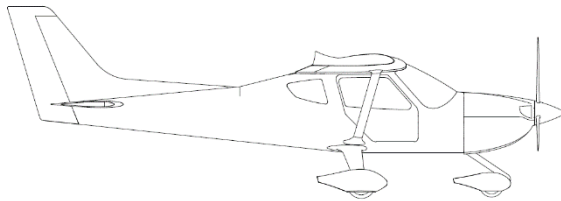




508 Vandenberg Road, Hangar 5
Hondo TX, 78861 USA



Aircraft Maintenance Manual

T1-AMM-12

The Colt 100 Aircraft is manufactured by Texas Aircraft Manufacturing, INC in the United States of America and is approved by the FAA regulations as a Special Light-Sport Aircraft under the accepted ASTM consensus standards.

Make: Texas Aircraft Manufacturing, INC

Model: COLT 100

Aircraft Configuration: Dual Garmin-VFR- Sterna Propeller- With Parachute- Rotax 912 ULS2-01 – Anti-

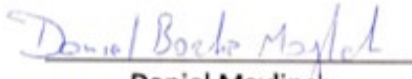
Vapor Lock System

Airplane Serial Number:

Airplane Registration Number:




T1-AMM-12


Daniel Maylinch
Texas Aircraft, Engineering
Manager


Lucas Falcão
Texas Aircraft, Manager


Philip Jung
Texas Aircraft, QA Manager


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	AIRCRAFT MAINTENANCE MANUAL	FOREWORD

○ Log of Revisions

Revision	Date	Description of Revision
NC	11/18/2024	Initial Release, based on the T1-AMM-E Manual and adapted to this configuration

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○ Introduction


This manual has been prepared exclusively for the Colt 100, manufactured by Texas Aircraft Manufacturing, INC., in accordance with the ASTM F2483. It supplies the best practices and ensures the correct maintenance, repairs, and alterations for the Special Light-Sport Aircraft Colt 100 , and contains the following main subjects:

- 1 – General
- 2 – Inspections
- 3 – Structures
- 4 – Engine
- 5 – Fuel System
- 6 – Propeller
- 7 – Utility Systems
- 8 – Instruments and Avionics
- 9 – Electrical System
- 10 – Heavy Maintenance, Repairs and Alterations
- 11 – Texas Aircraft Manufacturing Contact and Feedback
- 12 – Inspection Checklist
- 13 – Placards

The aim of this manual is to ensure the safe flight and the correct use of the aircraft in accordance with the manufacturer specifications.

The disregard of the operating and technical specifications contained inside this manual can result in injury or loss of life.

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○ Warnings, Cautions and Notes

The following safety definitions are used in this manual:

WARNING

A WARNING STATEMENT IDENTIFIES A SPECIFIC HAZARD TO PERSONNEL OR DAMAGE TO EQUIPMENT. THE ABSENCE OF THE CORRECT PROCEDURE COULD RESULT IN INJURY AND LOSS OF LIFE.


CAUTION

A CAUTION statement identifies the possible risk of damage to aircraft or equipment, if not observed or corrected with the appropriate procedure.

NOTE

A NOTE statement identifies the important or unusual procedure, which is emphasized.

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- 4 Engine
- 5 Fuel System
- 6 Propeller
- 7 Utility Systems
- 8 Instruments and Avionics
- 9 Electrical System
- 10 Heavy Maintenance, Repairs and Alterations
- 11 Contact and Feedback
- 12 Appendix A – Inspection Checklist
- 13 Appendix B – Placards

○ List of Abbreviations

ASTM - American Society for Testing and Materials
 arm_{MLG} - distance between the DATUM and Main Landing Gear
 arm_{NLG} - distance between the DATUM and Nose Landing Gear
 CG - center of gravity
 DATUM - reference point for balance calculation
 IFR - instrument flight rules
 MTOW - maximum takeoff weight
 POH - Pilot's Operating Handbook
 S-LSA - Special Light-Sport Aircraft
 VFR - visual flight rules
 W_{empty} - total weight of the empty aircraft
 W_{MLG} - sum of weight on the Main Landing Gears
 W_{NLG} - weight on the Nose Landing Gear

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○ Unit Conversions


Length	meter [m]	3.281 feet [ft]
	inch [in]	25.4 millimeters [mm]
Area	square meter [m ²]	10.764 square feet [ft ²]
Volume	liter [l]	0.264 gallon [us gal]
	cubic inches [in ³]	16.387 cubic centimeter [cm ³]
Weight	kilogram [kg]	2.205 pounds [lb]
Speed	knots [kts]	1.151 miles per hour [mph]
Pressure	bar	14.504 psi
	pound per square feet [lb/ft ²]	4.882 kilogram per square meter [kg/m ²]
Power	kilowatt [kW]	1.341 horse-power [hp]
Moment of Force	kilogram meter [kg.m]	7.233 pound feet [lb.ft]
	kilogram millimeter [kg.mm]	0.0868 pound inch [lb.in]

Temperature		Formula
Celsius [°C]	Fahrenheit [°F]	Celsius = 5/9 * (Fahrenheit – 32)

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1.1 Equipment List

This Chapter 1.1 presents the equipment installed in the aircraft Colt 100 , manufactured by Texas Aircraft Manufacturing.

Information on assemblies and parts of the airframe (wing, fuselage, stabilizers, control surfaces, etc.) can be found in detail in the T1-IPC (Illustrated Parts Catalog) document, which can be accessed at this link: <https://www.texasaircraft.com/support>.


DESCRIPTION	PART NUMBER	SECTION
EIS (Engine Interface Sensor) - GEA 24	010-01042-00	Avionics
PFD - G3X Touch™ 10.6" Display - GDU 460	010-01057-00	Avionics
MFD - G3X Touch™ 10.6" Display - GDU 460	010-01057-00	Avionics
GSA 28 Smart Autopilot Servo, Roll	010-01068-00	Avionics
GSA 28 Smart Autopilot Servo, Pitch	010-01068-00	Avionics
GSA 28 Smart Autopilot Servo, Yaw	010-01068-00	Avionics
GTR 200B Experimental/LSA COM Radio	010-0187-21	Avionics
Garmin GAP 26 (Unheated)	010-01074-00	Avionics

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GTX45R Transponder	101-01757-06	Avionics
Autopilot Control Panel - GMC 507	010-01946-00	Avionics
GPS 20A ADS-B	010-01546-00	Avionics
GA™ 35 GPS Antenna, White	013-00235-00	Avionics
AHRS - GSU 25C	010-01071-50	Avionics
MAG - GMU 11 Magnetometer	011-04349-00	Avionics
GTP 59 OAT	011-00978-00	Avionics
SFD - G5 Electronic Flight Instrument	010-01485-00	Avionics
G5 Battery Back up Pack	010-12493-01	Avionics
TCW INTEGRATED BACK UP BATTERY SYSTEM 6AH	11-12653	Avionics
ARTEX - ELT 345 Emergency Locator Transmitter	A3-06-2880	Avionics
ARTEX - Battery LiMnO2, Li=4.6g - 6V	A3-06-2883	Avionics
Flap Motor	FA-400-12-2"-P	Avionics
Signaling Light Wingtip Green Led with White Rear 12V	SAS-139GB	Avionics
Signaling Light Wingtip Red Led with White Rear 12V	SAS-139RB	Avionics
Signaling Light Strobe Anti Collision Beacon Red Led 12V	SAS-138M3	Avionics
Taxi Light LED	01-0771125-11	Avionics
Landing Light LED	01-0771125-11	Avionics

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Main Wheel Assembly (Qty 2)	RF-019(A)	Airframe
Nose Wheel Assembly	RA-015(A)	Airframe
Brake Assembly (Qty 2)	EA-006N(A) T2	Airframe
Master Cylinder Assembly (Qty 4)	MP-002N(A)	Airframe
Fuel Flow Transducer	FT-60	Power Plant
Ignition Switch with start position	DNI2207	Power Plant
ROTAX Aircraft Engine - BRP-Rotax GmbH & Co KG	912 ULS2-01	Power Plant
Propeller Type S69CBMR-3LE-WR-C // 3-RT-B	----	Power Plant
Propeller Hub	3-RT-B	Power Plant
Propeller Spacer	3-RT-B	Power Plant
Propeller Blade #1	S69CBMR	Power Plant
Propeller Blade #2	S69CBMR	Power Plant
Propeller Blade #3	S69CBMR	Power Plant
PRT FIRE EXTINGUISHER	RT-A400	Airframe
Fuel Selector Valve LEFT/RIGHT/OFF (90 DEGREES BETWEEN LEFT AND RIGHT)	FS20X7-T	Airframe
Shoulder Harness	27H3730-D	Airframe
Seat Belt	206440	Airframe

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Galaxy Rescue System Ballistic Parachute - GRS	GRS 6 SD	Airframe
FALCON PEDESTAL MOUNT COMPASS	10-02070	Avionics
COMANT VHF COMMUNICATION CI-121 (LH)	CI-121	Avionics
COMANT Transponder Antenna CI-105	CI-105	Avionics

1.2 Sources to Purchase Parts

The purchase of parts can be ordered directly from Texas Aircraft Manufacturing, by email request to support@texasaircraft.com or from authorized dealers.


1.3 List of Disposal Replacement Parts

Air Filter	ROTAX P/N: 825 551
Fuel Filter / Gascolator	ACS Gascolator 10580
Oil Filter	ROTAX P/N: 825016
Nose Gear Tire	Aero Classic 11x4.00-5 8Ply
Main Gear Tire	5.00-5 8Ply Michelin Air TL (recommended)
	5.00-5 6Ply Goodyear Custom III
Brake Fluid	MIL-H-5606
Master Brake Cylinder Fluid	MIL-H-5606

1.4 Engine Specifications

Manufacturer	BRP-Rotax Gmbh & CO KG
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Model		912 ULS2-01
Maximum Power	Take-off (5800 rpm)	73.5 kW / 100 hp (max 5 minutes)
	Max continuous (5500 rpm)	69.0 kW / 93 hp
Reduction Ratio (crankshaft : propeller shaft)		2.43

1.5 Weight and Balance Information

The Chapter 1.5 – Weight and Balance contains the following subjects:

1.5.1 - General Data


1.5.2 - CG Calculation

▪ General Data

The next table presents the general data regarding the weights and allowable CG range for flight.

MTOW	600 kg / 1320 lb
Empty Weight (including Unusable Fuel)	386.0 kg / 851.0 lb
Maximum Baggage Weight	20 kg / 44.1 lb
Maximum Fuel	120 l / 31.7 US gal
Most Forward CG	1.916 m / 75.86 in (20.85%)
Most Afterward CG	2.018 m / 80.51 in (29.32%)


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WARNING

THE PILOT IS THE RESPONSIBLE TO CORRECTLY LOAD THE AIRCRAFT. ANY CONFIGURATION BEYOND THE CG BOUNDARIES COULD RESULT IN UNSTABLE FLIGHT, ACCIDENT AND LOSS OF LIFE.

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▪ **CG Calculation**

In order to obtain the Center of Gravity, CG, position the aircraft on the 3 scales to get the weights in each landing gear. Before the weight recording, be sure that:

- ✓ The hangar is closed;
- ✓ The aircraft is cleaned, without personal objects, tools and any instrument that does not make part of the standard instruments;
- ✓ The wing tanks are completely empty;
- ✓ The seats are located at the center of the seat track;
- ✓ Flaps are retracted;
- ✓ Flight Controls are in neutral position;
- ✓ The aircraft is aligned to the horizontal.

The figure below shows the main distances from the reference points and DATUM, to get the CG of the empty aircraft. The DATUM is located behind the spinner plate, as can be seen in figure 3.2.1. In addition, the distance between the DATUM and the pilot and passenger seats (at the center of the seat track), baggage and fuel can be viewed in the next table.

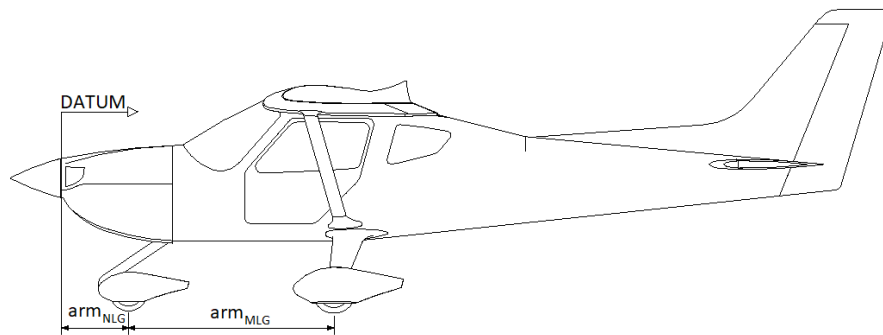


Figure 3.2.1. DATUM reference.


After recording the weights on the landing gears, the Center of Gravity can be calculated as follow:

$$CG = \frac{\sum \text{Moment}}{\sum \text{Weight}} = \frac{(W_{NLG} \cdot arm_{NLG}) + (W_{MLG} \cdot arm_{MLG})}{W_{empty}}$$

where:

Empty - total weight of the empty aircraft

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W_{MLG} - sum of weight on the Main Landing Gears

W_{NLG} - weight on the Nose Landing Gear

arm_{MLG} - distance between the DATUM and Main Landing Gear = m

arm_{NLG} - distance between the DATUM and Nose Landing Gear = m

arm_{NLG}	0.495 m / 19.50 in
arm_{MLG}	2.153 m / 84.75 in
Pilot	2.108 m / 82.99 in
Passenger	2.108 m / 82.99 in
Fuel	2.197 m / 86.50 in
Baggage	2.743 m / 107.99 in
Leading Edge	1.634 m / 64.35 in

The Center of Gravity in terms of wing chord is calculated below.

$$\%CG = \frac{(CG - LE)}{c} * 100$$

where:

CG - X_{CG}


LE - distance between the wing leading edge and datum.

c - wing chord (1.400 m or 55.12 in)

1.6 Recommended Tire Inflation Pressures

Nose Gear Tire	25 psi
Main Gear Tire	35 psi

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At the discretion of the mechanic and operator, the average pressure on the main gear tire can be between 31 and 35, depending on the operating weight.

1.7 Approved Oils and Capacities

The ROTAX 912 ULS2-01 engine is provided with a dry sump forced lubrication system (please refer to figure 1.7.1.) equipped with a main oil pump integrated pressure regulator (1) and oil pressure sensor (2).

The oil pump (3) sucks the motor oil from the oil tank (4) via the oil cooler (5) and forces it through the oil filter (6) to the points of lubrication in the engine.

The surplus oil emerging from the points of lubrication accumulates on the bottom of the crankcase and is forced back to the oil tank by blow-by gases.

The oil circuit is vented via a bore (7) on the oil tank.

The oil temperature sensor (8) for reading the oil inlet temperature is located on the oil pump housing.

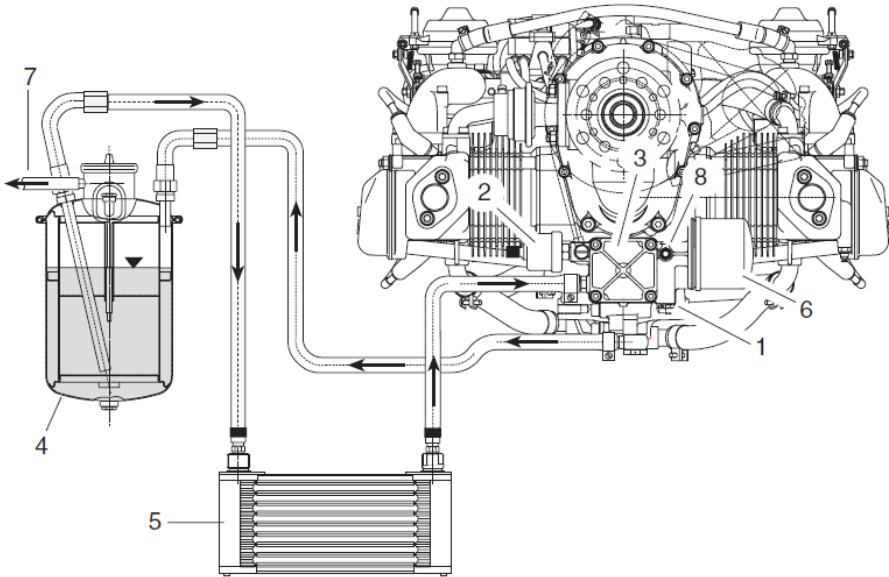



Figure 1.7.1. Engine Lubrication System.

Oil *	AeroShell Sport Plus 4 (recommended)
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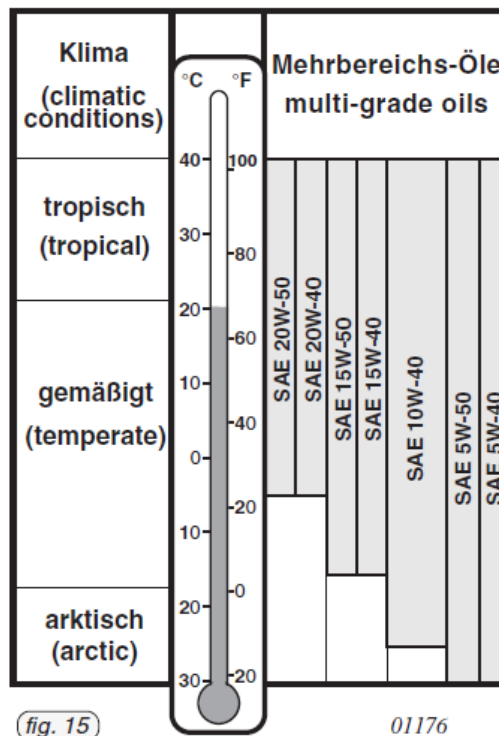
Oil Capacity	Min. 2.5 l (0.66 US gal or 2.6 quarts)
	Max. 3.0 l (0.8 US gal or 3.2 quarts)
Oil Change	every 50 hours
Oil Filter Change	every 50 hours
Oil Tank**	every 100 hours

Notes:


* Climate condition temperature can affect recommended oil (see NOTE below).

**Check the oil tank and clean the oil tank if contaminated.

The allowable viscosity grade oil is shown below. More information can be found in the Rotax Operators Manual.



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NOTE

Multi-viscosity grade oils are less sensitive to temperature variations than single grade oils. They are suitable for use throughout the seasons, ensure rapid lubrication of all engine components at cold start and get less fluid at higher temperature.

1.8 Cooling

The cooling system of the ROTAX 912 ULS2-01 is designed for liquid cooling of the cylinder heads and ram-air cooling of the cylinders. The cooling system of the cylinder heads is a closed circuit with an expansion tank.

The coolant flow is forced by a water pump loop, driven from the camshaft. Coolant flows from the radiator to the cylinder heads. From the top of the cylinder heads the coolant flows to the expansion tank. After the expansion tank, the coolant flows back to the radiator to complete the circuit.


The expansion tank is closed by a pressure cap. As coolant temperature rises, a pressure valve will open and some coolant will flow to the transparent overflow bottle mounted on the firewall. When cooling down, the coolant will be sucked back into the cooling circuit.

Cooling System	Liquid / Ram-air
Coolant*	See Rotax Operators Manual
Coolant Types**	Conventional, based on ethylene glycol (50% concentrate, 50% water)
	Waterless, based on propylene glycol
Coolant Tank**	200 hours

Notes:

*Verify coolant level, replenish as necessary.

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**Flushing the cooling system each 200 hours.

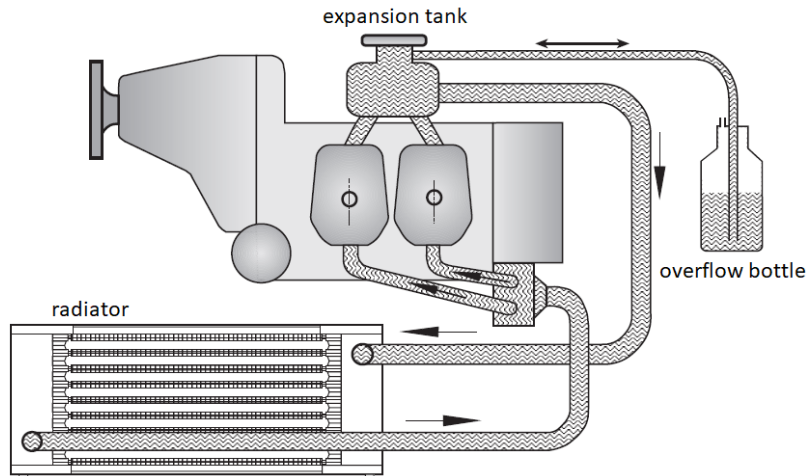


Figure 1.8.1. Cooling System.


NOTE

The important advantage of water-less coolant is its higher boiling point than a conventional mixture.

CAUTION

- Verify coolant level in the expansion tank, replenish as required up to top. The coolant level must be at least 2/3 of the expansion tank.
- Verify coolant level in the overflow bottle, replenish as required. The coolant level must be between max and min mark.

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1.9 Recommended Fastener Torque Values

The importance of correct torque application cannot be overemphasized. Under torque can result in unnecessary wear of nuts and bolts, as well as the parts they secure. Over torque can cause failure of a bolt or nut from overstressing the threaded areas. Uneven or additional loads that are applied to the assembly may result in wear or premature failure.

Consult the figure 1.9.1 below to find the correct torque parameters for various fasteners.

AN Bolt Size	Bolt Size- Threads Per Inch	Standard Nuts AN310, AN315, AN365	
		INCH POUNDS	FOOT POUNDS
AN3	#10-32	20-25	1.6-2.0
AN4	1/4-28	50-70	4.2-5.8
AN5	5/16-24	100-140	8.3-11.6
AN6	3/8-24	160-190	13.3-15.8
AN7	7/16-20	450-500	37.5-41.7
AN8	1/2-20	480-690	40.0-57.5
AN9	9/16-18	800-1000	66.6-83.3
AN10	5/8-18	1100-1500	91.6-125.0

Figure 1.9.1. Torque values (inch pounds). Ref: AC 43.13-1B.


1.10 General Safety Information

To minimize the risk of accidents, always perform the airframe maintenance tasks following the procedures described in this manual, additionally, regularly consult the manuals referring to the installed components (engine and propeller) and the best practices of aircraft maintenance training. Use the right tool and personal protective equipment, such as ear and eye protections, gloves, safety shoes, apron and splash gloves as needed.

Others general safety information to follow are:

- Make sure the ignition switch is in the off position and the key is removed before any maintenance is performed;
- Allow engine to cool down to ambient temperature before starting any work on the engine, reducing the risk of burnings;
- Before any electrical component substitution, disconnect the negative lead from the battery source;
- Remove all jewelry, rings and watches, because they can conduct electricity and may cause a short circuit;
- Do not start the engine if any person is close to the aircraft;
- Never parking the aircraft under a hanger door for long periods of time.

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▪ **Instructions for Ground Handling**

The aircraft should be moved by pulling the propeller near the hub or pushing the wing strut near the wing on both sides. Steer by pulling only one wing strut or pressing the tail cone down in front of the empennages to raise the nose wheel and turn the aircraft. Be careful to not touch the tail on the ground and never use the control surfaces to move the aircraft.

▪ **Lubrication**

1.10.1.1 Brakes

Use a brake cleaner to remove brake fluid, grease, oil and dirt on the brake disk.


Directions:

- Protect all rubber brake parts, plastic parts, rims, and painted surfaces from the overspray.
- Wet down surfaces to be cleaned using short bursts of the cleaner at a distance of 18-24 inches.
- After all surfaces have been wetted, continue spraying to remove contaminants.
- Air dry or wipe with a clean cloth.
- For heavy deposits, repeat application as necessary.

1.10.1.2 Elevator Control

The elevator control should be cleaned and lubricated with aerosol spray lubricant on all rod ends and all ball links, as shown below. From the left to right, the figures are: close to the pedals, push-rods connections and elevator actuator.

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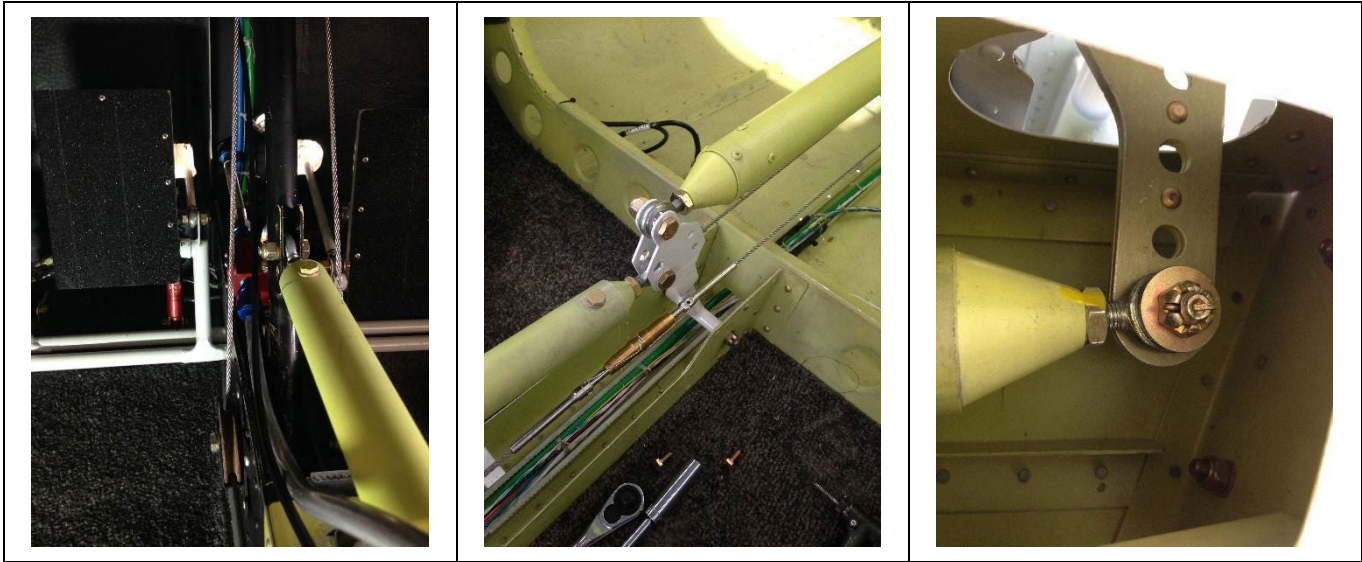
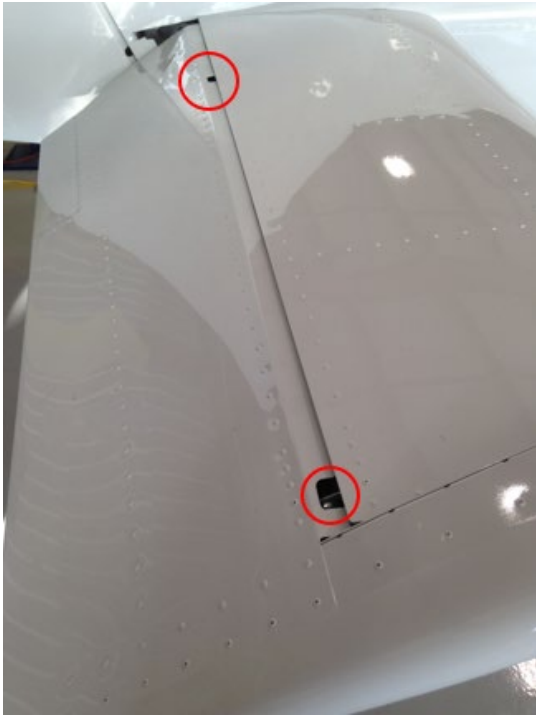


Figure 1.10.2.2.1. Elevator Control System.

Lubricate all rod ends that connect the elevator to the horizontal stabilizer.



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Figure 1.10.2.2.2. Elevator Attach Points.

1.10.1.3 Aileron Control

The aileron system is lubricated with aerosol spray lubricant.



Figure 1.10.2.3.1. Aileron Horn.

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Figure 1.10.2.3.2. Aileron Rod End.


1.10.1.4 Rudder Control

Lubrication of the rudder system is done using aerosol spray lubricant in all rod ends, inside and outside the cockpit, as shown below.

Fittings between tubes are lubricated with lithium general purpose grease, grade 2.

The rod ends used in the connection to the vertical stabilizer are also lubricated with aerosol spray lubricant.

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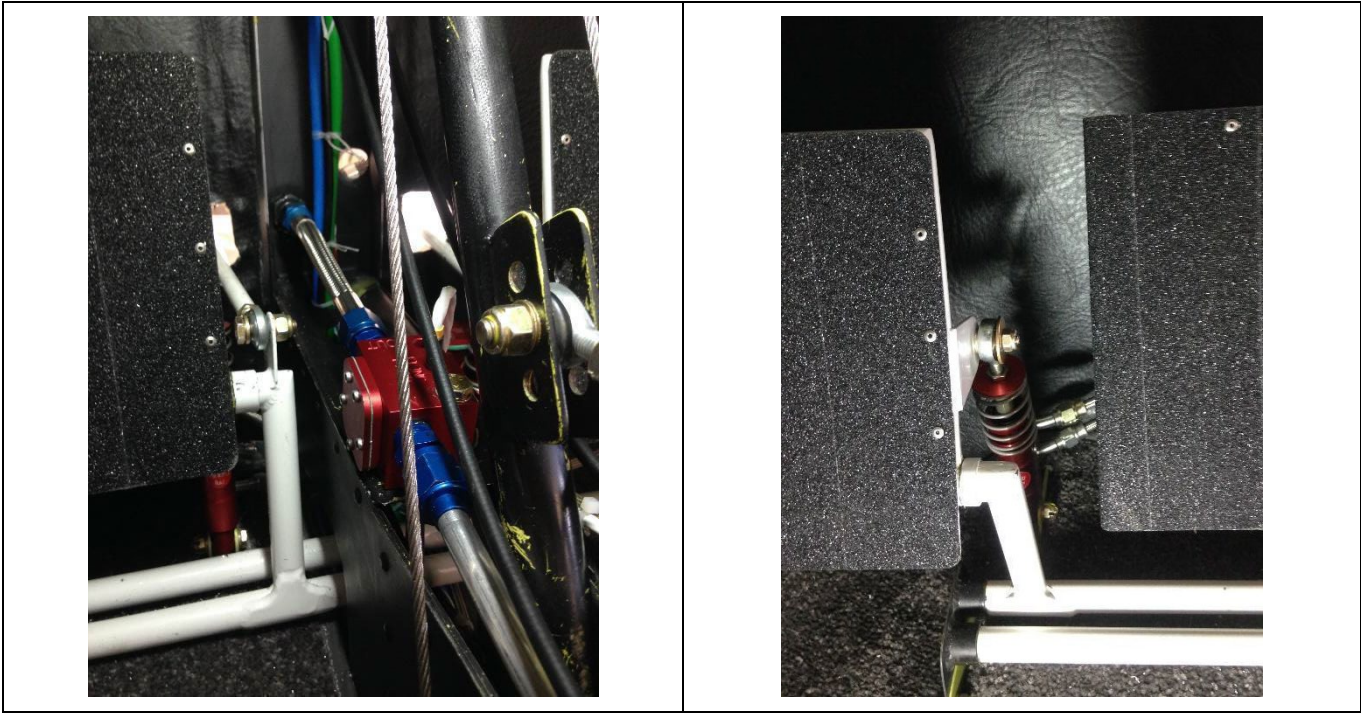


Figure 1.10.2.4.1. Rudder Control System.

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Figure 1.10.2.4.2. Rudder whiffletree.



Figure 1.10.2.4.3. Rudder Rod Ends.

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1.10.1.5 Flap Control

Lubricate the flap attachments with aerosol spray lubricant.



Figure 1.10.2.5.1. Flap attachments.

The flap actuator pushrod should be lubricated with lithium general purpose grease, grade 2.

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Figure 1.10.2.5.2. Flap Motor.

1.10.1.6 Main Column Control

Use lithium general purpose grease, grade 2 for fittings between tubes and metal-to-metal connections in the main control.

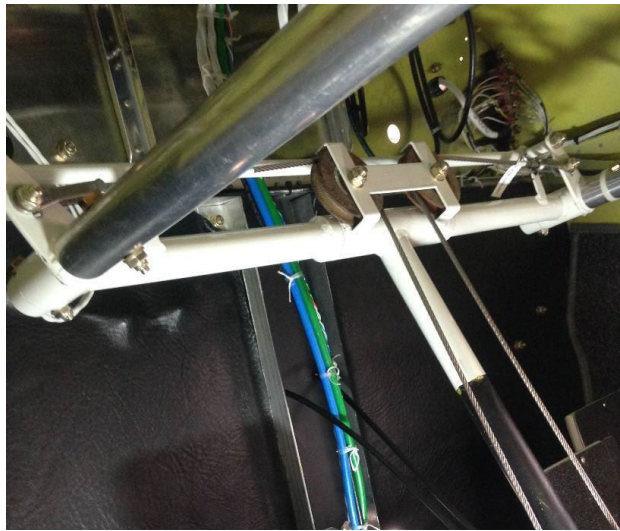



Figure 1.10.2.6.1. Main Control System.

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1.10.1.7 Autopilot

Use aerosol spray lubricant in the rod ends of the elevator servo push-rod.



Figure 1.10.2.7.1. Push-rod elevator servo.

1.10.1.8 Engine


For Engine lubrication, see Chapter 1.7.

1.11 Reporting Safety of Flight Concerns

Contact Texas Aircraft Manufacturing to report possible safety of flight and service difficulty issues (faults, malfunctions, defects, and other occurrences) upon discovery using the Feedback Form in Section 16. Please send the mentioned form by Mail or Email to:

Texas Aircraft Manufacturing, INC
508 Vandenberg Road, Hangar 5
Hondo, TX 78861
800-922-2161
www.texasaircraft.com
support@texasaircraft.com

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Owners/operators have the responsibility to understand that they may submit written comments and questions regarding any mandatory Notice issued by Texas Aircraft Manufacturing, by using the Feedback Form in Section 16 and sending an email with the form to support@texasaircraft.com.


Should an owner/operator not comply with any mandatory service requirement, the aircraft shall be considered not in compliance with applicable ASTM standards and may be subject to regulatory action by the presiding aviation authority.

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2.1 Aircraft Alignment


In order to verify the alignment of the Colt 100 aircraft, there are reference points and distances provided in the tables and figures below. The following reference points are located at the wings and stabilizers. The distances are from the wings to vertical stabilizer (W-VT) and vertical to horizontal stabilizer (VT-HT). The measurement between the wing root and fuselage as well as the wing dihedral is also provided below.

Table 2.1.1. Distance references for alignment.

Reference	Distance	Figure
W - VT	4109 mm \pm 20 mm	9.1.1 / 9.1.6
VT' - HT	1810 mm \pm 10 mm	9.1.1 / 9.1.7
TR - TL height	43 mm \pm 4 mm	9.1.1 / 9.1.4
wing – fuselage gap	37.4 mm \pm 1.0 mm	9.1.5

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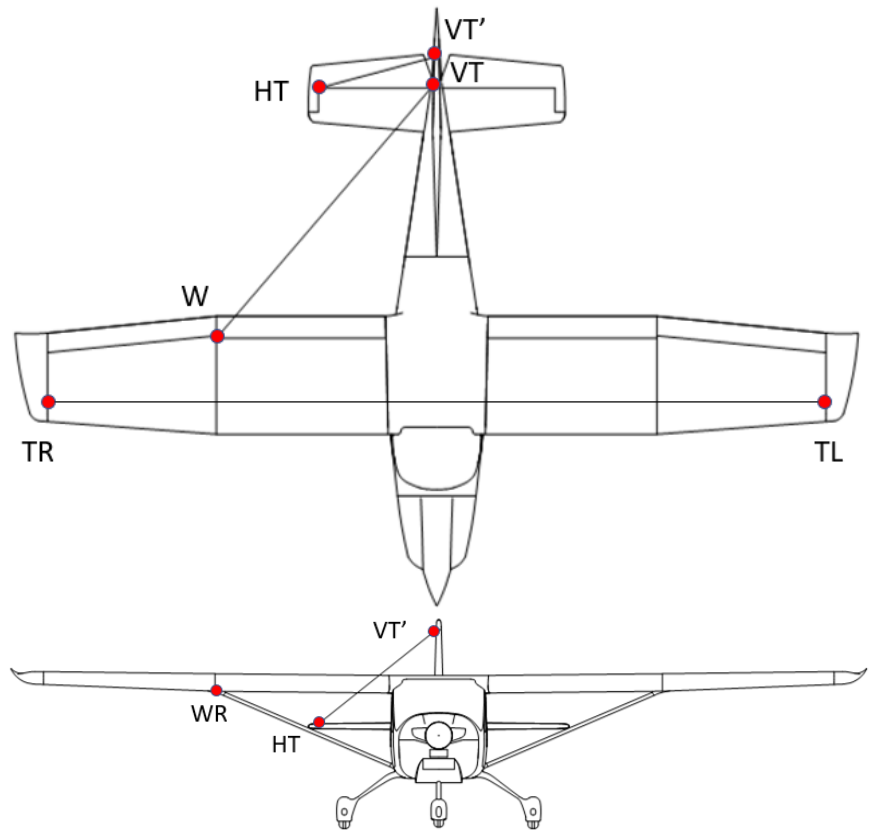


Figure 2.1.1. Reference points and distances.

Wing Dihedral and Incidence: The first procedure is leveling the fuselage as shown in the figure. The angle measurement is taken by placing the level gauge at the center of the fuselage in front of the rivet row.

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Figure 2.1.2. Fuselage alignment.

Then, put a line between the wing tips at the first rivet row and stretch it as straight as possible.

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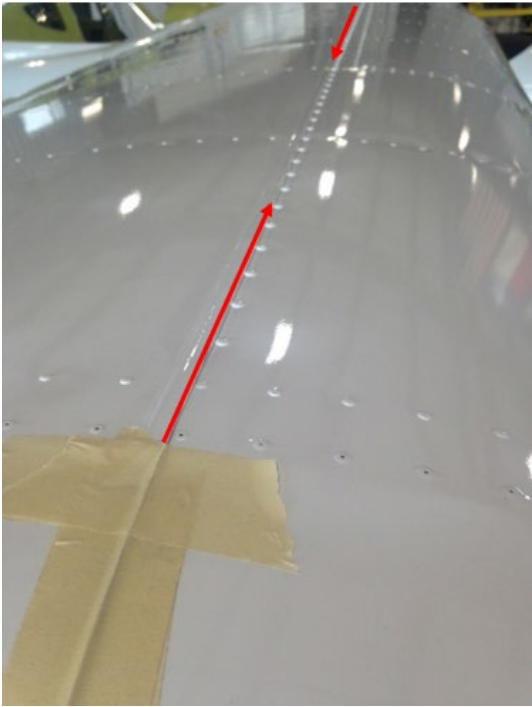


Figure 2.1.3. Line location to align the wings.

The wing dihedral and wing incidence are verified by measuring the distance from the top of the fuselage (first lateral rivet row) to the stretched line across from the wing tips. See figure 9.1.4 below.

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Figure 2.1.4. Height of line at the fuselage.

Wing Span and Sweep: The wing span and wing sweep are verified by measuring the gap between the wing root and outboard edge of the fuselage. Make sure to measure the gap along the wing chord. See figure 2.1.5 below.

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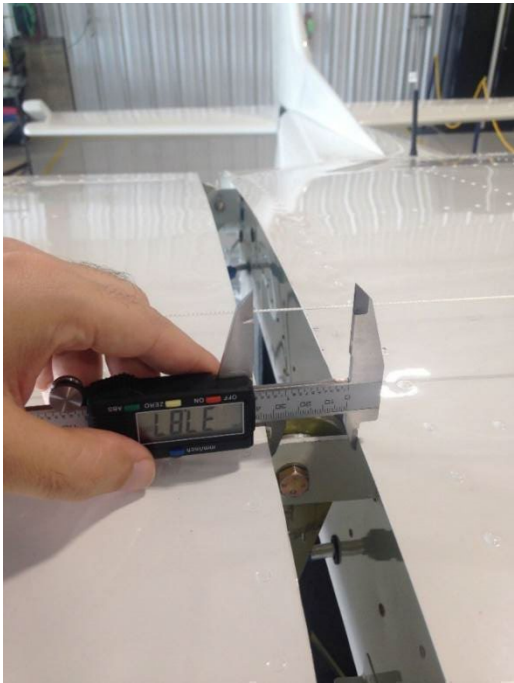


Figure 2.1.5. Gap between fuselage and wings.

Airframe Alignment: An airframe alignment verification can be performed by taking a measurement between a specific point of the wing and vertical stabilizer. The point W on the wing is located at the first rivet of the second rivet row between the aileron and flap station (see figure 9.1.6 below). The VT point is the lower corner of the vertical stabilizer, on the inboard edge.

The alignment of the vertical and horizontal stabilizers is performed by taking a measurement between the first rivet forward of the trailing edge corner on the horizontal stabilizer and the third rivet from the top corner of the vertical stabilizer (see figure 2.1.6 below.) Airframe alignment described above on both left and right sides.

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Figure 2.1.6. W and VT reference points.

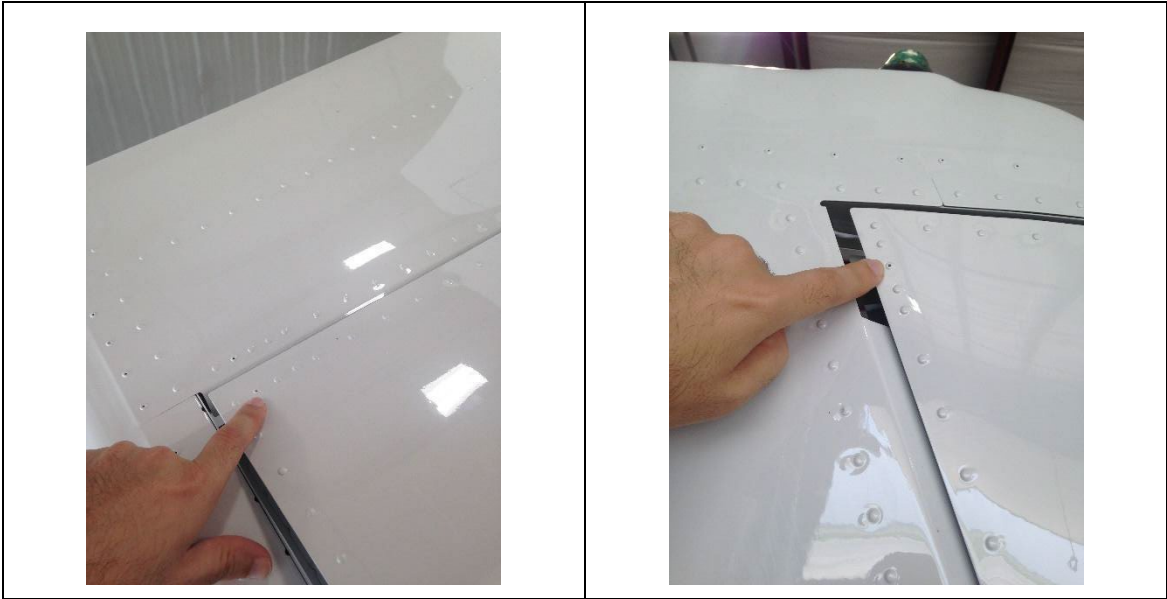



Figure 2.1.7. HT and VT' reference points.

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2.2 Control Cable

The table below shows the required tension for the control cables.

The measurement must occur with the following situation: Sticks in the neutral position for the elevator and centered (neutral position of the ailerons).

Rudder and aileron cables are 1/8" in diameter

Table 2.2.1. Control Cable, Tensions.

Surface Control	Tension
Rudder	35 lbs ± 5 lbs
Aileron cockpit	25 lbs ± 5 lbs
Aileron	25 lbs ± 5 lbs

The procedure to check those values is as follows:

- Remove the seats and the upholstery on the center console and measure the rudder cable

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Figure 2.2.1. Measure of the rudder tension cable

- If the readings are OK, then proceed. If not, tension the cables using the tensioner located near the elevator bell crank.
- No temperature compensation is required
- Any tensiometer can be used, as long as the tool has the following specification:
 - *Range 15-70 Lbs in 1 lb increments or a greater resolution..*
 - *Cable sizes: at least 1/8".*
 - *Accuracy within +/-10 percent or greater.*

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Figure 2.2.2. Tensioning point of the rudder

- Do the same with the Aileron, noting the different tension
- If adjustment is needed, find the tensioners on the roof near the seatbelts fixtures as the picture shows:

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Figure 2.2.2. Tensioning point of the aileron

2.3 Level of Certification


Owner - Items that can be expected to be completed by a responsible owner who holds a pilot certificate but who has not received any specific authorized training.

NOTE

FAA regulations authorize SLSA aircraft owners who hold at least a sport pilot certificate to perform preventative maintenance as outlined in 14 CFR Part 43.

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LSA Repairman Maintenance - Items that can be expected to be completed on a SLSA by a responsible individual, which holds a FAA repairman certificate (light sport aircraft), with a maintenance rating or equivalent.

A&P - Items that can be expected to be completed by a responsible individual who holds a mechanic certificate with airframe or powerplant ratings, or both, or equivalent.

Task Specific - Items that can be expected to be completed by a responsible individual who holds either a mechanic certificate or a repairman certificate and has received task specific training to perform the task.

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2.4 Line Maintenance, Repairs, and Alterations

Alterations must be approved by **Texas Aircraft Manufacturing INC** prior to the alteration

Authorized to perform – LSA Repairman Maintenance or A&P.

▪ First 25 hours

This section outlines the inspection for the **first** 25 hours. For this inspection, it is not necessary to remove inspection panels or the center console.

Visual inspection should be conducted for:

1. Cracks on exterior surfaces, such as: wings, stabilizers and control surface.
2. Looseness of bolts and nuts.
3. Excessive wear on brake assembly.
4. Rod ends and attachments of surface controls.
5. Evidence of fuel leakage on the wing.

2.4.1.1 Engine

The inspection performed on the engine at 25 hours is the same as for the 100 hours engine inspection as provided by the Maintenance Manual (Line Maintenance) for Rotax Engine Type 912 Series (Maintenance Schedule). To do any work on the Rotax engine and keep warranty on the engine, it is recommended to take the appropriate maintenance course from Rotax Aircraft Engines.


Consult the Maintenance Manual (Line Maintenance) for Rotax Engine Type 912 Series for more details.

Visit <https://www.flyrotax.com/services/technical-documentation.html>.

The recommended tasks are:

- All (Alert) Service Bulletins are complied with. If necessary, perform these and document their execution;
- All SI-PAC (Service Instruction Part and Accessories) for additional GENUINE-ROTAX® –parts and accessories used on the relevant aircraft are complied with. If necessary to perform these and document it;
- Remove all spark plugs and check for spark plug defects (deposits, melting...) Check if GENUINE-ROTAX® spark plugs are used;
- Check the magnetic plug;


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- General visual inspection of the engine for damage or abnormalities. Check cooling air duct and cooling fins of the cylinders for obstruction, cracks, wear and good condition. Take note of changes caused by temperature influence;
- Inspect all coolant hoses of the engine for damage, including leakage, hardening from heat, porosity, loose connections and secure attachment. Verify routing is free of kinks and restrictions;
- Carry out visual inspection of leakage bore at the base of the water pump for signs of leakage;
- Inspect the expansion tank for damage and abnormalities. Check coolant level, replenish as necessary. Inspect radiator cap. Inspect protection rubber on expansion tank base for correct fit;
- Inspect the overflow bottle for damage and abnormalities. Verify coolant level, replenish as necessary. Inspect line from expansion tank to overflow bottle for damage, leakage and clear passage. Inspect venting bore in cap of overflow bottle for clear passage;
- Inspect all oil lines for damage, leak age, hardening from heat, porosity, security of connections and attachments. Verify routing is free of kinks and restrictions;
- Inspect all fuel lines for damage, leakage, hardening from heat, porosity, security connections and attachments. Verify routing is free of kinks and restrictions. Check steel fuel lines for any cracks and/or scuffing marks;
- Inspect the wiring and its connections for secure fit, damage and signs of wear;
- Inspect engine suspension and fasteners (GENUINE-ROTAX®-) for secure fit, including damage from heat, deformation, cracks;
- Check the airbox (GENUINE ROTAX®) incl. throttle body actuation. Inspect sensors for tight fit, damage from heat, damage and signs of wear;
- Checking the air filter;
- Inspection of the GENUINE ROTAX® exhaust system included in the standard delivery. Inspect the exhaust system for crack formation and uncharacteristic exhaust stains (leaks). NOTE: If there is no GENUINE ROTAX® exhaust system in use, the specifications of the manufacturer must be observed;
- Drain oil from oil tank;
- Check the oil tank and clean the oil tank if contaminated;
- Refill oil tank with approx. 3 liters of oil. For oil quality, see Operators Manual latest edition;
- Install new oil filter;
- On configurations with auxiliary alternator, check the attachment and the V-belt tension;
- Check all temperature sensors;
- Check all pressure sensors;
- Check all exhaust gas temperature sensors;
- Check all speed sensors;
- Check the throttle control sensor;

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- Check the knock sensor;
- Download the ECU fault memory (fault and data logs);
- Check the ECU wiring;
- Check the throttle valve adjustment;
- Visual inspection of the fuses;
- Engine cleaning;
- Checking the air filter;
- Verify liquid level, replenish as necessary;
- Start the engine and run to operating temperature. Limits see Operators Manual 912 Series. Ignition check at _____ rpm engine speed. Speed drop without LANE: A (Off) _____ rpm B (Off) _____ rpm A/B (difference) _____ rpm Checking the idle speed. After engine test run, re-tighten the oil filter by hand (only at cold engine). Checks for leaks;

2.4.1.2 Lights

Check the function of all lights: Navigation (Red/Green), Beacon, Taxi, Landing, Dome, LED Panel and Dimmer control.

- **50 hours**

2.4.1.3 Engine

The inspection performed on the engine at 50 hours is provided by the Maintenance Manual (Line Maintenance) for Rotax Engine Type 912 Series on Chapter 05-20-00 (Maintenance Schedule). The engine service requirements are outlined in section 2.4.2.1 below. To do any work on the Rotax engine and keep warranty on the engine, it is recommended to take the appropriate maintenance course from Rotax Aircraft Engines.

Consult the Maintenance Manual (Line Maintenance) for Rotax Engine Type 912 Series for more details.

Visit <https://www.flyrotax.com/services/technical-documentation.html>.


According to Section 1.7, Engine Lubrication System, Approved Oils and Capacities.

The recommended tasks are:

- Remove the old oil filter from the engine. Cut old filter without producing any metal chips and inspect following components for wear and /or missing material;
- Drain oil from oil tank;
- Check the oil tank and clean the oil tank if contaminated;

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- Refill oil tank with approx. 3 liters of oil. For oil quality, see Operators Manual latest edition;
- Install new oil filter.

▪ **100 hours or Annual Inspection**

Before the 100 hours inspection or annual inspection the authorized to perform maintenance needs to check with the CAA registry that the registration identification (a) is still the same for that serial number, and (b) the owner information is still current.

Remove all covers/fairings and inspection panels.

To do any work on the Rotax engine and keep warranty on the engine, it is recommended to take the maintenance course from Rotax Aircraft Engines.

Authorized to perform – LSA Repairman Maintenance or A&P.

2.4.1.4 Fuselage


- Skin - for deterioration, distortion, other evidence of failure, and defective or insecure attachment of fittings.
- Systems and components - for improper installation, apparent defects, and unsatisfactory operation.
- Control surface system - for lubrication.

2.4.1.5 Cabin and Cockpit Group

- Generally - for uncleanliness and loose equipment that might foul the controls.
- Seats and safety belts - for poor condition and apparent defects.
- Windows and windshields - for deterioration and breakage.
- Instruments - for poor condition, mounting, marking, and (where practicable) improper operation.
- Flight and engine controls - for improper installation and improper operation. Full and unrestricted movement of travel.
- Batteries - for improper installation and improper charge.
- All systems - for improper installation, poor general condition, apparent and obvious defects, and insecurity of attachment.
- All control cables - for broken wires strands. Any cable assembly that has one broken wire strand located in a critical fatigue area must be replaced. Check and adjust the tension according to Section Control Cables.
- Inspect pulleys - for roughness, sharp edges, and presence of foreign material embedded in the grooves. Examine pulley bearings to ensure proper lubrication, smooth rotation; and freedom from flat spots, dirt, and paint spray.

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- Check all pulley brackets and guards for damage, alignment, and security.
- Control Surface system – for lubrication.

2.4.1.6 Engine and Nacelle Group

- Engine section - for visual evidence of excessive oil, fuel, or hydraulic leaks, and sources of such leaks.
- Studs and nuts - for improper torque and obvious defects.
- Internal engine - for cylinder compression and for metal particles or foreign matter on screens and sump drain plugs. If there is weak cylinder compression, for improper internal condition and improper internal tolerances.
- Engine mount - for cracks, looseness of mounting, and looseness of engine to mount.
- Flexible vibration dampeners - for poor condition and deterioration.
- Engine controls - for defects, improper travel, and improper safety.
- Lines, hoses, and clamps - for leaks, improper condition and looseness.
- Exhaust stacks - for cracks, defects, and improper attachment.
- All systems - for improper installation, poor general condition, defects, and insecure attachment.
- Cowling - for cracks, and defects.
- Rudder control system – for lubrication.

2.4.1.7 Engine

The inspection performed on the engine at 100 hours is provided by the Maintenance Manual (Line Maintenance) for Rotax Engine Type 912 Series on Chapter 05-20-00 (Maintenance Schedule). The engine service requirements are outlined in section 2.4.2.1 below. To do any work on the Rotax engine and keep warranty on the engine, it is recommended to take the appropriate maintenance course from Rotax Aircraft Engines.


Consult the Maintenance Manual (Line Maintenance) for Rotax Engine Type 912 Series for more details.

Visit <https://www.flyrotax.com/services/technical-documentation.html>.

The recommended tasks are:

- All (Alert) Service Bulletins are complied with. If necessary, perform these and document their execution;
- All SI-PAC (Service Instruction Part and Accessories) for additional GENUINE-ROTAX® –parts and accessories used on the relevant aircraft are complied with. If necessary to perform these and document it;
- Check the compression by the differential pressure method;
- Visual inspection of the GENUINE ROTAX® fuel filter for leaks;


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- Replacement of the GENUINE ROTAX® fuel filter (exclusive after TSN or TSO \leq 100 hour \pm permissible tolerance);
- Remove all spark plugs and check for spark plug defects (deposits, melting...) Check if GENUINE–ROTAX® spark plugs are used;
- Replacing spark plugs. (use of leaded fuel more than 30% of operation);
- Check the magnetic plug;
- Remove old oil filter from engine. Cut old filter without producing any metal chips and inspect components for wear and/or missing material;
- General visual inspection of the engine for damage or abnormalities. Check cooling air duct and cooling fins of the cylinders for obstruction, cracks, wear and good condition. Take note of changes caused by temperature influence;
- Inspect temperature sensors and oil pressure sensor for secure fit and signs of wear;
- Inspect all coolant hoses of the engine for damage, including leakage, hardening from heat, porosity, loose connections and secure attachment. Verify routing is free of kinks and restrictions;
- Carry out visual inspection of leakage bore at the base of the water pump for signs of leakage;
- Inspect the expansion tank for damage and abnormalities. Check coolant level, replenish as necessary. Inspect radiator cap. Inspect protection rubber on expansion tank base for correct fit;
- Inspect the overflow bottle for damage and abnormalities. Verify coolant level, replenish as necessary. Inspect line from expansion tank to overflow bottle for damage, leakage and clear passage. Inspect venting bore in cap of overflow bottle for clear passage;
- Inspect all oil lines for damage, leak age, hardening from heat, porosity, security of connections and attachments. Verify routing is free of kinks and restrictions;
- Inspect all fuel lines for damage, leakage, hardening from heat, porosity, security connections and attachments. Verify routing is free of kinks and restrictions. Check steel fuel lines for any cracks and/or scuffing marks;
- Inspect engine suspension and fasteners (GENUINE-ROTAX®-) for secure fit, including damage from heat, deformation, cracks;
- Check the airbox (GENUINE ROTAX®) incl. throttle body actuation. Inspect sensors for tight fit, damage from heat, damage and signs of wear;
- Checking the air filter;
- Inspection of the GENUINE ROTAX® exhaust system included in the standard delivery. Inspect the exhaust system for crack formation and uncharacteristic exhaust stains (leaks). NOTE: If there is no GENUINE ROTAX® exhaust system in use, the specifications of the manufacturer must be observed;
- Drain oil from oil tank;
- Check the oil tank and clean the oil tank if contaminated;

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- Refill oil tank with approx. 3 liters of oil. For oil quality, see Operators Manual latest edition;
- Install new oil filter;
- Inspect the fuel system on the engine side for leaks;
- Inspect the fuel system for damages;
- On configurations with auxiliary alternator, check the attachment and the V-belt tension;
- Inspect screws and nuts of all external parts for tight fit. Inspect safety wiring, replace as necessary;
- Check all temperature sensors;
- Check all pressure sensors;
- Check all exhaust gas temperature sensors;
- Check all speed sensors;
- Check the throttle control sensor;
- Check the knock sensor;
- Download the ECU fault memory (fault and data logs);
- Check the ECU wiring;
- Check the throttle valve adjustment;
- Visual inspection of the fuses;
- Engine cleaning;
- Checking the air filter;
- Verify liquid level, replenish as necessary;
- Start the engine and run to operating temperature. Limits see Operators Manual 912 Series. Ignition check at _____ rpm engine speed. Speed drop without LANE: A (Off) _____ rpm B (Off) _____ rpm A/B (difference) _____ rpm Checking the idle speed. After engine test run, re-tighten the oil filter by hand (only at cold engine). Checks for leaks;

2.4.1.8 Landing Gear Group


- All units - for poor condition and insecurity of attachment.
- Hydraulic lines - for leakage.
- Wheels - for cracks, defects, and condition of bearings.
- Tires - for wear and cuts.
- Brakes - for improper adjustment and pads wear.

2.4.1.9 Wing Assembly

- All components of the wing and center section assembly for poor general condition, skin deterioration, distortion, evidence of failure, and insecurity of attachment.
- Control Surface system – for lubrication.

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2.4.1.10 Empennage Assembly

- All components and systems that make up the complete empennage assembly for poor general condition, skin deterioration, distortion, evidence of failure, insecure attachment, improper component installation, and improper component operation.
- Control Surface system – for lubrication.

2.4.1.11 Propeller Group

- Propeller assembly - for cracks, nicks, delamination, binds, and oil leakage.
- Bolts - for improper torque and lack of safety.
- **See Section 2.4.13.1**

Note: The inspection performed on the propeller at 100 hours is provided by the Manufacturer's Maintenance Manual. Consult the Propeller Manual for more details:

- **For Sterna Propeller, Instruction manual Sterna propeller range .**

NOTE:

- **Propeller pitch is set by Texas Aircraft Manufacturing and may not be changed or adjusted.**

2.4.1.12 Radio Group

- Radio and electronic equipment - for improper installation and insecure mounting.
- Wiring and conduits - for improper routing, insecure mounting, and obvious defects.
- Bonding and shielding - for improper installation and poor condition.
- Antennas - for poor condition, insecure mounting, and improper operation.

2.4.1.13 ELT

- Remove and inspect the ELT installed for :
 - (1) Proper installation;
 - (2) Battery corrosion;
 - (3) Operation of the controls and crash sensor; and
 - (4) The presence of a sufficient signal radiated from its antenna.


▪ Servicing of Fluids

Find the correspondent chapter for each fluid according to the table below.

Table 2.4.4.1. Servicing of fluids, reference chapter.

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Fluids	Chapter
Oil	1.7
Coolant	1.8
Brake	2.4

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- **2 Years Inspection**

According to 14 CFR Part 91.411, all aircraft capable of operating under IFR regulations must undergo an anemometric calibration, as part of the altimeter system and altitude reporting equipment tests and inspections, every two years.

- **2000 hours**

2.4.1.14 Engine

Time between Overhaul (TBO) is 2000 hours or 15 years, whichever comes first.

Visit <https://www.flyrotax.com/services/technical-documentation.html> and consult the Maintenance Manual (Heavy Maintenance) for Rotax Engine Type 912 Series for further details.

To do overhauls on the Rotax engine and keep warranty, it is recommended to take the heavy maintenance course from Rotax Aircraft Engines.

Authorized to perform – Rotax overhaul authorized companies and A&P.

2.4.1.15 Propeller

Factory Inspection required at 1500 Hours.

See Section 2.4.13.2

Note: Consult the Propeller Manual for more details:

- **For Sterna Propeller, Instruction manual Sterna propeller range .**

NOTE:

Propeller pitch is set by Texas Aircraft Manufacturing and may not be changed or adjusted.


- **Electric Fuel Pump**

The electric fuel pump is installed on the firewall, between the gascolator and the fuel distributor. Replace as necessary upon indications of improper operation.

Table 2.4.6.1. Electric Fuel Pump.

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Manufacturer	Voltage	Current
GENUINE-ROTAX® fuel pump	12V	9.1 amp



Figure 2.4.6.1. Fuel Pump Installation.

Removing:


- Move the Fuel Selector to the OFF position;
- Drain the fuel contained inside the line;
- Disconnect the electrical connection;
- Disconnect the hoses attached to the fuel pump;
- Remove the bolts attached to the firewall.

Electrical Connection:

- Connect the hoses;
- Connect the electric plug;
- Install it to the firewall.

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CAUTION

The aircraft is unairworthy with a defective electric fuel pump.

▪ Gascolator


The gascolator itself has no scheduled maintenance interval and is an On-Condition maintenance component. Deterioration and leaking would indicate replacement. Always sump the fuel at the gascolator during pre-flight inspection to prevent premature corrosion. The gascolator filter screen should be inspected visually for contamination and potential blockages, cleaned and replaced if needed.

Table 2.4.7.1. Gascolator components.

Component	Model
ACS Gascolator	10580
Gascolator Screen 120 Microns	10543-1
ACS Bracket Installation	10371

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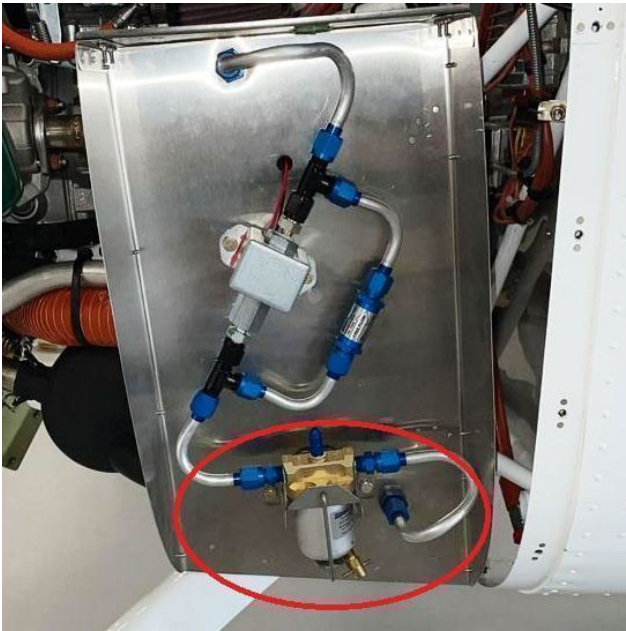


Figure 2.4.7.2. Gascolator installation.

Removing:

- Move the Fuel Selector to the OFF position;
- Drain the fuel contained inside the line;
- Disconnect the hoses attached to gascolator;
- Release the wheel nut below the bowl to lose the wire and remove the gascolator.

Installing:


- Fit the gascolator into the bracket
- Put the wire and tight the wheel nut;
- Connect the hoses to the gascolator;

▪ **Battery**

Manufacturer	Model	Nominal Voltage	Nominal Capacity
EarthX	ETX900	13.2 V	15.6 Ah

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The battery installed in the Colt 100 has an ETX hundred series Battery and is a maintenance free battery. No inspection or testing is recommended for 24 months after purchase, and thereafter the following is recommended annually:

Inspecting:

Visually inspect the battery for signs of damage; the plastic case is warped or swollen. Ensure the terminal screws are tight (properly torqued).

LED Light	Voltage	Possible Cause	Recommended Action
Continuous Flashing Light	Less than 13.2V	Battery over-discharged (due to faulty charging system)	Charge battery. Once charged, the light will stop flashing.
Continuous Flashing Light	Less than 13.2V	Weak or failing cell	Charge battery. If voltage drops below 13.2V within a few days, discontinue use.
Continuous Flashing Light	13.2V-14.6V	Weak or failing cell	Discontinue use. If in flight, this is not an immediate issue unless it is in conjunction with a charging system failure.
Continuous Flashing Light	Greater than 15.2V	Over-charging (due to faulty charging system)	If in flight, shutoff charging system immediately. Aircraft over-voltage protection is strongly recommended (i.e. over voltage crowbar circuit)
Flashing Light (short periods)	13.2V – 14.6V	Cell to cell charge levels are not balanced	May come on briefly during periods of high current charging until the cells are automatically balanced. Try charging with a plugin charger, like an Optimate Lithium charger.
Solid Light	Any voltage	BMS electronic issue	Discontinue use. If in flight, this is not an immediate issue unless it is in conjunction with a charging system failure.
Solid Light that turns off	Any voltage	Short Circuit protection was activated	Nothing needs to be done.

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Figure 2.4.8.1. The table above shows the most common fault conditions and possible causes.

Removing:

Remove the old battery, while paying attention to the routing and placement of wires, cables and protective covers.

Installing:

Check the battery cables and connectors for corrosion or damage. Pay special attention to the positive battery cable, checking for cuts or wear marks in the insulation. Clean and or replace the battery cables as required.

Place the battery in the support.

Connect the positive cable first. Next, connect the negative cable. Do not connect the battery in reverse polarity (positive to negative or negative to positive).

Install the battery holder and tighten securely.

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Figure 2.4.8.2. Final Battery Installation.


▪ **Switches**

2.4.1.16 Garmin avionics system

The Colt 100 with Garmin avionics system is equipped with a Master Switch group, and a second switch group. Both groups are located at the cockpit panel. See Section 8.2, Avionics and Instruments for more details.

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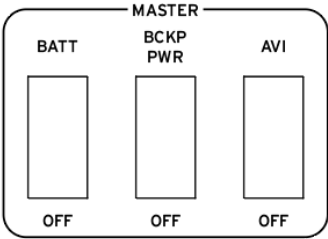


Figure 2.4.9.2.1. Master Switch display

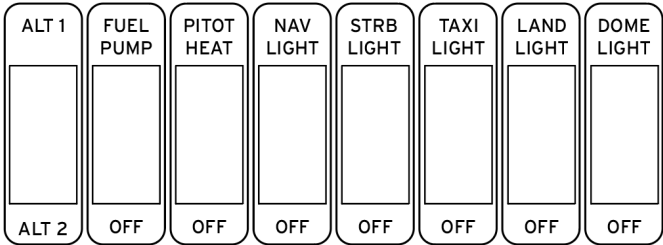


Figure 2.4.9.2.2. Switch display

▪ **Lights**

The lights have no scheduled maintenance interval and are an On-Condition maintenance component. If replacement is needed for a navigation light, remove the phillips screw and the light will be free to pull out of position. Disconnect electrical wires. To install, connect the electrical wires, position light with the black rubber gasket in place to seal water from infiltrating, then tighten the screw. The same procedure is to be followed to replace the beacon light.

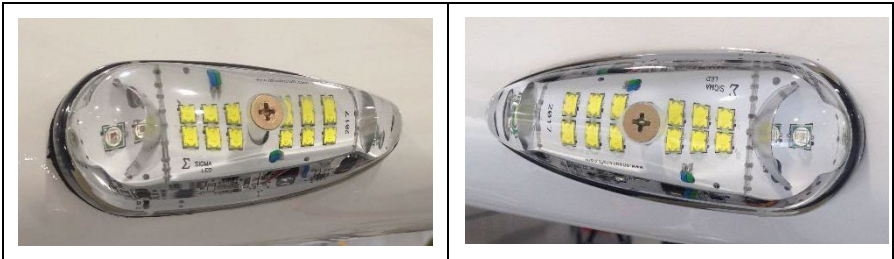



Figure 2.4.10.1. Navigation Lights, LH and RH, respectively.

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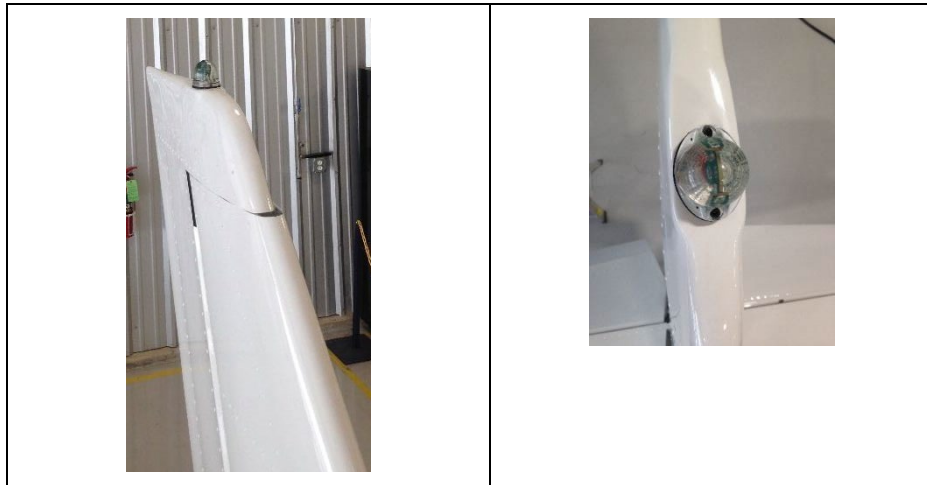


Figure 2.4.10.2. Beacon Light on the Vertical Stabilizer.

The Taxi and Landing lights are located in the leading edge of the left wing. They are supported by buckets, Philips screws and anchor nuts behind the lenses.



Figure 2.4.10.3. Taxi and Landing Lights.

Replacing the taxi or landing lights:


Disconnect the electrical connection, which is behind the main wing spar. Then, remove the light from the bracket. To replace it with a new component, connect the electrical source and install it in the bracket. Adjust the light beam direction to the best pilot position, tighten the screws and reposition the wires and connections behind the main wing spar.

- **Circuit Breaker**

The circuit breaker has no scheduled maintenance interval and is an On-Condition maintenance component. In order to change the circuit breaker, disconnect the wires behind the panel and loosen the circuit break in front of the panel. To replace, install on the panel and reconnect wires.

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2.4.1.17 Garmin Avionics System

There are three groups of circuit breakers located in the panel, rated according to the labels, and as shown in the pictures below.

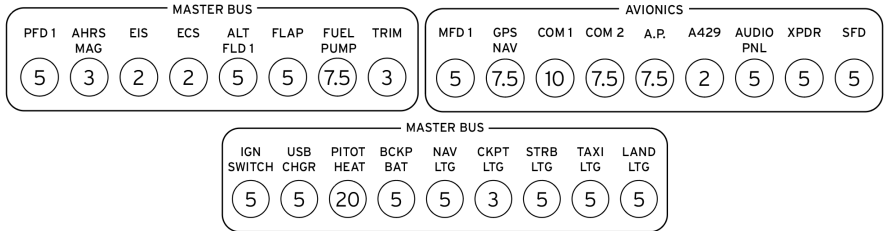


Figure 2.4.11.2.1. Circuit Breaker layout for Garmin avionics system

Table 2.4.11.2.1. Circuit breaker – Garmin Avionics System.


Part Number	Manufacturer	Current Rating
7274-2-2	Klixon	2 A
7274-2-3	Klixon	3 A
7274-2-5	Klixon	5 A
7274-2-7.5	Klixon	7.5 A
7274-2-10	Klixon	10 A
7274-2-20	Klixon	20 A

▪ **Exhaust Manifold / Mufflers**

The exhaust system is composed of an exhaust manifold and a muffler. The exhaust manifold is installed to the cylinder heads and muffler. Exhaust gases exit the cylinder into the manifolds into the muffler and then exit the system at the tail-pipe. See figure 2.4.12.1 below for critical system inspection points.

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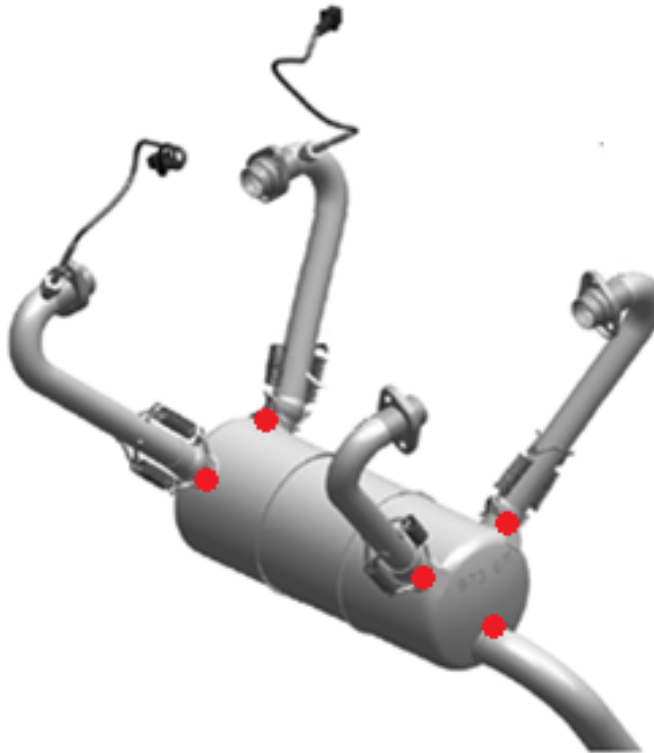


Figure 2.4.12.1. Exhaust Inspection Points.

Inspection:

The exhaust should be inspected each 50 hours at all welded joints.

Repair:


TIG welding repairs should be used.

NOTE

The exhaust gas temperatures (EGT) can be measured by sensors at the initial engine installation and verified in the course of test flights.

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More information can be found in the Installation **Manual for ROTAX Engine Type 912 Series**.

Visit <https://www.flyrotax.com/services/technical-documentation.html>

▪ **Propeller**

2.4.1.18 100 hours or Annual Inspection

Remove the spinner dome and examine it for damage, and cracks. If necessary, replace the spinner dome. See manufacturer for repairs to the spinner dome.

It's recommended that the attachment bolts (AN5), every 100 hours or 12 months (whichever comes first), should be removed one at a time, not removing the propeller hub, inspected for corrosion and dimensionally checked. Once one bolt is removed, inspected and approved, it should be installed on the hub before removing the next one.

Any bolts that exhibit stretching, corrosion or damage such as cracks or nicks are to be replaced.

The recommended torque value on **Three-Blade FLASH Propeller Hub** attachments bolts (M8) should be 25Nm (Newton-meter)

2.4.1.19 600 hours Inspection

Remove the spinner dome and examine it for damage, and cracks. If necessary, replace the spinner dome. See manufacturer for repairs to the spinner dome.

Remove clamp bolts. The bolts should be dimensionally checked against one another.

Any bolts that exhibit stretching, corrosion or damage such as cracks or nicks are to be replaced.

Remove the hub cover half and set aside.

Remove each blade and inspect blade shanks for any wear. A thorough visual inspection is recommended together with a coin tap inspection of each composite blade, including the metal erosion shield on the leading edge. No dents in the Leading Edge (metal erosion shield) should be deeper than 1/8". No dents should puncture the metal erosion shield. There should be no wear through or cracks in the leading edge. If blade damage is beyond Minor Blade Repair instructions below, the blade must either be retired from service or sent to a repair station for evaluation before further service.

Conditions requiring blade retirement from service:


Any hole in hollow blade shell (doesn't apply if a replacement metal erosion shield will cover hole)

Any crack or damage deeper than .025"

Any solid tip damage that can't be trimmed off completely within the limits for

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minimum diameter

Remove the mounting bolts -- The bolts should be dimensionally checked against one another. Any bolts that exhibit stretching, corrosion or damage such as cracks or nicks are to be replaced.

Remove the hub mount half and spacer. Inspect both hub halves for corrosion. If necessary, carefully remove any flaked or blistered paint from the hub surface, taking care not to scratch the aluminum surface. If there is any corrosion or damage present, please see Minor Hub Repair instructions below.

Remove the rear spinner bulkhead and examine for missing fasteners, damage, and cracks. If damaged or cracked, replace the spinner bulkhead.

Reinstall the assembly per the above installation instructions.

Note: Consult the Propeller Manual for more details:

- For Sterna propeller, Instruction manual Sterna propeller .

NOTE:

Propeller pitch is set by Texas Aircraft Manufacturing and may not be changed or adjusted.

2.4.1.20 1500 hours / Major Periodic Inspection

Remove the spinner dome and examine for damage, and cracks. If necessary, replace the spinner dome.

Remove clamp bolts and washers and retire from service.

Remove the hub cover half and blades.

Remove mount bolts and special lock washers and retire from service.

Remove rear spinner bulkhead and examine for damage, and cracks. If necessary, replace the rear bulkhead.

Remove the hub mount half and spacer (if applicable).

- Sterna - The 1500-hour inspection can be performed by an A&P, IA, approved repairman or it can be sent to the Sterna propeller factory.

Reinstall propeller approved if approved after the major inspection or replace with a new propeller, spacer (if necessary), and spinner per the above installation instructions.


Note: Consult the Propeller Manual for more details:

NOTE:

Propeller pitch is set by Texas Aircraft Manufacturing and may not be changed or adjusted.

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- **Spark plug**

The spark plug recommended for the Colt 100 is **DCPR8E NGK SPARK PLUG P/N: 297940**. At the discretion of the mechanic and operator, spark plugs may be replaced per Rotax recommendation.

More information can be found in the Installation **Manual for ROTAX Engine Type 912 Series**.

Visit <https://www.flyrotax.com/services/technical-documentation.html>

It's recommended that the spark plugs are installed using **MG Chemicals 860-150G Silicon Heat Transfer Compound**.

Removing:

Remove the spark plug, check for mechanical damage and clean the electrode gap. Adjustment of the spark plug gap is not allowed. If gap measurement is over the permissible limit, the spark plug must be discarded.

Electrode Gap	
Min - Max	Wear Limit
0.8 – 0.9 mm (0.031 – 0.035")	1.1 mm / 0.043"

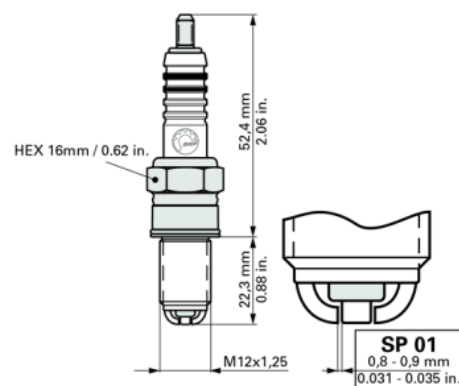



Figure 2.4.14.1. Electrode gap.

Replacing:

It's recommended that the spark plugs be replaced every 100 hours if the use of leaded fuel is more than 30% of the operation time. It's recommended that the spark plugs be replaced every 200 hours if leaded fuel is used less than 30% of the time.

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Installing:

Apply a small quantity of heat conduction compound to spark plug thread and tighten spark plug to 16Nm (142 in.lb) on the cold engine.

▪ Electrical Ignition

The ignition unit is completely free of maintenance and needs no external power supply.

Check:

Check the two ignition circuits at 4000 RPM.

- Speed drop with only one ignition circuit must not exceed 300 RPM.

115 RPM max RPM difference between both circuits when only one ignition circuit is in operation, A or B.

Inspection:

Inspect plug connections between electronic module and ignition coils for corrosion or damage and replace if necessary.


Inspect all 8 ignition cables to spark plug connector for corrosion or damage and tight fit and replace if necessary.

WARNING

MAKE SURE IGNITION SWITCH IS IN THE OFF POSITION AND THE KEY IS REMOVED BEFORE ANY MAINTENANCE IS PERFORMED. **ALWAYS ALLOW ENGINE TO COOL DOWN TO AMBIENT TEMPERATURE BEFORE START OF ANY WORK.**

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- **Hoses and Lines**

Inspect all coolant hoses for damage, including leakage, hardening from heat, porosity, loose connections and secure attachment. Verify routing is free of kinks and restrictions. Rubber hoses should be changed every 5 years.


- **Ballistic Recovery System**

The removal of the parachute is prohibited by anyone other than TEXAS AIRCRAFT. Every 6 years, the aircraft MUST be brought to the Texas Aircraft Manufacturing facility for an inspection of the parachute system. During this process, the parachute must be removed and sent to the parachute manufacturer for review, reassembly, and subsequent reinstallation in the aircraft by Texas Aircraft.

For more information, see the parachute maintenance and installation manual.

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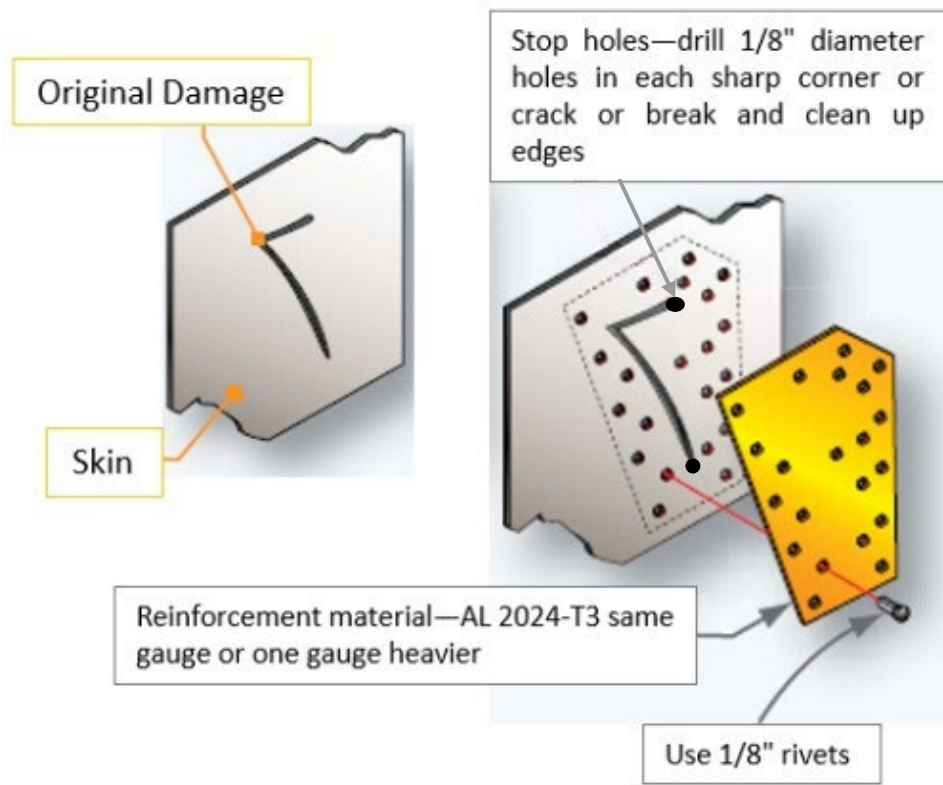
▪ **Repairs**

Small holes in skin panels or non-structural parts which do not involve damage to the stiffening members may be patched by covering the hole with 2 types of patch plates: Lap Patch or Flush Patch.

2.4.1.21 Lap Patch


The lap or scab type of patch is an external patch where the edges of the patch and the skin overlap each other. The overlapping portion of the patch is riveted to the skin. Lap patches may be used in most areas where aerodynamic smoothness is not important.

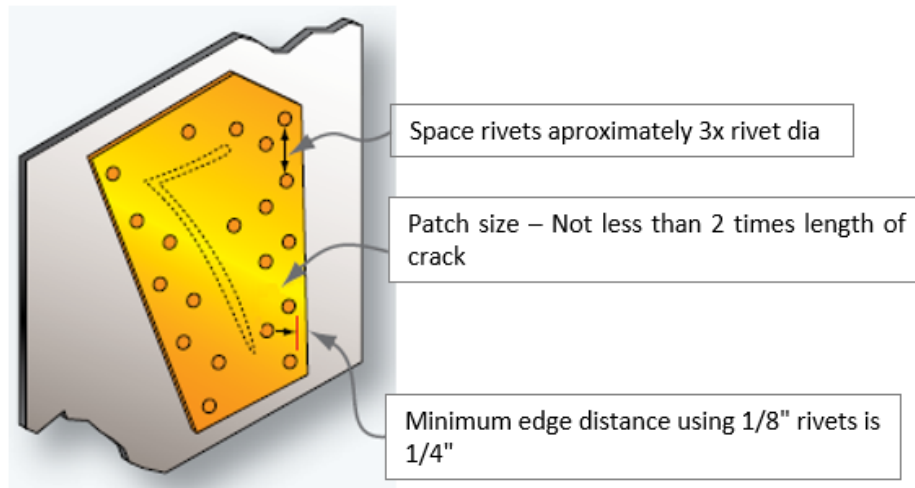
The figure below shows a typical patch for a crack and or for a hole.



- The 1/8" rivets are solid aluminum rivets
- Seal with SIKAFLEX[®] or any other similar product. The surface finish can be achieved using automotive polyester putty filler, sanding and repainting the affected area

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When repairing cracks or small holes with a lap patch, the damage must be cleaned and smoothed. In repairing cracks, a small hole must be drilled in each end and sharp bend of the crack before applying the patch. These holes relieve the stress at these points and prevent the crack from spreading. The patch must be large enough to install the required number of rivets. It may be cut circular, square, or rectangular. If it is cut square or rectangular, the corners are rounded to a radius no smaller than 1/4-inch. The edges must be chamfered to an angle of 45° for 1/2 the thickness of the material.

2.4.1.22 Flush Patch


A flush patch is a filler patch that is flush to the skin when applied it is supported by and riveted to a reinforcement plate which is, in turn, riveted to the inside of the skin.

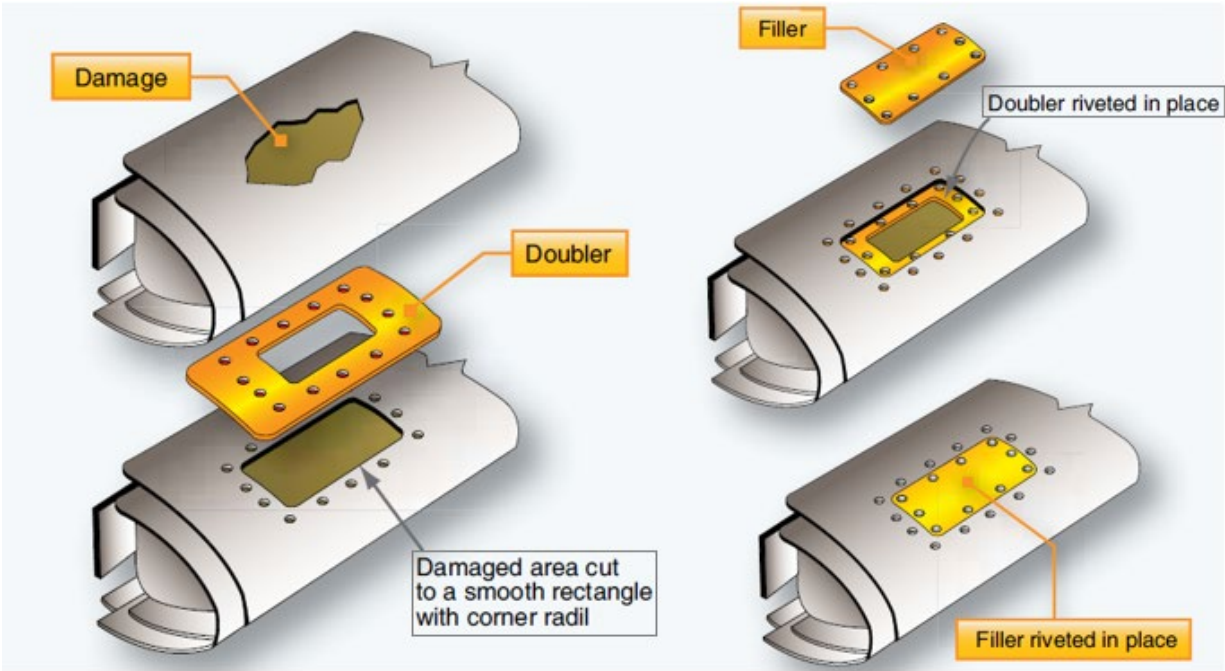
The next figure shows a typical flush patch repair. The doubler is inserted through the opening and rotated until it slides in place under the skin. The filler must be of the same gauge and material as the original skin. The doubler should be of material one gauge heavier than the skin.

The repair needs done using only flush solid aluminum rivets, sealed with SIKAFLEX  or any other similar product. The surface finish can be achieved using automotive polyester putty filler, sanding and repainting the affected area

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2.4.1.23 Stop-Drilling of Cracks

Small cracks that do not affect the structural integrity of the component may be repaired by stop-drilling the ends of the crack with a # 30 or a 1/8-inch drill.

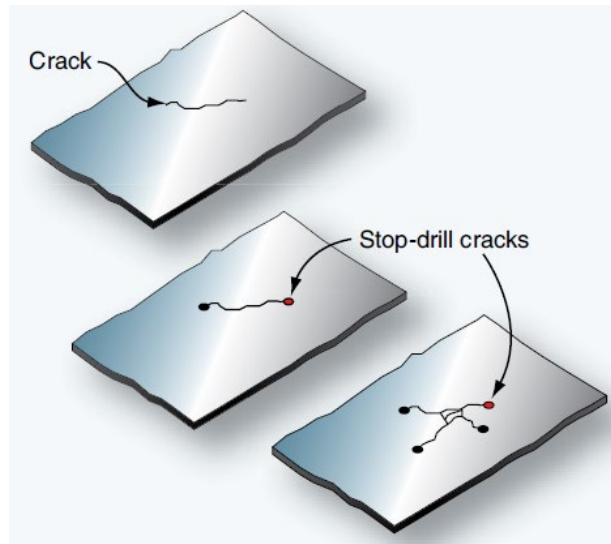


Figure 2.4.18.3.1. Stop-Drilling of Cracks.

Then, proceed with the repair according to 2.4.1.21 as needed.


▪ Installation of Communication Radio, Transponder, GPS and Antenna

The installation guide of Communication Radio, Transponder, GPS and Antenna is provided by the avionics manuals search <https://support.garmin.com>, for Garmin system avionics. See Section 9, Electrical System to check the Electrical Diagrams.

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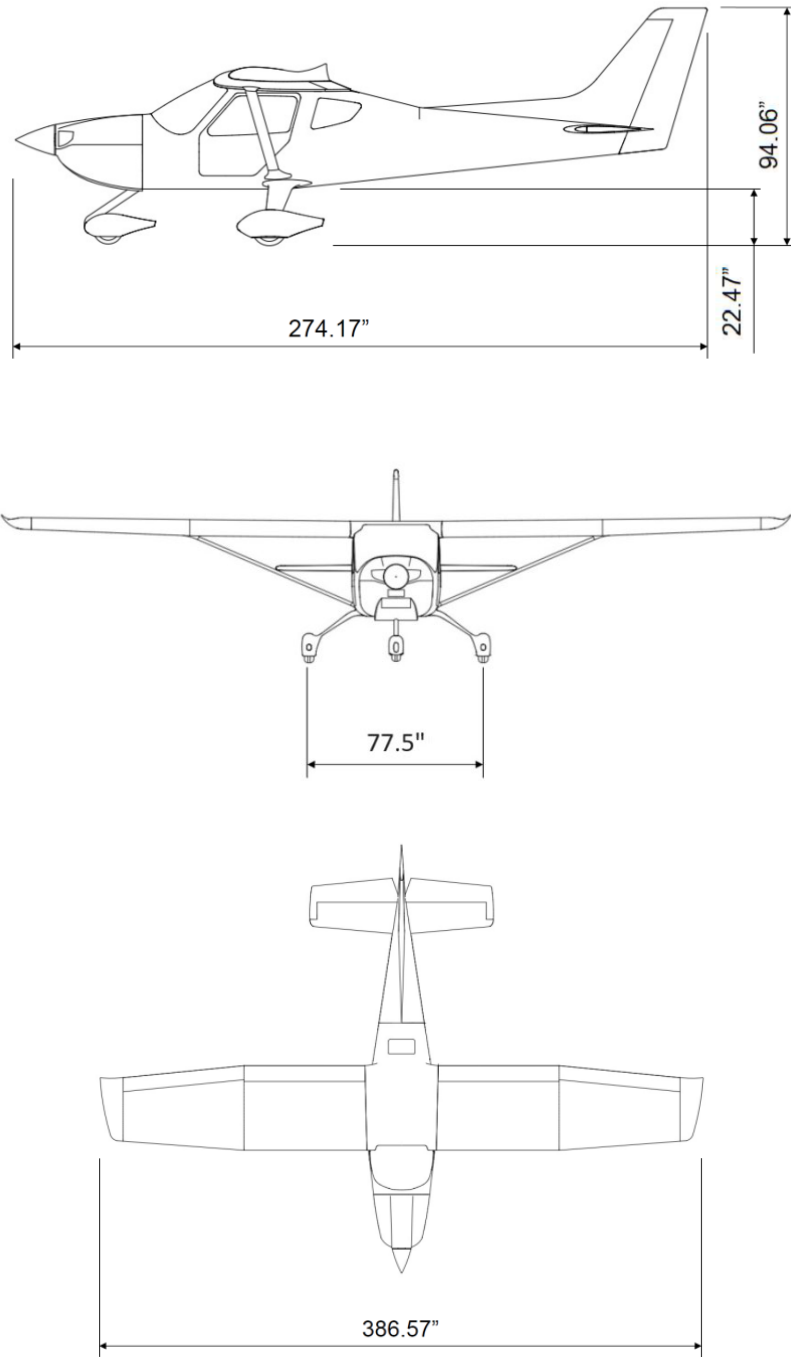
3.1 Airplane Profile

Type	This special light-sport aircraft is high-wing, strut-braced, designed for two occupants side-by-side, with fixed landing gear, mixed structure of truss type and semi-monocoque, composed by Aluminum Alloy, Chromium-Molybdenum Steel tubes and carbon fiber. Powered by one frontal engine Rotax 912 ULS2-01. The MTOW is 1320lbs, including empty aircraft, fuel, crew and baggage (max 44 lbs).
Design	The aircraft has a conventional design, which results in a good behavior in terms of control and flight stability. The flaps are electrically controlled from 0° to 30° via a pilot-controlled cockpit switch. The nominal aileron deflection is 20° upward and 15° downward. The elevator and rudder present a nominal deflection angle of 25° upward and downward for both flight controls. The trim tab is deflected by an electric servo connected to the surface. The main landing gear is constructed by Aluminum Alloy plate equipped with hydraulic brakes, while the nose landing gear is a free-castoring type constructed by Chromium-Molybdenum Steel tubes. To improve the efficiency and performance, all fairings are made of carbon fiber and they are specially made by hand lay-up and vacuum bag techniques.
Layout	The aircraft is composed of the following groups: Power Plant, Wings, Fuselage, Tail Cone, Stabilizers, Flight Controls, Landing Gear, Electrical System, Avionic .

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3.2 Main Dimensions and Control Surface Deflection Limits



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Figure 3.1.1. Three View Drawing

Every Range here described are determined by design and are limited by physical stops.


Wing	Area	12.89 m ² / 138.75 ft ²
	Chord at Root	1.40 m / 55 in
	Chord at Tip	1.04 m / 41 in
	Taper Ratio	0.74
	Aspect Ratio	7.48
	Incidence	3° ± 0.25°
	Dihedral	0.50° ± 0.04°

Aileron	Area	0.520 m ² / 5.60 ft ²
	Deflection	+20° ± 4°
		-15° ± 4°

The aileron range is determined by design and measured after the aileron installation using a digital level.

Flap	Area		0.63 m ² / 6.78 ft ²
	Deflection	Takeoff	10°

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		Landing	$30^{\circ} \pm 3^{\circ}$
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Horizontal Stabilizer	Area	2.22 m ² / 23.90 ft ²
	Chord at Root	0.91 m / 35.8 in
	Chord at Tip	0.68 m / 26.7 in
	Taper Ratio	0.75
	Aspect Ratio	4.15

Elevator	Area	1.00 m ² / 10.76 ft ²
	Deflection	+25° ± 5°
		-25° ± 5°
Trim Tab	Deflection	+20° ± 2°
		-18° ± 2°

	Area	1.15 m ² / 12.28 ft ²
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Vertical Stabilizer	Taper Ratio	0.58
	Sweep angle	40°

Rudder	Area	0.6m ² / 6.46 ft ²
	Deflection	+20° ± 4°
		-20° ± 4°

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3.3 Wing

The wing assembly is composed of 4 parts: main wing, aileron, flap and wing tip. This section details the main wing.

It is manufactured with Al 2024-T3 sheets which, when built, includes spars, stamped ribs and skins. The main wing is reinforced at the wing root and control surface attach regions. Each main wing has one integral fuel tank with a capacity of (15.85 gallons) usable fuel per side. There are inspection panels located on the wing to inspect and access internal structure and components. Assembly of the main wing structure is accomplished with flush and universal type solid rivets as well as stainless steel blind rivets to close the assembly. To avoid high stress loads concentrations at the root, an exclusive extruded wing strut made of Al 6061-T6 is installed on the bottom wing and connected to the fuselage.

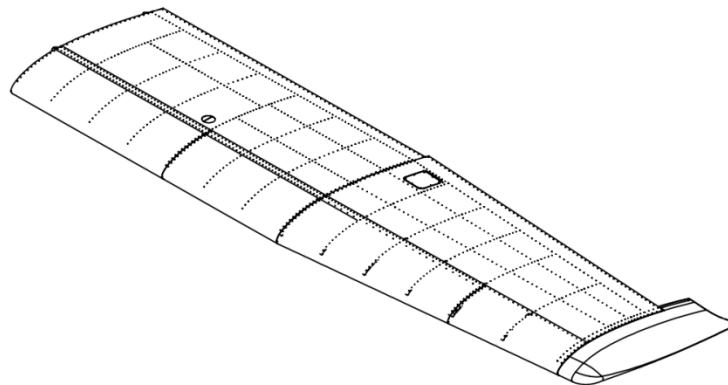


Figure 3.2.1. Main Assembly.

The attachment to the fuselage is done at 3 points: Main Spar (front), Rear Spar and Wing Strut. The next figure shows the wing installation to the fuselage.

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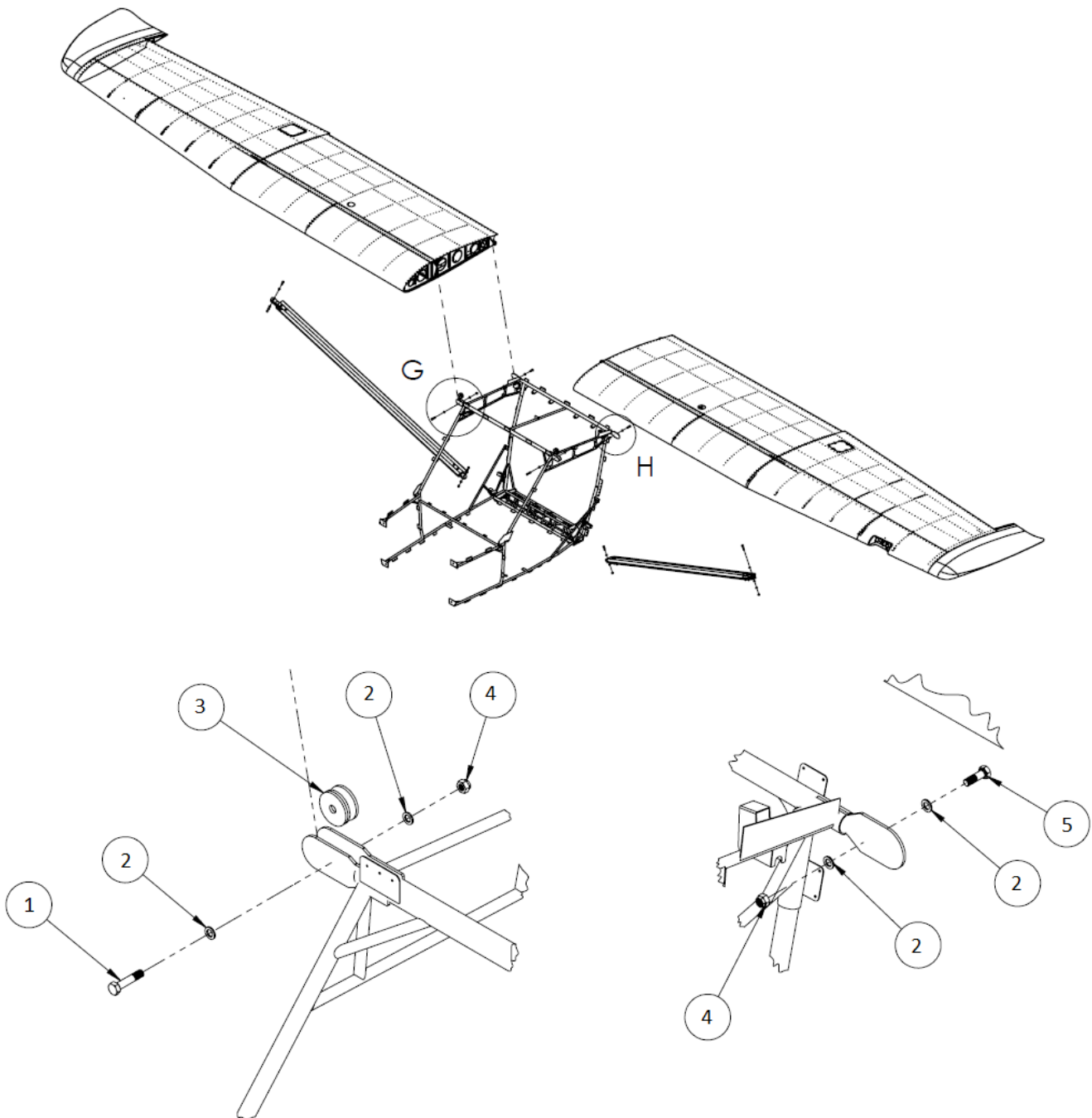


Figure 3.2.2. Main Wing Installation.


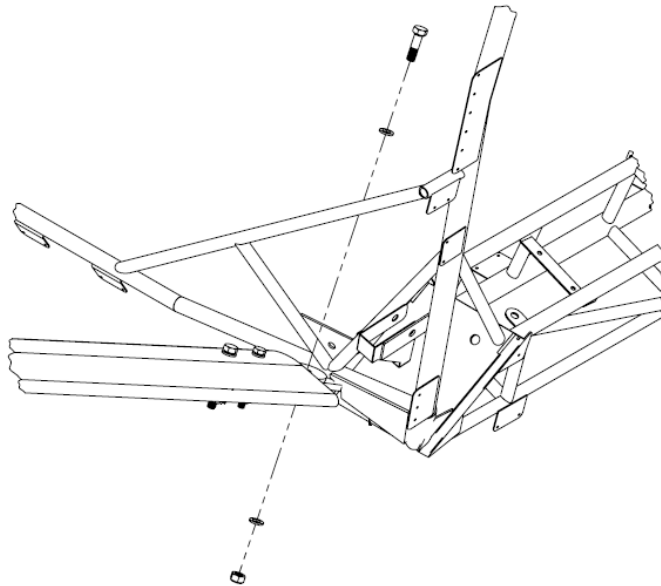

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Table 3.2.1. Wing installation, Hardware (ref. figure 3.2.2.).

ID	Description	Part Number	Quantity
1	Bolt	AN5-13A	2
2	Washer	AN960-516	8
3	Spacer	T1.57A.1000.004	2
4	Nut	AN363-1032A	4
5	Bolt	AN5-7A	2



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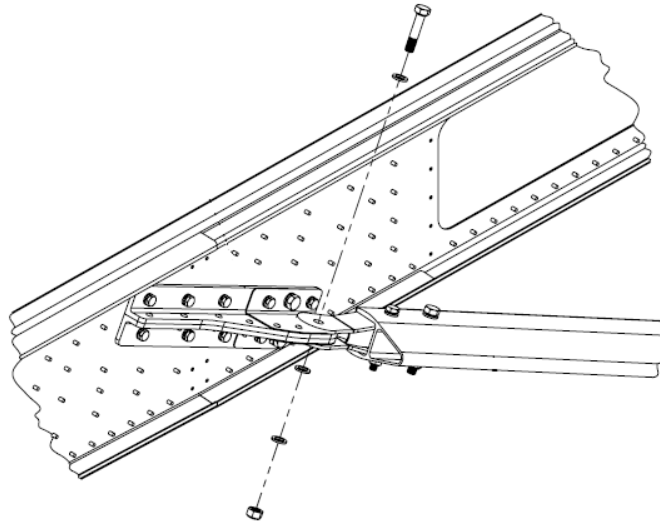



Figure 3.2.3. Wing Strut Installation.

Table 3.2.2. Wing installation, Hardware (ref. figure 3.2.3.).

Description	Part Number	Quantity
Bolt Strut to Wing	AN5-13A	2
Bolt Strut to Fuselage	AN5-10A	2
Washer	AN960-516	10
Nut	AN364-524A	2

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▪ **Flaps**

The flap has a constant chord line and is constructed with Al 2024-T3 aluminum composed of bended ribs and skins. Assembly of the flap components are accomplished with solid and stainless-steel blind rivets at the connection points. The flap is actuated by one electric motor actuator with a 400 foot-pounds force capacity. The actuator motor controls both left and right wing flaps as both flaps are interconnected by a chrome-moly tube. See figures below.

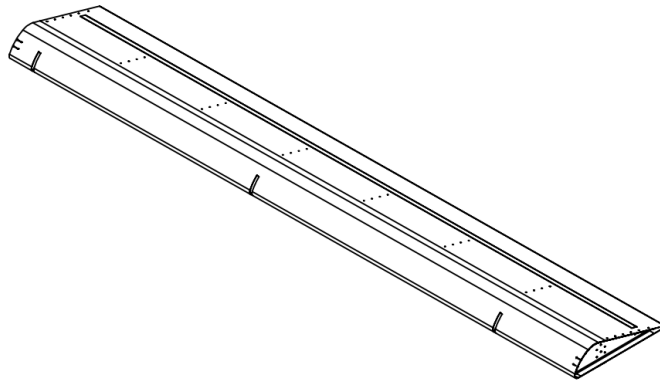
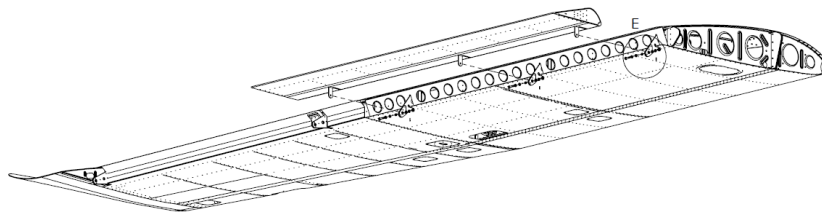



Figure 3.2.1.1. Flap.



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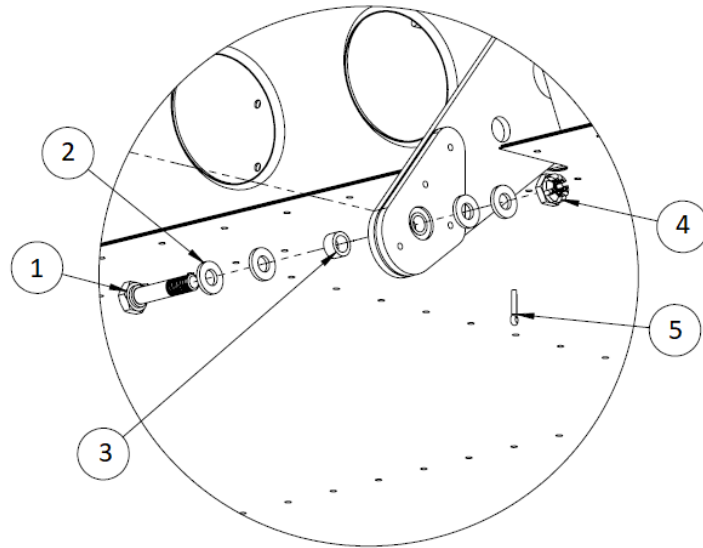



Figure 3.2.1.2. Flap Installation.

Table 3.2.1.1. Flap installation, Hardware (ref. figure 3.2.1.2.).

ID	Description	Part Number	Quantity
1	Bolt	AN4-11	3
2	Washer	AN960-416	12
3	Spacer	T1.57A.0000.010	8
4	Nut	AN310-4	3
5	Cotter Pin	MS24665-208	3

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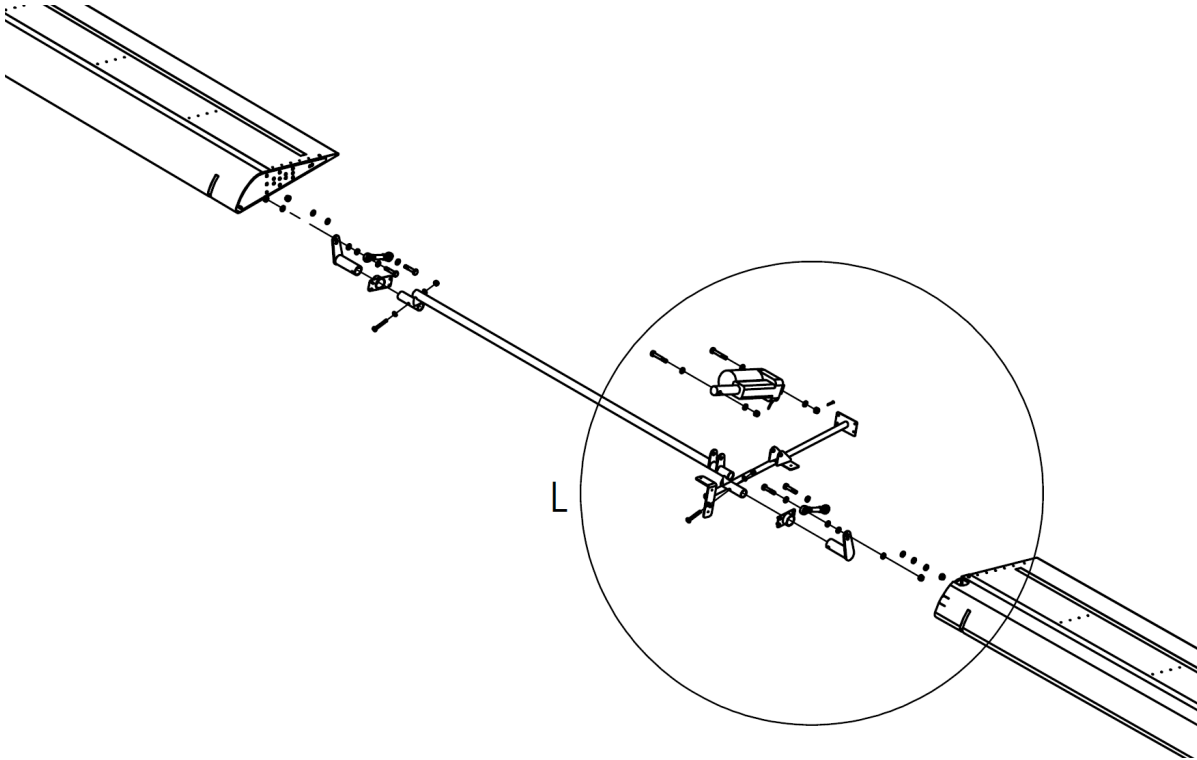



Figure 3.2.1.3. Flap System.

ID	Description	Part Number	Quantity
1	Rod End 4/16	CM4	4
2	NUT AN364-428A	AN364-428A	4
3	WASHER AN960-416	AN960-416	15
4	BOLT AN4-11	AN4-11	4
5	NUT AN310-4	AN310-4	4
6	WASHER AN960-516	AN960-516	4
7	Cutter Pin .094 x .75	MS24665-283	4

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3.4 Empennage

The Empennage consists of the horizontal and the vertical stabilizers.

- **Horizontal Stabilizer**

The horizontal stabilizer is made of Aluminum 2024-T3 sheets and assembled by solid rivets. Each side is composed of 5 stamped ribs and 1 skin. The entire component has a main spar (front) and rear spar. The connection to the tail cone is accomplished with a set of bolts, washers and nuts. Slick carbon fiber tips complete the assembly. Brackets of AISI 4130 are installed behind the rear spar to install the elevator.

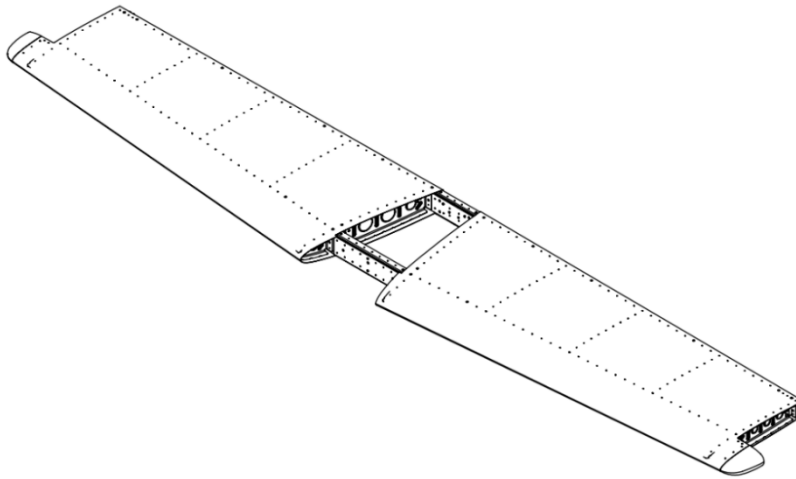



Figure 3.3.1.1. Horizontal Stabilizer.

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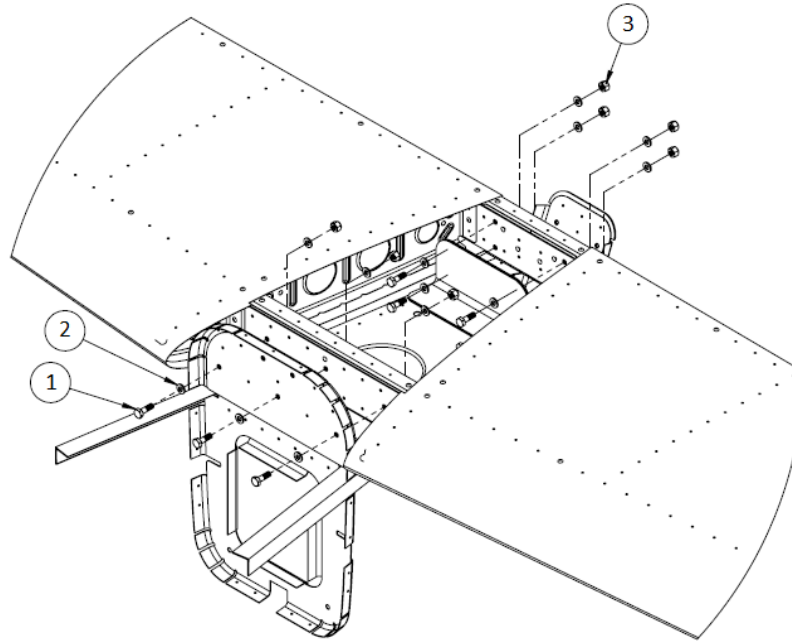


Figure 3.3.1.2. Horizontal Stabilizer Installation.


Table 3.3.1.1. Horizontal stabilizer installation, Hardware (ref. figure 3.3.1.2).

ID	Description	Part Number	Quantity
1	Bolt	AN4-6A	7
2	Washer	AN960-416	10
3	Nut	AN365-428A	7

▪ Vertical Stabilizer

The vertical stabilizer is made of Aluminum 2024-T3 sheets and assembled by solid rivets. It is composed of 4 stamped ribs, 1 skin, a main spar (front) and rear spar. The installation to the airframe is accomplished with bolts, washers, and nuts. There is a carbon fiber tip that mounts on the top of the Vertical Stabilizer. Brackets of AISI 4130 are installed behind the rear spar to attach the rudder.

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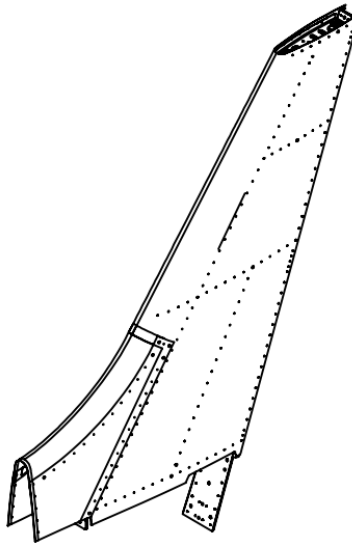


Figure 3.3.2.1. Vertical Stabilizer.

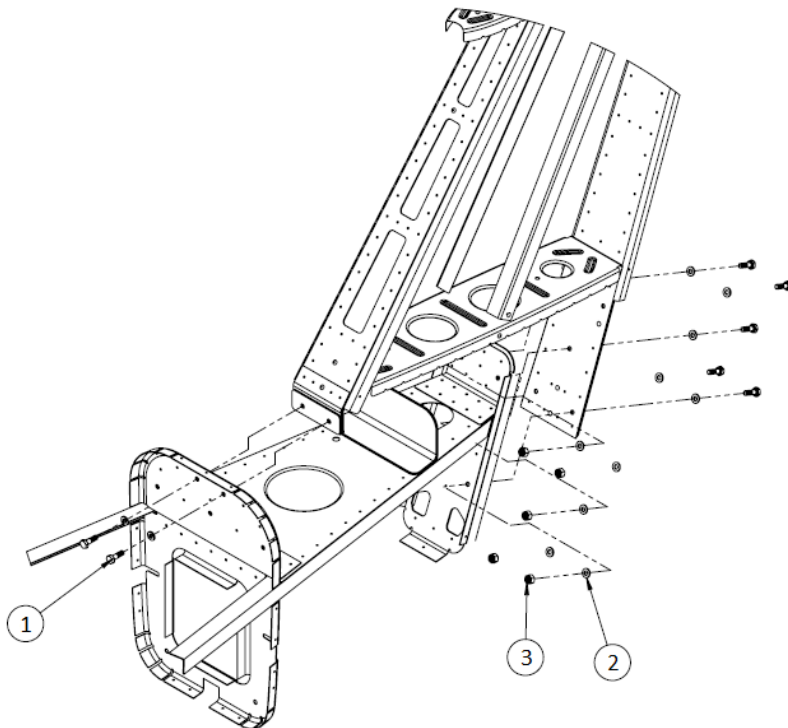


Figure 3.3.2.1. Vertical Stabilizer Installation.

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Table 3.3.2.1. Vertical stabilizer installation, Hardware (ref. figure 3.3.2.1.).

ID	Description	Part Number	Quantity
1	Bolt	AN4-6A	7
2	Washer	AN960-416	12
3	Nut	AN365-428A	7


3.5 Landing Gear

The landing gear is composed of the legs, wheels, tires, and brake assemblies. Below is listed the summary of the components used in the landing gear.

Table 3.4.1. Landing Gear.

Leg Structure	Main	Manufactured in Aluminum 7075 by CNC Milling Machine
	Nose	Chromium-Molybdenum Steel tube
Wheel Assembly	Main	Beringer, RF-018(A)
	Nose	Beringer, RA-015(A)
Tire	Main	5.00-5 8Ply Michelin Air TL (recommended)
		5.00-5 6Ply Goodyear Custom III
	Nose	11x4.00-5 8Ply Aero Classic TL
Brake Assembly		Beringer, EA-002.2N(A)
Master Cylinders		Beringer, MP-002.5N(A)

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The installation of the landing gear legs to the fuselage (main and nose) as well as the installation of the wheel and brake assemblies to the main gear legs are shown below in (Figure 3.4.1.). It's recommended to use the Beringer Maintenance and Overhaul Manual.

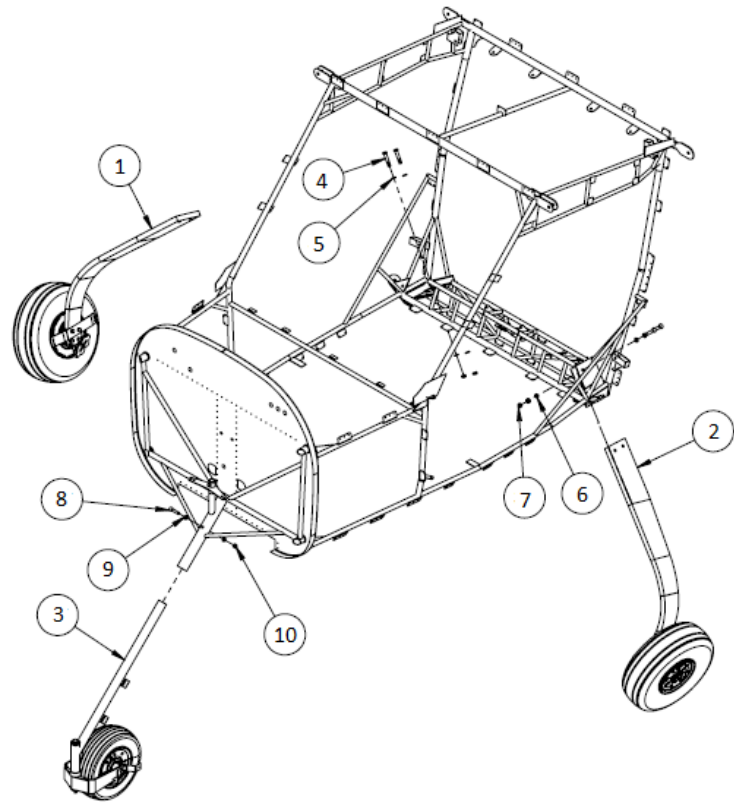



Figure 3.4.1. Landing Gear Legs Assembly.

Table 3.4.2. Landing Gear Legs Assembly (Ref. figure 3.4.1.).

ID	Description	Part Number	Quantity
1	T1.32R.1000.00 1	Right Landing Gear	1
2	T1.32L.1000.001	Left Landing Gear	1
3	T1.32A.2000.000	Nose Gear Leg	1

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4	AN6-16A	Bolt AN6-16A	4
5	AN960-616	Washer AN960-616	4
6	AN960-616	Washer AN960-616	4
7	AN3-13A	Bolt AN3-13A	2
8	AN5-20A	Bolt AN5-20A	1
9	AN960-516	Washer AN960-516	1
10	AN364-624A	Nut AN364-624A	4

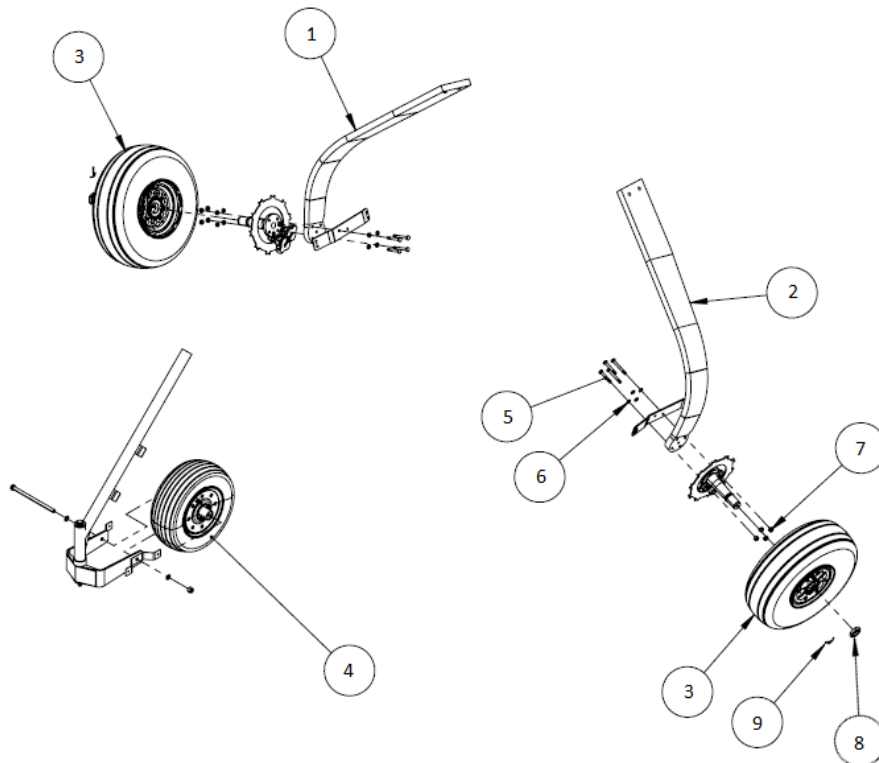



Figure 3.4.2. Wheels Assembly.


Table 3.4.3. Wheels Assembly (ref. figure 3.4.2).

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ID	Description	Part Number	Quantity
1	T1.32R.1000.00 1	Right Landing Gear	1
2	T1.32L.1000.001	Left Landing Gear	1
3	RF-018(A)	5.00x5" Std Main Wheel Assy	2
4	RA-015(A)	4.00x5" HL Nose Wheel	1
5	AN4-15A	Bolt AN4-15A	8
6	AN960-416	Washer AN960-416	8
7	AN364-524A	Nut AN364-524A	8
8	ECR-002(B)	M25x1.5 Axle Nut	2
9	L-V-004	2.5x36 Cotter Pin	2

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▪ **Main Landing Gear**

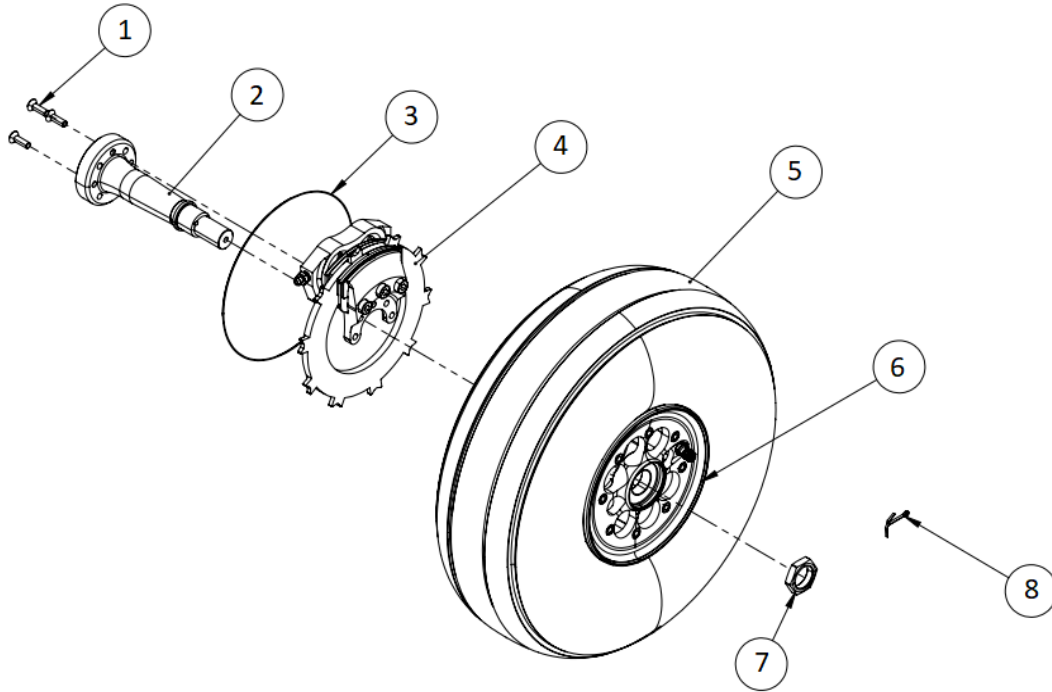



Figure 3.4.1.1 Main Landing Gear Assembly.

Table 3.4.1.1. Main Landing Gear components (ref. figure 3.4.1.1).

ID	Part Number	Description	QTY
1	V-FHC-001	Screw M6x20	3
2	FUS-009	Axle	1
3	ZPA02	Safety Wire	1
4	EA-002.2N(A)	Brake Caliper	1
5	070-310-0	Tire 5.00-5"	1
6	RF-018(A)	5.00x5" Std Main Wheel Assy	1
7	ECR-002(B)	M25x1.5 Axle Nut	1
8	L-V-004	2.5x36 Cotter Pin	1

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▪ **Nose Landing Gear**

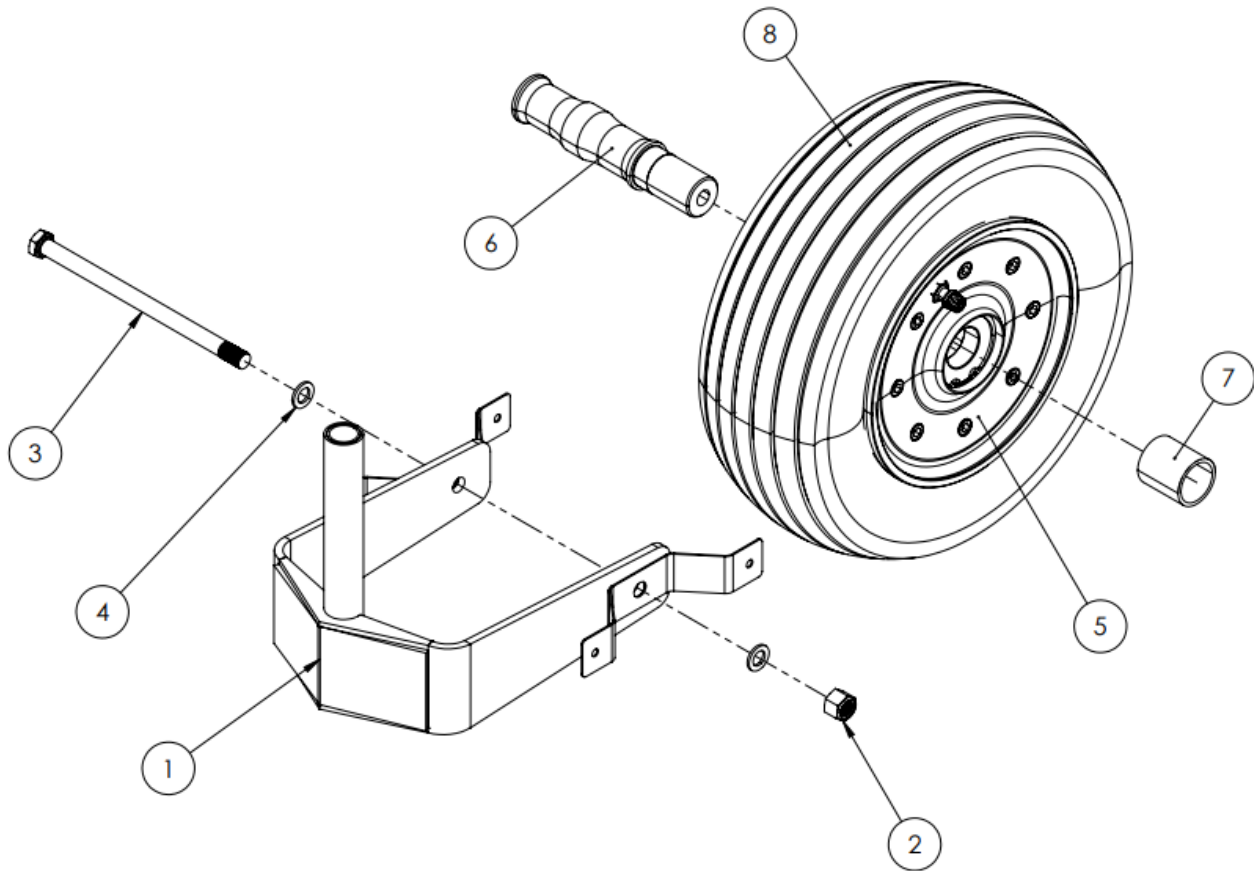


Figure 3.4.2.1. Nose Landing Gear Assembly.

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Table 3.4.2.1. Nose Landing Gear components (ref. figure 3.4.2.1).

ID	Part Number	Description	QTY
1	T1.32A.20B0.000	Nose Gear Fork	1
2	AN365-624A	Nut AN365-624A	1
3	AN6-61A	Bolt AN6-61A	1
4	AN960-616	Washer AN960-616	2
5	RA-015(A)	4.00x5" HL Nose Wheel	1
6	AXP-007.2(A)	4.00x5" HL L=138 Nose Wheel Axle	1
7	BGE-042.2(A)	4.00x5" HL L=32 Nose Wheel Bearing Spacer	1
8	DTR5582	Tire 11x4.00x5"	1

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3.6 Control Surfaces

Section 3.5 details the ailerons, elevator, rudder, and trim tab, their construction as well as their attachment to the airframe.

▪ Aileron

Each aileron is composed of bent ribs, a main spar (front), a rear spar, and two skins. One skin forms the leading edge and the other forms the trailing edge. The aileron components are assembled with solid aluminum rivets as well as stainless steel rivets blind rivets to close the assembly. The aileron control system connects via a rod end to an attach bracket made of 6061-T6 installed on the aileron assembly. The aileron control system is composed of phenolic pulleys and steel wire cables MIL-W-83420 Comp B (CRES). The pulleys and cables connect the system to the yoke control and the aileron. The Colt 100 that has an autopilot installed uses the SV-32 autopilot servo installed in the aileron system. A welded piece of AISI 4130 with an arm of 12.5 inches is installed on the outboard end of the aileron to balance the flight control.

The balancing is performed during the manufacturing of the part by Texas Aircraft Manufacturing INC

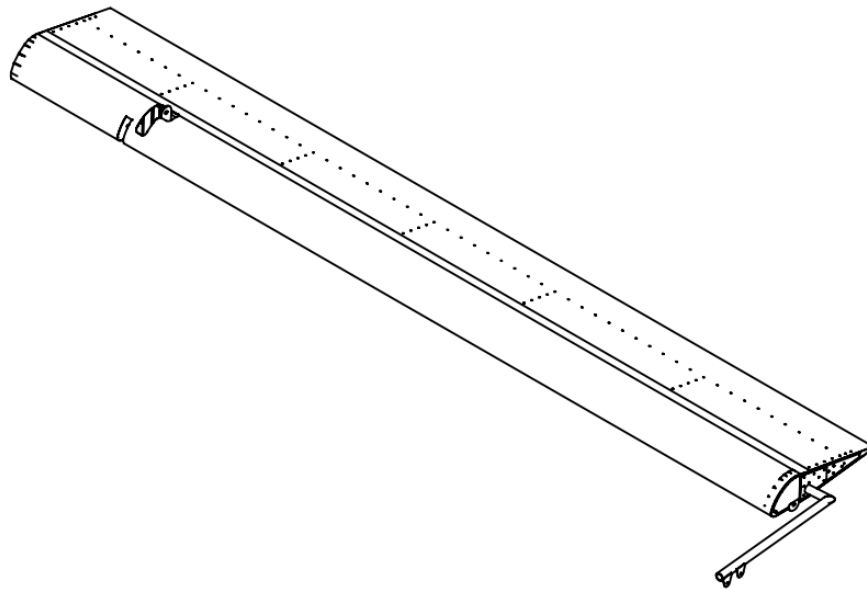



Figure 3.5.1.1. Aileron Assembly.

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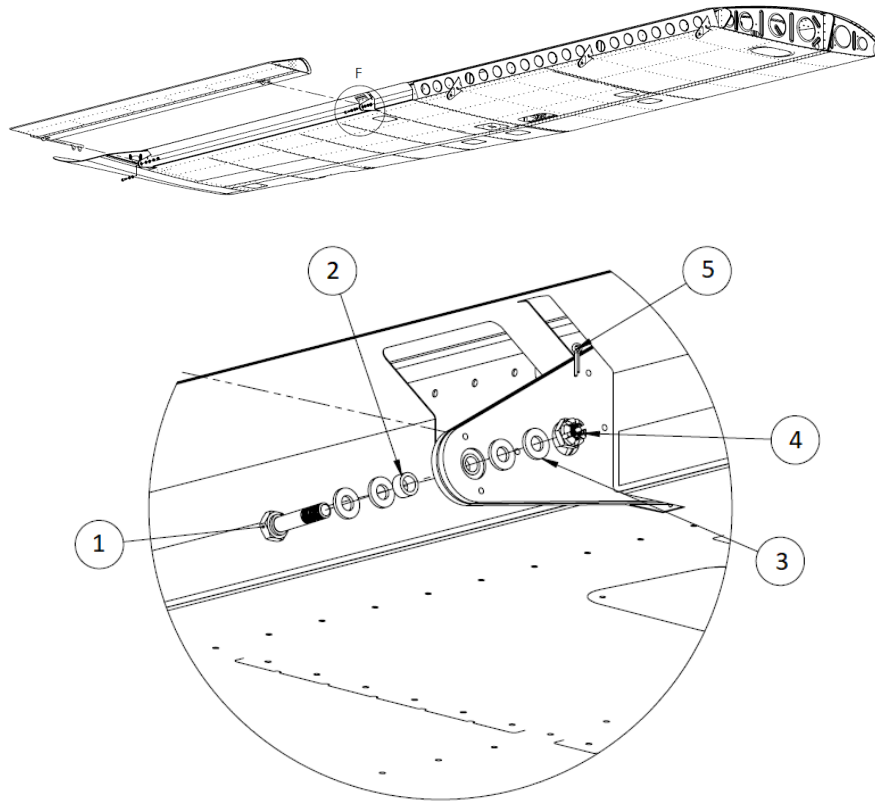



Figure 3.5.1.2. Aileron Installation.

Table 3.5.1.1. Aileron installation, Hardware (ref. figure 3.5.1.2).

ID	Description	Part Number	Quantity
1	Bolt	AN4-11	3
2	Spacer	T1.57A.0000.010	3
3	Washer	AN960-416	12
4	Nut	AN310-4	3
5	Cotter Pin	MS24665-208	3

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During the installation, the full deflections must be measured at the outboard end of the Aileron, within the ranges described in section 3.2, as the following pictures:

Neutral Yoke Position:



Down Position:

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Up Position:



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Elevator

The elevator is made of Aluminum 2024-T3 sheets. Both left and right elevator assemblies are composed of three ribs with two on the ends and one in the center. There is a main spar (front) and rear with reinforcements. The elevator components are assembled with solid aluminum rivets and stainless-steel blind rivets to close the assembly. Carbon Fiber tips are installed on the elevator tips.

The elevator is attached to the horizontal stabilizer by bolts, washers, nuts, and safety cotter pins. The elevator horn is welded from AISI 4130 and attached to the elevator by solid rivets. The elevator horn is connected to the elevator control system. The Elevator control system is composed of push-pull tubes and rod end connections. For a Colt 100 with an autopilot installed there is a SV-42 autopilot servo installed in the elevator control system. Small AISI 4130 sheets are installed on the elevator rib tips for balancing the control surface. There are usually two pounds installed on each side

The balancing is performed during the manufacturing of the part by Texas Aircraft Manufacturing INC

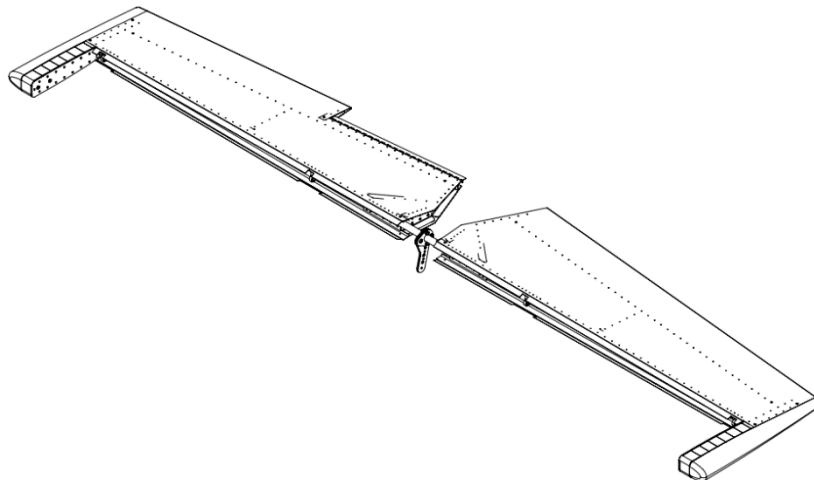



Figure 3.5.2.1. Elevator Assembly.

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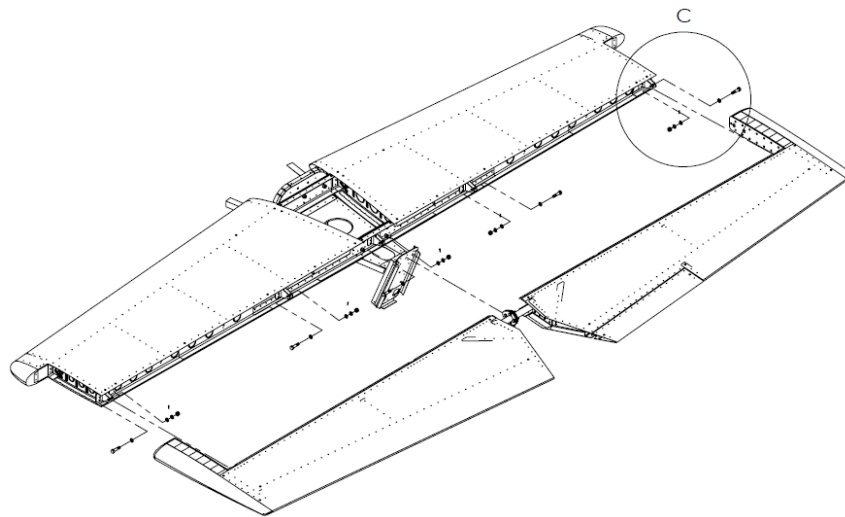


Figure 3.5.2.2. Elevator Installation.

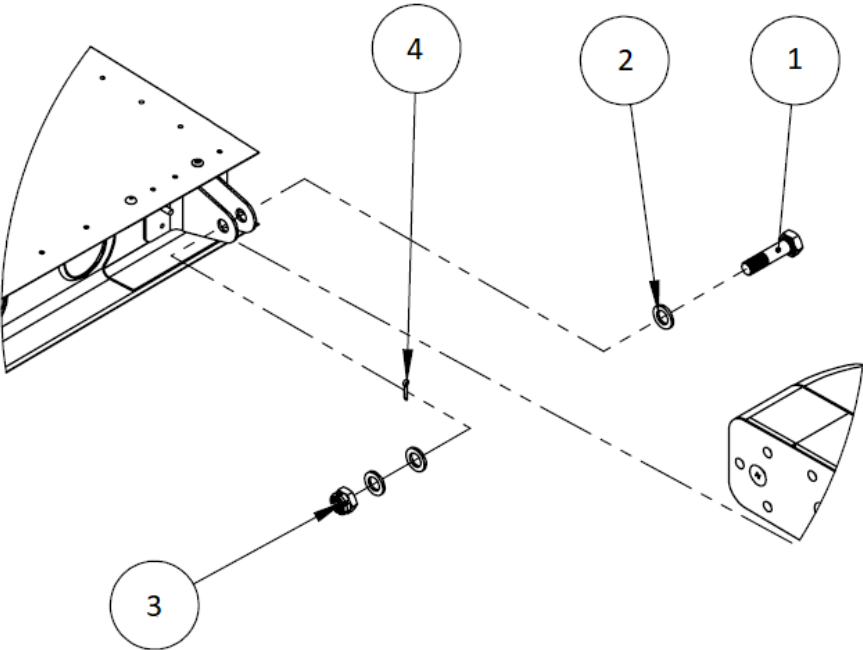


Figure 3.5.2.3. Elevator Installation, Detail C.

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Table 3.5.2.1. Elevator installation, Hardware (ref. figure 3.5.2.3).

ID	Description	Part Number	Quantity
1	Bolt	AN4-6A	5
2	Washer	AN960-516	10
3	Nut	AN310-5	5
4	Cotter Pin	MS24665-132	5

The procedure to measure the deflection of the Elevator is done as below:


Put the digital level on the upper surface of the elevator, in the balancing ar region as seen in the picture below:



Figure 3.5.2.4. Elevator angle measurement.

The measurements should be $\pm 25^\circ \pm 5^\circ$

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▪ **Rudder**


The rudder is made of Aluminum 2024-T3 sheets. There are four ribs (two on the ends and the other two centered). There is one front reinforced main spar and a single skin. The rudder components are assembled with solid aluminum rivets and stainless-steel blind rivets to close the structure. There is a carbon fiber tip.

There are three rod ends attached to the rudder that are used to attach the rudder to three support brackets installed on the vertical stabilizer. The rudder attaches to the vertical stabilizer with bolts, washers, nuts, and safety cotter pins. The rudder control system is composed of phenolic pulleys and steel wire cables MIL-W83420 Comp B (CRES). The control system attaches to the rudder at an attachment bracket that is welded to AISI 4130 on one end and is attached to the yoke control system on the other.

There is no balancing arm, or any kind of balancing on the rudder

The

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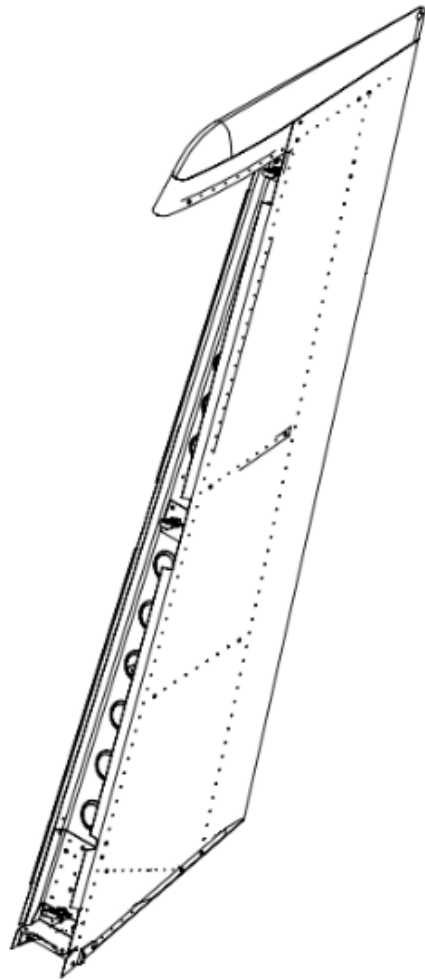


Figure 3.5.3.1. Rudder Assembly.

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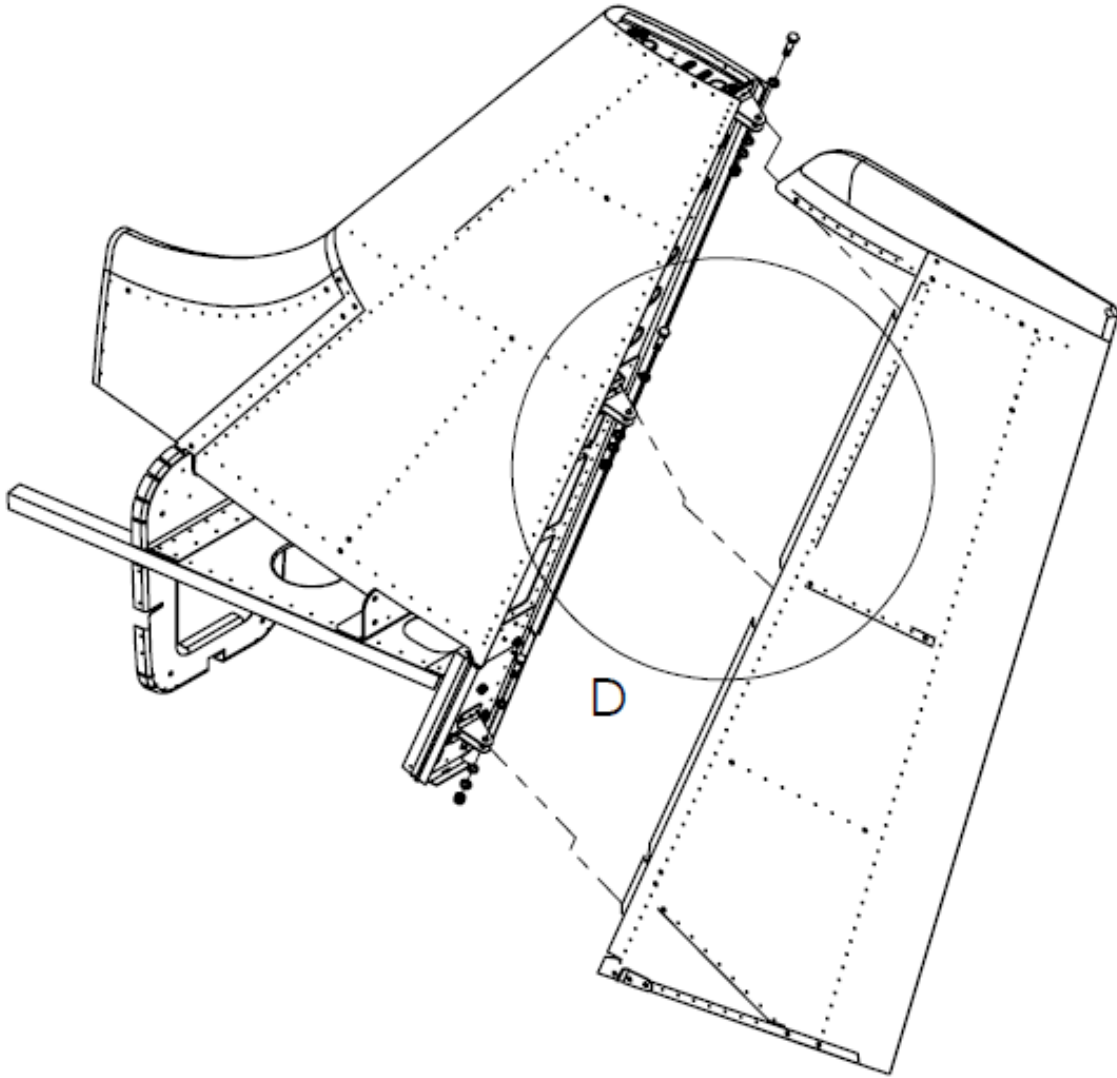



Figure 3.5.3.2. Rudder Installation.

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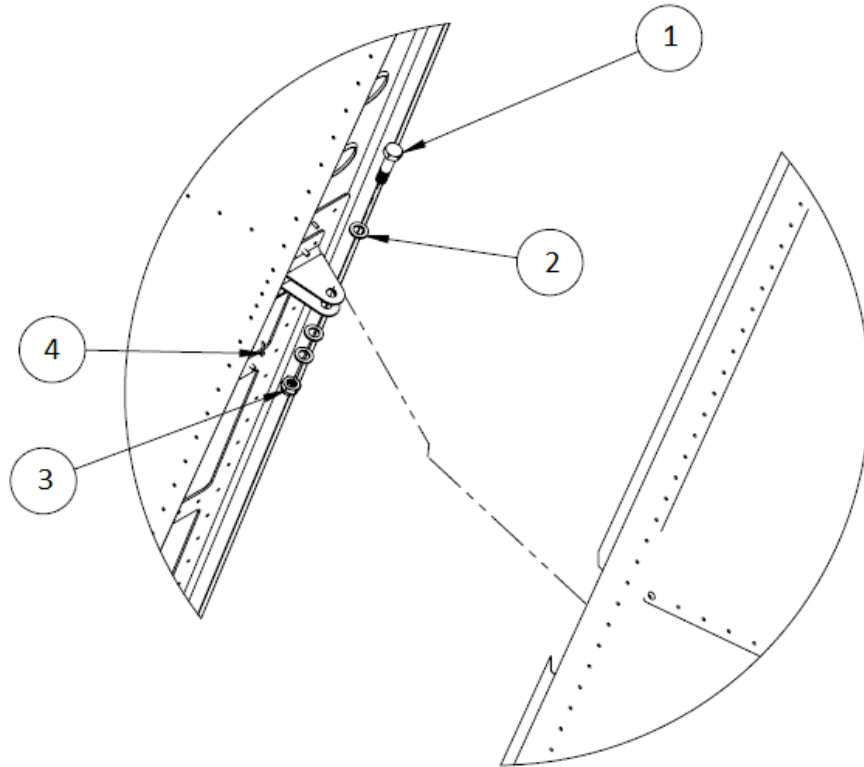



Figure 3.5.3.3. Rudder Installation, Detail D.

Table 3.5.3.1. Elevator installation, Hardware (ref. figure 3.5.3.3.).

ID	Description	Part Number	Quantity
1	Bolt	AN5-11	3
2	Washer	AN960-516	9
3	Nut	AN310-5	3
4	Cotter Pin	MS24665-132	3

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The procedure to measure the deflection of the rudder is done as below:

Put the angle finder aligned to the line of rivets of the vertical stabilizer shown in the image below and while applying full right pedal, measure the angle.




Figure 3.5.3.4. Rivet line measurement

The angle measured should be $\pm 20^\circ \pm 4^\circ$,

The other method is measuring the gap between the elevator root and the fully deflected rudder, as shown below:

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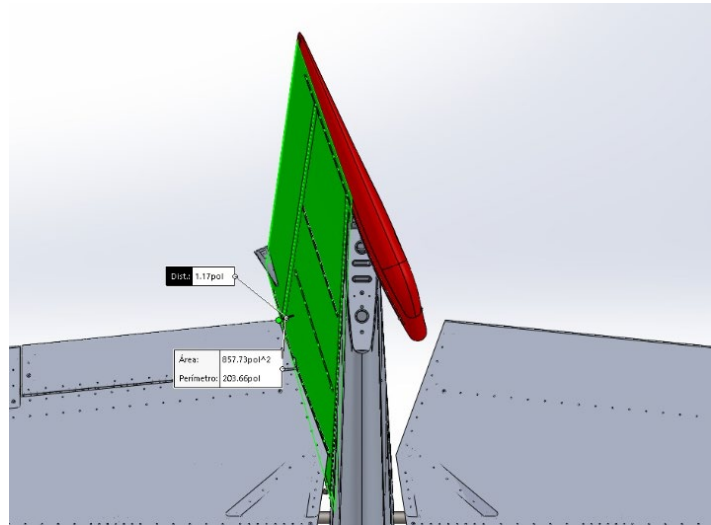


Figure 3.5.3.5. Design gap at full deflection

In terms of design, the rudder deflection is limited by the angle of the stabilizer root in neutral position. Consequently, the design gap in this region is 1.17 inches (approximately 30 mm), with each millimeter corresponding to approximately 0.22 degrees (doing a linear approximation because of the small angles). The limits are 20.3mm and 38.1mm ($0.22 = \frac{1}{38,1-20,3} * 4$)

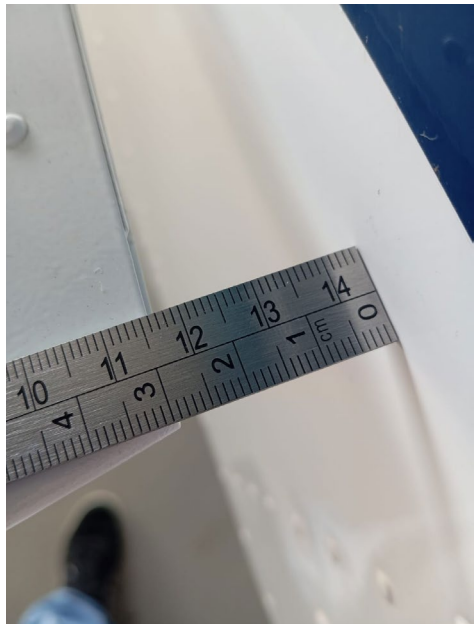



Figure 3.5.3.6. Measured gap at full deflection angle

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▪ Trim Tab

The trim tab dimensions are 503.8mm x 92.9mm (19.8in. x 3.7in.) It is installed on the right elevator on the trailing edge. The trim tab attaches to the elevator using an Al 5052 piano hinge. The trim tab assembly is composed of Al 2024-T3 skin assembled with solid aluminum rivets and stainless-steel blind rivets. A T3-12A Ray Allen servo is installed in the trim control system and is electrically controlled by a switch mounted on the control yoke.

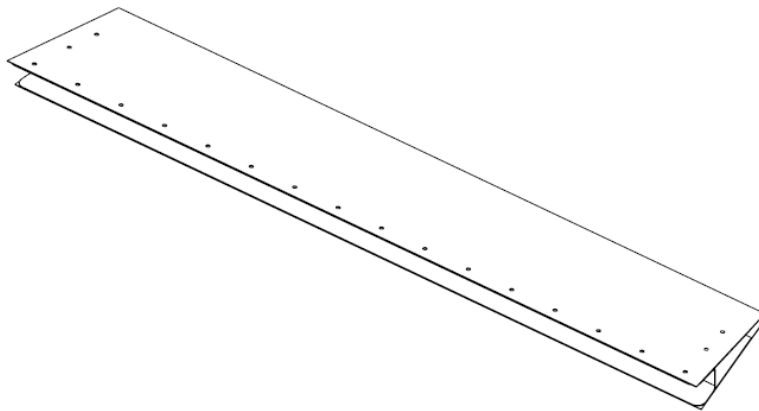


Figure 3.5.4.1. Trim Tab Assembly.


3.7 Fuselage

The Colt 100 fuselage is divided into two main parts: tail cone and cockpit. These two structures are described below.

▪ Tail-Cone

The tail-cone is a semi-monocoque structure made of Al 2024-T3 sheets and Al 6061-T6 angle stock. The tail-cone is composed of bended and extruded stringers, stamped frames and shear clips, and skins assembled with solid aluminum rivets to complete the entire structural assembly. The tail-cone houses the elevator and rudder control systems, ELT, and ballistic parachute installations. There are various inspection panels to gain access for inspection and maintenance. The Stabilizers are mounted to the rear of the tail-cone.

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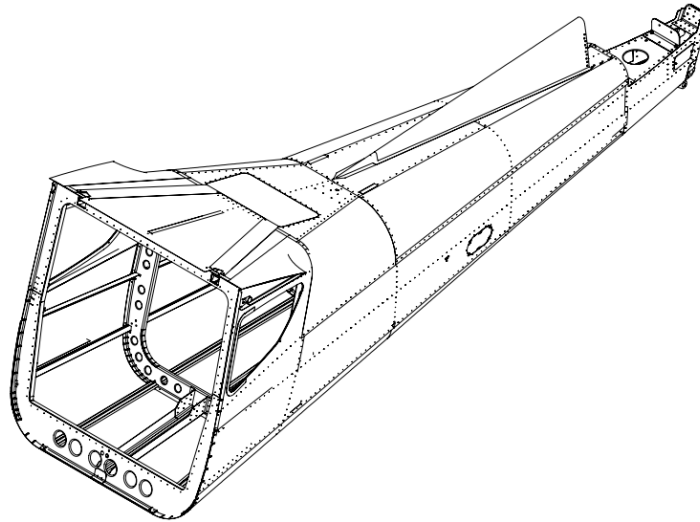



Figure 3.6.1.1. Tail Cone Assembly.

▪ **Cockpit (Safety Cell)**

The cockpit is semi-monocoque and tubular truss structure. The safety cell is a AISI 4130 (chrome-molybdenum) tubular structure constructed via TIG welds. The wing spars, wing struts, gear legs, and engine mount attach to this steel tubular safety cell. The semi-monocoque structure is composed of Al 2024-T3 skins and stringers and is attached to the AISI 4130 tubular truss structure with solid aluminum rivets. The forward end of the fuselage is the firewall structure constructed from stainless steel AISI 304 .40mm sheet. The floor of the cockpit is composed of bent and stamped aluminum parts with an extruded Al 6061-T6 seat rail. The semi-monocoque and tubular truss structures are joined as shown in figure 3.6.2.1.

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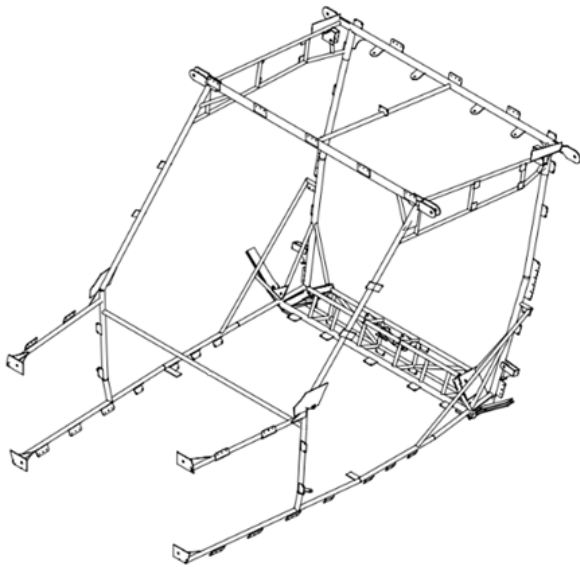


Figure 3.6.2.1. Cockpit Truss Structure.

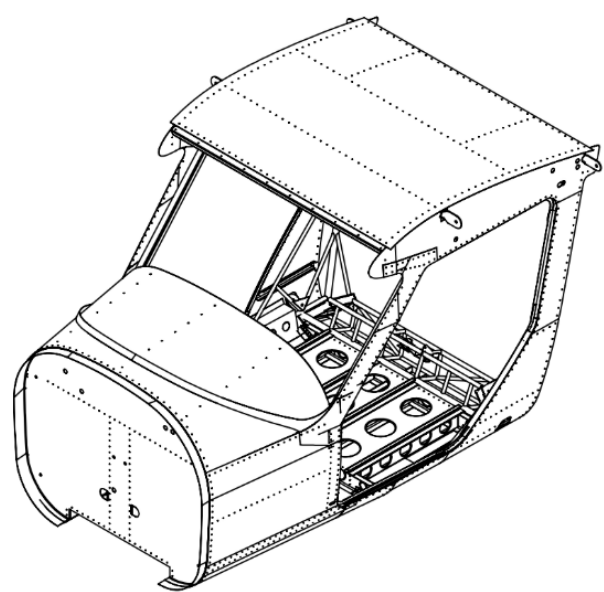



Figure 3.6.2.2. Cockpit Structure.

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▪ **Engine Mount**

The engine mount assembly is composed of two primary components: engine ring and engine mount. Both components are constructed of AISI 4130 tubes of varying diameters of 1/2", 5/8", 3/4", 7/8", and 1.5". These assemblies are constructed with TIG welding. The engine mount is installed directly to the firewall and the fuselage tubular truss structure. The engine ring supports the engine and is installed to the engine mount. There are four shock mounts for vibration dampening installed between the engine mount and engine ring.

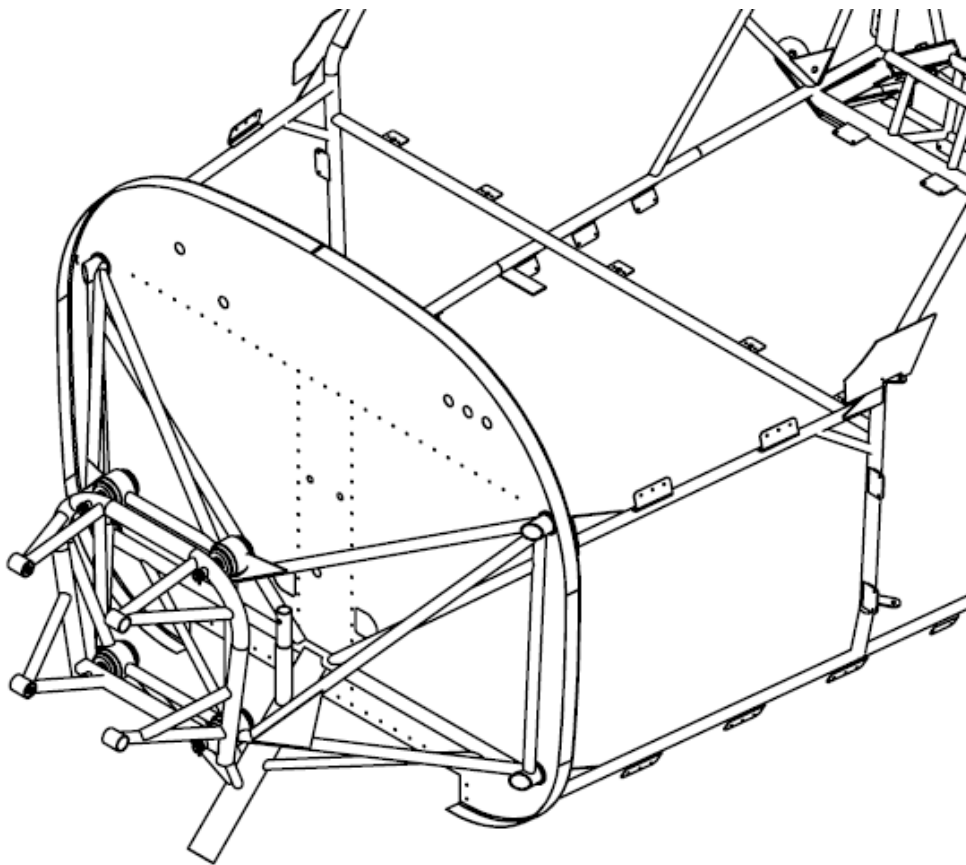


Figure 3.6.3.1. Engine Mount.

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See figure below for engine mount and engine ring parts and hardware.

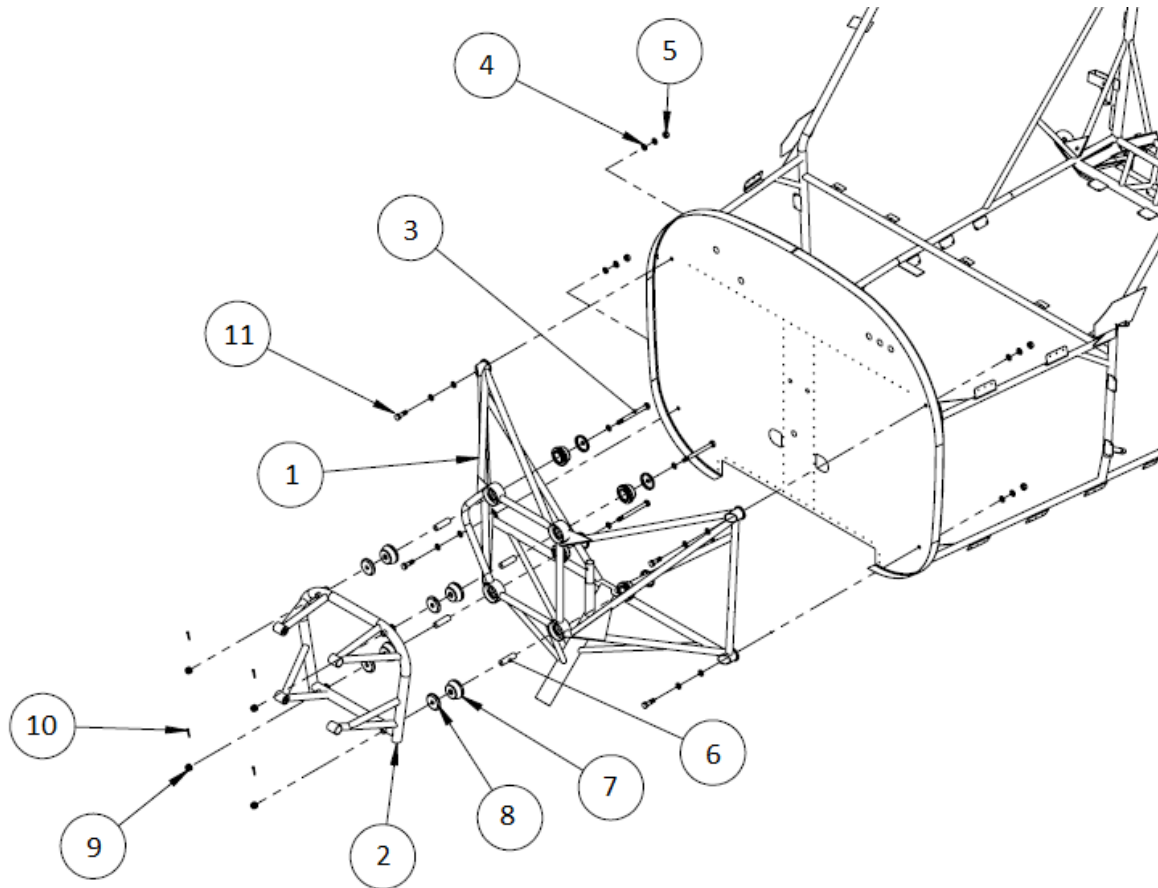


Figure 3.6.3.2. Engine Mount Installation.


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Table 3.6.3.1. Engine Mount, parts and hardware (ref. figure 3.6.3.2.).

ID	Description	Part Number	Quantity
1	Engine Mount	T1.71A.20B0.00 0	1
2	Engine Ring	T1.71A.20A0.00 0	1
3	Bolt AN5-34	AN5-34	4
4	Washer AN960-516	AN960-516	18
5	NUT AN364-624A	AN364-624A	4
6	AISI 4130	2024 T3 - 48x144x040S	4
7	Engine Lord - J-3608-1	AS-07-01131	8
8	Lord Engine Washer	ASS-530741	8
9	Nut	AN363-1032A	2
10	Cotter Pin	MS24665-283	6
11	Bolt AN5-7A	AN5-7A	4

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4 Engine

The Colt 100 is equipped with the Rotax® 912 ULS2-01 engine. The standard version is configured as:

- 4 stroke, 4 cylinders horizontally opposed, spark ignition engine, single central camshaft hydraulic tappets - push rods – OHV;
- Liquid cooled cylinder heads;
- Ram air cooled cylinders;
- Dry sump forced lubrication;
- Dual ignition of breakerless, capacitor discharge design;
- Electrical fuel pumps;
- Electric starter (12 V 0.9 kW);
- Integrated AC generator with external rectifier regulator;
- Propeller drives via an integrated gearbox with mechanical shock absorber and overload clutch.

The inspections listed on chapter 2 of this manual are provided by the Maintenance Manual (Line Maintenance) for Rotax Engine Type 912 Series on Chapter 05-20-00 (Maintenance Schedule). The engine service requirements are outlined in section 2.4.2.1 below. To do any work on the Rotax engine and keep warranty on the engine, it is recommended to take the appropriate maintenance course from Rotax Aircraft Engines.

It is the responsibility of the maintainer to check the latest versions of the engine maintenance manual and perform them in accordance with their manufacturer's instructions.


Consult the Maintenance Manual (Line Maintenance) for Rotax Engine Type 912 Series for more details. Visit <https://www.flyrotax.com/services/technical-documentation.html> and consult the Maintenance Manual (Line Maintenance) for Rotax® Engine Type 912 Series for 25, 50, 100, 200, 600 and 1000 hours inspections.

This engine series offers a time between **Overhauls (TBO) of 2000 hours**.

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5 Fuel System

Fuel	<p>AVGAS 100 LL (recommended)</p> <p>MOGAS premium (91 octane - EN 228 Super Standard, up to 5% ethanol max)</p> <p>MOGAS could cause sealant deterioration in the wing tank.</p>
Usable Fuel	117 l (30.9 US gal)
Total Fuel	120 l (31.7 US gal)

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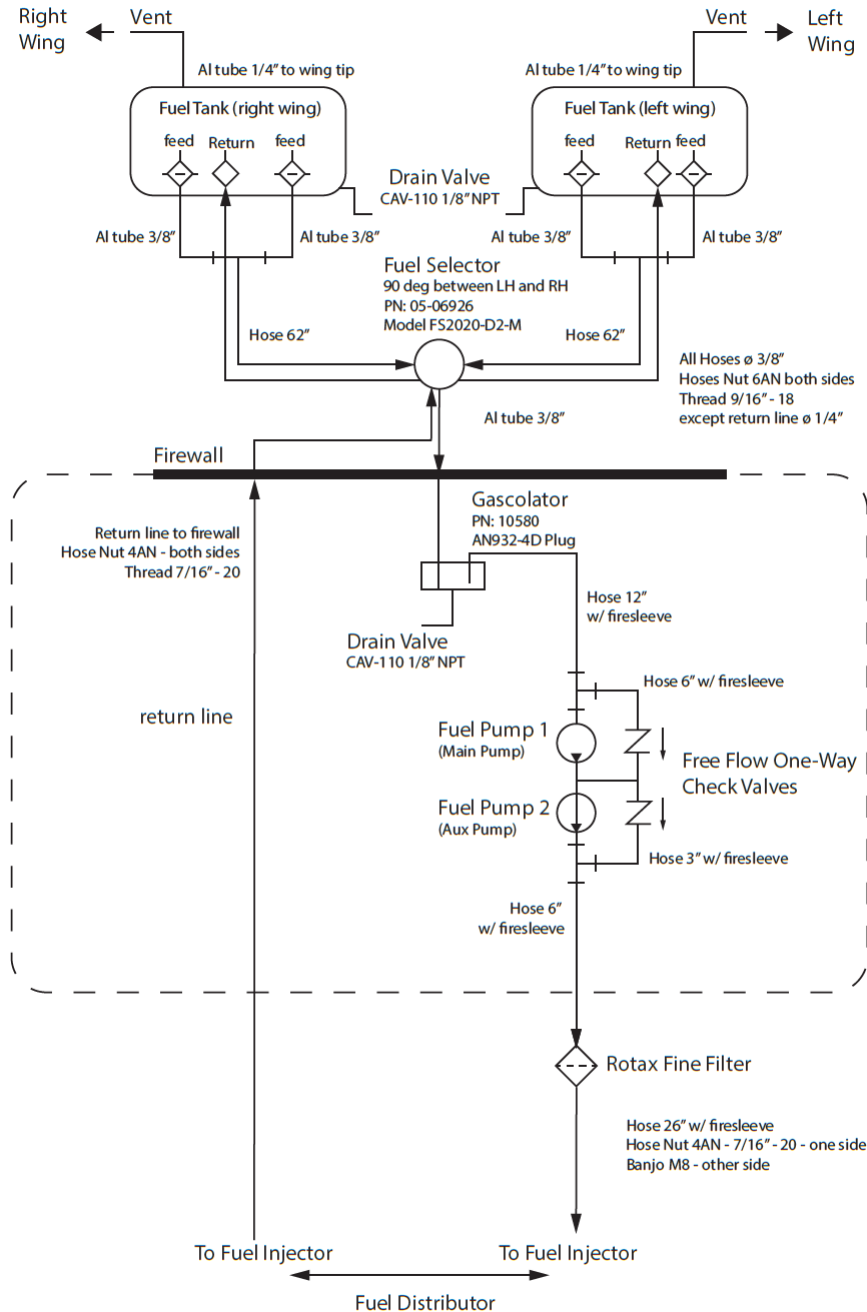



Figure 5.1. Fuel System Diagram.



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	AIRCRAFT MAINTENANCE MANUAL	PROPELLER

6 Propeller

It is the responsibility of the maintainer to check the latest versions of the propeller maintenance manual and perform them in accordance with their manufacturer's instructions.


6.1 Sterna Propeller

Manufacturer	Sterna propeller
Model Blade	Sterna
Blade Part Number	S69CBMR-3LE-WR-C
Model Hub	Flash Hub
Hub Part Number	3-RT-B
Number of Blades	3
Weight	9.95 lb / 4.510 kg
Diameter	69"
Pitch adjust	18 deg / (4900 rpm - 50 rpm)

Note:

- Consult the Propeller Manual for more details: Instruction manual Sterna propeller range.
- Propeller pitch is set by Texas Aircraft Manufacturing and may not be changed or adjusted.


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7 Utility Systems

In this section the air ventilation system is described. On the cockpit panel there are two air vents installed on the pilot and co-pilot (left and right) sides. The vents have no scheduled maintenance interval and are On-Condition maintenance components.


Item	P/N
Plastic EyeBall Air Vent	05-04079

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8 Instruments and Avionics

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8.1 Garmin System	2
▪ 8.1.1. Initial Preparation	2
▪ 8.1.2. GTN 650 Installation	2
▪ 8.1.3. Audio Panel and Dual Comm Radios Installation	2
▪ 8.1.4. Three-Axis Autopilot Installation	2
▪ 8.1.5. G5 Backup Installation	3
▪ 8.1.6. G3X Displays Installation	3
▪ 8.2 Ground test procedure for avionics installation:	3

8.1 Garmin System

The follow equipment and instruments are mounted on the standard cockpit panel:

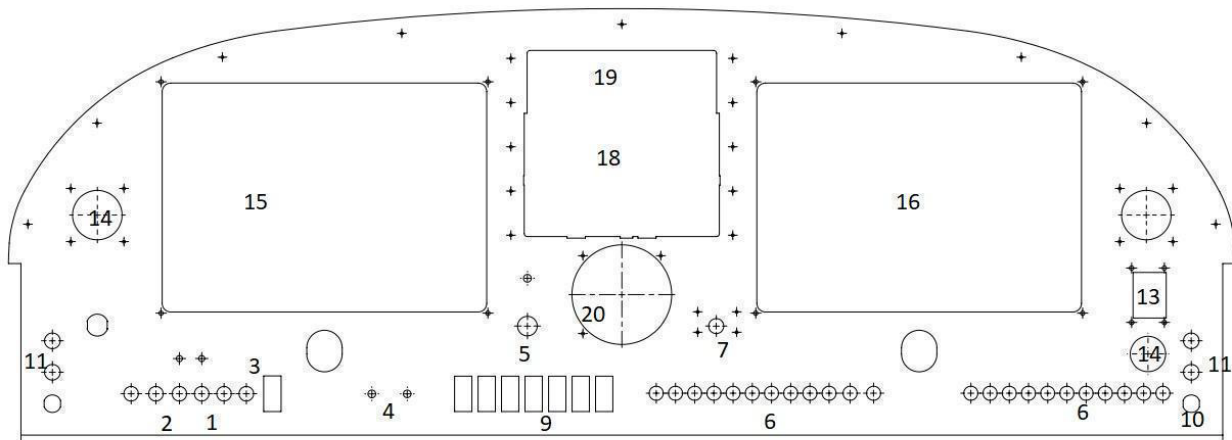



Figure 8.2.1 Instrument Panel for Garmin System

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1. Fuel	8. Master Bus
2. Lanes A & B and fuel pump switches	9. Avionics Buss
3. Master Switch	10. Dual USB Charger
4. Instrument and panel Dimmer Switches	11. Pilot Headset Jacks
5. Autopilot Disconnect Button and trim selector switch	12. Co-pilot Headset Jacks
6. Switches	13. ELT Remote Switch
7. Flap Switch	14. Air Vents

Avionics:

15. G3X Touch 10.6 PFD	18. GMA 245 Audio Panel
16. G3X Touch 10.6 MFD In the single scree	19. GMC 507 Autopilot Control Panel

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	20. Garmin G5
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*The circuit breakers and switches may change according to the avionics, instruments and modules installed in the Colt 100 .

▪ 8.1.1. Initial Preparation

- **8.1.1.1. Documentation Review:** Review the technical documentation and manuals for all equipment. Ensure all required components are available and meet specifications. **Refer to the Garmin G3X installation manual in each section**
- **8.1.1.2. Electrical Harness Inspection:** Inspect the prefabricated wiring harness for any damage. Verify that all connectors are correctly identified and positioned. The harness is made by Texas Aircraft and its PN is T1.24A.10A0.000 referenced by the wiring schemes in this manual .
- **8.1.1.3. Aircraft Shutdown and Safety:** Ensure the aircraft is fully powered down and follow all safety procedures before starting the installation.


▪ 8.1.2. GTN 650 Installation

- **8.1.2.1. Physical Mounting:** Install the GTN 650 into the panel, ensuring it is securely fastened.
- **8.1.2.2. Electrical Connection:** Connect the GTN 650 to the wiring harness, ensuring all connections are secure and conform to the wiring diagram.

▪ 8.1.3. Audio Panel and Dual Comm Radios Installation

- **8.1.3.1. Audio Panel Installation:** Mount the audio panel in the designated position on the panel.

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- **8.1.3.2. Comm Radios Physical Installation:** Install both communication radios in the designated compartments.
- **8.1.3.3. Electrical Connection:** Connect the audio panel and comm radios to the wiring harness. Ensure the connections for power, antenna, and interfaces with the GTN 650 are properly secured.

▪ **8.1.4. Three-Axis Autopilot Installation**

- **8.1.4.1. Servo Installation:** Mount the servos for each axis (aileron, elevator, rudder) in the appropriate locations within the aircraft structure.
- **8.1.4.2. Control System Connection:** Connect the servos to the autopilot control system using the wiring harness.
- **8.1.4.3. Electrical Connection and Initial Setup:** Connect the autopilot components to the wiring harness. Perform a basic check to ensure all connections are functional.

▪ **8.1.5. G5 Backup Installation**


- **8.1.5.1. Physical Mounting:** Install the G5 Backup in the designated panel location.
- **8.1.5.2. Electrical Connection:** Connect the G5 to the wiring harness, ensuring it receives correct power and data, and that the backup functions are properly configured.

▪ **8.1.6. G3X Displays Installation**

- **8.1.6.1. Installation Preparation:** With all other components installed and verified, prepare the panel area for the installation of the G3X displays.
- **8.1.6.2. Physical Mounting of Displays:** Install the two G3X displays in the designated panel positions.
- **8.1.6.3. Electrical Connection:** Connect the G3X displays to the wiring harness, ensuring proper data and power connections.

NOTE: In case of doubt, always refer to the equipment installation manual in question and consult an avionics technician for more complex or critical repairs

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▪ **8.2 Ground test procedure for avionics installation:**

● **8.2.1 Initial Power-Up**

- After the installation of the avionics system, power on all instruments.

● **8.2.2 Instrument Verification**

- Confirm that each instrument is powered on.
- If any instrument fails to power on, troubleshoot to identify the cause following the Garmin Installation manual corresponding to the instrument that is not turned on.

● **8.2.3 Sensor and Parameter Recognition**

- Verify that all sensors and parameters are being recognized by the instruments.
- If any sensor or parameter is not recognized, refer to the Garmin G3X installation manual to check the sensor/electrical harness installation.

● **8.2.4 Ground Run and Monitoring**

- Conduct a ground run and monitor all parameters.
- **If the engine is undergoing its first run:**
 - If any sensor displays anomalous data (i.e., data outside the specified parameters in the manuals):
 - Check the electrical harness and if not successful
 - Replace the sensor and perform another ground run.
 - If the anomaly persists, it may indicate an engine issue—contact Rotax for further assistance.
 - If the anomaly is resolved, consider the issue resolved.
- **If the engine has previously been run:**
 - If any sensor displays anomalous data, Check the electrical harness and/or replace the sensor.


● **8.2.5 Final Verification**

- Ensure that all parameters are within the specified limits.
- If all parameters are within limits, the procedure is complete.

NOTE: In case of doubt, always refer to the equipment installation manual in question and consult an avionics technician for more complex or critical repairs

8.3 Garmin software Updates:

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Updates for the G3x system is found in this link:

<https://www8.garmin.com/support/collection.jsp?product=010-00G3X-00>

The installation instructions, download and disclaimers are found in the garmin website:

https://www8.garmin.com/support/download_details.jsp?id=7129 and

<https://support.garmin.com/en-US/?faq=5I54Yks9zsAymDzLxe3R0A>

garmin

8.3.1 Update responsibility.

The G3x system comes from the factory with a free software update to the latest version, and it is **the owner's responsibility** to check the software version and update when necessary, even if Texas Aircraft Manufacturing had already updated the software during the installation of the PFD.

Every other garmin instrument in this airplane configuration needs to follow the same process, and its updates are **the responsibility of the owner**.

Useful links:

<https://support.garmin.com/en-US/?faq=uNVlgOd9jj7Lk5DcU5UGj6>

https://www8.garmin.com/support/download_details.jsp?id=15519


8.3.2 Database Updates:

Ensuring that navigation charts and terrain data are current and accurate **is the responsibility of the owner**. Keeping this information up to date is crucial for safe and efficient navigation.

During installation, Texas Aircraft may, in some cases, update the system. However, it is the owner's responsibility to ensure that the system remains up to date.

Access this link to see the instructions and steps to keep your aviation database up to date:

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<https://fly.garmin.com/fly-garmin/devices/overview>



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9 Electrical System

9 Electrical System	1
9.1 Garmin System	1
▪ Main Power	1
▪ Emergency Power	3
▪ GDU460 PFD System	4
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▪ GAD 29 Data Concentrator	6
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9.2 ACS Ignition Switch	20

9.1 Garmin System

▪ Main Power

The main power is supplied by a 250W AC generator with an external rectifier/regulator of 14.2VDC, rated to 22A at 5800 RPM, also an external alternator with output max 600 W/DC at 6000rpm and 14.2 VDC, which recharges the battery in normal operation. A secondary source is supplied by the battery, with a capacity of 16Ah, which supplies system power when the engine is turned off or in case of generator failure. The total electrical load during flight is rated to 26.46A. Electrical supply by the battery only will supply power for a minimum of 30 minutes assuming the battery capacity is 80%. The master relay connects the electrical supply into the circuit, feeding the Master Buss and Master Avionics, which feed the avionics bus, and allowing engine start-up. Two circuit breakers of 50A and 25A are installed to protect the electrical system.

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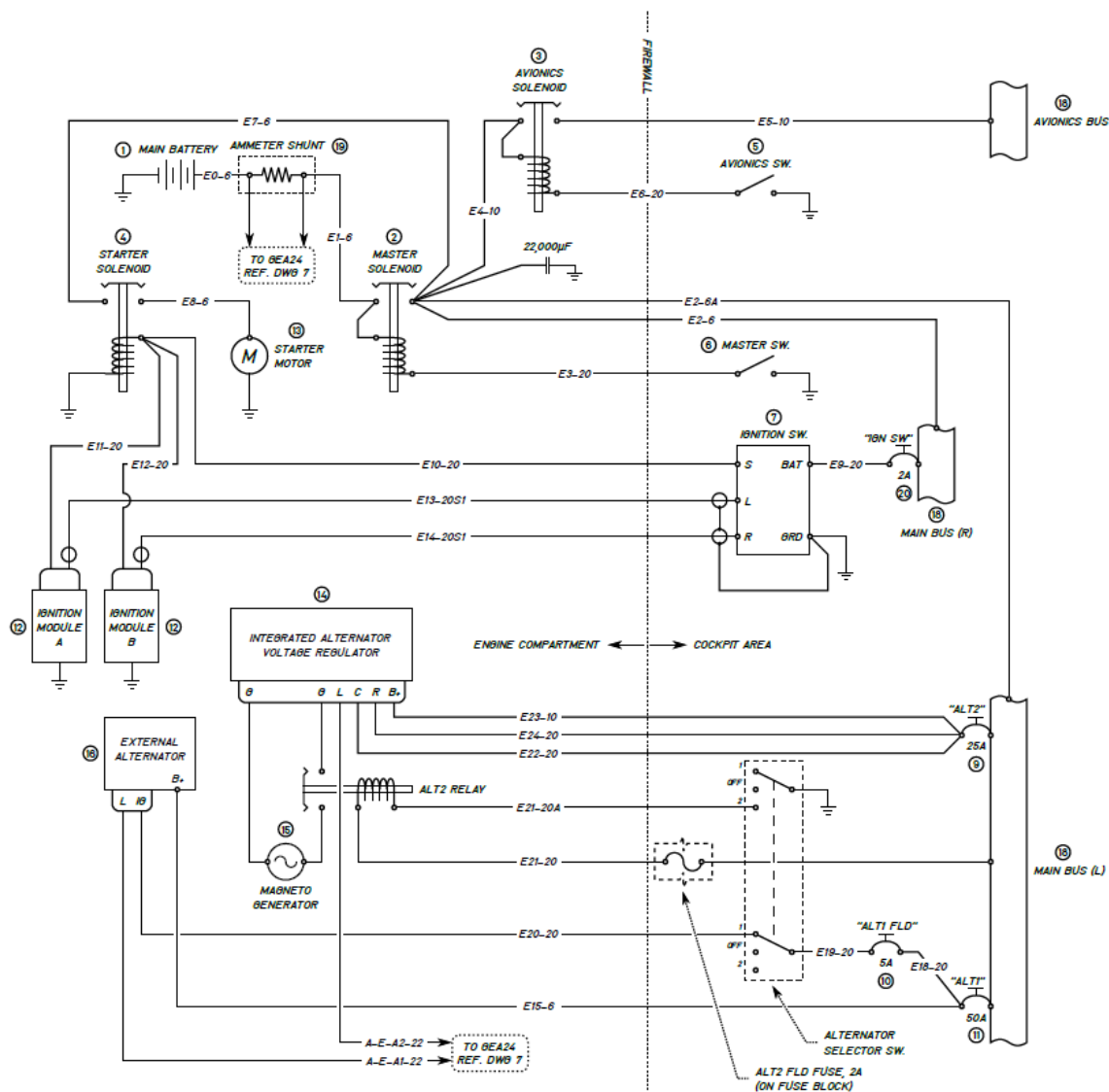


Figure 9.2.1.1. Main Power Diagram

Emergency Power

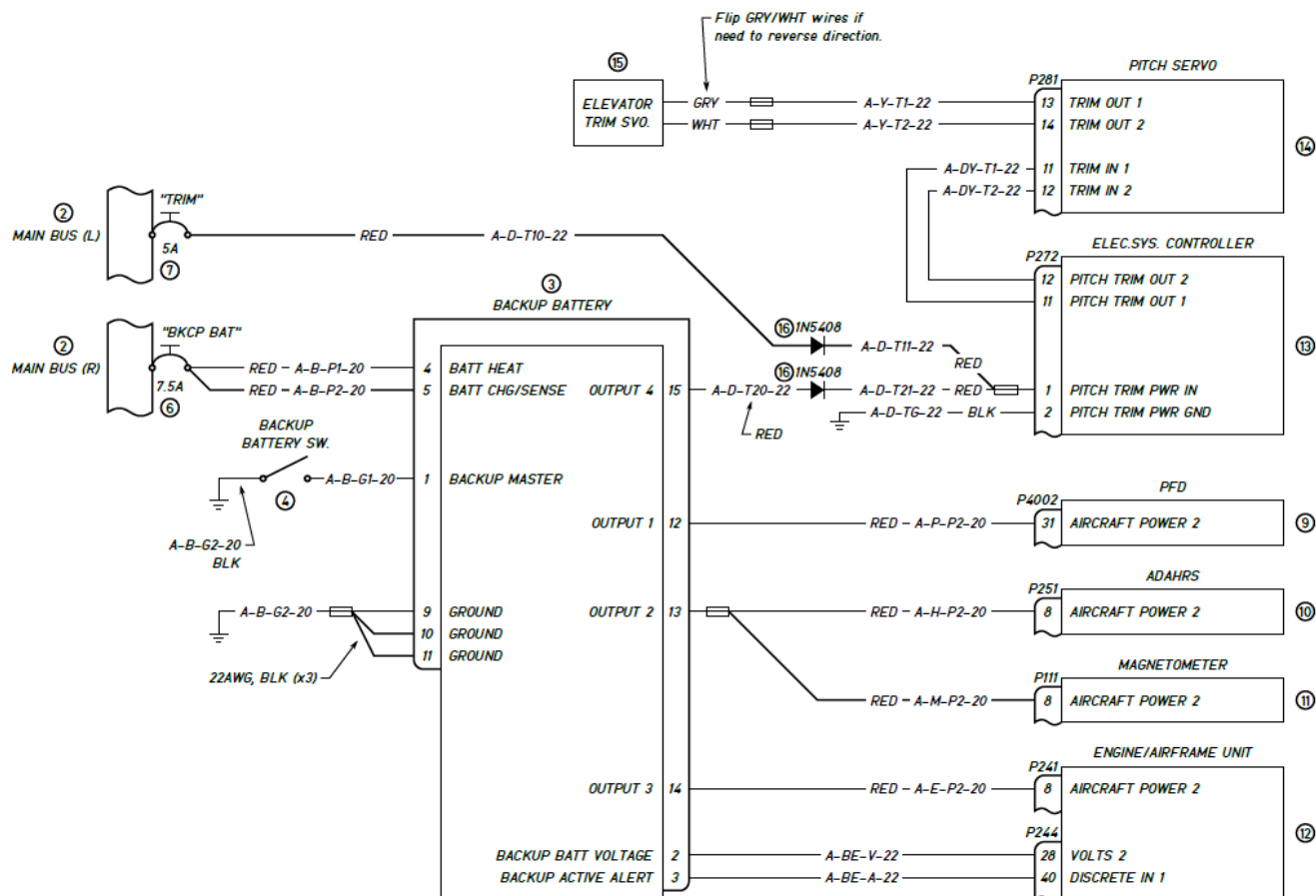


Figure 9.2.2.1. Emergency Power Diagram

GDU460 PFD System

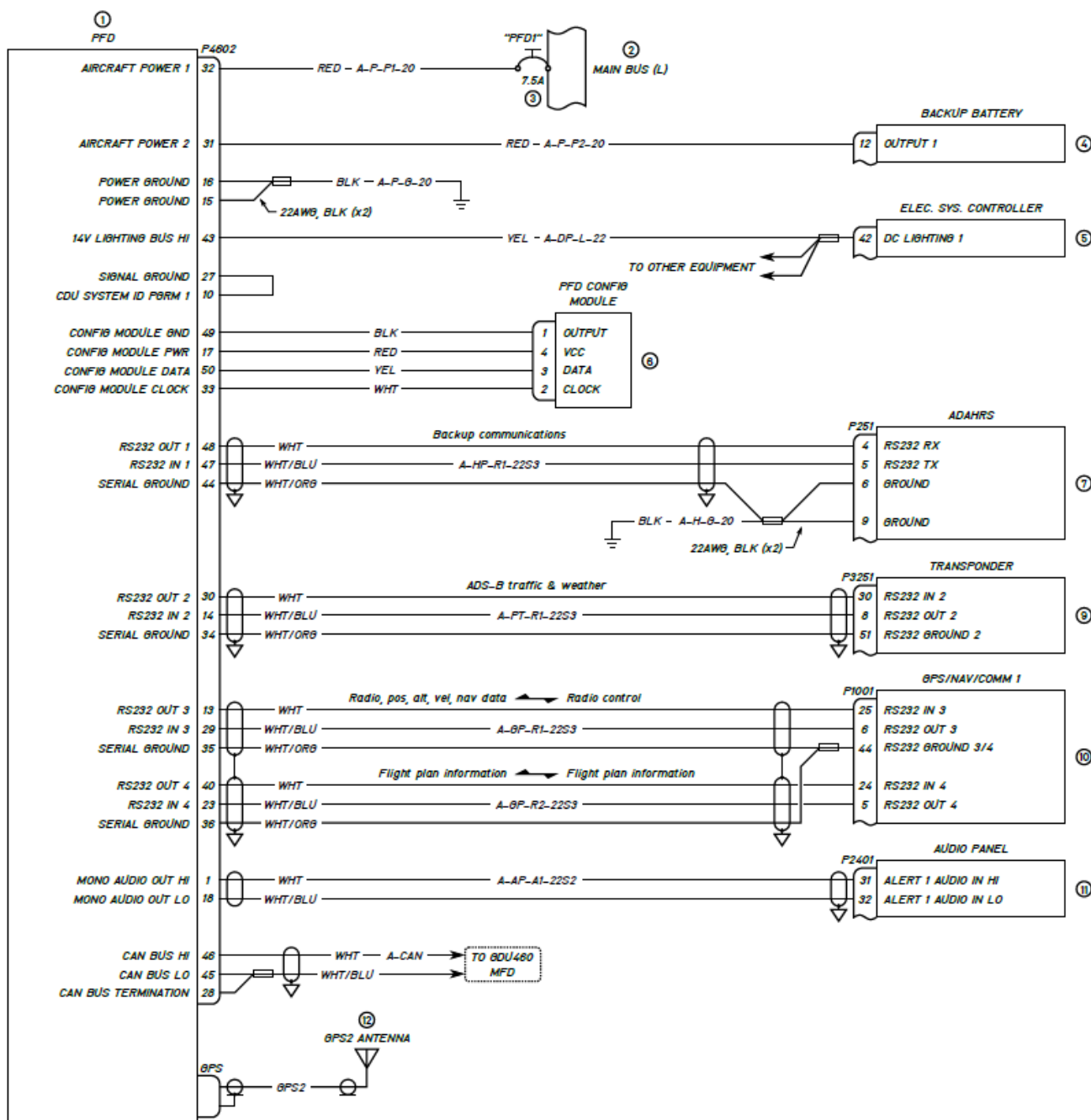


Figure 9.2.3.1. GDU 460 PFD Diagram

GDU 460 MFD System

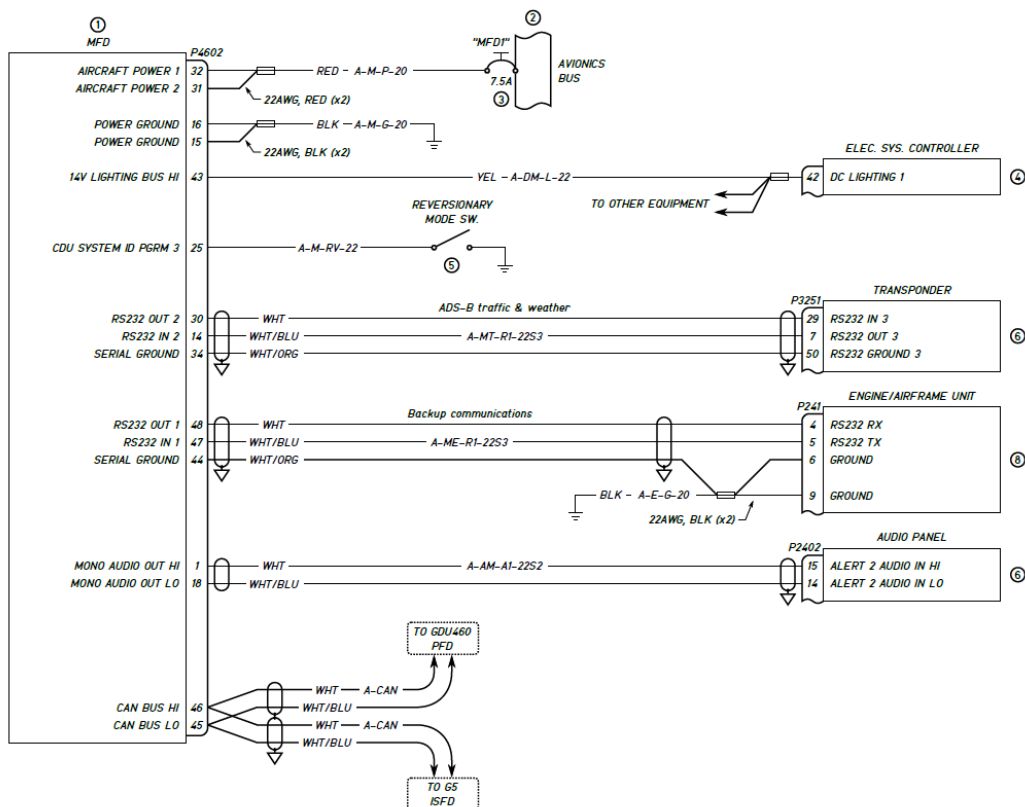


Figure 9.2.4.1. GDU 460 MFD Diagram

GAD 29 Data Concentrator

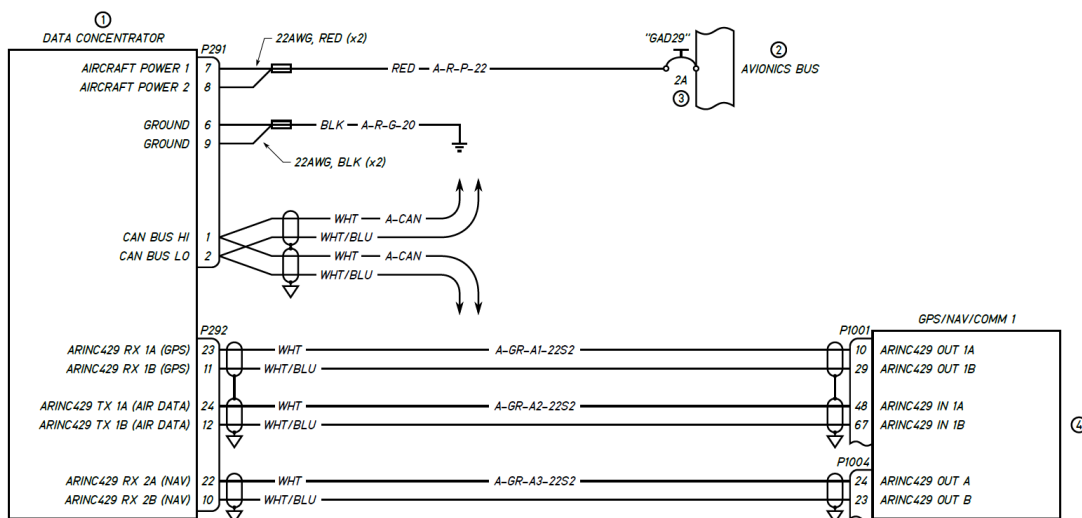


Figure 9.2.14.1. GAD 29 Diagram

GSU 25C ADAHRS System

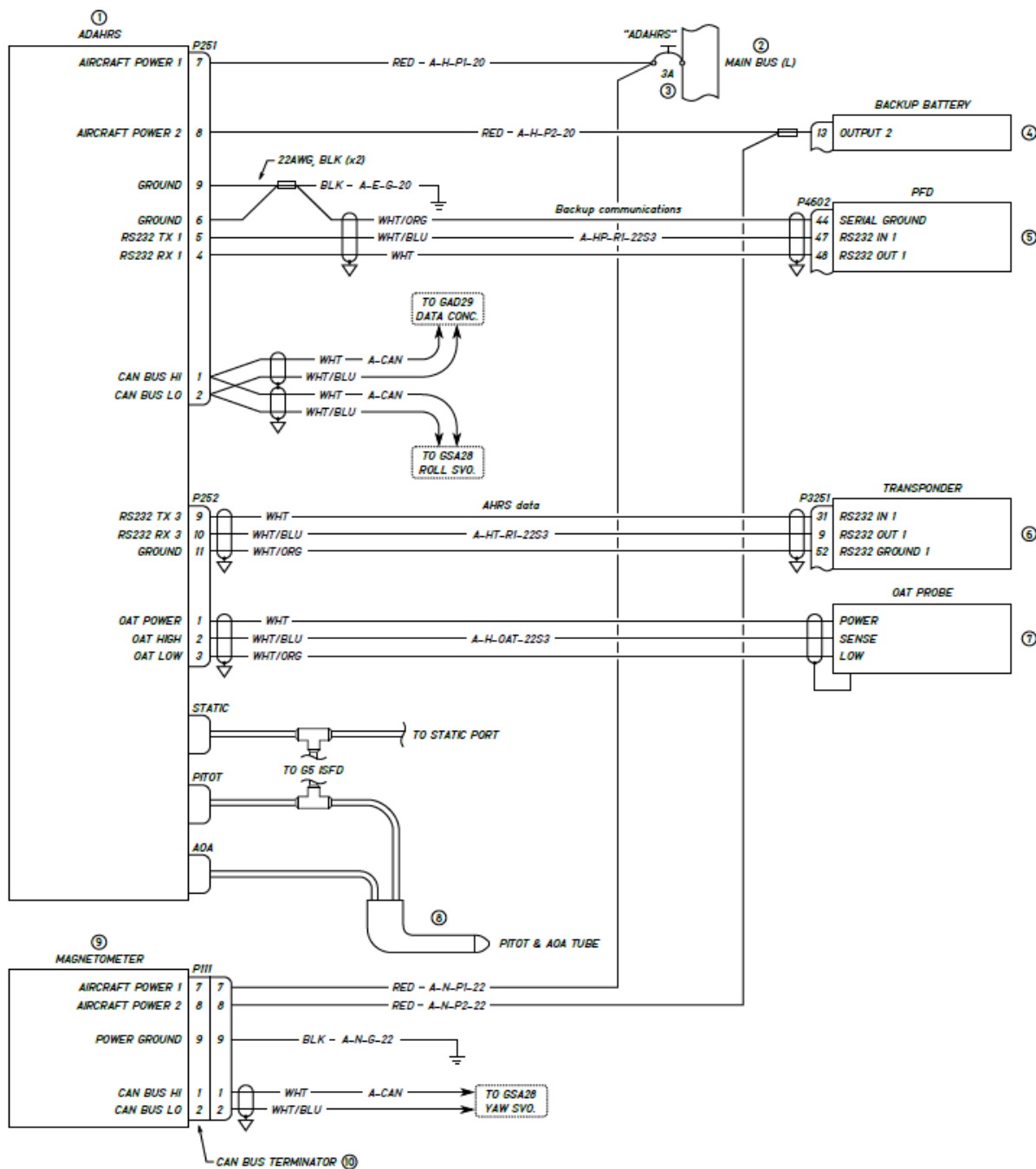


Figure 9.2.5.1. GSU 25 C ADARHS Diagram

Auto Pilot System

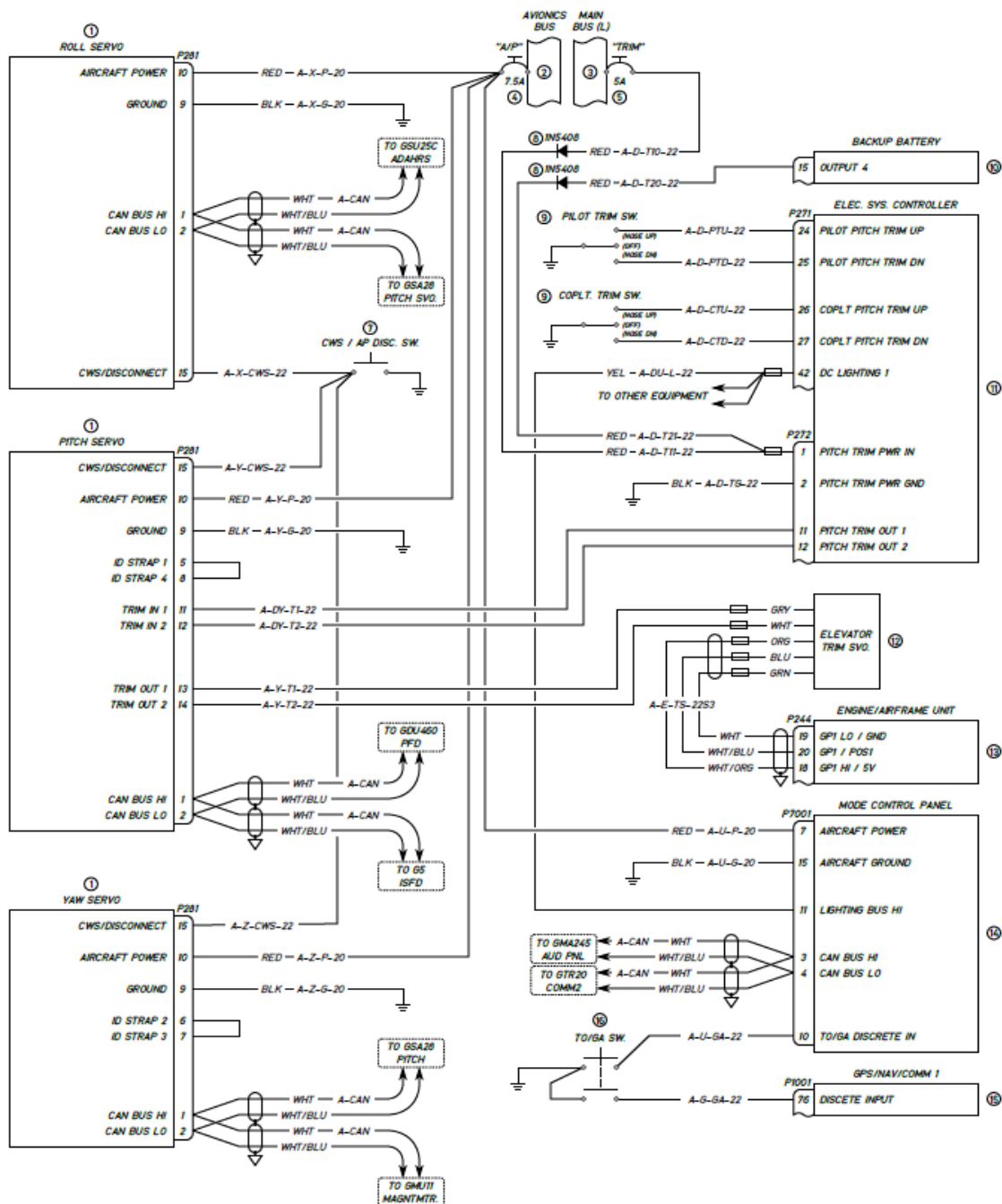


Figure 9.2.7.1. Autopilot Diagram

GEA 24 Engine Airframe System

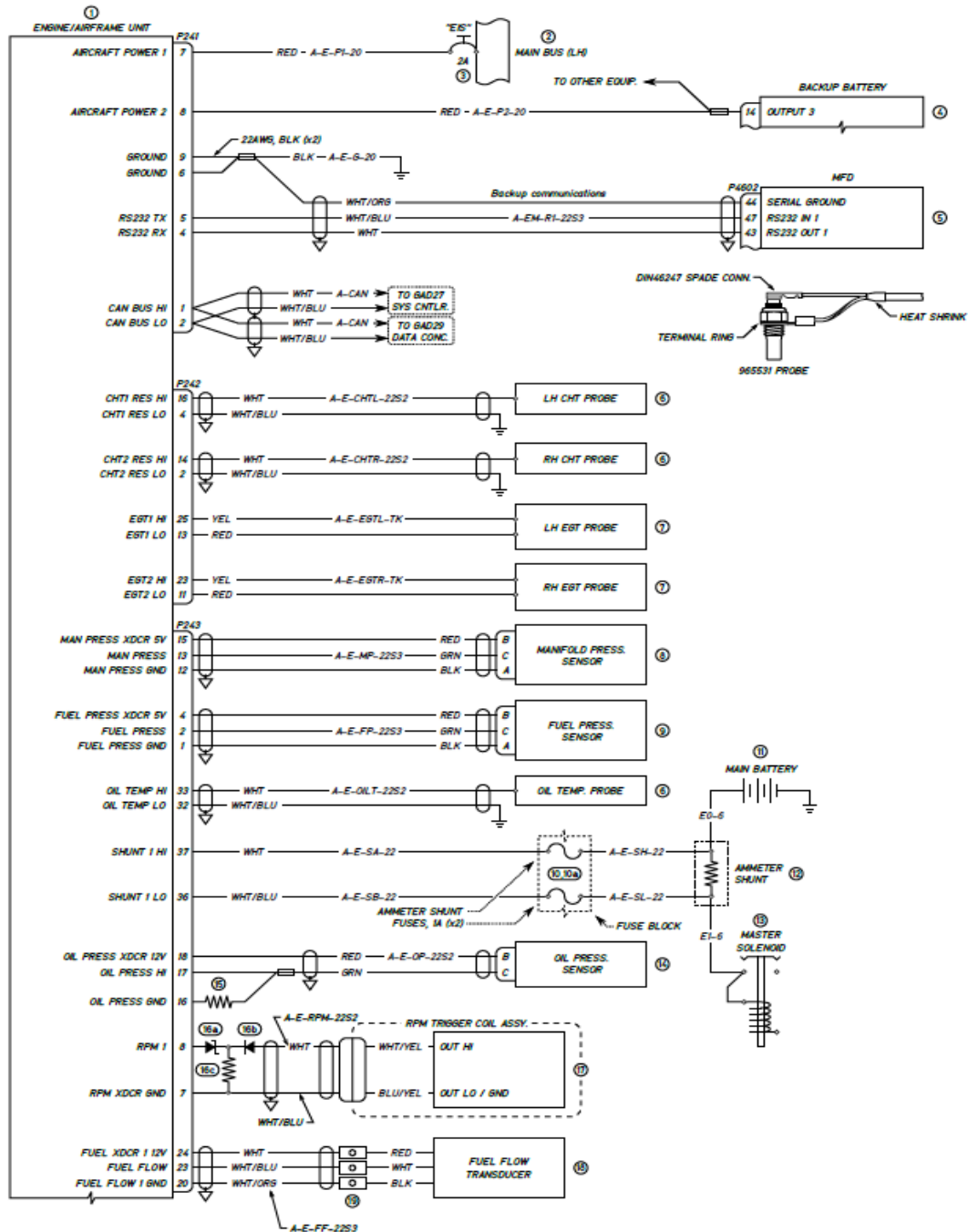


Figure 9.2.7.1. GEA 24 Diagram

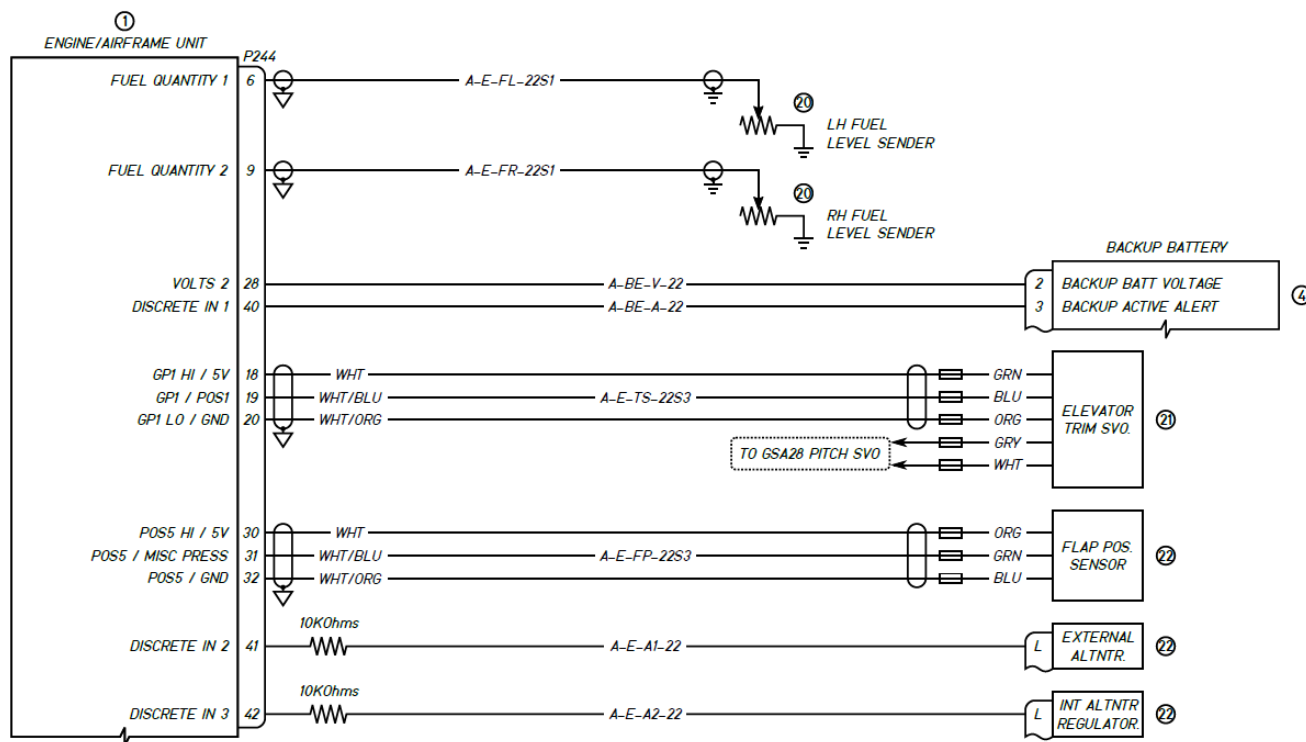


Figure 9.2.7.2. GEA 24 Diagram (continued)

GAD 27 Electrical Controller System

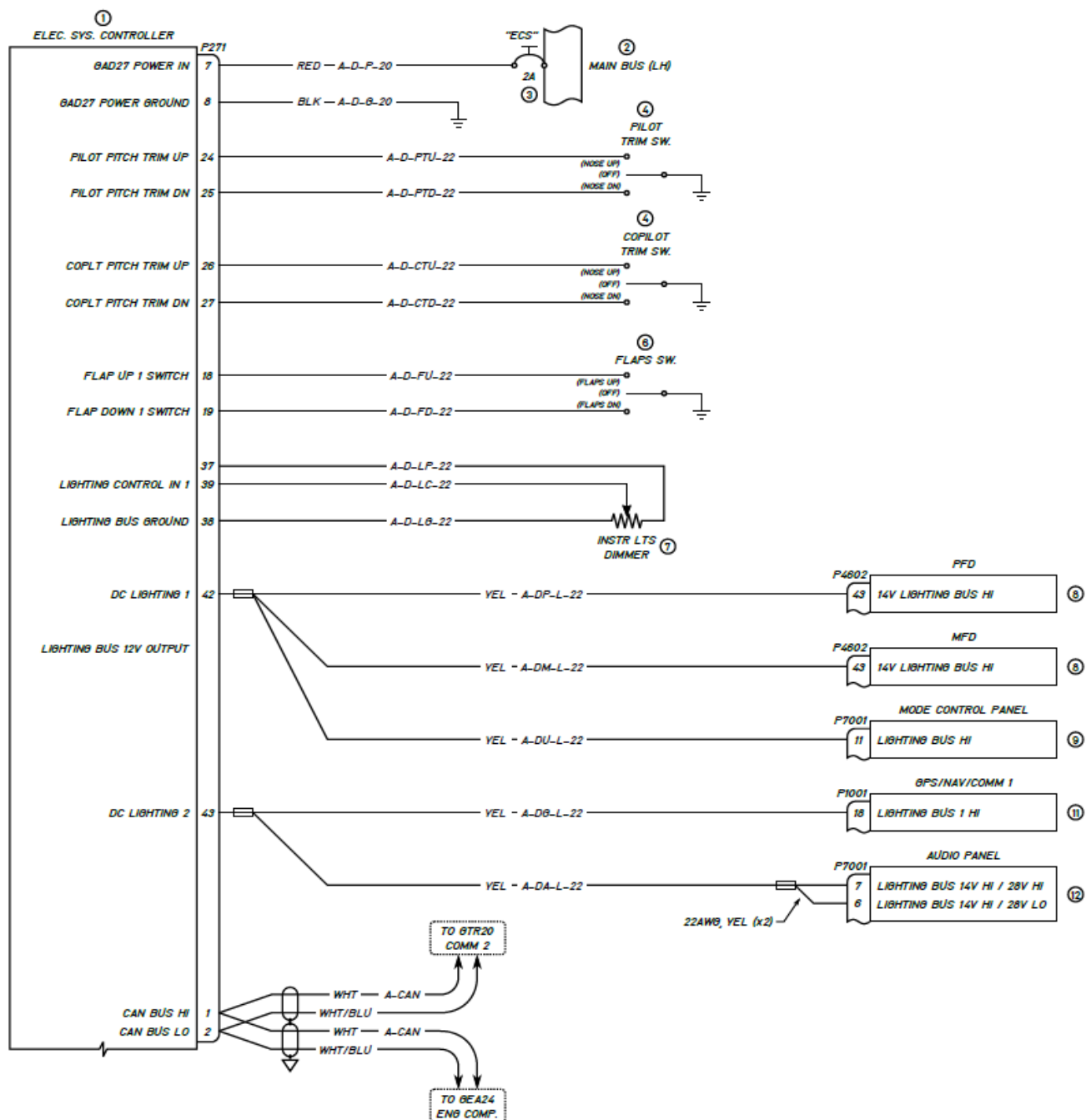


Figure 9.2.8.1. GAD 27 Diagram

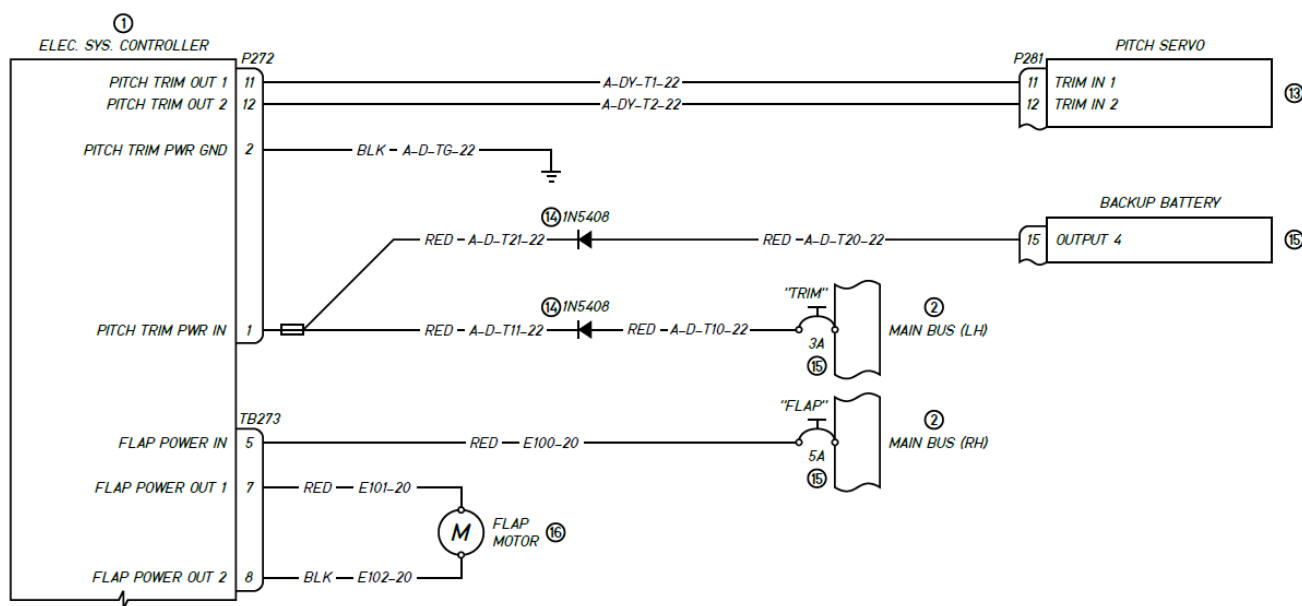


Figure 9.2.8.2. GAD 27 Diagram (continued)

- **Emergency Locator Transmitter**

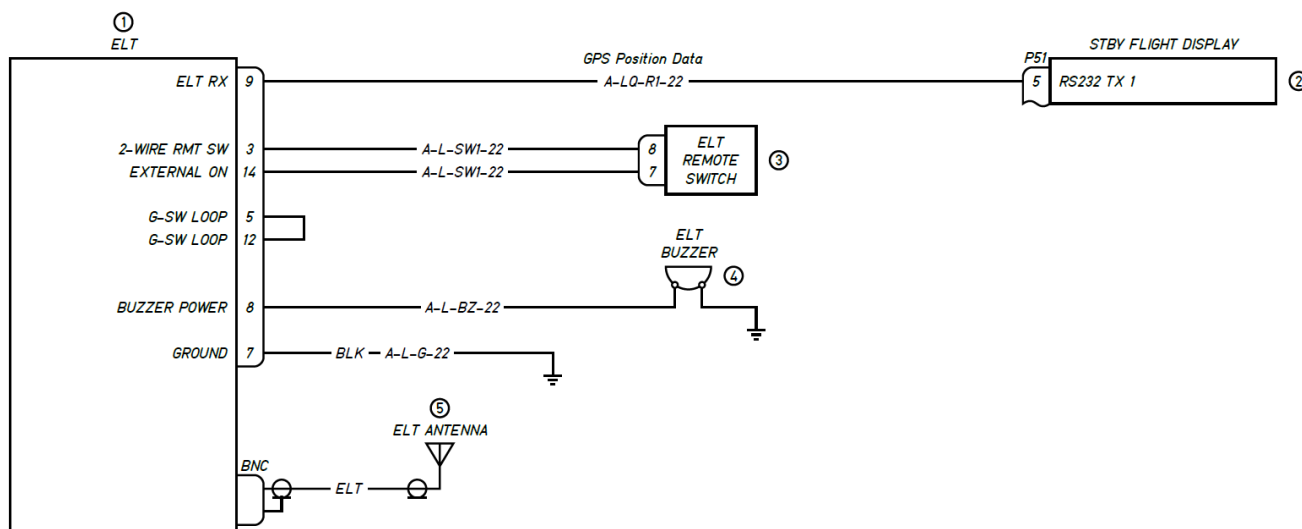


Figure 9.2.15.1. ELT Diagram

GTN 650 XI GPS/NAV/COMM

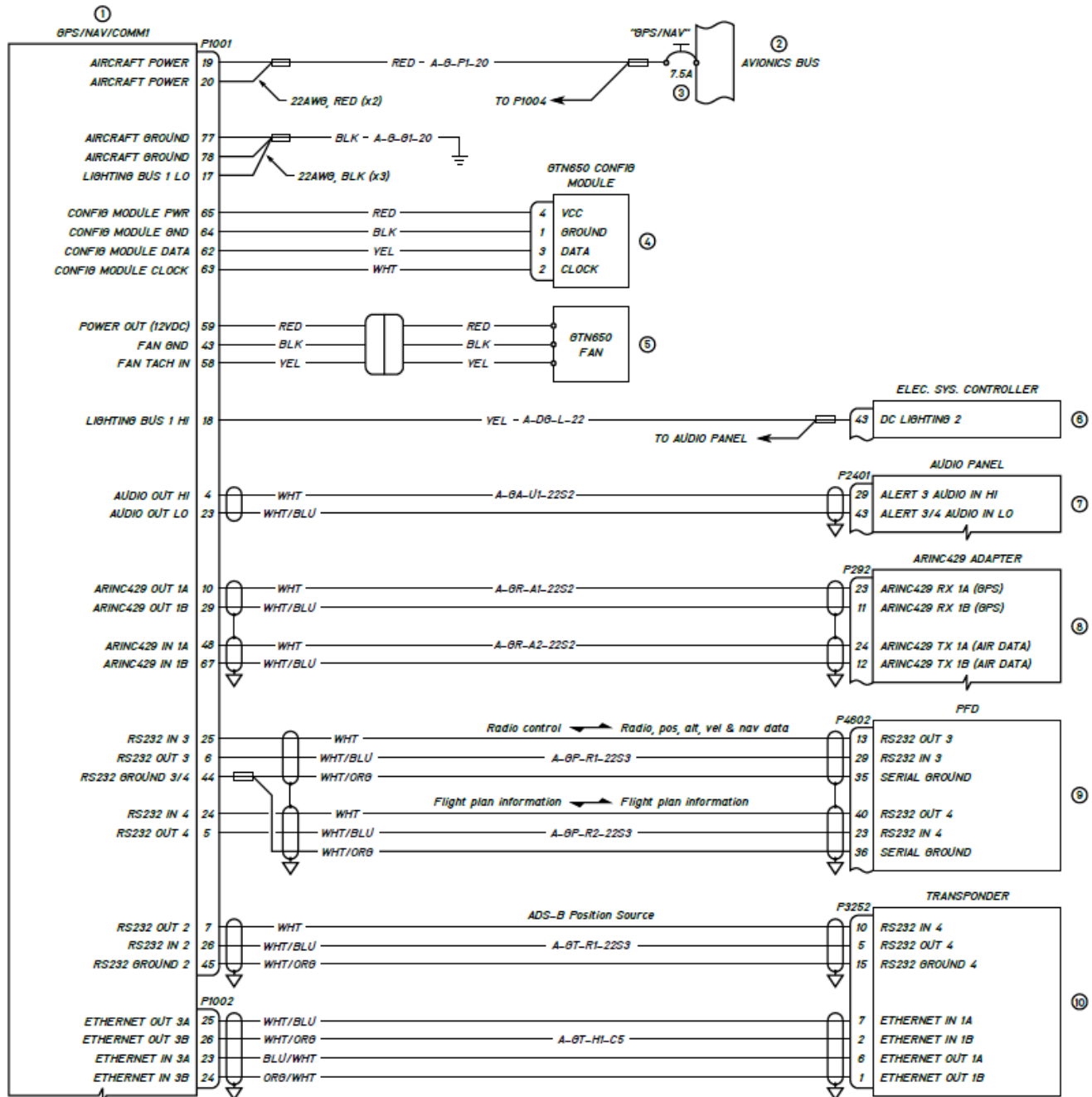


Figure 9.2.9.1. GTN 650 XI Diagram

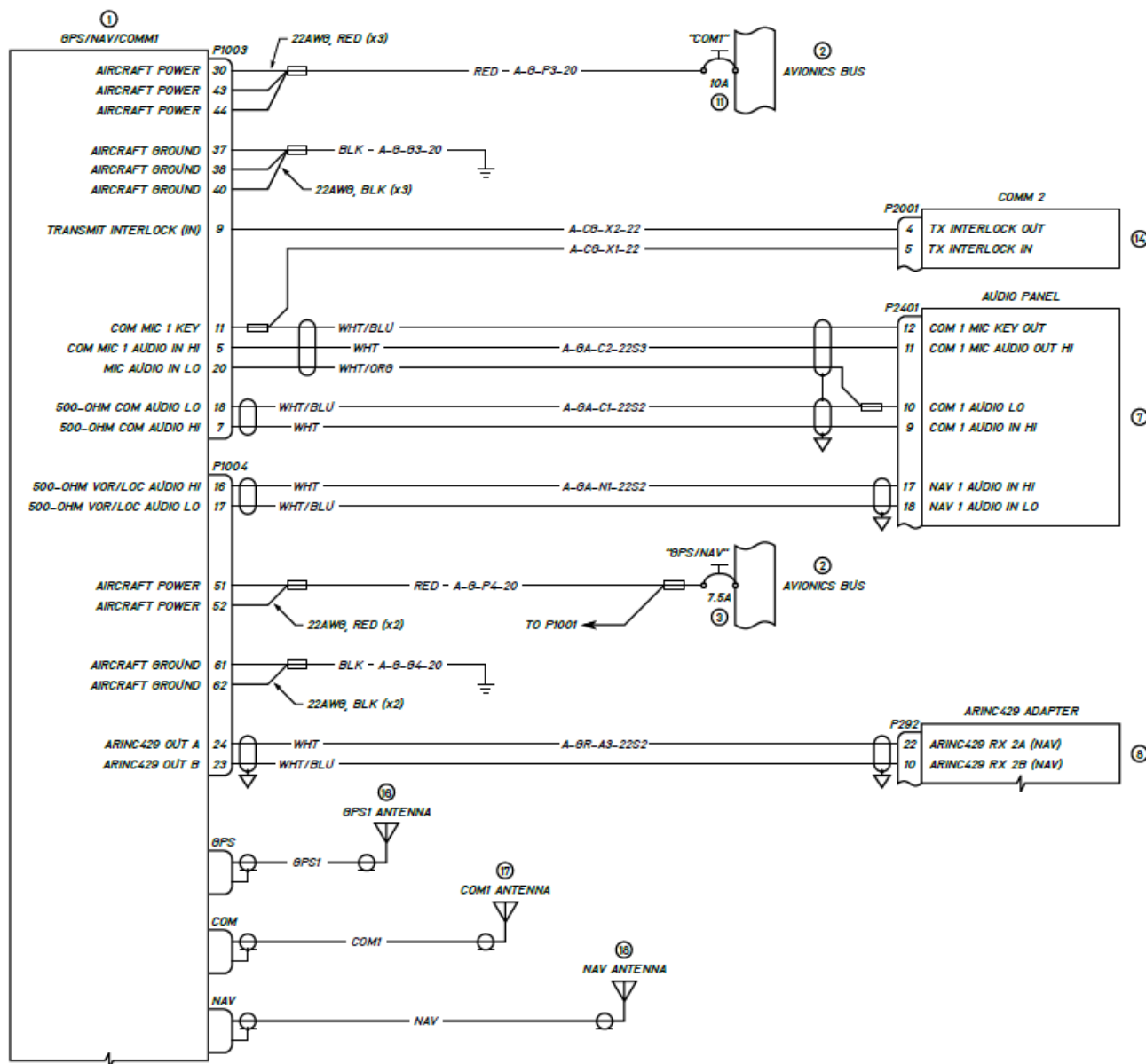


Figure 9.2.9.2. GTN 650 XI Diagram (continued)



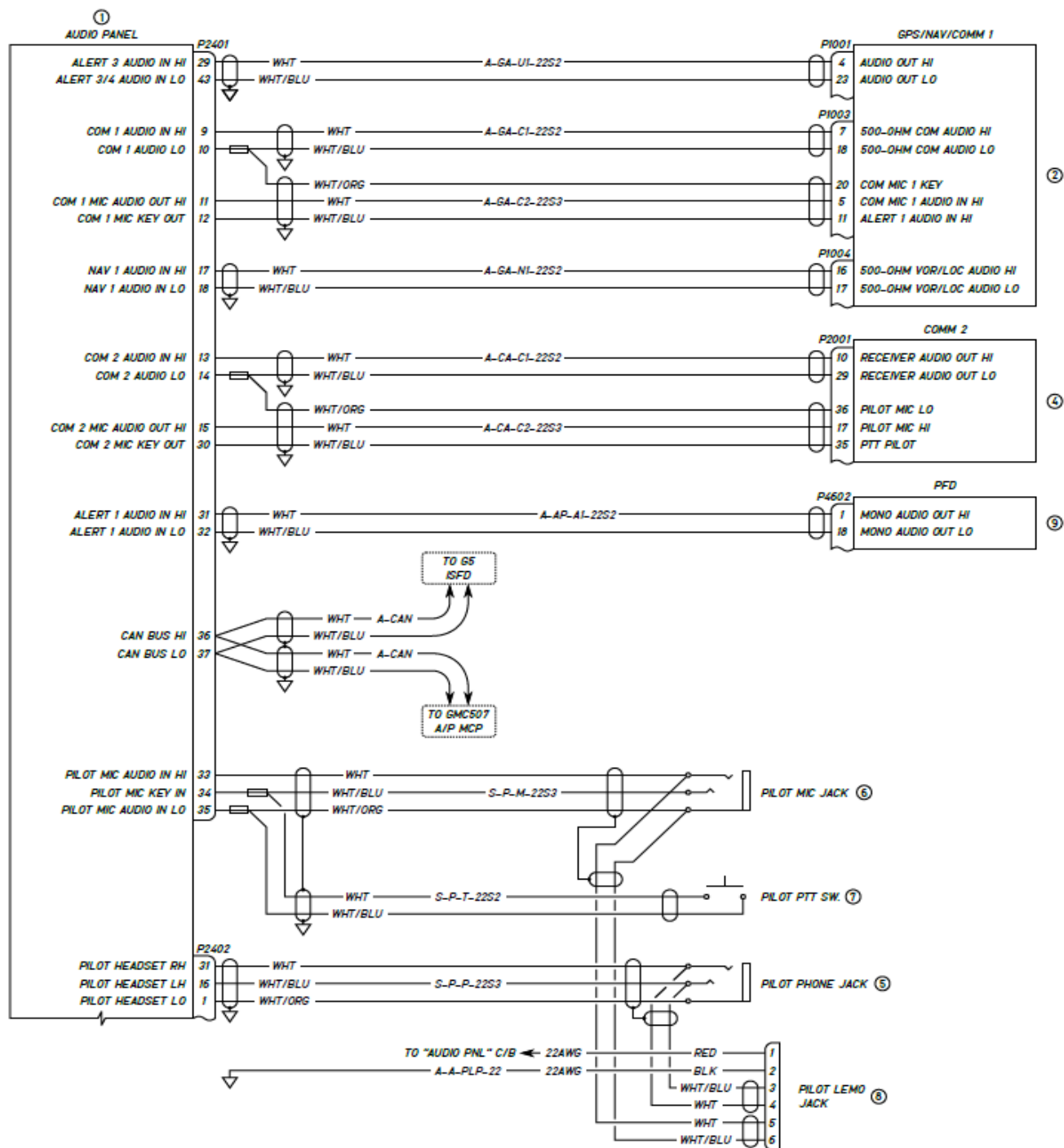
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AIRCRAFT MAINTENANCE MANUAL

ELECTRICAL SYSTEM

GMA 245 Audio Panel



GTX 45 R Transponder System

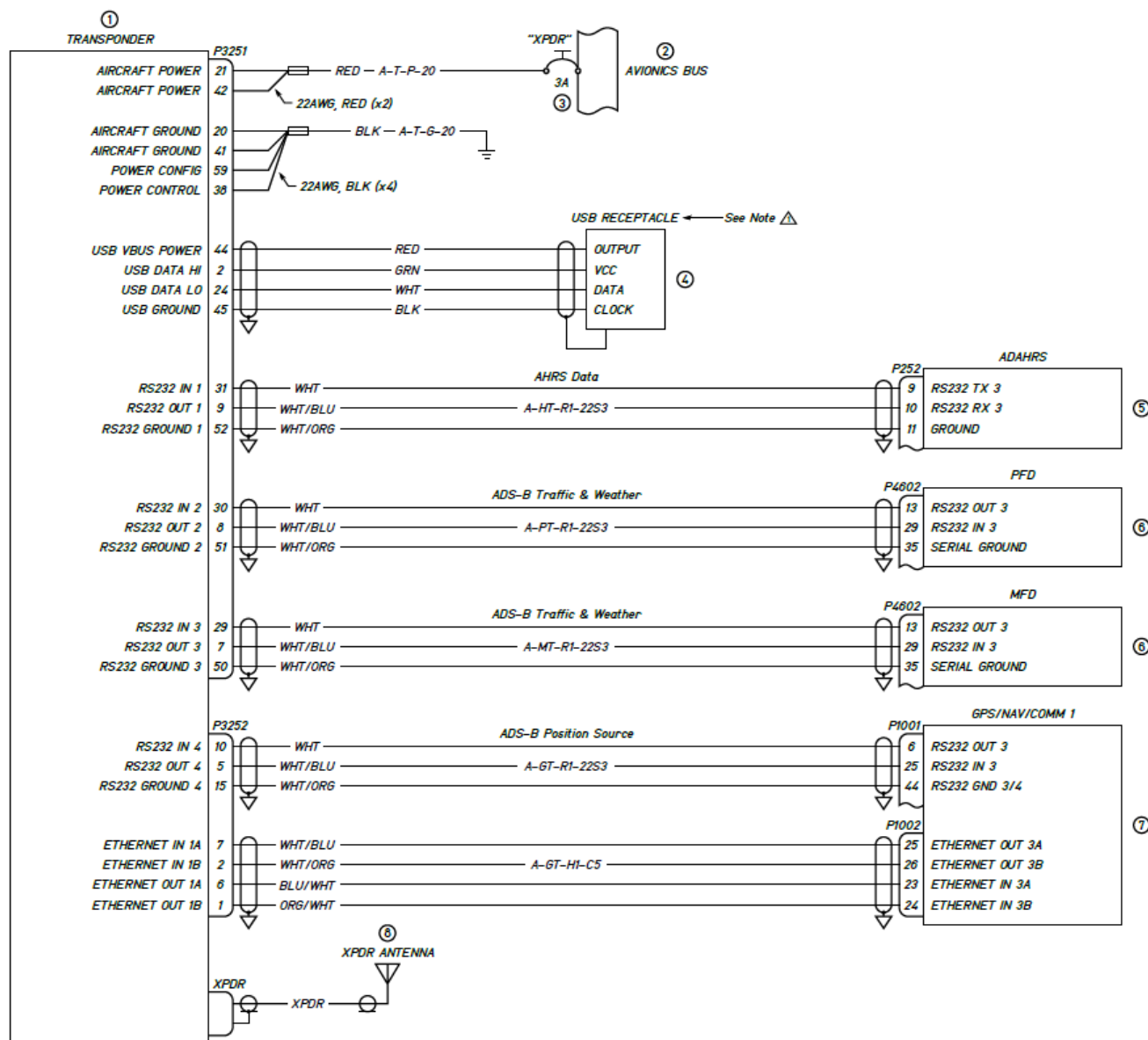


Figure 9.2.11.1. GTX 45 R Transponder Diagram

GTR 20 COMM 2

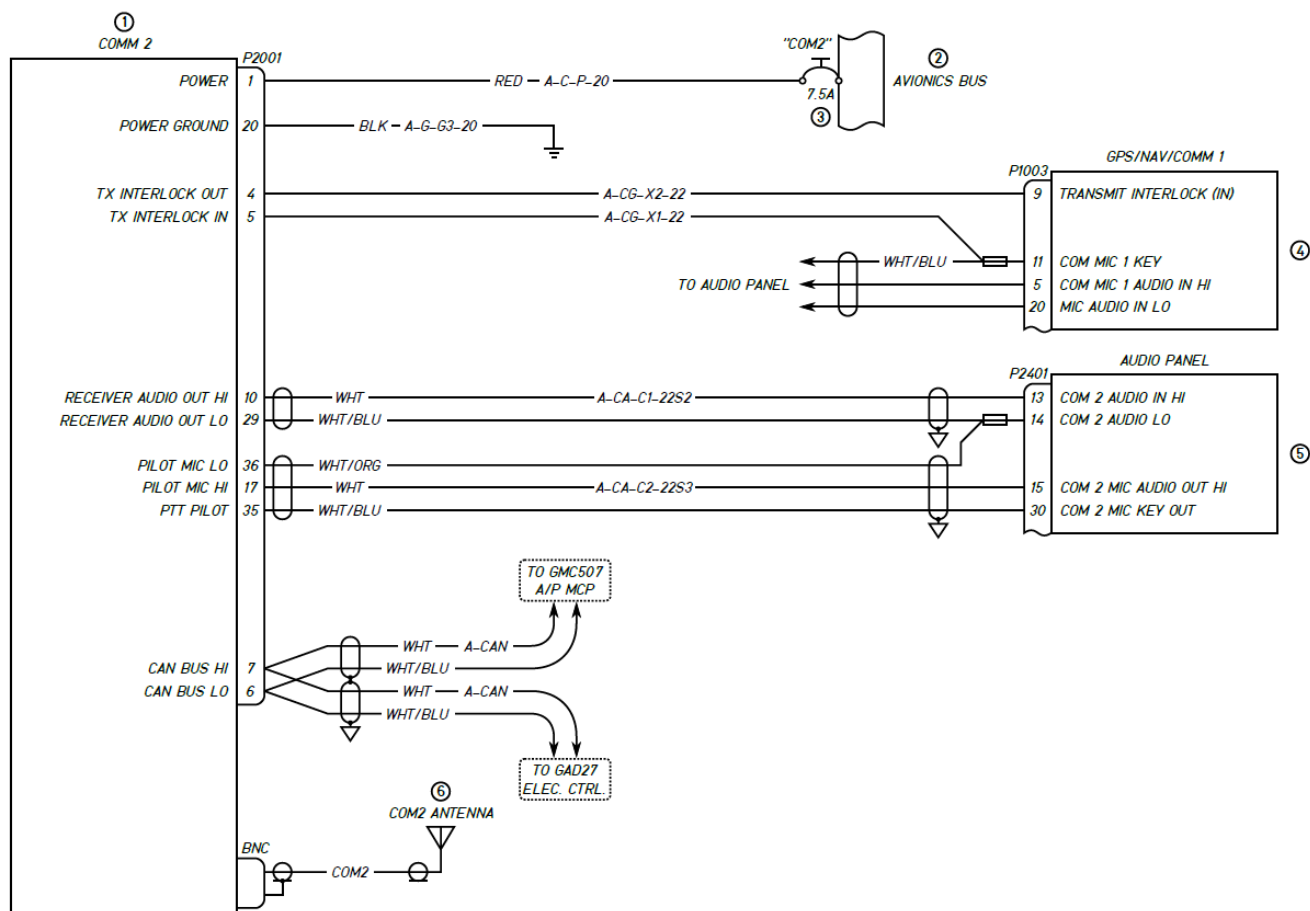



Figure 9.2.12.1. GTR 20 COMM 2 Diagram

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▪ **G5 Integrated Standby Flight Display**

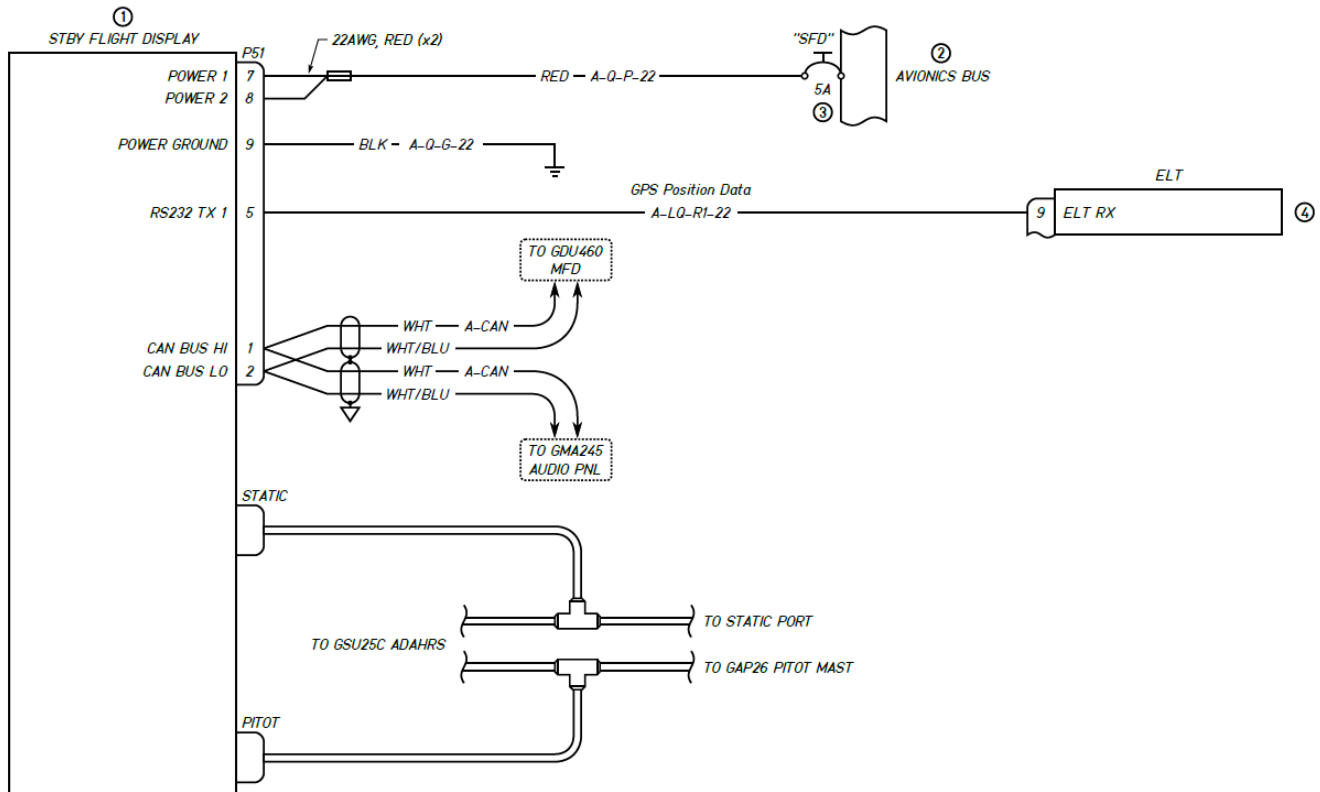


Figure 9.2.13.1. G5 Standby Flight Display Diagram

9.2 ACS Ignition Switch

Check compliance with ACS ignition key bulletin **SB92-01** in aircraft maintenance logbooks.


If it has not been complied with, it is recommended to comply with the instructions in the document provided by the component manufacturer. The manufacturer recommends, for ignition switches which have been operated without a starter solenoid diode, a complete inspection for oxidation and correct lubrication of the device and the installation of a diode in the starter relay. This task is recommended to take place within the next 100 hours or annual aircraft inspection, whichever comes first.

It is the responsibility of the mechanic and operator to consult the most up-to-date technical publications.

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10 Heavy Maintenance, Repairs and Alterations

10 Heavy Maintenance, Repairs and Alterations	1
10.1 Overhaul	2
10.2 Major Repairs and Alterations	2
10.3 Structural Repair	2
10.4 Painting and Coatings	3

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Heavy Maintenance, Repairs, and Alterations

Authorization to perform – Only the Texas Aircraft Manufacturing, INC may perform Heavy Maintenance, Repairs, and Alterations on the Colt 100 aircraft or component.

Tasks:

- Complete engine removal and reinstallation in support of an engine overhaul or to install a new engine;
- Removal and replacement of engine cylinders, pistons, or valve assemblies, or a combination thereof;
- Primary flight control cables/components;
- Landing gear assemblies;
- Repair of components or aircraft structure, or both;
- Repainting of control surfaces;
- Structural repairs.

10.1 Overhaul

Authorization to perform – Only Texas Aircraft Manufacturing may perform or is authorized to perform the overhaul of an aircraft component directly made by Texas Aircraft Manufacturing.

Components to be overhauled by third parties:

Engine and engine components.

Authorized to perform – Rotax overhaul authorized companies and A&P.


10.2 Major Repairs and Alterations

A MRA (Major Repair and Alteration) will be issued for any major repairs and alterations. The MRA must be approved by Texas Aircraft Manufacturing INC before any work is performed.

10.3 Structural Repair

Structural repairs should be conducted in accordance with the best practices found in AC 43.13-1B and FAA-H-8083-31. All structural repairs should be made or approved by Texas Aircraft Manufacturing, INC.

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10.4 Painting and Coatings

Before performing any related work or customization, please contact **Texas Aircraft Manufacturing, INC** by email for written authorization.

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11 Contact and Feedback

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11.1 Texas Aircraft Manufacturing, INC - Contact

For Heavy Maintenance, Overhaul or Major Repairs, please contact Texas Aircraft Manufacturing team by Mail or email, at the following address:

Texas Aircraft Manufacturing, INC

508 Vandenberg Road, Hangar 5

Hondo, TX 78861


800-922-2161

www.texasaircraft.com

support@texasaircraft.com



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11.2 Feedback Form




Feedback Form

Owner/Operator:
Contact Information:
Aircraft S/N:
Aircraft Registration Number:
Date:

The aircraft’s owner or maintainer should use this form to contact the manufacturer, by e-mail, for improvements, corrections, safety of flights and service difficulties issues identified during the operation of the aircraft or in the contents of this manual.


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12 Appendix A – Inspection Checklist

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12.1 First 25 hours Inspection


Group	Points of Inspection	Chapter Reference	Sign-Off
Wing	Visual Inspection for cracks on exterior surfaces.	3.2	
	Evidence of fuel leakage.	3.2	
Horizontal Stabilizer	Visual Inspection for cracks on exterior surfaces.	3.3.1	
Vertical Stabilizer	Visual Inspection for cracks on exterior surfaces.	3.3.2	
Rudder	Visual Inspection for cracks on exterior surfaces.	3.5.3	
	Looseness of bolts, nuts and rod ends.	3.5.3	
Aileron	Visual Inspection for cracks on exterior surfaces.	3.5.1	
	Looseness of bolts, nuts and rod ends.	3.5.1	
Elevator	Visual Inspection for cracks on exterior surfaces.	3.5.2	
	Looseness of bolts, nuts and rod ends.	3.5.2	
Flap	Visual Inspection for cracks on exterior surfaces.	3.2.1	
	Looseness of bolts, nuts and rod ends.	3.2.1	
Landing Gear	Excessive wear on brake assembly.	3.4	
Lights	Visual Inspection and functionality for Navigation (Red/Green), Strobe, Beacon, Taxi, Landing, Dome, LED Panel	1.1.5 2.4.10	
Engine	Same as 100 hours/Annual Inspection	ROTAX 05-20-00*	

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12.2 First 50 hours Inspection

Group	Points of Inspection	Chapter Reference	Sign-Off
Wing	Visual Inspection for cracks on exterior surfaces.	3.2	
	Evidence of fuel leakage.	3.2	
Horizontal Stabilizer	Visual Inspection for cracks on exterior surfaces.	3.3.1	
Vertical Stabilizer	Visual Inspection for cracks on exterior surfaces.	3.3.2	
Rudder	Visual Inspection for cracks on exterior surfaces.	3.5.3	
	Looseness of bolts, nuts and rod ends.	3.5.3	
Aileron	Visual Inspection for cracks on exterior surfaces.	3.5.1	
	Looseness of bolts, nuts and rod ends.	3.5.1	
Elevator	Visual Inspection for cracks on exterior surfaces.	3.5.2	
	Looseness of bolts, nuts and rod ends.	3.5.2	
Flap	Visual Inspection for cracks on exterior surfaces.	3.2.1	
	Looseness of bolts, nuts and rod ends.	3.2.1	
Landing Gear	Excessive wear on brake assembly.	3.4	
Lights	Visual Inspection and functionality for Navigation (Red/Green), Strobe, Beacon, Taxi, Landing, Dome, LED Panel	1.1.5 2.4.10	
Engine	Change Oil.	ROTAX 05-20-00*	
	Change Oil Filter.		

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Exhaust	Check for crack/damage or deterioration at welded joints. Welding repairs should be performed as needed.	2.4.12	
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Note:

* Check the latest revision.


12.3 50 hours Inspection

Group	Points of Inspection	Chapter Reference	Sign-Off
Engine*	Change Oil.	ROTAX 05-20-00*	
	Change Oil Filter.		

Note:

* Check the latest revision.


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12.4 100 hours/Annual Inspection


Check with the CAA registry that the registration identification (a) is still the same for that serial number, and (b) the owner information is still current.			
Group	Points of Inspection	Chapter Reference	Sign-Off
Fuselage	Skin - for deterioration, distortion, other evidence of failure, and defective or insecure attachment of fittings.	3.6	
	Systems and components - for improper installation, apparent defects, and unsatisfactory operation.		
	Control Surface system – for lubrication.	1.10.2.2	
Cabin and Cockpit	Generally - for uncleanness and loose equipment that might foul the controls.	-	
	Seats and safety belts - for poor condition and apparent defects.	3.6.2	
	Windows and windshields - for deterioration and breakage.	3.6.2	
	Instruments - for poor condition, mounting, marking, and (where practicable) improper operation.	1.1.1 POH	
	Flight and engine controls - for improper installation and improper operation.	1.1.2	
	Batteries - for improper installation and improper charge.	2.4.8	
	All systems - for improper installation, poor general condition, apparent and obvious defects, and insecurity of attachment.	1.1.1 1.1.2 1.1.4	
	All control cables - for broken wires strands.	1.10.2.3	

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		1.10.2.4	
	Any cable assembly that has one broken wire strand located in a critical fatigue area must be replaced. Check and adjust the tension according to Section Control Cables.	1.10.2.3 1.10.2.4	
	Inspect pulleys - for roughness, sharp edges, and presence of foreign material embedded in the grooves. Examine pulley bearings to ensure proper lubrication, smooth rotation; and freedom from flat spots, dirt, and paint spray.	Check Aileron and Rudder System	
	Check all pulley brackets and guards for damage, alignment, and security.	Check Aileron and Rudder System	
	Control Surface system – for lubrication.	1.10.2.2 1.10.2.4 1.10.2.5 1.10.2.6 1.10.2.7	
Engine and Nacelle	Engine section – for visual evidence of excessive oil, fuel, or hydraulic leaks, and sources of such leaks.	-	
	Studs and nuts – for improper torque and obvious defects.	-	
	Internal engine – for cylinder compression and for metal particles or foreign matter on screens and sump drain plugs. If there is weak cylinder compression, for improper internal condition and improper internal tolerances.	-	
	Engine mount – for cracks, looseness of mounting, and looseness of engine to mount.	3.6.3	

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	Flexible vibration dampeners – for poor condition and deterioration.	-	
	Engine controls - for defects, improper travel, and improper safety.	-	
	Lines, hoses, and clamps - for leaks, improper condition and looseness.	-	
	Exhaust stacks - for cracks, defects, and improper attachment.	2.4.12	
	All systems - for improper installation, poor general condition, defects, and insecure attachment.	-	
	Cowling - for cracks, and defects.	-	
	Rudder control system – for lubrication.	1.10.2.4	
	Check the oil tank and clean the oil tank if contaminated.	1.7	
	Consult Maintenance Manual for Rotax Engine Type 912 Series	ROTAX 05-20-00*	
Landing Gear	All units - for poor condition and insecurity of attachment.	3.4	
	Hydraulic lines - for leakage.	3.4.1 3.4.2	
	Wheels - for cracks, defects, and condition of bearings.	1.6 3.4	
	Tires - for wear and cuts.	3.4.1	
	Brakes - for improper adjustment.	1.10.2.1 3.4.1	
Wing	All components of the wing and center section assembly for poor general condition, skin	3.2	

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	deterioration, distortion, evidence of failure, and insecurity of attachment.		
	Control Surface system – for lubrication.	1.10.2.3 1.10.2.5	
Empennage	All components and systems that make up the complete empennage assembly for poor general condition, skin deterioration, distortion, evidence of failure, insecure attachment, improper component installation, and improper component operation.	3.3	
	Control Surface system – for lubrication.	1.10.2.2 1.10.2.4	
Propeller	Propeller assembly - for cracks, nicks, binds, and oil leakage.	2.4.3.7	
	Bolts - for improper torque and lack of safety.	2.4.3.7	
	Perform according to 2.4.13.1.	2.4.13.1	
Radio	Radio and electronic equipment - for improper installation and insecure mounting.	1.1.4 2.4.3.8 9.5	
	Wiring and conduits - for improper routing, insecure mounting, and obvious defects.	-	
	Bonding and shielding - for improper installation and poor condition.	-	
	Antennas - for poor condition, insecure mounting, and improper operation.	-	
ELT	Remove and inspect the ELT installed for: (1) Proper installation; (2) Battery corrosion; (3) Operation of the controls and crash sensor; and	2.4.3.9 9.7	


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	(4) The presence of a sufficient signal radiated from its antenna.		
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12.5 1500/2000 hours Inspection

Group	Points of Inspection	Chapter Reference	Signature
Propeller	Hub, Blade, Spinner and spinner bulkhead: Inspection for damage or cracks and replace as needed. Replace all bolts and washers.	2.4.13.2	
Engine	TBO: Engine and engine components.	ROTAX 05-20-00*	

Note: * Check the latest revision.


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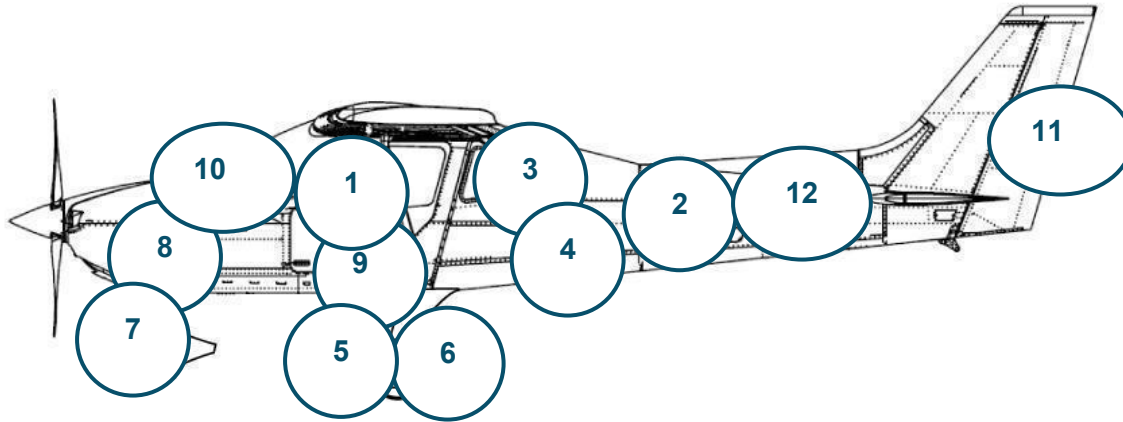
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13 Appendix B – Placards

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13.1 Left View




ITEM	DESCRIPTION	POSITION	DESIGN
1	Doors Handle and Latch (Lock and Unlock)	Door (Inside and Outside)	<div>  <p>(Outside)</p>  <p>(Inside)</p> </div>

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2	Static Pressure Port	Fuselage (tail)	
3	Aircraft Category - Light Sport	Fuselage near to the Door	LIGHT SPORT
4	ELT	Fuselage (tail)	
5	No Step	Main Landing Gear Fairing	NO STEP
6	35 PSI – Main Wheel Calibration	Main Landing Gear Fairing	35 PSI
7	25 PSI – Nose Wheel Calibration	Nose Landing Gear Fairing	25 PSI
8	Drain (Fuel Line – Only with Rotax 912 ULS2-01)	Fuselage (below the door)	DRAIN 
9	Aircraft Model - Colt	Fuselage	COLT®
10	No Push	Rudder	NO PUSH

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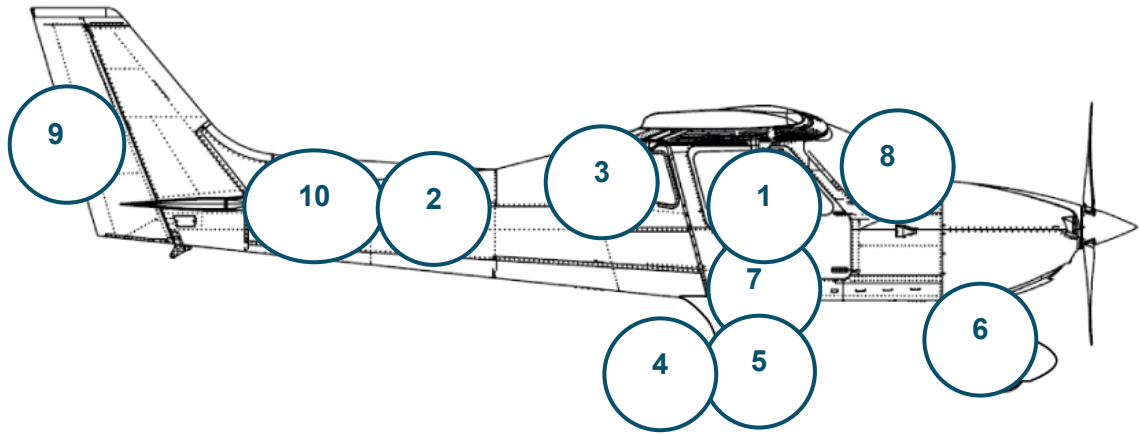
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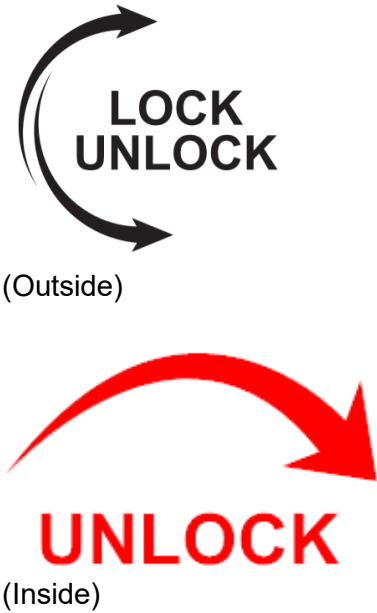
11	N-Number	Fuselage (tail)	N105TX (Sample)
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13.2 Right View




ITEM	DESCRIPTION	POSITION	DESIGN
1	Doors Handle and Latch (Lock and Unlock)	Door (Inside and Outside)	

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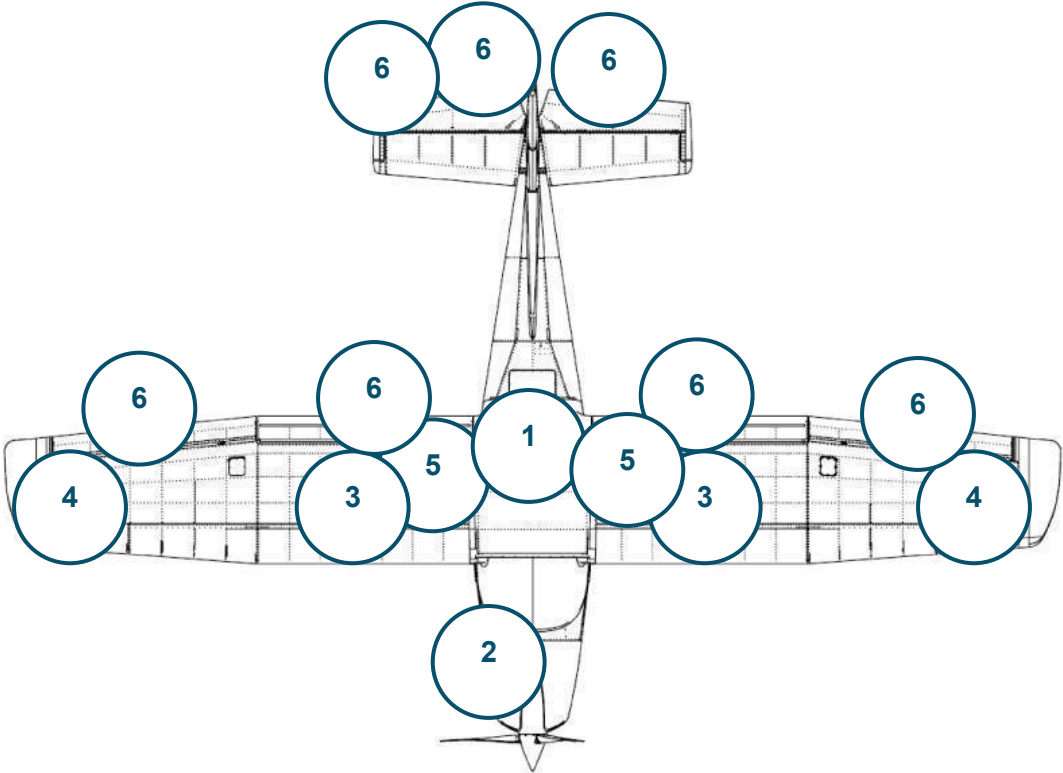
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2	Static Pressure Port	Fuselage (tail)	
3	Aircraft Category - Light Sport	Fuselage near to the Door	LIGHT SPORT
4	No Step	Main Landing Gear Fairing	NO STEP
5	35 PSI – Main Wheel Calibration	Main Landing Gear Fairing	35 PSI
6	25 PSI – Nose Wheel Calibration	Nose Landing Gear Fairing	25 PSI
7	Drain (Fuel Line – Only with Rotax 912 ULS2-01)	Fuselage (below the door)	DRAIN 
8	Aircraft Model - Colt	Fuselage	COLT®
9	No Push	Rudder	NO PUSH
10	N-Number	Fuselage (tail)	N105TX (Sample)

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13.3 Top View




ITEM	DESCRIPTION	POSITION	DESIGN
1	Jack Point	Fuselage (Bottom)	 JACK POINT


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2	Oil Indication	Cowling (Exterior and Oil Compartment)	<div>  <p>OIL AEROSHELL SPORT PLUS 4</p> </div> <p>(Exterior)</p> <div> <p>RECOMMENDED OIL</p> <p>BRAND: SHELL®</p> <p>DESCRIPTION: AEROSHELL OIL SPORT PLUS 4</p> <p>SPECIFICATION: ACCORDING TO RON 424</p> <p>VISCOSITY: SAE 10 W-40</p> <p>QUANTITY: MIN. 2.5 L (0.66 US GAL) MAX. 3.0 L (0.8 US GAL)</p> </div> <p>(Oil Compartment)</p>
3	Fuel Indication	Wing (both - upper)	 <p>100LL GRADE AVGAS RECOMMENDED</p> <p>MAX. USABLE FUEL 15.45 US GAL</p>
4	Fuel Vent	Wing (both - lower)	<div>  <p>VENT</p> <p>KEEP CLEAR</p> </div>

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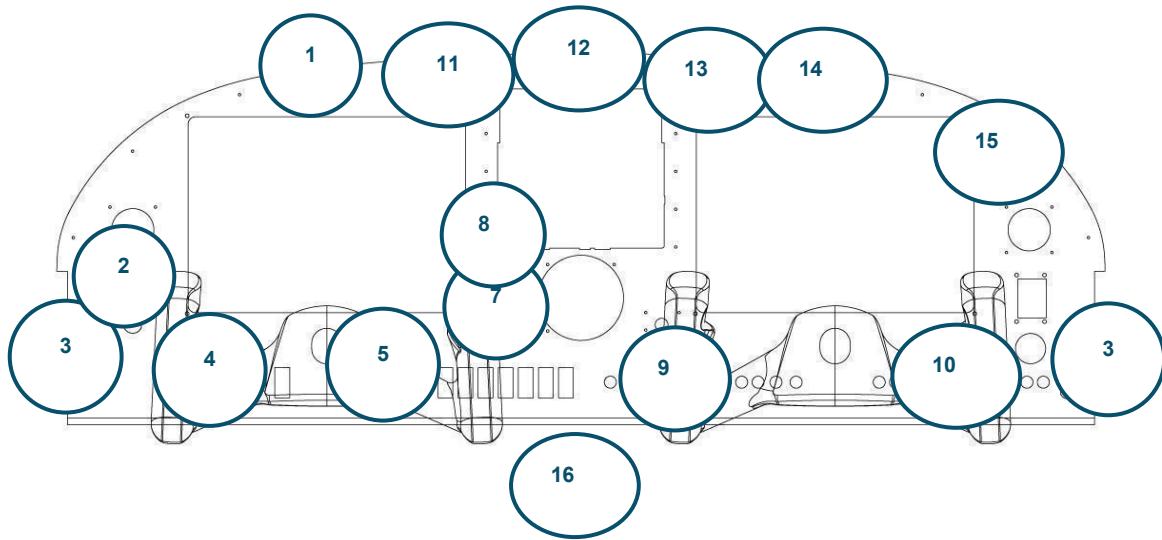
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5	Drain (Fuel Tank)	Wing (both - lower)	DRAIN 
6	No Push	Ailerons, Flaps, Elevator, Elevator Trim	NO PUSH

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13.4 Dashboard



ITEM	DESCRIPTION	POSITION	DESIGN
1	N-Number	Dashboard	<div>N105TX</div> <div>(Sample)</div>
2	Start	Dashboard	<div>START</div>
3	Microphone/Phone/6 Pin	Dashboard	<div>MIC</div> <div>PHONE</div> <div>6 PIN</div>
4	Master Switches	Dashboard	<div><div>START POWER</div><div>BATT SWITCH</div><div>LANE A</div><div>LANE B</div><div>PUMP 1</div><div>PUMP 2</div><div>OFF</div><div>OFF</div><div>OFF</div><div>OFF</div><div>OFF</div><div>OFF</div></div>
5	Panel Lights	Dashboard	<div>LIGHTS</div> <div>PANEL</div> <div>INST</div> <div>OFF</div> <div>MAX</div> <div>OFF</div> <div>MAX</div>
6	Switches	Dashboard	<div><div>FUEL PUMP</div><div>NAV LIGHT</div><div>STROBE</div><div>TAXI LIGHT</div><div>LAND LIGHT</div><div>DOME LIGHT</div><div>12V OUTLET</div><div>OFF</div><div>OFF</div><div>OFF</div><div>OFF</div><div>OFF</div><div>OFF</div><div>OFF</div></div>

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7	Auto Pilot Disengage	Dashboard	AP TO/GA																																																				
8	Trim Select	Dashboard	TRIM LEF T/RIGHT																																																				
9	Master Buss 1	Dashboard	MASTER BUS BKP NAV STROBE TAXI LAND DOME 12V TRIM FLAP CABIN BATT PH BATT LIGHT LIGHT LIGHT LIGHT LIGHT OUTLET LIGHT SWITCH STA																																																				
10	Avionics Buss 2	Dashboard	GTN GPS GMA AUTO G5 MFD PFD ADHARS/ GEA24 RADIO TRANSP RADIO PILOT FLOT AVIONICS GMA/11																																																				
11	Alert – Aerobatic Maneuvers and Spin Phohibition	Dashboard	AEROBATIC MANEUVERS AND INTENTIONAL SPINS ARE PROHIBITED																																																				
12	Alert – Light Sport Airworthness Standards	Dashboard	THIS AIRCRAFT WAS MANUFACTURED IN ACCORDANCE WITH LIGHT SPORT AIRCRAFT AIRWORTHNESS STANDARDS AND DOES NOT CONFORM TO STANDARD CATEGORY AIRWORTHNESS REQUIREMENT																																																				
13	Airspeed Indication	Dashboard	<table border="1"> <thead> <tr> <th colspan="4">AIRSPEEDS</th> </tr> <tr> <th>SPEED</th> <th>DESCRIPTION</th> <th>KIAS</th> <th>KCAS</th> </tr> </thead> <tbody> <tr> <td>V_{st}</td> <td>STALL SPEED (0° - FULL FLAPS)</td> <td>18</td> <td>37</td> </tr> <tr> <td>V_{st}</td> <td>STALL SPEED (10° - FLAPS)</td> <td>40</td> <td>39</td> </tr> <tr> <td>V_{st}</td> <td>STALL SPEED (0° - FLAPS)</td> <td>44</td> <td>44</td> </tr> <tr> <td>V_{st}</td> <td>SPEED FOR BEST RATE OF CLIMB</td> <td>60</td> <td>60</td> </tr> <tr> <td>V_{st}</td> <td>SPEED FOR BEST RATE OF CLIMB</td> <td>64</td> <td>65</td> </tr> <tr> <td>V_{st}</td> <td>BEST POWER-OFF GLIDE SPEED</td> <td>60</td> <td>60</td> </tr> <tr> <td>V_{st}</td> <td>MAXIMUM FLAP EXTENDED SPEED</td> <td>80</td> <td>81</td> </tr> <tr> <td>V_{st}</td> <td>OPERATING MANEUVERING SPEED</td> <td>87</td> <td>89</td> </tr> <tr> <td>V_{st}</td> <td>DESIGN MANEUVERING SPEED</td> <td>108</td> <td>111</td> </tr> <tr> <td>V_{st}</td> <td>MAXIMUM STRUCTURAL CRUISING SPEED</td> <td>108</td> <td>111</td> </tr> <tr> <td>V_{st}</td> <td>NEVER EXCEED SPEED</td> <td>132</td> <td>136</td> </tr> </tbody> </table>	AIRSPEEDS				SPEED	DESCRIPTION	KIAS	KCAS	V _{st}	STALL SPEED (0° - FULL FLAPS)	18	37	V _{st}	STALL SPEED (10° - FLAPS)	40	39	V _{st}	STALL SPEED (0° - FLAPS)	44	44	V _{st}	SPEED FOR BEST RATE OF CLIMB	60	60	V _{st}	SPEED FOR BEST RATE OF CLIMB	64	65	V _{st}	BEST POWER-OFF GLIDE SPEED	60	60	V _{st}	MAXIMUM FLAP EXTENDED SPEED	80	81	V _{st}	OPERATING MANEUVERING SPEED	87	89	V _{st}	DESIGN MANEUVERING SPEED	108	111	V _{st}	MAXIMUM STRUCTURAL CRUISING SPEED	108	111	V _{st}	NEVER EXCEED SPEED	132	136
AIRSPEEDS																																																							
SPEED	DESCRIPTION	KIAS	KCAS																																																				
V _{st}	STALL SPEED (0° - FULL FLAPS)	18	37																																																				
V _{st}	STALL SPEED (10° - FLAPS)	40	39																																																				
V _{st}	STALL SPEED (0° - FLAPS)	44	44																																																				
V _{st}	SPEED FOR BEST RATE OF CLIMB	60	60																																																				
V _{st}	SPEED FOR BEST RATE OF CLIMB	64	65																																																				
V _{st}	BEST POWER-OFF GLIDE SPEED	60	60																																																				
V _{st}	MAXIMUM FLAP EXTENDED SPEED	80	81																																																				
V _{st}	OPERATING MANEUVERING SPEED	87	89																																																				
V _{st}	DESIGN MANEUVERING SPEED	108	111																																																				
V _{st}	MAXIMUM STRUCTURAL CRUISING SPEED	108	111																																																				
V _{st}	NEVER EXCEED SPEED	132	136																																																				
14	Alert – IMC Flight Prohibition	Dashboard	FLIGHT INTO IMC IS PROHIBITED																																																				
15	Alert – Don't Smoke and Fasten Seat Belt	Dashboard	DON'T SMOKE FASTEN SEAT BELT																																																				
16	Throttle	Console	MAX T H R O T T L E MIN																																																				

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NOTE

The above placard colors are subject to change depending on exterior and interior color schemes.


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13.5 Drawings

13.5.1 N-NUMBER

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13.5.3 LIGHT
SPORT

The image shows the dimensions for the 'LIGHT SPORT' sticker. The text 'LIGHT SPORT' is in a large, outlined, sans-serif font. A horizontal dimension line above the text indicates a width of 19.5. A vertical dimension line to the left of the text indicates a height of 2.2.

The image shows two diagrams of a light aircraft. The top diagram is labeled 'LOCATION' and shows the 'LEFT SIDE OF THE FUSELAGE NEXT TO THE WINDOW'. The bottom diagram shows the 'RIGHT SIDE OF THE FUSELAGE NEXT TO THE WINDOW'. Both diagrams have a dashed line indicating the placement of the sticker. Below the diagrams is the text 'SCALE 1:150'.


NOTES:
- FONT ARIAL BOLD
- COLOR MAY VARY DEPENDING ON THE AIRPLANE LAYOUT.

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		File	T1.STK.003. LIGHT SPORT					
		Title	LIGHT SPORT				Number Req.	2
		Drawing	Date	08/18/2024	Project Name	Colt 100		
		Eng.	Date	08/18/2024	Scale	1:3	Sheet	1 of 1
Prod.	Date	08/18/2024	Dimensions	inches	A4			

13.5.4 COLT
STICKER

The image shows the dimensions for the 'COLT' sticker. The text 'COLT' is in a large, outlined, sans-serif font. A horizontal dimension line above the text indicates a width of 8.72. A vertical dimension line to the left of the text indicates a height of 1.1. Below the text is the text 'BLUE, BLACK OR WHITE'.

The image shows two diagrams of a light aircraft. The top diagram is labeled 'LOCATION' and shows the 'LEFT SIDE OF THE FUSELAGE NEXT TO WIND SHIELD AND DOOR'. The bottom diagram shows the 'RIGHT SIDE OF THE FUSELAGE NEXT TO WIND SHIELD AND DOOR'. Both diagrams have a dashed line indicating the placement of the sticker. Below the diagrams is the text 'SCALE 1:150'.

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		File	T1.STK.004. COLT					
		Title	COLT STICKER				Number Req.	2
		Drawing	Date	08/18/2024	Project Name	Colt 100		
		Eng.	Date	08/18/2024	Scale	1:2	Sheet	1 of 1
Prod.	Date	08/18/2024	Dimensions	inches	A4			

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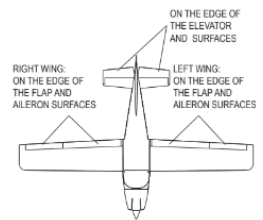
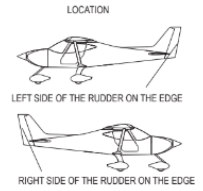
Colt 100

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13.5.5 NO PUSH



SCALE 1:150

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PN	T1.STK.005	Rev.	NC	
File	T1.STK.005_NO PUSH			
Title	NO PUSH	Number	9	
Drawing		Date	08/18/2024	Project Name
Eng		Date	08/18/2024	Scale
Prod.		Date	08/18/2024	Dimensions
				inches
				A4

13.5.6 ELT



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PN	T1.STK.006	Rev.	NC	
File	T1.STK.006_ELT			
Title	ELT	Number	1	
Drawing		Date	08/18/2024	Project Name
Eng		Date	08/18/2024	Scale
Prod.		Date	08/18/2024	Dimensions
				inches
				A4

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13.5.7 STATIC PORT

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File	T1.STK.007_STATIC PORT			Number	2
Title	STATIC PORT			Rev.	2
Drawing	Date	08/18/2024	Project Name	Colt 100	
Eng.	Date	08/18/2024	Scale	1:1	Sheet 1 of 1
Prod.	Date	08/18/2024	Dimensions	inches	A4

13.5.8 DRAIN

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File	T1.STK.008_DRAIN			Number	4
Title	DRAIN			Rev.	4
Drawing	Date	08/18/2024	Project Name	Colt 100	
Eng.	Date	08/18/2024	Scale	1:1	Sheet 1 of 1
Prod.	Date	08/18/2024	Dimensions	inches	A4

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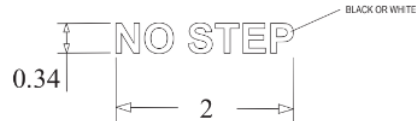
Colt 100

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13.5.9 NO STEP



SCALE 1:150

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PN	T1.STK.009		Rev.	NC		
File	T1.STK.009_NO STEP					
Title	NO STEP				Number/Rev.	2
Drawing		Date	08/18/2024		Project Name	Colt 100
Eng.		Date	08/18/2024		Scale	1:1
Prod.		Date	08/18/2024		Dimensions	inches A4

13.5.10 35 PSI



SCALE 1:150

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File	T1.STK.010_35 PSI				
Title	35 PSI			Number Rec.	2
Drawing		Date	08/18/2024	Project Name	Colt 100
Eng.		Date	08/18/2024	Scale	1:1
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13.5.11 25 PSI

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File	T1.STK.011_25 PSI				
Title	25 PSI			Number	2
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Eng.	Date	08/18/2024	Scale	1:1	Sheet 1 of 1
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13.5.12 DOOR EXTERNAL

SCALE 1:150

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PN	T1.STK.012	Rev.	NC		
File	T1.STK.012_DOOR EXTERNAL				
Title	DOOR EXTERNAL			Number	2
Drawing	Date	08/18/2024	Project Name	Colt 100	
Eng.	Date	08/18/2024	Scale	1:1	Sheet 1 of 1
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13.5.13 LEFT DOOR LATCH INTERNAL

SCALE 1:150


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File	T1.STK.013, LEFT DOOR INTERNAL			Number	1	
Title	LEFT DOOR LATCH INTERNAL			Project Name	Colt 100	
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Prod.	Date	08/18/2024				


13.5.14 RIGHT DOOR LATCH INTERNAL

SCALE 1:150

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File	T1.STK.014, RIGHT DOOR INTERNAL			Number	1	
Title	RIGHT DOOR LATCH INTERNAL			Project Name	Colt 100	
Drawing	Date	08/18/2024	Scale	1:1	Sheet	1 of 1
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13.5.15 JACK POINT

Technical drawing of Jack Point. The main view shows a circle with a vertical dimension of 1.39 and a horizontal dimension of 1.29. The circle is labeled "JACK POINT" and "RED". A "LOCATION" diagram shows the fuselage (bottom) with the Jack Point location marked. The scale is 1:150.


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PN	T1.STK.015	Rev.	NC		
File	T1.STK.015_JACK POINT				
Title				Number	2
Drawing	Date	08/18/2024	Project Name	Colt 100	
Eng.	Date	08/18/2024	Scale	1:1	Sheet 1 of 1
Prod.	Date	08/18/2024	Dimensions	inches	A4

13.5.16 OIL EXTERNAL

Technical drawing of Oil External. The main view shows a dashed rectangle with a horizontal dimension of 2.25 and a vertical dimension of 0.98. The text "OIL AEROSHELL SPORT PLUS 4" is inside the rectangle. A "LOCATION" diagram shows the right side of the upper cowling on the oil access area. The scale is 1:150.

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PN	T1.STK.016	Rev.	NC		
File	T1.STK.016_OIL EXTERNAL				
Title				Number	1
Drawing	Date	08/18/2024	Project Name	Colt 100	
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13.5.17 OIL
EXTERNAL

The diagram shows a rectangular placard with a height of 1.57 and a width of 2.75. The placard contains the following text:

- RECOMMENDED OIL
- BRAND: SHELL*
- DESCRIPTION: AEROSHELL OIL SPORT PLUS 4
- SPECIFICATION: ACCORDING TO RON 424
- VISCOSITY: SAE 10 W-40
- MIN. 2.6 L (0.68 US GAL)
- MAX. 3.0 L (0.8 US GAL)

The text is in white on a black background. The placard is labeled "BLACK" and "LETTERS IN WHITE".

The location diagram shows the placard mounted on the inside cowling of the oil compartment. The scale is 1:150.

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PN	T1.STK.017	Rev.	NC		
File	T1.STK.017_OIL_INTERNAL				
Title	OIL INTERNAL			Number	1
Drawing	Date	08/18/2024	Project Name	Colt 100	
Eng.	Date	08/18/2024	Scale	1:1	Sheet 1 of 1
Prod.	Date	08/18/2024	Dimensions	inches	A4


13.5.18 VENT

The diagram shows a rectangular placard with a height of 2.8 and a width of 2.25. The placard contains the text:


- VENT
- KEEP CLEAR

The text is in white on a black background. The placard is labeled "BLACK" and "VENT AREA".

The location diagram shows the placard mounted on the right and left wings (bottom) on the vent area. The scale is 1:150.

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PN	T1.STK.018	Rev.	NC		
File	T1.STK.018_VENT				
Title	VENT			Number	2
Drawing	Date	08/18/2024	Project Name	Colt 100	
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13.5.19 N-NUMBER
DASHBOARD

(THE N-NUMBER IS A SAMPLE)

SCALE 1:10

NOTES:
- FONT CENTURY GOTHIC BOLD
- COLOR BLACK OR WHITE DEPENDING ON THE DASHBOARD COLOR.

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File	T1.STK.019_N-NUMBER_DASHBOARD					
Title	N-NUMBER DASHBOARD			Number Res.	1	
Drawing	Date	08/18/2024	Project Name	Colt 100		
Eng.	Date	08/18/2024	Scale	1:1	Sheet	1 of 1
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13.5.20 START

SCALE 1:10

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Eng.	Date	08/18/2024	Scale	2:1	Sheet	1 of 1
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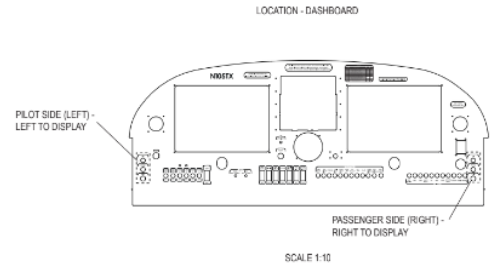
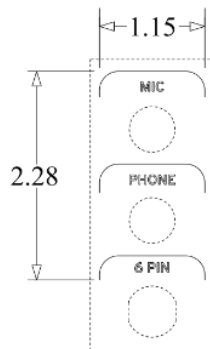
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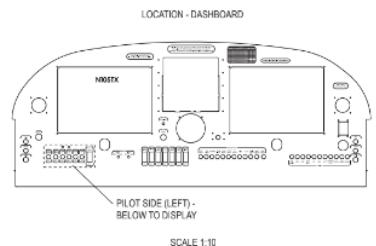
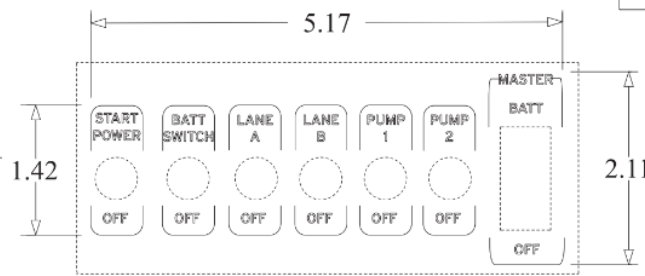
13.5.21 MICROPHONE , PHONE AND 6 PIN




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Prod.	Date	08/18/2024	Dimensions	inches	A4		

13.5.22 MASTER SWITCHES



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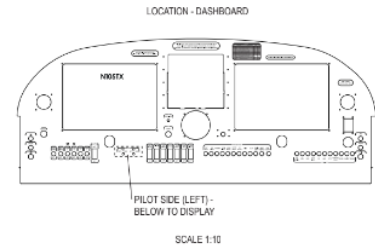
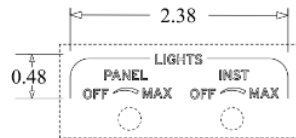
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13.5.23 PAINEL LIGHT

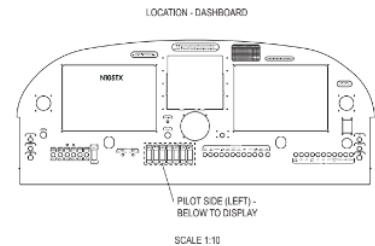
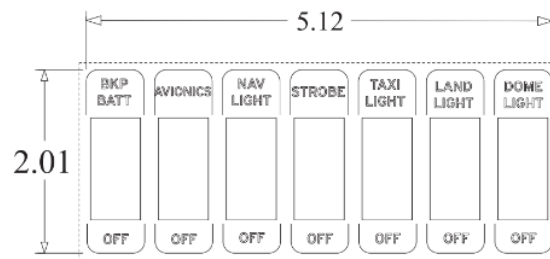


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Eng.		Date	08/18/2024	Scale	1:1
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				Dimensions	inches
					A4

13.5.24 SWITCHES



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13.5.25 AUTOPILOT
DISENGAGE

PILOT SIDE (LEFT) -
RIGHT TO DISPLAY

SCALE 1:10

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Eng.	Date	08/18/2024	Scale	2:1	Sheet 1 of 1
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13.5.26 TRIM
SELECT

PILOT SIDE (LEFT) -
RIGHT TO DISPLAY

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Eng.	Date	08/18/2024	Scale	2:1	Sheet 1 of 1
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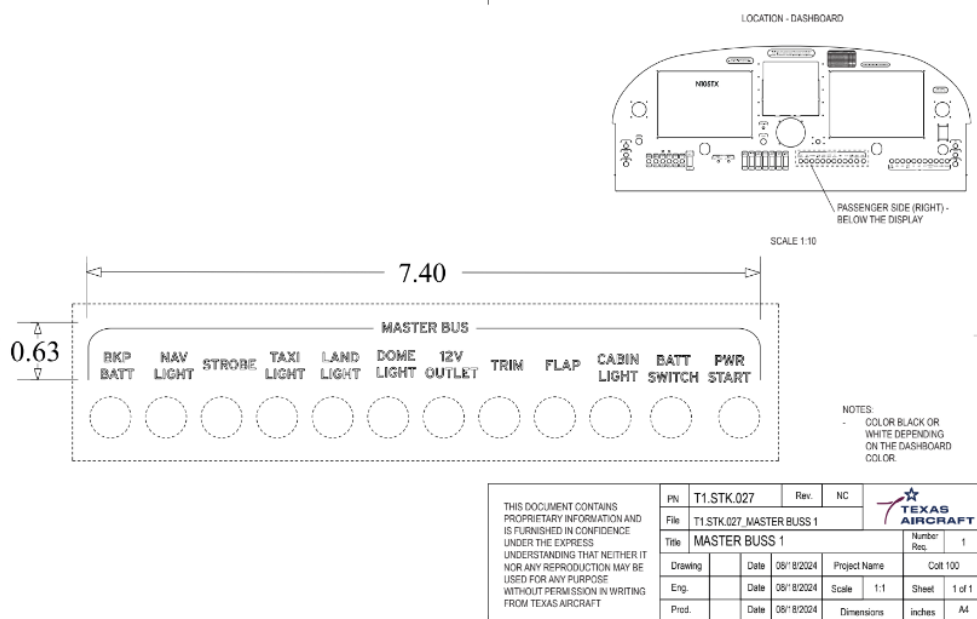
Colt 100

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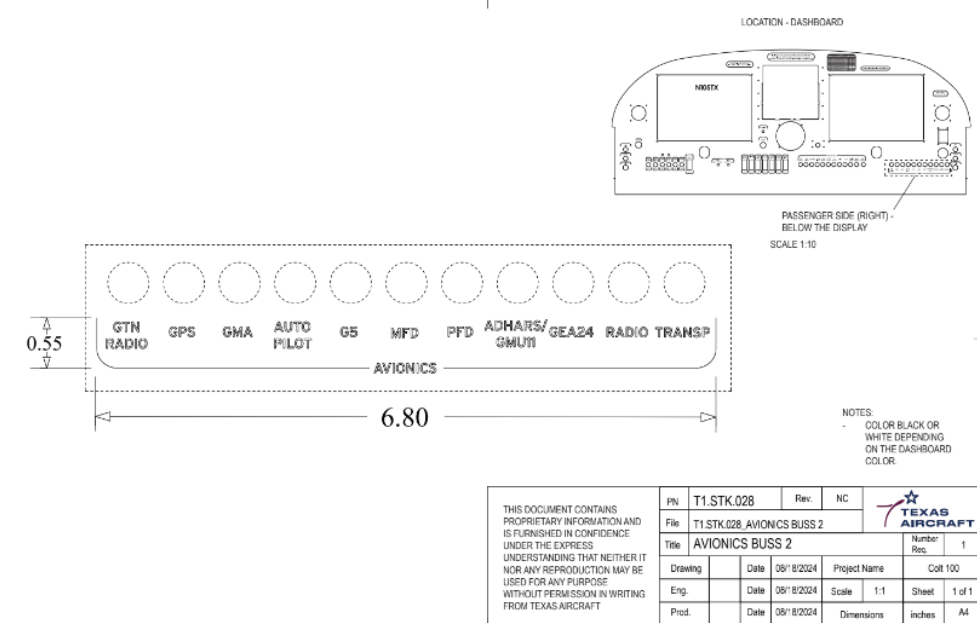
AIRCRAFT MAINTENANCE MANUAL

PLACARDS

13.5.27 MASTER BUSS ON



13.5.28 AVIONICS BUSS 2





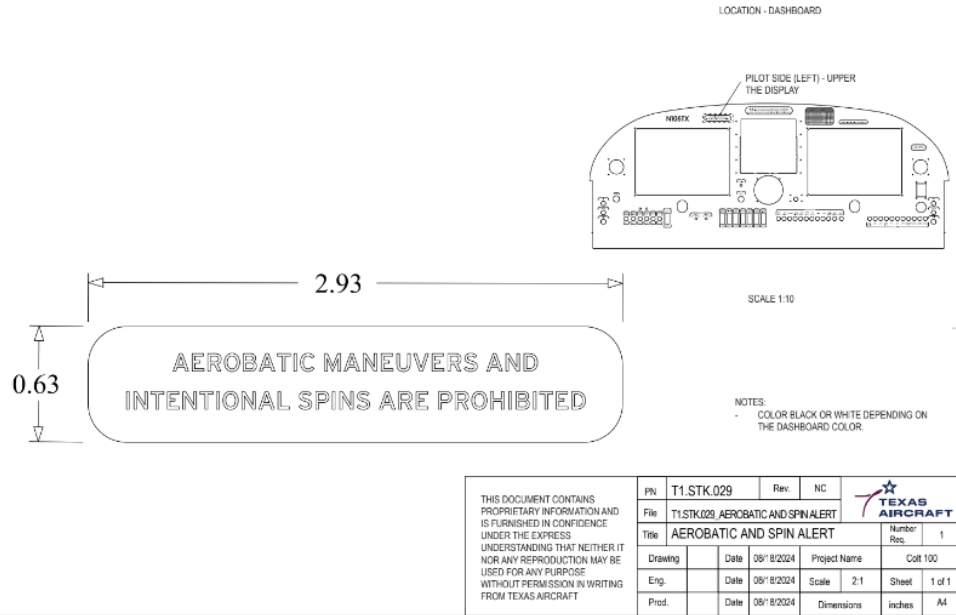
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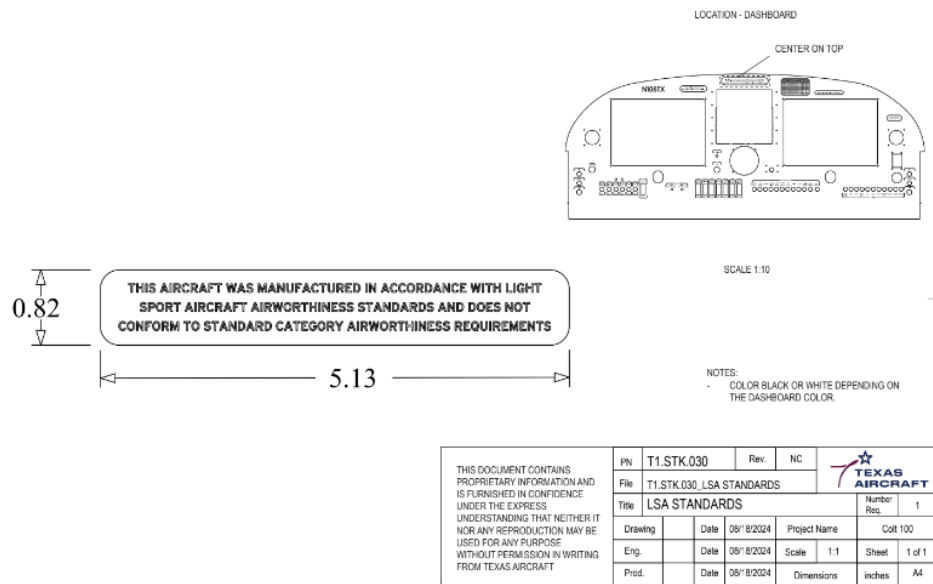
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13.5.29 AEROBATIC AND SPIN ALERT



13.5.30 LSA STANDARDS



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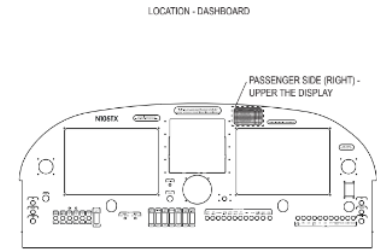
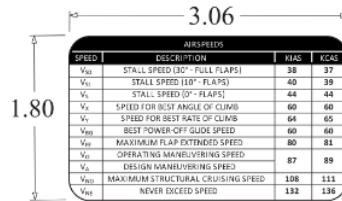
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13.5.31 AIRSPEED INDICATION



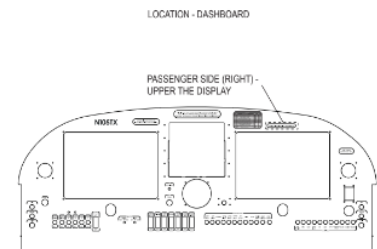
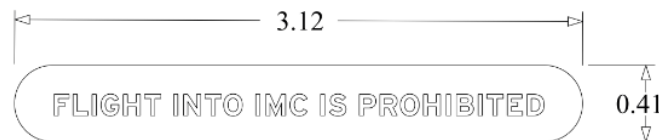
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Eng.	Date	08/18/2024	Scale	1:1	Sheet 1 of 1
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13.5.32 IMC PROHIBITION



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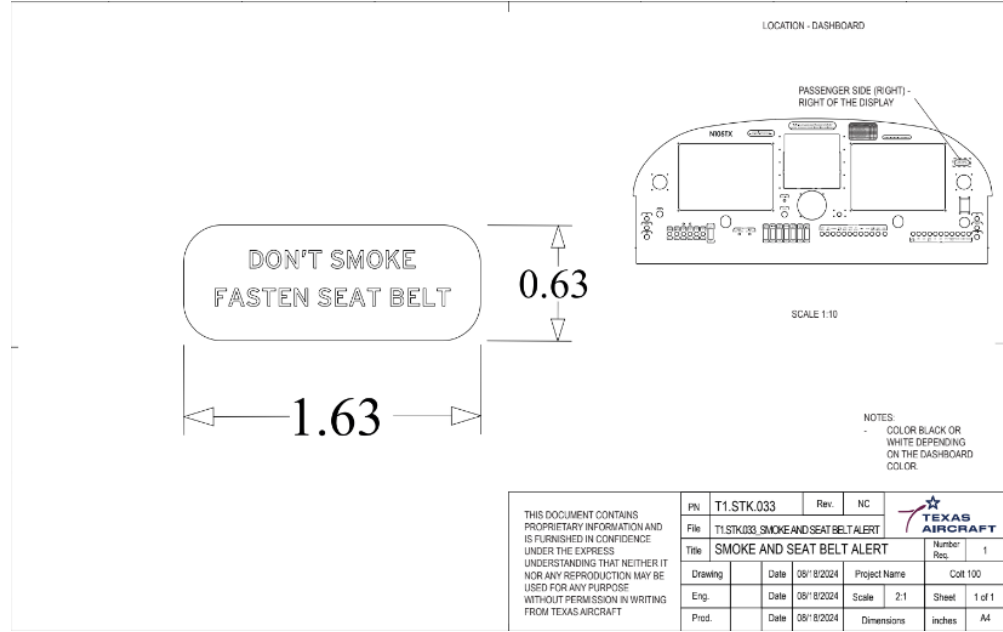
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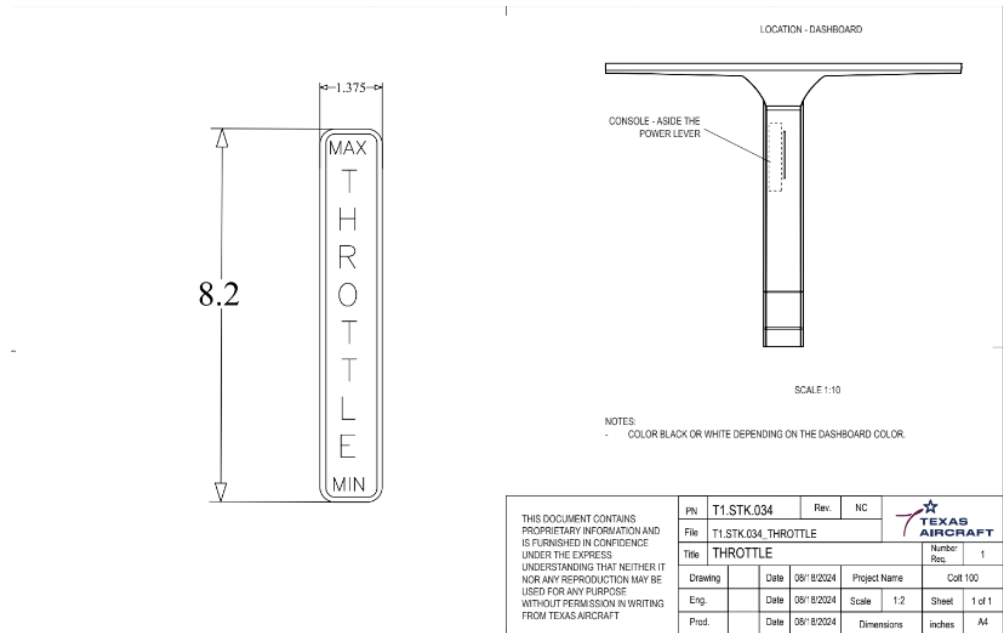
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13.5.33 SMOKE AND SEAT BELT ALERT



13.5.34 THROTTLE



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