

Bolling Design



DYNAXM “3” mk2

(march 2022)



“Dynamic sound shaper”

USER MANUAL

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All repairs are made in factory. Packaging, shipping and insurances in charge of the machine owner.

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Bolling Design ROHS and CE Compliance

With respect to Article 2.1 and 3 of the RoHS Directive, the Dynax falls under category 9. Equipment in this category are completely exempt from requirements of the RoHS Directive. Nevertheless, the Dynax is compliant with the RoHS Directive.

The unit is compliant to CE rules. Power supply is compliant to CEI/EN 61558-2-6

IMPORTANT:

Operating the unit before the unit is totally warm may cause the Dynax not to work at its full potential.

Plug the unit in well ahead of the time you will to need it. One hour is a good start.

Warming of the meter section can take one hours too. You may have to use a screwdriver to perform a more accurate metering calibration after warming time. The temperature rise is no cause for concern, but allowing for some airflow is always a benefit from a long-term reliability standpoint.

It is strongly recommended that the Dynax be left powered-on for fixed installations.

Front panel legend markings reflect approximate values, which may vary from unit to unit due to components tolerances, environmental conditions, normal aging, etc.

THIS UNIT CONTAINS NO USER-SERVICEABLE PARTS.

Warning : risk of electric shock if cover is removed.

Opening cover void your guaranty.

In the event of unit operational failure, contact OB service and technical support or your geographic authorized distributor. Please be prepared to describe in detail the exact problem that the unit is experiencing, including : failure conditions, system signal flow, exact failure manifestation, events and actions leading to the failure, etc. Also, be able to quickly provide contact information and the unit's serial number.

It is highly recommended that customers do not attempt to troubleshoot their own units or have them serviced at unauthorized repair centers. Opening the case of the unit will void the OB warranty. These measures also act to protect Olivier Bolling intellectual property so that OB may continue to design high-end professional audio peripherals.

In any case, always refer to this manual, or contact your authorized dealer.

List is available at : <https://bollingdesign.com>

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Thanks for buying a Bolling Design analog audio machine.

Made in France.

History :

The **Dynax3** is the continuity of an old project, started in the 90's , prototypes released in 2003 at Plus XXX studios and tested during a lot of great mixing sessions(France, USA, Japan). Presented officially at 2006 Paris and San Francisco AES conventions, first machines were mono (Dynax).

Released in stereo (Dynax2) during 2007 New York AES convention.

Dynax2 was used for so different projects , from Prince concerts to Manny Marroquin mixes...

Dynax2 user comes from different areas and music environments.

Jazz, Classical, Pop, RnB ,studio, concert, mastering...



2010 Dynax2 (mk4)

In 2010 , first DYNAXM (for Mastering) were delivered.



2010 DynaxM (mk1)

The new blue DynaxM is the continuity of the original one, same sound, more audio features.

What' s new in DYNAXM ?

The original sound is preserved and we can say that the DynaxM blue is a DYNAXM grey with several new features .

New features:

- **SORGIN** (means Sorcer in Bask language): makes your machine a sort of compressor envelopp follower.
- Side Chain has new circuitry, you can put an insert on the side chain path (filter/delay...) and listen it.

Some differences:

- Metering: shows only gain reduction (GR)
- Threshold sensitivity on front panel.
- Stéréo adjust knob on front panel (was a trimmer previously).
- New front panel.with optional studio logo engraving.

DynaxM , what for ?

Mastering of course ...

But it has his place for drum tracking, mix buss and in mono also (try it on vocals...).

Technical aspect:

DynaxM is a stereo dynamic processor.

Input stage is an op amp DC servo circuit.

VCA components are based on carefully selected and paired Opto Cells.

Solid State output amp with Sowter (made in UK) transformers (discrete transfoless on request)

PSU can run on 110 or 230 V AC mains by switching an internal switch.

! DANGER : lethal voltages inside. Never open covers when machine plugged to the mains!

Optical cells are selected as VCAs in order to minimize the distortion.

This feature permits two different features:

- Compress/ Limit with very low artefacts
- Limit strongly in order to perform sound design , based on dynamic more than on harmonic distortion.

Important: DYNAXM has no blender function. It is designed for Mastering purpose, generally Mastering studios have their own insert/mixers systems.

Controls:

DYNAXM is a DIRECT FEED compressor /limiter.

That means that the input is fed directly to the gain control element (VCA).

You don't need to control an input knob in order to control the threshold.

This is more like a unity gain processor, with a threshold control that send a part of the input to the VCA and an output gain in order to compensate the level loss due to compression (make up).

Input and output are balanced.

*The unique sound of the DynaxM is due to premium selected components and **unique design**.*

DYNAX3 is not a clone, it was desigedn from scratch... But with a great knowledge of the relationship between electronic design and how it sounds, from the past machines.

- **Audio Path :**



- . By Pass is a true hardware by pass (in By Pass, no electronic is engaged in the audio circuitry).
- . IN means that DYNAXM is on operation
- . SC Listen means that DYNAXM outputs are fed by the Side Chain signal. You can ear the Bass Drive filter and everything you have inserted (only in external SC mode).



- . Make Up is the compressor/limiter gain
- .Stereo adjust modify left channel level in order to adjust left/right balance if needed.
- Make up is stepped (rotary switch) , Stereo adjust is a potentiometer (not stepped).

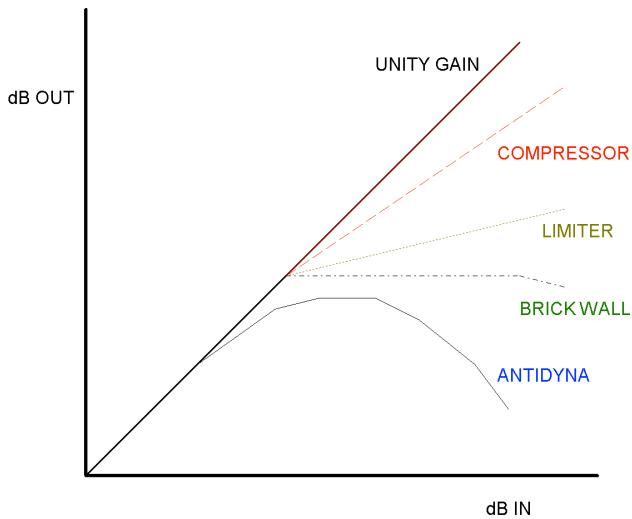
- **Control Path :**



- .POWER : Turns ON the machine
 - .METER reflects Gain Reduction
- Please , note that meter light is dimmed when machine is in By Pass mode and that light turns red when close to peak...
- .EXT / IN SIDE CHAIN: select side chain source (from 1/4" jack in EXT).



.RATIOS: DynaxM is a soft knee compressor, offering 4 ratios.



ALSO DYNAX2 RATIOS



.THRESHOLD: this is the control for the level where the compressors acts
Threshold is stepped (rotary switch).

.Threshold Range: due to the fact that you can use it for heavy levels (mastering) or normal levels (tracking), you can select on front panel the range.



.Time constant: Attack and Release.

Please, note that those settings have a non usual range.

In the DYNAXM design, we decided to permits the user to access to non common values of Attack and release.

As the detector acts on peak levels, if attack is slow and release is fast, you can misunderstand and estimate that attack and release acts like threshold.

This is due to the so small amount of peak and due also to the analog circuit behaviour.

Attack and release are stepped (rotary switches).

.SORGIN: this a special mod. It comes from a simple idea... The time constant are made with capacitors...we suppressed the time constant capacitor in order to have a sort of envelop follower compressor...This generate dynamics changes with time distortion effects.



.BASS DRIVE is a high pass filter.

Full means that no filtering is applied.

50,100,150 ... are not frequency indications in Hz but percentage of the original filter, used on the 2003 prototype... The higher the indication is , the higher the cut frequency is. Bass drive is stepped (rotary switch)

- **Calibration access :**

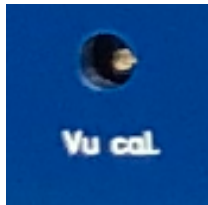


Please, do not twick those calibration OPTO and GAIN R potentiometers.This is for professional trained authorized technician.This is a reason for warranty void.

Full calibration shall be performed by an autorised technician.

Please, do not open your machine (warranty void) , no user serviceable part inside.

Lethal voltage inside, danger !!!



VU Cal calibration.User performable calibration : use a small dedicated screwdriver.

To perform: machine should be ON from at least 1 hour.

No signal at input.Perform the Vu cal for needle at 0 position.

The switch on rear panel is for ground lift.

Please, try both position in order to minimize ground noise.

Engaged is for EARTH LIFT (10R // 1 uF).

Fuse: Fuse is localized in the mains connector socket.

Use T 315mA for 230 V operation, T 630 mA for 110V operation.

Note that TEMPORISED /Delaid fuses are used.

The unit MUST be GROUNDED.

SIDE CHAIN insert ¼" jack: Tip is return , Ring is Send.

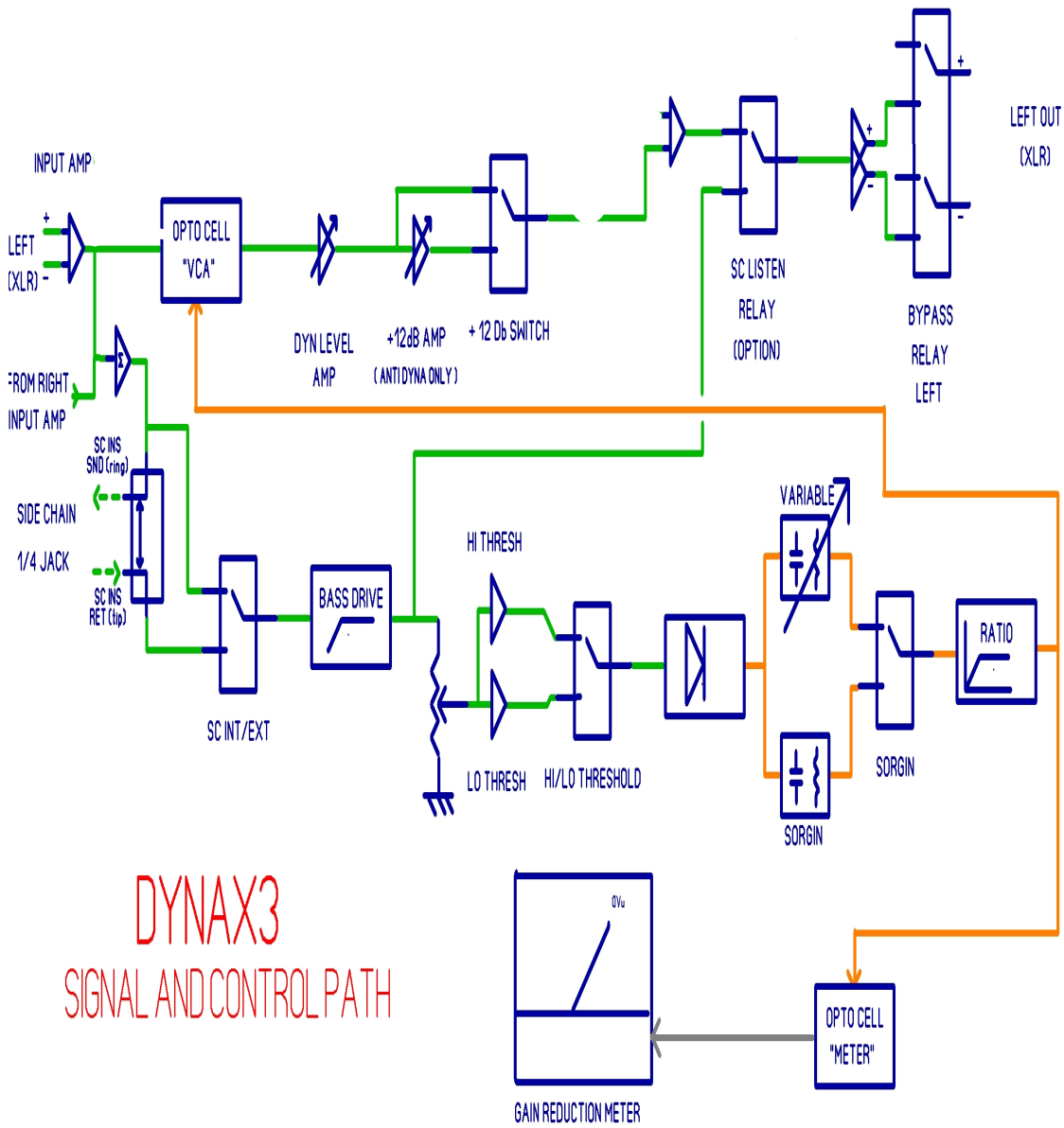
A dedicated cable can be used in order to insert an EQ into the side chain path (deessing, etc...).

An unbalanced cable could be used to inject a signal in order to key the compressor.

Basics settings:

- **Mastering or stereo bus : Compressor or Limiter mode, Bass Drive at 200, Attack: 5, release: 6, turn Compression knob in order to achieve 2/3 dB .**
- **Electric bass: Stop Wall mode, Bass drive at 200 or 300, attack : 4, Release:2 or 7**
- **Snare (usual): Limiter mode, Bass drive :Full, attack :3;Release: 5Compression in order to achieve 3 to 10 dB.**
- **Snare (fast mode) Stop Wall mode, Bass drive : Full, Attack: Fully Counter Clock Wise (CCW), Release: 2.Perform an at least 12 dB reduction (and try harder, change carefully release and attack!).**

Of course you can use any settings you want. Music is the only way..



Technical specifications

Sometimes (we can say generally), there is a lot of difference between what brands claims and what we can measure at the office.

In addition, we say that we are creating musical instruments and that the relationship between measurement and listening is not so crystal clear !

So, the only way to know if a machine suits your taste and make the job you want is to test it by yourself.

For sure DYNAXM technical specifications are the good ones, regarding distortion ,noise , dynamic range and bandwidth !



Please, listen, use your ears.

Music is the only way.

www.bollingdesign.com