



## SST AND ARROW MAINTENANCE MANUAL

**Manufacturer:** AirBorne WindSports Pty Ltd  
Unit 22/30 Kalaroo Rd  
Redhead, NSW 2290  
Australia

**Phone :** + 61 2 4944 9199  
**Fax :** + 61 2 4944 9395  
**Website :** <http://www.airborne.com.au/>

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**DATA PACKAGE**

This manual constitutes one part of the complete data package that accompanies the aircraft. Following is a list of each of the components, which are required.

- **Pilot Operator's Handbook/Aircraft Operating Instructions**
- **Applicable Base Maintenance Manual**
- **Applicable Base Illustrated Parts Catalogue**
- **Wing Maintenance Manual**
- **Wing Illustrated Parts Catalogue**
- **Rotax Owners Manual**
- **Rotax Maintenance (Compact Disk)**
- **Radio Manual – If Installed**
- **BRS Parachute Manual – If Installed**

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## AMENDMENT RECORD SHEET

Amendment Date	Affected Sections	Affected Pages	Date Inserted	Signature
24-05-2012	All to issue 1.1	All to issue 1.1	24-05-2012	Airborne

**Table 1 Amendment Record Sheets**

### NOTE

Airborne data packages will be revised from time to time. Owners registered on AirBorne's database will be notified of any changes to data and directed to the AirBorne web site (<http://www.airborne.com.au/>) for the applicable pages. The amended pages should be printed and the prior page replaced in the folder as soon as possible. The amendment table should at that time be updated with the appropriate details and date. Revised pages will be sent by mail if requested.

## LOG OF ALL EFFECTIVE PAGES

[illegible]

### Table 2 Log Of Effective Pages



## INTRODUCTION

This manual contains factory recommended procedures and instructions for ground handling, servicing and maintaining the SST or ARROW wing section of this aircraft. The procedures described are to be used in conjunction with those required by the National Airworthiness Authority (NAA) of the country of registration. Any NAA maintenance requirement takes precedence over this manual.

This manual should be used in conjunction with a certified base, and therefore the operator is directed to reference the base maintenance manual for any issues that are related to the base component of the aircraft.

### **Skills**

Only people with an adequate skill level should perform maintenance on this aircraft. A sound understanding of mechanical systems, and good experience with the necessary tools and procedures is required - as the continuing airworthiness of the aircraft relies on the competence of the person performing the maintenance. Assessment and judgement of the condition of each individual component is required, which necessitates a sound understanding of the purpose of each component in the system. All maintenance and repairs must be carried out in accordance with good aeronautical practices.

### **Skills and authorisations specific to Special Light Sport Aircraft**

Maintenance tasks are rated in the categories listed below, according to the applicable category of registration and skill levels required to perform those tasks:

*Owner*— FAA regulations authorize SLSA aircraft owners who hold at least a sport pilot certificate to perform maintenance as outlined in 14 CFR Part 43. To perform inspections on aircraft condition, functional checks and maintenance in between inspections carried out by LSA Repairman Maintenance certificate holders.

*LSA Repairman Maintenance*— This certification authorizes a certificate holder to perform line maintenance, repairs and alterations to S-LSA as the task allows. Includes 100 hourly and yearly inspections on S-LSA.

*A&P*—Mechanic Certificate with Airframe and or Powerplant rating. To perform heavy Maintenance on airframes or powerplant as the rating allows.

*Task Specific*—Applicable to the following ratings:

*LSA Repairman Maintenance* with appropriate task specific training or;

*A Mechanic Certificate* with appropriate task specific training.

Authorizes the holder of mechanic certificate or a repairman certificate who has received task specific training, to perform the tasks approved under that training. Allows a repairman certificate holder to perform, heavy maintenance, repairs and alterations on the SLSA.

E.g. The Mechanic Certificate holder may obtain Task Specific training on Rotax engines, to allow overhaul etc.

### **Skills and authorisations specific to Experimental Special Light Sport Aircraft**

*LSA Repairman Inspection*— To perform line maintenance and inspections to be completed on an E-LSA by a responsible owner, who holds an FAA repairman certificate (light sport aircraft), with an inspection rating or equivalent.

There are no requirements for minimum certification to perform any other task on an experimental aircraft. However, Airborne recommend that only people with an adequate skill level should perform maintenance on this aircraft as described at the start of this section.

### **Other Categories of Registration**

This aircraft is a Light Sport eligible aircraft. This manual is created to be compliant to the standards applicable to Special Light Sport Aircraft.

The category of registration may be quite varied; as such the maintenance requirements of this aircraft are to be applied in conjunction with the requirements of the National Airworthiness Authority (NAA) of the country of registration. Any NAA maintenance requirement takes precedence over this manual.

In the event that the owner is permitted to perform maintenance in their country and category of registration, if there are any doubts regarding the required and appropriate maintenance then the safety of the aircraft may be jeopardised in continuing with self maintenance. In this situation an Airborne Dealer should be contacted for the correct procedures and or servicing.

### ***Tooling***

There are no specialised tools needed for the maintenance described in this manual, following is a list of the type of tools that may be required.

### **NOTE**

Loctite will be required in certain locations and should **always** be replaced after disassembly.

- Loctite (243 and 262) for the frame
- Open ended Imperial Spanner set
- Open ended Metric Spanner set
- Torque wrench
- Dry Lubricant – lubricant that doesn't attract dust after application.
- Hex key set
- Bettsometer Instrument
- Various general care items, specified where needed
- Socket Set Imperial and Metric
- 6mm T Allen Wrench
- Allen Key Set Imperial and Metric
- Protractor with built in spirit level (Available from Airborne, part number 108624)
- Digital level
- Protractor with plumb bob

This list may not be comprehensive.

### ***Format***

The manual has been prepared using the ATA format, which provides a standard layout of the chapters to be included, and their content. Some of the chapters are not included as they are deemed to be not applicable to this aircraft.

The information in this manual is based on the data that was available at the time of its publication. The latest amendments to this manual will be issued on the Airborne website in PDF format. This should be printed out and added to the manual. Therefore it is important that operators keep a regular check on the website for any amendments that have been made. If any errors or omissions are found in this manual please advise the factory.

### ***Service Difficulty Reporting***

Any service difficulties or defects should be reported to Airborne using the form contained in appendix A.

### **WARNING**

THE INFORMATION IN THIS MANUAL NEEDS TO BE FOLLOWED, AND IT IS NOT ACCEPTABLE TO MAKE CHANGES TO THE MATERIALS AND OR PHYSICAL FEATURES OF THIS AIRCRAFT. IN PARTICULAR THE GRADES OF BOLTS THAT HAVE BEEN UTILISED IN THE MANUFACTURE OF THIS AIRCRAFT ARE CRITICAL FOR ITS CONTINUING AIRWORTHINESS. NEVER REPLACE BOLTS WITH ANY OTHER SIZE OR GRADE. GRADE 8 BOLTS ARE NOT INTERCHANGEABLE WITH AIRCRAFT (AN) GRADE BOLTS. THE FATIGUE CHARACTERISTICS OF AIRCRAFT GRADE BOLTS ARE SUPERIOR TO OTHER BOLTS AND ALLOW LONGER SAFE SERVICE LIFE UNDER CYCLIC LOADS LIKE THOSE EXPERIENCED IN AIRCRAFT. THE LENGTH OF THE BOLT IS IMPORTANT. IF A SHORTER BOLT IS USED THE THREAD MAY ENCROACH ON THE LOAD BEARING AREA, WHICH INCREASES THE STRESSES EXPERIENCED BY IT.

### **MANDATORY SERVICE BULLETINS**

AS THE SERVICE HISTORY OF THE AIRFRAME EVOLVES AIRBORNE WILL FROM TIME TO TIME ISSUE AIRBORNE DIRECTIVES, WHICH DETAIL ANY CHANGES TO THE MAINTENANCE MANUALS, PILOT'S OPERATING HANDBOOK, OR ANY OTHER DETAILS THAT AIRBORNE DEEMS NECESSARY FOR OWNERS TO BE NOTIFIED OF.

THE WEB ADDRESS FOR AIRBORNE DIRECTIVES IS:

[HTTP://WWW.AIRBORNE.COM.AU/](http://www.airborne.com.au/)

IT IS THE RESPONSIBILITY OF THE OPERATOR TO KEEP UP TO DATE WITH ANY ROTAX DIRECTIVES THROUGH THE ROTAX WEBSITE.

## USE OF METRIC/ IMPERIAL UNITS

This Service Manual uses the metric unit system as the basic system of measurement. Where common usage or available instrumentation refer to the Imperial system, both units are quoted. The following conversion factors are presented as a ready reference to the conversion factors that have been used in this manual.

1 Pound (lb)	=	0.4536 Kilogram (kg)
1 Pound per sq in (psi)	=	6.895 Kilopascal (kPa)
1 Inch (in)	=	25.4 Millimetres (mm)
1 Foot (ft)	=	0.3048 Metre (m)
1 Statute mile	=	1.609 Kilometres (km)
1 Nautical mile (NM)	=	1.852 Kilometres (km)
1 Millibar (mb)	=	1 Hectopascal (hPa)
1 Millibar (mb)	=	0.1 Kilopascal (kPa)
1 Imperial gallon	=	4.546 Litres (l)
1 US gallon	=	3.785 Litres (l)
1 US quart	=	0.946 Litre (l)
1 Cubic foot (ft <sup>3</sup> )	=	28.317 Litres (l)
1 Degree Fahrenheit (F)	=	(1.8 X C)+32
1 Inch Pound (in lb)	=	0.113 Newton Metres (Nm)
1 Foot Pound (ft lb)	=	1.356 Newton Metres (Nm)

**Table 3 Imperial / Metric Conversions**

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## **0. ASSEMBLY AFTER SHIPPING**

### ***00.00.00 Wing Assembly After Shipping.***

This procedure is to be followed if the wing arrives in a short packed configuration. An approved dealer is responsible for assembly from the short packed configuration. The short packed wing has had the rear leading edges removed to reduce the packed size for transport.

The correct reassembly of the wing is critical for safety and performance of the wing. If there are any doubts about the correct procedure for assembly after shipping contact AirBorne.

### **00.10.00 Reassembly Guide**

#### **Remove wing from box**

Ensure that all staples are removed before pulling the wing from the box. Damage to the sail may result if caught on box staples.

#### **Unzip bag**

Remove padding from the nose of the wing. Remove all wing straps. Remove padding from control bar and rear leading edges.

#### **Assemble the control frame**

Assemble control frame and rotate the wing so that it is lying flat on the ground.

#### **Spread Leading Edges**

Spread both leading edges approximately 1/2 metre. Remove the tip bags, which have been used as protection on the rear of the front leading edges.

#### **Insert Rear Leading Edges**



#### **NOTE**

Insert rear leading edges in the correct side (left and right hand sides are marked) with the slot positioned horizontally.

As shown on the photo the washout struts (or sprogs) should be routed through the sail zip as the rear leading edge is pushed inwards.

The rear leading edges are located with their slots and held in place by the sail loops.

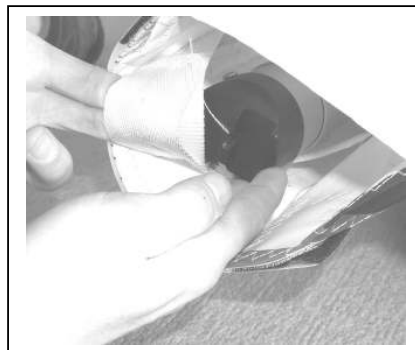
**Figure 1 Insertion of Rear Leading Edges**

### **CAUTION**

**VELCRO TABS AND SAIL CELLS NEED TO BE POSITIONED AFT OF THE LEADING EDGE. ONCE INSTALLED THE REAR LEADING EDGE SLOT SHOULD BE LOCATED ON THE CHANNEL HORIZONTAL BOLT. IT IS IMPOSSIBLE TO ROTATE THE LEADING EDGE IF CORRECTLY INSTALLED.**

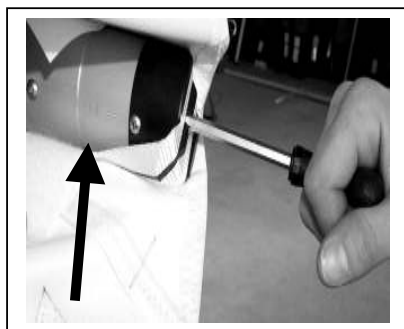
#### **Tension Sail**

Place one hand on the rear of the leading edge. Pull sail firmly until the loops are located on the end of the leading edge fitting. This holds both the sail and the rear leading edges in place. Ensure the webbing is centrally located with one on each side of the central divider. Repeat for the other leading edge.



**Figure 2 Locating Sail Webbing on Rear Leading Edges**

#### **Set Tip Adjusters**



Tension the sail using a 6mm Allen key. The tip fitting should be adjusted until the leading edge is positioned on the:

**4<sup>th</sup> mark for SST / ARROW Wing**

The markings are on the internal tube and should be adjusted until the appropriate mark aligns with the main outer tube.

Secure the hook and loop fastener tabs around the leading edge.

**Figure 3 Setting Tip Adjusters**

#### **NOTE**

If you find difficulty pulling the sail tension on the leading edge the adjustable tips can be wound in (clockwise) The sail nose tangs can be removed to allow the sail to move back. It is, however, extremely important to check that the sail at the nose does not foul on the frame when the wing is being tensioned. Ensure that the nose tangs are replaced and secured.

#### **Tip Protectors**

Install the tip wear protectors (secure the hook and loop fasteners to the mylar protectors onto the sail at the tip).

#### **Assemble**

Assemble in accordance with section 4 of the Pilot OH Book / Aircraft Operating Instruction for LSA.

#### **Preflight**

### **CAUTION**

**A THOROUGH AND COMPLETE PREFLIGHT IS ESPECIALLY NECESSARY AFTER REASSEMBLY. THOROUGHLY CHECK ALL NUTS AND BOLTS (REFER TO SECTION 5 FOR TORQUING PROCEDURES BEFORE TIGHTENING ANY NUTS), WIRE ROUTING, SAIL FIT, MYLAR SHAPE AND OVERALL SYMMETRY OF THE WING BEFORE FLIGHT.**



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**SST and ARROW Maintenance Manual**

Preflight as described in section 4 of the Pilots Operating Handbook / Aircraft Operating Instructions paying particular attention to possible damage to the airframe during transport.

## **4. AIRWORTHINESS LIMITATIONS**

### **4.00.00     *General***

This section sets forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure required for type certification.

### **4.20.00     *Airframe Limitations***

<b>Component</b>	<b>Life (hours)</b>	<b>Requirement</b>
Heart Bolt (1 off)	100	Mandatory Replacement
Struts	961	Check For Service Life Announcements. Replace if there are no revisions.
Tubes	961	Check For Service Life Announcements. Replace if there are no revisions.
Sail	1000	Mandatory Replacement

**Table 4 Airframe Limitations**

The airframe was analysed using FAA fatigue analysis “Fatigue Evaluation Of Wing and Associated Structure on Small Airplanes FAA Report # AFS-120-73-2”. In order to estimate the time life limits for the major components of the airframe, this is detailed in Airborne report 04-144ds. The estimates that have been made do not take into account any extreme loads, which will reduce the fatigue life of the airframe. The fatigue life of these components is dependent upon rigid adherence to maintenance schedules.

As the service history of the airframe evolves these time life estimates are expected to be revised. Amendments should be checked for regularly.

## **5. TIME LIMITS/MAINTENANCE CHECKS**

### **5.00.00 General**

The time limits and maintenance schedule provided are in addition to any regulation of the governing body where the aircraft is being flown. The pilot of the aircraft must ensure that the required maintenance is carried out and documented in the correct manner.

Airborne microlights have been designed to permit easy inspection, and operators should have no difficulty in assessing problems or recognising damage if visual checks are carried out correctly. Maintenance checks may require partial disassembly of the wing. Inspection should include a thorough visual check of the condition of the component and the attachment point in adequate lighting conditions. Cleaning of the component may be required for proper inspection. Significant scratches, cracks, galling, corrosion or any other mechanical wear of the component is reason for replacement. The sail requires special attention to the condition of the fabric, and Bettsometer tests will be required after significant amounts of environmental exposure to things such as UV radiation, chemicals and heat, as well as mechanical wear (and or tears). For instructions on Bettsometer testing see Section 57.30.10 Bettsometer Testing.

The Pilot's Operating Handbook / Aircraft Operating Instructions outlines checks required prior to each flight.

Extreme operating conditions may reduce the time limits for components. Unscheduled maintenance is detailed in Section 5.50.00. AirBorne will from time to time amend these maintenance checks as the service history of the aircraft evolves. It is the responsibility of the pilot to ensure compliance with new directives. (Information is available on the website <http://www.airborne.com.au/>)

### **5.00.10 Inspection Notes**

#### **Installation & Removal**

When removing or installing tubing do not bend or force tubes.

#### **Inspection**

Inspect tubing for cracks, damage from abrasion, elongated holes or distortion in tube surface. Inspect holes in tubing and corners / radiused areas for cracks during scheduled inspections. Ensure that the areas are clean. A 10X magnifying glass and good lighting will improve this visual inspection for cracks.

**WARNING**  
**NEVER ATTEMPT TO REPAIR TUBING.**  
**ALWAYS REPLACE WITH A GENUINE NEW PART.**

#### **Corrosion**

Inspect tubing for corrosion inside and out. Discolouration of the metal may indicate corrosion. Salt is the most common cause of corrosion during coastal operation. Parts affected by salt must be stripped and thoroughly cleaned before reassembly. The cause of the corrosion must be identified and eliminated. If corrosion (pitting or oxidation) is present the component must be removed and replaced with a new part.

Exposed wires may be protected from corrosion by applying a water dispersant such as WD 40, RP7 or Inox using a rag wetted with the water dispersant. Such treatment is only required in corrosive environments. Preventative treatment may be applied as required.

### **Replacement**

Aluminium tube comes in many different sizes and grades. As sections of the airframe are manufactured from tube made specifically to Airborne's specification it is important that only genuine replacement parts as supplied by Airborne WindSports Pty. Ltd are used.

### **Airframe Bolts**

All airframe bolts are either aircraft quality or high tensile bolts. If it necessary to replace any bolts or nuts it is important that the specification of the original bolt are matched when a replacement is selected. This applies not only to the grade of the bolts but to the length as well.

### **Installation & Removal**

- After tightening, all bolts should have thread protruding out of the nyloc.
- All self-locking nuts should not be installed more than 2 times.
- Be sure not to over-torque bolts when installing.
- Check assembly instructions for correct bolt placement.

### **Inspection**

Check bolts for worn shanks, bad threads or corrosion.

### **Wire Inspection**

Inspection of wires should concentrate on any areas where the wires come into physical contact with other components. These areas may cause stress concentration and mechanical wear. Some areas may need to be partially disassembled to fully inspect wires. Kinks created during packing up, transport and storage should also be checked. Any degradation of wires requires replacement.

## **5.20.00      *Scheduled Maintenance Checks***

### **General care should include:**

- Washing down the tube with warm water and a light detergent followed by rinsing with fresh water.
- Fabric sponged with warm water and a mild detergent and rinsed with fresh water.

Apart from the consequences of heavy landing, or of exceeding flight limitations, the major factors requiring attention are corrosion, fatigue, wear, UV exposure and heat.

There are no known fatigue problems with Airborne microlights, but excessive loads and vibration can weaken the structure. Regular inspection for hairline cracks in areas under high stress, such as bolt holes and tube junctions is recommended.

Many components can be replaced with ease, for difficult repairs or if the repair process is not fully understood consult your Airborne Dealer or the Airborne factory.

The registration of microlights is only valid provided that all necessary maintenance, modification and service requirements are fulfilled.

These requirements include:

- (a) Maintenance of aircraft as per the Maintenance Schedule in this manual.
- (b) Modification as detailed in any relevant Service Bulletins.
- (c) Modification to approved details, obtained from Airborne WindSports Pty. Ltd.
- (d) Repairs necessary to replace minor damage, wear or ageing.
- (e) Servicing, replacement and overhaul, inspection and checking in compliance with the Maintenance Schedule.
- (f) Any Airworthiness Directory (AD) issued by CASA or the NAA of the country of registration

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**SST and ARROW Maintenance Manual**

### 5.20.01 Maintenance Privileges

This manual lists task to be performed on the maintenance schedule. The minimum qualification required to perform that task is prescribed. A simple explanation of maintenance privileges permitted according to LSA category of registration is described in the table below:

	Experimental LSA				Special LSA			
	Sport Pilot	Owner Sport Pilot	LS – I Sport Pilot	LS - M / A&P / part 145 repair	Sport Pilot	Owner Sport Pilot	LS – I Sport Pilot	LS - M / A&P / part 145 repair
Modifications								
Daily Inspections								
Preventative Maintenance								
Repairs, Major Maintenance.								
100 hour inspection								
Annual Inspection								



Authorized to perform.



May perform only if the Repairman Inspector is the owner of the aircraft.



May perform only if the modification is included in the aircrafts Maintenance Manual or if the repairman is authorized to do so by the manufacturer.



May perform if the Repairman Inspector is the owner of the aircraft and not using the aircraft for compensation (training or towing), or

When using the Experimental aircraft for compensation (Training or towing) until January 31 2010, the inspection must be performed by an LS - M / A&P or part 145 repair facility.



Not authorized to perform.

#### Table 5 Maintenance Privileges

Note that owners and pilots are permitted to perform preventative maintenance tasks as prescribed by FAR document: Part 43, Appendix A Sec. A43.1

### **Limitations Due to Registered Category**

#### S-LSA

Maintenance on a Special LSA, 100 hourly and annual inspections are to be performed by the holder of a LSA Repairman Maintenance certificate or an appropriately rated A&P mechanic.

Note: owners and pilots are permitted to perform preventative maintenance tasks as prescribed by FAR document: Part 43, Appendix A Sec. A43.1

#### E-LSA

The owner of an aircraft registered as an Experimental LSA has operations limited to private use and has additional maintenance privileges.

During the transition period, commercial operations may be conducted until 31 January 2010. Where the experimental registered aircraft is used for compensation (training or towing) during the transition period the option c) below does not apply to 100 hourly inspections.

The 100 hourly or annual inspections on an E-LSA are to be performed by:

- a) the holder of a LSA Repairman Maintenance certificate, or
- b) an appropriately rated A&P mechanic, or
- c) the owner when the owner is the holder of a LSA Repairman Inspection certificate.

The pilot of the E-LSA aircraft is responsible to see that the maintenance and inspection has been performed on this aircraft as per the maintenance schedules prescribed in this maintenance manual. The maintenance schedule tasks remain applicable, where there is no minimum level of qualification required to perform maintenance on E-LSA, however a minimum skill level continues to apply to tasks. Only people with an adequate skill level should perform maintenance on this aircraft. A sound understanding of mechanical systems, and good experience with the necessary tools and procedures is required - as the continuing airworthiness of the aircraft relies on the competence of the person performing the maintenance. Assessment and judgement of the condition of each individual component is required, which necessitates a sound understanding of the purpose of each component in the system. If there are any doubts regarding the required and appropriate maintenance then the safety of the aircraft may be jeopardised in continuing with self maintenance. In this situation an Airborne Dealer should be contacted for the correct procedures and or servicing.

All maintenance and repairs must be carried out in accordance with good aeronautical practices.

### **5.20.02 Description of Task Classification**

#### **Preventative Maintenance**

The preventative maintenance that is permissible to be performed by pilot certificate holders is defined in FAR document Part 43, Appendix A Sec. A43.1.

#### **Line Maintenance**

Includes inspections, servicing of fluids. Tasks where specific instructions are described in the manual that do not require specialised training, for replacement, repair of parts and structure or alterations described in the manual. Includes compliance with service directives that prescribe repairmen as the minimum qualification to perform the task.

## Heavy Maintenance

Tasks that require a repairman rating with specialised training or Mechanic with A&P rating, such as major engine work, repair of landing gear assemblies. It also includes alterations to structure where instructions are provided in the manual, such as fitment of an undercarriage kit or a tow kit.

### 5.20.03 Qualification Descriptions

#### Certification Required to Perform Light Sport Aircraft Maintenance Tasks

- [O] **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.
- [R] **E-LSA Repairman Inspection** – Applicable to E-LSA registration. Repairman Inspection—Items that can be expected to be completed on an ELSA by a responsible owner, who holds an FAA repairman certificate (light sport aircraft), with an inspection rating or equivalent.
- [R] **S-LSA Repairman Maintenance** – Applicable to S-LSA registration. Repairman Maintenance—Items that can be expected to be completed on a S-LSA or E-LSA by a responsible individual, who holds a FAA repairman certificate (light sport aircraft), with a maintenance rating or equivalent.
- [A&P] **Mechanic Certificate with Airframe and or Powerplant Training - 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.
- [RS] **Part 145 Repair Station** – Items that can be expected to be completed by a responsible organization that holds a part 145 repair Station approval.
- [TS] **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. When specifying the “task specific” level of certification, the specific training is also specified where it is appropriate.

Note that **dealers may be authorized** by the manufacturer to perform a maintenance or modification task for which they are specifically trained. These tasks are not necessarily included in the Maintenance Manual.

This Maintenance manual is created with the focus to maintain Special Light Sport Aircraft (S-LSA). This category of registration allows the aircraft to be used for hire and reward. Maintenance requirements are given in the maintenance schedule tables. Note that the level of qualification is given for each of the tasks.

Notice that this manual prescribes owner maintenance and repairman maintenance. The minimum applicable repairman ratings for each category of registration are as follows:

**E-LSA registered** - LSA Repairman Inspection certificate (**LS-I**).

**S-LSA registered** - LSA Repairman Maintenance certificate (**LS-R**).

In both cases of E-LSA and S-LSA, a person who holds a mechanic certificate with A&P rating, or a part 145-repair station may perform maintenance and inspections on the LSA.

The 100 hourly or annual inspections on a S-LSA are to be performed by the holder of a LSA Repairman Maintenance certificate, an appropriately rated Mechanic with Airframe and Powerplant (A&P) rating, or a part 145 Repair Station.

The holder of a sport pilot certificate may perform preventive maintenance on an aircraft owned or operated by that pilot and issued a special airworthiness certificate in the light-sport category. Items of preventative maintenance that may be performed by an owner are listed in FAR 43 appendix A, Section A43.1 (c)

### **5.20.05 Maintenance Task Legend**

Your microlight should be maintained in accordance with the following schedules. When registered under LSA, the following schedules are mandatory. The following codes are used in these schedules:

**Code**

- 1 Oil lubricate, clean and service.
- 2 Check as directed.
- 3 Check for insecurity, cracks, wear legibility and faulty operation.
- 4 Remove, inspect and replace if necessary.
- 5 Recommend replacement or overhaul.
- 6 Mandatory Replacement
- 7 Refer to Rotax maintenance manual and Rotax maintenance logbook.

**Certification required to perform Light Sport Aircraft maintenance tasks**

- [O] Owner
- [R] E-LSA Repairman Inspection (experimental registered aircraft only)
- [R] S-LSA Repairman Maintenance
- [A&P] Mechanic Certificate Airframe and or Powerplant
- [TS] Task Specific

### **5.20.06 Log Book**

When maintenance is performed always fill out the appropriate check sheet supplied in Appendix A at the rear of this maintenance manual. The aircraft logbook should also be filled out when maintenance has been done.

When Service Bulletins have been completed both the maintenance manual and the log book should be filled out. A copy of the Service Bulletin form should be sent to the factory to be stored with the aircraft QA papers.

A separate maintenance manual is supplied with the trike base. The wing maintenance log should be filled out in the wing maintenance manual and aircraft log book.



### 5.20.10 Wing Airframe Maintenance Schedule

WING MAINTENANCE SCHEDULE	Manual Section	AIRCRAFT OR ITEM HOURS OF OPERATION									
	Reference	100	200	300	400	500	600	700	800	900	1000
Sail Bettsometer testing	57.30.00		2[R]		2[R]		2[R]		2[R]		2[R]
Wing sail fabric & stitching	57.30.00	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]
Wing sail attachment points	57.30.00	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]
Tip assembly and webbing. Correct tension set	00.10.00	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]
Inspection zips operational	As directed	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]
Batten fitting latches secure	57.10.00	3[R]	3[R]	3[R]	3[R]	3[R]	3[R]	3[R]	3[R]	3[R]	3[R]
Check battens against template	57.40.00	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]
Wires & attachment fittings	As directed	3[R]	3[R]	3[R]	3[R]	4[R]	3[R]	3[R]	3[R]	3[R]	6[R]
Leading edges, struts, keel, cross bars and down tubes for straightness, dents and corrosion	As directed	2[R]	2[R]	2[R]	2[R]	4[R]	2[R]	2[R]	4[R]	2[R]	6[R]
Remove frame from sail, disassemble and check for fatigue cracks radiating from drilled holes	5.50.50					4[R]					6[R]
Loose bolts / nuts	20.10.00	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	6[R]
Universal joint / keel roller free moving and in good order	As directed	2[R]	2[R]	2[R]	2[R]	4[R]	2[R]	2[R]	2[R]	2[R]	6[R]
Heart bolt (See time life 4.20.00)	As directed	6[R]	6[R]	6[R]	6[R]	6[R]	6[R]	6[R]	6[R]	6[R]	6[R]
Trimmer assembly operation	As directed	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]	2[R]
Placards: Trimmer, and Data plate	As directed	3[R]	3[R]	3[R]	3[R]	3[R]	3[R]	3[R]	3[R]	3[R]	3[R]

**Table 6 Scheduled Maintenance**

### **5.50.00 Unscheduled Maintenance Checks**

Unscheduled maintenance is required due to abnormal flight loads such as severe turbulence or heavy landings. If any abnormal loads are encountered during transport or storage then the airframe needs to be checked.

The pilot will be responsible for identification of these extreme operating conditions and identification of the effected components. Where damage is found further checks should be carried out upon areas that may also be affected.

Thorough checks should also be carried out after transportation of the aircraft, and after extended storage periods.

#### **5.50.10 Inspection after heavy landing.**

The main attachment point for the wing to the aircraft base should be inspected carefully for any permanent deformation of the U-bracket the main bolt or the keel, as well as all of the other effected components. If the landing resulted in contact with the ground then obviously these parts will require extra attention. The tubing relies on being intact in perfect condition for full strength. If tubing is bent or kinked in any way then it should be replaced prior to flying. This includes its attachment point to bolts. The battens should be checked against the supplied batten profile and the opportunity should also be taken to inspect the batten fittings.

#### **5.50.20 Inspection after heavy turbulence.**

The main areas of wing structure that require attention after severe turbulence are the attachment points for structures. These include the front and rear wires, the struts and the main hang point. The sail should also be inspected for any strain or tearing that may have occurred – though this is very unlikely. All of the tubing should be inspected for bending, including the battens against the supplied batten profiles. The opportunity should be taken to inspect the batten fittings at the same time.

If the base bar has made contact with the mast brace at any time during flight then they should both be checked.

#### **5.50.50 Sail removal**

The sail should be removed for close inspection of the airframe if the frame is suspected of suffering any damage for example, having bent tubes following a heavy landing, blow over or crash. If the wing suddenly develops a turn after severe turbulence it is possible that some tubes may be bent, therefore close inspection of all the tubes is necessary. It is suggested that the sail should be removed from the frame every 500 hours to check for any signs of fatigue or damage from general wear and tear.

The main points to check are

- Cross bar hinge joint
- Cross bar /leading edge joint (deformation in the bushes)
- Leading edge nose joint (deformation in the bushes)
- Nose plates
- Strut attachment points
- Straightness of the tubes
- Elongation of boltholes
- Damaged wires
- Damage to bolts
- Damage to sail

#### **NOTE**

If any part of the aircraft has any signs of damage the part should be replaced prior to re-installing the frame.

## Special Requirements and Tips

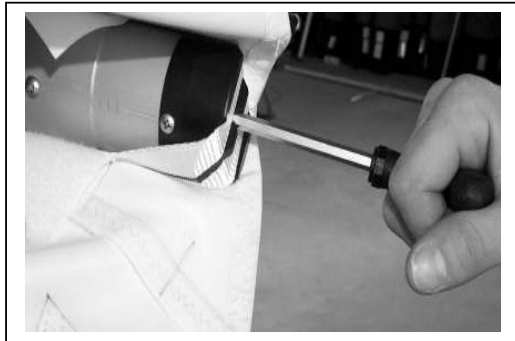
When installing or removing the sail you will need a large unobstructed area of approximately 12 metres by 3 metres. Make sure the surface is clean and not abrasive. Rough concrete will damage the sail, a grass area will not damage the wing, but will provide many hiding places for bolts, nuts and washers – short carpet is ideal.

It is a good practise to note the order of washers and other fittings prior to disassembly and to have a small container to put the hardware in. The Illustrated Parts Catalogue should be referenced for correct assembly. Taking photos before and during disassembly can also help aid the reassembly process.

### NOTE

Wherever possible perform an operation on one side of the wing, and completely reassemble it before continuing with the other side. This method gives an easy reference to the reassembly sequence that is required for correct and safe operation.

## De-tension the Tip



**Figure 4 De-tensioning the Tip**

- Undo hook and loop retaining straps at rear leading edge.
- Wind tip-tensioner inward (clockwise) to de-tension the tip webbing.
- Remove sail webbing from rear leading edge.

## **Remove Rear Leading Edges**

- Spread leading edges approximately 1-½ metres apart.
- Remove rear leading edge from airframe.

**Figure 5 Removing Rear Leading Edges**



## **Untie Bungie**



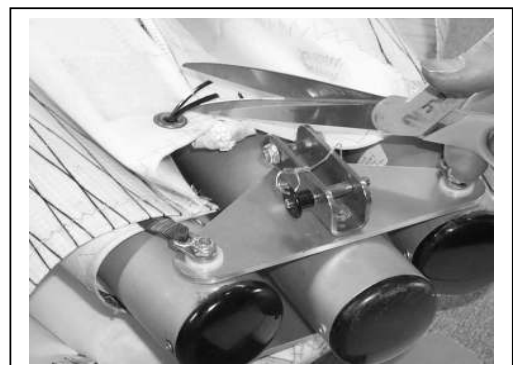
- Untie bungie from pull back handle. When the wings are folded in the handle is accessed through the undersurface center zip.

**Figure 6 Removing Rear Leading Edges**

## **Remove Zip**

- Cut off zip tie at nose junction.
- Remove zip slider from zip and unclip sail safety webbing.

**Figure 7 Removing Centre Zipper**



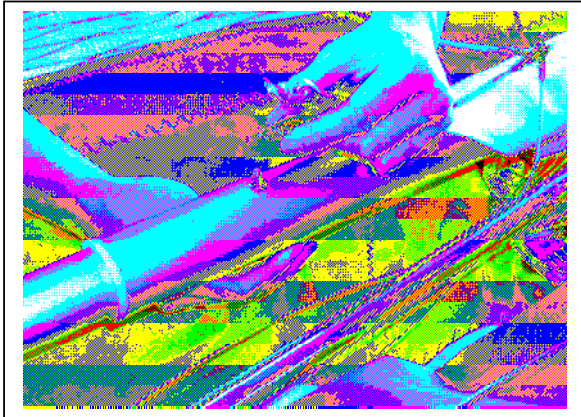
### **Remove Nose Webbing**



-Undo sail webbing nut and remove sail webbing. Replace nut finger tight.

**Figure 8 Removing Nose Webbing**

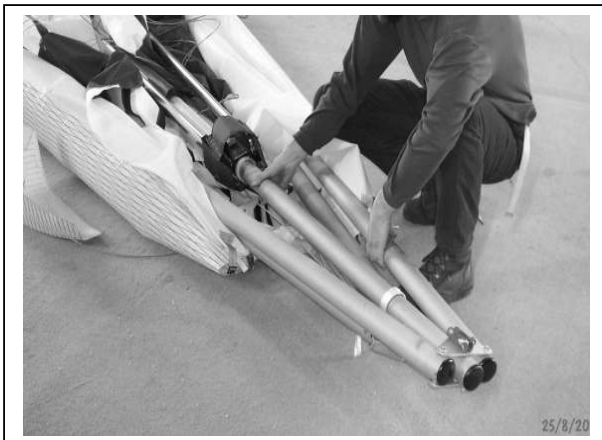
### **Remove Rear Wires**



- Remove sail Tang and quick clip

**Figure 9 Removing Rear Wires**

### **Remove Airframe from Sail**



-Leave control frame attached and carefully slide frame out through the nose of the sail.

**Figure 10 Removing Airframe**

**CAUTION**  
**DO NOT FORCE SAIL. IF IT SNAGS, STOP AND FIND WHAT IT'S CAUGHT ON.**

### 5.50.60 Frame Reinsertion

After the frame has been removed for inspection the frame must be properly reinstalled to maintain a high level of safety. Particular attention must be paid to the correct orientation of bolts and washers. It is advisable that all nuts that are removed are replaced with new ones, or as a rule Nylok nuts should not be reinstalled more than twice.

### **WARNING**

**REFER TO SECTION 20 (STANDARD PRACTICES) FOR CORRECT TORQUING PROCEDURES, FAILURE TO READ AND UNDERSTAND THE SPECIFIC TORQUING METHODS THAT ARE NECESSARY FOR THIS THIN WALLED TUBULAR STRUCTURE WILL RENDER THE AIRFRAME UNSAFE TO FLY.**

### Reinstall Bungie

-Tie pull back handle bungie to pulley temporarily using a bowline knot



Figure 11 Tie Pull Back Bungie To Pulley

### Prepare Frame for Sail Reinstallation



-Insert quick clip bolt, attach rear-flying wires and tighten nut finger tight, it needs to be removed again to allow the keel pocket past.

-Insert rear leading edges into **correct right and left hand side** and stand airframe onto its A-frame.

-Lay sail out at the tips inline with the airframe.

-Ensure rears are located correctly.

Figure 12 Frame Preparation for Sail Reinstallation

### Reinstall Sail Step 1.

-Slide sail 1 metre up the airframe making sure one leading edge goes in either side of the sail



Figure 13 Sliding Sail Onto Frame Step 1

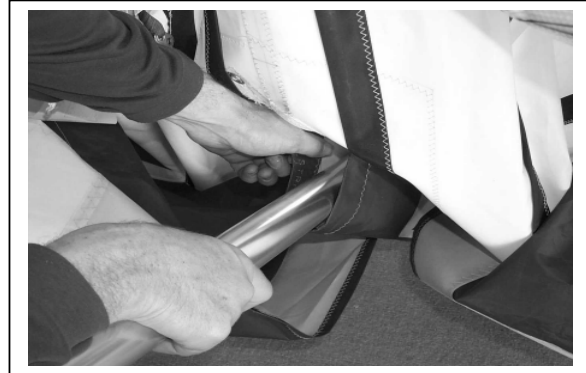
### Reinstall Sail Step 2.



**Figure 14 Sliding Frame Onto Frame Step 2**

### **Insert Keel into Sail**

- When sail is approximately halfway up, insert the keel into the keel pocket.
- Slide sail up until the keel pocket hits the quick clip bolt.



**Figure 15 Inserting Keel Into Sail**

### **Position Keel Pocket forward of Rear Wires**



**Figure 16 Position Keel Pocket Forward Of Rear Wires**

### **Spread Wings**

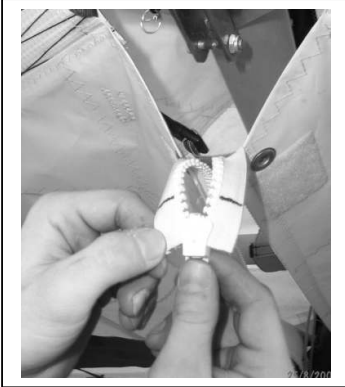
- Spread each wing apart  $\frac{1}{4}$  of the way alternately on each side until fully open, making sure sail is loose and free at all times.



**Figure 17 Spread The Wings Apart**

- Have someone hold the nose of the wing up so the bottom rear flying wires are loose.
- Remove quick clip nut and bottom rear flying wires.
- Slide keel pocket up until the sail tang aligns with the quick clip bolt hole.
- Re-insert quick clip bolt and attach washer, sail tang and rear flying wires, tighten nut.
- Let the nose down.
- Slide the rest of the sail up to the nose.

### Join Zip



- Connect sail safety strap at nose junction.
- Slide on zip slider, making sure strike marks on the zipper align.
- Fasten zip tie through eyelet holes around the zipper.

**Figure 18 Join Centre Zipper**

### Locate Tip Webbing / Attach Struts

- Locate tip webbing over rear leading edge and secure retaining Velcro.
- Attach Struts.



**Figure 19 Locate Tip Webbing**

### Insert Battens

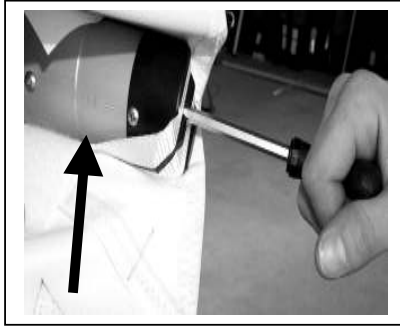


- Insert main sail battens and pull cross bar tension on, Note the pull back handle should be routed through the top sail hole.
- Tie pull back bungie onto pull back handle using a bowline knot.
- Photo shows the pull back handle being tied on.

**Figure 20 Insert Battens**



### Reset Tip Adjusters



Tension the sail using a 6mm Allen key. The tip fitting should be adjusted until the leading edge is positioned on the:

**4<sup>th</sup> mark for SST / ARROW Wing**

The markings are on the internal tube and should be adjusted until the appropriate mark aligns with the main outer tube

Secure Velcro tabs around the leading edge.

**Figure 21 Tension Tips**

### NOTE

If you find difficulty pulling the sail tension on the leading edge the adjustable tips can be wound in (clockwise). The sail nose tangs can be removed to allow the sail to move back. It is, however, extremely important to check that the sail at the nose does not foul on the frame when the wing is being tensioned. Ensure that the nose tangs are replaced and secured.

### Locate Tip Over-Centre Battens

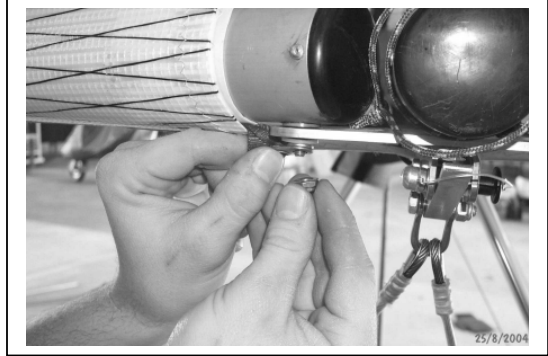


- Locate tip over center battens.
- Insert under surface battens.

**Figure 22 Locate Tip Over-Centre Battens**

### **Attach Swan Catch**

- Attach swan catch.
- Secure and tighten nose webbing tangs.



**Figure 23 Nose Webbing**

### **Quality Assurance**

After this procedure is completed recheck all nuts, bolts and connections, make sure that there are no parts left over or missing from the assembly.

### **NOTE**

It is good practice to have an independent person check the airframe. AirBorne WindSports always uses a different person for checking the assembly process. Following is the Final assembly QA sheet, which may assist in performing the final inspection process. This QA is used by trained personnel and does not represent all of the instructions that are necessary for a safe aircraft. It is to be used as a reference only.

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SST and ARROW Maintenance Manual

QA Inspection Form

**ASSEMBLY TRACE – WING T SERIES AND  
ARROW**

**GJP-256 pg2/3**

**FINAL QA**

Line	Check Operation, Security and Finish	T Series									
		Left Hand Side	Right Hand Side								
1.	Nose Assembly										
2.	Nose Catch										
3.	Nose webbing secure										
4.	Nose Batten										
5.	Nose Cone										
6.	Keel Roller/U-Bracket <table border="1" style="width: 100%;"> <tr> <td>Roller Position</td> <td>Rear</td> <td>Rear +1</td> <td>Rear +2</td> </tr> <tr> <td></td> <td></td> <td></td> <td>SST</td> </tr> </table>	Roller Position	Rear	Rear +1	Rear +2				SST		
Roller Position	Rear	Rear +1	Rear +2								
			SST								
7.	Down Tubes top assembly										
8.	D/Tube Velcro										
9.	Cross Bar Hinge										
10.	Cross Bar Padding										
11.	Down Tube Bottom Corners										
12.	Bottom Front Wires										
13.	Strut Control Frame Universal										
14.	Base Bar Bolts										
15.	Cross bar / Leading Edge Junction										
16.	Cross Bar Strut Assembly										
17.	Inboard Sprog Assembly										
18.	Inboard Sprog Mylar Cover										
19.	X/Bar L/Edge Zip										
20.	Outboard Sprog Assembly										
21.	Outboard Sprog Mylar Cover										
22.	Tip Webbing Located Correctly										
23.	Tip Tension <table border="1" style="width: 100%;"> <tr> <td>L/Edge Tension</td> <td>3<sup>rd</sup> Mark</td> <td>4<sup>th</sup> Mark</td> </tr> <tr> <td></td> <td></td> <td>SST</td> </tr> </table>	L/Edge Tension	3 <sup>rd</sup> Mark	4 <sup>th</sup> Mark			SST				
L/Edge Tension	3 <sup>rd</sup> Mark	4 <sup>th</sup> Mark									
		SST									
24.	Tip Scuff Pads										
25.	Pull Back Wires										
26.	Bottom Rear Wires										
27.	Pull Back Wires / Shackle										
28.	Clip Batten Tension Adjusted										
29.	Tip struts adjusted										
30.	Inboard Sprog Angle (8 Deg)										
31.	Outboard Sprog Angle (10 Deg)										
32.	Trimmer Sticker										
33.	Strut LH & RH Identification Sticker										
34.	Torque seal applied to Strut and D/Tube Nuts										
35.	Serial number Placard										
36.	Attach Test Fly Sheet in Plastic Holder										

Final QA By:

Appointed Signatory  
(As per 03/122/OI)

Date

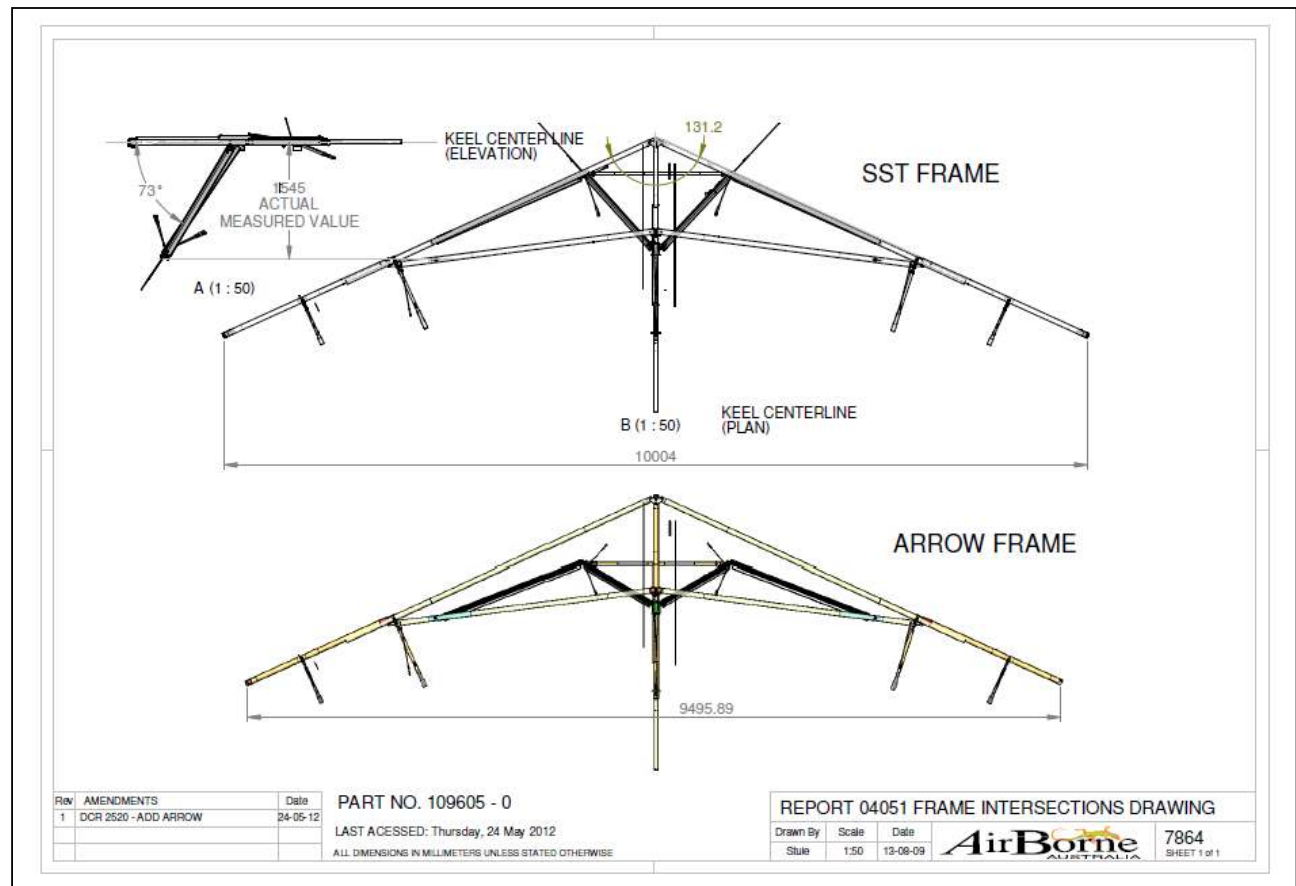
**Table 7 Airborne Final QA Inspection Sheet**

## 6. DIMENSIONS AND AREAS

### 6.00.00 General

This section gives general dimensions for the wing. It should be noted that this is a flex wing aircraft and the dimensions that are given will be different depending on the loads on the wing. In general the dimensions that have been supplied are those without the sail on the wing, (which bends the leading edge and slightly reduces the wing span) and with the wing on the ground, resting on the base bar.

### 6.10.00 Major Dimensions of the SST Airframe



**Figure 24 Major Dimensions of Airframe**

## 6.30.00 Significant Dimensions and Areas

### General

The Major dimensions of the wing are listed below.

	SST		ARROW	
	Metric	Imperial	Metric	Imperial
<b>Sail Area</b>	13.54 m <sup>2</sup>	145.7 ft <sup>2</sup>	12.9 m <sup>2</sup>	138.9 ft <sup>2</sup>
<b>Control Frame Rake Angle</b>	73 <sup>0</sup>	73 <sup>0</sup>	73 <sup>0</sup>	73 <sup>0</sup>
<b>Wingspan</b>	10 m	32.8 ft	9.5 m	31.1 ft
<b>Control Frame Height From Keel</b>	1.590 m	5.22 ft	1.590 m	5.22 ft
<b>Nose Angle (With Sail Installed)</b>	131.2 <sup>0</sup>	131.2 <sup>0</sup>	131.2 <sup>0</sup>	131.2 <sup>0</sup>

Table 8 Dimensions and areas

## 9. GROUND HANDLING

### 9.00.00 General

The wing should only be moved in the packed up condition or if necessary when attaching to the base.

When moving the wing in the assembled position it is recommended that the wing be lifted with the shoulders whilst standing in the control frame. It is suggested that an assistant is used to support the weight on the rear of the keel tube.

If there is wind or gusts the wing can easily be caught by the wind without proper handling. If there is a significant amount of wind, it is advisable to have assistants to hold the struts. The wing should be moved with the nose facing into the wind.

### CAUTION

**ENSURE THAT WHEN MOVING THE WING IN WINDY CONDITIONS THAT THE NOSE IS KEPT LOW WHEN FACING INTO THE WING. THE WINDWARD TIP SHOULD ALSO BE KEPT LOWER TO AVOID THE WING RISING.**

### 9.10.00 Ground Transportation

Avoid damage to your wing by using well padded racks. Careless transportation can cause considerable damage to your wing.

We recommend that you support the wing in at least 3 places to spread the load. The wing should be transported with the control frame down (U Bracket on top) to minimise the chance of damage to the cross tubes.

Flat straps should be used for tie downs to avoid damage to leading edge mylar.

Store the wing in a dry room off the ground. Air the wing out regularly to avoid mildew, and never store wet.

## **10. DERIGGING**

### **10.00.00    *General***

For derigging and storage see Sections 4 of the Aircraft Operating Instructions or Pilots Operating Handbook as applicable.

## 11. REQUIRED PLACARDS

### **11.00.00    *General***

The placards that are present on this aircraft are a legal requirement showing safety information, emergency information and identification of the aircraft. The placards must be repaired or replaced if they become illegible or damaged in service. Replacement placards may be purchased from an Airborne dealer or direct.

### **11.10.00    *Required Placards***

The placards on the aircraft are designed to provide information regarding general aircraft limitations and other details for the safe operation of the aircraft.

The placards that are required for operation of this aircraft are available in Section 2, "Placards", of the Aircraft Operating Instructions or Pilots Operating Handbook as applicable.

## 20. STANDARD PRACTICES - AIRFRAME

### 20.00.00 General

This chapter gives details for each of the bolts that are used on the wing. This is because there are few fittings which require standard torques.

### 20.10.00 Torquing Procedures

Correct torquing of fasteners is critical. If a bolt or fastener is too loose it may cause unnecessary movement resulting in wear or fatigue damage, while over tightening may cause tensile failure of the bolt, or crushing of components. Specific torques should be determined using an accurate torque wrench. The torque required after the nut is fully on the shaft, but not against the mating surface should be added to the final torque value.

#### **WARNING**

**THE CORRECT TORQUING OF THE BOLTS FOR THE WING SECTION OF THE AIRFRAME IS ESPECIALLY IMPORTANT FOR THE SAFETY AND LONGEVITY OF THE WING. IN GENERAL STANDARD TORQUING VALUES WILL NOT BE APPLICABLE, BECAUSE OF THE NATURE OF THE THIN WALL ALUMINIUM TUBING THAT HAS BEEN USED TO CONSTRUCT THE MAJORITY OF THE WING STRUCTURE.**

**NEVER TIGHTEN NUTS SO THAT THE ALUMINIUM TUBING IS DEFORMED FROM ITS CIRCULAR CROSS SECTIONAL SHAPE.**

**ALWAYS HAVE AT LEAST ONE FULL THREAD SHOWING PAST ANY NYLOK NUT THAT IS USED.**

**NEVER REPLACE COMPONENTS WITH A SUB STANDARD PART. TO REITERATE, OTHER GRADES OF BOLTS – SUCH AS GRADE 8 DO NOT HAVE THE SAME STRENGTH / FATIGUE CHARACTERISTICS AS AN (AERONAUTICAL GRADE) BOLTS.**

### Special Torquing Procedures

Special Notes for each of the bolts on the wing are given in the table below, along with references to the illustrated parts catalogue, which should be used to ensure that the components are reinstalled in the correct sequence.

#### Definition of “Just Not Loose”

A definition of torque has been made for the assembly of this wing which has been called “Just not loose”, a setting which is used to achieve the best combination of strength characteristics of the tubing while not allowing any vibration or relative movement of the bolt in the axial direction. In practice this means that the nut shall be tightened adequately to ensure that each of the components that are held by it are in contact with each other, and then approximately ¼ turn more should be made. The resulting fit should not allow any axial movement of the bolt in its location, but will allow rotation (using fingers) of a held component to be achieved with approximately 20mm of lever arm; (eg. a wire tang).

No.	Area	Instructions
1.	Nose Assembly	Central bolts, “Just Not Loose” Outer bolts to leading edges may be slightly tighter, make sure that the sail tangs are in place with at least one thread showing. This area may be slightly tighter than “Just Not Loose” because there is a bush in the leading edge (see drawing 7792 Illustrated Parts Catalogue).
2.	Nose Catch	“Just not loose” (See Drawing 7800 Illustrated Parts Catalogue)



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**SST and ARROW Maintenance Manual**

3.	Keel Roller / U Bracket	The socket countersunk cap screws which locate in the "Neg Plate" (horizontal aluminium plate with serial number riveted to it) should be tightened to approximately 25 Nm. Red Loctite 262 must be used (see Drawing 7793 Illustrated Parts Catalogue)
4.	Down Tubes Top Assembly	The down tubes are also attached to the U-bracket. The down tubes need to move relative to the U Bracket, therefore it is important that they are able to move after tightening. This may be slightly tighter than "Just Not Loose" Ensure that there is no gap between the neg plate and the U-bracket, there should be approx 2-3 threads showing.
5.	Cross Bar Hinge	The central bolt should be tightened to "Just not loose", the black acetal cross bar protector should still be able to be rotated by hand (see drawing 7795 Illustrated Parts Catalogue).
6.	Down Tube Bottom Corners	The base bar fitting bolt, should be slightly tighter than "just not loose", but base bar knuckle should be able to be rotated by hand. Loctite is not required, as there is a locking bolt installed.
7.	Base Bar Bolts	"Just not loose".
8.	Cross Bar Leading Edge Junction	"Just not loose".  <b>NOTE</b> The vertical bolt will have approximately four threads showing. (See Drawing 7792 Illustrated Parts Catalogue)
9.	Struts	Strut top swivel should be lubricated with a lanolin-based product to prevent corrosion. The bolts and nuts connecting the strut airfoil to the knuckle top and bottom must have Loctite 262 applied. The nut internal and bolts should have a marker line drawn across the end to help see if they become loose. (See Drawing 7742 Illustrated Parts Catalogue)
10.	Pull Back Wires	Tighten bolt till 1-2 threads are showing.  <b>NOTE</b> The wires that locate on the bolt will float slightly from side top side (see drawing 7795 Illustrated Parts Catalogue) - there will be two wires in the pull back shackle.
11.	Quick Clip Bolt	"Just not loose" (see drawing 7800 Illustrated Parts Catalogue)
12.	Trimmer Attachment to Down Tube	Tighten nut until the faces of the saddle and trimmer spool come in contact. (see drawing 7770 sheet 2 Illustrated Parts Catalogue)
13.	Trimmer Handle	Firm with Loctite 243 (see drawing 7770 sheet 2 Illustrated Parts Catalogue).

**Table 8 Torque settings for the wing**

## ***20-20-00 SAFETYING PROCEDURES***

All bolts and nuts, except the self-locking type, should be safetied after installation. This prevents them from loosening in flight due to vibration.

### **Self-Locking Nuts**

Self-locking nuts are used throughout the airframe. Self-locking nuts may be reused but not if they can be run on the thread by hand without using tools. After a self-locking nut has been tightened at least one full thread pitch of the male thread must protrude through the nut-locking feature.

### **Loctite**

On any bolt that does not have a Nyloc type locking mechanism, Loctite 243 should be used to prevent premature loosening. On the U-bracket and Struts Loctite 262 (Red High Strength) needs to be used.

## ***20-30-00 CONTROL CABLES AND TERMINALS***

There is a single control cable on the wing, used for the trimmer. The trimmer wire is routed through the right hand down tube, through a pulley to halve the ratio, and on to the trimmer reel where the pilot actuates it. The trimmer should be checked regularly for excessive friction and wear. Wear is most likely to occur at the ends of the cables at the attachment points and the areas where the wire is bent.

## 27. FLIGHT CONTROLS

### **27.00.00 General**

The SST and ARROW wings use weight shift control. This means that there is no need for most of the traditional flight control surfaces such as flaps and rudders. The pilot uses the control bar to shift weight relative to the attachment point of the base to the wing, which in turn causes a reaction in the wing and the control response of the aircraft.

### **27.60.00 Spoiler, Drag Devices and Variable Aerodynamic Fairings**

The only flight control on the wing that is not automatic or weight shift controlled is the trim speed control. A pulley device on the right hand down tube gathers wire through a bungie system, and is linked to the keel. Turning the trim handle pulls the keel down at the rear, acting like a counterweight, which has the effect of reducing trim speed. There is a swage on the wire, which allows the pilot to see which position the trimmer is in. The wire for the trimmer assembly should be periodically inspected for wear, and the handle inspected for free operation.

### **27.70.00 Trimmer Knob Inspection**

When inspecting the trimmer assembly, check that the pulley at the bottom of the base bar has not been worn by the position indicating swage on the wire. If the pulley has been worn it will need to be replaced.

## **57. WINGS**

### **57.00.00 General**

The main structure of the wing comprises of aluminium tubing and stainless steel wire. The lifting surface is constructed from Dacron polyester fabric. The wing is subject to maintenance checks and preflight procedures that must be carried out prior to flying. Any dents crazing, bends (except for tube bending caused by normal flight and set up loads), corrosion or other distortion of the wing structure renders the wing unsafe to fly. Secondary structures of the aircraft are limited to:

- Keel extension structure
- The trimmer assembly
- The pull back assisting rope and pulley system

### **CAUTION**

**IT SHOULD BE NOTED THAT ALL OF THE TUBES THAT ARE USED ARE SPECIFIC GRADES OF ALUMINIUM DESIGNED FOR FLEX, STRENGTH AND FATIGUE CHARACTERISTICS. ALL OF THE TUBES ARE SLEEVED FOR STRENGTH AND WHERE STRESS CONCENTRATIONS EXIST. IF ANY TUBING IS TO BE REPLACED IT SHOULD BE REPLACED WITH AIRBORNE SPARE PARTS ONLY.**

### **57.10.00 Main Frame Description**

This section allows the user to understand the main function of each of the components of the wing, which should help the operator, or maintenance personnel to properly inspect the wing.

#### **Keel**

The keel of the wing is mainly constructed from 6061 T6 aluminium. Each of the major components of the wing are attached to the keel. Major components from the front to the rear of the keel:

#### **Nose Plates**

The nose plates are bolted to the keel and provide attachment points from the leading edges to the keel. They are attached to the keel with bolts. The nose plate bolts also attach the stainless U-channel where the front wires attach to the swan catch.

#### **U Bracket**

The U-bracket provides a mounting point for both the control frame and the trike mast, the main attachment point for the base to the wing. The U-bracket is allowed to rotate around the keel, and is held in position longitudinally with acetal bungs, which are bolted to the keel.

#### **Quick Clip**

The quick clip is bolted to the keel with the same bolt used to attach the rear wires.

#### **Control Frame**

The control frame is constructed mainly from 6061 T6 aluminium. The control frames down tubes work mainly in compression due to the positive loading of the wing, which is reacted through the struts and base bar sections. The base bar works mainly in tension through the strut loads from the crossbars and leading edges.

The control frame is bolted to the keel through the U-bracket. The fittings at the top of the control frame allow relative movement between the U-bracket and the control frame. This is necessary because of the movement between the base and the wing during the weight shift control actions.

### **Leading Edge**

The leading edges are mainly constructed from 6061 T6 Aluminium. The leading edges are mainly loaded in bending and compression and share loading with the cross bars during positive and negative flight loads.

The leading edges are attached to the keel through the two nose plates at the front of the wing, and via a bolt assembly to the cross bars and the struts. The rear leading edges fit inside the leading edge tubes, which locate onto a horizontal bolt in the leading edge assembly. The rear leading edges are a part of the leading edge, but are made in order that they may be removed for ease of shipping.

### **Cross Bars**

The cross bars are mainly constructed from 6061 T6 aluminium. The cross bars serve the purpose of holding the leading edges forwards and spread against the sail, they share the loading with the leading edges during positive and negative flight loads.

The cross bars are attached to each other at the keel using a ball joint that allows relative movement. They are also tethered to the keel via a webbing loop. The cross bars are attached to the leading edges outboard using a bolt assembly.

### **Battens**

The battens are mainly constructed from 7075 T6 aluminium. The battens are located with batten pockets sewn into the sail. The batten fittings at the trailing edge secure the battens into their pockets. The battens help to maintain the profile of the wing during flight, and are important to the correct and stable operation of the wing. For this reason there is a batten profile that is supplied with each wing for the battens to be checked against.

Battens should always be inserted into the same side of the wing, red is always inserted on the left hand side, green is always inserted on the right hand side. A useful mnemonic is "red is never right".

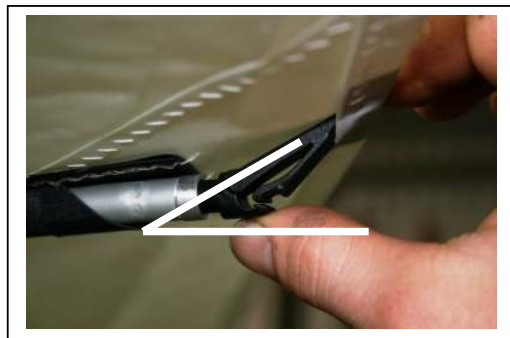
### **WARNING**

**DO NOT FLY THE WING WITH ANY OTHER BATTEN PROFILE THAN THAT SUPPLIED BY AIRBORNE, AS VARIATION MAY HAVE SERIOUS EFFECTS ON THE FLIGHT PERFORMANCE STALL AND STABILITY CHARACTERISTICS OF THE WING.**

**BATTENS MUST ALWAYS BE CORRECTLY INSTALLED WITH RED BATTENS IN THE LEFT HAND SIDE AND GREEN IN THE RIGHT HAND SIDE OF THE WING. BATTENS MAY BE DELIBERATELY DIFFERENT FROM SIDE TO SIDE.**

### **Batten end fittings**

When inserting batten end fittings prior to closing, batten fittings should sit inserted in the trailing edge. The angle before loading is applied should not exceed 30°.



**Figure 25 Inserted Batten End Unloaded Angle Check**



Latch fittings should be sharp and not rounded. Rounded edges can occur from unloading without depressing the latch. Check the unloaded measurement of latch to body of the outer fitting is not less than 2mm to maintain loaded retaining force.

**Figure 26 Batten End Fitting Dimension Check**

### **WARNING**

**ALWAYS ENSURE THE BATTEN END FITTINGS ARE CLOSED AND LOADED SECURELY BEFORE TAKE-OFF. BATTEN ENDS BECOMING UNLOADED DURING FLIGHT AT HIGHER AIRSPEEDS MAY HAVE SERIOUS EFFECTS ON THE FLIGHT PERFORMANCE AND STABILITY CHARACTERISTICS OF THE WING.**

### **Struts**

The control frame is constructed mainly from 6061 T6 aluminium and are attached to the cross bars and the control frame through fittings that allow them to rotate. The struts work mainly in tension through the loads from the crossbars and leading edges.

### **Front and Back Wires**

The front and back wires are stainless steel braided wires that have swaged fitting at each end for attachment to the nose catch, control frame and keel.

### **Sprog / Washout Struts**

The sprogs are mainly 6061 T6 aluminium tubes that do not operate in normal flight. They attach at the bottom of the leading edges and are connected by stainless steel wire to the top of the leading edges. Sprogs become active at low angles of attack, the rear of the sprog tubes act upwards on transverse battens that serve to keep the trailing edge of the sail raised, providing dive recovery function.

### **Checking the SST / ARROW Stability System**

This method is used to check the sprog angle relative to the keel angle of the wing.

Angles may be measured using one of the following tools:

1. Protractor with built in spirit level (these are available from Airborne, part number 108624 PROTRACTOR SPIRIT LEVEL)
2. Digital level
3. Protractor with plumb bob

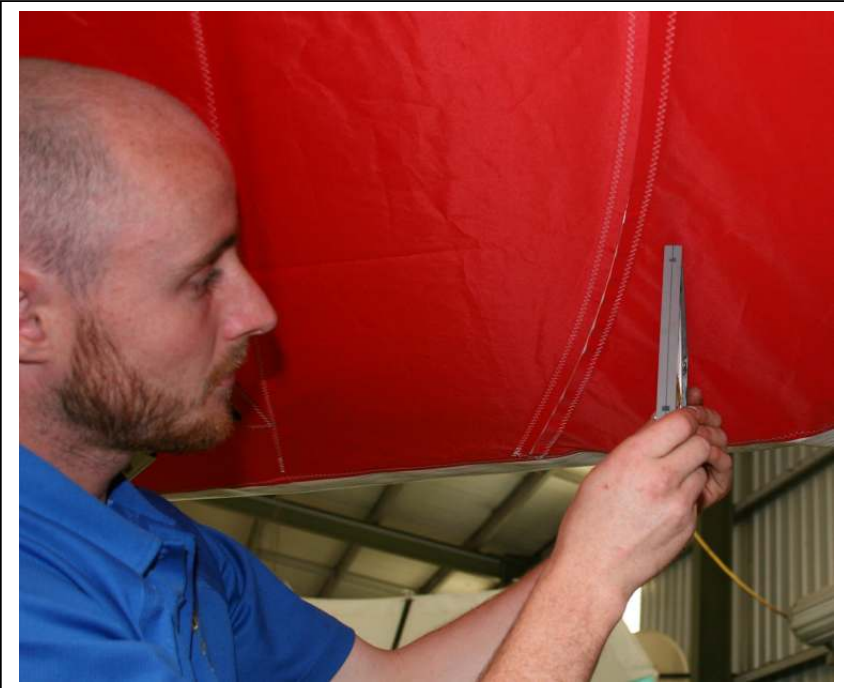
Inspection steps:

1. Fully assemble the wing ready for flight.
2. On a level piece of ground raise the rear keel to horizontal as  $0^\circ$  is a convenient reference point. Using a stand to support the keel extension.
3. Place the protractor/level on the underside of the keel between the cross bar straps as shown in the following photograph. Do not move the wing from this position.



**Figure 27 Setting Reference Keel Angle**

4. Check inner sprogs: With the access zips to the inner sprogs closed, place the protractor/level on the underside of the washout struts so that it sits with good contact (pressing through the sail) as shown in the following photograph. Avoid the zip and sew line which will interfere with a correct reading. Measure and record at both inner washout strut locations as described in the table below.



**Figure 28 Measuring the inner Washout Strut Angle**

5. Check outer sprogs: To check the outer sprogs the zips must be opened in order to be able to place the protractor against the sprog correctly.





**Figure 29 Checking the Outer sprog angle**

The table below indicates the minimum differential angle for each of the washout struts referenced to the keel at zero degrees. Compare the measurements taken to the certified angles in the applicable table. Make adjustments to raise or lower the struts as required.

As a guide for the magnitude of adjustment:

- the **inboard** struts change approximately **0.5° per revolution** of the threaded strut cone.
- the **outboard** struts change approximately **1° per revolution** of the threaded strut cone.

	Strut	
	Inboard	Outboard
<b>Wing model</b>		
SST	8.0°	10.0°
ARROW	8.0°	10.0°

**Table 9 Washout Strut Angles**

**Making changes to the angle of a washout strut:**

- Swing the strut out from the sail.
- Remove the split ring from the clevis pin.
- Remove the clevis pin.
- To raise the trailing edge, view the washout strut from the rear, rotate the threaded cone anticlockwise until the clevis pin hole reappears, this occurs in 1/2 turn increments.
- To lower the trailing edge, view the washout strut from the rear, rotate the threaded cone clockwise until the clevis pin hole reappears, this occurs in 1/2 turn increments.
- Replace the clevis pin and split pin.
- Replace the strut in the sail and capture it by doing the zipper up.
- Tap the sail from above to jiggle the strut into its flattest position. The strut angle is now ready to be sighted and re-measured.

**WARNING**

**EXPERIENCED PERSONNEL SHOULD ONLY CARRY OUT ADJUSTMENTS TO THE WING STABILITY SYSTEMS. ANY ADJUSTMENTS SHOULD BE RECORDED IN THE MAINTENANCE LOG. CHANGES REQUIRED FOR TUNING ARE SMALL AND INCREMENTAL. MAJOR CHANGES WILL CAUSE THE WING TO PERFORM BADLY, AND MAY BE DANGEROUS.**

**WHEN MAKING STRUT ADJUSTMENTS, IT IS WISE TO VISUALLY SIGHT THE STRUTS TO CHECK FOR GROSS CHANGES BEFORE TEST FLYING. TO SIGHT THE STRUT SETTINGS, STAND IN FRONT OF THE GLIDER WITH THE KEEL HORIZONTAL & HOLDING THE NOSE WIRES. SLOWLY ROTATE THE NOSE FORWARD AND BACKWARD, NOTICE WHEN THE TRAILING EDGE OF EACH OF THE STRUT LOCATIONS COMES INTO AND OUT OF VIEW.**

### **57.30.00 Sail**

The sail comprises the lifting surface of the wing. It is mainly constructed of Dacron polyester fabric, with some Mylar material making up the leading edge areas, the ARROW wing has a large portion of the top surface made from Mylar, whereas the SST is all dacron except the leading edge. The sail is constructed from many individual panels, which are sewn together using polyester thread to form the required shape. The sail has attachment points sewn into it to attach to the frame at various points and to hold the battens in place. The Sail also provides zips that facilitate easy preflight inspection of all the members inside the double surface wing.

The sail should be kept out of the sun as much as possible as sunlight will damage the sail, and in time will cause it to fail the required sail strength Bettsometer tests.

#### **Inspection**

- Check for tears in the sailcloth or any loose or unravelled seams.
- Check all webbing securing points are not damaged or worn.
- Check all inspection zippers to see if they function smoothly and close completely.

#### **Protection**

Ultraviolet radiation from strong sunlight ultimately reduces the strength of Dacron, but this may be reduced to an acceptable level by careful consideration of the wings use and exposure. In its bag the wing is fully protected. Sunlight will eventually cause it to fail the required Bettsometer tests.

**KEEP THE SAIL COVERED WHEN NOT IN  
USE AS CONTINUED EXPOSURE TO  
ULTRAVIOLET RADIATION  
DRAMATICALLY REDUCES SAIL LIFE.**

The Dacron sailcloth may be cleaned with warm soapy water. Strong detergents must not be used. Thoroughly rinse with plenty of clean water.

**NEVER USE CHEMICAL SOLVENTS OR  
APPLY WATER REPELLENT COMPOUNDS.**

### **57.30.10 Bettsometer Testing**

Bettsometer testing is a method of determining the tensile strength of the sail fabric and stitching, which is known to degrade during the life of the sail.

#### **Hour or Time Related Check Limits**

Annual Bettsometer test with a 1.2mm diameter needle, with wing sails fitted and tensioned for flight is to be carried out to:

Upper & lower surface: 1360 grams.

Stitches: 1360 grams using a 1mm or 1.2mm diameter hook, pull upwards.

As well as the annual check there are several criteria for testing of sails, which are highly dependent on the conditions that the sail fabric is exposed to. The pilot/operator of the aircraft is responsible for determining the level of exposure that the sail experiences.

Generally the method used for fabric testing is a Bettsometer test (on an annual basis). Annual testing has been found to be adequate for recreational user where the operator takes care to avoid unnecessary exposure to UV.

More frequent testing (200 operating hours or 750 UV hours) is applied where operators exceed these hours prior to the annual test.

**NOTE**

- If a wing is stored under a roof, but the roof does not have doors on the front – i.e. an open hanger, the wing will still experience UV degradation.
- If a wing is flown, and or left in the open for a day, this will equate to 8-10 hours of UV exposure.

Where aircraft have been exposed to high levels of UV over an extended period (such as being left set-up in the open for 3 months or more - equivalent to 750 UV hours), then testing prior to return to service is recommended.

The instructions that are supplied with the Bettsometer should be followed to ensure proper testing.

**NOTE**

Some instructions that may be helpful,

- The instructions that come with the Bettsometer recommend that *"any flat section of the sail, clear of obstructions"* is suitable for fabric testing. Single layer sections of the sail would give a more relevant test result than patched or multi-layered sections and obviously those areas most exposed to UV damage (usually the top surface) would be the most useful to test.
- Likewise the stitching exposed on the top surface would show the most UV degradation and will give a better indication of the strength left in the thread than that on the under surface.
- Bettsometers are available from Airborne Windsports.



**Figure 30 Bettsometer Instrument**

**57.30.20**

**Minor tears or rips in the sail**

Minor sail repairs are a Line Maintenance task which Sport Pilots are suitable to perform unless local regulations prohibit owner maintenance for sails. A repair is classified as minor if tears are less than 30mm long, provided that no free edges (such as the wing trailing edge) are broken and that the tear is isolated and not within 50mm of an existing seam line or 100mm of the trailing edge. Also, abraded holes no more than 15mm in diameter. Such damage may be replaced with self adhesive patch material (Often called "sail tape" or "sticky back sail repair tape") such as used for registration letters. If possible a patch should be applied to both sides of the fabric.

(Reference BMAA TIL No. 015 Issue 1.)

The tape is available from Airborne as a spare part.

Any other significant damage should be discussed with Airborne or a dealer for an assessment of the best repair option.

## **57.40.00 Tuning**

### **Roll Tuning**

Your aircraft was test flown and delivered to you in good flying order.

#### **WARNING**

**EXPERIENCED PERSONNEL SHOULD ONLY CARRY OUT ADJUSTMENTS TO THE WING, IDENTIFICATION OF A TURN SHOULD ALSO BE CARRIED OUT BY AN EXPERIENCED PERSON. ANY ADJUSTMENTS SHOULD BE RECORDED IN THE MAINTENANCE LOG. CHANGES REQUIRED FOR TUNING ARE SMALL AND INCREMENTAL. MAJOR CHANGES WILL CAUSE THE WING TO PERFORM BADLY, AND MAY BE DANGEROUS.**

If you feel that the wing requires adjustment to trim in the roll or the pitch axis you should check that the problem is not caused by something asymmetrical in the frame or the battens. In order of priority check the following:

- Check the battens against the template
- Check that the sail webbing is correctly mounted on the leading edges and tensioned to the correct mark
- Check the keel is straight
- Check that the leading edges are straight and that the rear leading edges are located correctly
- Check front and rear wires are routed correctly

To check your battens use the following procedure:

- Remove the battens from the wing after the wing is de-tensioned as required during the pack up phase. See Pilot's Operating Handbook / Aircraft Operating Instructions for pack up procedures
- Lay the template out on a flat surface.
- Note whether the battens have been reflexed. Do not change the reflex initially. The battens may have already been reflexed to correct a turn.
- Start with the keel batten lining the nose of the batten up with the start of the line. The line should be above the batten.
- If the batten does not line up, gently apply pressure using your hand or knee to get a smooth curve.

After checking as noted above a turn can be remedied by adjustments as outlined in the following table.

## Roll Tuning Matrix

The following table outlines procedures for tuning a wing to correct a turn.

	Adjustment Method	Remedy Left Turn	Remedy Right turn
<b>VERY MILD TURN</b>	<b>Batten Tip Ends</b> Unclip batten ends. Rotate batten ends clockwise to reduce tension or rotate batten ends anti-clockwise to increase tension. Note: Tip batten tuning has more effect on tuning than the root battens. Note Maximum 30 Deg angle during install. See Fig 24.	The main sail batten tip end tension can be increased on the left wing. The tension on the right can be decreased.	The main sail batten tip end tension can be increased on the right wing. The tension on the left can be decreased.
<b>MILD TURN</b>	<b>Tip Angle Adjustment</b> The angle of the tip can be adjusted by rotating the angle of the end cap. Adjustment requires removal of the stainless screw, which secures the tip webbing bung. The tip bung is rotated and the screw is re installed in the appropriate hole. Reduction in leading edge tension will simplify procedure. Ensure correct tension is applied after adjustment. See Section 0 Assembly After Shipping for tip adjustment details	Rotate the left tip down (clockwise) 1 hole and re install screw. If more adjustment is required rotate the right tip up (clockwise) 1 hole and re install screw.	Rotate the right tip down (anti clockwise) 1 hole and re install screw. If more adjustment is required rotate the left tip up (anticlockwise) 1 hole and re install screw.

**If after tuning the turn persists consult your authorised dealer or the factory.**

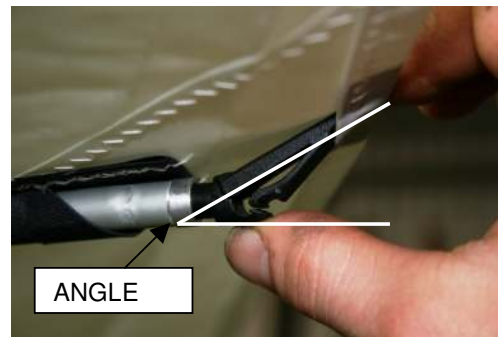
<b>ADDITIONAL TUNING</b>	An adjustment called torque roll tuning is also used to adjust a small roll off to the right in the wing as it approaches $V_{ne}$ . This adjustment has little or no effect at lower speeds. It is achieved by reflexing the right hand side tip battens numbers 8 and 9, 250mm from the trailing edge upwards to a maximum of 15mm from the straight section of the batten (refer batten profile as necessary). NOTE: The more reflex the more correction effect.
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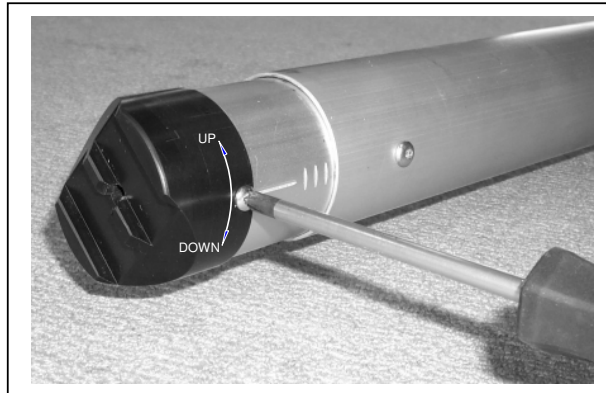
**Table 10 Tuning procedure**

## BATTEN TENSION ADJUSTMENT

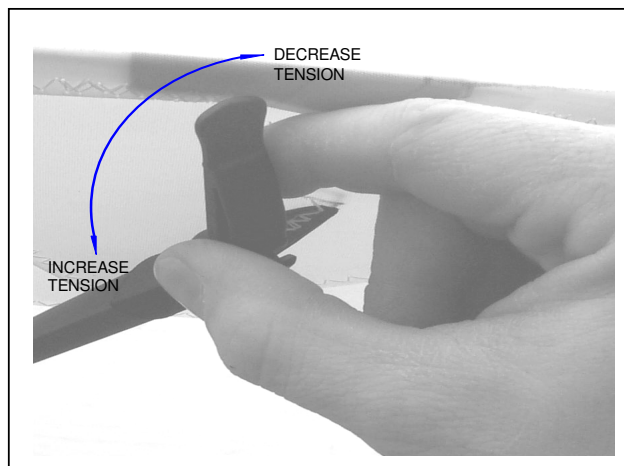
Over tensioning of battens will cause degradation of handling. A mylar sail tends to shrink as it ages so checking of the batten tension periodically is required. The correct tension is applied to the batten when loading with minimal pressure applied an angle of  $30^\circ$  is achieved (See diagram). The last tip batten should be approximately  $45^\circ$  (More tension). To decrease tension the fitting is rotated clockwise. To increase tension the fitting is rotated anticlockwise

**Figure 31 Standard Batten Tension**





**Figure 32 Adjusting Tip Angle (Sail Not Fitted)**



**Figure 33 Adjusting Batten Tension**

### **Pitch Tuning**

Trim speed at MTOW and the trimmer in the off position is:

WING MODEL	TRIM SPEED
SST	60-66 KIAS
ARROW	60-70 KIAS

**Table 11 Trim speeds**

If the wing is trimming outside the specified trim range a forward or aft movement of the keel roller on the keel tube can be used to trim the wing.

A one-hole adjustment will see a typical change in trim of 5 knots. Moving the roller to the forward position will increase the trim speed whilst moving the roller rearward will decrease the trim speed. The illustrated parts catalogue should be referenced for correct reassembly.

### **NOTE**

- If the centre of gravity (C.G) is moved forward the trimmer mast clamp will need to be moved up the mast the same amount. If the C.G is moved rearward, the trimmer clamp will need to be moved down. That is a single hole adjustment of the keel roller will require a 20mm trimmer mast clamp adjustment.

### ***57.50.00 Attach Fittings***

#### **U-bracket**

The U-bracket is the main attachment point of the wing to the base structure, as well as to the keel of the wing. It is the major junction for the three main components of the aircraft, the wing (keel attachment), base (mast attachment) and control frame (top knuckle attachment). The U-bracket has two components, a U shaped channel, and a negative block that is attached below the keel to preclude the keel from moving out the bottom of the bracket.

The U-bracket should be checked thoroughly after any unusual loads.

### ***57.60.00 Flight Surfaces***

There is a trim speed control device on the wing. The trim control is achieved by a pulley system, which gathers rope through a bungee system, and is linked to the keel. Turning the trim handle pulls the keel down, acting like a counterweight, which has the effect of reducing trim speed.



## **95. SPECIAL PURPOSE EQUIPMENT**

### ***95.10.00 Training Bars***

The training bars will be supplied as an option for use by qualified instructors in order to teach people to fly the aircraft, they allow more experienced students to fly the aircraft from the rear if necessary.

The training bars attach to the wings base bar and down tubes, and provide control extensions toward the back of the aircraft for rear occupant usage.


Instructions for fitting and maintenance are included as part of the training bar kit.

## APPENDIX A – Condition Inspection Checklist

Wing Maintenance Log.      S/N: \_\_\_\_\_

Date	Hours	Maintenance Section or Service Bulletin	Work Performed	Maintained by

## APPENDIX B – Feedback Form

<b><i>Operation and Maintenance Feedback Form</i></b>	
	Please use a copy of this form to provide notification to the manufacturer about issues or anomalies identified during the operation or maintenance of the aircraft or in the content of the manual.
Return to AirBorne WindSports Pty Ltd PO Box 7042 Redhead New South Wales 2290 Australia Fax +61 2 4944 9199 Email <a href="mailto:trikesupport@airborne.com.au">trikesupport@airborne.com.au</a>	Please provide your own contact details below
Issue Description	
If you have a proposal to remedy the issue please provide it here:	
Number of pages submitted including this cover page_____	

End SST and ARROW Maintenance Manual

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**SST AND ARROW  
ILLUSTRATED PARTS CATALOGUE**

Applicability : SST AND ARROW

Unit 22/30 Kalaroo Rd  
Redhead 2290  
New South Wales  
Australia  
Phone (+61) 2 49449199  
Fax (+61) 2 49449399

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## INTRODUCTION

### WARNING

**SOME PARTS WHICH ARE LISTED ARE COMPONENTS OF PARTS WHICH ARE NOT USER SERVICABLE. ONLY MAINTENANCE WHICH IS SPECIFIED IN THE MAINTENANCE MANUAL SHOULD BE ATTEMPTED AND ONLY THE EXACT SPARE SHOULD BE USED TO REPLACE PARTS. THE FOLLOWING DRAWINGS ARE PROVIDED AS A CONVENIENCE TO AID IDENTIFICATION OF PARTS WHICH ARE USER MAINTAINABLE.**

This manual should be used in conjunction with the correct maintenance manual, and repairs should only be carried out by competent people. Read the Maintenance manual before proceeding.

This parts catalogue has been prepared to aid in the identification of components that may effect the airworthiness of the Airborne T-Series SST wings.

Drawings with various levels of detail are supplied that include all of the spare parts available – specific to the serial number identification of the wing.

Most of the parts listed are available as spare parts. If a component is not listed then it may only be available as a complete part. For example spare parts are not available for the base bar, only the entire base bar assembly is supplied as a spare part.

All parts available are named and have part numbers, this is the identification system that should be used to order spares, eg: Shackle RF615 4mm, Part Number 100406, and the quantity required.

NB. Some parts may have been used from other wings, and therefore have other model names in the title. The most important thing in ordering spare parts is the part number.

### NOTE

Airbornes data packages will be revised from time to time. Owners registered on AirBorne's data base will be notified of any changes to data and directed to the AirBorne web site (<http://www.airborne.com.au/>) for the applicable pages. The amended pages should be printed and the prior page replaced in the folder as soon as possible. The amendment table should at that time be updated with the appropriate details and date. Revised pages will be sent by mail if requested.



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### 5 OPTIONS

- 5.1 NIL

### 6 END OF CATALOGUE

## NAVIGATING - HOW TO USE THIS CATALOGUE

The pieces that make up a trike or wing are called “Parts” or “Assemblies (ASM)”. Each drawing in this manual contains a mixture of Parts and ASM’s at different levels of manufacture. This manual contains the “Highest Level Drawing” at the front, and divides into “Main Sub Chapters”. The Sub Chapter Drawings become simpler and simpler until they show only Parts or simple ASM’s. These are the items that are SOLD.

On each Drawing, items that are SOLD are identified by CIRCLES. Parts identified by BOXES are NOT SOLD and are used for factory purposes only. See Figure 1 for examples of circles and boxes.

Use this manual by identifying the “Highest Level Drawing” that contains the item you’re interested in, and then, by using the identifier circles, look at the next level of Drawings listed in the Bill Of Materials box.

Continue until you find your item where it is listed on a Drawing, where it is identified using a Circle. This will be the item to ORDER.

### EXAMPLE

For example if you were to require a new PULL-BACK PULLEY for the KEEL.

**Step 1.** Use the main drawing to identify which part or sub-assembly it belongs to. In this case it is a part of the AIRFRAME T SERIES DRAWING 7785, which means that it is in Chapter 2.

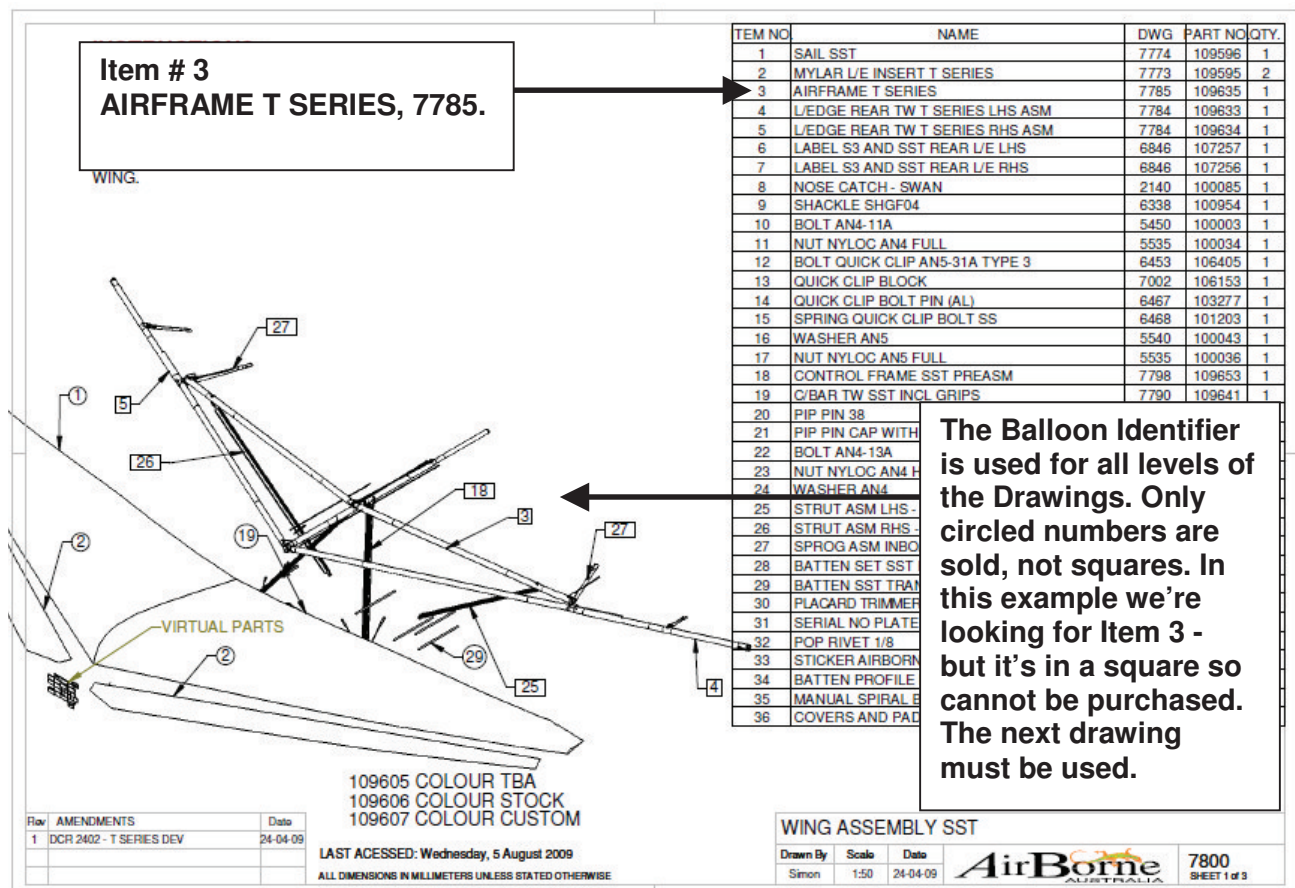


Figure 1. Highest Level Drawing

**Step 2.** So now if you go to that drawing (7785) then you may use the identifiers to find the next drawing number that is required. The keel is part of Item 1, drawing 7792.

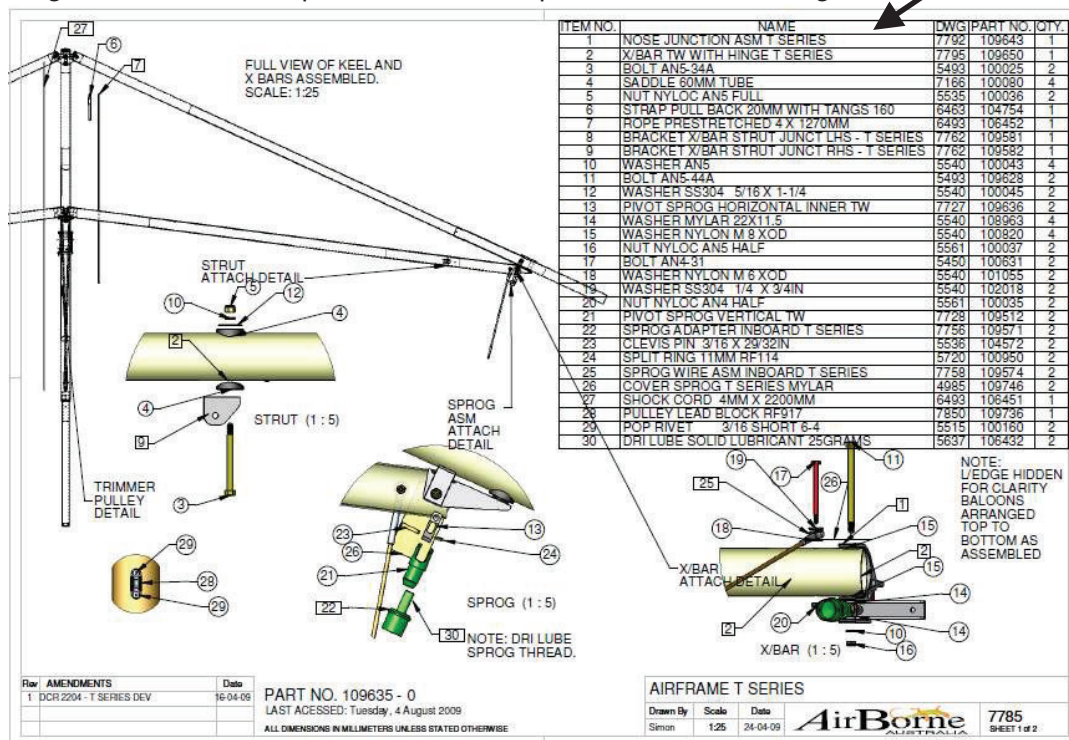


Figure 2. 2nd Level Drawing

**Step 3.** Keep looking for the part of the wing you want. In this example it's still not shown as an individual item, so it must be part of Item 1, drawing 7793.

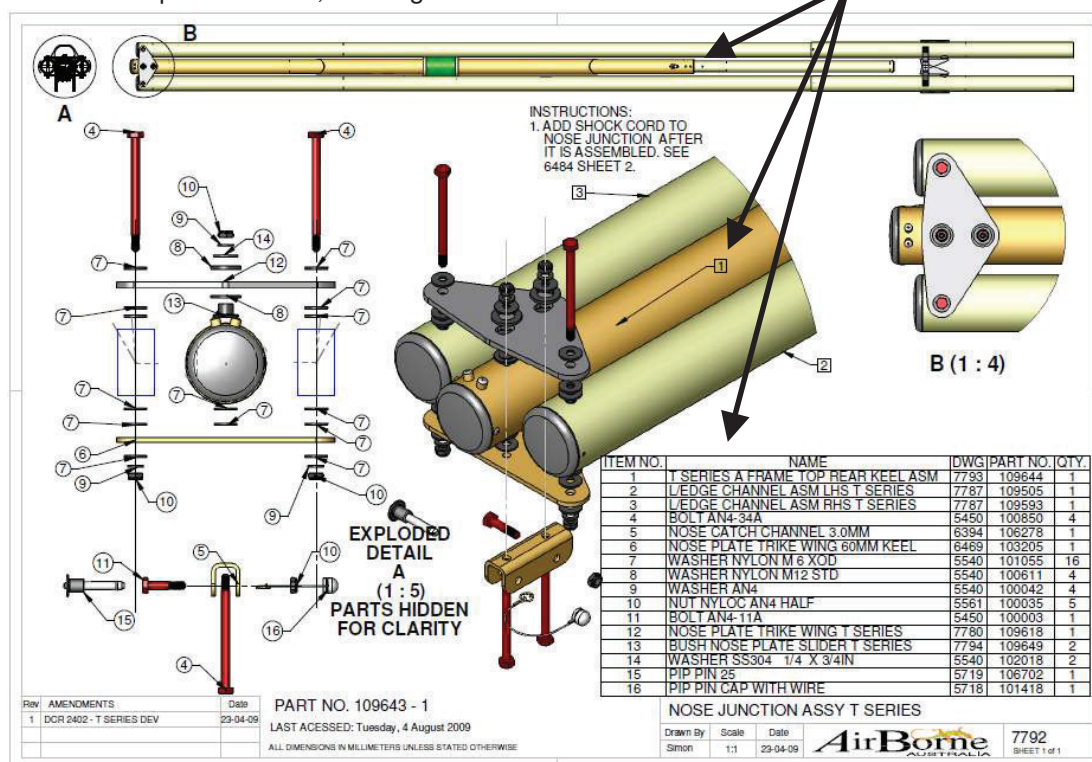


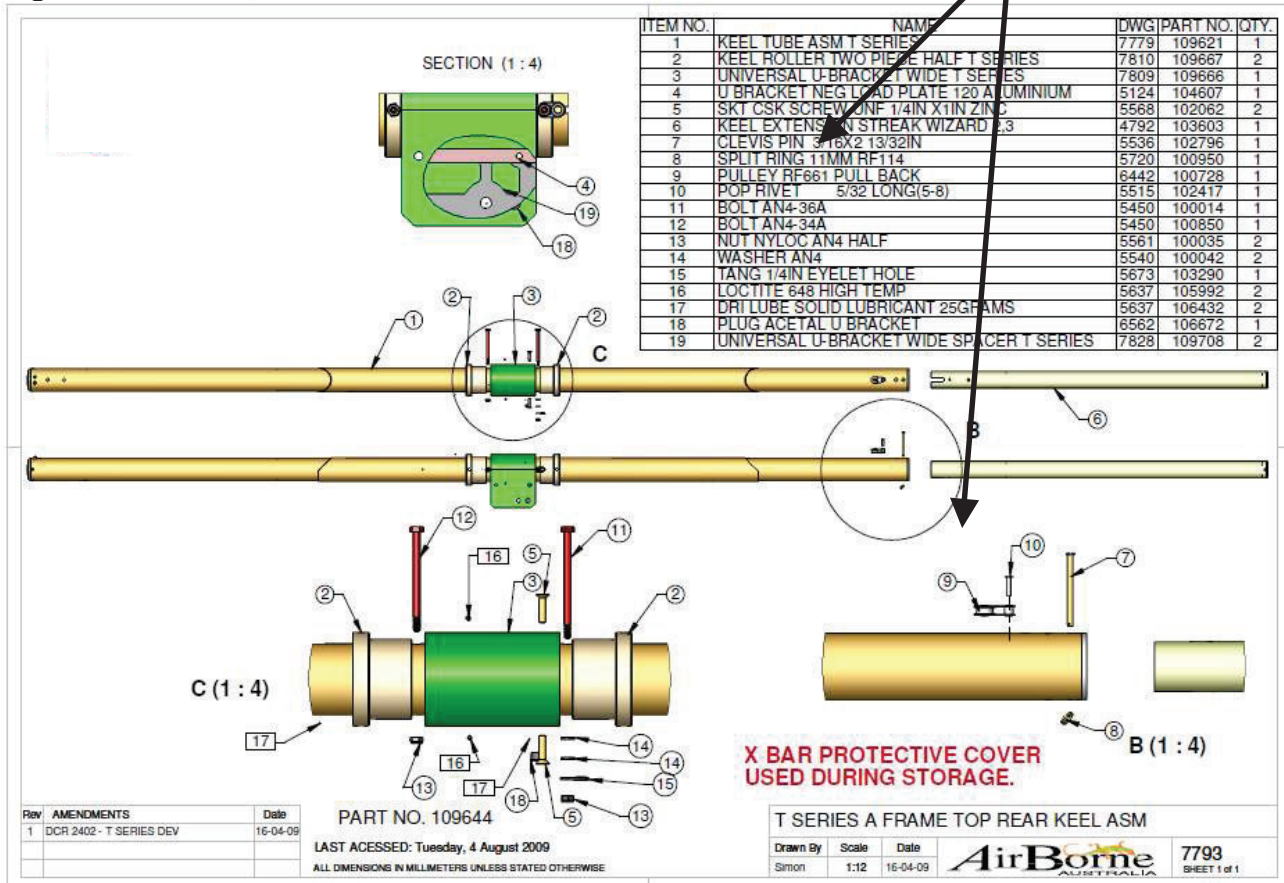
Figure 3. 3rd Level Drawing



## Step 4. Part identified, Order!

On this drawing the pulley is found as ITEM NO 9 and has a circle around it which means the part is sold and is identified. Record the **PART NUMBER, DESCRIPTION AND THE DRAWING** in order to make the spare part order.

**E.g. Part # 100728, PULLEY RF661 PULL BACK, 7793.**



**Figure 4. The component is identified.**

## WARNING

**SOME PARTS WHICH ARE LISTED ARE COMPONENTS OF PARTS WHICH ARE NOT USER SERVICABLE. ONLY MAINTENANCE WHICH IS SPECIFIED IN THE MAINTENANCE MANUAL SHOULD BE ATTEMPTED AND ONLY THE EXACT SPARE SHOULD BE USED TO REPLACE PARTS. THE FOLLOWING DRAWINGS ARE PROVIDED AS A CONVENIENCE TO AID IDENTIFICATION OF PARTS WHICH ARE USER MAINTAINABLE.**

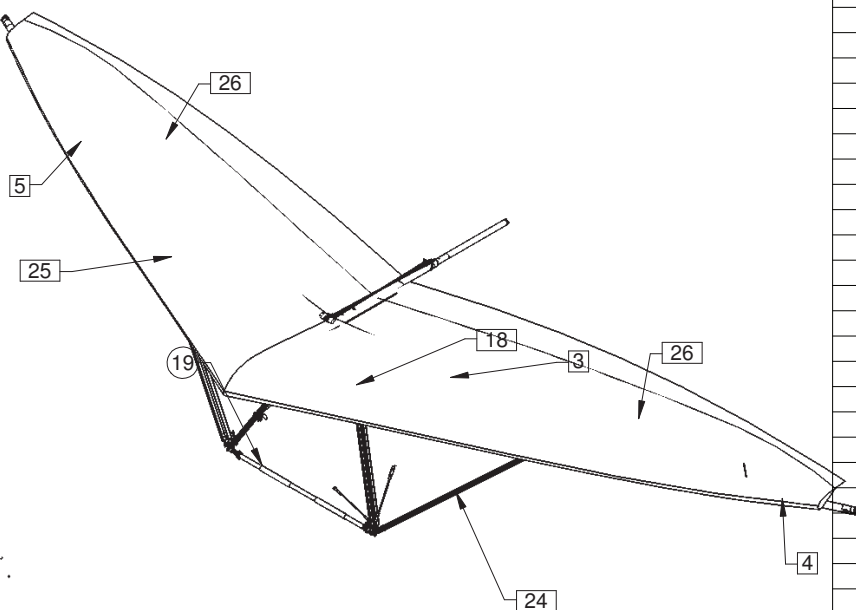
**1 WING ASSEMBLY SST**

**- DRAWING # 7800**

**INSTRUCTIONS:  
SEE GJP XXXX162XXXX FOR  
ASSEMBLY INSTRUCTIONS**

NOTE:  
A CERTIFICATION KIT MUST  
BE SUPPLIED WITH THIS  
WING.

NOTE:  
#109622 T SERIES PULL BACK WIRE LENGTH  
INCREASED FROM 1175 TO 1200 FOR  
WING SST SERIAL # 50 AND UP.



109605 COLOUR TBA  
109606 COLOUR STOCK  
109607 COLOUR CUSTOM

Rev	AMENDMENTS	Date
1	DCR 2402 - T SERIES DEV	24-04-09

LAST ACESSED: Tuesday, 29 May 2012

ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

TEM NO	NAME	DWG	PART NO	QTY.
1	SAIL SST	7774	109596	1
2	MYLAR L/E INSERT T SERIES	7773	109595	2
3	AIRFRAME T SERIES	7785	109635	1
4	L/EDGE REAR TW T SERIES LHS ASM	7784	109633	1
5	L/EDGE REAR TW T SERIES RHS ASM	7784	109634	1
6	LABEL S3 / SST AND ARROW REAR L/E LHS	6846	107257	1
7	LABEL S3 / SST AND ARROW REAR L/E RHS	6846	107256	1
8	NOSE CATCH - SWAN	2140	100085	1
9	SHACKLE SHGF04	6338	100954	1
10	BOLT AN4-11A	5450	100003	1
11	NUT NYLOC AN4 FULL	5535	100034	2
12	BOLT QUICK CLIP AN5-31A TYPE 3	6453	106405	1
13	QUICK CLIP BLOCK	7002	106153	1
14	QUICK CLIP BOLT PIN (AL)	6467	103277	1
15	SPRING QUICK CLIP BOLT SS	6468	101203	1
16	WASHER AN5	5540	100043	1
17	NUT NYLOC AN5 FULL	5535	100036	1
18	CONTROL FRAME SST PREASM	7798	109653	1
19	C/BAR TW INCL GRIPS SST	7790	109641	1
20	PIP PIN 38	5719	102146	1
21	PIP PIN CAP WITH WIRE	5718	101418	1
22	BOLT AN4-15A	5450	100967	1
23	WASHER AN4	5540	100042	1
24	STRUT ASM LHS - T SERIES	7742	109543	1
25	STRUT ASM RHS - T SERIES	7742	109575	1
26	SPROG ASM INBOARD T SERIES	7755	109570	2
27	HEATSHRINK CLR 38MM X 160	5582	109815	2
28	BATTEN SET SST HINGE	7825	109661	1
29	CARBON TUBE 12.0MM ID	7802	109656	4
30	PLACARD TRIMMER STREAK	4711	103817	1
31	SERIAL NO PLATE TRIKE WING	4501	102358	1
32	POP RIVET 1/8	5515	100162	2
33	STICKER AIRBORNE LOGO 2009 BLK 815X115MM	7778	109617	1
34	BATTEN PROFILE MERLIN SST AND ARROW	7629	109213	1
35	COVERS AND PADDING SET T SERIES	6496	109660	1
36	MANUAL SPIRAL BOUND IPC MM SST AND ARROW	7824	109703	1

**WING ASSEMBLY SST**

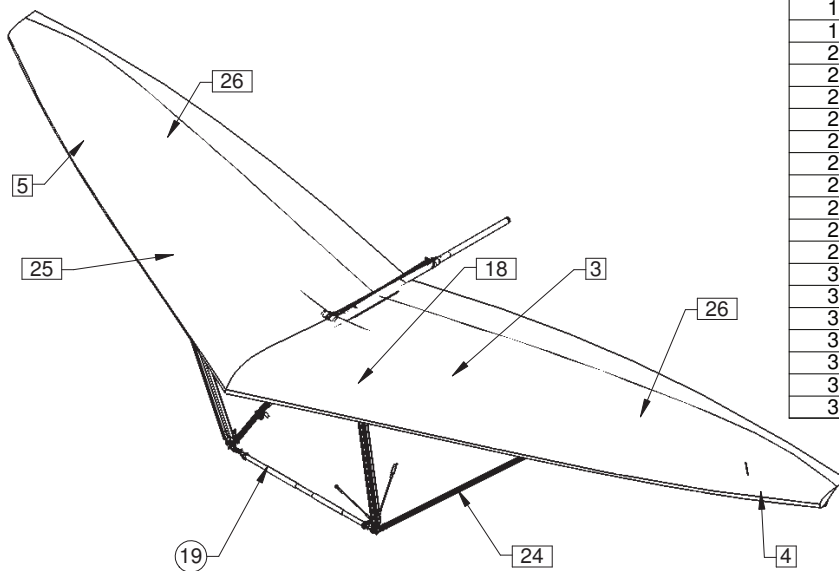
Drawn By	Scale	Date		<b>7800</b> SHEET 1 of 4
Simon	1:50	24-04-09		

**2 WING ASSEMBLY ARROW**

**- DRAWING # 8422**

## INSTRUCTIONS: SEE GJP 256 FOR ASSEMBLY INSTRUCTIONS

NOTE:  
A CERTIFICATION KIT MUST  
BE SUPPLIED WITH THIS  
WING.



110825 COLOUR CUSTOM  
111046 COLOUR STOCK  
111045 COLOUR TBA

Rev	AMENDMENTS	Date
1	DCR 2520 - U SERIES DEV	20-01-12

LAST ACESSED: Wednesday, 30 May 2012

ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

ITEM NO.	NAME	DWG	PART NO.	QTY.
1	SAIL ARROW 12.9	8426	110831	1
2	MYLAR L/E INSERT U SERIES	8424	110829	2
3	AIRFRAME T SERIES	7785	109635	1
4	L EDGE REAR TW U SERIES LHS ASM	8425	109633	1
5	L EDGE REAR TW U SERIES RHS ASM	8425	109634	1
6	LABEL S3 / SST AND ARROW REAR L/E LHS	6846	107257	1
7	LABEL S3 / SST AND ARROW REAR L/E RHS	6846	107256	1
8	NOSE CATCH - SWAN	2140	100085	1
9	SHACKLE SHGF04	6338	100954	1
10	BOLT AN4-11A	5450	100003	1
11	NUT NYLOC AN4 FULL	5535	100034	2
12	BOLT QUICK CLIP AN5-31A TYPE 3	6453	106405	1
13	QUICK CLIP BLOCK	7002	106153	1
14	QUICK CLIP BOLT PIN (AL)	6467	103277	1
15	SPRING QUICK CLIP BOLT SS	6468	101203	1
16	WASHER AN5	5540	100043	1
17	NUT NYLOC AN5 FULL	5535	100036	1
18	CONTROL FRAME SST PREASM	7798	109653	1
19	C/BAR TW INCL GRIPS ARROW 12.9	7790	111040	1
20	PIP PIN 38	5719	102146	1
21	PIP PIN CAP WITH WIRE	5718	101418	1
22	BOLT AN4-15A	5450	100967	1
23	WASHER AN4	5540	100042	1
24	STRUT ASM LHS - T SERIES	7742	109543	1
25	STRUT ASM RHS - T SERIES	7742	109575	1
26	SPROG ASM INBOARD T SERIES	7755	109570	2
27	HEATSHRINK CLR 38MM X 160	5582	109815	2
28	BATTEN SET ARROW 12.9 HINGE	8168	110830	1
29	CARBON TUBE 12.0MM ID	7802	109656	4
30	PLACARD TRIMMER STREAK	4711	103817	1
31	SERIAL NO PLATE TRIKE WING	4501	102358	1
32	POP RIVET 1/8	5515	100162	2
33	BATTEN PROFILE MERLIN SST AND ARROW	7629	109213	1
34	COVERS AND PADDING SET ARROW	6496	111048	1
35	MANUAL SPIRAL BOUND IPC MM SST AND ARROW	7824	109703	1
36	LABEL TRIMMER ARROW	8468	111052	1

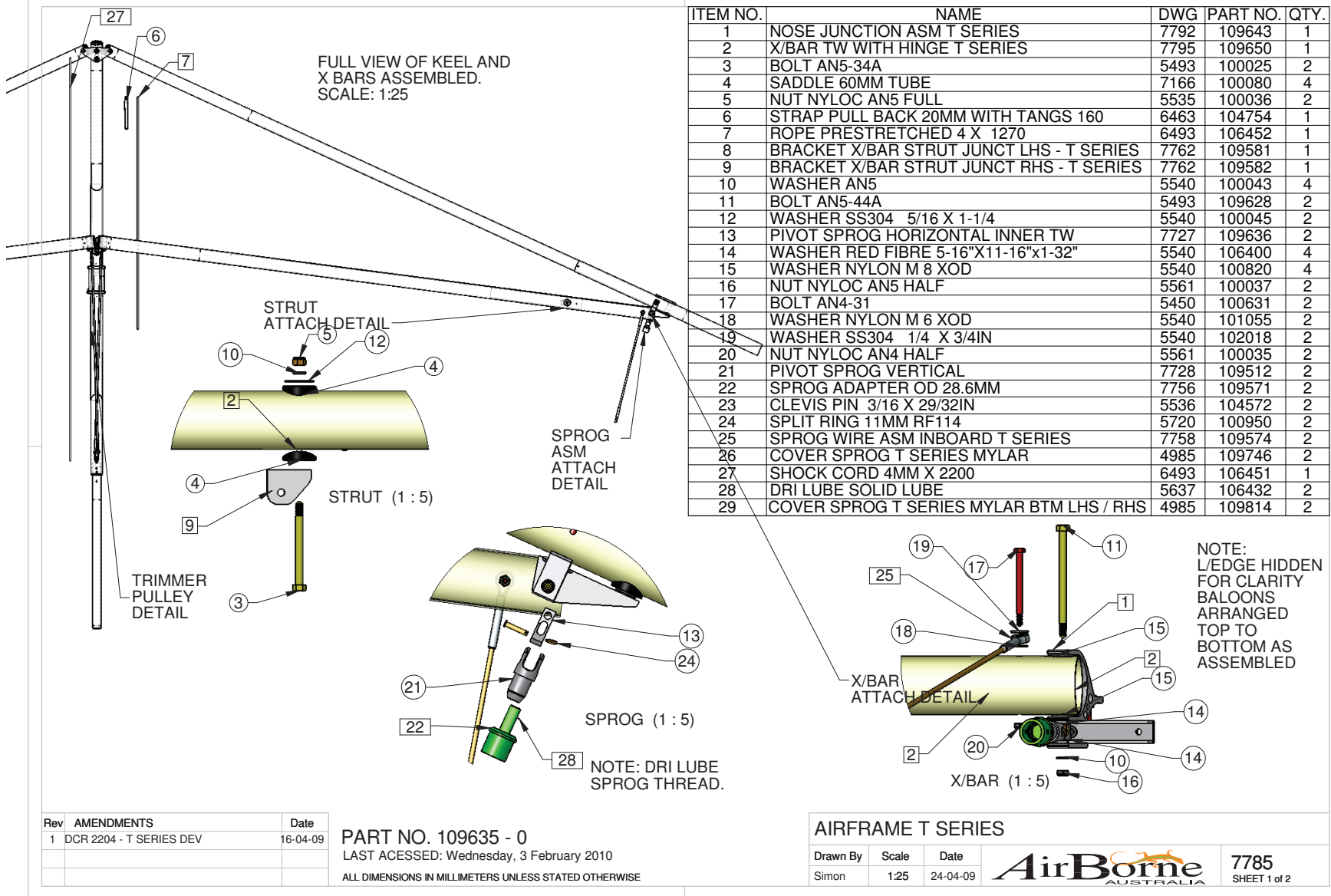
### WING ASSEMBLY ARROW

Drawn By	Scale	Date	AirBorne AUSTRALIA	8422 SHEET 1 of 2
Simon	1:50	20-01-12		



### 3 AIRFRAME T SERIES

- Drawing # 7785



PHOTOGRAPHS OF ROPE  
AND SHOCK CORD ROUTING  
PRIOR TO FINAL ASSEMBLY  
PULL BACK STRAP LOCATION  
ALSO SHOWN.

photos to be added when finalised.

Rev	AMENDMENTS	Date

PART NO. 109635

LAST ACESSED: Wednesday, 3 February 2010

ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

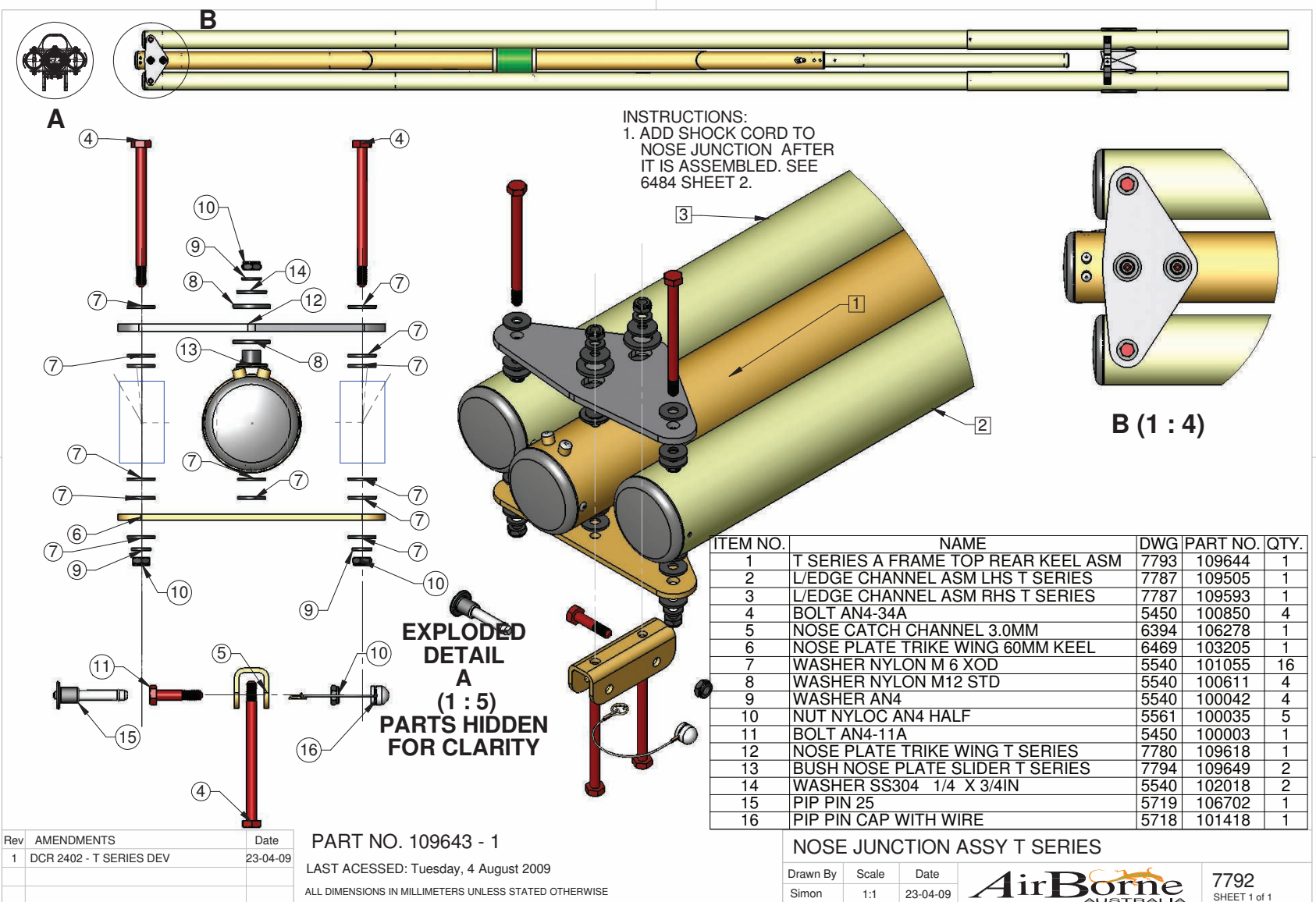
AIRFRAME T SERIES

Drawn By	Scale	Date
Simon	1:25	24-04-09



7785  
SHEET 2 of 2



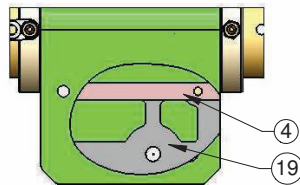


*3.2 T SERIES A FRAME TOP REAR KEEL ASM - Drawing # 7793*

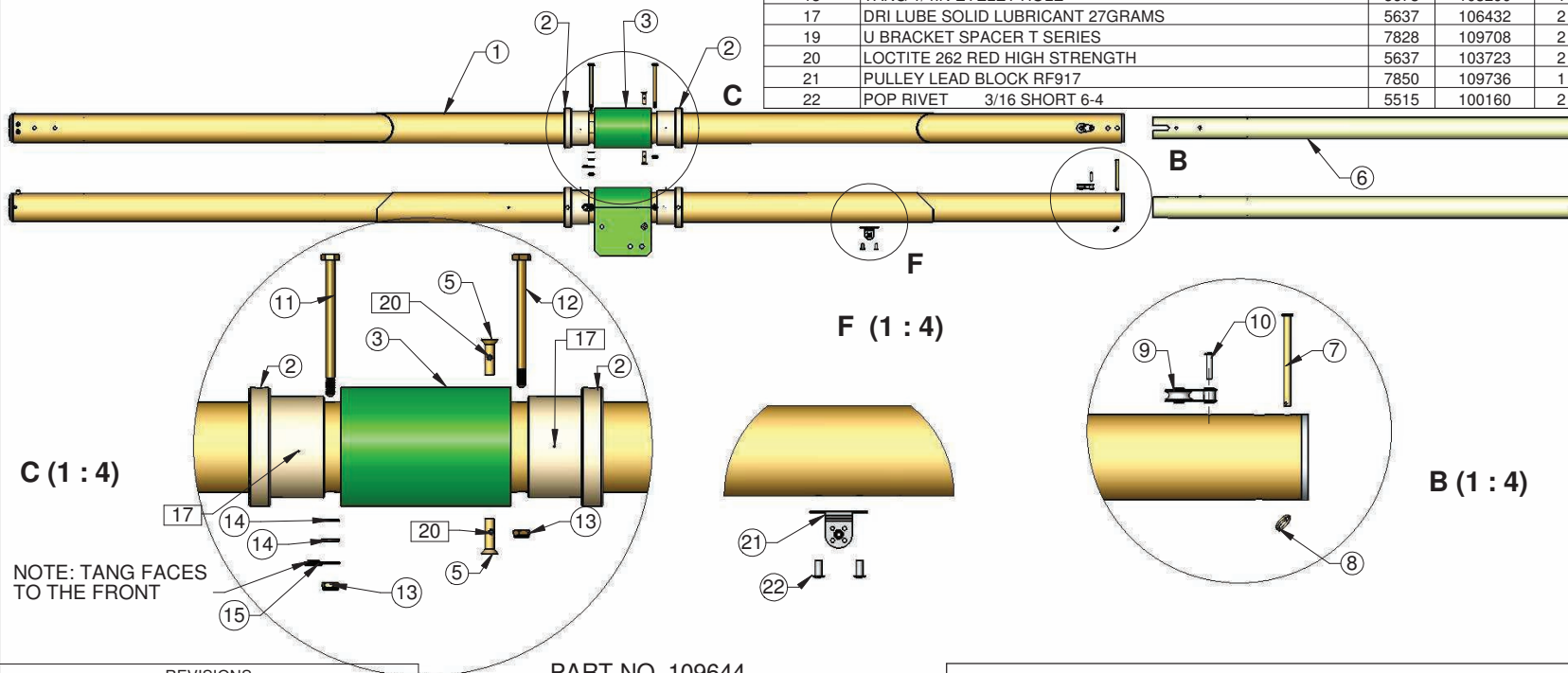
## INSTRUCTIONS:

1. DRI LUBE ON KEEL ROLLER BUNGS
2. RED LOCTITE ON SKT CAP SCREWS
3. T SERIES STD GRAVITY 3RD HOLE

## SECTION (1 : 4)



**X BAR PROTECTIVE COVER  
USED DURING STORAGE.**



REVISIONS			
DCR	Rev	AMENDMENTS	Date
2402	1	T SERIES DEV	16-04-09
2524	2	MOVE TANG	21-02-12

PART NO. 109644

LAST ACESSED: Tuesday, 21 February 2012

ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

ITEM NO.	NAME	DWG	PART NO.	QTY.
1	KEEL TUBE ASM T SERIES	7779	109621	1
2	KEEL ROLLER TWO PIECE HALF 63MM KEEL	7810	109667	2
3	U BRACKET WIDE 63MM KEEL	7809	109666	1
4	U BRACKET NEG LOAD PLATE 120 ALUMINIUM	5124	104607	1
5	SKT CSK SCREW UNF 1/4IN X1IN ZINC	5568	102062	2
6	KEEL EXTENSION STREAK WIZARD 2,3	4792	103603	1
7	CLEVIS PIN 3/16X2 13/32IN	5536	102796	1
8	SPLIT RING 11MM RF114	5720	100950	1
9	PULLEY RF661 PULL BACK	6442	100728	1
10	POP RIVET 5/32 LONG(5-8)	5515	102417	1
11	BOLT AN4-36A	5450	100014	1
12	BOLT AN4-34A	5450	100850	1
13	NUT NYLOC AN4 HALF	5561	100035	2
14	WASHER AN4	5540	100042	2
15	TANG 1/4IN EYELET HOLE	5673	103290	1
17	DRI LUBE SOLID LUBRICANT 27GRAMS	5637	106432	2
19	U BRACKET SPACER T SERIES	7828	109708	2
20	LOCTITE 262 RED HIGH STRENGTH	5637	103723	2
21	PULLEY LEAD BLOCK RF917	7850	109736	1
22	POP RIVET 3/16 SHORT 6-4	5515	100160	2

## T SERIES A FRAME TOP REAR KEEL ASM

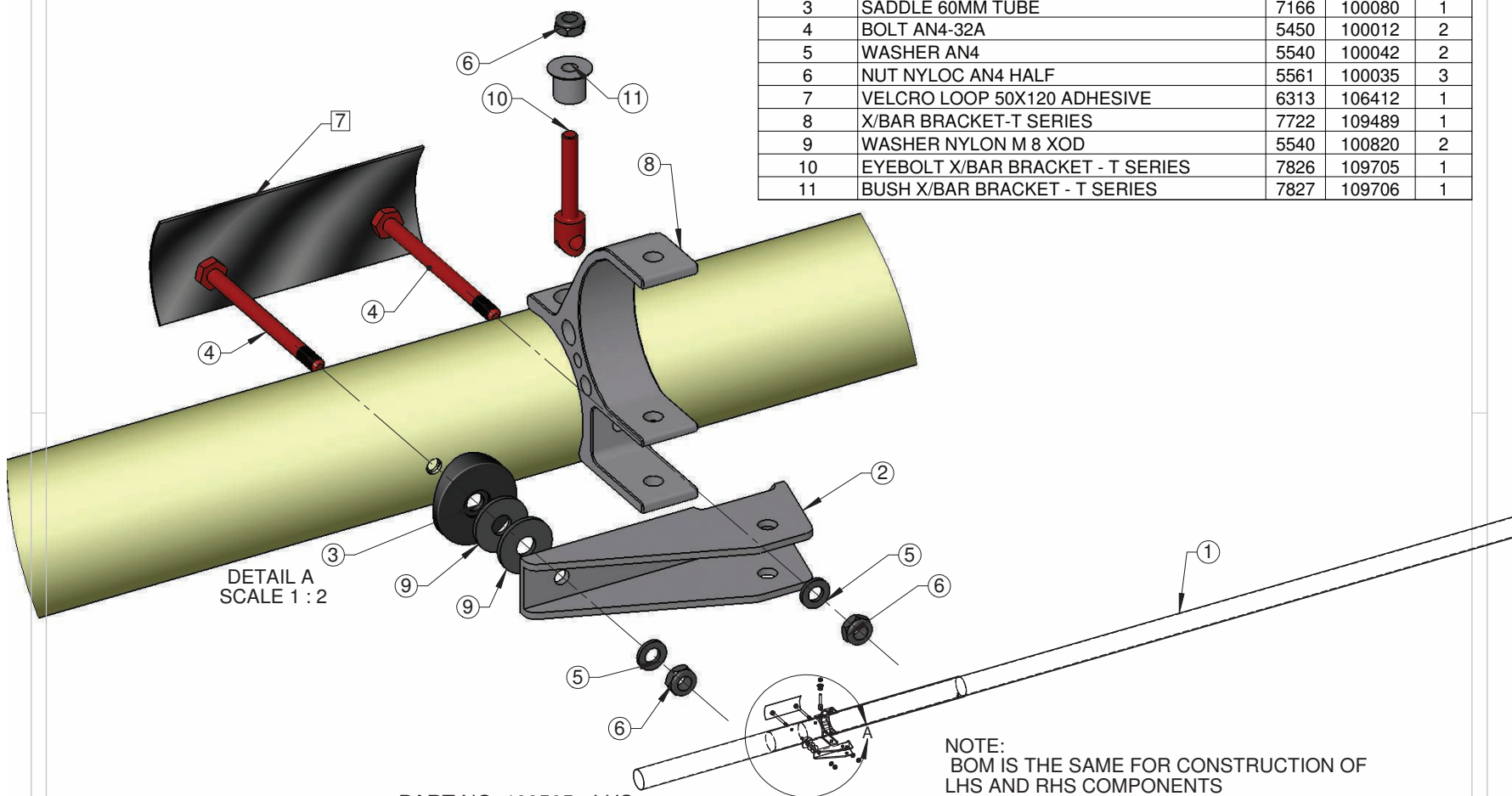
Drawn By	Scale	Date
Simon	1:12	16-04-09

7793  
SHEET 1 of 1

*3.3 L/EDGE CHANNEL ASM LHS AND RHS T SERIES- Drawing # 7787*



ITEM NO.	NAME	DWG	PART NO.	QTY.
1	L/EDGE FRONT TW S SERIES AND T SERIES	4693	103601	1
2	X/BAR CHANNEL - T SERIES	7723	109490	1
3	SADDLE 60MM TUBE	7166	100080	1
4	BOLT AN4-32A	5450	100012	2
5	WASHER AN4	5540	100042	2
6	NUT NYLOC AN4 HALF	5561	100035	3
7	VELCRO LOOP 50X120 ADHESIVE	6313	106412	1
8	X/BAR BRACKET-T SERIES	7722	109489	1
9	WASHER NYLON M 8 XOD	5540	100820	2
10	EYEBOLT X/BAR BRACKET - T SERIES	7826	109705	1
11	BUSH X/BAR BRACKET - T SERIES	7827	109706	1



PART NO. 109505 - LHS  
PART NO. 109593 - RHS

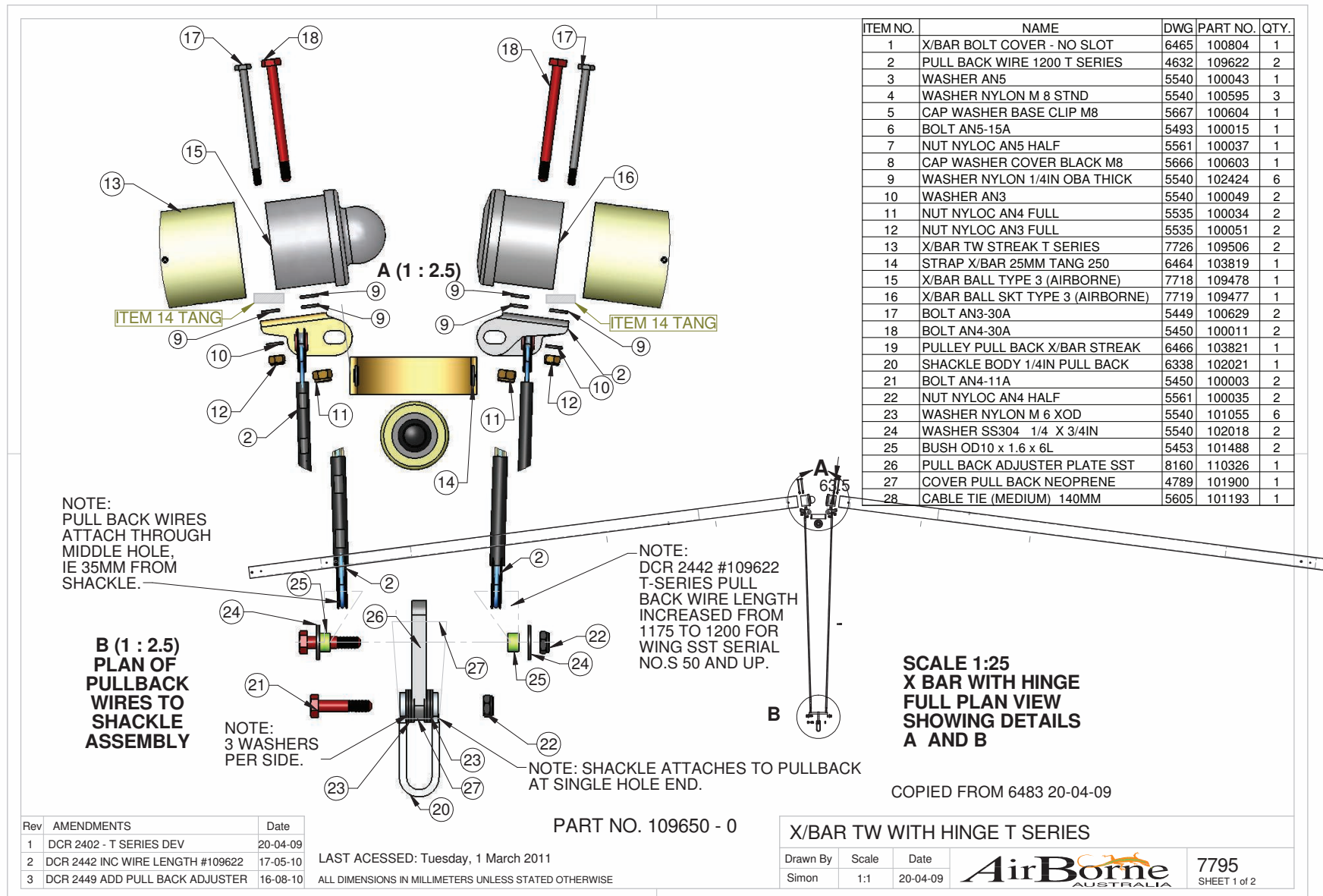
Rev	AMENDMENTS	Date
1	DCR 2402 - T SERIES DEV	12-03-09

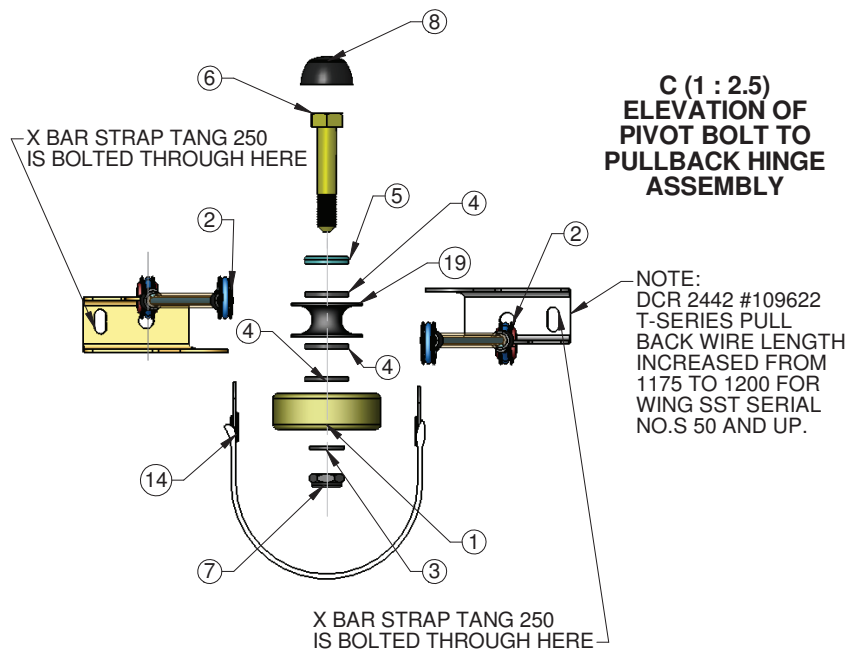
LAST ACESSED: Wednesday, 5 August 2009  
ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

#### L/EDGE CHANNEL ASM LHS AND RHS T SERIES

Drawn By	Scale	Date		
Simon	1:15	26-11-08		7787 SHEET 1 of 1







ITEM NO.	NAME	DWG	PART NO.	QTY.
1	X/BAR BOLT COVER - NO SLOT	6465	100804	1
2	PULL BACK WIRE 1200 T SERIES	4632	109622	2
3	WASHER AN5	5540	100043	1
4	WASHER NYLON M 8 STND	5540	100595	3
5	CAP WASHER BASE CLIP M8	5667	100604	1
6	BOLT AN5-15A	5493	100015	1
7	NUT NYLOC AN5 HALF	5561	100037	1
8	CAP WASHER COVER BLACK M8	5666	100603	1
9	WASHER NYLON 1/4IN OBA THICK	5540	102424	6
10	WASHER AN3	5540	100049	2
11	NUT NYLOC AN4 FULL	5535	100034	2
12	NUT NYLOC AN3 FULL	5535	100051	2
13	X/BAR TW STREAK T SERIES	7726	109506	2
14	STRAP X/BAR 25MM TANG 250	6464	103819	1
15	X/BAR BALL TYPE 3 (AIRBORNE)	7718	109478	1
16	X/BAR BALL SKT TYPE 3 (AIRBORNE)	7719	109477	1
17	BOLT AN3-30A	5449	100629	2
18	BOLT AN4-30A	5450	100011	2
19	PULLEY PULL BACK X/BAR STREAK	6466	103821	1
20	SHACKLE BODY 1/4IN PULL BACK	6338	102021	1
21	BOLT AN4-11A	5450	100003	2
22	NUT NYLOC AN4 HALF	5561	100035	2
23	WASHER NYLON M 6 XOD	5540	101055	6
24	WASHER SS304 1/4 X 3/4IN	5540	102018	2
25	BUSH OD10 x 1.6 x 6L	5453	101488	2
26	PULL BACK ADJUSTER PLATE SST	8160	110326	1
27	COVER PULL BACK NEOPRENE	4789	101900	1
28	CABLE TIE (MEDIUM) 140MM	5605	101193	1

**SCALE 1:25  
X BAR WITH HINGE  
FULL ELEVATION VIEW  
SHOWING DETAIL C  
NB THE PARTS ARE  
EXPLODED UP FROM  
THEIR ACTUAL  
POSITION**



Rev	AMENDMENTS	Date

PART NO. 109650 - 0

LAST ACESSED: Tuesday, 1 March 2011

ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

X/BAR TW WITH HINGE T SERIES

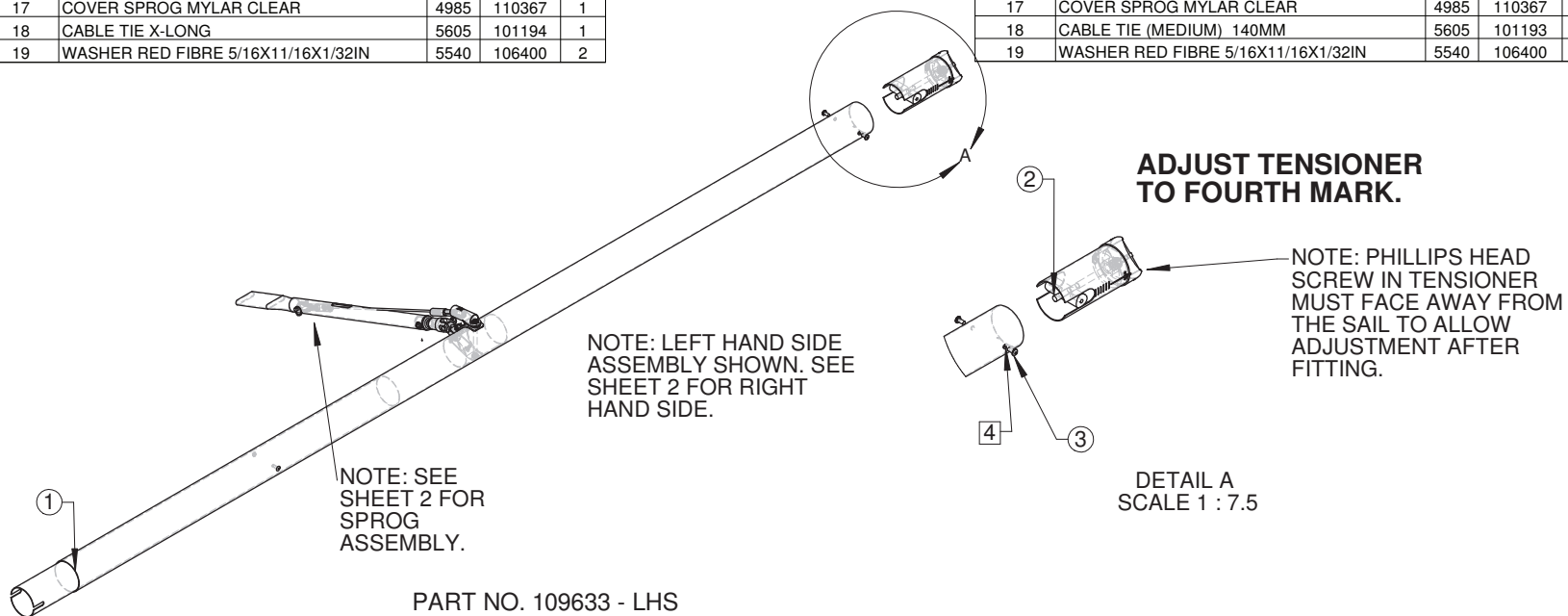
Drawn By	Scale	Date
Simon	1:1	22-04-09

**7795**  
SHEET 2 of 2



ITEM NO.	NAME	DWG	PART NO.	QTY.
1	L/EDGE REAR TW T SERIES	7783	109632	1
2	TRIKE WING L/EDGE TENSIONER LHS	5172	104669	1
3	SKT BUTTON SCREW M5 X 10 SS 304	5677	106172	2
4	LOCTITE 243 BLUE MID STRENGTH	5637	103706	1
5	SPROG BRACKET TW OUTBOARD T SERIES	7781	109619	1
6	PIVOT SPROG VERTICAL	7728	109512	1
7	SPROG ASM OUTBOARD T SERIES	7751	109564	1
8	PIVOT SPROG HORIZONTAL 33MM	7727	109514	1
9	SPLIT RING 11MM RF114	5720	100950	1
10	NUT NYLOC AN4 HALF	5561	100035	2
11	CLEVIS PIN 3/16 X 29/32IN	5536	104572	1
12	WASHER NYLON M 6 XOD	5540	101055	1
13	DRI LUBE SOLID LUBRICANT 27GRAMS	5637	106432	3
14	POP RIVET 3/16 SHORT 6-4	5515	100160	2
15	BOLT AN4-27A MODIFIED 2MM HEAD	8116	110178	1
16	MACH SCREW MS24694-S106 1/4X1 7/32IN	7797	104202	1
17	COVER SPROG MYLAR CLEAR	4985	110367	1
18	CABLE TIE X-LONG	5605	101194	1
19	WASHER RED FIBRE 5/16X11/16X1/32IN	5540	106400	2

ITEM NO.	NAME	DWG	PART NO.	QTY.
1	L/EDGE REAR TW T SERIES	7783	109632	1
2	TRIKE WING L/EDGE TENSIONER RHS	5172	104740	1
3	SKT BUTTON SCREW M5 X 10 SS 304	5677	106172	2
4	LOCTITE 243 BLUE MID STRENGTH	5637	103706	1
5	SPROG BRACKET TW OUTBOARD T SERIES	7781	109619	1
6	PIVOT SPROG VERTICAL	7728	109512	1
7	SPROG ASM OUTBOARD T SERIES	7751	109564	1
8	PIVOT SPROG HORIZONTAL 33MM	7727	109514	1
9	SPLIT RING 11MM RF114	5720	100950	1
10	NUT NYLOC AN4 HALF	5561	100035	2
11	CLEVIS PIN 3/16 X 29/32IN	5536	104572	1
12	WASHER NYLON M 6 XOD	5540	101055	1
13	DRI LUBE SOLID LUBRICANT 27GRAMS	5637	106432	3
14	POP RIVET 3/16 SHORT 6-4	5515	100160	2
15	BOLT AN4-27A MODIFIED 2MM HEAD	8116	110178	1
16	MACH SCREW MS24694-S106 1/4X1 7/32IN	7797	104202	1
17	COVER SPROG MYLAR CLEAR	4985	110367	1
18	CABLE TIE (MEDIUM) 140MM	5605	101193	1
19	WASHER RED FIBRE 5/16X11/16X1/32IN	5540	106400	2



Rev	AMENDMENTS	Date
1	DCR 2402 T SERIES DEV	21-04-09
2	DCR 2439 #100011 to #110178	21-04-10
3	DCR 2452 #109943 to #110367	27-09-10

PART NO. 109633 - LHS  
PART NO. 109634 - RHS

LAST ACCESSED: Friday, 2 March 2012

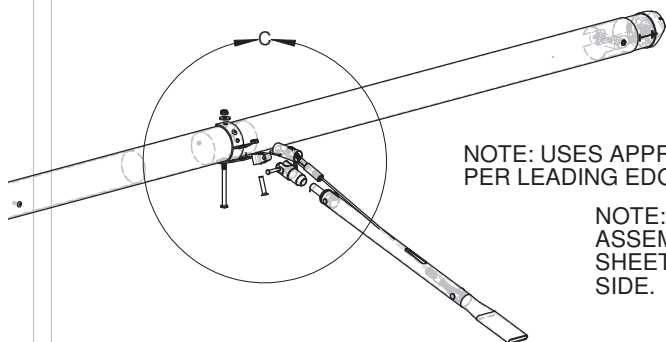
ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

#### L/EDGE REAR TW T SERIES ASM

Drawn By	Scale	Date
Stuart	1:10	21-04-09

**AirBorne**  
AUSTRALIA

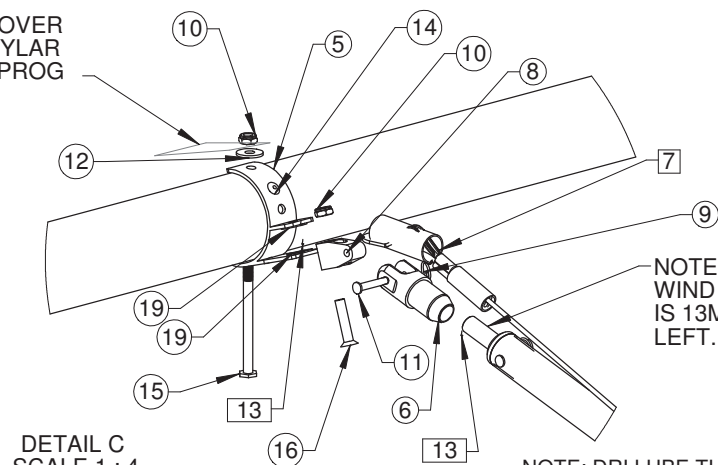
7784  
SHEET 1 of 2



NOTE: USES APPROX 3GM OF DRI-LUBE PER LEADING EDGE.

NOTE: RIGHT HAND SIDE ASSEMBLY SHOWN. SEE SHEET 1 FOR LEFT HAND SIDE.

COVER  
MYLAR  
SPROG



DETAIL C  
SCALE 1 : 4

NOTE:  
WIND IN TILL THERE  
IS 13MM OF THREAD  
LEFT.

NOTE: DRI LUBE THREAD  
OF SPROG ASSEMBLY.

Rev	AMENDMENTS	Date

PART NO. 109634

LAST ACESSED: Friday, 2 March 2012

ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

ITEM NO.	NAME	DWG	PART NO.	QTY.
1	L/EDGE REAR TW T SERIES	7783	109632	1
2	TRIKE WING L/EDGE TENSIONER RHS	5172	104740	1
3	SKT BUTTON SCREW M5 X 10 SS 304	5677	106172	2
4	LOCTITE 243 BLUE MID STRENGTH	5637	103706	1
5	SPROG BRACKET TW OUTBOARD T SERIES	7781	109619	1
6	PIVOT SPROG VERTICAL	7728	109512	1
7	SPROG ASM OUTBOARD T SERIES	7751	109564	1
8	PIVOT SPROG HORIZONTAL 33MM	7727	109514	1
9	SPLIT RING 11MM RF114	5720	100950	1
10	NUT NYLOC AN4 HALF	5561	100035	2
11	CLEVIS PIN 3/16 X 29/32IN	5536	104572	1
12	WASHER NYLON M 6 XOD	5540	101055	1
13	DRI LUBE SOLID LUBRICANT 27GRAMS	5637	106432	3
14	POP RIVET 3/16 SHORT 6-4	5515	100160	2
15	BOLT AN4-27A MODIFIED 2MM HEAD	8116	110178	1
16	MACH SCREW MS24694-S106 1/4X1 7/32IN	7797	104202	1
17	COVER SPROG MYLAR CLEAR	4985	110367	1
18	CABLE TIE (MEDIUM) 140MM	5605	101193	1
19	WASHER RED FIBRE 5/16X11/16X1/32IN	5540	106400	2

PHOTO SHOWS WIRE ATTACHMENT POSITION  
ALSO AMOUNT OF THREAD SHOWING IS 13MM



L/EDGE REAR TW T SERIES RHS ASM

Drawn By	Scale	Date
Stuart	1:10	01-11-07

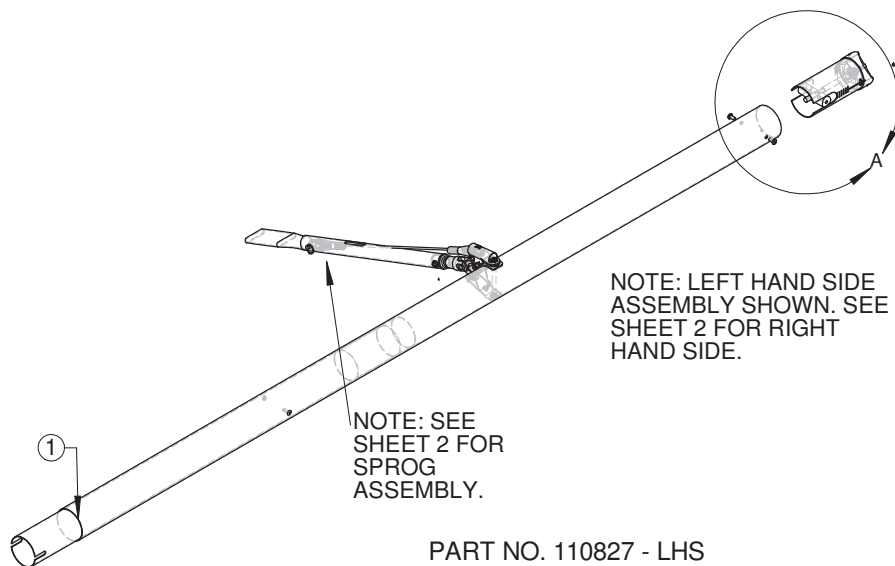
**AirBorne**  
AUSTRALIA

7784  
SHEET 2 of 2





ITEM NO.	NAME	DWG	PART NO.	QTY.
1	L/EDGE REAR TW U SERIES	8423	110826	1
2	TRIKE WING L/EDGE TENSIONER LHS	5172	104669	1
3	SKT BUTTON SCREW M5 X 10 SS 304	5677	106172	2
4	LOCTITE 243 BLUE MID STRENGTH	5637	103706	1
5	SPROG BRACKET TW OUTBOARD T SERIES	7781	109619	1
6	PIVOT SPROG VERTICAL	7728	109512	1
7	SPROG ASM OUTBOARD T SERIES	7751	109564	1
8	PIVOT SPROG HORIZONTAL 33MM	7727	109514	1
9	SPLIT RING 11MM RF114	5720	100950	1
10	NUT NYLOC AN4 HALF	5561	100035	2
11	CLEVIS PIN 3/16 X 29/32IN	5536	104572	1
12	WASHER NYLON M 6 XOD	5540	101055	1
13	DRI LUBE SOLID LUBE	5637	106432	3
14	POP RIVET 3/16 SHORT 6-4	5515	100160	2
15	BOLT AN4-27A MODIFIED 2MM HEAD	8116	110178	1
16	MACH SCREW MS24694-S106 1/4X1 7/32IN	7797	104202	1
17	COVER SPROG MYLAR CLEAR	4985	110367	1
18	CABLE TIE X-LONG	5605	101194	1
19	WASHER RED FIBRE 5/16X11/16X1/32IN	5540	106400	2



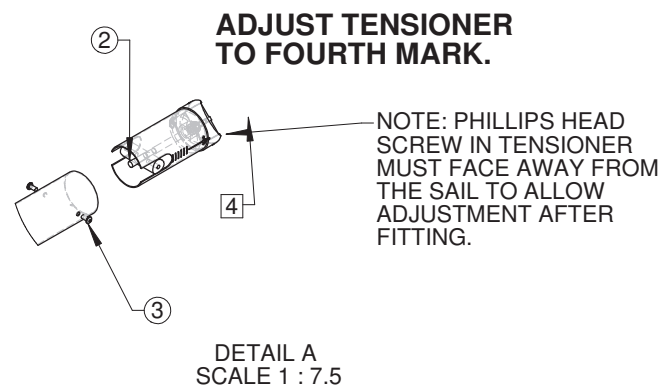
PART NO. 110827 - LHS  
PART NO. 110828 - RHS

Rev	AMENDMENTS	Date
1	DCR 2520 u SERIES DEV	20-01-12

LAST ACCESSED: Friday, 20 January 2012

ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

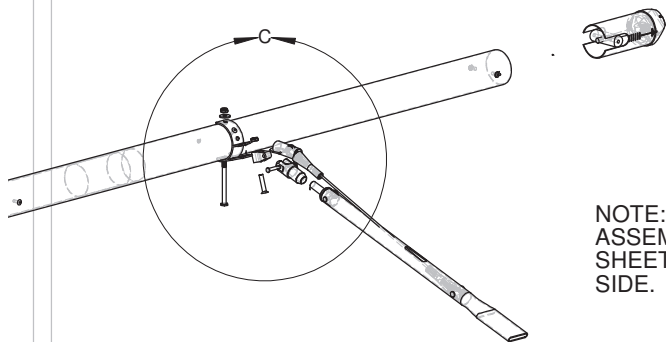
ITEM NO.	NAME	DWG	PART NO.	QTY.
1	L/EDGE REAR TW U SERIES	8423	110826	1
2	TRIKE WING L/EDGE TENSIONER RHS	5172	104740	1
3	SKT BUTTON SCREW M5 X 10 SS 304	5677	106172	2
4	LOCTITE 243 BLUE MID STRENGTH	5637	103706	1
5	SPROG BRACKET TW OUTBOARD T SERIES	7781	109619	1
6	PIVOT SPROG VERTICAL	7728	109512	1
7	SPROG ASM OUTBOARD T SERIES	7751	109564	1
8	PIVOT SPROG HORIZONTAL 33MM	7727	109514	1
9	SPLIT RING 11MM RF114	5720	100950	1
10	NUT NYLOC AN4 HALF	5561	100035	2
11	CLEVIS PIN 3/16 X 29/32IN	5536	104572	1
12	WASHER NYLON M 6 XOD	5540	101055	1
13	DRI LUBE SOLID LUBE	5637	106432	3
14	POP RIVET 3/16 SHORT 6-4	5515	100160	2
15	BOLT AN4-27A MODIFIED 2MM HEAD	8116	110178	1
16	MACH SCREW MS24694-S106 1/4X1 7/32IN	7797	104202	1
17	COVER SPROG MYLAR CLEAR	4985	110367	1
18	CABLE TIE (MEDIUM) 140MM	5605	101193	1
19	WASHER RED FIBRE 5/16X11/16X1/32IN	5540	106400	2



L/EDGE REAR TW U SERIES ASM

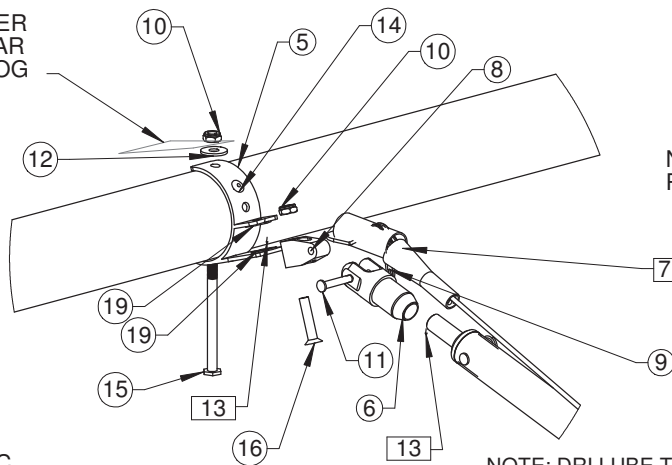
Drawn By	Scale	Date	8425
Simon	1:10	20-01-12	SHEET 1 of 2

**AirBorne**  
AUSTRALIA



NOTE: RIGHT HAND SIDE  
ASSEMBLY SHOWN. SEE  
SHEET 1 FOR LEFT HAND  
SIDE.

COVER  
MYLAR  
SPROG



DETAIL C  
SCALE 1 : 4

NOTE: USES APPROX 3GM OF DRI-LUBE  
PER LEADING EDGE.

NOTE: DRI LUBE THREAD  
OF SPROG ASSEMBLY.

ITEM NO.	NAME	DWG	PART NO.	QTY.
1	L/EDGE REAR TW U SERIES	8423	110826	1
2	TRIKE WING L/EDGE TENSIONER RHS	5172	104740	1
3	SKT BUTTON SCREW M5 X 10 SS 304	5677	106172	2
4	LOCTITE 243 BLUE MID STRENGTH	5637	103706	1
5	SPROG BRACKET TW OUTBOARD T SERIES	7781	109619	1
6	PIVOT SPROG VERTICAL	7728	109512	1
7	SPROG ASM OUTBOARD T SERIES	7751	109564	1
8	PIVOT SPROG HORIZONTAL 33MM	7727	109514	1
9	SPLIT RING 11MM RF114	5720	100950	1
10	NUT NYLOC AN4 HALF	5561	100035	2
11	CLEVIS PIN 3/16 X 29/32IN	5536	104572	1
12	WASHER NYLON M 6 XOD	5540	101055	1
13	DRI LUBE SOLID LUBE	5637	106432	3
14	POP RIVET 3/16 SHORT 6-4	5515	100160	2
15	BOLT AN4-27A MODIFIED 2MM HEAD	8116	110178	1
16	MACH SCREW MS24694-S106 1/4X1 7/32IN	7797	104202	1
17	COVER SPROG MYLAR CLEAR	4985	110367	1
18	CABLE TIE (MEDIUM) 140MM	5605	101193	1
19	WASHER RED FIBRE 5/16X11/16X1/32IN	5540	106400	2

Rev	AMENDMENTS	Date

PART NO. 110828

LAST ACESSED: Friday, 20 January 2012  
ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

L\_EDGE REAR TW U SERIES RHS ASM

Drawn By	Scale	Date
Simon	1:10	20-01-12

**AirBorne**  
AUSTRALIA

8425  
SHEET 2 of 2

**3.7 LABEL SST / ARROW STRUT LEFT & RIGHT SIDE TOP -**  
*Drawing # 7857*

ITEM NO.	PART NO.	NAME	MATERIAL.DESCRPTION	MATL.NO.	REQD
1	109757	LABEL SST STRUT LEFT SIDE BOTTOM	NA	NA	NA

ITEM NO.	PART NO.	NAME	MATERIAL.DESCRPTION	MATL.NO.	REQD
1	109758	LABEL SST STRUT RIGHT SIDE BOTTOM	NA	NA	NA

NOTE:  
TO PRINT USE P-TOUCH EDITOR 4.2, NAVIGATE TO  
L:\Foxpro25\STOCK\Labels\7857 AND OPEN FILE 7857.lbl  
TO EDIT DATA USE EXCEL, NAVIGATE TO  
N:\Cad\Drawings\7800\7857 AND OPEN FILE  
strut\_leftright\_top\_labels.xls



NOTE: VIRTUAL PARTS ONLY. MADE FOR INCLUDING IN BOM'S.

PART NO. 109757 LHS  
PART NO. 109758 RHS

Rev	AMENDMENTS	Date
1	DCR 2402 T SERIES DEV	23-07-09
2	DCR 2520 ARROW DEV	29-05-12

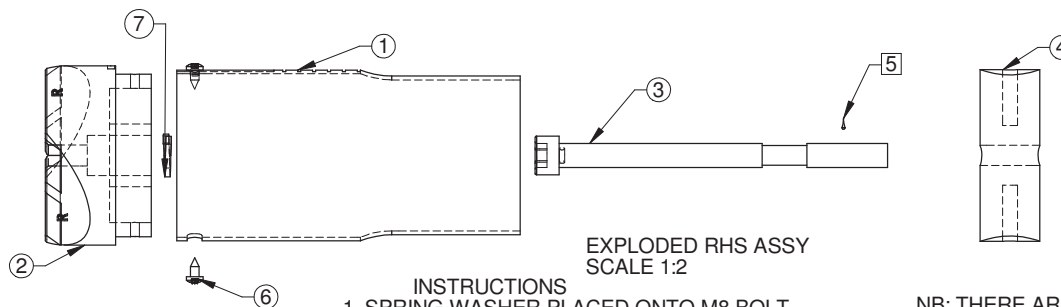
LAST ACESSED: Tuesday, 29 May 2012  
ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

LABEL SST STRUT LEFT & RIGHT SIDE TOP			
Drawn By	Scale	Date	
Stuart	2:1	23-07-09	
AirBorne AUSTRALIA			7857 SHEET 1 of 1



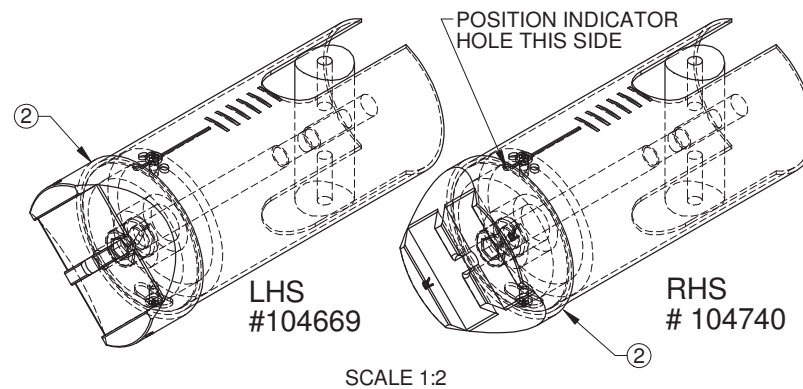
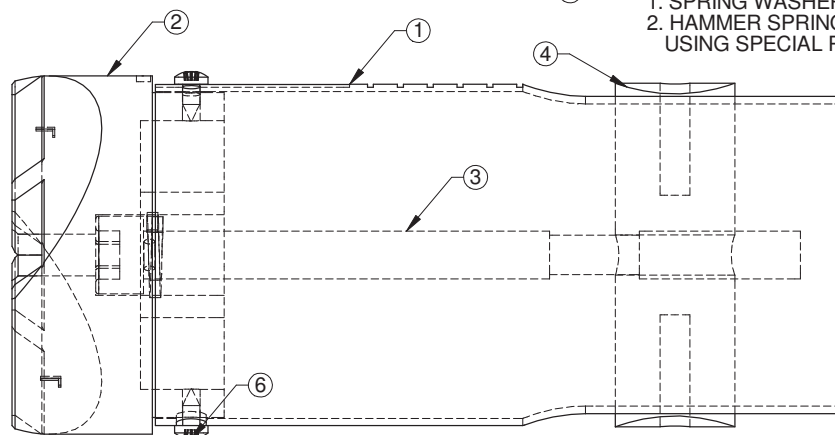
ITEM NO.	NAME	DWG	PART NO.	QTY.
1	WING ADJUSTER INNER TUBE	5168	104665	1
2	WING ADJUSTER WEBBING CAP RHS TYPE 2	5169	109859	1
3	BOLT TRIKE WING TIP ADJUSTER	5233	104733	1
4	TIP ADJUSTER DOWL	5170	104667	1
5	DRI LUBE SOLID LUBE	5637	106432	1
6	SCREW SELF TAPPING 1/4X8G 304SS	5909	105140	2
7	SPRING WASHER 8MM ZINC	5679	101366	1

ITEM NO.	NAME	DWG	PART NO.	QTY.
1	WING ADJUSTER INNER TUBE	5168	104665	1
2	WING ADJUSTER WEBBING CAP LHS TYPE 2	5169	109858	1
3	BOLT TRIKE WING TIP ADJUSTER	5233	104733	1
4	TIP ADJUSTER DOWL	5170	104667	1
5	DRI LUBE SOLID LUBE	5637	106432	1
6	SCREW SELF TAPPING 1/4X8G 304SS	5909	105140	2
7	SPRING WASHER 8MM ZINC	5679	101366	1



INSTRUCTIONS  
 1. SPRING WASHER PLACED ONTO M8 BOLT  
 2. HAMMER SPRING WASHER INTO WEBBING CAP  
 USING SPECIAL PUNCH.

NB: THERE ARE TWO DIFFERENT  
 LEFT / RIGHT COMPONENTS  
 FOR THE WEBBING CAP.



SCALE 1:2

REVISIONS			
DCR	Rev	AMENDMENTS	Date
2163	1	ADDED LOCTITE	10-08-05
2425	2	CHG TO INTERNAL DES	21-09-09
2433	3	ADD RETRO KITS	21-01-10
2472	4	ADD ITEM 7 BALLOON	09-06-11

RHS PART NO. 104740  
 LHS PART NO. 104669

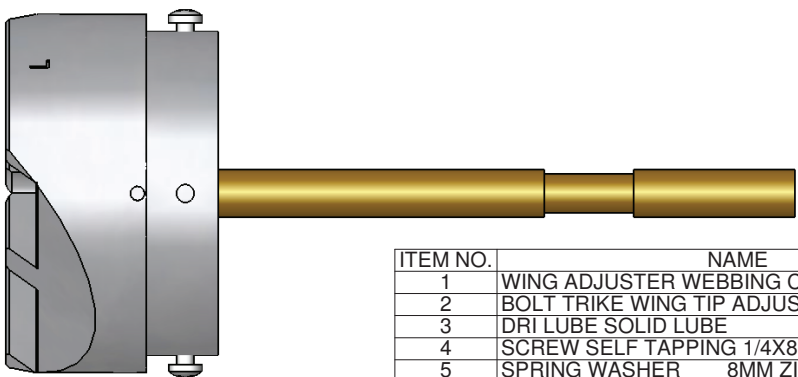
LAST ACESSED: Thursday, 9 June 2011  
 ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

#### TW LEADING EDGE TENSIONER ASSYS

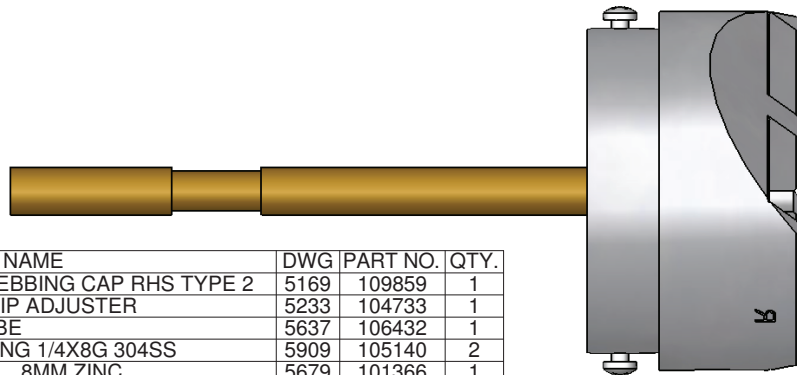
Drawn By	Scale	Date
Simon	1:1	20-05-04

**AirBorne**  
 AUSTRALIA

5172  
 SHEET 1 of 2



ITEM NO.	NAME	DWG	PART NO.	QTY.
1	WING ADJUSTER WEBBING CAP LHS TYPE 2	5169	109858	1
2	BOLT TRIKE WING TIP ADJUSTER	5233	104733	1
3	DRI LUBE SOLID LUBE	5637	106432	1
4	SCREW SELF TAPPING 1/4X8G 304SS	5909	105140	2
5	SPRING WASHER 8MM ZINC	5679	101366	1



ITEM NO.	NAME	DWG	PART NO.	QTY.
1	WING ADJUSTER WEBBING CAP RHS TYPE 2	5169	109859	1
2	BOLT TRIKE WING TIP ADJUSTER	5233	104733	1
3	DRI LUBE SOLID LUBE	5637	106432	1
4	SCREW SELF TAPPING 1/4X8G 304SS	5909	105140	2
5	SPRING WASHER 8MM ZINC	5679	101366	1

PART NO. 110028 - LHS RETROFIT KIT  
PART NO. 110029 - RHS RETROFIT KIT

LAST ACESSED: Thursday, 9 June 2011

ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

### TRIKE WING WEBBING CAP TYPE 2 RETRO LHS

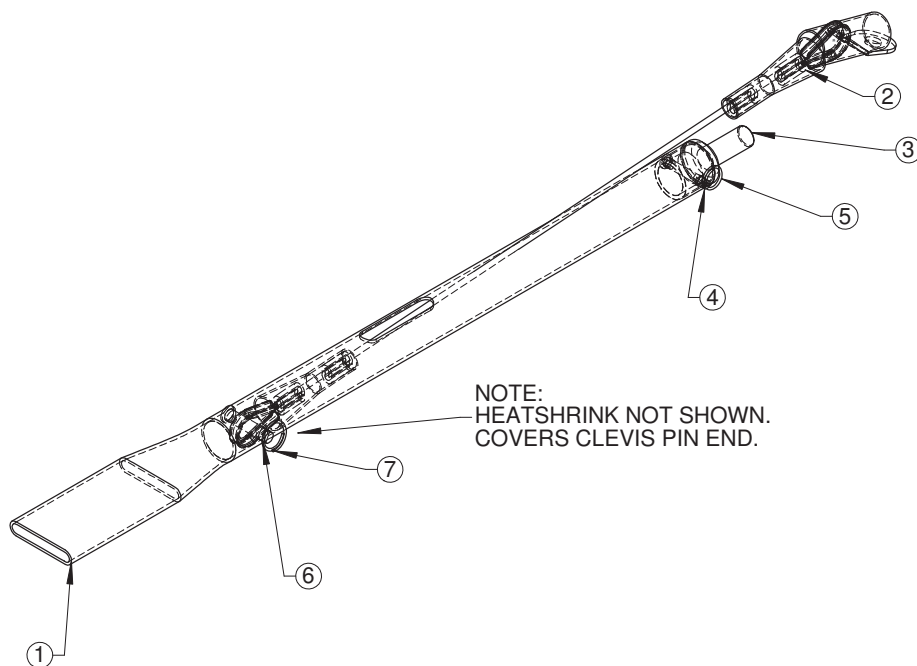
Drawn By	Scale	Date		5172 SHEET 2 of 2
Simon	1:1	28-01-10		

Rev	AMENDMENTS	Date





ITEM NO.	NAME	DWG	PART NO.	QTY.
1	SPROG TUBE OUTBOARD T SERIES	7753	109566	1
2	SPROG WIRE ASM OUTBOARD T SERIES	7754	109568	1
3	SPROG ADAPTER OUTBOARD T SERIES	7752	109565	1
4	CLEVIS PIN 3-16" X 1 1-32"	5536	104209	1
5	SPLIT RING 11MM RF114	5720	100950	1
6	CLEVIS PIN 1-4" X 1 1-32"	5536	104001	1
7	SPLIT RING 14MM RF686	5720	109756	1
8	HEATSHRINK CLR 25 X 200	5582	109569	1



Rev/	AMENDMENTS	Date
1	DCR 2402 - T SERIES DEV	06-03-09

PART NO. 109564

LAST ACESSED: Friday, 25 September 2009

ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

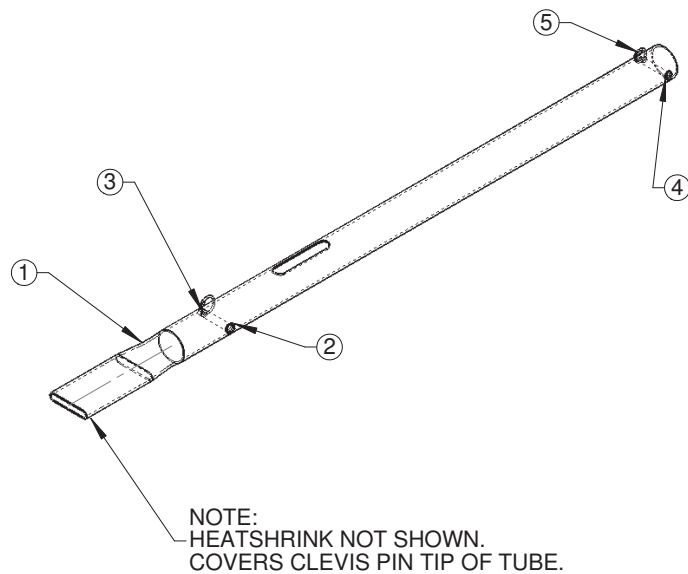
## SPROG ASM OUTBOARD T SERIES

Drawn By	Scale	Date
Simon	1:3	06-03-09

**AirBorne**  
AUSTRALIA7751  
SHEET 1 of 1



ITEM NO.	NAME	DWG	PART NO.	QTY.
1	SPROG TUBE INBOARD T SERIES	7757	109572	1
2	CLEVIS PIN 1/4X 1 9/32IN	5536	109747	1
3	SPLIT RING 14MM RF686	5720	109756	1
4	CLEVIS PIN 3/16X 1 9/32IN	5536	109652	1
5	SPLIT RING 11MM RF114	5720	100950	1
6	HEATSHRINK CLR 38MM X 220	5582	109868	1



Rev/	AMENDMENTS	Date
1	DCR 2402 - T SERIES DEV	07-03-09

PART NO. 109570

LAST ACESSED: Tuesday, 29 September 2009  
ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

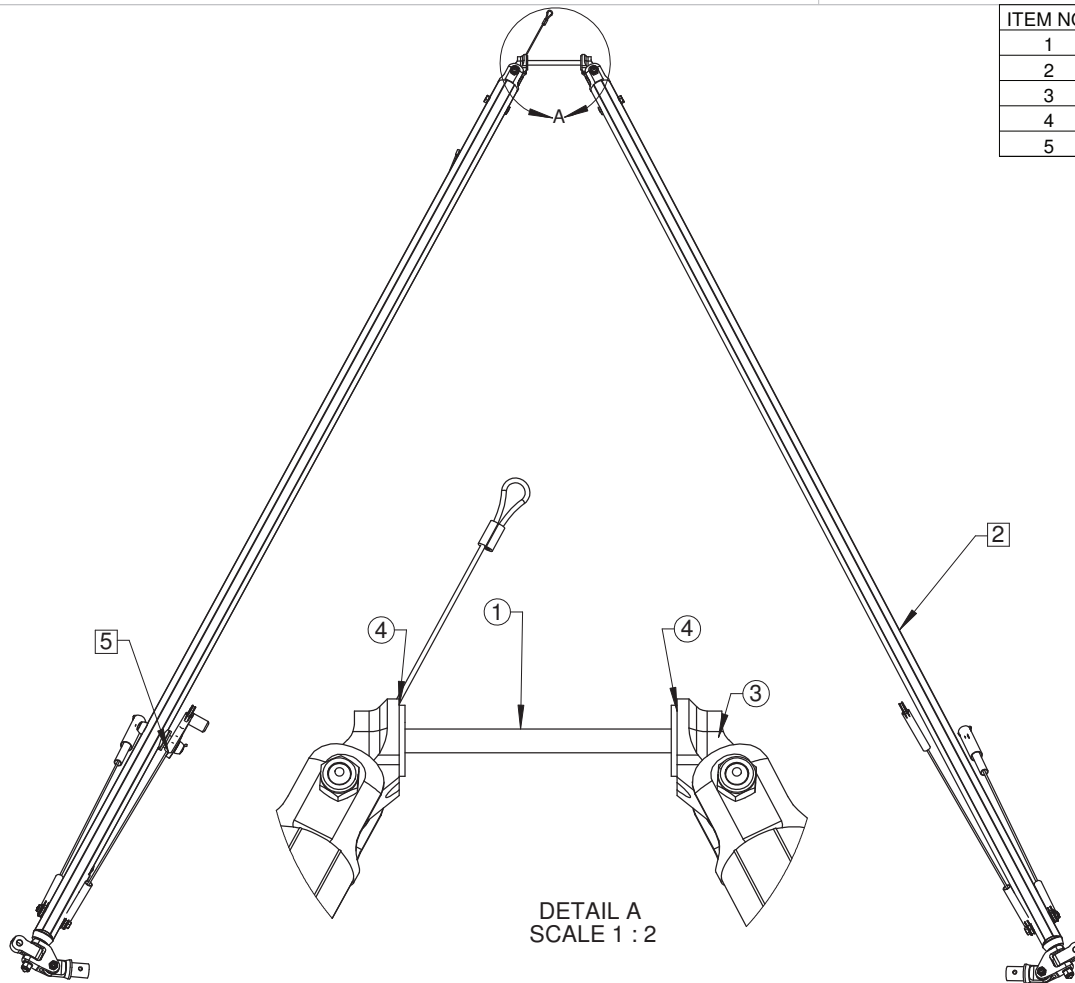
## SPROG ASM INBOARD T SERIES

Drawn By	Scale	Date
Simon	1:5	07-03-09

**AirBorne**  
AUSTRALIA7755  
SHEET 1 of 1



ITEM NO.	NAME	DWG	PART NO.	QTY.
1	BOLT AN5-44A	5493	109628	1
2	D/TUBE TW SST LHS WITH WIRES	7799	109654	1
3	NUT NYLOC AN5 HALF	5561	100037	1
4	WASHER NYLON M 8 XOD	5540	100820	2
5	D/TUBE TW SST RHS WITH WIRES	7801	109655	1



DETAIL A  
SCALE 1 : 2

PART NO. 109653

Rev	AMENDMENTS	Date
1	DCR 2402 T SERIES DEV	30-04-09

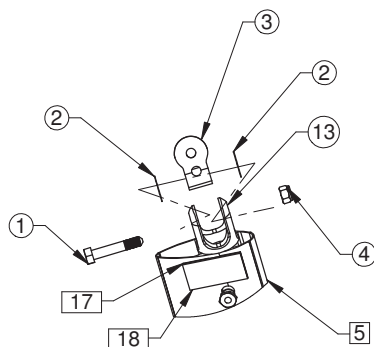
LAST ACESSED: Wednesday, 5 August 2009  
ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

CONTROL FRAME SST PREASM SPREAD

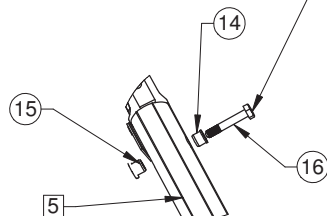
Drawn By	Scale	Date	AirBorne AUSTRALIA	7798 SHEET 1 of 1
Stuart	1:10	30-04-09		



ITEM NO.	NAME	DWG	PART NO.	QTY.
1	BOLT AN5-15A	5493	100015	1
2	WASHER MYLAR 22X 7	5540	100624	2
3	C/FAME BRACKET TOP AERO D/TUBE BUSHED	6893	107503	1
4	NUT NYLOC AN5 FULL	5535	100036	1
5	D/TUBE TW ASM LHS - T SERIES	7770	109591	1
6	FRNT FLYING WIRE STREAK & T SERIES 1780	6601	103793	1
7	REAR FLYING WIRE SST	6604	109734	1
8	D/TUBE TW SST KNUCKLES BTM ASM LHS	7856	109760	1
9	BOLT AN4-22A	5450	100549	1
10	WASHER SS304 1/4 X 3/4IN	5540	102018	2
11	BUSH T SERIES CNTL FRAME BTM	7804	109658	2
12	NUT NYLOC AN4 HALF	5561	100035	1
13	KNUCKLE D/TUBE TOP LHS - T SERIES	7767	109587	1
14	BUSH T SERIES CNTL FRM AND STRUT	7804	109659	1
15	NUT INTERNAL AN4 - T SERIES	7776	109603	1
16	BOLT AN4-14A	5450	100559	1
17	VELCRO LOOP 25x50 ADHESIVE	6313	105887	1
18	VELCRO HOOK 25X50	6312	109870	1

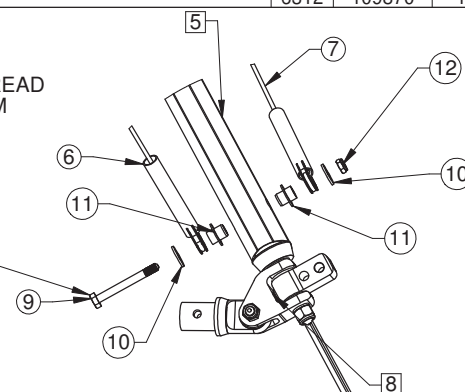


DETAIL TOP SIDE  
SCALE 1 : 5



DETAIL TOP FRONT  
SCALE 1 : 5

NOTE:  
TOP BOLT HAS THREAD  
FACING IN, BOTTOM  
BOLT HAS THREAD  
FACING OUT.



DETAIL BOTTOM FRONT  
SCALE 1 : 5

REVISIONS			
DCR	Rev	AMENDMENTS	Date
2402	1	T SERIES DEV	17-06-09
2475	2	PART NAME CLARIFICATION	27-06-11

PART NO. 109654

LAST ACESSED: Monday, 27 June 2011

ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

D/TUBE TW SST LHS WITH WIRES

Drawn By	Scale	Date
Stuart	1:2	01-11-07

 AirBorne  
AUSTRALIA

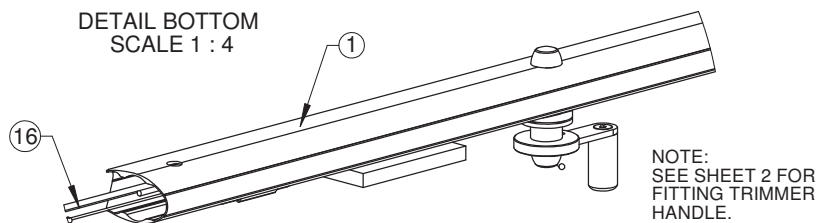
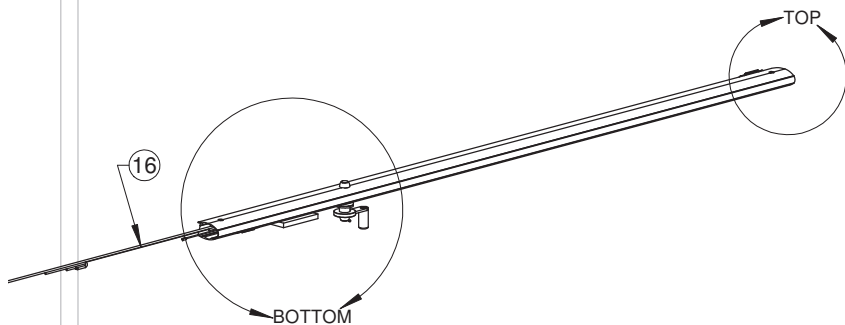
7799

SHEET 1 of 1





ITEM NO.	NAME	DWG	PART NO.	QTY.
1	D/TUBE TW AIRFOIL T SERIES LHS	7820	109697	1
2	TRIMMER ROPE & SHOCK CORD ASM SST	7887	109845	1



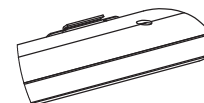
Rev	AMENDMENTS	Date
1	DCR 2402 - T SERIES DEV	12-03-09

PART NO. 109592 - RHS  
PART NO. 109591 - LHS

LAST ACESSED: Monday, 29 March 2010

ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

ITEM NO.	NAME	DWG	PART NO.	QTY.
1	D/TUBE TW AIRFOIL T SERIES RHS INC WIRE	7820	109698	1
2	SADDLE TRIMMER T/W AERO D/T	6397	106284	1
3	TRIMMER SPOOL T/W AERO D/T	6398	106287	1
4	HAND LEVER TYPE 2 (COUNTERSINK)	4410	106476	1
5	KNOB - HAND PLASTIC 40	6433	106531	1
6	SKT CSK SCREW M 6X 16 SS 304	5568	106275	1
7	BOLT AN4-26A	5450	100009	1
8	WASHER SS304 M 6 X12.5 BELLEVILLE	6421	106346	2
9	WASHER SS 304 M10 X20 BELLEVILLE	6421	102367	1
10	CAP WASHER COVER BLACK M8	5666	100603	2
11	CAP WASHER BASE CLIP M8	5667	100604	2
12	NUT NYLOC AN4 HALF	5561	100035	1
13	LOCTITE 243 BLUE MID STRENGTH	5637	103706	1
14	PLACARD TRIMMER STREAK	4711	103817	1
15	POP RIVET 1/8	5515	100162	1
16	TRIMMER ROPE & SHOCK CORD ASM SST	7887	109845	1



DETAIL TOP  
SCALE 1 : 4

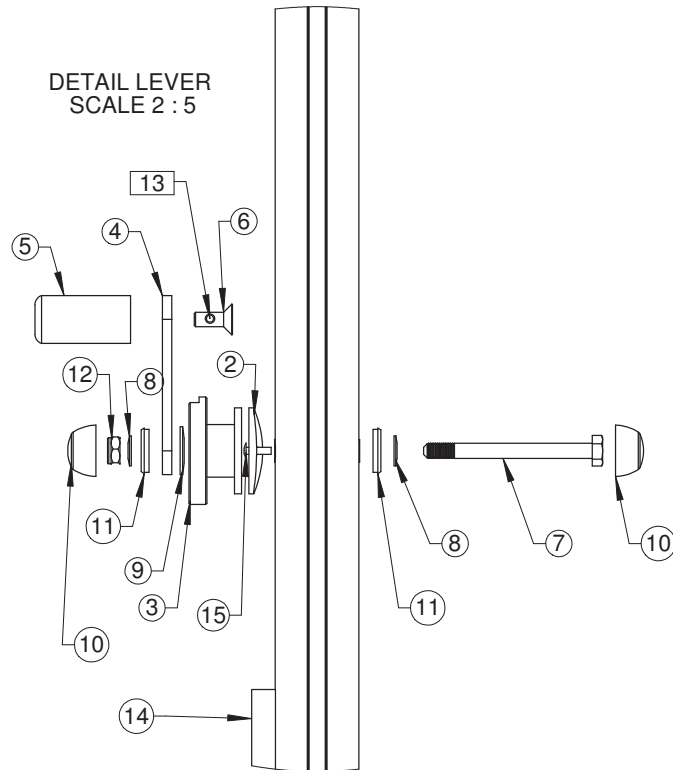
#### D/TUBE TW ASM - T SERIES

Drawn By	Scale	Date
Simon	1:10	12-03-09

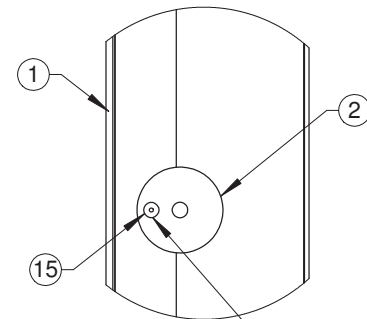


7770  
SHEET 1 of 2

ITEM NO.	NAME	DWG	PART NO.	QTY.
1	D/TUBE TW AIRFOIL T SERIES RHS INC WIRE	7820	109698	1
2	SADDLE TRIMMER T/W AERO D/T	6397	106284	1
3	TRIMMER SPOOL T/W AERO D/T	6398	106287	1
4	HAND LEVER TYPE 2 (COUNTERSINK)	4410	106476	1
5	KNOB - HAND PLASTIC 40	6433	106531	1
6	SKT CSK SCREW M 6X 16 SS 304	5568	106275	1
7	BOLT AN4-26A	5450	100009	1
8	WASHER SS304 M 6 X12.5 BELLEVILLE	6421	106346	2
9	WASHER SS 304 M10 X20 BELLEVILLE	6421	102367	1
10	CAP WASHER COVER BLACK M8	5666	100603	2
11	CAP WASHER BASE CLIP M8	5667	100604	2
12	NUT NYLOC AN4 HALF	5561	100035	1
13	LOCTITE 243 BLUE MID STRENGTH	5637	103706	1
14	PLACARD TRIMMER STREAK	4711	103817	1
15	POP RIVET 1/8	5515	100162	1
16	TRIMMER ROPE & SHOCK CORD ASM SST	7887	109845	1


 DETAIL LEVER  
SCALE 2 : 5

DETAIL TRIMMER


 DETAIL RIVET  
SCALE 2 : 5

NOTE: DRILL 1/8" RIVET WITH HOLE TOWARD TO THE FRONT OF THE DOWN TUBE. USE SMALL BOLT WITH WINGNUT TO HOLD SADDLES WHILE DRILLING AND RIVETTING.

Rev	AMENDMENTS	Date

PART NO. 109592

LAST ACESSED: Monday, 29 March 2010  
ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

D/TUBE TW ASM RHS - T SERIES

Drawn By	Scale	Date
Stuart	1:5	01-11-07

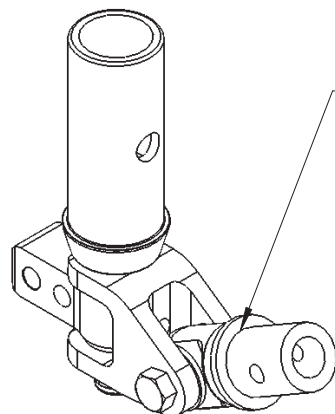

 AirBorne  
AUSTRALIA

 7770  
SHEET 2 of 2

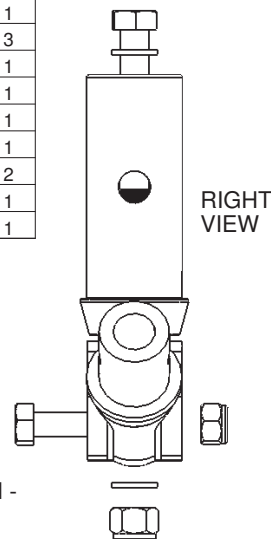
*3.14 D/TUBE TW SST KNUCKLES BTM ASM LHS/RHS - Drawing  
7856*

#

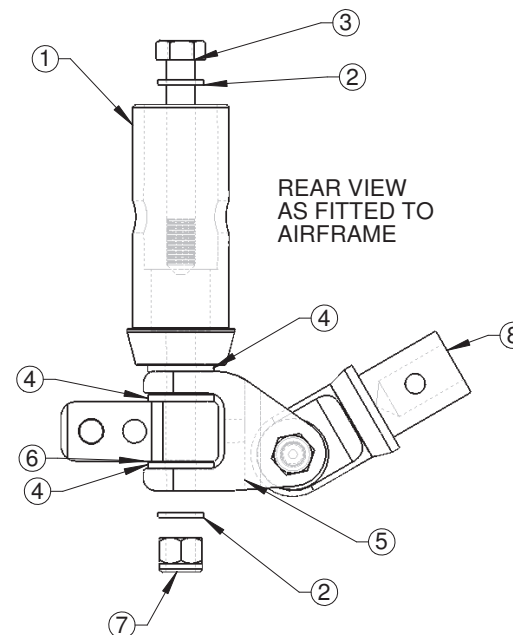
ITEM NO.	NAME	DWG	PART NO.	QTY.
1	KNUCKLE D/TUBE BTM - T SERIES	7765	109585	1
2	WASHER AN6	5540	100044	2
3	BOLT AN6-26A	5494	109627	1
4	WASHER NYLON M10 STND	5540	100619	3
5	KNUCKLE STRUT BASEBAR PIVOT - T SERIES	7764	109584	1
6	KNUCKLE STRUT BTM PIVOT - T SERIES	7763	109583	1
7	NUT NYLOC AN6 FULL	5535	100038	1
8	C/BAR KNUCKLE - T SERIES	7769	109590	1
9	WASHER NYLON M 8 XOD	5540	100820	2
10	NUT NYLOC AN5 FULL	5535	100036	1
11	BOLT AN5-15A	5493	100015	1



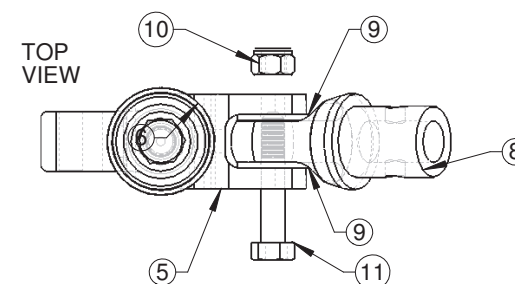
NOTE: LHS  
CONFIGURATION -  
NUT FACES TO  
FRONT.



RIGHT  
VIEW



REAR VIEW  
AS FITTED TO  
AIRFRAME



TOP  
VIEW

Rev	AMENDMENTS	Date
1	DCR 2402 - T SERIES DEV	13-08-09

PART NO. 109760

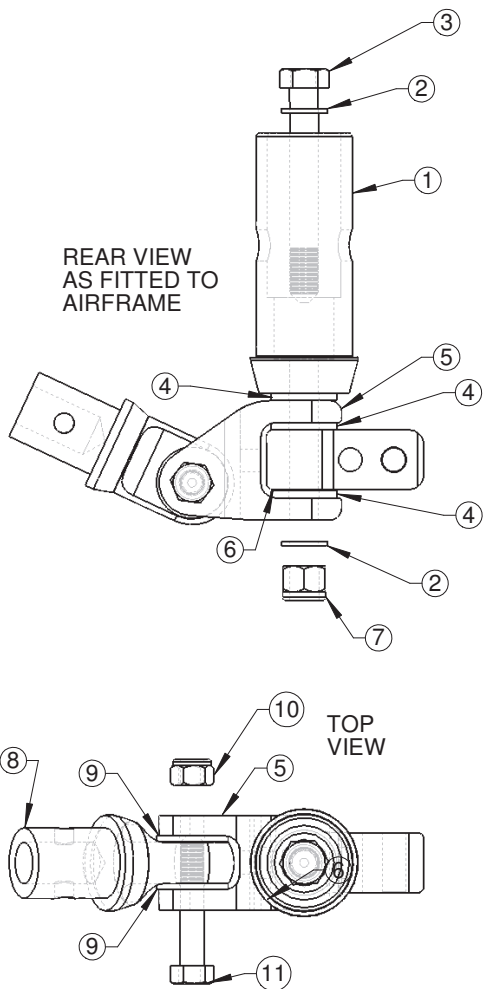
LAST ACESSED: Thursday, August 13, 2009  
ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

D/TUBE TW SST KNUCKLES BTM ASM LHS

Drawn By	Scale	Date
Stuart	1:2	23-07-09

**AirBorne**  
AUSTRALIA

7856  
SHEET 1 of 2



LEFT  
VIEW

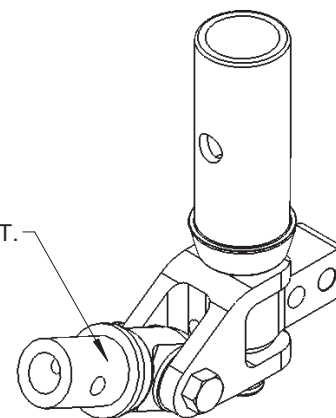
TOP  
VIEW

PART NO. 109761

LAST ACESSED: Thursday, August 13, 2009  
ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

ITEM NO.	NAME	DWG	PART NO.	QTY.
1	KNUCKLE D/TUBE BTM - T SERIES	7765	109585	1
2	WASHER AN6	5540	100044	2
3	BOLT AN6-26A	5494	109627	1
4	WASHER NYLON M10 STND	5540	100619	3
5	KNUCKLE STRUT BASEBAR PIVOT - T SERIES	7764	109584	1
6	KNUCKLE STRUT BTM PIVOT - T SERIES	7763	109583	1
7	NUT NYLOC AN6 FULL	5535	100038	1
8	C/BAR KNUCKLE - T SERIES	7769	109590	1
9	WASHER NYLON M 8 XOD	5540	100820	2
10	NUT NYLOC AN5 FULL	5535	100036	1
11	BOLT AN5-15A	5493	100015	1

NOTE: RHS  
CONFIGURATION -  
NUT FACES TO FRONT.



Rev	AMENDMENTS	Date

D/TUBE TW SST KNUCKLES BTM ASM RHS

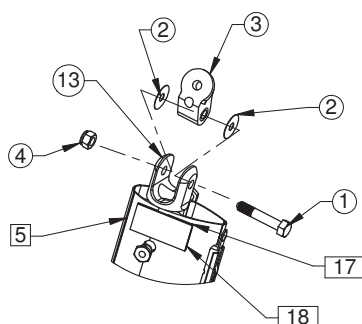
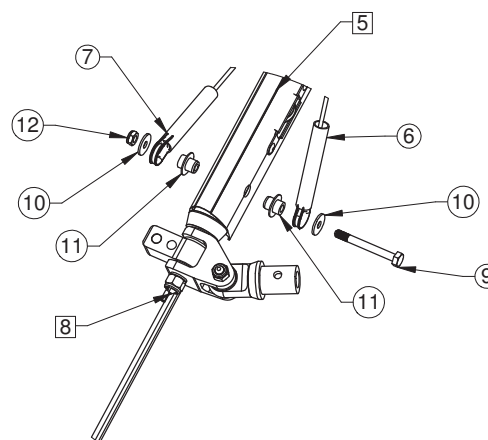
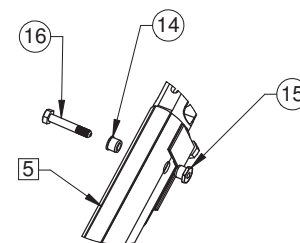
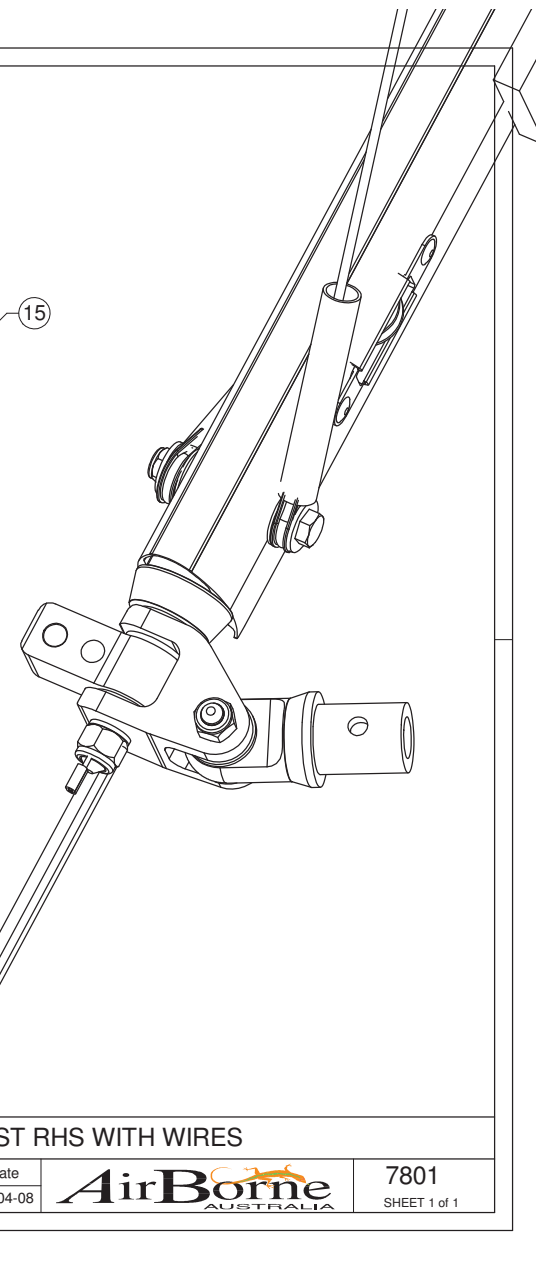
Drawn By	Scale	Date
Stuart	1:2	23-07-09

**AirBorne**  
AUSTRALIA

7856  
SHEET 2 of 2



ITEM NO.	NAME	DWG	PART NO.	QTY.
1	BOLT AN5-15A	5493	100015	1
2	WASHER MYLAR 22X 7	5540	100624	2
3	C/FAME BRACKET TOP AERO D/TUBE BUSHED	6893	107503	1
4	NUT NYLOC AN5 FULL	5535	100036	1
5	D/TUBE TW ASM RHS - T SERIES	7770	109592	1
6	FRNT FLYING WIRE STREAK & T SERIES 1780	6601	103793	1
7	REAR FLYING WIRE SST	6604	109734	1
8	D/TUBE TW SST KNUCKLES BTM ASM RHS	7856	109761	1
9	BOLT AN4-22A	5450	100549	1
10	WASHER SS304 1/4 X 3/4IN	5540	102018	2
11	BUSH T SERIES CNTL FRAME BTM	7804	109658	2
12	NUT NYLOC AN4 HALF	5561	100035	1
13	KNUCKLE D/TUBE TOP RHS - T SERIES	7767	109588	1
14	BUSH T SERIES CNTL FRM AND STRUT	7804	109659	1
15	NUT INTERNAL AN4 - T SERIES	7776	109603	1
16	BOLT AN4-14A	5450	100559	1
17	VELCRO LOOP 25x50 ADHESIVE	6313	105887	1
18	VELCRO HOOK 25X50	6312	109870	1


 DETAIL TOP SIDE  
SCALE 1 : 5

 DETAIL BOTTOM FRONT  
SCALE 1 : 5

 DETAIL TOP FRONT  
SCALE 1 : 5


PART NO. 109655

LAST ACESSED: Monday, 27 June 2011

ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

D/TUBE TW SST RHS WITH WIRES

Drawn By	Scale	Date
Stuart	1:2	29-04-08


 AirBorne  
AUSTRALIA
7801  
SHEET 1 of 1

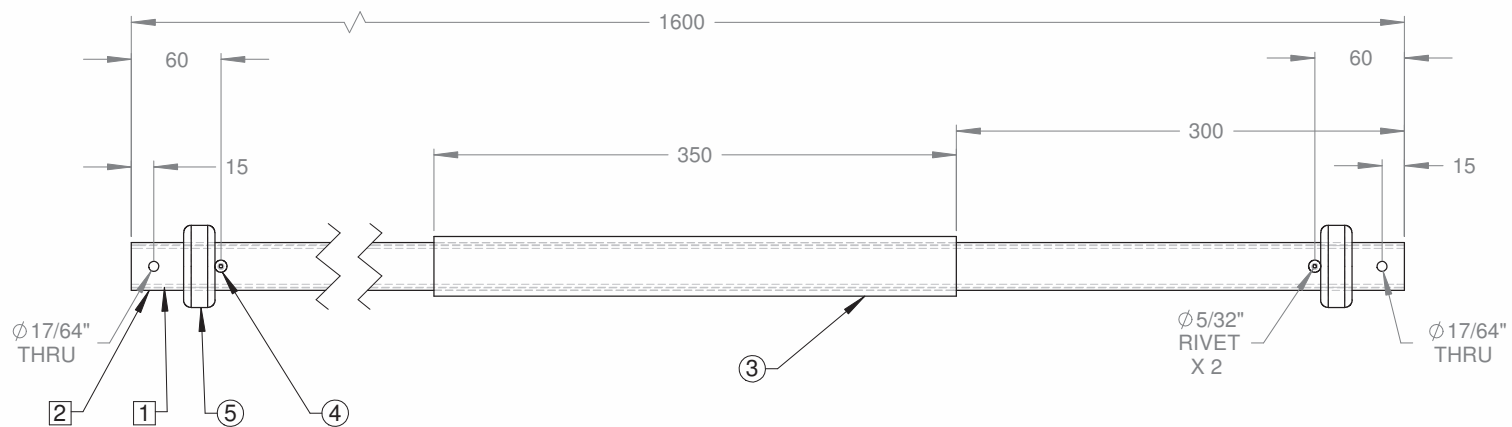
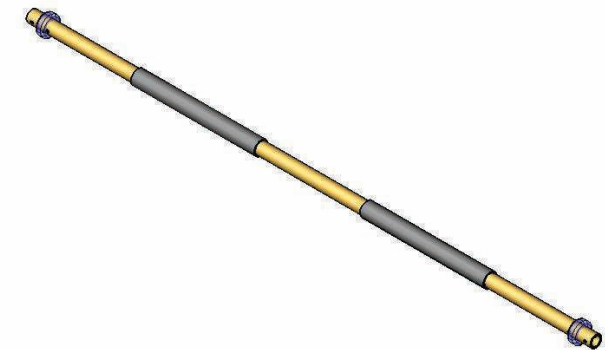
## REVISIONS

DCR	Rev	AMENDMENTS	Date
2402	1	T SERIES DEV	18-09-09
2475	2	PART NAME CLARIFICATION	20-04-11





ITEM NO.	NAME	DWG	PART NO.	QTY.
1	C/BAR TW SST BASE TUBE INNER ONLY	7791	109646	1
2	C/BAR TW SST BASE TUBE OUTER ONLY	7791	109642	1
3	HAND GRIP XT DETAIL	5579	105311	2
4	POP RIVET 5/32 SHORT(5-3)	5515	102418	2
5	C/BAR PROTECTOR/WHEEL SPACER 28	6617	100141	2



Rev	AMENDMENTS	Date
1	DCR 2402 T SERIES DEV	20-04-09
2	DCR 2422 - REFLECT MAN	02-09-09
3	DCR 2520 - ARROW DEV	18-05-12

PART NO. 109641

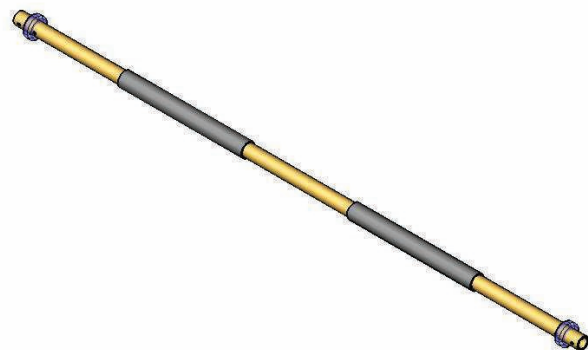
LAST ACESSED: Friday, 18 May 2012

ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

C/BAR TW INCL GRIPS SST

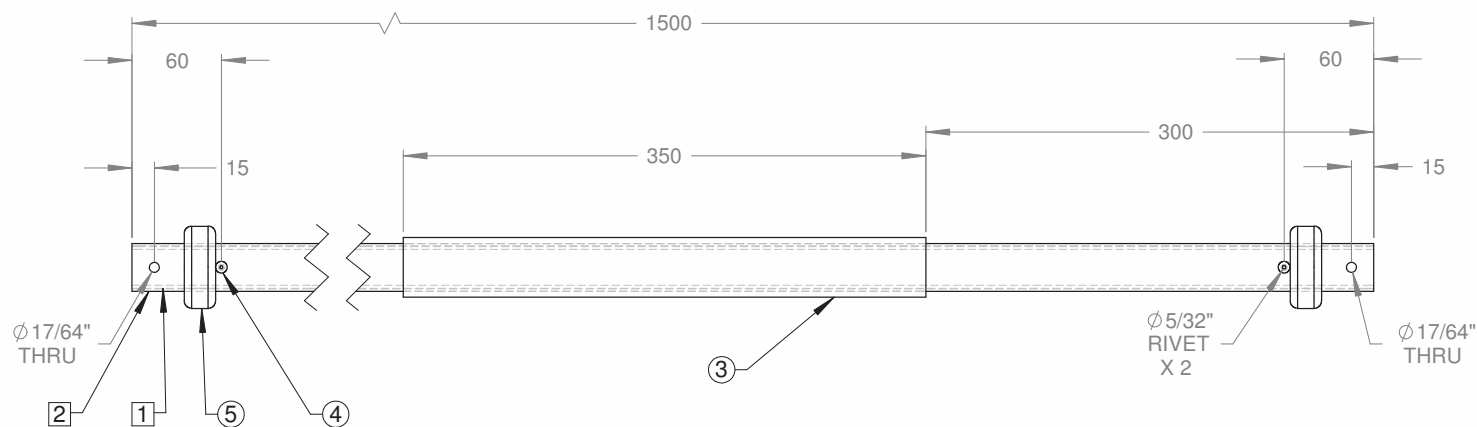
Drawn By	Scale	Date
Stuart	1:4	20-04-09

AirBorne  
AUSTRALIA7790  
SHEET 1 of 2



ITEM NO.	NAME	DWG	PART NO.	QTY.
1	TC/BAR TW ARROW BASE TUBE INNER ONLY	7791	111042	1
2	TC/BAR TW ARROW BASE TUBE OUTER ONLY	7791	111043	1
3	HAND GRIP XT DETAIL	5579	105311	2
4	POP RIVET 5/32 SHORT(5-3)	5515	102418	2
5	C/BAR PROTECTOR/WHEEL SPACER 28	6617	100141	2
6	LABEL ARROW BASEBAR	8468	111044	1

**ADD PHOTO OF STICKER POSITION**



PART NO. 111040

LAST ACESSED: Friday, 18 May 2012

ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

C/BAR TW INCL GRIPS ARROW 12.9

Drawn By	Scale	Date
Stuart	1:4	20-04-09



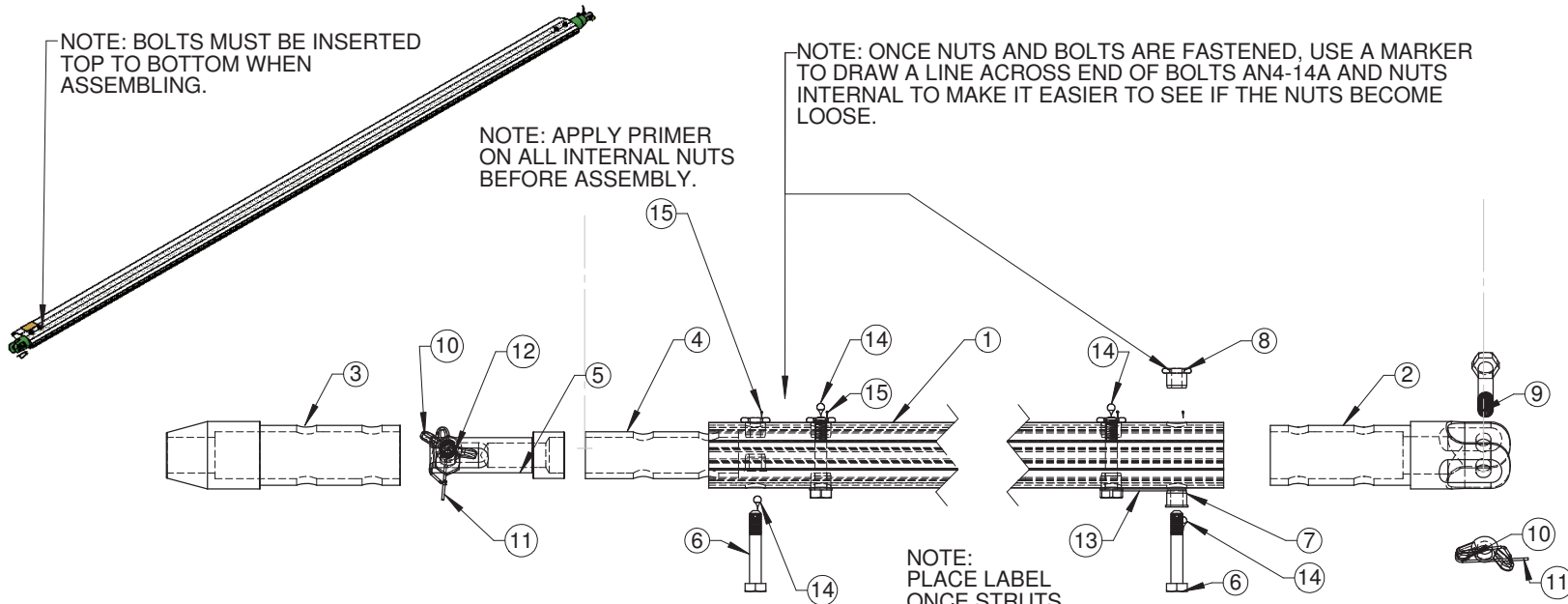
7790  
SHEET 2 of 2



ITEM NO.	NAME	DWG	PART NO.	QTY.
1	TUBE AIRFOIL STRUT - T SERIES	6475	109542	1
2	KNUCKLE STRUT BTM LHS - T SERIES	7740	109541	1
3	KNUCKLE STRUT TOP STATIC - T SERIES	7759	109576	1
4	BUSH STRUT TOP - T SERIES	7761	109578	1
5	KNUCKLE STRUT TOP PIVOT - T SERIES	7760	109577	1
6	BOLT AN4-14 a	5450	100559	4
7	BUSH T SERIES CNTL FRM AND STRUT	7804	109659	4
8	NUT INTERNAL AN4 - T SERIES	7776	109603	4
9	BOLT AN5-16	5493	109630	1
10	WINGNUT AN5	5534	102454	2
11	SAFETY PIN	5545	100920	2
12	BOLT AN5-14	5493	109637	1
13	LABEL SST STRUT LEFT SIDE BOTTOM	7857	109757	1
14	LOCTITE 262 RED HIGH STRENGTH	5637	103723	4
15	LOCTITE 7471 PRIMER	5637	104448	4

NOTE: BOLTS MUST BE INSERTED TOP TO BOTTOM WHEN ASSEMBLING.

NOTE: APPLY PRIMER ON ALL INTERNAL NUTS BEFORE ASSEMBLY.



PART NO. 109543 - LHS  
PART NO. 109575 - RHS

Rev	AMENDMENTS	Date
1	DCR 2402 - T SERIES DEV	09-03-09

LAST ACESSED: Monday, 23 November 2009

ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

ITEM NO.	NAME	DWG	PART NO.	QTY.
1	TUBE AIRFOIL STRUT - T SERIES	6475	109542	1
2	KNUCKLE STRUT BTM RHS - T SERIES	7740	109580	1
3	KNUCKLE STRUT TOP STATIC - T SERIES	7759	109576	1
4	BUSH STRUT TOP - T SERIES	7761	109578	1
5	KNUCKLE STRUT TOP PIVOT - T SERIES	7760	109577	1
6	BOLT AN4-14 a	5450	100559	4
7	BUSH T SERIES CNTL FRM AND STRUT	7804	109659	4
8	NUT INTERNAL AN4 - T SERIES	7776	109603	4
9	BOLT AN5-16	5493	109630	1
10	WINGNUT AN5	5534	102454	2
11	SAFETY PIN	5545	100920	2
12	BOLT AN5-14	5493	109637	1
13	LABEL SST STRUT RIGHT SIDE BOTTOM	7857	109758	1
14	LOCTITE 262 RED HIGH STRENGTH	5637	103723	4
15	LOCTITE 7471 PRIMER	5637	104448	4

NOTE: ONCE NUTS AND BOLTS ARE FASTENED, USE A MARKER TO DRAW A LINE ACROSS END OF BOLTS AN4-14A AND NUTS INTERNAL TO MAKE IT EASIER TO SEE IF THE NUTS BECOME LOOSE.

NOTE: PLACE LABEL ONCE STRUTS ARE IN PLACE.

#### STRUT ASM LHS AND RHS - T SERIES

Drawn By	Scale	Date	7742 SHEET 1 of 1
Simon	1:3	09-03-09	

**AirBorne**  
AUSTRALIA



Batch Size	1
------------	---

NB: NO REFLEX

Made	Batch	To Go
2	2	0
2	2	0
2	2	0
2	2	0
2	2	0
2	2	0
2	2	0
2	2	0
2	2	0
2	2	0
2	2	0
0	0	0
2	2	0
2	2	0
2	2	0
2	2	0
0	0	0
0	0	0
0	0	0
0	0	0

ASSEMBLY	
FRONT	REAR
45 Cut / Spectra	Tip
Tip	Thread Insert
Tip	Thread Insert
Tip	Thread Insert
Tip	Thread Insert
Tip	Thread Insert
Tip	Thread Insert
Tip	Thread Insert
Tip	Thread Insert
Tip	Tip / Over-centre lever
Tip	Tip / Leach Line
Tip	Tip / Leach Line
Tip	Tip / Leach Line
Tip	Tip / Leach Line
Tip	Tip / Leach Line

31.75

Rev	Amendments	Date
1	DCR 2402 T SERIES DEV	27-05-09
2		

<b>AIRBORNE WINDSPORTS</b>		Pty Ltd
<b>HINGED BATTENS</b>		
9	<b>SST</b>	<b>A4-7825</b>

ITEM NO.	NAME	DWG	PART NO.	QTY.
3	BATTEN SET SST HINGE	7825	109661	1

Batten	LHS	RHS	ASSEMBLY	
	PART No	PART No	FRONT	REAR
<b>Nose</b>	109784	109796	45 Cut / Spectra	Tip
<b>No 1</b>	109785	109797	Tip	Thread Insert
<b>No 2</b>	109786	109798	Tip	Thread Insert
<b>No 3</b>	109787	109799	Tip	Thread Insert
<b>No 4</b>	109788	109800	Tip	Thread Insert
<b>No 5</b>	109789	109801	Tip	Thread Insert
<b>No 6</b>	109790	109802	Tip	Thread Insert
<b>No 7</b>	109791	109803	Tip	Thread Insert
<b>No 8</b>	109792	109804	Tip	Thread Insert
<b>No 9</b>	109793	109805	Tip	Thread Insert
<b>No 10</b>	109794	109806	Tip	Thread Insert
<b>No 11</b>	109795	109807	Tip	Tip / Over-centre lever
<b>US1</b>	103757	103751	Tip	Tip / Leach Line
<b>US2</b>	103758	103752	Tip	Tip / Leach Line
<b>US3</b>	103759	103753	Tip	Tip / Leach Line
<b>US4</b>	110252	110253	Tip	Tip / Leach Line
<b>US5</b>	103761	103755	Tip	Tip / Leach Line



**THIS MODEL IS A VIRTUAL ASSEMBLY OF THE MATERIALS USED TO CREATE THE BATTENS. NO ACTUAL ASSEMBLY HAS BEEN CREATED. THEY ARE DEFINED BY THE EXCEL SPREADSHEET 7825, AND IN FOXPRO FOR ALL OF THE ADDITIONAL COMPONENTS.**

NOTE:  
THE NUMBER 1. BATTENS ARE CLOSEST TO THE KEEL.

NOTE: DWG COPIED FROM A4-7557

Rev	AMENDMENTS	Date
1	DCR 2402 T SERIES DEV	27-05-09

PART NO. 109661

LAST ACCESSED: Tuesday, 29 June 2010  
ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

BATTEN SET SST HINGE			
Drawn By	Scale	Date	7825
Stuart	1:4	27-05-09	SHEET 1 of 1

**AirBorne**  
AUSTRALIA





ITEM NO.	NAME	DWG	PART NO.	QTY.
1	BATTEN SET ARROW 12.9 HINGE	8168	110830	1

**THIS MODEL IS A VIRTUAL ASSEMBLY OF THE MATERIALS USED TO CREATE THE BATTENS. NO ACTUAL ASSEMBLY HAS BEEN CREATED. THEY ARE DEFINED BY THE EXCEL SPREADSHEET 8168, AND IN FOXPRO FOR ALL OF THE ADDITIONAL COMPONENTS.**

	LHS	RHS	ASSEMBLY	
Batten	PART No	PART No	FRONT	REAR
<b>Nose</b>	109784	109796	45 Cut / Spectra	Tip
<b>No 1</b>	111054	111065	Tip	Thread Insert
<b>No 2</b>	111055	111066	Tip	Thread Insert
<b>No 3</b>	111056	111067	Tip	Thread Insert
<b>No 4</b>	111057	111068	Tip	Thread Insert
<b>No 5</b>	111058	111069	Tip	Thread Insert
<b>No 6</b>	111059	111070	Tip	Thread Insert
<b>No 7</b>	111060	111071	Tip	Thread Insert
<b>No 8</b>	111061	111072	Tip	Thread Insert
<b>No 9</b>	111062	111073	Tip	Thread Insert
<b>No 10</b>	111063	111074	Tip	Thread Insert
<b>No 11</b>	111064	111075	Tip	Tip / Over-centre lever
<b>US1</b>	103757	103751	Tip	Tip / Leach Line
<b>US2</b>	103758	103752	Tip	Tip / Leach Line
<b>US3</b>	103759	103753	Tip	Tip / Leach Line
<b>US4</b>	110252	110253	Tip	Tip / Leach Line
<b>US5</b>	103761	103755	Tip	Tip / Leach Line



MASTER INCLUDES BATTEN BAG DOUBLE PART # 106479

NOTE:  
THE NUMBER 1. BATTENS ARE CLOSEST TO THE KEEL.

Rev	AMENDMENTS	Date
1	DCR 520 U SERIES DEV	20-01-12

PART NO. 110830

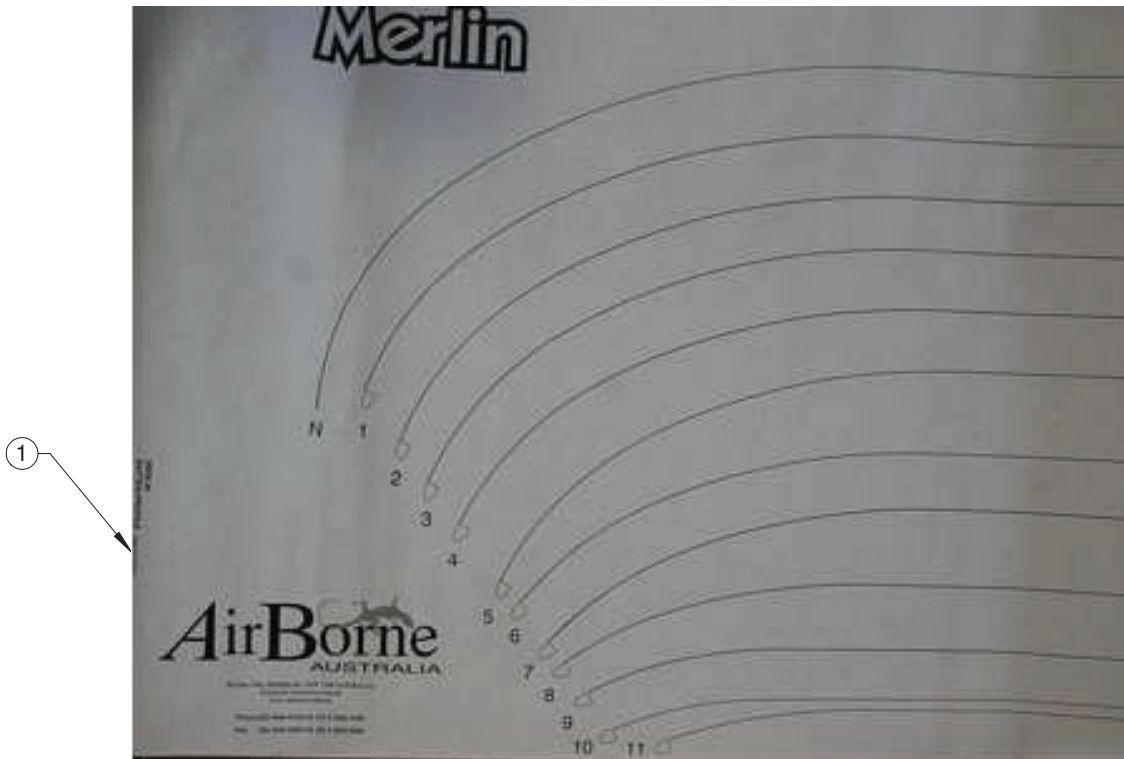
LAST ACCESSED: Thursday, 31 May 2012  
ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

NOTE: DWG COPIED FROM A4-7825

BATTEN SET ARROW 12.9 HINGE				8168
Drawn By	Scale	Date		SHEET 1 of 1
Simon	1:4	20-01-12		

*3.20 BATTEN PROFILE MERLIN / SST AND ARROW-Drawing # 7629*

ITEM NO.	PART NO.	NAME	MATERIAL DESCRIPTION	MATL. NO.	REQD
1	109213	BATTEN PROFILE MERLIN _ SST AND ARROW	NA	NA	NA



Rev	AMENDMENTS	Date
1	DCR 2402 - T SERIES DEV	28-04-09
2	DCR 2520 - ADD ARROW	21-05-12

PART NO. 109213

LAST ACESSED: Monday, 21 May 2012  
ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

BATTEN PROFILE MERLIN \_ SST AND ARROW

Drawn By	Scale	Date		
Stuart	1:2	28-05-08		7629 SHEET 1 of 1

*3.21 MANUAL SPIRAL BOUND IPC/MM SST / ARROW-Drawing # 7824*

ITEM NO.	PART NO.	NAME	MATERIAL DESCRIPTION	MATL.NO.	REQD
1	109703	MANUAL SPIRAL BOUND IPC_MM SST AND ARROW	NA	NA	NA

AirBorne WindSports Pty Ltd.  
SST Maintenance Manual & Illustrated Parts Catalogue

**AirBorne**  
AUSTRALIA



**SST MAINTENANCE MANUAL  
AND  
ILLUSTRATED PARTS CATALOGUE**

**Manufacturer:** AirBorne WindSports Pty Ltd  
Unit 22/50 Kalaroo Rd  
Redhead, NSW 2290  
Australia  
**Phone:** + 612 4944 9199  
**Fax:** + 612 4944 9395  
**Website:** <http://www.airborne.com.au/>  
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This wing should only be used in conjunction with a certified base combination.

Issue 1.0 May 2009

Rev	AMENDMENTS	Date
1	DCR 2402 T SERIES DEV	18-06-09
2	DCR 2520 ARROW DEV	22-05-12

PART NO. 109703

LAST ACESSED: Tuesday, 29 May 2012

ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

MANUAL SPIRAL BOUND IPC\_MM SST AND ARROW

Drawn By	Scale	Date
Stuart	1:2	25-05-09

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AUSTRALIA

7824  
SHEET 1 of 1

## SST AND ARROW IPC



*3.22 COVERS AND PADDING SET T SERIES / ARROW-  
Drawing # 6496*

ITEM NO.	NAME	DWG	PART NO.	QTY.
1	COVER X/BAR SMALL	7146	102730	1
2	TIP SCUFF PAD S SERIES	6548	105139	2
3	COVER CONTROL FRAME BASE GENERIC	4500	101673	1
4	COVER QUICK CLIP K POST BASE	6499	106480	1
5	GLIDER TIE	7153	100139	4
6	COVER REAR KEEL	4499	102436	1
7	COVER TIP BAG ELASTIC	6500	106481	2
8	WING BAG STREAK, CRUZE, MERLIN, SST	7149	103883	1
9	COVER TRIMMER	6535	106614	1
10	COVER C/BAR GENERIC	6501	106482	1
11	COVER U BRACKET TRIKE WING	6497	106478	1



NUMBERS POINTING TO THE FRAME  
SHOW APPROXIMATE LOCATIONS OF  
COVERS WHEN STORING GLIDER.

**THIS ASSEMBLY IS MADE FROM VIRTUAL PARTS.**

Rev	AMENDMENTS	Date
2	CHANGED TO S SERIES DCR 2107	08-04-05
3	DCR 2402 - ADD T SERIES TO SHEET 3	28-04-09
4	DCR 2520 - ADD ARROW	21-05-12

PART NO. 106477 - 2

LAST ACESSED: Tuesday, 22 May 2012

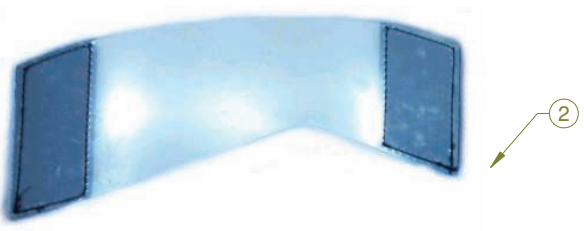
ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

#### COVERS AND PADDING SET S SERIES


Drawn By	Scale	Date
Simon	NTS	28-06-04

**AirBorne**  
AUSTRALIA


6496  
SHEET 1 of 4



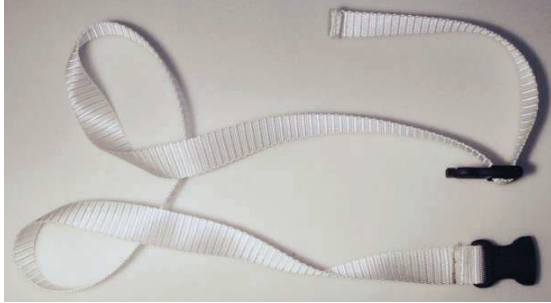
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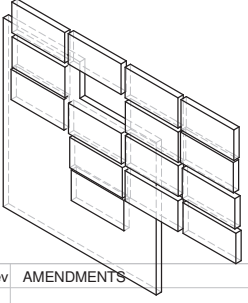
11



8



5




Rev	AMENDMENTS	Date

PART NO. 106477

LAST ACESSED: Tuesday, 22 May 2012

ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

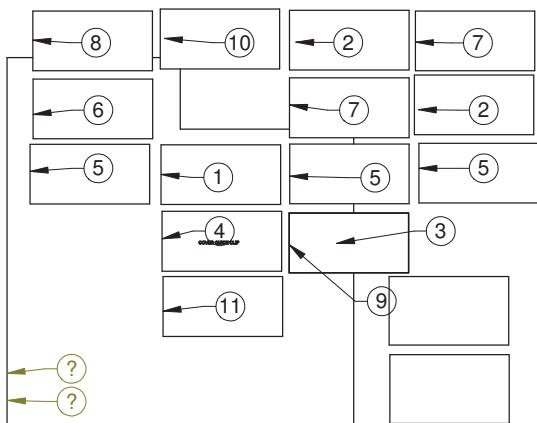
COVERS AND PADDING SET S SERIES			
Drawn By	Scale	Date	
Simon	1:1	02/03/03	

6496

SHEET 2 of 4



ITEM NO.	NAME	DWG	PART NO.	QTY.
1	COVER X/BAR SMALL	7146	102730	1
2	TIP SCUFF PAD S SERIES	6548	105139	2
3	COVER CONTROL FRAME BASE GENERIC	4500	101673	1
4	COVER QUICK CLIP	7865	109810	1
5	GLIDER TIE	7153	100139	4
6	COVER REAR KEEL	4499	102436	1
7	COVER TIP BAG ELASTIC	6500	106481	2
8	WING BAG STREAK, CRUZE, MERLIN, SST	7149	103883	1
9	COVER TRIMMER	6535	106614	3
10	COVER C/BAR GENERIC	6501	106482	1
11	COVER U BRACKET TRIKE WING	6497	106478	1
12	COVER D/TUBE HG DOUBLE MITT	6948	107779	2



NOTE: VIRTUAL ASSEMBLY MADE FOR BOM PURPOSES.  
 THE T SERIES COVERS AND PADDING IS THE SAME AS  
 THE S SERIES EXCEPT FOR 3 X 101673 - WHICH COVER  
 THE STRUT ENDS, AND 3 X 106614 - WHICH COVER STRUT  
 BRACKETS. SEE SHEET 1 AND 2 FOR PICTURES OF  
 INDIVIDUAL PARTS.

Rev	AMENDMENTS	Date

PART NO. 109660

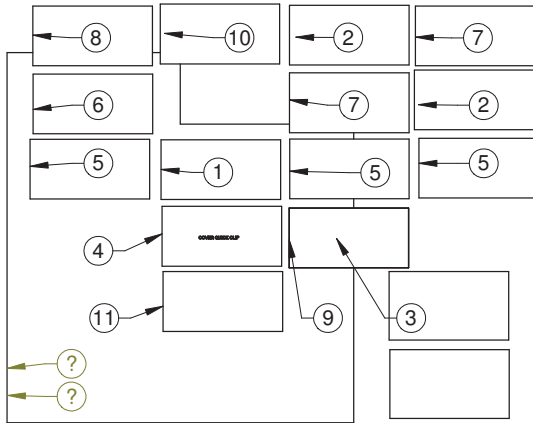
LAST ACESSED: Tuesday, 22 May 2012

ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

## COVERS AND PADDING SET T SERIES

Drawn By	Scale	Date
Simon	1:5	28-04-09


 AirBorne  
AUSTRALIA
6496  
SHEET 3 of 4



ITEM NO.	NAME	DWG	PART NO.	QTY.
1	COVER X/BAR SMALL	7146	102730	1
2	TIP SCUFF PAD S SERIES	6548	105139	2
3	COVER CONTROL FRAME BASE GENERIC	4500	101673	1
4	COVER QUICK CLIP	7865	109810	1
5	GLIDER TIE	7153	100139	4
6	COVER REAR KEEL	4499	102436	1
7	COVER TIP BAG ELASTIC	6500	106481	2
8	WING BAG ARROW 12.9	7149	111039	1
9	COVER TRIMMER	6535	106614	3
10	COVER C/BAR GENERIC	6501	106482	1
11	COVER U BRACKET TRIKE WING	6497	106478	1
12	COVER D/TUBE HG DOUBLE MITT	6948	107779	2

NOTE: VIRTUAL ASSEMBLY MADE FOR BOM PURPOSES.  
THE T SERIES COVERS AND PADDING IS THE SAME AS  
THE S SERIES EXCEPT FOR 3 X 101673 - WHICH COVER  
THE STRUT ENDS, AND 3 X 106614 - WHICH COVER STRUT  
BRACKETS. SEE SHEET 1 AND 2 FOR PICTURES OF  
INDIVIDUAL PARTS.

Rev	AMENDMENTS	Date

PART NO. 111048

LAST ACESSED: Tuesday, 22 May 2012

ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

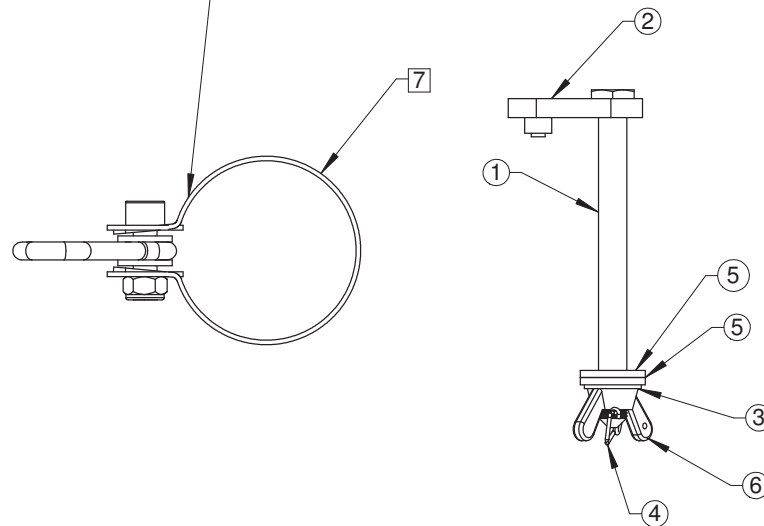
#### COVERS AND PADDING SET ARROW

Drawn By	Scale	Date		
Simon	1:5	28-04-09	<b>AirBorne</b> AUSTRALIA	6496 SHEET 4 of 4



**NOTE:**

1. MOUNT TRIMMER CLAMP TO MAST, 500MM DOWN FROM TOP OF SILVER MAST TUBE (NOT THE BLACK MAST TOP ADAPTER), WITH THE SNAP HOOK FACING REARWARD AND OPENING GATE DOWN.  
 2. IF THE CENTRE OF GRAVITY IS MOVED FORWARD ON THE WING KEEL, THE MAST CLAMP NEEDS TO BE RAISED UP THE MAST BY 20MM. IF THE CoG IS MOVED REARWARD, THE MAST CLAMP WILL NEED TO BE LOWERED BY 20MM.



ITEM NO.	NAME	DWG	PART NO.	QTY.
1	BOLT AN6-41	5494	100033	1
2	RETAINER ASM BOLT HEAD	5218	104739	1
3	WASHER SS304 3/8 X 3/4	5540	100924	1
4	SAFETY PIN	5545	100920	1
5	WASHER NYLON M10 STND	5540	100619	2
6	WINGNUT AN6	5534	101065	1
7	TRIMMER MAST ASM T SERIES	7868	109816	1

Rev	AMENDMENTS	Date
1	DCR 2402 T SERIES DEV	18-06-09

PART NO. 109716

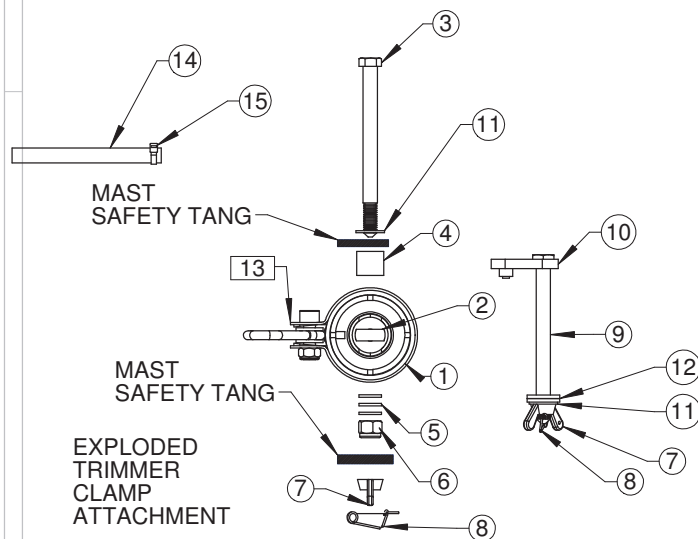
LAST ACESSED: Wednesday, 23 May 2012  
 ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

**WING ATTACHMENT KIT T SERIES**

Drawn By	Scale	Date
Stuart	1:2	18-06-09

7839  
 SHEET 1 of 3

ITEM NO.	NAME	DWG	PART NO.	QTY.
1	MAST TUBE EDGE XT WITH INT SLEEVE TY	7859	109774	1
2	MAST SAFETY WIRE ASM XT TYPE 2 WITH	7867	109812	1
3	BOLT SAE 5 UNF 3/8X 4-1/2IN DRILLED	7846	109729	1
4	SPACER ALLOY OD 18X ID 25-64X 16L	4013	109732	1
5	WASHER AN6	5540	100044	3
6	NUT NYLOC AN6 FULL	5535	100038	1
7	WINGNUT AN6	5534	101065	2
8	SAFETY PIN	5545	100920	2
9	BOLT AN6-41	5494	100033	1
10	RETAINER ASM BOLT HEAD	5218	104739	1
11	WASHER SS304 3/8 X 3/4	5540	100924	2
12	WASHER NYLON M10 STND	5540	100619	2
13	TRIMMER MAST ASM T SERIES	7868	109816	1
14	MANUAL PAGES XT 912 S3/CZ AOI	6582	107605	1
15	CABLE TIE (SHORT) 100 X 2.5MM BLACK	5605	101192	1

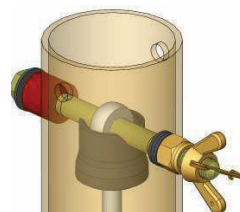


PART NO. 109718

Rev	AMENDMENTS	Date

LAST ACESSED: Wednesday, 23 May 2012

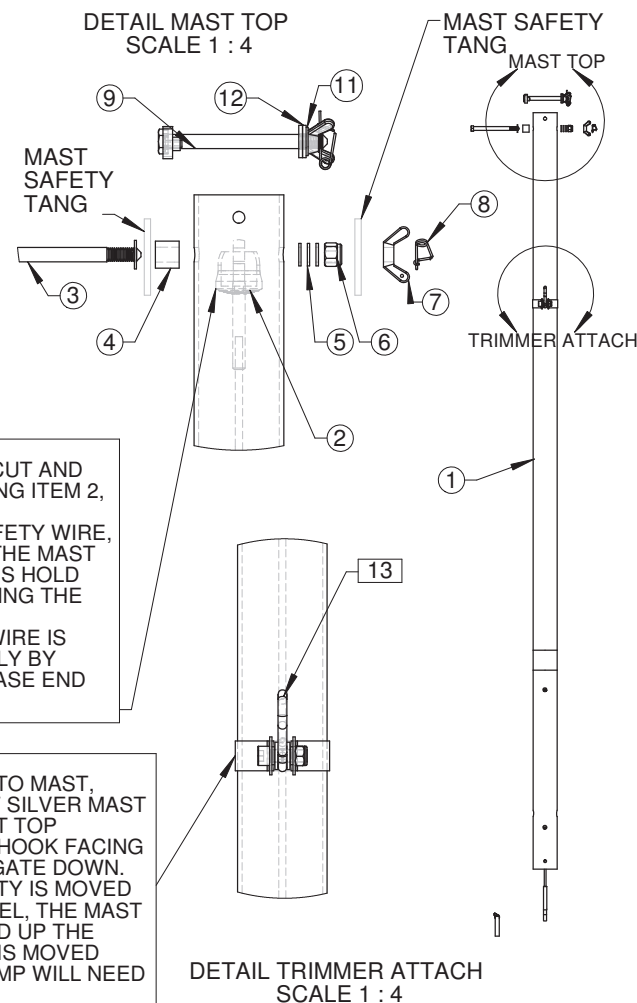
ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE



NOTE:  
BOLT MUST GO THRU  
MAST SAFETY WIRE.

NOTE:  
1. SAFETY WIRE NEEDS TO BE CUT AND DISCARDED WHEN RETROFITTING ITEM 2, MAST SAFETY WIRE.  
2. WHEN FITTING THE MAST SAFETY WIRE, GUIDE THE RUBBER CAP INTO THE MAST TOP ADAPTER SO THAT IT HELPS HOLD THE WIRE IN PLACE WHILE FITTING THE SECURING BOLT.  
3. CHECK THAT MAST SAFETY WIRE IS HELD IN PLACE AFTER ASSEMBLY BY PULLING FIRMLY ON WIRE AT BASE END OF MAST.

NOTE:  
1. MOUNT TRIMMER CLAMP TO MAST, 500MM DOWN FROM TOP OF SILVER MAST TUBE (NOT THE BLACK MAST TOP ADAPTER), WITH THE SNAP HOOK FACING REARWARD AND OPENING GATE DOWN.  
2. IF THE CENTRE OF GRAVITY IS MOVED FORWARD ON THE WING KEEL, THE MAST CLAMP NEEDS TO BE RAISED UP THE MAST BY 20MM. IF THE CoG IS MOVED REARWARD, THE MAST CLAMP WILL NEED TO BE LOWERED BY 20MM.

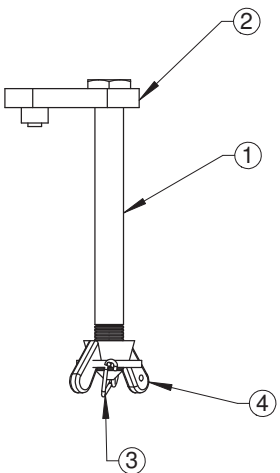


## WING ATTACHMENT KIT SST RETRO

Drawn By	Scale	Date
Stuart	1:3	01-11-07

 7839  
SHEET 2 of 3

ITEM NO.	NAME	DWG	PART NO.	QTY.
1	BOLT AN6-35	5494	106347	1
2	RETAINER ASM BOLT HEAD	5218	104739	1
3	SAFETY PIN	5545	100920	1
4	WINGNUT AN6	5534	101065	1
5	WASHER NYLON M10 STND	5540	100619	1



Rev	AMENDMENTS	Date

PART NO. 109827

LAST ACESSED: Wednesday, 23 May 2012  
ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

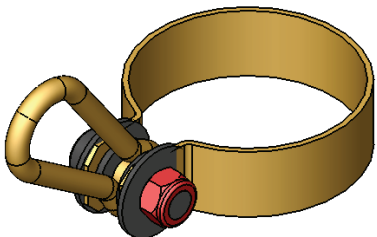
WING ATTACHMENT KIT 60 MM

Drawn By	Scale	Date
Stuart	1:2	31-08-09

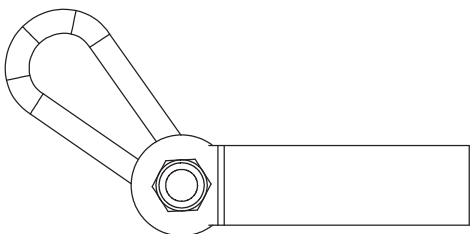
**AirBorne**  
AUSTRALIA

7839  
SHEET 3 of 3

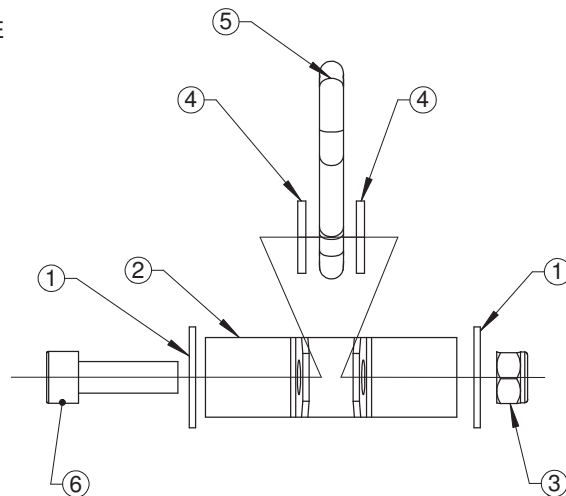




NOTE: WHEN FITTING, THE DISTANCE OF THE CLAMP - IN FLIGHT CHARACTERISTICS WILL CHANGE DEPENDING ON THE PLACEMENT OF THE CLAMP, SEE DRAWING A4-7839 FOR MORE INFORMATION.



ITEM NO.	NAME	DWG	PART NO.	QTY.
1	WASHER SS304 5/16 X 1IN X 16G	5540	100714	2
2	TRIMMER MAST CLAMP T SERIES	7853	109749	1
3	NUT NYLOC M 8 ZINC	5604	100915	1
4	WASHER NYLON M 8 STND	5540	100595	2
5	SNAP HOOK 60MM RF2355	7855	100921	1
6	SKT CAP SCREW M 8 X 25 ZINC	5603	100980	1



Rev	AMENDMENTS	Date
1	DCR 2402 T SERIES DEV	12-08-09

PART NO. 109816

LAST ACESSED: Thursday, 1 October 2009  
ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

TRIMMER MAST ASM T SERIES

Drawn By	Scale	Date
Stuart	1:1.5	12-08-09

**AirBorne**  
AUSTRALIA

7868  
SHEET 1 of 1

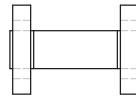
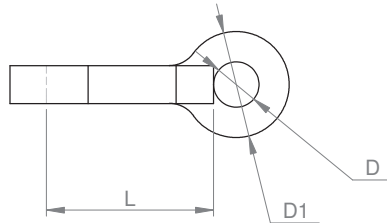


## 4 MISCELLANEOUS COMPONENTS

*4.1 Dee Shackle Drawing*

- *Drawing # 6338*

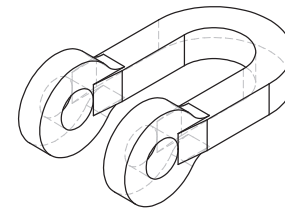
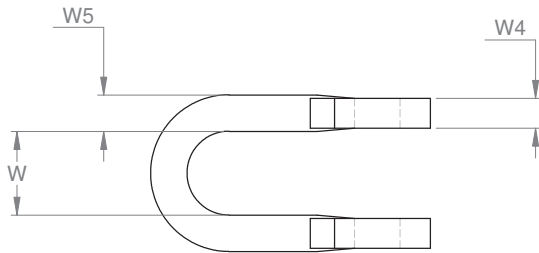
PART NO.	DWG	D	L	W	D1	W4	W5
100406	6338	4	15.5	10	8.9	3	3.2
104305	6338	4.7625	18	11	13.9	3	4
102021	6338	6.35	43	14	14.9	3	4
100067	6338	7.9375	51	30	18.2	3	4
	6338	6.4	22	14		3	4
106315	6338	7.6	28	14	17.75	5	6.1
100954	6338	6.5	23.5	12.2	13.6	2.92	4.34



NOTE FOR MODEL DATA:

SHACKLE DIMENSIONS NOT ACCURATE-  
CHECK BEFORE USE IN DESIGN

SHACKLE PIN NOT SHOWN



Rev	AMENDMENTS	Date
1	INSTRUCTIONS FOR MOD MOVED TO DWG 6479	03-06-04

LAST ACCESSED: Thursday, 18 May 2006

ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE



#### DEE SHACKLES - DESIGN TABLE

Drawn By	Scale	Date		
Cris	1:1	13/10/03		
			6338	SHEET 1 of 1

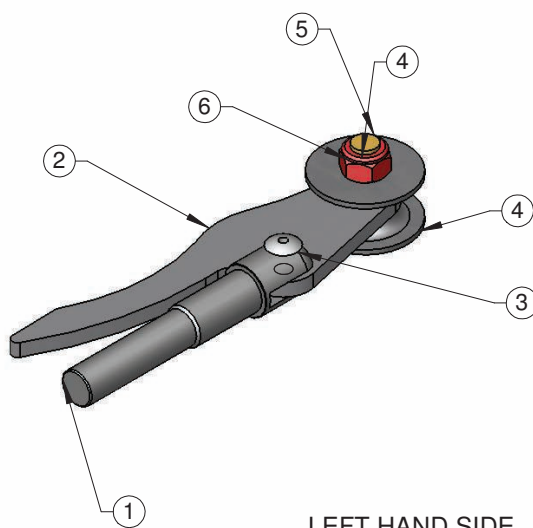


Drawn By	Scale	Date		5321 SHEET 1 of
CRIS	2:1	12/12/02		



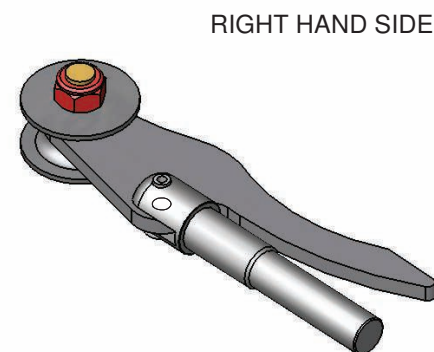
ITEM NO.	NAME	DWG	PART NO.	QTY.
1	OVER-CENTRE TIP LEVER PIVOT AL T SERIES	7841	109722	1
2	OVER-CENTRE TIP LEVER AL T SERIES	7840	109721	1
3	POP RIVET 1/8	5515	100162	1
4	OVER-CENTRE TIP LEVER ROLLER T SERIES	7845	109725	2
5	SKT BUTTON SCREW M5 X 16 SS 304	5677	103182	1
6	NUT NYLOC M 5 ZINC	5604	101365	1

NOTE:  
MAKE IN PAIRS AND MAKE IN EQUAL  
AMOUNTS. NOTE THE DIRECTION OF  
THE BOLT FOR EACH ASSEMBLY.  
THIS IS SO THE NUT FACES  
DOWNWARDS WHEN INSTALLED IN  
THE WING.



LEFT HAND SIDE

NOTE:  
THESE PARTS ARE  
USUALLY SOLD AS A  
COMPLETE ASSEMBLY.



RIGHT HAND SIDE

PART NO. 109723 LHS  
PART NO. 109727 RHS

Rev	AMENDMENTS	Date
1	DCR 2402 T SERIES DEV	19-06-09

LAST ACESSED: Friday, 29 January 2010  
ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

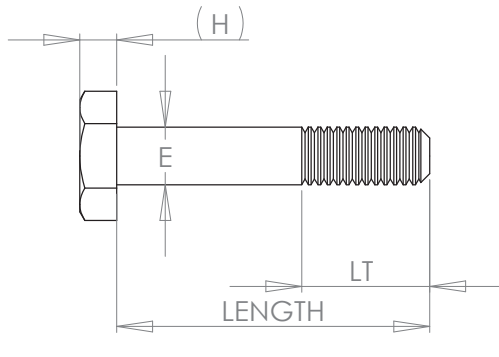
OVER-CENTRE TIP LEVER ASM T SERIES			
Drawn By	Scale	Date	7842
Stuart	1:1	22-06-09	SHEET 1 of 1


 AirBorne  
AUSTRALIA

*4.4 AN3 Bolts*

- *Drawing # 5449*





DIMENSIONED TO ANSI B18.2.1-1981  
STANDARD HEX AND HEAVY BOLTS  
TABLE 2. PG# 1049 AND 1047  
MACHINERERY'S HANDBOOK 22ND ED  
INDUSTRIAL PRESS LTD, NEW YORK.

( 9.36 )  
CHECK THIS DIMENSION

**NB: AT THIS STAGE BOLTS WITH HOLES IN THE SHAFT  
(WITHOUT a DESIGNATION) ARE NOT REPRESENTED  
WITH HOLES IN THE MODELS.**

Design Table for: AN3 hex bolt

	PART NO.	NAME	SHANK
AN3-10 a	102927	Bolt AN3-10 a	26.2
AN3-11 a	109626	Bolt AN3-11 a	29.4
AN3-12 a	100050	Bolt AN3-12 a	32.5
AN3-13 a	100584	Bolt AN3-13 a	35.7
AN3-14 a	109629	Bolt AN3-14 a	38.9
AN3-15 a	100735	Bolt AN3-15 a	42.1
AN3-21 a	101184	Bolt AN3-21 a	54.8
AN3-23 a	100558	Bolt AN3-23 a	61.1
AN3-30 a	100629	Bolt AN3-30 a	77.0

Rev	AMENDMENTS	Date
1	DCR 2402 - T SERIES DEV	08-04-09

LAST ACESSED: Wednesday, 8 April 2009  
ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

AN3 BOLT DESIGN TABLE

Drawn By	Scale	Date		5449
Simon	2:1	02/03/03		

SHEET 1 of 1

## SST AND ARROW IPC

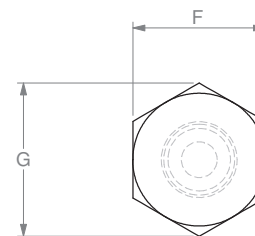
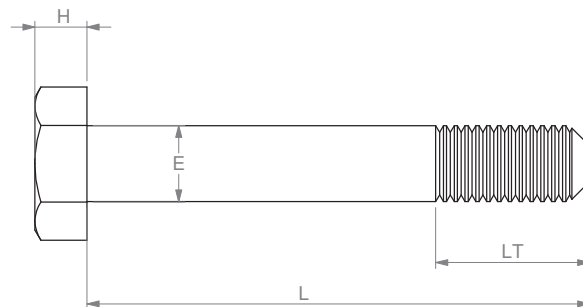
4.5 AN4 Bolts

- *Drawing # 5450*

Design Table for: hex bolt\_an

PART NO.	NAME	LENGTH
100002	BOLT AN4-6	19.84
100001	BOLT AN4-7	23.02
100003	BOLT AN4-11a	29.37
100547	BOLT AN4-12 a	32.54
101333	BOLT AN4-13 a	35.72
100559	BOLT AN4-14 a	38.89
100967	BOLT AN4-15 a	42.07
100004	BOLT AN4-16	45.24
105330	BOLT AN4-20	51.59
100006	BOLT AN4-20 a	51.59
100549	BOLT AN4-22 a	57.94
109929	BOLT AN4-23	61.12
100587	BOLT AN4-24 a	64.29
100009	BOLT AN4-26 a	70.64
100010	BOLT AN4-27 a	73.82
100011	BOLT AN4-30 a	76.99
100631	BOLT AN4-31	80.17
100012	BOLT AN4-32 a	83.34
101363	BOLT AN4-33 a	86.52
100850	BOLT AN4-34a	89.69
100013	BOLT AN4-35 a	92.87
100014	BOLT AN4-36 a	96.04
100713	BOLT AN4-40 a	102.39
102273	BOLT AN4-41 a	105.57
103668	BOLT AN4-42 a	108.74

DIMENSIONED TO ANSI B18.2.1-1981  
STANDARD HEX AND HEAVY BOLTS  
TABLE 2. PG# 1049 AND 1047  
MACHINERERY'S HANDBOOK 22ND ED  
INDUSTRIAL PRESS LTD, NEW YORK.



Rev	AMENDMENTS	Date
1	DCR 2428 - REV DEV ADD 109929	20-11-09

ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

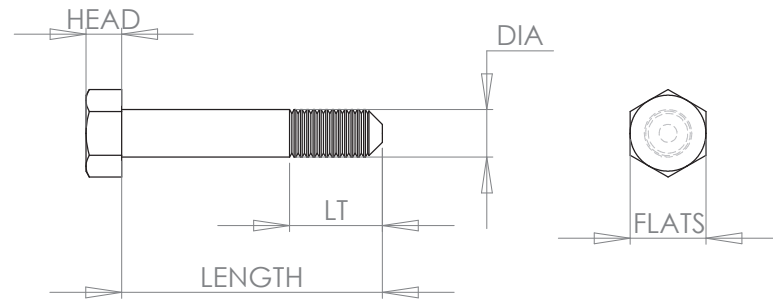
AN4 BOLT - DESIGN TABLE

Drawn By	Scale	Date		5450
Simon	2:1	21/03/03		

SHEET 1 of 1



DIMENSIONED TO ANSI B18.2.1-1981  
STANDARD HEX AND HEAVY BOLTS  
TABLE 2. PG# 1049 AND 1047  
MACHINERERY'S HANDBOOK 22ND ED  
INDUSTRIAL PRESS LTD, NEW YORK.



PARTS WITH AN X BESIDE MAY NOT BE STOCKED BY AIRBORNE.  
THIS TABLE DOES NOT INCLUDE ALL PARTS THAT HAVE BEEN  
MADE OBSOLETE. CHECK FOR EXISTING OBSOLETE PARTS PRIOR TO  
ALLOCATING NEW PART NUMBERS.

AN5-11 a	102743
AN5-14	109637
AN5-15 a	100015
AN5-16 a	100553
AN5-16	109630
AN5-17	103296
AN5-17 a	101244
AN5-20 a	100016
AN5-21 a	100819
AN5-22 a	100017
AN5-25 a	100019
AN5-26	100588
AN5-26 a	104713
AN5-27 a	100020
AN5-30 a	100021
AN5-31 a	100022
AN5-32	110556
AN5-32 a	100023
AN5-33	110555
AN5-33 a	100024
AN5-34 a	100025
AN5-36 a	100026
AN5-36	106618
AN5-37	100027
AN5-40 a	100028
AN5-41 a	100965
AN5-43	110557
AN5-44 a	109628
AN5-46	104500
AN5-46 a	100029
AN5-53 a	100960
AN5-56 a	100420
AN5-24 a	100018

Rev	AMENDMENTS	Date
3	DCR 2402 - T SERIES DEV	08-04-09
4	DCR 2446 - N SERIES DEV	02-03-11

LAST ACESSED: Wednesday, 2 March 2011  
ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

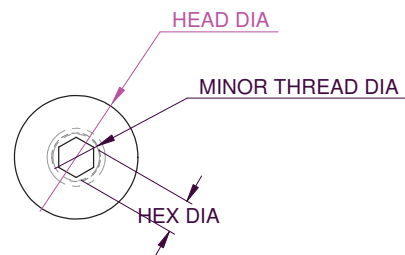
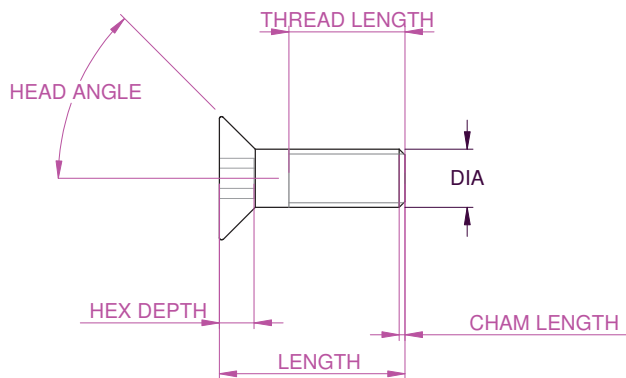
AN-5 BOLT DESIGN TABLE

Drawn By	Scale	Date		5493 SHEET 1 of 1
Simon	1:1	02/03/03		



Design Table for: 5668

PART NO.	NAME	DIA	HEAD DIA	HEAD °	LENGTH	CHAM LENGTH	HEX DIA	HEX DEPTH	THREA D L	THREAD MINOR DIA	MATERIAL	MATL NO.
106344	SKT CSK SCREW M5x16 SS	5	11.2	45	16		3		10	4.2	NA	NA
105453	SKT CSK SCREW M6x45	6	13.44	45	45	0.5	4	3	35	5	NA	NA
101823	SKT CSK SCREW BSW 2.5x0.25"	6.35	11.4	45	2.5*25.4	0.5	4	3	32	4.8	NA	NA
105997	SKT CSK SCREW BSW 1-4" MOD 58L	6.35	11.4	45	58	0.5	4	3	23	4.8	SKT CSK SCREW BSW 2.5x0.25"	101823
106319	SKT CSK SCREW BSW 1-4" MOD 47L	6.35	11.4	45	47	0.5	4	3	23	4.8	SKT CSK SCREW BSW 2.5x0.25"	101823
102062	SKT CSK SCREW UNF 1-4" x 1"	6.35	12.5	40	25.4	0.5	4	3	19	4.8	NA	NA
102063	TOW RELEASE FIXING SCREW	6.35	10.35	40	24.25	0.5	4	2	19	4.8	SKT CSK SCREW UNF 1-4" x 1"	102062
109488	SKT CSK SCREW UNF 1-4IN X1IN BLACK	6.35	12.5	40	25.4	0.5	4	3	19	4.8	SKT CSK SCREW UNF 1-4" x 1"	102062
106275	SKT CSK SCREW M6x16 SS	6	13.44	45	16	0.5	4	3	10	5	NA	NA



**PART # 105997 MADE FROM PART # 101823**  
**PART # 106319 MADE FROM PART # 101823**  
**NOTE:**  
**MOVED #102063 FROM A4-4414 WHICH IS NOW SUPERSEDED, 11-08-10.**

Rev	AMENDMENTS	Date
1	UPDATED AND REMOVED PARTS WITH NO PART NUMBERS IN THE SYSTEM	04-06-04
2	ADDED 109488	21-11-08
3	ADDED 102063 FROM A4-4414	11-08-10

LAST ACESSED: Wednesday, 11 August 2010

ALL DIMENSIONS IN MILLIMETERS UNLESS STATED OTHERWISE

SKT CAP SCREW COUNTERSINK - DESIGN TABLE

Drawn By	Scale	Date	5668 SHEET 1 of 1
Cris	2:1	22/05/03	

## **5 OPTIONS**

### *5.1 NIL*



