

REVERB TANK REPLACEMENT FOR VCS3-SYNTHI AKS



Type 1 Reverb

A small low cost two spring unit,
designed for applications when price is a major factor.
Ideally suited for practice amps.

Outer channel dimensions:
9.25" Length x 3.375" Width x 1.313" Height.

The original (japanese?) reverb tanks on the Synthi's are no longer available. To replace a broken reverb tank requires using modern tanks. [Accutronics](#) in the US make a large range of tanks. The smallest they make are about 9.25" in length which is the closest to the original synthi but its not the exact same dimensions. One option is to remove the spring reverb mechanism from a new accutronics tanks and remount it in the original Synthi tank. This is not a perfect solution but it does work. It might require leaving off the lid on the original tank.

I will post more info about this and what other synthi owners have found that works, soon.

The original synthi tanks had DC input resistance about 1.8 Ohm and Output resistance of about 900 Ohm. I measured a dc resistance of about 0.8 Ohm on my original VCS3 reveb tank ..so maybe there were variations ?

The Impedance (AC resistance not to be confused with DC resistance) of the input/output coils in accutronics tanks can be found on the accutronics website. Here is the info:-

Part Numbering Specifications For the TYPE 1 Reverb

EXAMPLE: 1EB2C1B

DIGIT #1 - REVERB TYPE

1 for Type 1

DIGIT #2 - INPUT IMPEDANCE

A = 8 Ohm

B = 150 Ohm

C = 200 Ohm

D = 250 Ohm

E = 600 Ohm

F = 1475 Ohm

DIGIT #3 - OUTPUT IMPEDANCE

A = 500 Ohm

B = 2250 Ohm

C = 10000 Ohm

DIGIT #4 - DECAY TIME

1 = Short (1.2 to 2.0 sec)

2 = Medium (1.75 to 3.0 sec)

3 = Long (2.75 to 4.0 sec)

DIGIT #5 - CONNECTORS

A = Input Grounded / Output Grounded

B = Input Grounded / Output Insulated

C = Input Insulated / Output Grounded

D = Input Insulated / Output Insulated

E = No Outer Channel

DIGIT #6 - LOCKING DEVICES

1 = No Lock (locking devices are not available)

DIGIT #7 - MOUNTING PLANE

A = Horizontal Open Side Up

B = Horizontal Open Side Down

C = Vertical Connectors Up

D = Vertical Connectors Down

E = On End Input Up

F = On End Output Up

Type 8 is also the same length but with 3 springs instead of 2. This might give a more natural sounding reverb though the original synthi tanks had 2 springs.

Here is the accutronics matching chart of DC coil resistance vs AC impedance:-

Impedance @ 1KHz +/- 10%			Plastic Bobbin (Color of Coil)	DC Resistance (Ohms +/- 10%)	# of Turns	Nominal Drive Current (AC mA)
Input	Type 9 or 8 (In Ohms)	Type 4 or 1 (In Ohms)				
A	10	8	White	0.81	124	28.0
B	190	150	Black	26	538	6.5
C	240	200	Violet	27	600	5.8
D	310	250	Brown	36	688	5.0
E	800	600	Orange	58	1100	3.1
F	1925	1475	Red	200	1700	2.0
Output						
A	600	500	Green	42		
B	2575	2250	Red	200		
C	12000	10000	Yellow	800		
					Typical Decay Time	
					Short = 1.2 to 2.0 Sec	
					Medium = 1.75 to 3.0 Sec	
					Long = 2.75 to 4.0 Sec	

From the chart it looks like type BC is the 'safest' closest match. One could use a tank with smaller Output coil resistance (type A or B) with suitable series resistor added. I have used a type A input coil before without any problem. Again a small value series resistor (about 1 Ohm) could be added in series with type A input coils to make DC resistance about 1.8 Ohm.

One doesn't want too low an impedance on the input coil as this might cause the reverb driver chip MFC6070 to overheat.