

**Thanks for Ordering
The WideDrive Belt Conversion Kit
for the Suzuki Marauder from**



READ THIS BEFORE UNPACKING YOUR KIT!

This instruction booklet contains detailed steps for installing the belt drive conversion kit on your Suzuki Marauder motorcycle. 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.

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Instructions for Installing the Scootworks Belt-Drive on the Suzuki Marauder 800

(Be sure to visit www.scootworks.com and select [Instructions] from the main page, for more info and pictures!)

Tools Needed:

- Phillips-head screwdriver
- Flat-head screwdriver
- Socket wrench pull bar
- Large torque wrench calibrated in foot-pounds
- 4mm Allen wrench
- 6mm Allen wrench
- 8mm Allen wrench
- 8mm socket
- 10mm open-end wrench
- 12mm socket/wrench
- 14mm socket (6 point recommended)/wrench
- 17mm socket
- 19mm socket
- 22mm socket (optional, you may substitute a 7/8" socket for this)
- 27mm and 32 mm sockets (optional, you may substitute a 1 1/16" socket for the 27mm socket)
- Small amount of **RED** Loctite (maximum strength thread locking compound)

The installation of the Scootworks Belt Drive is basically the same as replacing the OEM sprockets and chain, with the exception of removing the swing arm (not required). However, Scootworks wanted to assist you as much as possible with the installation process, and developed this instruction package. 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 contact 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, 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. Place the bike on a lift, and raise the rear wheel at least 3" off of the ground. You can raise the rear wheel with a lift on the swingarm, as the swingarm does not have to be removed for this belt drive installation.

2. Remove the front sprocket cover (chrome cover) by removing the three fasteners with an 8mm wrench or socket. You may need to remove the shifter linkage from it's attachment on the rear, to access the lower RH 8mm bolt head on the chrome sprocket cover.
3. Remove the swingarm pivot cover by removing the three allen bolts with a 6mm allen wrench. This is the black webbed cover located immediately to the right of the chrome front sprocket cover.
4. Remove the front chain drive sprocket from the engine. Before the front sprocket can be removed, the locking washer must be bent away from the nut that secures the sprocket. Using a screwdriver with a sharp point and a small hammer, bend the edges of the washer down flat against the front sprocket.

The easiest way to fold down the washer sides that are securing the pulley is to place a flathead screwdriver (or something similar) in the joint between the washer and the pulley nut and tap the screwdriver with a light hammer. That will bend the washer side away from the locking nut on the pulley. Then use a flat surface (like a brass drift pin or bar stock) and tap down the entire washer surface so it lies relatively flat against the outer surface of the sprocket. You might be able to get the nut off without flattening the washer all around but it's far easier if you flatten it first.

Place the transmission in 1st gear to assist with loosening this nut. Have someone to sit on the bike and hold the rear brake locked tightly. Using a 27mm or 32mm socket (varies with model) and pull bar or 27mm or 32mm socket and impact driver, loosen the nut. Once the nut is off, place the nut carefully to one side, and toss the old lock washer and flat spacer washer as far away as you can :-). **DO NOT reuse these washers!**

5. Loosen the rear axle with a 17mm and 22mm socket/wrench a bit. Loosen the rear drum brake's drag link on the RH side of the rear wheel (the bar that connects the drum assy. to the swingarm). Loosen the rear chain/wheel adjusters with a 12mm wrench, and slip the rear wheel all the way forward.
6. Break the chain and remove it. If the chain is old and there is little use for it, simply break it with a grinder or bolt cutters. Remove the front drive sprocket. Remove the small semi-circular cooling system guard (usually a goldish color sheet metal guard rail with two bolts) that is located in front of the old drive sprocket location, and place this to the side. You will reinstall it when the belt drive installation is nearly completed.
7. Now is a good time to clean the area around the original sprocket. Remove all that grease, grim, and crud that has accumulated in this area during your bike's previous life as a chain driven beast.

Remove any paint that might be on the rear surface that contacts the tubular spacer on your output shaft, and on the front surface that is contacted by the locking nut. Clean the threads inside of the 27mm or 32mm nut, and the threads on the output shaft, with alcohol to remove any oils. Slip on the new pulley (with the 12 point fasteners facing outward), and the nut. **Do not** install the locking washer or flat spacer washer (don't even think about it!). **Do not apply Loctite at this time!!!** Place the engine in neutral, and rotate the pulley. If the pulley contacts the two small hex head bolts in the case behind it, simply remove and file or grind about 1/16" away from the tops of these two bolts, and reinstall. This usually only requires removing the ridge from the top of the bolt. **DO NOT** space the pulley outward! Tighten the nut to about 90 ft/lbs., or approximately to the maximum amount possible without turning the engine while in 1st gear. Application of the loctite and final torque setting will be achieved after the rear wheel is installed, and the belt tensioners are initially adjusted to the 6th mark from the front on each side of the swingarm.

8. Let's get ready to remove the rear wheel. Remove the rear brake tension nut and barrel, and reinstall on the brake rod for safe keeping.

Remove the bolt and nut from the drag link (drum securing bar). These are often extremely tight, and the use of a 6 point socket is recommended to prevent damage to the nut. You only need to remove the bolt and nut nearest the rear of the bike, and loosen the forward one. Be sure to replace the bolt and nut on the bar after the bar has dropped down out of the way so they're handy when you reinstall the bar.

Remove the cotter pin and nut from the RH side of the axle. When preparing to remove the axle, you can loosen either side to remove the RH axle nut. The RH nut is 22mm and the LH end of the axle is 17mm. The hand-wrench supplied in the owner's tool kit is not robust enough for this application, so most users loosen and tighten with a 17mm wrench on the LH side of the axle. You can use the tool kit wrench to secure the RH nut while tightening or loosening, however... You just won't be able to loosen the axle nut with it. Use a pull-bar with the 17mm socket, if possible. Also, a large adjustable wrench on the 22mm nut works nicely.

9. Remove the axle by pulling it out to the left of the bike. Carefully lower the rear wheel, keeping one hand on the brake drum assembly on the RH side of the wheel to prevent it from falling out. Lean the wheel over, remove the chain from the sprocket, and slide the wheel from under the bike.

Remove the brake assembly from the hub, and place to one side. You'll need this when you're ready to reinstall the wheel!

10. Remove the spacer from the sprocket side of the wheel. Use a 17mm socket (with a pull-bar) to remove the five nuts securing the sprocket to the rear wheel. Remove the sprocket and toss it! Next, take a moment to mark the rear hub. This will insure correct alignment, should it be removed and need to be reinstalled. Notice the photo below...



Test fit the new rear pulley on the hub of the wheel. Install the deep side of the pulley towards the wheel.

Due to minor variations in manufacturing tolerances at Suzuki, ScootWorks chrome pulleys may be a very tight fit on the center protrusion of the rear hub of the wheel. If necessary, although not common, you may use sandpaper on the inner bore of the rear pulley to fit it to the rear hub. Our black coated rear pulleys are often a very tight fit, and the excess material will push out of the center bore as you install it on the hub.

Install the rear pulley, and tighten the five attachment nuts. Torque to 36 ft-lbs. In a “star” pattern, tightening opposing bolts on rotation. The black drives will require a gradual tightening of this 5 nuts, to slowly work it onto the hub. This insures a very well centered rear pulley. Once tightened all the way down onto the rear hub, loosen the nuts, and set the torque to 36 ft-lbs.

11. Reinstall the rear wheel in the frame, with the axle all the way forward. Remove the chain guard from the swingarm and place to one side for the time being. Remove the LH rear shock from the bike using a 6mm allen wrench on the top of the shock, and a 17mm wrench on the lower shock bolt.

12. Twist the belt up on it’s side, slip the belt behind the rear frame section, between the swingarm and frame. Pull the belt forward, and in front of the swingarm pivot. Pull the rear section of the belt around the rear pulley. Slip the front of the belt around the front pulley.

13. Reinstall the cooling system guard around the front of the front pulley assembly.

NOTE: Make sure that the belt is located on both sides of the swing arm pivot: the upper belt portion should be above the swing arm pivot, the lower belt portion should be below the swing arm pivot.

Make sure belt "straddles" the swing arm pivot as shown below...

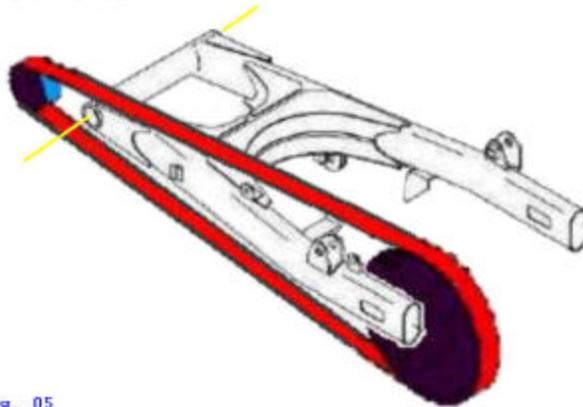


Fig. 05

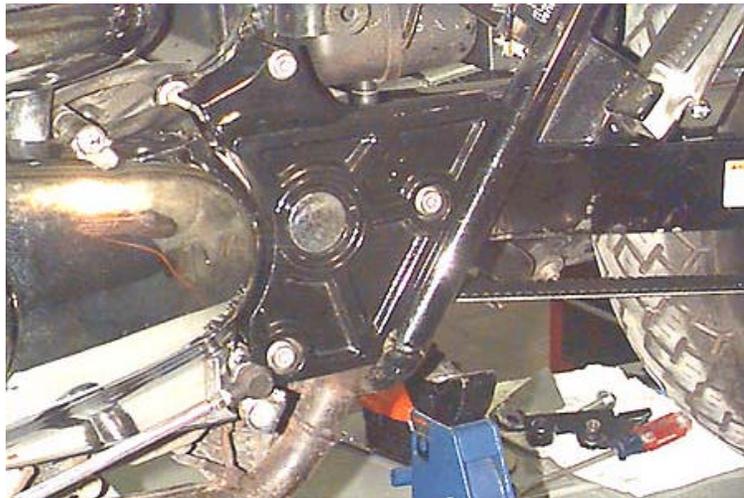
14. Modification to the black webbed swingarm cover (removed earlier). Below is a picture of the unmodified swingarm pivot cover.



The circled area (above) shows the tab and edge of the cover that must be removed to provide adequate clearance for the front pulley. Remove the tab and material from the edge of the cover with a dremel tool, die grinder, conventional belt sander or tabletop grinder, or hand file to provide clearance as needed. The picture below shows the completed/modified cover, ready for installation. Install the cover, and check for adequate clearance between the inner cover surface and the front pulley's outer flange. Spin the wheel and observe the front pulley while listening for contact. Remove and repeat as necessary. Touch up with a small amount of black paint on the inner edge as needed.



The next photo shows the modified cover, installed on the Marauder. This is a simple task, and doesn't require any exacting measurements...only that the cover not contact the pulley's moving parts when modified and installed.



15. Follow the disassembly instructions in reverse, omitting the steps you've previously completed (like installing the front pulley), but leave the chrome front pulley cover OFF until the belt tensioning is completed, and the front pulley's locking nut is secured.

ADJUSTING THE BELT TENSION

It's now time to apply the RED (permanent) Loctite. Be sure the threads in the front pulley's nut are free of oil, and the threads on the shaft are also clean and dry. **Apply a liberal amount of RED Loctite to the threads inside of the nut and on the end of the output shaft prior to installing the nut...not to the splines on the shaft. Make sure you torque to 150 ft lbs. within a short time of using the RED loctite, as it will cure and you'll be unable to finish torque setting to 150 ft/lbs. Wait 24 hours before riding the bike after setting the torque to 150 ft/lbs., to allow time for the Loctite to cure. This is VERY important.**

Once all is installed, begin the adjust belt tension procedure by setting the rear wheel adjusters to 6th alignment mark from the front. Be *sure* that both adjusters are set to the 6th mark from the *front* of the, it's easy to make a mistake here. Don't "second guess" the following adjustments, follow this procedure in it's entirety... **At this time, make the final torque setting on the front pulley while in 1st gear and while holding the rear brake. Torque the 27mm nut on the front pulley to 150 ft/lbs.** Next, make the final adjustments to the belt tension. 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 side the belt at mid-span (halfway between the front and rear pulley), to measure the **BELT** deflection (ignore the ruler printed on the outer body of the tension tester...this is for another application). Slide the small black o-ring on the center plunger of the tension tester to the 10 lb. mark as a point of reference. See the photo below...



Apply 10 lbs. of force upward on the return side (bottom) of the belt at mid-span. The belt should be adjusted to deflect between 1/8" and 3/16", but no more than 3/16" at the loosest point measured.) On most Marauders, we've found the final setting to be about the 7th mark from the front on the adjusters (the large mark being even with the rear edge of the swingarm).

Once adjusted, retighten the axle to 47 ft/lbs. and reinstall the cotter pin, retighten the drum locking bar to 18 ft/lbs. and reinstall the cotter pin, and lock the rear wheel adjuster nuts against the swingarm.

Once the Belt Drive is adjusted per the above instructions, perform a road test. While the 6th mark is the recommended starting point, with final adjustment to be set at 1/8" to 3/16" of deflection, there are many variables with individual motorcycles that make it impossible to provide exact setting values for the rear wheel adjusters. 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 adjuster' (approximately 1/3 revolution). Test again. Continue, until no additional ratcheting occurs, and tighten an additional 1 flat. Lock the adjusters and ride! Typical final rear wheel adjustment location is approximately 7 marks from the front of the. Note: A "rubbing-type" of belt noise is normal during break in...don't let this alarm you. Be sure to read more on this in the FAQs below.

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 1000 MILES.

It is very important to check the tension of your belt after 1000 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:

Torque values:

§ **Shock absorber fasteners: 36ft/lbs (lower), 16.5 ft/lbs. (upper)**

§ **Drag Link nuts (the two on the bracket holding the drum in position): 18ft/lbs**

§ **Rear axle nut: 47ft/lbs**

§ **Front pulley nut: 150ft/lbs**

§ **Rear pulley nuts: 36ft/lbs**

1. Don't forget to re-install the cotter pin in the axle!
2. Torque the front pulley to 150 ft-lbs. This is best done with the transmission in 1st gear, and someone holding the rear brake locked. **BE SURE to use RED (permanent) loctite on the threads of the nut and shaft for the front pulley, and DO NOT reinstall the OEM locking washer on the shaft(read the FAQ below for more info on this)!**

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 1000 miles, and then again about every 6,000 miles afterward. The Suzuki attachment method for the front chain sprocket or pulley has been known to loose. The OEM locking washer is of a very soft material, and will wear easily if the front securing nut should loosen. The more the nut loosens, the more the washer wears, etc. An excessively loose drive system can cause premature shaft/spline erosion. This isn't isolated to belt-driven 800's, and can also happen with chain driven 800's...so you may wish to pass this info along to your chain-driven brethren. Insure that the front nut torque is set to 150 ft/lbs. per the instructions. This is **very important**. Marauder 800's driven by riders who tend to use heavy engine braking, have a higher propensity to loosen this nut than those who slow their bike with brakes (while in 5th gear) and downshift back to 1st as they roll to a stop. Engine braking is abusive to the drive line (including the clutch), so opt for your brakes instead.

FAQ's (Frequently Asked Questions)

Installation Related FAQs

Question- Does the Scootworks Belt Drive system require any additional materials, fasteners, etc. for installation?

Answer- The Scootworks Drive System comes complete with all parts needed for installation, including detailed step-by-step instructions. One only needs to supply RED (permanent) loctite thread locking compound.

Question- How long does it take to install a Scootworks Belt Drive?

Answer- We've had dealers install these systems in under 1 hour, and we've installed these in our shop in just over 1 hr, by one person. 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. A good rule of thumb for a person performing a first time installation is approximately 2 hours. 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- The ScootWorks Belt Drive is a direct replacement for your original chain drive system. Following the instructions for a conventional OEM chain replacement, the Scootworks Belt Drive slips back into place as if your bike came with it originally. One only needs a to perform a minor modification to the inner surface of the black webbed swingarm pivot cover.

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 for some of our other belt drive systems 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- 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- Suzuki recommends a torque of 83ft/lbs. and the use of their locking washer on the engine output shaft. You recommend RED loctite, no locking washer, and 150 ft/lbs. of torque. Which is correct??

Answer- Countershaft nut loosening is been a known problem with the Marauder 800 engine. We began working on a solution to this problem back in '99 on it's Kawasaki counterpart (Vulcan 800), after finding bikes with low mileage having loose countershaft nuts and damaged splines on the shaft. After doing an engineering study on the countershaft (nut size, material composition, thread pitch, etc), we determined the first problem to be the torque spec of 83 ft/lbs. The correct torque is 150 ft/lbs., with the upper acceptable end being 210 ft/lbs.

The next problem is the malleable material used in the Suzuki lock washer... The chain sprocket/belt drive pulley will "squirm" (rotate CW and CCW about 1/10,000th inch, due to the required installation clearances between the splined shaft and mating surfaces) on the shaft a bit during accel/decel. Over time, the soft material in the lock washer will wear, creating more clearance, which causes more movement, etc...it gets into a run-away condition, and will damage and/or destroy the output shaft. Our tests with red loctite (permanent grade) and 150 ft/lbs. of torque corrects this situation, and is actually an "old school" fix. Red loctite isn't really permanent on a shaft of the diameter used in this application, but it is a very good thread locking compound.

Question- Does the swing arm have to be removed for installation?

Answer- No, one can slip the belt on without removing the swingarm from the frame.

Question- How do you get the locking washer bent back around the front drive nut?

Answer- **DON'T!** Follow the instructions for the use of RED loctite, 150 ft-lbs. of torque, and do not use the locking washer with the belt drive.

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- One side of the pulley is deeper than the other. The deep side faces the rear hub/wheel.

Question- While installing my chrome rear pulley, I noticed a small groove in the chrome on the teeth, in the approximate center of the rear pulley. There are also sharp edges on some of the teeth.

Answer- This is normal, and the edges and groove will wear away quickly. When chrome plating the rear pulley, we must hang the pulley in an area that isn't seen during normal operation, as the metallic hangar will repel chrome during the plating process. Additionally, we wish to minimize the chrome accumulation in the toothed area of the pulley, so suspending the pulley from the toothed area solves two issues at once. This will not damage the belting, and will disappear soon after installation and operation.

Question- I'm going to remove my belt 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- When I installed the OEM sprocket securing nuts back onto the mounting studs, they did not thread down far enough to contact the pulley.

Answer- I have seen a few rear hubs that had "screw-in" studs. Check your hub and see if you have the version with studs. They can screw out a bit during removal of the sprocket.

Tensioning/Tension/Belt Tracking Related FAQs

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 life span. 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 around 1000 miles). 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- 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 the 6th alignment mark from the front. Be *sure* that both adjusters are set to the 6th mark 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 side the belt at mid-span (halfway between the front and rear pulley), to measure the **BELT** deflection (ignore the ruler printed on the outer body of the tension tester...this is for another application). Slide the small black o-ring on the center plunger of the tension tester to the 10 lb. mark as a point of reference. Apply 10 lbs. of force upward on the return side (bottom) of the belt at mid-span. The belt should be adjusted to deflect between 1/8" and 3/16", but no more than 3/16" at the loosest point measured.

Once the Belt Drive is adjusted per the above instructions, perform a road test. While the 6th mark or 1/8" to 3/16" of deflection is a recommended starting point, there are many variables with individual motorcycles that make it impossible to provide exact setting values for the rear wheel adjusters. 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. Lock the adjusters 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 1000 MILES.

It is very important to check the tension of your belt after 1000 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- It appears there is approximately a 4" section where the belt is wider than the rest. When this portion of the belt runs back into the rear pulley it makes a disturbing sound as the belt rubs down and into the teeth on the pulley.

Answer- It's not unusual to find areas of the belting that may be slightly wider than others, as these belts are sliced to correct width on a rotating drum at low speed. The belt should track to the left hand side of the pulley on the rear, and to the RH side of the front pulley...this is intentional belt steering. Tension the belt per our instructions, and make sure both rear wheel adjusters are at the same point for "straight" tracking" of the wheel. It will take 100-200 miles for the belt edges to "wear in", while it's fitting itself to your individual installation. Don't let the noise of the belt edges bother you during break-in, as this is normal.

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 transient 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 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 **NEVER** 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- I know how to install and adjust a belt, and don't care to bother with the tension tool if the belt tension feels OK to me. Is it really that important to use the tool, or do I just need it for the initial installation?

Answer- I really wish we could call this something other than a belt, because I've answered this question many, many times. The only similarities between our belting and conventional belting that most are familiar with, is the fact that it is a continuous loop of semi-flexible material. Try to forget anything else you know about belting, including the common myths that exist about motorcycle drive belts. The single most common cause of premature Kevlar belt failure is under tensioning. Micro-oscillations in the return track of the belt, as a result of incorrect tensioning, will destroy the Kevlar in short order. Often, a belt adjusted out of spec as little as 1/16"-1/8" @ 10 lbs. will destroy a belt that would otherwise last for tens of thousands of miles. It's almost impossible to distinguish this difference by "feel" or see it with the human eye. This is the reason our kits are supplied with the tool...to insure this adjustment is made correctly. The good thing is, once the initial and break-in adjustments are made, you can almost forget about your drive system. The tool makes this adjustment accurately, and is VERY easy to use. Be

sure to read the installation instructions completely, and familiarize yourself with the tool. There is a separate instruction and FAQ on our website at www.scootworks.com for the tool, in the event you would only like to read about that.

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 the 6th alignment mark on the swingarm, from the front. Next, follow the belt tension instructions and the belt drive will perform correctly.

Performance Related FAQs

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.

Question- What gear ratio have you selected for the Suzuki belt drive, and will I loose horsepower or top end speed??

Answer- The engine will produce the same horsepower, irrespective of the final drive ratio. Power to the ground will increase a bit, as the belt drive efficiency is about 98% vs. a chain being in the mid-80% range (at it's best!). Since the power band is at a different vehicle speed, you'll notice some difference in acceleration at different speeds. Top speed will remain about the same, as the amount of HP developed by the engine will only do a certain amount of work.

The bike may not leap out of the hole as it did (by comparison). The Marauders are geared at a ridiculously low ratio (3.20:1!!). Many riders commonly swap front and rear sprockets to reduce engine RPMs at highway speeds. Most every chain driven metric cruiser on the market today comes geared to give the best "around town" performance, yet lack a bit on the open road due to high cruising RPMs.

The belt drive is shipped as 2.22:1, and was optimized at that ratio after much experimentation from 2001-2003 with ratios from 2.05:1 through 2.80:1 and thousands of miles in all sorts of terrain.

Question- I was afraid going from a final ratio of 3.20:1 to a 2.22 would kill the "takeoff" power of my '00 model Marauder. 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.

Answer- It makes a substantial difference in cruising RPMs, shaving off over 1000 RPM at 60 mph in 5th gear!

Squeaks/Sounds/Noises Heard FAQs

Question- My Belt makes a slight 'squeak' when I roll the bike slowly. Is there anything I can do for this?

Answer- This is normal for the technology and fit we use in the WideDrive. An old "trick" used by many belt driven motorcycle owners of all brands, is to occasionally rub the 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 pulley flanges (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.

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 over tensioned 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.

Misc. FAQs

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 hundreds of thousands of miles on our belt drive systems, and is more than adequate for the application.

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 Suzuki 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 that no additional wear has occurred in the bearings of the output shaft and drive system free motion is unchanged.

Question- My Marauder 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- Is there any lubrication or other maintenance on the belt drive after it's installed?

Answer- Only once, at about 1000 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 synthetic belt stock 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- 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 Web Page, at the bottom of the page under 'Warranty & Return Policies'.
