

Tonewheel (legacy)

A tonewheel drawbar organ with percussion, key click, scanner vibrato / chorus and valve drive.

This is the first Tonewheel, kept on the Legacy page. The Stable Tonewheel now has the rotary speaker built in and a new panel; this one is dry, for use with your own rotary.



Overview

Tonewheel is a drawbar organ in the classic tonewheel style. 91 tonewheels spin all the time and stay locked together, as on the real thing; nine drawbars from 16' to 1' mix their harmonics, with the classic foldback at the top and bottom of the range.

It has the parts that make the sound: percussion on the 2nd or 3rd harmonic (single-trigger - it only strikes again once all keys are lifted), the key click of the contacts, the scanner vibrato and chorus (V1 - V3, C1 - C3), a valve preamp DRIVE, TONE and the SWELL pedal.

The organ is mono and dry by design. For the full sound, put GFX Rotary after it: Tonewheel passes all MIDI on, so the mod wheel or sustain pedal can switch the rotary's speed.

Reach for it for

- Jazz, soul and gospel organ parts
- Rock organ with overdrive (into GFX Rotary)
- Reggae bubble and other percussive comping
- Soft flute and ballad registrations
- Swell-pedal dynamics from an expression pedal (CC11)

Playing it

Tonewheel is an instrument: it has no audio input and makes its sound from MIDI.

1. Insert Tonewheel on a track (as the first plug-in, or after a MIDI effect).
2. Arm the track for recording and set its input to your MIDI keyboard (or draw notes in a MIDI item).
3. Pull the drawbars, or pick a registration from PRESETS.
4. Play. The MIDI IN light shows notes arriving, and the MIDI section shows how many keys are down.
5. For the classic rotary-speaker sound, add GFX Rotary after Tonewheel on the same track.

Tonewheel responds to the expression pedal (CC11 moves SWELL) and all-notes-off (CC120 and CC123). Velocity does not change the level, as on a real organ. All MIDI is passed on down the chain.

Controls

The header

PRESETS, arrows and display

PRESETS (or a click on the display) opens the list of drawbar registrations; the ◀ / ▶ keys step through them. The display shows the preset number and name. Choosing one sets the drawbars, percussion, vibrato / chorus, CLICK and DRIVE; TONE, SWELL, TUNE, DRIFT and OUTPUT are left as they are. The last entry resets everything to the defaults.

S / M / L

Panel size: small, medium or large. The panel also scales to fit the plugin window.

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Opens a pop-up with the design credit, the GFX website address and the address of this manual. Click anywhere to close it.

DRAWBARS

Nine drawbars, left to right: 16', 5 1/3', 8', 4', 2 2/3', 2', 1 3/5', 1 1/3' and 1'. The two brown ones are the sub-harmonics, the white ones the octaves of the note and the black ones the fifths and the third. Drag a drawbar down to pull it out (0 to 8), or use the mouse wheel over it. Each step is about 3 dB; 0 is off. A short stub of each drawbar's stalk always shows, even when it is pushed fully in.

PERC

ON	Switches the percussion on: a decaying ping on the 2nd or 3rd harmonic at the start of each phrase. It is single-trigger: it only strikes again once all keys are lifted, so play detached for percussion on every chord. While it is on, the 1' drawbar is silent (the percussion borrows it).
SECOND / THIRD	The key shows the setting. Off: percussion on the 2nd harmonic (an octave up). On: on the 3rd harmonic (an octave and a fifth up).
NORMAL / SOFT	The key shows the setting. Off (NORMAL): loud percussion, and the drawbars drop by about 3 dB to make room for it. On: softer percussion, the drawbars at full level.
FAST / SLOW	The key shows the setting. Off (FAST): a short ping. On: a longer decay.

THIRD, SOFT and SLOW only work (and only light up) while ON is lit.

V/C

V1 / V2 / V3	Scanner vibrato, from shallow (V1) to deep (V3).
C1 / C2 / C3	Scanner chorus: the vibrato mixed with the straight sound, from shallow to deep.
Off	Click the lit key again to switch vibrato and chorus off.

VOICE

CLICK	The key click, 0 - 100% (40% by default): how fast the contacts switch on and off, plus a little contact noise. Turn it down for a smooth, soft attack; up for a percussive spit.
DRIVE	The valve preamp, 0 - 100% (15% by default). Low settings add warmth; high settings break up into growl.
TONE	Brightness, 0 - 100% (70% by default): a low-pass that rolls the top off, from about 2 kHz at 0% to 12 kHz at 100%.
SWELL	The expression pedal, 0 - 100%. It follows a squared curve, like a real swell pedal. MIDI CC11 moves it.
TUNE	Fine tuning, -50 to +50 cents.

Drift

DRIFT	0 - 100% (25% by default). The motor speed wanders slowly, so the whole organ drifts a little in pitch (up to 20 cents at 100%), TONE drifts a little brighter and darker, and the scanner's speed wavers. The tonewheels always stay locked together, so the organ never goes out of tune with itself.
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ROOM

SIZE	The size of the room around the organ, 0 - 100% (40% by default).
MIX	How much of the room you hear, 0 - 100% (off by default).

MIDI

CHANNEL	The MIDI channel Tonewheel listens to: OMNI (all) or CH 1 to CH 16.
MIDI IN	Lights when a note arrives or keys are held. Below it, the number of keys down.
PANIC	Lets go of every held key at once.

MASTER

SAT	Band saturation on the way out, 0 - 100%: only the lows and highs are saturated (the mids stay clean), with a soft curve that loosens as the level rises.
OUTPUT	Output level, -24 to +12 dB.
OUT meters	Output level as two bars, L above R, with a floating peak. Click a meter to clear the peaks.

The output is softly clipped at -0.3 dBFS, so peaks never go over.

Presets

Soul Jazz	888000000 with third-harmonic percussion (normal, fast) and C3.
Memphis Groove	888800000, no percussion, C3 and a little more drive.
Full Organ	All drawbars out, C3, more drive.
Gospel	886800008 - the 1' on top - with C3 and more drive.
Modern Jazz	838000000 with soft, slow third-harmonic percussion, no vibrato and almost no drive.
Jazz Ballad	808000000, gentle C1 chorus, a soft click.
Rock Overdrive	888888000, C3, a sharper click and heavy drive.
Reggae Bubble	008800000 with soft, fast second-harmonic percussion and no vibrato.
Flute	The 8' alone with V1 vibrato, a very soft click and no drive.
Slow Perc	888000000 with slow third-harmonic percussion and C3.
Reset all to defaults	Every control back to its starting value.

Tips

- Drawbar numbers read left to right: 888000000 means the first three drawbars fully out.
- For percussion on every chord, lift all keys between chords; held legato notes will not re-strike it.
- Put GFX Rotary straight after Tonewheel and use the mod wheel or sustain pedal to switch it between slow and fast.
- Map an expression pedal to CC11 for SWELL: it is the most expressive control on an organ.
- If the organ sounds harsh with lots of upper drawbars, bring TONE down rather than pushing the drawbars back in.

File: gfx-g-tonewheel-legacy.jsfx