

Electric harmonica warmer development story

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It has been five years since I started enjoying playing the chromatic harmonica as one of my hobbies after the compulsory retirement. From the very start, I have been one of those players who have been annoyed by the “stuck valve” caused by the condensation that always occurred in the cold season.

The condensation is attributable to the difference in the temperature between the exhaled breath and the harmonica. So, everyone will think that you can solve the problem just by warming the harmonica. A variety of efforts have been done so far to that effect, including the use of body heat as by putting the harmonica in the pocket or holding it under the arm, the exposure of the harmonica to warm air blow of the air conditioner, or wrapping the harmonica with disposable body warmer. With such methods, however, the effect will not last long and the harmonica gets cold, causing condensation. It was the spring of the year before last (2012) that I decided that something needed to be done and started to think about the solution.

What drew my attention at first was the idea of directly warming the reed plate. It was considered that the challenges to be solved for the realization would include, for example: [1] selection of heat source (electric power, chemical heat generating substances, thermal storage media, etc.), [2] method of transferring the heat from the heat source to the reed plate, [3] method of fitting heat source to the harmonica (screw, magnet, clip, etc.), [4] capacity of the heat source (wattage), large capacity may soften the valve and small capacity will not warm, [5] any adverse effect on the tone, and [6] any adverse effect on the playability.

For each of the challenges, I developed specific ideas, put them into shape and repeated prototyping and tests to find out the best. It required a lot of laborious efforts, patience and time. And a hand-made prototype completed in the fall of the year before last (2012), when it was becoming cold.

To confirm the effect, I played the harmonica in a cold room to intentionally cause the condensation and the fifth hole started to let out the sound “poop, poop,” when I fitted the prototyped device. Then, voila! Ten to twenty minutes later when the harmonica got warm, it sounded easily without resistance when I blew with a weak breath. And the condensation has gone as if it were a magic. I almost cried out “Eureka!” At that moment, I was sure it is good enough for everyone to use.

After that, I built 20 more prototypes and distributed them to instructors and students of Mr. Tokunaga’s class for evaluation purpose starting in January last year (2013). As a result, most of them affirmatively responded, saying “sure-fire effect” and “I want it sold early as a product.” I managed to commercialize it this month (February 2014) and have delivered 60 pieces to this day. To my utmost pleasure, I am receiving a lot of voices of satisfaction with the effects after the use. And, in addition to the prevention of condensation, an unexpected secondary effect of improved sound was confirmed.

I know there are still some issues left. I will incorporate improvements hereafter, increase applicable models and make the product more compact and usable. Your kind suggestions are appreciated. It would be my pleasure if this product widely spreads to serve harmonica lovers who have been annoyed by the condensation.

For your information, this invention was registered on June 21, 2013 as a patent in Japan and its patent number is 5294519. Since it was published on September 18, see the Unexamined Patent Application Publication or search it in the patent electronic library on the Internet for the contents. And, based on the PCT, the international application was filed in January this year.

I would like to thank a lot of people who helped in the present commercialization, including: Mr. Takashi Kobayashi, electric engineer, who has been a comrade since the time of early prototype tests; Mr. Shinichiro Tsunemi, who graduated from the same school and helped me in developing patent application documentation; Kinoshita Electronics Corporation in Kyoto that cooperated with me in the production; harmonica players Mr. Nobuo Tokunaga and Mr. Hideyuki Yagi who provided me with advice and powerful support of public relations; and many other people who kindly tested the product. (Developer: Yoshihiro Fujiwara)



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