

Main Gun Elevation R/C Upgrade Kit
For
Tiger I, 1/6 scale Tank Kit

Items needed:

- ABS Glue or Modeler Super Glue
- Trimmers (Plastic Clippers, knife)
- Power Tools (Drill and/or hobby tool such as a Dremel Tool)
- 1/16", 3/32", 1/8", 3/16", 3/8" Drill Bits
- Hand Tools (Pliers, Screwdrivers, Hex Head Driver, Tape Measure)
- Masking Tape
- Marker Pen or Pencil
- Clamps

ABS Parts

Servo Mounting Set
Servo Arm

Hardware (Note, head types may vary)

High Torque Servo.
Servo mounting hardware packet.
Metal rod with 4-40 threaded end.
4-40 swivel ball joint.

IMPORTANT WARNINGS:

Small parts may pose choking hazard to small children and other mammals.

CAUTION: READ THE COMPLETE INSTRUCTIONS BEFORE BEGINNING WORK.

NOTE - The flat black plastic pieces have a smooth side and a rough side. The smooth side is meant to be the exterior surface. When in doubt - SMOOTH SIDE OUT.

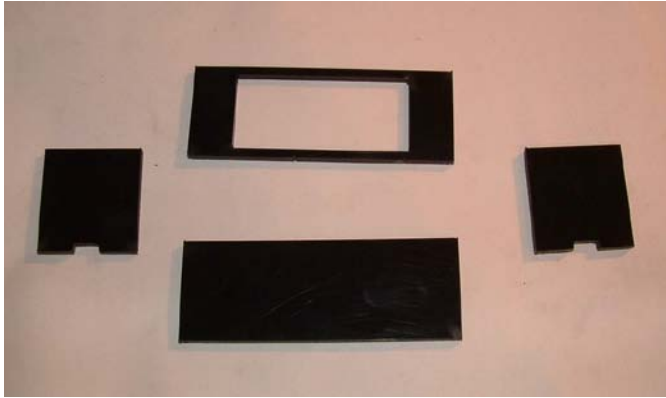
There are no jigs needed to build this assembly. Masking tape will be used to secure all joints. Make sure that the joints are held tight when secured with masking tape to ensure a strong joint.

Super Glue, Modelers Cement and ABS Glue can be sanded easily when cured. If glue joints aren't as clean as liked, let the glue fully cure then sand and fill as necessary. ABS Glue can also be used as fillet and as a filler material between ABS parts.

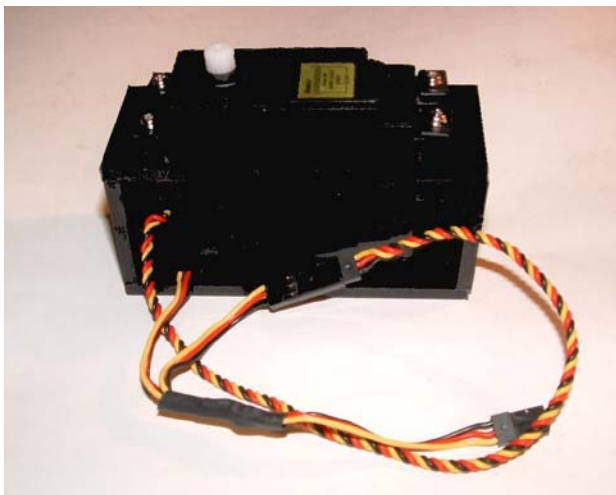
Step 1: Preliminary Work: If the basic Tiger tank has already been completed, remove the turret from the tank hull. Turn the turret upside down and position on a flat surface. To protect the top of the turret, it is recommended to use a layer of foam or a towel between the top of the turret and the flat surface.

Step 2: Gun Tube Balance: It will be necessary to balance the main gun tube, by adding a weight to the end of the gun tube located within the turret. Weights can be bolts, fishing weights, or any other object of the necessary mass. Refer to further steps concerning the installation of these weights.

Step 3: Servo Mount: Locate the servo tray and mount unit, consisting of the parts shown below. These parts have been designed for use with a generic large size servo. Build the mount with the two side panels glued between the top and bottom panels. Locate the side panels with the cut outs located adjacent to the solid bottom panel. Use a triangle to ascertain that the unit is built with ninety degree angles.



Step 4: Servo Installation: Install the servo into the servo tray. Insert the servo into the tray and make the four locations for the servo mounting screws. Remove the servo and drill a 1/16" hole for each of the four screw locations. Reinstall the servo and secure with the servo mounting hardware, which consists of four rubber vibration inserts, four brass inserts and four mounting screws.



Step 5: Servo Assembly Installation: Install the servo assembly by gluing the servo mount to the main gun barrel within the turret. Use scrap ABS to provide a level base for the servo mount. Install the assembly with the servo output shaft located towards the back of the turret. The servo output shaft should also be located approximately ten inches from the main gun pivot, which is located at the front of the turret.

Note that this photo shows a counter weight located at the rear of the main gun tube. Three lag bolts were used for this installation. The lag bolts were taped together and the secured to the gun tube with two wire tie wraps inserted into a hole drilled through the gun tube. The servo assembly must be installed before balancing of the main gun unit.



Step 6: Fixed Servo Arm Installation: Install the fixed servo arm to the turret. The fixed servo arm is fitted to the inside of the front of the turret. The fixed servo arm should be slightly offset from center, so that it will be in line with the moveable servo arm at the servo. Glue the ABS fixed servo arm to the turret. Use a small piece of the ABS scrap material as a fillet brace for the fixed servo arm.



Step 7: Swivel Ball Joint Installation: Install the swivel ball joint to the end of the rod. Bolt the swivel joint to the servo arm, with the bolt head located on the lower side of the servo arm. The predrilled holes on the servo arm may need to be enlarged. Install the lock nut, so that it is snug but still allows full movement of the rod.



Step 8: Servo Rod Forming: Form a “V” in the connection rod. This “V” provides some protection to the servo in the event that the gun barrel is obstructed from movement during elevation change. Although the rod shown below has a ninety degree bend, the exact location of this bend has to be customized for each servo assembly installation. This will be covered in the following step.



Step 9: Servo Rod Installation: Attach the servo arm to the servo, and at the ninety degree position. Relocate the entire turret assembly so that the main gun is hanging beyond the flat surface. Adjust the main gun so that it is in the center of the arc of its travel. With the rod extending from the servo arm, align the rod to the fixed arm, and mark the location on the rod. Bend the rod at ninety degrees at this location, and insert into the fixed arm. Check the travel of the main gun by connecting the servo to the radio receiver. ***Make sure that the servo is wired properly to the battery and the receiver as recommended by the manufacturer, otherwise the receiver and other radio components may be damaged.*** Make sure that the instructions for the use of this servo are followed.

Once the operation of the gun elevation is adjusted for the desired upwards and downwards movement, secure the servo arm to the servo with the provided screw. Bend the end of the rod at the fixed arm so that the rod will not slip out of the fixed arm. Cut off any excessive rod material.

