



DUALITY 100



model: D100
User Manual

INDIEX

INTRODUCTION	pg 3
POWER SUPPLY	pg 3
PREMISE	pg 5
SOUND DESCRIPTION	pg 6
TECHNICAL FEATURES	pg 7
FIRST USAGE	pg 9
MIDI AND SAVING A PRESET	pg 10
LOOP FX	pg 11
D100F FOOTSWITCH	pg 11
TUBE LAYOUT AND CABINET	pg 12
TROUBLESHOTTING	pg 13
WARRANTY	pg 14

INTRODUCTION

Duality 100 is a three channel, modern style, guitar amplifier. Thought as ultimate tone weapon, featuring rich clean crispy sound, a tridimensional multi stage overdriven channel and a third modern-“over the top” gain lead channel.

Full MIDI implementation (CC and PC), double master volume and a serial high voltage buffered effects loop make Duality 100 your life as guitarist easier than ever before.

Additional informations and audio/video demos can be found at www.redseven-amplification.com or you can contact us any time at info@redseven-amplification.com

POWER SUPPLY

Duality is shipped with hardwired primary voltage. 240V, 230V or 115V must be chosen at order time.

NOTE: IMPORTANT...NOT TO DO!

- Do not try to change output jacks (impedance) while the amplifier is on. You must turn STANDBY and POWER switches to OFF position before changing the output impedance.
- Do not try to change input/output levels of you devices plugged into fx loop while the amplifier is on. You must turn STANDBY and POWER switches to OFF position before changing input/output levels of your gear plugged into fx loop or at least disconnect cables form SEND and RETURN jacks.

THIS OPERATIONS CAN LEAD TO FINAL BREAK OF THIS AMPLIFIER. IN THESE PARTICULAR CASES RED SEVEN AMPLIFICATION WILL NO BE RESPONSIBLE FOR DAMAGES TO AMPLIFIER ITSELF OR PEOPLE. PLEASE KEEP IN MIND YOU ARE HANDLING A DEVICE WITH POTENTIALLY LETHAL VOLTAGE. PLEASE CAREFULLY READ THIS MANUAL BEFORE TURING ON THE AMPLIFIER. RED SEVEN AMPLIFICATION ARE NOT RESPONSABLE FOR ANY PARTS SUBJECT TO WEAR (LIKE TUBES, POTS, CAPACITORS, ETC).

WARNING!!

This amplifier uses potential lethal voltage, it must be inspected only by expert people!

WARNING!!

Before insert power cord inside Duality100, check the voltage plate under IEC socket and be sure to match wall voltage of your country.

PREMISE

By developing this amplifier we had few main visions in our minds:

1 – **THE AMPLIFIER MUST SOUND GOOD IN A MUSICAL CONTEST AND NOT IN YOUR BEDROOM EXCLUSIVELY.**

This can be hard to understand to some people, but in every step of our developing process we recorded it through a professional studio recording system, making sure that all useless frequencies which can fight with bass guitar, synths or maybe cymbals in a live/recording environment are gone. A huge quantity of useless gain and can be a bad thing and we have taken care of this issue as well.

2 – **ALL THE DISTORTION CIRCUITS ARE 100% TUBE BASED, NO DIODE CLIPPING HERE.**

For this project we focused on dynamics. We found by having too much gain and compression (like for example achieving this with diodes or LEDS) are totally useless for this purpose. We're not judging anyone here, only to explain the idea we had on this particular amplifier. You will not find anything like a over- saturated / over-compressed and over-gained sound here. Nothing at all. If you are looking at this type of monothematic distortion sounds, you better search somewhere else. You will find only an amp that talks the best with your pick control and volume control, capable to obtain a multitude of sounds, even on one channel. Dynamics and control are everything for us.

3 – **MIDS IS EVERYTHING.**

The mid frequencies is where your guitar amplifier lives. This mean you need good mids and the right frequencies to pop out of the mix without having any volume problem. We changed quite a bit in the way that a usual mid control works in almost every guitar amplifier. By doing this we have developed a very sensitive mid control on the distorted channel, ensuring a very special and musical way to express this delicate frequencies. We believe in mids, do not underestimate this frequency range, we're serious about this!

SOUND DESCRIPTION

D100 were born from the demand of our clients to modify so many amps, until they recognized an unique style and sound in our work. It took us almost a year to develop this 100w all tube amplifier after all the positive experience with D100. We are proud to say that this is not a clone of anything. You will not find any ingredients from any other builder inside. Like it or not. Here is the sonic features for this amplifier:

- **CH1 (Clean channel)** is something between and old '50s Fender and late '60 Marshall Plexi. Sparkly and rich clean sound, something that is hard to find in todays modern multi channel amps. It can crunch with some aggressive pickups but it stays almost clean with any guitar below the gain set at 4. With a classic Strat type guitar it stays clean or have an early breakup between 5 and 7, with a LP style guitar breakup is little earlier. Tone stack is way more effective than the vintage '50/'60 mono channel amplifiers, you can obtain quite a lot different sounds from this channel. Bright switch also add some flexibility to it, B1 is classic bright, a high shelf around 4KHz, B2 is way more effective and start around 1KHz, boosting some mids.
- **CH2 (VINTAGE):** Vintage channel is where you'll probably want to spend most of your time. Gain quantity can be set from a crunchy Marshall-esque sound (think of early AC/DC) to '80s VH. Not a super huge gain quantity and no over-saturated gain in the low end. With the volume control you can obtain a very good clean sound, even with gain dimed. With "LEAD" mode engaged you are in the late hard rock '80s territory. Quite a lot of gain available now, consistent bass response, dynamics is always at maximum. Eq is shared with MODERN channel and it's way more effective than your usual eq and probably a bit different. Our special mid control can scoop or boost mid in a unique way, capable to turn this channel into a lot more channels, we are not joking here. Treble and bass is also are super effective, you can dial in almost every guitar here and probably a bass guitar too.
- **CH3 (MODERN):** The Modern channel starts where the Vintage channel ends but with a little more gain and bass frequencies on top. This is a lot tighter, gainy, compressed and saturated than the previous channel. It's has the right amount of gain to play solo parts even without using "LEAD" mode. Engaging "LEAD" mode you have a huge quantity of gain, you can be ready for any hard rock / classic metal tones. I

IMPORTANT NOTE: while VINTAGE and MODERN channel shares the same eq controls they are two completely separated channels. This allow us to have two different flavours of the same sound, using the second channel sound but with a bit more gain/compression on top. Pure magic.

TECHNICAL FEATURES

FRONT PANEL:



(from left to right)

- **STANDBY / ON SWITCH:** turn the amplifier in standby mode or in operative mode.
- **RED LED:** (under STANDBY / ON SWITCH): this led will indicate the state of incoming power supply. It will turn on if everything is ok.
- **GREEN LEDs:** when on, clean channel is activated.
- **BLUE LEDs:** when on, vintage channel is activated.
- **RED LEDs:** when on, modern channel is activated.

POTS:

- **CHANNEL 1** (clean channel): Volume, Bass, Middle, Treble, Gain.
- **CHANNEL 2** (vintage channel): Gain Vintage, Volume Vintage & Treble, Middle, Bass shared with CH 3.
- **CHANNEL 3** (modern channel): Gain Modern, Volume Modern & Treble, Middle, Bass shared with CH 2.

SWITCHES:

- **CHANNEL 1:** (clean channel): Bright switch (bright 1/ normal / bright 2),
- **CHANNEL 2:** (vintage channel): Bright switch (bright 1/ normal / bright 2).
- **CHANNEL 3:** (modern channel): Bright switch (bright 1/ normal / bright 2).

PUSHBUTTONS:

- **CLEAN:** activates clean channel.
- **VINTAGE:** activates vintage channel.
- **MODERN:** activates modern channel.
- **LEAD:** activates lead boost on both vintage and modern channels.
- **LOOP:** activates serial loop effects for all three channels.

REAR PANEL



(from left to right)

- **SEND & RETURN:** Connection between pre amp and power amp. D100 is shipped with pedal friendly signal level.
- **MASTER 1/2:** Master volume controls.
- **PRESENCE:** global setting for presence control. It acts on every channel.
- **LINE OUT:** jack and level pot for line out signal, taken from the output jacks. Please remember you **MUST** use a cabinet anytime in conjunction with this output. Using Line Out by itself without any load will damage this amplifier.
- **OUTPUT:** output jacks for connect the amp to cabinets. Please read carefully the impedance before connect your cabinets.
- **MIDI IN & MIDI THRU:** sockets for midi communications. Midi IN receive midi signal, Midi THRU left midi signal pass thru without modify original messages.
- **FOOTSWITCH:** input jack for Duality D100F footswitch. Pay attention: others footswitches can damage the amp.
- **STORE SWITCH:** tactile switch for saving combinations of sounds into amplifier digital memory.
- **HT FUSE:** (1A slo blow) high current fuse. Replace **ONLY** with same type.
- **MAIN FUSE:** (2.5A slo blow) input voltage fuse. Replace **ONLY** with same type.
- **IEC SOCKET:** connect power cable here.
- **POWER ON / POWER OFF SWITCH:** turn the amplifier on or off.

FIRST USAGE

Before plugging in the power cord, make sure to check the input voltage of the amplifier and be sure to match it with your wall voltage, and then insert the power chord. Before plugging in the speaker cable, check the impedance of your cab and match the output impedance of the amplifier with the impedance switch on the rear panel, then connect the speaker cable from cabinet to amplifier.

Now you are ready to put the Power Switch in "POWER ON" position. Leave the amplifier in this state for at least thirty seconds. Plug your signal cable into input jack then you are ready to put the Standby Switch to "ON" position. Now you can rock'n'roll!

MIDI

Duality, despite the full tube audio signal path, is equipped with digital memory which can make saving combinations (preset) of functions inside the amp.

Duality is shipped with presetted midi channel #1. You can't change midi channel on the fly after bought it, but you can ask for a different midi channel at order time.

All the functions are recallable on the fly via midi CC. This is the full CC list:

- Clean channel: CC #100
- Vintage Channel: CC #101
- Modern Channel: CC#102
- Lead Boost: CC#103
- Loop effects: CC#104
- Master 1 / Master 2: CC#105

All the CC are also be changed for a custom numbers, but only at order time.

SAVING A PRESET

Saving a preset is quite easy with Duality 100, it takes only few steps:

- Choose the desired combination of functions (channel, loop, master, etc);
- Keep the "STORE" button on rear panel pressed for three seconds, until corresponding led turn on, than release;
- By using a MIDI devices able to send Program Change, send the desired PC you want to memorize this particular combination;
- Store led will blink couple time for confirmation;
- Your preset is now created.

You can save and re-save a preset infinite time. With this procedure you can use different midi pedalboards or interface for recall preset without losing data, because all presets are stored inside the amp. You only need to send the exact PC and it will recall the same combination of functions every time forever.

You can exit the saving routing in anytime by pressing "STORE" switch three seconds until the corresponding led turn off.

LOOP FX

Loop effects on D100 is between preamp output and power amp input, right before master volume. It's a buffered 100% serial loop fx with instrument level signal.

When loop effect is engaged 100% of your sound will pass thru the effect wired to send/return jacks. When it's bypassed, the signal goes straight from preamp to power amp.

There's no specific send/return control on back panel but channel volume acts as a "send control" (the amount of signal to be sent to the input of your effect) and master volume acts as "return control" (the amount of signal returning from your signal back into the power amp).

Loop effect can always be activated/bypassed thru the front tactile switch, the footswitch or via midi PC/CC.

SUGGESTION: if you are hearing some bad clipping sound when loop effect is on, you're probably overloading the input of your effect. Try to lower the preamp signal (by lowering channels volume on the D50 or the input control or your effect) then increase the incoming signal to return jack (by increasing master volume on D50 or output volume of your effect)

D100F FOOTSWITCH

Duality 100 comes with D100F footswitch. It can operate only with D100 model, so it can't be used with D50 model.

D100F also can't be used with other amplifiers or devices, since it can be damaged by incorrect uses.

D100F can basically do same things as the player can do with keypad situated on the right side of the front panel. It can skip between **CLEAN**, **VINTAGE** and **MODERN** channels with first three footswitches.

Footswitch named **LEAD** turn on/off lead boost on both VINTAGE and MODERN channels.

Last footswitch **LOOP/M2** can operate in three modes:

- 1 – turn on/off LOOP FX;
- 2 – select between MASTER 1 and MASTER 2 volume controls;
- 3 - turn on/off LOOP FX and select between MASTER 1 and MASTER 2 controls at same time.

In order to decide what this button can activate, you need to enter in "mapping mode" by pressing CLEAN and LOOP FX/M2 footswitch together for three seconds until all leds starts blinking, then release them.

Now you need to decide with operation mode you want to select and save, by pressing one of the first three footswitch:

(CLEAN footswitch) LOOP FX on/off;

(VINTAGE footswitch) Master 1/Master 2 selection

(MODERN footswitch) LOOP FX on/Master 2 or LOOP FX off/Master 1

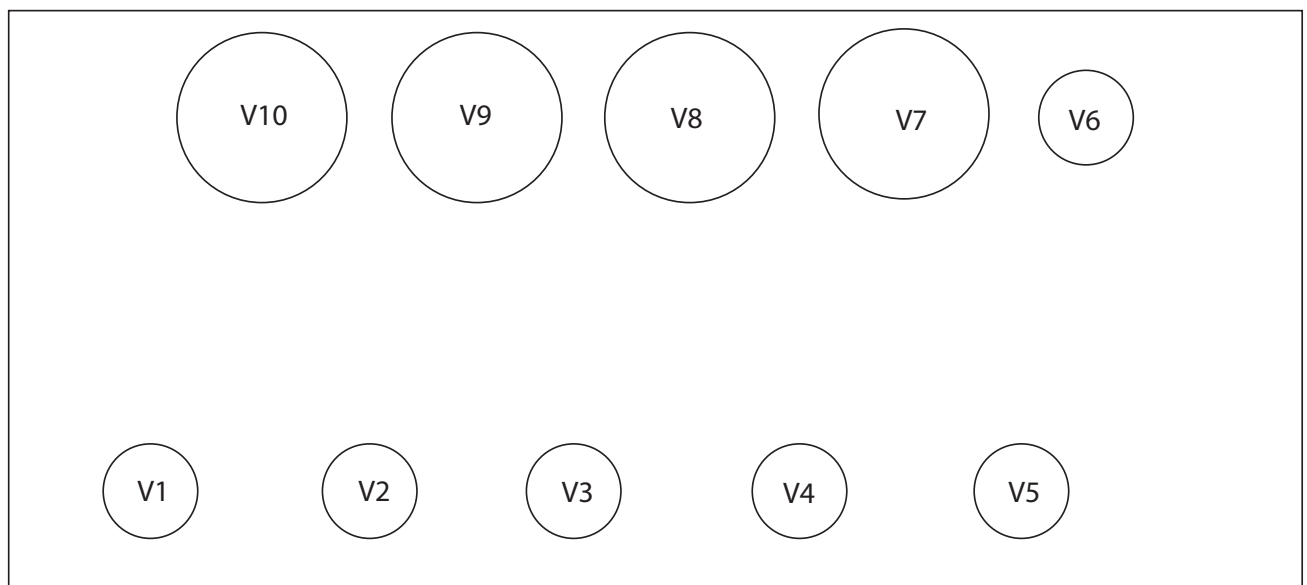
Once your choice is made and you pressed one of the first three footswitches, "mapping mode" will automatically save your setting and quit. From now, every time you turn D100 on, your D100F will remember the last saved setting, so you don't need to repeat this procedure every single time, but only if you need to change this.

Now your footswitch is set and ready to go on stage.

TUBE LAYOUT

This amplifier comes with EL34B type tubes in the power amp section and 12AX7B in preamp, selected by our trusty partners at Tube Amp Doctor. Power tube can't be changed with other type of tubes (i.e 6L6s, KT88s, etc), they can be substitute only with other EL34 type tubes. You need to check the bias every time poweramp tubes are changed. For doing this is necessary to open the amplifier, so please contact us at info@redseven-amplification.com

Do not try swap P.A. tubes without adjusting bias current. In the most case this can lead to a simply tube failure, in some other you can make some serious damages!



FRONT PANEL

- V1 - suggested tube: TAD ECC83WA (first and second stage for clean channel)
- V2 - suggested tube: TAD ECC82WA (third stage for clean channel)
- V3 - suggested tube: TAD 7025 (first stage vintage mode and first stage modern mode)
- V4 - suggested tube: TAD ECC82WA (second stage for vintage/modern mode and lead boost)
- V5 - suggested tube: TAD 7025 (tonestack)
- V6 - suggested tube: TAD 7025 (phase inverter)
- V7, V8, V9, V10 - suggested tube: TAD EL34B (poweramp tubes)

CABINET AND SPEAKERS

For the best sonic experience ever we highly suggest to play this amplifier with RedSeven Pro Cab series, especially with 4x12 model.

We develop this amplifier thru this cabinet so this is the natural extension for it.

We suggest you to try D100 with Celestion V30 or Greenback or a mix of both first. This is our first choice. Other type and brand of speakers can be good, Alnico speakers for example would be our last choice here, but tastes is different for everyone!

TROUBLESHOOTING

- D100 IS NOT TURNING ON

Check the power chord, sometimes it will be loose and cannot make good contact with IEC socket. Replace it. If this doesn't work check MAIN fuse, if it's blown replace with SAME type and try again to turn on again. If fuse continue to blown, turn off the amp and contact RedSeven Amplificaton.

- D100 IS TURNING ON (RED LED IS ON) BUT WITH NO SOUND

First of all be sure to connect speaker cable properly, both amplifier as the cabinet. Check the input signal from guitar too. If this doesn't work check HT fuse, if it's blown replace with SAME type and try again to turn on again. If fuse continue to blown, turn off the amp and contact RedSeven Amplificaton.

- D100IS MAKE NO SOUND

If everything works properly be sure to have both relative channel volume and master volume turned up.

- I'M NOT ABLE TO SAVE A PRESET

Read "SAVING A PRESET" chapter and do meticulously what it's wrote. You have to follow any step and not swap them. Check midi cable and try to replace it. Be sure to connect your sending devices via MIDI OUT socket and Duality MIDI in socket and not vice-versa.

If for some reason this doesn't work contact RedSeven Amplificaton.

- I'M NOT ABLE TO RECALL A PRESET

Be sure to set up your midi board or midi interface on midi channel 1. Any other channel will not work and you will not able to recall a preset. Check midi cable and try to replace it. Be sure to connect your sending devices via MIDI OUT socket and Duality MIDI in socket and not vice-versa.

For any problem and in any moment you can contact a qualified tech at:
info@redseven-amplification.com

We will replay to you as soon as possible.

WARRANTY DESCLAMER

Please, do not try to open the amplifier in any case. For any problem contact your seller or write to us. This amplifier runs at very high voltage that can lead to death. Any inexpert person should not even think of do anything inside this amplifier. RedSeven Amplification offer a standard two year fully warranty for any component (except to wear subjects).

By removing the amplifier form his wood cabinet or by making any modification to the original state will violate standard warranty and RedSeven Amplification will not responsible for any damage to people, things or animals.

Revision 1.0
September 2018