

# GLOBAL AT-2000

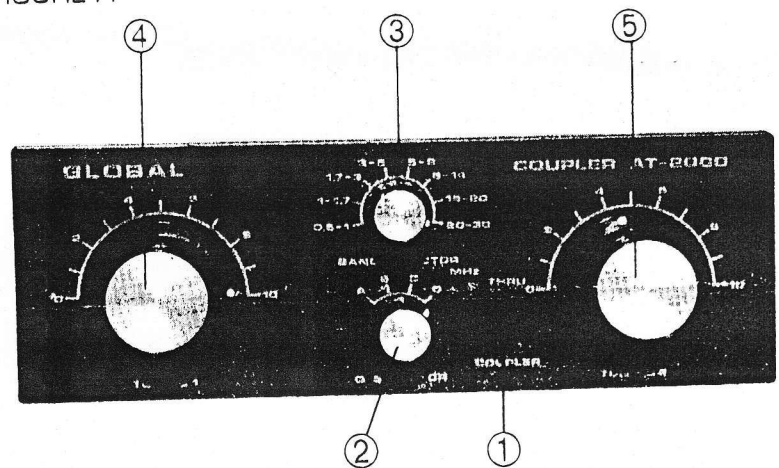
## ANTENNA TUNING UNIT FOR SHORTWAVE RECEIVER

Global produce the most popular antenna tuning units for shortwave receiver stations on the market today. In fact, they are now accepted as "Industry Standard" and feature in most serious shortwave receiving stations throughout the world. The AT-2000 is a simple, yet rugged and reliable antenna matcher of classic design which can be installed in seconds. Simply disconnect the antenna feed from your receiver and connect it to the rear of the AT-2000. Then run a lead between the AT-2000 and the receiver. No power is needed. The AT-2000 can be used to good effect on any type of received signal in any mode. This simple device will enable you to obtain the best results from your chosen receiver. When using a random length antenna a receiver needs a tuner to work to its full potential as theory tells us that we need a different length antenna for each different frequency we wish to listen to. Quite simply, the tuner corrects impedance mismatches caused by using 'incorrect' antennas and improves the signal being sent to the receiver, which is particularly important for weak signals. The AT-2000 helps improve the selectivity of the receiver by reducing the effects of interference from strong signals adjacent to the wanted signal.

### FEATURES:

- (i) Effective over a wide frequency range, medium wave and shortwave 0.5 - 30 MHz.
- (ii) Impedance matching for improved weak signal reception and maximum signal transfer.
- (iii) Improved "front end" selectivity.
- (iv) At the heart of this unit are copper coils wound onto a large 25mm bobbin giving high "Q" characteristics. This enables the unit to cover a wide range of frequencies easily and efficiently.
- (v) The coupler circuit employs a Pi-Matching system and the unit incorporates two large variable capacitors of very high quality, making it useable with any short wave receiver and any antenna.
- (vi) The "Q" selector is a unique feature only found on the AT-2000. The "Q" control's main function is to prevent cross modulation interference from adjacent strong signals that frequently occur with modern receivers. This results in lower noise levels and has the effect of increasing the front-end selectivity of the receiver, especially on the lower frequency bands. It has four switched positions. When the control is rotated fully anti-clockwise it provides the highest "Q". When it is rotated fully clockwise the control is out of circuit. As the "Q" of the AT-2000 is increased, using this control, so the selectivity will increase and the main tuning control adjustments will become more critical. There will also be a reduction in signal strength but on crowded bands, particularly at night, this will often result in the background noise being reduced and the signal will be easier to copy. The improvement in reception gained when using the AT-2000 very much depends on radio conditions at the time, and the bands being monitored.
- (vii) Can be used with coaxial feeds, long wires, tuned feeder and loop antennas.
- (viii) The AT-2000 is a passive device so no power supply is needed.
- (ix) A straight through position switch is selectable.
- (x) Compact size.

FIGURE A



### OPERATION OF AT-2000

You will soon learn how easy it is to tune radio signals for the best reception when using the AT-2000. Follow carefully the directions as listed below in conjunction with FIGURE A. First set the slide switch ① marked 'THRU' and 'COUPLER' to 'COUPLER' (the lower position). Next, set the "Q" SELECTOR knob ② to "A" initially. Turn on your receiver and dial up the first frequency that you are going to listen to. Then using the 'BAND SELECTOR' switch ③ on the AT-2000 select the range that includes the frequency displayed on your receiver. When you have done this use both hands to turn 'TUNING 1' ④ and 'TUNING 2' ⑤ knobs alternately until the signal is at its strongest. Once maximum sensitivity has been attained and because of the difference in characteristics between the widely differing variety of aerials, it is worth re-setting the 'BAND SELECTOR' knob first one step higher and then one step lower, each time re-tuning with 'TUNING 1' and 'TUNING 2' knobs alternately to see if a better signal can be obtained. Finally, try the "Q" SELECTOR in its other three positions to obtain the very best reception point. Choose the 'THRU' position on the 'COUPLER' switch only if you want to check reception without the tuner in circuit or if using an antenna for a specific band that does not require tuning.

### SPECIFICATIONS

TUNEABLE FREQUENCY RANGE	: 500 KHz - 30 MHz (IN 8 SWITCHED BANDS)
INPUT and OUTPUT IMPEDANCE	: 5 - 600 OHMS
ANTENNAS	: LONG WIRE/LOOP/COAX/TWIN FEED
CONNECTORS	: 2 x SO-239 and 4 x WIRE TERMINALS
DIMENSIONS	: 162mm WIDE x 55mm HIGH x 101mm DEEP

N.B. The unit comes complete with instruction leaflet and connecting lead.  
PL-259 50 Ohm patch lead available as an optional extra.

## CONNECTING A SHORTWAVE RECEIVER TO THE AT-2000 ANTENNA TUNING UNIT

Although connecting the AT-2000 between a shortwave receiver and an antenna is simple, please adhere to the following instructions as connection does vary for different types of antennas and receivers.

(i) (FIGURE C) When connecting the AT-2000 to a broadcast listening (BCL) type radio receiver (i.e. radio without a SO-239 antenna socket) and a long wire antenna, use the supplied connection cord to connect between the RX push terminals of the AT-2000 (FIGURE B ⑦) and the antenna terminals of the radio. The long wire antenna and earth lead connections are made to the antenna push terminals on the AT-2000 (FIGURE B ⑨). Some portable receivers accept a 3.5mm mono jack plug so a suitable lead can be used in place of the one supplied.

(ii) (FIGURE D) If using a communications type receiver (i.e. radio with a SO-239 antenna socket) and a long wire antenna, connect the receiver to the AT-2000 RX-SO-239 terminal (FIGURE B ⑥) with a patch lead using 50 Ohm co-axial cable and PL-259 plugs. The long wire antenna and earth lead connections are made to the antenna push terminals on the AT-2000 (FIGURE B ⑨).

(iii) (FIGURE E) When using a communications type receiver with a 1/2 wave di-pole or other 50 Ohm impedance antenna then connect the receiver to the AT-2000 RX SO-239 (FIGURE B ⑥) with a patch lead using 50 Ohm co-axial cable and PL-259 plugs. Then connect the antenna to the tuner using 50 Ohm co-axial cable with a PL-259 plug into the SO-239 antenna socket on the AT-2000 (FIGURE B ⑧).

(NOTE) It is important to introduce an earth into a shortwave receiving system when using a long wire antenna because a good earth effectively completes the antenna system. The current flows down the long wire into the receiver and then the circuit needs to be completed by connection to earth. Therefore, if an earth is omitted the system will not be working efficiently. If you already have an antenna earth on your receiver then this usually works best if transferred to the rear of the AT-2000 as only one antenna earth point is required. With a co-axially fed antenna the current flows from one side of the aerial down to the AT-2000 and then back up the co-axial cable to the other side of the aerial so completing the circuit.

FIGURE B

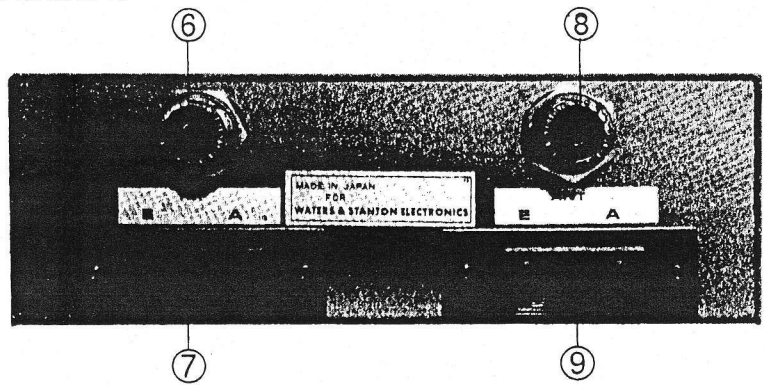


FIGURE C

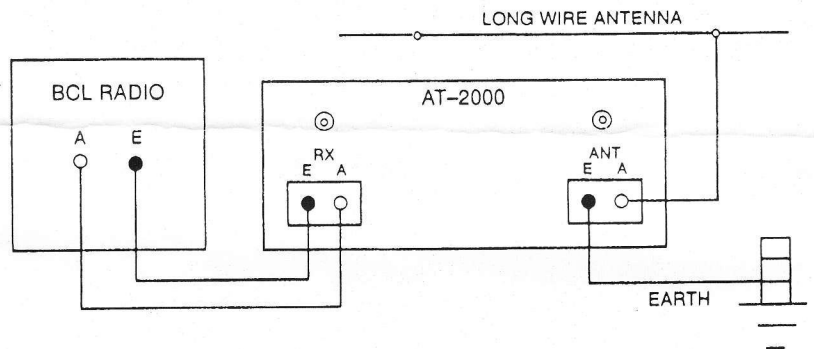


FIGURE D

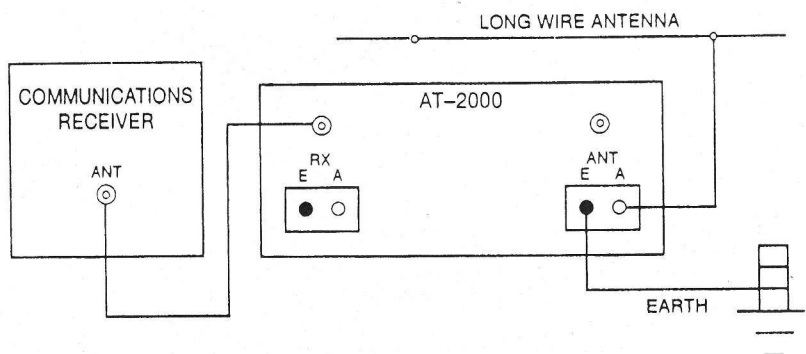
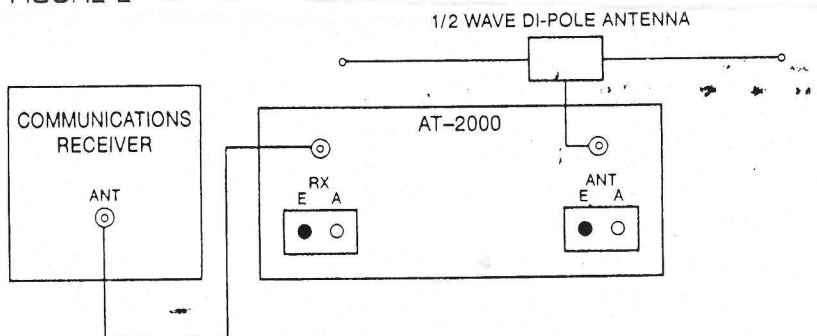


FIGURE E



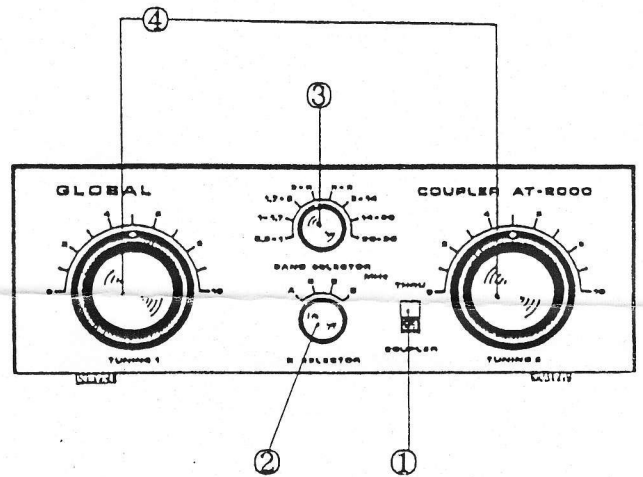
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【AT-2000の操作】

☆ AT-2000は中波帯から短波帯（0.5～30MHz）の受信用アンテナカップラーとして使えます。

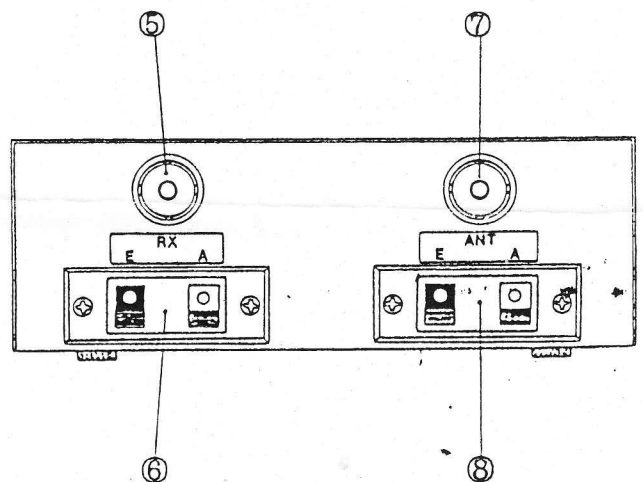
- ① スライドスイッチをカップラー側にセットします。  
（スルーにするとカップラーを通さずに直接アンテナがラジオにつながります。）
- ② Qセクターつまみは、とりあえずAにセットしておきます。
- ③ ラジオをONにしてAT-2000のバンドセクターつまみを聞きたい周波数が含まれているバンドに合わせます。（使うアンテナによっては、パネルに印刷されている周波数と実際に最高感度になる周波数が少しずれる場合があります。）
- ④ 本機のチューニングつまみの1と2を両手でつかみ交互に回して最高感度になるように合わせます。  
もし最高感度にならずに0又は10になってしまう時はバンドセクターつまみをどちらかに一段切り換えて最高感度になるように再度チューニングつまみを交互に回して下さい。



☆ ④の操作をしても良い個所が見付からない時は、さらにバンドセクターを一段切り換えてチューニングつまみを合わせたり②のQセクターつまみをB～Dに切り換えて、同様の操作を繰り返して最良点に合わせれば完了です。  
また、④の操作で良い個所があった場合でもQセクターをB～Dに切り換えることで更に良い状態になることもあります。

【リヤパネルの端子について】

- ⑤・・・通信型受信機との接続用M型接栓。
- ⑥・・・BCLラジオなどとの接続用端子。  
（M型接栓のついて無い受信機用）
- ⑦・・・同軸ケーブル給電型アンテナの接続用M型接栓。
- ⑧・・・ロングワイヤーアンテナ及び接地アース用端子。



# “GLOBAL” ANTENNA COUPLER AT-2000

## 【特長】

- 1 心臓部のコイルは中波から短波までQの高いφ25mm専用コイルを用いた本格派です。
- 2 カップラー回路はパイマッチ方式ですからどんなアンテナやラジオにも使えます。
- 3 アンテナ及び周波数の違いによる損失をさらに減らすために、より完全なマッチングがとれる4つのポジションから最良点を選べるQセレクター回路も内蔵されています。

## 【定格】

- 1 周波数範囲…………… 0.5~30MHz
- 2 バンド数 …………… 8バンド
- 3 入出力インピーダンス…… 50~600Ω
- 4 外形寸法 …………… 162 (W) × 55 (H) × 101 (D) mm

☆ 付属品として専用接続コードが付属しておりますので御確認下さい。

## 【AT-2000の接続】

本機をアンテナと受信機につなぐ場合、アンテナ形状やBCLラジオ、通信型受信機などによって接続端子が異なりますので右図を参考に接続して下さい。

### ① ロングワイヤーにBCLラジオをつなぐ時 (図-A)

付属の専用コードを使いAT-2000の(RX)プッシュターミナルとラジオのアンテナ端子をつなぎます。

### ② ロングワイヤーに通信型受信機をつなぐ時 (図-B)

M型接栓付の同軸ケーブルでAT-2000の(RX)M型端子と受信機のアンテナ端子をつなぎます。

### ③ 1/2入ダイポールに通信型受信機をつなぐ時 (図-C)

M型接栓付の同軸ケーブルでAT-2000の(RX)M型端子と受信機のアンテナ端子をつなぎ、同様にAT-2000の(ANT)M型端子にダイポールアンテナの給電線をつなぎます。

