

After years of experience, improvements and evolution of technology we are pleased to present our new version of this classic and beloved model airplane so popular for its sport/scale aerobatic flight with docile and predictable aerodynamic behavior. A model that surprises by the scale visual, details such as antennas, rivets, panel lines, exhaust replicas, main and front landing gear doors (not installed), handmade painting with top quality finish, scale adhesives according to the painting scheme applied and varnished in the model, and also for the pleasure of flying, since it remains stable in high and low speeds, scale flaps give much realism and stability for landings and slow flight. Prepared for installation of retracts (not supplied) pneumatic, mechanical or electrical, a wide variety of equipment can be used without problems or adaptations. Prepared for installation of scale navigation lights (not supplied), wing tips and wing landing lights with clear lenses. This is the T-27 Tucano 20cc ARF Juniaer. High-quality epoxy resin model with structural reinforcements, low weight and high strength due to high technology FULL COMPOSITE vacuum lamination technique.

2 piece wing (1 aluminum tube) laminated in fiberglass and epoxy resin with carbon fiber reinforcements and plywood and balsa laser cut structural parts. Ailerons, flaps, and elevators are factory hinged in perfect alignment. Wing and stabilizer servos are internal for improved scale appearance and fixed in structural plywood laser cut ribs for easy and quick installation and precise flight controls command.

Fuselage made of epoxy resin laminated with fiberglass fabrics and carbon fiber structural reinforcements, providing high structural strength and low weight with extensive durability. Rudder to be installed with hinge points provided with the kit. Servo tray and tank tray in laser cut plywood. Great finishing with automotive paint, adhesives according to painting scheme and varnished for optimal durability. Transparent canopy and resin canopy frame can be installed fixed or with opening and closing mechanism, resin cockpit with replicas of seats and control panels, scale pilot available separately. Firewall installed with correct and definite angles, with center marking and drilling points. 2 part engine cowl provided without cutouts making it easy to access the engine for adjustments or checkups. It must be cut into the final assembly according to the position of engine, exhaust and installed accessories. Side door with opening and closing mechanism installed and ready to accommodate on/off switches, fuelers, voltage monitors and other equipment to be installed on the model aircraft.



The T-27 Tucano 20cc is indicated as: Advanced Low Wing Trainer, for acrobatic initiation, the model airplane becomes very stable and docile at low commands rate and the flaps ensure support for a good landing. Stall speed reduced and enlived by Juniaer aerodynamics resources; Scale Model Airplane, for realistic flight reprodutions and acrobatics as cuban eights, slow rolls, 4 point rolls, stall turns, loopings, inverted flight, etc...; Sport/Scale Model Airplane, for high adrenaline acrobatics as snap rolls, knife edge, high speed dives, lancevack, etc...

DOES NOT INCLUDE ASSEMBLY ACCESSORIES such as linkages, fuel tank, retracts, wheels, engine, spinner, propeller, radio and electronic equipments, etc...













Specifications:

Wingspan: 70 ½" (1790mm) Lenght: 55 1/8" (1400mm)

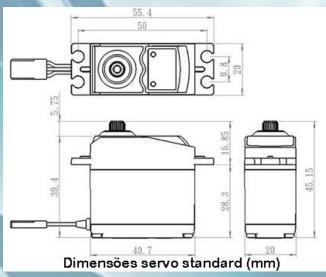
Weight: aprox.. 6.17 lb (2,8 Kg) (without acessories) 8.8-9.9 lb (4-4,5 Kg) (Flying weight)

Radio: 6 channel with limited features –7 or more channels for complete installation (not included)

Servos: With glow or electric engine all servos can be nylon gear with 4,5Kg/cm (63oz-in.) torque. With gasoline engine all servos must be metal gears, 70oz-in (5Kg/cm) torque (except for the elevator mini servos).

6 standard size , **70oz-in or more torque** (2 ailerons , 2 flaps , 1 rudder/front wheel steering (can be assembled with 1 more servo if it's desired) and 1 throtlle (except for electrics).

Suggestions: SAVOX: SAVSC0252MG SAVSC0254MG SPEKTRUM: SPMSA6180



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2 mini servos 55.5oz-in. (4Kg/cm) or more torque for elevators



If pneumatic retracts are installed it's necessary 1 more servo or micro servo for the air valve.

Engine: Gas burning engine 20cc to 23cc (we recommend DLE-20RA)

Glow engine 90 to 110 2 cycle or 100 to 125 4 cycle or electric motor with similar power to 20cc

Suggestions: DLE-20RA DLE 20RA - perfect fit with supplied mounts and muffler

GPMG 4770 RIMFIRE 1.20 Great Planes MAX1.20 ROTOMAX 1.20 Turnigy

OSMG0935 FS-120 SIII pump OS Engines SAIE125A FA-125 A Saito Engines





Distance between firewall to prop drive washer: 6 3/4" (171mm) (lenght)

Distance between engine center to the end of cylinder head: (3 5/8") 93mm (height)

Alumminum wing tube: (19,05mm x 15,87mm x 553mm)

Fuel tank: 16oz to 20oz (not included)

Spinner: 2 ½" alluminum (not included)

Propeller: 15x8 two blade or 14x9 to 15x7 three blade (according to engine's operation manual)

C.G. (Center of gravity: C.G. point is at 3 15/16" (100mm) from wing leading edge, at wing root. Wing chord lenghts 13 3/8" (340mm). To check the balance hold the model airplane inverted by the C.G. points in both sides of the wing, at the wing roots, without fuel. Retracts must be retracted. The model airplane must presente nose weight tendency. Never hold the model airplane by the wing tips, Always hold it by the wing roots (closer to the fuselage). Never take off your model airplane without checking the C.G. balance as described above. Tail weight tendency will result in inapropriate flight characteristics and may cause accidents and/or damages.





Linkage, Horns and Fixing Points:

The model aircraft has high rigidity structural reinforcements for the installation of the control horns of the ailerons, flaps, elevator and rudder controls. These points measure 30mmx25mm, are positioned in strategic locations and should be followed per the instructions below. If you wish to modify or adapt equipment that requires modifications of the original design, do not do this on your own, please contact channels check possibility Juniaer through our service to the installation. Ailerons: Required 2 simple horns with height between 15mm to 20mm. Servo arms (length 20mm to 25mm from center to end) should be positioned to the side of the root of the wing. Note that both sides of the wing have the same positioning. The horn reinforcement is centered with the straight line formed by the servo arm slot. Distance between center of control arm and horn hole (in neutral position): 84mm. Servos are internal for improved scale appearance and fixed in structural plywood rib with servo box cover. Flaps: Required 2 simple horns with height between 15mm to 20mm. Servo arms (length 20mm to 25mm from center to end) should be positioned to the side of the wing root on one side and to the wing tip on the other side, as shipped from the factory. The horn reinforcement is centered with the straight line formed by the servo arm slot. Distance between center of control arm and horn hole (in neutral position): 79mm. Servos are internal for improved scale appearance and fixed in structural plywood rib with servo box cover.

Elevators: Required 2 simple horns with height between 15mm to 20mm. The servo arm (length 20mm to 25mm from center to end). The mini-servos should be positioned with the centralized control arm at stabilizer bottom on the rear of the plywood servo tray supplied with the model airplane. The horn reinforcements are centered with the straight line formed by by Rudder: Requires 1 double horn (with control for both sides) with total length between 60mm to 70mm. The servo arm must be double (with control for both sides) with total length between 30mm to 36mm. The horn reinforcements are centralized with the fuselage pushrods exits, whereby the steel cables pass to drive the rudder to both sides. Servo installed inside the fuselage on the plywood servo tray supplied with model pull-pull airplane, working with steel cables. * The wires must be steel, with thread and diameter 4-40 at the elevators and 2-56 in the other commands.

* All servo links and connectors must be metalic and suitable for 120 or 20cc aircraft models or larger.







Recommended control Surfaces deflection:

Ailerons: Between 3/8" (10mm) (low rate) and 5/8" (high rate) – up and down

Elevators: Between 5/8" (15mm) (low rate) and 3/4" (20mm) (high rate) – up and down

Rudder: Between 1 3/16" (30mm) (low rate) and 1 13/16" (46mm) (high rate) – left and right

Flaps: Between 0° and 10° for take off and between 25° and 30° for landing







Engine installation

Engine Class	<u>Recommendation</u>	Engine mont	<u>Screws</u>	Blind Nuts	<u>Propellers</u>
Glow 2 cycle 90/110	OS 91FX , OS 95AX	GPMG 1091 Great Planes	10-32x1 ¼" (4x34mm)	10-32 (4mm)	14x8 2 blade
Glow 4 cycle 90/125	OS FS-95V, OS FS-120 SIII Saito 125	GPMG 1091 Great Planes	10-32 x1 ¼" (4x34mm)	10-32 (4mm)	15x8 2 blade 14x9 3 blade
Gas burner 2 cycle 20/23cc	DLE-20RA , OS GT-22	GPMG 1091 Great Planes	10-32x1 ½" (4x40mm)	10-32 (4mm)	15x8 2 blade 14x9 3 blade
Electric	RIMFIRE .80 / speed control 80A/ LiPo 6S	GPMG 1260 Great Planes	10-34x1 ¼" (4x32mm)	10-32 (4mm)	15x8e 2 blade

Parts: Fuselage, superior engine cowl FOR DLE-20RA: 10mm benchwood firewall extension

<u>Hardware:</u> Engine mount, 4 allen screws/washers/blind nuts (as above) to fix engine mount to firewall, 4 8-32x1" (3x34mm) allen screws/washers/drive washers/parlock nuts to fix engine to engine mount, adhesive tape, medium grade thread lock, 5 minutes epoxy glue, 30 minutes epoxy glue, allen 8-32 and 10-32 wrenches (or according to the chosen screws), driller with 5mm drill bit **FOR DLE-20RA**: Flat drill bit 20mm

Instructions:

- 1-FOR DLE-20RA glue with 30 minutes epoxy glue the 10mm plywood firewall extension aligned with the central firewall hole. Glow engines and electric motors do not use this part.
- 2-Position the engine mount's template with the center of the hole in the fire wall and mark the 4 fixing holes. Drill at locations marked with drill and drill bit of same diameter as the screws, taking care to maintain 90 degree alignment with the fire wall, straight and aligned holes. Clean up.
- 3-Apply a small amount of 30 minutes epoxy glue on the outside of the blind nuts that will be in contact the firewall inside the fuselage and insert them into the holes. Fully insert the screws at engine mount with washers. Apply thread lock to the screw tips. Position the engine mount and tighten the screws until firmly secured. Observe the blind nuts inside and tighten until they are inserted into the firewall at the same level.
- 4-Before fixing the engine in the engine mount check where to drill the firewall to throttle linkage. FOR DLE-20RA ENGINE also drill for choke linkage and for the engine's spark plug (use 20mm flat drill). Use the photos for reference. Apply 5 minute epoxy glue to all exposed holes or parts of the firewall to seal the wood from any oil or fuel residue.
- 5-Position the engine on engine mount so that the top of engine's drive washer is 168mm from the original firewall. Position the top of the cowl in place by taping the fuselage and insert the spinner plate into the engine's drive washer for alignment and correct distance. When satisfied, mark the 4 engine mounting holes, taking care to keep the markings centered with the holes.
- 6-Remove engine upper cowl and drill at locations marked with drill and drill bit of same screws diameter, taking care to maintain 90 degree alignment with engine mount, straight, centered and aligned holes. Clean up.
- 7-Assemble the engine components following the manufacturer's manual recommendations. TIP: For gasoline engines apply medium torque thread lock on the exhaust bolts and throttle arm. Install the throttle and choke linkage using links or ball links.
- 8-Insert the 4 engine mounting bolts with washers and lockwashers into the engine and tighten them securely through the engine mount, locking with 4 lock nuts on the other side of the engine mount.
- 9-Check the fastness, alignment and distances of the engine / engine mount assembly with the cowl and spinner backplate.

10-IF YOU ARE NOT SATISFIED OR DETECTING ANY PROBLEM IN THE PROCEDURES ABOVE REMAKE THE PROCESS CORRECTING ANY ERRORS OR PROBLEMS. DO NOT CONTINUE ASSEMBLY BEFORE CORRECTING. IF YOU HAVE DOUBTS PLEASE CONTACT US. THESE KIND OF ENGINES AND MOTORS MAY CAUSE SERIOUS DAMAGE AND INJURY, SO THIS INSTALLATION MUST BE MADE VERY SAFE AND IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.







Canopy gluying

Parts: Fuselage, canopy and canopy frame

<u>Material</u>: White canopy glue (Pacer Formula 560 - PT-56, 1 small piece of sandpaper (between 1000 and 2000) and good quality adhesive tape (3M).

Instructions:

1-Position the canopy frame at fuselage and fix it firmly with adhesive tape through all its outline.





2-Sand the contact area at the canopy frame to improve glue adhesion. Clean up with a cloth.





3-Apply the white glue in all the contact area. Clean up excessive glue with a cloth.

4-Position the canopy at canopy frame and fix it firmly on place with adhesive tapethrough all the outline, also vertically, to get the right position between the 3 parts. Wait untill final glue cure without moving the parts. Drying is around 3 hours and total cure around 24 hours. We recommend to remove the adhesive tapes after 24 hours. After removing check out de results and remove eventual glue excess.



If there is an area without satisfactory adhesion apply more glue and repeat steps 3 and 4.

Scale Pilot Busts T-27 Tucano 20cc ARF



Width at Base: 2.68" Lenght at base: 1.3" Height: 2.76" Wheight: 0.64oz







Made of fiberglass and epoxy resin , low weight , painted and varnished according to the paint scheme for greater realism , custom-made for your T-27 Tucano 20cc Juniaer !





Scale lighting system T-27 Tucano 20cc

Specifications:

Tension: 12v Recomendations: : Li-Po 3S 11,1V 850 mAh to 1300mAh. Exclusive battery to power the system, independent of the receiver.

Consuption corrent: 400ma - peaks of 730ma Minimal recomendation: li-po 3S 650ma 5c

On/Off: PWM-Pulse Width Modulation, switched to a receiver channel. All radio manufacturers

compatible. Anti-interference filter.

Strobo Leds: SMD-Surface Mount Device. White light: 11.000K light transmission power: 3w 120° lenses.

Wing landing lights: SMD White light: 11.000K light transmission power: 2w Four leds on each side.

Left navigation lights: SMD Red light:11.000K light transmission power: 2w Four leds on wing tip.

Right navigation lights: SMD Green light:11.000K light transmission power: 2w Four leds on wing tip.

Right and left sides printed on wing tips boards.

Front landing light: Top Led 5mm: White light: 11.000K light transmission power: 0.5w

Rudder navigation lights: 2 Hat type leds 5mm 1 white and 1 red: 11.000K light transmission power: 0.5w

Up arrow printed on board for correct installation (white above and red down).

Dimensions: Main board: 50x32mm (2" x 1 1/4") Wing Tip Assembly: 35x20mm (3/8" x 1/4")

Installation:

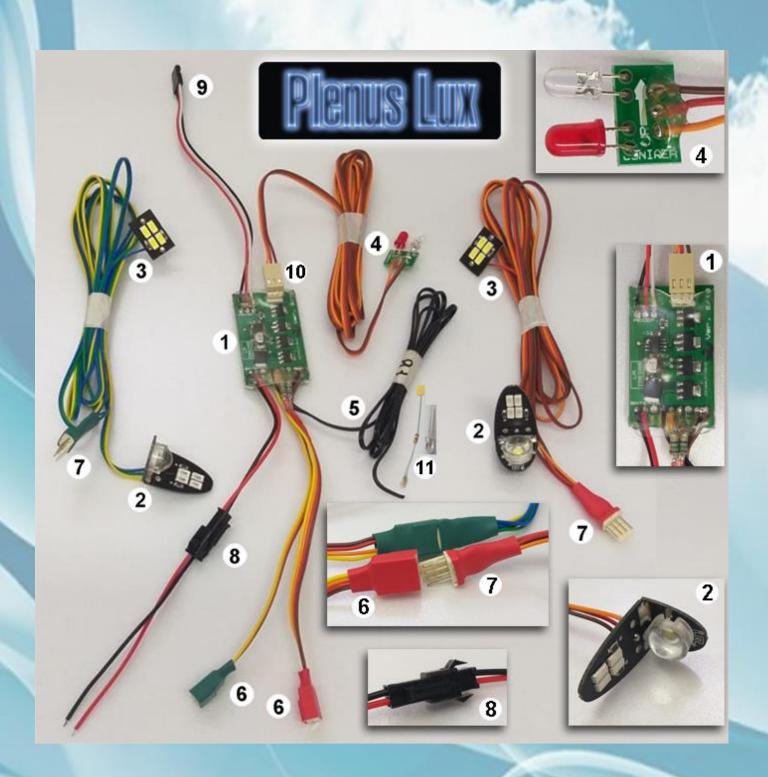
To attach the main board, wingtips boards, landing lights and rudder boards to the model airplane, use 3M high-adherence double-sided tape (red). Before gluing the tapes apply 3M 8250 adhesion promoter primer to the contact surfaces for a good result. The front landing led and resistor are sent without soldering as an optional (see details in attacked flyer). When using Johnny Simões retracts the led is included and installed, being necessary only to solder the wires.

Operation:

The circuit requires to be connect to a receiver channel to a 3-position switch on the radio.

When the system is connected to the battery, the circuit performs a self test by turning on all lights for 1 second, indicating its perfect operation. The radio switch in the full position turns the circuit on, turning all lights on; in the middle position turns off only the landing lights keeping the navigation lights on, and in the minimum position turns off the circuit, turning off all lights.

It is recommended to disconnect the battery from the circuit when not using the model airplane for more than 5 days.



Main board (1) 50x36mm lighting system. 150mm wires and universal plugs for battery (8) and receiver (9), 1000mm led wire to front landing light (5) (led and resistor sent without soldering) (11) and rudder extension plug (10).

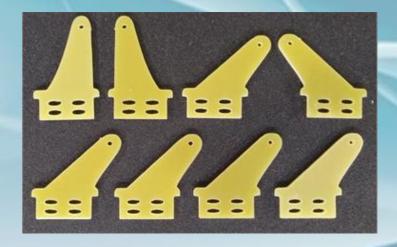
Left side extension (wing tip 1250mm and landing lights 550mm). 3-pin plug to main board (7). Right side extension (wing tip 1250mm and landing lights 550mm). 3-pin plug to main board (7). Wing Tip Boards (2): 35x22x20mm-correct format for installation. Landing lights boards (3): 18x11mm Rudder extension 1700mm. 3-pin plug to main board (10). Rudder main board (4): 18x19mm.



Johnny Simões engineering



Electric retracts (servoless) custom made set, JP V2 controller with optional gear doors sequencer. Ready to install. Direct drive steering for one side linkage. Includes rubber wheels, functional damping and front land gear light.



Fiberglass horn set

Includes: 6 standard horns (2 ailerons, 2 elevators and 2 rudder) and 2 flap horns for external installation.





Custom made cockpit for T-27 Tucano 20cc, extremely detailed and realistic, ready to install in place of factory stock cockpit. Allows the installation of pilot busts (not full body).









Three Blade 14x9 wood propeller, electric motors



Three Blade 14x9 wood propeller, combustion engines

* Sold separately.







Custom made conectors for T-27 Tucano 20cc in 2 options:

1-Ailerons, flaps and retracts

2-Ailerons, flaps, retracts and lights



* Sold separately.

Protection and transport covers T-27 Tucano 20cc



- ✓ Protection and transport covers for T-27 Tucano 20cc.
- ✓ Made of durable padded material for protection.
- ✓ Wing covers with zipers and carrying handle, with wing tube housing.
- ✓ Fuselage and stabilizer covers with velcro.
- ✓ Custom made by Juniaer.