

# **CARR SUPER BEE**



## **OWNER'S MANUAL**

*January 2021*



## **Super Bee Instructions**

Thank you for purchasing a Carr Super Bee amplifier.

Nested in Classic Black Face Super Reverb Fullerton sounds with all the usable power needed for great tone and great fun!

- Super Seductive, Super Rocking, Super Black Face inspired swagger sporting current production 6BeeM8 power tubes.

- 10 watts (the new 100) plus built-in attenuator for late night flying

- 3 position Sting switch taking you thru an alternate reality of Black Face tones - ***extra scooped beauty - center Fullerton strut - heated 70s CBeeS.***

The Super Bees' EZ81 tube rectifier yields lively bounce while enhancing the amplifier's emotional buzz. Suitable for home or afield.

Please take time to familiarize yourself with this manual.

**Volume** – Adjusts the loudness and drive of the amplifier. *With any guitar amplifier as you increase Volume the tone becomes thicker and more bass heavy. The Super Bee has a unique circuit that gently rolls off low end as you turn up to keep the bass response tight.*

**Sting Rotary Switch** 3 distinct tonal voices: **64** extra scoop and shimmer - low gain, **68** classic black face – medium gain, **72** increased drive and punch – highest gain - *each setting has a different EQ midrange response -*

**Treble** – Varies the top end from dark to bright.

**Mid** – Varies the midrange frequencies and is very interactive with the Treble control. For a 60s American tone, set the Mid to 12 o'clock. The tone becomes more aggressive as you advance the Mid past 2 o'clock. *When the Mid is set near full, the Treble control's effect is more subtle and the amp is easily overdriven plus the differences between 64, 68, and 72 diminish.*

**Bass** – Varies the low end from lean to full.

**Reverb** – Controls the amount of reverb sound from none to deep and lush. *For 100% wet reverb output set Sting to 72 then turn the Tones off. Only reverb will pass!*

**Attenuator** – Set the Wattage toggle up for full 10 watts with the speaker bypassing the attenuator. Toggle down to vary the speaker output from 2 Watts to a whisper continuously.

**Standby – Off – Play** – The Toggle switch baton in the middle position is Power Off. To play set the amp to Standby (switch baton *down*). After 1 minute of warm up, switch the Power baton *up* to Play. The amp is ready to be played. When turning off reverse this process, first turning from Play to Standby, then Off. Using the Standby setting every time the amp is turned on will prolong tube life. *Note: as the voltages inside your amps come up to operating levels (~ 30 seconds) operating the Sting switch or toggling the Power from Play directly to Off may produce a pop. This is normal and will not hurt the amp.*

## **Bottom Panel**

**Fuse** – In the unlikely event that a tube fails, the Super Bee is protected by a 1.5 Amp slow blow fuse for 120v and 100v (North America and Japan) models or a 0.75 Amp slow blow fuse for 220v and 240v (Europe and Asia) models. Please consult us or a qualified tech for assistance in the event of a fuse blowing. The fuse is located on the bottom of the chassis by the power cord.

**Speaker output jack** – The speaker output jack is located between the power tubes and the Pre amp tubes on the chassis (see *Chassis Diagram*). The Super Bee is designed to drive an 8 ohm load. Maximum tone will be realized when connected to an 8 ohm speaker or cabinet. The internal speaker in Super Bee combos is an 8 ohm load.

To run an external cabinet, turn the Super Bee OFF, unplug the internal speaker (combo amps) and plug in the external cabinet's speaker cord. Alternatively, a "Y" speaker cord can be used to run a 16 ohm external cabinet along with the internal speaker(s) of a combo amp without damage to the amp (the total impedance or speaker load in this case will be 5.3 ohms – see the previous paragraph).

Damage will result from operating the Super Bee without a speaker load or into any load less than 4 ohms.

## **Biassing your Carr Super Bee**

The Super Bee is a cathode bias (self bias) amplifier and as such does not require a bias adjustment when changing tubes. Matched pairs of output tubes are preferred but unmatched tubes are safe to use. Each Power tube has its own self bias network. You will achieve maximum tone and power with matched pairs of output tubes. The Super Bee can only use 6BM8/ECL82 power tubes.

*Carr Amplifiers selects and tests the finest current production tubes specifically for each amplifier model. Caution should be used when buying replacement tubes from any dealer who does not have a return policy as all tubes can have problems (NOS tubes are susceptible to microphonics and failure too).*

**Recommended Settings** These give you a place to start – the Super Bee has a huge range of possible tones – have fun experimenting and remember that guitar pickups vary a lot and you will need to tweak to your guitar and ear! Use the Attenuator for the desired overall loudness. (Attenuator notes for home volumes)

Sound	Volume	Sting	Treble	Mid	Bass	Reverb
Mid 60s American Clean		68				
Spacy Shimmer		64				
CBeeS		72				
Texas Overdrive (Attenuator On)		72				

Sound	Volume	Sting	Treble	Mid	Bass	Reverb
Clang 'a' Dang		64				
Fullerton Hot Rod (Attenuator On)		68				
Angry Tweed Coyote (Attenuator On)		72				
Canyon 100% Wet Reverb		72				

# Carr Amplifiers Chassis Diagram

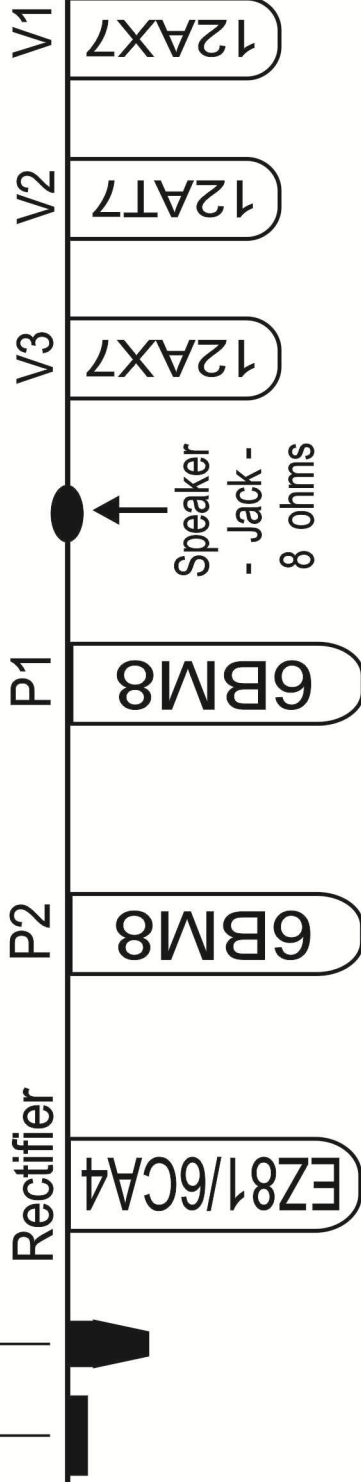
Power Connection  
100W Max



Fuse

Reverb Return Jack  
(on speaker side of chassis)

Reverb Send Jack  
(on speaker side of chassis)



## 6BeeM8 – ECL82

### What is the 6BM8?

The 6BM8 is a 9 pin current production tube containing one high gain triode (pre amp tube) and one power pentode in the same glass envelope. *The power tube section has a dissipation of 7 watts.*

*For plate dissipation comparisons in watts a 6V6 is 14, an EL84 is 12, an EL34 is 25, and a 6L6 is 30.*

*This does not tell us how much power the tube will make though it points to it. In the most general sense using push pull (2 tubes) you can expect ~ 65% of the total added dissipation in relatively clean output power. Looking at 2 EL84s we have  $12 + 12 = 24$  times  $.65 = 16$  watts. Using this very general approach with the 6BM8 we have  $7 + 7 = 14$  times  $.65 = 9$  watts cleanish. The Super Bee with 2 6BM8 makes 10 watts at full pushed output.*

### What does it sound like?

A lot of times the circuit you put a tube in can have as much or more to do with the final sound as the tube itself.

In the case of the Super Bee the 6BM8 has a clear - muscular -balanced sound that rolls into overdrive gracefully.

Cross a 6L6 with a 6V6 and you are getting the idea!

*To me, NOS 5881s come to mind. The 5881 was the tube certain Tweed Bassman and Twin amps shipped with.*

### Why use them?

New sonic flavors naturally and to achieve a push pull amp that is really working the output tubes yet producing just 10 watts of real world power. *10 watts is such a sweet spot. More than enough for home and studio while just enough for live gigs where you want the output section singing at today's gig volumes.*

### Who makes them?

Electro Harmonix is the current producer of 6BM8 tubes. This is the stock tube and they are readily available from any tube vendor. *There are also many affordable NOS examples online for those who wish to tube roll.*

*Matched pairs are recommended though the amp will self-bias with unmatched pairs.*

## Conceptual notes on the Sting switch –

The Super Bee is an imagining of mid 1960s American Fullerton reverb amp sounds. There were a wide range of amplifiers from this period and each had its own vibe depending on subtle circuit variations, power tube types, and speaker configurations. The Super Bee distills these flavors while stretching their sonic wings and letting them go further afield - where they might have naturally! The Sting switch is our guide.

### ***What does the Sting switch change in the Super Bee circuit?***

4 things happen at once every time the Sting switch is turned.

*(that's value!)*

The frequency voicing of the Midrange changes.

The Gain of the dry signal thru the reverb circuit changes.

The place in the signal path where the Tone circuit occurs changes.

The spot the Reverb Drive signal is derived changes.

### ***What do the numbers (64, 68, 72) on the Sting switch refer to?***

These are the three conceptual Fullerton Reverb vibes you can access.

**64** - I have a 1964 Deluxe Reverb that is a special amp. It turns out the very first year or so for most the Reverb amp models had larger value Reverb dry signal pad resistors compared to all the amps that come after. To me this is a more shimmery sound. In **64** we use this larger value resistor along with a larger than stock mid capacitor for more of a scoop in the Midrange - an extra dose of classic tone. It is also lower gain as more of the dry signal is padded down.

**68** – When I was doing amp repair work years ago I had the opportunity to service many late 60s Super Reverb 4 -10 amps. Such a punchy beast! **68** captures this archetypal center 60s sound.

**72** – In the early 70s guitarist started modifying their 60s Reverb amps for more drive and distortion. One way to do this is add a gain stage in front of the amp. The **72** setting moves the level reducing tone circuit from between the first and second gain stage (classic 60s Fullerton architecture) and places it after the second gain stage. Now the first gain stage can hit the second without the tone stacks level drop. This arrangement is more like a Marshall or some of the Tweeds and has a very driven pushed sound.

*An interesting setting given the 72 tone section placement - try turning the tone controls off - this mutes the dry signal and you are left with 100% reverb!*

### ***Why does the sound of the 3 Sting settings become more similar when the Mid is at maximum?***

Most guitar amps use passive tone circuits. This style of tone circuit works by subtraction. Each Sting setting has a different Mid circuit - when you turn the Mid control up all the way you are lessening the effect of the Mids.

(subtracting less midrange lessens the different Mid vibes). It is a little backward to think about, but it is how our familiar tone circuits work!

### ***Why do I love playing thru the Super Bee?***

Because you are a tasteful and insightful guitarist.



