



2-SPEED TRANSMISSION CONVERSION FOR THE MAXIMUM™ BX, MT, ST

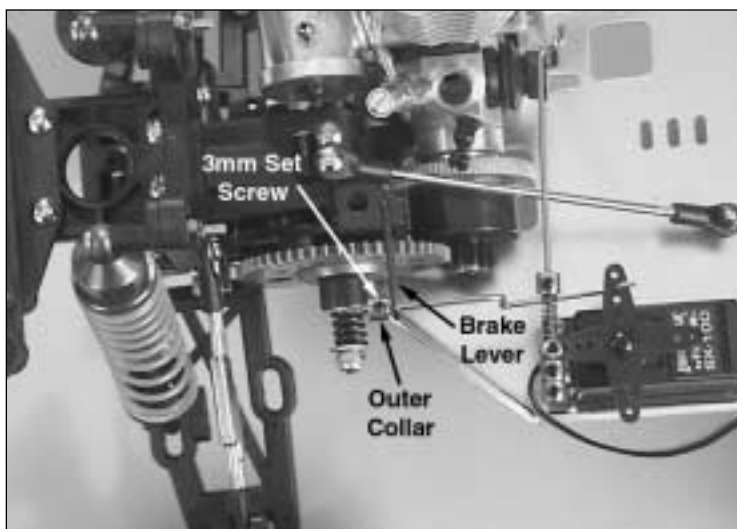


NOTE: This transmission will not work with the Duratrax Torq .12" engine. The Duratrax Torq .16" engine (or equivalent) is required.

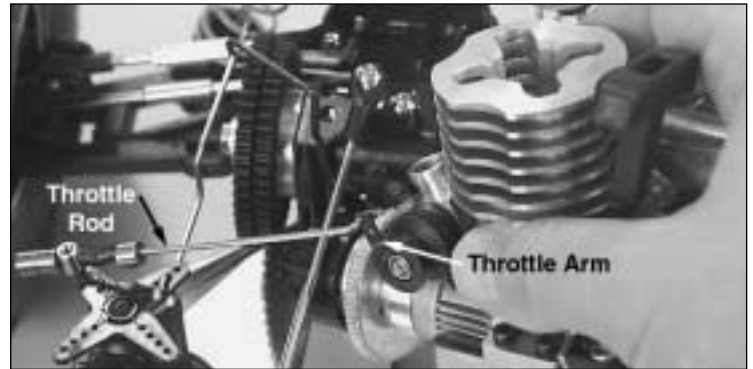
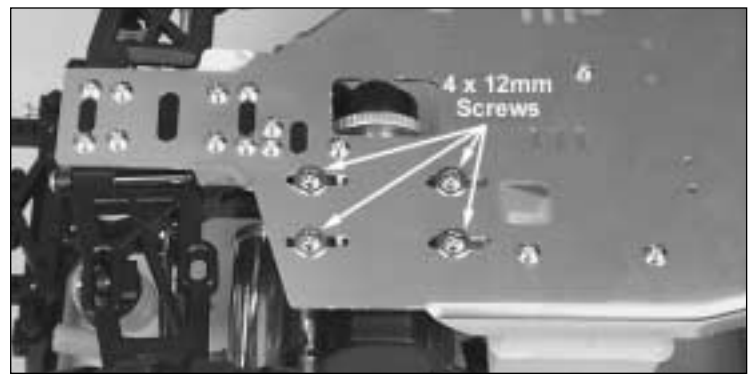
Thank you for purchasing the 2-Speed Transmission for your Duratrax Maximum series vehicle. Properly installed, you should have hours of enjoyment.

Please read these instructions entirely before installation. Take your time, assemble carefully, and follow the set-up procedure (at the end of this manual) for best results.

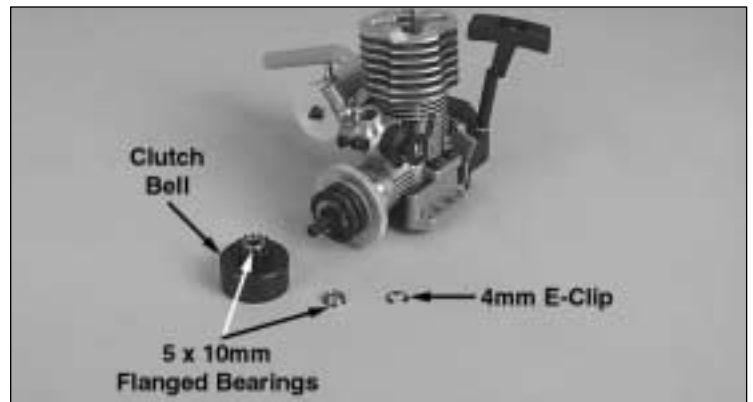
First, let's prepare the engine. (IMPORTANT NOTE: Some components have been removed from the chassis in order to show an unobstructed view.)



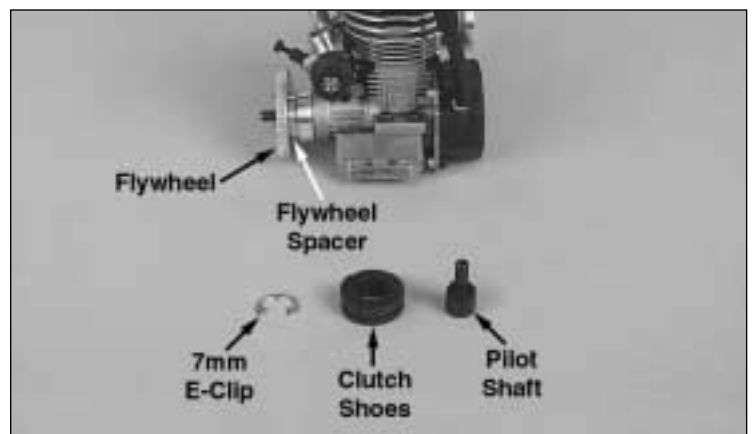
1) Disconnect the brake rod by loosening the 3mm set screw and sliding the outer collar off of the brake rod.



2) Remove the engine by unscrewing the four 4 x 12mm engine mounting screws. Disconnect the throttle rod from the carburetor by rotating the engine.

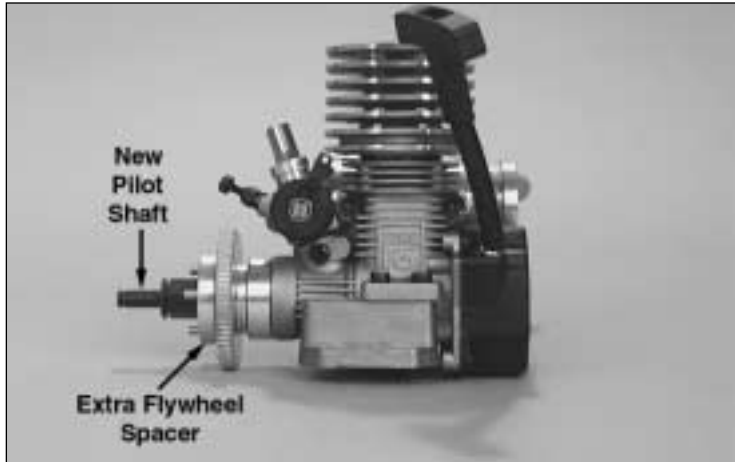


3) Remove the 4mm E-clip from the end of the pilot shaft and remove the clutch bell and two flanged 5x10mm clutch bell bearings.

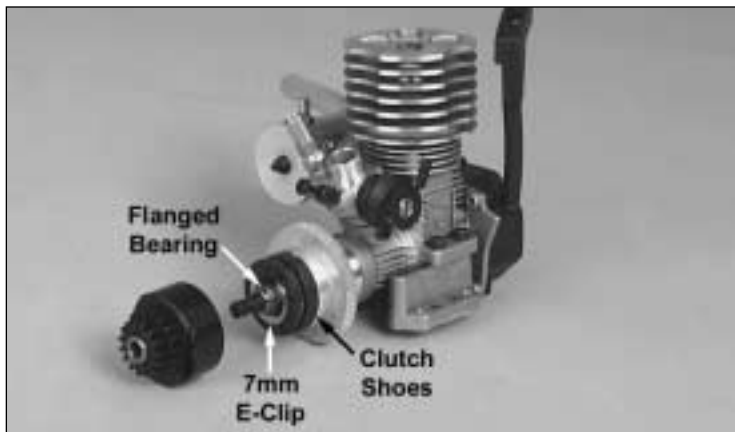


4) Remove the 7mm E-clip and gently remove the clutch shoes with clutch spring attached (note direction). Remove the pilot shaft with a 10mm wrench or socket. Use a crankshaft locking tool (not included) to "lock" the crankshaft in place and prevent it from rotating while removing the pilot shaft. A crankshaft locking tool is available from

your local hobby shop (DTXR1100). DO NOT put anything into the exhaust port of the engine to lock the crankshaft. Doing so will damage the cylinder and piston in the engine. Leave the flywheel and flywheel spacer in place on the crankshaft.



5) Add the extra flywheel spacer to the crankshaft. The pins on the flywheel should insert into the holes of the flywheel spacer. Install the new pilot shaft. The pilot shaft must be tight to prevent it from loosening while running the vehicle. It is additionally suggested that you use thread lock (not included) on the crankshaft to help prevent the pilot shaft from loosening. **Note:** Remove the crankshaft locking tool when this step is completed.



6) Reinstall the clutch shoes with spring attached (note direction of shoes with the narrow side towards the front of the crankshaft), the 7mm E-clip, and the 5 x 10mm flanged bearing.

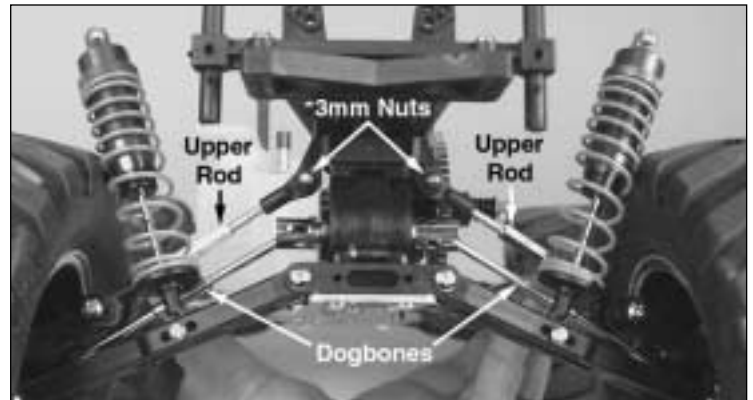


7) Remove the 5 x 10mm flanged bearing from the old clutch bell and install it into the end of the new clutch bell and slide it onto the pilot shaft. Apply a small amount of thread lock to the 3 x 6mm cap screw and insert into the end of the pilot shaft to secure the clutch bell to the engine.

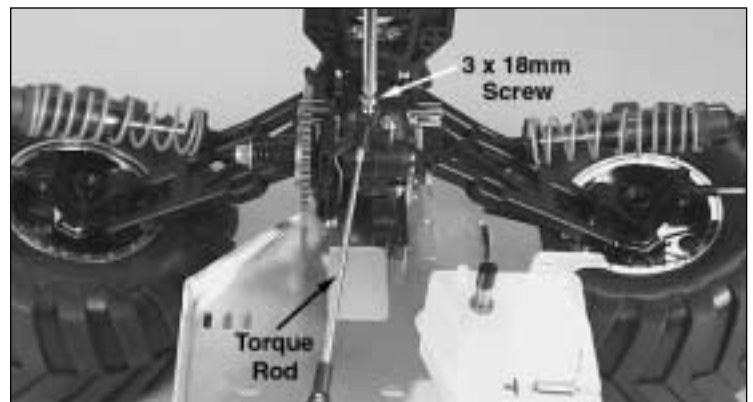
Now to access the gearbox.



8) Detach the rear shock tops by removing the 3mm nuts. Lean the shocks to either side.



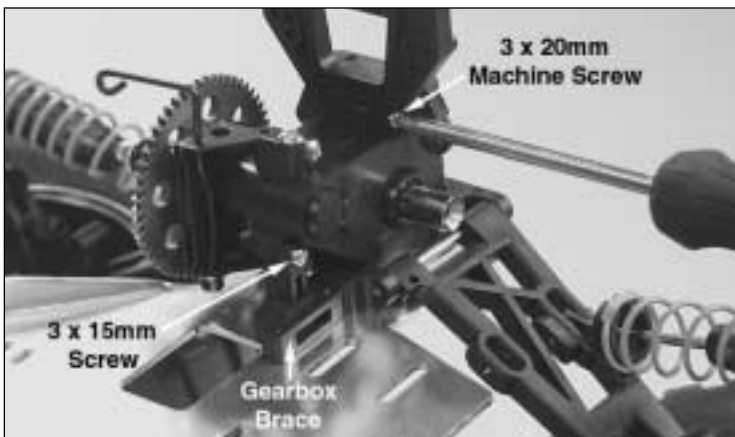
9) Detach the rear upper rods by removing the 3mm nuts. This will enable you to remove the rear dogbones.



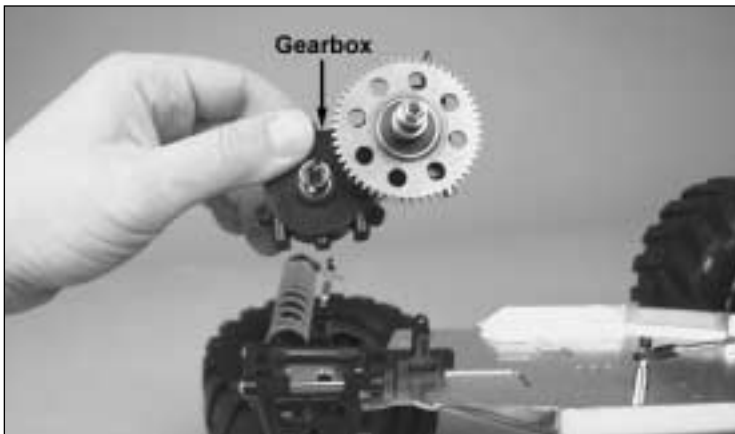
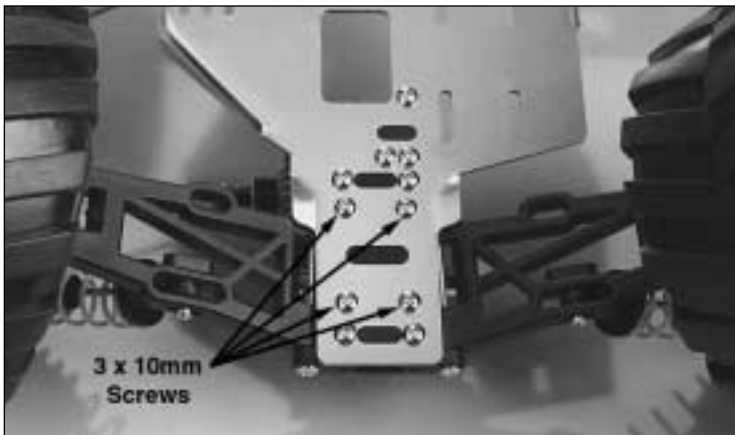
10) Detach the torque rod from the brake assembly by removing the 3 x 18mm screw.



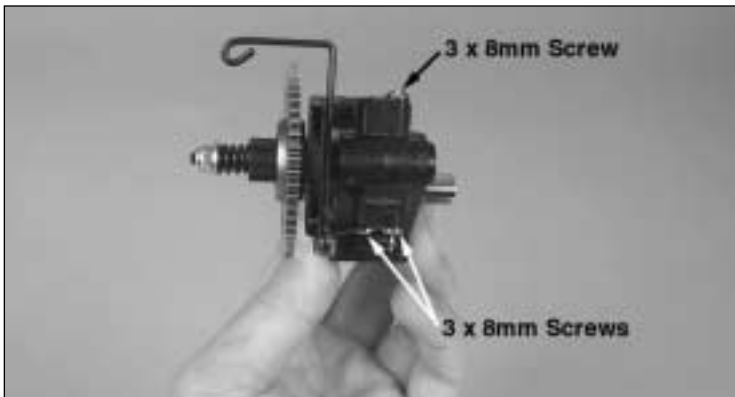
11) Remove the body mount assembly by removing the two 3 x 18mm screws.



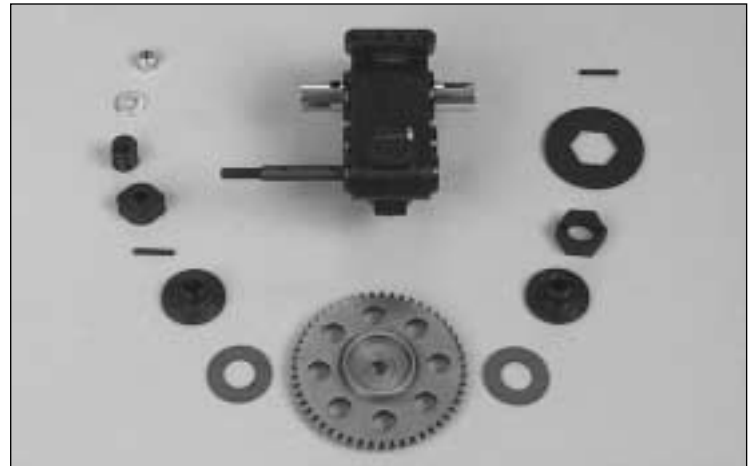
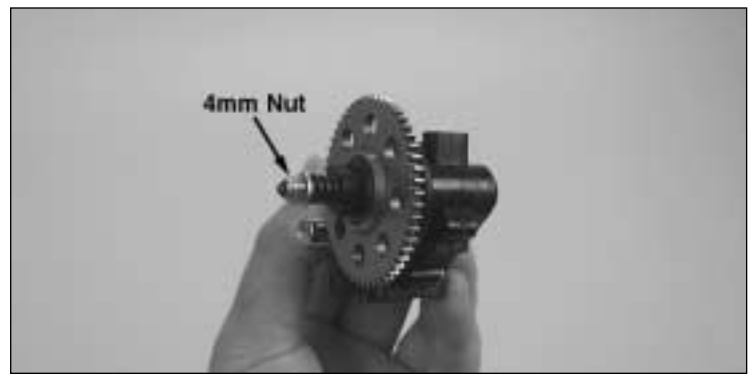
12) Remove the rear shock tower by removing the 3 x 20mm machine screw. Remove the 3 x 15mm screw from the gearbox brace.



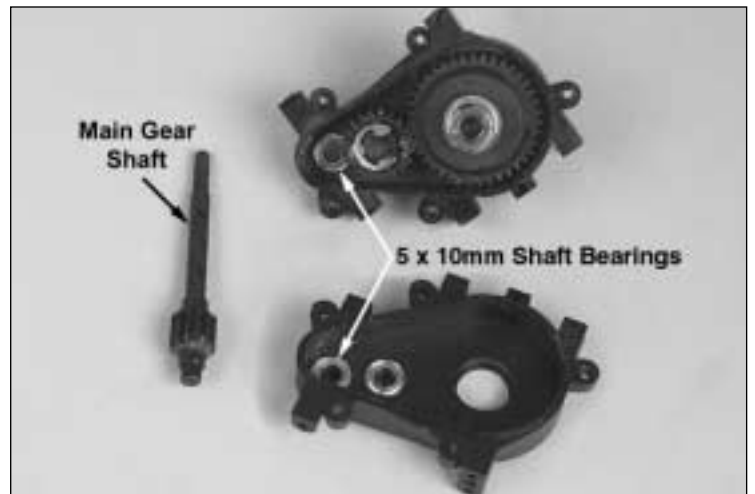
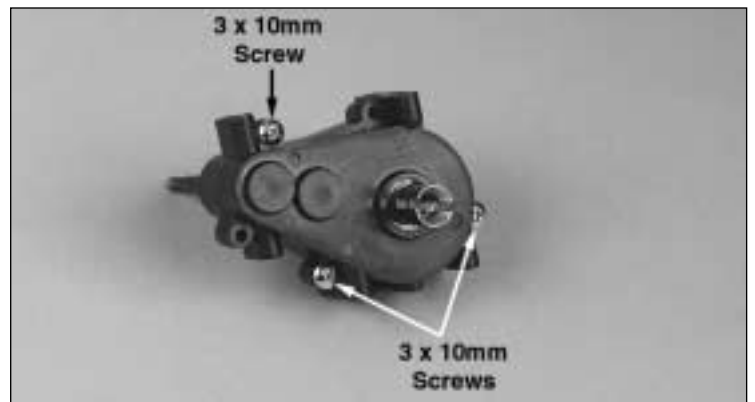
13) Remove the gearbox by removing the four 3 x 10mm screws.



14) Remove the brake assembly from the gearbox by removing the three 3 x 8mm screws.



15) Remove the 4mm nut from the main gear shaft. Remove the slipper clutch components and spur gear from the main gear shaft.



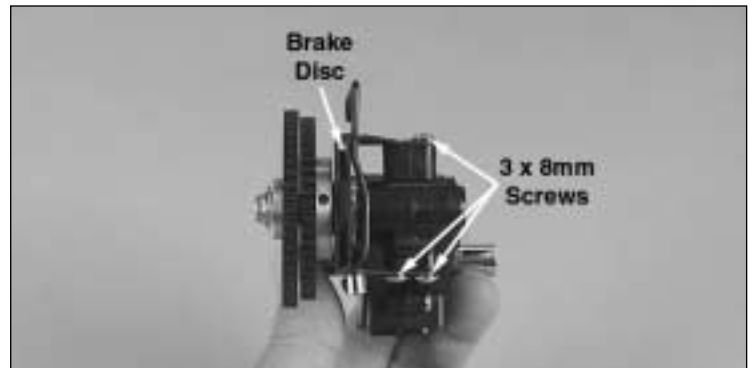
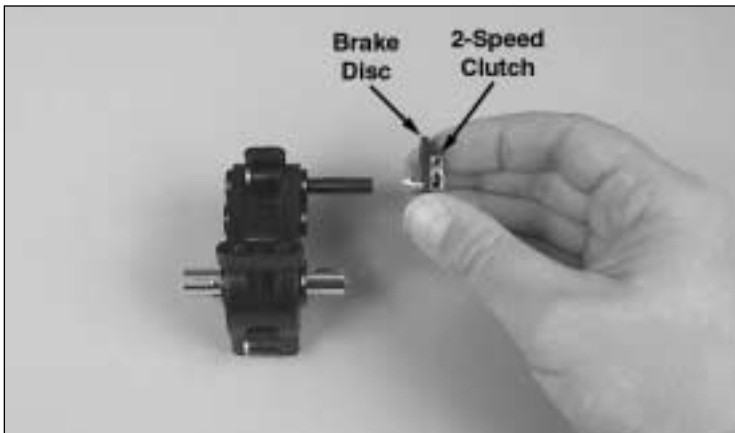
16) Remove the three 3 x 10mm screws holding the gearbox halves together. Carefully open the gearbox (make sure the gears do not fall out while separating the halves). Remove the main gear shaft and both 5 x 10mm shaft bearings.



17) Install the new 6 x 10mm main gear shaft bearings into the gearbox halves. Install the new main gear shaft. Reassemble the gearbox using the three 3 x 10mm screws.

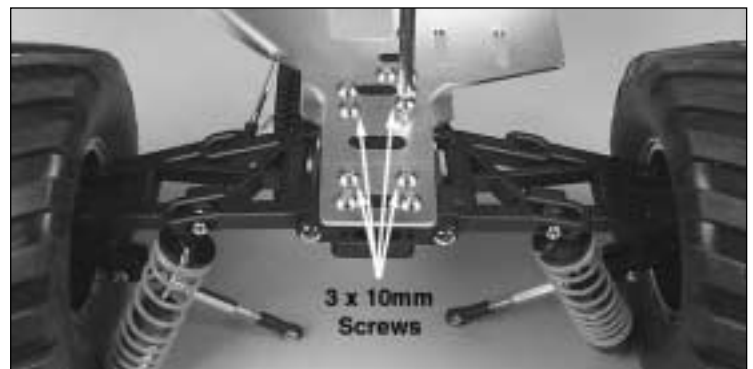
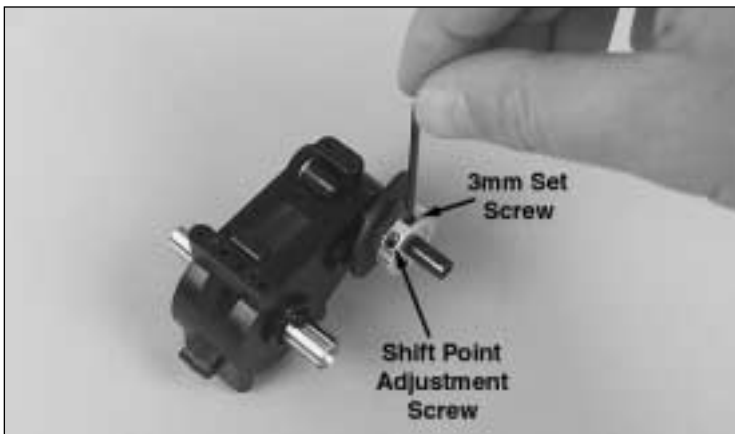


19) Place the 48 tooth spur gear onto the main gear shaft so that the attached aluminum clutch drum covers the clutch assembly. Follow that with the 52 tooth spur gear (screwheads facing away from the gearbox) and a 6 x 12mm washer onto the main gear shaft. Apply a small amount of thread lock to the 4 x 8mm machine screw and install it into the end of the main gear shaft as shown in the photo.

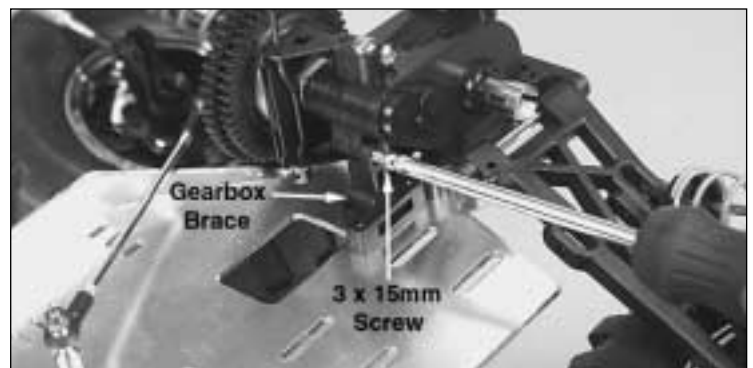


20) Reattach the brake assembly to the gearbox using the three 3 x 8mm screws making certain that the brake disc is between the brake plates.

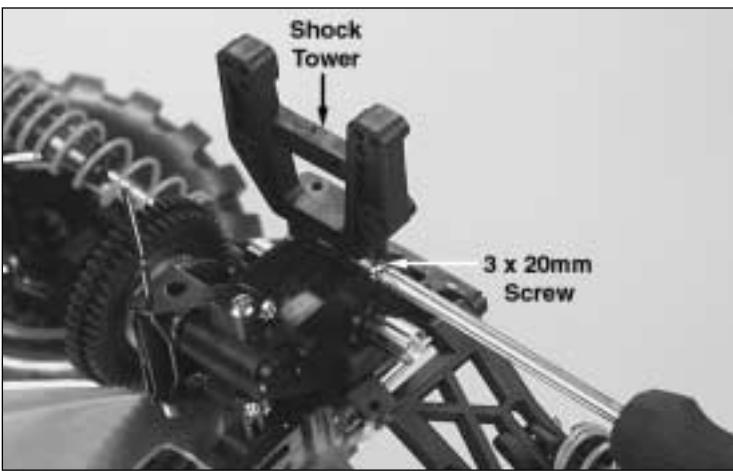
Time to reassemble your vehicle.



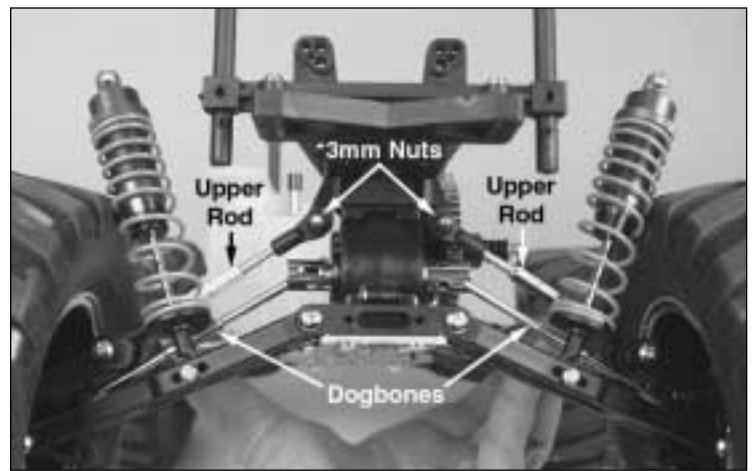
18) Slide the brake disc onto the 2-speed clutch. Slide the 2-speed clutch and brake disc onto the main gear shaft. Secure the 2-speed clutch to the main gear shaft with the 3mm set screw. Ensure that the 3mm screw seats on the flat spot on the main gear shaft. NOTE: There is a 4mm set screw for adjusting the shift point on the 2-speed. This screws into the clutch at an angle. Do not mistake this for the screw that secures the clutch to the main gear shaft.



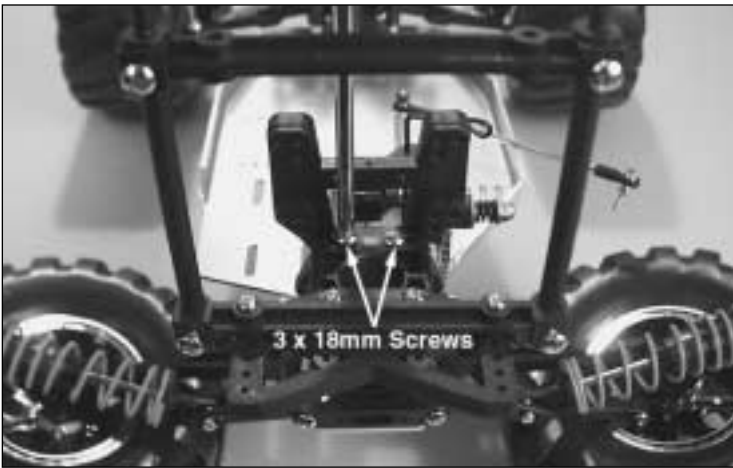
21) Reattach the gearbox to the chassis using the four 3 x 10mm screws and to the gearbox brace using the 3 x 15mm screw.



22) Reattach the shock tower using the 3 x 20mm machine screw.



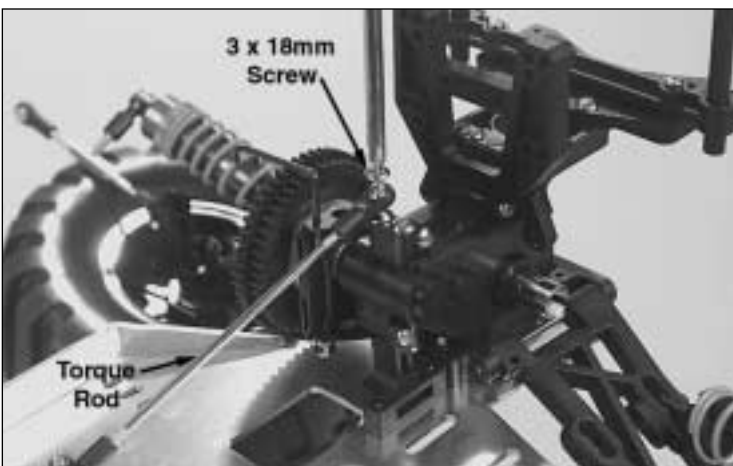
25) Re-insert the dogbones and secure the upper rods by replacing the 3mm nuts. (See photo for placement.)



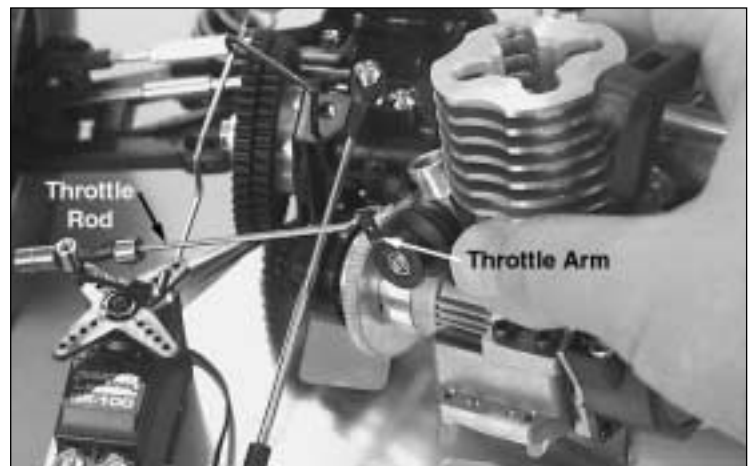
23) Now put the upper rear brace in place and reattach the body mount assembly using the two 3 x 18mm screws.



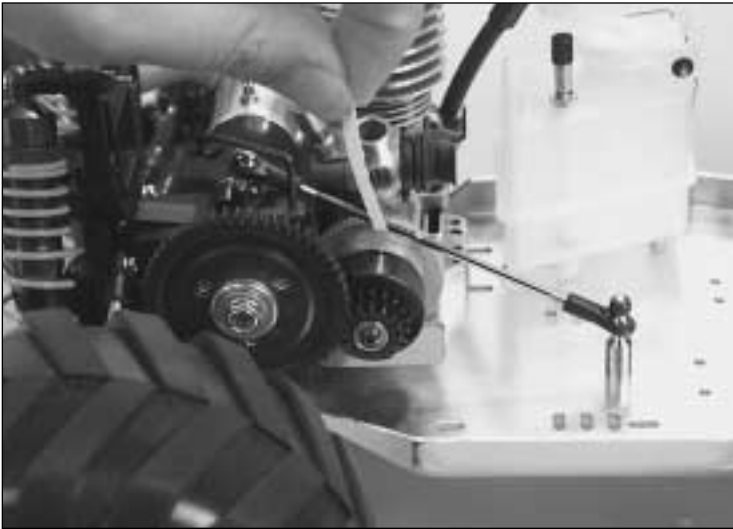
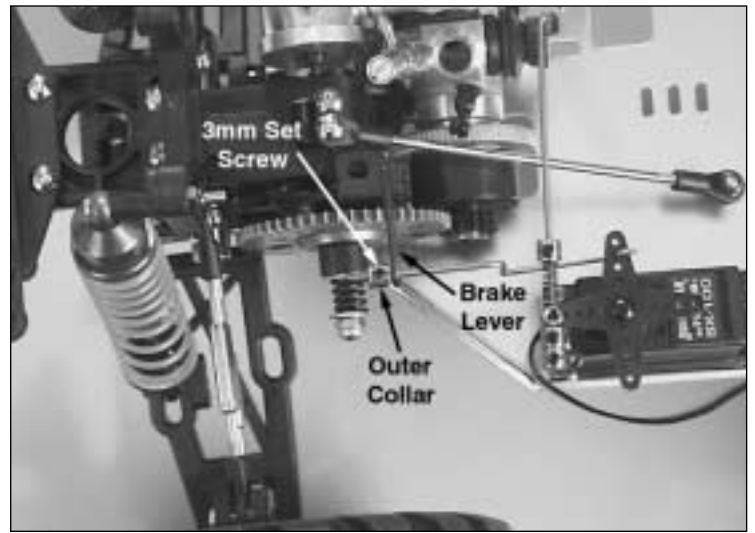
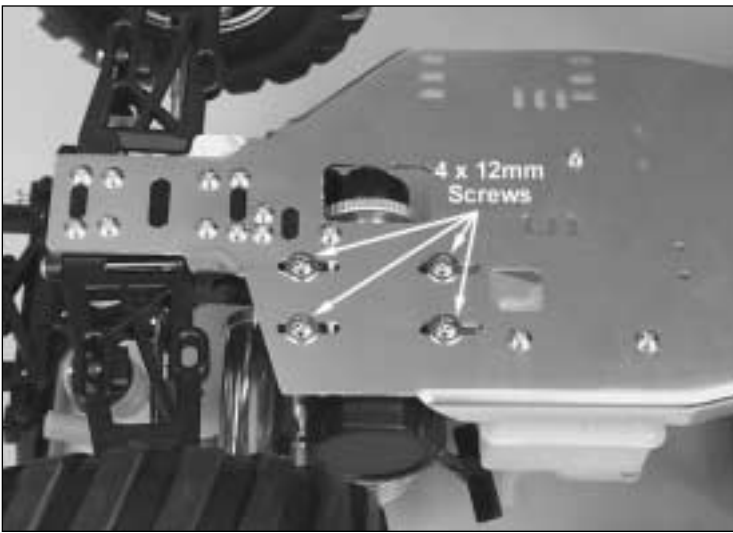
26) Reattach the shocks to the shock tower by re-installing the 8mm nuts.



24) Reattach the torque rod using the 3 x 18mm screw.



27) Reattach the throttle rod to the carburetor. This is done by inserting the z-bend of the throttle rod through the outer hole of the throttle arm. Rotate the engine into place.



28) Reattach engine to the chassis using the four 4 x 12mm engine mounting screws, using threadlock on the screws. DO NOT tighten them completely. Make sure the gears mesh correctly by placing a single piece of paper between the 15T clutch bell gear and the 52T spur gear. Push the gears as close together as possible, then rotate the gears to remove the paper. If the paper tears, the gear mesh is too tight. Tighten the 4 x 12mm engine mounting screws.

29) Slide the brake rod through the brake lever and replace the metal collar. DO NOT tighten the collar until we are sure that the brake is set up properly. Follow this sequence:

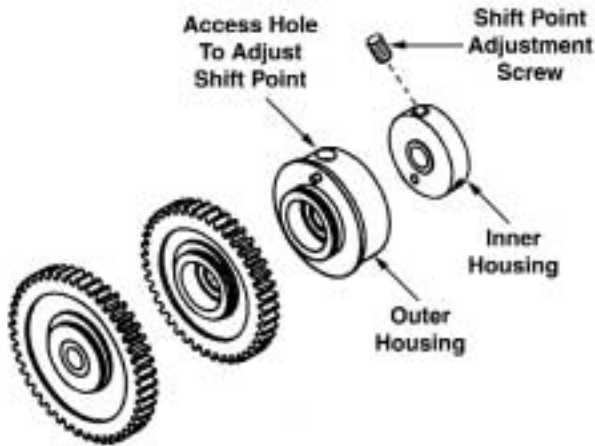
- A) Turn on transmitter and receiver, set throttle trim at neutral.
- B) Move the transmitter trigger to apply brakes while manually moving the brake lever so that the brake is engaged.
- C) Tighten the 3mm set screw.

When you release the transmitter trigger, the brake should release, and the car should be able to roll freely.

HOW TO ADJUST THE 2-SPEED TRANSMISSION:

The shift point on the 2-speed transmission is factory set. You can make adjustments to the shift point on the 2-speed transmission. When you make shift point adjustments, it is important that your engine has already been broken in, is properly tuned, and already at proper operating temperature. To adjust the shift point use the following procedure:

- 1) Warm up the engine (run it for a minute or two) and then stop the engine.
- 2) Rotate the 2-speed outer housing attached to the smaller spur gear so that the access hole is up.



- 3) Rotate the outer housing back and forth until you can see a small set screw on the inner housing. This set screw does not go straight down into the inner housing, it is set at an angle. This is the adjustment screw for the shift point.

- 4) Insert a 2mm allen wrench into the set screw.

- 5) To raise the shift point (make it shift later, when the engine develops more RPM), turn the screw clockwise 1/8 of a turn. Do not over-tighten this screw you may damage the 2-speed transmission.

- 6) To lower the shift point (make it shift earlier) turn the screw 1/8 of a turn counter clockwise. Do not loosen this screw too much. The screw could fall out requiring disassembly of the entire 2-speed to repair.

- 7) Do not make adjustments more than 1/8 of a turn. After each adjustment, start the engine and test the shift point.

If you have made adjustments to the shift point and want to return to the factory setting, it is 5.5 turns out from the point that the screw will not turn in any more without using excessive force.

It is possible to have the shift point too far in, in which case the inner clutch on the 2-speed is locked such that only the two inner gears (the gears for top speed) will be engaged during the run and the outer gears (the gears for good acceleration) will not be engaged at all. It is also possible to have the shift point too far out, which will mean that you are only running the acceleration gears. In either case you will not hear the truck shift. Make sure that you listen carefully for the RPM change of the engine that signifies that the 2-speed is shifting.

TIPS AND WARNINGS:

- 1) Do not land the vehicle off of a jump with the throttle on. If the throttle is on while in the air, the two-speed will be in the high speed gear. When the vehicle is landed with the throttle on, there is tremendous stress on the entire gear train. This may cause stripped gears and broken differentials.

- 2) Be sure to check the screws and nuts frequently for loosening. The vibration from the engine makes it easy for the fasteners to loosen, especially on metal-to-metal connections, like the engine mount and muffler screws. It is additionally recommended that you clean (to remove any oils and dirt) and re-threadlock any screws that repeatedly loosen.

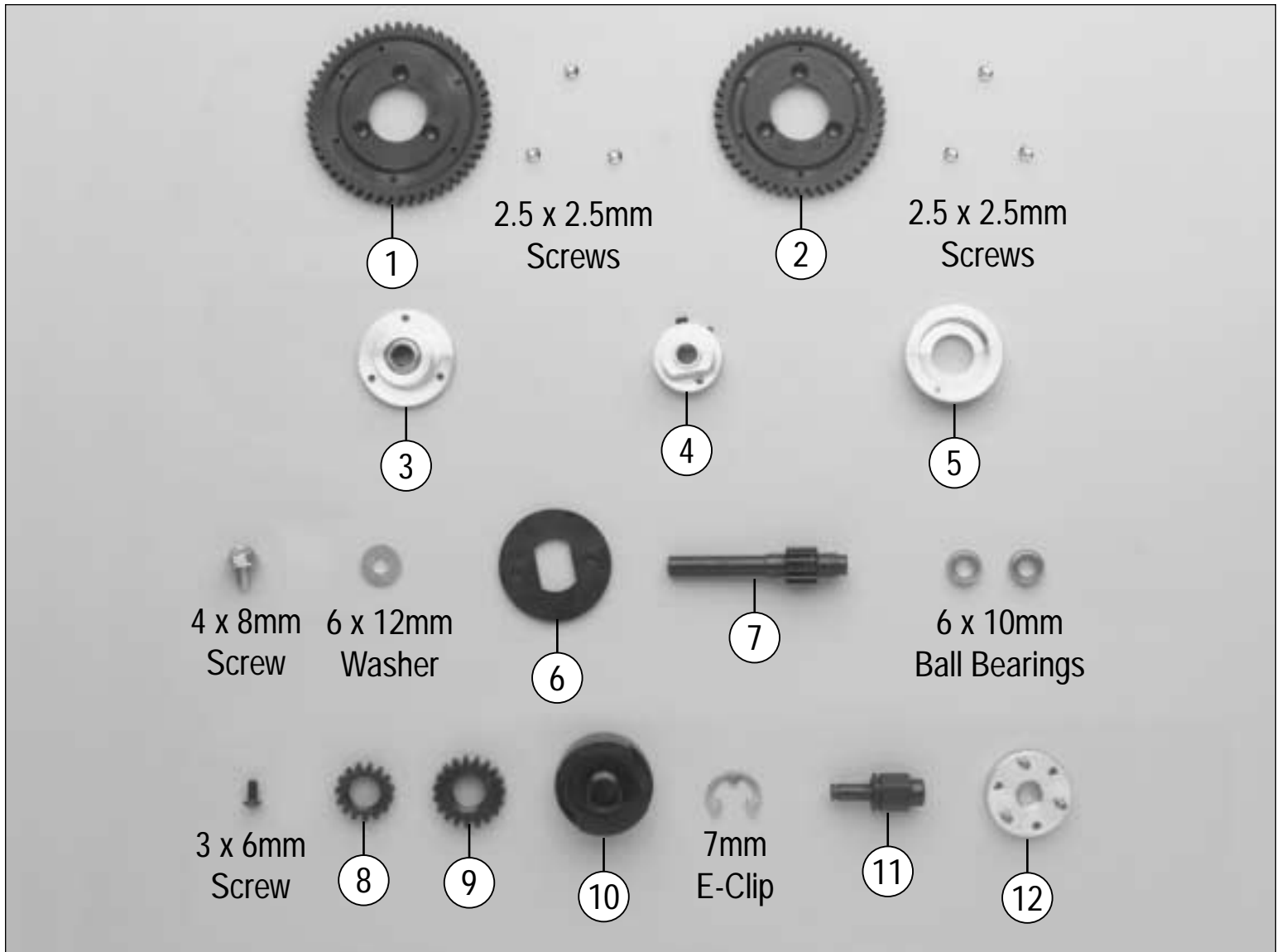
- 3) Do not run your vehicle in tall grass for extended periods of time. The extra load on the geartrain will overheat the engine.

SAFETY PRECAUTIONS:

When the safety precautions are followed, your vehicle will provide years of enjoyment. Use care and good sense at all times when operating your vehicle. Failure to use this vehicle in a safe, sensible manner can result in injury or damage to property. You and you alone must insure that the instructions are carefully followed and all safety precautions are obeyed.

- Do not operate your vehicle near people. Spectators should be behind the driver or at a safe distance away from the vehicle.
- The engine and exhaust produces quite a bit of noise. If you are disturbed by the amount of noise this truck produces, wear ear protection such as earplugs. Do not run this vehicle when or where it can disturb others.
- The engine and exhaust can become very hot. Avoid touching any of these parts during use and until they have cooled down.
- Model engine fuel is poisonous. Make sure you read and follow all of the precautions on the fuel container. Keep fuel out of the reach of children.
- Model engine fuel is flammable and when ignited has a flame that is difficult to see. Avoid sparks, flames, smoking, or any other ignition source when fuel is near.
- The engine emits carbon dioxide just like real cars. Do not operate this model indoors.
- Before turning on the transmitter, make sure that no one else is on your frequency.

REPLACEMENT PARTS AVAILABLE



Stock #	Description	Contents
DTXC1561	6 x 10mm Ball Bearings	x 2pcs
DTXC6712	Brake Disk (2-Speed)	6 x 1pc
DTXC7146	Clutch Bell without Gears (2-Speed)	10 x 1pc
DTXC7147	15T Clutch Gear (2-Speed)	8 x 1pc
DTXC7148	19T Clutch Gear (2-Speed)	9 x 1pc
DTXC7118	Clutch Drum (2-Speed)	5 x 1pc
DTXC7654	Clutch Nut / Pilot Shaft (2-Speed)	11 x 1pc
DTXC7760	Flywheel Spacer (2-Speed)	12 x 1pc
DTXC7975	Gear Mount with One-Way (2-Speed)	3 x 1pc
DTXC8090	Inner Clutch (2-Speed)	4 x 1pc
DTXC9390	48T Spur Gear (2-Speed)	2 x 1pc
DTXC9391	52T Spur Gear (2-Speed)	1 x 1pc
DTXC9620	Top Shaft (2-Speed)	7 x 1pc

