

MFJ-941 VERSA TUNER II INSTRUCTIONS

Thank you very much for purchasing the MFJ-941 VERSA TUNER II.

GENERAL INFORMATION

The MFJ-941 is designed to match virtually any transmitter to almost any antenna, including dipoles, inverted vees, verticals, mobile whips, beams, random wires, and others fed by coax lines, balanced lines, or a single wire. This unit will handle up to 300W of RF output power from the transmitter from 160 meters through 10 meters. The MFJ-941 will monitor either SWR or RF transmitter power in two ranges, 30W or 300W. An antenna selector switch allows switching to one of three antennas. Two coax fed antennas and either a balanced line antenna or a random wire antenna can be connected to the tuner at the same time. A 1:4 balun is built in for connection to balanced lines. With the antenna switch on the bypass position and the load on the bypass antenna coax connector, the MFJ-941 can be used as a SWR meter or as a wattmeter. The wattmeter is only accurate for a 50 ohm resistive load.

THE SWR/WATTMETER

The SWR/wattmeter of the MFJ-941 can be used with the tuner or by itself. The SWR/wattmeter is between the transmitter and the tuner when the antenna switch is in the ANT. 1, ANT. 2, or WIRE/BAL position. The tuner is bypassed, but not the SWR/wattmeter, when the antenna switch is in the BYPASS position. The SWR meter is sensitive down to a 10W output. The SWR reading will not be accurate for a transmitter power of less than 10W.

To read RF transmitter output power, simply push the SWR/WATT control in and set to either 30 or 300. At position 30, the meter will read a maximum of 30W. At position 300, the meter will read a maximum of 300W.

To read SWR, turn the SWR/WATT control, with the control pushed in, for a full-scale deflection and then pull the control out for the SWR reading. NOTE: The SWR sensitivity must be reset for each power level to obtain an accurate reading.

INSTALLATION

1. Install the MFJ-941 between the transmitter and the antennas. A coax line is connected between the transmitter and the SO-239 coax connector marked TRANSMITTER on the tuner.
2. One or two coax fed antennas may be connected to the SO-239 coax connectors marked ANT. 1 and ANT. 2.
3. A random wire antenna may be connected to the five-way binding post marked WIRE. The random wire should be long, high, and as clear of surrounding objects as possible. Do not ground the random wire antenna and make sure that the tuner is well grounded to the transmitter. A five-way binding post, marked GND, is provided for ground connections.

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4. A balanced line fed antenna may be connected to the two five-way binding posts marked BALANCED LINE, along with a jumper wire from the WIRE binding post to the adjacent BALANCED LINE binding post, as indicated by a dotted line on the MFJ-941. This couples the MFJ-941 to the balanced line through a 1:4 balun. NOTE: Either a balanced line or random wire antenna can be connected at one time. If a random wire antenna is used, make sure that there is not a jumper wire between WIRE and BALANCED LINE.
5. An antenna or dummy load may be connected to the SO-239 coax connector marked BYPASS ANT. The antenna switch on the BYPASS position will bypass the tuner and allow the MFJ-941 to be used as a SWR meter or wattmeter.
6. The mobile mounting bracket may be installed, if mobile operation is desired, by first mounting the bracket to the selected location. Two #10-32 X 1/2" screws, two #10 lockwashers, and two #10 nuts are provided. Second, slide the MFJ-941 into the bracket and secure it with the four #6 X 3/8" sheet-metal screws also provided. Use one of the four flat-washers provided between the bracket and the bottom of the tuner for each of the four #6 sheet-metal screws. NOTE: Do not over-tighten the sheet-metal screws.

USING THE MFJ-941

The INDUCTANCE switch on the MFJ-941 presents a minimum of inductance at position A and a maximum of inductance at position T. Less inductance is needed at high frequencies than at low frequencies for the same impedance. The TRANSMITTER and ANTENNA controls both present a maximum of capacitance at position 1.

For optimum operation of the MFJ-941, the transmitter must be tuned for a 50 ohm output impedance for the frequency band in operation. The transmitter can be tuned with the MFJ-941 connected by connecting the 50 ohm load to the BYPASS ANT. connector and turning the antenna switch to the BYPASS position. The MFJ-941 is then used only as a SWR meter or a wattmeter. NOTE: ALWAYS tune the transmitter at a low output power.

After properly tuning the transmitter, turn the antenna switch to the desired antenna and tune the tuner for a minimum SWR as described below. Do not readjust the transmitter setting after loading it to the 50 ohm load.

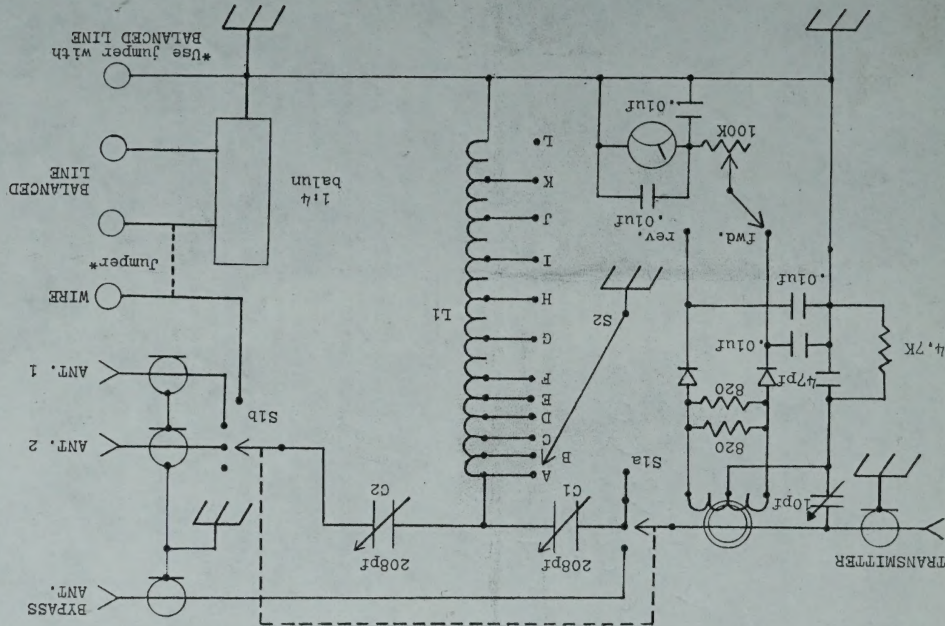
1. Set the TRANSMITTER and ANTENNA controls to 3.5.
2. (The capacitors are half-opened.) Rotate the INDUCTANCE control until maximum noise is obtained in the receiving mode.
3. With the SWR/WATT control pushed in and set at 30, set the transmitter to the tune position and transmit.
4. Turn the SWR/WATT control clockwise until a full-scale deflection is obtained. If a full-scale deflection cannot be obtained, increase the output power from the transmitter.

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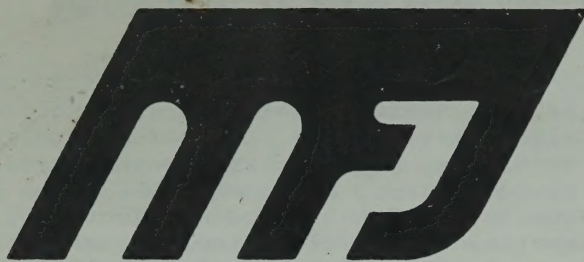
5. Pull the SWR/WATT control out for the SWR reading.
6. If the SWR is not 1:1, then tune the MFJ-941 for a minimum SWR.
7. While transmitting, and with the INDUCTION control set the same as for Step 2, alternately adjust the TRANSMITTER and ANTENNA controls for a minimum SWR. Since the TRANSMITTER and ANTENNA controls interact, the two controls can best be adjusted by turning the TRANSMITTER control at a small increment at a time and then rotating the ANTENNA control for the minimum SWR. Repeat this until a minimum SWR is obtained.
8. If a SWR reading of 1:1 is not achieved, increase or decrease the INDUCTION control one position and repeat Step 7.
- CAUTION: If arcing between capacitor plates occurs, increase or decrease the INDUCTION control one position and repeat Step 7. NOTE: If a SWR of 1:1 cannot be achieved at this point, repeat Step 7 for each INDUCTION control position.
9. Again, do this in the tune mode or at a low transmitter power. After a minimum SWR is achieved, readjust the SWR sensitivity by pushing the SWR/WATT control in and adjust for a full-scale deflection. Pull out for the SWR reading. The transmitter power may now be increased up to 300W. The SWR sensitivity must be reset again after full power is applied. The ANTENNA and TRANSMITTER controls may need fine adjustment if the SWR is not 1:1 at high power. NOTE: On the 160 meter band, excessive heating or arcing may occur. Reduce the transmitter output power until it stops.
10. To read the transmitter power, push the SWR/WATT control in and set it to either 30 or 300.
11. A SWR of 1:1 can occur from more than one set of control settings on the MFJ-941. When a SWR of 1:1 is obtained, be sure to check the transmitter power and make sure that the transmitter power is relatively high. If the transmitter power has decreased substantially, try another INDUCTION control setting and repeat Step 7.
12. When using the MFJ-941 for receiving only, tune the MFJ-941 as described in Step 1 and Step 2.

ADDITIONAL NOTES AND CAUTIONS

1. Do not use the MFJ-941 for over 300W of RF output power, even in the BYPASS position.
2. Do not operate the antenna switch while transmitting.
3. The SWR/WATT control is factory calibrated for the 300W range. Do not reset the knob on this control. However, due to component tolerance when precision reading is desired, the 30W range can be recalibrated as follows: Push the SWR/WATT control in. Set the control to 300, note the power level on the 300W scale, then rotate the control clockwise to read the same power level on 30W scale. Mark the control setting for the re-calibrated 30W range.
4. A slight SWR may be expected on 10 and 15 meters when monitored with a 50Ω dummy load.
5. The meter is sensitive to ferrous materials and may need zeroing before operation. The zero adjustment is accessed through the small hole in the front panel. The unit must be in its normal or mounted position when making this adjustment. It is usually easier to tune to a SWR of 1:1 at low frequencies than at high frequencies. It may be necessary to practice tuning at the low frequencies.
- 6.



MFJ-941 CIRCUIT DIAGRAM



MFJ VERSA TUNER II

*Mac -
884-4887*

5470

MODEL MFJ-949D OWNER'S MANUAL

CAUTION: Read All Instructions Before Operating Equipment.

MFJ ENTERPRISES, INC.

P. O. BOX 494, MISSISSIPPI STATE, MS. 39762, USA

MFJ-949D VERSA TUNER II INSTRUCTIONS

GENERAL INFORMATION

The MFJ-949D is designed to match virtually any transmitter to almost any antenna, including dipoles, inverted-vees, verticals, mobile whips, beams, random wires, and others fed by coax lines, balanced lines, or a single wire. A 4:1 balun is built-in for connection to balanced lines. An antenna-selector switch provides versatile antenna selection. A 50 ohm dummy load is built-in for easy transmitter tuning. The MFJ-949C will handle upto 300 watts of RF output power from the transmitter from 160 through 10 meters. The MFJ-949D employs a cross-needle meter so forward power, reflected power, and SWR may be read simultaneously.

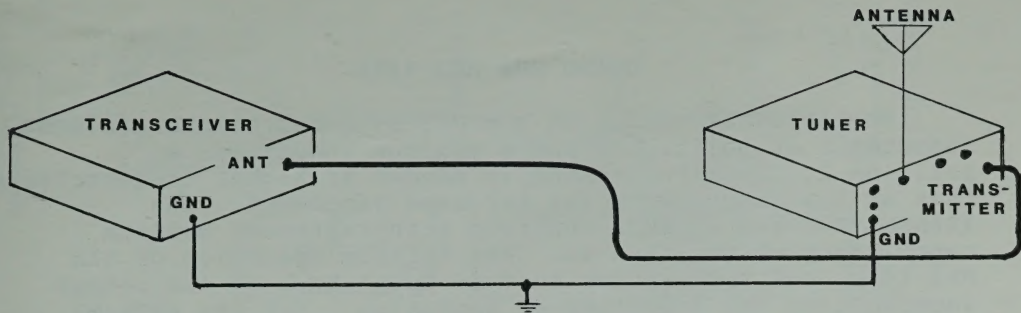
PEAK READING SWR/WATTMETER

The meter on the MFJ-949D may be used with the tuner or by itself. To use the meter without the tuner, set the ANTENNA SELECTOR to COAX 1 DIRECT or COAX 2 DIRECT. The MFJ-949D utilizes a cross-needle meter so peak or average FORWARD power, REFLECTED power and SWR may be read simultaneously in two ranges. To read FORWARD power, set the power range switch to HI(300 watts) or LO(30 watts). Next read the power level on the FORWARD SCALE. REFLECTED power is shown at the same time on the REFLECTED POWER SCALE. SWR is read by observing where the two needles cross. No SWR sensitivity adjustment is needed to read SWR. You get a peak holding average reading when you set the METER button to PEAK. Read the power level off of both scales. The HI range is 300 watts FORWARD and 60 watts REFLECTED. The LO range is 30 watts FORWARD and 6 watts REFLECTED. The difference between the HI and LO scales readings is a factor of 10.

The meter lamp can be powered by a 12V DC source, such as the optional MFJ-1312 power supply. Use a 2.5mm plug with the tip of the plug connected to the positive. The METER LAMP ON/OFF switch will activate the meter lamp.

ANTENNA SELECTOR

The ANTENNA SELECTOR switch allows selecting two coax antennas either directly or through the tuner, a balanced-line antenna, a wire antenna or a built-in 50 ohm dummy load. The 50 ohm dummy load is rated at 300 watts. Do not continuously key into the dummy load for more than 2 minutes at a time. CAUTION: DO NOT OPERATE THE ANTENNA SELECTOR SWITCH WHILE TRANSMITTING. Never use the MFJ-949D for over 300 watts of RF output power, even in the DIRECT or DUMMY LOAD positions.



INSTALLATION

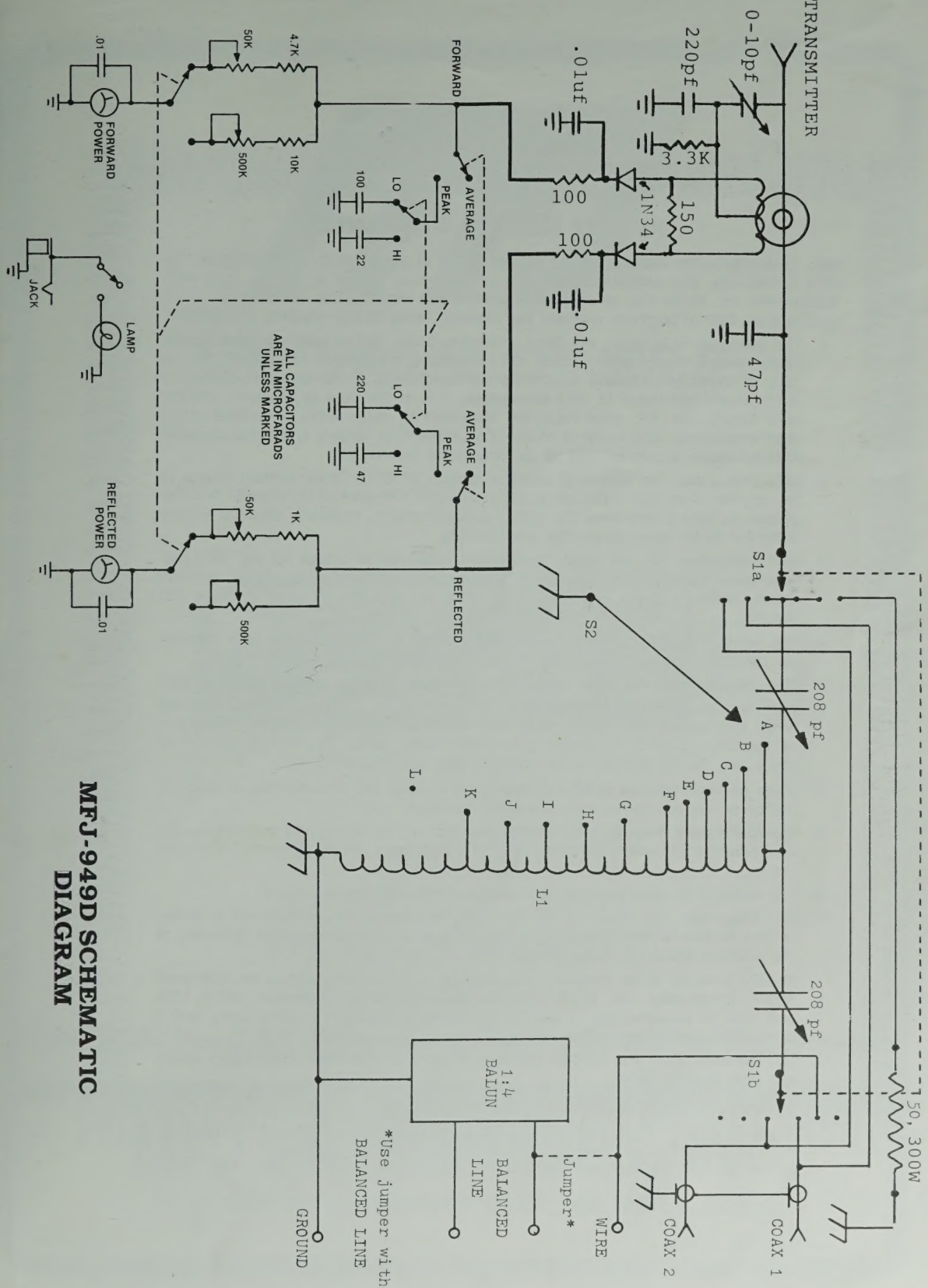
1. Locate the tuner in a convenient location at the operating position. **NOTE: LOCATE THE TUNER SO THE REAR IS NOT ACCESSABLE DURING OPERATION.** If random wire or balanced line operation is used, the ceramic feed through insulators will have high RF voltages which can cause serious RF burns if touched when transmitting.
2. Install the MFJ-949D between the transmitter and antenna as shown in the diagram above. A coax line is connected to the transmitter and the SO-239 coax connector marked TRANSMITTER on the back of the tuner.
3. One or two coax-fed antennas may be connected to the SO-239 coax connectors marked COAX 1 or COAX 2. **NOTE:** Coax 1 and Coax 2 antennas may be connected directly to the transmitter, bypassing the tuner, by setting the ANTENNA SELECTOR switch to COAX 1 DIRECT or COAX 2 DIRECT respectively.
4. A random wire antenna may be connected to the five way binding post marked WIRE. The random length wire should be long, high, and as clear of surrounding objects as possible. For optimum operation, the wire antenna should be a quarter-wavelength or longer at the operating frequency. Do NOT ground the random wire antenna. Make certain that the tuner is well-grounded to the transmitter. A binding post marked GROUND is provided for ground connection(s).
5. A balanced line fed antenna may be connected to the two five way binding posts marked BALANCED LINE. A jumper wire from the WIRE binding post, as indicated by a dotted line on the MFJ-949D, should be connected to one of the posts of the BALANCED LINE. This couples the MFJ-949D to the balanced line through a 4:1 balun. **NOTE:** Either a balanced line or a random wire antenna may be connected to the MFJ-949D at one time. If a random length wire is used, make sure that there is no jumper wire between the WIRE and BALANCED LINE binding posts.

USING THE MFJ-949D

The INDUCTOR switch on the MFJ-949D represents minimum inductance at position A and a maximum inductance at position L. Less inductance is needed at higher frequencies than at low frequencies for the same impedance. The TRANSMITTER and ANTENNA controls both represent maximum capacitance at position 10. For optimum operation of the MFJ-949D, the transmitter must be tuned to a 50 ohm output impedance at the frequency of operation. Set the ANTENNA SELECTOR switch to DUMMY LOAD for tuning up the transmitter. **NOTE:** Always tune the transmitter at a low output power.

After properly tuning the transmitter, set ANTENNA SELECTOR to the desired antenna and tune the tuner for a minimum SWR as described below. Do NOT readjust the transmitter loading control setting after loading it to the 50 ohm load.

1. Set the TRANSMITTER and ANTENNA controls to 5. The capacitors are half-opened.
2. Rotate the INDUCTOR control until maximum noise is obtained with your transceiver in the receiving mode.
3. While transmitting a steady state carrier (CW) alternately adjust "TRANSMITTER" and "ANTENNA" controls for minimum SWR. Since both controls interact, the two controls can best be adjusted by turning the TRANSMITTER control a small increment at a time, then rotating the ANTENNA control for minimum SWR. Repeat until minimum SWR is obtained.
4. If a SWR of 1:1 is not achieved, increase or decrease the INDUCTOR control and repeat Step 3. If arcing should occur between capacitor plates, increase or decrease the INDUCTOR control one position, then repeat Step 3. **NOTE:** If you can't achieve a SWR of 1:1, repeat Step 3 for each INDUCTOR control position.
5. After minimum SWR is achieved, transmitter power may be increased to 300 watts. Your VERSA TUNER II will reduce the SWR of most feed systems to 1:1. In some cases, a 1:1 SWR is not achievable. Increase or decrease the length of your antenna to improve SWR.
6. A SWR of 1:1 may occur at more than one set of control settings on your MFJ-949D. When an SWR of 1:1 is obtained, check transmitter power. Ensure that transmitter power is relatively high. If transmitter power has decreased substantially, try another INDUCTOR control setting and repeat Step 3.
7. When using the MFJ-949D for receiving only, tune the MFJ-949D as described in Step 1 and Step 2.



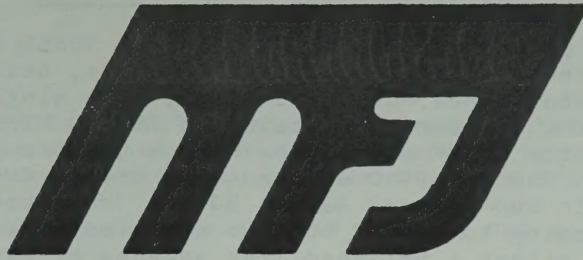
**MFJ-949D SCHEMATIC
DIAGRAM**

FULL 12 MONTHS WARRANTY

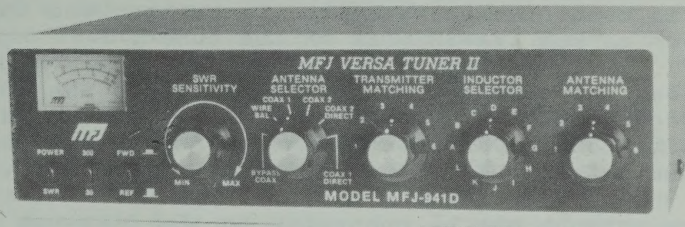
MFJ Enterprises, Inc. warrants to the original owner of this product, if manufactured by MFJ Enterprises, Inc. and purchased from an authorized dealer or directly from MFJ Enterprises, Inc. to be free of defects in material and workmanship for a period of 12 months from date of purchase provided the following terms of this warranty are satisfied.

1. The purchaser must retain the dated proof-of-purchase (bill of sale, cancelled check, credit card or money order receipt, etc.) describing the product to establish the validity of warranty claim and must submit the original or a machine-reproduction of such proof-of-purchase to MFJ Enterprises, Inc. at the time of warranty service. MFJ Enterprises, Inc. shall have the discretion to deny warranty without dated proof-of-purchase. Any evidence of alteration, erasure, or forgery of proof-of-purchase shall be cause to void any and all warranty terms immediately.
2. MFJ Enterprises, Inc. agrees to repair or replace at MFJ's option without charge to the original owner any defective product provided the product is returned postage prepaid to MFJ Enterprises, Inc. with a personal check, cashier's check or money order for \$5.00 covering postage and handling.
3. MFJ Enterprises, Inc. will supply replacement parts free of charge for any MFJ product under warranty upon request. A dated proof-of-purchase and a \$5.00 personal check, cashier's check or money order must be provided to cover postage and handling.
4. This warranty is **NOT** void for owners who attempt to repair defective units. Technical consultation is available by calling (601) 323-5869.
5. This warranty does not apply to kits sold or manufactured by MFJ Enterprises, Inc.
6. Wired and tested PC board products are covered by this warranty provided **only the wired and tested PC board is returned**. Wired and tested PC boards installed in the owner's cabinet or connected to switches, jacks, cables, etc. sent to MFJ Enterprises, Inc. will be returned at the owner's expense unrepaired.
7. Under no circumstances is MFJ Enterprises, Inc. liable for consequential damages to person or property by the use of any MFJ product.
8. **Out-of-Warranty Service:** MFJ Enterprises, Inc. will repair any out-of-warranty product provided the unit is delivered prepaid. All charges will be shipped COD to the owner.
9. This warranty is given in lieu of any other warranty express or implied.
10. MFJ Enterprises, Inc. reserves the right to make changes or improvement in design or manufacture without incurring any obligation to install such changes upon any of the products previously manufactured.
11. All MFJ products to be serviced in-warranty or out-of-warranty should be addressed to **MFJ Enterprises, Inc., 921A Louisville Road, Starkville, Mississippi 39759, USA** and must be accompanied by a letter describing the problem in detail along with a copy of your dated proof-of-purchase.
12. This warranty gives you specific rights, and you may also have other rights which vary from state to state.

554-8177



MFJ VERSA TUNER II



MODEL MFJ-941D OWNER'S MANUAL

CAUTION: Read All Instructions Before Operating Equipment.

MFJ ENTERPRISES, INC.

P. O. BOX 494, MISSISSIPPI STATE, MS. 39762, USA

MFJ-941D VERSA TUNER II INSTRUCTIONS

Thank you for purchasing the MFJ-941D VERSA TUNER II. The MFJ-941D is designed to match vees, verticals, mobile whips, beams, random wires, and others fed by coax lines, balanced lines, or a single wire. A 1:4 balun is built in for connection to balanced lines. This unit will handle up to 300 watts of RF output power from the transmitter from 160 through 10 meters. The MFJ-941D will monitor either SWR or RF transmitter power in two ranges, 30W or 300W. The antenna selector switch allows switching to one of the two coax fed antennas (direct or through tuner) and either a balanced line antenna or random wire antenna. A bypass position allows switching to a dummy load or a direct coax antenna. The tuner is bypassed but not the meter circuit when the ANTENNA SELECTOR switch is switched to BYPASS, DIRECT COAX 1, or DIRECT COAX 2 positions.

CAUTION: Do not use the MFJ-941D for over 300 watts of RF output power, even in the bypass or direct positions. Do not operate the antenna selector while transmitting.

INSTALLATION

1. Install the MFJ-941D between the transmitter and the antennas. A coax line is connected between the transmitter and the SO-239 coax connector marked TRANSMITTER on the tuner.
2. One or two coax fed antennas may be connected to the SO-239 coax connectors marked COAX 1 and COAX 2. NOTE: Coax 1 and coax 2 antennas can be connected directly to the transmitter by turning the antenna selector to COAX 1 DIRECT or COAX 2 DIRECT.
3. A random wire antenna may be connected to the five-way binding post marked WIRE. The random wire antenna should be long, high, and as clear of surrounding objects as possible. Do not ground the random wire antenna but make sure that the tuner is well grounded to the transmitter. A five-way binding post, marked GND, is provided for the ground connection.
4. A balanced line fed antenna may be connected to the two five-way binding posts marked BALANCED LINE, along with a jumper wire from the WIRE binding post to the adjacent BALANCED LINE binding post, as indicated by a dotted line on the MFJ-941D. This couples the MFJ-941D to the balanced line through a 1:4 balun. NOTE: Either a balanced line or random wire antenna can be connected at one time. If a random wire antenna is used, make sure that there is not a jumper wire between WIRE and BALANCED LINE.
5. An antenna or dummy load may be connected to the SO-239 coax connector marked BYPASS COAX. The antenna switch on the BYPASS position will bypass the tuner and allow the MFJ-941D to be used as an SWR meter or a wattmeter.

for measuring SWR. Set the transmitter to the tune position and transmit.

4. Turn the SWR SENSITIVITY control clockwise until a full-scale deflection is obtained. If a full-scale deflection cannot be obtained, increase the output power from the transmitter.
5. Set the FWD/REF switch to the REF for the SWR reading.
6. If the SWR is not 1:1, then tune the MFJ-941D for a minimum SWR.
7. While transmitting, and with the INDUCTANCE control set the same as for Step 2, alternately adjust the TRANSMITTER and ANTENNA controls for a minimum SWR. Since the TRANSMITTER and ANTENNA controls interact, the two controls can best be adjusted by turning the TRANSMITTER control at a small increment at a time and then rotating the ANTENNA control for the minimum SWR. Repeat this until a minimum SWR is obtained.
8. If a SWR reading of 1:1 is not achieved, increase or decrease the INDUCTANCE control one position and repeat STEP 7.
NOTE: If a SWR cannot be achieved at this point, repeat Step 7 for each INDUCATNCE control position. Again, do this in the tune mode or at a low transmitting power.
9. After a minimum SWR is achieved, readjust the SWR sensitivity (to get a more accurate reading of the SWR) by pushing the FWD/REF switch in to FWD and adjust the SWR SENSITIVITY control for a full scale meter deflection. Switch the FWD/REF switch to the REF position for the SWR reading. The transmitted power may now be switched to 300 watts. The SWR sensitivity must be reset again after full power is applied. The ANTENNA and TRANSMITTER controls may need fine adjustment if the SWR is not 1:1 at high power.
NOTE: On the 160 meter band, excessive heating or arching may occur. Reduce the transmitter output power until it stops.
10. To read the transmitter power, push the POWER/SWR switch in to POWER and the 300/30 watt switch to whichever power scale you want. To read reflected power, put the FWD/REF switch in the REF position.
11. A SWR of 1:1 can occur from more than one set of control settings on the MFJ-941D. When a SWR of 1:1 is obtained, be sure to check transmitter power and make sure that the transmitter power is relatively high. If the transmitter power has decreased substantially, try another INDUCTANCE control setting and repeat Step 7.
12. When using the MFJ-941D for receiving only, tune the MFJ-941D as described in Step 1 and Step 2.

THE SWR/WATTMETER

The SWR/WATTMETER of the MFJ-941D can be used with the tuner or by itself. The SWR/WATTMETER is between the transmitter and the tuner when the antenna switch is in the COAX 1, COAX 2, or WIRE/BAL positions. The SWR meter is sensitive down to approximately 5 watts RF output. The SWR reading will not be accurate for a transmitter power of less than 5 watts.

FORWARD AND REFLECTED POWER

1. Set the POWER/SWR switch to POWER.
2. Set the 300/30 watt switch for the desired range.
3. Set the FWD/REF switch in for forward, out for reflected power.
4. Transmit a steady carrier and read the power.

SWR MEASUREMENT

1. Set the POWER/SWR switch out.
2. Set the FWD/REF switch in.

NOTE: It does not matter which position the 300/30 watt switch is in for measuring SWR.

3. Transmit and adjust the SWR SENSITIVITY control for full scale reading.
4. Set the FWD/REF switch out and read the SWR.

OPERATION OF THE TUNING SECTION

The INDUCTANCE switch on the MFJ-941D presents a minimum of inductance at position "A" and a maximum of inductance at position "L". Less inductance is needed at high frequencies for the same impedance. The TRANSMITTER and ANTENNA controls both present a maximum of capacitance at position 6.

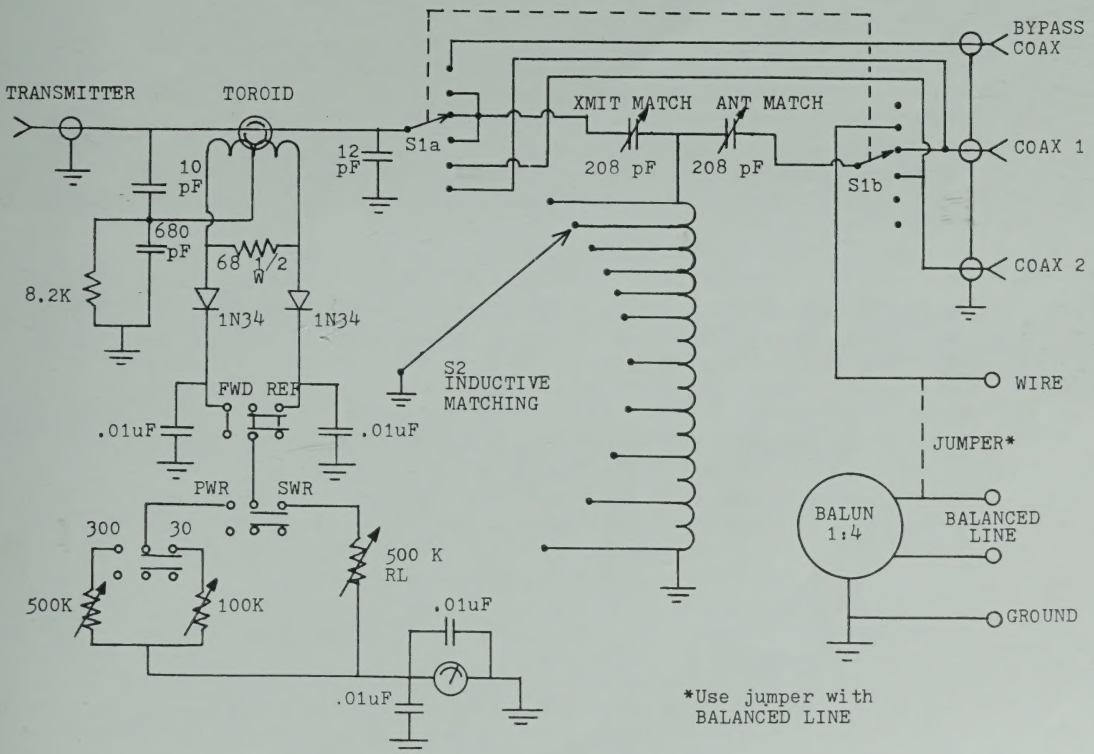
For optimum operation of the MFJ-941D, the transmitter must be tuned for a 50 ohm output impedance for the frequency band in operation. The transmitter can be tuned with the MFJ-941D connected by connecting the 50 ohm load to the BYPASS COAX connector and turning the antenna switch to the BYPASS position. The MFJ-941D is then used only as an SWR meter or a wattmeter. NOTE: Always tune the transmitter at a low output power.

After properly tuning the transmitter, turn the antenna switch to the desired antenna and tune the tuner for minimum SWR as described below. Do not readjust the transmitter setting after loading it to the 50 ohm load.

1. Set the TRANSMITTER and ANTENNA controls to 3.5. (The capacitors are half opened).
2. Rotate the INDUCTANCE control until maximum noise is obtained in the receiving mode.
3. Set the POWER/SWR switch to SWR and the FWD/REF switch to FWD. It does not matter which position the 300/30 watt switch is in

ADDITIONAL NOTES AND CAUTIONS

1. Do not use the MFJ-941D for over 300 watts of RF output power, even in the BYPASS or the DIRECT COAX positions.
2. Do not operate the antenna switch while transmitting.
3. For recalibrating the power scale settings, use the trim pots just behind the meter. Looking from the front, the left trimpot adjusts the 300 watt scale and the right adjusts the 30 watt scale.



FULL 12 MONTHS WARRANTY

MFJ Enterprises, Inc. warrants to the original owner of this product, if manufactured by MFJ Enterprises, Inc. and purchased from an authorized dealer or directly from MFJ Enterprises, Inc. to be free of defects in material and workmanship for a period of 12 months from date of purchase provided the following terms of this warranty are satisfied.

1. The purchaser must retain the dated proof-of-purchase (bill of sale, cancelled check, credit card or money order receipt, etc.) describing the product to establish the validity of warranty claim and must submit the original or a machine-reproduction of such proof-of-purchase to MFJ Enterprises, Inc. at the time of warranty service. MFJ Enterprises, Inc. shall have the discretion to deny warranty without dated proof-of-purchase. Any evidence of alteration, erasure, or forgery of proof-of-purchase shall be cause to void any and all warranty terms immediately.
2. MFJ Enterprises, Inc. agrees to repair or replace at MFJ's option without charge to the original owner any defective product provided the product is returned postage prepaid to MFJ Enterprises, Inc. with a personal check, cashier's check or money order for \$4.00 covering postage and handling.
3. MFJ Enterprises, Inc. will supply replacement parts free of charge for any MFJ product under warranty upon request. A dated proof-of-purchase and a \$4.00 personal check, cashier's check or money order must be provided to cover postage and handling.
4. This warranty is **NOT** void for owners who attempt to repair defective units. Technical consultation is available by calling (601) 323-5869.
5. This warranty does not apply to kits sold or manufactured by MFJ Enterprises, Inc.
6. Wired and tested PC board products are covered by this warranty provided **only the wired and tested PC board is returned**. Wired and tested PC boards installed in the owner's cabinet or connected to switches, jacks, cables, etc. sent to MFJ Enterprises, Inc. will be returned at the owner's expense unrepai red.
7. Under no circumstances is MFJ Enterprises, Inc. liable for consequential damages to person or property by the use of any MFJ product.
8. **Out-of-Warranty Service:** MFJ Enterprises, Inc. will repair any out-of-warranty product provided the unit is delivered prepaid. All charges will be shipped COD to the owner.
9. This warranty is given in lieu of any other warranty express or implied.
10. MFJ Enterprises, Inc. reserves the right to make changes or improvement in design or manufacture without incurring any obligation to install such changes upon any of the products previously manufactured.
11. All MFJ products to be serviced in-warranty or out-of-warranty should be addressed to **MFJ Enterprises, Inc., 921A Louisville Road, Starkville, Mississippi 39759, USA** and must be accompanied by a letter describing the problem in detail along with a copy of your dated proof-of-purchase.
12. This warranty gives you specific rights, and you may also have other rights which vary from state to state.