press and hold the Up or Down Key for one second to skip that frequency and resume Scanning.

Memory Clear

To clear or erase a memory channel, press and hold the Clear Key followed by the Memory Key. Release the keys when MEM CLR is displayed on the top line of the screen.

MEM CLR	
01	225.00

The first memory channel with a stored frequency will be displayed on the bottom of the screen. Press the Up or Down Key to scroll through the memory channels to select the memory channel to clear. Once the desired memory channel is displayed, press the Memory Clear Key (also the 0 Key on the Numeric Keypad) to clear the selected channel. Additional channels may be cleared by once again pressing the Up or Down Key to make another selection and then pressing the Memory Clear Key.

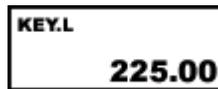
Press the Clear Key at any time to exit the Memory Clear function.

To clear every memory channel, hold down the Clear Key while turning on the power. Please note, there is no way to reverse this process. The screen will display the following to verify all of the memory channels have been cleared.

ALL MEM CLR	
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Key Lock

Inputs from the keypad may be locked out at any time by pressing and holding the Key Lock Button. The JD-100 will beep letting you know that the key lock has been activated, and KEY.L will be displayed at the Top of the screen as shown below.



Key Lock is also deactivated by pressing and holding the Key Lock Button. The JD-100 will beep when the key lock has been deactivated, and KEY.L will no longer be displayed at the Top of the screen.

Low Battery Indicator

When the batteries need replaced, BATT will be displayed at the top of the screen and the displayed frequency will flash.



Screen Lighting

Press and release the Light Button to activate the JD-100's screen lighting for five seconds. To activate the screen lighting indefinitely, press and hold the Light Button for one second until a beep is heard. When this is done, the Light Button must be pressed a second time to turn the lighting off.

Key Tone

To deactivate the key tone function of the JD-100, press and hold the CLR Key then press the 1 Key. The screen will prompt BP OFF as shown below.



To activate the key tone function, press and hold the CLR Key then press the 1 Key. The screen will prompt BP ON as shown below.



The key tone function is set in the "on" position at the factory.

Call Sporty's Pilot Shop at 1-800-LIFTOFF (543-8633) or (513)735-9000 or fax (513)735-9200 to order any of the following optional accessories.

115 Volt Wall Power Adapter (#8633A)

Allows the JD-100 to be powered externally from a 115 Volt wall outlet. Power cord measures 6 ft. long.

230 Volt Wall Power Adapter (#8628A)

Allows the JD-100 to be powered externally from a 230 Volt wall outlet. Power cord measures 6 ft. long.

12/24 Volt Power Adapter (#8634A)

Allows the JD-100 to be powered externally from a cigarette lighter in aircraft with 12, 24 or 28 Volt electrical systems (accepts input voltage of 10 to 30 Volts DC). Power cord measures 6 ft. long.

Cordura® Carrying Case (#8629A)

A handy way to keep your JD-100 dust-free and close by. Made of Du Pont Cordura® nylon. Features sewn-in sleeve with two piece closure. This allows antenna to remain connected or to be stored in sleeve. The case also includes a sewn-in belt loop for carrying convenience.

Metal Belt Clip (#3920A)

Attaches to the back of the JD-100 with screws installed in the unit as standard equipment.

Rooftop VHF Antenna (#8107A)

Includes antenna, hardware for mounting, and 50 feet of cable.

Magnetic Base Antenna (#7986A)

Includes antenna, magnetic base, and 11 feet of cable.

VHF Aircraft/Car Antenna Kit (#7995A)

Includes antenna, hardware for mounting through metal surface,

and 10 feet of cable.

General

Receive Frequencies

1000 VHF COMM Frequencies from 118.000 MHz to 142.975 MHz

7200 UHF COMM Frequencies from 220.000 MHz to 399.975 MHz

Memory Channels

20 channels numbered P to 19

Weight (including antenna)

0.79 lb (360 grams) with batteries

0.59 lb (270 grams) without batteries

Dimensions

Height 6.14 in (156 mm)

Width 2.44 in (62 mm)

Depth 1.46 in (37 mm)

Operating Temperature Range

14°F to 122°F (-10° C to 50° C)

Frequency Stability

+ 0.002% (-10° C to 50° C)

Power Supply Requirement

Alkaline battery 6.0 VDC (4 “AA” batteries x 1.5 VDC each, not included)

External 9.0 VDC (Optional Wall Power Adapter)

Receiver

Audio Output

250mW with an 8 OHMS load (within 10% distortion)

Adjacent Channel Rejection

More than -50db

Sensitivity

1.0µV for 6db SN (with 1KHz, 30% Modulation)

Selectivity

More than -60db at + 25KHz

Bandwidth

More than + 7KHz at -6db

Power Consumption

200mA (Full Volume)

60mA (Watch and Wait)