

HarpGear 2 Amplifier Instruction Manual



Getting started:

There are several things you should know in order to get started with your amplifier.

- There are no user serviceable parts inside the chassis of the amplifier. For your own safety contact us directly or take it to a qualified technician.
- Do not use the amplifier or leave plugged in when it is exposed to liquids. This includes rain, water, soft drinks or beer.
 - Do not change the fuses without first unplugging the amplifier.
 - Use the correct replacement fuse in the event you need to replace your fuse.
- Tubes get extremely hot when the amplifier is in use. Please do not go near the tubes or allow anyone else to go near the tubes while the amplifier is in use or shortly thereafter. You will get severely burned if you do come in contact with them.
- Do not use th amplifier around drapery, furnishing, paper or anything else flammable. The tubes get extremely hot and may cause them to ignite and catch on fire. Maintain at least 6

inches around the amplifier at all times while in use.

- Musical instrument amplifiers by nature are intended to get loud. Respect your hearing and the hearing of others. Permanent damage may result.
- This amplifier comes with a grounded power cord (three prong). Do not alter this and always make sure the unit is always connected to proper grounded power of the correct voltage. (US 120 VAC)
- Never run the amplifier without the speaker connected. You may cause major damage (not under warranty) to the amplifier.

This information is extremely important. For yours and the amplifiers safety please follow these guidelines.

Amplifier Operation:



When looking at the top of your amplifier this is what you'll see.

1. There are 2 inputs on the top of the amplifier. #1 is the high gain input and #2 is the lower gain input. They both have different tonal characteristics. Experiment with both to see which you like best.
2. There are two knobs on the top of the amplifier. The knob on the right (from the back) is the volume which adjusts the loudness of the amplifier. The other is your tone knob which allows for removal of the high frequencies. When the tone knob is fully clockwise it is brighter and when the tone knob is fully counter clockwise the amp is less bright or darker sounding.
3. There is a pilot light on the top of the amplifier also to indicate if the amplifier is turned on.
4. Make sure the amplifier is plugged into a grounded outlet with 120 VAC. (Standard US electricity)
5. There is a power switch on the top of the amplifier also. Move the switch to the on position and wait 30 seconds before playing. The volume should be at 1 at this time. This gives the tubes time to warm up. You may shorten the lives of your tubes by rushing things.
6. With the volume turned to 1 plug your microphone into the input of your choice and turn the volume up and play!
7. When disconnecting your microphone from the amp please turn the volume to 1 before doing so.



When looking at the bottom of your amplifier this is what you will see.

1. The small tube in stock configuration is a 12AY7 (you may also use: 12AX7 5751 12AT7 12AU7)
2. There are two outputs on the bottom of the amplifier. One is marked 4 ohm, this is your speaker jack and should be connected to your speaker at all times regardless of if you are using the line out. Damage may occur if you use the amp without the speaker connected. There is also an output jack labelled Direct Out, this is the line out for use with a PA, computer sound card, another amplifier or sound board.
3. The middle tube is a 6V6 tube and the tube next to the fuse is a 5Y3 rectifier tube.
4. Next to the 5Y3 rectifier tube you will find a fuse holder. It uses a 1 AMP slo-blo fuse. I recommend you carry an extra fuse with you while playing. Please unplug the amplifier before changing the fuse.

Technical Information:

Power Requirements: 120V A.C. Grounded outlet.

Fuse: 1 AMP slo-blo fuse on underside of chassis.

Power output: Approximately 5W RMS

Tube Order: Number 1 through 3 from RIGHT to LEFT as you look at the back of the amplifier.

Preamp tube (tube #1): 12AY7 (you may also use: 12AX7 5751 12AT7 12AU7)

Power tube (tube #2): 6V6GT

Rectifier tube (tube #3): 5Y3GT

Speaker output load: 4 ohm

Speaker: 8" Weber signature series straight cone alnico.

Warranty:

We care about our customers and want them to be happy. We stand behind our products for a period of one year from purchase for the original purchaser of the amplifier. The warranty covers parts and labor for our workmanship and all components except transformers, tubes and speakers which are covered for 60 days. If your amplifier needs service please contact us and we will help

you make the arrangements to get the amp back to us. If your amp has been modified or repaired by someone else the warranty is void. Any abused or damaged items are not eligible for warranty claims.

Tips on playing and getting better tone:

As we all know amplifiers amplify the signal being sent to them. If the tone of the signal sent to the amplifier is lacking then the amplified signal will be lacking tone. Below are some tips to help make your amp as well as yourself sound their absolute best!

How to get better tone.

One thing I find with quite a few players I run into is that there tone can be improved. Some have been playing for a short time and some have been playing for a long time. Sometimes I find a players acoustic tone is good but their amplified tone needs help. I will go over some basics here to work on to make your tone stronger and fuller. We are working on creating more resonance and to do so requires a large oral cavity. One reason some people believe that tongue blockers get better tone is because the harp is deeper in their mouth when they tongue block. I know plenty of players who are lip pursers and they have phenomenal tone. The key is placing the harmonica deep into the mouth and having relaxed lips like the picture below. This relaxed open embouchure is the key to good tone.



This picture shows the harp deep in the mouth and the lips relaxed.



This picture shows the harmonica on the edge of the lips with the mouth closed and the lips tight. This position will make the harps tone thin and weak.

I find a lot of players have the harp too deep in their hand while they are playing also. This leads to not having adequate room for the mouth to be on the harmonica. When holding the harmonica you want to have the harp tilted slightly down and your fingers at the rear of the harmonica.



This picture shows the harmonica with the playing surface uncovered and ready for great tone. The harp is deep in the mouth.



This picture shows the harmonica too deep in the fingers with no room for your mouth. See how little room there is for your mouth there? Notice how tight my mouth is here. Not much room for anything but thin tone.

Now that you are holding the harmonica correctly we can work on placing the harmonica in the mouth correctly. Open your mouth wide and bring the harmonica into the mouth with the back of the harp slightly tilted up towards your nose. You want to bring the harp all the way into the mouth until the harmonica is touching the point where the top and bottom lips meet. Now gently relax your mouth onto the harmonica leaving the lips loose and relaxed. Now breathe into the harp. At this point it is impossible to do anything other than inhale or exhale to make the harmonica sound. When the lips are puckered on the edge of the harmonica you will find you are blowing and sucking like there is a straw in your mouth. This leads to a small mouth cavity and thin tone. We want to concentrate more on inhaling and exhaling. At first you may find it difficult to get a clean single note with the harp deep in your mouth. Tilting the back of the harp up towards your nose is going to help out with this quite a bit. The goal is to get your single notes to sound big round and full while they are sounding. This may take you a little bit but it is well worth the time and effort if you want great tone.

The next step is getting the inside of your mouth big and open. If you have your tongue bunched up in your mouth it is closing the tone chamber up and making the sound muffled and thin. You want to drop the tongue and press it flat to the bottom of the mouth to make as much room as

possible in there.



This position shows the tongue down and the throat open. This is a nice resonance chamber for good tone.



This position shows the tongue up and blocking the oral cavity and making the resonance chamber small and ineffective.

The next step is to drop the jaw and open the throat. While harp is in your mouth as described above you want to open your jaw as wide as possible without the lips coming off the harp. Then open your throat by simulating yawning. This opens the mouth and throat up as far as possible

creating your biggest resonance chamber to give you that sweet round tone we're all looking for.



This picture shows the jaw dropped and the throat open. Notice the slight bulge under the goatee.



This picture shows the jaw closed and the throat not opened. No bulge here.

The final step we touched on earlier was to inhale and exhale on the harp instead of blowing and sucking. You want to breathe from your diaphragm and not your chest. You should notice your stomach expanding as you inhale on the harmonica and it should contract while exhaling. If you

are feeling your breathing in your chest and not your stomach you are not breathing properly.
We'll work on this in the exercises below.

Now if you combine all the above techniques and do some practice exercises you will have the best acoustic tone possible and be ready for the amplified harmonica techniques.

The five key elements to good tone:

1. uncover your playing surface
2. place the harp deep in your mouth and relax lips
3. think inhale / exhale not blow / suck and use your diaphragm to breathe
4. drop your tongue to the bottom of your mouth
5. drop your jaw and simulate a yawn to open throat

Exercises:

Now we can begin to do some practical exercises to reinforce great tone. If you do these steps everyday for 10 minutes a day I guarantee you will see a noticeable difference in your tone. If you can record yourself playing these exercises the first day and the seventh day you will hear it. (I would like to thank Larry "The Iceman" Eisenberg for teaching me this originally.)

1. Long tones are one of the keys to developing big tone. Lay on your back with a pillow on your stomach. Now pick one hole on the harmonica to inhale / exhale on (I am going to use hole #2 for my hole). Get your embouchure correct as we discussed above. Remembering the five key elements. Now slowly relax and inhale on hole #2 or the hole you chose. Feel yourself inhaling and concentrate on how the note sounds. The pillow should rise as you inhale and drop when you exhale. Slowly move your mouth to make the tone change. What does it sound like with the mouth a little closed? What does it sound like open? What does it sound like with it in between? Don't begin to make the note sound and stop. Inhale as long as you comfortably can and experiment with the sound. Now exhale on the same hole slowly and keep the volume between both notes the same. Do this for 10 minutes on whichever hole you choose. I will be adding an amplified section in the next couple of days. I don't pretend to be an expert on tone. I just know what I have been taught by people I consider to be the experts on tone. I am just trying to help those who need a little help with making their sound a little bigger. Even if you have good tone these steps are always good to review. Also sorry for some of the photos. I know I needed a shave and the mouth one definitely isn't purdy. (no deliverance jokes please :o) Please give me any feedback you have to offer good or bad. Hearing from you guys will inspire me to do more or not to do more depending on the responses. I would also like to thank my wife for taking the photos ;o)
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Bending Help

A couple of questions have come up about bending with the tongue down and on the bottom of the mouth after [the tone article](#). Here's my explanation:

When bend I actually move the back of my tongue and throat to do it. I leave my jaw in place and I slightly pull my tongue to the rear of my throat which causes the tongue to rise slightly in the back. When I say I pull my tongue I am using that as a way of describing the feeling of the movement. The actual movement on the front of the tongue is so miniscule it is almost nonexistent. When you "pull" your tongue back it causes the tongue to rise slightly. This redirects the air and causes the reed to bend. The front of the tongue moves back slightly but stays down. It is much the same as when you learn to bend tongue blocked. You can't move the front of your tongue too much when you are tongue blocking because you would lose the clarity of the note. A

lot of players bend using their jaw and tongue but notice the jaw more. This method of bending is more like forcing a bend. Just using your tongue and throat is like finessing. Try while inhaling on the 4 hole of your favorite harp to pull the tongue back while keeping it flat in the front and allowing it to rise in the rear. You will feel the pull in the part of your throat where the jaw and throat meet on the bottom side of the back of the mouth. You should also notice the back of the tongue is coming up so slightly. This isn't easy at first and it is why a lot of players have problems bending while tongue blocked. The bend should sound if you are moving the tongue right. If you are getting the bend and it is right you will be able to hold your jaw and feel it staying down and not moving. While I am bending I can feel the muscles in the area where the jaw meets the throat moving up slightly but the front of the jaw is stationary. This will take some time to get but when you do it will allow you to bend while tongue blocking or lip pursing and with great tone. I am not saying that bending the other way will not give you great tone. This way will just allow you to open the oral cavity more and create an even bigger resonance chamber. This was a little hard to describe but I am more than happy to answer any questions to help clear it up.

How to get better amplified tone.

One thing I find with quite a few players I run into is that there tone can be improved when playing amplified. Some have been playing for a short time and some have been playing for a long time. If you have [good acoustic tone](#) you may be able to help your amplified tone with these simple tips. Before I go any further I want to thank [Dennis Gruenling](#) who spent the time with me to show me how to get good amplified tone. Everything on this page was shown to me by him including the glass exercise I will show you. The first thing that you will need to work on is mic grip. I will break this down into steps. Please note that there are plenty of other grips that work well for other people. I am just showing you the one I and many other players use with great success.

First how to hold the harmonica. We will place the harmonica in our hands right above the crease where the pointer finger meets the hand. You will see the hands are evenly placed and the harp is held with pressure between the hands.



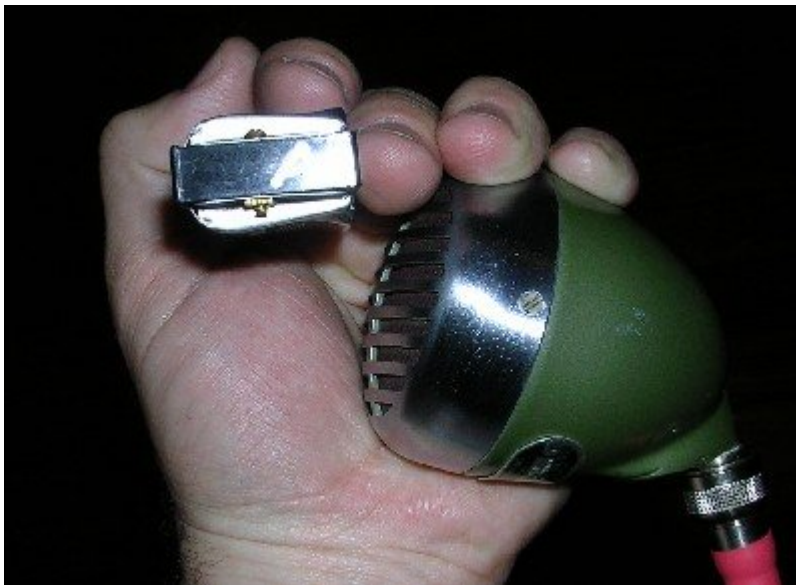
Next we will bring our fingers over the top of the harp with the right fingers on top of the left fingers and bring the heels of our hands together. Please note I am leaving the playing surface uncovered so I can get deep placement of the harmonica in my mouth.



This is how we will hold the harmonica while holding the microphone. Now it is time to add the microphone. I get asked how deep do I hold the mic when it is in my hand. I place the mic in my hand so that it is held in place by my pinky and ring finger.



I also took a picture of what it looks like when I am holding the mic and harp together. This cutaway shows the small space between the mic and harp which allows a "tone chamber" of sorts. It also gives you an idea of how the harp and mic interact with each other.



Now that you have the mic in your hands with harmonica it will look like this. The heels of your palms should be together and in full contact with the mic. No air should escape there. This will feel impossible at first but trust me, it is very possible and takes time and practice.



The next step is to bring this to your face. Your chin will fit into the open area under the harmonica . You will bring your left thumb up along the left side of your face. Then rock the harp and mic to the right side of your face so that your thumb is tight against the right side of your face as if you intend to play with the side of your mouth. The fingers on the top close off the top side of the harp making it airtight. Done right you will have an airtight cup around the harp and mic. This will overdrive the mic element giving us the overdriven, fat, round and brown sound we all desire.



Left side



Right side. Do you see any air pockets? The harp and mic are buried in there. No air will escape it.



The heels of my hands closing the bottom off.



The top is closed also. This is the key to great amplified tone.

Now lets look at some common tone mistakes with the microphone / harp / face interface.



You can see here that the right hand is not sealing the cup and there is too much room for air to escape.



Here is another common mistake. The right hand is almost there but not quite. Just bring the thumb to the face and you will have it.

I also hear, "I can't move the harp in my mouth with this tight cup." It is a matter of practice. I find that the base of my index fingers push the harp from side to side while my face and mic stay put.

When playing the harmonica properly you will be moving the harp and not the face anyways . Unless of course you are doing a headshake or some other effect. So think of the harmonica like a typewriter bar and let it ride in the pocket from side to side while everything else stays tight.

The exercise below will help you become accustomed to moving the harp in the cup.

People who see me hold the mic will commonly say, "You have big hands. Mine are too small to do that.". My hands are very average (8" from heel to middle finger tip exactly) and it is about practice and working with the technique.



Microphone Exercise

I have an exercise that will make holding a bullet mic seem like child's play. (Once again thanks [Dennis G.](#)) Find yourself a nice coffee mug or wine glass with a big mouth like the one in the picture.



This is a full sized 520SL green bullet and not a 707A bullet. The glass is just that big.

Now we are going to hold it like a bullet and get a tight seal like with the bullet mic. If you are having problems with the mic this will seem ridiculous. It isn't trust me. This is the type of practice it takes to get this critical step right in amplified playing.



Here it is with the harp and totally sealed. Now practice playing some songs, licks or whatever you like. Do this for one week for 10 minutes a day. The first day you will be leaking air and the inside of your forearms WILL burn. Keep it up and continuously try to get the seal perfect. Don't forget to roll it to the right and get a good seal on the right side as well. In this time I challenge you not to touch a bullet mic. After seven days of not touching the mic and doing this for 10 minutes everyday while you practice your stuff you will hold the mic like it's a babies toy. Your grip will be strong and consistant. Now I realize this is hard work. I did it and I still do it. I will routinely practice with a coffee cup and just play. I'll do it for 10-30 minutes at a time 3-4 days a week. Why? Because it is what it takes to get it right for me. I heard a story once and I will try to relay it

here effectively.

One day there was a man who had played violin for 25 years and was world renowned discussing with an interviewer how he gets disappointed about his playing. He said it drives him to practice 8 hrs a day to be as perfect as possible and yet he is still not satisfied. The interviewer said, "I can't believe you could be dissatisfied with your playing! You sound excellent. I would give my life to sound like you!". The violin player just looked at him and said, "I did give my whole life to play like this."

I can't say I practice to that extent, but the ones who are great and we all admire do practice like that. They have given their lives to be where they are and sound like they do. If we hope to sound even 25% as good as them we need to do the things we can to get there. This lesson is one of the biggest things you can do to get "that sound" while playing amplified. Please ask any questions you have and let me know what you think of the article and video.