VELOTRON

Bicycle Training Technology for
World Class Performance

Velotron Hardware Assembly Manual

June 2010

Hardware and Bike Setup Instructions

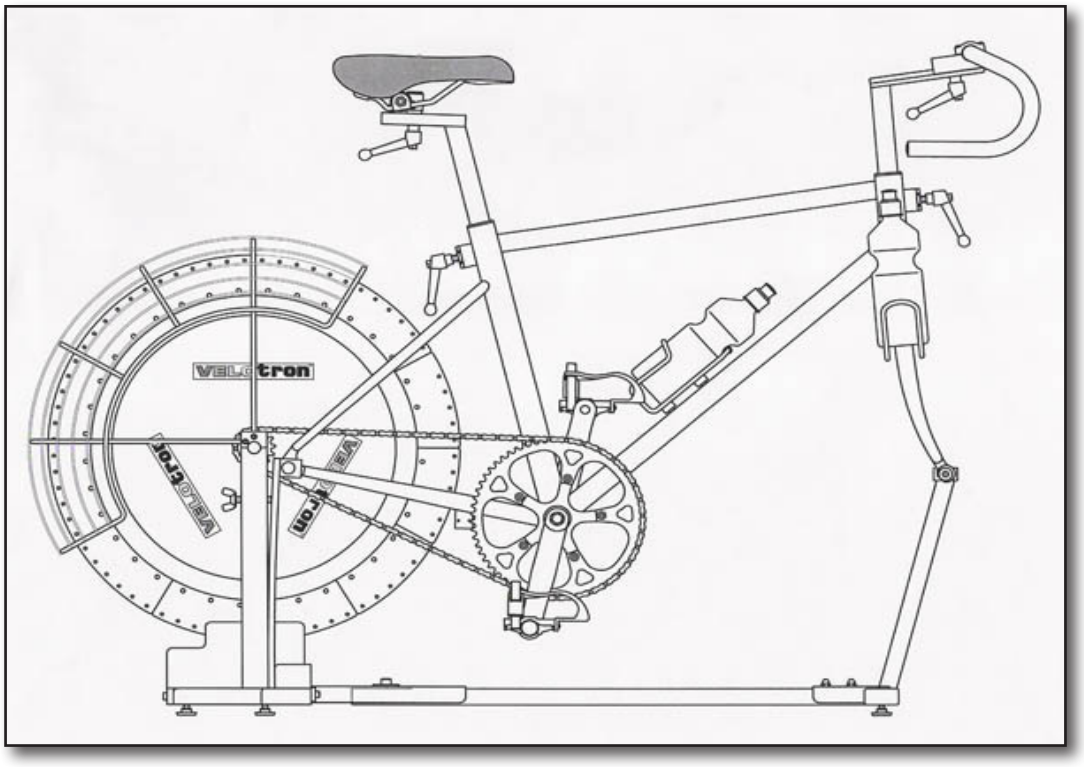
ATTENTION!

The copper segments around the periphery of the flywheel are at potential for being bent, both while the Velotron is idle and while in use. Care should be exercised that these discs not be damaged.

The flywheel should always be stopped using the electronic brake before the cyclist mounts or dismounts the bike. Failure to do so will increase the chance a cyclist inadvertently bends a copper disc segment while the flywheel is spinning, causing damage to the Velotron in the process. The brake is activated while using any software applications by pressing F6 (Fn+F3) or if when disconnected from external software by pressing the brake switch on the Velotron Load Generator Power Switch (opposite position to ON).

If a disc does get bent or the Velotron makes any unusual noise while the flywheel is spinning, it should be taken out of service and the copper segments checked for interference. Any bent discs should be straightened or replaced before the bike is put back into service! Failure to do so can cause significant damage to the Velotron. See the Maintenance appendix for further information regarding this procedure.

In addition, you should check all accessible bolts for tightness weekly. A torque chart is supplied to facilitate this. Pay close attention to the bolts holding the bike to the fork and the rear dropouts. Also check for chain tension and condition weekly and replace if necessary.



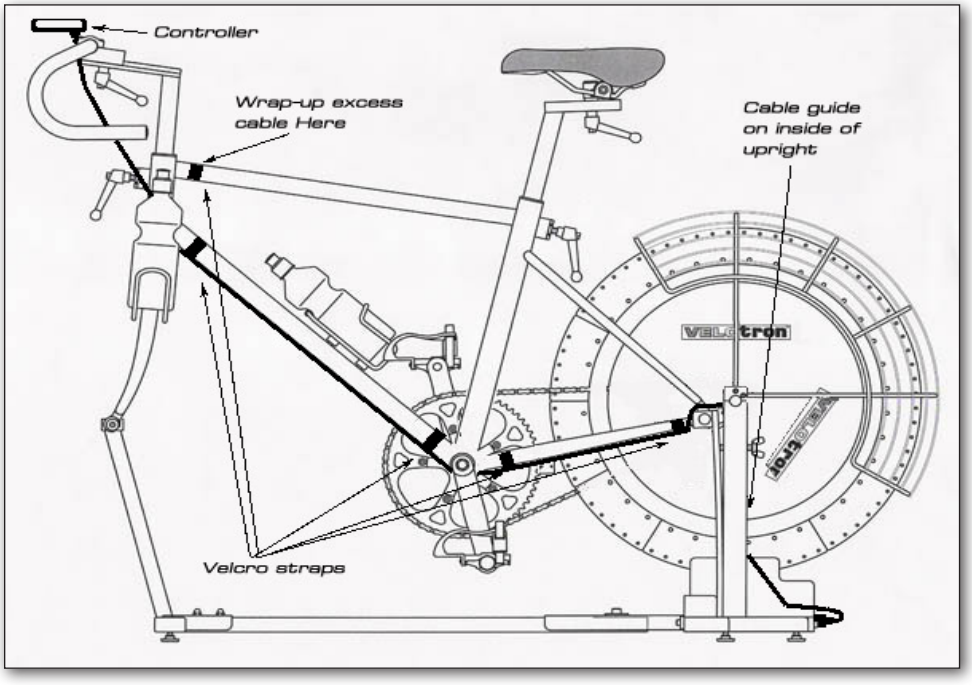
Velotron Pro with Dynafit Bike Frame

Basic Setup

Unless you have purchased a Velotron Basic, your Velotron will come preassembled with the exception of power cables and the Controller. If you are adding your own bike, please follow the instructions below on replacing the bike.

1 Attach the Handlebar Controller Bracket to the Handlebar Controller using the two Phillips-head screws. Once the bracket is installed, place the Handlebar Controller onto the handlebar of the bike. Gear shifting is accomplished using this device or the supplied brake hood shifter. If you mount the Controller off the bike and expect the cyclist to have access, make sure the Controller is within reach wherever you mount it. Aerobar and remote (off the bike) mounts are available from RacerMate.

2 The DIN Cable (when a bike is supplied) is attached to the bike using adhesive-backed Velcro strips. If you are supplying the bike, route the cable up the bike frame away from any moving parts and plug one end into the connector on the Load Generator and the other end into the jack on the bottom of the Handlebar Controller. Use the supplied Velotron wraps to secure the cable as you go.



Route DIN Cable

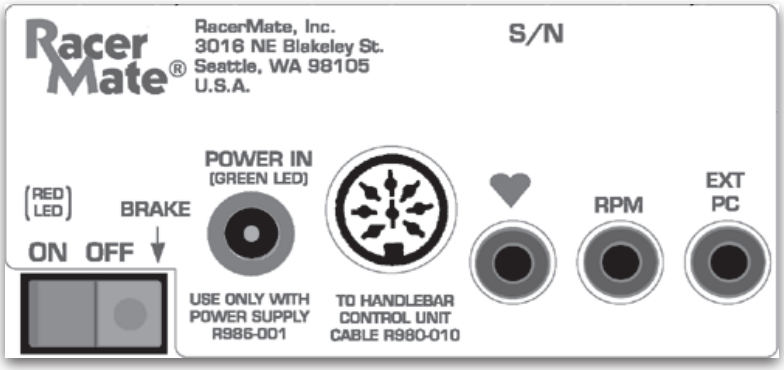
3 The Load Generator has both a Green and a Red LED indicating power. The Green LED indicates whether the Power Supply is plugged into the wall outlet. The Red LED indicated the switch is in the ON position and the Velotron circuitry has power. There is also a Power LED on the Handlebar Controller indicates that the Load Generator is in the ON position. Very little current is flowing (just enough for the LED to light) when only the Green LED is lit, so there is no need to unplug the Power Supply from the wall outlet to conserve electricity.

4 The Velotron Power Switch is a 3 position switch with the center position being OFF. In addition to supplying power to the Velotron circuits in the ON position, there is also a momentary position on this switch which will apply the full current available to the coils to brake the flywheel.

Caution: If you lose power to the Velotron, you should not spin the flywheel. There is no safe means to slow and stop the flywheel when there is no power. If you find this condition exists and the flywheel is spinning, let it come to a stop on its own before the cyclist dismounts the bike. DO NOT attempt to slow the flywheel by means of friction (slowing it by hand or by foot).

Basic Setup - continued

5 There are 5 jacks on the Load Generator. The largest of these is for the DIN cable and is already inserted from the factory if we supply the bike. The power supply plugs into the Power In jack. The Cadence (RPM) sensor is pre-inserted with supplied bikes, but otherwise plugs into the RPM jack. The Pulse jack on the Load Generator is for diagnostic use at the factory (there is a Pulse jack on the Handlebar Controller for the optional earlobe HR sensor). The Stereo Cable, which provides data to and from the PC, plugs into the EXT. PC connector.



Cable Connections

6 The Handlebar Controller has an internal wireless heart rate monitor installed that will work with Polar™ compatible chest strap transmitters (optional). If your particular chest strap will not function, you can order one from RacerMate. There is also an optional EARLOBE Heart Rate Sensor, which if inserted into the Controller will disengage the wireless receiver. As previously noted, there is a Heart Rate jack on the Load Generator too, but this is a diagnostic port for use at the factory ONLY.

7 The GEAR jack on the Controller accepts the remote gearshift control (included).

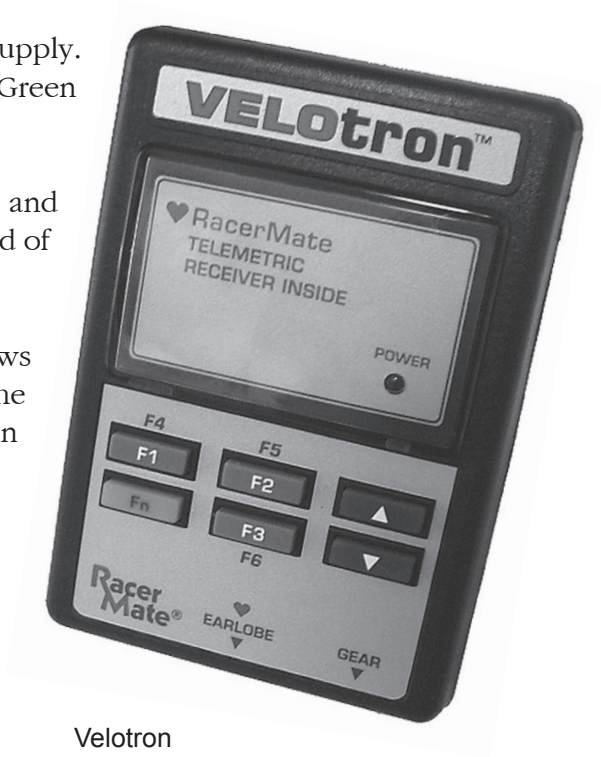
Please Note: Gear shifting on the Velotron is based upon virtual gears setup within the external software. and the speed of the flywheel is not road speed as it relates to a bicycle tire. Shifting virtual gears on Velotron is accomplished based upon the time period the shifter switch is being held. *Quick switch movements* shift the virtual **rear** gears and *holding the shift control switch* for a second will shift the virtual **front** gears.

8 Plug the Power Supply power cable into the Power Supply. You can now plug the Velotron into a wall outlet. The Green LED should now be lit.

9 Install the PC software beginning with 3D software - and when prompted install the USB adapter driver at the end of the 3D software installation.

10 Plug the USB adapter into your computer (Windows should recognize it). Now plug the Stereo Cable into the USB adapter and the other end into the EXT PC jack on the back of the Velotron.

11 Your Velotron basic hardware is now setup.



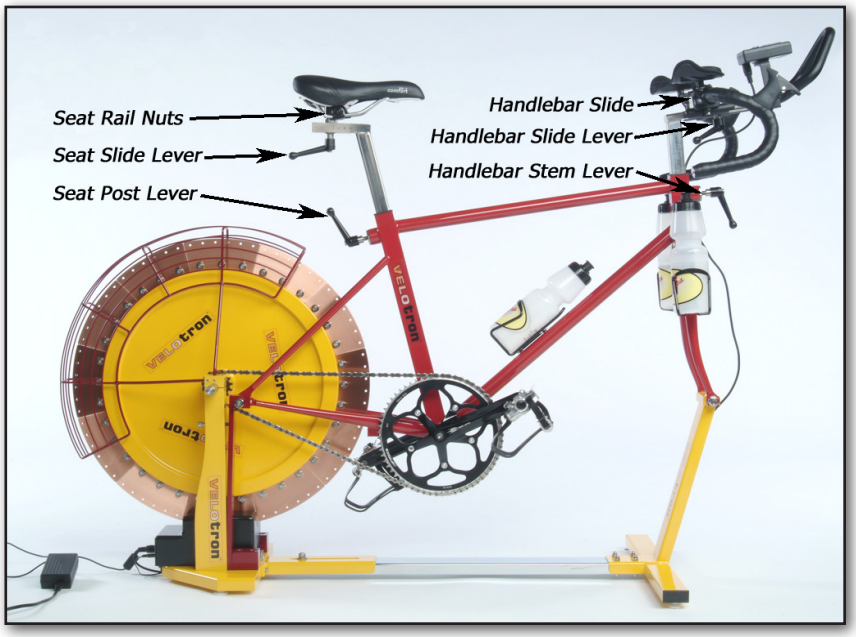
Velotron
Controller

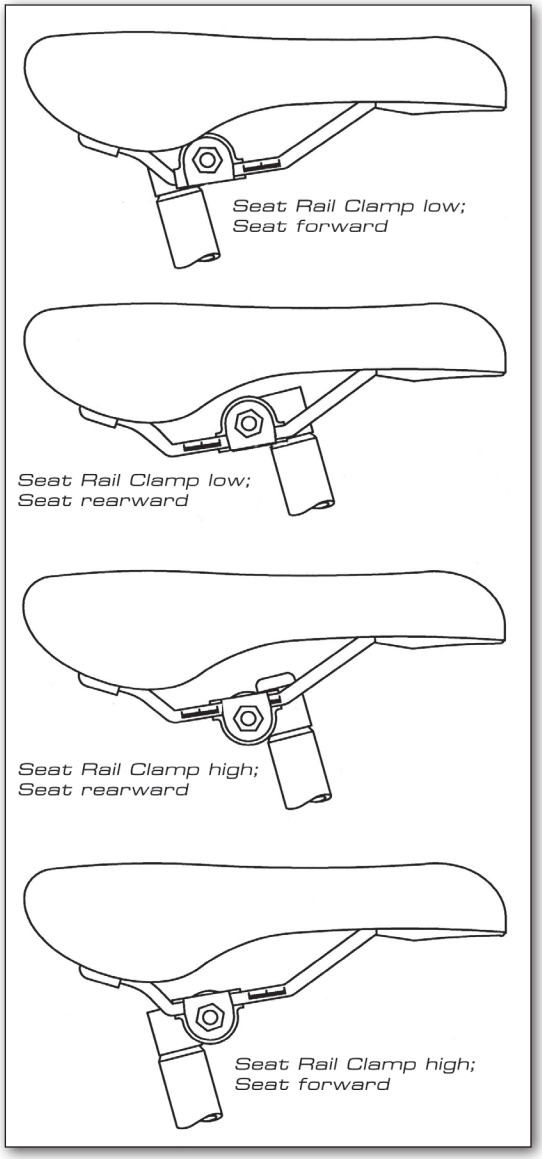
Velotron DynaFit Bike Setup and Adjustment

1 The DynaFit bike frame was designed to fit a wide range of rider sizes. Adjust the bike to your liking as follows.

2 The seat can be adjusted up, down, forward, and backward, to mimic a variety of seat tube angles (~72˚ to 78˚).

2a Adjust the seat up and down by loosening the seat post clamp lever 1/4 turn and sliding the seat post into the preferred position and retightening the clamp lever.





2b Fore/Aft seat adjustment require loosening the Seat Slide Lever 1/4 turn and sliding the seat to the preferred position.

2c As the image (left) suggests, the seat rail clamps can also be rotated high or low to gain or loose about 3/4" (19mm) height. This requires loosening the clamp nuts enough to slide the seat rails out of the clamps and then with the seat fully removed from the clamp rotating each rail clamp as needed and then reinstalling the seat. Note: The bike seat can be replaced the same way with any seat style using rails as you prefer.

3 The Handlebar Stem is adjusted up and down by loosening the Handlebar Stem Lever 1/4 turn and raising or lowering the stem to the preferred position.

4 The Handlebar Fore/Aft position is adjusted by turning the Handlebar Slide Lever 1/4 turn and moving the slide fore or aft to the preferred position.

5 The handlebar can be reversed to accommodate smaller riders. To do so remove the 4 screws clamping the handlebar to the Handlebar Slider and remove the cap and handlebar. Now remove the Clamp Lever completely and rotate the Slider 180˚ and reinstall the Clamp Lever. Now reinstall the handlebar and the cap with the 4 small screws, level the handlebar and retighten the screws.

Velotron DynaFit Bike Setup and Adjustment *(Continued)*

6 The bike handlebar can be swapped out for any style of your choice of the same diameter (1"/25.4mm). RacerMate does **not** make a 31.8MM slider. An Aerobar Adapter can be purchased to mount the Handlebar Controller to aerobars, if attached.

7 The cadence sensor is permanently attached to the bike frame, but the cadence magnet may still require adjustment from time to time.

Please Note: Real-Time RPM will not display when the cadence sensor is not correctly aligned, but the software will show average and peak RPM in this case. Real-time RPM "displays" only when it sees the cadence sensor, but actual RPM is being calculated by use of high-frequency counters using the holes around the periphery of the flywheel copper. There is a diagnostic screen in the Velotron CS application (use the PC "D" key while on any Coaching Software charts screen to display PRPM in the top-left corner, which will allow you to turn the cranks backward (not spinning the flywheel) to adjust the cadence sensor).

Bike Replacement

If you are adding a new bike or installing a bike on a Basic Velotron (a Basic Velotron is shipped without a bike), the steps are very much the same. The bike is held to the Velotron by the fork and rear drop-outs (where the bike wheels normally go). Installing a road-bike to a Velotron requires removing all the bike derailleurs, brake hardware and wheels. You must also install the Velotron 62-tooth sprocket on the bike, which requires a 130mm Shimano crank set.

Please Note: It is not advised to use a bike on the Velotron you also intend to use on the road again. Too many components are required to be removed from the bike to adapt it to a Velotron thereby making it labor intensive to outfit a bike, once on a Velotron, for road service again.

Removing and installing a new bike

1 Remove the Velotron Handlebar Controller, untape and remove the gear shifter and DIN cable from the bike. Remove the Cadence Sensor from the left chain-stay and unplug the sensor and DIN cable from the Load Generator. If changing from a Dynafit to a regular road-bike, you will need to contact RacerMate for a cadence sensor bracket.

2 Loosen the chain by loosening the Allen bolt on the right-upright until the chain is fully slack. This Allen bolt is found on the rear side of the right flywheel support leg.

3 Remove the chain master link and remove it from the bike/Velotron assembly.

4 Loosen the two nuts that hold the rear bike dropouts and the two nuts that hold the front fork and lift the bike from the Velotron.

5 Install the new bike in the reverse order -- noting that the length of the Velotron frame can be adjusted by loosening the base-slider adjustment screw and tightening it once the new bike is fitted to the rear dropouts and the fork support.

Please Note: Replacing the bike on the Velotron is not recommended unless you have the necessary tools to do so. Also be very careful NOT to damage the Velotron copper discs!

Bike Replacement *(Continued)*

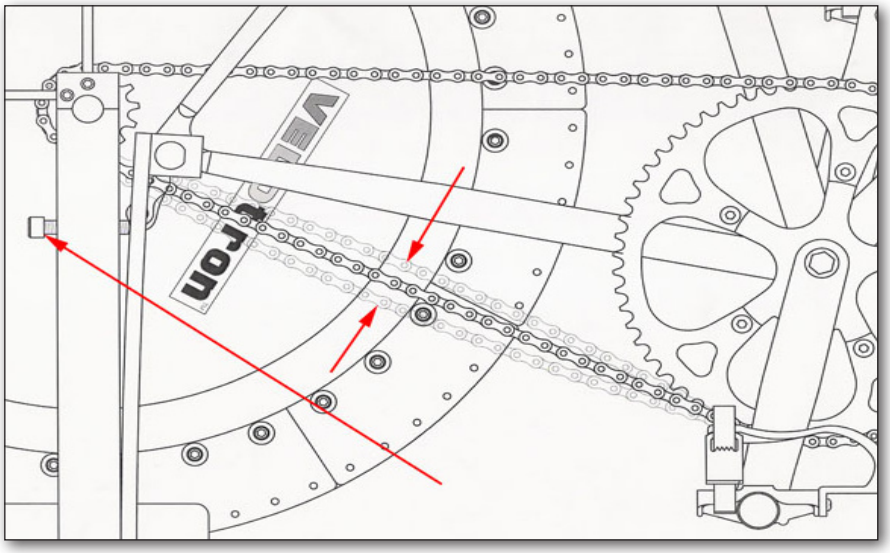
6 Once the bike is attached and axle-nuts torqued (see torque specs) adjust the dropout width by loosening the rear dropout axle set-screws and center the bike relative to the flywheel by moving the dropout axles. When satisfied, tighten the set-screws securely against the **flat portion** of the axles. Be sure to always tighten the set-screws on the flats before tightening the axle nuts to the specified torque.

7 The Velotron comes standard with a 62 tooth 130 mm bolt circle front sprocket which should be installed on the new bike. This larger-than-normal sprocket size allows for optimum RPM of the flywheel, thereby increasing the capacity (in load output). RacerMate also offers an 85-tooth sprocket to allow up to 2400 watts of load.

Note: Whatever sprocket size you choose, you will need to set the tooth count within any software used.

8 Finally, adjust the chain tension , as shown below, and you are ready to ride. Pedal the bike slowly, by hand, first. If all seems well, then you have successfully swapped the bike on your Velotron.

Adjustments and Maintenance



Chain Tension Adjustment

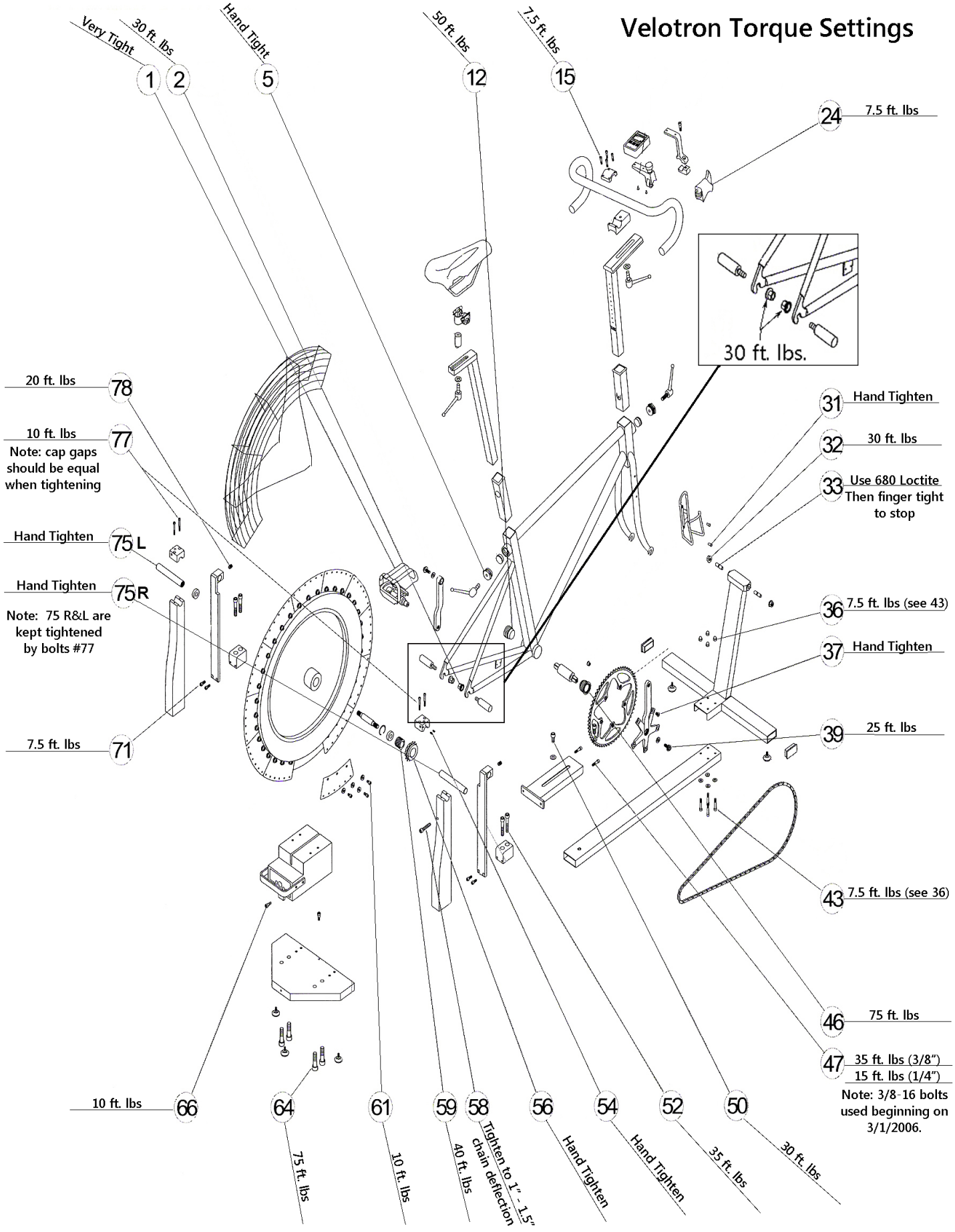
1 The chain can be adjusted when necessary by turning the chain tensioner (located on the right rear flywheel support brace) until the chain has about **1" to 1-1/2"** movement.

2 All bolts should be periodically checked and tightened as needed, specifically those holding the bike to the frame. Use the image on the next page for torque settings.

3 You should wipe the Velotron down with a warm wet rag to remove any sweat that drips on the bike and Velotron components. Follow-up with a dry cloth. Sweat is very corrosive and failure due to sweat is not covered by warranty.

4 Periodically check the flywheel copper disc to Load Generator clearance by leaning the entire Velotron over at about a 45-degree angle while rotating the flywheel. There should be no noises (copper touching within the Load Generator) in each leaning direction. If you notice any noises, contact RacerMate service immediately for a resolution.

Velotron Torque Settings



Two Year Limited Hardware Warranty

RacerMate Velotron is warranted to the original purchaser for a two-year period from the original purchase date against defective material and workmanship. Any implied warranties are also limited in duration to two years from the original purchase date. Some states do now allow limitation on how long an implied warranty lasts, so the above limitations may not apply to you.

During the warranty period RacerMate will repair, or at its option replace any part that proves upon inspection to be defective. Products subject to improper installation, misuse, neglect, accident, alteration, or unauthorized repair shall be excluded from this warranty. To obtain warranty service, proof of original purchase date must be furnished.

RacerMate shall not be liable for shipping cost to the factory, consequential costs, expenses or damages incurred by the purchaser. Some states do not allow the exclusion of incidental or consequential damages so the above exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights that vary from state to state.

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