

As a bunch of people has asked me over the years about how to mount bindings for backcountry skiing and / or speedriding, here are some thoughts around that topic:

In general non competition speedflying does NOT require any special or specific binding setup other than a good allround offpiste binding setup.

I suggest that the Skis you use should not be too heavy as very heavy skis will have a negative impact on your swingweight when flying "harder" maneuvers (high wingovers, quick left / right transitions, barrel rolls)

Also the skis should not be extremely wide (e.g. 160-140-150) as superwide skis will generate more air-resistance and will slow you down / degrade your glide considerably - especially when they are not positioned perfectly towards the airflow in barrel rolls or hard turns the air resistance a big pair of planks generates can eventually even become dangerous.

A good mid / shallow sidecut and not too much up to zero camber is a good starting point for selecting your skis.

For an average sized person (say 180cm / 80 kg) something around 170 to 180 cm and 130/90/120 with a sidecut radius somewhere between 16 to 30 meters usually works fine as an allround ski by todays standards *(as skis are getting fatter and fatter by the year, dont get fooled, as an allround solution 130mm underfoot wont work too well unless you exclusively ski waistdeep powder - in that case i envy you )*

As a binding you usually want to have a touring binding as in most ski areas you might want to be able to easily get away from the populated areas - let alone the possibility for hike + fly style runs *(which are often WAY cooler / better compared to runs very close to the ski resort)*

Also in many areas after your speedrun you will end up in a side valley or in the middle of a powder field where a touring binding and climbing skins will make it much easier and quicker to get back to the resort and its lifts.

### Some Basics you should know

#### **Why bother with Binding setup ? There is a midsole marker on the ski, one on the boot that's it - is it ?**

The binding position has a relatively large effect on how a ski feels to you, only 1cm fwd or back can make a very noticeable difference mainly in turn initiation, float and rear end grip.

The Standard Mounting points indicated on most skis and boots are NOT necessarily placed in the perfect spot for your body geometry, instead they will be placed to work for the average skier (whoever this mythical person might be) and sometimes obviously in some sort of random fashion by the designers or even production line workers.

Also take into consideration that many manufacturers place the "standard" position in a more hardpack oriented spot, simply because when people test skis (even powder skis) in early season festivals on glaciers etc. in most cases the conditions are not perfect, so a more piste oriented standard setup makes the ski feel better when potential customers test it in non offpiste conditions - so the chances are higher that they like the ski in harder conditions and will buy it. So if (for speedriding) we focus on freeride performance this "standard" position might be suboptimal for our needs.

As an average ski shop employee usually will not invest much time or thinking in the mounting process unless you specifically tell them to mount off standard) you might end up with a suboptimal setting ... for them (as binding mounting is not really well paid) the focus is mounting

time, and the less time it takes them the better.

So even if you NOT want to mount the bindings yourself, it can be very wise to think about the correct position and to mount the bindings TOGETHER with the boots in order to get the right / working boot position.

Be aware that the bootcenter is not always measured in the exact same way by all ski boot mfg's and sometimes it changes from size to size in relation to your foot (*as there are usually 2 inner boot sizes but just one outer shell size due to cost restrictions (outer shell molds are very expensive and only justify for the mfg with a big amount of shells molded from them)*)  
.. so the smaller inner boot will either sit more fwd or more back in the shell  
(*usually more back with some extra padding around the toes in order not to compromise fwd lean adj.*)

Also the boot center mark ON THE SKI - as already outlined a few paragraphs above - is placed with a wide variety of intentions (*better pow performance, better hardpack perf., easier turn initiation (more fwd)*) etc. by the mfg's. so its almost impossible to say what the mfg's designer had truly in mind  
(*i also have personally seen enough pairs where simply the printing had an offset between the two skis so boot center would be 5-10 mm off on both skis of one pair .. an average "high volume" ski shop usually will not look and mount them accordingly off :-o ..*)  
so its always better to self mount and doublecheck before you (let) drill.

**Usually skis mounted for pow / soft snow work best for freeride type speedriding as the more set back binding pos. makes them bite less into the turn** (*as your foot is further back relative to the sidecut and is not putting as much pressure in the tip of the ski*)  
**so making them more forgiving when flying/riding through fast touches in variable snow conditions.**

### The Art of body related binding positioning

Here is my preferred positioning method, pls be aware that it only works 1:1 for classic non twintipped, mild rockered skis, with twintipped or extremely rockered skis you need to "calculate" (= estimate) a compensation value that factors in the rocker, rocker length and the

apprx. wheight of the turned up tail portion in correlation to the running lenght - usually you will end up trying a few positions until you get it perfect *(too bad that with most touring setups there is no fwd / aft slider like in some carving oriented bindings / race bindings*

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Another detail you dont want to overlook ist that with a touring binding setup the skitip should RISE when you lift the ski in touring mode with your leg... otherwise you will have severe troubles in kickturns or when laying tracks in very deep pow

lets have a look at the main steps:

**1.) measure the true ski balance of your ski** = the point where it balances on itself when placed on a ruler or similar narrow support *(perpendicular to the running lenght but i guess thats clear , -)*

A ski with a substantial amount of twintip will balance too far back, so if you balance the ski without compensating for the "tailtip" you might end up with a too far back binding position for general offpiste use (but it might be perfect for deep pow)

**2.) put on the skiboot and try to find the point where the middle of the base joint** *(the one where the toe attaches to the foot)*

**of your big toe is located**

- best done while lightly "knocking" with e.g. the hard plastic grip of a big screwdriver on the outer shell - you will feel the right point on your foot

*(i know it sounds weird / funny but its the most precise and the fastest method i know of)*

... now you know where your big toe base joint is - mark it on the shell with a felt pen marker.

**3.) For a perfectly neutral position on a "classic" ski shape the ski balance and the big toe base joint should line up.**

In some (most) cases this and the midsole marker on your boot and the midsole marker on the ski should (hopefully) more or less line up *(within +/- 1cm)* if you are far off you either have a full

on twintip ski

*(they sometimes have*

*double midsolde markers, one for twintip use, one for normal use)*

OR you have messed up the ski balance measuring by not correctly adjusting for a larger tail area (twintip tail) or you could have a ski with a weird / unusual weight distribution, then your only chance is to look at the shape and determine where the ski balance is in relation to the sidecut radius .. it will most likely sit in the flattest part of the (multi)elliptical shaped sidecut) .. use the mfg's mid sole point on the ski as reference.

remark: for twintipped or highly rockered skis (= the more and more common "exotic" shapes - which does not imply that these shapes are bad - aux contraire some of them work wonders) the correct placement for a given combo of boot / fwd lean / rider biometrics has a lot to do with experience and hence "feel"  
*(and sometimes some luck to get it right on first try)*

so be aware that a long / flat ski tip ("early rise tip"), a very short "stubby" tip and / or a very turned up tail (*simply anything that has a great impact on running length vs overall length*) will make it more complicated / hard to initially / quickly find the best compromise in binding position especially when you are often traversing from groomed hard slopes to crust or pow.

In this case you have not too much alternatives then to follow the mfg's recommended midsole position and in a worst case need to redrill / reposition if that's not satisfying.

On Skis that don't come with inserts it might be worthwhile to think about putting in threaded steel inserts (*e.g. the ones from RAMPA (around 0.30 € per piece)... you need Typ C with 8 mm length and 8mm outer diameter and with M5 internal threads (you drill with a 6.5 mm drill and then use the insert to cut the thread in the skis core, glue them in with 24hr epoxy and make sure you don't mess up the M5 threads with epoxy.)*

As recommended mounting points can sometimes be so ridiculously off it's always good to invest a bit of time and check if they are in a position that at least looks believable / as it would work for your boots and the intended main use (groomers, offpiste hardpack, slush, crud, pow etc.)

That said it can absolutely make sense to slightly fwd mount on powder specific skis to get a more versatile ski that still floats enough in the deep stuff but is more fun on hardpack.

**4.) now comes the tricky part: to finally decide where to drill / mount.**

At first (important) make sure when you put your boots in full fwd lean your knees are placed OVER the ski balance / basejoint of your big toe area (*check this from the approx. middle of your knee joint to the middle of your bigtoe basejoint with a string and some wheight*)

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Pls. dont wank around with this too much, it must roughly meet... some people with very long feet and short lower legs can have trouble here... in those cases you need to go further fwd with your boot realtive to the ski balance line in order to compensate for e.g. very short lower legs...

Also check that your skiboots possess the corrcct amount of fwd lean - anything under 18 degrees (some beginner skitouring boots have such too little fwd lean designs) will not work, 21 to 23 degrees are usually a very good compromise (and 99% of all good skitouring boots will have 21-22 degree fwd lean)

**ok, apart from that now you should have a solid allround downhill biometric geometry that puts all forces in the right place - the balance point of your foot and ski.**

As its absolutely impossible to give general advise regarding mounting positions on different skis, here is a simple **real world example** of where and why I mounted dynafit bindings on a pair of mt baker superlights (177 lenght if i remember corr.) :

For general offpiste use I personally (with my body geometry) never mount forward of the ski balance / big toe basejoint point (= *bigtoe base joint more fwd then ski balance*) so on my mt baker superlights, after measuring ski balance and finding it 1cm back in relation to the boots midsole markers / the skis printed midsole marker, I estimated that 2cm back over the too much fwd mfg midsole recommendation and 1cm back from ski balance should give me a good allround backcountry setup which should work very well in soft snow and crud and hopefully the ski would still feel neutral enough and not too floaty in the tip for slush and corn.

## Ski setup

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The expected (and real world) downpoint of this setup (about 1cm back from true ski balance) is that you need to lean a tiny bit fwd (*bend your upper body / lower legs an idea fwd from normal*) to get full "bite" when skiing fast on icy / artificial snow groomers.

But as i don't like skiing icy groomers and as thats definately NOT the strong point of the relatively light and soft mt baker SL's (*i think they re now called the way back by the mfg*), so why bother ...

If I would have aimed for superallround i would have gone exactly for ski balance / 1cm back from the mfg's midsole reccomendation.

In real life i was lucky with my guesstimation and my more soft snow oriented setup with 2cm back over midsole (1cm back from true ski balance) showed to be the perfect compromise while keeping the ski very neutral in a variety of conditions except in bottomless pow which still requires a bit of backward lean to make the tip float (which is no real problem as i then use a different pair of superlight touring skis with 106 underfoot and alot more float in the +130ish tip).

Happy measuring guessing and drilling :-)