Thanks for Ordering
The Belt Drive Conversion Kit
from

READ THIS BEFORE UNPACKING YOUR KIT!

This instruction booklet contains detailed steps for installing the belt drive conversion kit on your Honda Steed 400 and 600, VT-400, VT-600, 600 VLX, and 600 VLX Deluxe. Please pay careful attention to the instructions regarding the unpacking and handling of your belt. The belt can be damaged if handled improperly. If you have any questions concerning installation of your belt drive, please contact us via e-mail at support@scootworks.com. This will ensure you receive the most prompt and accurate reply.

Rev 1.3; 3/20/03

Instructions for Installing the Scootworks Belt-Drive on The Honda Steed 400 and 600, VT-600, 600 VLX, and 600 VLX Deluxe

Tools Needed:

- Safety glasses!
- Flat-head screwdriver
- Socket wrench pull bar (24” recommended)
- Large torque wrench calibrated in foot-pounds
- Hacksaw with fine tooth metal cutting blade
- Chain breaker or grinder for removing the brad from a chain link
- 5mm Allen wrench
- 8mm socket
- 10mm wrench
- 10mm socket
- 12mm wrench
- 14mm wrench (2 ea.)
- 14mm 6 point deep well socket
- 17mm wrench
- 17mm socket
- 22mm socket
- 24mm socket
- 1/2” wrench
- 1/2” socket
- Electric drill
- 5/16” twist drill
- Medium strength Loctite

The installation of the Scootworks Belt Drive is similar to combined standard tasks of replacing the OEM sprockets and chain, and performing the swing arm service/lubrication, with the addition of adding the Scootworks Gateway in the swingarm.. Scootworks wanted to assist you as much as possible with the installation process, and developed this instruction manual. If there are any steps you feel need improvement in instructions, please email **support@scootworks.com** and specify the area you are having trouble with.

UNPACKING!

The shipping container and contents must be inspected by the purchaser for damage to goods immediately upon receipt of goods, and a claim must be filed with the carrier if damage is discovered. The purchaser must Scootworks within 24 hours from receipt of damaged goods to file a claim, and for further instructions. Your Scootworks Belt Drive will come packed with the front pulley assembly, the rear pulley, the belt, a belt tension tester, two predrilled gateway sections, two semi-circular 7/8” wide cutting guides, one stainless steel 1 1/16”-2” hose clamp, 4 ea. 5/16-18 x2 ¾” hex head bolts, 4 ea. 5/16-18 self-locking nuts, and these printed instructions. Uncoil the belt, with the teeth turned inward. **DO NOT** fold the belt inside out, nor pinch to a fold of less than 1 1/2"! This will permanently damage the Kevlar material used in the construction of the belt. While the belt is **VERY** strong, these are important handling precautions that should be followed closely. There is more info on this in the **FAQ** page.

BEGIN INSTALLATION

1. Lift the rear of the bike above the floor, 6”-8” of clearance between the floor and bottom of the rear wheel is recommended. If a frame-style lift is not available, an automotive type screw jack or hydraulic floor jack can be used in conjunction with a 24” long 2”x4”, with the 2”x4” turned crosswise in front of the rear tire, lifting against the bottom of the swingarm. Lift the rear of the bike well above 8”, and insert a set of jack stands under the frame (not swingarm) as far rearward as possible, but just prior to the swingarm pivot point. Be sure to have help available for this exercise, to steady the bike while lifting and assist with placing the jack stands. Attempting this alone can be dangerous!

2. Loosen the 24mm rear axle nut, located on the RH side of the swingarm. Hold the LH side of the axle with a 17mm wrench, while loosening the nut with a pull bar and 24mm socket. Loosen only by 2 revolutions.

3. Using a 14mm 6 point socket, remove the rear brake adjustment nut from the brake linkage. Once removed, depress the brake pedal and remove the brake rod and spring from the brake lever on the rear brake drum. Push the round insert from brake lever on the rear brake drum, slip it on the brake rod, and reinstall the 14mm rear brake adjustment nut on the brake rod. This will secure all components until you’re ready for reassembly.

4. On the same side of the brake drum as the rear brake lever, locate the drum tie rod. This is the rod that secures the rear drum to the frame. Remove the cotter pin from the attachment point on the drum, loosen and remove the 12mm nut, and press the attaching bolt from the tie rod and drum assembly. Reinstall the bolt, rubber bushing, flat washer, 12mm nut, and cotter pin in the tie rod. This will secure these components until time for reassembly. The photo below illustrates steps #3 and #4… You’ll notice the brake linkage and tie rod, disconnected from the rear drum, and with the associated parts reattached for security.

5. Loosen the 14mm rear wheel adjuster locking nut and adjuster bolts. There is one adjuster assembly located on each side of the swingarm. Loosen them all the way forward, allowing the rear wheel to move as far forward as possible in the swingarm, loosening the chain.

6. Remove the 8mm bolt securing the chain guard, and remove the guard. Break the chain and remove it from the bike. A chain breaker is best for this task, but it can be accomplished with a dremel tool or portable grinder. If the grinder method is used, grind a brad from a chain link, and separate it at this point.

7. Remove the front sprocket cover. This is accomplished by removing the spring clip from the upper rear side of the sprocket cover, and removing the 5mm Allen bolt from the lower front of the sprocket cover. Place the parts aside for reinstallation later.

8. Mark across the end of the shifter rod and linkage, and the point where they connect. This is the rod protruding from the engine case just to the lower RH side of the front sprocket. Mark the end of the rod and the shifter linkage, to allow correct positioning of the linkage when reconnecting it later in this procedure. Using a 10mm box end wrench, loosen and remove the pinch bolt from the shifter linkage, pull the linkage from the shifter rod, and reinstall the pinch bolt in the linkage.

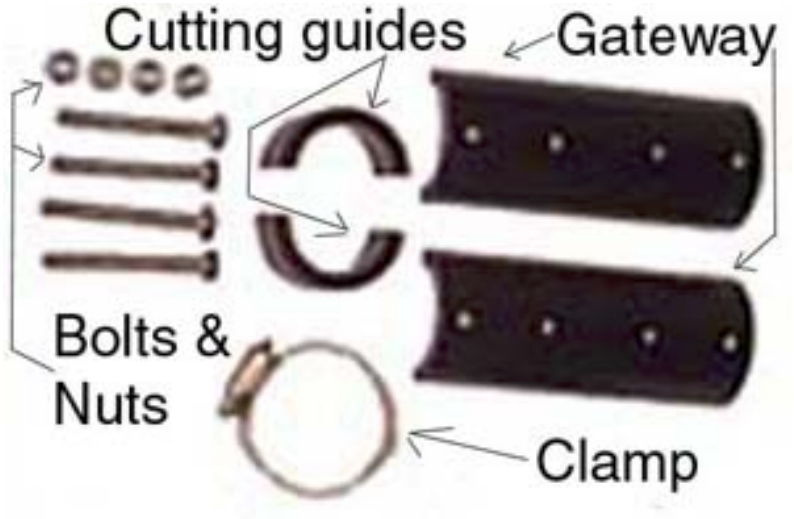
9. Loosen and remove the 10mm bolts in the front sprocket that secure the retainer. Turn the retainer ring slightly, and remove the retainer from the output shaft (countershaft). Remove the 16 tooth front sprocket at this time.

10. Completely remove the 24mm nut from the rear axle. Lift the rear wheel to relieve tension from the rear axle, and push the rear axle from the rear wheel assembly. Lower and remove the rear wheel from the swingarm. Take care to notice the placement of the rear axle bushings on either side of the swingarm (one on each side of the wheel), and the two rear wheel spacers. Once removed from the bike, pull the brake assembly from the rear drum (RH side of the wheel), and place out of the way. Place the wheel on it's side, with the open brake drum cavity facing downward, and the sprocket facing up.

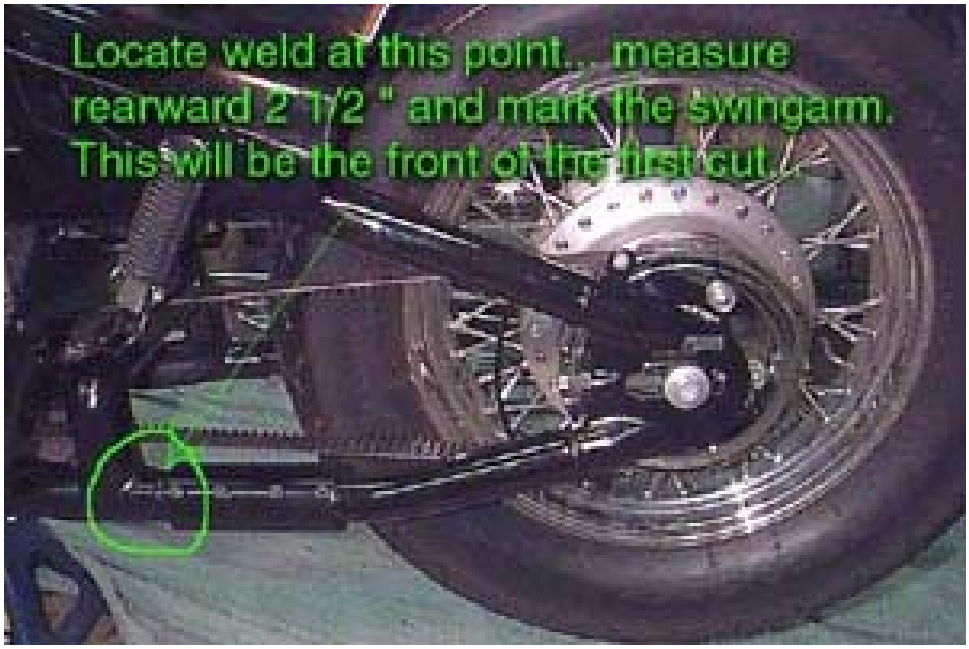
11. Using a 17mm socket and pullbar, remove the 5 nuts securing the sprocket to the rear wheel. Remove the sprocket from the wheel. Set the new Scootworks rear pulley on the wheel, with the part number on the pulley facing inward (toward the wheel). Reinstall the 17mm nuts (5 each), and tighten until only snug. Using a torque wrench, torque these 5 nuts to 47 ft/lbs. Be sure to torque these nuts in a **star pattern**. Place the rear wheel assembly aside for reinstallation at a later time. The photo below shows the installation of the rear pulley, one nut is in place for illustration purposes. Wow, look at that beautiful chrome!

12. With the rear wheel removed, the coolant tank is exposed. This must be removed to gain access for swingarm removal. Locate and remove the 10mm hex head bolt from the LH side of the coolant tank. Pivot the LH side of the coolant tank rearward, pulling the mounting tab (located on the RH side of the tank) from it's mounting socket in the frame. Spread a few rags below the bike, and disconnect the hoses from the coolant tank. Some liquid will be lost during this procedure. Place the tank aside for reinstallation at a later time. (On Ca. Models, the charcoal canister in the emissions control system will be accessible, and should also be removed at this time). The photo below shows the coolant tank about to be removed….

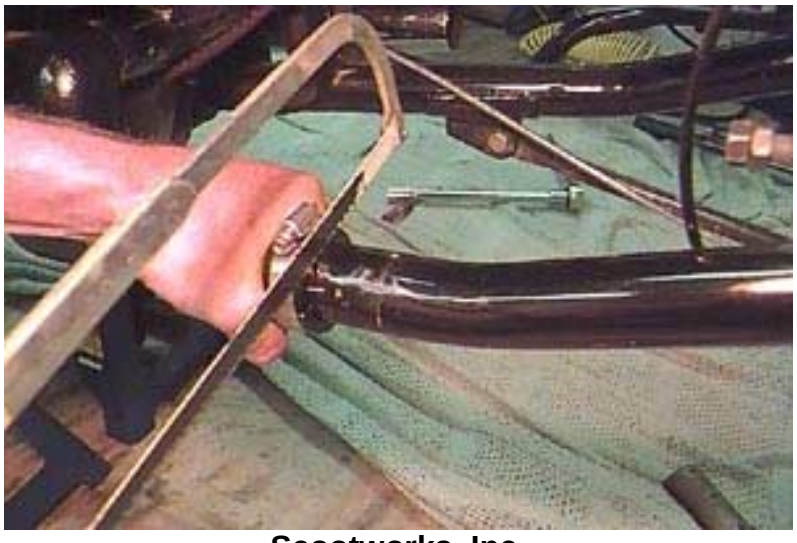
13. It's time to install the **GATEWAY**! The Gateway is required, due to the design of the 600's swingarm, to allow a path to install the drive belt. This is the part of the procedure that most are concerned about, but is actually a simple task. Scootworks has included a cutting guide to help you make a straight cut. I'll break this into small steps, to better describe the process and allow pictures for assistance… First, let's have a look at the gateway. Familiarize yourself with these parts:



Observe the photo below, and locate the weld that attaches the tubular portion of the lower swingarm to the ast portion used in the assembly. The photo below is of the completed assembly, but was edited to show the location of the weld. It's easy to locate, and is a weld that travels around the entire outer diameter of the tubing at this point. Measure rearward from this weld 2 ½", and mark the swingarm. Make an additional mark at 3 3/8" rearward from the weld.



Place the two "C" shaped cutting guides around the swingarm (forming a circle around the swingarm tubing), between the marks made 2 1/2" and 3 3/8" rearward of the weld. Install the hose clamp and tighten. Using the hacksaw with metal cutting blade, saw down each side of the guides you have clamped around the swingarm. This will remove a section of the swingarm just slightly larger than the guides. It is commonplace for the swingarm to move or "spring" slightly closer together or apart once the section is removed. This is a non-issue, as the gateway has a machined section to fill this area upon installation. Observe the photo below for the cutting procedure.



Install the two Gateway sections onto the swingarm, fitting the machined inner protrusion into the opening made from the cut in the step above. These two sections should form a circle around the swingarm tubing. They may not fit completely flush yet, as they are machined for an extremely tight fit along the length of the tubing and often require the use of the mounting bolts to pull them into position. Rotate these Gateway sections so the bolt holes are at approximately a 45 degree angle from vertical, as in the weld location photo above. This will allow one to only view the heads of the bolts, once installed. Using the electric drill and 5/16” twist drill, mark the four holes in each of the two Gateway sections, remove the Gateway sections, and drill. Do not drill straight through, but rather drill the top four holes, then move below the swingarm and drill the lower four holes. This will ensure the holes are properly aligned. Observe the photo below…

Once completed, you should have a cut and drilled swingarm that resembles the photo below. Place the Gateway sections aside for use a little later in this procedure.

14. Disconnect the lower shock bolt from the swingarm. The bolt has a 14mm head, and a 17mm nut. Using the appropriate wrenches, remove the nut and bolt, allowing the aft end of the swingarm to lower towards the floor. Below is the lower end of the shock, after disconnection from the swingarm…

15. OK! Now that the Gateway opening is completed, let's remove the swingarm for the final belt installation. Using a small straight screwdriver, pop the plastic caps off of the swingarm pivot bolt. Using a 22mm socket and pullbar on the RH side of the pivot, and a 17mm socket and ratchet on the LH side of the pivot, loosen and remove the pivot bolt. Push the bolt from the RH side, through the frame and rear engine mounts, and out through the LH side of the frame. Remove the swingarm. Some models have a rubber drive chain guide attached to the LH pivot point on the swingarm. If yours is so equipped, remove it. Slip one side of the belt through the opening in the Gateway, and over the swingarm pivot. The belt should now be on each side of the swingarm pivot, passing rearward towards the location of the wheel.

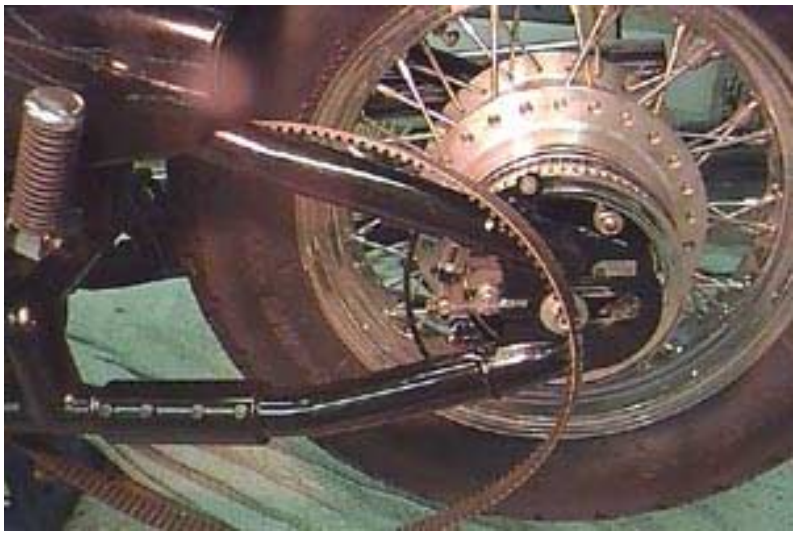
16. Installation of the front pulley… Dab a small amount of wheel bearing grease in the retainer groove on the engine's output shaft. This is to hold the keepers in place until the outer splined disc is installed. Locate the front pulley, and using a small piece of sandpaper, remove any paint that might exist around the perimeter of the recessed side. These are painted during assembly to prevent rust while in storage. Slip the pulley onto the engine's output shaft, with the recessed side facing outwards, until the retainer groove on the output shaft is visible. Place the two "C" shaped keepers in the retainer groove, with the indentions located in the back side of the keepers aligned with the two threaded bolt holes in the pulley. Locate the thin disc, and apply a thin film of grease around it's perimeter. Slip the thin disc into the recessed outer side of the pulley with the machined indention facing the keepers, aligning the disc with the two bolt holes in the pulley. Make sure the keepers fit into the machined indention of this outer disc. The disc should fit within the outer recess of pulley, perfectly flat, and press in flush with the face of the pulley when the two Allen bolts are installed next. Refer to the pictures on the supplied supplement shipped with your front pulley for this assembly step. Apply a small amount of medium strength Loctite to the two Allen bolts, install them in the outer surface of your pulley, and tighten.

17. Position the swingarm beneath the bike, in position for installation. Pull the belt forward, and over the front drive pulley. Lift the swingarm into position, and insert the swingarm pivot bolt from the LH side of the bike. Install the 22mm nut on the RH side of the swingarm pivot bolt, tighten, and torque to 65 ft/lbs. Raise the swingarm into position, and reinstall the lower shock absorber bolt and nut. Hold the 14mm head of the shock bolt, and torque the 17mm nut to 33 ft/lbs. Double check and insure that the belt path is correct, and matches the drawing above. Snap the plastic protective covers over the swingarm pivot bolt openings in the frame.

18. Install the Gateway in the swingarm, making sure that the machined protrusions on the inside of the two Gateway sections fit into the Gateway opening in the swingarm. Insert 4 each 5/16-18 x2 ¾" bolts from the topside, and install the locking nuts on the bottom. Hold the heads of the bolts with a ½"" box end wrench, and tighten the ***NUTS*** (not the bolts heads!) to 5 ft/lbs. Do not allow the heads of the bolts to turn, to protect the black powder coated surface of the gateway. Snug the four bolts, and gradually increase torque on each bolt, to pull the Gateway into place and seat it firmly onto the swingarm tubing.

19. Reinstall the coolant tank (and charcoal canister on Ca. Models), and reconnect the hoses. It may be necessary to add coolant to this tank, check the level and fill as necessary at this time.

20. Pull the drive belt back firmly, making sure it is properly seated on the front drive pulley. Pull the aft end of the belt loop rearward, and over the outside of the swingarm as in the photo below. This will keep the belt out of harm's way while the rear wheel is being installed. Observe this picture…



21. Lift the rear wheel into position within the swingarm, with the brake assembly reinstalled in the drum. Push it forward, and slip the belt over the pulley. Keep the transmission in neutral, and move the belt a little to make sure it is properly engaged in the teeth of the front pulley. Pull the wheel rearward enough to align the axle openings in the wheel and swingarm. Reinstall the axle from the LH side, through an adjuster bushing, through the LH spacer, through the wheel and drum, through the RH spacer, and through the RH adjuster bushing. Install the 24mm axle nut on the RH side, and while holding the 17mm hex head of the axle on the LH side, tighten until just snug. Push the wheel assembly as far forward as possible in the swingarm.

22. Reconnect the rear brake linkage and brake drum tie rod on the RH side of the bike. Leave the rear brake linkage as loose as possible, until the belt tension is adjusted. Adjust the wheel adjusters rearward, setting the rear wheel at the 7th mark from the front of the bike for the 2.25:1 ratio (2nd mark from the front of the bike for the 2.53:1 ratio), on each side of the swingarm. Do not adjust one side all the way to this mark, but rather take each side back about 1 mark on the indicator at the time, alternating from side to side until the recommended position is reached. With the transmission in neutral, spin the rear wheel to make sure everything is free, and nothing is touching or binding. This is a preliminary location to begin the tensioning process.

ADJUSTING THE BELT TENSION

Once all is installed, begin the adjust belt tension procedure by setting the rear wheel adjusters to a point half way between the 7th and 8th alignment mark from the front for the 2.25:1 ratio, or at the 2nd alignment mark from the front for the 2.53:1 ratio. Be *sure* that both adjusters are set to the recommended alignment marks when counted from the ***front*** of the bike (not the rear of the bike), it's easy to make a mistake here. Don't "second guess" the following adjustments, and follow this procedure in it's entirety... Use the Belt Tension Tool supplied with the kit. Also, **_BE SURE_** to read all of the **FAQs** on the Scootworks Belt Drive **_BEFORE_** attempting to 'test drive' your new belt drive system. **Correct initial adjustment is critical to the long life of your new belt! Please remember that the belt, while strong, is not indestructible! Performing wheelies, burnouts, or excessively hard acceleration at a low speed can result in damage to the belt.**

With the bike on a lift and the rear wheel off of the ground, rotate the tire while "plucking" the belt. Note the location of the wheel when the belt tension is highest. Place a mark on the tire pointing straight down with the wheel in this position. Remove the bike from the lift, and position the bike with the tire mark pointing straight down. Using the Scootworks Belt Tension Tester supplied with the kit, perform the following test: The bike should be on level ground, transmission in neutral, and rider on. Place a ruler along the leading edge of the Gateway, to measure the belt deflection**. Apply 10 lbs of force upward on the return side (bottom) of the belt at mid-span, just behind the ruler and along side of the Gateway**. The belt should be adjusted to deflect between 1/8" and 3/16", but no more than 3/16" at the loosest point measured. I prefer a setting of 3/16" @ 10 lbs. in this application, but in cases of higher payload or "more spirited" riding habits, a setting of 1/8" @ 10 lbs. is acceptable. Again, use no more, and no less than these recommended values. Observe the next picture for an illustration of this procedure…

Once the Belt Drive is adjusted per the above instructions, torque the rear axle to 65 ft/lbs., and perform a road test. While the recommended alignment mark settings from the front (listed above) are recommended starting points, there are many variables with individual motorcycles that make it impossible to provide exact setting values for the indicators of rear wheel adjusters. That's why the tension measurement is the correct way to adjust belt tension. I find, with the Honda VLX drives, most often the adjustment ends up at the 8th mark, being spot on for 2.25:1 ratio, or halfway between the 2nd and 3rd alignment mark from the front for the 2.53:1 ratio. Take the motorcycle out on the road for a quick test. If you get any ratcheting of the belt (jumping or slipping) during **normal** operation, tighten both adjusters an amount of 'two flats of the nuts' (approximately 1/3 revolution). Test again. Continue, until no additional ratcheting occurs, and tighten an additional 1 flat. Check the tension once more, as you should not exceed the "tight" setting of 1/8" @ 10 lbs. Lock the adjusters, reinstall the chain guard (if desired), and ride!

Once adjusted, we recommend that you perform is what we call a "pick check". When the belt is "picked" along the edge like a guitar string, it will generate a tone. Observe this when the belt drive installation is new, and use it as a point of reference during the life of your belt. It may sound silly, but it has held true on all of the systems I've installed locally over the last few years, and is a common practice among those who service belt driven motorcycles.

NOTE: CHECK THE TENSION OF YOUR BELT AFTER APPROXIMATELY 2000-4000 MILES.
It is very important to check the tension of your belt after 2000-4000 miles of use, and re-adjust it if necessary. There should be no more adjustments needed after that, but as with any good maintenance program, you should always be aware of your belt tension, and check it periodically.

Additional notes:

1. Torque values:

§ Swing arm pivot shaft nut: 65ft/lbs

§ Shock absorber nuts: 33ft/lbs each

§ Drum Link nut: 15ft/lbs

§ Rear axle nut: 65ft/lbs

2. Don't forget to install the cotter pin in the drum tie rod bolt.

3. Reinstall the chrome cover for the front pulley using a 5mm Allen wrench. Don't forget to reinstall the spring clip in the upper rear of this cover.

Maintenance

There isn't a lot of maintenance required for the belt drive system. Check the belt tension periodically, and keep the system free of dirt and debris.

Occasionally, inspect the torque of the front pulley attachment. I recommend to check this at 3000 miles, and then again about every 10,000 miles afterward. Remember, engine braking is abusive to the driveline (including the clutch), so opt for your brakes instead.

FAQ's (Frequently Asked Questions)

Question- I recently saw a HD Belt, and it was very large. Is the Belt used in the Scootworks Belt Drive of an adequate size for my bike?
Answer- Many of the older belts for H-D systems were large, as they used an older technology. Many are simple rubber timing belts with a fiber reinforcement. The newer belt driven bikes use a technology incorporating Kevlar in their construction, making them much stronger as well as much smaller. The belt used in the Scootworks Belt Drive is one such belt, and has a higher tensile strength than a #60 steel roller chain. It has been road tested for thousands of miles, and is more than adequate for the application.

Question- I currently have to adjust my chain every 1000-2000 miles. I have a friend with a belt driven bike, and he has to tension his belt also. Will I have to periodically adjust my belt tension?
Answer- Chains stretch across their entire lifespan. Cord reinforced rubber drive belts used on some motorcycles also stretch. The composition of the belt used in the Scootworks Belt Drive doesn't lend itself to stretch the way conventional belts do. Usually, after initial installation, the Scootworks belt will need a single tension adjustment after 'break in' (somewhere between 1000-4000 miles, depending on rider). This tension adjustment is due to several variables that occur during break-in :

The belt will wear to match the exact contour of the drive pulleys. Paint wears away from the teeth of the front drive pulley. Chrome plating and/or paint wears away from the teeth of the rear drive pulley. A very small amount of belt elongation when new (usually only a few thousandths of an inch!)

It's virtually maintenance free.

Question- Does the Scootworks Belt Drive system require any additional materials, fasteners, etc. for installation?
Answer- Not at all. The Scootworks Drive System comes complete with all parts needed for installation, including a detailed step-by-step instruction booklet.

Question- How long does it take to install a Scootworks Belt Drive?
Answer- I've installed the VLX drives in my personal shop in just over 2 hrs, by myself. My personal motorcycle shop at home is equipped with only average tools, a lift, etc. Conversely, I've had some people report that their local dealership charged them for as much as 8 hours of labor... So, this obviously depends on many variables. Items such as the speed of the individual performing the installation, stuck fasteners, contamination of components to be removed, tools available, problems understanding instructions, individual skillsets, etc are beyond our control. Remember, we are only an email or phone call away, to answer any of your questions.

Question- Will I have to cut or modify anything to get the Scootworks Belt Drive system on my bike?
Answer- Yes, the Scootworks Belt Drive for the Honda VT/VLX 600's requires the installation of our "Gateway", as the original swingarm design will not allow the installation of any type of continuous loop drive systems. This task has been reduced to a very simplistic job, requiring only about 20 minutes to perform. The result is a swingarm with a path opening for the belt, yet stronger than the original design (as proven on FEPro, a finite point stress analysis software package). Otherwise, the task is very straightforward and easy to perform.

Question- I'm concerned about modifying my swingarm. Will it be weaker now?
Answer- No, it will actually be stronger. The modifications to the swingarm were modeled on a fractal-based finite point stress analysis software package to determine the best location for the gateway. The point selected for the gateway had a extension loading of nearly 0, with most of the loading occurring during rebound as compression loading. The gateway is more complex internally than it appears on the outside, and distributes the compression loading evenly throughout the gateway. Compression strength of the modified swingarm is greater than the original design.

Question- I see that you offer the rear pulleys in chrome finish. Are they available with any other finish?
Answer- Yes, they can be provided with a black painted finish, which replaces the industrial (not decorative) chrome finish we once offered.

Question- Will the Scootworks Belt Drive require an additional belt guard? The bike in your pictures has the belt exposed and I'd like to cover it to keep rider's feet safe.
Answer- The Scootworks Belt Drive was designed to retain the use of your existing chain guard. There are no clearance problems and the OEM chain guard works nicely with your new belt drive system. Some customers have fabricated their own lower guard, to eliminate the possibility of a stone entering the system, but reports (and personal experiences) with this failure mode indicate that operation without a lower guard is practically a non-issue.

Question- Does the Scootworks Belt Drive reduce acceleration?
Answer- There is some minor reduction in acceleration from start is a little less than the OEM chain drive and sprocket installation. This is due to a reduction in the final drive ratio. However, there is a very noticeable reduction in engine RPM's at cruising speeds, making the ride much more relaxed. The reason for the difference is due to the change in ratios used by Scootworks in the belt drive system. One of the design criteria was to reduce engine speed to make hiway speed operation more enjoyable, and to improve gas mileage. The Scootworks belt drive provides the VLX with the final drive ratio of that often asked for "5^{th} gear"!

Question- When I received my Scootworks Belt Drive, I examined everything closely. I accidentally turned the belt "teeth out", and folded it together. A white stripe appeared in between two teeth of the belt. Is it OK to install it anyway??
Answer- No, do not install this belt. While the belt has a tensile strength higher than a #60 steel chain, the Kevlar composition is not designed to fold or bend tightly. Never bend the belt smaller than about 1 1/2", and absolutely _never_ bend it inside out (as if you're inspecting the "teeth" closely). This will damage or break the Kevlar material, and lead to premature failure.

Question- Is there any danger in damaging the output shaft bearing of the engine, due to the tension required by a belt?
Answer- An engineering study was performed on the installation, taking into consideration the tension of the belt, additional load presented by the engine, the location of the shaft bearings on the shaft, and the type of bearings used by Honda in the design of the output shaft. Load data indicated that the shaft loads were well within the bearing design parameters. Feedback from field testing has indicated, with thousands of miles of use on the test installation, that no additional wear has occurred in the bearings of the output shaft and drive system free motion is unchanged.

Question- Does the swing arm have to be removed for installation?
Answer- Yes, the swing arm must be removed. It may sound scary, but is really quite simple and is outlined both in the shop manual and in the instruction booklet supplied by Scootworks. The only thing special is the requirement that the back wheel be raised to remove the swing arm (just as in the chain replacement procedure). If you have your work done by a mechanic, he wouldn't encounter anything unusual in the removal of the Honda VLX swingarm.

Question- I received my Scootworks Belt Drive, but am unsure of the correct direction of installation for the rear pulley. Which side of the pulley should be turned towards the hub of the wheel?
Answer- On most versions, one side of the pulley has a part number stamped into it. Those that do not, have a sticker attached to one side of the pulley. This is the side that should be installed toward the rear hub/wheel.

Question- I'm not sure I have the belt tension set correctly. Are there any simple methods to use as a starting point?
Answer- Sure. Correct belt tension is easy to accomplish, with very little practice. Once all is installed, begin the belt tension procedure by setting the rear wheel adjusters to a point half way between the 7th and 8th alignment mark from the front for the 2.25:1 ratio, or on the 2nd alignment mark from the front for the 2.53:1 ratio. Be *sure* that both adjusters are set to these points from the ***front*** of the bike, it's easy to make a mistake here. Don't "second guess" the following adjustments, follow this procedure in it's entirety... Use the Belt Tension Tool supplied with the kit. Also, **_BE SURE_** to read all of the **FAQs** on the Scootworks Belt Drive **_BEFORE_** attempting to 'test drive' your new belt drive system. **Correct initial adjustment is critical to the long life of your new belt! Please remember that the belt, while strong, is not indestructible! Performing wheelies, burnouts, or excessively hard acceleration at a low speed can result in damage to the belt.**

With the bike on a lift and the rear wheel off of the ground, rotate the tire while "plucking" the belt. Note the location of the wheel when the belt tension is highest. Place a mark on the tire pointing straight down with the wheel in this position. Remove the bike from the lift, and position the bike with the tire mark pointing straight down. Using the

Scootworks Belt Tension Tester supplied with the kit, perform the following test: The bike should be on level ground, transmission in neutral, and rider on. Place a ruler along the leading edge of the Gateway, to measure the belt deflection**. Apply 10 lbs. of force upward on the return side (bottom) of the belt at mid-span, just behind the ruler and along side of the Gateway**. The belt should be adjusted to deflect between 1/8" and 3/16", but no more than 3/16" at the loosest point measured. I prefer a setting of 3/16" @ 10 lbs. in this application, but in cases of higher payload or "more spirited" riding habits, a setting of 1/8" @ 10 lbs. is acceptable. Again, use no more, and no less than these recommended values. Observe the picture below for an illustration of this procedure…

Once the Belt Drive is adjusted per the above instructions, torque the rear axle to 65 ft/lbs., and perform a road test. While the alignment mark settings from the front (listed above) are recommended starting points, there are many variables with individual motorcycles that make it impossible to provide exact setting values for the indicators of rear wheel adjusters. That's why the tension measurement is the correct way to adjust melt tension. I find, with the Honda VLX drives, most often the adjustment ends up at the 8th mark, spot on for the 2.25:1 ratio, while halfway between the 2nd and 3rd mark are usually correct for the 2.53:1 ratio. Take the motorcycle out on the road for a quick test. If you get any ratcheting of the belt (jumping or slipping) during **normal** operation, tighten both adjusters an amount of 'two flats of the nuts' (approximately 1/3 revolution). Test again. Continue, until no additional ratcheting occurs, and tighten an additional 1 flat. Check the tension once more, as you should not exceed the "tight" setting of 1/8" @ 10 lbs. Lock the adjusters, reinstall the chain guard (if desired), and ride!

Once adjusted, we recommend that you perform is what we call a "pick check". When the belt is "picked" along the edge like a guitar string, it will generate a tone. Observe this when the belt drive installation is new, and use it as a point of reference during the life of your belt. It may sound silly, but it has held true on all of the systems I've installed locally over the last few years, and is a common practice among those who service belt driven motorcycles.

NOTE: CHECK THE TENSION OF YOUR BELT AFTER APPROXIMATELY 2000-4000 MILES.
It is very important to check the tension of your belt after 2000-4000 miles of use, and re-adjust it if necessary. There should be no more adjustments needed after that, but as with any good maintenance program, you should always be aware of your belt tension, and check it periodically.

Question- My Belt makes a slight 'squeak' when I roll the bike slowly. Is there anything I can do for this?
Answer- Yes. An adjustment I like to perform is 'tracking' of the belt. This isn't necessary, but will eliminate a 'squeaky' belt (noticed when the bike is pushed slowly). There are two different adjustments, depending on the location of the "squeak" and the ratio selected. The amount of the following adjustments do not impact handling of the motorcycle in a negative manner, as the change in wheel location is minimal.

#1- If the "squeak" is coming from the front pulley area, this requires the LH side of the rear wheel to not be adjusted as far back as the RH side by somewhere between 1/3 and 1 full revolution of the adjuster nuts. This test requires that the rear wheel be raised. Turn the rear wheel by hand (in the normal direction of rotation) and observe the belt sound. Loosen the LH side adjuster slightly, while monitoring the belt tension. It may be necessary to tighten adjusters slightly (once the correct offset has be achieved) to maintain correct belt tension. This adjustment will reduce the contact pressure between the belt and the RH flange of the front pulley during it's unloaded condition, helping to eliminate "belt squeak".

#2- If the "squeak" is coming from the rear pulley area, this requires the RH side of the rear wheel to not be adjusted as far back as the RH side by somewhere between 1/3 and 1 full revolution of the adjuster nuts. This test requires that the rear wheel be raised. Turn the rear wheel by hand (in the normal direction of rotation) and observe the belt sound. Loosen the RH side adjuster slightly, while monitoring the belt tension. It may be necessary to tighten adjusters slightly (once the correct offset has be achieved) to maintain correct belt tension. This adjustment will reduce the contact pressure between the belt and the LH flange of the rear pulley during it's unloaded condition, helping to eliminate "belt squeak".

An old "trick" used by many belt driven motorcycle owners of all brands, is to occasionally rub the LH and RH edges of the belt with a bar of soap to eliminate "dry squeak". The "squeak" is usually caused by small particles of dirt that become embedded in the belt while riding, and/or by a clean and dry belt while rubbing against the edge of the pulleys (much like rubbing a clean finger around the top of a wine glass). A little dry soap will "lubricate" the edge of the belt, and eliminate "ringing" or "squeaking", should it occur. Additionally, new belts will often make a small amount of noise during break-in, until the edges of the belt are worn smooth and fit the specific components of each individual installation perfectly.

Question- I've noticed a 'howl' or 'whine' from my belt at certain speeds. Is this normal??
Answer- It is normal for the belt to exhibit a small 'howl' or 'whine' at some speed between 25-45 mph, once break-in is completed. This is simply the point where resonance is achieved between the belt tension and the rate that the belt's teeth strike the pulleys. A new belt will often be a bit noisy for the first few hundred miles, while it is wearing to match the contour of the front and rear pulleys.

A belt that 'howls' at a wide range of speeds usually indicates a slightly overtensioned belt. Overtensioning isn't typically a contributor to premature failure (as is undertensioning!), but is a bit annoying. Loosen the belt tension slightly, but stay within the recommended 1/8"-3/16" tension setting. I usually loosen the rear wheel adjusters by only 1 flat each, while making this adjustment. Measure the tension, road test, and repeat if necessary. Once adjusted, this doesn't need to be repeated in the future.

Question- I don't want to run my belt as tight as recommended by Scootworks. Can I operate with the belt a little slack?
Answer- No. If the belt is loose (even a "little"), the mechanical shock generated when placing the bike into gear as well as that of the vibration transmitted from the engine to the drive train, will destroy the belt. A loose belt will allow the input pulley to generate transients and micro-oscillations many times greater than would normally exist in normal operation. Additionally, micro-oscillations will occur along the length of the belt's lower track that will destroy the Kevlar in the belt and lead to premature belt failure. The leading cause of premature belt failure is under-tensioning. Adjust the belt to the correct tension as recommended by Scootworks.

Question- My belt seems to jump teeth occasionally, under normal to moderate acceleration. Is something wrong?
Answer- The belt should not jump during normal use. As with any belt drive, no matter of manufacture, it is possible to cause it to jump (and even destroy it) during heavy acceleration, when doing burnouts or attempting to pull "wheelies". If your belt jumps during normal to moderate acceleration, check to make sure you have it adjusted the dimension outlined in the belt tension instructions. If the problem persists, increase the tension by adjusting the rear wheel adjusters in 1/3 revolution steps (2 flats on the adjuster nuts), and repeat the test. A single 1/3 revolution increase in tension can make a considerable improvement in performance. Most often, this problem occurs when a new drive is installed and is not adjusted correctly, but can occur after the belt has past the initial break in period and requires a minor adjustment.

Question- How tight does the belt need to be? I was afraid to get it too tight for fear I might snap it. How tight is too tight?
Answer- These belts are STRONG! You can literally lift an automobile off the ground with this type of belt. Adjust the rear wheel to a point midway between the 7th and 8th alignment marks on the swingarm, from the front. Follow the belt tension instructions and the belt drive will perform correctly.

Question- My VLX jumps suddenly when I place it in gear from a cold start. Is this normal, and will it damage the belt?
Answer- Start the engine, and hold the clutch "in" for about 30 seconds before you place it in gear. There isn't anything wrong, and many bikes with wet clutches will do this when cold. If unused for a while, a wet clutch will displace the oil from the clutch plates and create a vacuum, giving the appearance that the clutch isn't disengaged. Pumping the clutch doesn't usually help, but holding it in as I outlined will make that first shift into gear nice and smooth. This will also help minimize stress on the belt (and the rest of the drive train!) when starting a cold engine.

Question- Does the belt typically run more to one side of the rear pulley or should it line up in the middle? Mine seems to stay more to one side or the other, rather than the middle.
Answer- The belt should track to the LH side of the rear pulley under normal conditions. This is intentional, and does not indicate a misalignment of the system. The belt will track back and forth on the rear pulley a little, depending on load. That's the reason for the pulleys being a little wider than the belt. Much work has gone into insuring the user of correct alignment without the need for adjustment or modification. Kevlar belts run under different conditions than the conventional rubberized belts most users are familiar with. You'll notice, if the bike is up on a lift and the rear wheel is free to spin, the belt is easily moved from one side of the pulley to the other.

Question- Is there any lubrication or other maintenance on the belt drive after it's installed?
Answer- Only once, at about 2000-4000 miles. Once the belt drive is installed with the proper tension on the belt, the only other adjustment is a minor retensioning after break-in. ...unlike a chain which requires lubrication every 600 miles. Chains normally stretch over time and require periodic readjustment. The Scootworks Belt drive uses a Kevlar/Arimid fiber reinforced Poly Chain similar to that used on other "modern" belt driven motorcycles. Since there is no belt stretch (well, only about .002"!), the system requires no adjustment. A great by-product of having a belt drive instead of a chain is the fact that you no longer have all that grease and grime to clean from your rear wheel, tire and rim that a chain will deposit there.

Question- I'm going to remove my belt/swingarm to perform lowering modifications to my bike. Are there any precautions I need to observe when reinstalling a used belt?
Answer- Inspect the belt for any physical damage. If there is any damage, now is the perfect time to replace it..it's very inexpensive. If you decide to reinstall the old belt, be sure to mark it's original direction of installation, and reinstall it so it runs in the same direction it originally did.

Question- I was afraid going from a final ratio of 2.75 to a 2.25 would kill the "takeoff" power of my VLX 600. It really does slow those RPMs down at highway speeds! I'm really impressed with the setup and am surprised at how relatively easy it is to takeoff from a stop. I notice that I must “feather” or “slip” the clutch a small amount more than previously (when starting off) but even that was no problem after a few miles of riding and familiarization with my new ratio.
Answer- It makes a substantial difference in cruising RPMs of the Honda that originally came with a 16t front and 44t rear sprocket. There are two ratios available, 2.53:1 and 2.25:1. 2.53:1 is approximately the same as a 16t/41t tooth pulley combination, while the 2.25 ratio is approximately the same as a 16t/36t setup. I weigh 200 lbs., and still opt for the SLOW rumble the 2.25:1 ratio provides for my personal VLX 600.

Question- I’ve tested a 38 tooth rear sprocket, and there’s no way I’d ever try a drive that was similar to a 36 tooth rear sprocket!
Answer- The improvements in efficiency of a belt over a mechanical chain are not small. Chains have friction points along their entire length, and make metal-to-metal contact at both ends with the sprockets. Chain drives are at their best efficiency when they are new (80% range), and deteriorate from there. A belt drive is nearly 100% efficient as a drive medium, with Gates’ rating it at about 98%. This translates to more power to the ground, and affords the ability to run a ratio that might be difficult with a chain drive system.

Question- I’m concerned with engine loading when using the 2.25:1 final ratio in your kit. Have you tested this?
Answer- Yes. A pyrometer was used to measure cylinder head and exhaust header temperature, and the amount of cooling fan “on” time was measured over a predetermined course during many 50 miles runs. This was compared to the stock 16/44 tooth sprocket setup, and no appreciable difference was found. At a ratio of 2:10:1, temperatures and cooling fan time began to increase, indicating a crossing of engine loading vs. capability was found. This was with a bike with stock pipes and jetting, and riders with weights of 200 lbs. and 325 lbs. After several thousand miles of use with the most difficult ratio of 2.25:1 over all types of terrain, it was deemed satisfactory to utilize both 2.25:1 and 2.52

Question- I’m not sure I have the front pulley assembled correctly. How can I be sure?
Answer- What the pulley is assembled correctly, the thin outer disc should pull down flush with the face of the pulley, and not be tilted on any side.

Question- Does Scootworks have a Warranty of any type? I've looked all over the web site and couldn't find anything.
Answer- Certainly! Scootworks Inc. warrants the workmanship of all materials sold, to be free of defects for a period of twelve (12) months from the date of purchase. As with any other belt drive manufacturer, the belt is warranted to be free of defects at the time of purchase only. You can find more information on the first page of the Scootworks WebPage, at the bottom of the page under ‘Warranty & Return Policies’.