

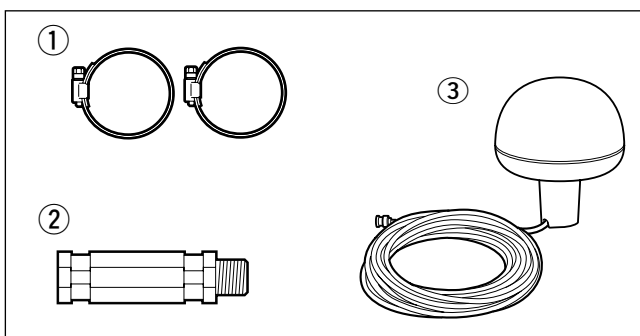
ICOM INSTRUCTION MANUAL

DIFFERENTIAL GPS BEACON RECEIVER

RD-200

Thank you for purchasing the **RD-200 DIFFERENTIAL GPS BEACON RECEIVER**. Connecting this DPGS beacon receiver to the Icom navigation systems, will permit the GPS to pinpoint the ship location more accurately. Please read these instructions thoroughly before installing and operating the RD-200.

SUPPLIED ACCESSORIES



- ① Horse band (HAS-40) 2
- ② Extension pipe (2273 pipe)..... 1
- ③ DGPS receiver..... 1

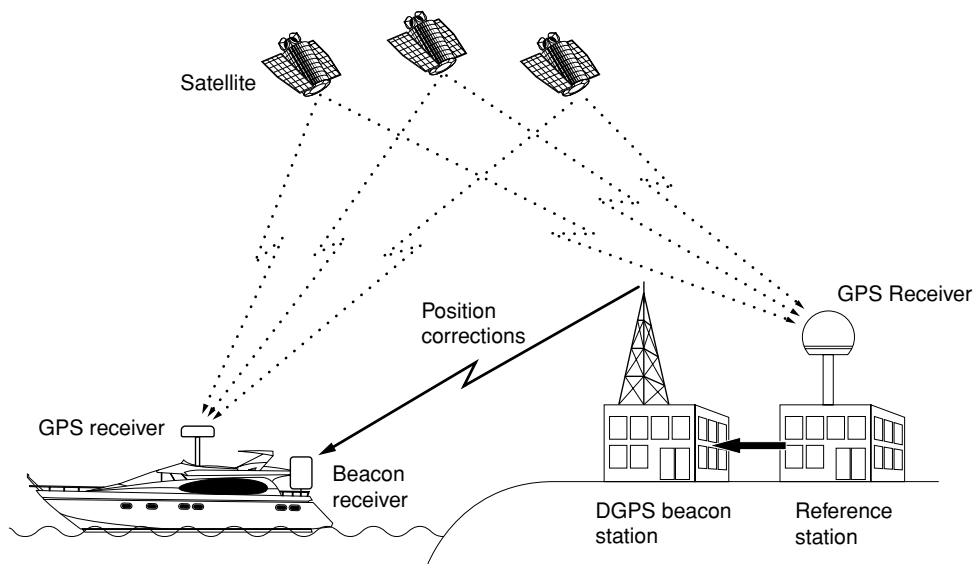
WHAT IS DIFFERENTIAL GPS ?

The Differential GPS (DGPS) is a system where the GPS positioning precision is advanced, and can be utilized efficiently for coastal maneuvers or other times where high precision positioning is vital. In order for the DGPS to be put into practice, a reference station has to be established in close proximity, and a Differential responding GPS ship navigation system (sold separately) is to be installed.

The reference station (generally a radio beacon station already established) may assign true or arbitrary position readings due to false calculations of coordinates received from the GPS receiver and coordinates that have been previously received at the reference station. In this case, correct positional data is produced and this data (RTCM SC-104) is sent out from the beacon transmitter.

For the operators, the position correction data is received at the Differential GPS beacon receiver and then transferred to the ship's navigation system. By receiving this new and correct positioning data the ship's GPS navigation system will not only decrease the number of accidental errors, but will also improve the positioning precision.

With the reference station and the remote receiver in close proximity precision is at a high level, but by increasing this distance the error count will increase. For the DGPS to coordinate correctly a distance of 100 to 200 miles is the most accurate range limit. (In reference with RTCM: Radio Technology Commission for Maritime Services).

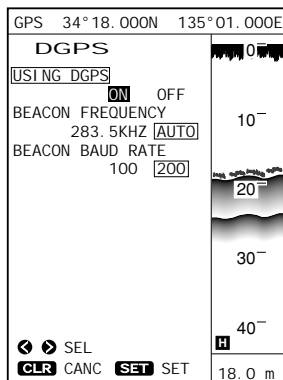


OPERATION

The DPGS is a newly established system intended to improve the positioning precision of the GPS. (Optional RD-200 is required).

This chapter describes how to correct the positioning data using DGPS data, select the beacon station, and set the baud rate. When you activate the marine plotter (e.g. Icom FP-561) either of two screens will be displayed. The Plotter screen or the Sounder screen. All functions are able to be accessed and activated from these two screens.

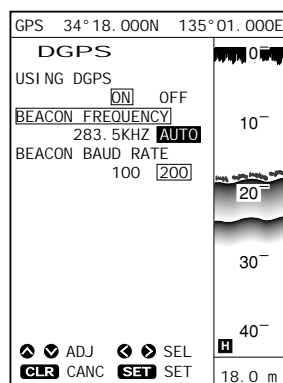
(1) Using the DGPS



Using the DPGS data allows correction of the positioning data received by the built-in GSP receiver.

- ① Press the [MENU] key.
The Main Menu screen will appear.
- ② Select "Positioning Menu" using the [UP] or [DOWN] key and press the [SET] key.
The positioning screen will appear.
- ③ Select "DGPS" using the [UP] or [DOWN] key and press the [SET] key.
The DGPS setting screen will appear.
- ④ Select "Using DGPS" using the [UP] or [DOWN] key and press the [SET] key.
The selected item turns blue.
- ⑤ Select "ON" using the [LEFT] key and press the [SET] key. (default: OFF)
The selection is now saved.
- ⑥ When you finish setting, press the [MENU] key.
You will return to the previous screen.

(2) Setting the beacon frequency and baud rate

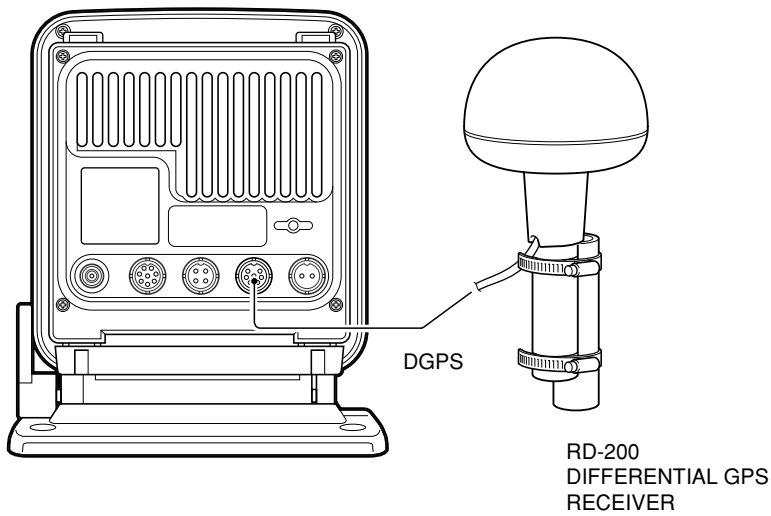


To set the beacon frequency and baud rate (transmission speed), proceed as follows.

- ① Press the [MENU] key.
The Main Menu screen will appear.
- ② Select "Positioning Menu" screen using the [UP] or [DOWN] key and press the [SET] key.
The Positioning Menu screen will appear.
- ③ Select "DGPS" using the [UP] or [DOWN] key and press the [SET] key.
The DGPS setting screen will appear.
- ④ Select "Beacon Frequency" using the [UP] or [DOWN] key and press the [SET] key.
AUTO (default) will turn yellow.
- ⑤ Select the frequency field using the [LEFT] key. (See **NOTE**)
- ⑥ Set the frequency using the [UP] or [DOWN] key and press the [SET] key.
 - Set the frequency of the beacon station nearest to the current ship position. (Refer to the supplied Beacon Station Lists.)
- ⑦ When the frequency fields have been set, select "beacon baud rate" using the [UP] or [DOWN] key and press the [SET] key.
The selected item turns blue.
- ⑧ Select "100" or "200" using the [LEFT] or [RIGHT] key and then press the [SET] key. The beacon baud rate will be set as you selected.
 - If the Frequency of the beacon station has been set manually the baud rate of the beacon station must also be entered manually. (See **NOTE**)
- ⑨ When you finish setting the beacon frequency and baud rate, press the [MENU] key.
You will return to the previous screen.

NOTE: Generally when setting the beacon frequency please select the "AUTO" option (as in step ⑤). This will automatically select the highest (closest) signal intensity to the ship's present position. If the system fails to synchronize with this beacon station for one minute, it automatically starts to search for the highest signal intensity, again.
In cases where the beacon frequency has been manually selected after referral to the supplied **BEACON STATION LIST**, ensure the corresponding baud rate is also entered. If both the beacon frequency and the baud rate are not correctly entered the position correction signal will not be received.

CONNECTION

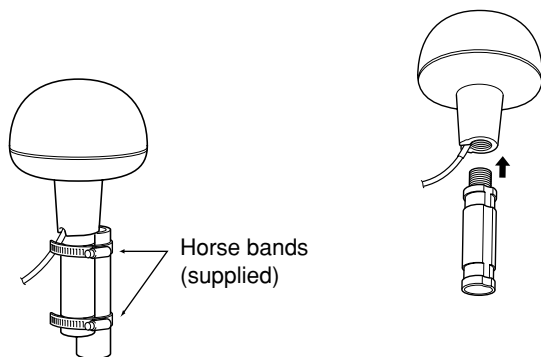


Icom MARINE PLOTTER;
e.g. FP-561

Prior to any operation it is important to make sure that all connections are performed accurately. All connections should be performed only by certified persons.

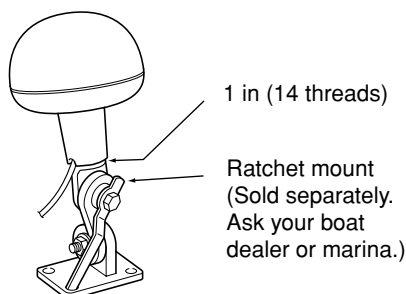
The output connector is to be connected from the RD-200 to Icom Marine Plotter DGPS data input terminal.

INSTALLATION



The supplied extended pipe is to be inserted firmly into the base of the Differential GPS Receiver and screwed in a clockwise direction.

Using the supplied Horse bands the Differential GPS receiver can be stabilized to your designated area.



As an alternative the Ratchet Mount is available (sold separately.) Insert the Ratchet mount into the base of the RD-200 and screw in a clockwise direction to a firm but loose position.

NOTE: The Ratchet mount is of a metallic property and if inserted too tightly the RD-200's output cable may be damaged or even cut. While inserting the Ratchet mount it is advised to loosely maneuver the output cable.

SPECIFICATIONS

GENERAL

- Frequency coverage : 283.5 kHz to 325.0 kHz (0.5 kHz step)
- Type of emission : 1K0F2B
- Antenna impedance : 50 ohms nominal
- Intermediate frequency : 455 kHz
- Operating temperature range : - 20 °C to +70 °C, (- 4 °F to +158 °F)
- Power supply voltage : 12 V DC nominal (negative ground)
- Current drain (max.) : 0.2 A
- Dimensions : 140 mm (D) x 157.2 mm (H) (5.5 in (D) x 6.2 in (H))
- Weight : 1.0 kg (2.2 lb)

RECEIVER

- Sensitivity : - 14 dB μ (PD)
- Spurious response : 60 dB
- Intermodulation : 50 dB

All specifications are subject to change without notice or obligation.



Versions of the RD-200 which display the "CE" symbol on the serial number seal, comply with the essential requirements of the 89/336/EEC directive for Electromagnetic Compatibility.