

The bomber crews nicknamed them  
“Little Friends”



## **TITAN AIRCRAFT**

**T-51 Mustang**  
**¾ Scale Kit**

# Table of Contents

<u>Page</u>	<u>Subject</u>
1	Titan Aircraft and T-51 Mustang Introduction
2	T-51 Mustang Brief Description
3	Aircraft Specifications and Performance
4	Mustang Photos
5	Description of the Kit, Description of the Outer Wing Panel Kit
6	Description of the Center Section Kit
7	Description of the Fuselage Kit
8	Description of the Tail Kit
9	Description of the Finish Kit
10	Planning Your Aircraft
11	Rotax Aircraft Engines
12	Rotax Drawings
13	Alternative Engines
14	T-51 Mustang Pricing
15	Contact Information

# **Titan Aircraft Manufacturer of the T-51 Information**

## **Address**

**Titan Aircraft  
1419 State Route 45 South  
Austinburg, Ohio 44010**

## **Telephone**

**440 275-3205**

## **Website**

**<http://www.titanaircraft.com/>**

**email: [info@titanaircraft.com](mailto:info@titanaircraft.com)**

## **T-51 Mustang brief description**

**The T-51 is a two-seat, dual control, tandem seat aircraft. It can be built as an “N” numbered amateur built experimental aircraft or as a Light Sport Aircraft .**

**Quality of materials and methods of construction is similar to that of the Tornado kits. All metal construction ensures longevity. It has breathtaking performance on a 100 hp 4 cylinder 4 stroke Rotax 912S.**

**BUILD A TRIBUTE TO OUR HERITAGE AND FREEDOM**

Titan Aircraft

## **T-51 Mustang Description**

Titan Aircraft is proud to introduce the T-51 Mustang, the newest addition to our family of light aircraft. The T-51 incorporates material and systems not commonly found in aircraft comparably priced. This, combined with Titan Aircraft's renowned reputation for high quality, superior aircraft performance, and outstanding customer support, is sure to provide the pilot and kit builder a very pleasurable experience.

The kit has an estimated build time of 600 hours and includes all required material, components and fasteners. The kit does not however include the engine, propeller and instruments because of different customer preferences. When equipped with the Rotax 912S 4 cylinder 4 stroke engine, controllable propeller, and full compliment of necessary flight instruments; we expect the finished T-51 to cost under \$70,000.00. (This depends on customer configuration)

Titan Aircraft is providing a replica P-51D that combines friendly low speed handling characteristics with agility and high performance. The T-51 is rated at a +6g / -4 g load limit capability at a gross weight of 1450 pounds. When operating with the Rotax 912S engine and landing gear retracted the cruise speed is in excess of 150 mph. The stall speed in landing configuration is 39 mph.

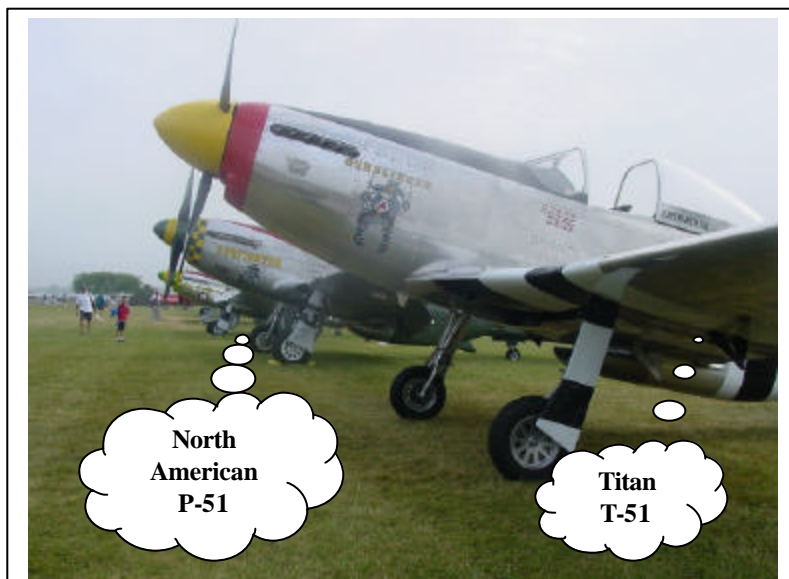
We invite inquiries. Please contact a member of our sales team at [sales@titanaircraft.com](mailto:sales@titanaircraft.com). We look forward to speaking with you!

# Titan Aircraft T-51 Mustang Specifications and Performance

<b>SPECIFICATIONS</b>		<b>PERFORMANCE</b>	
<b>EMPTY WEIGHT</b>	850 lbs	<b>NEVER EXCEED SPEED</b>	197 mph
<b>GROSS WEIGHT</b>	1450 lbs	<b>CRUISE SPEED</b>	150 mph
<b>LENGTH</b>	23' 6"	<b>STALL SPEED</b>	39 mph
<b>HEIGHT</b>	9' 2"	<b>RANGE</b>	600 miles w/reserve
<b>WING SPAN</b>	24'	<b>CLIMB RATE</b>	1200 ft/min
<b>WING AREA</b>	118 sq ft	<b>TAKEOFF RUN</b>	300 ft
<b>CABIN WIDTH</b>	24"	<b>LANDING ROLL</b>	300 ft
<b>CABIN HEAD ROOM</b>	48"	<b>CEILING</b>	16000 ft
<b>CABIN LEG ROOM</b>	46"	Performance of aircraft varies with engine, propeller, gearbox and installed options.  <b>SPECIFICATIONS SUBJECT TO CHANGE                      WITHOUT NOTICE</b>	
<b>FUEL CAPACITY</b>	25 gallons		
<b>ENGINE</b>	Rotax 912ULS/3 *		
<b>POWER</b>	100 hp		

\* The Rotax 914 turbocharged engine is also available

# Titan Aircraft T-51 Mustang



Pictures

taken at

Oshkosh

2003



Serial number 1 with 3 Blade prop &  
serial number 7 with 4 Blade prop





## Titan Aircraft T-51 Mustang Description of Kit Packages

Over the years a lot of P-51D homebuilt kits and plans have been offered for sale, but the Titan's T-51 kit has captured its niche in the warbird replica market. The T51 kit offers the builder the highest quality at a realistic price and operational affordability. Construction methodology is such that the average homebuilder can build the aircraft without jigs or exotic tools.

There are two versions of the T-51 kit available for purchase. The first is the highly publicized homebuilt with retractable gear, which is registered and certified as an amateur built experimental and must be flown by rated pilots with retractable gear experience. This amateur built experimental version can be built so that it qualifies for the 1200 lb and under weight category in New Zealand and Australia. The second version can be flown by a sport pilot in the US, but has fixed landing gear and fixed pitch propeller with a maximum speed of 120 kts, stall speed 45 kts and a gross weight of no more than 1320 lbs.

The T51 utilizes aircraft grade 2024-T3 aluminum thicknesses of .016, .020, .025, .032 and .040 for wing structure, tail structure, flight controls, fuselage bulkheads and skin. The fuselage is manufactured by utilizing 1/2" x 1/2" square aviation grade 4130 steel tubing. The kit construction methods use blind rivets (known as pop rivets) and structural adhesive throughout. An option is using solid aircraft rivets.

### Main Wing (outer) Panels Kit:

- Aileron Assemblies are Complete and Ready to Install
- Spars and Wing Leading Edges are completed
- Preformed Ribs (14) are formed and fluted
- Preformed Aft Spars and Fittings
- Aileron Pushrods are Completed
- Wiring Kits
- Preformed Webs and Stringers
- Pre-cut Wing Skins
- Pitot Tube and Plumbing
- Manufactured Flap Hinge Fittings
- Hardware Kit, Rivet Kit and Adhesive Kit



This is an outer wing panel leading edge. It is built in a mold at the factory with the wing twist pre-set. The builder will install ribs, aft spars, stringers, control linkages and aft skins.

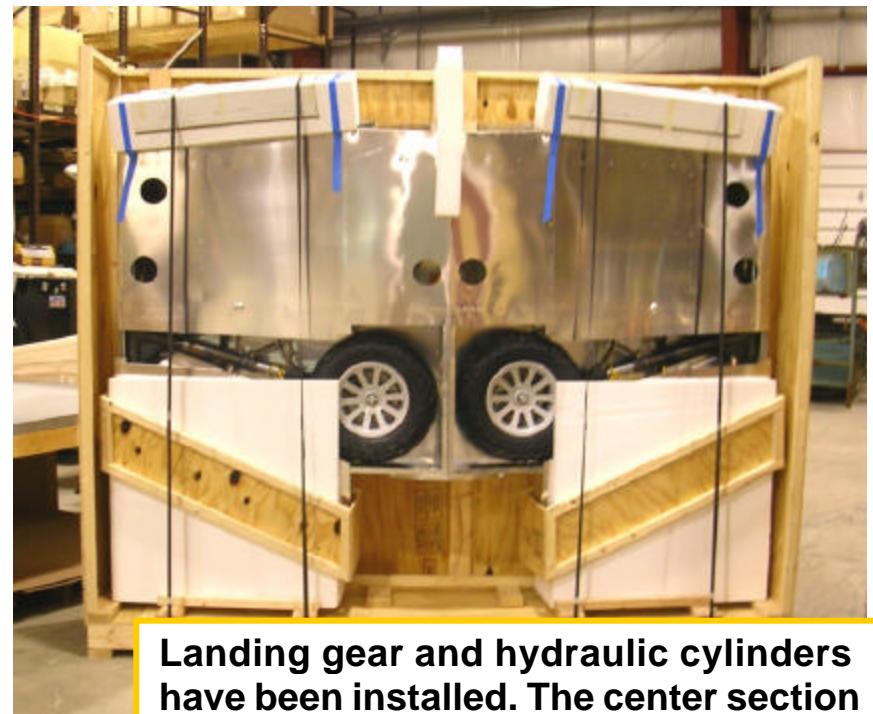
## Center Wing Section Kit:

- **Pre-built Center Section Assembly includes:**
  - Assembled Main Spar
  - Preformed Skin Panels, pre-drilled and located
  - Main Retractable Landing Gear installed
  - Main Landing Gear Hydraulic Cylinders installed
  - Main Landing Gear Oleo Struts assembled
  - Wing-to-Fuselage fittings installed and pre-drilled
  - Jack Pads installed
  - Wheel, Tire & Brake Assemblies built-up & installed
- Main Fuel Tanks (2)
- Center Fuel Header Tank
- Pre-drilled Flap Hinge Fittings
- Hardware Kit, Rivet Kit and Adhesive Kit
- Fuel System Fittings
- Fuel Filler Neck and Cap Assembly
- Fuel Gauges
- Landing Gear Position Micro-Switches
- Landing Gear Position Indicators and Warning Horn
- Hydraulic Pressure Indicator and Warning Light
- Landing Gear Emergency Extension Valves
- Flap Assemblies completed & ready to install
- Main Landing Hydraulic System Fittings and Plumbing
- Main Landing Brake System Fittings and Plumbing
- Brake System Remote Located Reservoir

**NOTE:**

**LSA AIRCRAFT ORDER**

Retractable landing gear components are not included in the Light Sport (LSA) kit.



Landing gear and hydraulic cylinders have been installed. The center section is in the crate and ready to be shipped.



## Fuselage Kit:

- Fuselage Frame Welded & Stress Relieved (4130 Steel)
- Preformed Fuselage Bulkheads
- Pre-cut Outer Fuselage Skins
- Polycarbonate Material for Windscreen
- Hydraulic Pump/Reservoir
- Fuel Selector Valve
- Control Stick Assemblies (front & rear seat controls)
- Rudder Pedal Assemblies (front & rear seat controls)
- Stainless Steel Firewall Material
- Flap Motor and Electric Flap System Components
- Instrument Panel Material
- Pre-cut Cockpit Interior Panels
- Pre-cut Push-Pull Flight Control Tubes
- Hardware Kit, Rivet Kit and Adhesive Kit
- Elevator Bellcrank Components
- Rudder Cable Kit
- Tail Wheel Assembly Complete
- Hydraulic Cylinder for Tail Wheel Assembly
- Engine Compartment Cowling Structural Components
- Engine Cowling Hardware Kit
- Preformed Vertical Dorsal Fin
- Tail Wheel Doors and Associated Hardware Kit

**NOTE:**

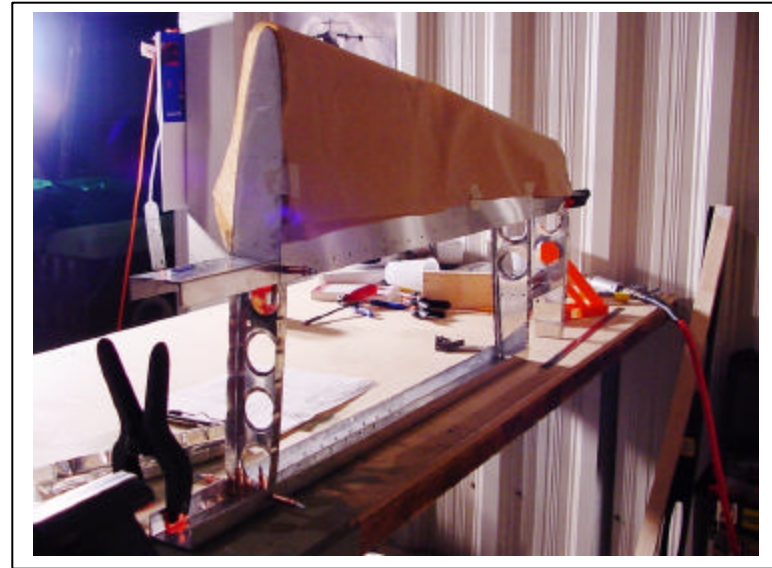
**LSA AIRCRAFT ORDER**

Retractable landing gear components are not included in the Light Sport (LSA) kit.



## Tail Kit:

- **Horizontal Stabilizer Spars & Leading Edges completed**
- **Preformed Horizontal Stabilizer Aft Spars**
- **Pre-cut Upper and Lower Horizontal Stabilizer Skins**
- **Vertical Stabilizer assembled & ready to install**
- **Rudder Structure ready to cover**
- **Elevator Structures ready to cover**
- **Elevator Trim Tab with Electric Actuator installed**
- **Hardware Kit, Rivet Kit and Adhesive Kit**
- **Rudder & Elevator Hinges, pre-drilled**
- **Elevator & Rudder Control Horns**
- **Elevator Trim Indicator and Control Switch**



Factory pre-built  
elevator structure



Factory pre-built  
rudder structure



Factory installed

Elevator Trim Motor



Factory pre-built vertical  
stabilizer and horizontal  
stabilizer leading edges

## Finish Kit:

- **Preformed Canopy**
- **Canopy Crank & Latch Kit**
- **Preformed Canopy Frame**
- **Canopy Hardware & Seal Kit**
- **Fabric Covering Kit for Rudder & Elevator**
- **Fiberglass Wing Tips**
- **Fiberglass Nose Cowling**
- **Fiberglass Belly Scoop**
- **Rudder & Vertical Tips**
- **Elevator & Horizontal Tips**
- **Seat Frames and Associated Hardware Kit**
- **Seat Cushions with Upholstery**
- **Seat Belts & Shoulder Harnesses**
- **Inspection Panels**
- **Wing to Fuselage Fairings**
- **Horizontal to Fuselage Fairings**
- **Main Landing Gear Doors and Hardware Kit**
- **Engine Mount (912 or 914)**
- **Throttle Quadrant (912 or 914)**
- **Flight Controls Stick Grip (front) Fighter Style**
- **Flight Controls Stick Grip (rear) G1 style**
- **Interior Trim Components and Associated Hardware**
- **Landing Gear Position Selector, assembled**
- **Hardware Kit, Rivet Kit and Adhesive Kit**



## **Titan Aircraft T-51 Mustang**

**The T-51 Mustang was designed and is manufactured such that you as the builder can customize the aircraft's configuration to suit your requirements. That being said, a lot of forethought is required by you to decide, as examples, engine, propeller, instrumentation & avionics (day VFR, night VFR or IFR), experimental or light sport category.**

**The following is a list of components to be considered by the customer to license the aircraft in whatever category is decided upon.**

**Flight Instrumentation**

**Engine Monitoring Instrumentation**

**Cockpit Lighting**

**Navigation Radio Equipment**

**Communication Radio Equipment**

**Landing & Taxi Lights**

**Wiring and Related Components Required to Make a Fully Functional Aircraft Electrical system such as Circuit Breaker, Terminal ends, Switches, etc. (basic circuit breakers, wire and battery are included in the kit)**

**Navigation Lighting (Position Lights and/or Strobe light System)**

**Antenna and Associated Hardware Required for Navigation and Communications**

**Data Plate, Decals Required by FAA and Custom Decals to Reflect Historic Replica**

**Battery and Battery Box and Associated Hardware**

**Radiator, Associated Hardware and Plumbing**

**There are many other items too numerous to mention, but be advised that during the process of customizing the configuration of your aircraft, follow all applicable FAA regulations. The best single source of information on building and operating a HOMEBUILT or LIGHT SPORT AIRCRAFT is the EAA and your local EAA chapter's Technical Advisor. Also, your Titan Factory authorized Dealer/Representative is great source of information.**



# Rotax Aircraft Engines

A Bombardier Company

## Specifications and Performance - Description of 912 powerplant

### Technical description

Horizontally opposed 4 stroke 4 cylinder, air-cooled cylinders, liquid cooled heads, overhead valve, dual electronic ignition.

Engine weight 128 lbs

Description	912 ULS/3
Bore	3.31"
Stroke	2.4"
Displacement	82.5 cu in
Compression ratio	10.5 : 1

Performance		Torque		Max RPM
HP	RPM	FT LBS	RPM	RPM
95	5500	94	5100	5800
100	5800			

Dry sump forced lubrication system (Premium HD motorcycle Oil)

Dual breakerless capacitor discharge ignition

Constant depression carburetors (2) (Fuel Unleaded premium or 100 LL)

Mechanical fuel pump

Prop reduction gearbox (2.43: 1)

Accessory drive pad for vacuum pump or hydraulic constant speed prop governor

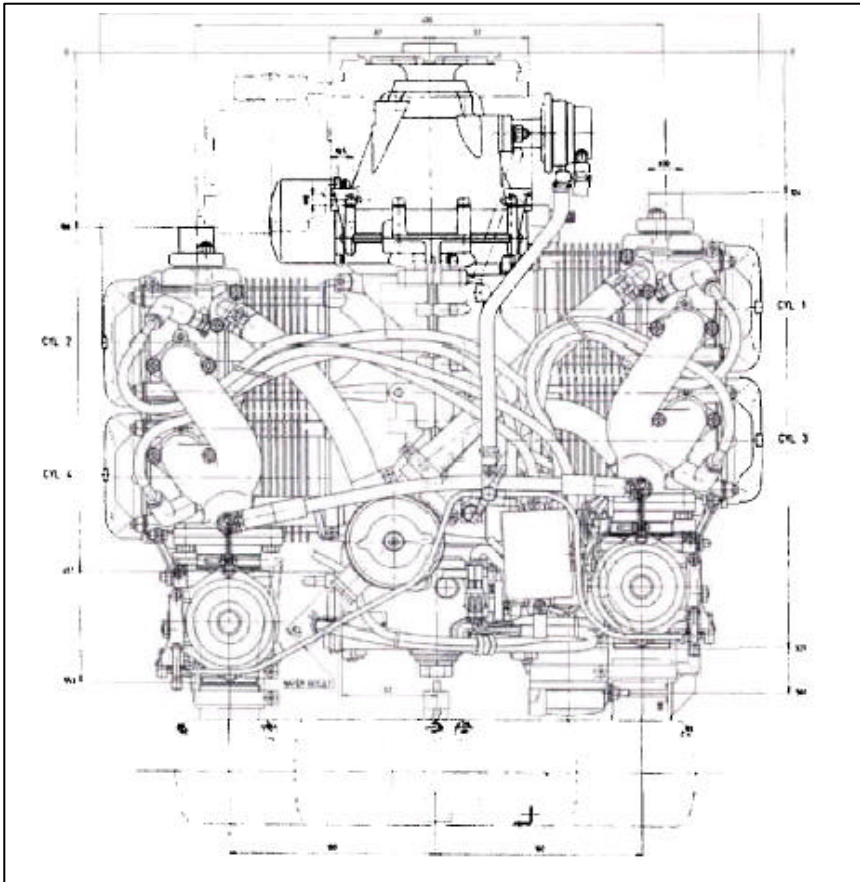
Electric starter (12v)

External alternator (12V 40 Amp)

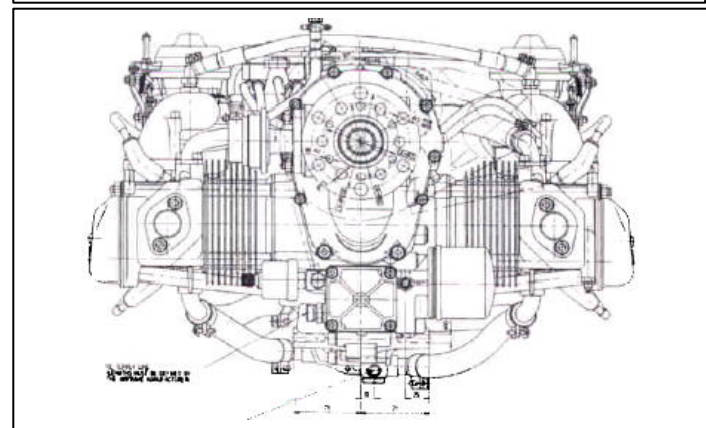
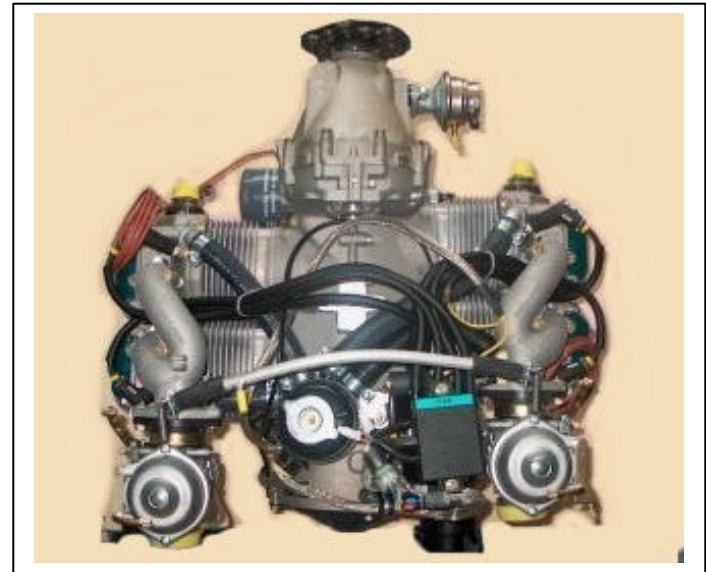


# Rotax Aircraft Engines

A Bombardier Company  
Drawings and Pictures



912 ULS



## Alternative Engines

The T-51 Mustang was designed to fly well with either the Rotax 100 hp 912 ULS engine or the Rotax 115 hp turbocharged engine. Either engine can be equipped with a hydraulically operated four-blade propeller. The weight and balance works out well with either engine. Both engines are recommended power plants and both are available through Titan Aircraft.

Because the T-51 is a kit aircraft and because many builders are also innovators, the question of possible alternative engines arises often. We don't want to discourage innovation, but if a reliable aircraft is the goal, it is highly recommended that one of the two Rotax engines be installed. If the builder is an innovator and is willing to be responsible for the design, fabrication and testing of an alternative engine installation, other engine options could be possible. It is our experience that engines that were not designed to be installed in aircraft, such as auto conversions, tend to be less reliable than engines that were designed for aircraft use. Be aware of this before choosing an engine.

Some considerations should be physical size and weight of the engine. The engine compartment width is about 23½ inches. The length is about 32 inches. The height is about 35 inches at the back and about 30 inches at the front. The weight should be limited to about 250 lbs. If the engine is heavier than 250 lbs., some structural modifications will need to be made forward of the cockpit. Also, some weight will need to be moved aft. Moving the battery is probably a good place to start, although that may not be enough.

Possible engine alternatives are:

- The "Mini Merlin" Suzuki V6 conversion by Dan Hawken (Canada 403-652-1440) (New Zealand 64-03-312-8008)

- The LOM 332A aircraft engine from the Czech Republic (will need modifications to the forward airframe)

- The Innodyn turboprop (modifications to the airframe likely and being explored at the Titan factory)

- The Jabiru 3300 six cylinder aircraft engine (air cooled, cooling system will need engineering)

- Other commercially available small auto conversion engines like the CAM 125, Raven and some rotary engines may fit, although extensive modifications are likely.

Engines that are **not** appropriate for the T-51 airframe:

- Four and six cylinder opposed Lycoming or Continental engines- too wide to fit inside the airframe

- Big V8 engines like the Chevrolet or Ford - too heavy and too large

## T-51 Mustang

## Kit and Modular Kit Pricing \*\*

<b>T-51 Mustang Kit: Includes items listed below</b>	<b>\$49,900.00 <sup>2</sup></b>
<b>T-51 Modular Kit: Main Wing Panel Kit</b>	<b>\$9,500.00</b>
<b>T-51 Modular Kit: Center Section Kit</b>	<b>\$16,000.00</b>
<b>T-51 Modular Kit: Fuselage Kit</b>	<b>\$14,500.00</b>
<b>T-51 Modular kit: Tail Kit</b>	<b>\$7,000.00</b>
<b>T-51 Modular kit: Finish kit</b>	<b>\$7,000.00</b>
<b>Crating Charge For Freight Shipments</b>	<b>\$1,200.00</b>
<b>Shipping to home destination</b>	<b>Call for quote <sup>1</sup></b>

<sup>1</sup> Call Titan Aircraft (440) 275-3205 for latest quote on shipping costs from Austinburg, Ohio.

<sup>2</sup> Sport Plane version (LSA) does not include retractable landing gear system \$48,400

The basic T-51 kit includes the parts to build a complete airframe plus exhaust stacks, exhaust system, throttle/choke system, two main fuel tanks & a header tank, control stick grips (fighter style front seat, G1 style back seat), engine mount (the part that bolts to the firewall), basic switches, circuit breakers (25 amp master, 20 amp gear, 15 amp lights, 10 amp flaps & trim, 5 amp avionics), battery, fuel gauges, hydraulic pressure gauge, all retract system switches, wire, Mustang seat upholstery and seat belts.

Items not included with the kit are the engine, propeller, radiator, oil cooler, hoses & clamps, coolant overflow bottle, fluids, spinner, instruments, avionics and powder coating.

If a Rotax engine is purchased from us, we will include the air cleaners and engine mount isolators at no charge.

If a Whirl Wind propeller is purchased we will include the spinner and spinner bulkheads fit to the propeller and balanced as an assembly at no charge.

If a propeller governor is purchased, we will include the propeller control system at no charge.

\*\* Prices subject to change without notice

## Contact Information

### WORLDWIDE

#### Titan Aircraft Factory

1419 State Route 45 South  
Austinburg, OH 44010, USA  
440-275-3205  
[info@titanaircraft.com](mailto:info@titanaircraft.com)  
<http://www.titanaircraft.com/>

### CANADA

#### 51 Squadron Sales

Dan Hawken  
838 9<sup>th</sup> St. SW  
High River, Alberta, T1V 1C3, Canada  
403-652-1440

### NEW ZEALAND & AUSTRALIA

#### Campbell Aviation Company LTD

Ivan Campbell  
183 Stonyflat Road  
Loburn, Randgiora R.D.2, New Zealand  
64-03-312-8008  
[ivan@campbellaeroclassics.com](mailto:ivan@campbellaeroclassics.com)  
<http://www.campbellaeroclassics.com/>