

# FOXCON

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## Maintenance Manual

### Terrier T200 LSA

Aircraft Registration Number:	21-5161	
Aircraft Serial Number:	#040701	
Power plant:	Subaru EA-81	
Power plant Serial No:	544848	
Propeller:	Bolly BOS3	
Date of First Flight:	05.03.08	
Current Owner:		
Address:		
<b>Empty Weight</b>	<b>Moment</b>	<b>Date Weighed</b>
323kg	698.26	25.02.08

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## 1.1 General

The purpose of this manual is to provide guidance to owners and mechanics who wish to undertake maintenance, repairs, and alterations on the Terrier 200 light sport aircraft. **If in any doubt, please contact the manufacturer.**

### 1.1.1 Equipment list

- Metric socket & spanner set
- UNF socket & spanner set
- Spark plug spanner
- # 1 & #2 Philips head screwdriver

### 1.1.2 Sources to purchase parts

- Foxcon Aviation & Research Pty Ltd
- Automotive supply store

### 1.1.3 List of disposable replacement parts

- Reduction drive belt

### 1.1.4 Engine Specifications

- Subaru E81 – 100hp
- Type - Liquid cooled horizontally opposed 4 cyl OHC
- Firing Order – 1-3-2-4
- Capacity – 1781cc

### 1.1.5 Weight and balance information

- Empty Weight - \_\_\_\_\_

### 1.1.6 Tire inflation pressures

- Nose wheel tyre - 103kPa / 15psi
- Main tyres - 103kPa / 15psi

### 1.1.7 Approved oils and capacities

- Refer to engine manual

### 1.1.8 Recommended fastener torque values

- Refer to engine manual

### 1.1.9 General safety information

- Always handle the aircraft with care. Do not allow anyone to help move the aircraft by pushing on any control surface (flaps, ailerons, tail -elevators) the hinges are NOT designed to take these stresses.
- To push the tail down, lift the prop hub or push down on the rear fuselage near the horizontal stabilizer.
- Remember to follow all safety precautions pertaining to aircraft, especially around the propeller area.
- The following maintenance program outlines the minimum maintenance that must be followed to keep the aircraft in good flying condition. The suggested time interval of 50 hours does not in any way eliminate the need for routine maintenance before and after each flight. Maintenance is part of the pilot's responsibilities: the pilot should be certain that the aircraft is airworthy at all times, especially when flying.
- The recommended 50 and 100-hour maintenance checks are designed to cover areas that are not normally checked in the quicker pre-flight inspection, and this guide is offered only as an indication of the required maintenance. It is the owner's responsibility to determine what should be performed, and ensure that it is done.
- A qualified individual should perform aircraft servicing and maintenance

**NOTE:** If anything unusual is discovered at any time, during pre-flight or at a scheduled inspection, contact your normal maintainer for the proper maintenance procedure. Do not attempt to maintain or repair the aircraft without proper qualifications.

**Do NOT fly an un-airworthy aircraft.**

### 1.1.10 Instructions for reporting possible safety of flight concerns found during inspection/maintenance

- Please complete the Feedback Form (LSA05) and send to Foxcon Aviation & Research Pty Ltd.

## 1.2. Inspections

### 1.2.1 Inspection– 6 month/50-h (whichever comes first)

Check the general condition of the TERRIER and in particular the following:

**GENERAL:** Verify that no cables are chafed, check for proper anchorage and connection of all items (fuel and coolant hoses, oil lines and electrical wiring, etc), check tension of alternator belt. Verify that all fasteners and pins have the required "safety" wire or split pins.

**CONTROLS:** Check for rust on steel parts (clean and repaint as required). Lubricate all moving parts (hinges, control attachments, bearings, etc.). Verify that all controls operate smoothly and that they are firmly attached.

**LANDING GEAR & WHEELS:** Inspect nose steering stops and steering tension (use a cheap set of fish scales hooked to the wheel - 7 Kg pull to move), and inspect the main wheel braking system and lines. Check for correct (15 lbs) tyre pressure, then look for tyre wear or flat spots (wheel it along while watching the bit of tyre you can see).

**BATTERY:** (IGNORE IF A SEALED UNIT) Check fluid level, especially in hot weather. Maintain the level at the top mark by adding distilled water as required (read instructions located on battery). DO NOT OVERFILL as spillage may corrode the airframe.

**BATTERY:** (All types) Clean around terminals, looking for corrosion and grease lightly with Vaseline.

**WOOD PROPELLER:** Wood propellers are inexpensive and dampen vibrations efficiently, but maintenance is required to keep the propeller in proper condition. The prop may need periodic re-varnishing.

**ALL PROPELLERS:** Check the tips and leading edges for damage. Look for nicks and cracks. Inspect spinner, bolts (tight and secured). Wiping the propeller with an oily cloth will result in cleaning off grass and bug stains. DO NOT OPERATE AIRPLANE IN RAIN since the propeller will get damaged.

**ENGINE COMPARTMENT:** Thoroughly check and inspect the engine compartment, including the reduction drive belt tension, exhaust system, fuel system, oil system, and coolant system. Is the radiator clogged with insects? Hosing from the rear can help here. Clean (replace if required) the carburettor air filter. The engine and compartment should be kept free of any accumulation of oil, grease, and dirt to prevent a fire hazard. See the Engine Manual for more information on routine maintenance and inspections.

**ENGINE:** Refer to Engine Manual. Check for plastic lines or rubber hoses in direct contact with a rough or sharp surface or with wear due to the constant vibration emitted by the engine. It is important that all electrical wires and hoses (fuel, water, oil) be in a secured position clear of contact with the engine casting, cowl, exhaust, or any "sharp" edge. Go over each item separately, replacing what is damaged or worn, and securing each item using adequate insulation to prevent premature wear.

**EXHAUST:** Check for cracks, cowl clearance, missing springs. Where flexible pipe is used, replace pipe at the first sign of a crack.

**ENGINE COWLING:** Check for looseness, rear pins, are the throwover latches still well attached to cowl, look for any damage or cracks. Make sure everything is properly secured.

**FUEL:** Remove, clean and re-install gascolator. Inspect for any leaks and loose fittings in the lines and tanks, and check the smooth operation of shut-off valves. Clean (or replace) any installed filters.

**Use checklist LSA04 & record all maintenance performed in log book.**

## 1.2.2 Inspection 100 HOURS, OR 12 MONTHS (whichever comes first)

### QUICK OVERVIEW

FOXCON recommend that you always replace:

- Alternator Belt
- Coolant
- Oil
- Oil Filter
- Distributor Points
- Spark plugs

**Then:**

**Once again you need to do a 50 hour maintenance PLUS the following:**

Clean the aircraft: exterior and interior. Place a support under the rear of aircraft, then remove manhole cover plate in rear bulkhead and make a thorough inspection of the whole aircraft, inspecting for any damage, wear, or cracks.

**FRONT OF AIRCRAFT:** Check and inspect the following: Engine (see Engine Manual), controls and hoses, engine mount, propeller, battery, exhaust (look closely for cracks), radiator, fire-wall. Check that all bolts and nuts are tight and safetied.

**FUEL SYSTEM:** Check for leaks, check condition and safety/ security of lines and taps for smooth operation. Clean, re-install (or replace) and secure all installed fuel filters.

**FUSELAGE:** Check skins and internal structure for loose bolts, cracks, and buckling due to mishandling or over-stressing. Check that the drain holes in the bottom of the fuselage are not plugged up.

**CONTROLS:** Inspect for looseness, wear, chafing fairleads, and cable terminals.

**INSTRUMENTS:** Check screws, fuses, markings, switches, pitot lines. Ensure that all the instruments are functioning correctly.

**WINGS:** Check skins, look for buckles or cracks (from mishandling), inspect leading edges and trailing edges. Check all bolts and safety wires/split pins. Check control surface stops and aileron connection. Check all control hinges and moving parts for wear. Replace when clearance exceeds maximum wear of .025" (.6 mm).

**TAIL:** Inspect skin, and look for cracks, etc. Check attachment of rudder and elevator, cable ends, trim tab, etc. Check control surface stops.

**LANDING GEAR:** Refer to the 50 hour check list.

**REDUCTION DRIVE:** Check belt for wear. Replace belt and bearings at 500 hours. *Recommended to be done at Foxcon factory.*

**OIL OR GREASE** all moving parts: See following table.

**Oil the following (each with 1 drop of standard "motor" oil):**

- ALL Bearings
- ALL Aileron Controls (bell-crank, rod ends) – inside fuselage as well
- Elevator hinge points
- ALL Rudder hinge points
- ALL Control Stick Bearings – in cabin
- Pedals (bearings, cable ends, brake pedals)
- ALL Cable ends – include inside fuselage
- ALL Throttle bearings/linkages
- Choke control (if applicable)
- ALL canopy latches and bearings

After this thorough inspection of the aircraft, and after having done the required maintenance and/or repairs, re-install any removable items, and after a final check that oil was refilled, run the engine checking for smooth operation. Oil pressure should register within 10 seconds of start, if not shut down and check.

Move aircraft to a clear area, and check full power static RPM to see that engine is delivering full power.

After running engine, do another final check for oil leaks at the drain plug or the new oil filter, and coolant leaks.

**Use checklist LSA03 & record all maintenance performed in log book.**

### 1.3 Structures

Contact Foxcon Aviation & Research Pty Ltd for instructions for the maintenance, repair and alteration of the primary aircraft structures such as:

- 1.3.1 Wing
- 1.3.2 Empennage
- 1.3.3 Landing Gear
- 1.3.4 Control surfaces

### 1.4 Engine

Refer to Gregory's Service and Repair Manual for Subaru 1979-1994 No 501. for general servicing.

The camshaft is especially ground to accommodate the larger pistons.

Major repair and overhaul is to be done under instructions from Foxcon Aviation & Research Pty Ltd.

### 1.5 Fuel System

Contact Foxcon Aviation & Research Pty Ltd. for instructions for the maintenance and repair of the fuel system.

### 1.6 Propeller

Contact Foxcon Aviation & Research Pty Ltd. for instructions for the maintenance and repair of the propeller.

Tuning

### 1.7 Utility Systems

Contact Foxcon Aviation & Research Pty Ltd. for instructions for the maintenance and repair of utility systems such as heating and vents.

### 1.8 Instruments and Avionics

Contact Foxcon Aviation & Research Pty Ltd. for instructions for the maintenance, repair and replacement and installation of existing and additional instruments and avionics.

### 1.9 Electrical System

Contact Foxcon Aviation & Research Pty Ltd. for instructions for the maintenance, repair and alteration.

- An electrical schematic drawing is attached in the appendix.

### 1.10 Structural Repair

The following structural repairs are authorised without further consultation with the manufacturer. Though consultation is encouraged before commencing.

- Windscreen and side window replacement. A separate instruction sheet is available from Foxcon Aviation & Research Pty Ltd.

### 1.11 Painting and Coatings

Two pack polyurethane is used on all external surfaces.

### 1.12 Forms and Checklists

#### 1.12.1 Feedback Form

A form for the aircraft owner or maintainer to provide notification to the manufacturer about issues and anomalies identified during the operation or maintenance of the aircraft or in the content of the manual.

Refer to LSA05 – Feedback Form

#### 1.12.2 Inspection Procedure Checklist – 6 month/50-h

Refer to LSA04 - Inspection Procedure Checklist - 6 month/50-h

#### 1.12.3 Inspection Procedure Checklist – Annual/100-h

Refer to LSA03 - Inspection Procedure Checklist - Annual/100-h

## 2.0 Line Maintenance, Repairs and Alterations

### 2.1 Authorisation to Perform

The LSA owner or a LAME with an inspection or maintenance rating is authorised to perform line maintenance of LSA.

### 2.2 Typical Tasks Considered as Line Maintenance for the Terrier T200 LSA

- 2.2.1 Pre-flight, 50-h and 100-h inspection,
- 2.2.2 Annual condition inspection,
- 2.2.3 Servicing of fluids,
- 2.2.4 Removal and replacement of components for which instructions are provided in the maintenance manual such as:
  - 2.2.4.1 Fuel pumps,
  - 2.2.4.2 Batteries,
  - 2.2.4.3 Instruments, switches, lights, and circuit breakers,
  - 2.2.4.4 Starters/generators/alternators,
  - 2.2.4.5 Exhaust manifolds/mufflers,
  - 2.2.4.6 Wheel and brake assemblies,
  - 2.2.4.7 Propellers,
  - 2.2.4.8 Sparkplugs, ignition wires, and electronic ignition models/components limited to the use of mechanical connections,
  - 2.2.4.9 Hoses and lines,
- 2.2.5 Repair of components and structure for which instructions are provided in the maintenance manual and which do not require additional specialized training, such as:
  - 2.2.5.1 Patching of a hole in a fabric, metal, or composite non-structural component, and
  - 2.2.5.2 Stop-drilling of cracks.
- 2.2.6 Alterations for which specific instruction are provided in the maintenance manual, such as:
  - 2.2.6.1 Installation of a communications radio, transponder, GPS, and antenna,
  - 2.2.6.2 Installation of a strobe light system, and
  - 2.2.6.3 Compliance with a manufacturer service directive when the repairman is listed as an authorized person to accomplish the alteration.

## 3.0 Heavy Maintenance, Repairs, and Alterations

### 3.1 Authorization to Perform

The holder of a mechanic certificate with airframe or powerplant rating(s), or both, or an LAME that has received additional task specific training for the function to be performed is generally considered the minimum level of certification to perform heavy maintenance of LSA. It is requested that prior to commencement of the tasks listed below that the proposed tasks are discussed with the Foxcon factory.

### 3.2 Typical Tasks Considered as Heavy Maintenance for the Terrier T200 LSA

- 3.2.1 Removal and replacement of components for which instructions are provided in the maintenance manual or service directive instructions, such as:
  - 3.2.1.1 Complete engine removal and reinstallation in support of an engine overhaul or to install a new engine,
  - 3.2.1.2 Remove and replacement of engine cylinders, pistons, or valve assemblies, or a combination thereof,
  - 3.2.1.3 Primary flight control cables/components, and
  - 3.2.1.4 Landing gear assemblies.
- 3.2.2 Repair of components or aircraft structure, or both, for which instructions are provided in the maintenance manual or service directive instructions, such as:
  - 3.2.2.1 Repainting of control surfaces,
  - 3.2.2.2 Structural repairs.
  - 3.2.2.3 Alterations of components or aircraft structure, or both, for which instructions are provided in the maintenance manual or service directive instruction, such as:
    - 3.2.2.3.1 Initial installation of skis, and
    - 3.2.2.3.2 Installation of new additional pitot static instruments

## 4.0 Overhaul

### 4.1 Authorization to Perform

Only the manufacturer of an LSA or the component to be overhauled on an LSA may perform or authorize to be performed the overhaul of an LSA component. Contact Foxcon for further details.

*NOTE—In Australia, no CASA certification is given to be an LSA approved overhaul facility.*

### 4.2 Overhaul Manual

A separate overhaul manual in addition to the manufacturer's maintenance manual is required to perform the overhaul of an LSA or LSA component.

*NOTE—The form and content of such a manual is not governed by this practice or by any FAA or CASA regulation.*

*NOTE—Specific form and content guidelines have not been promulgated here as type-specific training and authorization is required from the manufacturer in order to overhaul an LSA or component.*

### 4.3 Overhaul Components

Typical components that are overhauled include:

- 4.3.1 Engines, 1000 hrs
- 4.3.2 Carburettors/fuel injection systems, 1000 hrs
- 4.3.3 Starters/alternators/generators, 1000hrs
- 4.3.4 Instruments 1000 hrs.

## 5.0 Major Repairs and Alterations

- 5.1 All major repairs or alterations made to aircraft subsequent to its initial design and production acceptance testing to applicable ASTM standards and sale to a consumer must be evaluated relative to the requirements of the applicable ASTM design and production acceptance specification(s).
- 5.2 The manufacturer or other entity that performs the evaluation of an alteration or repair shall provide a written affidavit that the aircraft being altered will still meet the requirements of the applicable ASTM design and performance specification subsequent to the alteration.
- 5.3 The manufacturer or other entity that performs the evaluation shall provide written instructions and diagrams on how, who, and the level of certification needed to perform the alteration or repair.
  - 5.3.1 The instructions must include ground and flight testing that complies with the original ASTM production acceptance testing standard, as appropriate, to verify the alteration was performed correctly and the aircraft is in a condition for safe operation.
- 5.4 The manufacturer or other entity that performs the evaluation shall provide information to the owner of the aircraft for the documentation of the alteration in the aircraft's records.

## 6.0 Task-Specific Training

- 6.1 A manufacturer of a product may require type-specific training in order to accomplish a task in either the maintenance manual or in an authorization for a major repair, maintenance, or alteration. CASA and the RAA do not give approval to these task-specific training programs for LSA. A manufacturer may specify any task-specific training it determines is appropriate to accomplish a task.
- 6.2 Examples of task-specific training include:
  - 6.2.1 Engine manufacturer heavy maintenance or overhaul school, or both,
  - 6.2.2 Aircraft manufacturer course.

## 7.0 Safety Directives

- 7.1 The LSA may have a safety directive issued against an aircraft or component part. The original aircraft manufacturer issues the directive as outlined in the applicable ASTM continued airworthiness specification.

*NOTE* —LSA and components installed on LSA's do not have airworthiness directives issued against them. If an AD is issued against a type-certificated product that may be incorporated into light sport aircraft, the manufacturer of the aircraft is required in accordance with Practices F 2295 and F 2415, and Specification F 2241 to issue a safety directive providing instruction on how to address the safety defect outlined in the AD on the specific SLSA.

- 7.2 The original LSA manufacturer, Foxcon Aviation & Research Pty Ltd .is responsible for providing the applicable instructions to comply with any safety directive, which will include:
  - 7.2.1 A list of the tools needed to accomplish the task,
  - 7.2.2 A list of the parts needed to perform the task,
  - 7.2.3 Type of maintenance, for example, line, heavy, overhaul,
  - 7.2.4 The level of certification needed to accomplish the task, for example, A&P, repairman inspection,
  - 7.2.5 Detailed instructions and diagrams as needed to perform the task, and
  - 7.2.6 Method to test/inspect to verify the task was accomplished properly.
- 7.3 Service directives are considered as mandatory tasks in order to maintain a condition of safe operation and compliance with the applicable original ASTM design specification.

*NOTE* —Service directives are not considered mandatory for experimental LSA's in Australia or the U.S.

## 8.0 Definitions

### 8.1 Aircraft Flight Manual (AFM)

A document for each individual aircraft that contains the information necessary to operate that aircraft at the level of safety established by the applicable airworthiness requirements, with any additional instructions and information necessary. The certificated flight manual for the aircraft type forms the basis of the AFM, plus any other applicable amendments or supplements. Certain portions of a manufacturer's Pilot Operating Handbook (POH) may be approved as the AFM.

### 8.2 Light Sport Aircraft (LSA)

Light Sport Aircraft (LSA) regulations introduce a new category of aircraft. The category covers various types of sport aircraft for take off weights up to 600 kilograms (650 kgs for floatplanes). The regulations apply to both production built aircraft and kit built aircraft. Specification F2245

### 8.3 Annual Condition Inspection

A detailed inspection accomplished once a year on a LSA in accordance with instructions provided in the maintenance manual supplied with the aircraft. The purpose of the inspection is to look for any wear, corrosion, or damage that would cause an aircraft to not be in a condition for safe operation.

### 8.4 Heavy Maintenance

Any maintenance, inspection, repair, or alteration a manufacturer has designated that requires specialized training, equipment, or facilities.

### 8.5 Line Maintenance

Any repair, maintenance, scheduled checks, servicing, inspections, or alterations not considered heavy maintenance that is approved by the manufacturer and is specified in the manufacturer's maintenance manual.

### 8.6 Maintenance Manual

A manual provided by an LSA manufacturer or supplier that specifies all maintenance, repairs, and alterations authorized by the manufacturer.

### 8.7 Major Repair, Alteration or Maintenance

Any repair, alteration, or maintenance for which instructions to complete the task excluded from the maintenance manual(s) supplied to the consumer are considered major.

### 8.8 Manufacturer

Any entity engaged in the production of an LSA or component used on an LSA.

### 8.8 Minor Repair, Alteration or Maintenance

Any repair, alteration, or maintenance for which instructions provided for in the maintenance manual(s) supplied to the consumer of the product are considered minor.

### 8.9 Overhaul

Maintenance, inspection, repair, or alterations that are only to be accomplished by the original manufacturer or a facility approved by the original manufacturer of the product.

### 8.10 Overhaul Facility

A facility specifically authorized by the aircraft or component manufacturer to overhaul the product originally produced by that manufacturer.

### 8.11 Repair Facility

A facility specifically authorized by the aircraft or component manufacturer to repair the product originally produced by that manufacturer.

### 8.12 100-h Inspection

Is the same as an annual condition inspection, except the interval of inspection is 100 hours of operation instead of 12 calendar months. This inspection is utilized when the LSA is being used for commercial operations such as flight instruction or rental, or both.

## 9.0 Abbreviations

AC	Advisory Circular
ACR	Aircraft Register
AD	Airworthiness Directive
AFM	Aircraft Flight Manual
ASTM	American Standard Testing Method
CoA	Certificate of Airworthiness
CoR	Certificate of Registration
CAO	Civil Aviation Order
CAR	Civil Aviation Regulation
CAS	Calibrated Airspeed
CASA	Civil Aviation Safety Authority
CASR	Civil Aviation Safety Regulation
FAA	Federal Aviation Administration (of the USA)
FAR	Federal Aviation Regulations (of the USA)
FM	Flight Manual
GIR	Ground Inspection Report
IAS	Indicated Airspeed
IoA	Instrument of Appointment
LSA	Light Sports Aircraft
MSB	Mandatory Service Bulletin
MTOW	Maximum Take-off Weight
POH	Pilot Operating Handbook
RSOL	Radio System Operating Limitations
SAAA	Sport Aircraft Association of Australia
TC	Type Certificate
TAC	Type Acceptance Certificate
TACDS	Type Acceptance Certificate Data Sheet
TCDS	Type Certificate Data Sheet
VFR	Visual Flight Rules



## 11.0 List of Valid Pages

This manual contains \_\_\_\_\_ original and \_\_\_\_\_ revised pages listed below.

	Pages	State
Cover	1	Original
Table of Contents	2	Original
General	3-6	Original
Line Maintenance, Repairs and Alterations	7	Original
Heavy Maintenance, Repairs, and Alterations	7	Original
Overhaul	7	Original
Major Repairs and Alterations	8	Original
Task-Specific Training	8	Original
Safety Directives	8	Original
Definitions	9	Original
Abbreviations	10	Original
Revision History	11	Original
List of Valid Pages	12	Original
Appendix	13	Original

### Caution:

This manual is valid only if it contains all of the original and revised pages listed above.

Each page to be revised must be removed, shredded and later replaced with the new, revised page in the exact same place in the manual.

## 12.0 Appendix

### 12.1 Electrical Schematic

