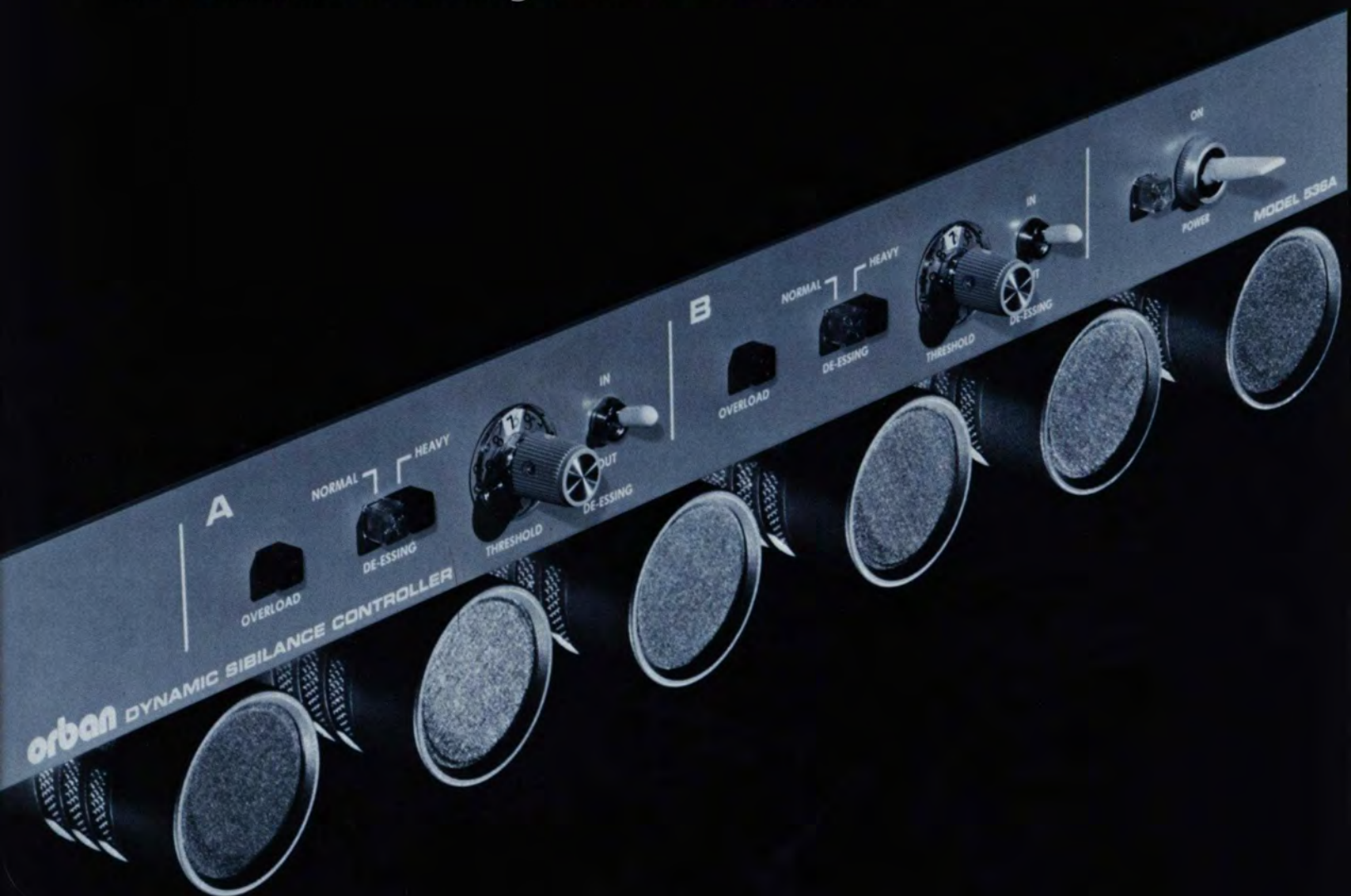


# The Orban 536A Dynamic Sibilance Controller

Two channels of de-essing at an affordable price.



## Performance Highlights

- Two independent channels
- Effective, inaudible de-essing over a 15dB input range
- Active-balanced input, strapable for +4 or -10dBm
- Active-balanced output with transformer option
- Dual-LED gain reduction metering
- Overload/noise ratio typically 105dB
- Very low distortion
- Effective RF suppression
- Top-quality professional construction
- Cost-effective 19" rack mount package
- Low cost-per-channel

### Related Products:

526A Single-Channel Dynamic Sibilance Controller (with switchable mic/line inputs)

### ORDER GUIDE

536A Two-Channel Dynamic Sibilance Controller

Options:

RET-22 XLR-type connectors, kit  
RET-23 Transformer-coupled outputs (500/600 ohms), kit

Note: RET-kits are factory-installed if requested, or may be ordered later as field-retrofit kits

## Description

The new Orban 536A Dynamic Sibilance Controller is an improved, two-channel version of our popular single-channel 526A (but without the mic input). The 526A and its ancestor, the 516EC, are considered to be the industry-standard de-essers and are found in professional audio facilities throughout the world. Now, with the introduction of the 536A, we offer the most cost-effective package available today—two channels of de-essing at an affordable price.

Like its predecessors, the 536A is designed to work effectively on **voice only** in its many professional applications. (Users requiring de-essing of mixed tracks should consider the Orban 422A/424A Gated Compressor/Limiter/De-esser.)

Compared to its competitors, the 536A offers vastly simpler setup, improved noise and distortion performance, and no emphasis of residual IM distortion while de-essing is occurring.

The 536A is active-balanced at both inputs and outputs. For applications requiring a fully-floating output, optional output transformers can be fitted. Like all Orban products, the 536A features RF filtering of input, output, and power leads to help assure trouble-free installation in high RF fields.

The 536A is simplicity itself to operate. There is only one adjustment: a THRESHOLD control. The amount of sibilance energy is limited to a certain **fraction** of the non-sibilant speech energy—even if the input level changes as much as 15dB. The THRESHOLD control determines this fraction. Thus, a consistent balance between the "voiced" and "sibilant" sections of speech is achieved whether or not input levels are well-controlled. This is especially useful with off-mic voices, or in any application (such as motion picture sound) where speech levels vary widely.

A dual-LED display indicates the amount of de-essing which is occurring ("Normal" and "Heavy"), warning of possible misadjustment of the THRESHOLD control. An peak-stretching OVERLOAD indicator warns of clipping anywhere in the circuit.

The IN/OUT switch can be operated at any time without clicks, pops, or gain changes.

Critical parameters, such as attack time, release time, and the frequency characteristics of the control loop, have been preset after extensive listening tests on many voices. Therefore, these parameters can never be misadjusted by the user. Instead, the 536A is simply **there**—ready to do the job quickly and efficiently with minimal hassle.

### How It Works

"Esses" are detected by means of a sharply selective filter which effectively discriminates between "ess" frequencies (centered around 6kHz) and lower-frequency vocal components. In addition, the absolute threshold at which de-essing begins to occur is automatically forced to track the peak input level. This threshold is thus a constant **fraction** of the input level, resulting in **constant de-essing action over a wide range of input levels**. (The fraction is determined by the setting of the THRESHOLD control).

When an "ess" attempts to exceed the automatically-varying threshold, the 536A decreases its gain as necessary to reduce the "ess" level back to the threshold. Recovery is so quick that the following vocal sound is not audibly affected. Because the gain of the **entire** channel is reduced (not just the high frequencies), any IM distortion existing on the original recording medium is reduced along with the "ess", and coloration of the "ess" sound does not occur.

Non-linear control voltage smoothing assures that excessive modulation distortion will not occur under de-essing conditions despite the extremely fast (approximately 10ms) release time employed.

The variable-gain device is a junction FET, assuring a gentle overload characteristic and freedom from control-voltage leakage into the signal.

### Limitations

There are some limitations: First, using the 536A on voice which has already been mixed with other sounds is often unsuccessful because it can mistake sounds having high frequency content for sibilance, with unpredictable results. If de-essing of mixed vocals and instruments is desired, we recommend that you evaluate our Model 422A (mono) or 424A (stereo) Gated Compressor/Limiter/De-essers which can perform that task.

Another limitation is that, because the 536A uses frequencies of 6kHz and above to control its action, the minimum bandwidth required of the source material is approximately 8kHz. Occasionally, bandwidth problems arise when the "sibilance" is mostly IM distortion caused by tape overload (particularly with cassettes), by use of telephone-quality carbon microphones, or by attempts to de-ess recordings distorted by previous transfer to optical film. If the sibilance exists as IM without significant energy above 6kHz, then the de-esser cannot detect and control it.

The track must also be reasonably free of noise or hiss in the region above 6kHz. Normally these factors do not cause problems except in the case of the lowest-quality program material.

It is known that some dialects of non-English languages can trigger de-essing action on sounds other than sibilance. This is ordinarily not a problem if the THRESHOLD control is set carefully.

## Application Ideas

### Recording Studio

Current vocal equalization practices in the pop recording industry tend to include large amounts of high frequency boost to increase presence and articulation. These boosts, particularly when combined with limiting or compression, can boost sibilance to unpleasantly high levels. Using the 536A **after** the equalizer and limiter can reduce the sibilance to levels that sound natural and right. With the 536A, equalization and limiting are no longer constrained by the problems of unnatural sibilance levels, and may therefore safely be used to achieve the ultimate artistic goals of the producer and engineer. Use of 536A during recording allows the producer/engineer to get the intimate, "tight to the mic" sound that has become so popular on hit records while substantially reducing the probability of disk overcutting or cassette saturation when the master is transferred to these common consumer media.

The availability of two independent channels of de-essing in the same package means that two different voices can be de-essed simultaneously without interaction, making the 536A extremely cost-effective.

### Motion Picture Sound/ Video Production

The susceptibility of the variable-area optical soundtrack to high frequency crossmodulation distortion made de-essing compulsory in motion picture recording. The 536A can fulfill this need in a simple, natural, and inaudible way—with solid-state reliability and with the fully balanced input and output interface requirements characteristic of motion picture recording theaters.

Similarly, in video post-productions, there are often problems in getting properly-balanced dialogue tracks—particularly when mic placement was compromised by the needs of the video! The 536A allows radical corrective re-equalization of such problem tracks without overload due to sibilance.

### Sound Reinforcement

Ultra-close miking is the norm in most amplified music. If substantial 6kHz boost has been applied to increase presence—either by means of an equalizer, or by use of a mic with a built-in "presence peak"—then sibilance and "spitting" can become a real problem. The 536A is a cost-effective solution. Up to two microphone channels can be de-essed simultaneously with minimal setup problems.



## Broadcasting

The aggressive compression and limiting employed by many broadcasters in an effort to win audience share may result in a substantial exaggeration of announcer sibilance. In addition, there are some "problem announcers" with unnaturally sibilant voices whose sibilance may be unacceptably aggravated by even moderate audio processing and/or the choice of microphones.

Such problems can be solved with the 536A. It can be used beneficially by itself or in a complete signal processing chain for voice only, aided by equalization (like the Orban 622 or 672A parametric equalizers). The extensive RFI protection means easy installation in the broadcast environment.

The 536A can also be used in TV newsrooms and production facilities to combat the sibilance problems often encountered when using "tie-tac" mics. Many female announcers' voices are highly sibilant; the 536A can add a more naturally listenable quality to these voices.

## Summary

Virtually everyone involved in professional sound needs de-essing—often at a moment's notice! Either you must deal with at least one "problem voice" which requires de-essing to reach contemporary standards of recorded quality, or sibilance buildup problems will hold you back in your quest to transcend the merely adequate and achieve the truly excellent.

If you recognize either problem, the Orban 536A is your ideal solution. It's clean...it's quiet...and it's **simple**. It's a **problem solver**, not a problem causer. See your dealer about the new 536A two-channel, rack-mounted de-esser from Orban—the de-essing expert.



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## Specifications

**Frequency Response:**  $\pm 0.25$ dB, 20-20,000Hz

**Total Harmonic Distortion:** (de-essing defeated):  $< 0.025\%$ , 20-20,000Hz, @ +24dBm

**Total Harmonic Distortion:** (de-essing in):  $< 0.5\%$  @6kHz

**Output Noise:** (20kHz bandwidth):  $< -75$ dBm. Dynamic range from noise floor to clipping exceeds 100dB.

**Input Level Variation for Constant De-essing:**  $> 15$ dB

### Input Characteristics:

**Impedance:**  $> 10,000$  ohms, active-balanced bridging

**Level:**  $-10$  or  $+4$ dBm (strappable)

**Gain:**  $+20$ dB or  $+6$ dB (Dependent on input strap; referred to balanced output. Referred to unbalanced output, gains are 6dB lower.)

### Output Characteristics:

**Impedance:** Approximately 100 ohms, active-balanced-to-ground. Fully-floating transformer output optional. Unbalanced output available from either output to ground.

**Level:** Drive capability into 600 ohms exceeds  $+25$ dBm, 20-20,000 Hz

**Crosstalk:**  $< -80$ dB

**Attack Time:** approximately 1 ms

**Recovery Time:** approximately 10 ms

**Variable-Gain Element:** junction field-effect transistor

### Indicators:

Two-element LED gain reduction meter;

LED OVERLOAD indicator

LED POWER ON indicator

### Operating Controls:

THRESHOLD control (each channel)  
DE-ESSING IN/OUT switch (each channel)

POWER ON/OFF switch

**Connectors:** All inputs and outputs appear on Jones 140-Y-type barrier strip (#5 screw). Chassis is punched for optional installation of paralleling XLR-type input and output connectors.

**Power Requirements:** 115-230 volts AC,  $\pm 10\%$ , 50-60Hz, approx. 6 watts. Captive power cord with "U-Ground" plug to United States standards.

**Size:** 19" (48.3cm) wide x 1 $\frac{3}{4}$ " (4.45cm) high x 5 $\frac{3}{4}$ " (14.6cm) deep

### Weight:

Shipping: 7 lbs. (5.2 kg)

Net (without options): 5 lbs. (2.3 kg)