Aircraft Service Manual

- **Service Schedule**

- **Inspection Schedule**

- **Engine Instruction and Maintenance Manual**

- **Propeller Instruction Manual**

- **Airworthiness Limitations -** **Mandatory Replacement Times**
  - **Structural Inspection Intervals**
  - **Structural Inspection Procedures**

This manual contains JABIRU recommended procedures and instructions for ground handling, servicing and maintaining. The following Jabiru aircraft models:

LSA 55/2J	-	Jabiru 1600 powered
LSA 55/3J	-	Jabiru 2200 powered
Jabiru ST	-	Jabiru 1600 powered
Jabiru ST3	-	Jabiru 2200 powered
SK	-	Either Jabiru 1600 or 2200 powered
UL450C	-	Jabiru 2200 powered
SP	-	Jabiru 2200 powered
UL6	-	Jabiru 3300 powered
SP6	-	Jabiru 3300 powered
SP4	-	Jabiru 2200 powered
SP-T	-	Jabiru 2200 powered
SP-T	-	Jabiru 3300 powered

The Jabiru models:

LSA 55/2J	-	Jabiru 2200 powered
LSA 55/3J	-	Jabiru 2200 powered
Jabiru ST	-	Jabiru 2200 powered
Jabiru ST3	-	Jabiru 2200 powered
UL450C	-	Jabiru 2200 powered

are Type Certificated by the Australian Civil Aviation Safety Authority (CASA) under Civil Aviation Order (CAO) 101.55. In Australia, the LSA 55/2J and LSA 55/3J models may be registered with the Australian Ultralight Federation (AUF). Models Jabiru ST and Jabiru ST3 are registered with CASA.

The Jabiru model SK is the Amateur-Built (or ‘Experimental’) Kit aircraft. In Australia, it may either be registered by CASA or the AUF. The Jabiru UL has been developed to meet the FAI “Microlight” definition. In countries other than Australia, other registration requirements will apply. It is the owner’s responsibility to become fully aware of the particular maintenance requirements and limitations applicable to the appropriate registration.

The information in this manual is based upon data available at the time of publication, and is supplemented and kept current by Service Bulletins & Service Letters published by JABIRU AIRCRAFT Pty Ltd. These are sent to all JABIRU owners (as recorded by JABIRU) so that they have the latest authorised recommendations for servicing the aircraft. New owners of pre-owned aircraft should ensure that the transfer of their aircraft has been advised to JABIRU AIRCRAFT Pty Ltd. Existing owners should ensure that their postal address remains current.

In addition to the information in this Service Manual, vendor publications will periodically be available from JABIRU which describe disassembly, overhaul and parts breakdown of some of the various vendor equipment items. A listing of the available publications is issued from time to time in service letters.

IMPORTANT

All maintenance should be undertaken with careful regard for the procedures outlined in this manual. A detailed record of maintenance undertaken should be recorded in the Aircraft Log Books.

The JABIRU is a CAO 101.55 Type Certified Aircraft. In accordance with Civil Aviation Regulations and Orders and the Australian Ultralight Federation Operations Manual, **NO MODIFICATIONS ARE PERMITTED.**

In the interests of product development, we encourage owners to make suggestions related to design improvements. However, the final decision on their adoption or otherwise rests with JABIRU AIRCRAFT Pty Ltd.

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JABIRU AIRCRAFT PTY LTD

SERVICE MANUAL

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SECTION 1

GENERAL DESCRIPTION

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1.1 GENERAL DESCRIPTION

The JABIRU aircraft described in this manual are 2-seat, high-wing monoplane composite aircraft of monocoque construction. They are equipped with fixed tricycle landing gear of composite construction. The steerable nose gear is a welded metal, trailing link assembly with rubber springs.

The aircraft is equipped with JABIRU, 4 cylinder, 4 stroke engines driving a wooden fixed pitch propeller.

1.2 AIRCRAFT SPECIFICATIONS

Leading particulars of this aircraft, with dimensions based on gross weight, are given in Figure 1-1. If these dimensions are used for constructing a hangar or computing clearances, remember that such factors as tyre pressure, tyre size and load distribution may result in some dimensions that may be somewhat different from those listed.

1.3 CENTRE OF GRAVITY LIMITATIONS

The JABIRU is a very light aircraft. The installation of equipment may significantly alter the approved CG limits of the aircraft. Therefore, all proposed fixed installations must be approved by JABIRU AIRCRAFT Pty Ltd.

1.4 TORQUE VALUES

A chart of recommended torque values is shown in Figure 1-2. These torque values are recommended for all service procedures contained in this manual, except where other values are stipulated. They are not to be used for checking tightness of installed parts during service.

MODEL	LSA 55/2J & Jabiru ST	LSA 55/3J & Jabiru ST3	SK	UL450C	UL6
AIRCRAFT SPECIFICATIONS GROSS WEIGHT	430 kg (946 lb)	430 kg (946 lb)	430 kg (946 lb)	450 kg (990 lb)	500 kg (1100 lb)
FUEL CAPACITY	50 litres	65 litres	50 or 65 litres	50 litres	85 litres
OIL CAPACITY	2.3 litres	2.3 litres	2.3 litres	2.3 litres	3.4 litres
ENGINE MODEL (Refer to Appendix I for Engine Data)	Jabiru 1600	Jabiru 2200	Jabiru 2200	Jabiru 2200	Jabiru 3300
PROPELLOR (Fixed Pitch)	Jabiru 54" dia (1371mm)	60" (1524mm)	60" (1524mm)	60" (1524mm)	60" (1524mm)
PROPELLOR (Fixed Pitch)	Jabiru 38" pitch (965mm)	42" (1040mm)	42" (1040mm)	42" (1040mm)	48" (1040mm)
MAIN WHEEL TYRES STANDARD (Options Available)	11" dia x 4" rim	11" dia x 4" rim	11" dia x 4" rim	11" dia x 4" rim	11" dia x 4" rim
MAIN WHEEL TYRES STANDARD (Options Available)	4" wide (4 Ply Rating)	4" wide (4 Ply Rating)	4" wide (4 Ply Rating)	4" wide (4 Ply Rating)	4" wide (4 Ply Rating)
NOSE WHEEL TYRE STANDARD (Options Available)	10.25 dia x 4" rim	10.25 dia x 4" rim	10.25 dia x 4" rim	10.25 dia x 4" rim	10.25 dia x 4" rim
NOSE WHEEL TYRE STANDARD (Options Available)	4" wide (4 Ply Rating)	4" wide (4 Ply Rating)	4" wide (4 Ply Rating)	4" wide (4 Ply Rating)	4" wide (4 Ply Rating)
TYRE PRESSURES STANDARD - Mains	170 kpa (25 psi)	170 kpa (25 psi)	170 kpa (25 psi)	170 kpa (25 psi)	170 kpa (25 psi)
TYRE PRESSURES STANDARD - Nose	82 kpa (12 psi)	82 kpa (12 psi)	82 kpa (12 psi)	82 kpa (12 psi)	82 kpa (12 psi)
WHEEL ALIGNMENT (at Gross Weight) Camber Toe In	 0" 0"	 0" 0"	 0" 0"	 0" 0"	 0" 0"
PRINCIPAL DIMENSIONS Wing Span Length Fin Height Track Width (Wheel Centres) Tail Span	 8034 mm (26'4") 5040 mm (16'5") 2013 mm (6'7") 1600 mm (5'3") 2350 mm (7'8-1/2")	 8034 mm (26'4") 5040 mm (16'5") 2013 mm (6'7") 1600 mm (5'3") 2350 mm (7'8-1/2")	 8034 mm (26'4") 5040 mm (16'5") 2013 mm (6'7") 1600 mm (5'3") 2350 mm (7'8-1/2")	 9398mm (30'10") 5640mm (18'6") 2013 mm (6'7") 1600 mm (5'3") 2350 mm (7'8-1/2")	 9398mm (30'10") 5640mm (18'6") 2013 mm (6'7") 1600 mm (5'3") 2350 mm (7'8-1/2")
BATTERY LOCATION	In Engine Compartment	In Engine Compartment	In Engine Compartment	In Engine Compartment	In Engine Compartment

MODEL	SP	SP6	SP-T	SP-T6
AIRCRAFT SPECIFICATIONS GROSS WEIGHT	430 kg (946 lb)	430 kg (946 lb)	430 kg (946 lb)	430 kg (946 lb)
FUEL CAPACITY	50 litres	65 litres	50 or 65 litres	65 litres
OIL CAPACITY	2.3 litres	2.3 litres	2.3 litres	2.3 litres
ENGINE MODEL (Refer to Appendix I for Engine Data)	Jabiru 2200	Jabiru 3300	Jabiru 2200	Jabiru 3300
PROPELLOR (Fixed Pitch)	60” (1524mm)	60” (1524mm)	60” (1524mm)	60” (1524mm)
PROPELLOR (Fixed Pitch)	42” (1066.8mm)	48” (1219.2mm)	42” (1040mm)	48” (1040mm)
MAIN WHEEL TYRES STANDARD (Options Available)	11” dia x 4” rim	11” dia x 4” rim	11” dia x 4” rim	11” dia x 4” rim
MAIN WHEEL TYRES STANDARD (Options Available)	4” wide (4 Ply Rating)	4” wide (4 Ply Rating)	4” wide (4 Ply Rating)	4” wide (4 Ply Rating)
NOSE WHEEL TYRE STANDARD (Options Available)	10.25 dia x 4” rim	10.25 dia x 4” rim	10.25 dia x 4” rim	10.25 dia x 4” rim
NOSE WHEEL TYRE STANDARD (Options Available)	4” wide (4 Ply Rating)	4” wide (4 Ply Rating)	4” wide (4 Ply Rating)	4” wide (4 Ply Rating)
TYRE PRESSURES STANDARD - Mains	170 kpa (25 psi)	170 kpa (25 psi)	170 kpa (25 psi)	170 kpa (25 psi)
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WHEEL ALIGNMENT (at Gross Weight) Camber Toe In	0” 0”	0” 0”	0” 0”	0” 0”
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BATTERY LOCATION	In Engine Compartment	In Engine Compartment	In Engine Compartment	In Engine Compartment

Figure 1-1 Aircraft Specifications

RECOMMENDED TORQUE VALUES (in fibreglass)

Bolt Size	**Inch/lbs**
AN3	20 - 25 (2 ft lb)
AN4	50 - 70 (4-5 ft lb)
AN5	100 –140 (8-12 ft lb)
AN4 Propellor	84 (7 ft lb)

Table 1-1

These values relate only to steel nuts on oil-free cadmium plated threads.

For Engine Bolt Torque Values see Engine Instruction & Maintenance Manual at Appendix 1.

The above values are recommended for all installation procedures contained in this Manual, except where other values are stipulated.

The above values are not to be used for checking tightness of installed parts during service.

CAUTION
DO NOT REUSE SELF-LOCKING NUTS

Figure 1-2 Recommended Torque Values

SECTION 2

GROUND HANDLING, SERVICING, LUBRICATION AND INSPECTION.

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2.1 GROUND HANDLING

2.1.1 Towing

The JABIRU aircraft is very light and should always be moved by hand.

Moving the aircraft is accomplished by using the wing struts or prop hub or landing gear struts as push points together with the solid rear fuselage join of the fin to the tail plane.

CAUTION

Do not use control surfaces to move the aircraft
--Damage to the control system may result

When pushing at the join of the fin and Tail Plane, Watch that you do not jam your fingers under the Rudder or in the rudder hinge – Remember that it is Connected to the Nose Wheel.

CAUTION

When moving the aircraft, never turn the Nose Wheel more than 15 degrees either side of centre or Nose Gear may be damaged.

The aircraft may also be moved by placing the propeller in the horizontal and then placing one hand on the propeller on either side of the spinner. The aircraft can then be pulled forward and nose wheel lifted off the ground if necessary.

CAUTION

Never move the aircraft in this manner whilst the engine is hot as it may fire when the propeller is moved and result in severe injury!

Always ensure that the Master and Ignitions are OFF!

Never approach the propeller when anyone is in the aircraft.

Always treat the propeller as **LIVE! IT KILLS!**

2.1.2 Jacking

JABIRU is a very light aircraft. Before jacking, ensure that it is as light as possible by removing luggage and any unnecessary fuel.

Jacking Main Gear

1. Remove main gear spat on the side to be jacked or both spats if both wheels to be jacked.

2. The aircraft can be lifted on one side by a person of reasonable strength (or 2 of lesser strength) by lifting on the Wing Spar, around the outboard part of the wing strut attachment. **Be careful lifting at the Wing Tip.**

3. Place a solid block (preferably wood) under the bottom of the composite glass leg which will result in the wheel being off the ground when the aircraft is lowered. Be careful not to interfere with brake components or Wheel Spat attachments.

4. Repeat for other side if necessary.

The above procedure is useful for wheel/brake servicing or repairs, but is of no value in removing the main undercarriage. If the removal of the main undercarriage is necessary, adopt the following procedure.

1. Obtain a tressel, 20ltr drum or similar object 600mm metre high.

2. Mount a solid foam block, sandbag, pillow or similar compliant material on top of the tressel. (compliant material should distribute load over minimum 150 square centimetres) Place under the lower wing strut attachment.

3. Support under both wings at the Wing Spar to prevent the aircraft from rocking. Ensure that no fittings are strained.

Jacking Nose Gear

1. Push down on tail Plane (NOT THE ELEVATOR) until nose gear is off the ground.

2. Place tressel or drum under rear fuselage together with absorbent material such as foam block, sandbags or a pillow.

CAUTION

Ensure tressel does not foul Ventral Fin.

3. Weigh down tail plane with sandbags or similar heavy absorbent material.

CAUTION

Do not lift using control surfaces. Damage to the control surface or control system may result.

2.1.3 Hoisting

This procedure should not be necessary for most service or maintenance procedures. Should hoisting be necessary:

1. Remove wings. See Paragraph 4.2.1.
2. Fit shackles to wing support brackets (4 off).
3. Fit cables/rope to shackles and to a centre lift shackle.
4. Hoist only from this point ensuring that cables/ropes do not mark the top of the fuselage at corners above wing support brackets.

2.1.4 Levelling

Method 1
For both lateral and longitudinal levelling use a spirit level on either side of the lower door sills or the fuselage cowl flange line.

Method 2
Use the join line of the cowl top & bottom cowl as one point. As the second measuring point, use the join where the top & bottom fuse meets, which should be the leading edge of the horizontal stabiliser.

2.1.5 Parking

Parking precautions depend principally on local conditions. As a general precaution, check the wheels and tie the control handle back firmly with a seat belt to lock the controls. Park into the wind and tie down the aircraft as outlined in Paragraph 2.1.6 if a hangar is not available.

2.1.6 Tie Down

When mooring the aircraft in the open, head into wind if possible. Secure control surfaces by tying the control handle back firmly with a seat belt.

Then:

1. Tie ropes to the top end of each wing strut. Secure opposite end of the ropes to ground anchors located at approximately 30 degrees to the vertical, outboard of the top wing attachment point. Ensure that the ropes have sufficient slack to not strain the wing attachments should a tyre deflate while the aircraft is tied down.

2. Tie rope to the Tail Tie-down Hole in the Ventral Fin. Secure the opposite end of rope to ground anchors.

2.1.7 Flyable Storage

Flyable storage is defined as a maximum of 30 days non-operational storage.

Ensure that the engine has been stopped by turning off the fuel valve, thereby not leaving any fuel in the carburettor bowl.

Every 7th day the propeller should be rotated through 5 revolutions, without running the engine. Leave the propeller in the horizontal position to ensure even distribution of liquids in the wood. If left in the vertical position, liquids will drain to the lower tip resulting in an unbalanced propeller.

CAUTION

Ensure that the Master and Ignition Switches are OFF!

Store under cover, away from direct sunlight as ultra-violet rays damage composite structures.

In addition, the pitot tube, static air vent, air vents, openings in the engine cowl and other similar openings should have protective covers fitted to prevent entry of foreign materials and beings (especially wasps).

2.1.7 Returning Aircraft to Service

After flyable storage, returning the aircraft to service is accomplished by performing a thorough pre-flight inspection. Ensure all protective covers are removed.

2.1.9 Temporary or Indefinite Storage

Temporary storage is defined as aircraft in non-operational status for a maximum of 90 days.

Treat as for flyable storage (see Paragraph 2.1.7), plus:

- For temporary storage, fill fuel tank with correct grade of gasoline (to prevent moisture accumulation).

- For indefinite storage, drain fuel tank, ensure carburettor bowl is empty by running engine with fuel valve off until it stops or by draining bowl.

Then:

1. Clean aircraft thoroughly.
2. Clean any dirt, oil or grease from tyres and coat tyres with a tyre preservative. Cover tyres to protect against dirt and oil.
3. Either block up undercarriage/fuselage to relieve pressure on tyres or rotate wheels every 30 days to prevent flat spotting the tyres.
4. Seal or cover all openings.
5. Remove battery and store in a cool dry place. Service the battery periodically and charge as required.

   NOTE 1: It is recommended that a battery which is not used should be charged every 30 days.

   NOTE 2: The battery serial number is recorded in the aircraft equipment list. To assure accurate warranty records, the battery should be reinstalled in the same aircraft from which it was removed. If the battery is returned to service in another aircraft, appropriate changes must be made and JABIRU AIRCRAFT Pty Ltd must be notified.

6. Disconnect spark plug leads and remove spark plugs from each cylinder.
7. Using an oil can or spray atomiser, spray preservative oil through a spark plug hole of each cylinder with the piston in the down position.

   NOTE: Use shell ENSIS Engine Oil 30 or similar engine preservative.

8. Rotate the propeller 10 – 12 times, leaving it in the horizontal position.

CAUTION

Ensure that the Master and Ignition Switches are OFF!

9. Install spark plugs and connect leads.
10. Seal exhaust pipes.
    Attach a red streamer to each. DO NOT seal fuel tank breathers.
11. Place protective covers over pitot tube, static source vents, air vents and openings in engine cowl to prevent the entry of foreign material or beings (especially wasps).
12. Attach a warning placard to the propeller stating that vents and breathers have been sealed. The engine must not be started with the seals in place.
13. Every 7 days the propeller should be rotated through 5 revolutions without running the engine – leave propeller in the horizontal position.

CAUTION

Ensure that the Master and Ignition Switches are OFF!

2.1.10 Inspection During Storage

1. Generally inspect airframe and clean as necessary.
2. Inspect the interior of at least one cylinder through the spark plug hole for corrosion at least once a month.
3. If, at the end of the 90 day period, the aircraft is to be continued in non-operational storage – repeat Steps 1-13 above (most will only need to be checked).

2.1.11 Returning Aircraft to Service

After temporary storage, the procedures for returning the aircraft to service are as follows:

1. Remove aircraft from blocks and check tyres for proper inflation.
2. Check battery and install.
3. Check carburettor air filter and service if necessary.
4. Remove warning placard from propeller.
5. Remove materials used to cover openings.
6. Remove, clean and gap spark plugs.
7. While spark plugs are removed, rotate propeller several revolutions to clear excess preservative oil from cylinders.

CAUTION

Ensure that the Master and Ignition Switches are OFF!

8. Install spark plugs – torque to 20 nm (180 inch/lbs).
9. Check fuel filter – replace if necessary.
10. Check brake fluid level.
11. If returning to service after indefinite storage, fill fuel tank with correct grade of fuel.
12. Check fuel tank and fuel lines for moisture and sediment.
    Drain enough fuel to eliminate any moisture and sediment.
13. Check fuel tank breather is clear.
14. Perform a thorough pre-flight inspection.
15. Start and warm engine.

2.2 SERVICING

Servicing requirements are shown at Paragraph 2.2.1. The following paragraphs supplement this table by adding details not included.

Note that Inspection Requirements are detailed at Paragraph 2.5.

2.2.1 Servicing Schedule

Pre-Flight: Refer to Flight Manual

25 Hour Service: Refer to Engine Instruction & Maintenance Manual

50 Hour Service: Refer to Engine Instruction & Maintenance Manual

100 Hour Service: Refer to Eng. Instruction & Maintenance Manual

Other Inspection & Maintenance Procedures:
Refer to Engine Instruction & Maintenance Manual.
Replace flexible oil & fuel line in engine compartment every 2 years.

2.2.2 Fuel

The fuel tank should be filled immediately after flight to lessen condensation of moisture. The tank capacity is listed in Section 1.

2.2.3 Fuel Drain

A fuel drain is located in the fuel tank. Drain fuel after each refueling to ensure moisture and contaminants are not present.

2.2.4 Carburettor Air Filter

The Carburettor air filter keeps dust and dirt from entering the induction system. The value of maintaining the air filter in a good clean condition cannot be overstressed. More engine wear is caused through the use of a dirty or damaged air filter than is generally believed. The frequency with which the filter should be removed, inspected and cleaned will depend on the operating conditions. A good general rule, however, is to remove, inspect and clean the filter ever 50 hours of engine operating time and more frequently if warranted by the operating conditions. Clean only with compressed air. Under extreme operating conditions, daily servicing of the filter is recommended.

2.2.5 Battery

The Battery is not a serviceable item as it is a gel. Use bicarbonate of soda (baking soda) and clean water to neutralise electrolyte of corrosion. Follow with a thorough flushing with clean water. Do not allow bicarbonate of soda to enter the battery. Remove battery and clean residue from aircraft.

Tighten cable and terminal connections with a wire brush, then coat with petroleum jelly before connecting cables. Check the battery every 50 hours (or at least every 30 days), more

often in hot weather. Add only distilled water, not acid or "rejuvenators", to maintain electrolyte level in the battery. Inspect the Battery Box and attachments and clean and remove any signs of spillage or corrosion.

2.2.6 Tyres

Maintain tyre pressure at the air pressure specified in Figure 1.1. When checking tyre pressure, examine tyres for wear, cuts, bruises and slippage. Remove oil, grease and mud from tyres with soap and water.

NOTE: Recommended tyre pressures should be maintained, especially in cold weather. Remember that any drop in temperature of the air inside the tyre causes a corresponding drop in tyre pressure.

2.2.7 Hydraulic Brakes

Check brake master cylinder and refill with automotive brake fluid **(.3/.4)** Bleed the brake system of any trapped air whenever there is a spongy response on the brake lever.

Refer to paragraph 5.8 for filling and bleeding of the brake system.

CAUTION

The JABIRU uses automotive brake fluid(**.3/.4)**. DO NOT use Aircraft hydraulic fluid (**mineral based**) or damage to the brake system will result.

2.3 CLEANING

Keeping the aircraft clean is important. Besides maintaining the appearance of the aircraft, cleaning makes inspection and maintenance easier.

2.3.1 Windshield and Windows

These should be cleaned carefully with plenty of fresh water and a mild detergent, using the palm of the hand to feel and dislodge any caked dirt or mud. A sponge, soft cloth or chamois may be used but only as a means of carrying water to the plastic. Rinse thoroughly, then dry with a clean, moist chamois. DO NOT rub the plastic with a dry cloth as this builds up an electrostatic charge which attracts dirt. Oil and grease may be removed by using a soft cloth moistened with mineral turpentine.

CAUTION

DO NOT use gasoline, alcohol, buzene, acetone, carbon tetrachloride, fire extinguisher fluid, de-icer fluid, lacquer thinner or glass window cleaning spray. These solvents will soften and craze the Plastic.

DO NOT use a canvas cover on the windshield

or windows as the cover may scratch the plastic.

2.3.2 Interior Surfaces

Interior surfaces should be cleaned with a soft cloth, fresh water and a mild detergent. Volatile substances such as those mentioned in the previous section must never be used.

2.3.3 Exterior Surfaces

The exterior surfaces, under normal conditions, require a minimum of polishing and buffing.

CAUTION

DO NOT polish or buff the aircraft within the first 2 weeks after delivery from the factory as surface treatments take up to 14 days to properly cure.

Generally, the exterior surfaces can be kept bright by washing with water and a mild soap or detergent, followed by a rinse with water and drying with a cloth or a chamois.

Remove stubborn oil and grease with a cloth moistened with mineral turpentine, then wash with water and a mild soap, rinse and dry as stated before.

After the curing period the aircraft may be waxed with a good quality automobile wax. A heavier coating of wax on the leading edges of the wing, tail and on the engine nose cap will help reduce abrasion encountered in these areas.

CAUTION

DO NOT use Silicon based cleaning materials as Silicon is absorbed into the composite materials and may affect repairability.

2.3.4 Aluminium Surfaces

The aluminium surfaces require a minimum of care, but should not be neglected. Wash and clean as detailed in paragraph 2.3.3 above.

CAUTION

JABIRU aircraft are designed for minimum maintenance. However, special attention should be applied when the aircraft has been used in extremely corrosive conditions, e.g. beach landings with sand and salt. Always ensure the aircraft is thoroughly hosed and washed immediately after such use. Pay particular attention to wheels and external controls. Always hose down wheels and spats after landings in mud or sand to ensure brakes, wheels and spats are free of dirt

build-up.

2.3.5 Engine and Engine Compartment

The engine should be kept clean since dirty cooling fins and baffles can cause overheating of the engine. Also, cleaning is essential to minimise any danger of fire and provide easy inspection of components.

CAUTION

DO NOT hose engine. Electrical components may be damaged by moisture. Ensure electrical components are protected against moisture. Caustic cleaning solutions should not be used.

Recommended cleaning procedure is lightly spray with degreasing fluid – after sealing coils and starter motor. WIPE clean with brush and cloth.

2.3.6 Propeller

Wash with soap and water, rinse with clean water and dry with cloth or chamois. Lightly wax using automotive wax.

2.3.7 Wheels

The wheels should be washed periodically and examined for corrosion, cracks or dents in the wheel halves or in the flanges or hubs. If defects are found, remove and repair in accordance with Section 5. Discard cracked wheel halves, flanges or hubs and install new parts.

2.4 LUBRICATION

There are no lubrication requirements for the JABIRU other than those detailed in Appendix 1.

2.4.1 Wheel Bearing – Mains and Nose

At each 100 hour inspection, jack the wheel, spin the wheel and check for free running and any play on the shaft. Remove and replace if there is any sign of binding or wear.

2.5 INSPECTION

Inspection Charts

The chart at Paragraph 2.5.2 shows the recommended intervals at which items are to be inspected.

As shown in the chart, there are items to be inspected each 50 hours, each 100 hours and each 200 hours. There are also special inspection items which require inspection of servicing at intervals other than 50, 100 and 200 hours.

The engine Instruction Manual also details engine inspection schedules and should be consulted in addition to this chart.

- When conducting an inspection at 50 hours, all items marked under EACH 50 HOURS would be inspected, serviced or otherwise completed as necessary to ensure continuous airworthiness.

- At each 100 hours, the 50 hours items would be completed in addition to the items marked under EACH 100 HOURS as necessary to insure continuous airworthiness.

- An inspection conducted at 200 hours would likewise include the 50 hour items and 100 hour items in addition to those at EACH 200 HOURS.

- A complete aircraft inspection includes all 50, 100 and 200 hour items together with those shown in the Engine Instruction Manual.

2.5.1 INSPECTION GUIDELINES

*** MOVEABLE PARTS** for: lubrication, servicing, security of attachments, binding, excessive wear, safetying, proper operation, proper adjustment, correct travel, cracked fittings, security of hinges, defective bearings, cleanliness, corrosion, deformation, sealing and tension.

*** FLUID LINES AND HOSES** for: leaks, cracks, kinks, chafing, proper radius, security, corrosion, deterioration, obstruction and foreign matter.

*** METAL PARTS** for: security of attachment, cracks, metal distortion, broken welds, corrosion, and any other apparent damage.

*** WIRING** for: security, chafing, burning, defective insulation, loose or broken terminals, heat deterioration and corroded terminals.

*** BOLTS IN CRITICAL AREAS** for: correct torque in accordance with torque values given in the chart in Section 1, when installed or when visual inspection indicates the need for a torque check.

NOTE: Torque values listed in section 1 are derived from oil-free cadmium-plated threads, and are recommended for all installation procedures contained in this manual except where other values are stipulated. They are not to be used for checking tightness of installed parts during service.

*** FILTERS, SCREENS and FLUIDS** for: cleanliness, contamination and/or replacement at specified intervals.

*** AIRCRAFT FILE:** Various data, information and licenses are part of the aircraft file. Check that the following documents are up-to-date and in accordance with current Civil Aviation Authority Regulations. Most of the items listed are required by the Australian Civil Aviation Authority Regulations. Since the regulations of other nations may require other documents and data, owners of exported aircraft should check with their own aviation officials to determine their individual requirements.

To be displayed in the aircraft at all times:

Placards as detailed in Flight Manual Paragraph 2.9.

To be carried in the aircraft at all times:

Flight Manual

To be made available on request:

Aircraft Registration
Radio Station License
Pilot License/Certificate including Medical Certificate (if appropriate).

*** ENGINE RUN-UP:** Before beginning the step-by-step inspection, start, run-up and shut-down the engine in accordance with instructions in the Flight Manual and Appendix 1 of this manual. During the run-up, observe the following, making note of any discrepancies or abnormalities:

1. Engine temperatures and pressures.
2. Static RPM. (Also refer to Engine Instruction Manual).
3. Magnito drop. (Also refer to Engine Instruction Manual).
4. Engine response to changes in power.
5. Any unusual engine noises.

6. Fuel shut-off valve; operate engine in ON position and in OFF position long enough to ensure shut-off functions properly.
7. Idling speed.

After the inspection has been completed, an engine run-up should again be performed to determine that any discrepancies or abnormalities have been corrected.

2.5.2 INSPECTION CHART

IMPORTANT

READ ALL INSPECTION RQUIREMENTS PARAGRAPHS PRIOR TO USING THESE CHARTS.

		Each 50 Hours	Each 100 Hours	Each 200 Hours	Annual Inspection
PROPELLER					
1.	Spinner……	*			*
2.	Spinner flange……		*		*
3.	Spinner screws……	*			*
4.	Propeller…….	*			*
5.	Propeller bolts/nuts…….	*			*
6.	Leading Edge Tape (if fitted)…….	*			*
ENGINE COMPARTMENT					
Check for evidence of oil and fuel leaks, then clean entire engine and compartment, if needed, prior to inspection. (See notes in Paragraph 2.3.5 re engine cleaning).					
1.	Carburettor air filter……	*			*
2.	Engine baffles and air ducts……		*		*
3.	Cylinders…….		*		*
4.	Crankcase and front crankcase seal……	*			*
5.	Hoses, lines and fittings…….	*			*
6.	Intake and exhaust systems……	*			*
7.	Ignition harness……		*		*
8.	Spark plugs……..	*			*
9.	Compression check…….		*		*
10.	Electrical wiring……..		*		*
11.	Fuel pump……		*		
12.	Engine controls and linkages…….	*			*
13.	Engine mounts, mount structure…….	*			*
14.	Starter, solenoid and electrical connections……..		*		*
15.	Coils and electrical connections……		*		*
16.	Carburettor heat system……..		*		*
17.	Throttle and linkage……..	*			*
18.	Carburettor……..		*		*
19.	Oil system tubes and hoses……	*			*
20.	Firewall……			*	*
21.	Engine cowlings and clips…….		*		*

		Each 50 Hours	Each 100 Hours	Each 200 Hours	Annual Inspection
FUEL SYSTEM					
1.	Fuel filter, drain valve, bowl……	*			*
2.	Fuel tank vent, cap and placards..……		*		*
3.	Fuel tank……		*		*
4.	Check tank attachments…….			*	*
5.	Fuel shut-off valve and placards..…….		*		*
6.	Electronic fuel boost pump and fittings…….		*		*
7.	Fuel lines and connectors…….…….		*		*
8.	Fire sleeves……..…….		*		*
LANDING GEAR					
1.	Main gear wheels and fairings..……	*			*
2.	Nose gear wheel, steering links, tension links and fairings….……..……	*			*
3.	Wheel bearings……..…….		*		*
4.	Nose gear strut……	*			*
5.	Nose gear housing and bushes..…….		*		*
6.	Main gear struts, clamps and bolts/nuts……	*			*
7.	Tyres and tubes.……	*			*
8.	Brake fluid, hoses, linings, discs, brake assemblies and master cylinder……		*		*
9.	Brake operational check…..…….	*			*
AIRFRAME					
1.	Aircraft exterior…….…….		*		*
2.	Aircraft structure……..……..		*		*
3.	Windows, windshield, doors and seals.……		*		*
4.	Seatbelts and shoulder harnesses……..		*		*
5.	Seat structure……..		*		*
6.	Instruments and markings……..		*		*
7.	Instrument plumbing and wiring…..……..			*	*
8.	Instrument panel, shockmounts, decals and labels..……..			*	*
9.	Ventilation system……..		*		*
10.	Cabin upholstery, trim……			*	*
11.	Switches, fuses……		*		*
12.	Pitot and static systemslips…….		*		*
13.	Radio, intercom and headsets……		*		*
14.	Antenna and cable……		*		*
15.	Battery, battery cradle and cables…….		*		*
16.	Battery electrolyte……..	*			*

CONTROL SYSTEMS

In addition to the items listed below, always check for correct direction of movement (particularly if controls have been disconnected) and correct travel.

		Each 50 Hours	Each 100 Hours	Each 200 Hours	Annual Inspection
1.	Cables and clamps…….……	*			*
2.	Rod ends……..……	*			*
3.	Trim control and cable..……	*			*
4.	Travel stops….……..…….	*			*
5.	Decals and labels……..…….	*			*
6.	Flap controls and linkages……...…….	*			*
7.	Elevator control and linkages…….	*			*
8.	Rudder pedals and linkages.…….…….	*			*
9.	Exterior surfaces of control surfaces..…….	*			*
10.	Control horns, hinges and hinge lock tabs…….	*			*

SECTION 3

FUSELAGE

Table of Contents **Paragraph**

3.1 FUSELAGE

The Fuselage is a composite monocoque (self-supporting) structure and includes both the Horizontal Stabiliser and Vertical Fin.

All repairs must be referred to Jabiru Aircraft Pty Ltd.

3.2 WINDSHIELD and WINDOWS

3.2.1 Description

The windshield and windows are one-piece acrylic plastic panels set in sealing strips with Sikaflex-291 or silicon and secured to the fuselage with screws/nuts.

IMPORTANT

The Windshield is a structural element of the Fuselage and therefore must be Maintained in excellent condition. Cracks up to 25 mm in length should be stop drilled; those longer than 25 mm should NOT be repaired, and the windshield should be replaced.

3.2.2 Cleaning

Refer to Section 2.

3.2.3 Waxing

Waxing will fill in minor scratches in clear plastic and help protect the surface from further abrasion. Use a good grade of commercial wax (NOT SILICON BASED) applied in a thin, even coat. Bring wax to a high polish by rubbing lightly with a clean, dry flannel cloth.

IMPORTANT

Silicon based waxes and polish are not recommended as silicon may be absorbed into the glass fibre laminate and effect the repairablity due to impairing bonding.

3.2.4 Repairs

Damaged window panels and windshield may be removed and replaced if damage is substantial. However, certain minor repairs as prescribed in the following paragraphs can be made successfully without removing the damaged part from the aircraft.

The procedure for repairing cracks is only recommended for low stress areas. No repairs of any kind are recommended on highly stressed or compound curved areas or where repair would be likely to affect the pilot's field of vision.

3.2.5 Scratches

Scratches on clear plastic surfaces can be removed by hand buffing and polishing using Plastic Polish available from JABIRU as Part No.: NOVUS#2.

NOTE: Rubbing plastic surface with a dry cloth will build up an electrostatic charge which will attract dirt particles and may eventually cause scratching of the surface. After applying polish, dissipate this charge by rubbing surface with a slightly damp chamois. This will also remove dust particles which have collected while wax is hardening.

3.2.6 Cracks

When a crack appears, drill a hole at the end of the crack to prevent further spreading. Hole should be approximately 1/16 inch in diameter, depending on length of crack and thickness of material. An unfluted drill should be used.

3.2.7 Removal

Unscrew and remove carefully with a small chisel.

3.2.8 Installation

1. Ensure all old Silastic/Sikaflex-291 sealant has been removed from the fuselage sealing strips and from a used windscreen which is being replaced.

2. Check new windscreen for fit. File or grind away any excess material to ensure a close fit.

3. Squeeze a bead of Silastic/Sikaflex-219 around the outer edge of the windscreen.

4. Place windscreen accurately over the sealing strips and locate with one screw top and bottom.

5. Fit other screws.

6. Take care not to crack windscreen when installing. DO NOT over tighten screws – cracking will result.

3.3 CABIN DOORS

3.3.1 Removal and Installation

Removal of doors is achieved by removing the hinge pins or removing the screws which attach the hinges.

3.3.2 Adjustment

Cabin doors should be adjusted so that the door skin fairs with the fuselage skin.

3.3.3 Door Seals

A weather strip is glued around all edges of the door. Apart from excluding wind and water, the weather strip is important in minimising exhaust fume entry to the cabin. It should be maintained in good condition and fit at all times. New weather strip may be applied after mating surfaces of weather strip and door are clean, dry and free from oil and grease.

3.3.4 Cabin Door Latches

There is one main latch on each door of a simple spring type. This is complemented by two wedge catches at the top of each door.

Door latches or their component parts must be replaced if worn or damaged.

3.3.5 Locks

An optional cylinder and key lock is available. When fitted, the keyed barrel lock is located in the fuselage at the rear of the Port side door. An internal toggle catch, located in the fuselage at the rear of the Starboard door, locks the Starboard door. Spare keys are available to JABIRU registered owners by quoting the aircraft Serial Number.

3.4 SEATS

The JABIRU seats are an integral part of the structure of the aircraft; they are therefore fixed in position. Forward and upward adjustment can be achieved by placing a cushion behind and/or under the occupant. The seat pans incorporate crushable foam which is essential in providing shock absorption in crash conditions.

WARNING
DO NO MODIFY SEATS.

3.4.1 Repair

As seats are integral to the aircraft structure, any repair must be referred to JABIRU AIRCRAFT Pty Ltd.

3.5 UPHOLSTERY

Seat upholstery is provided through slip-on covers. These are easily removed for cleaning and inspection of the seat structures.

Optional Hood and Cabin lining is available, together with Door Pockets.

3.6 SOUNDPROOFING

Soundproofing material is included in the Firewall.

In addition, a curtain of soundproofing material is provided at the rear of the cockpit/baggage area. This curtain is attached to composite struts in the fuselage with velcro straps. Its purpose is to minimise drumming of the fuselage as well as restricting material falling aft of the curtain and resulting in a severe aft centre of gravity condition. The curtain should be in place for all flights.

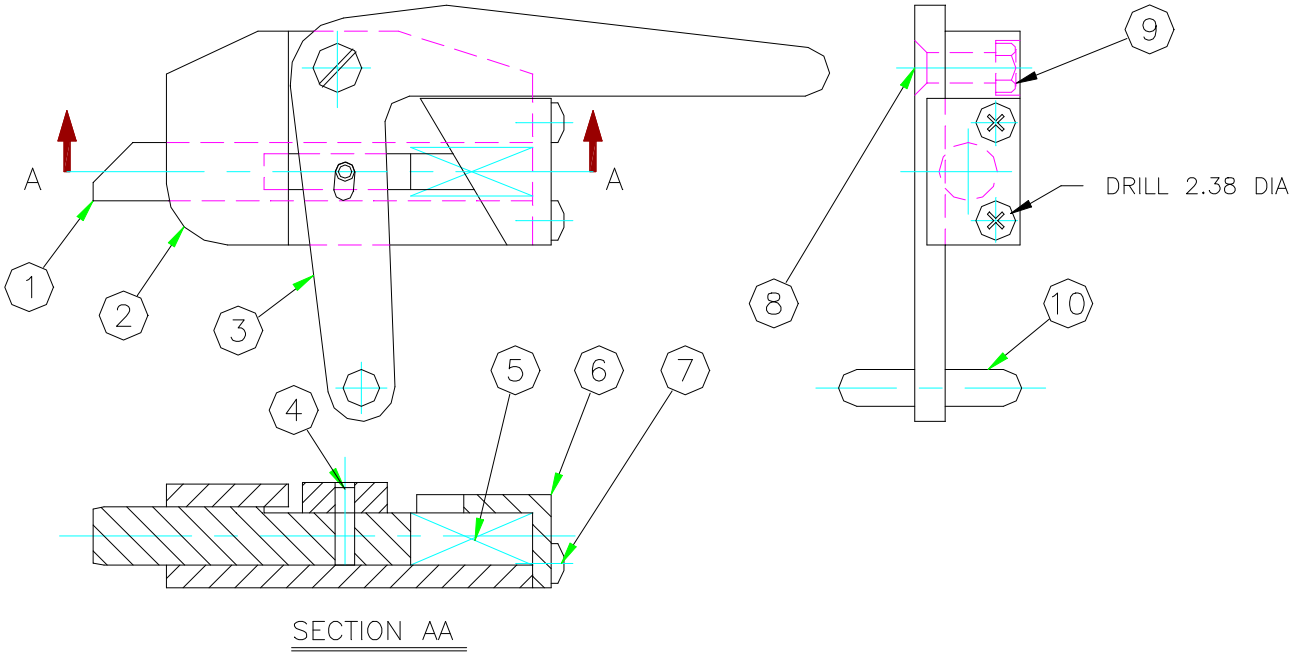
3.7 SAFETY PROVISIONS

3.7.1 Seatbelts

Aircraft grade Seatbelts, bolted to the fuselage structure, are provided for both seats. Belts should be replaced if frayed or cut, latches are defective of stitching is broken. Attaching parts should be replaced with equivalent grade parts if excessively worn or defective.

Door Latch Assembly

ITEM	L.S ASSY P/N	R.S ASSY P/N	DESCRIPTION	QTY.
	7012093	701709N	DOOR LATCH ASSY	
1	7016094	701809N	PLUNGER DOOR LATCH	1
2	7013094	701909N	BLOCK NYLON DOOR LATCH	1
3	7014094	702009N	LEVER DOOR LATCH	1
4	PH0329N	PH0329N	ROLL PIN 1/8 X 1/2	1
5	PX0019N	PX0019N	SPRING	1
6	7015094	702109N	PLATE ALUMINIUM	1
7	PH0129N	PH0129N	SELF TAP 6gg X 10	2
8	PH0369N	PH0369N	SCREW C/S 3/16 X 5/8 BSW	1
9	PH0319N	PH0319N	NUT 3/16 BSW HEX	1
10	7023094	7023094	PIN – DOOR LEVER	1



Drawing 7012093/3 DOOR LATCH ASSY

Figure: 3-3-4

SECTION 4

WINGS and EMPENNAGE

Table of Contents **Paragraph**

4.1 WINGS and EMPENNAGE

4.2 Wings

Refer to Figure 4.2.

Each composite wing is a semi-cantilever, monocoque type with a main spar. The wing is a moulded structure of rigid cellular polystyrene which is bonded through a moulding process to a fibreglass skin and to the spars.

The forward wing attachment is an extension of the forward sub-spar. The rear attachment is a composite block heavily bonded to the reinforced wing skin and attaching the main spar through the Wing End Plug. Both attachments are through stainless steel threaded bushes bonded into the attachment blocks.

4.2.1 Removal

The JABIRU aircraft is designed with wings which are removable for storage or transport.

Wing removal is most easily achieved if two persons are available to handle the wing.

1. Remove wing root fairings.
2. Remove wing strut fairings – top and bottom.
3. Disconnect Pitot tube – RH wing only.
4. Unbolt flap control rods – 1 each wing.
5. Unbolt aileron control cables (2) from rear of control stick horn inside cabin.
6. Remove pin and clamp block from aileron control cable clamps at rear of seat – 1 each seat.
7. With one person supporting wing tip, unbolt top wing strut bolt and lower wind strut to the ground.
8. Lower wing tip to ground.
9. Unbolt and remove front wing attachment bolt.
10. Unbolt and remove rear wing attachment bolt.
    Note: It may be necessary to rock the wing slightly while pulling attaching bolt, or carefully use a long drift punch to drive out attaching bolt.
11. Carefully remove wing by moving it out to clear the aileron cable from the fuselage.
12. Place wing on cushioned structure to avoid damage to wing strut attachment.
13. Unbolt lower wing strut bolt and remove wing strut.
14. Repeat Steps 6 – 12 to remove other wing.

4.2.2 Repair

The wing is a composite monocoque structure. All repairs must be referred to JABIRU AIRCRAFT Pty Ltd.

4.2.3 Installation

1. Fit wing and its lower attaching bolt, leaving the top end of the strut on the ground.

WARNING

Do Not Tighten nut or metal fatigue may result
washer must be free to rotate.

2. Fit wing to fuselage, leaving wing tip on the ground and routing aileron cable through hole in fuselage wing root.
3. Install front and rear wing attaching bolts/nuts.
4. Put top wing strut attaching bolt in your pocket.
5. Lift wing tip and install wing strut to wing strut attachment with bolt from pocket. Install nut.

WARNING

Do Not Tighten nut or metal fatigue may result
washer must be free to rotate.

6. Install bolt/nut in flap control rod.
7. Install bolt/nut in aileron control cable on main control stick horn.
8. Install clamp block and pin in aileron control cable clamp at rear of seat.
9. On RH wing, reconnect pitot tube.
10. Replace wing strut fairings – top and bottom.
11. Replace wing root fairings.

4.3 WING STRUTS

Each wing strut is a single lift strut which transmits a part of the wing load to the lower portion of the fuselage. The strut consists of a streamlined tube riveted to two end fittings which attach to the fuselage and wing.

WARNING

Do Not Tighten Strut Attachment Bolts.
Metal fatigue may result
Bolt must be free to rotate.

4.3.1 Removal and Installation

See Wing Removal (Paragraph 4.2.1) and Wing Installation (Paragraph 4.2.3).

4.3.2 REPAIR

Wing struts are structural components and therefore all repairs must be referred to JABIRU AIRCRAFT Pty Ltd.

A dented, cracked or deformed wing strut should be replaced prior to next flight.

4.4 FIN

The Fin is a moulded composite structure supported by a rib and a rear spar. Hinges attached to the rear spar attach the rudder.

4.4.1 Removal, Installation, Inspection and Repair

The fin is an integral part of the fuselage structure and cannot be removed.
All repairs must be referred to JABIRU AIRCRAFT Pty Ltd.

4.5 HORIZONTAL STABILISER

The horizontal stabiliser is a moulded monocoque structure of rigid cellular polystyrene bonded to a fibreglass skin and rear spar.

4.5.1 Removal and Installation

The horizontal stabiliser is an integral part of the fuselage to which it is bonded. It cannot be removed.

All repairs must be referred to JABIRU AIRCRAFT Pty Ltd.

SECTION 5

LANDING GEAR and BRAKES

Table of Contents **Paragraph**

5.1 LANDING GEAR

Main gear comprises two separate composite beams which are bolted to the fuselage at the top and centre and to the wheel stub at the bottom.

The nose gear is a welded steel, trailing arm assembly with a rubber spring system. The nose wheel is steerable with the rudder pedals.

Nose Wheel and Main Wheel Speed Fairings are optional equipment.

5.2 TROUBLE SHOOTING

Trouble	Probable Cause	Remedy
Aircraft leans to one side	Incorrect tyre inflation	Inflate to pressure shown at Fig 1-1
	Landing gear attaching parts not tight	Tighten loose parts. Replace defective parts.
	Bent axle stubs	Install new part(s)
Tyres wear excessively	Incorrect tyre inflation	Inflate to pressure shown in Figure 1-1
	Main wheels out of alignment	Align as specified in Figure 1-1
	Bent axle stubs	Install new part (s)
	Dragging Brakes	Refer to Para. 5.8

5.3 MAIN GEAR

Figure 5-3 illustrates the main landing gear. The illustrations should be used in conjunction with the following procedures during removal and installation of component parts.

The wheels comprise two wheel halves which are attached to the wheel hub by through-bolts and nuts as shown in Figure 5-3-1. During assembly of the main wheels the through-bolts/nuts should be tightened to the value specified in Figure 1-2.

NOTE: The Main Undercarriage Legs are Left and Right handed as denoted by Part Nos. 6003093 and 602409N respectively. They are NOT interchangeable.

WARNING: Check looseness of main u/c beams by lifting each wing and trying to move beam back and forth. If movement, tighten clamp bolts (2) evenly to take beam movement out. Do not over tighten or exceed 3 threads clear on the nuts (use extra washers). Models with wide 65lt tanks must have tank attachments and hoses loosened and rocked to obtain clearance on rear main saddle bolt. Over tightening can cause bolt fracture and failure to tighten both can also cause bolt failure.

5.3.1 Removal

The following procedural steps remove one side of the landing gear as a complete assembly. Refer to applicable paragraphs for removal of the individual components.

1. Jack the aircraft in accordance with Paragraph 2.1.2.
2. Unbolt wheel end of flexible brake hose – catching brake fluid in a container.
3. Remove bolt/nut from top inboard end of undercarriage beam. Remove rubber bushes (2).
4. Remove bolts/nuts (2) from the clamp at bend in undercarriage beam.
5. Remove clamp.
6. Remove Undercarriage Leg Assembly.

5.3.2 Installation

The following procedural steps install the landing gear as a complete assembly. Refer to applicable paragraphs for installation of the individual components.

With aircraft jacked:

1. Offer the beam to the fuselage and install clamp and bolts/nuts (2) – Do not tighten at this stage.
2. Locate top end bolt, install and tighten nut (See Torque Value Figure 1-2).
3. Tighten clamp bolts/nuts (2) (See Torque Value Figure 1-2).
4. Connect flexible brake line.
5. Top-up brake master cylinder with fresh brake fluid and bleed brakes – see Paragraph 5.8.5.
6. Lower aircraft

5.3.3 Inspection and Repair

1. Inspect composite beam for damage indicated by cracks or delamination. Pay particular attention to the area around the centre bend and to areas around drilled holes.
2. Inspect bolts and nuts for signs of stress or bending – replace if in any doubt.
3. Inspect clamp for damage.
4. Inspect bolt seats in fuselage for signs of damage, wear or perishing.

Repairs to the composite undercarriage beams must be referred to JABIRU AIRCRAFT Pty Ltd.

4.3.4 Main Wheel Fairing Removal and Installation

1. Remove the machine screws around the join of the forward and rear sections of the fairing.
2. Remove the bolt on the outside of the rear section of the fairing.
3. Remove the machine screws (2) in the leg attachment fitting.
4. Remove the machine screws (3) in the inside of the rear section of the fairing.
5. Reverse the preceding steps for installation.

5.3.5 Main Gear Top Fairing Removal and Installation

The fairing at the top of the main undercarriage leg is removed by removing the securing screws.

To install, reverse this procedure.

5.4 MAIN WHEEL

5.4.1 Main Wheel Removal

1. Jack aircraft as outlined in Paragraph 2.1.2.
2. Remove speed fairing, if installed, in accordance with paragraph 5.3.4.
3. Remove outboard brake pad plate.
4. Remove lock bolt/nut through centre of axle and spacer.
5. Remove lock spacer.
6. Pull wheel from axle.

5.4.2 Main Wheel Disassembly

1, Deflate tyre and break tyre beads loose from tyre rims.

WARNING

Injury can result from attempting to separate wheel halves with the tyre inflated. Avoid damaging wheel flanges when breaking beads loose as a scratch, nick or gouge may cause wheel failure.

2. Remove through-bolts/nuts and separate wheel halves, removing tyre and tube and wheel hub.
3. Remove brake disc.
4. Remove bearings from hub.

NOTE: The bearing are “press-fit” in the wheel hub and should not be removed unless a new part is to be installed.

5.4.3 Main Wheel Inspection, Assembly and Repair

1. Clean all metal parts in solvent and dry thoroughly.
2. Inspect wheel halves for cracks. Cracked wheel halves should be discarded and new parts used. Sand out nicks, gouges and corroded areas. Clean thoroughly and paint with silver paint.
3. If excessively warped or scored or worn to a thickness of 2 mm, brake discs should be replaced with a new part. Sand smooth small nicks and scratches.
4. Carefully inspect bearings for damage and discolouration.

NOTE: Bearings are pre-packed. DO NOT clean with solvents as it will removed the packing.

5. Replace bearings.

6. Position tyre and tube between wheel halves with tube inflation valve through hole in outside wheel half.
7. Mate with wheel hub.
   While maintaining a light force, assemble a washer and nut on one through-bolt and tighten snugly. Assemble the remaining washers and nuts on the through-bolts and torque to the value specified in Figure 1-2.

CAUTION

Ensure tube is not pinched between wheel halves during assembly. Uneven or improper torque of through-bolt nuts can cause failure of bolts with resultant wheel failure.

8. Insert through-bolts through brake disc and position disc on the inner wheel hub flange.
9. Inflate tyre to seat tyre beads, then adjust to correct tyre pressure – Refer Figure 1-1.

5.4.4 Main Wheel Installation

1. Lightly coat axle with "Anti Sieze" or a Water Proof grease.
2. Place wheel assembly on axle.
3. Install spacer and lock bolt/nut through centre of axle.
4. Place outboard brake pad plate and springs in position and secure with bolts/nuts/washers.
5. Reconnect flexible brake line.
6. Refill brake master cylinder with fresh brake fluid.
7. Bleed brakes – Refer to Section 5.8.5.
8. Install speed fairing (if used) as outlined in Paragraph 5.3.4.

5.4.5 Main Wheel Stub Axle Removal

1. Remove speed fairing (if installed) in accordance with Paragraph 5.3.4.
2. Remove wheel in accordance with Paragraph 5.4.1.
3. Disconnect flexible brake hose and drain brake fluid.
4. Remove 4 bolts/nuts/washers securing axle to leg.

NOTE: When removing axle from leg, note number and position of the wheel alignment shims (if any) between the axle flange and composite leg. Mark these shims or tape them together carefully so that they can be installed in exactly the same position, to ensure that wheel alignment is not disturbed.

5. Remove inboard brake plate.

5.4.6 Main Wheel Stub Axle Installation

1. Secure axle and inboard brake plate to composite leg, making sure that any wheel alignment shims are installed in their original position.
2. Install wheel assembly on axle in accordance with Paragraph 5.4.4.

5.4.7 Main Wheel Alignment

Refer to Figure 5-4-7.

5.4.8 Wheel Balancing

Since uneven tyre wear is usually the cause of tyre imbalance, replacing the tyre will probably correct this condition. If a wheel shows evidence of imbalance during service, it may be statically balanced.

5.5 NOSE GEAR

The nose gear comprises a steerable nose wheel mounted on a welded steel assembly with aluminium trailing arms and a rubber spring system.

The steel tube is constrained within two lubron bushes mounted in the fuselage main horizontal beam.

Nose wheel steering is achieved by connecting the rudder pedal assembly to the nose wheel steering link by a push rod. The nosewheel is centred by a sprung steel cable.

A nose wheel speed fairing is optional equipment.

Disassembly, inspection, repair and reassembly of the nose wheel assembly are described in separate paragraphs.

The wheel is in two halves which are joined by through-bolts to the wheel hub as shown in Figure 5-5. During assembly of the nose wheel, the through-bolts must be tightened evenly and torqued to the value specified in Figure 1-2.

5.5.1 Trouble Shooting

Trouble	Probable Cause	Remedy
Nose wheel shimmy	Nose strut bolts loose	Tighten bolts
	Loose or worn steering link	Tighten, replace defective parts
	Nose wheel out of balance	Refer Paragraph 5.6.5
	Wheel bearings loose	Replace

5.5.2 Nose Gear Removal and Installation

See Figure 5-5.

1. Weight or tie-down tail of aircraft to raise nose wheel off floor.
2. Disconnect nose wheel steering cables and centring cable from steering cross beam.
3. Unbolt steering cross beam.
4. Slide steering cross beam from position in top of front aluminium beam.
5. Pull the nose wheel strut assembly down from the bushes in the fuselage.

To install the nose gear, reverse the preceding steps.

5.5.3 Nose Gear Inspection and Repair

1. Inspect steel tube and attachments for dents and straightness.
2. Inspect rubber spring assembly for damage or perishing of the rubber, or delamination of the rubber from the aluminium spacers between the rubber blocks.
3. Inspect aluminium trailing arms for damage or bending.
4. Inspect bolts/nuts for torque – see torque values Figure 1-2.

Repairs to the welded nose leg assembly beam must be referred to JABIRU AIRCRAFT Pty Ltd.

5.5.4 Nose Wheel Speed Fairing Removal and Installation

1. Remove the machine screws around the forward and rear sections of the fairing and remove the front section.
2. Loosen the axle nuts and remove the rear section.
3. Reverse the preceding steps for installation.

5.6 NOSE WHEEL

5.6.1 Nose Wheel Removal and Installation

1. Weight or tie-down tail of aircraft to raise the nose wheel off the floor.
2. Remove nose wheel axle bolt.
3. Pull nose wheel assembly from yolk.

Reverse the preceding steps to install nose wheel. Tighten axle bolt.

5.6.2 Nose Wheel Disassembly

1. Completely deflate tyre and break tyre beads loose at wheel rim.

WARNING

Injury can result from attempting to separate wheel halves with the tyre inflated. Avoid damaging wheel flanges when breaking beads loose as a scratch, nick or gouge may cause wheel failure.

2. Remove through-bolts and separate wheel halves.
3. Remove wheel hub.
4. Remove tyre and tube from wheel halves.
5. Remove bearings.

NOTE: The bearings are "press-fit" in the wheel hub and should not be removed unless a new part is to be installed.

5.6.3 Nose Wheel Inspection and Repair

1. Clean metal parts in solvent and dry thoroughly.
2. Inspect wheel halves for cracks. Cracked wheel halves should be discarded and new parts used. Sand out nicks, gouges and corroded areas. Clean thoroughly and paint with silver paint.
3. Carefully inspect bearings for damage and discolouration.

NOTE: Bearings are pre-packed. DO NOT clean with solvents as it will remove the packing.

4. Refit bearings.

5.6.4 Nose Wheel Reassembly

1. Replace bearings in wheel hub.
2. Position tyre and tube between wheel halves with tube inflation valve through hole in outside wheel half.
3. Mate with wheel hub.
   While maintaining a light force, assemble a washer and nut on one through-bolt and tighten snugly. Assemble the remaining washers and nuts on the through-bolts and torque to the value specified in Figure 1-2.

CAUTION

Ensure tube is not pinched between wheel halves during assembly. Uneven or improper torque of through-bolt nuts can cause failure of bolts with resultant wheel failure.

4. Insert through-bolts through brake disc and position disc on the inner wheel hub flange.
5. Inflate tyre to seat the tyre beads, then adjust to correct tyre pressure – Refer Figure 1-1.

5.6.5 Wheel Balancing

Refer to Paragraph 5.4.8 for wheel balancing information.

5.7 NOSE WHEEL STEERING SYSTEM

5.7.1 Steering Centring Cable Assembly

The Nosewheel Centring Cable Assembly consists of a manufactured cable assembly and a spring.

Repair is limited to replacement of both or either part.

5.7.2 Nose Wheel Steering Assembly

Refer to Figure 5-7-2.

The Nosewheel Steering Assembly comprises a Steering Bellcrank Assembly which is bolted to the Main Beam and push rods attaching the Rudder Pedals and the Steering Link.

Repair is limited to the replacement of serviced parts.

5.8 BRAKE SYSTEM

The hydraulic brake system consists of one master cylinder located between the seats in the main longitudinal beam, flexible hoses connecting the master cylinder to each wheel brake cylinder and the single disc, floating-cylinder type brake assembly, located at each main landing gear wheel.

5.8.1 Trouble Shooting

Trouble	Probable Cause	Remedy
Dragging brakes	Brake handle binding	Check and adjust
	Worn or broken piston return spring	Repair or install new master cylinder
	Restriction in hydraulic lines or in master cylinder	Drain brake line, clear with compressed air. If cleaning lines fails, the master cylinder may be faulty and should be repaired or replaced.
Brakes fail to operate	Leak in system	If master cylinder or wheel cylinders are leaking, repair or install new parts.
	Air in system	Bleed system
	Lack of fluid in master cylinder	Fill and bleed system
	Master cylinder defective	Repair or install new parts
	Brake pads worn	Replace with new parts

5.8.2 Brake Master Cylinder

The brake master cylinder, located between the seats in the main longitudinal beam, is actuated by applying rearward pressure to the brake handle. A small reservoir is incorporated into the master cylinder for the fluid supply.

Brake Master Cylinder Removal and Installations

1. Remove the flexible hose from one wheel brake assembly and drain the hydraulic fluid from the brake system.
2. Remove cover over main longitudinal beam between seats.
3. Unbolt pushrod at brake handle and remove pushrod.
4. Disconnect flexible hose at master cylinder.
5. Unbolt master cylinder retaining bolts (2).
6. Plug or cap hydraulic fittings and hoses to prevent the entry of foreign material.

Reverse the preceding steps to install brake master cylinder, then fill and bleed brake system in accordance with Paragraph 5.8.5.

Brake Master Cylinder Repair

Figure 5-8-2 may be used as a guide during disassembly, repair and reassembly of the brake master cylinder.

Repair is limited to installation of new parts, cleaning and adjustment. Use only automotive brake fluid. DO NOT use aircraft grade hydraulic fluid or damage will result.

5.8.3 Hydraulic Brake Lines

These lines are flexible hoses connected through a tee-piece.

Repair is limited to replacement.

5.8.4 Wheel Brake Assemblies

The Wheel Brake Assemblies use a disc which is attached to the main wheel hub with through-bolts and a floating brake assembly (Refer to Figure 5-3-1).

Removal
The Wheel brake assemblies can be removed by disconnecting the brake hose and unbolting the brake cylinder from the backing plate. The brake disc is removed after the wheel is removed and disassembled. Refer to Figure 5-3-1 for disassembly of either wheel brake assembly.

Wheel Brake Inspection and Repair

1. Clean all parts except brake linings and cylinder buckets in dry cleaning solvent and dry thoroughly.
2. New cylinder buckets should be installed each time they are removed. If reuse is necessary, they should be wiped with a clean cloth saturated in automotive brake fluid and inspected for damage.

NOTE: Thorough cleaning is important. Dirt and chips are the greatest single cause of malfunctions and leaks in hydraulic brake systems.

3. Check brake linings for deterioration or excessive wear.
4. Inspect brake cylinder bore for scoring. A scored cylinder will leak or cause rapid bucket wear. If wear is evident, install a new brake cylinder.
5. If the anchor bolts on the brake assembly are nicked or gouged, replace with new bolts.
6. Inspect wheel brake disc for a minimum thickness of 2mm. If brake disc is below minimum thickness, install a new part.

Wheel Brake Installation

1. Place brake cylinder assembly in position on backing plate.
2. Install bolts, springs, outboard pad and nuts/washers.
3. Reconnect flexible hose.
4. Fill master cylinder reservoir with brake fluid.
5. Bleed brakes – Refer to Paragraph 5.8.5.

Brake Lining Installation

New brake linings should be installed when the existing linings are worn to expose the rivet heads.

To replace outboard lining:

1. Remove bolts securing outboard brake pad and brake cylinder to backing plate.
2. Remove outboard brake pad.
3. Place brake pad on a table with lining side down flat. Centre a 1/8" (or slightly smaller) punch on the rolled rivet and hit the punch sharply with a hammer. Punch out all rivets securing the lining to the pad plate.

   NOTE: A replacement kit for brake pads and rivets is available from JABIRU as Part No. 6000994.
4. Clamp the flat side of an anvil in a vice.
5. Align the new lining on the pad plate and place the brake rivet in the hole with the rivet head in the lining. Place the head against the anvil.
6. Centre the rivet setting punch on the lips of the rivet. While holding the pad plate down firmly against the lining, hit punch with hammer to set the rivet. Repeat blows on the punch until the lining is firmly against the pad plate.
7. Realign the lining of the pad plate and install and set rivets in the remaining holes.
8. Replace the brake pad and refix with through-bolts and springs.

To replace inboard lining it is necessary to:

1. Remove wheel assembly – see Paragraph 5.4.1.
2. Remove stub axle – see Paragraph 5.4.5.
3. Remove brake cylinder backing plate.
4. Replace lining in accordance with steps 3-7 above.
5. Install axle and wheel assembly – see Paragraph 5.4.6.
6. Install outboard brake pad and refix with through-bolts and springs.

5.8.5 Brake System Bleeding

1. Fill the brake master cylinder with automotive brake fluid.
2. Loosen the flexible hose fitting at the brake cylinder.
3. Pump the handbrake until air is expelled from lines.

NOTE: Ensure brake master cylinder remains full above the outlet hose.

4. When air is fully expelled, tighten flexible hose fitting.
5. Repeat steps 1-4 for other side brake.

CAUTION

Use only automotive brake fluid. DO NOT use aircraft hydraulic fluid or damage will result.

5.8.6 Brake Pad Adjustment

Brake Pads may be adjusted by remove the Main Wheel Spats and tightening the brake pad attaching bolts and nuts until the wheel just rotates freely.

5.8.7 Parking Brake

The Parking Brake consists of an over centre cam on the brake handle. Should the cam have insufficient travel for the brakes to hold the aircraft with a propeller thrust of 2500rpm, adjust by one or all of the following:

1. Adjust brakes as described in Paragraph 5.8.6.
2. Bleed air from brake system as described in Paragraph 5.8.5.
3. Adjust length of Master Cylinder Drive Rod at the Rod End attaching to the Brake Handle.

NOTE: Items 1 and 2 above should correct the adjustment.
Item 3 should only be necessary with replacement of Master Cylinder.

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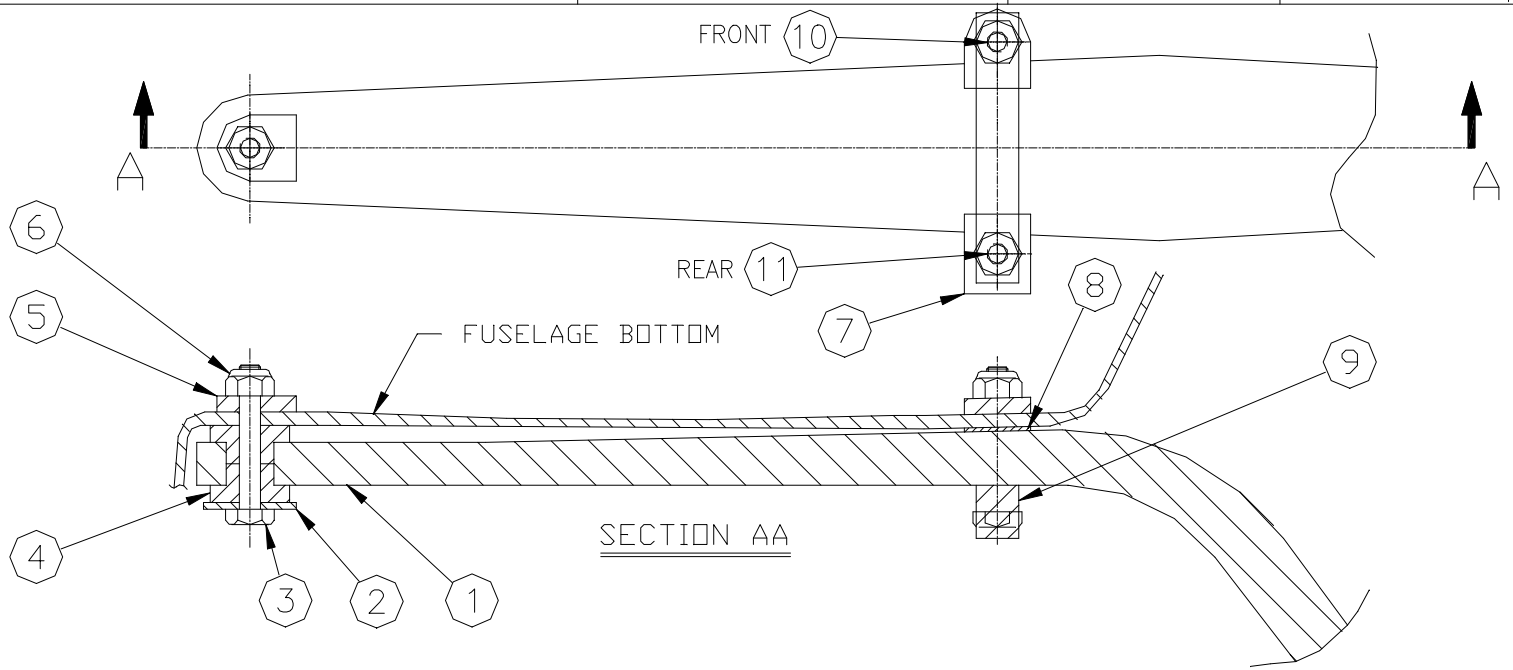

Figure: 5-3

ITEM	PART No.	DESCRIPTION	QTY.	ITEM	PART No.	DESCRIPTION	QTY.
6	MS20365-524	NUT	3				
5	6037094	BACKING PLATE RAD	2				
4	6034094	BUSH UNDERCARRIAGE	2	11	AN5-33A	BOLT	1
3	AN5-26A	BOLT	1	10	AN5-31A	BOLT	1
2	6033094	WASHER SPECIAL	1	9	6002094	CLAMP BAR	1
1	602409N	SUSPENSION LEG R.S	1	8	6019094	RUBBER STRIP	1
1	6003093	SUSPENSION LEG L.S	1	7	6036094	BACKING PLATE	1

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MATERIAL	AS DETAILED	APPR.			DWG. NO. 6038094-2 SHEET 1 OF 1 A4

ITEM	PART No.	DESCRIPTION	QTY.
1	PU0049N	WHEEL ASSY	1
2	AN4-7A	BOLT	4
3	MS20365-428	NUT	10
4	AN960-416	WASHER	10
5	6053094	WHEEL HUB	1
6	PB0029N	BEARING	2
7	AN3-13A	BOLT	1
8	6000594	EXTENSION - STUB AXLE	1
9	MS20365-1032	NUT	5
10	6000294	BRAKE DISC	1
11	AN3-6A	BOLT	4
12	AN960-10	WASHER	4
13	AN4-16A	BOLT	4

ITEM	PART No.	DESCRIPTION	QTY.
14	6000694	AXLE STUB	1
15	6000894	MOUNTING PLATE	1
16	PX0029N	SPRING	2
17	AN4-16A	BOLT	2
18	6017094	PISTON BODY ARM	1
19	R120	RIVET	3
20	6190404	BRAKE PISTON WITH ORING SEAL	1
ITEM 21 PISTON SEAL REMOVED FROM ASSY ISS 3			
22	BS 210	ORING BS210	1
23	6000994	BRAKE PAD	2
24	R121	RIVET	3
25	6000194	MOUNTING PLATE	1
26	6088084	PISTON BODY WITH BLEED LS	1
27	608908N	PISTON BODY WITH BLEED RS	1

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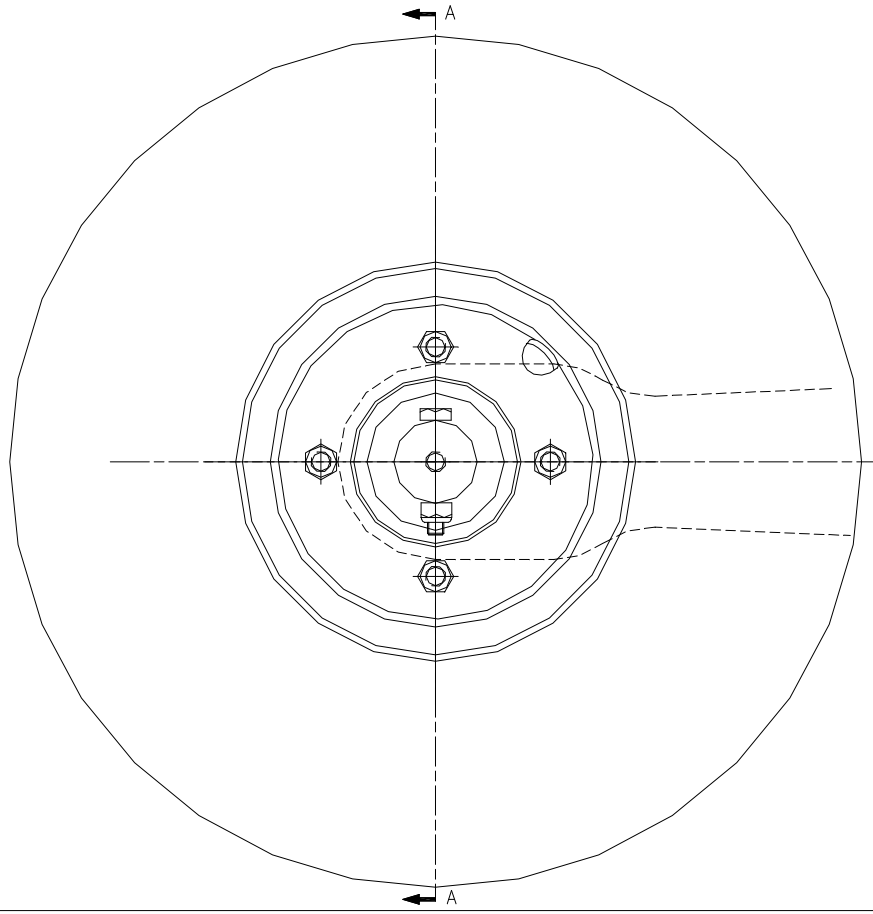

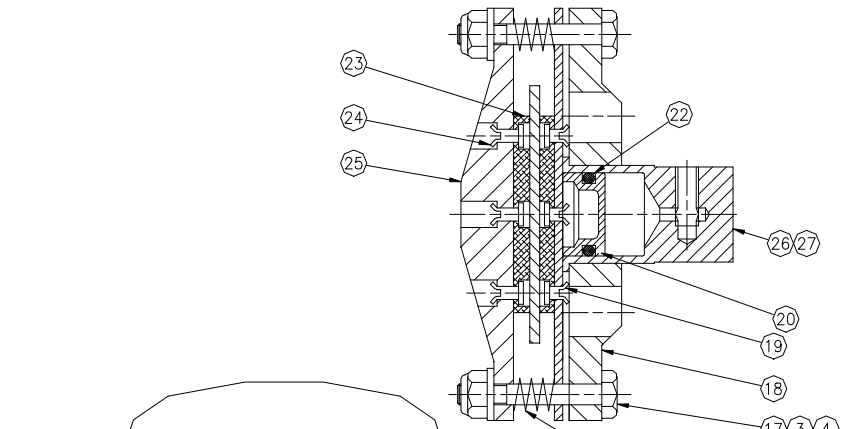

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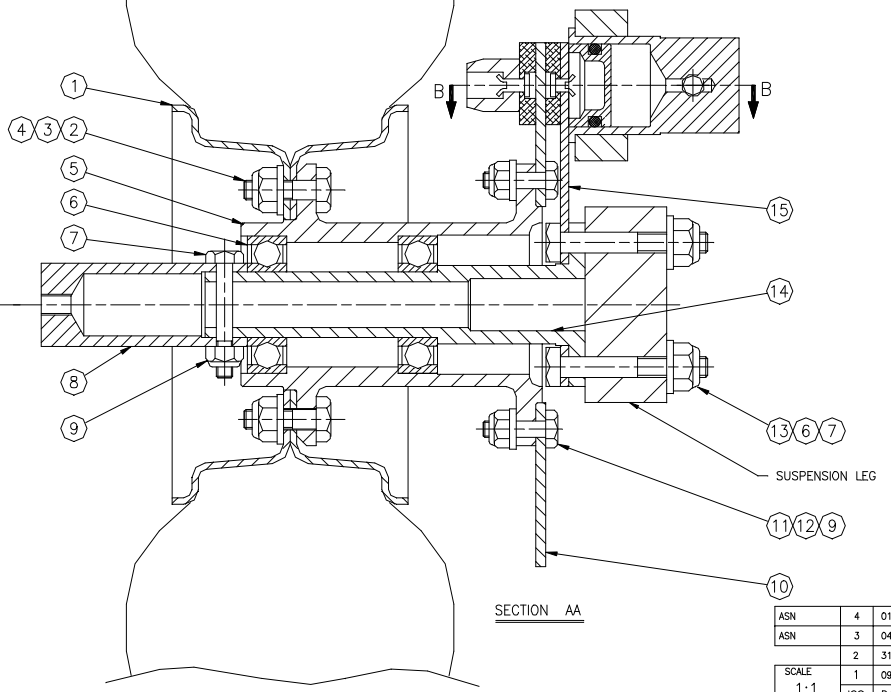

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MATERIAL	AS DETAILED	APPR.			DWG. NO. 6000092-4
					SHEET 1 OF 1 A2

ITEM	PART No.	DESCRIPTION	QTY.	ITEM	PART No.	DESCRIPTION	QTY.
1	6057044	RIM ASSY 6" INCL. REINFORCING	1	15	6000894	MOUNTING PLATE	1
2	AN4-10A	BOLT	4	16	PX0029N	SPRING	2
3	MS20365-428	NUT	10	17	AN4-16A	BOLT	2
4	AN960-416	WASHER	10	18	6017094	PISTON BODY ARM	1
5	6055044	WHEEL HUB	1	19	R120	RIVET	3
6	PB0029N	BEARING	2	20	6190404	BRAKE PISTON WITH ORING SEAL	1
7	AN3-13A	BOLT	1	ITEM 21 REMOVED AND REPLACED WITH ORING SEAL			
8	6000594	EXTENSION - STUB AXLE	1	22	BS 210	ORING BS210	1
9	MS20365-1032	NUT	5	23	6000994	BRAKE PAD	2
10	6000294	BRAKE DISC	1	24	R121	RIVET	3
11	AN3-6A	BOLT	4	25	6000194	MOUNTING PLATE	1
12	AN960-10	WASHER	4	26	PU0099N	TYRE 500 X 6	1
13	AN4-16A	BOLT	4	27	6088084	PISTON BODY WITH BLEED LS	1
14	6000694	AXLE STUB	1	28	608908N	PISTON BODY WITH BLEED RS	1

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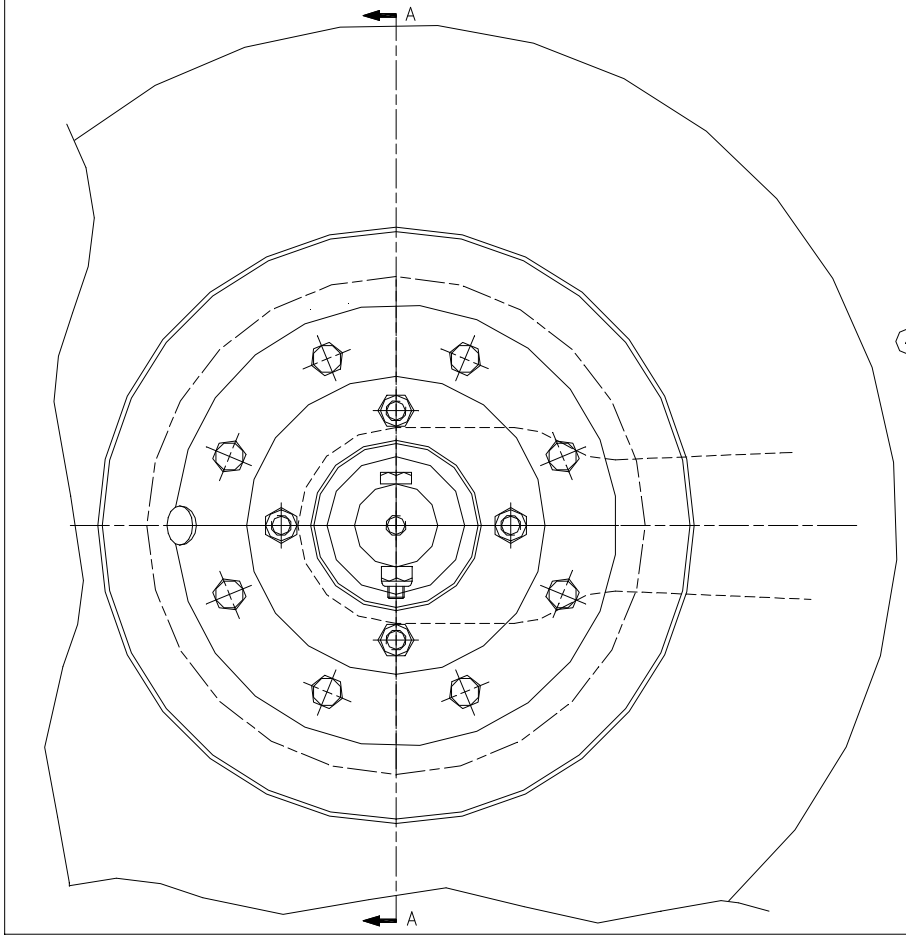

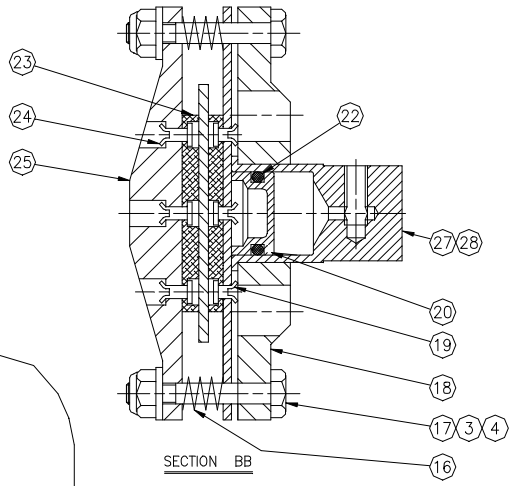

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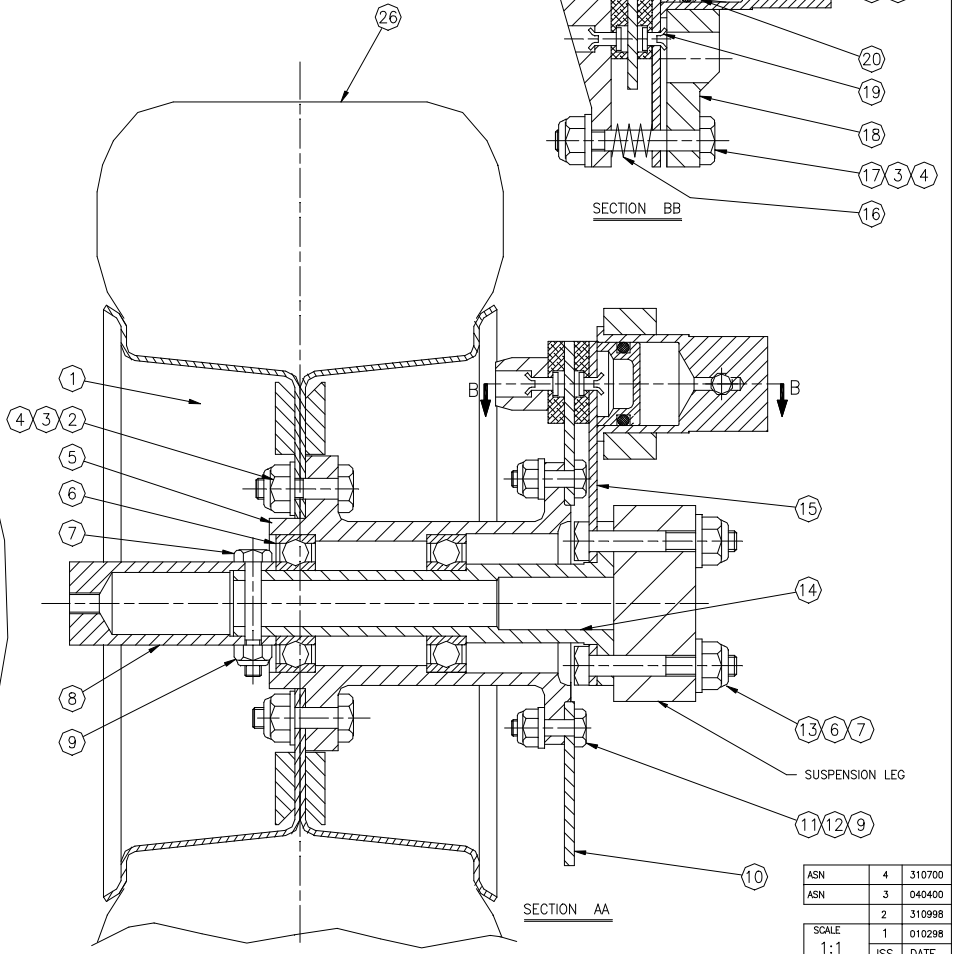

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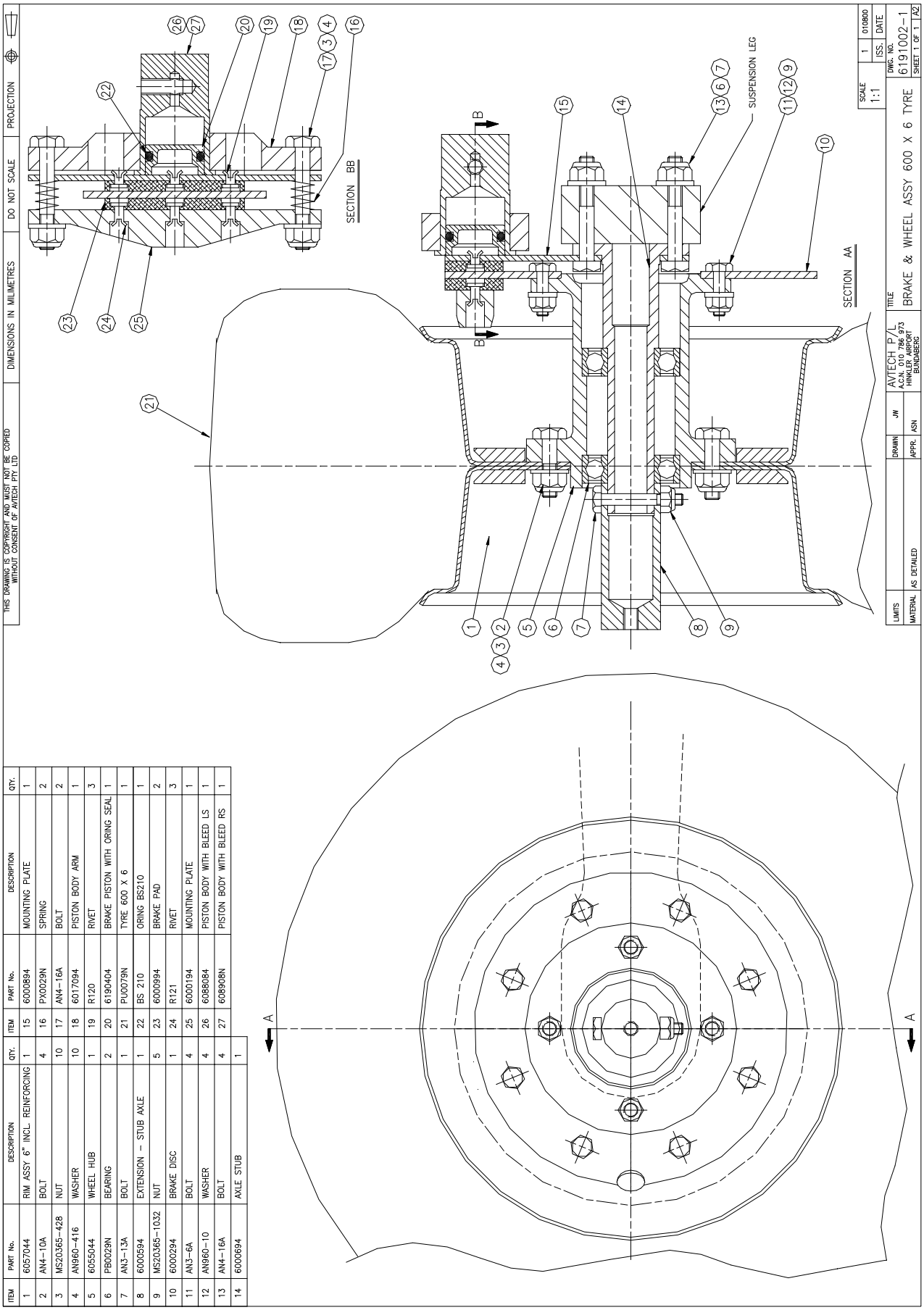
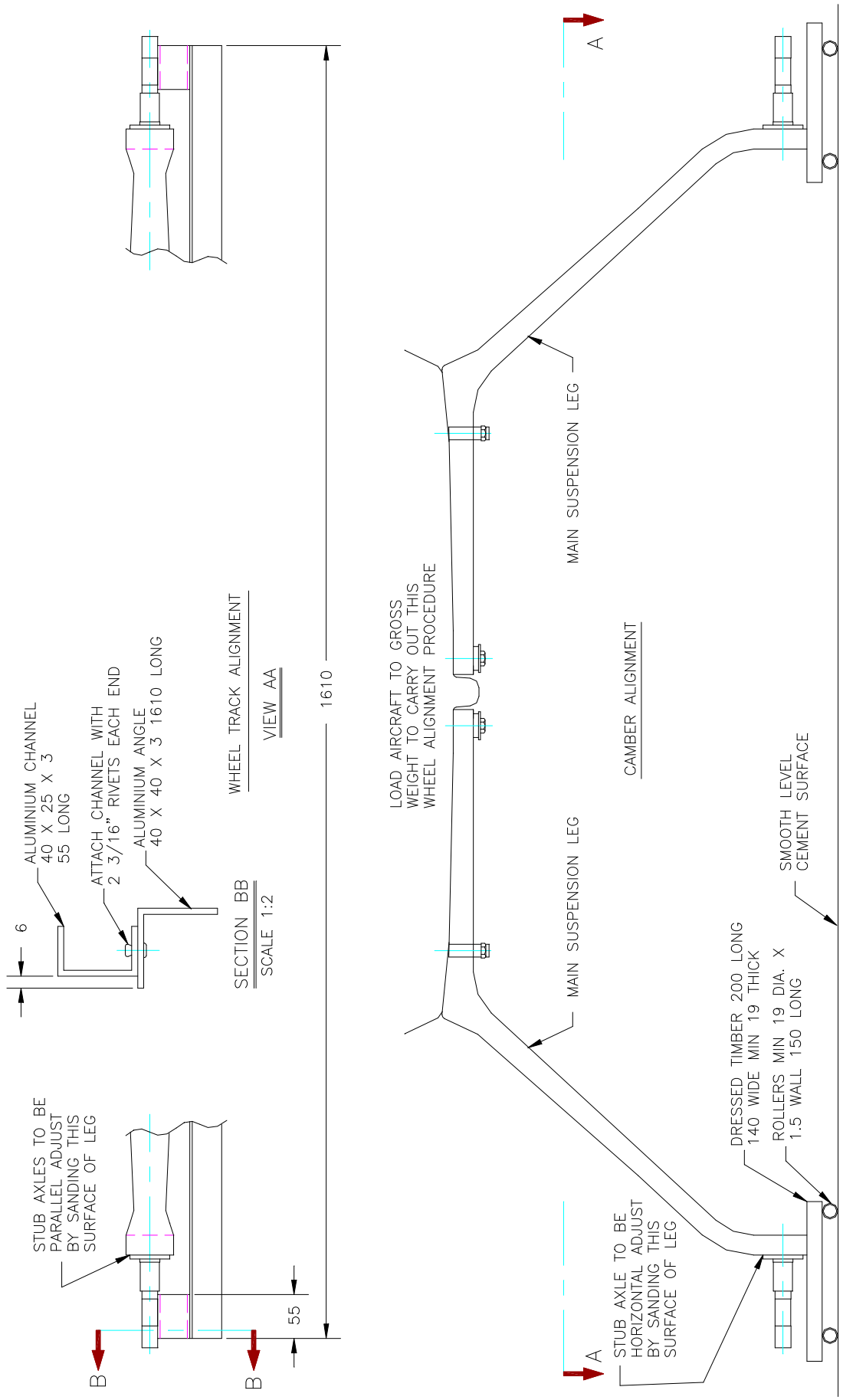
MATERIAL	AS DETAILED	APPR.			DWG. NO. 6083083-4 SHEET 1 OF 1 A2



ITEM	PART No.	DESCRIPTION	QTY.
1	6057044	RIM ASSY 6" INCL. REINFORCING	1
2	AN4-10A	BOLT	4
3	MS20365-428	NUT	10
4	AN960-416	WASHER	10
5	6055044	WHEEL HUB	1
6	PB0029N	BEARING	2
7	AN3-13A	BOLT	1
8	6000594	EXTENSION - STUB AXLE	1
9	MS20365-1032	NUT	5
10	6000294	BRAKE DISC	1
11	AN3-6A	BOLT	4
12	AN960-10	WASHER	4
13	AN4-16A	BOLT	4
14	6000694	AXLE STUB	1

ITEM	PART No.	DESCRIPTION	QTY.
15	6000894	MOUNTING PLATE	1
16	PX0029N	SPRING	2
17	AN4-16A	BOLT	2
18	6017094	PISTON BODY ARM	1
19	R120	RIVET	3
20	6190404	BRAKE PISTON WITH ORING SEAL	1
21	PU0079N	TYRE 600 X 6	1
22	BS 210	ORING BS210	1
23	6000994	BRAKE PAD	2
24	R121	RIVET	3
25	6000194	MOUNTING PLATE	1
26	6088084	PISTON BODY WITH BLEED LS	1
27	608908N	PISTON BODY WITH BLEED RS	1

Figure: 5-3-1



Drawing 9018093/1 WHEEL ALIGNMENT

Figure: 5-4-7

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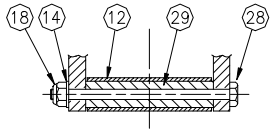

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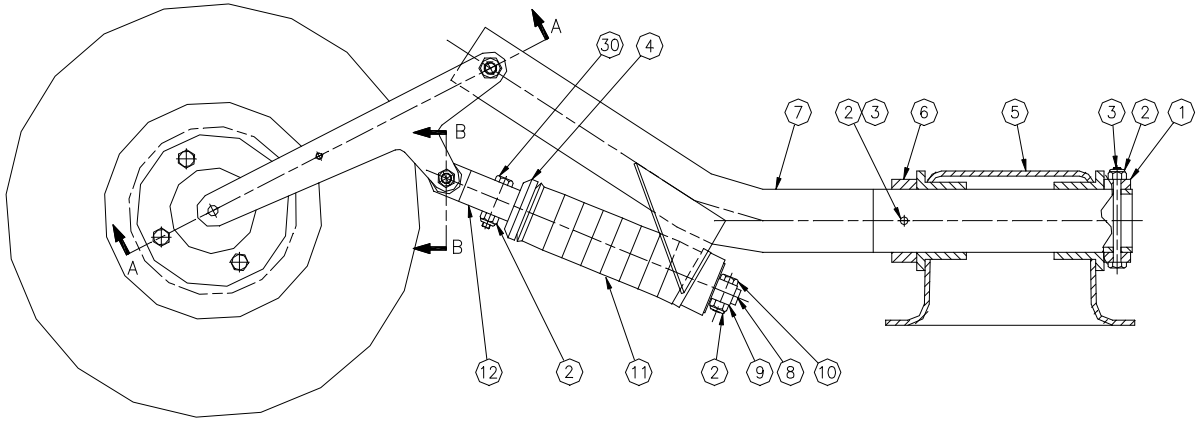

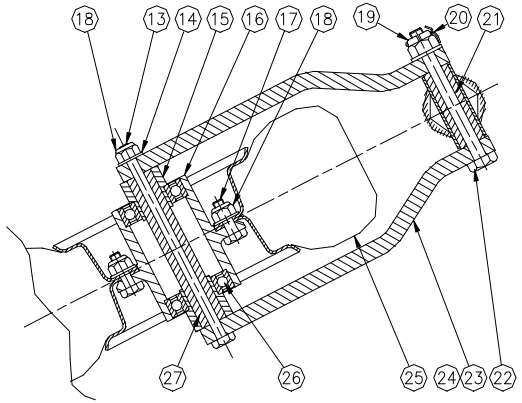

SECTION AA

ITEM	PART No.	DESCRIPTION	QTY.
30	AN3−11A	BOLT	1
29	6056434	BUSH SUSPENSION	1
28	AN4−42A	BOLT	1
27	6015094	FRONT AXLE	1
26	PB0029N	BEARING *6004−2RS	2
25	602009N	WHEEL ASSY	1
24	604509N	WHEEL YOKE LH	1
23	6044093	WHEEL YOKE RH	1
22	AN5−31	BOLT	1
21	6046094	BUSH SUSPENSION	1
20	AN380−2−2	COTTER PIN	1
19	AN310−5	CASTLE NUT	1
18	MS20365−428	NUT	6
17	AN4−7A	BOLT	4
16	6054094	HUB FRONT WHEEL	1
15	6014094	SPACER BEARING HUB	2
14	AN960−416	WASHER	6
13	AN4−53A	BOLT	1
12	6086084	SUSPENSION TENSION BRACKET	1
11	6055533	RUBBER SPACER SET	1
10	AN3−6A	BOLT	1
9	6061044	RETAINING COLLAR	1
8	6069044	TUBE SUSPENSION RUBBER	1
7	6195003	SUSPENSION LEG MACHINED	1
6	6191004	RETAINING COLLAR − M/C LEG	1
5	6194003	HOUSING ASSY WITH BUSHES	1
4	6087084	WASHER CURVED SUSP. BRKT	1
3	AN3−22A	BOLT	2
2	MS20365−1032	NUT	4
1	6193004	STEERING LINK − M/C LEG	1

Figure: 5-5

					SCALE 1:2	1	120900
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MATERIAL	AS DETIALED	APPR.	ASN			SHEET 1 OF 1	A2

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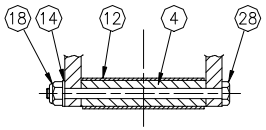

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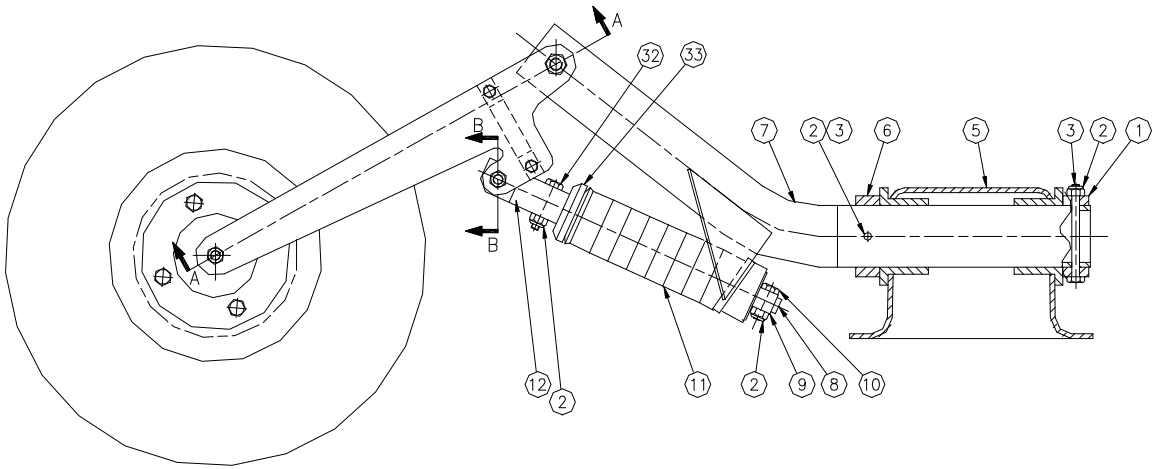

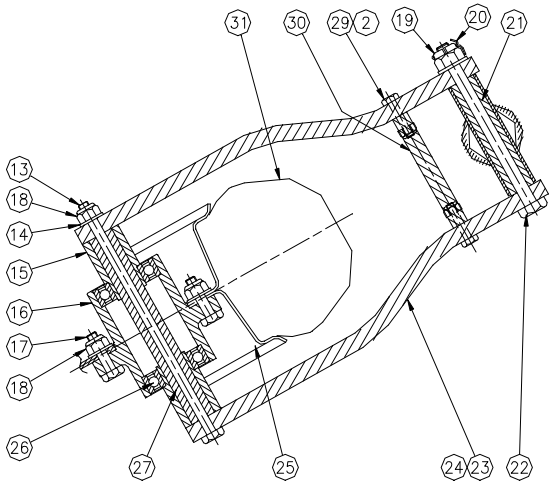

SECTION AA

ITEM	PART No.	DESCRIPTION	QTY.
33	6087084	WASHER CURVED SUSP. BRKT	1
32	AN3-11A	BOLT	1
31	PU0120N	TUBE 400 X4	1
31	PU0110N	TYRE 400 X4	1
30	6068044	SPACER WHEEL YOKES	1
29	AN3-1A	BOLT	4
28	AN4-42A	BOLT	1
27	6065044	FRONT AXLE	1
26	PB0029N	BEARING *6004-2RS	2
25	PU0130N	RIM ASSY 400 X 4 TYRE Med A	1
24	6066044	WHEEL YOKE LH	1
23	606704N	WHEEL YOKE RH	1
22	AN5-43	BOLT	1
21	604709N	BUSH SUSPENSION	1
20	AN380-2-2	COTTER PIN	1
19	AN310-5	CASTLE NUT	1
18	MS20365-428	NUT	6
17	AN4-10A	BOLT	4
16	6056044	HUB FRONT WHEEL	1
15	6064044	SPACER BEARING HUB	2
14	AN960-416	WASHER	6
13	AN4-63A	BOLT	1
12	6086084	SUSPENSION TENSION BRACKET	1
11	6055533	RUBBER SPACER SET	1
10	AN3-6A	BOLT	1
9	6061044	RETAINING COLLAR	1
8	6069044	TUBE SUSPENSION RUBBER	1
7	6196003	SUSPENSION LEG M/C BIG FOOT	1
6	6191004	RETAINING COLLAR M/C LEG	1
5	9194003	HOUSING ASSY M/C LEG	1
4	6056434	BUSH SUSPENSION	1
3	AN3-22A	BOLT	2
2	MS20365-1032	NUT	8
1	6193004	STEERING LINK - M/C LEG	1

LIMITS	+/- 0.5 UNLESS SPECIFIED	DRAWN	JW	AVTECH P/L A.C.N. 010 786 973 HINKLER AIRPORT BUNDABERG	TITLE: NOSE LEG ASSY MED. A 400 X 4 TYRE
MATERIAL	AS DETAILED	APPR.	ASN		DWG. NO. 6198002-1
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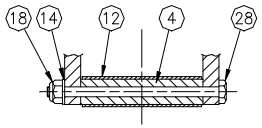
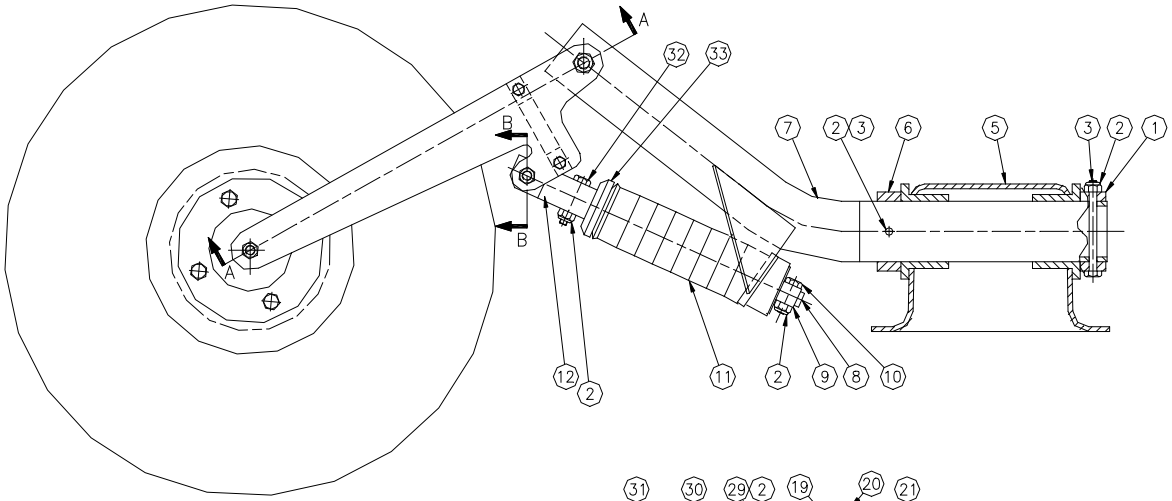
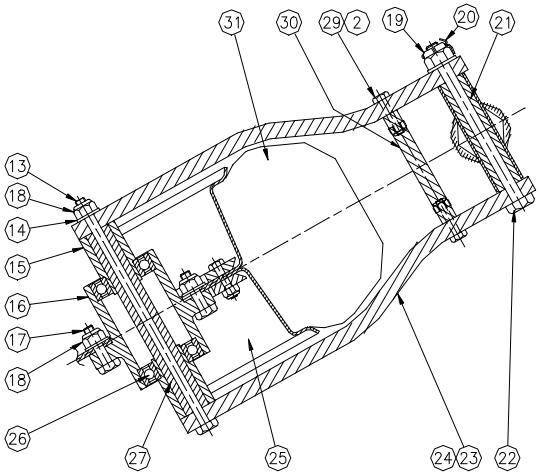


SECTION BB

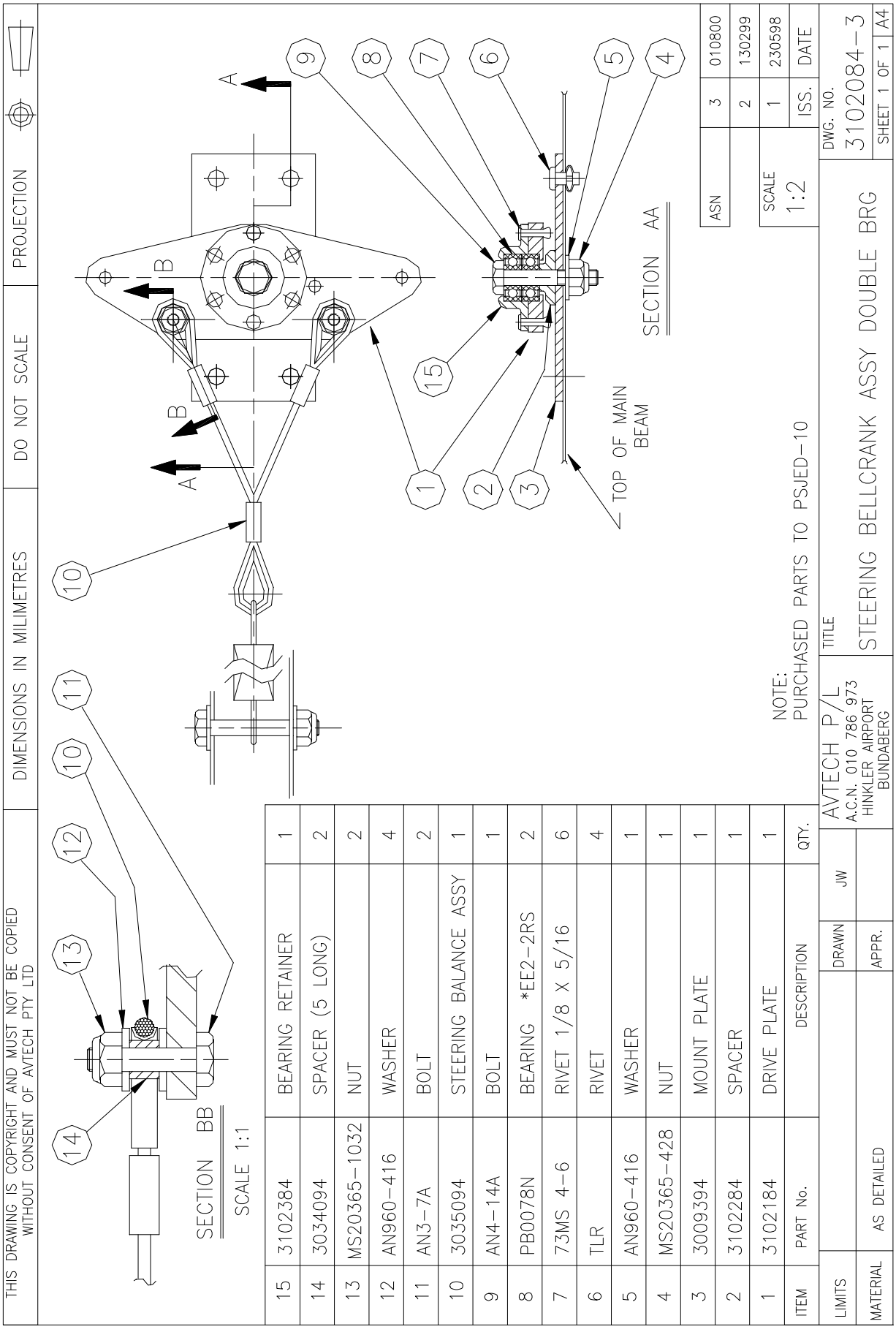




SECTION AA

ITEM	PART No.	DESCRIPTION	QTY.
33	6087084	WASHER CURVED SUSP. BRKT	1
32	AN3-11A	BOLT	1
31	PU0099N	TYRE 500 X 6	1
30	6068044	SPACER WHEEL YOKES	1
29	AN3-1A	BOLT	4
28	AN4-42A	BOLT	1
27	6065044	FRONT AXLE	1
26	PB0029N	BEARING *6004-2RS	2
25	6057044	RIM ASSY BIG FOOT 500 X 6	1
24	6066044	WHEEL YOKE LH	1
23	606704N	WHEEL YOKE RH	1
22	AN5-43	BOLT	1
21	604709N	BUSH SUSPENSION	1
20	AN380-2-2	COTTER PIN	1
19	AN310-5	CASTLE NUT	1
18	MS20365-428	NUT	6
17	AN4-10A	BOLT	4
16	6056044	HUB FRONT WHEEL	1
15	6064044	SPACER BEARING HUB	2
14	AN960-416	WASHER	6
13	AN4-63A	BOLT	1
12	6086084	SUSPENSION TENSION BRACKET	1
11	6055533	RUBBER SPACER SET	1
10	AN3-6A	BOLT	1
9	6061044	RETAINING COLLAR	1
8	6069044	TUBE SUSPENSION RUBBER	1
7	6196003	SUSPENSION LEG M/C BIG FOOT	1
6	6191004	RETAINING COLLAR M/C LEG	1
5	6194003	HOUSING ASSY M/C LEG	1
4	605643.4	BUSH SUSPENSION	1
3	AN3-22A	BOLT	2
2	MS20365-1032	NUT	8
1	6193004	STEERING LINK M/C LEG	1

LIMITS	+/- 0.5 UNLESS SPECIFIED	DRAWN	JW	AVTECH P/L A.C.N. 010 786 973 HINKLER AIRPORT BUNDABERG	TITLE: NOSE LEG ASSY BIG FOOT 500 X 6
MATERIAL	AS DETAILED	APPR.	ASN		DWG. NO. 6199002-1
SCALE 1:2	1	120900			SHEET 1 OF 1 A2
	ISS.	DATE			



ITEM	PART No.	DESCRIPTION	QTY.
15	3102384	BEARING RETAINER	1
14	3034094	SPACER (5 LONG)	2
13	MS20365-1032	NUT	2
12	AN960-416	WASHER	4
11	AN3-7A	BOLT	2
10	3035094	STEERING BALANCE ASSY	1
9	AN4-14A	BOLT	1
8	PB0078N	BEARING *EE2-2RS	2
7	73MS 4-6	RIVET 1/8 X 5/16	6
6	TLR	RIVET	4
5	AN960-416	WASHER	1
4	MS20365-428	NUT	1
3	3009394	MOUNT PLATE	1
2	3102284	SPACER	1
1	3102184	DRIVE PLATE	1

Figure: 5-7-2

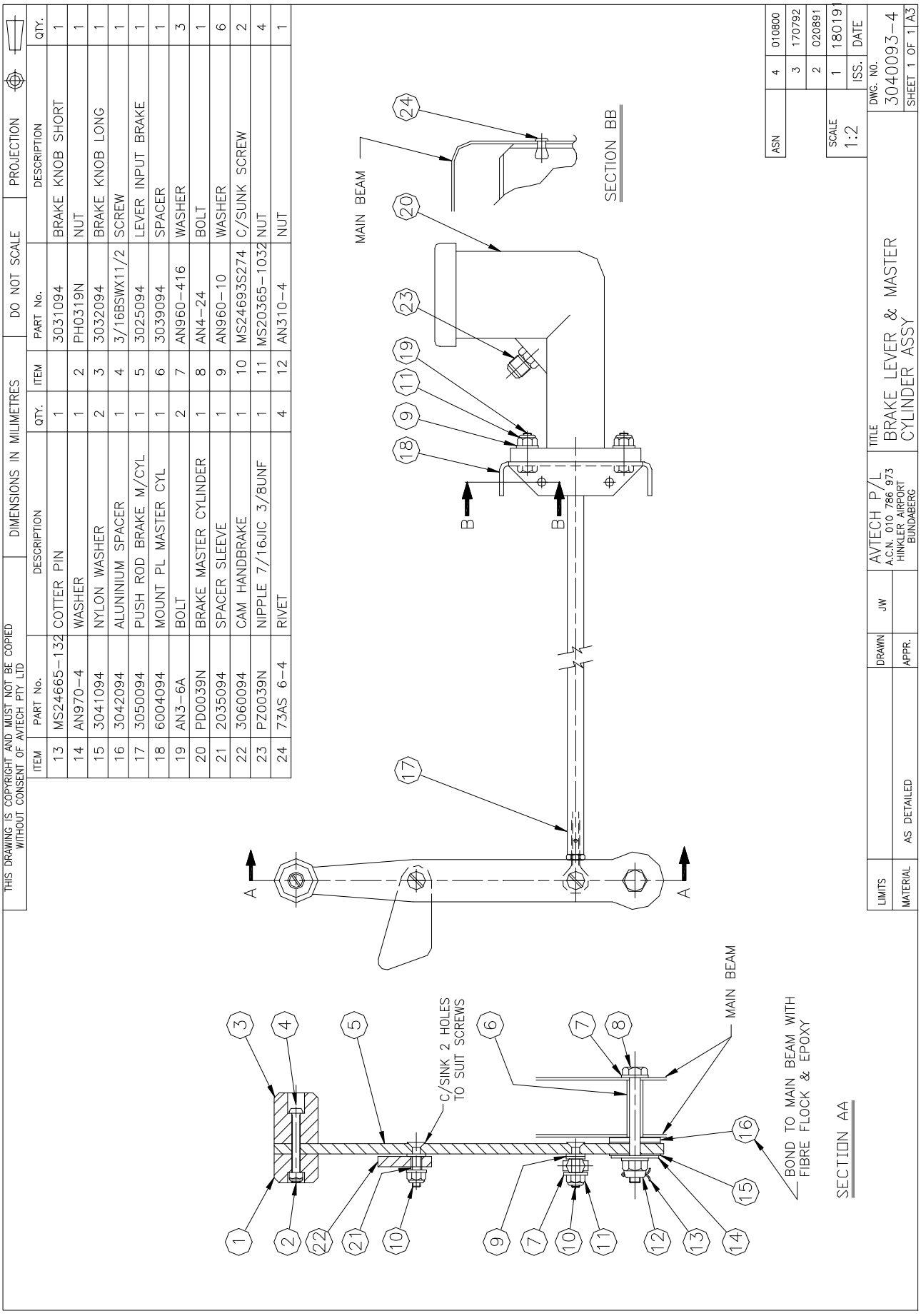

THIS DRAWING IS COPYRIGHT AND MUST NOT BE COPIED WITHOUT CONSENT OF AVTECH PTY LTD
DIMENSIONS IN MILIMETRES
DO NOT SCALE
PROJECTION
ITEM | PART No. | DESCRIPTION | QTY.
13 | MS24665-132 | COTTER PIN | 1
14 | AN970-4 | WASHER | 1
15 | 3041094 | NYLON WASHER | 2
16 | 3042094 | ALUNINIUM SPACER | 1
17 | 3050094 | PUSH ROD BRAKE M/CYL | 1
18 | 6004094 | MOUNT PL MASTER CYL | 1
19 | AN3-6A | BOLT | 2
20 | PD0039N | BRAKE MASTER CYLINDER | 1
21 | 2035094 | SPACER SLEEVE | 1
22 | 3060094 | CAM HANDBRAKE | 1
23 | PZ0039N | NIPPLE 7/16JIC 3/8UNF | 1
24 | 73AS 6-4 | RIVET | 4
ITEM | PART No. | DESCRIPTION | QTY.
1 | 3031094 | BRAKE KNOB SHORT | 1
2 | PH0319N | NUT | 1
3 | 3032094 | BRAKE KNOB LONG | 1
4 | 3/16BSWX11/2 | SCREW | 1
5 | 3025094 | LEVER INPUT BRAKE | 1
6 | 3039094 | SPACER | 1
7 | AN960-416 | WASHER | 3
8 | AN4-24 | BOLT | 1
9 | AN960-10 | WASHER | 6
10 | MS24693S274 | C/SUNK SCREW | 2
11 | MS20365-1032 | NUT | 4
12 | AN310-4 | NUT | 1
MAIN BEAM
SECTION BB
SECTION AA
C/SINK 2 HOLES TO SUIT SCREWS
BOND TO MAIN BEAM WITH FIBRE FLOCK & EPOXY
ASN 4 010800
3 170792
2 020891
SCALE 1:2
1 180191
ISS. DATE
DWG. NO. 3040093-4
SHEET 1 OF 1 A3
LIMITS
MATERIAL AS DETAILED
DRAWN JW
APPR.
AVTECH P/L
A.C.N. 010 786 973
HINKLER AIRPORT
BUNDABERG
TITLE
BRAKE LEVER & MASTER CYLINDER ASSY

Figure: 5-8-2

SECTION 6

AILERON CONTROL SYSTEM

Table of Contents **Paragraph**

6.1 AILERON CONTROL SYSTEM

Refer to Figure 6-5.

The aileron control system is comprised of a control column and two enclosed push-pull cables fitted with spherical bearings.

WARNING

All spherical bearings must be fitted with a large washer on the outside of the through-bolt to prevent the bearing case and cable releasing in the event of a bearing failure. See Figure 6-5.

6.2 CONTROL COLUMN

Refer to Figure 6-2.

6.2.1 Removal and Installation

The Control Column is a Primary Control and may not be removed or repaired without reference to JABIRU AIRCRAFT Pty Ltd.

6.3 CONTROL CABLES

Control Cables are of the enclosed push-pull type, fitted with spherical bearings at both ends.

To operate, the outer cover of the cable must be clamped firmly at each end.

6.3.1 Removal and Installation

Control Cables are Primary Control and may not be removed or repaired without reference to JABIRU AIRCRAFT Pty Ltd.

6.4 AILERONS

Ailerons comprise a moulded and bonded monocoque structure embodying a composite control horn at the outboard end.

6.4.1 Removal and Installation

1. Unbolt cable from aileron control arm.
2. Loosen screws in hinge pin retainers and lift hinge pin retainer away from the hinge pin. It is not necessary to completely remove these parts.
3. Remove hinge pins.
4. Remove aileron.

Reverse the preceding steps for installation.

6.4.2 Inspection and Repair

Inspect ailerons for any signs of delamination or cracking. Pay particular attention to the Control Horn and hinges and their surrounding areas.

Repairs must be referred to JABIRU AIRCRAFT Pty Ltd.

6.5 RIGGING

With the control stick in the neutral position, use a straight-edge not less than 1 metre long. Hold the straight-edge flush on the underside of the wing aerofoil and adjust aileron to sit on the straight-edge. Make this adjustment with the cable rod-ends, ensuring that on completion the locknut is tight on the rod-ends and that cable is visible through the inspection hole in the rod-end.

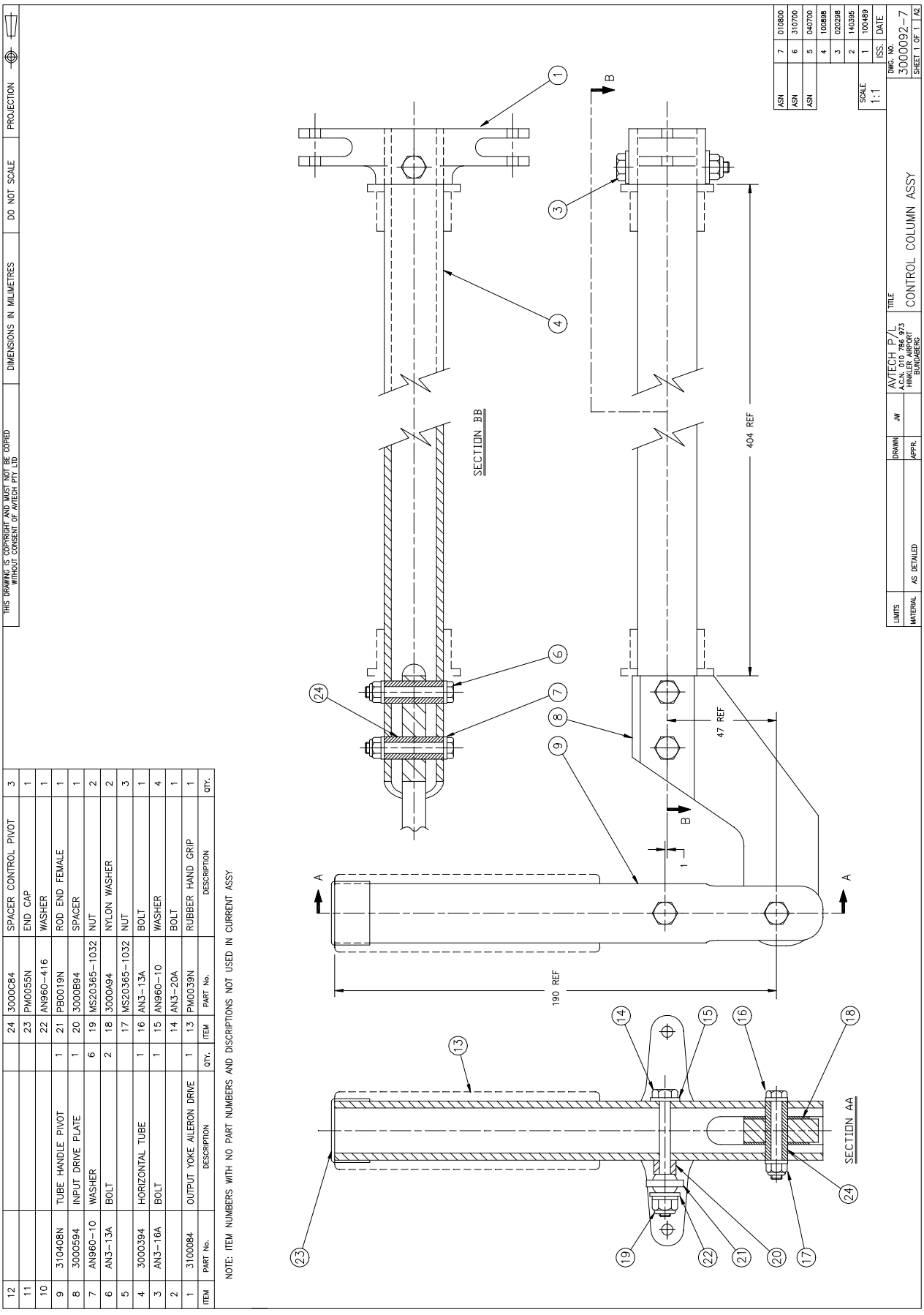
Then check UP travel on both ailerons using the Aileron Rigging Template (see Appendix 3) as shown in Figure 6-5.

Use the Aileron Control Stop adjustment (see Figure 6-5-1) to adjust the total aileron movement (ie. UP travel) and use cable adjustment as previously described to proportion UP and DOWN travel. The Aileron Control Stop should engage before the Aileron Arm hits the UP travel stop at the Wing Tip.

DO NOT move the Cable Anchors – these positions are factory set.

WARNING

The control cable must be connected to the same side of the control column bellcrank as the wing to which the aileron is fitted, otherwise control surface reversal will result.
DO NOT CROSS CABLES



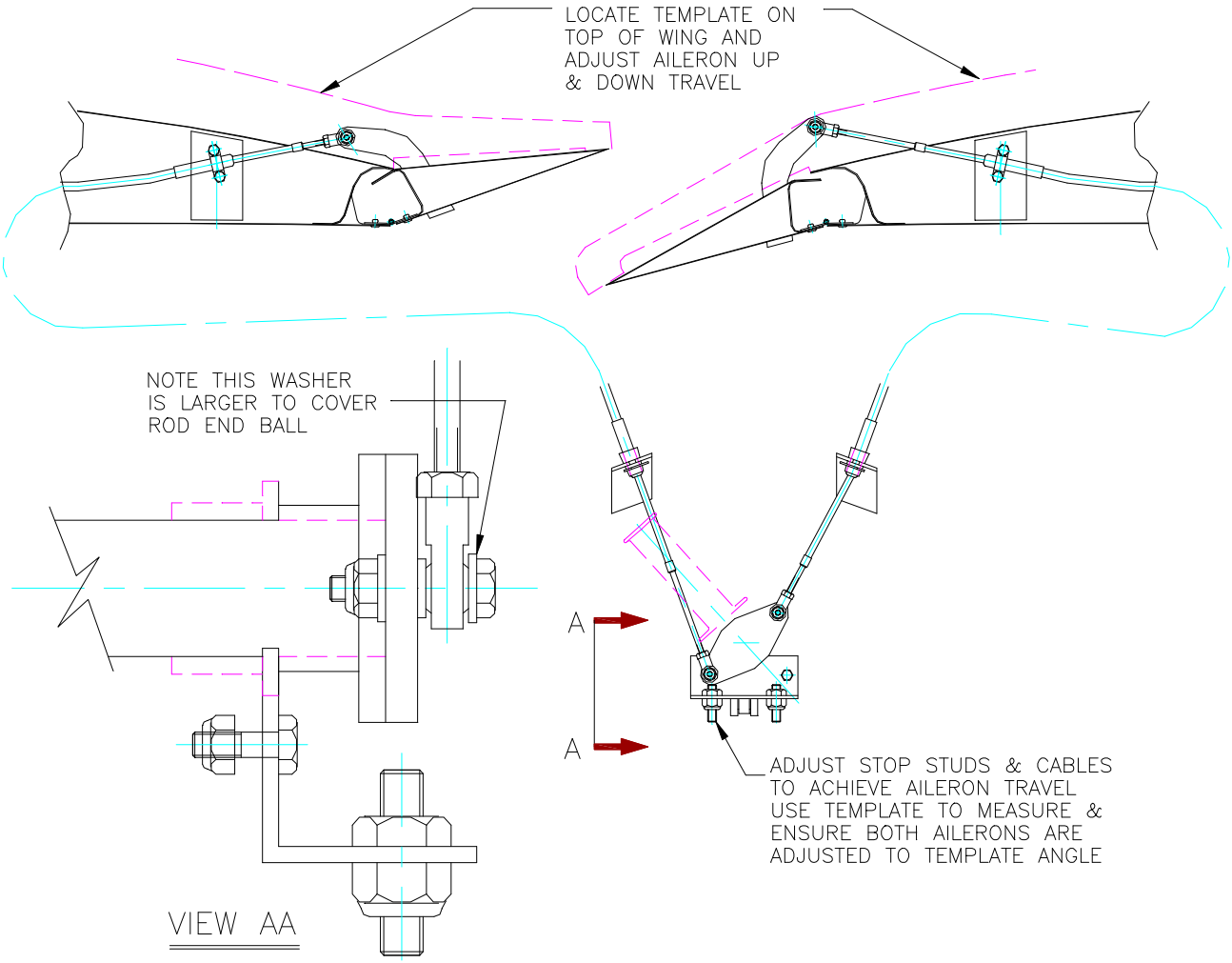
ITEM	PART No.	DESCRIPTION	QTY.
12			
11			
10			
9	310408N	TUBE HANDLE PIVOT	1
8	3000594	INPUT DRIVE PLATE	1
7	AN960-10	WASHER	6
6	AN3-13A	BOLT	2
5			
4	3000394	HORIZONTAL TUBE	1
3	AN3-16A	BOLT	1
2			
1	3100084	OUTPUT YOKE AILERON DRIVE	1

ITEM	PART No.	DESCRIPTION	QTY.
24	3000C84	SPACER CONTROL PIVOT	3
23	PM0055N	END CAP	1
22	AN960-416	WASHER	1
21	PB0019N	ROD END FEMALE	1
20	3000B94	SPACER	1
19	MS20365-1032	NUT	2
18	3000A94	NYLON WASHER	2
17	MS20365-1032	NUT	3
16	AN3-13A	BOLT	1
15	AN960-10	WASHER	4
14	AN3-20A	BOLT	1
13	PM0039N	RUBBER HAND GRIP	1

ISS.	DATE	DESCRIPTION
7	010800	ASN
6	310700	ASN
5	040700	ASN
4	100898	
3	020298	
2	140395	
1	100489	

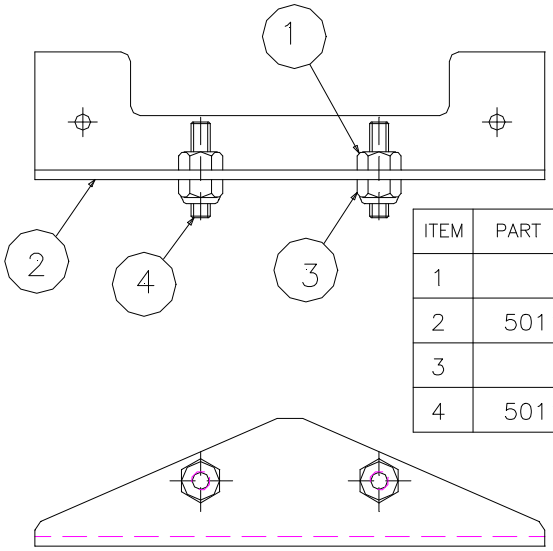
NOTE: ITEM NUMBERS WITH NO PART NUMBERS AND DISCRIPTIONS NOT USED IN CURRENT ASSY

Figure: 6-2



Drawing 9014093/1 AILERON RIGGING INSTRUCTIONS

Figure: 6-5



ITEM	PART No.	DESCRIPTION	QTY.
1		NUT HEX. 1/4" BSW	2
2	5011194	PLATE AILERON CONTROL	1
3		NUT HEX. NYLOC 1/4 BSW	2
4	5011294	STUD AILERON CONTROL	2

Drawing 5011094/2 AILERON CONTROL STOP ASSEMBLY

Figure: 6-5-1