

SNAZZY FX



TIDALWAVE MANUAL REV1

congratulations on the purchase of your new SNAZZY FX product!!

THE TIDAL WAVE IS A VERY POWERFUL MODULE WHICH CAN PROCESS AUDIO, WORK AS A SYNTH VOICE, CREATE HIGH FEEDBACK WAVE DESTRUCTION, PRETTY SYNTH PARTS, DEEP BASSLINES, OR ANYTHING IN BETWEEN. IF YOU ARE STILL NEW TO EURO-RACK MAKE SURE TO READ THE INSTALLATION PROCEDURES!

THIS MANUAL IS STILL EVOLVING AND AS WE HEAR FROM MORE OF YOU WE WILL BE ADDING MORE AND MORE TO THIS ORIGINAL DOCUMENT. SO IF YOU HAVE QUESTIONS PLEASE CONTACT US AT HELP@SNAZZYFX.COM

Installation:

The Snazzy FX TIDALWAVE requires +/-12V to operate. It is designed for use with the euro format modular synthesizer system (please see) http://www.doefer.de/a100_man/a100t_e.htm.

To install in your system, find space in your euro-rack synthesizer system, plug the 16pin power cable into the euro- rack style power distribution board, checking the polarity so the RED STRIPE stripe on the cable is oriented to the NEGATIVE 12 volt supply line. (LOOK FOR TEXT WHICH SAYS NEG or -v or -12)

This is USUALLY at the bottom.

Please refer to your case manufacturers' specifications for location of the negative supply.

IF IN ANY DOUBT PLEASE CONTACT YOUR DEALER!

or SNAZZY FX CONTACT HELP@SNAZZYFX.COM

REMEMBER..YOUR EURO DEALER IS THERE TO HELP YOU!



Connection Block Diagram

The diagram illustrates the signal flow and control connections between various blocks in a synthesizer:

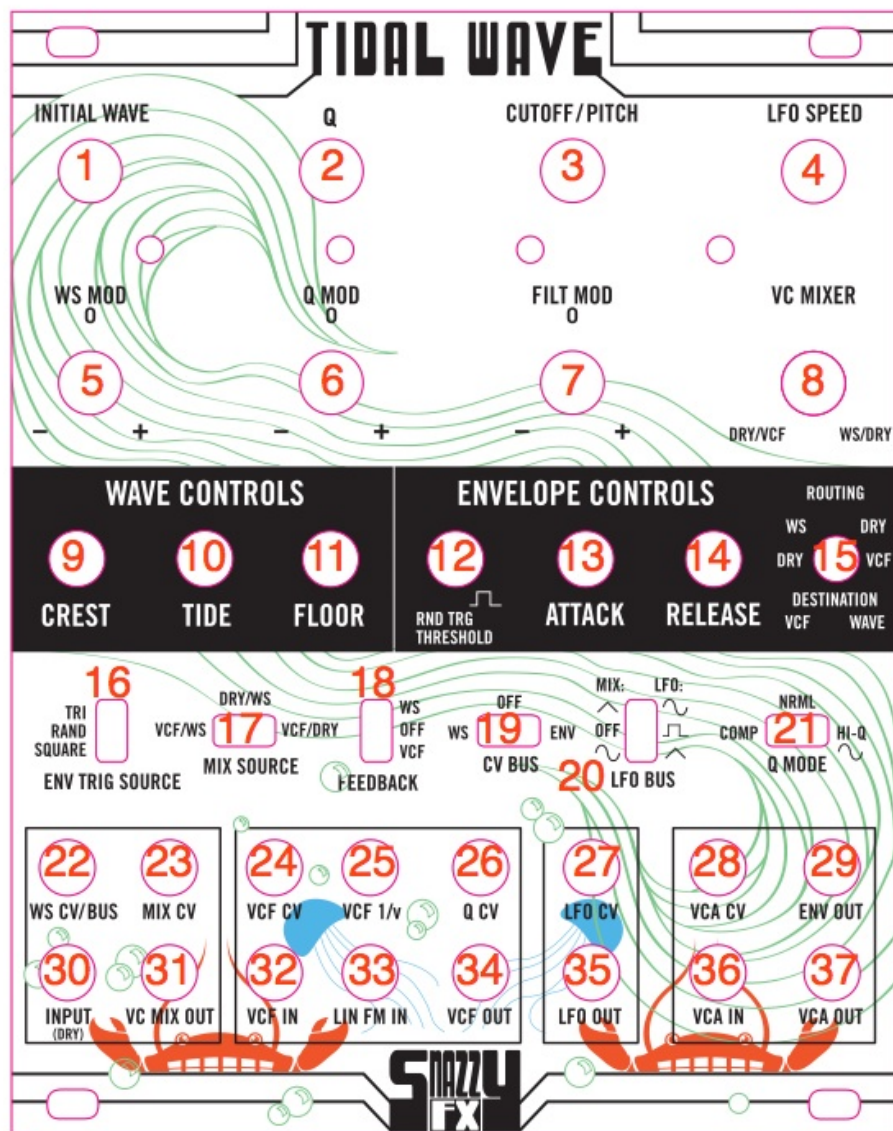
- Routing Switch**: The central control point that directs the signal to either the **WAVESHAPER BLOCK** or the **VCF/OSC** block.
- WAVESHAPER BLOCK**: Processes the signal and outputs to the **VC Mixer Switch**. It also provides a **Feedback** signal to the **VCF/OSC** block.
- VCF/OSC**: Receives the signal from the Routing Switch and outputs to the **VC Mixer Switch**. It also receives a **Feedback** signal from the **WAVESHAPER BLOCK**.
- VC Mixer Switch**: Receives signals from both the **WAVESHAPER BLOCK** and the **VCF/OSC** block. Its output is sent to the **VCA** block.
- VC MIXER**: Receives a **Normalized** signal from the **VCA** block and outputs to the **VCA** block.
- VCA** (Voltage Controlled Amplifier): Receives signals from the **VC Mixer Switch** and the **VC MIXER**. It outputs the final **OUT** signal.
- Auto Trig**: Receives triggers from the **LFO** and **Random Trigger** blocks. Its output is sent to the **A/R env** block.
- A/R env** (Attack/Release Envelope): Receives the signal from the **Auto Trig** block and outputs a **Normalized** signal to the **VCA** block.

```

graph LR
    A[WAVESHAPER OUT] --> B[FILTER BLOCK]
    B --> C[TO V.C. MIXER]
    B --> D[TO V.C.F. OUT]
    E[INPUT DRY] --> F[WAVESHAPER BLOCK]
    F --> G[TO V.C. MIXER]
    F --> H[TO FILTER INPUT]
  
```

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graph LR
    ID[INPUT DRY] --> FB[FILTER BLOCK]
    FB --> VM1[TO V.C. MIXER]
    FB --> WI[TO WAVESHAPER INPUT]
    FB --> VCFOUT[TO V.C.F. OUT]
    VCF[VCF OUT] --> WB[WAVESHAPER BLOCK]
    WB --> VM2[TO V.C. MIXER]
  
```



TIDAL WAVE CONTROLS

TOP TWO ROWS

1. **INITIAL WAVE CONTROL** (sets gain and offset of WS (waveshaper/wavefolder)
2. **Q CONTROL**- sets resonance of the VCF section/ amplitude of Sine OSCILLATOR- interacts with 21. Q mode switch. set to HI-q and turn q pot up for SINE OSCILLATOR. HIGH Q values reduce volume in NRML setting. In COMP setting, volume remains more constant at high q.
3. **CUTOFF/PITCH**- cutoff control for VCF section. Also sets Pitch when using in SINE mode with 1/v OCT jack (25. VCF 1/v)
4. **LFO SPEED**. sets initial speed of (vc) LFO. jack 27 adds pitch offset via CV
5. **WS MOD ATTENUVERTER**- SETS INTENSITY OF WS MOVEMENT. SET 1. and 9/10/11, then add more or LESS positive or negative CV with the knob (left is neg, right is pos middle is NONE)
6. **Q MOD ATTENUVERTER**- sets amount of VCF resonance modulation coming from Q cv jack or LFO BUS (which connects to WS OR ENV via CV BUS switch. (or off) When nothing is plugged into the WS CV/BUS jack, WS is normalled to connect to LFO side of LFO BUS Switch.
Q and FILT MOD are always sent the opposite side of the CV BUS SWITCH. So if you set the switch to WS, then the Q mod attenuverter knob will control the amount of ENV sent to Q depth of the VCF. (which is dependent on the attack and release and auto trig settings of the envelope section) or vice versa. DONT FORGET TO TURN THE CV BUS TO OFF when you are trying to set up the TIDAL WAVE as a more traditional SYNTH VOICE. Why? So the Envelope or LFO are not varying the Pitch (cutoff) and Amplitude (Q) of your VCF In HI-Q mode (SINE OSCILLATOR) which is feeding into your Wavefolder!!

7. FILT MOD ATTENUVERTER- Sets the amount of cutoff controlled by either the internal CV BUS or the VCF CV jack. This will effect PITCH in the HI-Q mode. Usually the CV BUS is set to OFF when the HI-Q mode is engaged FOR THE PURPOSE OF CREATING A TYPICAL SYNTH VOICE. for more esoteric effects, by all means leave all the BUSES ON and turn up all the attenuverters!!

8. VC MIXER CONTROL- This knob controls the crossfading and mixing of two signals which are setup on the LEFT and RIGHT of the control. This is used in conjunction with the MIX SOURCE (17) SWITCH to select two (phase opposed) signals which will meet and mingle in the MIDDLE of the knob. In any setting except the middle setting of LFO BUS SWITCH (20), the middle will be effected by the LFO triangle wave or Sine wave OR the MIX CV jack.

This is the knob which can bring the TIDAL WAVE Into many interesting areas of sound processing and filtering, taking advantage of comb filtering effects, and cancellation of signals.

The default is to have the MiX SOURCE SWITCH thrown all the way to the left, and then play with getting the knob so that the signals exhibit “movement” as the lfo or external CV is swept (usually slowly) This can be used in myriad ways, especially in combination with the POS and NEG cvs possible with the other attenuverters (5, 6, 7) to allow for one side of the VC MIXER to climb UP in harmonics while the other side is moving DOWN in harmonics. EXPERIMENT!!!!

TIDAL WAVE CONTROLS

WAVE CONTROLS SECTION

9. CREST

10. TIDE

11. FLOOR

These three controls in conjunction with controls 1 and 5, make up the WS (wave shaper or wave folder) section. 9/10/11 are highly interactive as well as being very sensitive to both the signal coming into the WS section AND to the initial wave setting (which is a cross between gain and offset). It is recommended to start with the 1 control at fully counterclockwise settings (fully left to around the middle) until 9 10 and 11 are set. Then try increasing the 5 control for CV modulation (movement) of the harmonics. since all the controls are interactive AND control 5 can be set negative or positive, the effects are wide ranging and THERE WILL BE SOME AREAS WHICH ARE QUIET AND

SOME AREAS WHICH ARE LOUD. IF THE SIGNAL IS TOO QUIET, ADJUST THE INITIAL WAVE CONTROL.

IT IS RECOMMENDED TO GET USED TO THE WAY THE WAVESHAPER SECTION WORKS BEFORE TURNING ON THE FEEDBACK SWITCH.

why? THE feedback switch will make it much harder to tell what the heck you are doing as everything gets thrown out the window!!

ENVELOPE CONTROLS SECTION

12. RND TRG THRESHOLD (random trigger thresh)

13. ATTACK

14. RELEASE

16. ENV TRIG SOURCE

12 13 and 14, as well as switch 16 are the internal ENVELOPE controls. Inside the Tidal Wave is a basic envelope utilizing a familiar ATTACK/ RELEASE ENVELOPE GENERATOR with a few interesting features. First off this envelope is automatically connected to the Tidal Waves Internal VCA UNLESS A CABLE IS PLUGGED INTO JACK 28. (vca Cv)

However even if you do decide to plug in an external envelope or other CV source into the VCA CV jack (which makes sense if you want to have greater control over the VCA), you can still use the TIDAL WAVE's auto triggering ENVELOPE GEN as a modulation source, both internally and via the ENV OUT JACK (29)

Basically the internal envelope is meant for those times where you want to be able to cut up

your sound (either audio your are processing THRU the TIDAL WAVE or when you are creating the signal with the SINE OSCILLATOR mode of the VCF (switch 21 set to hi q)
MIDDLE SECTION CONTINUED:

VCA AND AUTO TRIGGER MODES:

In those cases, you simply allow the VC MIXER to automatically feed its signal INTO THE VCA.

(in other words jack 31, MIX OUT is normalled to jack 36 (VCA IN) and this is always the case unless you plug an external source into the VCA)

THE TIDAL WAVE VCA will be opened and closed (your signal will be gated) based on the envelope CV which comes out of the Tidal Wave's envelope. This is also an automatic connection (which is only broken when you plug a Cv into jack 28).

So in order to hear whatever the rest of the TIDAL WAVE is doing BUT with amplitude control, simply take your OUTPUT from jack 37 (vca out)

NOW...start by setting ENV TRIG SOURCE (16) to SQUARE.

Set your LFO SPEED (4) to about 9 o'clock. Set attack (13) to zero and release (14) to about 9 o'clock. You should now hear the same signal you hear coming out of the MIX OUT jack, coming out of the VCA OUT jack EXCEPT IT WILL BE IN SHORT BURSTS that get faster or slower as you turn up or down LFO SPEED.

Trying this same setup with the switch set to TRI (triangle) will yield SIMILAR results but the rise and fall of the triangle is different than the square, so the settings and range are different as well as the results.

For a very different result, SET THE ENV TRIG SOURCE TO RAND (random)

THIS SETTING NO LONGER USES THE LFO AS ITS TRIGGER OR GATE SOURCE AND INSTEAD USES the RANDOM TRIGGER w THRESHOLD SECTION of the TIDAL WAVE.

This Setting is great for creating strange "self evolving" patches or for NON_TRADITIONAL effects. The RANDOM TRIGGER works by listening to the OUTPUT of the WS section, comparing it with the threshold value, and then processing the result to turn on the envelope.

Depending on WHERE you set the Threshold you will either get triggers or HEAR NOTHING.

Remember, in RAND MODE, triggers are only created when the Threshold is crossed.

THE SECOND LED (a GREEN LED) LIGHTS UP ON THE TIDAL WAVE EVERYTIME THE THRESHOLD IS CROSSED!!!!

15. **ROUTING SWITCH.** Please refer to the ROUTING DIAGRAM.

THIS TOGGLE SWITCH CONTROLS THE INTERNAL ROUTING/ORDER of the VCF/SINE and WS (wave folder) sections.

THIS SWITCH WILL HAVE NO EFFECT ON THE VCF IF YOU PLUG STRAIGHT INTO JACK 32 (VCF IN).

WHEN FLIPPED UP, THE WAVE SECTION IS CONNECTED DIRECTLY TO THE DRY INPUT (signal input)

THE VCF IS CONNECTED TO THE OUTPUT OF THE WAVE SECTION

however when the ROUTING SWITCH IS FLIPPED DOWN,

THE DRY SECTION FIRST CONNECTS TO THE VCF AND THEN THE VCF GOES STRAIGHT INTO THE WAVE SECTION.

THIS BOTTOM MODE IS WHAT YOU WOULD ALSO USE FOR SETTING UP THE TIDAL WAVE AS A VOICE MODULE, AS THE VCF WOULD BE SET TO THE HIGH Q MODE, a 1/v oct signal would be patched into the vcf, and then the wave folder would manipulate the sine wave, and the whole thing would go into the VCA.

SWITCHES SECTION

16. ENV TRIG SOURCE SWITCH. this selects the trigger source for the ATTACK/RELEASE env

17. MIX SOURCE SWITCH (see VC MIX diagram) this determines which signals are sent to the LEFT AND RIGHT sides of the VC MIX pot. CV or the internal LFO can sweep thru the two signals, crossfading them.

18. FEEDBACK SWITCH. DEFAULT IS OFF. see feedback diagram. BE CAREFUL WITH THIS SWITCH! The feedback can be much louder than the normal signal and can move into regions of non-linearity or instability very quickly. Very useful for creating aggressive sounds, easy to turn on and turn off very quickly.

19. CV BUS SWITCH

20. LFO BUS SWITCH

19 and 20 and JACK 22 (ws/cv bus) all interact, and all three control which CV sources are sent around the module (to the WS MOD knob, the Q mod, and the FILT mod sections AND the VC MIX section.

To disable all internal CV, simply set both switches to their middle positions (OFF) to Send the Attack Release Envelope to Q MOD, the TRIANGLE wave out of the LFO to the FILT MOD knob, and the Sine wave out of the LFO to the VC MIXER, simply set CV BUS to bottom position and LFO BUS to the LEFT position. (CV BUS SWITCH ALWAYS SENDS OPPOSITE SIDE OF SELECTION TO Q Mod and selection to FILT MOD) LFO BUS switch always sends LFO side (mix side sends selected wave to VC MIX) of switch to the NORMAL of the WS/CV BUS JACK. THIS IS HOW WE GET CVS ALL OVER THE MODULE!! IF YOU HOWEVER PLUG A CV INTO THE WS CV JACK, THEN THAT CV IS WHAT WILL BE SENT when CV BUS is set to WS.

21. Q MODE SWITCH:

Comp=Q COMPENSATION. This mode will have less volume change as Q increases good for a “softer” or more early 80s vcf sound.

NRML= regular q behavior. High Q will bring volume of signal down. More typical of earlier VCFS

HIGH-Q/SINE mode= the **SINE OSCILLATOR** mode. simply flip to the right and set Q knob to a high value and flip routing DOWN. the oscillator will be a good sine with 1/oct characteristics that then feeds into a nice CV wave shaper with the options of feedback and VCA as well as phasey effects by utilizing the VC MIXER knob!

22. WS CV/BUS JACK (CV INPUT FOR WAVE SHAPER SECTION AND FOR WS SIDE OF CV BUS SWITCH) (normals to LFO OUTPUT)

23. MIX CV JACK (CV INPUT FOR VC MIXER WHICH OVER-RIDES THE CV CONNECTED TO THE VC MIXER FROM THE MIX SIDE OF THE LFO SWITCH)

24. VCF CV JACK (EXPO CV INPUT FOR VCF WHICH CONNECTS DIRECTLY TO THE FILT MOD ATTENUVERTER (over-riding the CV BUS)

25. VCF 1/V (CONNECT KEYBOARD OR SEQUENCER VOLTAGES HERE)
DOES NOT EFFECT FILT MOD KNOB OR CV BUS.

26. Q CV JACK (CONNECTS AN EXTERNAL CV DIRECTLY TO THE Q MOD KNOB-over-rides CV BUS)

27. LFO CV JACK (adds speed offset to LFO SPEED KNOB)

28. VCA CV JACK (allows VCA to be externally OPENED AND CLOSED from an external envelope) (internal envelope can still be used for modulation)

29. ENV OUT JACK (allows TIDAL WAVE A/R ENV TO BE USED EXTERNALLY)

30. INPUT/DRY (MAIN SIGNAL INPUT) connects to DRY of ROUTING SWITCH. and DRY of MIX SOURCE.

31. VC MIX OUT (output of VC MIXER) normals to VCA IN.

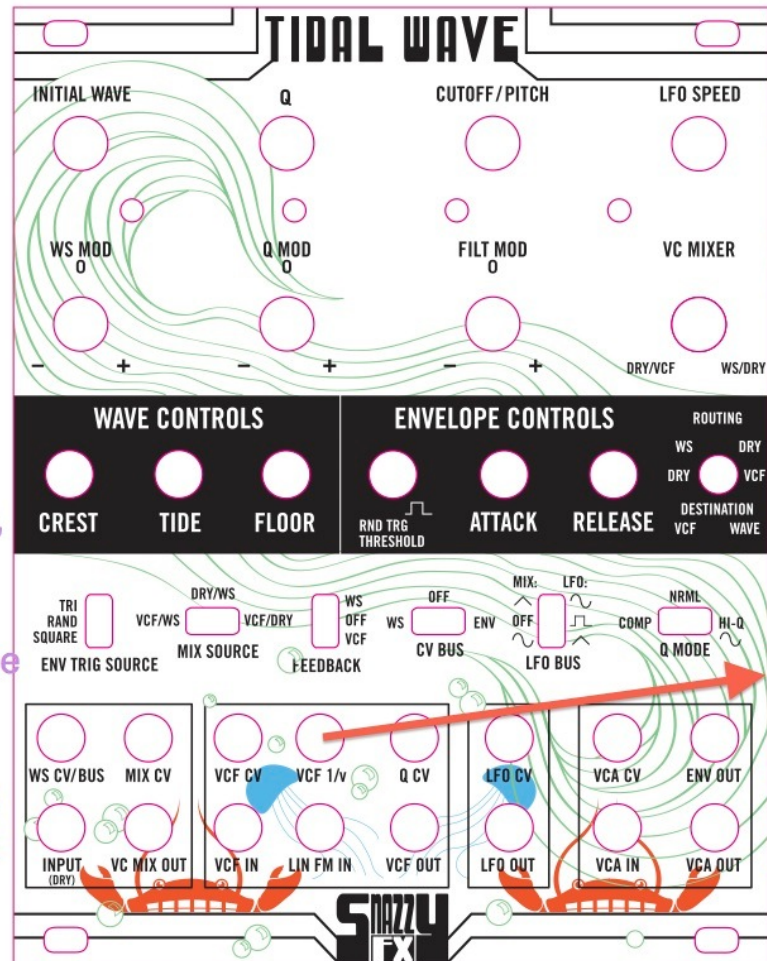
32. VCF INPUT (direct input to VCF..bypasses routing switch) NORMALS TO ROUTING SWITCH OUTPUT. (dry or WS out)

33. LIN FM INPUT (LIN CV MODULATION OF VCF)

- 34. **VCF OUT** (can be used as a separate out if VCF is used separately)
- 35. **LFO OUT** (connects to LFO: SIDE of LFO BUS switch)
- 36. **VCA IN** (allows for external Input to VCA) normals to VC MIX OUT
- 37. **VCA OUT** (allows for separate use of VCA with in and out jacks)

one useful feature of the TIDAL WAVE CV routing is that the CV BUS switch always provides a different modulation source for Q MOD then it does for FILT MOD.

So think of it this way: If you select ENV(a/r) with the CV BUS switch, then the opposite (WS) (jack/normalled LFO) will be routed to the Q MOD pot. IF YOU SELECT OFF, FILT MOD AND Q MOD POTS WILL NOT HAVE CV SIGNALS UNLESS YOU CONNECT CV DIRECTLY TO THE Q CV AND VCF CV JACKS



CV BUS switch always sends one signal to the FILT MOD POT and its opposite to the Q MOD POT.

VCF 1/V (volt per octave) JACK CONNECTS DIRECTLY TO VCF(SINE OSC) .

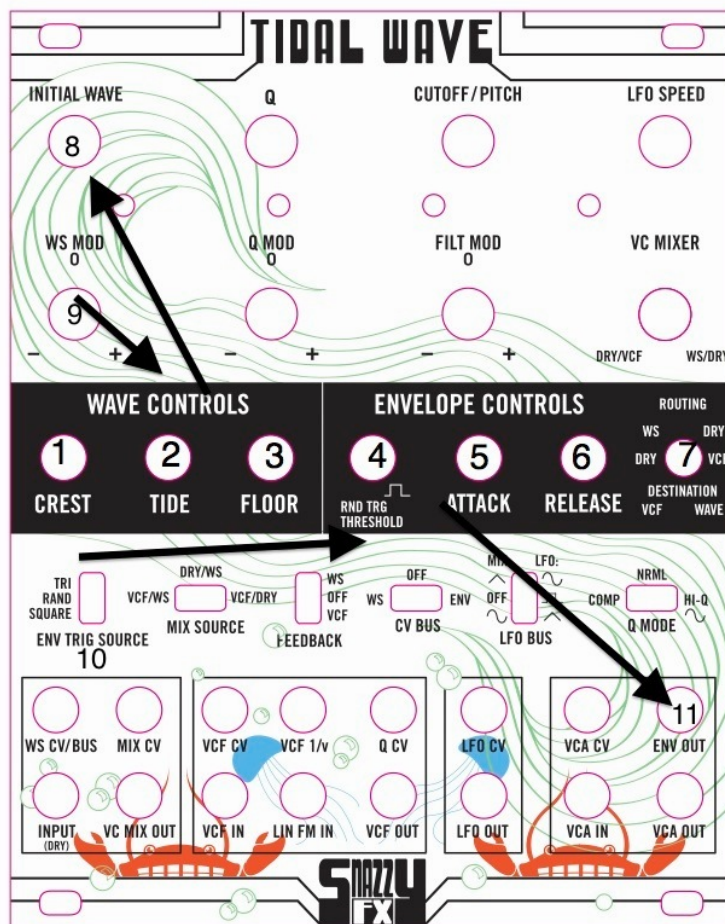
IT IS NOT connected to the bus or attenuverters.

use VCF 1/V jack for SYNTH VOICE MODE (routing sw down OR 1/v per oct FILTER TRACKING

WAVESHAPER (WS) CONTROLS / wavefolder

WAVE CONTROLS

1.crest 2. Tide. 3. Floor
all three knobs effect the shape of the wave and are highly interactive. Start with Initial Wave (8) turned to the left, and WS mod (9) in the middle (zero modulation) then adjust 1,2, and 3 to morph wave, turning 8 to change offset and gain, then add CV with knob 9 to add "movement" of harmonics. works best with saws, sines and triangles. (or with sine in BOTTOM routing mode)



ROUTING SWITCH

ENVELOPE CONTROLS

ATTACK/RELEASE ENV

4. random trigger threshold. sets RAND triggers when 10 is set to middle.

5. attack control

6. release control

11. envelope out jack.

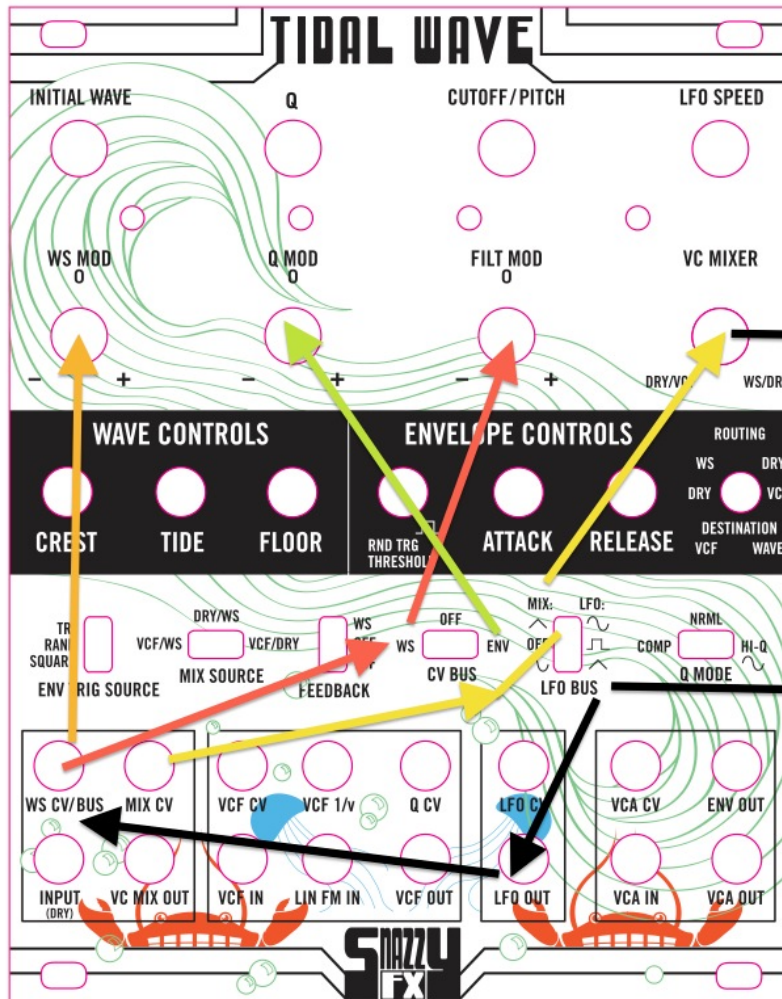
10. ENV TRIG SOURCE: this switch determines what will cause the envelope to fire.
TRI=triangle wave from LFO
RAND=random triggers set by threshold (4) pot
this mode listens WS out
SQUARE=square from Lfo

7=ROUTING MODE SWITCH

top=audio processor (signal into wavefolder first then into vcf.

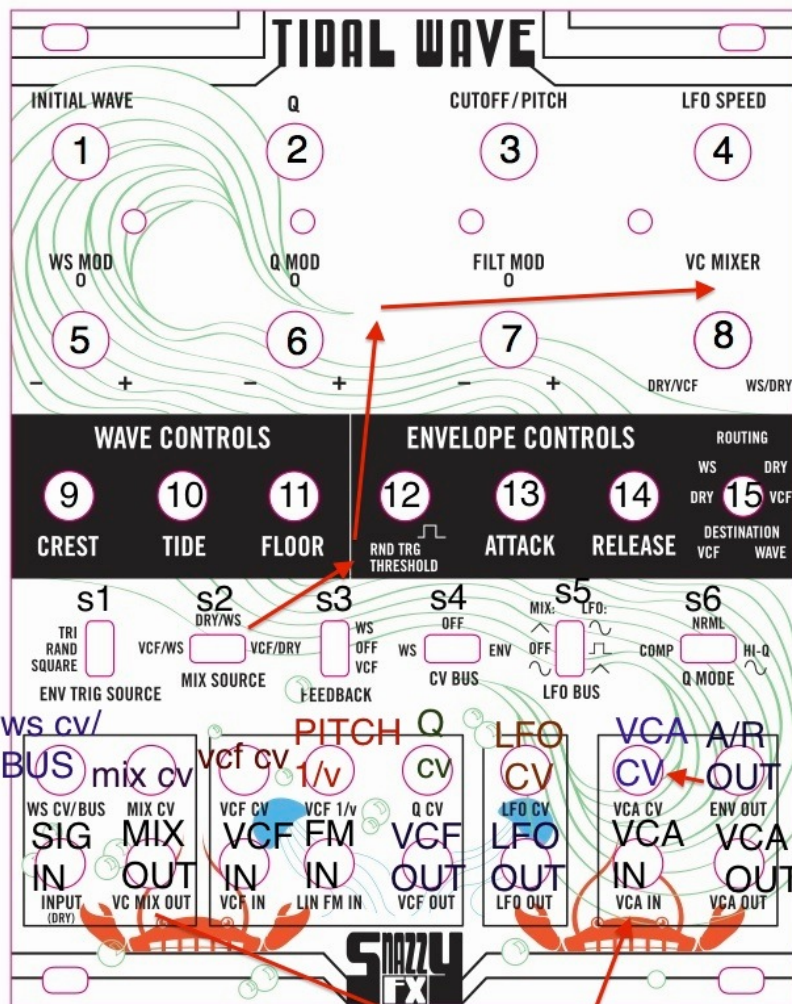
bottom=sine osc first then into wavefolder. OR signal into VCF first then into wavefolder

LFO/ENV/CV ROUTING



VC MIXER always gets left (MIX) side of LFO BUS switch. UNLESS you plug a cable into MIX CV input.

LFO BUS sends LFO out(sine/sqr/tri) to LFO OUT jack. LFO out is normalled to WS CV (in) jack so with no WS CV plugged in, LFO gets sent to WS MOD pot and CV BUS.



mix source switch
sets L and R sources of
VC MIXER

VC MIX OUT
normals to VCA IN

MIX SOURCE SWITCH

1	2	3
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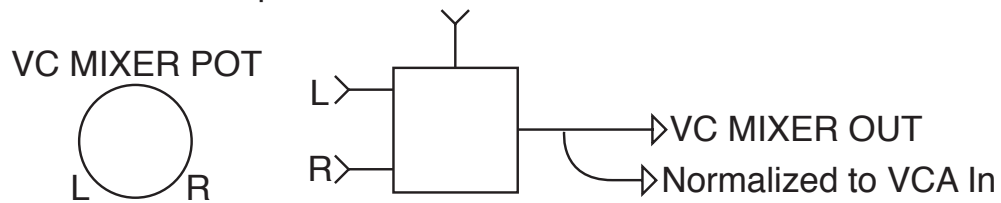
1 VCF Left, WS Right

2 Dry Signal Left, WS Right

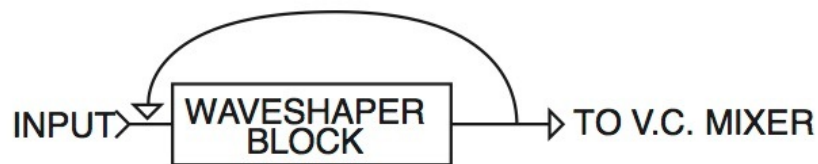
3 VCF Left, Dry Signal Right

VC MIXER

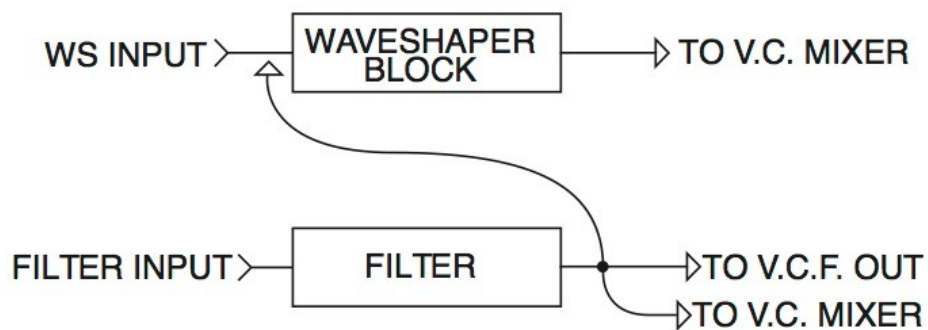
CV Input or CV from LFO Bus Switch



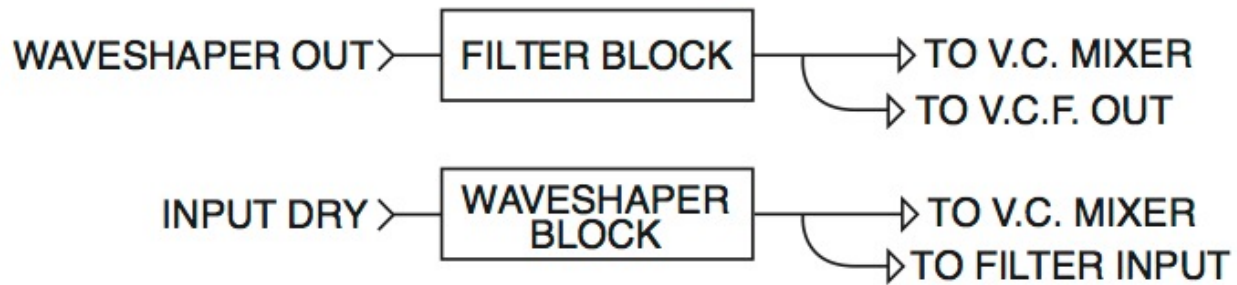
Feedback WS



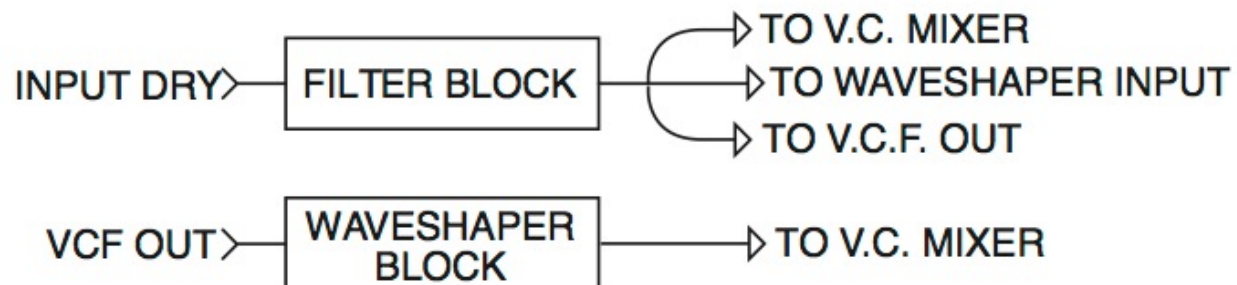
Feedback VCF



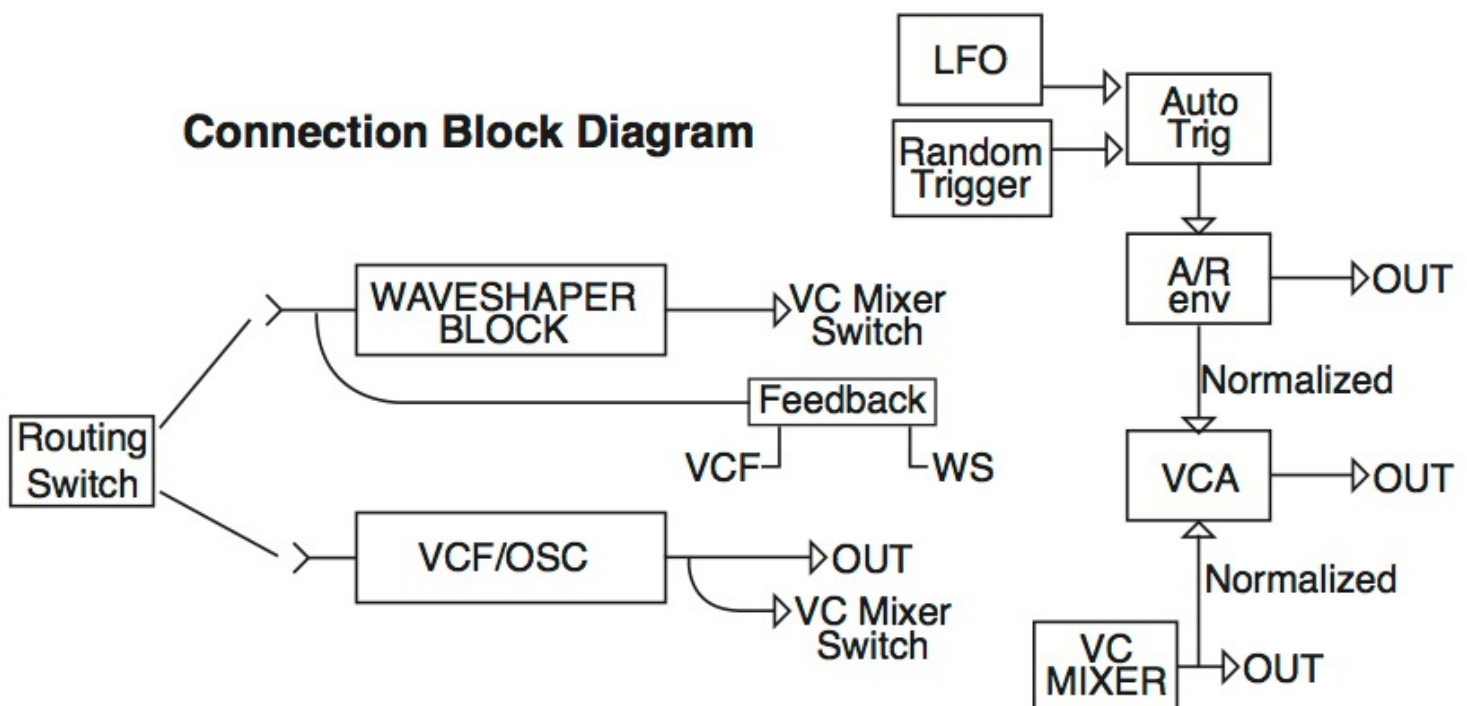
Routing Switch Up Audio Processing Mode



Routing Switch Down Synth Mode or Filter into Waveshaper Mode



Connection Block Diagram



head on over to the Snazzy FX SubForum on the
MuffWiggler Euro Forum
OR FIND US ON TWITTER!! OR ON FB.
or at HELP@SNAZZYFX.COM

WE LOVE TO HEAR FROM YOU!!



SNAZZY FX has a one year parts and six months labor warranty. This warranty covers defects and does not cover mis-use. If there is a problem with your SNAZZY FX device, *please contact the dealer* you purchased it from to first determine if the problem is related to control settings or system configuration issues.

Your SNAZZY FX dealer will then give you information on how to return the product so that you can get back to making weird sounds and beautiful music!

WE ARE NOT RESPONSIBLE FOR ANY TRASHED AUDIO EQUIPMENT. THE TIDAL WAVE CAN CREATE VERY LOUD BASS WHICH MAY RIP APART YOUR TINY SPEAKERS AND CRACK YOUR AMPLIFIER.

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