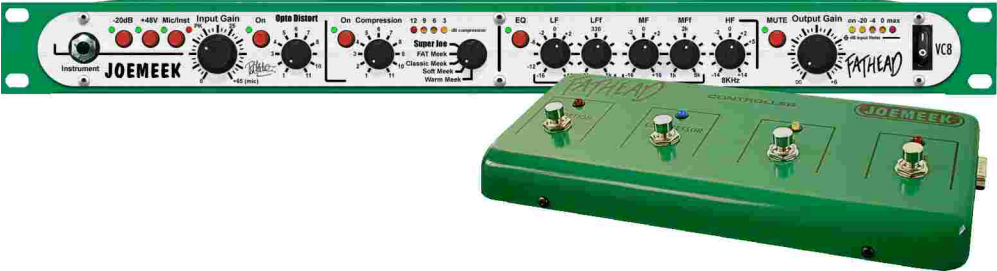


JOEMEER

# FATHEAD



User's guide



<b>1. Getting Started</b>	
basic setup	4
studio playing/recording	5
Advanced stage use	5
Use with a microphone	6
<b>2. Using the Fathead</b>	
Front panel	7
Rear panel	8
Sample settings	9
<b>3. Understanding the Fathead</b>	
The CurrentSense input amplifier	11
Opto distortion	12
The compressor	12
The Meequalizer	13
Digital Upgrade	14
<b>4. Common Problems</b>	14
<b>5. Technical performance</b>	16
<b>6. System Diagram</b>	19
<b>7. User Settings</b>	20
<b>8. Safety and Warranty</b>	21

## **Welcome**

Thank you for purchasing the JOEMEEK Fathead. We at JOEMEEK hope you will have as much fun playing through this unit as we had designing and building it!

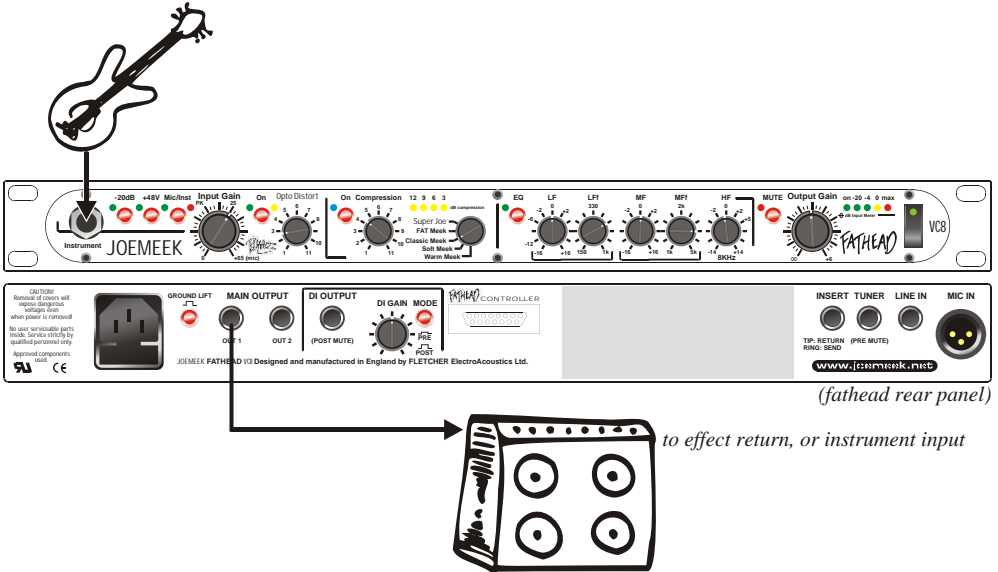
### ***About the fathead***

The JOEMEEK Fathead is an uncompromising pre amplifier for musicians. It combines the best available audio quality with vintage effects to create a musical sound, highly suited to recording and live performance.

The Fathead aims to be an artistic tool that gives the musician more tones and richness from their instrument. The Fathead also presents a superb signal path, with huge possibilities for interconnection in live performance and recording. So, whether recording, live playing, plugging in directly or using a studio microphone, the Fathead will radically improve your results, and give you more variety in sound.

## Get playing (basic setup)

If you are a guitarist or bass player, you will want to use the Fathead as a 'signal heater' before your instrument amp, so to start getting great sounds set up your equipment as follows:



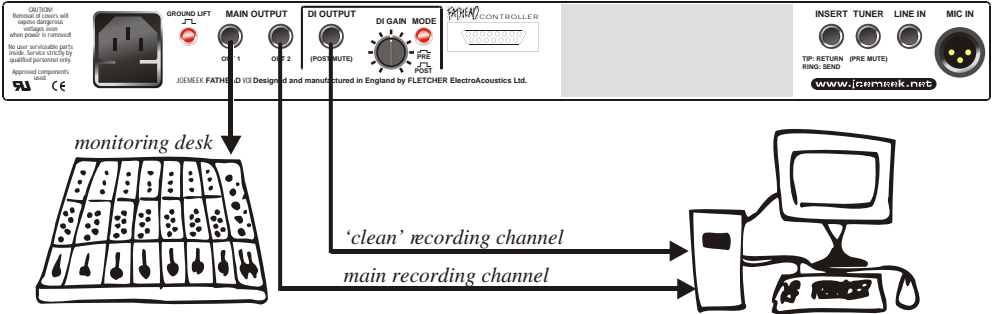
**HINT** The output of the Fathead is extremely hot (loud), so it is advisable to use a 'pre amp link' or 'effect return' input on your instrument amplifier, rather than the instrument input. You will also get less noise!

1. Connect your system as shown
2. Turn the output control of the Fathead to minimum
3. Switch on the Fathead, then the amplifier
4. Play test notes on the instrument and adjust the input gain on the Fathead so that all but the last 2 leds are lighting
5. SLOWLY add output gain on the Fathead until a comfortable level is achieved
6. Experiment with the effects, and enjoy!

## Studio playing/recording

In the Studio, the Fathead makes an excellent pre amp for direct recording and acoustic recording alike. For direct recording onto a computer, you might try the following:

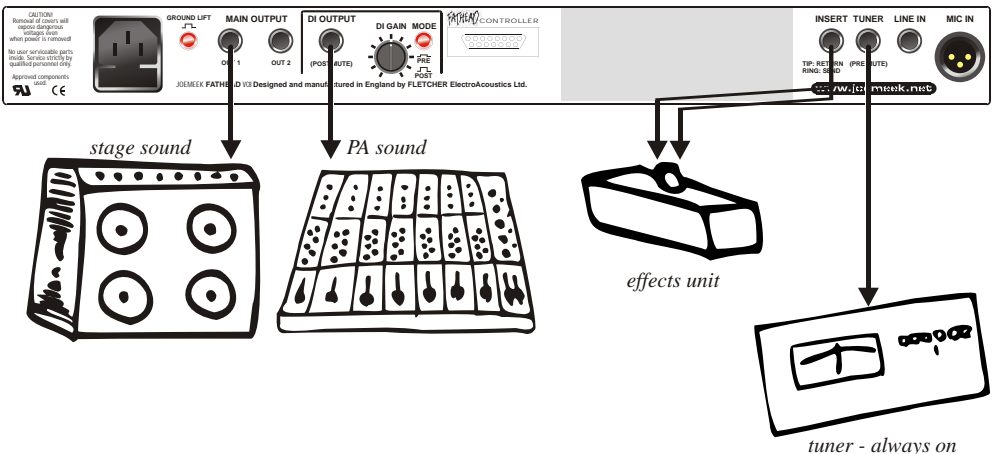
*set DI mode to pre for clean channel*



**HINT** Switch the DI output to 'pre' mode, and separately adjust the volume control. This gives you a clean channel of pure guitar as well as a track with effects on it. You can use effects liberally, and record them, while gaining a separate clean track that can be used later on.

## Advanced stage use

In a band that uses front of house PA, where you also want a great stage sound, you may want to set up the Fathead as shown here:



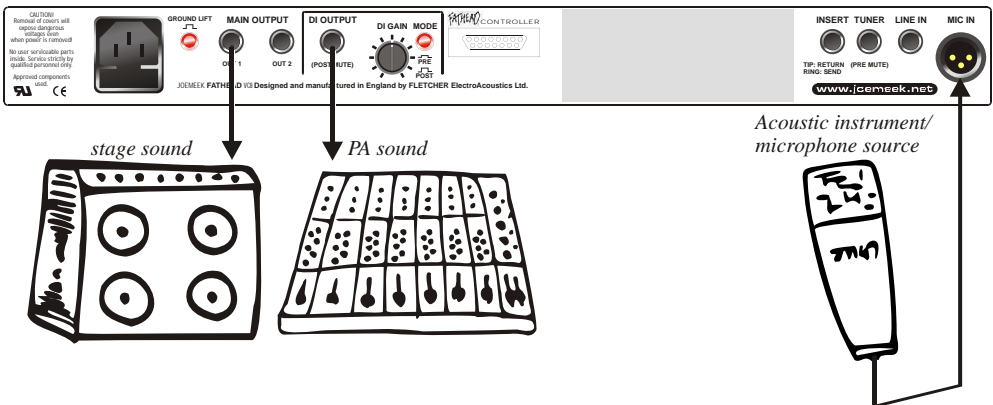
**HINT** *The tuner output is not muted, so check your tuning when you change instruments by pressing mute, and using your tuner normally!*

**HINT** *You may want to send the PA both an 'on stage' sound as well as a clean one, feel free to use both the second output and DI outputs for greater flexibility.*

**HINT** *If you use extra effects, i.e. delay, chorus etc, use them in the Insert point of the Fathead to increase the quality of your overall sound. To do this, use a stereo to two mono jack 'Y' cable.*

## Use with a microphone

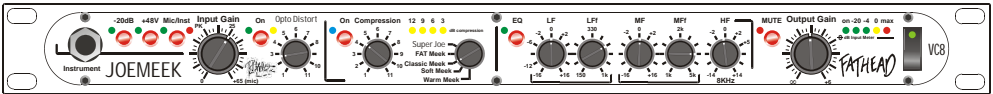
The Fathead features JOEMEEK's CurrentSense mic pre, so you can record and perform with all manner of acoustic instruments. Acoustic players will find the Fathead superb on stage as a quality pre amp that also gives great control over your sound.



**HINT** *The Fathead is extremely sensitive; when using live, feedback can often be a problem. Be careful with compression, this can actually make feedback worse! Always start with low gain, and no compression, and add volume slowly.*

**HINT** *For a more natural sound, remember to only boost frequencies that are present; avoid excessive bass and HF boost with acoustic instruments.*

## Front Panel



- 20dB** Enables a 20dB signal reduction on the microphone input.
- +48V** Enables +48V phantom power on the microphone input. Only use with condenser microphones.
- Mic/Inst** Switches between Mic (pressed in) and line inputs. Plugging an instrument into the front input bypasses the mic input.
- Input Gain** Adds gain to the input signal.
- Opto Distort/On** Rotary control from minimum (light distortion), to maximum (heavy fuzz/distortion). The pushbutton enables the distortion sound.
- Compression/On** Rotary control from minimum (no compression) to maximum (full compression). In actual fact, this control is like a threshold control. The pushbutton enables/bypasses the compressor section.
- Compression mode** 5 position selector switch for compression effect. The preset controls the compressor's attack, release and ratio settings. Warm Meek is the lightest setting, Super Joe is the most severe. Fat Meek is the most noticeable sound on solo instruments.
- Compression meter** 4 LED meter that shows the gain reduction from the compressor in dB.
- EQ** Bypass switch for EQ section.
- LF** Controls gain of the low frequencies in the equaliser section.
- LFF** Controls the centre frequency for the LF cut/boost
- MF** Controls gain of the mid frequencies in the equaliser section.
- MFF** Controls the centre frequency for the mid cut/boost
- HF** Controls gain of the high frequencies (8KHz).
- MUTE** Disables sound output on the main, DI, digital (optional), insert outputs. Note, does not affect tuner.
- Output Gain** Controls the output level of the main and digital outputs.
- Input meter** Shows the level of the signal before the output gain control.



## Rear Panel



**Ground Lift** When button is out, the mains earth is disconnected from the unit. **LEAVE PRESSED IN FOR NORMAL OPERATION**, it is generally safer to have the mains earth connected to electrical equipment.

**Main Output** Dual balanced line level outputs for the main signal. Connect to your main listening/recording equipment.

**DI Output** Secondary balanced output with switchable signal source

**DI Gain/Mode** Controls the output gain of the DI out. DI mode (PRE) causes the DI output to send a 'clean' signal, before the distortion, compressor and EQ. DI mode (POST) causes DI output similar to the main output but controlled by the DI gain control. See system diagram for more information.

**FATHEAD controller** Connection point for the supplied footswitch

Insert Send/Return signal breakpoint. Allows access to the signal before the compressor and EQ, but after distortion.

**Tuner** Constant output for connection to tuner device.

**Line in** Unbalanced input.

**Mic In** CurrentSensing microphone input.

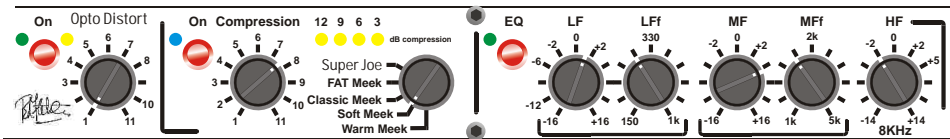
**Digi Upgrade** Cover plate for optional digital card upgrade.

## Footswitch

The Fathead controller footswitch may be connected to give the musician easy access to bypass/enable the compressor/distortion/EQ and mute functions. Simply attach the footswitch with the supplied cable, and enable/disable the Fathead functions as required.

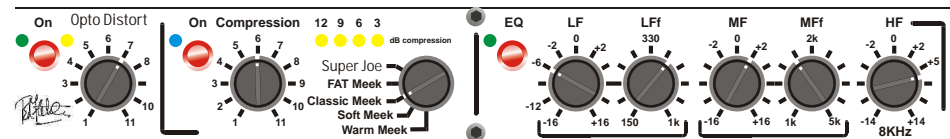
## Sample settings

To help you get started using the Fathead, here are some sample settings of some of our favourite sounds. Note that input and output gain settings are not mentioned. These should be set according to the input and output levels required. Always set the input gain high without showing overload on the meters, and set the output to be comfortable for equipment after the Fathead.



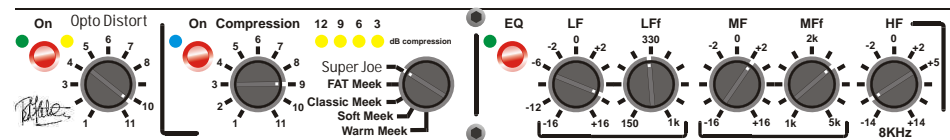
### *Electric/Acoustic/Bass guitar : Warmth*

For a nice sound that is rich and full bodied, use the ‘Soft Meek’ setting with moderate compression. This will give you more sustain and tone. The EQ is used to round off the top end slightly, while boosting the low end.



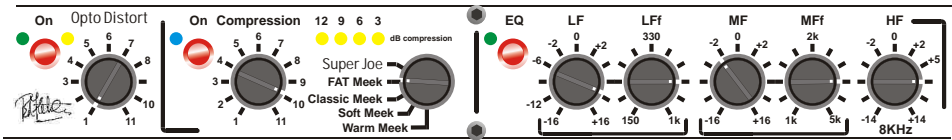
### *Electric guitar/bass : Vintage drive*

A combination of distortion and compression, and mid-high contouring gives a great big driving sound that is a lot like vintage amplifiers.



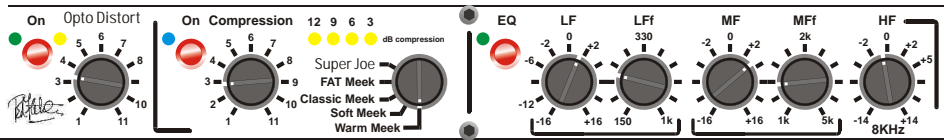
### *Electric guitar: heavy distortion*

Winding up the distortion and compression give amazing sustain and introduce some awesome harmonics. Sound that would normally be unheard are amplified and distorted to great effect. The roll off in HF makes for a much smoother sound.



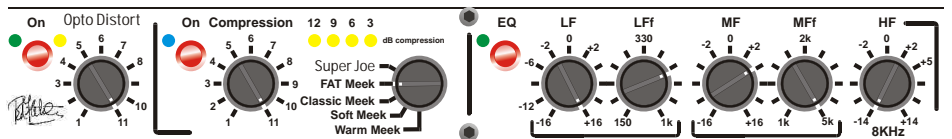
### *Acoustic guitar : Punchy*

With big compression, and a fast release time (FAT Meek setting), the sound of an acoustic becomes a lot more punchy. If you add to this eq contouring with big bass and hf boost with a mid cut a fantastic solo acoustic guitar sound is achieved. Please remember that with this setting, feedback through a PA or foldback may be a problem. If so, simply reduce the compression and bass eq until the problem goes.



### *Use with mic : guitar cabinet*

You can use the Fathead to great effect when using a mic on a guitar cabinet. The Distortion and drive that you get naturally can be picked up and enhanced by the distortion feature, and a little compression adds to warmth. This is worth considering as an alternative when you have a naturally good sound to work with, and want to get an enhanced version in a recording or PA system.



### *Out and out : Electric guitar & Bass*

When you are using an electric guitar with a big system, there is not a lot more fun than winding everything up full, and hearing your instrument like nothing ever before. As with other high distortion settings, bass boost and hf cut adds weight to the sound. This setting will generate a lot of noise, but will sound fantastic!

The JOEMEEK Fathead is a complete instrument channel. It has a lot of capabilities and functions that can interact with each other to create nearly infinite sounds and textures. To use it best, you need to understand each of the Fathead's facilities as separate pieces equipment, then use them together to make your sound.

## **1. THE CurrentSense input amplifier**

The input amplifier takes audio signals from any microphone (XLR socket), musical instrument (front mounted 1/4 inch jack) or high level source (1/4 inch line jack socket), and amplifies them up to 'line' level; that is, from a few millivolts, up to about a volt. The phantom power supply provides power to capacitor microphones through the mic input. Dynamic or ribbon microphones should be used with the phantom power turned off, then full advantage can be taken of the extreme low noise performance of this amplifier. The CurrentSense pre amp design, unique to JOEMEEK, guarantees optimised performance from all types of microphones, from dynamic, to condenser, to classic ribbon types. It is important to select the best input for a given job; here are some examples...

### *Mic input:*

- Live mic in front of instrument cabinet.
- Acoustic instrument with extremely low output transducer.
- Acoustic recording of an instrument with a microphone.

### *Line input:*

- Use with keyboards
- Use in subgroup on a mix
- Dynamic mic in front of live guitar/bass stack (very loud)

### *Instrument input:*

- Use with electric instruments

**HINT** *If you have an active instrument that has a very high output level you may find that you get better headroom using the line input.*

## 2. Opto Distortion

Technically, the 'Opto distortion' feature on the Fathead uses a combination of filtering and soft clipping (using optical components) to create anything from warming tube drive to screaming distortion. This effect was originally developed for guitar and bass. In the studio the optical distortion sound can be used on everything as a truly analogue effect that is extreme yet adds enormous warmth and character. Live, the sound gives the musician massive distortion sounds that are unmistakably analogue and have a warm feel.

Experiment with this control, there is no 'correct' or 'wrong' way to use distortion, just use your ears: "If it sounds right, it IS right"

**HINT** *Often the sound of the distortion can change greatly with different settings of the EQ section, experiment with this interaction for more effects!*

## 3. The Compressor

Compressors with instruments are great at adding punch and sustain, but how? The JOEMEEK compressor is especially good at giving you big vintage sounds. To get the best use out of the compressor it is necessary to get technical; so even if you're not technical, read the next bit carefully and get to be a compressor Guru!

A **LIMITER** is a device that stops the output of a signal path going above a predetermined level. It is mainly used to protect amplifiers and recorders, (and radio transmitters) against overload. The sound of a limiter is a bit like compression but it tends to be flat and uninteresting.

A **COMPRESSOR** is a device that reduces the dynamic range of programme material. Its use is necessary to squeeze both the loudest and softest sounds onto records so that they can be listened to in all environments; ie, in the car with lots of background noise, lack of compression would mean the subtleties of a recording would be lost! A secondary use of compression (and most important for us) is to introduce some artificial dynamics into sound to make it sound more exciting. This is what the JOEMEEK compressor does best.

## WHAT IS A COMPRESSOR?

A perfect compressor is an amplifier where the input/output ratio is constant: So using a 2:1 compressor, increasing the input by 2dB gives a corresponding 1dB increase in the output.

Early compressors which used variable mu thermionic tubes or photoelectric devices only approximated true compression over a limited range. They had a soft 'threshold' where compression started and held to a predictable ratio up to a certain level, then they returned to a more linear amplification allowing transients through. This is in stark contrast to modern VCA compressor/limiters where it seemed 'sensible' to combine the functions of compressor and limiter and to 'stonewall' any and all signals above a certain level; excellent for technical level control but hopeless for musical effect. Generally, (I know I'm over simplifying) modern VCA compressors sound muddy and flat, while old compressors sound lively and retain sparkle. The compressor in the JOEMEEK FATHEAD is unique; it is a recreation of an early photoelectric compressor in use in the mid 1960s. It is capable of producing the same punchy sounds that were so characteristic of the pop records of the time.

## 4. The Meequalizer

The equalizer controls the volume of three audio bands. It's used to modify the tonal sound of the signal in the Fathead. To be ideal for instruments, the Fathead's low frequency and mid frequency centers can cross over, allowing for superb musical effect. The equalizer is after the compressor in the Fathead's signal path.

The general rule about using EQ is to be very careful about too much 'lift'. Increasing the gain by say 10dB in the high frequencies has the effect of taking the Fathead closer to overload. This is generally OK as the Fathead is designed with very generous overload margins, but when using EQ this has to be remembered. The rule is that when 'lift' is used, it's often necessary to compensate by reducing the input gain.

**HINT** *always alter sound from the ground up; i.e. with the EQ controls set to the 'flat' or 0 position.*

**HINT** *If the overload light flashes more than 'occasionally', then decrease the input gain control. - See block diagram for detail on overload indicators.*

## **Digital Upgrade**

For use in the studio with digital systems it is possible to add JOEMEEK's VC1QD, giving the Fathead an additional 24/96 S/PDIF output. This effectively bypasses all noisy analogue stages going into a digital system, while leaving the analogue outputs free for monitoring.

## Common Problems

*I've got no sound!*

- Check cabling.
- Never use an unbalanced cable for a microphone
- Check that mic/inst button is pressed in
- Is the phantom power on? (capacitor microphones only).
- Is the output volume control up?
- Is Mute disabled?

*Got signal going through, but have no compression.*

- Is there enough input signal?
- Is the compressor light on.
- Have you turned the COMPRESSION control high enough?

*It's noisy*

- The Fathead input amplifier and compressor are extremely quiet, but by definition compressors raise the level of quiet passages, and EQ can contribute high frequency hiss if overused; this also means that if there is noise in the input, there will be more noise on the compressed and EQd signal. It's a compromise so try reducing compression and HF EQ.
- Disable distortion for quiet operation
- If you still have excessive noise, either there is serious noise in the input signal being fed into the unit, or something is still turned up far too high.
- Start turning things down.

### *It distorts.*

- No it doesn't! Distortion inside the compressor is virtually impossible; however it is possible that the input amplifier is overcooking; turn down the COMPRESSION control and readjust.
- Too much EQ can sometimes sound like distortion.

### *I can't make the compression gentle enough!*

- It takes practice. The setting of the COMPRESSION control is quite critical.
- Select a preset that is more anticlockwise, i.e. 'Soft Meek'

### *I have hum*

- When you are using the Fathead with other amplifiers and studio equipment, you may have a hum caused by 'double earthing'. To fix this, press in the ground lift switch on the rear panel. **BE SURE THAT AT LEAST ONE MAJOR PART OF YOUR RIG IS EARTHED** usually it is best to have your amplifier or mixing desk earthed. Having an unearthed system is **DANGEROUS!** But running parts of a system without earthing improves noise performance.
- Are you recording in front of a computer screen? Instruments often pick up noise from CRT displays.



***Pre amplifier***

The Fathead uses JOEMEEK latest generation CurrentSense pre amplifier circuit that gives ultimate flexibility and quality whether using line, mic, or instrument sources. This means that the Fathead can be used equally well as a head 'on stage' unit, or a pre amplifier for a mic or an instrument in the studio.

Currentsense Mic and instrument pre amp  
 65dB gain swing with 33dB overload margin  
 THD < .001 % @ 1Khz @ operating level  
 +48V Phantom

20dB pad

Phase reverse

Extremely low noise; noise is 128dB below input @ 50dB of gain+  
 Line, XLR mic (rear mounted), and instrument (front mounted)

inputs

Auto impedance matching for all microphone types (CS mode mic pre)

***'Opto Distort***

To add to the Fathead's tonal variety, we have given it an 'opto distort' feature. Technically, this is an arrangement of filters and limiters that utilise optical circuitry to generate a distortion that can be fully varied from tube like warmth to screaming fuzz.

Bypass control

Indicator, and active optical distortion indicator

Distortion level/tone control.

***JOEMEEK compressor***

As with all JOEMEEK channels, the Fathead boasts the JOEMEEK optical compressor. The compressor in the Fathead has been tweaked to produce extremely high ratios, capable of causing huge effect with instruments. That is, high compression without dulling of the sound. The 5 position switch selects carefully chosen presets for the attack, release and a basic ratio setting, while you control the 'compression' (similar to threshold) control.

The compressor can also be bypassed with the footswitch controller.

- Bypass control
- 4 LED compression meter
- Threshold control
- 5 position preset switch
- Automatic gain compensation
- Signal sensitive ratio

### ***JOEMEEK Meequalizer***

The Fathead features an all new 3 band, dual sweeping EQ, optimised for instruments. The frequencies of the sweeping EQ bands cross over, allowing for phasing and other classic effects. The EQ is JOEMEEK's best 'phase levelling' design, featuring extremely smooth sound, even with extreme settings.

- 3 band classic EQ, LF, MF, HF shelf
- LF sweeps from 150 to 1000Hz
- MF sweeps from 1k to 5k
- HF shelf centres at 8KkHz
- MF and MF cut/boost 16dB
- HF cut/boost 14dB

### ***Mute***

To aid 'on line' instrument changes, and silent studio operation, the Fathead is equipped with a silent operating mute function. Operated from the front panel and the foot switch, the mute silently cuts all sound from the main outputs, and DI output, whilst leaving the tuner output untouched.

### ***Output Stages***

The Fathead is equipped with the best technology for solid quality outputs. The unit has dual superb outputs, plus an additional 'DI' output with gain control for Stage/PA use. The DI output is selectable pre/post EQ and output gain control. For use in the studio with digital recording, the Fathead comes with 24bit/96k digital upgradability. Fitting the VC1QD module adds digital output to the main output bus.

Superbal balanced outputs

Di output with independent gain control and pre/post switching

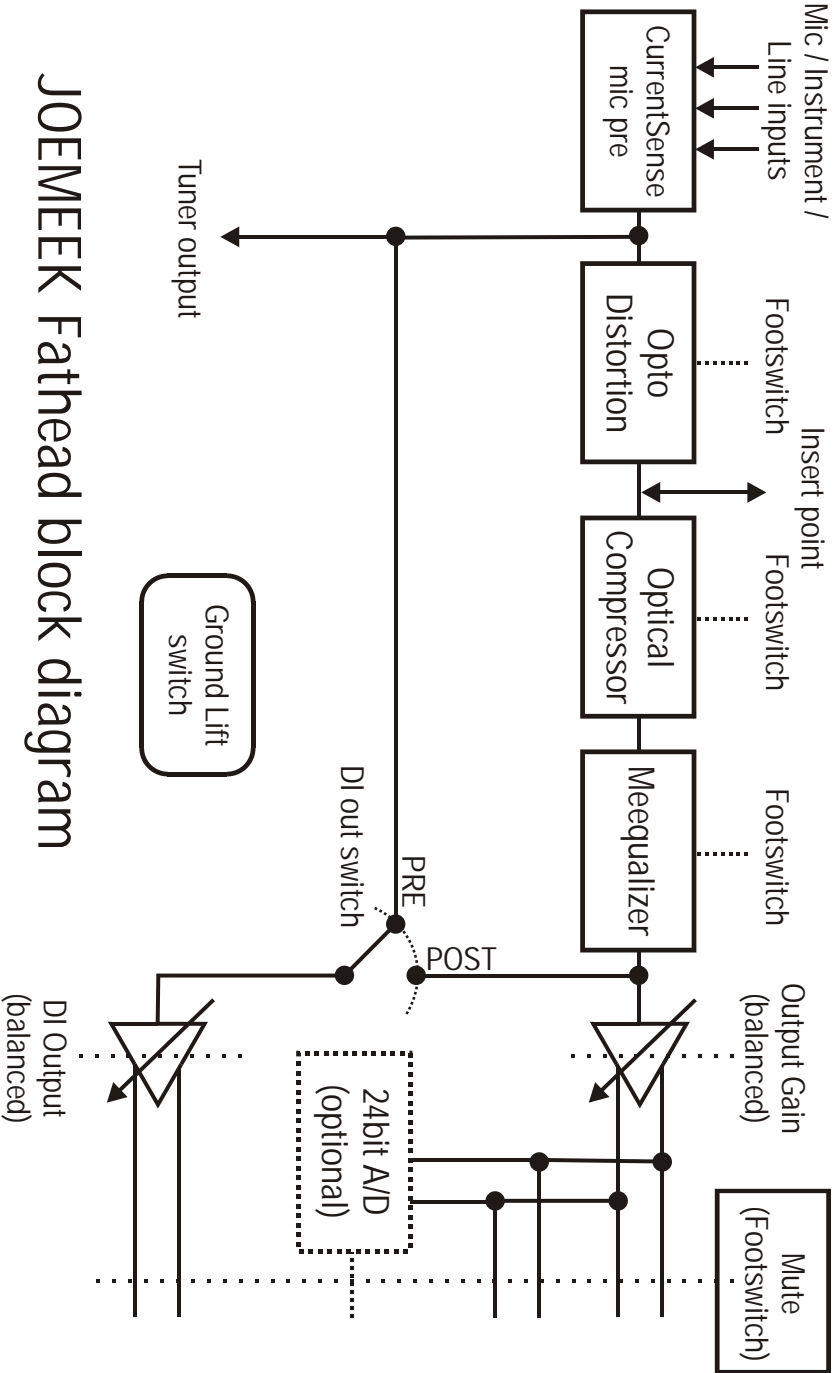
Tuner output - not affected by mute function

Unbalanced insert point for use with pedals, reverbs, overdrive etc.

24/96 digital output upgradability.

Ground lift switch on rear panel

*\*note, the digital module is available now.*



JOEMEEK Fathead block diagram

use this page to record your favourite settings...

On Opto Distort (green dot)    On Compression (blue dot)    EQ (red dot)

12 9 6 3 dB compression (yellow dots)

Super Joe  
FAT Meek  
Classic Meek  
Soft Meek  
Warm Meek

EQ: LF, LFf, MF, MFf, HF

LF: -2, 0, +2    LFf: 330    MF: -2, 0, +2    MFf: 2k    HF: -2, 0, +2

Gain: -16, +16, 150, 1k, -16, +16, 1k, 5k, -14, +14, 8KHz

Notes \_\_\_\_\_

On Opto Distort (green dot)    On Compression (blue dot)    EQ (red dot)

12 9 6 3 dB compression (yellow dots)

Super Joe  
FAT Meek  
Classic Meek  
Soft Meek  
Warm Meek

EQ: LF, LFf, MF, MFf, HF

LF: -2, 0, +2    LFf: 330    MF: -2, 0, +2    MFf: 2k    HF: -2, 0, +2

Gain: -16, +16, 150, 1k, -16, +16, 1k, 5k, -14, +14, 8KHz

Notes \_\_\_\_\_

On Opto Distort (green dot)    On Compression (blue dot)    EQ (red dot)

12 9 6 3 dB compression (yellow dots)

Super Joe  
FAT Meek  
Classic Meek  
Soft Meek  
Warm Meek

EQ: LF, LFf, MF, MFf, HF

LF: -2, 0, +2    LFf: 330    MF: -2, 0, +2    MFf: 2k    HF: -2, 0, +2

Gain: -16, +16, 150, 1k, -16, +16, 1k, 5k, -14, +14, 8KHz

Notes \_\_\_\_\_

On Opto Distort (green dot)    On Compression (blue dot)    EQ (red dot)

12 9 6 3 dB compression (yellow dots)

Super Joe  
FAT Meek  
Classic Meek  
Soft Meek  
Warm Meek

EQ: LF, LFf, MF, MFf, HF

LF: -2, 0, +2    LFf: 330    MF: -2, 0, +2    MFf: 2k    HF: -2, 0, +2

Gain: -16, +16, 150, 1k, -16, +16, 1k, 5k, -14, +14, 8KHz

Notes \_\_\_\_\_

## **SAFETY**

The unit complies fully with European Cenelec requirements (CE) and may be used in all territories subject to safety approval of the power supply to local regulations.

## **WARRANTY**

In the unlikely case of a breakdown, please return the unit in its original packing through the supplier. The unit will be attended to immediately and returned to your supplier.

If any breakdown occurs (excluding physical mistreatment) within 12 months of purchase, no service charge will be made.

**Manufactured by:** FLETCHER ElectroAcoustics Ltd. St Marys, Barton Road, Torquay, Devon. TQ1 4DP. ENGLAND Tel : +44 1803 321921 Fax : +44 1803 321922

e-mail : sales@joemeek.net  
www.joemeek.net

## **DECLARATION OF CONFORMITY.**

This analogue audio processing equipment conforms to the standards and requirements of the European Economic Community.

The EC Harmonised standards that have been applied are;

- a) Electrical equipment (safety) Regulations 1994 (S.I. 1994/3260)
- b) Electromagnetic Compatibility Directive (89/336/EEC) incorporating (S.I. 1992/2372)