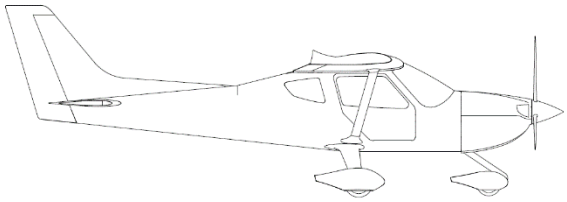
508 Vandenberg Road, Hangar 5
Hondo TX, 78861 USA



Aircraft Maintenance Manual

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

Airplane Serial Number:

Airplane Registration Number:

- Log of Revisions

Revision	Date	Description of Revision
NC	2019/07/04	Initial Release.
A	2020/20/02	Changed the company name from Texas Aircraft Manufacturing, LLC to Texas Aircraft Manufacturing, INC
B	2020/01/06	● Changed Figure 8.1. Instruments Panel, section 8 Instruments and Avionics. ● Added EFIS Data USB, SV-COM-C25 SkyView VHF Com Radio 2, Radio Select to instrument list, section 8 Instruments and Avionics ● Added Figure 9.5.2. Comm #2 Diagram, section 9.5 COMM Diagram. ● Changed Figure 9.9.1. Intercom Diagram, section 9.9 Intercom Diagram.
C	2020-20-07	● Changed manual's structure from continuous sequence to sections. ● Previous chapters 11, 12, 13, 14 included into section 10. ● Previous chapters 15 and 16 included section 11. ● Updated previous chapter 17 to section 12. ● Added Garmin instruments, section 8. ● Added Garmin to the electrical system, section 9. ● Added Warp Drive Propeller, section 2, and section 6. ● Added circuit breakers list for Garmin avionics system, section 2 ● Added switches list for Garmin avionics system, section 2.
D	2022-07-06	● Added recommended pressure on the main gear tire, section 1. ● Added recommended tasks of scheduled inspections for engine and propeller, section 2. ● Added recommended Spark Plug and Silicon Heat Transfer Compound, section 2. ● Added Propeller Removal Task on section 10. ● Added MOGAS EN 228 Standard to Section 5 - Fuel System.

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- Introduction

This manual has been prepared exclusively for the Colt 100 aircraft, 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

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.

- 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.

TABLE OF CONTENTS

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

- 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 General

1.1 Equipment List

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

1.2 Flight and Navigation Instruments

The aircraft standard configuration is equipped with 1 Dynon SkyView HDX 10” on the left side of the cockpit panel, and the autopilot controls are in the center. Analog instruments including Airspeed, Altimeter, Vertical Speed and Slip Indicator are installed on the right side. A compass is also installed in the aircraft at the top of the cabin.

Figure 1.2.1.1. Dynon SkyView HDX 10”.

Falcon Airspeed Indicator 0-140 knots ASI140N-3		Falcon 3-1/8” Sensitive Altimeter ALT20INF-3
 Falcon Vertical Speed 3-1/8” 3000 ft/min VS13FM-3	 Winter Slip Indicator Rectangular 1120	 Falcon Compass 12V Lighted MCDN-2L

Figure 1.2.1.2. Analog Flight Instruments.

 ***SV-AP-PANEL*** ***SkyView Autopilot***	 ***SV-KNOB-PANEL***

Figure 1.2.1.3. Autopilot control.

The installed autopilot servos are shown as follow:

Surface Control	Type
Aileron	SV32
Elevator	SV42

The flight modules are listed below:

SV-MAG-236 Remote Magnetometer

SV-ADAHRS-200/A Primary Air Data

1.2.1 Power Plant Instruments (Dynon System)

The Power Plant Instruments are shown directly by the EFIS display from the sensors and modules installed in the aircraft. Below is listed the engine module:

SV-EMS-220/A Engine Monitoring Module

The parameters supplied by the EFIS are: Tachometer, Manifold Pressure, Oil Pressure, Oil Temperature.

Figure 1.2.2.1. Dynon SkyView Display.

Note: Visit https://www.flyrotax.com/services/technical-documentation.html and consult all documentation (Service Bulletins, Installation Manual, Maintenance Manual and others) regarding the Engine Rotax 912 ULS.

1.2.2 Communication (Dynon System)

	
SV-COM-C25 SkyView VHF Com Radio	***SV-INTERCOM-2S Two Place***

Figure 1.2.3.1. Communication Instruments.

Modules

SV-XPNDR-261 Transponder SkyView Mode S Class 1

SV-GPS-2020 GPS Antenna/Receiver Module

SV-COM-C25

ELT

ARTEX ELT 345 GPS / 406 / 121.5 WITH WHIP ANTENNA FAA TSO

1.2.3 Flight and Navigation Instruments (Garmin System)

The aircraft standard configuration is equipped with 1 Garmin G3X Touch 10.6” on the left side of the cockpit panel, and the autopilot controls are in the center. The standby instrument Garmin G5 is installed on the right side. A compass is also installed in the aircraft at the top of the cabin.

Figure 1.3.1.1. Garmin G3X Touch 10.6”.

Figure 1.3.1.2. Standby Instrument Garmin G5.

Figure 1.3.1.3. Garmin GMC 507 auto pilot.

The installed autopilot servos are Garmin GSA 28 equipped with push-pull system for elevator surface, and Garmin GSA 28 equipped with capstan system for aileron and rudder surfaces.

The flight modules are listed below:

Garmin GMU 11 Magnetometer

Garmin GSU 25 ADAHRS

1.2.4 Power Plant Instruments (Garmin System)

The Power Plant Instruments are shown directly by the EFIS display from the sensors and modules installed in the aircraft. Below is listed the engine module:

Garmin G3X Sensor kit for Rotax 912

The parameters supplied by the EFIS are: Tachometer, Manifold Pressure, Oil Pressure, Oil Temperature.

Figure 1.3.2.1. Garmin G3X Touch Display.

Note: Visit https://www.flyrotax.com/services/technical-documentation.html and consult all documentation (Service Bulletins, Installation Manual, Maintenance Manual and others) regarding the Engine Rotax 912 ULS.

1.2.5 Communication (Garmin System)

Figure 1.2.3.1. Garmin GMA 245 Audio Panel.

Modules

Garmin GTR 20 Remote-mount COMM Radio

Garmin GA 35 GPS Antenna/Receiver Module

Garmin GAD 29 GPS/NAV

Garmin GTX 45 Remote Transponder ADS B

ELT

ARTEX ELT 345 GPS / 406 / 121.5 WITH WHIP ANTENNA FAA TSO

1.2.6 Power Plant Accessories (Garmin System)

The Engine ROTAX 912 ULS must only be operated with accessories supplied, recommended and released by BRP-Powertrain. The list of accessories installed on the engine can be found below.

Accessories	
External alternator assy	Radiator
Overload clutch	Air guide hood
Vacuum pump assy	Airbox
Hydraulic governor assy	2 air filters
HD-starter	Oil radiator
Rectifier regulator	Exhaust system
Starter relays	Engine Mount

1.2.7 Lights

Navigation Lights	SimplePack Sigma LED Green 1017
	SimplePack Sigma LED Red 1017
	SimplePack Sigma Beacon 918
Taxi Light	Taxi LED Light AVE-EX9TZYW-ENA
Landing Light	Landing LED Light AVE-EX9LZYW-ENA
Panel Light	UMA Electro-Luminescent Light 2-425-050X
Dome Light	Recessed Mount LED Light Fixture RM-01W12

1.3 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.

1.4 List of Disposal Replacement Parts

Air Filter	ROTAX P/N: 825711
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

1.5 Engine Specifications

Manufacturer		BRP-Rotax Gmbh & CO KG
Model		912 ULS
Maximum Power	Take-off (5800 rpm)	73.5 kW / 100 hp (max 5 minutes)
	Max continuous (5500 rpm)	69.0 kW / 95 hp
Reduction Ratio (crankshaft : propeller shaft)		2.43

1.6 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

1.6.1 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%)

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.

1.6.2 CG Calculation

In order to obtain the Center of Gravity, CG, positionate 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.

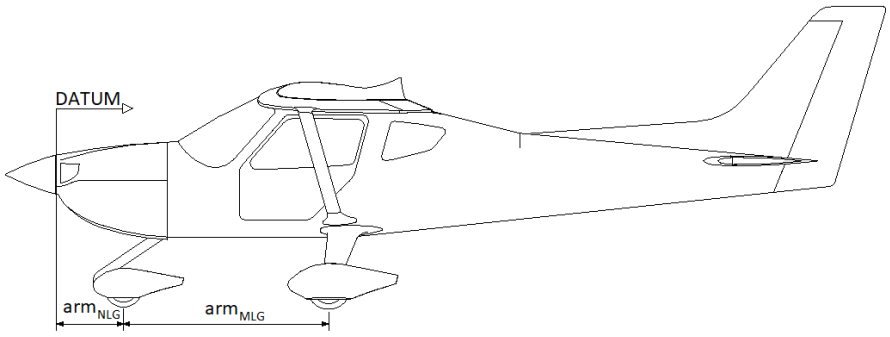

Figure 3.2.1. DATUM reference.

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

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

where:
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

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)

1.7 Recommended Tire Inflation Pressures

Nose Gear Tire	25 psi
Main Gear Tire	32 psi

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.

1.8 Approved Oils and Capacities

The ROTAX 912 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.

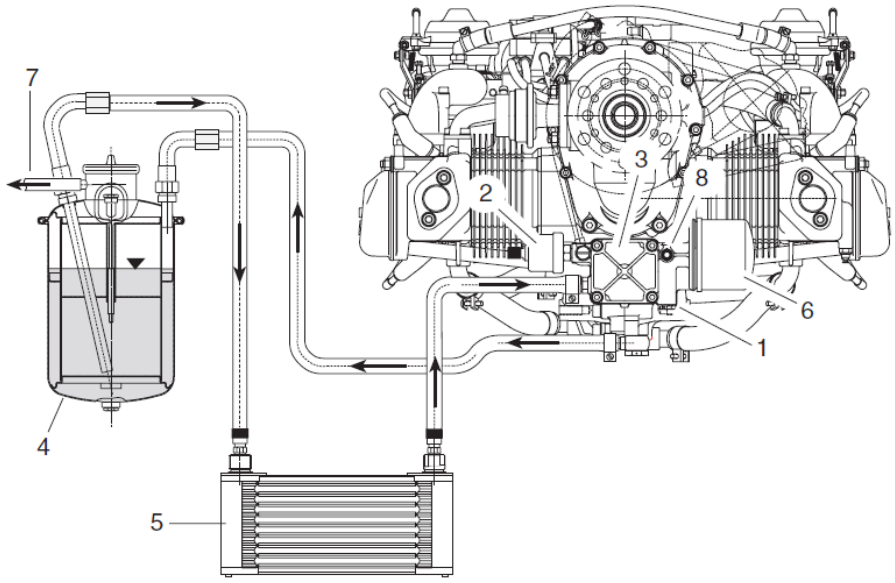

Figure 1.7.1. Engine Lubrication System.

Oil *	AeroShell Sport Plus 4 (recommended)
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.

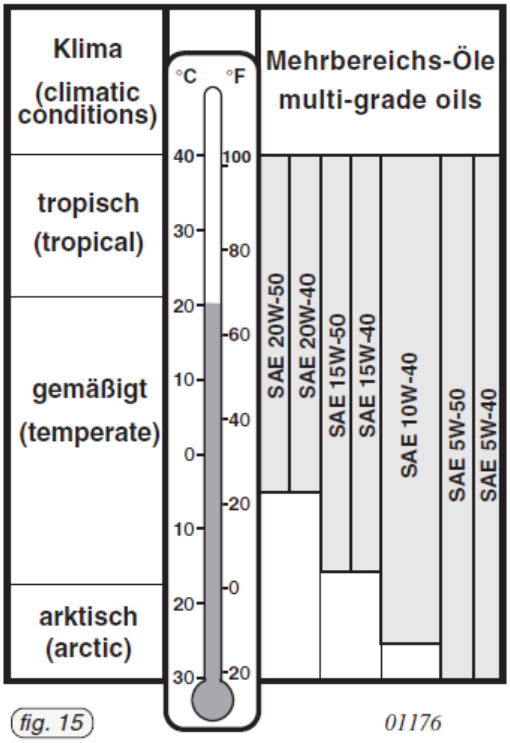

fig. 15

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.

1.9 Cooling

The cooling system of the ROTAX 912 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.

**Flushing the cooling system each 200 hours.

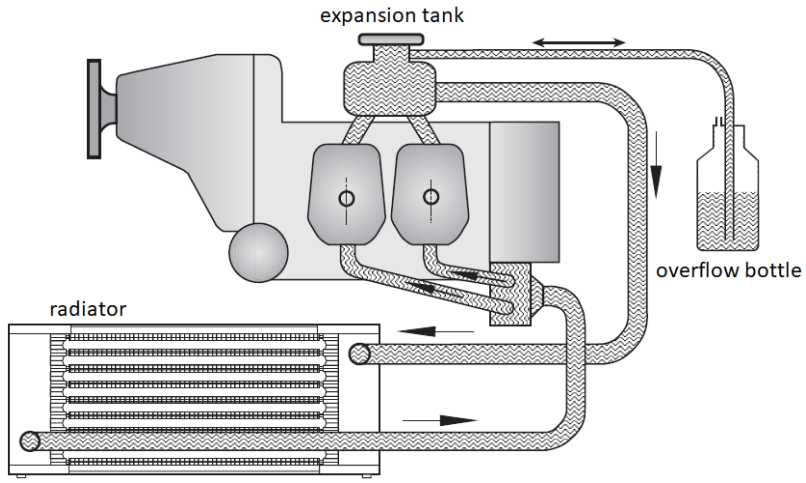

Figure 1.8.1. Cooling System.

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.

1.10 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.

1.11 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.

1.11.1 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.

1.11.2 Lubrication

1.11.2.1 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.

1.11.2.2 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.

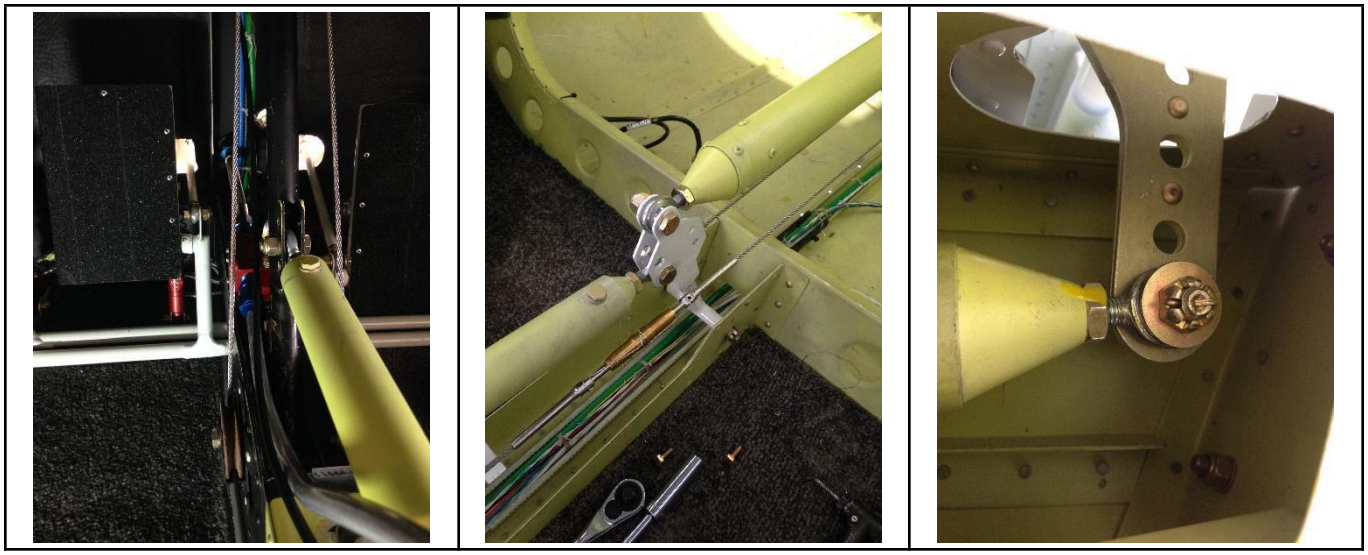

Figure 1.10.2.2.1. Elevator Control System.

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

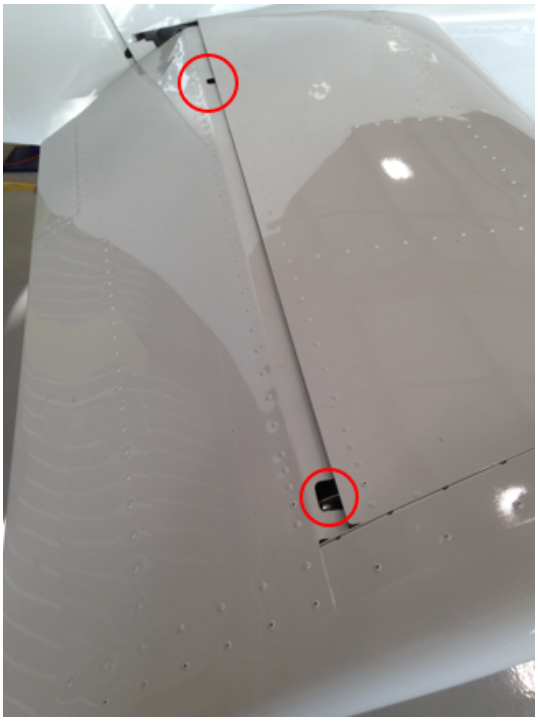

Figure 1.10.2.2.2. Elevator Attach Points.

1.11.2.3 Aileron Control

The aileron system is lubricated with aerosol spray lubricant.

Figure 1.10.2.3.1. Aileron Horn.

Figure 1.10.2.3.2. Aileron Rod End.

1.11.2.4 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.

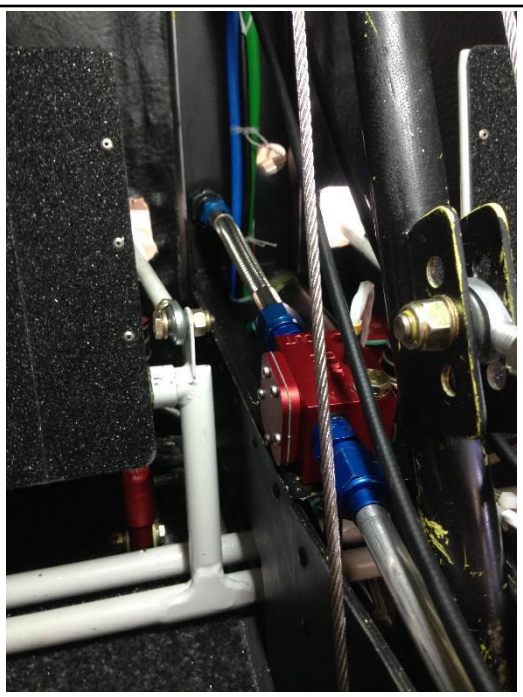

Figure 1.10.2.4.1. Rudder Control System.

Figure 1.10.2.4.2. Rudder whiffletree.

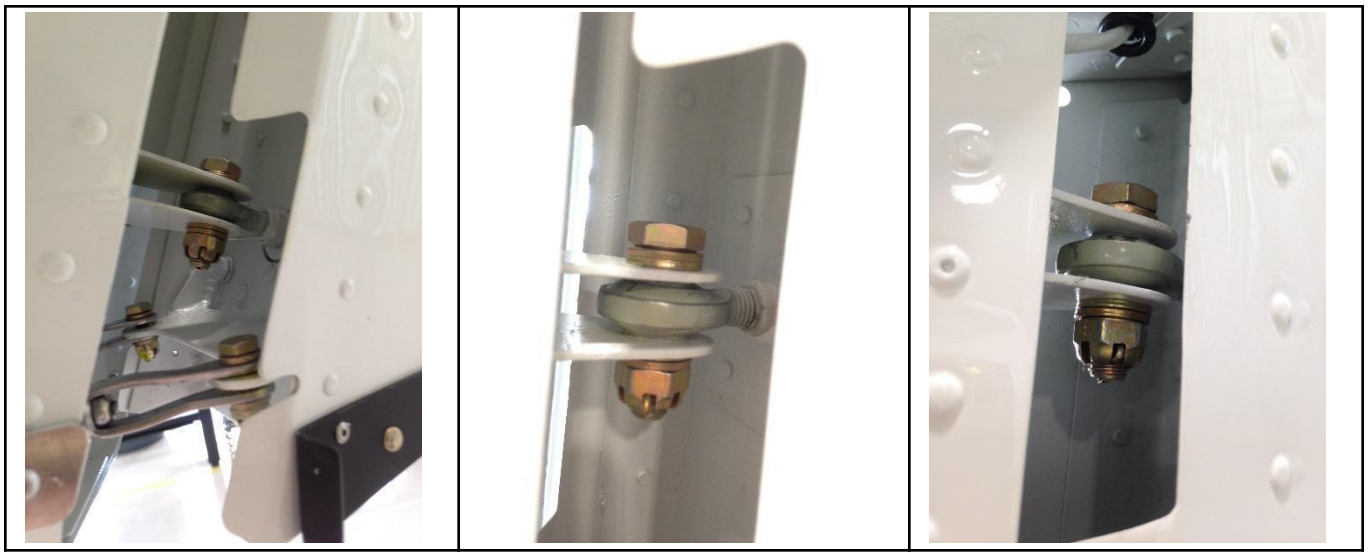

Figure 1.10.2.4.3. Rudder Rod Ends.

1.11.2.5 Flap Control

Lubricate the flap attachments with aerosol spray lubricant.

Figure 1.10.2.5.1. Flap attachments.

The flap actuator push-rod should be lubricated with lithium general purpose grease, grade 2.

Figure 1.10.2.5.2. Flap Motor.

1.11.2.6 Main Column Control

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

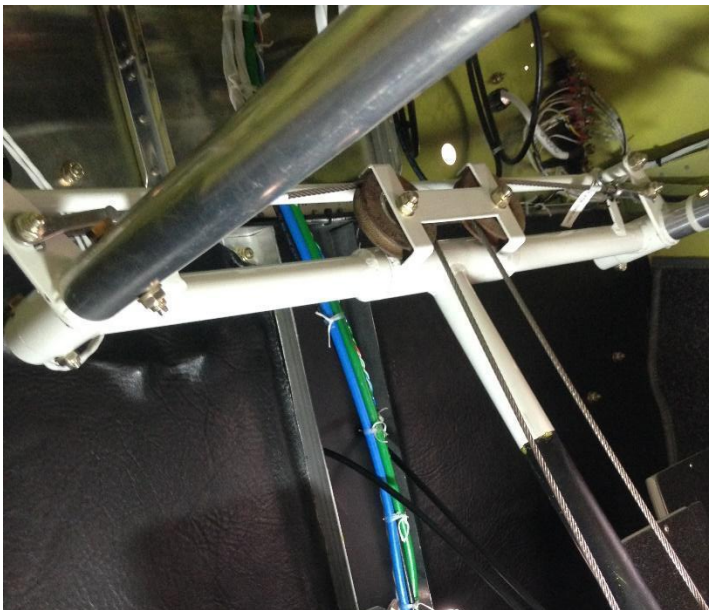

Figure 1.10.2.6.1. Main Control System.

1.11.2.7 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.

1.11.2.8 Engine

For Engine lubrication, see Chapter 1.7.

1.12 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

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 Inspections

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 ± 20 mm	9.1.1 / 9.1.6
VT’ - HT	1810 mm ± 10 mm	9.1.1 / 9.1.7
TR - TL height	43 mm ± 4 mm	9.1.1 / 9.1.4
wing – fuselage gap	37.4 mm ± 1.0 mm	9.1.5

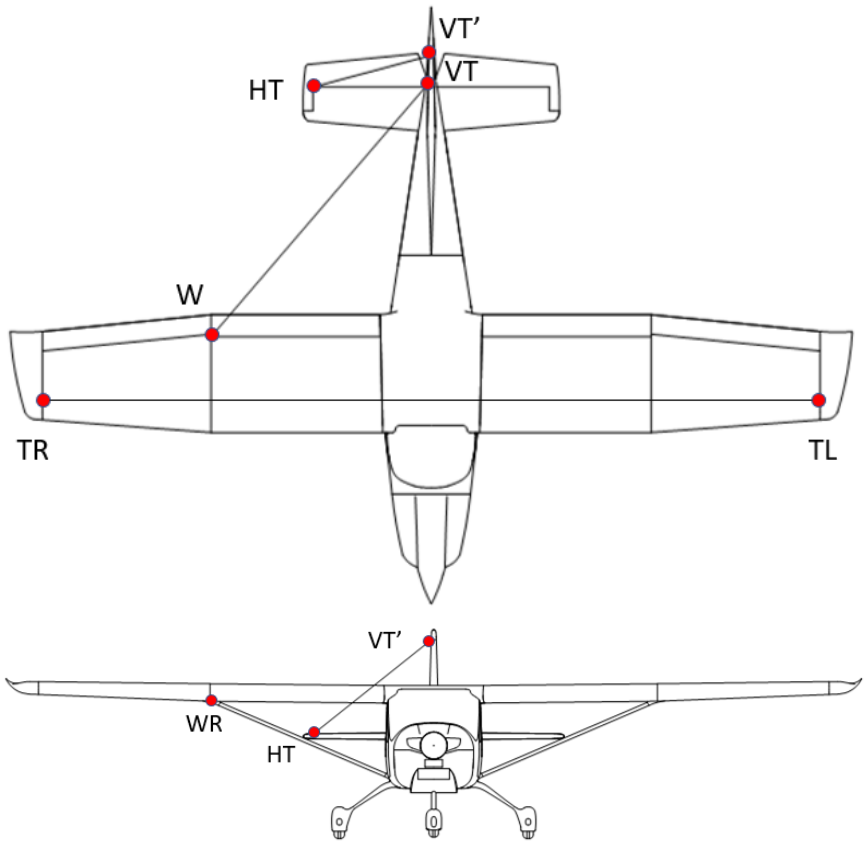


Figure 2.1.1. Reference points and distances.

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.

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.

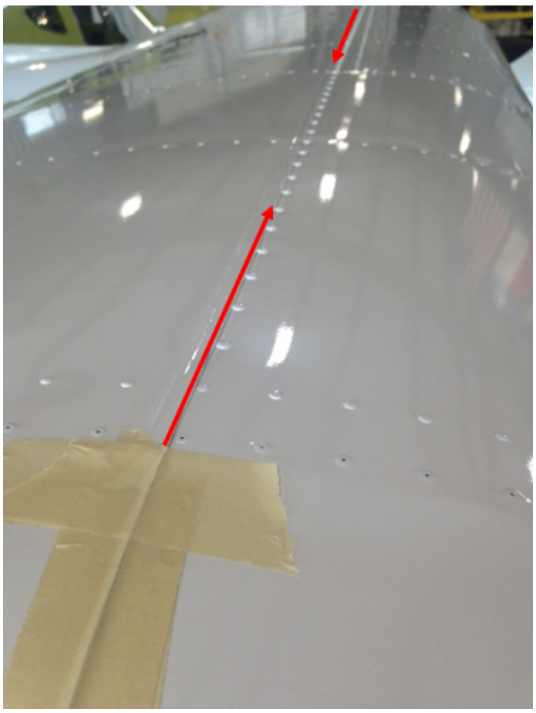


Figure 2.1.3. Line location to align the wings.

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.

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.

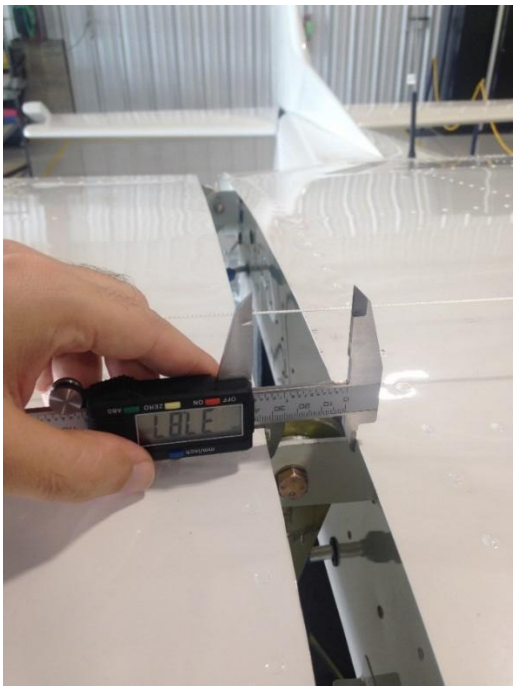


Figure 2.1.5. Gap between fuselage and wings.

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.

Figure 2.1.6. W and VT reference points.

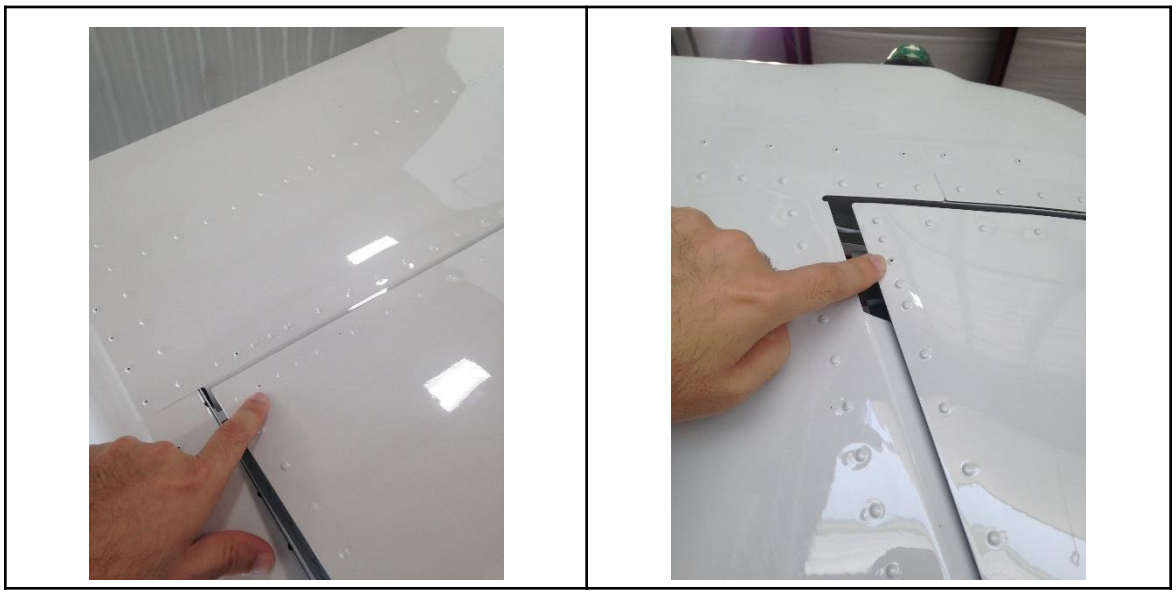


Figure 2.1.7. HT and VT’ reference points.

2.2 Control Cable

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

Table 2.2.1. Control Cable, Tensions.

Surface Control	Tension
Rudder	25 lbs ± 5 lbs
Aileron cockpit	25 lbs ± 5 lbs
Aileron	30 lbs ± 5 lbs

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 maintenance as outlined in 14 CFR Part 43.

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.

2.4 Line Maintenance, Repairs, and Alterations

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

2.4.1 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 on Chapter 05-20-00 (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, perform these and document their execution;
- Check the compression by the differential pressure method;
- Remove all spark plugs and check for spark plug defects (deposits, excessive wear melting..) Replace if defective. Check if GENUINE ROTAX® spark plugs are used;
- Check the magnetic plug;
- 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;
- 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;

- 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 overflow bottle for damage and abnormalities. Verify coolant level, replenish as necessary. In spect 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. air flap actuation. Inspect sensors for tight fit, damage from heat, damage and signs of wear;
- 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;
- Checking the idle speed;
- Check for free movement of the carburetor actuation (throttle lever and starting carburetor). Check that the Bowden cable allows the full travel of the throttle lever from stop to stop;
- Check carburetor synchronization. Mechanical and pneumatic synchronization;
- Checking the friction torque in free rotation on gearboxes with overload clutch;
- 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;
- Engine cleaning;
- Checking the air filter;
- Verify liquid level, replenish as necessary;
- Checking the idle speed;
- Start the engine and run to operating temperature. Limits see Operators Manual 912 Series;

2.4.1.2 Lights

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

2.4.2 50 hours

2.4.2.1 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:

- 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, perform these and document their execution;
- 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;
- Refill oil tank with approx. 3 liters of oil. For oil quality, see Operators Manual latest edition;
- Install new oil filter.

2.4.3 100 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.

2.4.3.1 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.

2.4.3.2 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.
- Check all pulley brackets and guards for damage, alignment, and security.
- Control Surface system – for lubrication.

2.4.3.3 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.

2.4.3.4 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, perform these and document their execution;
- Check the compression by the differential pressure method;
- Remove all spark plugs and check for spark plug defects (deposits, excessive wear melting..) Replace if defective. Check if GENUINE ROTAX® spark plugs are used;
- Check the magnetic plug;
- 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;
- 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;
- 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 overflow bottle for damage and abnormalities. Verify coolant level, replenish as necessary. In spect 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. air flap actuation. Inspect sensors for tight fit, damage from heat, damage and signs of wear;
- 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;
- Checking the idle speed;
- Check for free movement of the carburetor actuation (throttle lever and starting carburetor). Check that the Bowden cable allows the full travel of the throttle lever from stop to stop;
- Check carburetor synchronization. Mechanical and pneumatic synchronization;
- Checking the friction torque in free rotation on gearboxes with overload clutch;
- 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;
- Engine cleaning;
- Checking the air filter;
- Verify liquid level, replenish as necessary;
- Checking the idle speed;
- Start the engine and run to operating temperature. Limits see Operators Manual 912 Series;

2.4.3.5 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.

2.4.3.6 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.

2.4.3.7 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.

2.4.3.8 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 Composite Aircraft Propeller Operation, Installation and Maintenance Manual for Texas Aircraft Colt.**
- **For Warp Drive Carbon Fiber Propeller, Operation and Installation Manual for Warp Drive Carbon Fiber Propeller.**

2.4.3.9 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.

2.4.3.10 ELT

- Remove and inspect the ELT installed for proper operation and calendar date currency of the batteries.

2.4.4 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.

Fluids	Chapter
Oil	1.7
Coolant	1.8
Brake	2.4

2.4.5 2000 hours

2.4.5.1 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.

2.4.5.2 Propeller

Factory Inspection required at 2000 Hours.

See Section 2.4.13.2

Note: Consult the Propeller Manual for more details:

- **For Sterna Composite Aircraft Propeller Operation, Installation and Maintenance Manual for Texas Aircraft Colt.**
- **For Warp Drive Carbon Fiber Propeller, Operation and Installation Manual for Warp Drive Carbon Fiber Propeller.**

2.4.6 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 model.

Manufacturer	Model	Voltage	Current
Facet	40105	12V	1 amp

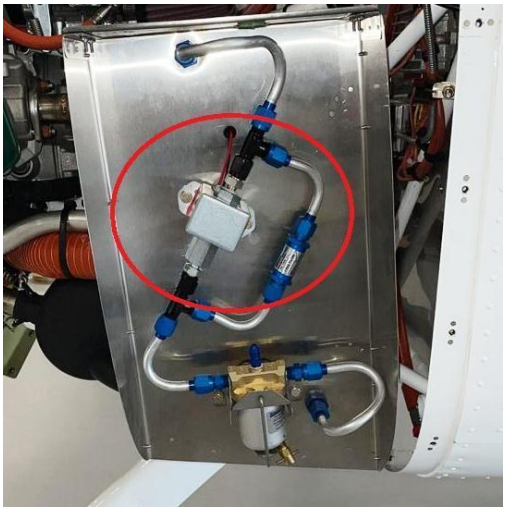


Figure 2.4.6.1. Fuel Pump Installation.

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.

CAUTION

The aircraft is unairworthy with a defective electric fuel pump.

2.4.7 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

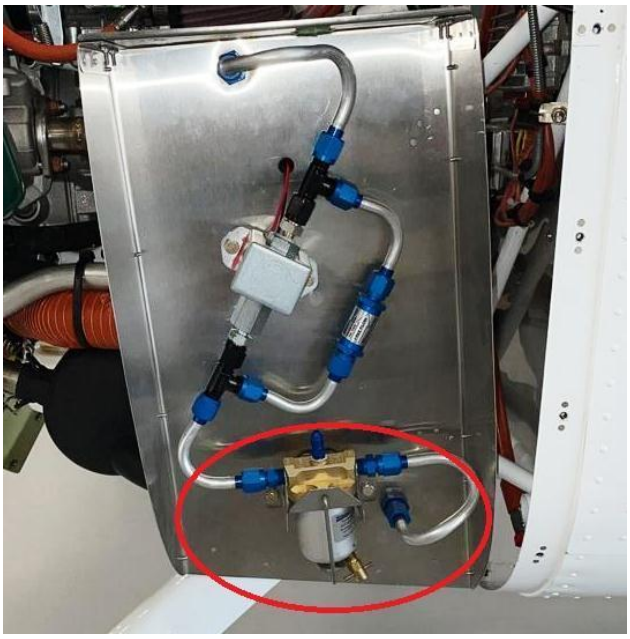


Figure 2.4.7.2. Gascolator installation.

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;

2.4.8 Battery

Manufacturer	Model	Nominal Voltage	Nominal Capacity
EarthX	ETX900-VNT	13.2 V	16 Ah

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).

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.

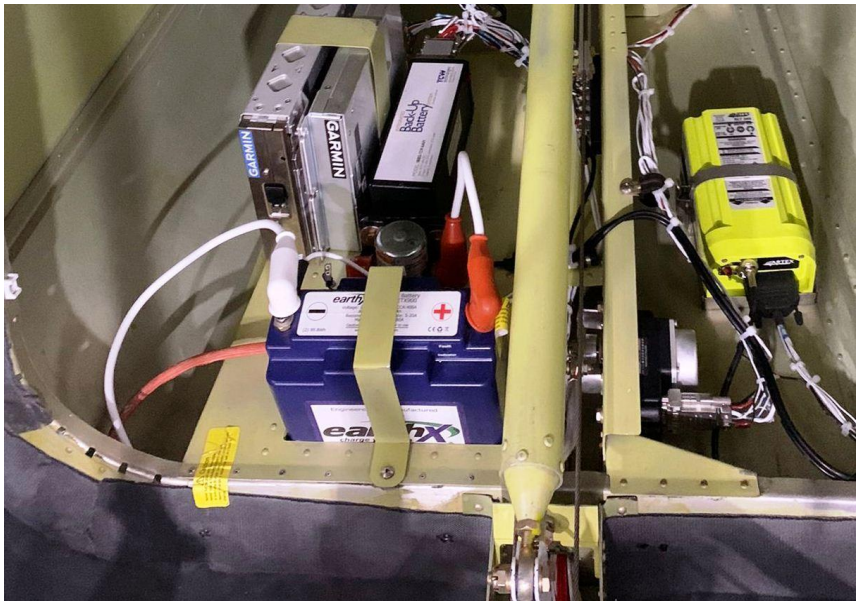


Figure 2.4.8.1. Final Battery Installation.

2.4.9 Switches

2.4.9.1 Dynon avionics system

The Colt 100 with Dynon avionics system is equipped with a MultiSwitch, which includes an internal circuit management system for protection against short circuit and overload. The MultiSwitch is located at the cockpit panel. See Section 8.1, Avionics and Instruments for more details.

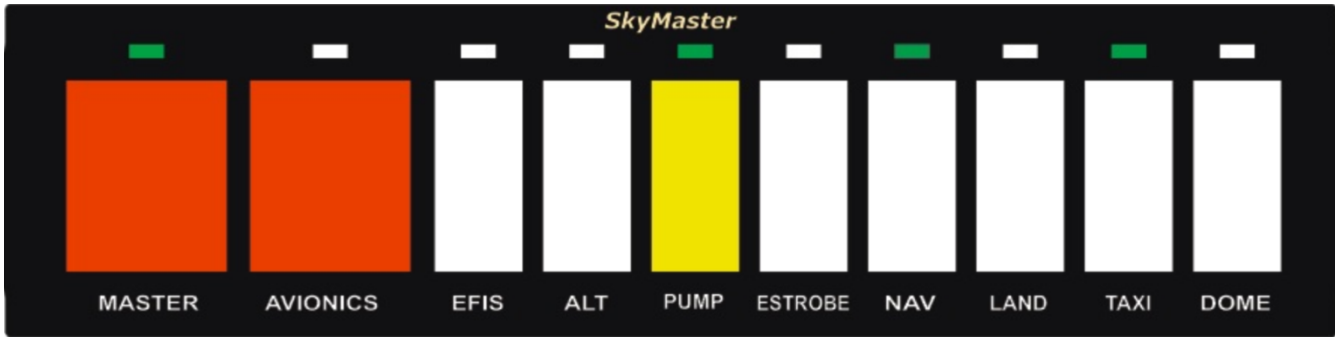


Figure 2.4.9.1.1. MultiSwitch display.

Figure 2.4.9.1.2. Skymaster MultiSwitch.

2.4.9.2 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.

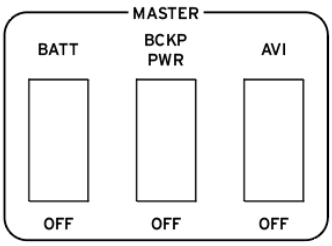


Figure 2.4.9.2.1. Master Switch display

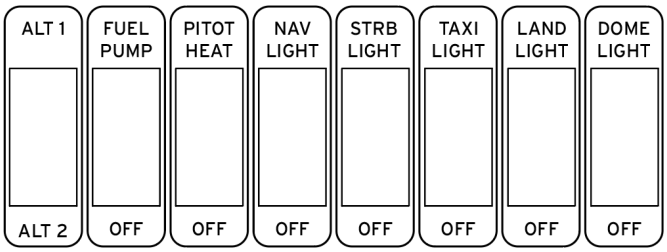


Figure 2.4.9.2.2. Switch display

2.4.10 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.

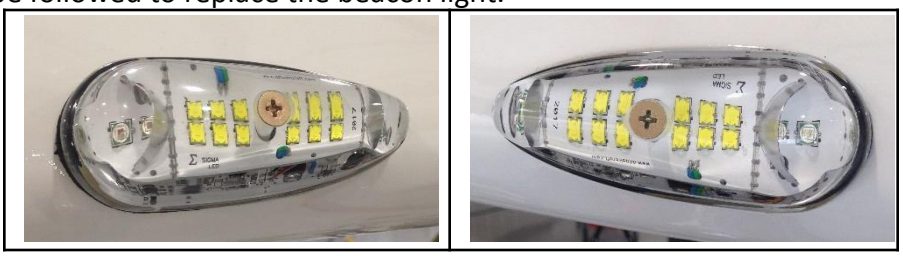


Figure 2.4.10.1. Navigation Lights, LH and RH, respectively.

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.

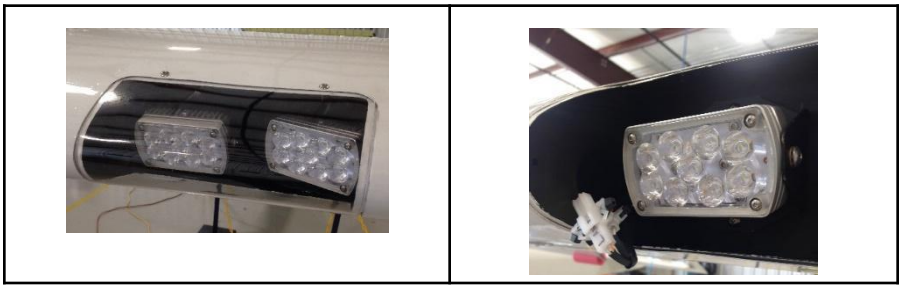


Figure 2.4.10.3. Taxi and Landing Lights.

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.

2.4.11 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.

2.4.11.1 Dynon Avionics System

A circuit breaker rated to25A is installed in the electrical system for protection.

Table 2.4.11.1.1. Circuit breaker – Dynon Avionics System.

Part Number	Manufacturer	Current Rating
W58-XC4C12A-25	Tyco Electronics	25 A

2.4.11.2 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.

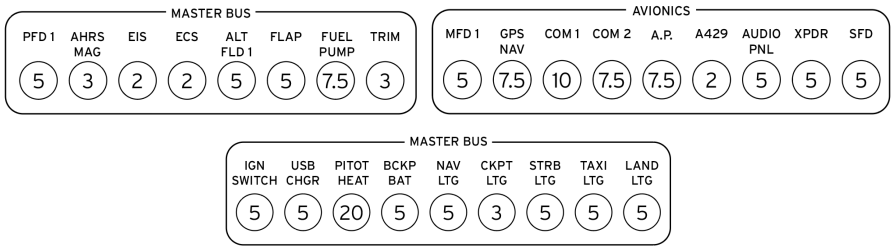


Figure 2.4.11.2.1. Circuit Breaker layout for Garmin avionics system

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

2.4.12 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.

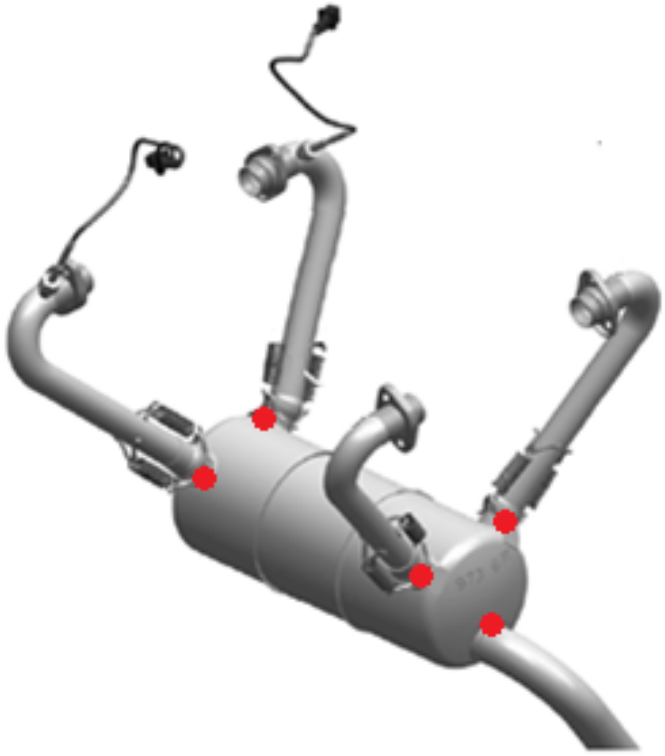


Figure 2.4.12.1. Exhaust Inspection Points.

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.

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

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

2.4.13 Propeller

2.4.13.1 100 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 **Sterna Propeller Hub** attachment bolts (AN5) should be between 120 and 140 inch-pound.

2.4.13.2 600 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.

Examine the data plate on the shank of each blade. Verify that you are using approved blades for the hub and engine model. If you are unsure, contact the factory for assistance.

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

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 Composite Aircraft Propeller Operation, Installation and Maintenance Manual for Texas Aircraft Colt.**
- **For Warp Drive Carbon Fiber Propeller, Operation and Installation Manual for Warp Drive Carbon Fiber Propeller.**

2.4.13.3 2000 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 Propeller - Send hub cover half, hub mount half, and blades to an Approved Propeller Repair Station or Sterna factory for the 2000-hour inspection.
- Warp Drive Propeller - The 2000-hour inspection can be performed by an A&P, IA, approved repairman or it can be sent to the Warp Drive 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:

- **For Sterna Composite Aircraft Propeller Operation, Installation and Maintenance Manual for Texas Aircraft Colt.**
- **For Warp Drive Carbon Fiber Propeller, Operation and Installation Manual for Warp Drive Carbon Fiber Propeller.**

2.4.14 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"

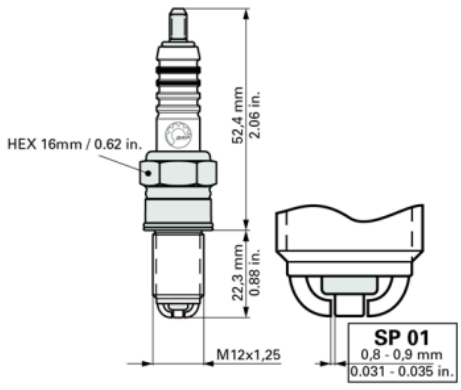


Figure 2.4.14.1. Electrode gap.

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.

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.

2.4.15 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.**

2.4.16 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.

2.4.17 Ballistic Recovery System

If installed, see the parachute maintenance and installation manual.

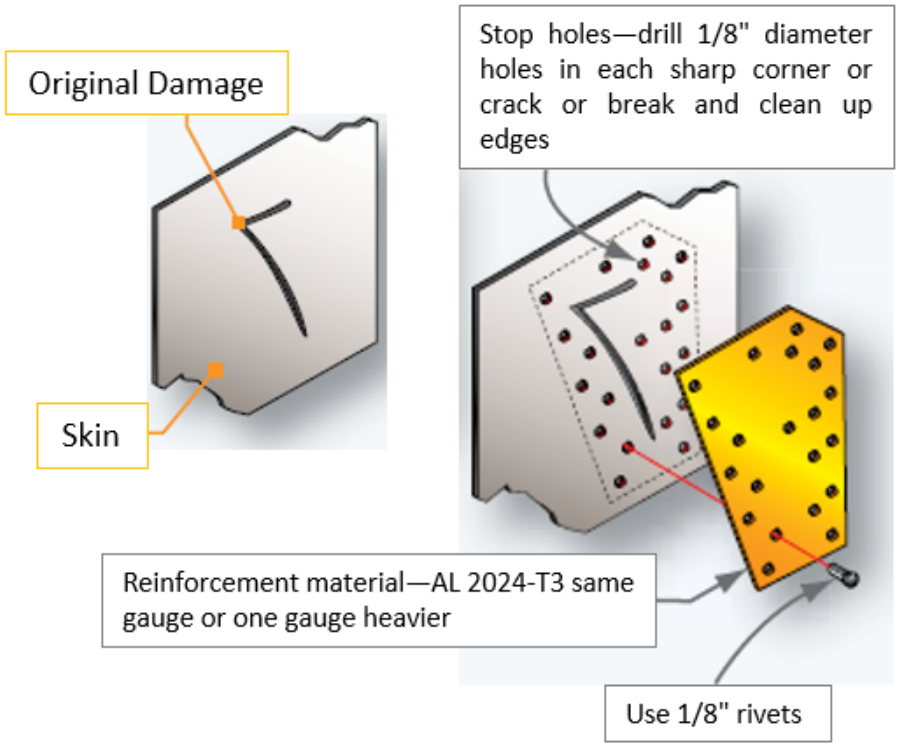
2.4.18 Repairs

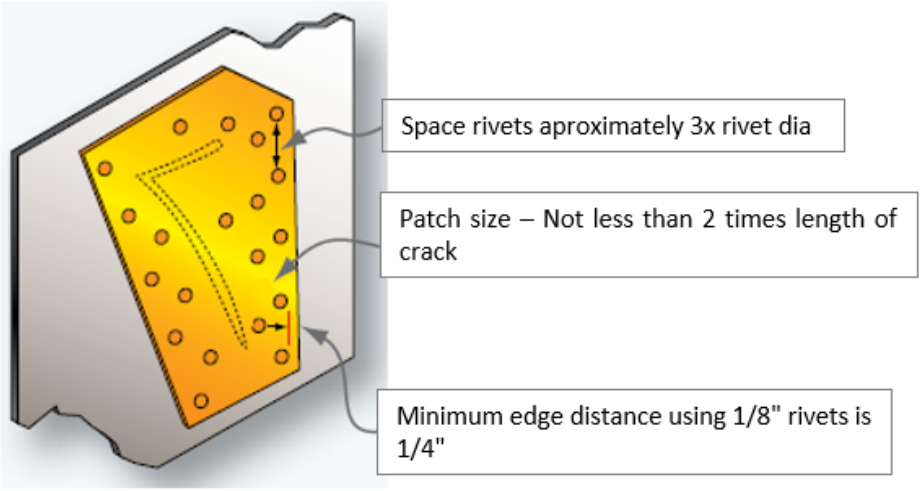
Small holes in skin panels or non-structural parts which do not involve damage to the stiffening members may be patched by covering the hole with 2 types of patch plates: Lap Patch or Flush Patch.

2.4.18.1 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.



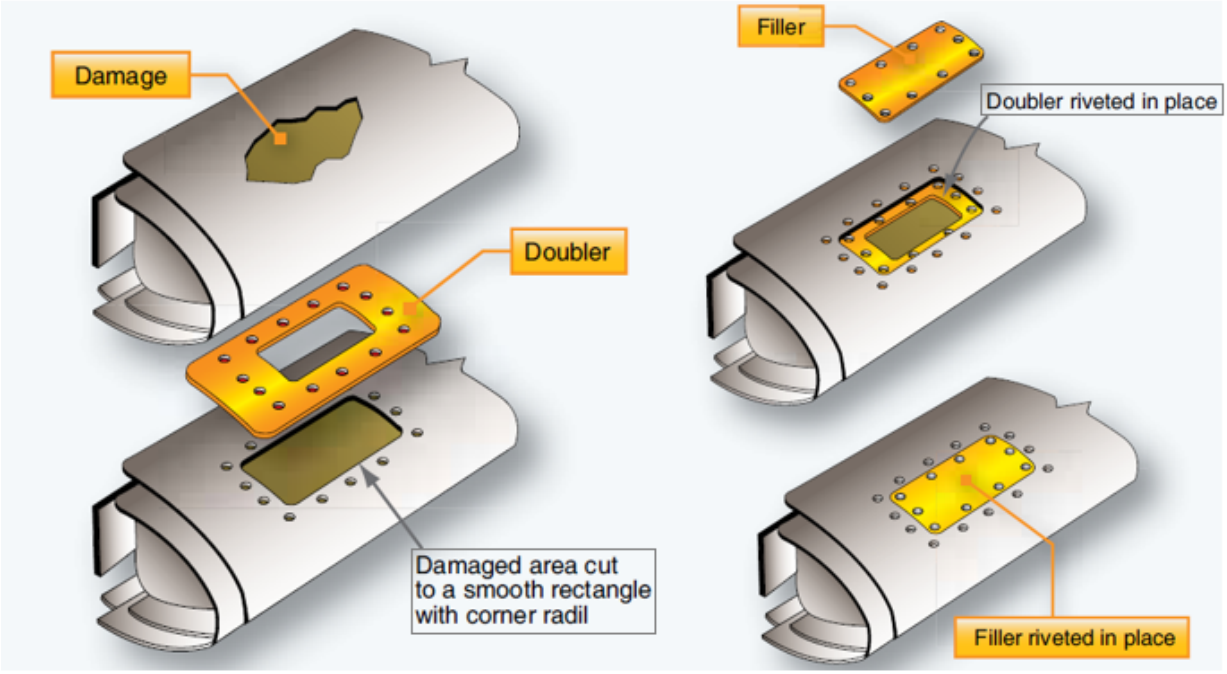


When repairing cracks or small holes with a lap patch, the damage must be cleaned and smoothed. In repairing cracks, a small hole must be drilled in each end and sharp bend of the crack before applying the patch. These holes relieve the stress at these points and prevent the crack from spreading. The 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.

2.4.18.2 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.


Damage
Doubler
Damaged area cut to a smooth rectangle with corner radil
Filler
Doubler riveted in place
Filler riveted in place

2.4.18.3 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.

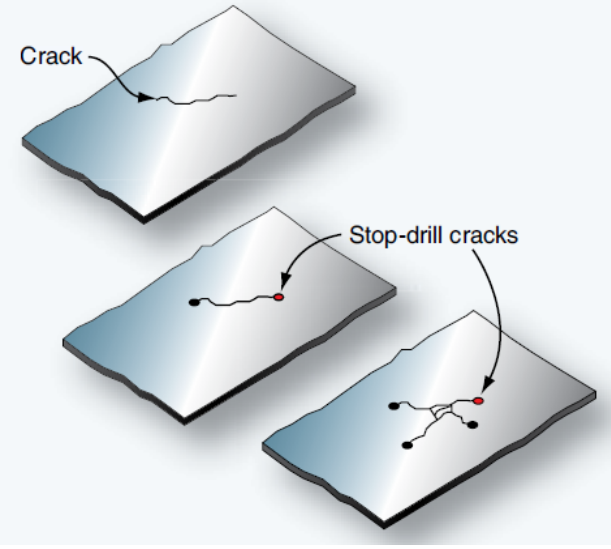


Figure 2.4.18.3.1. Stop-Drilling of Cracks.

Then, proceed the repair according to 2.4.18.1 as needed.

2.4.19 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://www.dynonavionics.com/skyview-documentation.php, for Dynon system avionics, or https://support.garmin.com, for Garmin system avionics. See Section 9, Electrical System to check the Electrical Diagrams.

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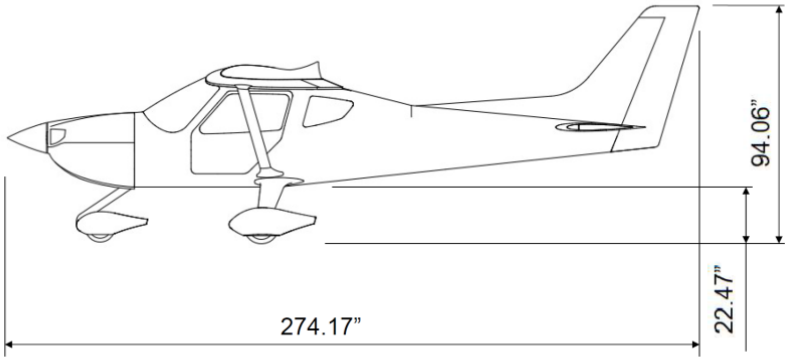
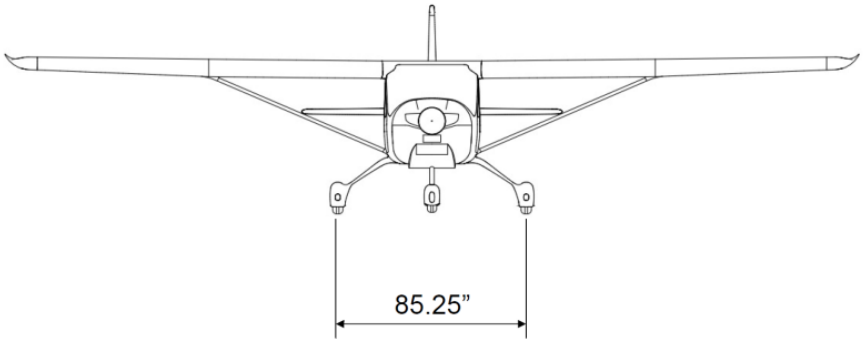
3 Structures

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 ULS. 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 maximum aileron deflection is 25° upward and 15° downward. The elevator and rudder present a maximum 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 and Parachute System.

3.2 Main Dimensions and Control Surface Deflection Limits





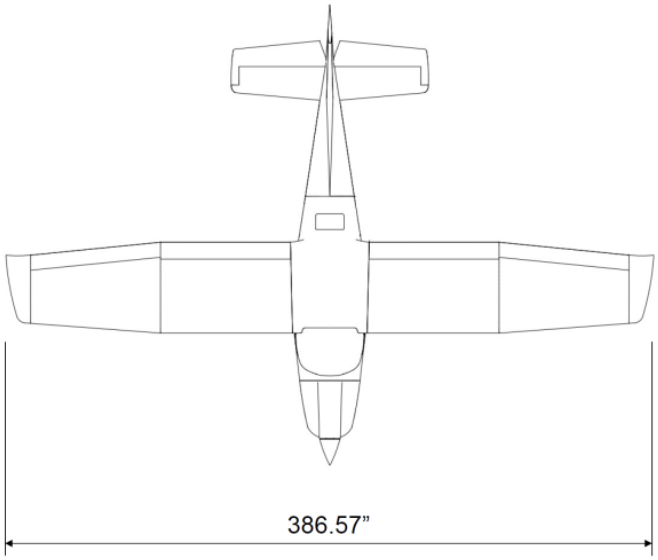


Figure 3.1.1. Three View Drawing

Wing	Area		12.89 m² / 138.75 ft²
	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 m² / 5.60 ft²
	Deflection		+25° ± 2°
			-15° ± 2°

Flap	Area		0.63 m² / 6.78 ft²
	Deflection	Takeoff	10°
		Landing	30° ± 3°

Horizontal Stabilizer	Area	2.22 m² / 23.90 ft²
	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 m² / 10.76 ft²

	Deflection	+25° ± 2°
		-25° ± 2°

Vertical Stabilizer	Area	1.15 m² / 12.28 ft²
	Taper Ratio	0.58
	Sweep angle	40°

Rudder	Area	0.6m² / 6.46 ft²
	Deflection	+25° ± 2°
		-25° ± 2°

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.

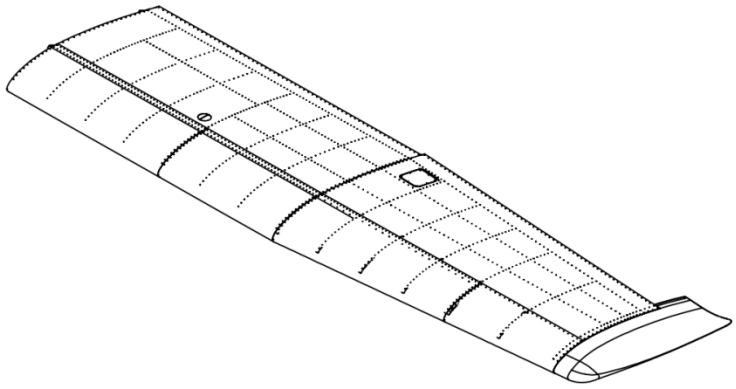


Figure 3.2.1. Main Assembly.

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.

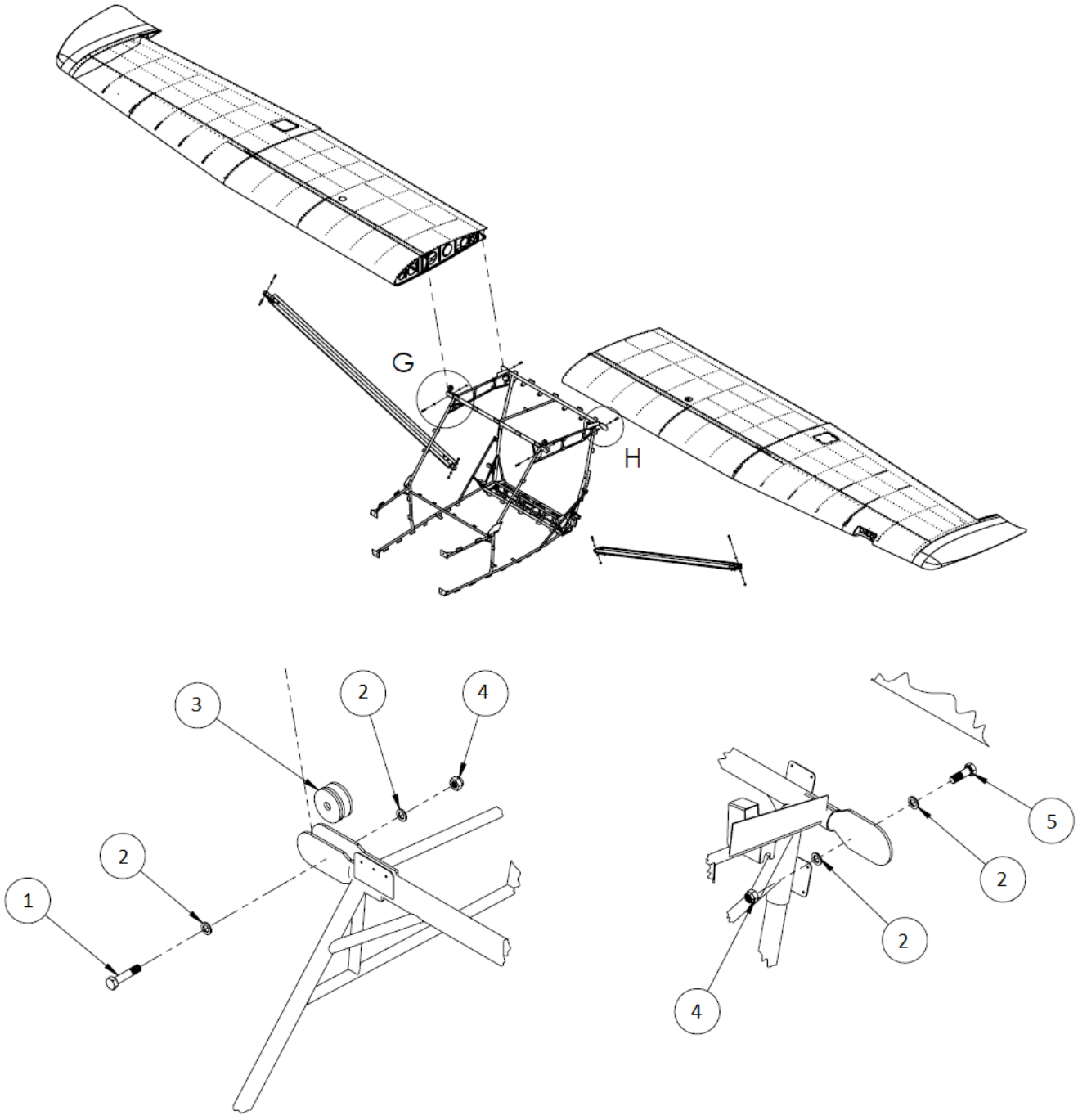
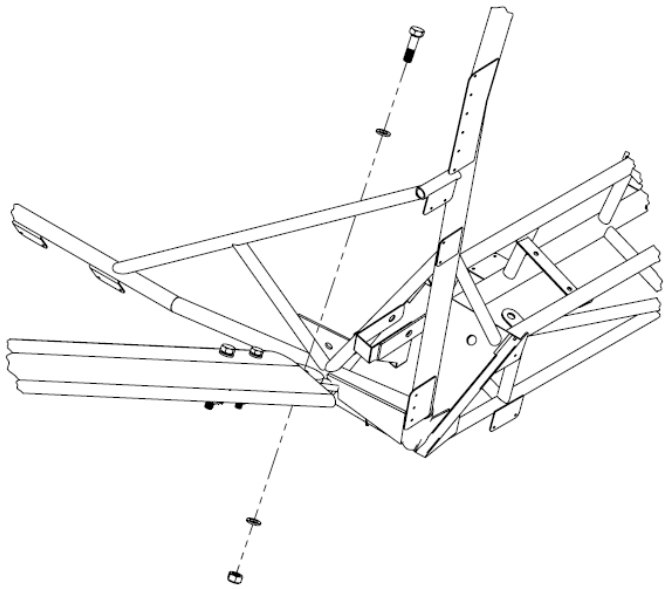


Figure 3.2.2. Main Wing Installation.

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



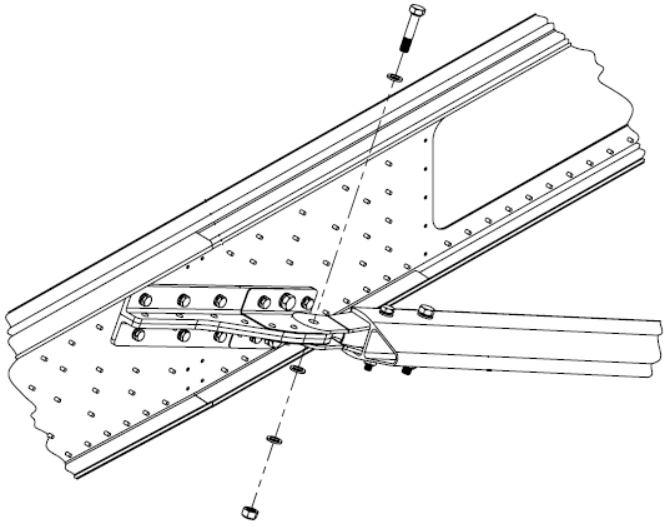


Figure 3.2.3. Wing Strut Installation.

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

3.3.1 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 inter- connected by a chrome-moly tube. See figures below.

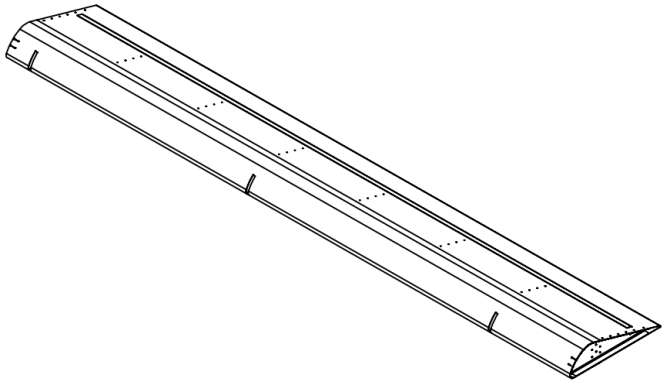


Figure 3.2.1.1. Flap.

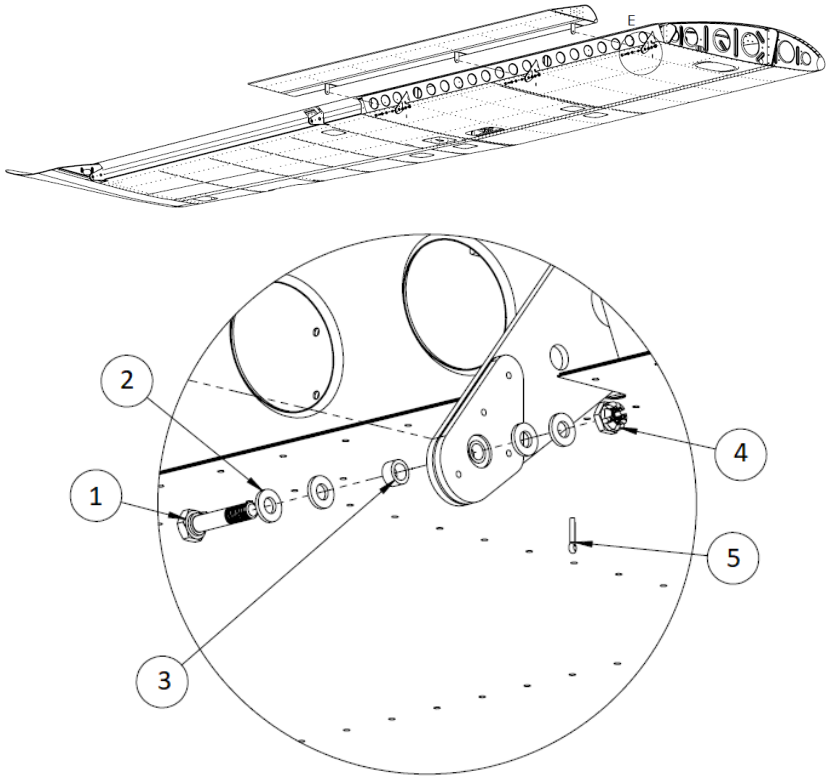


Figure 3.2.1.2. Flap Installation.

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

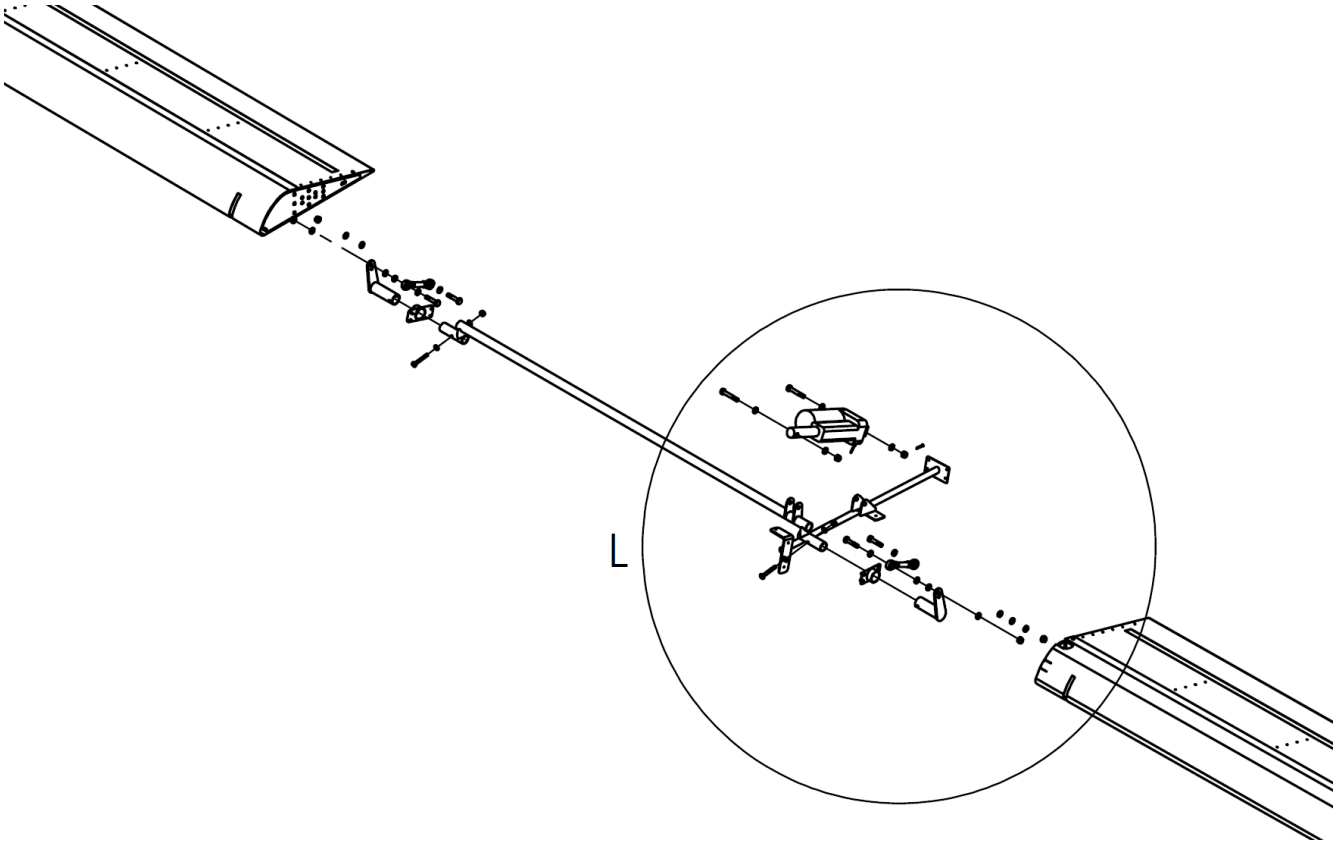


Figure 3.2.1.3. Flap System.

3.4 Empennage

The Empennage consists of the horizontal and the vertical stabilizers.

3.4.1 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. Sleek carbon fiber tips complete the assembly. Brackets of AISI 4130 are installed behind the rear spar to install the elevator.

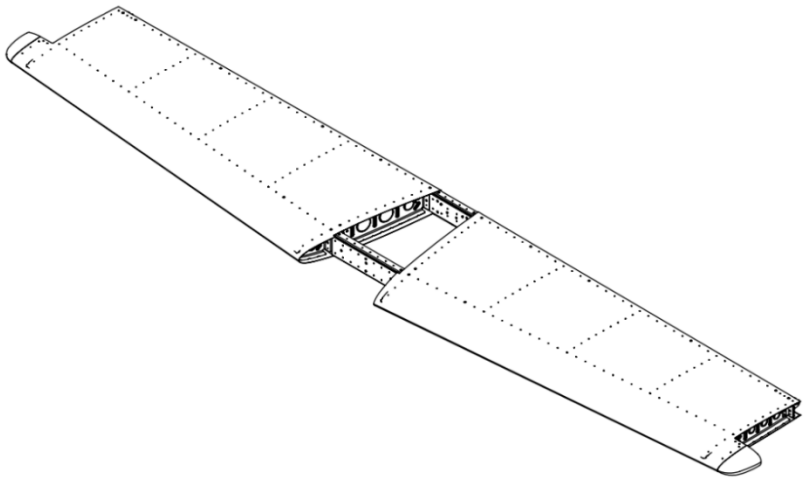


Figure 3.3.1.1. Horizontal Stabilizer.

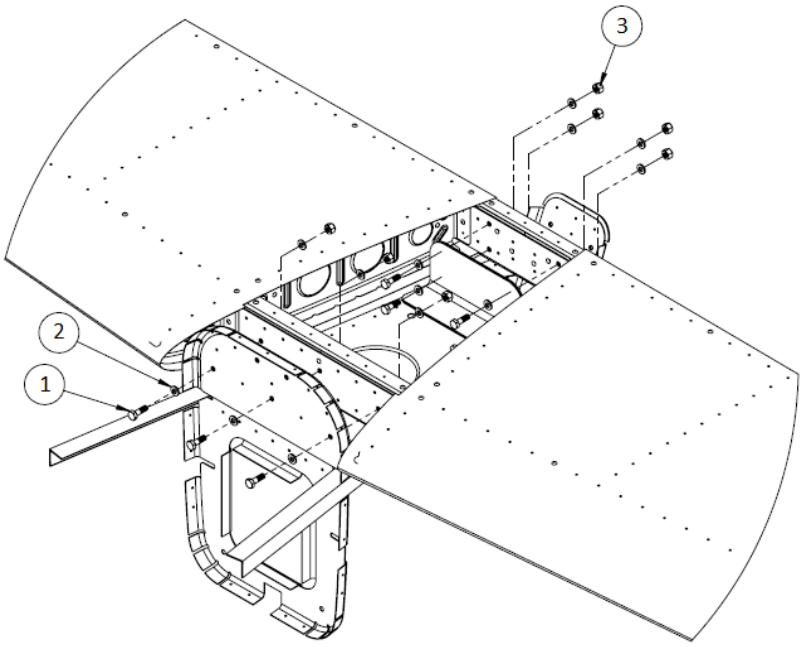


Figure 3.3.1.2. Horizontal Stabilizer Installation.

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

3.4.2 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.

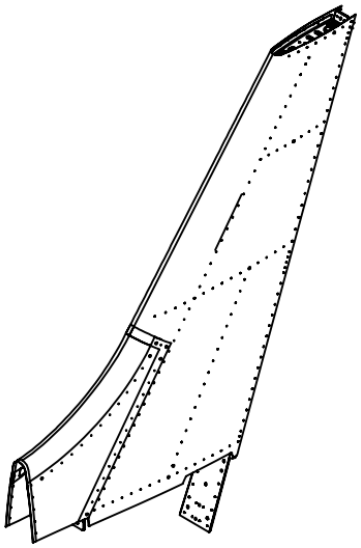


Figure 3.3.2.1. Vertical Stabilizer.

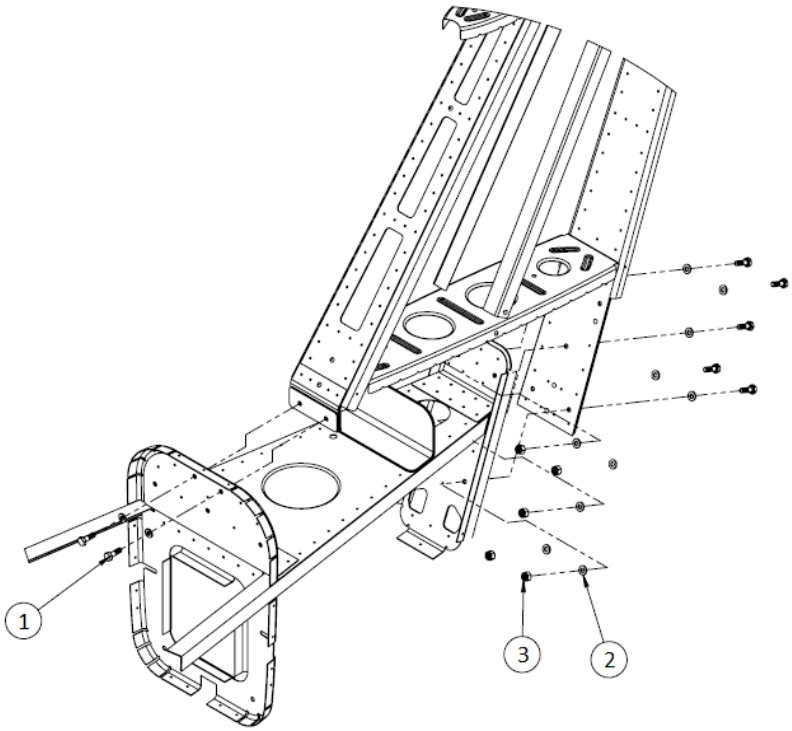


Figure 3.3.2.1. Vertical Stabilizer Installation.

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)

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.

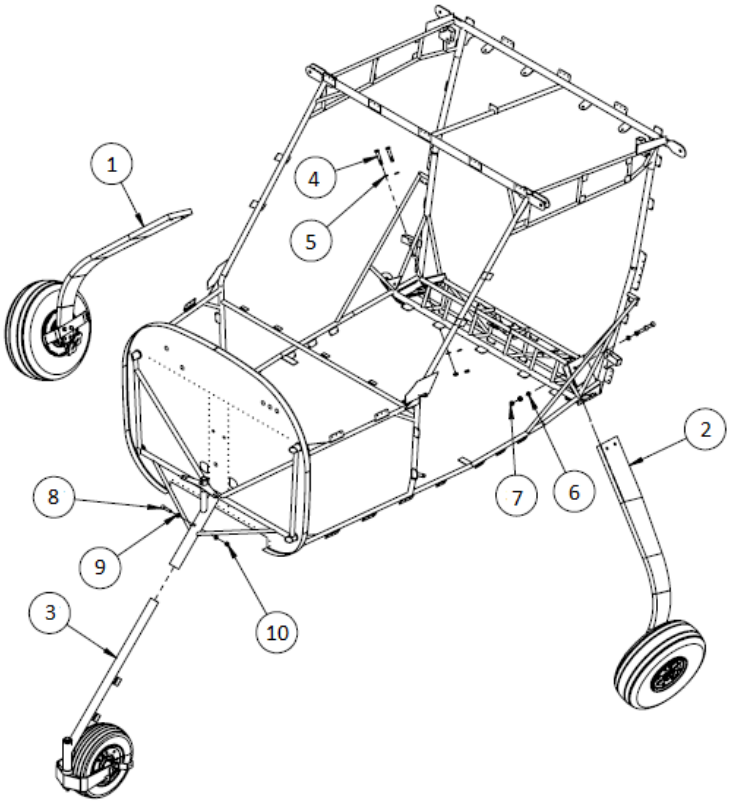


Figure 3.4.1. Landing Gear Legs Assembly.

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

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

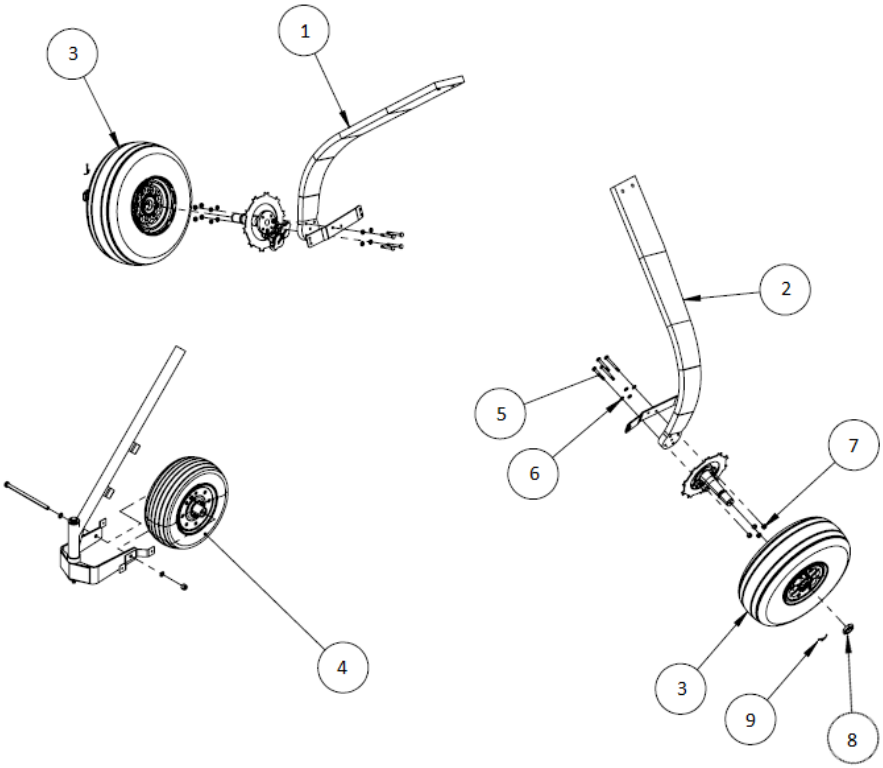


Figure 3.4.2. Wheels Assembly.

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

ID	Description	Part Number	Quantity
1	T1.32R.1000.001	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

3.5.1 Main Landing Gear

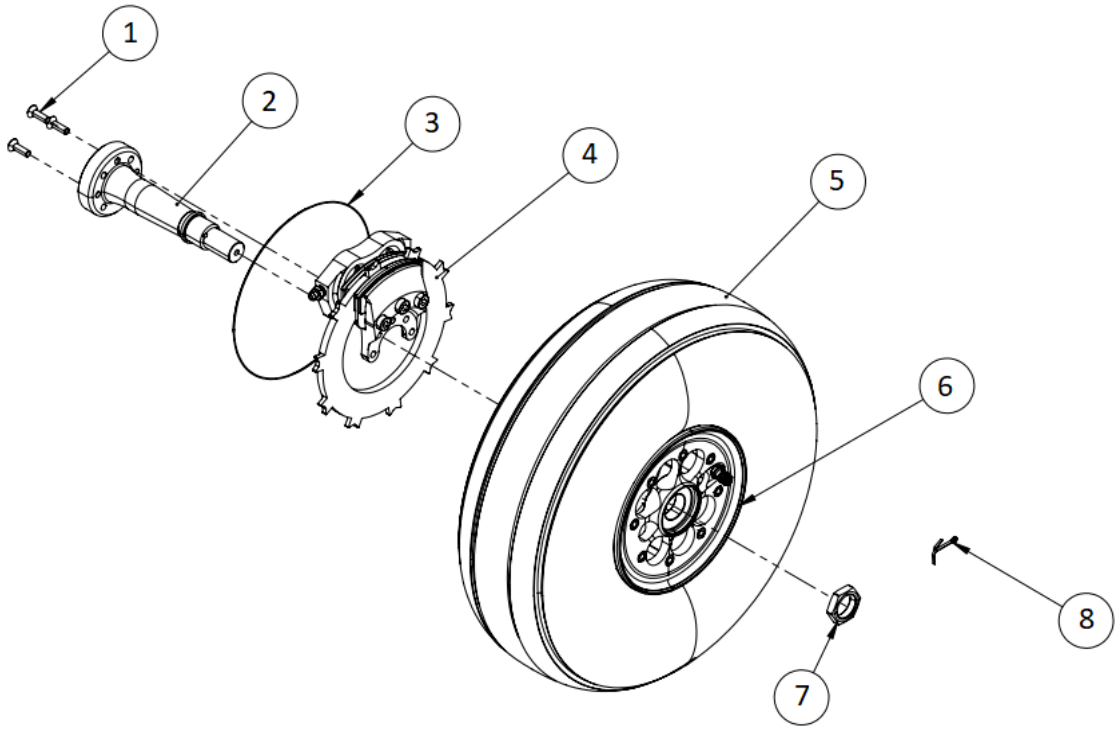


Figure 3.4.1.1 Main Landing Gear Assembly.

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	-	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

3.5.2 Nose Landing Gear

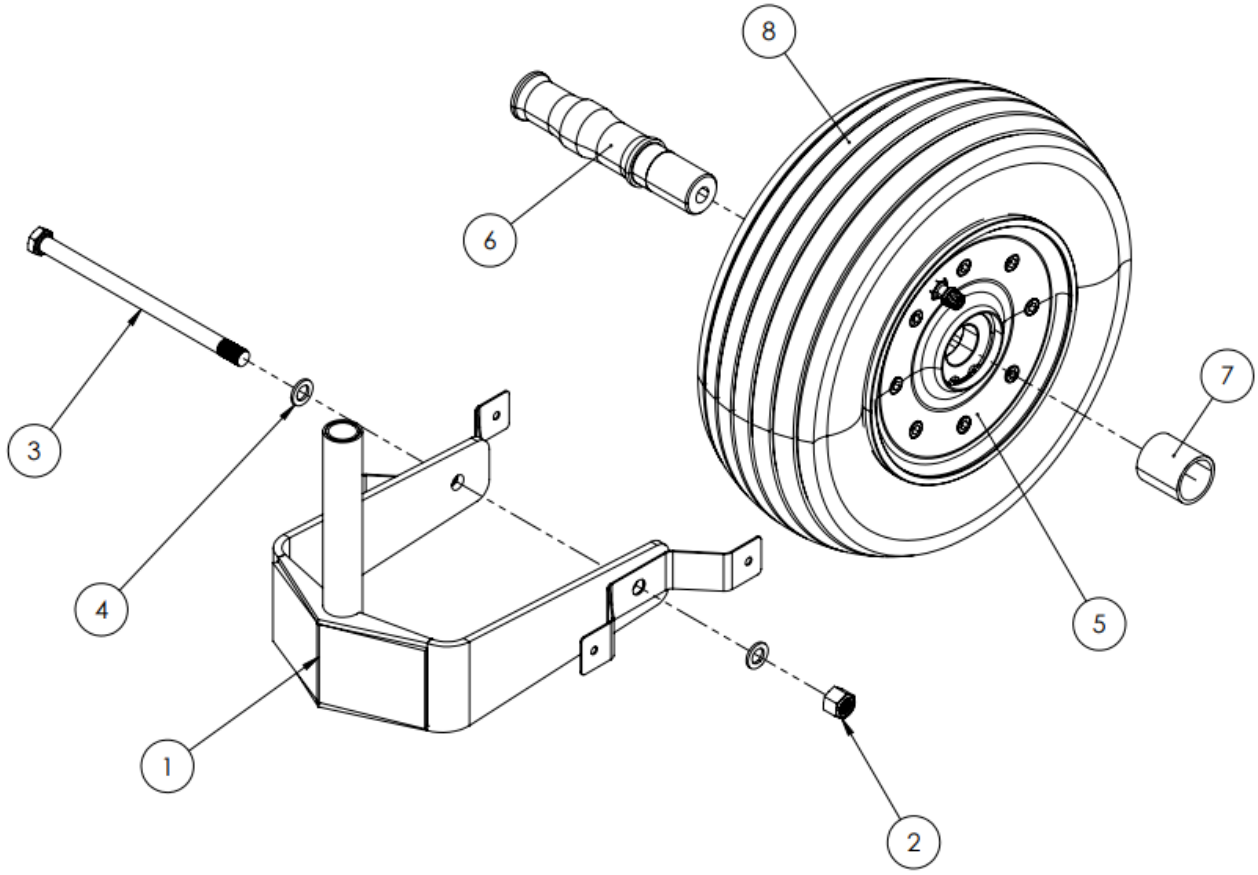


Figure 3.4.2.1. Nose Landing Gear Assembly.

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	-	Tire 11x4.00x5”	1

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.

3.6.1 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.

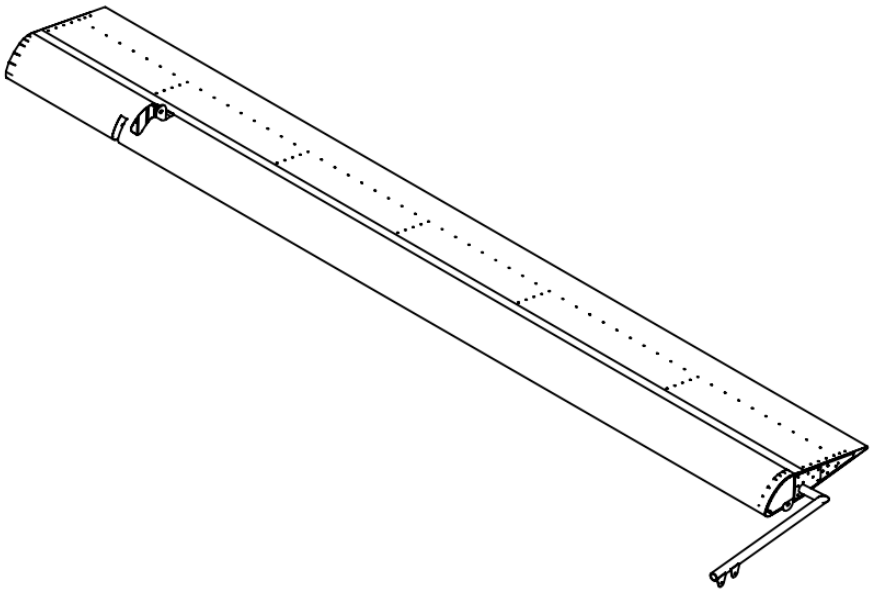


Figure 3.5.1.1. Aileron Assembly.

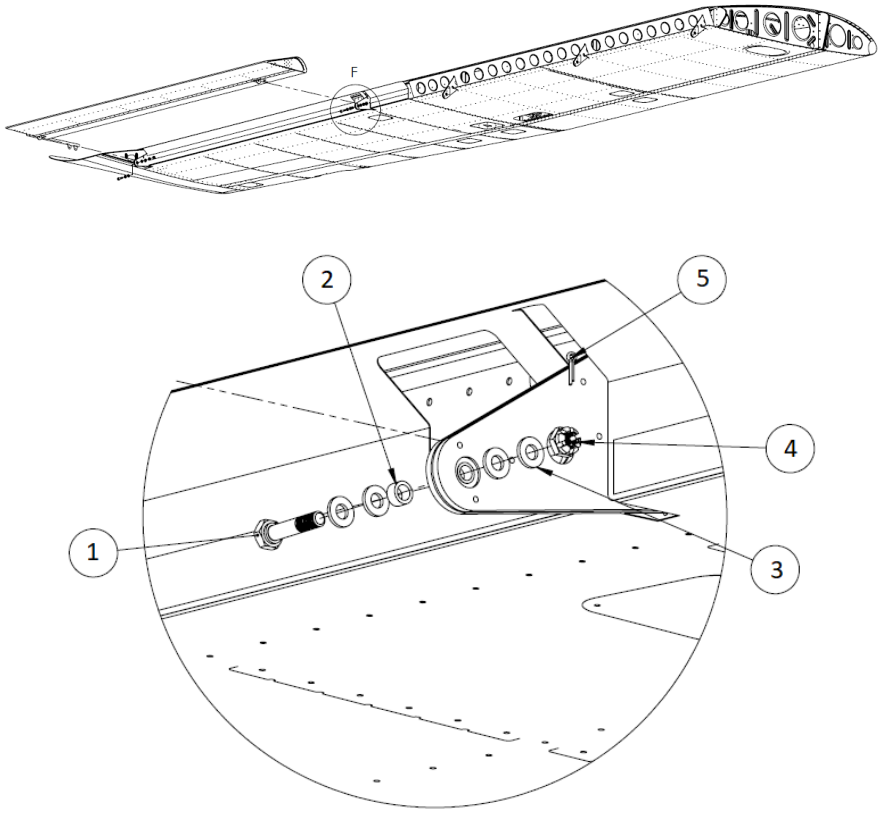


Figure 3.5.1.2. Aileron Installation.

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

3.6.2 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.

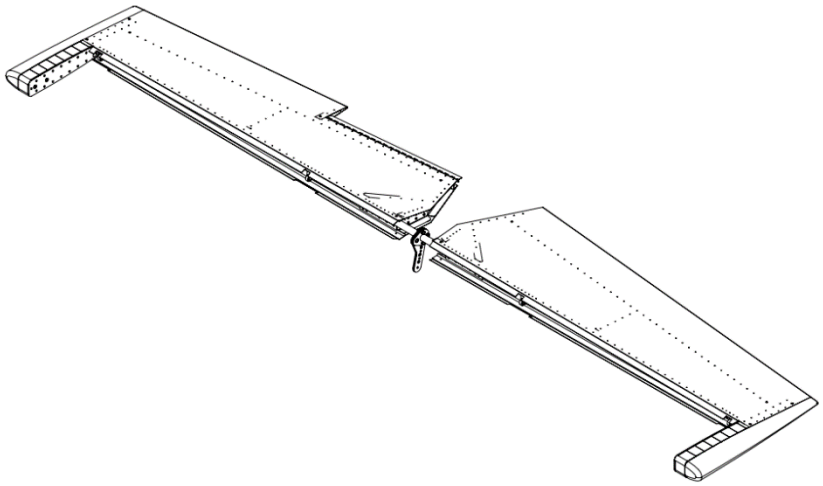


Figure 3.5.2.1. Elevator Assembly.

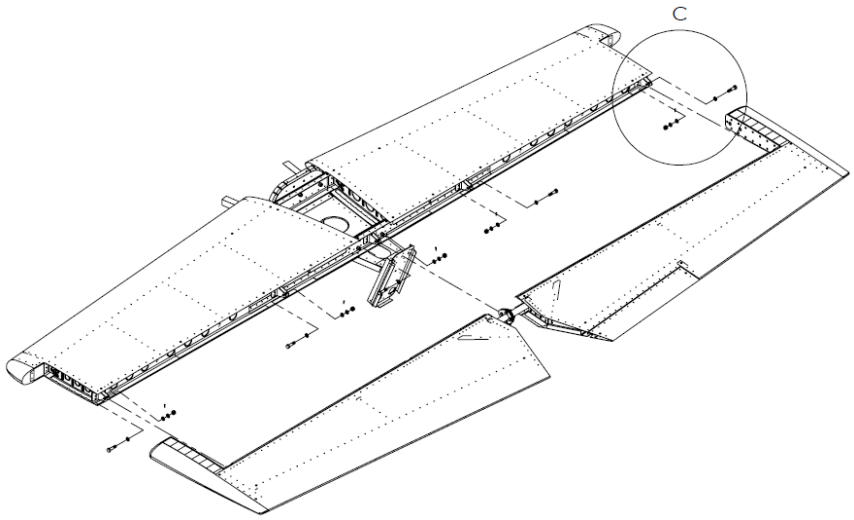


Figure 3.5.2.2. Elevator Installation.

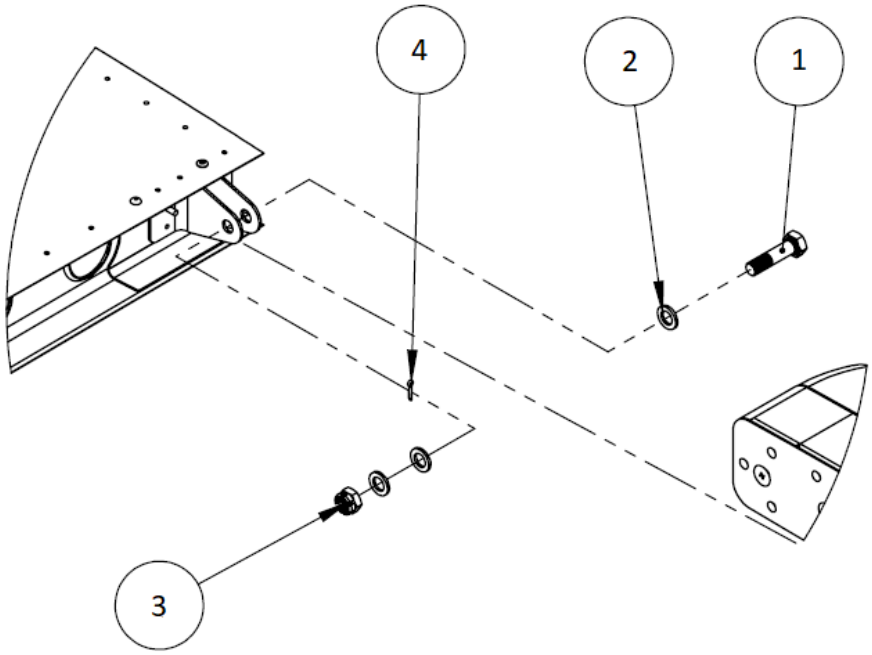


Figure 3.5.2.3. Elevator Installation, Detail C.

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

3.6.3 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.

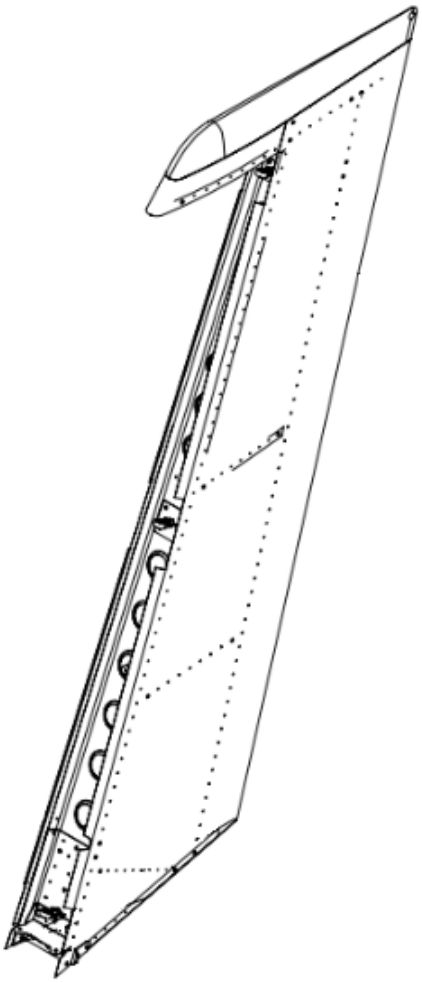


Figure 3.5.3.1. Rudder Assembly.

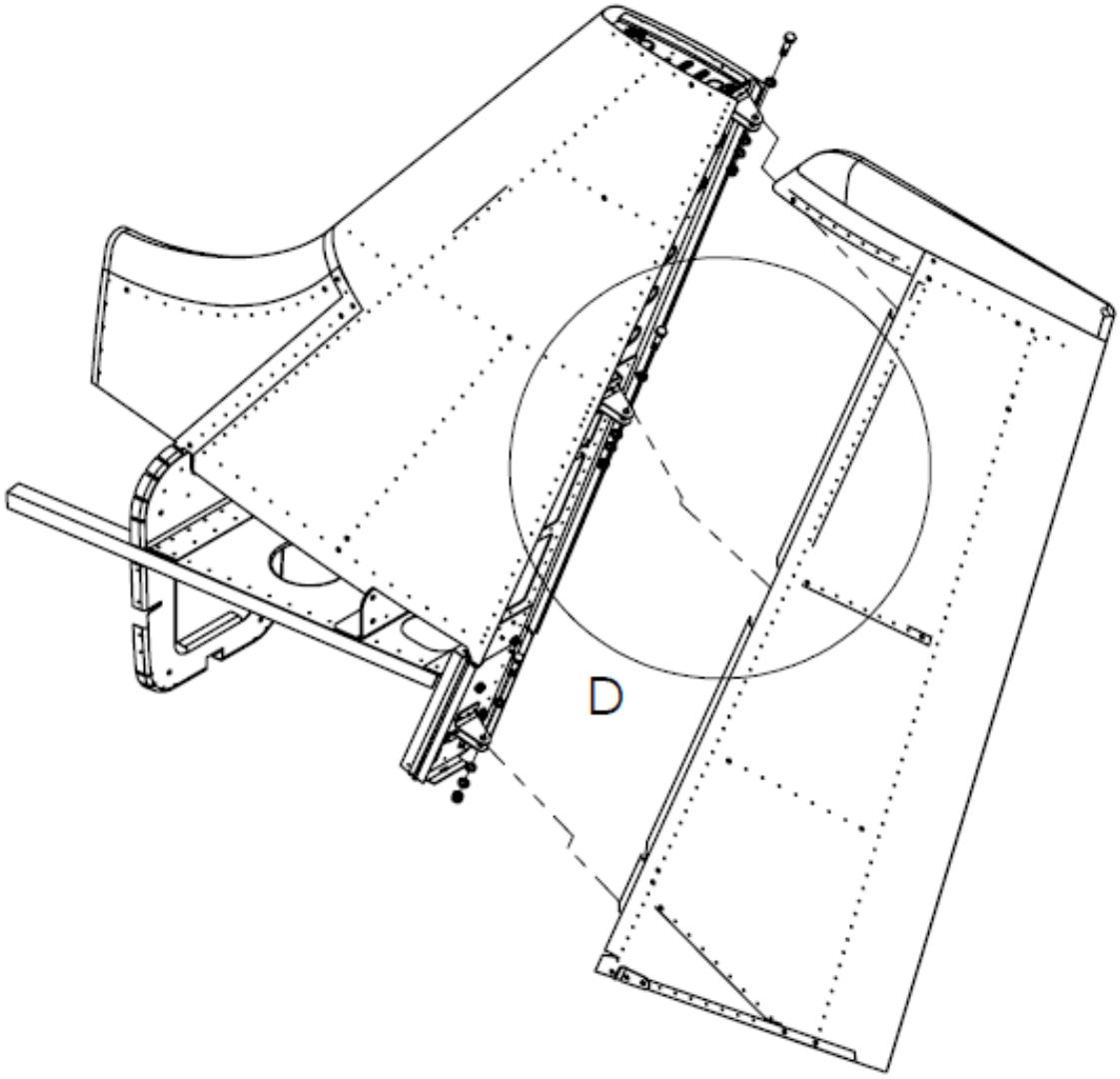


Figure 3.5.3.2. Rudder Installation.

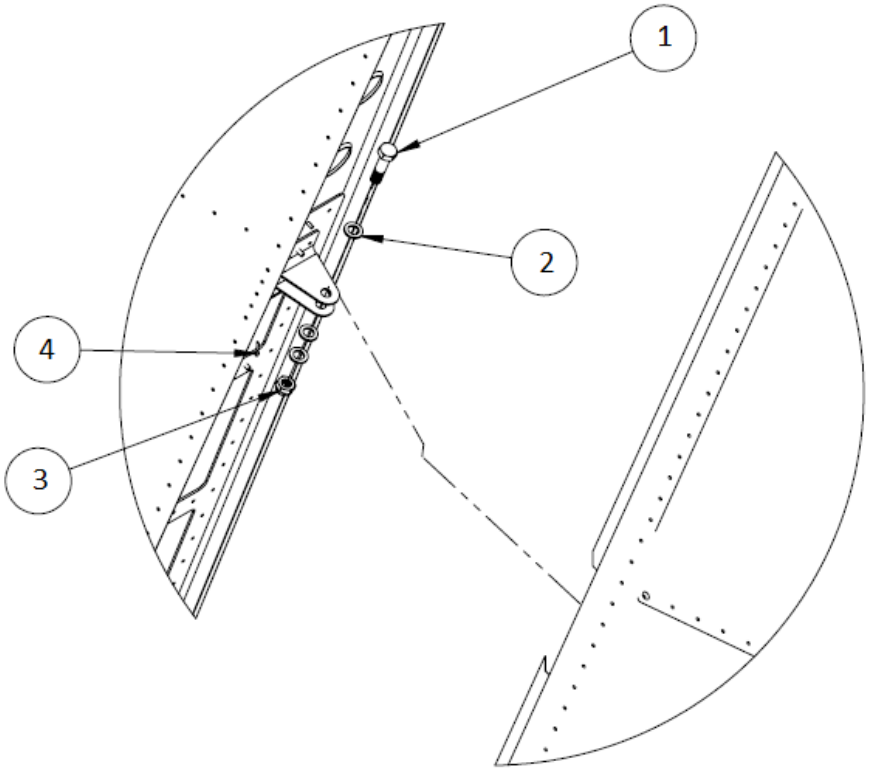


Figure 3.5.3.3. Rudder Installation, Detail D.

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

3.6.4 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 a 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.

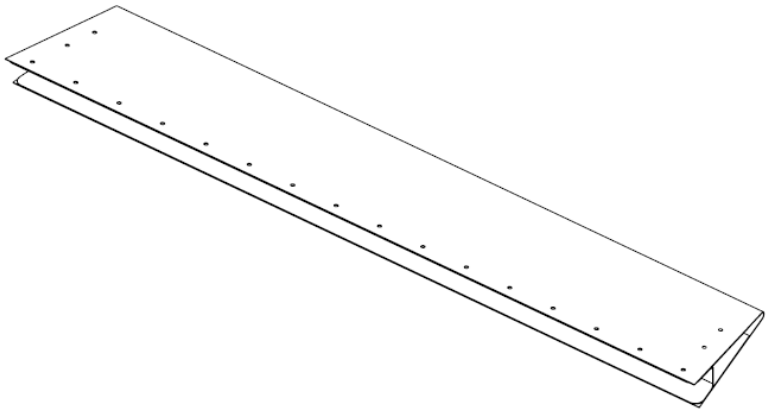


Figure 3.5.4.1. Trim Tab Assembly.

3.7 Fuselage

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

3.7.1 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.

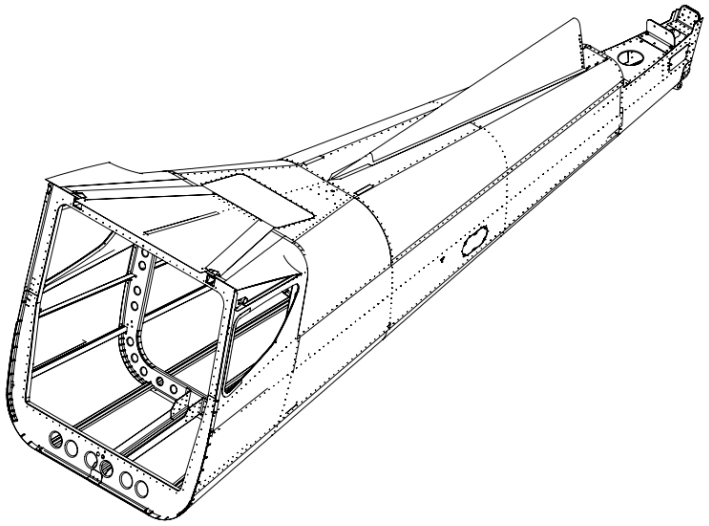


Figure 3.6.1.1. Tail Cone Assembly.

3.7.2 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.

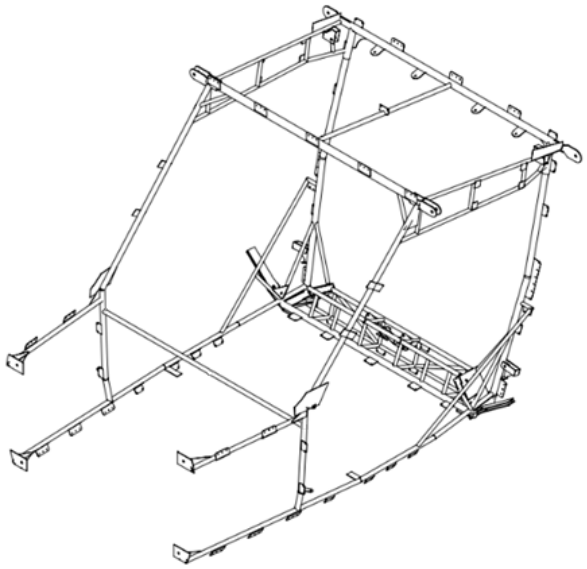


Figure 3.6.2.1. Cockpit Truss Structure.

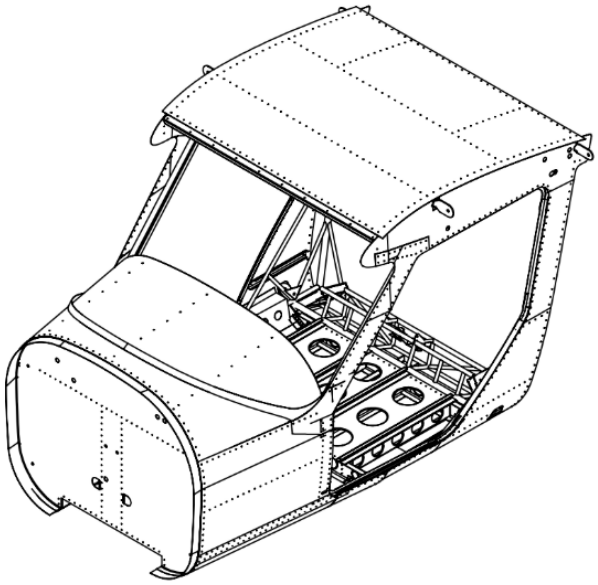


Figure 3.6.2.2. Cockpit Structure.

3.7.3 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”, ¾”, 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.

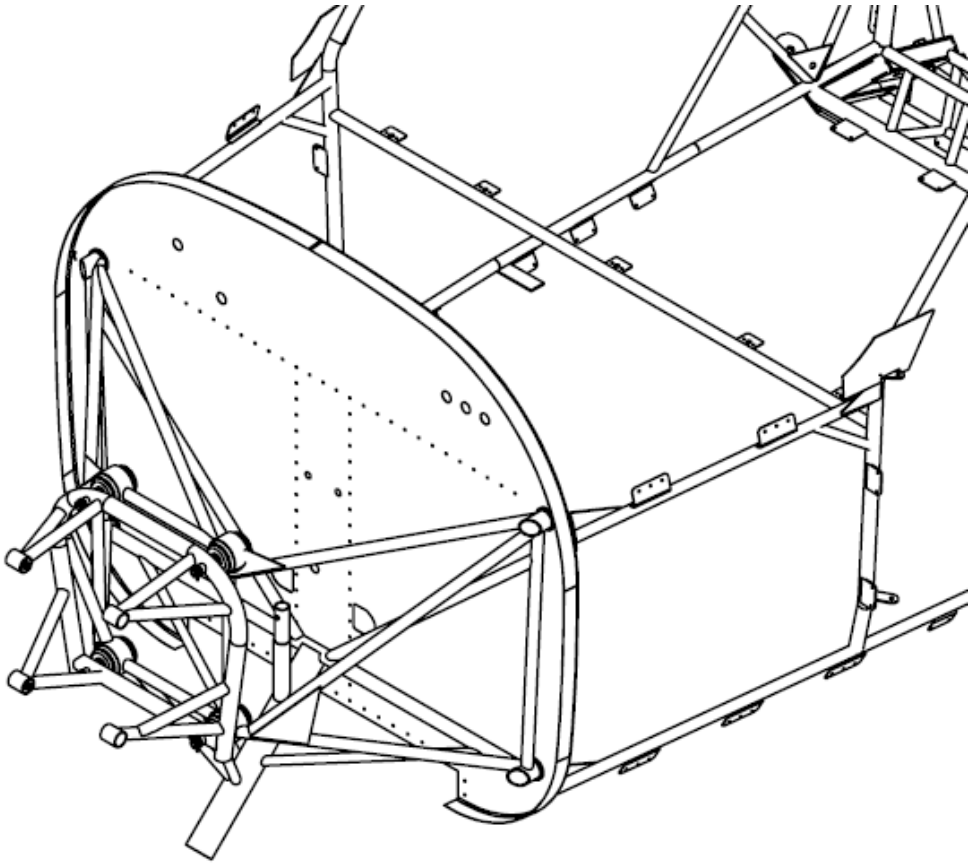


Figure 3.6.3.1. Engine Mount.

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

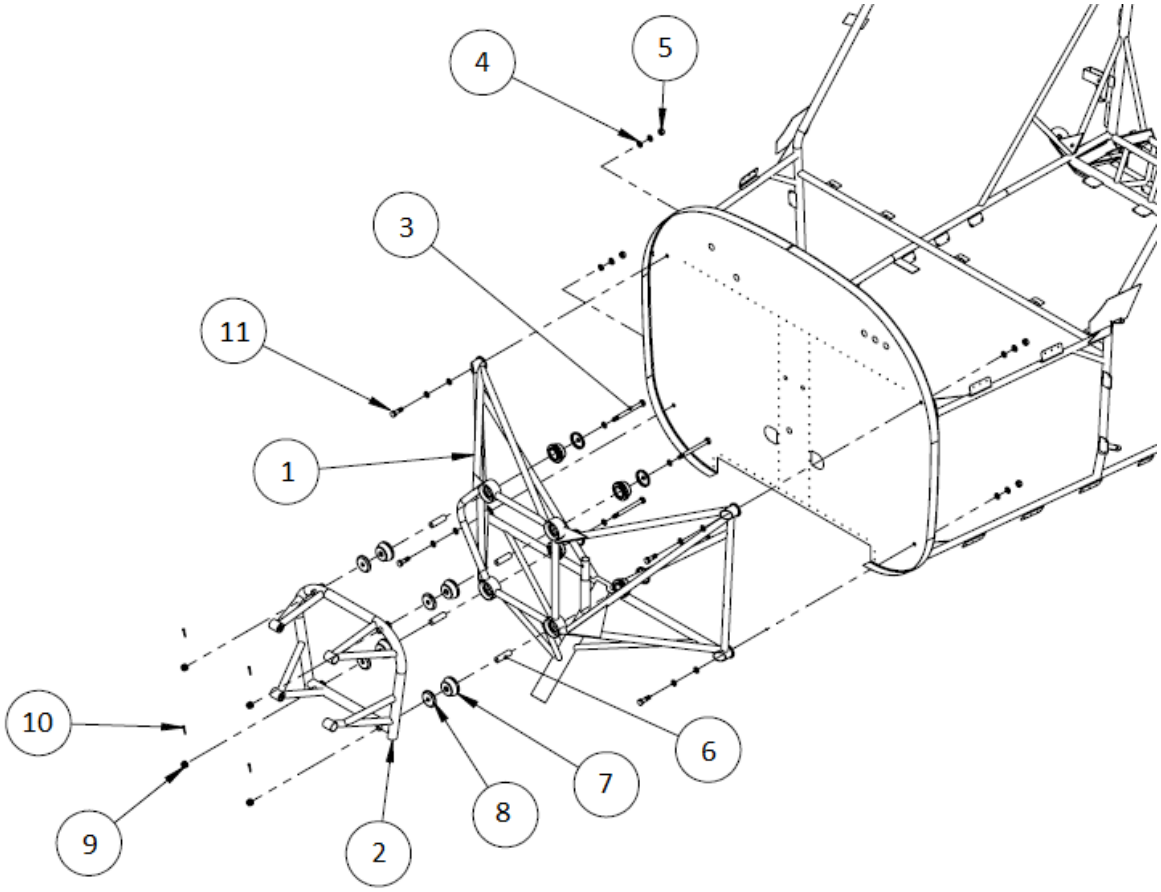


Figure 3.6.3.2. Engine Mount Installation.

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.20B0.000	1
2	Engine Ring	T1.71A.20A0.000	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	-	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 ULS 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;
- 2 constant depression carburetors;
- Mechanical 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	AVGAS 100 LL (recommended) MOGAS premium (91 octane - EN 228 Super Standard, up to 5% ethanol max) MOGAS could cause sealant deterioration in the wing tank.
Usable Fuel	117 l (30.9 US gal)
Total Fuel	120 l (31.7 US gal)

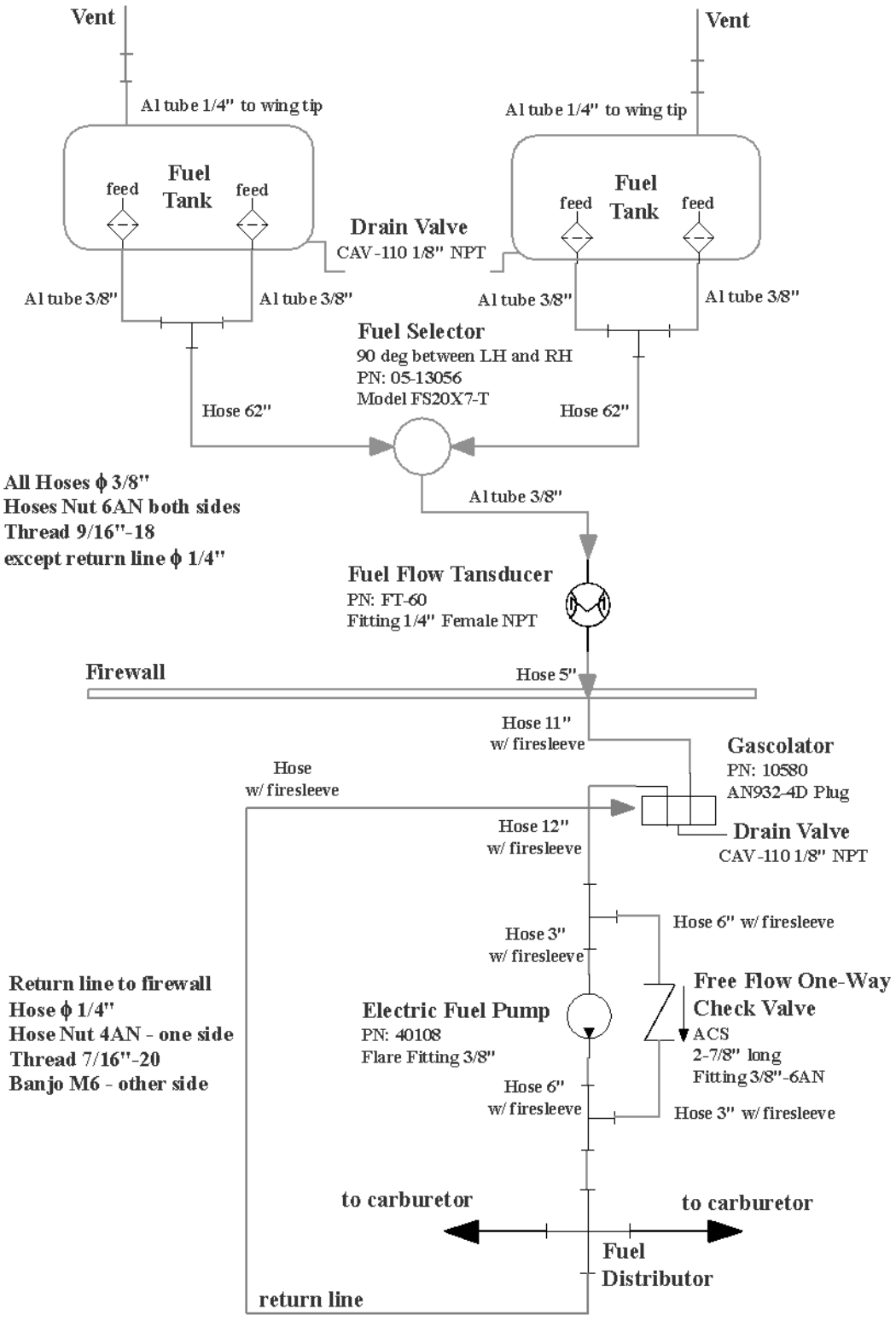

Figure 5.1. Fuel System Diagram.

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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	S69CBMR
Model Hub	3-RT-B
Number of Blades	3
Weight	4.510 kg / 9.955 lb
Pitch adjust	18 deg / (4900 rpm - 50 rpm)

Note: Consult the Propeller Manual for more details: Sterna Composite Aircraft Propeller Operation, Installation and Maintenance Manual for Texas Aircraft Colt.

6.1.1 Propeller Installation

Tool List for Propeller Installation:
- Calibrated torque wrench
- Pitch setting gauge for measuring blade angle
- 7/16” socket (for torque wrench)
- 7/16” box wrench
- 1/2” socket (for torque wrench)
- 1/2” box wrench
- Tachometer calibration tool

1. Be certain that the aircraft ignition or magneto switch is “OFF” and that all magnetos are grounded any time the propeller is handled. Chock the aircraft wheels to prevent movement. Clean dirt and oil residue from the engine flange.

2. Place rear spinner backplate as shown in Figure 3 and the assembled propeller on the propeller mounting flange. Check for proper bushing fit into the hub mount half.

WARNING: It is important that the hub sits completely flush against the mounting flange. Some installations may require a hub spacer kit or trimming of the drive bushings for proper fit on the engine flange. Bolt breakage WILL occur if there is a gap between the propeller hub, the

spacer (if used), and the engine flange.
3. Place the washer on bolt and insert the mounting bolt through the assembled hub and into the flange bushings as shown in Figure 3.

NOTE: Do NOT insert the mounting bolts backwards through the engine flange. The lock nuts will not fit inside the hub, preventing the blade shanks from fully seating and the hub from closing properly.

4. Using a calibrated torque wrench, torque the 6 mounting bolts evenly using a star pattern. Tighten the bolts in several increments up to full torque, such as 50%, 75%, and full torque. See Table 1 above or hub decal for mounting bolt torques.

5. The blue pattern in Figure 8 below is the tightening sequence for mounting the hub onto the engine flange. Tighten the two No. 1 bolts opposite of each other first, then tighten the two No. 2 bolts opposite of each other, finally tighten the two No. 3 bolts opposite of each other.

Note: Pay attention to the tightening order and that proper torque is applied when securing the hub-flange bolts. Do not tighten bolts one time. Tighten bolts in successive steps. Verify clearance between hub halves are the same.

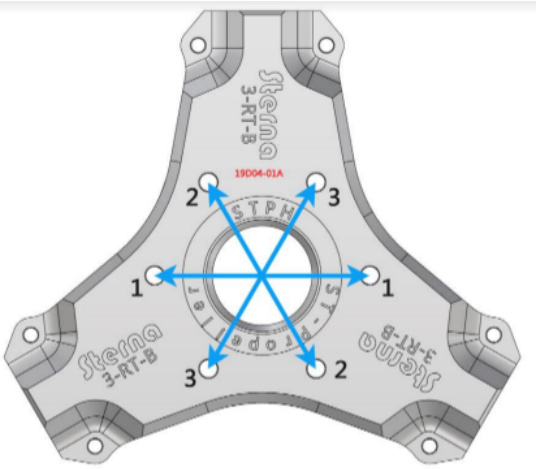

Figure 6.1. Use “Star Pattern” for tightening engine flange bolts.

6. Check the propeller blades for tracking. The blades should track within 3/16” of each other at the tip. Setting the pitch accurately is more important than track from blade to blade.

CAUTION: Make sure the pitch setting gauge has been removed from the blades before starting the engine.

NOTE: Tachometer accuracy is critical for safe operation of the propeller: Verify accuracy.

7. Run your propeller for approximately 5 minutes at 50% cruise rpm then re-torque mounting and clamping bolts. It is not unusual for bolts to need re-torquing.

NOTE: This torque value should be checked after the first 5 hours of operation and at least once a year thereafter.

8. With the brakes on, run up the propeller to check your pitch for desired maximum rpm. Remember, the propeller will pick up RPM at full throttle/level flight. If rpm is too low, adjust blades to a lower pitch setting. If rpm is too high, adjust the blades to a higher pitch setting. Check your aircraft and/or engine manual for recommended static rpm. If you are not seeing your expected static rpm, verify the tach was properly calibrated.

9. Install spinner front plate (if required) and spinner dome (if used).

NOTE: Ensure there is adequate clearance between the spinner dome cutouts and the propeller blades and hub. Inadequate clearance may result in the spinner dome wearing into the blade or hub. The amount of clearance depends on engine type and spinner construction, but a minimum of 1/8” clearance is recommended.

6.1.2 Changing Propeller Blade Pitch

Required Tool List:
- Calibrated torque wrench
- Pitch setting gauge for measuring blade angle
- 7/16” socket (for torque wrench)
- 7/16” box wrench
- 1/2” socket (for torque wrench)
- 1/2” box wrench

If Propeller Blade Requires Re-pitching:
1. Be certain that the aircraft ignition switch or magneto is “OFF” and that all magnetos are grounded any time the propeller is handled.

2. Loosen the clamp and mount bolts.

3. With the pitch setting gauge in place, adjust the blade angle and snug down the two clamping bolts for that barrel to prevent unwanted rotation of the blade.

4. Rotate the propeller to the next blade and repeat step 3 for the remaining blade(s).

5. Using a calibrated torque wrench, torque the clamping and mounting bolts evenly using patterns and sequences shown in Figures 7 and 8. Tighten the bolts in several increments up to full torque, such as 50%, 75%, and full torque. See Table 1 for bolt torque values.

6.1.3 Propeller Removal and Disassembly

Required Tool List:
- 7/16” socket (for socket wrench)
- 7/16” box wrench
- 1/2” socket (for socket wrench)
- 1/2” box wrench
- Socket wrench

1. Be certain that the aircraft ignition switch or magneto is “OFF” and that all magnetos are grounded any time the propeller is handled.

2. Remove spinner dome from propeller assembly (if used).

NOTE: Some installations also have a spacer.

3. Remove aircraft propeller assembly by loosening and removing propeller hub mount bolts. Set the propeller on a flat surface.

4. Propeller blades may be removed from the hub by removing clamping bolts.

6.2 Warp Drive Propeller

Manufacturer	Warp Drive
Model Blade	70RWT3HPL
Model Hub	HPL
Number of Blades	3
Weight	3.870 kg / 8.530 lb
Pitch adjust	17 deg / (5100 rpm – 5500rpm)

Note: Consult the Propeller Manual for more details: Warp Drive Carbon Fiber Propeller, Operation and Installation Manual for Warp Drive Carbon Fiber Propeller.

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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

8.1 Dynon System

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

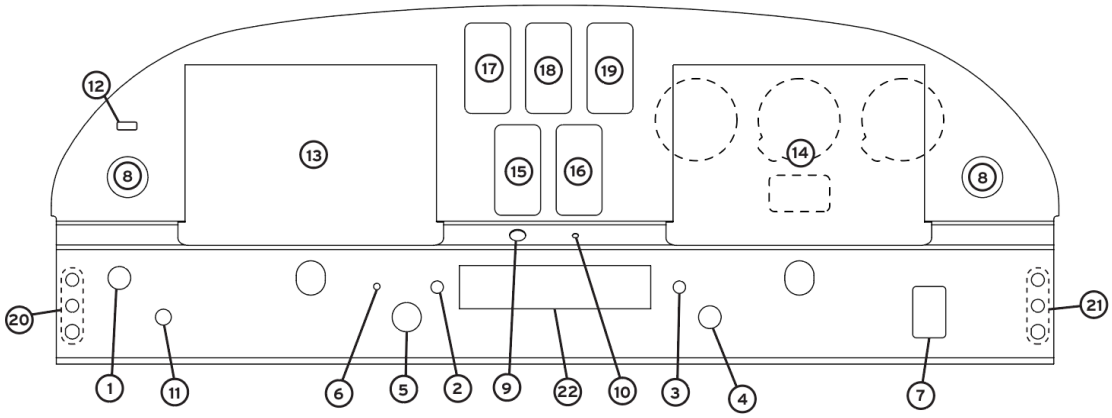

Figure 8.1.1 Instrument Panel

1. Ignition Switch
2. One circuit Breaker 25A*
3. Flap Control Switch
4. 12V Receptacle
5. USB Charger
6. Dimmer Control
7. ELT Remote Switch
8. Air Vents
9. Autopilot Disconnect Button
10. Comm 1 or 2 Transmit Switch
11. Choke Control Knob
12. EFIS Data USB

Avionics

13. Dynon Skyview HDX 10” PFD
14. Dynon Skyview HDX 10” MFD (Dynon Dual Screen option) – in the single option screen, the second display (MFD) is replaced by the follows analogs instruments:

- Airspeed
- Altimeter
- Vertical Speed Indicator
- Inclinometer

15. SV-AP-PANEL SkyView Autopilot
16. SV-KNOB-PANEL Autopilot
17. SV-COM-C25 SkyView VHF Com Radio 1
18. SV-COM-C25 SkyView VHF Com Radio 2 (optional)
19. SV-INTERCOM-2S Two Place
20. Pilot Headset (Mic/Phone/6 pin)
21. Co-pilot Headset (Mic/Phone/ 6pin)

Multi Switch Skymaster

- EFIS

22. Skymaster*
    - Avionics
    - Alternator
    - Electric Pump
    - Strobe Lights
    - Navigation Lights
    - Land Light
    - Taxi Light
    - Panel (Dome Light)

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

8.2 Garmin System

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

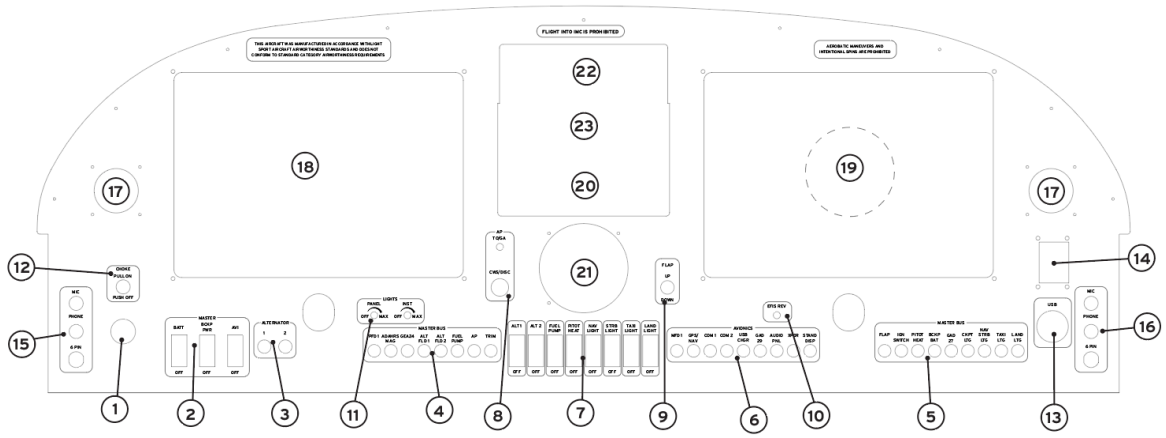

Figure 8.2.1 Instrument Panel for Garmin System

1. Ignition Switch
2. Master Switches
3. Alternator Circuit Breakers*
4. Master Buss 1*
5. Master Buss 2*
6. Avionics Buss*
7. Switches*
8. Autopilot Engage
9. Flap Switches
10. EFIS Reversionary Switch
11. Instruments and Panel Light
12. Choke Control Knob
13. Dual USB Charger
14. ELT Remote Switch
15. Pilot Headset Jacks
16. Co-pilot Headset Jacks
17. Air Vents

Avionics

18. G3X Touch 10.6” PFD
19. G3X Touch 10.6” MFD (Garmin Dual Screen Option) - in the single option screen, the second display (MFD) is replaced by the item 21 (G5 Standby Flight Display)
20. GTN 650XI Black GPS / NAV / COMM (optional)
21. G5 Standby Flight Display
22. GMC 507 Autopilot Control Panel
23. GMA 245 Audio Panel

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

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9 Electrical System

9.1 Dynon System

9.1.1 Main Power

The main power is supplied by the integrated AC generator of 250W with external rectifier/regulator 14.2 VDC, rated to 22A at 5800 rpm, which recharges the battery in normal operation. The secondary source is supplied by the battery, with capacity of 16 Ah, which feeds the electrical consumption when the engine is turned off or in case of alternator failure. The total electrical load during flight is rated to 17.1 A, allowing the electrical supply only by the battery for a minimum of 45 minutes assuming the battery capacity is 80%. The master relay enables the electrical supply into the circuit, feeding the central multi switch SkyMaster and allowing the engine start-up. A circuit breaker of 25A is installed to protect the electrical system.

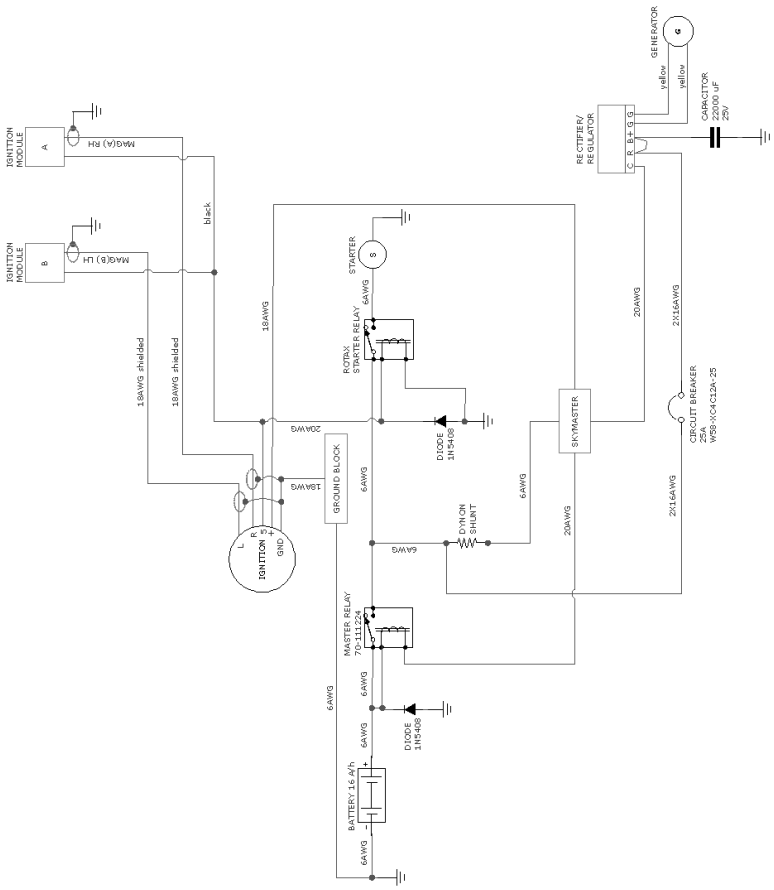

Figure 9.1. Electrical System Diagram.

CAUTION

Before any electrical component substitution, disconnect the battery source from the electrical system.

9.1.2 ADSB Diagram

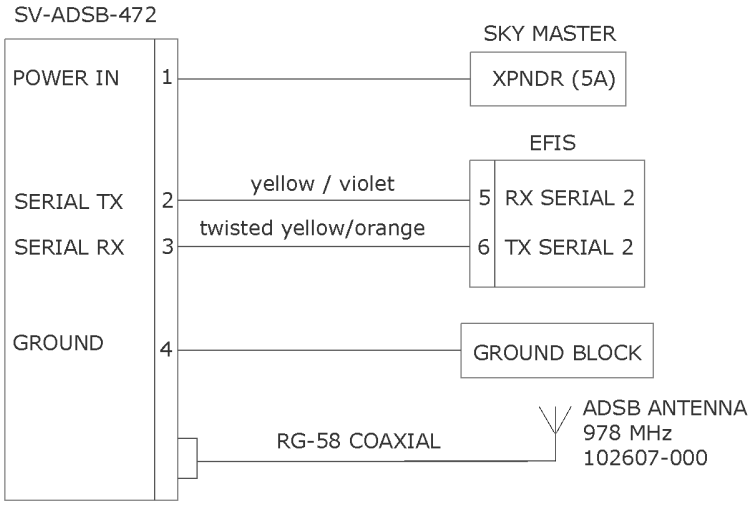

Figure 9.1.1. ADSB Diagram.

9.1.3 Auto Trim Diagram

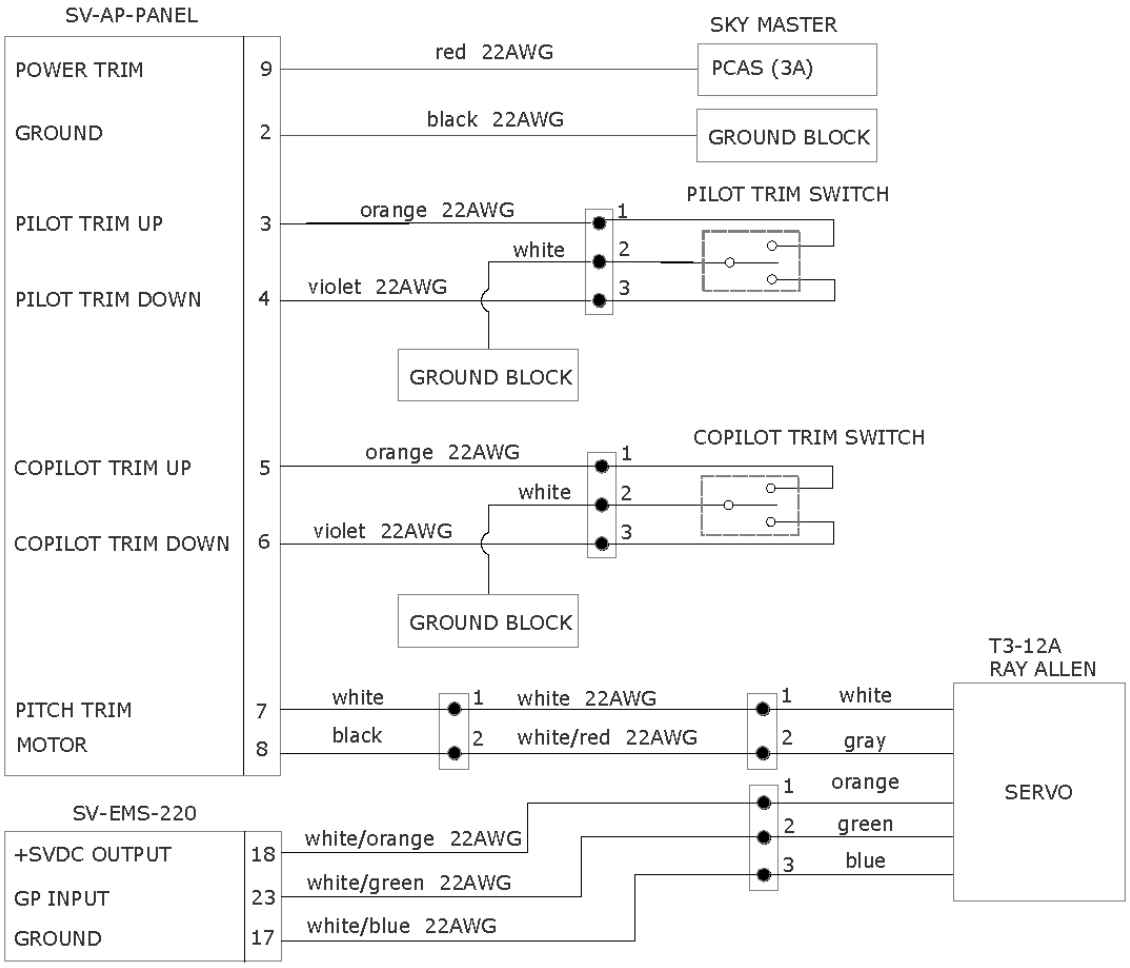

Figure 9.2.1. Auto Trim.

9.1.4 12V Receptable Diagram

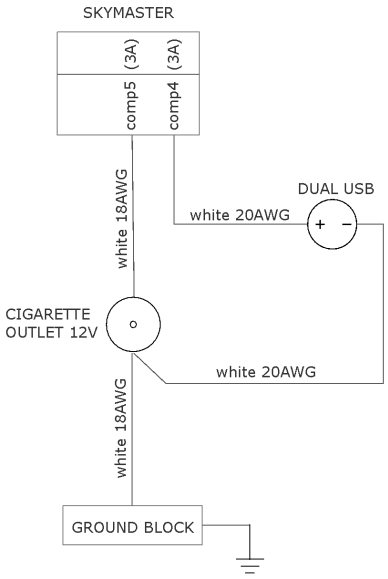

Figure 9.3.1. 12V Receptacle/USB Diagram.

9.1.5 Cockpit Lights Diagram

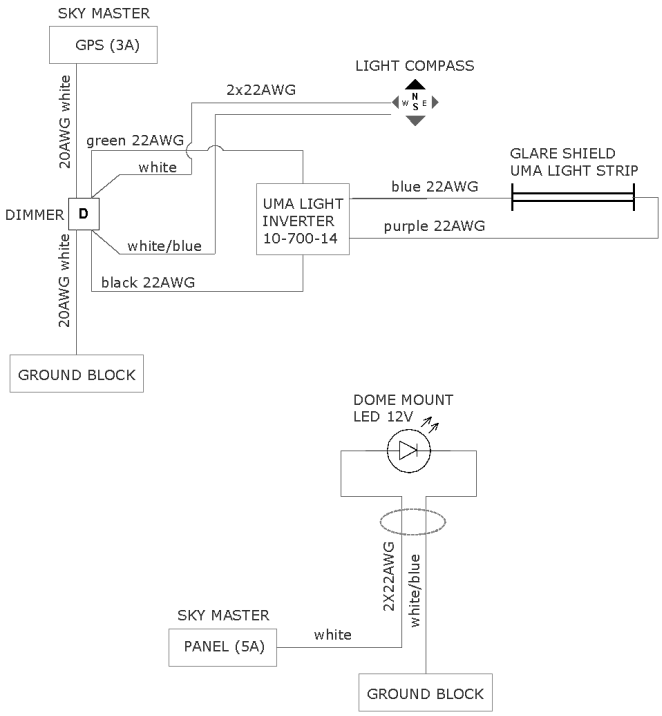

Figure 9.4.1. Cockpit Lights Diagram.

9.1.6 COMM Diagram

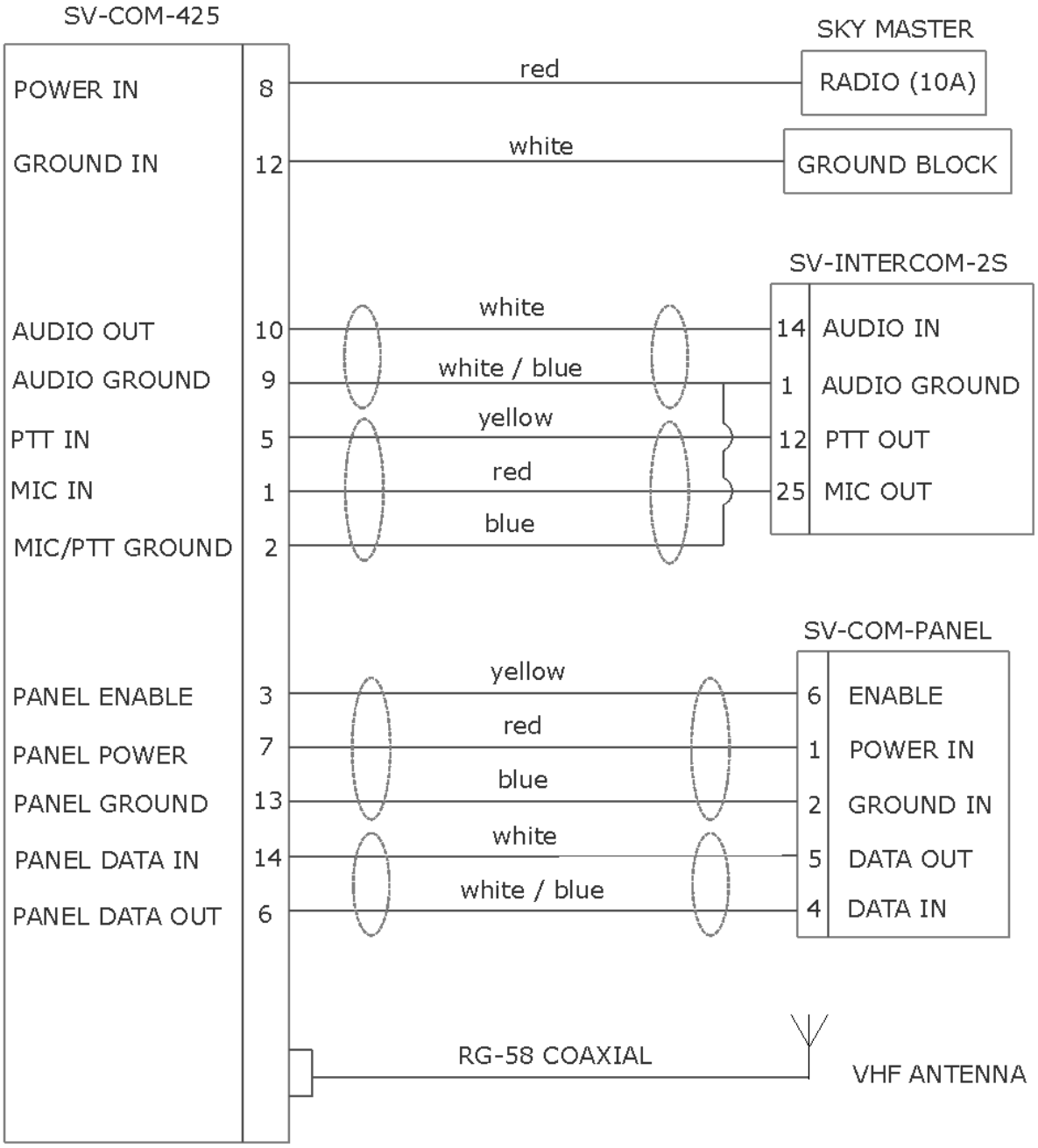

Figure 9.5.1. Comm #1 Diagram.

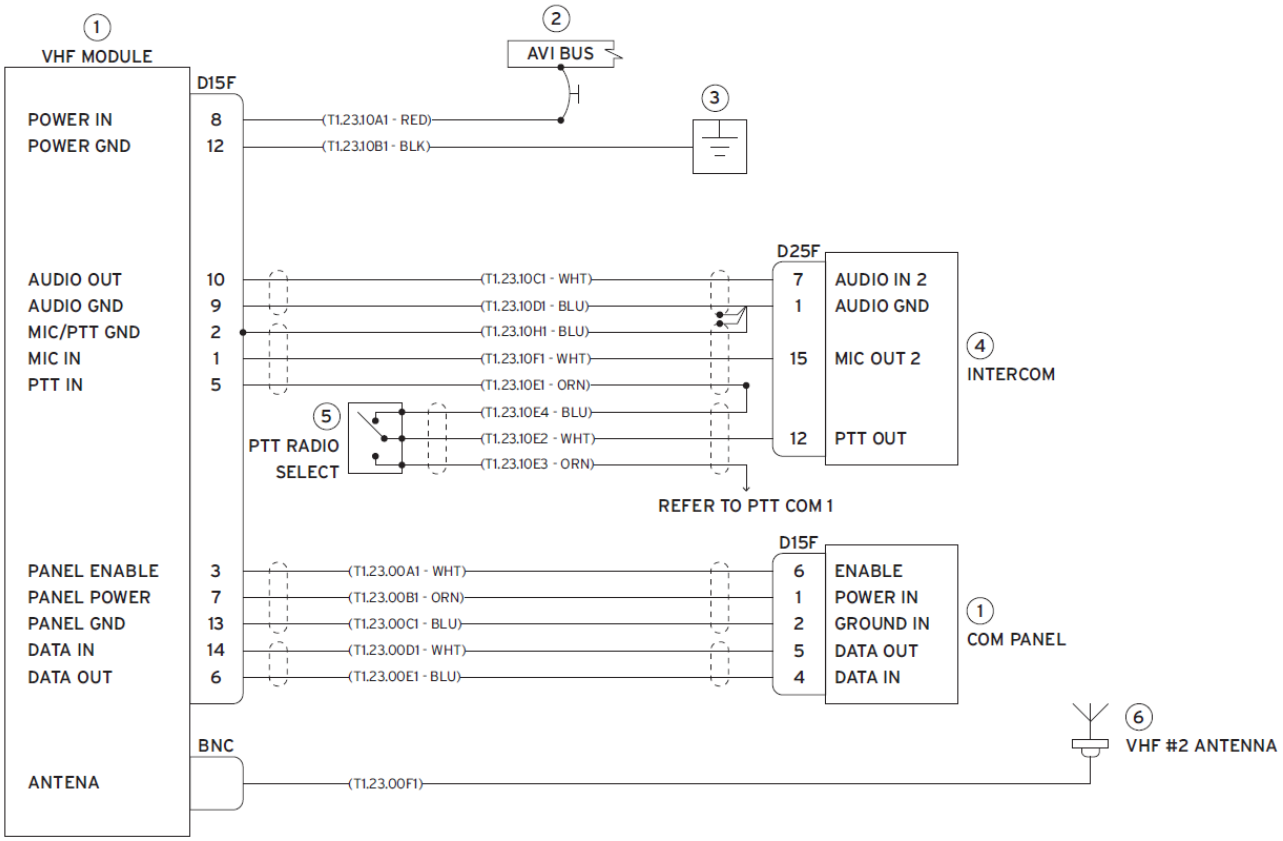

Figure 9.5.2. Comm #2 Diagram.

9.1.7 EFIS Diagram

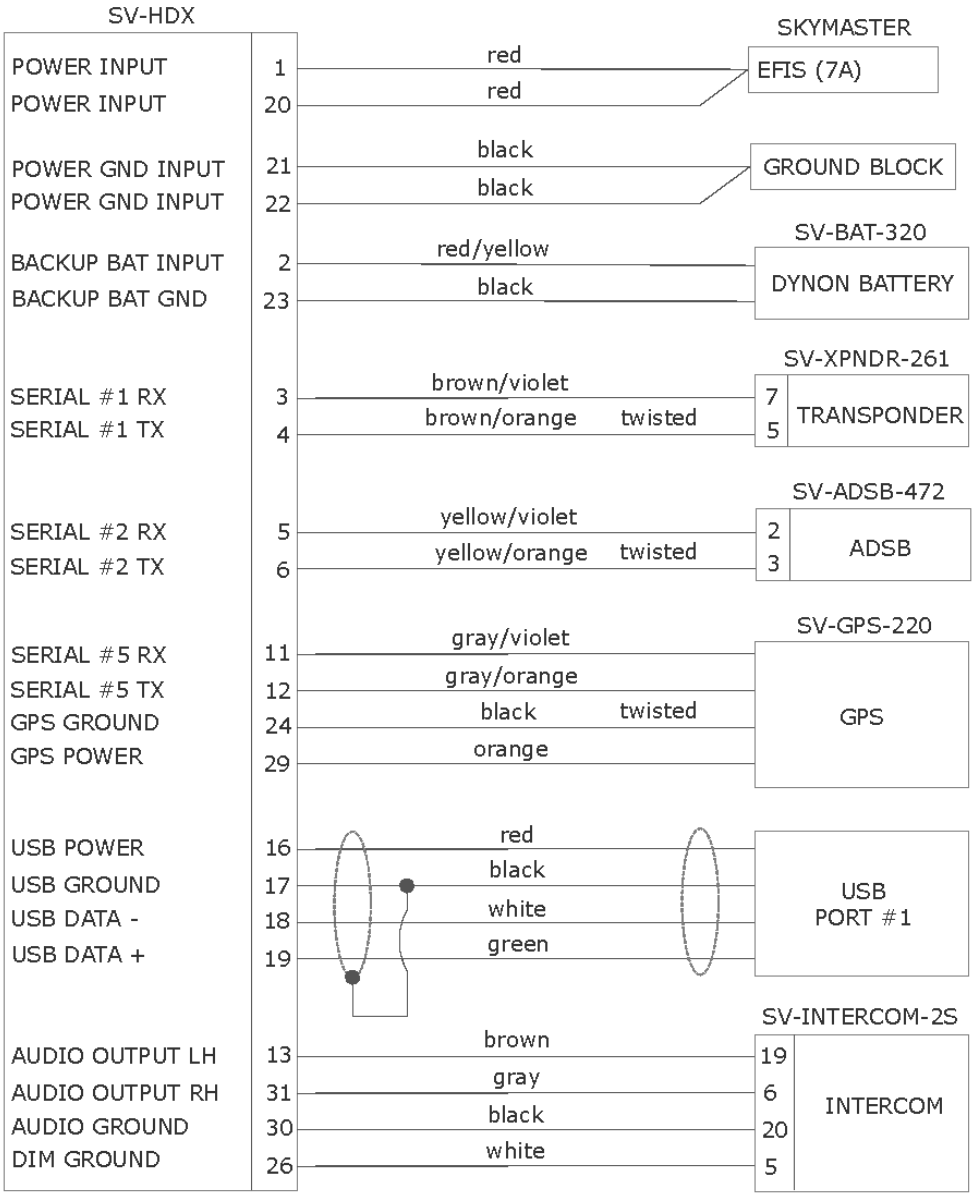

Figure 9.6.1. EFIS Diagram.

9.1.8 ELT Diagram

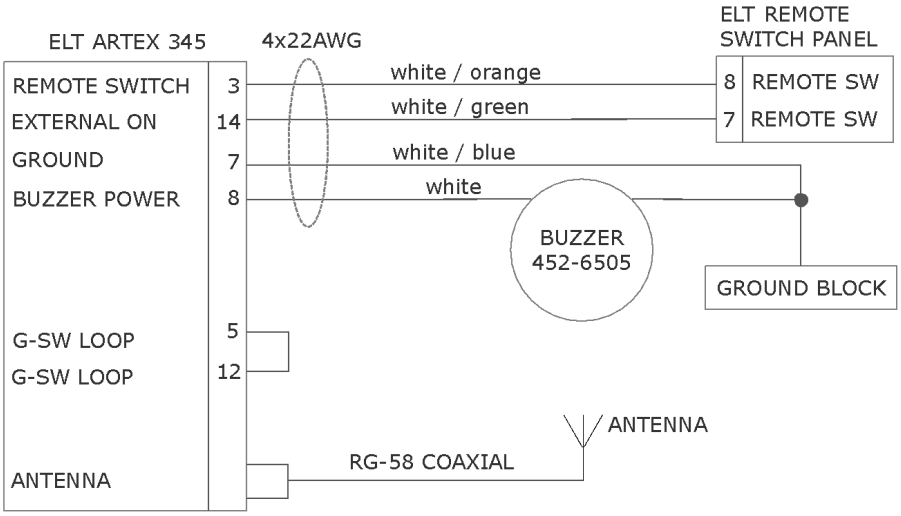

Figure 9.7.1. ELT Diagram.

9.1.9 Flap Diagram

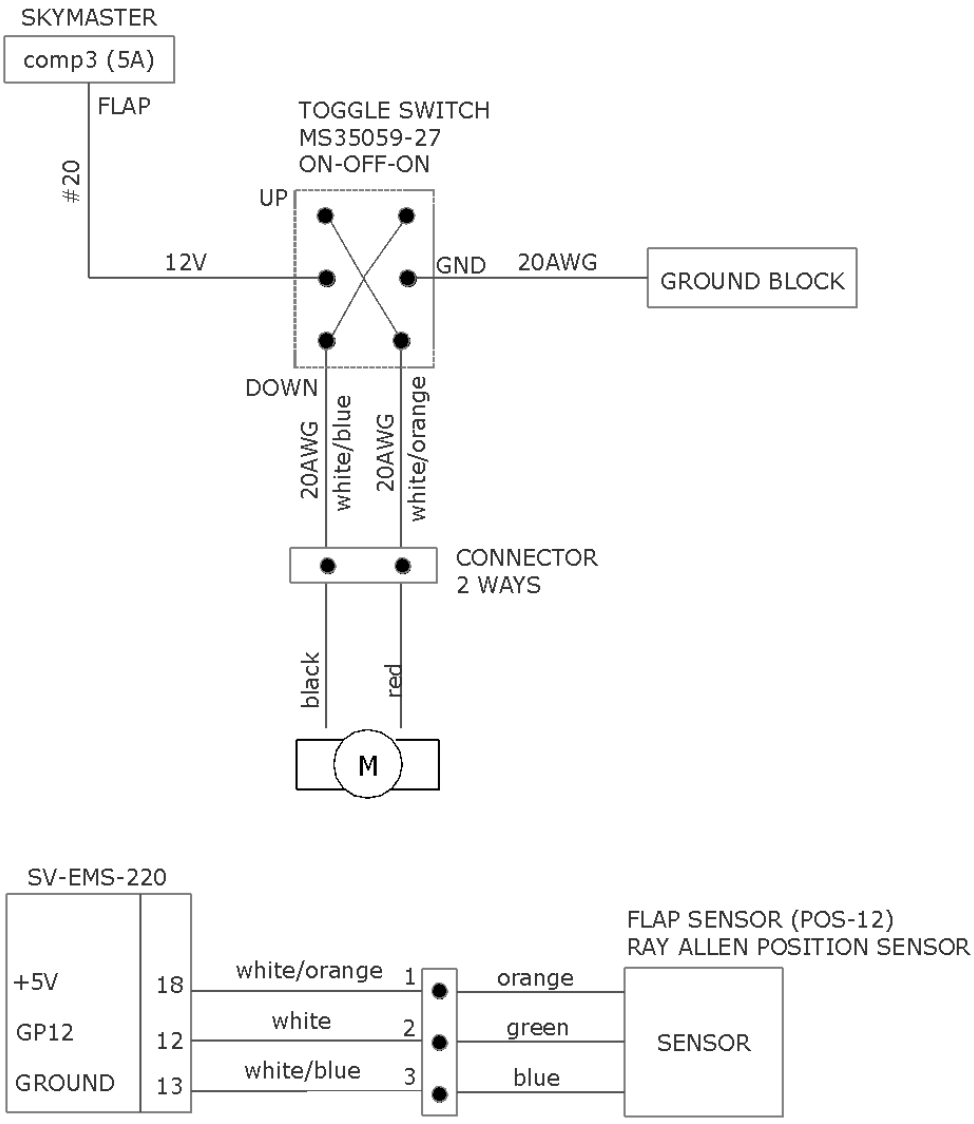

Figure 9.8.1. Flap Diagram.

9.1.10 Intercom Diagram

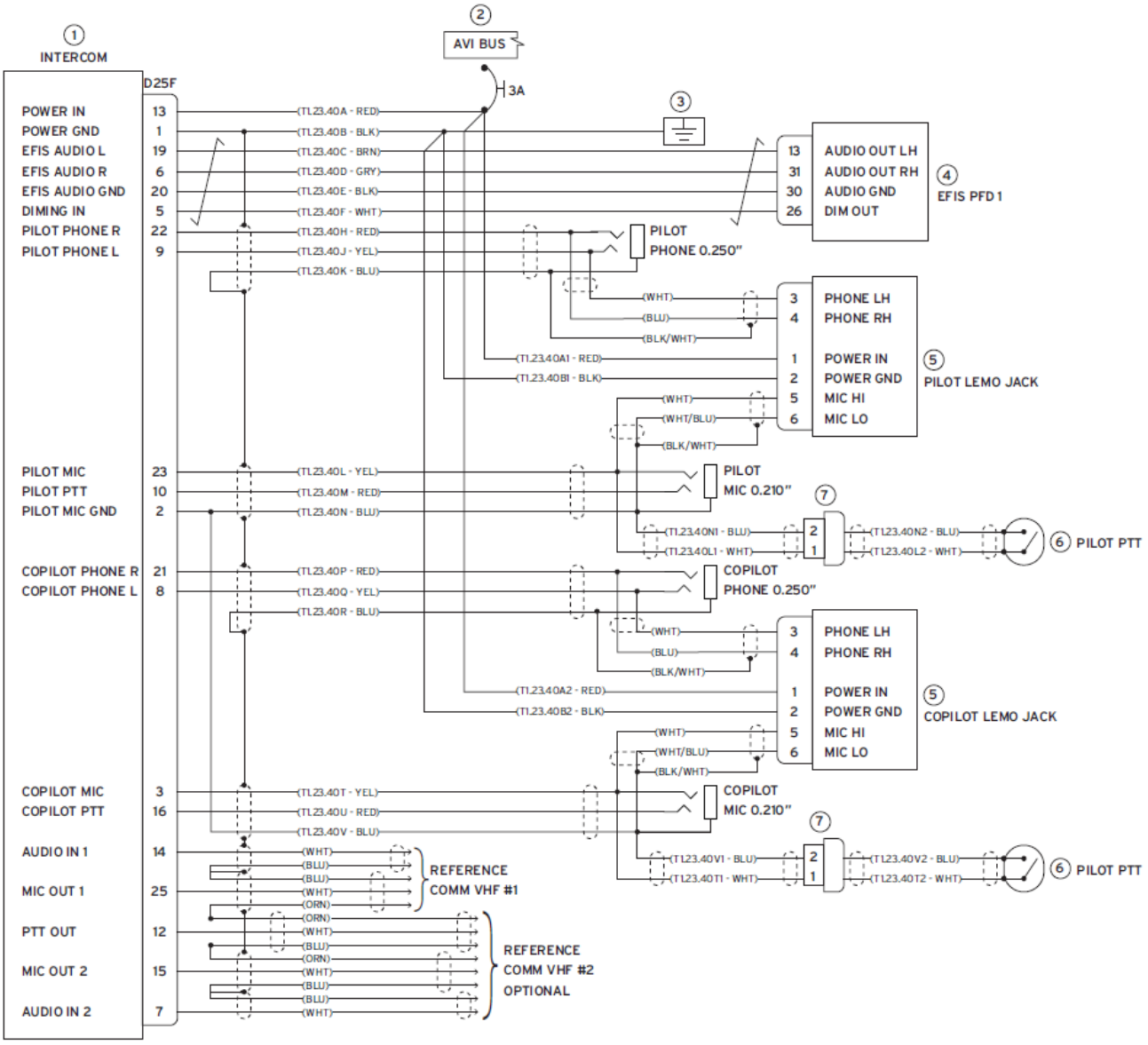

Figure 9.9.1. Intercom Diagram.

9.1.11 Landing / Taxi Lights Diagram

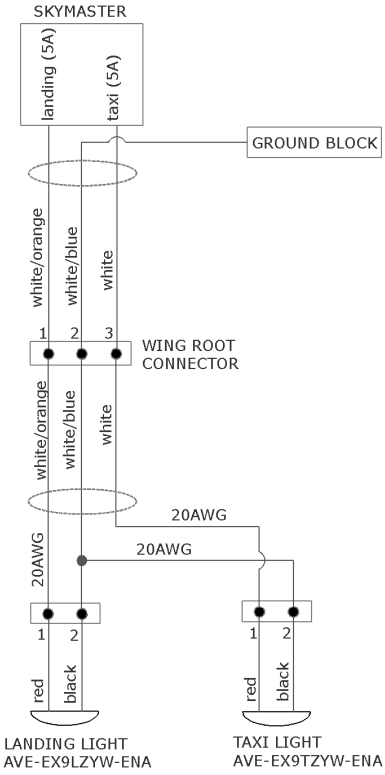

Figure 9.10.1. Landing / Taxi Lights Diagram.

9.1.12 Nav Lights Diagram

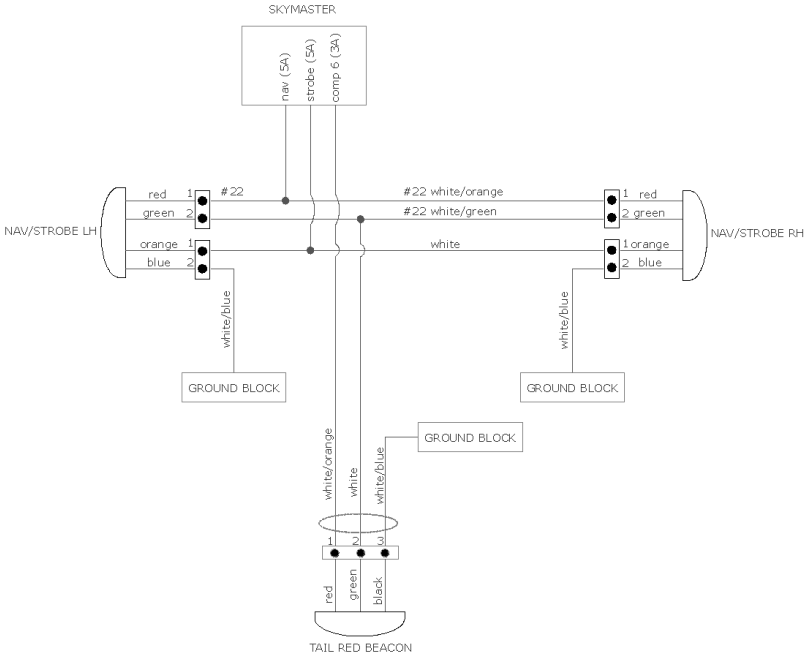

Figure 9.11.1. Nav Lights Diagram.

9.1.13 Sensors Diagram

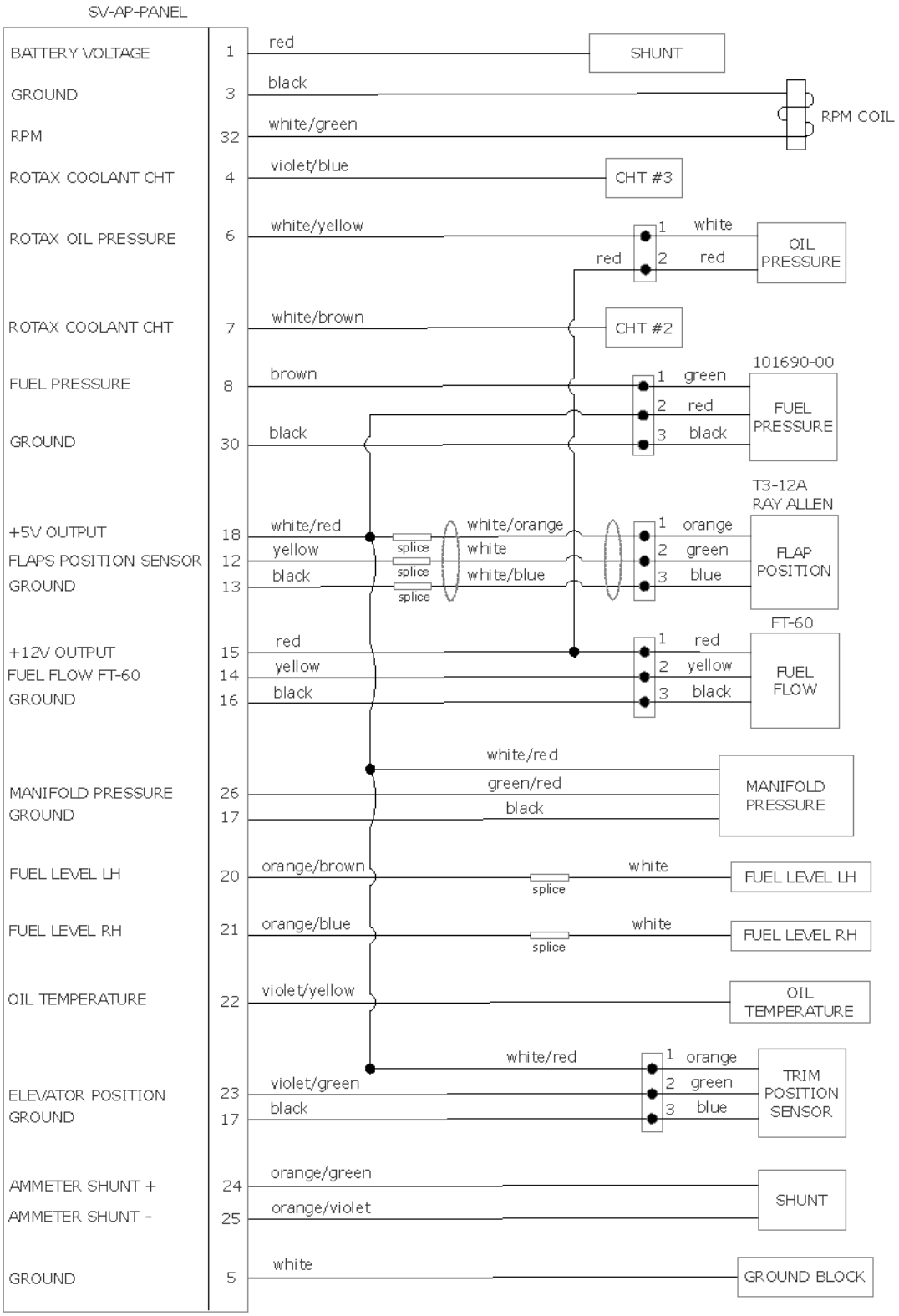
SV-AP-PANEL
BATTERY VOLTAGE 1
GROUND 3
RPM 32
ROTAX COOLANT CHT 4
ROTAX OIL PRESSURE 6
ROTAX COOLANT CHT 7
FUEL PRESSURE 8
GROUND 30
+5V OUTPUT 18
FLAPS POSITION SENSOR 12
GROUND 13
+12V OUTPUT 15
FUEL FLOW FT-60 14
GROUND 16
MANIFOLD PRESSURE 26
GROUND 17
FUEL LEVEL LH 20
FUEL LEVEL RH 21
OIL TEMPERATURE 22
ELEVATOR POSITION 23
GROUND 17
AMMETER SHUNT + 24
AMMETER SHUNT - 25
GROUND 5
red
SHUNT
black
white/green
RPM COIL
violet/blue
CHT #3
white/yellow
white
red
OIL PRESSURE
white/brown
CHT #2
brown
green
red
black
101690-00
FUEL PRESSURE
white/red
yellow
black
splice
white/orange
white
white/blue
orange
green
blue
T3-12A RAY ALLEN
FLAP POSITION
red
yellow
black
FT-60
FUEL FLOW
white/red
green/red
black
MANIFOLD PRESSURE
orange/brown
white
FUEL LEVEL LH
orange/blue
FUEL LEVEL RH
violet/yellow
OIL TEMPERATURE
violet/green
TRIM POSITION SENSOR
orange/green
orange/violet
SHUNT
white
GROUND BLOCK

Figure 9.12.1. Sensors Diagram.

9.1.14 SkyView Network

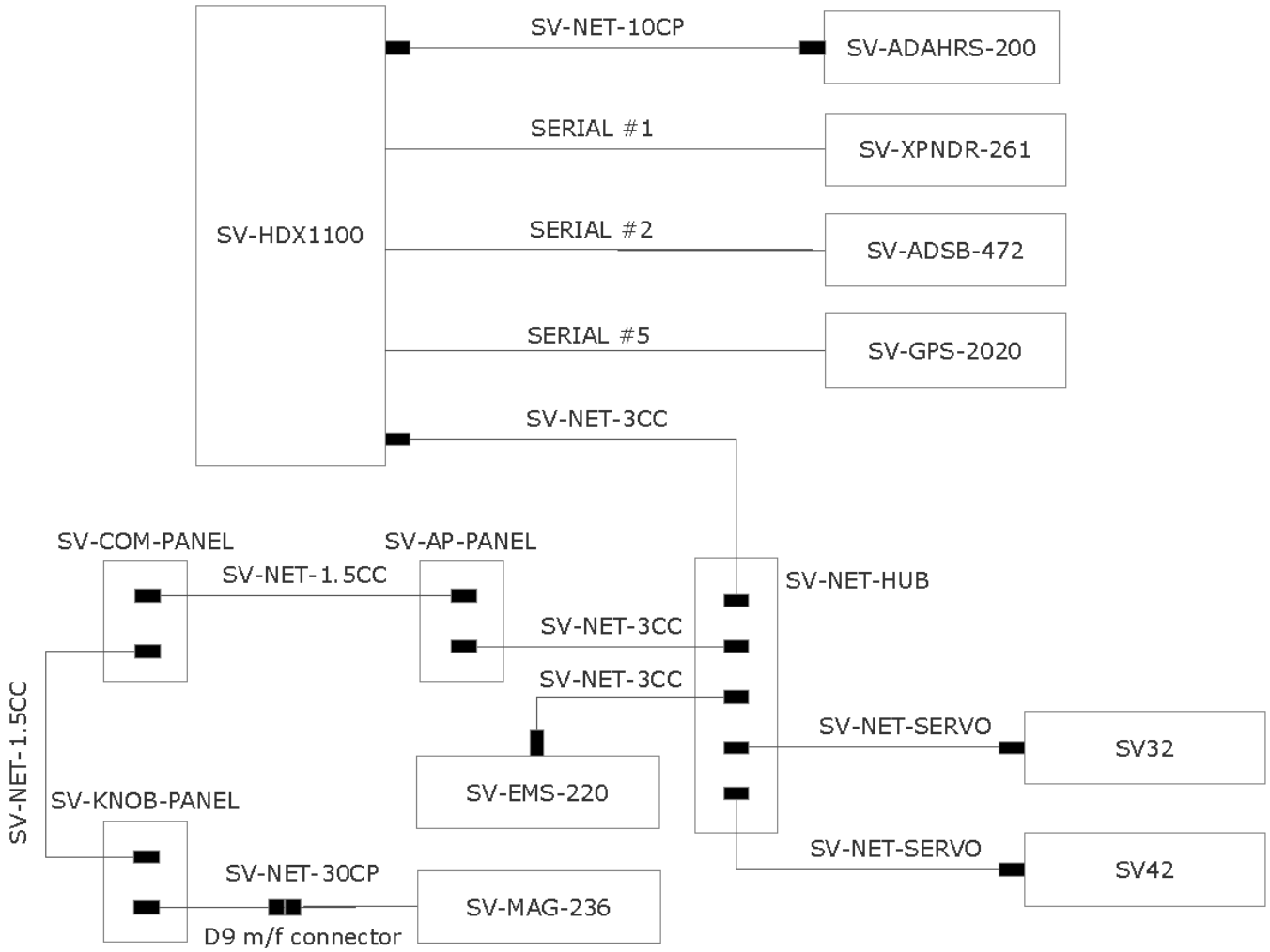

Figure 9.13.1. SkyView Network Diagram.

9.1.15 SkyView WASS

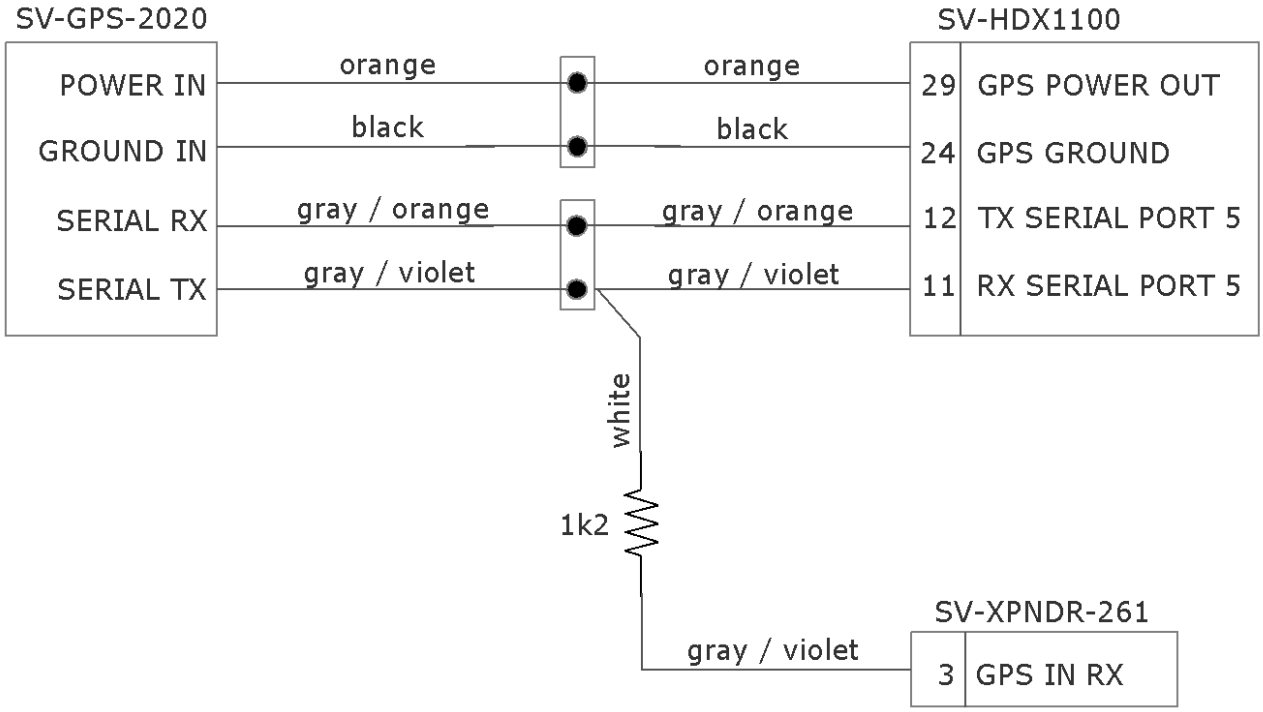

Figure 9.14.1. SkyView WASS Diagram.

9.1.16 Pitot / Static / AOA

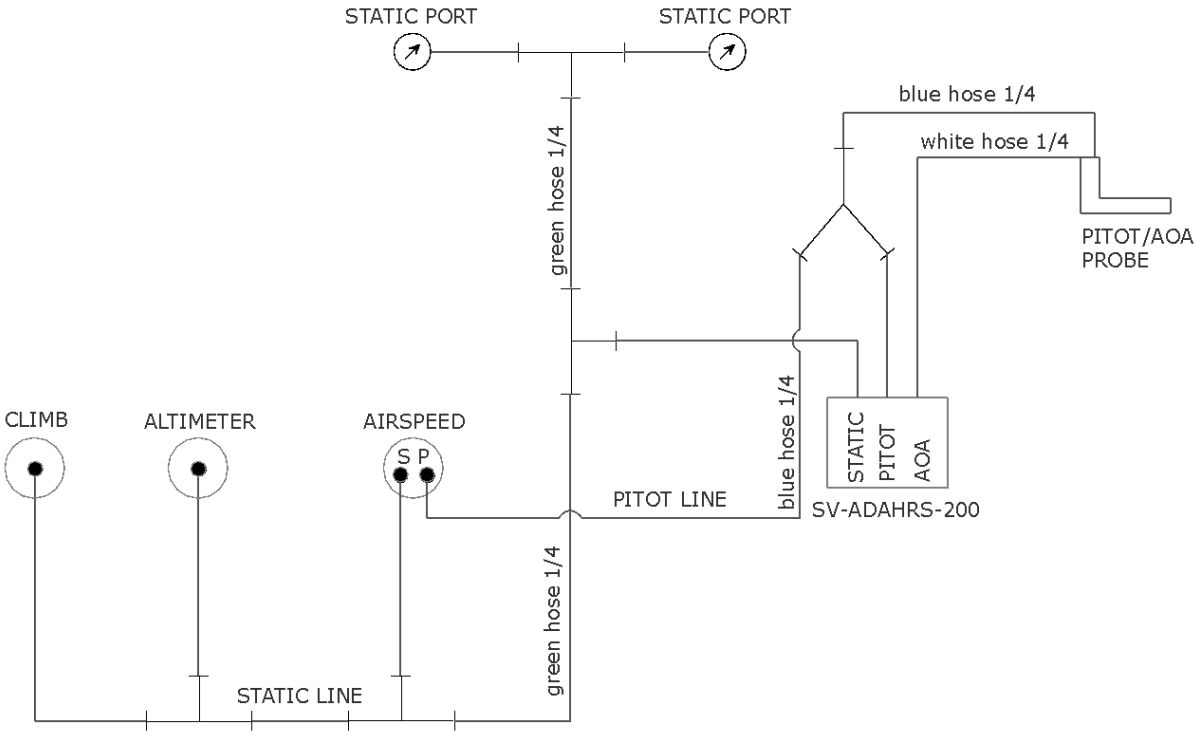

Figure 9.15.1. Pitot/Static/AOA System.

9.1.17 Switches

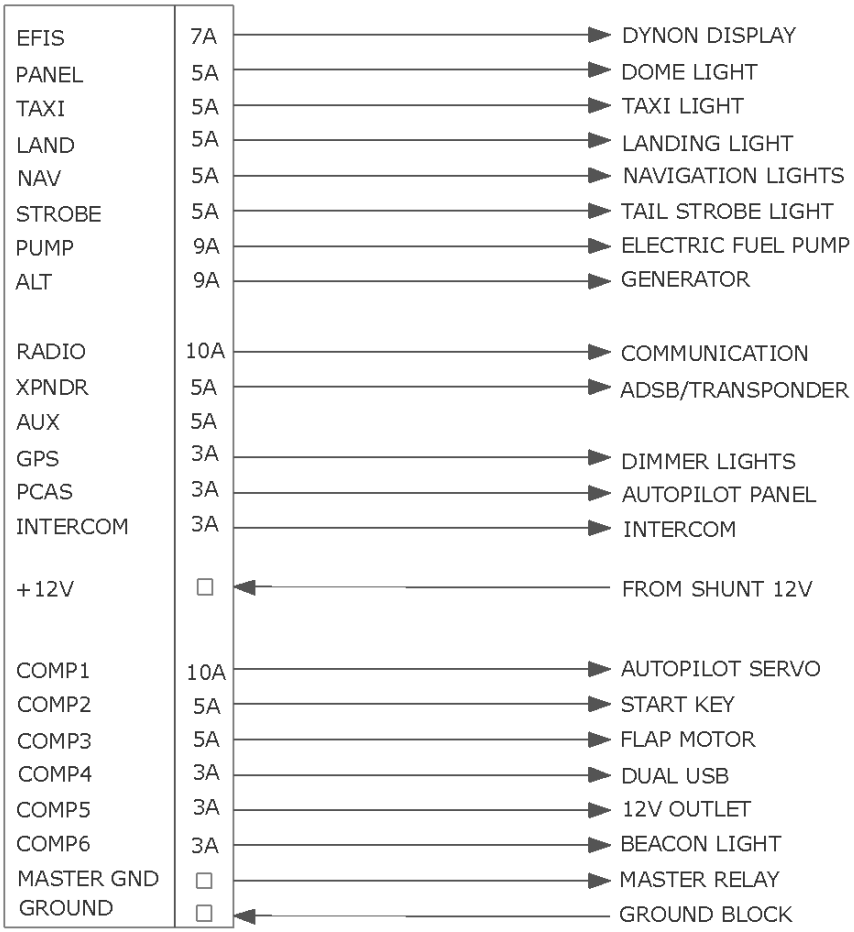

Figure 9.16.1. Internal Switch Diagram.

9.1.18 Transponder Diagram

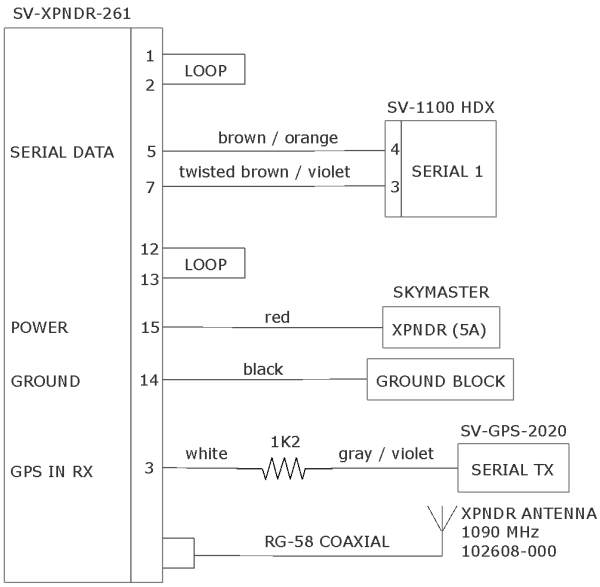

Figure 9.17.1. Transponder Diagram.

9.2 Garmin System

9.2.1 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 buss, and allowing engine start-up. Two circuit breakers of 50A and 25A are installed to protect the electrical system.

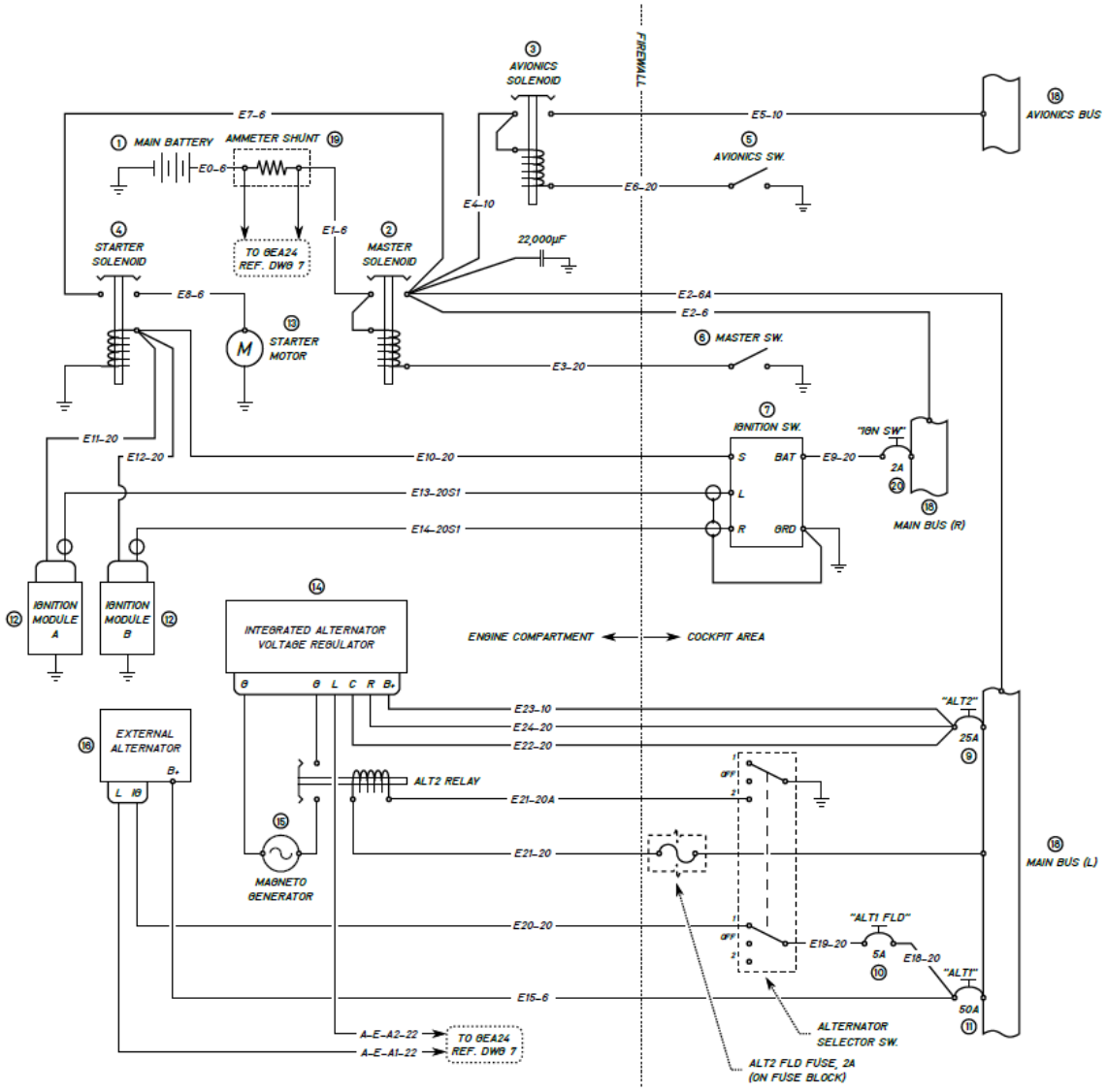

Figure 9.2.1.1. Main Power Diagram

9.2.2 Emergency Power

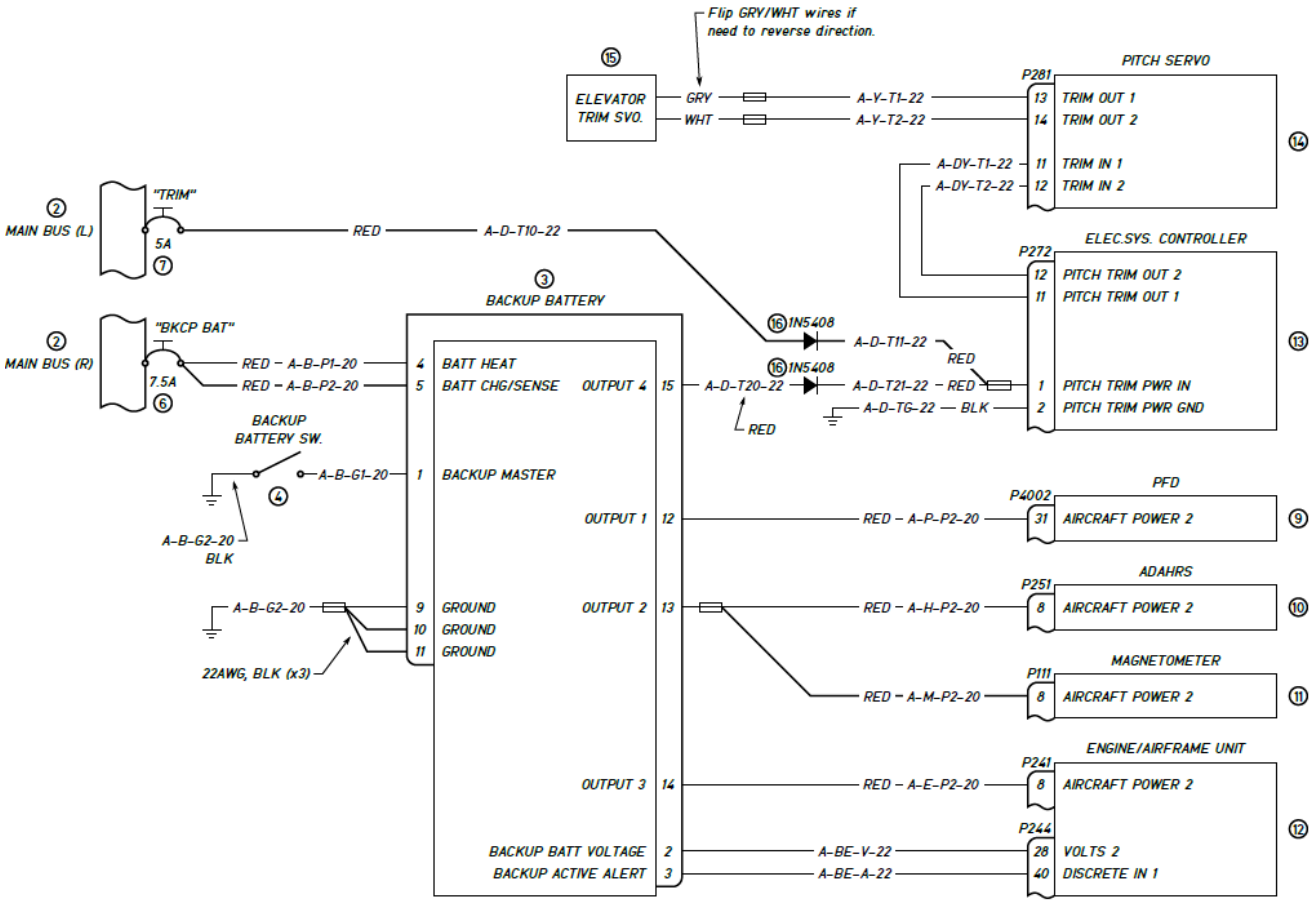

Figure 9.2.2.1. Emergency Power Diagram

9.2.3 GDU460 PFD System

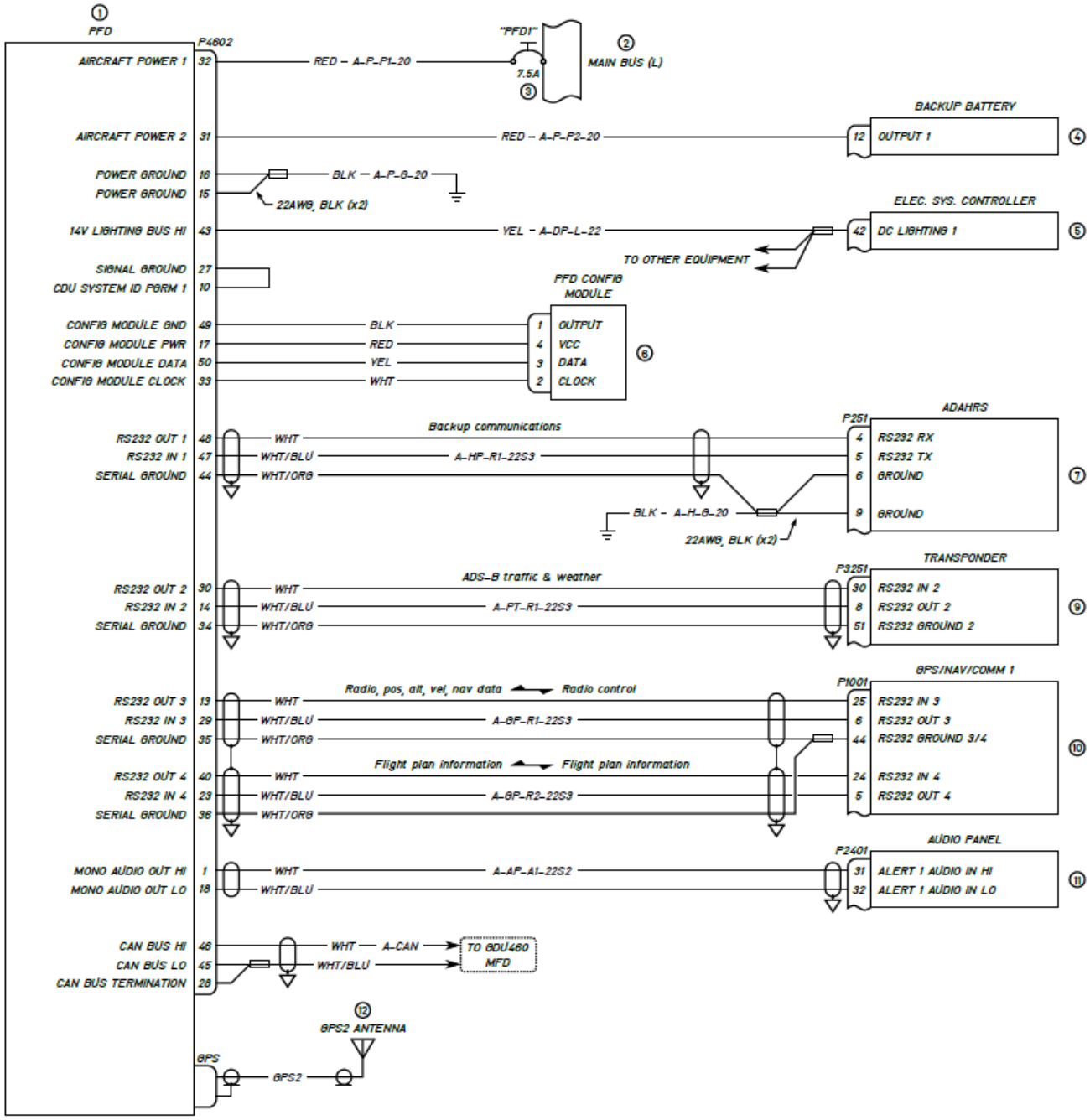

Figure 9.2.3.1. GDU 460 PFD Diagram

9.2.4 GDU 460 MFD System

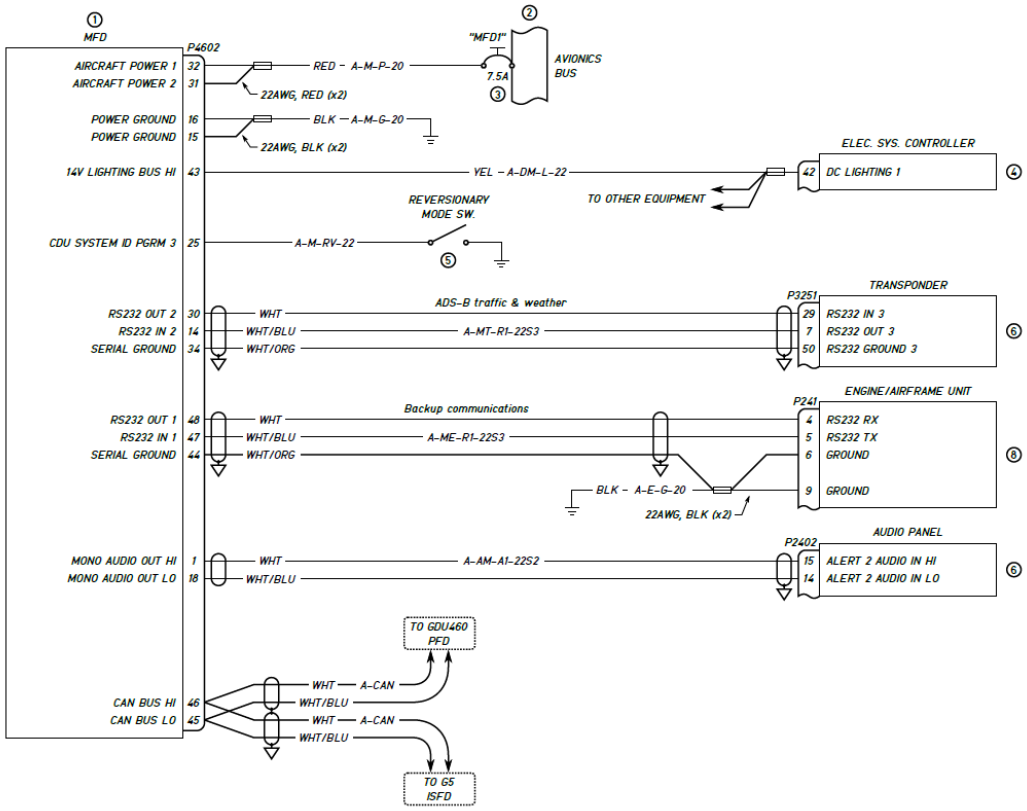

Figure 9.2.4.1. GDU 460 MFD Diagram

9.2.5 GAD 29 Data Concentrator

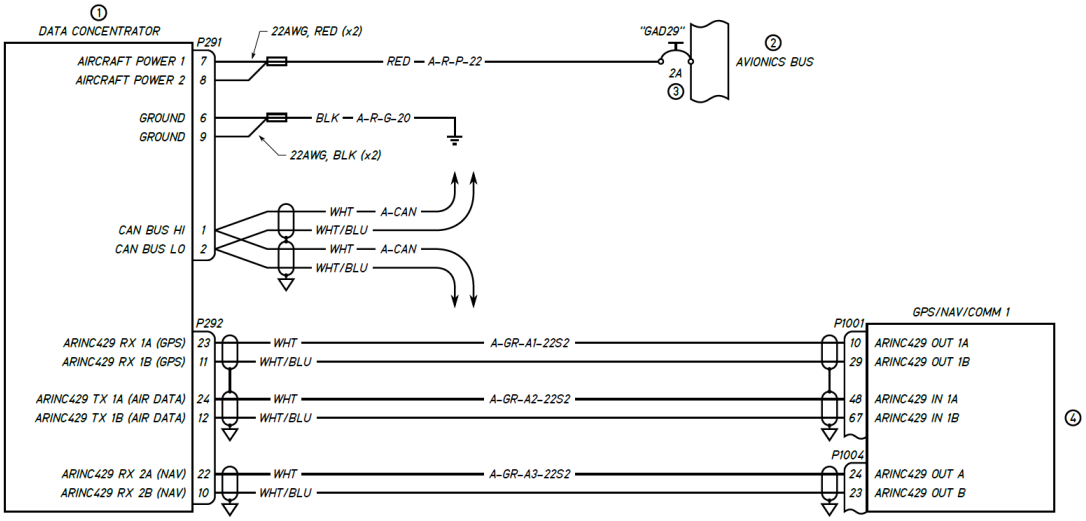

Figure 9.2.14.1. GAD 29 Diagram

9.2.6 GSU 25C ADAHRS System

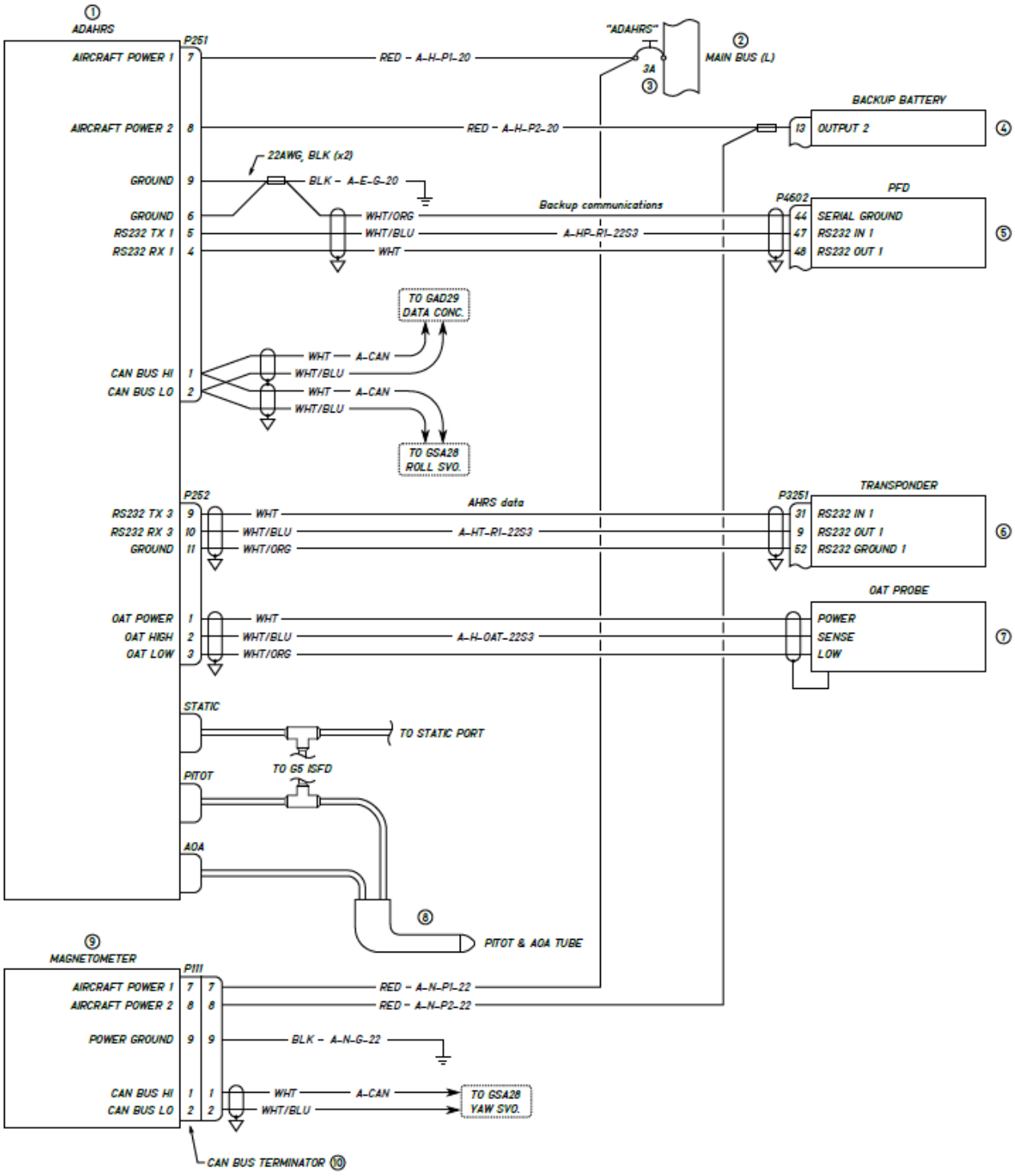

Figure 9.2.5.1. GSU 25 C ADARHS Diagram

9.2.7 Auto Pilot System

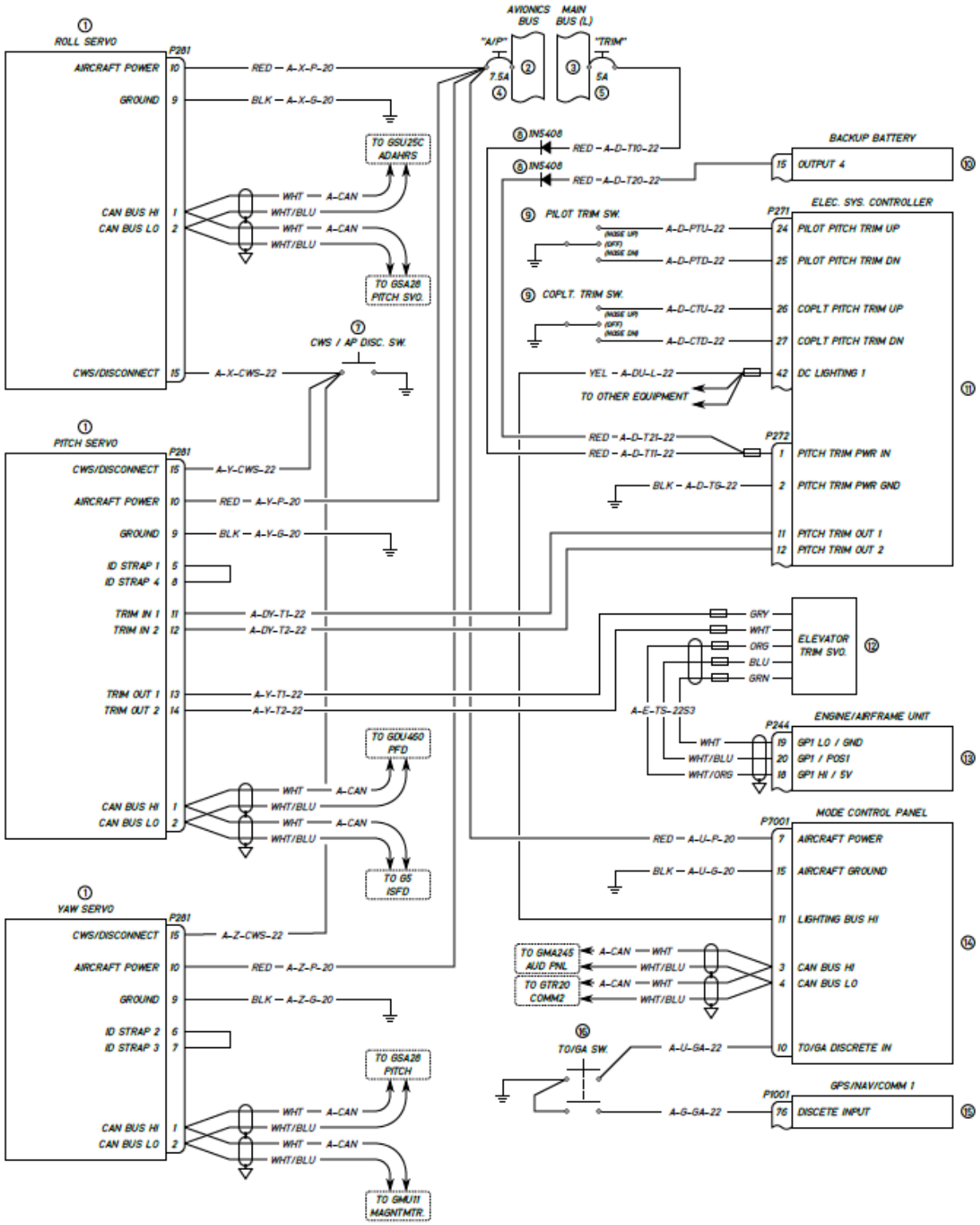
ROLL SERVO
P281
AIRCRAFT POWER 10
GROUND 9
CAN BUS HI 1
CAN BUS LO 2
CWS/DISCONNECT 15
RED – A-X-P-20
BLK – A-X-G-20
WHT – A-CAN
WHT/BLU
WHT – A-CAN
WHT/BLU
A-X-CWS-22
TO GSU25C ADAHRS
TO GSA28 PITCH SVO.
CWS / AP DISC. SW.
PITCH SERVO
P281
CWS/DISCONNECT 15
AIRCRAFT POWER 10
GROUND 9
ID STRAP 1 5
ID STRAP 4 8
TRIM IN 1 11
TRIM IN 2 12
TRIM OUT 1 13
TRIM OUT 2 14
CAN BUS HI 1
CAN BUS LO 2
A-Y-CWS-22
RED – A-Y-P-20
BLK – A-Y-G-20
A-DY-T1-22
A-DY-T2-22
A-Y-T1-22
A-Y-T2-22
WHT – A-CAN
WHT/BLU
WHT – A-CAN
WHT/BLU
TO GDU460 PFD
TO G5 ISFD
YAW SERVO
P281
CWS/DISCONNECT 15
AIRCRAFT POWER 10
GROUND 9
ID STRAP 2 6
ID STRAP 3 7
CAN BUS HI 1
CAN BUS LO 2
A-Z-CWS-22
RED – A-Z-P-20
BLK – A-Z-G-20
WHT – A-CAN
WHT/BLU
WHT – A-CAN
WHT/BLU
TO GSA28 PITCH
TO GMU11 MAGNTMTR.
AVIONICS BUS
MAIN BUS (L)
"A/P"
"TRIM"
7.5A
5A
IN5408
IN5408
RED – A-D-T10-22
RED – A-D-T20-22
BACKUP BATTERY
OUTPUT 4
ELEC. SYS. CONTROLLER
P271
PILOT TRIM SW.
COPLT. TRIM SW.
A-D-PTU-22
A-D-PTD-22
A-D-CTU-22
A-D-CTD-22
PILOT PITCH TRIM UP
PILOT PITCH TRIM DN
COPLT PITCH TRIM UP
COPLT PITCH TRIM DN
YEL – A-DU-L-22
TO OTHER EQUIPMENT
DC LIGHTING 1
P272
RED – A-D-T21-22
RED – A-D-T11-22
BLK – A-D-TS-22
PITCH TRIM PWR IN
PITCH TRIM PWR GND
PITCH TRIM OUT 1
PITCH TRIM OUT 2
GRY
WHT
ORG
BLU
GRN
A-E-TS-22S3
ELEVATOR TRIM SVO.
ENGINE/AIRFRAME UNIT
P244
WHT
WHT/BLU
WHT/ORG
GP1 LO / GND
GP1 / POS1
GP1 HI / 5V
MODE CONTROL PANEL
P7001
RED – A-U-P-20
BLK – A-U-G-20
AIRCRAFT POWER
AIRCRAFT GROUND
LIGHTING BUS HI
TO GMA245 AUD PNL
TO GTR20 COMM2
A-CAN
WHT
WHT/BLU
CAN BUS HI
CAN BUS LO
TO/GA SW.
A-U-GA-22
TO/GA DISCRETE IN
GPS/NAV/COMM 1
P1001
A-G-GA-22
DISCETE INPUT

Figure 9.2.7.1. Autopilot Diagram

9.2.8 GEA 24 Engine Airframe System

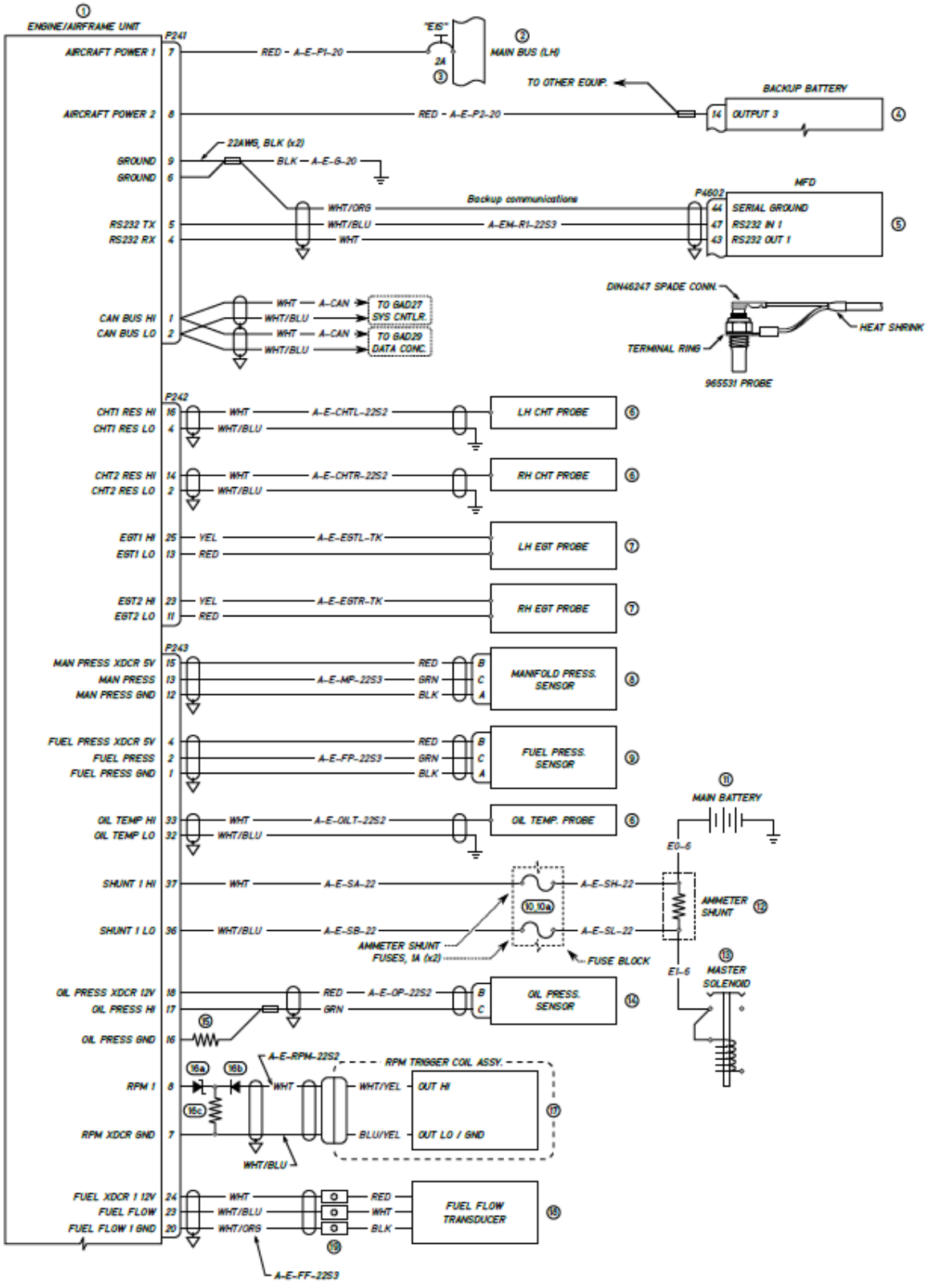
ENGINE/AIRFRAME UNIT
P241
AIRCRAFT POWER 1
AIRCRAFT POWER 2
GROUND
GROUND
RS232 TX
RS232 RX
CAN BUS HI
CAN BUS LO
"EIS"
MAIN BUS (LH)
TO OTHER EQUIP.
BACKUP BATTERY
OUTPUT 3
22AWG, BLK (x2)
Backup communications
MFD
SERIAL GROUND
RS232 IN 1
RS232 OUT 1
TO GAD27 SYS CNTLR.
TO GAD29 DATA CONC.
DIN46247 SPADE CONN.
HEAT SHRINK
TERMINAL RING
965531 PROBE
P242
CHT1 RES HI
CHT1 RES LO
CHT2 RES HI
CHT2 RES LO
LH CHT PROBE
RH CHT PROBE
EGT1 HI
EGT1 LO
EGT2 HI
EGT2 LO
LH EGT PROBE
RH EGT PROBE
P243
MAN PRESS XDCR 5V
MAN PRESS
MAN PRESS GND
MANIFOLD PRESS. SENSOR
FUEL PRESS XDCR 5V
FUEL PRESS
FUEL PRESS GND
FUEL PRESS. SENSOR
OIL TEMP HI
OIL TEMP LO
OIL TEMP. PROBE
MAIN BATTERY
SHUNT 1 HI
SHUNT 1 LO
AMMETER SHUNT FUSES, 1A (x2)
FUSE BLOCK
AMMETER SHUNT
MASTER SOLENOID
OIL PRESS XDCR 12V
OIL PRESS HI
OIL PRESS GND
OIL PRESS. SENSOR
RPM TRIGGER COIL ASSY.
RPM 1
RPM XDCR GND
OUT HI
OUT LO / GND
FUEL XDCR 1 12V
FUEL FLOW
FUEL FLOW 1 GND
FUEL FLOW TRANSDUCER

Figure 9.2.7.1. GEA 24 Diagram

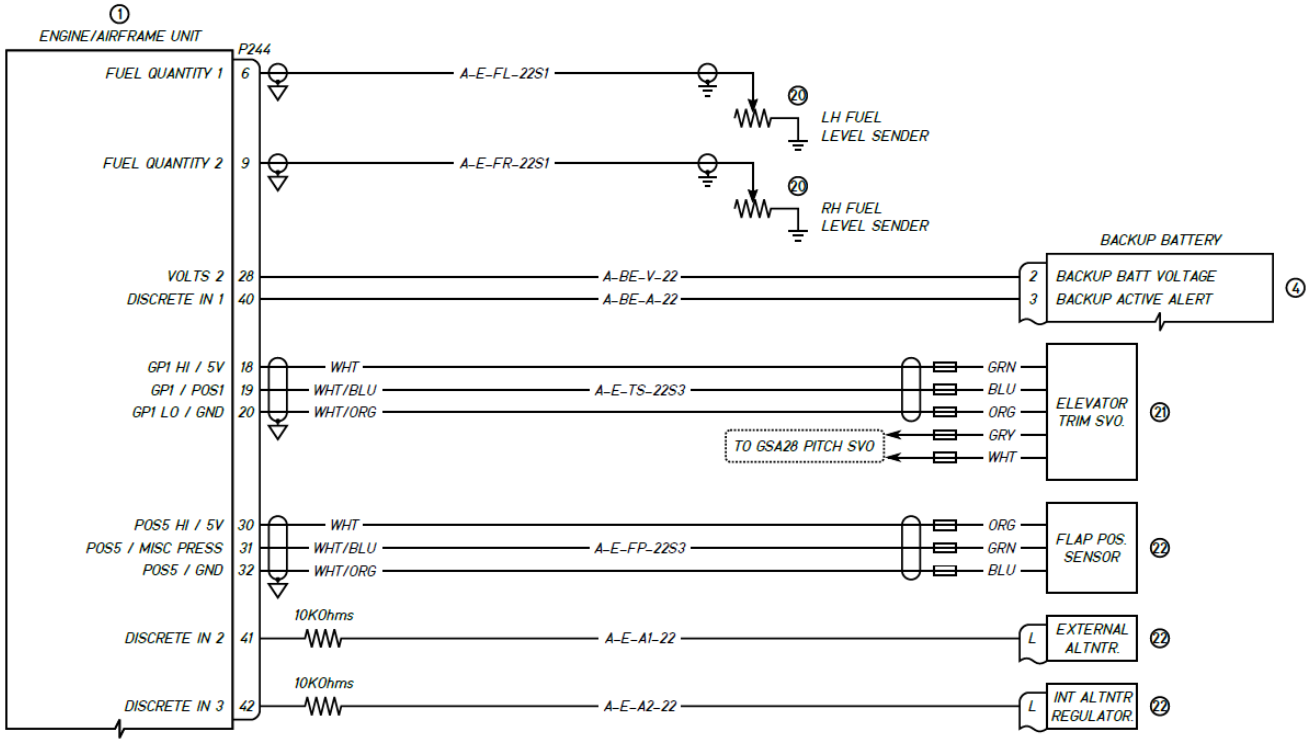

Figure 9.2.7.2. GEA 24 Diagram (continued)

9.2.9 GAD 27 Electrical Controller System

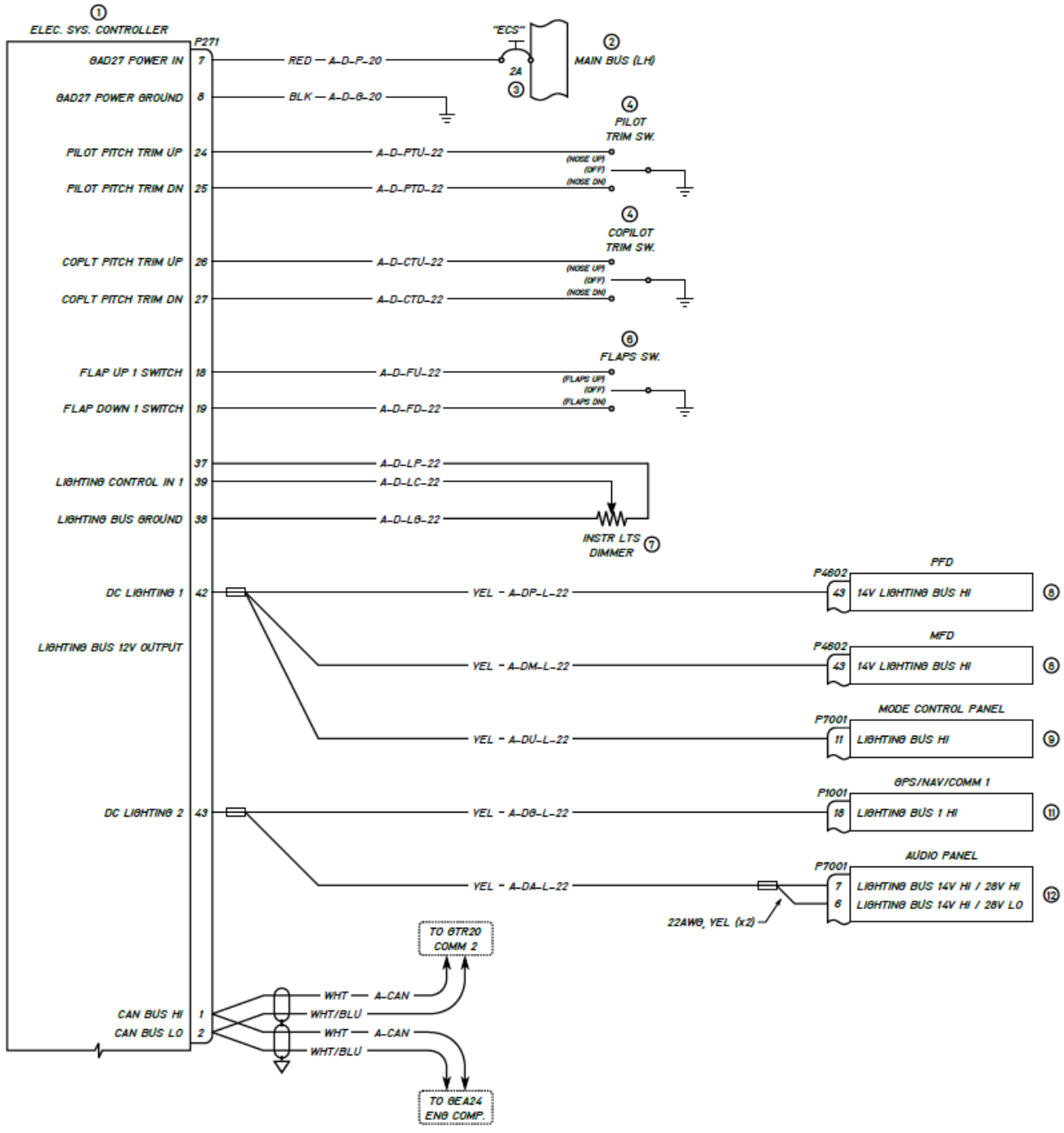

Figure 9.2.8.1. GAD 27 Diagram

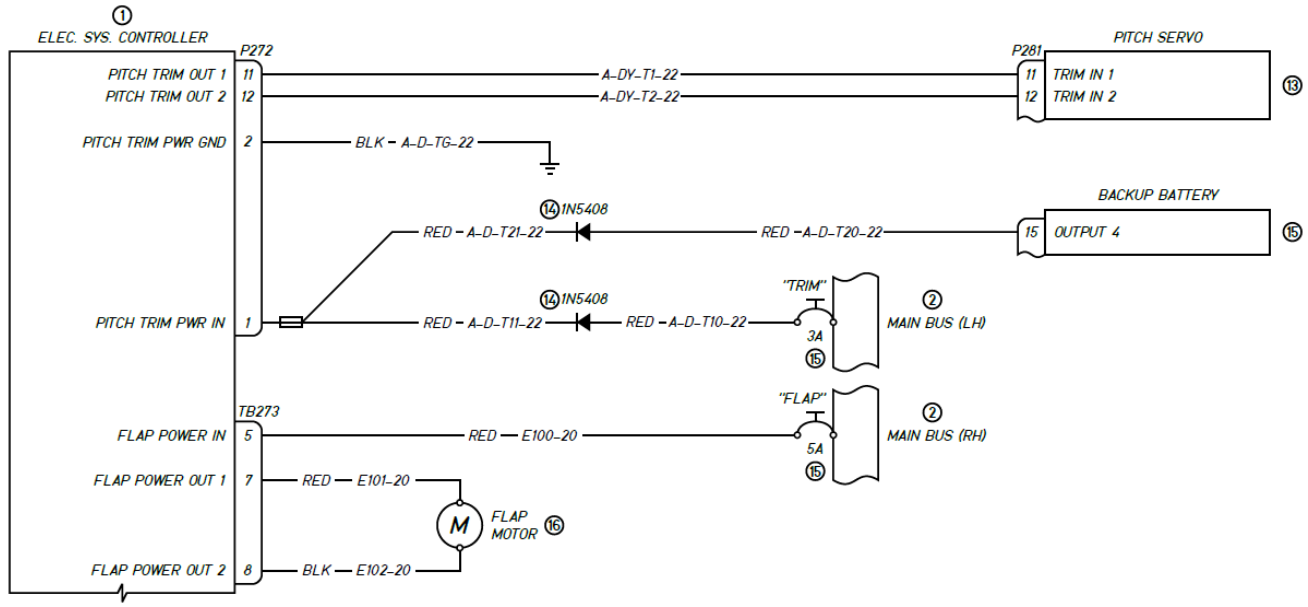

Figure 9.2.8.2. GAD 27 Diagram (continued)

9.2.10 Emergency Locator Transmitter

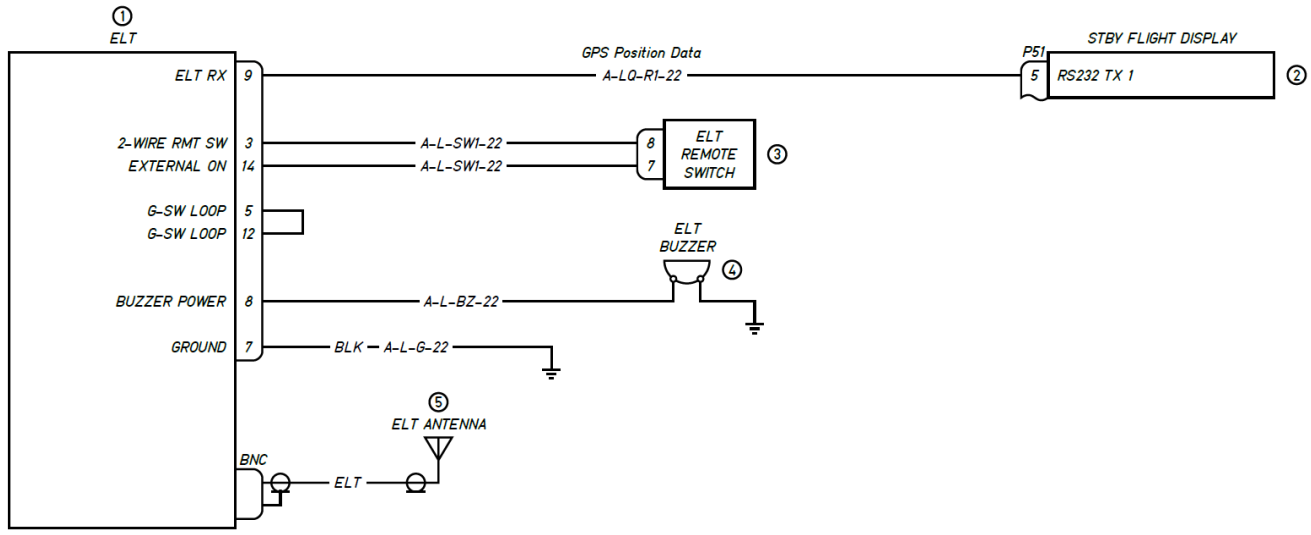

Figure 9.2.15.1. ELT Diagram

9.2.11 GTN 650 XI GPS/NAV/COMM

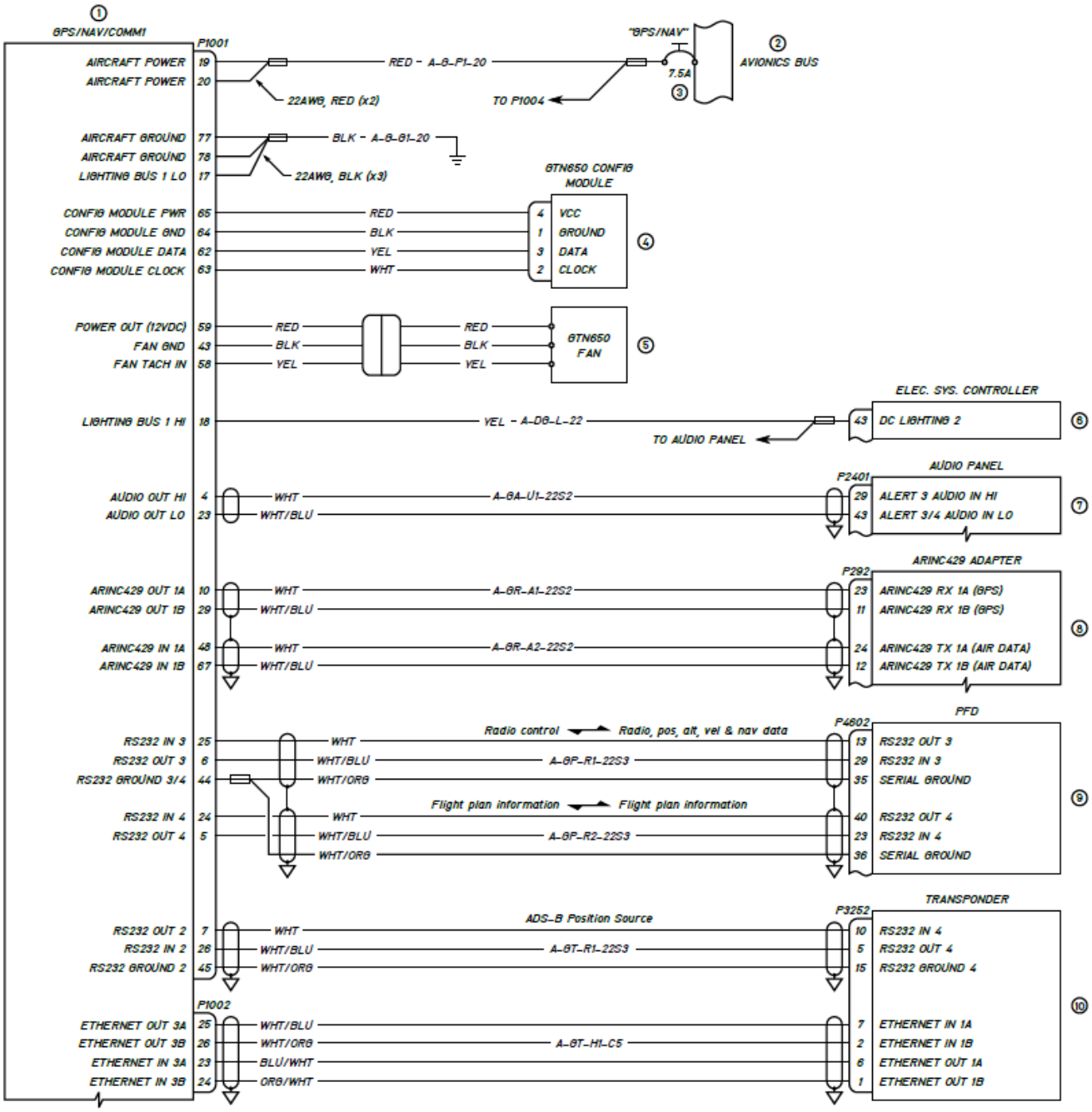

Figure 9.2.9.1. GTN 650 XI Diagram

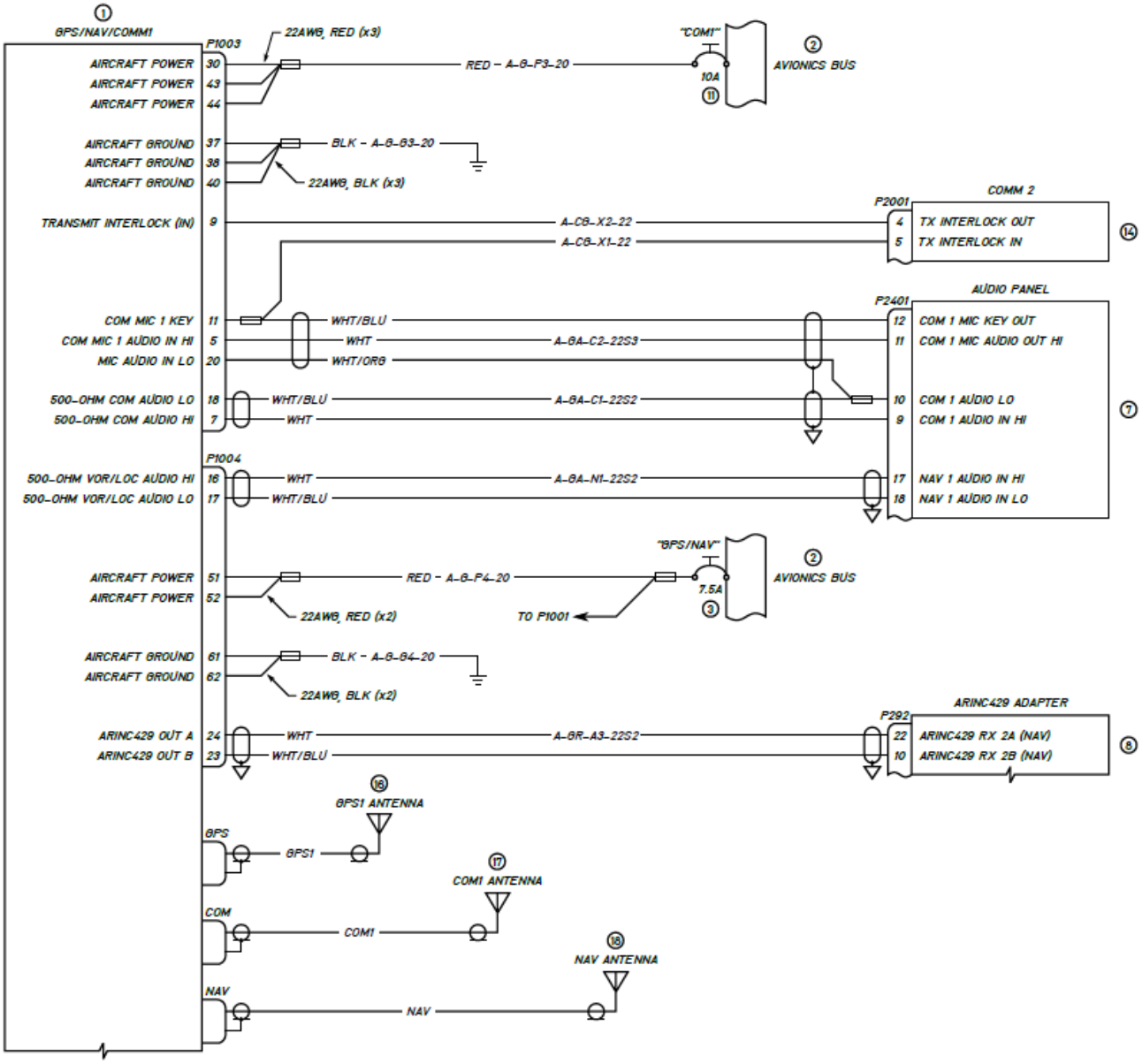

Figure 9.2.9.2. GTN 650 XI Diagram (continued)

9.2.12 GMA 245 Audio Panel

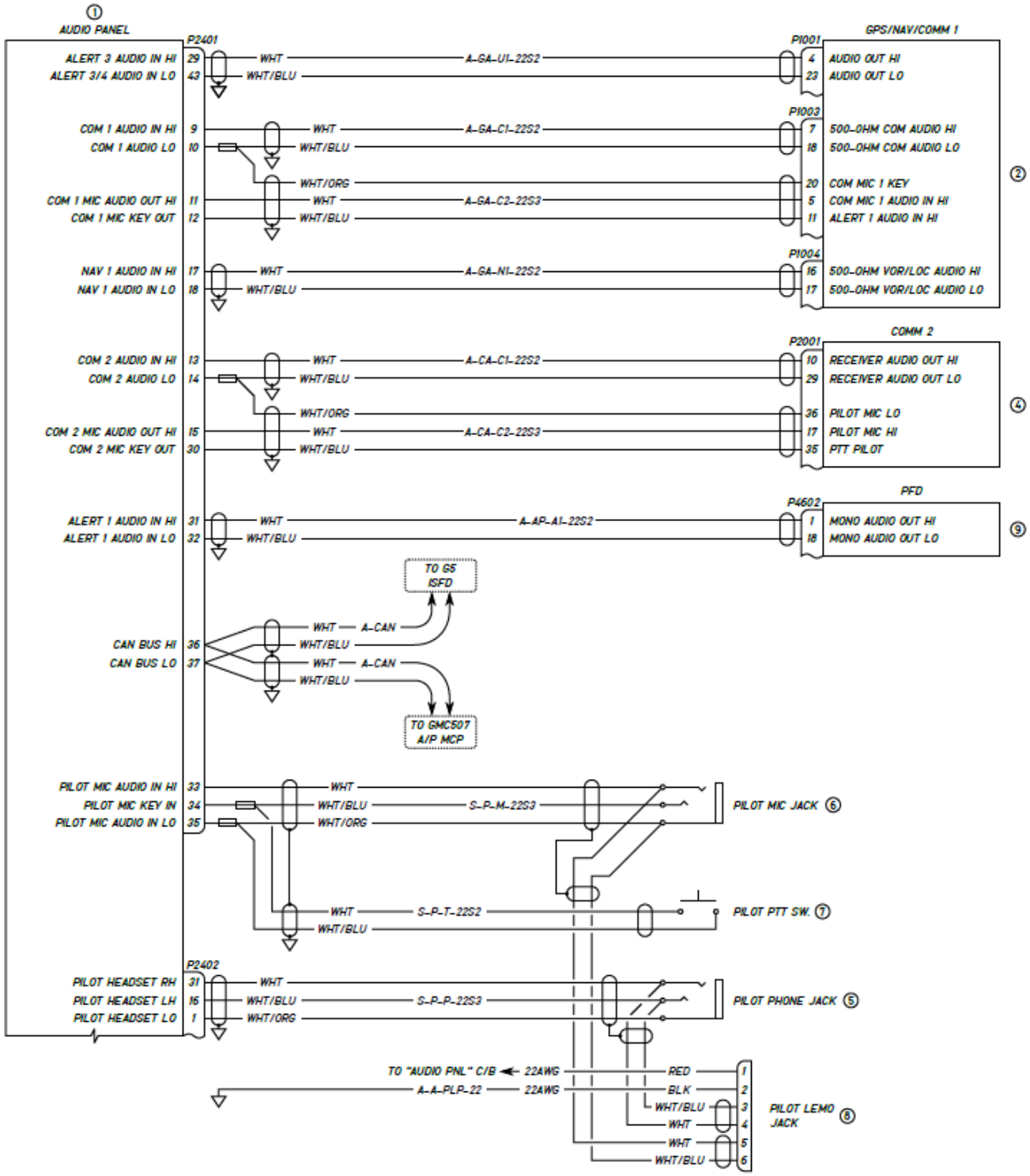

Figure 9.2.10.1. GMA 245 Audio Panel Diagram

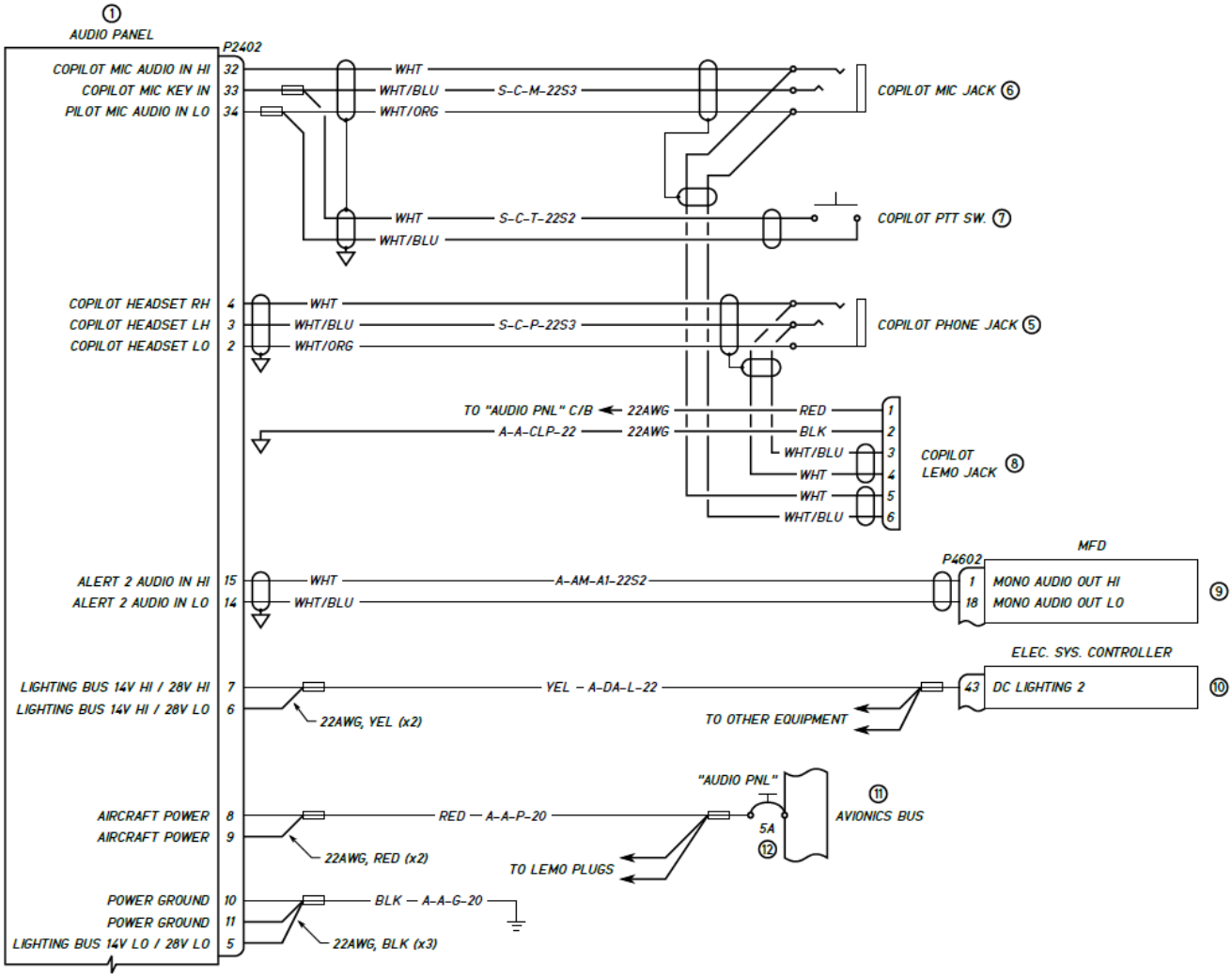

Figure 9.2.10.1. GMA 245 Audio Panel Diagram (continued)

9.2.13 GTX 45 R Transponder System

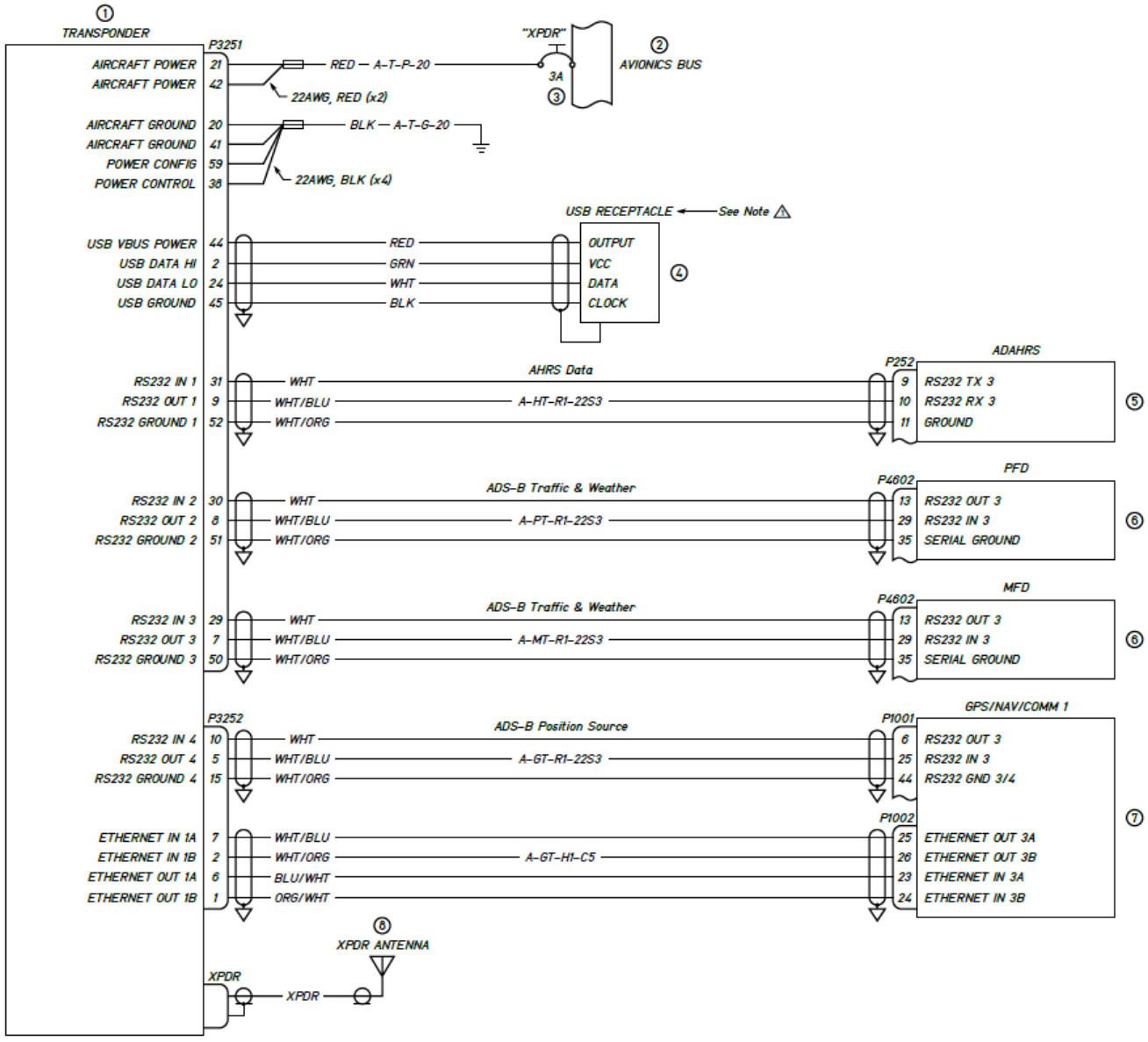

Figure 9.2.11.1. GTX 45 R Transponder Diagram

9.2.14 GTR 20 COMM 2

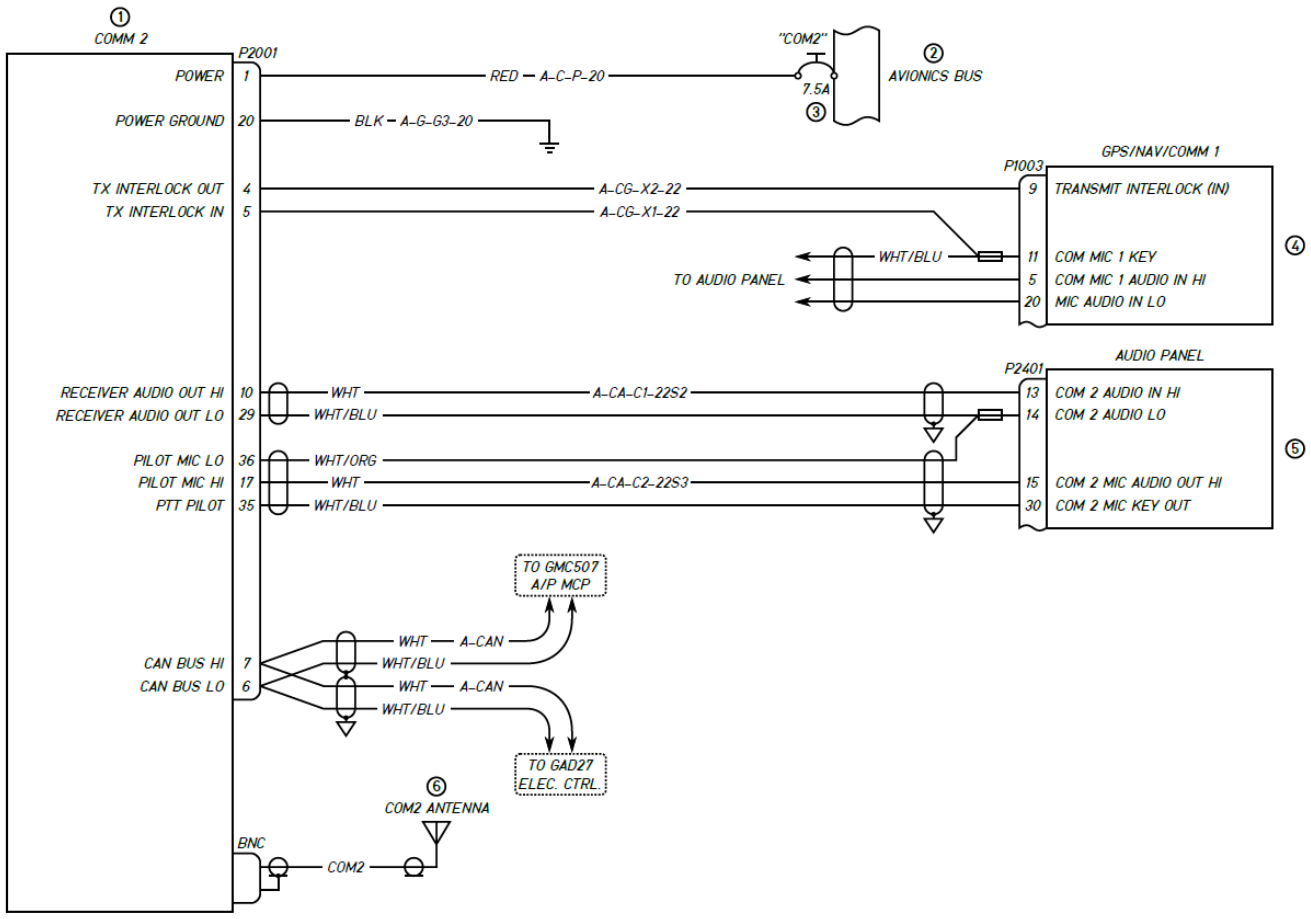

Figure 9.2.12.1. GTR 20 COMM 2 Diagram

9.2.15 G5 Integrated Standby Flight Display

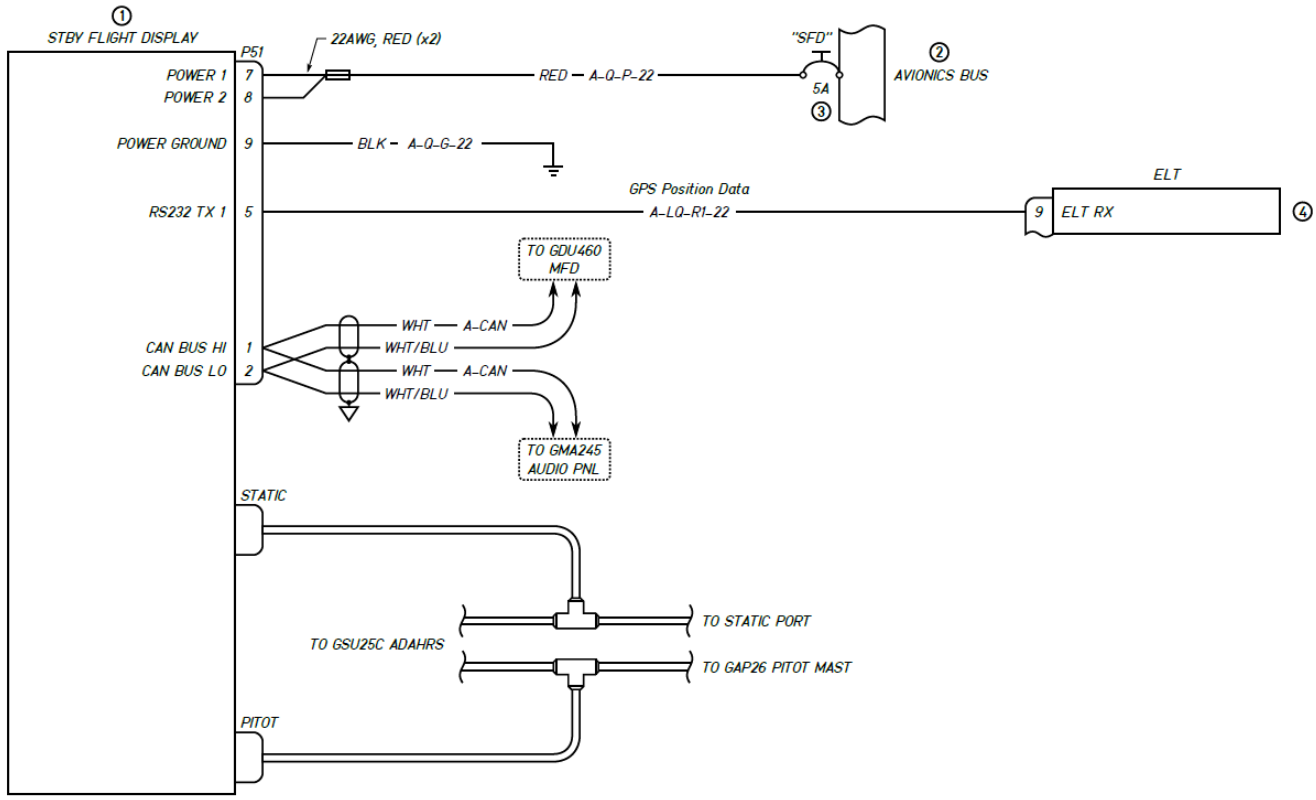

Figure 9.2.13.1. G5 Standby Flight Display Diagram

9.3 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

10.1 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.

10.2 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.

10.3 Major Repairs and Alterations

No Major Repair or Alteration is authorized to be done in this Revision.

MRA can be asked to the Engineering Group of Texas Aircraft Manufacturing, INC by means of contacting Texas Aircraft Manufacturing. Please refer to Section 15.

10.4 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.

10.5 Painting and Coatings

Before performing any related work or customization, please enter in contact in writing by email with Texas Aircraft Manufacturing, INC.

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11 Contact and Feedback

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

TEXAS AIRCRAFT

11.2 Feedback Form

TEXAS AIRCRAFT
508 Vandenberg Rd, Hondo, TX

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.

FORM RSPM

Texas Aircraft Manufacturing INC
508 Vandenberg Road, Hangar 5, Hondo TX, 78861 USA
+1 (800) 922-2161 / www.texasaircraft.com / support@texasaircraft.com

REVISION NC
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12 Appendix A – Inspection Checklist

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*	

Note: * Check the latest revision.

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

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.

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 uncleanliness 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 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	
	Flexible vibration dampeners – for poor condition and deterioration.	-	
	Engine controls - for defects, improper travel, and improper safetying.	-	
	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 deterioration, distortion, evidence of failure, and insecurity of attachment.	3.2	
	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 safetying.	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 proper operation and calendar date currency of the batteries.	2.4.3.9 9.7	

Note:* Check the latest revision.

12.5 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.