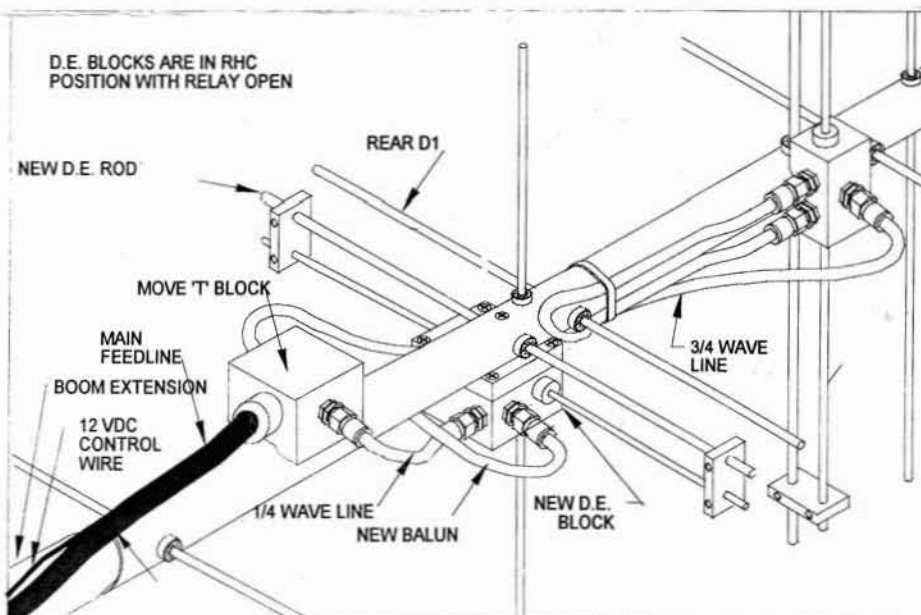
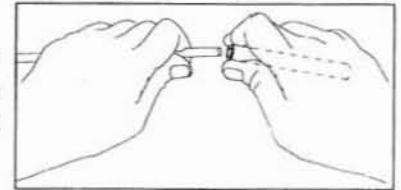


THIS SHEET IS USED ON 436CP30 AND 436CP42UG ANTENNAS

TOOL REQUIRED FOR ASSEMBLY: screwdriver and / or 11/32 nut driver or wrench, a 7/16" and 1/2" end wrench

REFER TO THE ENCLOSED DIMENSION SHEET AND NOTE ITEMS SURROUNDED BY BOXES. THE BOXES MEANS THERE IS A CHANGE TO THE ORIGINAL PART OR SOMETHING NEW HAS BEEN ADDED.

1. Loosen the set screws in the shorting bars in the rear driven element. WD40 lubricant will aid in loosening the set screws in the shorting bars if they have been in a hostile environment for some length of time. Remove the shorting bars from each side so the rear driven element can be completely removed from the antenna.
2. Cut off one element keeper and remove the original driven element rod that passes through the boom and replace it with the new correct length rod. SEE DIMENSION SHEET. Center the rod and install the keepers.
3. Cut off one element keeper from the rear REFLECTOR element and remove the element and the button insulators temporarily.
4. Remove the "T" block temporarily. Both the long and short cables on the "T" block will remain.
5. Using a .173" to .188" (3/16") diameter drill bit, drill a hole as shown 2.875 inches from the rear of the boom. This hole should be in line with the hole the rear driven element.
6. Attach the new switching rear driven element with the 8-32 x 1-1/4" screw in the forward hole. Orient the driven element so it matches the DIMENSION SHEET.
7. Re-attach the "T" block at the new hole position. the "T" block should be mounted on opposite side of the boom from the rear driven element. The driven element blocks should be mounted as shown or the RHC, default circularity may be reversed.
8. Install the new rear boom extension, align the holes, re-install the reflector element and secure with a new keeper.
9. Install the new nut seals on the 'F' connector females in the new rear driven element. Attach the new, slightly shorter 1/2 wave balun as shown. Tighten the connectors gently with a 7/16 end wrench and then finger tighten the nut seals. Use a thin 1/2" wrench to tighten the nut seals one more 3/4 turn.



10. Re-install the shorting bars on the rear driven element. Set the bars at the dimension shown on the "ANTENNA DIMENSIONS" sheet. NOTE: ON THE 436CP42UG, THE REAR DE SHORTING BARS ARE AT A DIFFERENT DIMENSION THAN THE FRONT DRIVEN ELEMENT SHORTING BARS.

11. Attach the original 1/4 wavelength RG-6U matching line to the new switching driven element and tighten connector and nut seal as noted above.

12. FOR THE 436CP42UG ONLY

Remove the REAR D1 (12.25") and replace with the 12.625" element. Center and install keepers. Remove the FRONT D1 (12.25"), trim off 1/16" inch and re-install. Center the element and install keepers.

13. Attach #22 AWG or larger wire to the feed through bypass terminal on the new D.E. block and route it to the rear. Attach MAIN FEED LINE AGAIN and secure it and the dc control wire to the NEW rear boom section. Route all cables as shown and keep them close against the boom using the cable ties provided.

TUNE UP AND OPERATION NOTES

When +12 vdc is applied to the control wire the internal coax relay switches the center conductor of the feed line from one side side of the REAR driven element to the other. This inverts the phase of the rear driven element by 180 degrees and subsequently reverses the circularity from RHC TO LHC. Because there are small lead length differences from one phase to the other, you may see a slight change in VSWR when the circularity is reversed. M² has tried to minimize this change by adjusting the rear driven element length and shorting bar position. Your system may differ slightly and you may have to adjust the shorting bars slightly. You may also note a slight overall VSWR change after you do this upgrade. This is normal but again the match change in the satellite band should be minimal and typically under 1.5:1. The change might be greater on either side of the satellite band. Again some adjustment can be done depending on what modes and frequencies you intend to use your antenna.

THIS COMPLETES THE UPGRADE

INSTALLATION TIPS

The 436CP30 and 436CP42UG are circular polarized antennas and create a field in all planes or polarities. Performance and VSWR can DETERIORATE SIGNIFICANTLY if they are mounted on a metal (conductive) mast or crossboom. A mast or crossboom of any NON-CONDUCTIVE material must be used. Fiberglass is the best choice for its strength and weather resistance. Try to keep the cable run to under 100 ft. to prevent excessive transmit power loss. Using a good low noise switching preamp at or near the antenna is highly recommended. The preamp will prevent the feedline loss from reducing your overall receive sensitivity. ARR and SSB Electronics both make good 160 watt + power handling relays. To maintain proper phasing when stacking two or more antennas, mount each with the same orientation of Driven Element Blocks. DO NOT MOUNT MIRROR IMAGE.

PART LIST FOR POLARITY SWITCH UPGRADE ON 70 CM ANTENNAS

11-29-2000

DESCRIPTION	QTY
UHF DE BLOCK ASSEMBLY W / RELAY	1
BOOM EXTENSION, 1" X 8" SOE	1
BALUN, RG-6U HALF WAVE	1
ELEMENTS, 3/16" X SEE DIMS	3
KEEPERS, 3/16" SS	6
NUT SEALS,	3
SCREW, 8-32 X 1-1/4"	1
SET SCREW, 8-32 X 1/4"	4
CABLE TIES, SMALL	4
PUSH TOOL, 3/8 X 3"	1
ALLEN WRENCH, 5/64"	1
ASSEMBLY / UPGRADE SHEET	1

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