DR-1
HIGH PERFORMANCE COAXIAL DUAL-ROTOR HELICOPTER

OWNER'S MANUAL

Model 6308 Ready-To-Fly DR-1 with Transmitter, LiPo Battery, and Charger

Model 6307 DR-1 EZ-Connect with LiPo Battery and Charger (transmitter not included)

TRAXXAS
Introduction
Carefully read and follow all instructions in this and any accompanying materials to prevent serious damage to your model. Failure to follow these instructions will be considered abuse and/or neglect. Before operating your model, look over this entire manual and examine the model carefully. If for some reason you decide it is not what you wanted, do not continue any further. Your hobby dealer absolutely cannot accept a model for return or exchange after it has been used.

Support
Traxxas Technical Support
PHONE: 888-TRAXXAS (1-888-872-9927)*
ONLINE: Traxxas.com/support
EMAIL: support@traxxas.com
*Monday through Friday from 8:30am to 9:00pm central time. Available in the U.S. only. Outside of the U.S., please call +1-972-265-8000.
Traxxas encourages you to register your helicopter online at Traxxas.com/register.

Exclusive Traxxas Helicopter Replacement Plan
Traxxas protects your investment with the Traxxas Helicopter Replacement Plan that allows owners to exchange worn or damaged helicopters for a reduced flat-rate fee. Consult your Traxxas Service and Support Guide for details and current pricing. You can also renew your helicopter’s performance with replacement parts available from your hobby dealer or Traxxas.

Safety Precautions
- Carefully follow the directions and warnings for this model and any optional support equipment you may use.
- The transmitter controls are positioned in one of two configurations (Mode 1 or Mode 2) depending on the region in which you purchased your model. Both configurations are illustrated in this manual. Be certain to confirm the controls of your model before you attempt to fly it.
- Never operate your model with low transmitter batteries.
- The helicopter has rotating blades that move at high speed, posing danger of damage and injury. Pilots are responsible for any actions that result in damage or injury from the improper operation of the helicopter. Choose an adequate flying space without obstacles. Do not operate the helicopter near buildings, crowds of people, high-voltage power lines, or trees to ensure the safety of yourself, others, and your model. Wear eye protection when operating your helicopter and keep your hands, face, hair, loose clothing, and foreign objects away from the rotating blades.
- This model has small parts that may pose a choking hazard. Keep all small parts and electrical devices out of the reach of children and animals.
- Pets can become excited by radio-controlled models. Keep pets away from your model at all times.
- Keep the model in sight at all times during operation and flight. Discontinue operation immediately if the model flies out of your field of view.
- Because your model is controlled by radio, it is subject to radio interference from many sources that are beyond your control. Radio interference can cause momentary losses of radio control; always allow a safety margin in all directions around the model to prevent collisions.
- When flying outdoors, do so only on a calm day when there is no wind. Do not operate your model near buildings, power lines, or other hazards.
- When flying indoors, avoid locations with ceiling fans, hanging light fixtures, heating or air conditioning vents, or any other obstacles that may interfere with or damage your model.
- Never attempt to retrieve your model from any location higher than your reach (such as rooftops) or from any location that poses a safety hazard.
- Do not operate your model at night or anytime your line of sight to the model may be obstructed or impaired in any way. Do not operate the model if you are tired or otherwise impaired.
- Moisture causes damage to electronics. Avoid exposing your helicopter, transmitter, and battery to water.
• The motor, batteries, and speed control can become hot during use. Allow parts to cool before handling.
• Do not leave the model unattended while it is turned on. Immediately turn the transmitter and model off after you have safely landed the model.
• Most importantly, use good common sense at all times.

All instructions and precautions outlined in this manual should be strictly followed to ensure safe operation of your model. Failure to comply with the warnings, instructions, and precautions in this manual could lead to product damage and personal injury.

About Lithium Polymer (LiPo) Batteries
The included LiPo rechargeable battery must be handled with care for safety and long battery life. LiPo batteries are more volatile than alkaline, NiCad, and NiMH batteries. Mishandling of LiPo batteries can result in fire. By handling, charging, or using the included LiPo battery, you assume all risks associated with LiPo batteries. If you do not agree with these conditions, return your complete, unused Traxxas DR-1 helicopter to the place of purchase. If at any time during charging or use the battery begins to swell or becomes damaged in any way, discontinue charging or use of the battery immediately. Continuing to charge or discharge a battery that has begun to balloon or swell can result in a fire. Quickly and safely disconnect the battery and place it in an open, safe area away from flammable materials. Observe the battery for at least 30 minutes to be certain no additional swelling or rupture occurs. Completely discharge the battery by submerging it in a saltwater solution (1/2 cup salt per gallon of water) for 24 hours. The battery may then be disposed of in the trash. LiPo batteries are landfill-safe.

It is your responsibility to charge and care for the battery pack properly.
• The included LiPo battery pack must be charged ONLY with the USB charger included with the model or a Traxxas-specified accessory charger. Failure to use the correct charger may result in a fire, personal injury, and/or property damage. DO NOT use a charger designed for NiCad or NiMH batteries. Using any charger other than the included charger may damage the battery.
• Charge the battery in a safe area away from flammable materials.
• Allow the battery to cool to room temperature before recharging.
• Never leave batteries unattended while charging. Monitor the charging process and react to any problems that may occur.
• Always unplug the battery from the model when not in use and when it is being stored or transported.
• Do not use or charge battery packs that have been damaged in any way (bent, dented, swollen, torn covering, or otherwise damaged).
• Do not allow small children to charge or handle LiPo batteries.
• Only discharge the LiPo battery by using it to power your model. Do not discharge the battery using an accessory device.
• Store the battery and model in a dry area at room temperature. Avoid temperatures less than 40°F/4°C and greater than 120°F/49°C. Do not store the battery or model in a car or in direct sunlight. If stored in a hot car or otherwise exposed to temperatures greater than 120°F/49°C, the battery can be damaged or may catch fire.

Included Support Equipment
450 mAh LiPo battery
USB-powered Charger
Spare rotor blade set
Phillips screwdriver
4 Traxxas AAA alkaline batteries
The Mode 1 or Mode 2 control positions are set at the factory and are not user-selectable. The mode is set according to the control configuration that is most common in your region. Typically Mode 2 is used in the US. The control positions for Mode 1 and Mode 2 are identical except for the Throttle and Forward / Reverse controls as illustrated above. Be certain to confirm your transmitter’s mode and refer to the correct illustrations in this manual.

**Getting Started**

1. Read all safety precautions.

2. Charge the battery pack.

3. Install the included AAA alkaline batteries into the transmitter.

4. Install the battery into the helicopter (A). Make sure the power switch is off.

5. Plug the battery into the power connector on the model (B).

6. Turn on the transmitter. Make sure the throttle stick is in the full down position (throttle off) (A), then turn the transmitter on (B).

7. Turn on the model. See “Flying Your Model.”
8. Confirm proper control operation. Make certain the control linkages match the transmitter commands as shown below.

Mode 2

Mode 1


10. Store and maintain your model. See “Caring for Your Model.”
    - Unplug and remove the battery.
    - Charge the flight battery to 50% if you are storing the model for a week or more.
    - Store the model and its batteries out of the reach of children and animals.
    - Remove the batteries from the transmitter if storing for a long period.

**Flight Controls**

Before you begin flying your model, familiarize yourself with the flight controls.

**Throttle Control**

Pushing the throttle stick forward will cause the main rotors to spin. The farther you push the stick, the faster the rotors will spin, causing the helicopter to lift off and gain altitude.

*Increase throttle / altitude: Push throttle stick forward • Decrease altitude: Pull throttle stick back*

**Rudder Control**

If you move the Rudder stick to the right, the helicopter will rotate clockwise. If you move the stick left, the helicopter will rotate counterclockwise. The farther you move the stick, the faster the helicopter will rotate.

*Rotate Left: Move Rudder stick left • Rotate Right: Move Rudder stick right*
Elevator Control
Pushing the Elevator stick forward will cause the helicopter to fly forward. Pulling the stick back will cause the helicopter to fly backward.

Aileron Control
Moving the Aileron stick left or right will cause the model to fly sideways in the direction of stick movement.

Mode 2 Controls

_MODE 2_

**THROTTLE UP**
Gain Altitude

**LEFT RUDDER**
Rotate Counterclockwise

**THROTTLE DOWN**
Reduce Altitude

**RIGHT RUDDER**
Rotate Clockwise

**FORWARD ELEVATOR**
Fly Forward

**LEFT AILERON**
Fly Sideways Left

**RIGHT AILERON**
Fly Sideways Right

**REAR ELEVATOR**
Fly Backward

_MODE 1_

**FORWARD ELEVATOR**
Fly Forward

**LEFT RUDDER**
Rotate Counterclockwise

**REAR ELEVATOR**
Fly Backward

**RIGHT RUDDER**
Rotate Clockwise

**LEFT AILERON**
Fly Sideways Left

**RIGHT AILERON**
Fly Sideways Right

**THROTTLE**
Gain Altitude

**THROTTLE**
Reduce Altitude
**Flying Your Model**

1. **Make small, gentle control movements.** The model will react quickly to your commands. To avoid loss of control, ALWAYS move the controls SLOWLY. If you ever feel you don't have complete control of the helicopter, use the throttle stick to maintain altitude and release the opposite stick. The model will return to level flight.

2. **Avoid ground turbulence.** Flying 2-3 feet above the ground will put you above any ground turbulence and deliver more stable and controllable flight.

   1. **Find a suitable flying area.** The DR-1 should be flown primarily indoors. The recommended minimum area for indoor flight is a room that is 10 x 10 feet, with a ceiling height of 8 feet or more. Be aware that the spinning rotor blades may damage furniture and wall coverings.

   2. **Switch the transmitter on.** Move the throttle stick to the full down position (A) (throttle off) and then slide the power switch up to the ON position (B).

      - Observe the battery level indicator on the LCD; five segments should be displayed. Replace the batteries when only one segment is displayed. Do not fly the model with low transmitter batteries or loss of control may result.

3. **Switch the model on.**
   - Make certain the transmitter's throttle stick is in the full down position (throttle off).
   - Place the model on a smooth, flat surface near the transmitter, and slide the model's on/off switch to the on position.
   - Do not operate the controls or move the model. This will allow the model to confirm its neutral position for stable flight.
   - The transmitter will emit a tone to indicate that binding is complete. When the red LED on the transmitter and the blue LED on the helicopter are both solid (not blinking), the helicopter is ready to fly.

4. **Place the model in the center of your flying area, with the canopy facing away from you.** Stand several feet behind the model.
5. Slowly push the throttle stick forward.
Gently increase the rpm of the main rotors until the model begins to lift off.

6. Reduce throttle to maintain a hover when the model is about 2–3 feet off the ground. This height will reduce the likelihood of crash damage and keep the model away from ground turbulence.

7. Practice maintaining the hover position.
Minor control inputs are required to keep the model hovering in one spot and at one altitude.

8. Practice gaining and reducing altitude.
To land, slowly and smoothly pull the throttle stick back until the helicopter touches down.

9. Practice flying forward and backward.
When you can confidently hover and control the model’s altitude, operate the elevator and aileron controls separately to familiarize yourself with the helicopter’s response.

10. Practice rotating the helicopter.
When you can operate the elevator and aileron controls confidently, practice using the rudder control while hovering. Practice rotating and stopping the helicopter precisely.

11. Combine control commands.
When you are comfortable operating the controls independently, you can combine controls to make very precise maneuvers. The model will always fly in the direction of the canopy. If you ever feel you don’t have complete control of the helicopter, use the throttle stick to maintain altitude and release the opposite stick. The model will return to level flight.

The following behaviors indicate a low battery condition and that the battery should be recharged immediately:
- The LED on the helicopter is blinking.
- The helicopter loses power and lands itself (low voltage cutoff).
- During operation, the helicopter begins to spin, requiring large rudder input to correct. Land the helicopter.

### Adjusting the Controls for Stable Flight

If your helicopter pulls or drifts in any direction (unrelated to air currents) when the sticks are at neutral, you can use the trim controls to tune out any unwanted flight motions.

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• The trim buttons will adjust each control in a small increment with each ‘click.’ Press the trim button as many times as is required until the model holds a steady hover with little or no correction required.

• The DR-1 features an automatic rudder trimming feature. Simply land the helicopter and allow it to sit still for three or more seconds. The DR-1 will automatically re-center the rudder control.

As you adjust each trim, the transmitter’s LCD will show you the trim position as a numeric value. There are 25 trim steps in each direction for Rudder, Elevator, and Aileron. When your model is trimmed for stable flight, the trim display may not indicate that the neutral setting is zero. This is normal.

**Flying Tips**

• The helicopter is sensitive to air currents in the room and turbulence that is created when the helicopter is near the ground, walls, and ceilings.

• Avoid air vents, air conditioners, room fans, and other devices that circulate air, as they may affect your model and cause unpredictable movements.

• As the helicopter nears a ceiling or wall, it will be drawn to the surface and pilot correction will be required. Stay 2-3 feet away from ceilings and walls to avoid this.

• Avoid obstacles such as ceiling fans and fire sprinkler heads.

• Remember that the model flies forward, reverse, left, and right relative to its position, not relative to your position. This is important to remember when the helicopter is flying towards you.

A rapid landing is much gentler on the helicopter than striking a wall or another object that stalls the rotor blades.

If you do crash your model, immediately pull the throttle stick to the full down position to stop the rotor blades from spinning. Failure to do so may result in damage to the model. Do not approach the model until the rotor blades have stopped completely. Hold the throttle stick in the down position (throttle off) before picking up the model. Turn the model off and unplug the battery before inspecting it for damage.

**Be prepared for altitude changes as you fly**

Forward/reverse and left/right movements may increase or reduce lift, causing the helicopter to gain or lose altitude. Be prepared to react to altitude changes by adjusting the throttle as you fly the model.

**Normal and Expert Flight Modes**

• The DR-1 is factory set for Normal Mode flying, and it will always power up in Normal Mode. While fast and responsive in Normal Mode, the DR-1 has even greater performance capability when Expert Mode is activated.

• Activate Expert Mode by pressing down on the Elevator stick (the model and transmitter must both be on).

• The LCD will display EXPERT and the red LED will blink to show you are in Expert mode.

Click the Elevator stick to switch between Normal and Expert mode.
WARNING! While in Expert Mode, it is even more important to use slow, smooth control inputs to prevent crashing your helicopter. Do not attempt flying in Expert Mode until you can confidently control the model in Normal Mode. Personal injury or product damage may result. The helicopter will react more quickly to control inputs, fly more aggressively, and will be capable of faster flight. Experts only!

Customizing The Controls

The speed of each control, except the throttle, can be adjusted independently. Once you have selected a control, you can increase its value (more directional speed) or reduce its value (less directional speed). Follow these steps to select and adjust each control.

Please note that the first programming option is servo reversing, indicated by SE. Skip this setting to avoid accidentally reversing the model’s controls.

When adjusting the controls in Normal mode, the trim displays will show three flashing dots and the red LED will be on solid. In Expert mode, five flashing dots will be displayed and the red LED will be blinking. The Elevator stick may be depressed at any time during programming to access the Normal and Expert Mode settings.

1. Turn on the transmitter and model.
2. Hold the throttle stick base for 3 seconds.
3. SE (Servo Reversing) appears. Do not adjust.
4. Click the throttle stick base to advance to the next function.
5. LCD displays flashing dots in the channel being adjusted.

TIP: Press the Elevator stick to switch between Normal and Expert mode at any time.

6. Adjust the channel value using the trim key.
7. Click the throttle stick base to advance to the next function, or hold the stick base for one second to exit.

Restoring the Default Settings

Use the following procedure to return the transmitter to its default settings.

1. With the transmitter powered off, move both sticks to the upper left position and hold, then power on the transmitter and release the sticks.
2. Move the left stick to full travel in each direction (full left, full right, full forward, full back), holding the stick in each position for one second. Repeat this procedure with the right stick.

3. Place the throttle stick in the full down (throttle off) position and then press and hold any trim button to complete the reset. The red LED will begin blinking when the reset is complete.

4. Turn the helicopter on, confirm the control directions, and fly.

**Caring For Your Model**

- After each flight and immediately after any crash, inspect your model for worn or damaged parts. If required, parts are available at your local Traxxas dealer. For a complete parts list and exploded view of your model, refer to the Service and Support Guide in this manual.
- A micro screwdriver is supplied with your model to assist with repairs.
- When not in use, store your model in its original packaging with the batteries removed from the transmitter and helicopter.
- If you do not plan to fly your model for a week or more, store the battery approximately 50% charged to maintain battery performance and life. To achieve a 50% charge, fly the model until the battery requires recharging. Charge the battery for half the time typically required to fully charge the battery.

*Do not store a swollen or damaged battery! See “About Lithium Polymer (LiPo) Batteries” for more information.*

**Troubleshooting Guide**

The helicopter is drifting on its own.
- The helicopter is out of trim. Correct this by using the trim buttons. See “Adjusting Your Controls for Stable Flight.”

The LED is blinking on the transmitter, and the transmitter will not control the model.

1. The transmitter is in binding mode.
   - Confirm that the helicopter is powered on and in binding mode (blinking LED). Move the transmitter to within one foot of the helicopter. The transmitter and helicopter should bind (indicated by a tone from the transmitter and solid LEDs on both the transmitter and helicopter).

2. There was a problem with the binding process.
   - Power down the transmitter and the helicopter, and then power them on again (transmitter first, then helicopter). The transmitter and helicopter should bind (indicated by a tone from the transmitter and solid LEDs on both the transmitter and the helicopter).

The controls are reversed. (For example, when the control is moved right, the helicopter moves left.)

1. The front of the helicopter is facing you instead of facing away from you. Make sure the front of the helicopter is facing away from you and try again.

2. You have accidentally changed the servo reversing. Return the transmitter to the default settings. See “Restoring the Default Settings.”

The transmitter settings have been adjusted incorrectly for optimal flight.
- Return the transmitter to the default settings. See “Restoring the Default Settings.”

The helicopter landed by itself, and now the throttle will not respond. The LED on the helicopter is blinking, and the LED on the transmitter is solid.
- The helicopter battery needs to be recharged.

The helicopter trim cannot be adjusted. The helicopter continues to drift no matter the trim setting.
1. There has most likely been some damage to the helicopter as the result of a crash. Carefully inspect the model for damage.
2. If the helicopter is drifting on the rudder control, then the battery is low. Land the helicopter and charge the battery.