

VAL60

A valve channel with a stackable preamp: iron, transistor, solid state and valve stages in any order, into a soft-knee, optical-style compressor.

A Lab plug-in. The Lab is where new GFX plug-ins are built in the open: they may change sound or controls between versions.



Overview

VAL60 is in the spirit of the 1990s British dual-channel valve processors that put a tube gain stage in front of a soft-knee, optical-style compressor. The Stable VAL60 has one valve stage. This Lab version has four preamp stages (IRON, TRANSISTOR, SOLID STATE and VALVE), each with its own DRIVE, and you can run them in any order.

Each stage keeps its level, so DRIVE adds harmonics, not volume. Each also has its own gentle tone: iron pushes the lows, the transistor lifts the mids, solid state pushes the highs and the valve dips the mids. Because each stage colours what the next one receives, the same stages sound different in a different order.

The sound then runs through THICK, the compressor (with MIX for parallel compression), the output transformer and LEVEL. DRIFT lets every stage in use drift in its own way.

Reach for it for

- DI bass and synth bass: iron for weight, valve for warmth
- Vocals: transistor into valve, with GUARD on hot takes
- Drum buses: transistor into solid state for crunch
- Acoustic instruments: valve with a touch of solid-state air
- Sub-mixes and gentle bus glue

Controls

The header

PRESETS	Opens the preset list (with "Reset all to defaults" at the end).
◀ / ▶	Steps to the previous or next preset, wrapping round.
Preset display	Shows the preset's name. Click it for the preset list too.
BYPASS	Crossfades (15 ms) to the untouched input, kept in time with the latency. Lit = bypassed.
OS	Oversampling for the preamp stages: click to cycle 1x / 2x / 4x (default 2x, as the Stable VAL60). Higher = cleaner top end when driven hard, more CPU. Latency 0 / 31 / 37 samples, reported.

PREAMP STACK

INPUT GAIN	-10 to +20 dB into the stack, after the input transformer.
GUARD	Off by default. Eases hot sources down towards -18 dBFS average (over about a second) and catches peaks above -6 dBFS. It never turns quiet sources up. Switching it crossfades.
Stage name	IRON, TRANSISTOR, SOLID STATE or VALVE. Click it to switch the stage in (lit in its colour) or out (grey). Switching crossfades.

DRIVE	0 to 100 %: how hard that stage works. It adds harmonics, not level.
◀ / ▶ (under each stage)	Move the stage one place left or right along the stack. The panel shows the order: the sound runs left to right. A move fades the stack out for 5 ms, reorders it and fades back in.
PREAMP	The whole stack in or out (crossfaded).
THICK	The house THICK circuit between the preamp and the compressor: low-mid weight, iron below 500 Hz and a rounded front. It also pushes every stage harder and lengthens the compressor's detector.
HEATERS	Glows dim while the valve warms up after loading (with DRIFT on), then full. Dark when the valve is out.

The four stages

IRON	A transformer core: only the lows (below about 150 Hz) saturate, mostly 3rd harmonic, and the top stays clean. Tone: +2.5 dB low shelf from about 120 Hz.
TRANSISTOR	A single-ended discrete stage: lop-sided (2nd harmonic), with the highs driving it harder than the lows, for a forward, crisp edge. Tone: +2 dB around 1.5 kHz.
SOLID STATE	An op-amp stage: clean until it nears the rails, then a firm, even knee (odd harmonics). Tone: +2.5 dB high shelf from about 7 kHz.
VALVE	The original VAL60 valve: a biased triode, soft and asymmetric. Tone: -2 dB around 700 Hz.

COMPRESSOR

THRESHOLD	-20 to +20 dBu (0 dBu = -18 dBFS). At the default 0 dBu, a programme at 0 VU (-18 dBFS) just reaches the knee: about 1 dB of gain reduction at 3:1.
ATTACK	1 to 50 ms.

RELEASE	0.1 to 4 s. After heavy, long compression it slows (up to 2x), like an optical cell.
RATIO	1.5:1 to 10:1, with a 10 dB soft knee.
MAKE-UP	0 to 20 dB on the compressed path.
MIX	DRY to WET: parallel compression, the preamp's sound against its compressed copy.
IN	The compressor in or out (crossfaded); the section greys when out.
GAIN REDUCTION	Eight LEDs under THRESHOLD showing how hard the compressor is working: 1 to 15 dB, from blue (a touch) through green, yellow and orange to red (heavy).

OUTPUT

LEVEL	-18 to +6 dB, after the output transformer.
CLIP	Lights when the house output stage soft-limits at -0.3 dBFS.
DRIFT	Lit = 33 % (the standard amount), dark = 5 %. Each stage in use drifts its own way: the valve warms up and its bias wanders, with HT sag on loud passages. The iron's saturation point wanders with core temperature. The transistor's bias wanders and creeps up as it heats. The solid-state rails sag on peaks. The compressor's timing parts sit slightly off nominal.
IN / OUT	LED ladders reading the peak level going in and coming out, -42 to 0 dBFS (green, amber from -9, red at 0), with a floating peak that holds for 1.2 s. Click either one to clear the peaks.

Knobs: drag up or down (hold Shift for fine moves) or use the mouse wheel; double-click or Ctrl-click returns to the default. Values show while you hover. S / M / L set the panel size; ? shows the credits and this manual's address.

Presets

Each preset is level-matched to the input on programme with LEVEL, except Init (every control at its default), which comes out about 2 dB under. The arrows show the order of the stages that are in.

Init	VALVE only, 20 % DRIVE: the Stable VAL60's valve, plus the valve's mid dip.
Valve Warmth DI	IRON → VALVE, gentle 2:1 compression.
Rich Bass Guitar	Heavy IRON → VALVE with THICK, 4:1.
Vocal Tube Fatten	TRANSISTOR → VALVE with GUARD, fast attack.
Drum Bus Crunch	TRANSISTOR → SOLID STATE with THICK, 4:1 and a quick release.
Synth Thickening	VALVE → IRON with THICK.
Acoustic Warmth	VALVE → SOLID STATE for a little air.
Master Bus Glue	Light IRON → VALVE, 1.5:1, slow attack.
Saturated Parallel	All four stages with THICK, 4:1, MIX 50 %.
Subtle Colour	IRON → VALVE, the compressor out.
Console Edge	SOLID STATE → TRANSISTOR: a bright, forward edge.
Hot Source Tamer	GUARD on, TRANSISTOR → VALVE: for sources that arrive too hot.

Tips

- Try the same stages in a different order: iron after the valve thickens the valve's harmonics, iron before it gives the valve a weightier signal to work on.
- For more character without more level, raise DRIVE; INPUT GAIN pushes everything harder, the compressor included.
- Leave OS at 2x; use 4x when several stages are driven hard on bright material.
- GUARD is handy on unknown or very hot sources: the stack then always sees a sensible level.

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