

A Summary Of The Methods Used For Mixing Campy Levers With Shimano Hubs

Ver 1.3**

***A special thanks to Mark Livingood and Mark Johnson for helping me with this summary*

So you want to use Campy levers on your Shimano bike?

I recently converted my commuter bike from XT levers to Campy Ergo shifters. I did the conversion myself after researching options to mixing the two brands of components. I am assuming that you like Campy Ergo levers and want to use them to shift your road bike. If you don't like Campy Ergo levers, this summary is not for you. Here are some of the advantages that I found in mixing the two brands

1. Campy levers are more reliable for me and can be repaired if needed. If a Shimano STI lever fails, you throw it away. Sorry, I've had too much trouble with Ulterga STI on a Cannondale tandem. In an 18 month period, we went through five levers. Three on the right and two on the left. Lance might ride'em, but he's not paying for mine!
2. Shimano makes some great hubs for use in all weather terrain. Shimano compatible hubs are readily available from premier hub builders like Phil Wood, Chris King, Hadley and White Industries.
3. Shimano and Shimano compatible cassettes from SRAM and others are of excellent quality, very durable, and offer the widest/lowest gear range options. Even with a Campy triple, I wanted to have lower gears options that are currently not available using Campy's stock cassettes.
4. I was already accustomed to using the Ergo levers. I liked the hoods and feel of the clicks.
5. Campy doesn't make hubs that are designed for tandems. You can buy Campy compatible hubs, but you still face the gear range limitations already mentioned. So, if you would like Campy shifting on your tandem, you will need to mix the two brands. I also own a [da Vinci road tandem \(http://www.davincitandems.com/\)](http://www.davincitandems.com/) that uses Campy levers and a Shimano rear cassette.
6. If you want integrated shifting and braking and also want nearly as much flexibility in trimming your front derailleur as you get with a barcon control, you can get that with a Campy Ergo lever.

Finding out how to combine the two brands was interesting. The information was out there, but it took some looking. What I wrote here was not pioneered by me. I spent some time finding out what other riders and mechanics did in the past and put the information in one easy to read place. I thought that this was a topic that needed a summary. The summary uses hyperlink text so that you can also follow any link, the text in blue print, by click on it. Make sure you are first connected to the internet before clicking. Clicking on the link will open a window in your internet browser or email program. Where a technique was specifically discussed or developed by someone, I tried to list their email and web address.

I found five ways to mix Campy Ergo levers with Shimano rear hubs:

1. Use a Campy Racing Triple, aka, Racing T, or Record Triple rear derailleur with Campy Ergo 9 speed levers and a Shimano 8 speed cassette —what da Vinci designs does on their tandems.
2. Use a VeloParts Inc, aka Shimagnolo, adapter—what I used for my conversion—with Campy Ergo 9 or 10 speed levers, a Shimano rear derailleur (e.g, XT, XTR), and a Shimano 8 or 9 speed cassette.
3. Use a Wheels Manufacturing Accelerator cassette with Campy Ergo 9 speed levers and a

Campy Racing T or Record Triple rear derailleur.

4. Use a Shimano rear derailleur, 8 or 9 speed Shimano cassette, and follow Brian Jenks tips on re-routing the rear derailleur cable.
5. Use Campy Ergo 9 speed levers and a Campy Racing T or Record Triple rear derailleur and a Shimano 9 speed cassette.

Use a Campy Racing Triple, aka, Racing T, or Record Triple rear derailleur with Campy Ergo 9 speed levers and a Shimano 8 speed cassette

This setup I have on my da Vinci road tandem. It involved using 9 speed Campy Chorus levers and rear derailleur with a Shimano 8 speed rear cassette. The 9th shifting detent or “click” in the Ergo lever isn’t used. You set the cable travel up so that the extra click appears either at high-end gear of the shifting range (the smallest cog in the rear cassette) or the low-end gear of the shifting range (the largest cog in the rear cassette). To use this method, make sure that you have the limit screw on the rear derailleur set properly so that the chain stops moving on the 8th click. If you don’t do this last step, the chain comes off the top into the spokes or off the bottom and jams between the small cog and the frame--not a pretty sight. The ninth click isn’t used.

Below are some pictures of the Campy derailleur. I don’t think that there is anything special about the cable routing. Since the parts for this conversion are not unique, you can buy them wherever you normally trade for your bike parts. Cost of Campy Racing T derailleur are about \$100.



Campy long cage derailleur. This is the 9 speed racing T derailleur used with an 8 speed Shimano cassette. The levers are 9 speed Campy Chorus

Use a VeloParts Inc., aka Shimagnolo, adapter

I used this adapter to do my conversion. The adapter was designed to work with 9 or 10 speed Campy levers, XT and XTR rear derailleurs, and 9 speed Shimano cassettes. What I liked about the conversion was that I didn't have to buy a new derailleur. The system worked by adding a special machined adapter to the derailleur cable mount housing and pinch bolt. Like the first method I described, you end up with an extra lever click when your are done. Installation instructions were very good and the product worked great!

How does it work? Perfectly. Contrary to popular belief, the changes have nothing to do with the amount of cable pull. Brian Jenk's described it on the [tandem and hobbes \(http://www-ac.s.ucsd.edu/home-pages/wade/tandem.html\)](http://www-ac.s.ucsd.edu/home-pages/wade/tandem.html) mailing list.

Although the derailleur appears to be a fairly complex mechanism it is really a simple parallelogram. By changing the cable-contact points (on that parallelogram) you also change the derailleur's movement in response to cable pull.

Although Brian was describing his alternate cable routing method described below, the principles were the same for the VeloParts Inc. adapter. I first learned about this method by following a thread on the [tandem and hobbes \(http://www-ac.s.ucsd.edu/home-pages/wade/tandem.html\)](http://www-ac.s.ucsd.edu/home-pages/wade/tandem.html) mailing list. This is a subscription based free daily newsgroup. Glenn Erickson offers this adapter on his tandems when customers prefer Campy Ergo shifters but also want the wide shifting range afforded by the Shimano XT & XTR rear derailleurs. Glenn's tandem business, Erickson Cycles, doesn't have a web site, but here is a link to an unofficial "enthusiasts" site: <http://home.att.net/~debbie.livingood/EricksonTandems.html>. The person who makes these for Glen is Leroy Kopel. He can be emailed at: lkopel3@hotmail.com or velopartsinc@hotmail.com, and also reached by phone at: 1-480-839-3787. When I called, I left a message and he called back in a few hours. He accepted paypal and shipped the next day. Cost was \$40 including shipping. Several other tandem dealers & bike shops are now carrying the VeloParts Inc. adapter.



On the left, a standard XT derailleur. On the right, the XT Derailleur with the VeloParts Inc. adapter installed



Just another angle of the VeloParts Inc. adapter. I used Daytona 10 speed levers and a 9 speed Shimano cassette. The derailleur was a 9 speed XT.

Use a Wheels Manufacturing Accelerator cassette with Campy Ergo 9 speed levers and a Campy Racing T or Record Triple rear derailleur

The fine folks at [Wheels Manufacturing, \(http://wheelsmfg.com/\)](http://wheelsmfg.com/) make a number of special-ity products. Their accelerator cassettes begin life as stock Shimano Ultegra or DuraAce cassettes that they disassemble, re-space, and remanufacture to match Campagnolo's shifting pattern. They retain the Shimano spline pattern and can be used on any Shimano or Shimano compatible hubs. They are 100% compatible with Campy shifters and derailleurs. Best results are obtained using Campy levers and derailleurs. Wheels Mfg does not deal directly with the public, but you can buy them through any good local bike shop and many of the on-line and catalog sales merchants. The cassettes range between \$100-170 depending on which model you choose – Ultegra or DuraAce.

Use a Shimano rear derailleur, 8 or 9 speed Shimano cassette, and follow Brian Jenks tips on re-routing the rear derailleur cable

Brian Jenks, (tech@hubbub) wrote this up and you can read the original by visiting his web site: <http://www.hubbub.com/ergoleverswshim9.htm> It is well illustrated and discussed. I pulled the information for this summary directly from his site. Brian Writes:

How did we do it? Because of the wide-range-gearing requirements of our tandems we use a Shimano 9-speed rear derailleur (XT-SGS) and a Shimano-compatible 9-speed cassette (11-32 or 11-34). Other large-capacity derailleurs may be available but nine speeds allow for a smaller “step” inside that wide range. Campagnolo 10-speed Ergopower Shift/Brake levers (the right or rear shifter MUST have the 10-speed “ratchet ring” – a 9-speed ring will not work,) and a Campagnolo “triple” front derailleur are also necessary. So far we have used RaceFace Tandem (54-44-32) and Shimano Ultegra Triple (52-42-30) cranksets, but any properly set up 9-speed crankset should work. The final elements are, of course, a 9-speed compatible chain and well-lubricated high quality cables.

The actual setup and adjustment of the system is identical to any other except the pinch-bolt on the rear derailleur, which holds the wire fast, should have a “hooked washer” between the head of the bolt and extension from the parallelogram. Normally, when using a Shimano shift-lever, the “hook” faces rearward and the “tab”, which clamps the cable, points inward toward the rear wheel. The wire rests in the small groove in the body of the derailleur and points forward (see fig. A).



Figure A



This Shimano Ultegra 9-speed rear derailleur is shown with the wire routed in its normal fashion - for use with a Shimano 9-speed shift-lever. The wire is clamped into its corresponding groove beneath the washer's tab.



The same Ultegra 9-speed derailleur is shown with the wire routed for use with Campagnolo Ergopower (10-speed) shift-controls. The "hooked washer" is pivoted 90 degrees so that the wire wraps around the "hook", runs across the groove, and is clamped beneath the tab.

When using Campagnolo 10-speed Ergo-levers, however, the "hooked washer" must be turned 90 degrees so that the "hook" is facing the rear wheel and the "tab" is pointing directly forward. The wire is then wrapped tightly AROUND the "hook" and clamped beneath the "tab" so that the wire points outward away from the bike. The wire should then be running perpendicular across the small groove in the body of the derailleur (see fig. B).

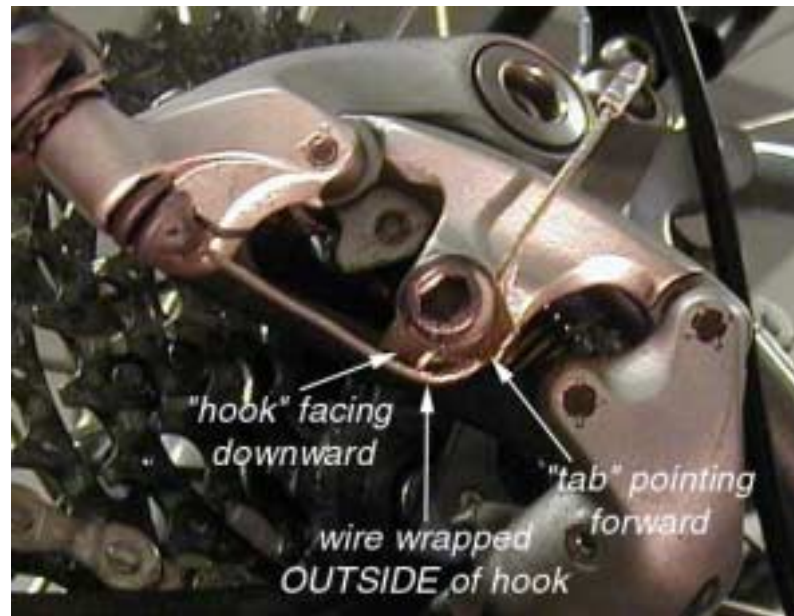


Figure B

Wrapping the wire around the "hook" may not be as easy as simply running it through the groove but it is necessary to making this combination work. I would also recommend adjusting the cable such that the extra "click" in the control occurs after the lowest gear rather than before the highest. This allows you to adjust the derailleurs lower-limit screw so that the 10th gear position is "locked out" and the 10-speed control becomes, in effect, a 9-speed control.

Brian's method is the least expensive of the four if you already have an all Shimano bike to

start with. He also went into a lot of detail in a posting to tandem@hobbes (T@H) that discussed how the technique was discovered and refined that you can read in the T@H archives: <http://catfood.phred.org/getmsg.asp?Filename=tandem.10207.0780.eml>

Use Campy Ergo 9 speed levers and a Campy Racing T or Record Triple rear derailleur and a Shimano 9 speed cassette.

This technique is very similar to the first one that I outlined on our da Vinci tandem, except that it allows you to use a Campy 9 speed Ergo shifter and Campy rear derailleur with a 9 speed (instead of 8 speed) Shimano cassette. [Mark Livingood \(Mark@WeRLivingood.com\)](mailto:Mark@WeRLivingood.com) from [TheTandemLink.com \(http://home.att.net/~thetandemlink/\)](http://home.att.net/~thetandemlink/) helped me with this section.

According to Mark, they're running two tandems with Campy Ergo 9 shifters, either a Racing T or Record Long Cage Triple rear derailleur and Shimano 11x27t cassettes. Mark and others have found that the Campy 9/Shimano 9 combinations all seem to shift quite crisply and run without chain chatter. So, even though they'll acknowledge that it's not supposed to work, in practice these set-ups work just great on the tandems and singles. It should be noted, getting the shifting "dialed-in" takes a careful touch since the derailleur and cog alignment needs to be "spot-on". Because of this need for extra attention to detail not everyone has enjoyed success with this particular set-up. Mark Livingood sent me the picture below showing Campy Chorus, Shimano Ultegra & Wheels Manufacturing 11x23t cassettes sitting side-by-side to illustrate how different the spacing is between the Shimano and Campy cassettes.



Campy Chorus 9 speed

Shimano Ultegra 9 speed

Wheels Accelerator 9

As you can see, the Shimano Ultegra cassette has an overall stack height (or width) that's a few mm shorter than the Campy.

I also talked with [Mark Johnson \(tandem-doctor@juno.com\)](mailto:tandem-doctor@juno.com) from [Precision Tandems \(http://www.precisiontandems.com/homepage.htm\)](http://www.precisiontandems.com/homepage.htm) about the topic. Here were his comments:

I have never used a 9sp Campy lever with a Shimano cassette but have heard it works. There would be little error for cable slop, maladjustment nor gritty less than par cable operation for it to work though. Here is why, 9sp Shimano has a cog spacing from center to center of 4.34mm while 9sp Campy is 4.55 or a .21mm difference. With 9sp there are a total of 8 positions to move the chain past the first one that is aligned perfectly, at least in theory. $8 \times .21 = 1.68\text{mm}$ one would be off by the end of

the cassette. Splitting the difference would mean that the chain would be mis-aligned with the further most outboard and inboard cog by only .84mm.

By the same token 10sp Campy spacing is 4.12mm compared to 9sp Shimano at 4.34mm or .22mm difference.

Remember the days of 8sp when everyone was buying spacing kits to convert Shimano cassettes to proper spacing for Ergo levers? The difference then was only .25mm with 7 positions to change from an aligned one or 1.75mm by the end of the cassette or if perfect alignment was attained in the middle cog then it would be off by only .875mm at each end of the cassette. I find it strange that this was unacceptable for the very forgiving nature of 8sp (as compared to 9 or 10) and that everyone was advocating respacing of the cogs to get back to Campy specs but now all of the sudden it is supposed to work with a much narrower chain. Hmmm.... I am sure it works but it has to be a bit finicky.

After the first draft, I received many favorable emails asking me to include this method in the next revision. You asked for it and here it is! I was hesitant to talk about this method in the original draft. I didn't have any experience using it and I was not comfortable talking about. Luckily Mark Livingood and Mark Johnson were able to help me put it together for you. Having said that, I think that this method may be used often. The method should be appealing to someone getting ready to buy a build up a new bike. One of the reasons for varying success may be that some mechanics lack the skills or/and patience needed to set the derailleur precisely. In my case, the VeloParts adapter was appealing because Leroy guaranteed that it was easy to install and would work perfectly. I also already had the cassette and derailleur. The trade off was that it cost me \$40.00

Summary Comments

I won't be buying Shimano STI levers again. They were too expensive to throw away after a few months of use and it took me too much time to change them. I don't care if they are under warranty or not! The usual disclaimer: "Your mileage with Shimano levers may vary."

With the first version of this summary, the most common question I received was: "Can't I just stick a Campy cassette on my Shimano hubs?" I thought the question was very odd at first, but I think that the question resulted from attempts to understand posts on different newsgroups where riders were talking about this topic. This summary should help to clear up the question. The question was so frequent, that at one point I began to wonder if I knew anything about the topic! Finally, I emailed Mark Johnson, and he reassured me that I was correct. I am only addressing it here because I want readers preparing to do this conversion to have a definite answer. So for the record, **you can't just stick a Campy cassette on to a Shimano hub!** They don't fit! I liked Mark's response to the question:

Campy (cassette) is so different from Shimano (cassette) in the spline pattern and in the spacer diameter (Campy = 35.4, Shimano = 33.6) that it seems very far fetched that one would slide onto another's freehub body, otherwise Phil, Chris King and White Ind would not make different bodies. But having said that I can honestly say I never actually tried to mate one to the other nor have I tried to put a Ford transmission in a Chevy!

The second most often asked question was: "What speed chain should I use?" In general, you should match the chain to the cassette. For example, if the cassette is 9 speed, you should use a 9 speed chain.

I hope you found the summary helpful. I learned a lot by putting the summary together. The method you use will largely be determined by the parts you already own and the skills you need to do the job. Drop me an email if you have questions or corrections. I will try to keep the summary current. I will be adding more information to my bike web site, but the link below should get you close

<http://www.hearingoffice.com/bike.htm>

Stop back from time to time to check for updates. I may add a FAQ, frequently asked question, section to the end of the summary.

Thanks

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