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**Combo Compact Organ v1.0.0**

Produced and Designed by Matt Black

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# Combo Compact Organ



The Farfisa Combo Compact, along with its siblings, the Mini Compact, Compact Deluxe and Compact Duo, was one of the defining sounds of the Sixties music scene. It was introduced around 1964, and was in production in one form or another, via the Fast and Professional series, until the early 70s.

Cheap and portable (well, portable-ish: weighing in at 70lbs it certainly couldn't be carried by the case handle with one hand, as suggested by photos in the original brochure!), the Compact transistorized organ is perhaps the definitive combo organ, still highly sought after and commanding auction prices up to £1,000 for the Duo.

The original single manual was available in either red or grey, and came equipped with vibrato, spring reverb, a swell pedal and a one octave bass section (bass pedals were an optional extra). It included nine Voice tabs providing a mixture of flute and reed tones. But it was the Multitone All-Booster that provided the key to the distinctive sharp, kitsch Farfisa sound, with its high-pass pulse wave for that bright, psychedelic buzz.

However to describe the Compact purely in term of its "kitschness" is unfair to a large extent: certain voice combinations can create tones that are, arguably, more harmonically interesting than both the Hammond tonewheel organ and the more popular Vox Continental transistor organ. It's arguably the most versatile of the "big three".

Reworking JP's popular Farfisa Combo Compact ReFill, *Combo Compact Organ* brings the full Farfisa sound into an easy-to-use Rack Extension to your Reason studio, with all the registration tabs, and all the multi-tones and boost tones, plus some new additions, such as an original Farfisa spring reverb.

It might be small and lean, but pound-for-pound it can still unleash more fun in your Reason rack than competing devices three times its size!

## The Compact

The Farfisa Combo Compact used in the production of the original ReFill, pictured here, dates from the mid-60's. Sample recordings were made in 24-bit at 96kHz, the final output downsampled to 44.1kHz.



During the production lifetime, different models featured slightly different voice groups. JP's original Compact featured Bass 16', Strings 16', Flute 8', Oboe 8', Trumpet 8', Strings 8', Flute 8', Strings 4', and Piccolo 4', plus Multiboost 16', 8' and 4'.

This gets a little complicated, so stay alert: the dual manual Compact Duo and Deluxe added a Multiboost  $2^{-2/3}' + 2'$  mixture and replaced the Piccolo 4' with a less filtered  $2^{-2/3}' + 2'$ . This is the version JP now owns; later versions, however, then replaced the  $2^{-2/3}' + 2'$  mixture with a non-mixture of  $2^{-2/3}'$  alone!

If that's confusing, then the long and short of it is simply that due to extra samples made for the original ReFill from a different organ to provide the  $2^{-2/3}'$ , combined with what JP now owns, what this Rack Extension can now offer is *all* of the above: you can have Piccolo 4' and select either  $2^{-2/3}' + 2'$  or  $2^{-2/3}'$  variants for the white voice tabs. No Compact variant ever

featured both Piccolo 4' and either 2-<sup>2</sup>/<sub>3</sub>' or 2-<sup>2</sup>/<sub>3</sub>' +2', thus you have available tone combos not available back in the 1960s. For the Pink Floyd fan this is also useful, as during Barratt-era Floyd keyboard player Richard Wright is believed to have used the mkI Duo (2-<sup>2</sup>/<sub>3</sub>' +2' mixture), while post-Barratt used a mkII Duo (2-<sup>2</sup>/<sub>3</sub>').

As well as Pink Floyd, a veritable wealth of other famous fingers used an iteration of the Farfisa organ. The following are known—or in some cases strongly believed—to have used an organ from the Compact family during their careers: B-52s, Blondie, Eurythmics, Genesis, The Grass Roots, Green Day, Inspiral Carpets, Jean-Michel Jarre, Jellyfish, Philip Glass, Pink Floyd, Pulp, ? and the Mysterians, REM, Stereolab, The Strawberry Alarm Clock, Tangerine Dream.

*Combo Compact Organ* features a number of effects available in certain Compacts, Compact Deluxes or Compact Duos: vibrato, tremolo, percussion, percussion repeat, bass/treble EQ, and reverb.

## F/AR external box and spring reverb

The best part of acquiring a Compact Duo for this project is that it includes an original and increasingly rare F/AR unit, which is required to run a Duo. This small but weighty metal box includes power circuitry, the EQ section and, most importantly, the exceptionally brilliant spring reverb. Happily, the F/AR includes an input to allow external instruments to make use of it. Equally happily, that meant I could produce a convolution reverb. This means that unlike the ReFill version that used Reason's RV7000 spring algorithm, *Combo Compact Organ* gives you the real spring reverb tone of the Farfisa Compact Duo. This spring reverb is so nice, I have also used it for the companion *Combo Continental Organ*.



## Voice Groups

The Compact features two voice groups: the ten cream Voice tabs and four green Multi-Boost tabs. *Only one group can be played at a time.* For all tabs the up position is Off, and the down position is On.

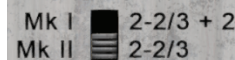
To switch between groups, you select the **Multi-Boost Off/On** tab at the right of the Multi-Boost group. Note that this parameter uses "next note" behaviour: you won't hear the groups change until you play a new note.

For using the Voice tabs, set **Multi-Boost Off/On** to the Off position. You can now freely engage any combination of Voice tabs, as within the group it uses "current note" behaviour, so even when set to off (the up position) they are still internally active. This means you can turn them on while you are holding down a note, to add the Voice to the current note/s, or turn it off while the notes are held, to remove it.

- Voice tab 1 - **Bass 16'**
- Voice tab 2 - **Strings 16'**
- Voice tab 3 - **Flute 8'**
- Voice tab 4 - **Oboe 8'**
- Voice tab 5 - **Trumpet 8'**
- Voice tab 6 - **Strings 4'**
- Voice tab 7 - **Flute 4'**
- Voice tab 8 - **Strings 4'**
- Voice tab 9 - **Piccolo 4'**



Voice tab 10 - 2-<sup>2</sup>/<sub>3</sub>' by default. You can select the 2-<sup>2</sup>/<sub>3</sub>' +2' mixture for this Voice by use of the **Mk I / Mk II** selector on the back panel. Additionally you can use the **Brill** tab to adjust the filtering, making it duller or brighter as required. The **Brill** tab only affects Voice tab 10.



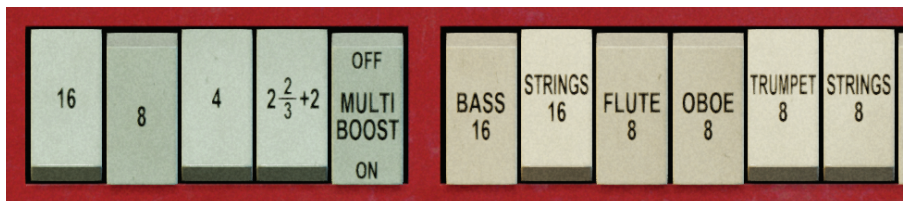
To use the Multi-Boost tabs, set **Multi-Boost Off/On** to the On position. Now you can select any combination of Multi-Boost footages, which are essentially pipe organ-like flutes. Within the group the tabs use “current note” behaviour, so selecting one of these voices instantly affects any notes still active when the tabs is switched from Off to On or vice versa.

Multi-Boost tab 1 - 16'

Multi-Boost tab 2 - 8'

Multi-Boost tab 3 - 4'

Multi-Boost tab 4 - 2-2/3' +2



While **Multi-Boost Off/On**

is On you can add the high-pass filtered pulse, the All-Boost. On the original Compacts, a spring-loaded knee lever allowed you to add this extra waveform, or you could have engaged the All-Boost tab to turn it on all the time while Multi-Boost was enabled. For *Combo Compact Organ* I've split the difference. The All-Boost tab has been left out to save space for an extra tab elsewhere. Instead, you have a rotary control at the top left, **All-Boost**, to set the desire level of the All-Boost waveform. Setting **All-Boost** to 100% is equivalent to the original All-Boost tab being enabled, or you can raise and lower the amount on the fly as if using the knee lever.

I decided against mapping it to the Pitch Wheel or Mod Wheel to allow you the flexibility to map it to your needs. To map it via Remote™ simply right-click over the **All-Boost** rotary control “Edit Remote Override Mapping...”, tick “Learn from control surface input” in the Edit Remote Override Mapping window that appears, then flick whatever control you want to use. The Pitch Wheel allows for behaviour similar to the knee-lever; the level of boost in the centre position is noticeable, but still not too strong, so you can flick it up to max and release to mimic the spring return of the knee lever. A selection of Combinators have preset mappings to the Pitch Wheel, Mod Wheel, Sustain Pedal (off/max), Expression Pedal, or Combinator Button 1 (off/max).

**All-Boost** is not available when using the Voice tabs, only when using the Multi-Boost tabs.



## Bass Section



A one octave bass is available from C0 to B2, with an independent level adjust using the **Bass Vol.** **Bass Section** tab to select between standard “Sharp” mode, or with a gentle attack and release envelope using “Soft”.

The bass section is not routed through the Reverb, Drive, Tremolo or EQ circuitry, but it is affected by the Percussion section. By connecting an audio jack to the Bass Output, the bass section can be sent to its own audio channel for separate effects processing, rather than mixed with the Main Outs.



If you have a 5-octave keyboard, I highly recommend transposing it one octave down, which will give you the full range of C0 to C5 at once.

## Percussion Section



A feature on the early Deluxes and Duos, set **Percussion Off/On** to On to apply an opto-envelope decay to all active Voice or Multi-Boost tabs. Two decay lengths are available via the **Percussion Short/Long**. Later organ variants added a repeat function, which retriggered the envelope. Set **Repeat Off/On** to On and adjust the retrigger rate from 16–1/16, or 12–1/8T with the **Repeat** rotary.



All percussion features use “next note” behaviour, which can provide some interesting results when used deliberately by switching these tabs during active notes. Envelope is also per note, so play notes together to ensure everything is triggered at the same rate, or play notes with arpeggio for creative effects. Applies to the Bass Section plus Voice or Multi-Boost tabs.

## Vibrato Section



No organ would be complete without some vibrato! The blue tabs allow you set the rate, **Vibrato Slow/Fast**; the depth, **Vibrato Light/Heavy**; and off/on, **Vibrato Off/On**. Applies to the Voice or Multi-Boost tabs only.

## Reverb Section

The level of the lovely Farfisa F/AR spring reverb can be adjusted using the **Reverb** rotary. If using an external reverb you can turn it off completely and save a few cycles of processing by disabling it with the yellow **Reverb Off/On** tab. Applies to the Voice or Multi-Boost tabs only.



## Amp Section

Click and hold the **Type** knob and drag it up or down to select between Transistor or Tube distortion types. Adjust the distortion amount with the **Drive** rotary; a minimum setting does not turn the amp off, merely sets a zero level of drive. Depending on other settings, you will typically notice the difference between Transistor and Tube modes, even with no drive. The amp section can be used on the Voice or Multi-Boost tabs only.



## Tremolo Section

Also a feature of later Duos, this section allows you set **Tremolo Depth** and **Tremolo Rate** (1–10Hz). As with the percussion envelope, the LFO driving the tremolo is per note, so play notes together to hear a single LFO, or arpeggiate them to stagger the LFO for creative purposes. Tremolo can be used in addition to or instead of vibrato, and is a great with the Repeat function for creative effects. Applies to the Voice or Multi-Boost tabs only.



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## Volume/EQ Section

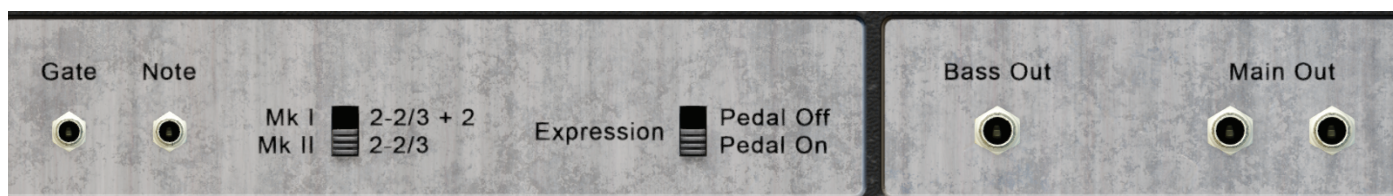
Apply +/- 20dB **Bass** (low shelf) and **Treble** (high shelf) to the Voice or Multi-Boost tabs only, and adjust the output **Volume** of the Bass Section plus Voice or Multi-Boost tabs (bass output jack not connected), or just the Voice or Multi-Boost tabs (bass output jack connected).



## Expression/Swell pedal

On the back panel you can enable an additional level control using your expression pedal; flick the **Expression** switch from Pedal Off to Pedal On. The range of the swell does not go all the way down to silence, which is normal behaviour.

If using the expression pedal, ensure that you record the automation for it, or else when you reopen your song or in some other miscellaneous circumstances you might find that it defaults to a minimum level. For this reason, **Expression** defaults to off, and is turned off for all included patches.



## Back panel connections/CV control

Apart from the natively supported Gate/Note sequencer inputs, the RE IDT system does not currently support CV input or output. All front-panel parameters can be controlled by placing the device in a Combinator and using it's own CV inputs and the TS8450 programmer to route them to the *Combo Compact Organ*.

The Main Out jacks will auto-route in dual mono. You can leave them both connected, but for authenticity, you can use just one output, or you could create a faux stereo output by processing both separately. The Bass Section is automatically output through the Main Out jacks unless the Bass Out jack is manually connected.

## Patches

Lots of presets, including reworked versions of most of those found in the ReFill version, are included in the Rack Extension package, as well as some new Combinators. Additionally a sub-folder called "RE Combis" is available in the Combinators folder, which features some choice patches which will require some additional Rack Extensions, including Propellerhead's *Rotor*, an essential companion for all big organ lovers, and our own *Ammo 100LA* modular oscillator.

### Patch levels

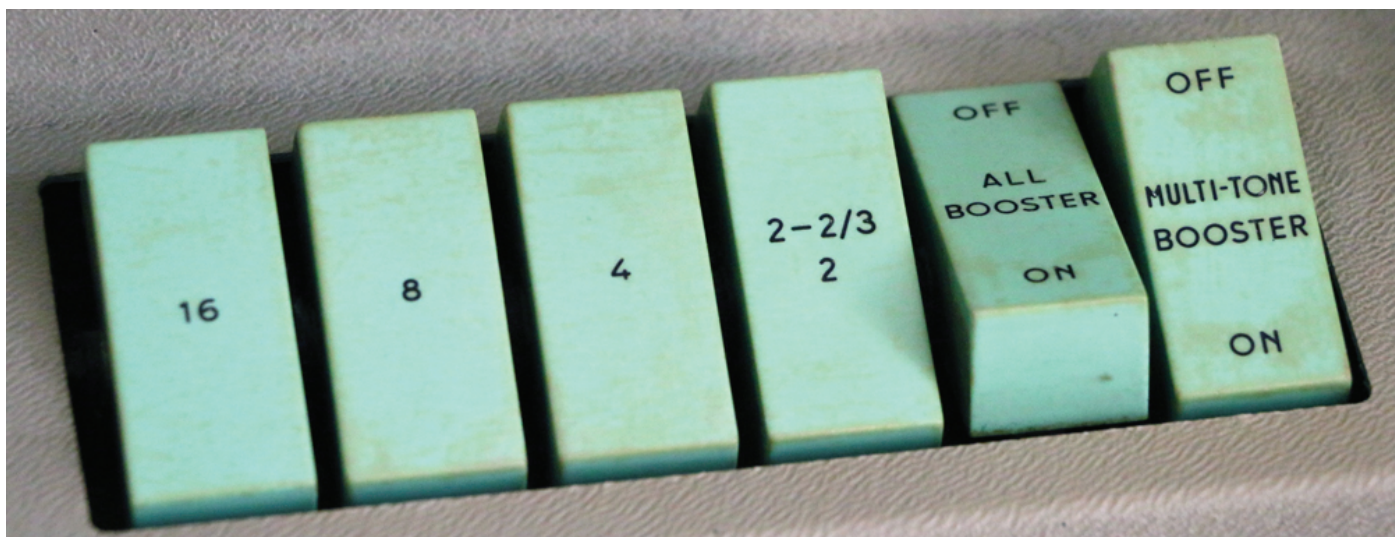
All patches have been set to a default to -12dB peak using a C1-E1-G1 chord. Perceptively, levels of patches with fewer harmonics will sound quieter even at the same peak level. The Compact has a lot of low end in its 16' voices, so the lowest chord was chosen as the -12dB baseline. The samples have been left unfiltered so that you can add low or high pass filtering as required. Remember, these samples are from machines that are about 50 years old; the noise is part of the charm and authenticity.

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## Voices vs Polyphony

*Combo Compact Organ* allows for up to 200 voices. Note that polyphony and voices are different things.

Each tab is one voice. Playing one note alone is actually playing ten voices if using the Voice tabs, even if you only have one Voice selected to be heard, and eight voices if using Multi-Boost (four Multi-Boost plus four All-Boost). 200 voices should provide enough polyphony (12+ notes) before oldest note stealing—where the oldest note active of a chord is replaced by a new note—occurs. Playing more notes does increase CPU load of the device, though. In typical use a six note polyphony (for example, two 3-note chords with both left and right hands) has little significant impact.



# Remote Mapping

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//Remote Map template for Instruments      Jiggery-Pokery Sound: Combo Compact Organ

Scope    Jiggery Pokery      com.jiggerypokery.ComboCompact

//      Control Surface Item      Key      Remotable Item      Scale      Mode

//Map    \_control\_      Volume  
//Map    \_control\_      Amp Drive  
//Map    \_control\_      Amp Type  
//Map    \_control\_      Reverb  
//Map    \_control\_      Reverb Amount

//Map    \_control\_      Bass 16  
//Map    \_control\_      Strings 16  
//Map    \_control\_      Flute 8  
//Map    \_control\_      Oboe 8  
//Map    \_control\_      Trumpet 8  
//Map    \_control\_      Strings 8  
//Map    \_control\_      Flute 4  
//Map    \_control\_      Strings 4  
//Map    \_control\_      Piccolo 4  
//Map    \_control\_      F2-2/3 +2  
//Map    \_control\_      Brilliance

//Map    \_control\_      Multi-Boost 16  
//Map    \_control\_      Multi-Boost 8  
//Map    \_control\_      Multi-Boost 4  
//Map    \_control\_      Multi-Boost 2-2/3  
//Map    \_control\_      Multi-Boost  
//Map    \_control\_      All-Boost Level

//Map    \_control\_      Bass Balance  
//Map    \_control\_      Treble Balance

//Map    \_control\_      Vibrato Rate  
//Map    \_control\_      Vibrato Depth  
//Map    \_control\_      Vibrato  
//Map    \_control\_      Tremolo Depth  
//Map    \_control\_      Tremolo Rate  
//Map    \_control\_      Bass Section Attack  
//Map    \_control\_      Bass Section Volume

//Map    \_control\_      Percussion  
//Map    \_control\_      Percussion Decay  
//Map    \_control\_      Percussion Repeat  
//Map    \_control\_      Percussion Repeat Rate



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*Special thanks to the Compact testing crew: Paul Kellet, Dogboy1973, Ozone0, alteree, kylelee, NaviRetlav, Reason101 and Shokstar.*

*Compact Compact Organ was designed and assembled by Jiggery-Pokery Sound, of London, England.*

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# From the maker of ...

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## Rack Extensions

- **Ammo 100LA Modulation Oscillator** - Portable single-channel oscillator for audio and CV rate synthesis and LFOs, featuring 128 waveforms
- **Ammo 400R Modulation Oscillators** - 4-channel LFO generator with audio output, featuring 136 waveforms and advanced modulation mixing
- **Ammo 1200BR Modulation Synthesizer** - Advanced 4-channel LFO generator and audio synthesizer adds S&H, Comparator and Electro-Switch
- **Anansi Mid/Side Mastering Router** - Mid/side audio router with mono compatibility check, 3-in merger and 3-out splitter
- **Charlotte Envelope Generator** - 9-stage EG with time, level, curve and velocity control per stage, and a priority-selectable MIDI-to-cv-pitch splitter
- **Chenille BBD Chorus Ensemble** - Realistic BBD chorus device, based on the 70s string synth ensembles and the classic Roland Dimension D rack unit
- **Combo Compact Organ** - The classic Italian transistor organ now in a brilliant, easy to use and equally compact Rack Extension format. Bags o' fun!
- **Combo Continental Organ** - The classic British transistor organ in a fantastic Rack Extension for that instant 60s feel!
- **Itsy Stereo/Phase Inverter** - L/R channel flip, cv-controllable 180° stereo inverting width adjust, stereo phase inverters and phase correlation metering
- **Loth CV Delay Splitter** - 4x4 channel cv splitter with independently adjustable gain and inversion controls, channel delay, and mirroring
- **Miranda CV Delay Merger** - 4x4 channel cv merger with independently adjustable gain and inversion controls, channel delay, and mirroring
- **Mordred Audio Bypass Merger** - 4 x 5 channel stereo audio merger with independently switchable outputs and autofade control
- **Shelob Audio Bypass Splitter** - 4 x 5 channel stereo audio splitter with independently switchable outputs, mirroring, and autofade control
- **Super-Spider Bundle** - Anansi, Itsy, Loth, Miranda, Mordred and Shelob: buy all six and get one and a couple of knobs on another absolutely free!
- **Steerpike BBD Delay Ensemble** - Vintage style 6-tap BBD device, with multiple delay modes including parallel, serial, and reverse
- **Titus BBD Delay Line** - A lightweight 1U delay device featuring a single Steerpike delay line, with reverse

## ReFills

- **Guitars vol.1+2: Stratocaster & Telecaster** - Multi-sampled guitars with slides, mutes, signature L6 effects and keyswitching
- **Elements?: Vector Synthesis Workstation** - Massive patch collection featuring Korg Wavestation/MS2000, Waldorf Blofeld and Roland SC-8850
- **Additions: Vintage Additive Synthesizers** - DK Synergy + Kawai K5m + Thor FM.
- **Blue Meanie: Virtually an ARP2600** - Thor and Kong-based analogue synth machine
- **Kings of Kong Classic Drum Machines\*** - the premier ReFill for Reason 5+, with over 50 classic beatboxes for Kong Drum Designer
- **Retro Organs v2**- Hammond B3 + Farfisa Combo Compact + Vox Continental in one brilliant ReFill. Also available for Reason Essentials
- **B3 Tonewheels v1.5** - the original 24-bit non-Leslie samples ReFill with advanced rotary speaker emulation
- **Farfisa Combo Compact Deluxe v1.5** - the complete set of original 24-bit Farfisa samples covering, both standard and Deluxe models
- **Vox Continental v1.5** - a complete set of original samples from the classic C300 organ, featuring original and extended Continental footages
- **Hammond Novachord\*** - the near-antique pre-WW2 monster polyphonic valve synthesizer
- **Retrospective: 40 years of Synthesizer History\*** - Over 1Gb of vintage samples from synths and electronic keyboards from the Hollow Sun archive

## FreeFills

- **Additives** - demo version of Additions: the fantastic Additives tracks from PUF Challenge #2 can be found at <http://soundcloud.com/groups/additives>
- **8-BIT Magic: The ZX Spectrum ReFill**
- **Classic Drum Machine Collection v1.1**
- **Eminent 310 Strings\*\* v3** - the classic Jarre string sound, with stereo samples plus the Oxygene II / Equinoxe 4 pizzicato lead
- **Harpe Laser\*\*** - the famous Laser Harp sound, the Elka Synthex preset 46 "Ring Mod"
- **Moog Taurus Bass Synthesizer\*\* v1.1**

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For more information on these products and for direct downloads of these latest versions, plus a wide range of great Combinator skins, please visit [www.jiggery-pokery.com](http://www.jiggery-pokery.com)

\* Includes samples licensed from HollowSun.com

\*\* demo ReFills for Retrospective