Shively Labs®

Fine-Matching Transformer

Fine-tune your antenna for optimal performance!

The Shively fine-matching transformer is designed to compensate for VSWRs as high as 1.5:1. It comes standard on all pressurized sidemount antennas (Models 6600, 6810, 6813 and 6814) as well as on the Model 6015 panel antenna. These units have been in use worldwide for over 40 years.

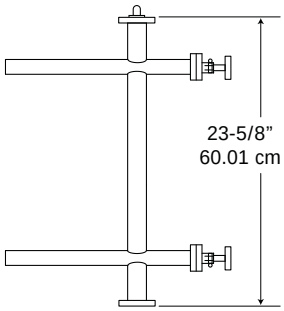
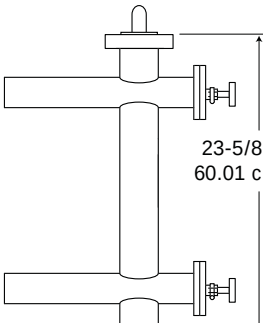
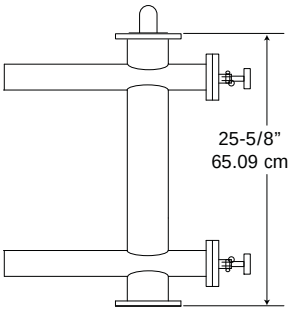
The Shively fine-matcher is a double-stub, eighth-wave-matched Pi network and uses two simple push-pull plungers for tuning. It is designed to be tuned under pressure. This allows the final tuning of the antenna system to be done after the system is cleaned, closed, purged and pressure-tight, to prevent contamination of the antenna or transmission line during final tuning.

Transformers can also be used at other points in the transmission chain to trim VSWR that cannot easily be matched out by other methods.

NOTE

Shively fine-matching transformers must be pressurized when used outdoors and in environments that are not climate-controlled. Unpressurized operation is permitted when used in clean, dry environments.

Specifications:

Part No.	53520-G503	55280-G505	89557-G501
			
Coax Size	1-5/8"	3-1/8"	4-1/16"
Input	1-5/8" EIA female	3-1/8" EIA female	4-1/16" female flange
Output	1-5/8" EIA male	3-1/8" EIA male	4-1/16" male flange
Weight	26 lb (11.8 kg)	58 lb (26.4 kg)	85 lb (38.6 kg)
Power Rating	15 kW	40 kW	80 kW

Transformer adjustment procedure

The transformer has been factory-adjusted to 50 ohms at your frequency. You will find a scribed line on each control rod shaft. It can be operated at that setting, but it will give optimal performance on your tower if you readjust it after installation.

Adjust the transformer as follows:

a. Loosen the hose clamps on the control rods enough to allow the rods to move.

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b. Grasp either control rod and slide it in or out about 1/4 inch or 6 millimeters. It will move stiffly because of O-ring friction.

c. Read the VSWR. If the reading went down, move the control rod again in the same direction. If the VSWR went up, move the same rod in the opposite direction.

d. Keep adjusting the same rod until no further improvement is seen. Adjust the second rod in the same manner. If you get "lost," return both rods to the factory setting (see table below) and start over.

e. Return to the first rod, and so forth, until you have the lowest possible VSWR or return power reading. This is the optimal transformer setting.

   VSWR at this point should be below 1.10 : 1. If it is not, call Shively Labs to help identify the problem.

f. When you have set the transformer, use a sharp point to scribe the shaft where it leaves the flange collar.

g. Record the control settings of the two control rods and file this information with this manual for future reference.

h. Tighten both hose clamps. If the clamps are left loose, vibration may change the adjustments.

Factory control rod settings

Nominal Transformer Size	Factory Control Rod Setting
1-5/8"	3-3/4" ± 1/16" (95 ± 1.5 mm)
3-1/8"	2-3/4" ± 1/16" (69 ± 1.5 mm)
4-1/16"	3-1/2" ± 1/16" (89 ± 1.5 mm)