



# User Manual for Polybass-R (RMC/Godin Multiac version)

V7 5.1.2001

## Why do we make such an Effort?

### Bass is fundamental

working as a sound engineer, playing in bands, studying the history of instrument making and analog electronics, the feeling became stronger every year that bass is much more important than it seems. it's unfair that the bass player is in the background, but it also fits to his fundamental task of stability and coordination for all other musicians.

Harmonies are built from harmonics of the fundamental tone. on primitive instruments like the fanfare its only possible to play those notes, and hearing the bass tone, we feel why all other notes belong together and why the notes that are not directly in the scale create an interesting tension...

more so, I feel that the vibrations resonate in our bodies and a concert or dance night is not just a social and cultural event but also a therapy... short:

**IF I COME HOME FROM A SHOW AND DID NOT FEEL SOME LOW BASS, I AM NOT SATISFIED !!**

### How to create the bass in a small ensemble

unfortunately not in every combo there is space for a bass player. there are probably more duos and trios of voice, guitar and percussion or harmonica and clarinet and so on where one of those instruments takes the musical task of the bass player, yet on an instrument which does not have the size to create a real low bass.

**BUT:**

we are lucky that engineers of the last decades created portable woofers that fill a big room with solid and profound bass! so one of the band can play a bass pedal and its done. how clumsy and synthetic! we have a better solution: we divide the lowest notes of the guitar so that they turn into bass notes! the guitar plays as usual, maybe a bit more aware of its function, and the bass comes out for free, low and alive, discrete and present, but not calling attention or pretending to be another instrument: everyone can see who plays those notes, no one cares why they sound so low, but they feel satisfied

### The physics of intervals

since the scales are made of harmonics which are multiples of the bass note, the higher climb in the scale, the more notes we get, the closer the intervals are. and also: the higher the frequency, the shorter the wave, the quicker we identify notes. so an interval that sounds good on the guitar can sound wobbly one octave lower!

## What is different about Polybass

there have been many approaches to create bass, but not for a clean single bass line! basically, one octave generator which switches to the lowest played string would be enough. but we found that sudden switching between strings call attention. so we made an octave generator for each string, tune it to the string and then select the lowest note and fade the previous. then a steep filter takes its color, so instead of sounding like an instrument which is not on stage, it just vibrates totally synchronous to the guitar string.

## The complete high class preamp system

Polybass is not only the low bass but a complete 7-channel low noise low power preamp and mixing system, designed to give you the maximum possible options for configuring and mixing any kind of pickups in any guitar.

in the 90ies we explained to the world what livelooping was good for, now you can participate in this evolution...

## About this Manual

the Polybass board serves for any guitar if there is a polyphonic (hexaphonic) pickup and enough space for the board and at least one additional control.

But it is specifically made to replace one of the RMC preamp boards which are used in the RMC Polydrive and the Godin Multiac ACS/SA/Spectrum/Jazz and some other instruments with this RMC system.

if you own such an instrument, the installation is very simple, explained in this manual.

if you want to build it into any other instrument, pick the manual for the version Polybass-P

most users are happy after the installation and do not need to read beyond.

for those who are not afraid of electronics we have many more options, just contact us!

remove to disable compensation filter (see page 5)

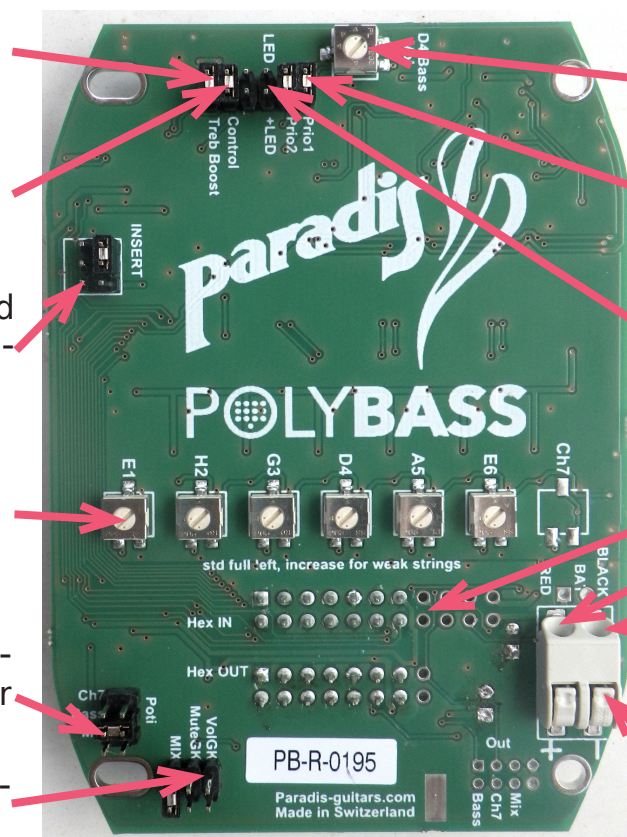
in this position, the SynthVol controls the Polybass effect vol.

if nothing is installed here, a jumper is needed next to INSERT

select the volume of each string by adding gain to the weaker ones (default is all closed)

Bass adds PBass signal to mix (remove for split outputs)

VolGK enables to control a guitar synth



adjust the effect volume for D-string

removing the Prio1 and 2 switches off the priority function

here you can connect a LED that blinks when the battery is weak

pins 15/16 for Spectrum/Jazz or split PBass  
insert red wire  
insert black wire

gently push while inserting wire

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## Installation into Godin Multiac SA/ACS

**Unfortunately, RMC changed their preamp to a single SMD board while we developed the Polybass, so the Polybass does not fit into instruments made after about 2017. we can provide an older original RMC board for this case though.**

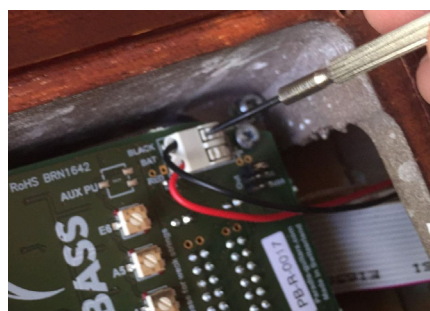
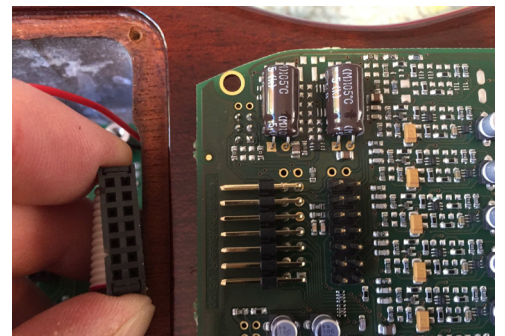
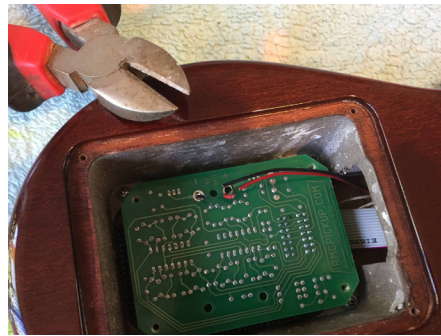
a video that probably shows all you need: <http://www.polybass.com/installation/>

Polybass octaves each string separately, thats why it works so accurately.

Godin produced the most instruments with a hexaphonic pick-up (the newer versions Encore and Duet have monophonic pickups though!), thats why we made the board fit perfectly into those guitars (and others with the RMC Polydrive system).

If you have a screw driver and can strip a wire, you can install it.

1. unscrew black plastic on the back side of the control faders (4 black screws)
2. unscrew board (4 metallic screws with plastic washers)
3. cut the red and the black wire about 2cm from the board
4. pull board to disconnect it from lower board
5. disconnect 14pin flat cable connector from it
6. plug the 14pin flat cable into the same position on the new Paradis board (its possible to connect off by one pin!). the red wire is pin1 which is square on the board
7. position the board by the screw holes and then gently press it down in the correct position
8. strip about 4mm insulation from the wires
9. insert wires to the cream colored receptacle, while pressuring its little levers: red to + and black to - . verify the wires are correctly inserted by pushing them a little
10. Play! the lowest fader intended to control a Roland synth volume now controls the volume of the Polybass effect.
11. if it does not work, jump to Trouble Shooting next page
12. verify the volume of each string. if you feel they are unbalanced, increase the volume of the weak ones. default is all at minimum!
13. screw the 4 metallic screws into the boards corners
14. install the new plexi back cover with the black screws
15. put the little plastic caps on the sliders, the colors help orientation





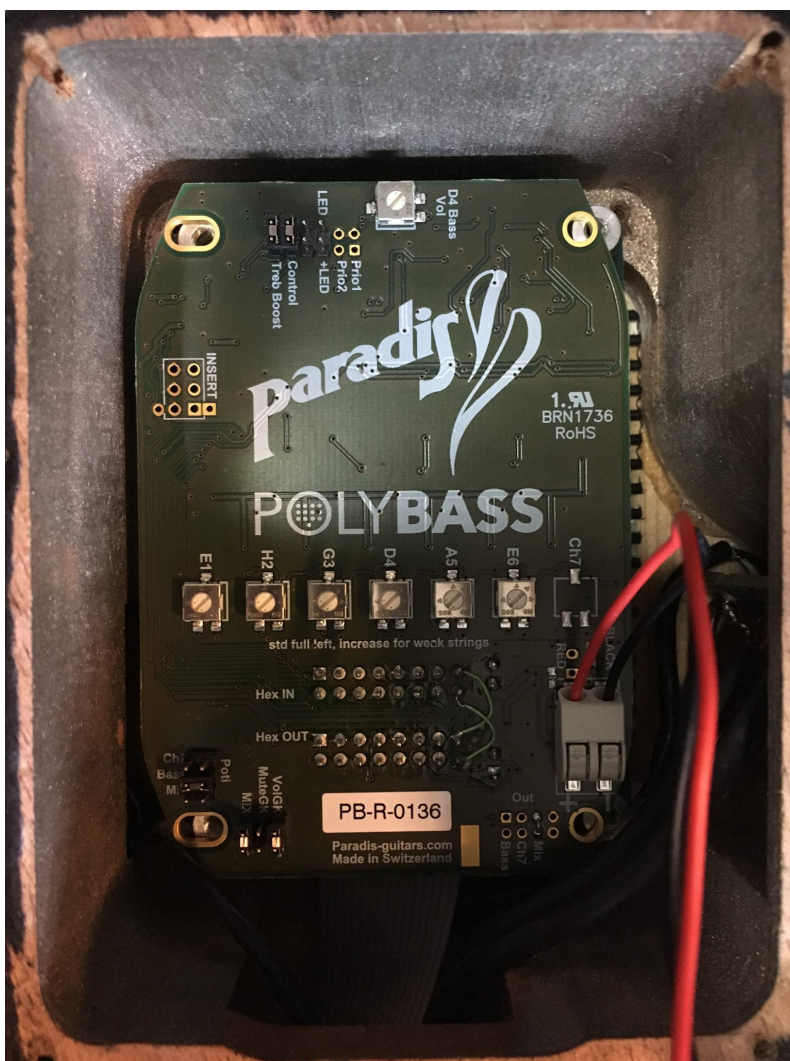
## Installation into Godin Multiac Spectrum / Jazz

**Unfortunately, RMC changed their preamp to a single SMD board while we developed the Polybass, so the Polybass does not fit into instruments made after about 2017. we can provide an older original RMC board for this case though.**

the Multiac Spectrum and Jazz have a magnetic pickup which needs another preamp in the output board and another two wires to be connected to the control board through the Polybass board. so the Polybass needs 16pin instead of 14pin connectors (the additional pins interconnected)

sadly those two connectors are also moved by one pin, so the whole board is moved by 2,5mm. since this puts the two boards out of alignment, we extended the two left-hand screw holes in the Paradis board so that it can be secured in place. the other two screws can be left off, or if you feel that they are necessary, you can easily cut the bit between the edge of the board and the holes.

so:  
basically the procedure is the same as on the previous page for Multiac SA/ACS except that when inserting the board you have to be careful to move it a little to the left so that the two oval holes on the left still fit but the two on the left are 2,5mm off



### wood cover

another difference is that the Spectrum cover is made of wood and 1mm shorter than the plastic of the SA/ACS and the screw holes are closer together, so we had to make a different plexi cover. in older instruments, the battery in this same compartment. if that is your case, we can send you a battery holder to stick onto the board (like in Polydrive, below) but we rather recommend installing a battery holder like Godin did in the newer versions or into the cover as below.

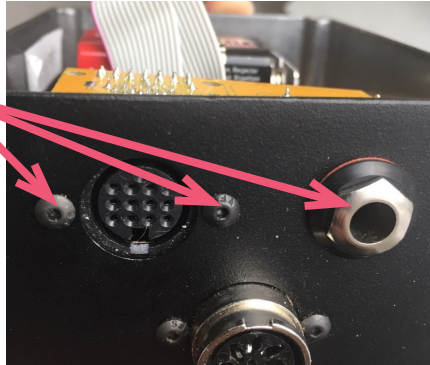
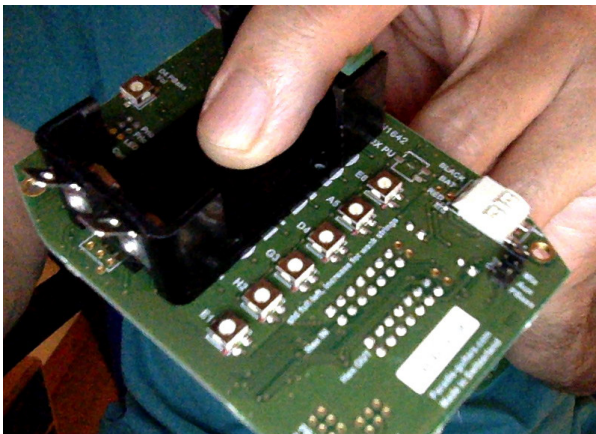


## Installation into RMC Polydrive

basically the installation is the same as into the Godin Multiac SA/ACS.

we do not provide the fixation of the battery holder like the original. but we can send you a battery holder which you can connect to the solder-less posts and tape to the Polybass board. what we really recommend is that you build a battery holder into the back cover so you do not need a tool to remove the battery

you need to remove the output board with two hex screws and the jack



here our battery holder and how it fits onto the board

## Trouble Shooting

what can go wrong?

both 14/16pin connectors can be positioned off by one pin!

the first you can be observed well when plugging in

the second you can control by the holes in the corner of the board.

to insert the two battery wires:

slightly press the gray plastic lever with a fingernail or fine tool

no sound at all:

1. set the amp to a low volume
2. pull the board but leave the wires connected
3. put a finger (or a metal piece you hold) on X2pin7 (picture) – a hum should appear.



if not, the 14pin connector is probably misplaced, either off by one pin or inverted: usually a “nose” on the connector inhibits the wrong orientation, but to make sure: the red wire is pin1 which is the square pin on the board.

4. verify that the power is coming from the batteries to the board by creating a quick short circuit between the legs of the cream wire receptacle. a loud clack should be audible. if not, verify point 8 and 9 of the installation procedure.



## Controls

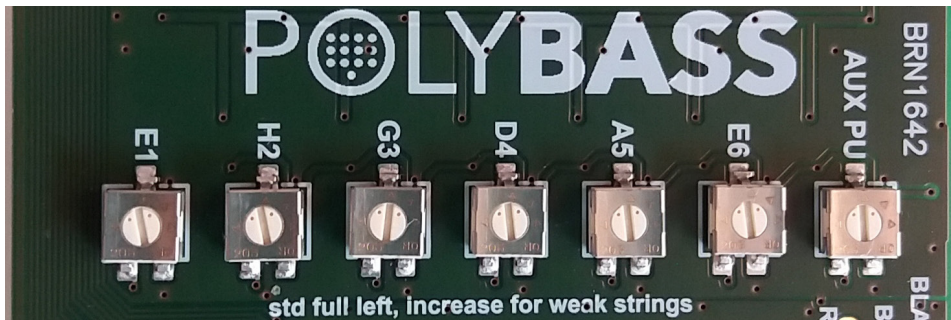
the Polybass is designed to give you the maximum possible options for configuring mixing any pickups in any guitar. for the Multiacs only those are relevant:

### Adjustable Volume for each String

the RMC pickup is amazingly balanced, but it can loose sensibility over time, mainly due to salt coming from sweat.

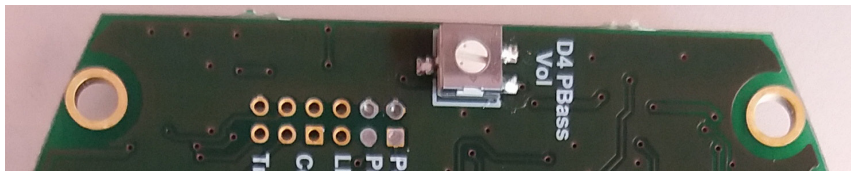
it can also be helpful to adapt the string volumes to playing style, to string characteristics, to musical intentions... from outside with a little screwdriver, boosting the weak strings...

IMPORTANT: for the perfect RMC level to come out equal to the original board, those controls all need to be fully CLOSED (turn left) !



### D4 string Bass volume

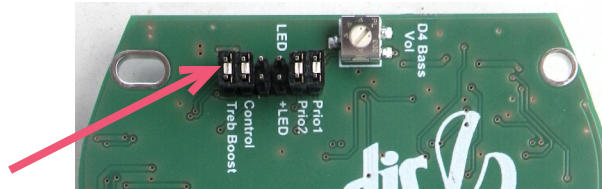
by default, the Polybass effect on the D4 string is similar to the E6 and A5 string. but some musicians like to have no effect on the D4 string and others prefer it to be lower so there is a transition between the strings with effect and the ones without. try out your setting on the single little trimmer on top of the board!



# Understanding and Adjustments

## Filter

the original RMC system has a treble enhancement on the input and a compensating treble cut on the output. since we only replace the board with the input stage, this treble enhancement is compensated on the new board. this compensation filter is switchable with a jumper which is set by default, so when you plug the board as you receive it, the sound should be similar. if not, try to remove the jumper Treble BoostFilter:



## Warmer Sound

you can try to take off the jumper to experience a warmer sound, see if you like it.

## Solder Battery Wires

we used a solder free wire connector to make it as simple as possible for most of the users. but if you travel around the world and need top reliability we recommend to solder those wires.

## Battery low warning

the first sign of the battery becoming exhausted is when strong attacks mainly on the D string cause a delay of the subbass sound. when dropping further, the delay also happens on lower strings and softer attacks. we think this is a rather smart indication since the musician will notice but hardly the public.

those who want a visual warning can connect a LED that flashes when the battery drops to about 7V. (see chapter LED installation in the Advanced Manual)

## Priority

in the classic Polysubbass unit, there is a switch to turn priority off. few people have used this, but if you like to hear the octave on all 3 bass strings at once, you can remove the jumpers Prio1 and Prio2 (may be soldered in older versions). If you find this option important, you can replace the jumpers by a switch. we explain how to achieve this in the Advanced Manual.

## Split Polybass effect out

sometimes its interesting to amplify the PBass signal separately from the normal guitar signal because

- some effects that sound good with the guitar loose their quality when the PBass signal is sent to them.
- the main amplifier may be made for guitar and not suitable for the low PBass frequency which can be connected to some subwoofer (without frequency divider even)

there are several options to do this and since they need some electronic skill we explain them in the advanced manual.

more options those who like to go deep are in the Advanced Manual, just ask for it!

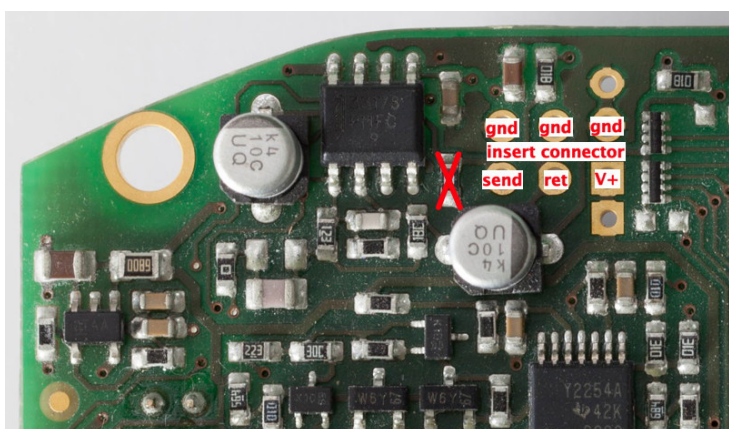


## Resonances in your instrument

every guitar has some resonances in the neck that “eat” the energy of certain notes, so they fade away quicker than the others. usually the worst is around G...A. those irregularities are better audible with the Polybass, but not related to it. so sorry, we cannot fix this, but you can improve a lot by holding the neck firmly when you play that note.

it may be possible to reduce the resonances of your instrument by adding a cover over the sound hole or stiffen the top for example by adding a bridge between top and bottom. please tell us if you find a solution, but do not blame us if it does not work ;-)

## Insert connector for wooDi-M etc



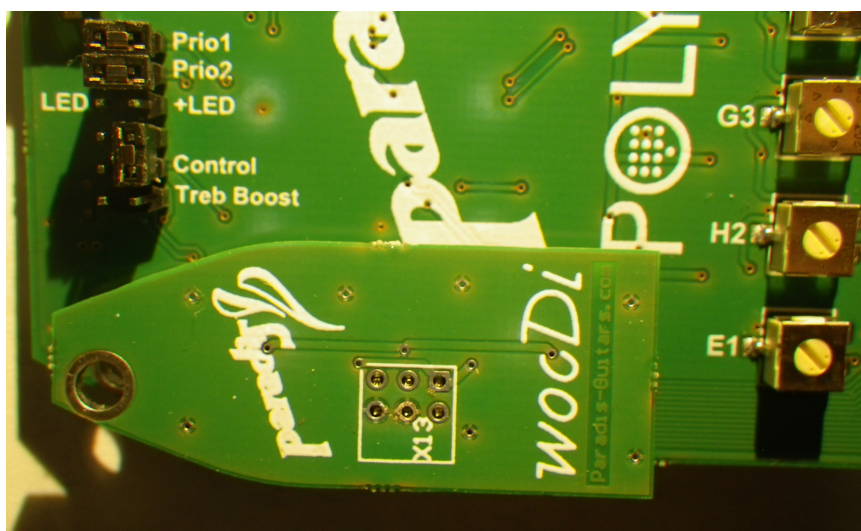
Polybass offers an insert connector for the mixed strings (no PBass no Aux mixed in) where you can connect any effect you or we may come up with. you need to remove the 0ohm resistor and solder the connector or wires on either side.

(on boards SN < PB-R-0168 you need to remove the 0ohm resistor and solder the connector)

so far we can offer one such effect:

wooDi-M (the small version of the wooDi) adds some warmth or, as others put it: it takes some of the piezo clicking.

it fits well on the trimmer side, it only needs 8mm high.



## jumper for Insert connector

In case you do not use the insert connector, it takes a jumper to make the signal flow through it:



## Roland GuitarSynth and compatible

in case you are using the Roland GK synth volume as it was intended originally, you will probably notice that it does not work any more because it now controls the Polybass. (on boards with serial < PB-R-0068 it controls Synth+Polybass so you may go to step 2)

if this does not suit you or the synth stops to sound (likely with GR55) try this:

1. set the jumper VolGK (not available on boards with serial < PB-R-0068)
2. change the setting in the Roland box to not control the Synth Vol by the GK and instead use the Vol knob on it or add a Vol Pedal. in the GR55 manual its page 69: Edit->System->GK-Ctl...



in the Axon 100 manual its page 23. change to off:



3. Older Roland units do not have this option. but there are solutions to maintain the control on the instrument. we discuss them in the Advanced Manual

## Polybass without RMC base

you can use the Polybass with any polyphonic piezo pickup and some additional mono pick-up of your choice by creating the correct cabling. we can also provide a output board and the flat cable to connect it. then you have many options to connect volume controls and send out signals... we can provide you with the necessary information