

<b>Document Number:</b>  <b>040-00119</b>  <input type="button" value="Form Instructions"/>	Rev	Description	Date	ECO#	
	1	SERVICE MANUAL	7/31/09	00499	
<b>Title</b>	<b>SERVICE MANUAL, FRONT PULLEYS &amp; BELTS &amp; BEARINGS REPLACEMENT</b>				
<b>Operation Description</b>	<b>Sub Assembly</b>				
<b>Standards</b>	<b>Man Occup.</b>	<b>Machine Occup.</b>	<b>Cycle Time</b>	<b>Setup Time</b>	<b>Batch Qty</b>
<b>Equipment List</b>	Equipment	Manufacturer	Qty		
	1- Channel lock type pliers	Any	2		
	2- Soft face mallet	Any	1		
	3- 5/32 inch Allen driver	Any	1		
	4- Standard screwdriver	Any	1		
	5- 9/16 inch wrench	Any	1		
	6- ¼ inch Allen wrench	Any	1		
	7- 1 1/8 inch open end wrench	Any	1		
	8- Secondary Pulley (Small)	T3 Motion	1		
	9- Secondary Pulley (Large)	T3 Motion	1		
	10- Bearings	T3 Motion	2		
	11- Crush Tube	T3 Motion	1		
	12- Primary Belt	T3 Motion	1		
	13-Secondary Belt	T3 Motion	1		
<b>Reference Docs</b>	Document #	Description	Document #	Description	
<b>Related Files</b>					
<b>RESP ENGR</b>	Mark Jones				
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**SERVICE MANUAL**

Item#	Part #	Description	Qty
8	200-00118 (18G)	Secondary Pulley Small(10:1 shown)	1
9	200-00111 (49G)	Secondary Pulley Large(10:1 shown)	1
10	100-50043	Bearings	1
11	200-00148	Crush Tube	2
12	100-50028	Primary Belt	1
13	100-50027	Secondary Belt	1



**Serious electrical shock can occur if precautions are not followed.**



- **ALWAYS TURN OFF POWER BREAKER IN GLOVE BOX AND REMOVE POWER MODULES BEFORE PERFORMING ANY ELECTRICAL WORK.**



Power breaker in glove box



Power modules

- **ALSO SET THE PARKING BRAKE PRIOR TO ANY WORK.**

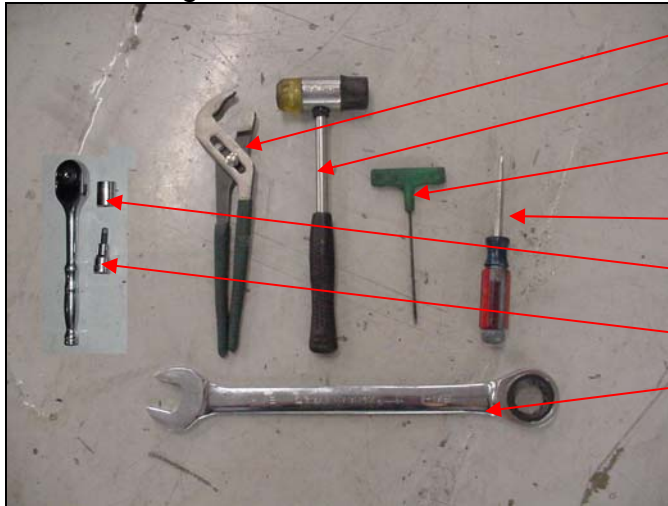


Parking brake

**WORK INSTRUCTIONS:**

1.0 Recommended tools for replacing the secondary pulley set, bearings and belts. See equipment table above for the details.

**NOTE:** This instruction shows the parts of a 10:1 ratio pulley and belt system. Other ratios are available but require different parts. The process is the same for all ratios. Be sure to verify the ratio of the vehicle work is being performed on prior to commencing work.



- 2- Channel lock type pliers
- 3- Soft face mallet
- 4- 5/32 inch Allen driver
- 5- Standard screwdriver
- 6- 9/16 inch wrench
- 7- 1/4 inch Allen wrench
- 8- 1 1/8 inch open end wrench

1.1 A support or stand is required to elevate the front of the vehicle. A stand like this works well.



2.0 Secondary pulleys, bearings and crush tube.



2.1 Primary (small) and Secondary (large) belts.



3.0 Remove the two 5/32 Allen bolts at the axle, (one on each side). Note that some vehicles have mounting points on the bottoms of the fender instead of the sides as shown below.



3.1 Remove the two 5/32 Allen bolts at the top rear sides of the fender, (one on each side). If your T3 unit has only these four fasteners, remove fender and proceed to step 4.0. If your T3 unit has two more fasteners on the top, proceed to step 3.2.



3.2 Remove the two 5/32 Allen bolts at the top of the fender, and remove the fender.



**4.0 Front tire and final drive pulley assembly left hand side:**



**4.1 Check the tension of the belt now so you will know what the proper tension feels like and can check it after you reassemble it.**



**5.0 With the screwdriver and the mallet, pry down the locking tab on the left side.**





5.1 This shows how far to bend the locking tab. If your T3 unit does not have locking tabs, continue with the procedure, they can be added during reassembly.



**IMPORTANT!**  
Do Not change the adjustments of the tensioning bolts on either side.

5.2 Loosen the 1-1/8 nut on the axle.



5.3 Elevate the front of the T3 unit.



5.4 Remove the nut you loosened on the left side of the axle.



6.0 Slide the axle through towards the right side. You will probably need the mallet and screwdriver.





- 6.1 Note the amount and location of the shims when the axle comes out. There are two shims for the left side of the axle.



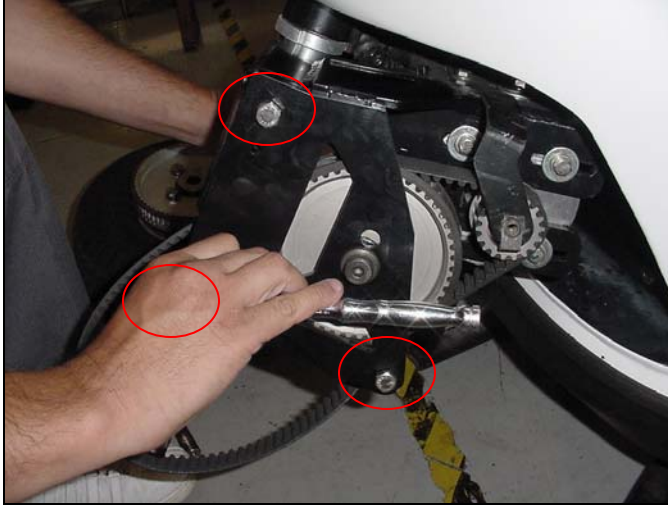
- 6.2 Remove the wheel assembly from the belt and fork.



- 7.0 Remove the 9/16 inch nylock nut on the on the shoulder bolt.



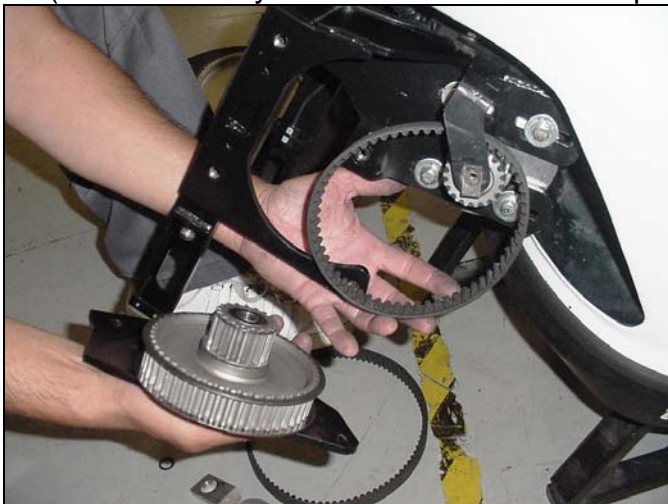
7.1 Remove the three 9/16 bolts that hold the side plate onto the fork frame.



7.2 Remove the shoulder bolt with a ¼ inch Allen wrench. (Socket type shown.)



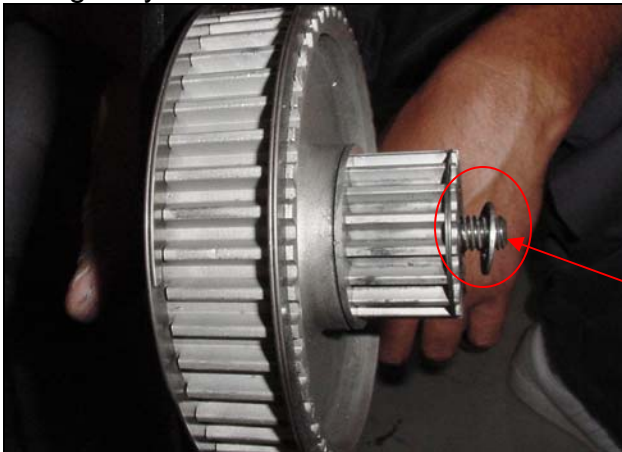
7.3 Remove the side plate with the shoulder bolt and secondary pulley assembly as one unit. (The secondary belt is on the floor in this picture.)



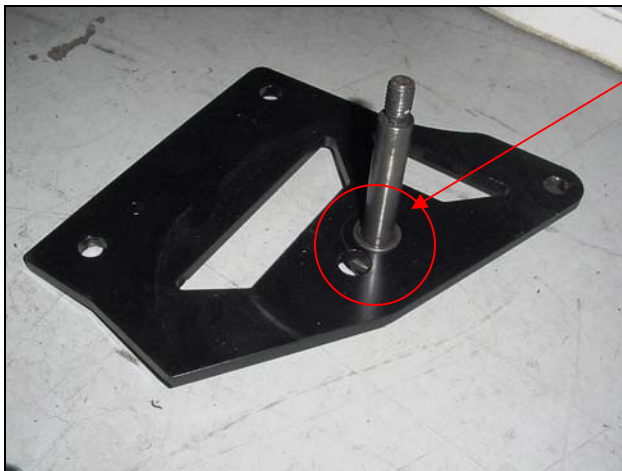
7.4 If you are changing the primary belt, remove and replace it at this time.



8.0 Note there is a shim between the small pulley and the inner mounting plate. It is possible to have different sized shims and one or more on each side of the pulley/bearing assembly. Note location of shoulder bolt in side plate and the shims on the shoulder bolt. Be sure to replace them the same way they were installed originally.



Shims. There maybe more than one on each side. Only one shim shown on each side of the pulley in these pictures. Note the thickness and locations of shims while disassembling.





- 8.1 This is an assembled secondary pulley and bearing set with a crush tube between the bearings. If the removed assembly did not have a crush tube when it was disassembled, install one at this time when you are installing new bearings. Bearings should be a very tight fit into the pulleys as should the fit of the smaller pulley into the larger pulley. Be sure to seat the bearings completely into the pulleys.



- 9.0 Slide the secondary pulley/bearing assembly onto the shoulder bolt that is installed in the side plate with the shims that were removed earlier. Place the primary belt on the larger pulley as shown.



- 9.1 Place the secondary belt on the smaller pulley and thread the shoulder bolt into the fork. (Allen wrench socket is shown in shoulder bolt.) Do Not tighten the shoulder bolt at this time.



- 9.2 Install the three 9/16 bolts that attach the side plate to the fork. Fully tighten them at this time.





- 9.3 Tighten the shoulder bolt using the ¼ inch Allen wrench. Be sure not to pinch any shims between the edge of the shoulder bolt and the fork. Torque to 20 ft.lbs. Install the nylock nut onto the shoulder bolt and tighten.

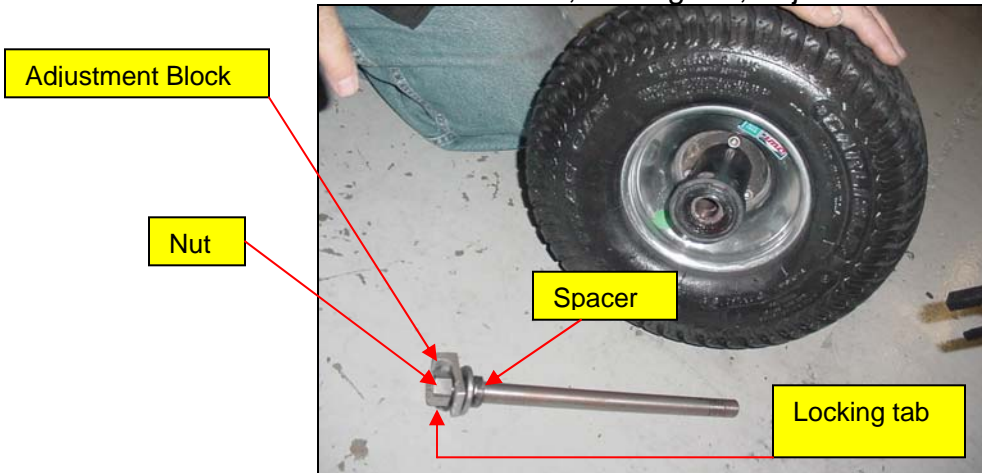


- 10.0 Sometimes the bearings shift inside the hub during transit or being moved without an axle installed. They can be realigned easily with the axle just by sliding it in at an angle to catch the bearings. See photo in step 10.2.



This is the left side.

- 10.1 Note the order of the nut, locking tab, adjustment block and spacer on the axle.



This is the right side.

10.2 Slide axle with a nut, a locking tab, an adjustment block and a spacer into the wheel from the right side.



10.3 Slide the axle straight through.



10.4 Install a spacer on the left side.



- 10.5 Guide the secondary belt around the pulley and position the wheel assembly between the forks.



- 11.0 Note the orientation of the adjustment block in this picture. This is the right side and for now, install the adjustment block upside down to the way it came off.



- 11.1 On the left side, slide the two shims back between the fork and spacer.





11.2 Then push the axle all the way through.



11.3 Install the left side adjustment block the same way it came off. You will probably need to tap it into place with the mallet.



11.4 Install the locking tab and nut, but leave a space between the nut and adjustment block as shown.



11.5 Tap the axle back towards the right side with the mallet.



11.6 Rotate the right side adjustment block 180 degrees back to the position it was before disassembly.



11.7 Tap the axle back through towards the left side.





11.8 Tighten nut on left side. Make it firmly snug, but do not over tighten.



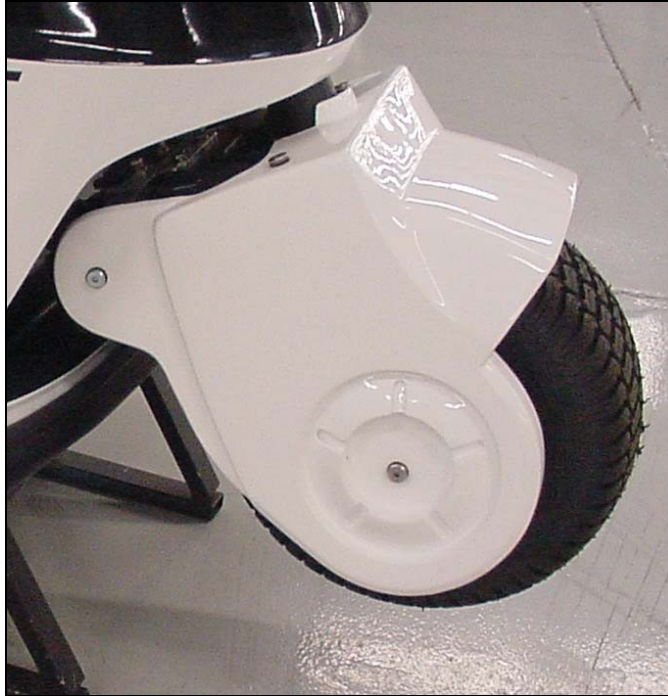
12.0 Check the tension of the belt.



12.1 With the pliers bend the locking tab up against the nut.



- 13.0 Reinstall front fender. Use the same fasteners you removed to take it off. Just reverse the procedure. Do not fully tighten any of the fasteners until all of the fasteners are in place. Do not over tighten the fasteners.



For addition information, contact T3 Motion at: (714)-619-3605.