OPERATING INSTRUCTIONS

- **INTRODUCTION**

Congratulations on the purchase of the ultimate in big-scale fun. Your new model is designed to deliver the highest level of technical sophistication combined with the smooth, reliable power of a Zenoah 23cc, two-stroke, gasoline engine. We believe that you will find these large-scale models to be durable, easy-to-operate, simple to maintain, and that either will make an impression wherever it goes.

Please examine your new model carefully and read all of the enclosed information, instructions, and precautions before attempting to operate it. If for any reason you feel like this model is not what you wanted, then DO NOT proceed any further. Your hobby dealer absolutely cannot accept it for return or exchange if assembly has begun, or if the model has been used in any way.

- **RADIO SYSTEM REQUIREMENTS**

Your model does not come equipped from the factory with a radio system. The use of a P.C.M. type radio system with a fail-safe mode is highly recommended to prevent loss of control if radio contact is lost. Your radio system will require the following:

  - Transmitter with endpoint adjustments.
  - Receiver with B.E.C.
  - Standard-size high-torque servo for throttle control (i.e. Futaba S9302 or JR 4721).
  - Two large-scale servos for steering control (i.e. Futaba S134 or JR 605).
  - "Y" adapter wiring harness for the two steering servos.
  - Heavy-duty servo wheels.
  - Battery pack consisting of 5 sub-c nicad cells mounted side-by-side (not end-to-end). This type of pack is necessary to power the radio system's large-scale steering servos. Your hobby dealer may have to custom-make this pack from individual cells. Be sure it is thoroughly shrink wrapped and protected from short circuits.

- **TOOLS YOU WILL NEED**

You will need the following tools to set up your model:

  - 1.5mm Allen wrench
  - 2.5mm Allen wrench
  - 3.0mm Allen wrench
  - 5.0mm nut driver
  - 5.5mm nut driver
  - 7.0mm nut driver
  - 10.0mm nut driver
  - #2 Phillips screwdriver
  - Needle nose pliers
  - Superglue or equivalent
  - Hand or power drill with 2.5 and 3mm drill bits

- **INSTALLING THE RADIO SYSTEM**

The servos must be centered before installing the radio system in the model. Use the "Y" connector to connect the two large-scale servos to channel 1 on your receiver. Connect the high-torque throttle servo to channel 2 on your receiver. Connect the 5-cell battery pack to the "batt" terminal on the receiver. Check your radio system manufacturer's instructions to be sure that the positive and negative from the 5-cell battery pack match the positive and negative terminals in the receiver.

Place fresh "AA" batteries in the transmitter and turn the power switch on. Set the throttle neutral adjustment at 70% throttle / 30% brake. Move the throttle and steering trim adjustments to their center position. Now turn the receiver power switch on and the servos will automatically jump to their center position.

Turn off the receiver switch followed by the receiver. The servos are now ready to be installed. Be careful not to move the servo shafts when installing the servo horns.

1. Remove the fiberglass radio tray by removing the two rollcage screws and the two screws in the bellcrank posts. On the on-road car, also remove the two screws which attach the radio tray to the front bulkhead.

2. Remove the four turnbuckles from the bellcrank arms (two turnbuckles on the on-road car). Each turnbuckle should have a center-to-center distance of 59mm.

3. Use a large servo wheel for each of the large-scale servos. On the Monster Buggy, drill two 3mm holes across from each other in each servo wheel. Distance "A" should be as close to distance "B" as possible (as shown in the drawing). For the On-Road car, cut the servo wheels as shown in fig. 1. The on-road car uses only one turnbuckle for each servo. The center-to-center distance should also be 59mm.
4. Fasten the 59mm turnbuckles to each servo wheel inserting a 3x4mm aluminum spacer in between the turnbuckle and the servo wheel (fig. 2). Use the provided 3x20mm washerhead machine screws and 3mm locknuts. Do not attach the servo wheels to the servos yet.

5. Install the large-scale servos in the radio tray as shown in Fig. 3 (note output shaft is to the rear). Use the provided 3x15mm washerhead machine screws and 3mm locknuts to attach the servos.

6. Install the high-torque throttle servo into the radio tray as shown in the drawing. Attach the servo with four 3x15mm washerhead machine screws and 3mm locknuts.

7. Locate the bag containing the two rod guides and four 2.5mm nuts. Use a servo wheel on the throttle servo. A four-blade servo horn may not be strong enough. Attach the rod guides to the servo wheel in 2.5mm holes that are 180 degrees apart, and approximately 15mm from the center (drill new holes if necessary). Tighten two 2.5mm nuts against each other on each rod guide. The rod guide should be free to rotate in the servo wheel (see Fig. 4).

8. Attach the servo wheel to the throttle servo with the correct screw provided with your servo. Position the servo wheel as shown in Fig. 7.

9. A slot is provided in the radio tray for an on/off switch. If desired, the on/off switch can be located in any other protected area.

10. Use heavy-duty servo tape to attach the receiver to the front part of the radio tray. Clean the radio tray with alcohol before applying the servo tape. Note: Some receivers are more sensitive to vibration and should be isolated with a layer of foam. The receiver may then be mounted with rubber bands or a nylon tie wrap (fig. 5).

11. Insert the antenna wire through the antenna tube and then insert the antenna tube into the mount on the radio tray.

12. Follow your radio system manufacturer’s instructions for proper wiring connections.

- INSTALLING THE COMPLETED RADIO TRAY

13. For the easiest assembly, the entire bellcrank steering assembly should be removed from the model; connected to the servos and radio tray assembly; and then reinstalled, as a unit, in the model. Use a 3mm allen wrench to disconnect the tie rods from the steering blocks and then disconnect the bellcrank braiding rods from the bulkhead (Monster Buggy only). Remove the bellcrank assembly from the chassis by removing, from underneath, the two 4x12mm countersunk screws.

14. Locate the two large-scale servo wheels and turnbuckle assemblies. Reattach the four turnbuckles (two on the on-road) to the bellcrank arms with four 3x15mm washerhead machine screws (see fig. 1).

15. Attach the two large-scale servo wheels to the large-scale servos with the screws provided with the servos (fig. 2). Do not move the servos from their original center positions when installing the servo wheels.

16. Fasten the radio tray to the top of the aluminum bellcrank posts with two 4x38mm roundhead machine screws. If the posts are not perpendicular to the radio tray, adjust the turnbuckles until there is no strain on the posts.

17. Reinstall the completed radio tray and bellcrank steering assembly into the model. Align the bellcrank posts with the chassis and fasten them with the 4x12mm countersunk machine screws.

18. Reattach the front supports of the roll cage with the 4x20mm roundhead machine screws. On the On-road, reattach the radio tray to the front bulkhead with the two 6x20mm roundhead screws.

19. Reattach the tie rods to the steering blocks with the 4x30mm caphead shoulder screws. Reattach the bulkhead bracing rods to the bulkhead with the 4x20mm caphead machine screws (buggy only).
INSTALLING THE THROTTLE AND BRAKE LINKAGE

Locate the bag containing the two 25cm rods. In another bag, find the four screw collars, four 3mm grub screws, and the two pieces of flexible tubing.

THROTTLE LINKAGE
1. Measure approximately one centimeter from the end of one of the 25cm rods and mark it. Use pliers to make a 90-degree bend at the mark.
2. Insert the bent end of the rod into the bottom hole on the carburetor throttle lever. Slide a screw collar over the end of the rod and secure it with a 3mm grub screw.
3. Slide the remaining end of the throttle rod through the right (inside) rod guide on the throttle servo wheel. Slide a piece of flexible tubing over the end of the rod followed by a screw collar. Secure the screw collar with a 3mm grub screw (see drawing). Note that the wire should be bent slightly to clear the air cleaner and to reduce binding in the rod guides.

THROTTLE LEVER

![THROTTLE LEVER](image)

ON-ROAD

MONSTER BUGGY

At neutral, the rod guides should be aligned as shown.

BRAKE
1. Loosen the caphead machine screw with a 2.5mm Allen wrench and position the brake lever as shown in Fig. 8. Retighten the screw.
2. Insert the end of the rod through the eye of the brake lever.
3. Slide the short length of flexible tubing over the end of the brake rod followed by a screw collar. Tighten the grub screw until it is snug.
4. Insert the end of the brake rod through the rod guide on the servo wheel. Slide the remaining screw collar over the very tip of the brake rod and tighten.
5. Turn the brake lever clockwise until the rear wheels spin freely. With the throttle in the idle position, slide the flexible tubing forward until it just touches the brake lever. Loosen the screw collar, push it gently against the flexible tubing and tighten. Move the servo from idle to full throttle and check to be sure that the brake does not engage when throttle is applied. This is extremely important!

INSTALLING THE 5-CELL RECEIVER PACK
1. The 5-cell pack mounts to the fiberglass plate in front of the gas tank. The plate is held in place by two screws.
2. On the right side of the model, remove the screw which fastens the gas tank to the fiberglass plate.
3. On the left side, remove the screw from the underside of the aluminum mounting post (leaving the post attached to the fiberglass plate). With the on-road car, remove the remaining gas tank screw from the top, without the post.
4. Slide the plate out of the model from the left side.
5. Use tie wraps to secure the battery pack to the underside of the fiberglass plate. Reinstall the hold-down plate in the reverse order of removal.
6. Test the operation of the radio system and servos. Make sure none of the linkages are binding.
7. Adjust the throttle and steering endpoints on your transmitter so that the servos stop when full throttle or maximum steering is reached. This will prevent damage to your servos.

TIRES
1. Locate the front and rear tires, and the four foam inserts. Remove all four wheels from the model with a 10mm nut driver.
2. Fit one foam insert into each tire with the flat side of each insert against the inside of each tire. Pull the tires over the wheels fitting the bead on each tire into the slot around each wheel rim.
3. Glue the tires to the rims by pulling the bead back with your thumb and inserting a drop of superglue. Do this at several points around both sides of each tire. Reinstall the wheels and tires on the model.

BODY AND WING
1. MONSTER BUGGY: Fold the body along the score lines and place it on the buggy. The mounting posts on the chassis may be adjusted so that the body fits tight and smooth.
ON-ROAD: Test fit the body on the chassis to determine where to cut the wheel openings. Use a motor grinder (such as a Dremel® tool) or jewelers saw to trim the body. There are indentions in the body to indicate where to put holes for mounting the body.
2. Use four body clips to attach the body (eight on the On-road).
3. A hole must be punched in the body to insert the antenna tube through
4. MONSTER BUGGY: The roll cage rod attaches to the rollcage with the 12 small tie wraps
5. MONSTER BUGGY: The wing has two indentations to indicate where to drill the holes to mount the wing. Secure the wing with two body clips.
ON/ROAD: The wing mounts to the body with two 3x10mm screws and 3mm locknuts. Test the wing before drilling any holes.
• SAFETY PRECAUTIONS

If the safety precautions are followed, and your large-scale model is operated sensibly and with care at all times, it is exciting, safe, and fun for you and your spectators. Failure to operate the model in a safe and responsible manner could result in property damage and injury. You alone must see to it that the instructions are followed and the precautions are adhered to.

These models are not intended for use by children or irresponsible adults. Every precaution in this manual must be followed to help ensure safe operation. Traxxas Corporation shall not be liable for any loss or damages, whether direct, indirect, special, incidental, or consequential, arising from the use, misuse, or abuse of this product and any accessory or chemical required to operate this product.

- The gasoline/oil mixture used for fuel is dangerous and poisonous. Follow all directions and precautions on the containers.
- The fuel is flammable. Do not allow sparks, flame, or smoking in the presence of gasoline.
- The engine emits poisonous carbon monoxide gas just like an automobile engine. Always run the model in a well-ventilated area. Never attempt to run the engine indoors.
- The engine and exhaust system become extremely hot during use. Be careful not to touch these parts, especially when refueling or refilling for the starter handle.
- Always test the radio system's operation and range prior to driving the model. Never operate the radio system with low batteries.
- Do not drive the model at night.
- Do not operate the model near large crowds of people (especially small children). The model is very fast and heavy, and could cause injury if it is allowed to collide with anyone.
- Do not use the Buggy to pull anyone (i.e. in a wagon, on skates, etc.).
- Do not let small children try to ride the model.
- Because the model is controlled by radio, it is subject to radio interference from many sources that are beyond your control. Since radio interference can cause momentary losses of control, always allow a safety margin in all directions in order to prevent collisions. A P.C.M. radio should be used and operated in the failsafe mode. The failsafe mode should be set to operate the brake if radio contact is lost.
- The engine produces a fair amount of noise. Be considerate of your neighbors by not running your model early in the morning or late in the evening. Try to find a place to run your model where no one will be disturbed by its noise.
- Drain the gas out of the model into an approved container before you store it. This will prevent accidental leakage. Do not dispose of the fuel in an improper manner (i.e. pouring it on the ground). Follow all applicable laws regarding hazardous waste disposal.
- Most importantly, use good common sense when you operate the model in order to ensure that your driving experience is fun and safe.

• MECHANICAL PRECAUTIONS

Because of the potentially high cost of replacement parts for these models, it is important not to abuse them. Do not intentionally attempt maneuvers, jumps, pulling, stunts, or crashes that could result in broken suspension arms, bent chassis, stripped gears, etc. Using good judgement and following the mechanical precautions will help to ensure troublefree running from your model.

- Do not over-rev the engine by applying full throttle while the wheels are off the ground.
- Do not allow the engine to overheat. Overheating can occur if the engine is allowed to idle for long periods of time or if grass and dirt accumulate around the engine's cooling fins.
- Do not use the correct oil/fuel mixture ratio to result in engine damage.
- If the model gets stuck or excessively loaded (i.e. driving in tall grass), do not continue to drive it. This will put excessive loads on the engine and drivetrain. Walk to where it is and free it before continuing to drive.
- Test the radio system each time before you operate the model. Always use strong, freshly-charged batteries in the transmitter and in the model.
- Do not operate the model at full throttle.
- Do not allow the engine to idle for long periods of time.
- Do not run the model through water. It is not waterproof.
- Do not touch the spark plug while the engine is running.
- Do not run the slipper on the Monster Buggy too loose.
- Do not allow the brake to drag when the throttle is engaged or the transmission and the brakes may be damaged.

• FUEL

The model requires regular unleaded pump gasoline mixed with a high-quality two-cycle engine oil. The fuel/oil ratio should be 25:1 (1 ounce of oil for 25 ounces of fuel or 5.1 ounces per gallon). Using a higher oil content than recommended could result in a fouled spark plug. Using less oil will result in engine damage. Do not use any octane boosters or fuel cleaning additives. Never fuel while the engine is running.

Turn the model on its side and fill the tank until the fuel reaches the bottom of the filler neck. Screw the cap on tightly to prevent leakage.

• STARTING

1. CHOKE

The carburetor has three choke settings: fully open, part open, and fully closed. When the engine is cold, move the choke lever up to the fully-closed position (down is fully open). When warm, no choke is necessary.

2. PRIMING

Located on top of the carburetor is a small priming bulb. Press the bulb 2 or 3 times with your finger to start the fuel flow. Typically, priming will no longer be necessary unless the engine sits overnight or longer without running or if the model runs out of fuel.

3. STARTING

With the choke closed and the carburetor primed, pull on the starter handle until the engine starts. Do not pull the starter handle more than 18-20 inches. Once the engine has started, move the choke to the part open position. Allow the engine to idle for 5 seconds and then move the choke to the fully-open position. Let the engine warm up for one minute before driving.

4. DRIVING

Once the engine is warm, then drive the model as you would drive any conventional R/C car. Keep in mind that because of the model's additional size and weight, it will require more room for maneuvers and it is much more capable of causing damage in a collision.

5. STOPPING THE ENGINE

Stop the engine by pressing and holding the red button on the front of the engine until it stops. Do not touch the spark plug.

• ENGINE MAINTENANCE

The most important engine maintenance is keeping it clean of dirt, and using good quality fuel and oils.
The air filter should be removed, cleaned, and re-oiled every 2-3 tanks of fuel. The filter should be cleaned more often when running in dusty or grassy conditions.

To access the air filter, press the intake cover on the sides and pull it out. Clean out any dirt or grass which has accumulated in the air filter cover and filter housing. Remove the foam element and clean it in warm, soapy water. Allow it to dry completely. Apply a liberal amount of foam filter oil (available from a motorcycle dealer) and wring out the excess. Do not use the 2-cycle engine oil in the air filter element. Reinstall the filter element making sure it is on the outside of the small pegs molded into the filter base. Reinstall the filter cover in the reverse order of removal.

ENGINE SHROUD

Grass, dirt, and debris will gradually accumulate in the engine shroud and cooling fins and should be removed in order to prevent overheating. To remove the shroud, first remove the complete rollcage, unplugging the spark plug wire, and then remove the 6 gold-color screws. Remove all dirt and debris with a brush or compressed air. Reinstall the shroud and rollcage.

CARBURETOR

Other than the air filter, the carburetor should not require any regular maintenance. Occasionally brush off any accumulated dirt. Do not attempt to adjust the carburetor’s fuel mixture screws. They are preset at the factory at their optimum setting.

SPARK PLUG

The spark plug should be removed and cleaned periodically with a wire brush (especially if the engine has become difficult to start). If the spark plug is worn, replace it only with the same type of plug. The plug type is an NGK BMR6A (medium) or NGK BMR7A (hot) gapped to .065mm.

- ADJUSTMENTS

DAMPENING

The oil level in the shocks should be maintained at 1-2mm below the top of the cylinder. For the best economy, use high-quality motorcycle fork oil to refill the shocks.

From the factory, your shocks have the 2-hole pistons installed inside the shocks. A set of 4-hole pistons has been supplied and may be used to decrease the dampening effect.

The shock angle affects the progressive rate of the dampening and the springs. This is adjusted by changing the mounting points on the shock tower and the suspension arm.

The spring pre-load and ride height is adjusted with the plastic spring spacers. Various thicknesses have been provided. Adjust the ride height so that the suspension arms are level (parallel) with the ground.

The best recommendation is to experiment with the many adjustments to find the best combination for your driving conditions.

SLIPPER CLUTCH

The slipper clutch is provided on the off-road buggy to reduce rear wheel spin in low-traction areas. To set the slipper, place the buggy on the surface it is to be run on. Tighten the slipper nut enough to lock the slipper. Now, loosen the slipper just enough to allow it to slip for no more than 2-3 feet from a standing start. Do not allow the slipper to slip for more than 3 feet or it will wear excessively.

GEARING

The gear ratios on the model may be changed to improve performance in different applications. The gears may be purchased in sets. Check your parts list for more details.

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LIMITED WARRANTY INFORMATION

Every effort has been made in component design and material selection to make your model as durable as possible. Because these models are hobby-class model and operate at a much higher level of performance than a "toy," no warranties can be expressed or implied relating to the longevity of the parts. Parts will wear out and require replacement. If any part of the model appears to be defective, or incorrectly assembled when it is new (before it is used), it will be repaired or replaced at Traxxas’ discretion. This warranty will not cover damage from wear, abuse, neglect, crashes, or water.

The engine has been test run at the factory prior to being installed in your model. It is guaranteed to start and run for the first tank of fuel. Because it is impossible to monitor the type and quality of fuel being used, and the conditions under which the engine is run, no warranties are expressed or implied relating to the longevity of any component. If a new engine is found to be defective in materials or workmanship, or if a new engine does not start after following the start-up procedures outlined in this manual, then return the engine to Traxxas and it will be repaired or replaced at our discretion.

The warranty does not cover the cost of shipping to Traxxas.

Traxxas reserves the right to make changes, modifications, and improvements to this product without notification, and which may not be reflected in these documents. Upgrades and improvements are not necessarily retroactive. Traxxas may not provide improved or updated components free of charge for models built prior to any change in specification.

TO OBTAIN WARRANTY SERVICE

If it has been determined that the engine or the model is somehow defective, return it to Traxxas with a note describing the problem, and a copy of the purchase receipt or invoice. Drain all fuel and remove all batteries. Remember that the warranty only covers brand new products which are defective right out of the box. All other service will be estimated on an individual basis.

Be sure to include a return address and a daytime phone number.

MAIL OR SHIP TO:

Traxxas
1100 Klein Rd.
Plano, TX 75074

For technical assistance regarding your model,
1-888-TRAXXAS

For orders and other information,
972-265-8000

The Zenoah engine used in your model is an extremely high-quality commercial engine. Parts and service for the engine can be found locally at lawn and garden equipment dealers and small engine repair shops. Having the engine serviced locally can save substantial time and shipping costs.