



2CH 8217
3CH 8303

JAGUAR

Instruction Manual



Introduction

Congratulations on your purchase of an ACE Jaguar radio system. All new Jaguar2AP and 3AP are designed by the state-of-the-art IT technology in Taiwan. With proper use and care, ACE Jaguar will make the control advanced and simple, and provide you with many years of enjoyment. Before operating your new radio system or installing it into your model, please take a few minutes to familiarize yourself with the various features of the system by reading this owner's manual thoroughly.

Features

Transmitter

- AM pistol grip transmitter
- Available in 2-Ch (Jaguar T2P) and 3-Ch (Jaguar T3P)
- Ergonomically designed steering wheel
- Digital proportional precise control
- Servo reversing
- Steering and throttle trims
- Throttle ATV /Adjustable Travel Volume
- Dual rate steering
- Adjustable neutral position for throttle trigger
- Optional the AUX Channel (only Jaguar T3P)
- LED battery level indicator with low power flashing
- Easy access crystal
- External charging jack for NiCd battery pack
- All SMT circuitry for dependability

Receiver

- Built in BEC (Battery Eliminator Circuit)
- Super-Heterodyne for extra long range
- Crystal interchangeable for versatility

Servo

- Most reliable high torque motor
- Dual sleeve bearings support
- Standard size to fit most models
- High impact material
- Brand new fashion design

System Contents

Radio system	Jaguar 2AP	Jaguar 3AP
Product No	8217	8303
Transmitter	Jaguar T2P	Jaguar T3P
Receiver	TR-202A	TR-403A
Servos	S1903 (x2)	S1903 (x2)
Switch harness (x1)		
Receiver battery holder (x1)		
Mounting Hardware and frequency flag set (x1)		

Specifications

Transmitter	Jaguar T2P	Jaguar T3P
Frequency	26MHz, 27MHz, 40MHz	
AUX	No	Yes
Modulation AM	Pulse Proportional Modulation (ppm)	
Transmitter batteries	AAx8(UM-3x8)	
Current Drain	200mA@12V	
Dimensions (w/o Ant)	185x105x264 mm (7.28x4.13x10.39 in)	
Weight	395g (13.9oz)	
Receiver	TR-202A	TR-403A
Frequency	26MHz, 27MHz, 40MHz	
Channel	2	4
BEC	Yes	
Single conversion	455KHz	
Channel spacing	20KHz	
Receiver batteries	AAx4(UM-3*4)	
Current Drain	35mA@6V	
Dimensions	48x34x22 mm (1.89 xx in)	
Weight	25g (0.89 oz)	
Servo	ACE S1903	
Control	Pulse width control	
Operation Range	+/- 45 degrees (without trims)	
Power Supply	4.8-6.0 V (shared with receiver)	
Current Drain	10mA at idle/ 650mA at stall	
Output torque	3kg-cm (42.18 oz-in)	
Transit time	0.19sec/60 degrees of travel	
Dimensions	40.9x20x37 mm (1.61x0.78x1.46 in)	
Weight	46g (1.62oz)	

Transmitter Controls

1. **Transmitter Antenna:** Never operate the transmitter without extending this antenna or you may create interference to other modeler.
2. **Battery Level Indicator:** Three LED display to indicate the battery voltage level. If the Red LED flashes, please replace the batteries.
3. **HI/LO Throttle ATV (Adjustable Travel Volume):** Provides the function to let you independently preset the maximum travel of the throttle servo either side (high / low) of neutral.
4. **Servo reversing switches:** To reverse the servo's rotation direction at the flip of the switch. The reversing switches are recessed into the transmitter to prevent accidental operation.
5. **Steering Trim:** Adjusts the steering in small increments or decrements to run the model straight.
6. **Throttle Trim:** Adjusts the throttle in small increments or decrements to shift the neutral position.
7. **Steering D/R (Dual Rates):** Allows you to choose between two different control sensitivities.
8. **AUX Ch Button (Jaguar 3AP only):** Provides an extra function for the control of the model movements.
9. **External Charging Jack:** Recharges the transmitter battery only as using a rechargeable Nicd battery pack.
10. **Crystal:** To change the channel number your radio broadcasts.

HELPFUL HINT

It is recommended to use only genuine ACE crystal set, and to change the both transmitter and receiver crystal at the same time.

11. **Steering Wheel:** Controls the steering of the model.
12. **Power Switch:** Sliding to turn the transmitter on or off.
13. **Throttle Trigger:** pulled or pushed to control the movement of the model.
14. **Trigger Neutral Position Lever:** Used to change the neutral position of the throttle trigger.

HELPFUL HINT

This function changes the sensitivity of the throttle servo in the throttle trigger forward side and brake side directions. It has no effect on the servo maximum travel.

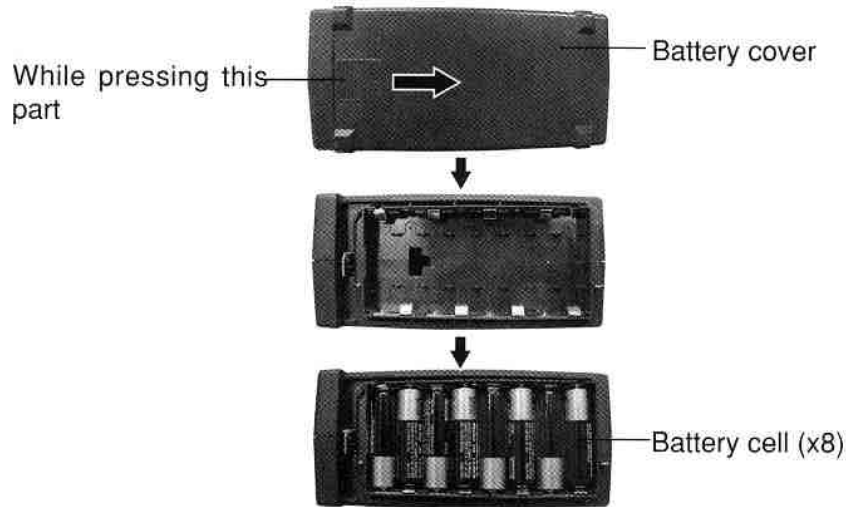
15. Battery Cover



Installation

Transmitter battery replacement/installation

Slide the battery cover in the direction as shown to install 8 AA cells into the transmitter. Then, turn the power switch on to check. If the LED fails to light, check the batteries for insufficient contact or incorrect battery polarity.



NOTE

Use only fresh, alkaline cells, all of the same brand at all times.

WARNING

Never attempt to recharge ALKALINE batteries, or any DRY cells! Or the transmitter may be damaged and the battery electrolyte may leak or the battery may break.

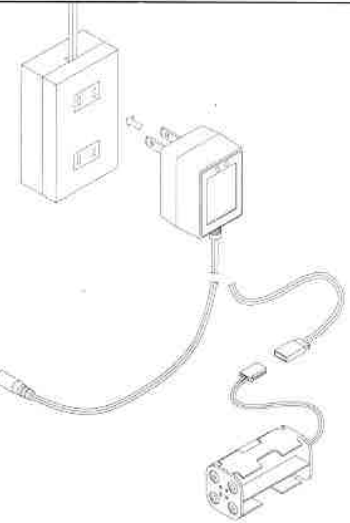
WARNING

Always be sure the batteries are loaded in the correct polarity order. If the batteries are loaded incorrectly, the transmitter may be damaged.

HELPFUL HINT

You may also use NiCd cells (ACE 2915 NiCd conversion Kit including 3 battery packages and 1 charger is recommended) in your transmitter. They can be charged through the external charging located on the transmitter.

Cord to transmitter
external charging jack



CAUTION

Make certain that the contacts in the battery holder stay clean by using a pencil eraser to gently remove any corrosion or dirt that may accumulate on them. It is recommended to do this each time you install fresh cells into your transmitter.

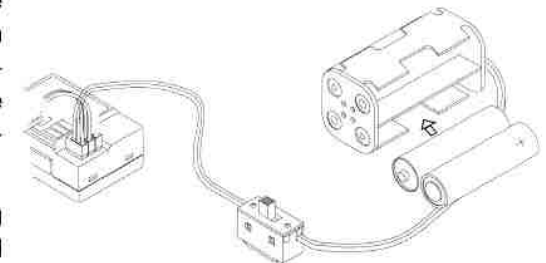
CAUTION

When the transmitter will not be used for any short or long period, always remove the batteries.

Receiver battery replacement/installation

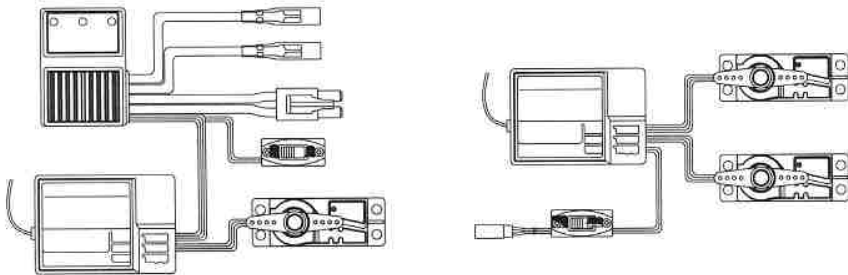
Insert 4 fresh AA cells into the receiver battery holder. Make sure the batteries are loaded in the correct polarity order. Maintain the battery contacts in the same way as described in previous section.

Insert the switch harness plug into the receiver socket marked "BATT"



Radio installation

Before installing your radio into your model, connect the receiver, servos, and switch harness/battery pack as shown. In addition to checking for proper operation, this "bench test" will help you to become familiar with the operation of your radio. After connecting the model components, extend both the transmitter and receiver antennas to their full length. Begin by turning on the transmitter, and then turn on the receiver switch. Make sure that all servos and trims levers are operating, and take a few moments to "play" with your system. After completion of your bench testing, turn off the receiver, followed by the transmitter.



Used w/ ESC

Used on gas powered model

HELPFUL HINT

Your new Jaguar 2AP/3AP radio system provides a build-in BEC (Battery Eliminator Circuitry) function. The feature Allows receiver to draw power from a main battery pack, eliminating the need for a receiver battery.

WARNING

Always follow the "transmitter on first, off last" procedure. A good way to remember this is to remind yourself to always have your receiver "listening" to the transmitter. If you turn the transmitter off prior to turning off the receiver, the receiver has nothing to "listen to", and this condition can sometimes damage the servo output gear train because of "jitters" or excessive servo travel beyond normal limits.

Servos

Mount the servos as recommended in your model's instruction manual. Follow these general guidelines for servo mounting.

Receiver installation

Note the location of the receiver in your model's instruction manual or building plans.

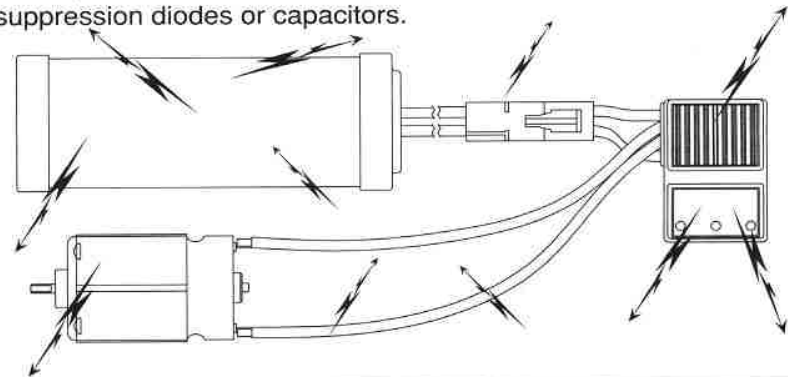
NOTE

We assume that all areas where large currents are flowing are generating noise, and noise is a type of radio wave. It is important to reduce the possibility of interference by locating a fine position for receiver and antenna.

HELPFUL HINT

Always install the receiver as far as possible from the motor, ESC, NiCd batteries, motor wire or other noise sources. Especially, do not route the motor wire next to the receiver, crystal or receiver antenna.

Noise suppression capacitors should be installed on almost all motors. If the proper capacitors are not installed, high frequency noise will reduce range and cause loss of control along with various other problems. Make sure your motor is equipped with noise suppression diodes or capacitors.

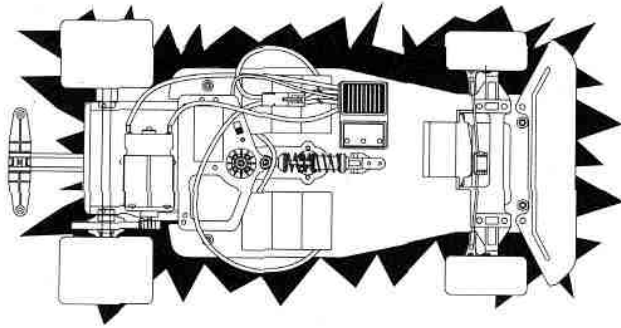


NOTE

FET servo wire (7.2V) can also generate noise, position them as far away as possible from the receiver and the antenna.

HELPFUL HINT

Metal and carbon chassis can also conduct noise, it is suggested that you route the antenna away from the chassis.



Position the crystal side at the top instead of the bottom side. Please refer to the following diagrams.



Space available in your model will determine how much padding can be placed around the receiver. When the receiver is in a good quality foam rubber, such as those available from Du-Bro, Carl Goldberg, Sig, and others. R/C foam is made from natural rubber, which eliminates vibration far better than synthetic foam, (such as the kind used for packing many consumer times).

CAUTION

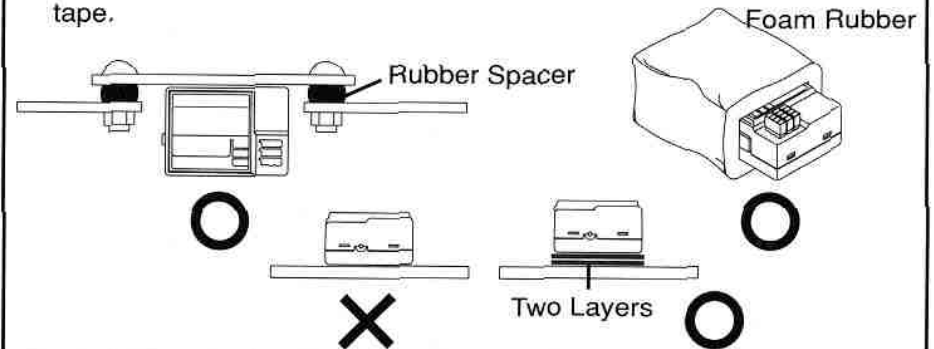
The receiver contains precision electronic parts. These parts are vulnerable to vibration and shock.

NOTE

When wrapping the receiver, keep in mind that you are trying to cushion a delicate piece of electronic equipment, so "wrap" the foam, don't "stretch" it around the receiver.

HELPFUL HINT

It is quite a simple way to isolate the receiver from vibration by attaching to the chassis or mounting plate with thick double-sided tape.



Many modelers prefer to install their receiver into the model at this point, with no further protection. Another sizeable group of modelers prefer to go a step further, and place the foam-wrapped receiver into a plastic bag, secured with a rubber band around the receiver case as well as the servo and battery wires.

The advantage of the plastic wrap is the protection against fuel or oil in the event of a major crash. The disadvantage of the plastic, especially if you run the model in very hot and humid conditions or wet days, is that moisture can accumulate inside the receiver.

CAUTION

Any contact with moisture i.e. water or condensation may cause malfunction and loss of control.

HELPFUL HINT

If you choose to wrap your receiver in both foam and a plastic bag, it is recommended to periodically remove the receiver from your model, remove the foam and bag to let the receiver "air out". This maintenance procedure will let you determine if any moisture is accumulating in the protective wrap. Small holes cut into the bag will allow airflow into the receiver, and eliminate the need for the periodic checks, although you will lose a certain amount of protection against fuel or oil with this step.

Battery installation

Always wrap the battery pack in foam, and mount it in the location specified in your models instructions. It is also recommended to wrap the battery pack in a plastic bag, as its location (close to engine and fuel tank) makes fuel proofing vital.

Switch installation

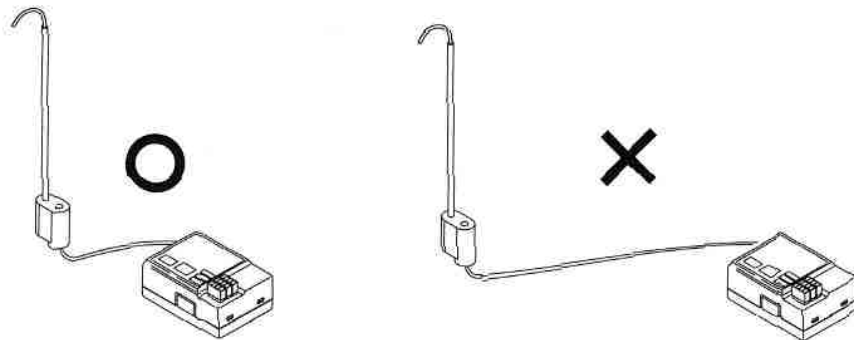
Pick the most convenient location for your on/off switch as required by your particular model. Always mount the switch on the opposite side of the engine exhaust. After mounting the switch, carefully bundle any excess servo wires with cable ties, keeping them away from any moving item (pushrod, servo arm, etc.) that could catch and cut the wires. Any empty space in your fuselage radio compartment can be filled with excess foam.

Receiver antenna

Refer to your model's instructions for the location desired for the receiver antenna to exit the Body or Fuselage. A general guideline is to exit the antenna from the Body / Fuselage at the closest possible point to the receiver, that is, have as much antenna as possible outside the model.

HELPFUL HINT

Install the antenna holder as near as possible to the receiver.



The shorter, the better. It will be easier to get the nearby noise if it is too long.

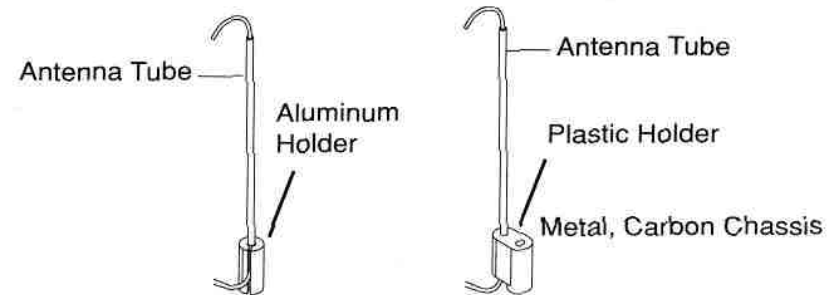
Use a strain relief (a knot will work) where the antenna exits the model, to avoid the antenna being ripped out of the receiver in the case of a mishap. A rubber band works well for this. **REMEMBER: THE ANTENNA WIRE IS YOUR MODELS "LINK" TO THE TRANSMITTER.** Take care to eliminate any chance of the antenna wire being caught or tangled in the prop, wheels, etc.

NOTE

The receiver antenna may seem long. The length of the receiver antenna is critical to the proper operation of your radio. Do not cut or alter from the original length for any reason, or you might severely limit the range of the system, and the receiver would become considerably more susceptible to interference and high frequency noise that will result in loss of range and control.

HELPFUL HINT

Please refer to the following diagrams when you mount the antenna holder on to the metal or carbon chassis.



Do not secure antenna wire to the plate.

Functions

Servo Reversing

It is sometimes necessary or convenient to reverse the output direction of the servo. The direction of the rotation for each individual servo can be changed by simply flipping the reversing switch that corresponds to the channel number on the receiver where the servo is plugged in. Under normal



circumstances, Ch1 is steering, Ch2 is throttle, and Ch3 is for extra function. Using the reversing switches as needed.

Steering Trim

- Neutral position trim

By turning the Steering Trim knob clockwise or counter-clockwise, the steering neutral can be adjusted as needed.

NOTE

Be sure the steering trim on the transmitter is at the neutral position before you are trying to make an adjustment.

HELPFUL HINT

When you install a servo, always check to be sure the servo is at its neutral position.

- Servo travel

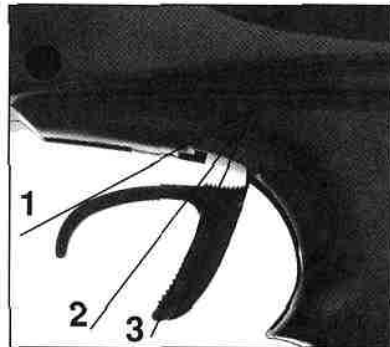
Changing the trim can affect the overall settings. When adjustments are made with this trim, it is recommended to re-check your installation for maximum servo travel.

HELPFUL HINT

If it takes most of your trim movement to get a servo to the neutral position, re-position the servo horn or servo saver on the servo and inspect your linkage installation.

Adjustable Throttle Trigger

By flipping the Trigger Neutral Position Lever, 3 positions as shown can be choice to achieve a best operation for your particular model. This function is used to change the both forward and brake-side travel of throttle servo to get a proper sensitivity



Throttle Trim

- Neutral position trim

Once the neutral position of the throttle trigger is set, by turning the Throttle Trim knob clockwise or counter-clockwise, the throttle neutral can be adjusted as needed.

HELPFUL HINT

When using an ESC, set the throttle trim to neutral and make adjustments to the speed control.

On a gas powered model, set the trim to neutral and adjust the throttle linkage to the point where the carburetor is fully closed in accordance with your engine instruction manual.

- Servo travel

Trim adjustments will affect the overall servo travel; check the brake side (backward) movement when changes are made.

HELPFUL HINT

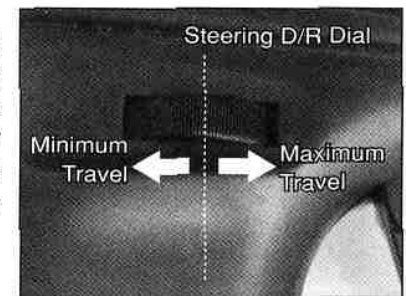
If you have used most of the trim movement to get the servo to the neutral position, re-center the servo horn closer to the neutral position and inspect your throttle linkage.

Throttle ATV

Throttle Adjustable Travel Volume/ATV provides the function to preset independently throttle travel of the servo either side of neutral. It lets the adjustment more easily to set the throttle operation at idle and maximum power.

Steering D/R

Steering D/R allows you change the steering travel while running by turning the dual rate dial as shown to correct over-steering and under-steering problems by increasing or decreasing steering sensitivity. You are able to tailor the sensitivity of your model to your own preferences with this function.





Final Checks

Once you have completed the radio installation to your satisfaction, then test the operation of the system before hooking up any push rods or control cables.

Connecting

Check the receiver, servos, and battery connectors; to be sure they are firmly connected.

CAUTION

If a connector is not fully inserted, vibration may cause the connector to work loose while the model is operating. This will result in loss of control.

Battery power

Turn the power switch on to check. As the red LED (the left one) begins to flash, it is time to change the cells.

HELPFUL HINT

Your new Jaguar 2AP/3AP radio system is controlled by a microprocessor. Once the throttle trigger might be not at the neutral position while you are turning on the power switch, an alarm would warn you to turn the power off.

Linkages

Once satisfied with the pushrods, attach them to the servo arm/horn per your models instructions. Then operate each servo horn over its full stroke and check to see that the linkage does not bind or is not too loose.

CAUTION

Before connecting the pushrods or control cables, make certain that there is no binding or unnecessary drag on the controls. Excessive force applied to the servo horn by binding or poor installation may lead to excessive power consumption by the servos and will quickly drain the receiver pack as well as make your model perform poorly.

Inspect all linkage installations and any point where metal could come in contact with other metal parts. Make sure these parts do not touch other metal parts under vibration.

NOTE

The high frequency noise generated by this contact will cause interference and possible loss of control.

Adjustments

With all transmitter trim levers set in their neutral position, turn on the radio system and reconfirm proper control directions. Adjust the pushrods mechanically to achieve neutral centered control with neutral transmitter trim.

The design, engineering, and production staffs at Ace R/C wish you might happy running with your new Jaguar 2AP/3AP radio system.

Frequency List (U.S.A.)

The following frequencies are available. They may be used for any R/C model.

27MHz

- 26.995 MHz Brown Flag
- 27.045 MHz Red Flag
- 27.095 MHz Orange Flag
- 27.145 MHz Yellow Flag
- 27.195 MHz Green Flag
- 27.255 MHz Blue Flag

26MHz

40MHz

Each frequency is assigned a colored flag. Attach this flag to the end of your transmitter antenna so that other modelers can determine your frequency from a distance. This is very important since it is not possible for more than one model to operate on the same frequency at the same time.

FCC RULES AND REGULATIONS

You are responsible for the proper operation of your station (transmitter) at all times and are responsible for observations, servicing, and maintenance as often as may be necessary to ensure proper operation. Each internal repair and each internal adjustment to an FCC type accepted R/C transmitter must be made in accordance with the technical regulations specified by the FCC. The internal adjustments should be performed by, or under the immediate supervision and responsibility of, a person certified as technically qualified to perform transmitter maintenance and repair duties in the private land mobile services and fixed services by an organization or committee representative of users in those services.

The FCC at this time does not require the modeler to obtain a special license for the operation of this unit. However, it is still the owner's responsibility to observe all FCC rules & regulations governing its use. For a copy of these rules write to:

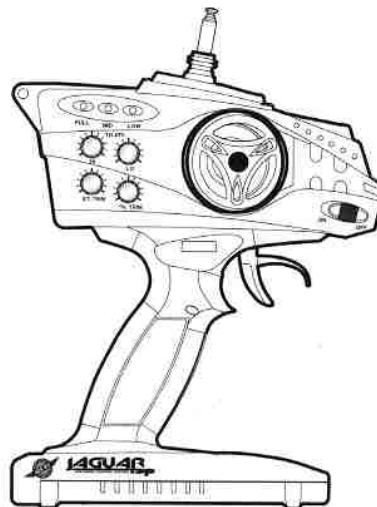
Federal Communications Commission
Washington, DC 20554

Using Caution at the Racing Track

Always check if there is anyone operating on the same frequency. If so, make sure that you don't turn on at the same time.

- Do not operate the model or use the radio in rain, lightning, or at night.
- Do not operate the model or use the radio if you have been drinking alcohol or under the influence of any other substance that will affect your skills.
- Always check battery power before you operate.
- Always keep your transmitter clean: wipe it with a mild detergent or window cleaner if there is any fuel, oil, dirt, or dust on the transmitter.
- Keep out of reach of children.
- Do not store the radio in temperatures below -10 °C(14°F) or above 40°C (104°F) or in a humid, dusty, or high vibration environment. Keep the radio away from direct sunlight.
- To prevent corrosion, take out the batteries if you are going to store the radio for a long period.
- The servos will glitch at $\pm 25^\circ$ if there is any frequency at about 200~250 MHz nearby when using this radio.

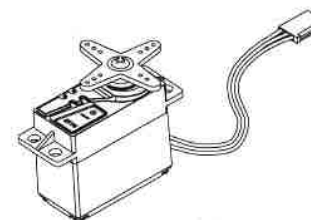
Jaguar accessories



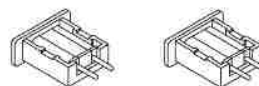
AQ0439 T2D Transmitter
AQ0438 T3D Transmitter



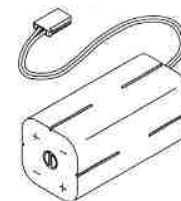
AQ0418 TR202A 2CH AM Receiver
AQ0415 TR402A 3CH AM Receiver



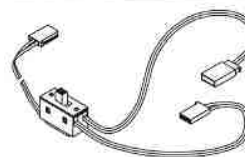
8114 ACE R/C SERVO S1903



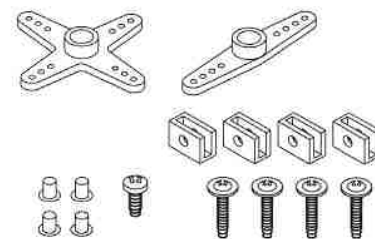
AQ0311 AM26.995 MHz Crystal set CH1
AQ0312 AM27.045 MHz Crystal set CH2
AQ0313 AM27.095 MHz Crystal set CH3
AQ0314 AM27.145 MHz Crystal set CH4
AQ0315 AM27.195 MHz Crystal set CH5
AQ0316 AM27.225 MHz Crystal set CH6



AG2059 4 Cell Battery Holder for TR202A
AQ0086 4 Cell Battery Holder for TR402A



AG2060 BEC Switch Harness for TR-202A
AG2051 Switch Harness for TR-402A



AQ1499 Servo Accessory Package



Service

All ACE R/C products have been carefully inspected prior to shipment. However, if you should discover any defect in materials and workmanship it will be repaired free of charge if returned directly to ACE Hobby Distributors Systems. DO NOT return the equipment to the place you purchased, as they are not authorized to do warranty. To validate the warranty, a copy of your sales receipt is required.

RADIO EQUIPMENT SERVICING

Keep a copy of this information with Your Original Sales Receipt

DO NOT return the equipment to the place of purchase, as they are not authorized to do warranty. Remove the radio equipment in question from the model. Do not send the entire model.

INCLUDE WITH YOUR RETURN:

- 1) **Your Name, Address and Daytime Telephone Number.**
- 2) **A note exactly describing the problems you are having** or the service you are requesting **IN THE PACKAGE.**
Do not send this letter separately. Packages received without an enclosed letter will be returned to the sender as-is.
- 3) **A copy of your original sales receipt showing the purchase date.**
- 4) **Method of Payment for service charges.**

Check one: MasterCard VisaCard # _____ Exp. Date _____
 Money Order Enclosed .

If not specified, the unit will be returned C.O.D.

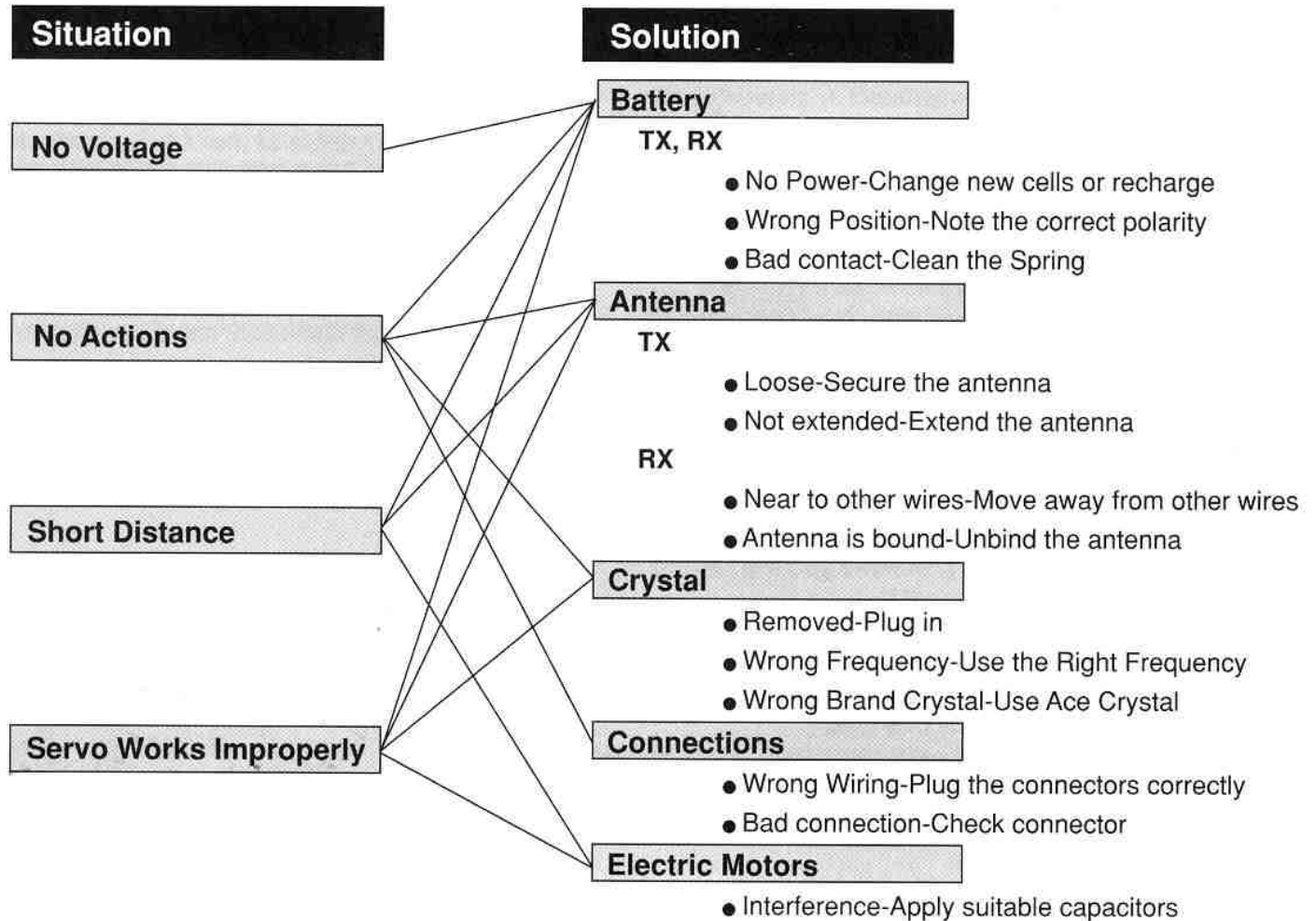
If the product has been modified or serviced by anyone other than an authorized service center, you will be charged for the repair of your equipment. Modifications which impede normal servicing will be removed at your expense. You may request a free estimate before we proceed with repairs. An omission of this request implies permission for service at discretion. When sending the unit by US Mail or United Parcel, package it in a strong cardboard box. Do not include any accessories which you added that are not an original part of the product. You are responsible for all postage and handling charges.

- 5) **Send the unit by United Parcel Service or by insured U.S. Mail to:**
Ace R/C Service Dept.
2055 Main Street, Irvine, CA 92614
Phone 1-949-833-7498
- 6) **Outside of the U.S.A., contact the local Ace R/C agent.**

Your new ACE Jaguar 2AP / 3AP radio System is warranted to the original purchaser for one full year from the date of purchase against defects in materials and workmanship. During this period, ACE R/C will repair or replace at our discretion, any defective components. This warranty is for the original product only and does not extent to any model car/boat, engine, property, or persons. Under no circumstances will the buyer be entitled to consequential or incidental damages. This limited warranty gives you specific legal rights. You may also have other rights, which vary from State to State.

Trouble Shooting

Do not try to operate your model if you find your radio is not working properly. Check out the radio as following steps. If you can not solve the problems then contact authorized tech support for help. For customer in North America, please contact Ace R/C Tech Support for service.



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