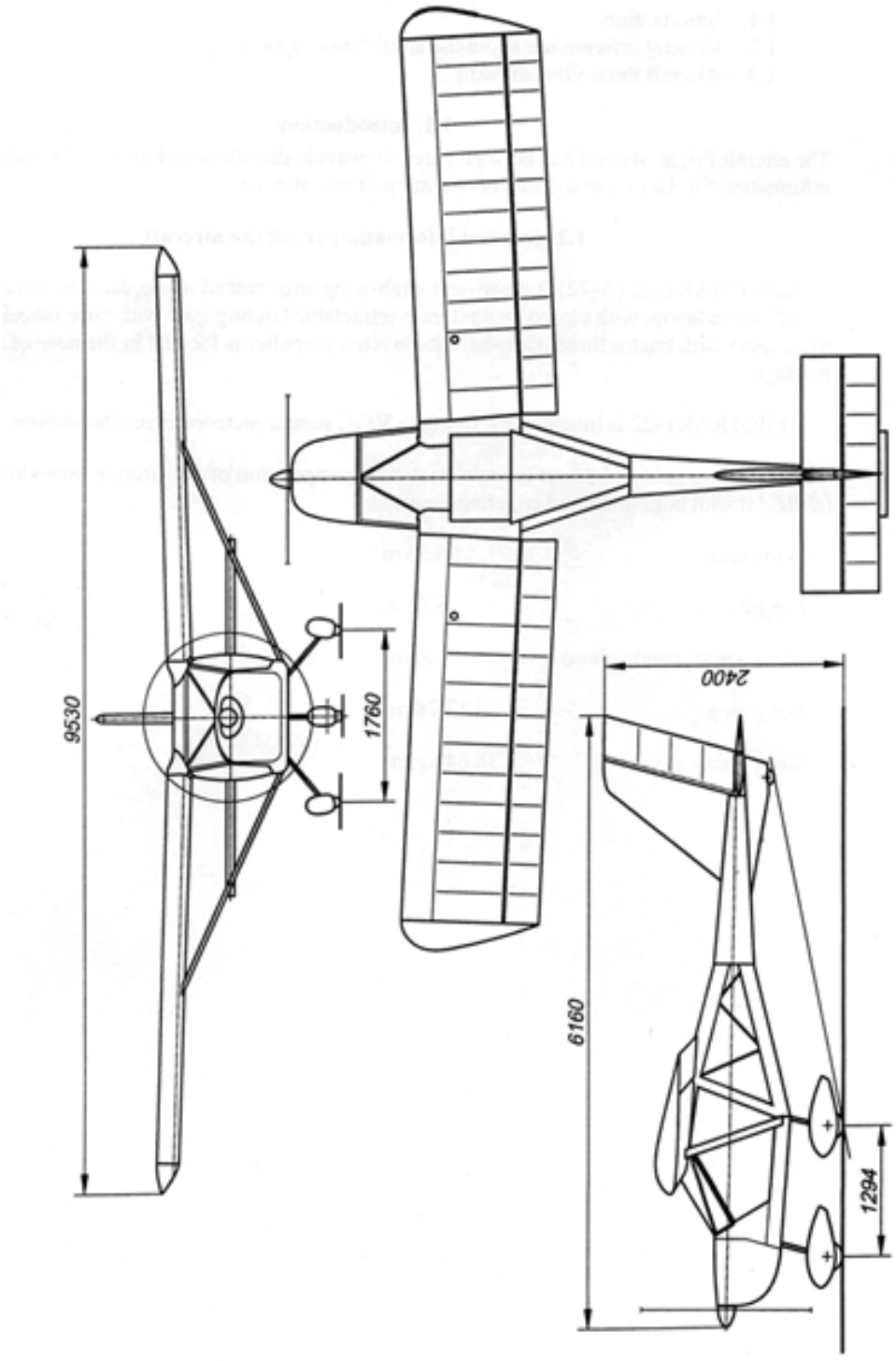

9530
1760
2400
6160
1294

Introduction to the Aeroprakt A22 Foxbat

The prototype A22 was conceived during 1996 on the drawing board of Antonov Design Bureau engineer Yuri Yakovlev - purely as an easy-to-fly 450-525 kg aircraft with excellent pilot and passenger comfort and competitive all-round performance. It was intended that pilots of average ability would be able to operate the A22 in safety from the typically short ultralight airstrips found around the world.

The design is aimed squarely at the growing ultralight market in Western Europe and the USA although examples are also operating in UAE, Malaysia and Eastern Europe. In Germany the A22 has achieved certification to the stringent BFU-95 requirements. Approval in UK to BCAR'S' via PFA engineering was achieved in late 2001. Standard engine is the 100 bhp Rotax 912ULS, with the 80 bhp 912UL available as an option.

Known in Australia South Africa and the UK as the ‘Foxbat’, the A22 is a quality-engineered aircraft with no aerodynamic vices. The airframe is in riveted aluminium with part Ceconite type fabric-covered wings and control surfaces. It retains adequate control response in all axes at speeds down to 30 kts and provides the unthreatening STOL capability of a genuine ultralight. Yet it can cruise at 85-90kts on 14ltrs/hr and has a range of more than 500 miles. The cockpit is very roomy with excellent visibility and plenty of luggage space in a container behind the seats.

This aircraft is an excellent choice for pilots of either ultralights or GA light aircraft. Equally at home on short ultralight airstrips or GA bitumen the Foxbat is a plane that can introduce light aircraft pilots to a much wider choice of destinations, and give ultralight pilots a level of speed and, in particular comfort, previously unavailable within the weight limit.

Building the Foxbat

Although the Foxbat is a modern aircraft in concept it uses a very conventional method of construction in riveted Alclad aluminium. The kit is supplied with some of the fuselage, much of the wings, tailplane, fin and control surfaces pre-riveted. The builder’s riveting (using ‘pop’ rivets) consists of fitting the cabin floor-pan (which is partly pre-drilled), finishing and riveting the wing and fin tips, securing the fin itself and various mounting brackets and webs to the bare fuselage monocoque. Final riveting includes all the glazing, including the windscreen.

The A22 Build Manual is illustrated with around 100 exploded-view drawings that cover each step of the assembly process together with easy-to follow

text. As an option, a full set of engineering reference drawings is available on CD at extra cost.

The bulk of the airframe construction work is centred on the fuselage and consists of fitting the control mechanisms (torque tubes, push rods, bell-cranks, cables, etc) the main components of which are factory finished, anodised and/or plated. The factory requires the wings, tailplane and control surfaces to be pre-riveted in jigs leaving the builder to add the fuel tanks, as well as covering and painting. At every point where a rotating action takes place, an aerospace-quality rose-joint or bearing is pre-pressed into the bracket.

The airframe can be assembled and finished to a rolling but bare stage before buying the engine, instruments and covering system. This means purchases of major items can be staggered to suit the budget or build schedule – for example, if six months or more is planned to build the plane, there is little point in having an expensive engine bolted to the airframe (or in a box) using up its warranty time. After installing the engine the final finishing involves installing and connecting the fuel tanks, covering and painting, and fitting instruments, windscreen, and other glazing.

One person, working at a steady and meticulous pace can build a finished aircraft from a Foxbat kit in around 500 hours (or fewer with an assistant) - some jobs need extra hands for completion. With good planning, a largish double garage will be a big enough workshop space to complete all the sub-assemblies (including covering and painting them) providing the wings and tailplane are stored elsewhere while work progresses on the fuselage. Obviously a larger space is required for the final assembly of the aircraft although this can be done outdoors prior to Final Inspection and trailer transportation to the airfield for Test Flying. With a little practice, two people can detach the standard wings quite easily in about 30 minutes. Re-assembly takes about the same.

INTRODUCTION TO BUILDING

Before you begin….

1. *Thoroughly read through the complete construction manual several times so you are completely familiar with each stage of the process.*

2. *Make sure you understand all the diagrams/drawings.*

3. *Check your parts against the parts list to ensure you have all the items you need.*

4. *Prepare your workshop and collect together all the tools you need. Construction of the Foxbat requires no really specialised tools – a set of metric spanners, a hand pop-rivet gun, flat and cross-head screwdrivers, long-nose and standard pliers some files and cutters are the main requirements. Later, you will need lifting tackle for the engine – but this can be hired for the day or so you will need it.*

5. *If you are buying the kit in stages, plan when you will need the engine, covering/paint and instruments, so that they can be ordered in plenty of time.*

6. *If you are in doubt about anything – call SilverWing Aviation for clarification. Once a hole is drilled, it can't be un-drilled! So take your time.*
7.

8. *Constructing your Foxbat should be an enjoyable experience – much of it is an assembly process, with actual making of parts kept to the minimum - many of the rivet holes are measured and, in some cases, drilled. Final covering and painting the aircraft is a straightforward if time consuming job which done well will give you an aircraft which will not only fly well but will last you many years.*

9. *Should you require assistance at any time, just contact SilverWing Aviation for help and guidance.*

10. *Happy constructing!*

SilverWing Aviation, PO Box 9050, Gold Coast MC, Qld 9726
(07) 5597 0391 & 0413 900 892
info@silverwing.com.au

AEROPRAKT A22 FOXBAT
PARTS LIST

REGIME - ITEM NUMBER - PART DESCRIPTION - (DRAWING NUMBER) - AEROPRAKT NUMBER

FUSELAGE/WINGS/ETC

1. *MONOCOQUE (1.050+) 2.0100*
2. *WING R/L (6.500) 3.2000*
3. *STRUT R/L (4.510) 3,2900*
4. *FLAPERON R/L (6.500) 0.3700*
5. *FIN (2.030+) 1.3400*
6. *RUDDER ((3.500) 0.3300*
7. *TAILPLANE (8.500) 1.3100.00*
8. *ELEVATOR (8.500) 3.3200*
9. *TRIM TAB (9.500) 1.4000*
10. *BEAM R/L (1.010) 0.0116*
11. *LG BEAM R/L (1.020) 0.4350*
12. *GUSSET R/L (1.030) 0.0148*
13. *ANGLE R/L (1.030) 0.0149*
14. *ANGLE R/L (1.030) 0.0150*
15. *HINGE X 4 (1.040) 0.1391*
16. *SUPPORT (1.130) 0.0156*
17. *BASEPLATE (1.140) 0.0164*
18. *BRACKET R/L (1.140) 0.0108*
19. *LG BRACKET R/L (1.150) 1.4130*
20. *LG BRACE R/L (1.150) 0.4150*
21. *LG BRACKET R/L (1.160) 0.4140*
22. *FITTING (1.160) 0.4150*
23. *BRACE R/L (1.050) 1.1371*
24. *BRACE R/L (1.050) 1.1372*
25. *BRACE R/L (1.060+) 1.1373*
26. *FITTING X 9 (1.070 +) 1.1377*
27. *BRACKET (18.010) 0.7625*
28. *BRACE X 3 (1.090/110) 1.1374*
29. *BRACE X 3 (1.090 +) 1.1375*
30. *BRACE X 3 (1.100 +) 1.1376*
31. *FLOORING (1.170) 0.0119*
32. *ANGLES R/L (1.180) 0.0171*
33. *DOUBLER (1.190) 0.0172*
34. *DOUBLER X 2 (1.190) 0.0173*
35. *SUPPORT (1.200) 3.4307*
36. *GUSSET X 2 (1.200) 3.4307*
37. *FLOORING (1.210) 0.0120*
38. *GUSSET R/L (1.220) 2.0147*
39. *BEAM (1.310) 1.0121*
40. *ANGLE (1.310) 0.0194*
41. *BELT (18.020) 0.7626*

UNDERCARRIAGE

1. *MAIN LEG R/L (1.270) 5.4110*
2. *AXLE X 2 (1.300) 3.4133.BLOCK X 2 (1.300) 8.4121*
4. *PLATE X 2 (1.300) 3.4123*
5. *MATCO 5.00-5 (+ BRAKE) X 2*
6. *SUPPORT (1.280) 3.4308*
7. *FLANGE (1.280) 3.4324*
8. *STRUT (1.280) 3.4300*
9. *NOSELEG (1.290) 3.4300*
10. *MATCO 6.00-6*
11. *AXLE (1.290) 1.4301*
12. *SPACER X 2 (1.290) 1.4316*

MOULDINGS, ETC

1. *PROP: SPINNER*
2. *SPINNER BACKPLATE*
3. *ENGINE COWLING UPPER*
4. *ENGINE COWLING LOWER*
5. *WING FILLETS R/L 0.1500*
6. *WHEELSPAT FRONT*
7. *WHEELSPAT RIGHT*
8. *WHEELSPAT LEFT*
9. *FIN CAP 0.3409*
10. *FLAPERON COWL 1.5400.04*
11. *CENTRAL CONSOLE 0.7152*
12. *INST: HOUSING 1.7151*
13. *INST: PANEL DURAL: 0.7001*
14. *INST: PANEL CARBON*
15. *WINDSCREEN 0.1301.00*
16. *SIDEWINDOW R/L 0.1301.01*
17. *TOPWINDOW 0.1303*
18. *PITOT HEAD/TUBES*

FUEL SYSTEM

1. *TANK R/L (17.100) 3.6120.00*
2. *FAIRING (18.100) 0.7627.01*
3. *GASCULATOR (SKYCRAFT,ETC)*
4. *J/TUBE (17.010) 3.6100.01*
5. *F/COCK X 2 (17.100)*
6. *T/PIECE X 2 (17.020)*
7. *DRAIN VALVE (17.020)*

ENGINE AND ANCILLARIES

1. E/MOUNT (10.010+) 0.6401.01
2. E/MOUNT (10.010+) 0.6402.00
3. BRACKET (10.020+) 0.6402
4. ROD (10.020) 0.6403
5. LUG (10.020) 0.6401
6. BEARINGS (10.020) 0.6404

CONTROLS (THROTTLE/CHOKE)

1. BRACKET L (16.010) 3.6018
2. BRACKET R (16.010) 3.6019
3. T/LEVER L (16.010+) 3.6025
4. T/LEVER R (16.010+) 3.6026
5. C/TUBE (16.010) 3.6021
6. F/CLAMP (16.010) 3.6029
7. SPACER (16.010) 3.6016
8. C/STOP (16.020) 3.6017
9. SHACKLE (16.020) 3.6023
10. HANDLE (16.020) 1.6028
11. I/CABLE (16.020+) 2.6040
12. O/CABLE (16.020+) 2.6041
13. C/LEVER (16.030) 1.6051
14. C/CABLE (16.030+) 1.6055
15. BRACKET (16.040) K20.2.42.02
16. J/BLOCK (16.040) K20.0.42.03
17. COVER (16.040) K20.2.42.05
18. CABLE X 2 (16.040) 1.6056
19. B/CABLE X 2 (16.050) 3.6040.00

CONTROLS (PEDALS)

1. PEDALS (11.050) 4.5210.01C6
2. PEDALS (11.050) 4.5210.02C6
3. BRACKET R (11.050) 3.5270.01
4. BRACKET L (11.050) 3.5270.02
5. CABLE R (11.050+) 5.5230.01C6
6. CABLE L (11.050+) 5.5230.02C6
7. ROD (11.050) 0.5240.01
8. ROD (11.050) 0.5240.02

CONTROLS (STICK)

1. S/HINGE (13.040+) I.5124.02
2. S/HINGE (13.040+) 1.5167.00
3. C/SHAFT (13.040+) 0.5123
4. BRACKET (13.030) 1.5502
5. ANGLE (13.030) 1.5124.04
6. SHAPE (13.030) 1.5124.05
7. HINGE (13.030) 1.5124.01
8. PLATE (13.030) 1.5124.03
9. BRACKET (13.010) 1.5168
10. BRACKET (12.020+) 2.5181
11. STOP (13.020) 1.5168
12. PAD (13.020) 1.5169
13. C/STICK (1.260+) 0.5122.00
14. BELLCRANK (12.030+) 1.5182
15. SLEEVE (12.030) 0.5186
16. ROD (12.040) 2.5132.00
17. ROD (12.040) 1.5183.00
18. COVER (1.330) 1.0196
19. FRAME 4 (15.010) 0.0940
20. C/GUIDE X 2 (15.010) 1.5500.04
21. PAD X 2 (11.020) 5.5293.00
22. CABLE R/L (11.020) 5.5230.01CB
23. BRACKET L (11.030) 5.5251.00
24. BRACKET R (11.030) 5.5252.00
25. CABLE R/L (11.030+) 5.5230.02
26. GUARD (11.030) 5.5253.00
27. SHACKLE (11.010) 0.5269.00
28. BELLCRANK (12.010) 1.5185
29. ROD (12.050) 1.5183.00
30. ROD (12.050) 1.5186.00

DOORS/FITTINGS

1. DOOR R/L (1.530) 0.1350.00
2. HINGE X 4 (1.500) 0.1380.00
3. HANDLE R/L (1.510) 0.1375.00
4. SPRING R/L (1.510) 0.1379.00
5. HANDLE R/L (1.510) 0.1376.00
6. PIN X 4 (1.600) 0.1350
7. G/STRUT (1.610) 0.1350.00
8. VENT (1.520) 1.1385.00
9. "K" D/EXCLUDER STRIP

CONTROLS (FLAP MECHANISM)

1. BRACKET R/L (14.010) 1.5405
2. BRACKETS (14.010+) 1.5400.01
3. C/STOP (14.010+) 1.5400.03
4. PAD R/L (14.010) 1.5400
5. ROCKER (14.020) 1.5403
6. LEVER (14.020+) 1.5402
7. BRACKETS (14.020) 1.5400.02
8. C/PLATE (14.020) 1.5404
9. BEARING (14.020) 1.5400.06
10. BEARING (14.020) 1.5400.07
11. HANDLE (14.030) 1.5401
12. SPRING (14.030) 1.5400.05
13. CABLE (14.030) 1.5407
14. C/STOP (14.030) 1.5404.03
15. C/SHAFT (13.050+) 1.5410
16. C/RING (13.050+) 1.5410.01
17. C/SHAFT (13.060+) 0.5123.00

18. ROD (13.060) 1.5408.00
19. TRIMCABLE (7.500) 1.5503.00

LUGGAGE AND SEATS
1. L/BAG (1.320) 1.8101
2. F/E TUBE (1.320) 0.8102
3. U/TUBE (1.320) 0.8103
4. L/TUBE (1.320) 0.8104
5. GUSSET (1.320) 0.8105
6. GUSSET (1.320) 0.8106
7. BELT (1.340) 0.7550.02
8. BELT (1.340) 0.7550.03
9. BELT (1.340) 0.7550.01
10. LUG (1.340+) 0.7550.10
11. SPACER (1.340) 0.7550.12
12. SEAT X 2 (1.350) 1.7560
13. SQUAB X 2 (1.350) 1.7561

CONTROLS (BRAKES, MATCO)
1. M/CYLINDER (19.010+)
2. C/TUBE (19.010+)
3. B/LEVER 19.010+)
4. T/PIECE X 2 (19.010)
5. S/CYLINDER (19.010)

ELECTRICAL
1. FUEL PROBE X 2 (18.100)
2. P/WIRE (18.100+) 0.7609.01.00
3. WIRE (18.040+) 0.7605
4. WIRE (18.050) 0.7612
5. F/GAUGES X 2

FOR REMAINING ELECTRICAL PARTS
SEE ROTAX AND OTHER COMPONENT SUPPLIER'S OWN PARTS LISTS, WHICH ARE PROVIDED WITH YOUR KIT.

NUTS/BOLTS/FASTENERS/ETC
SUFFICIENT QUANTITY OF THE VARIOUS SIZES AND TYPES ARE PROVIDED TO COMPLETE YOUR KIT. ALL THREADS ARE METRIC. SEE THE ASSEMBLY DRAWINGS FOR EXACT DETAILS.

ORDER REPLACEMENTS FROM SILVERWING AVIATION OR SPECIALIST FIRMS SUCH AS AIRCRAFT SPRUCE.

COVERING AND PAINT
A FOXBAT-SPECIFIC KIT OF "POLYFIBER" MATERIALS CAN BE SUPPLIED BY SILVERWING AVIATION. CONTACT US DIRECTLY FOR INFORMATION. THE 2-PACK STRUCTURAL ADHESIVE FOR FABRIC-TO-DURAL ATTACHMENT IS AVAILABLE IN ONE-JOB QUANTITIES FROM SILVERWING AVIATION.

TYRES AND TUBES
AIRCRAFT QUALITY 6" WITH CHOICE OF PROFILES. ORDER REPLACEMENTS FROM SILVERWING AVIATION OR SPECIALIST FIRMS ADVERTISING IN THE AVIATION PRESS.

PAGE ONE

DRAWING NUMBER 1.010

Installing the Central Console Beams

SEE DRAWING FOR PARTS REQUIRED

Recommended job for two persons with fuselage monocoque supported as required

1. Locate and inspect the left and right central console beams as illustrated in the drawing.

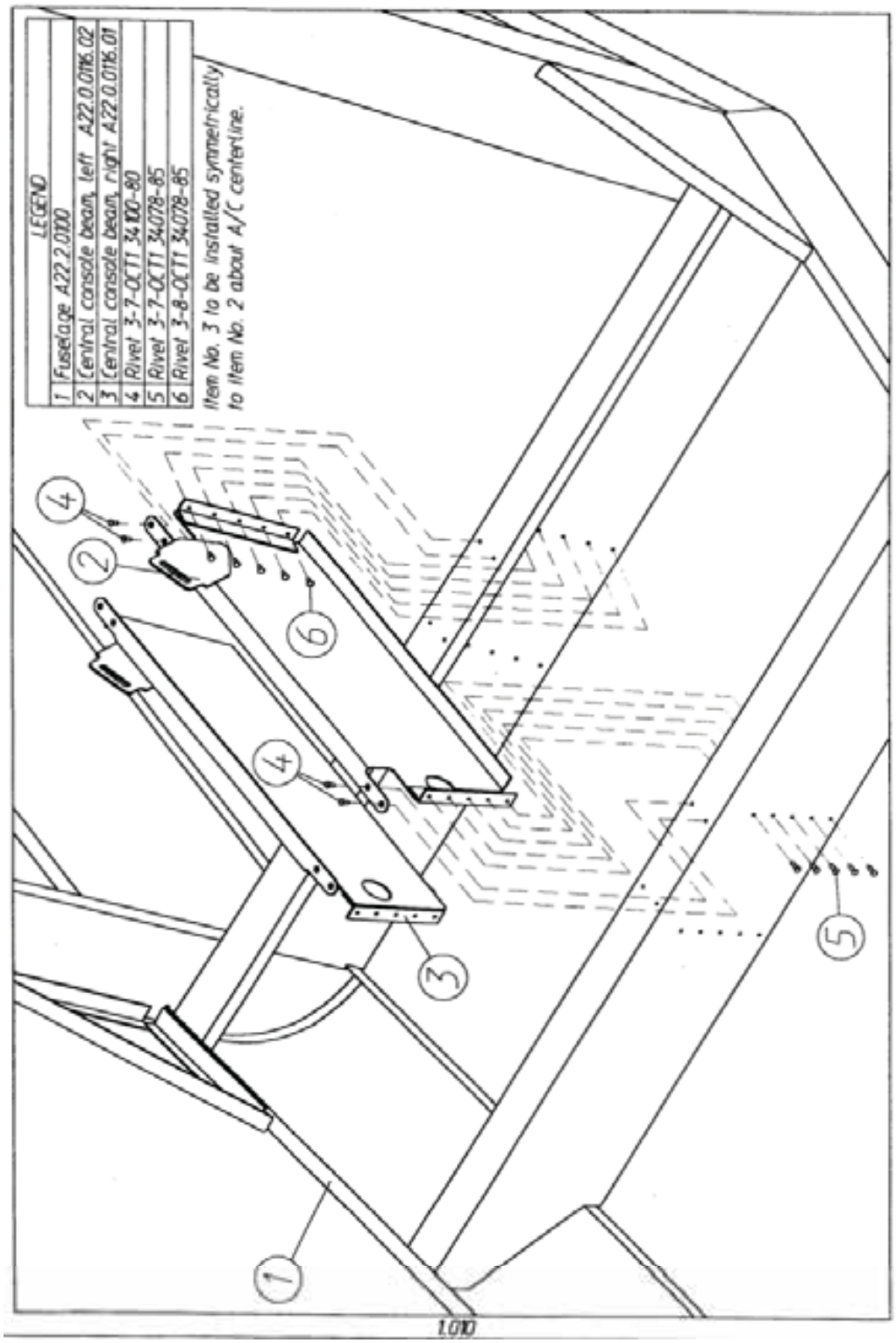
2. Offer up both parts ensuring that their orientation is exactly as shown in the drawing. Clico in place then check the fit and alignment.

3. Re-check steps 1 and 2.

4. Working from side to side alternately replace the clicos with rivets.

5. Thoroughly examine the finished work and compare it with the drawing.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Central console beam, left A22.0.0116.02
3 Central console beam, right A22.0.0116.01
4 Rivet 3-7-DCTT 34100-80
5 Rivet 3-7-DCTT 34078-85
6 Rivet 3-8-DCTT 34078-85
Item No. 3 to be installed symmetrically to item No. 2 about A/C centerline.
1.00

PAGE TWO

DRAWING NUMBER 1.020

Installing the Landing Gear Support Beams

SEE DRAWING FOR PARTS REQUIRED

Recommended job for two persons with the fuselage monocoque supported as required.

1. Locate and inspect the left and right landing gear (LG) beams illustrated in the drawing.

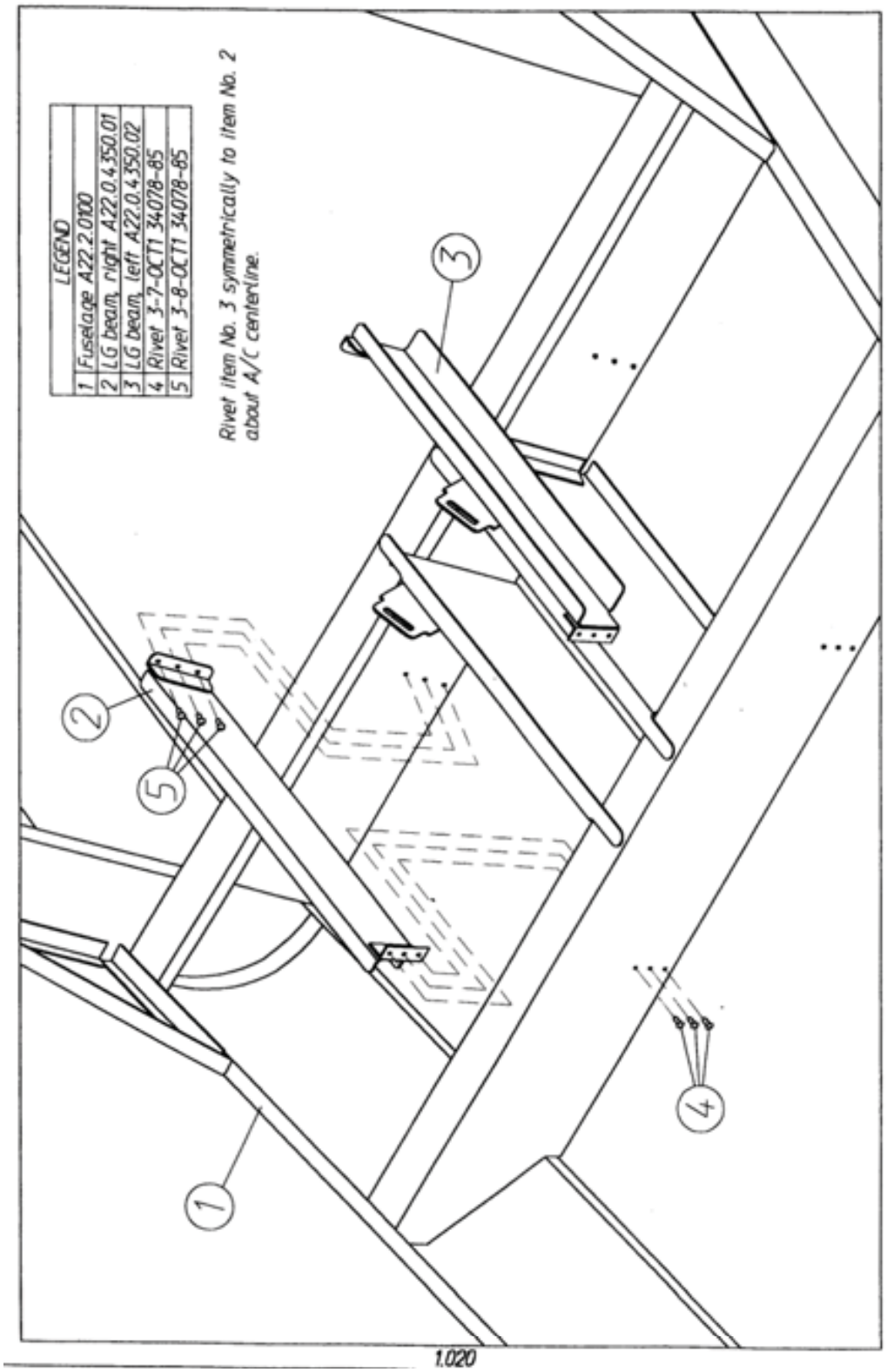
2. Offer up both parts to the fuselage ensuring that their orientation is exactly as shown in the drawing. Clico in place.

3. Re-check steps 1 and 2.

4. Working from side to side alternately replace the clicos with rivets.

5. Thoroughly examine the finished work and compare it with the drawing.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 LG beam, right A22.0.4.350.01
3 LG beam, left A22.0.4.350.02
4 Rivet 3-7-OCTI 34078-85
5 Rivet 3-8-OCTI 34078-85
Rivet item No. 3 symmetrically to item No. 2 about A/C centerline.
1.020

PAGE THREE

DRAWING NUMBER 1.030

Installing the Door Gussets

SEE DRAWING FOR PARTS REQUIRED

Recommended job for two persons with fuselage monocoque supported as required

1. Locate and inspect the angle pieces and gussets as illustrated in the drawing (left and right sets).

2. Offer up the three parts to the fuselage left side ensuring that their orientation is exactly as shown in the drawing. Clico in place then check the fit and alignment.

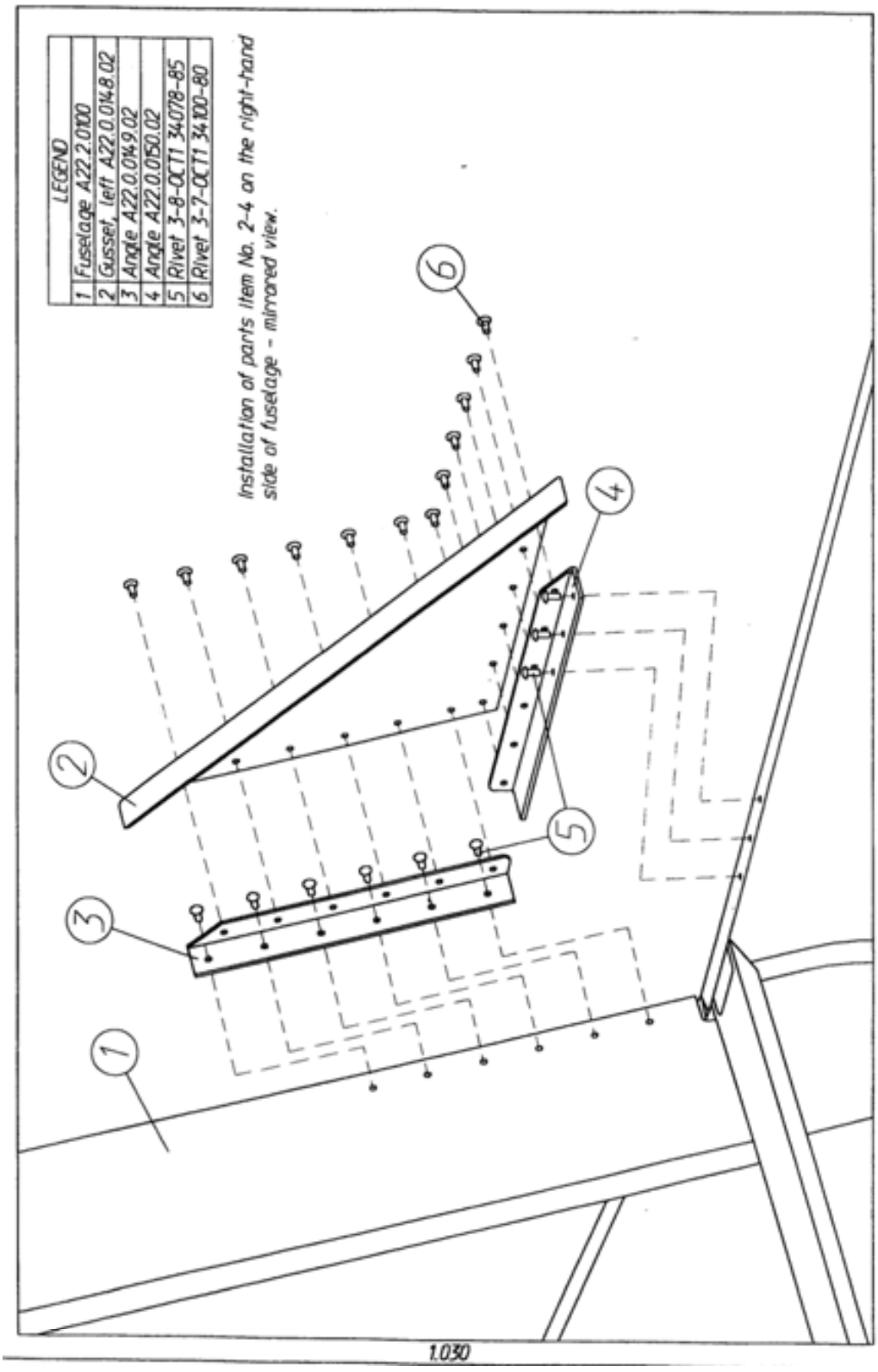
3. Re-check steps 1 and 2.

4. Working from end to end alternately replace the clicos with rivets.

5. Thoroughly examine the finished work.

6. Repeat on right-hand side.

Notes:


LEGEND
1. Fuselage A22.2.0100
2. Gusset, left A22.0.0148.02
3. Angle A22.0.0149.02
4. Angle A22.0.0150.02
5. Rivet 3-8-OCT1 34078-85
6. Rivet 3-7-OCT1 34100-80
Installation of parts item No. 2-4 on the right-hand side of fuselage - mirrored view.
1.030

PAGE FOUR

DRAWING NUMBER 1.040

Installing the Door Hinges

SEE DRAWING FOR PARTS REQUIRED

Recommended job for one person with the fuselage monocoque supported as required

1. Locate and inspect door hinges as illustrated in the drawing. Select the correct size bolts with stiff nuts and washers.

2. Loosely assemble both hinges in turn on the left side exactly as shown on the drawing.

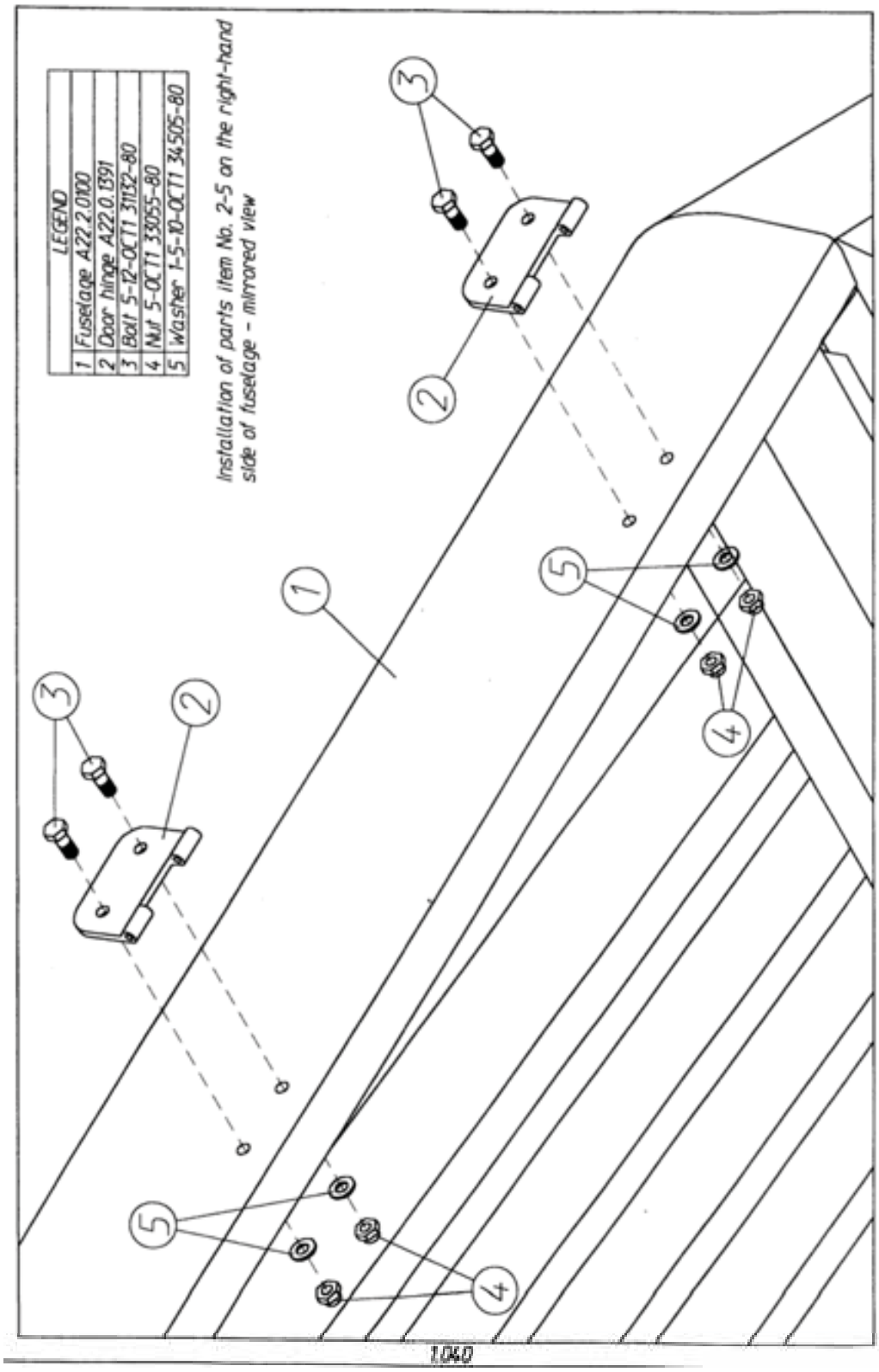
3. Re-check steps 1 and 2.

4. Tighten stiff-nuts until the hinges are snug and firm. Don't over-tighten.

5. Thoroughly examine the finished work.

6. Repeat on right-hand side.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Door hinge A22.0.1391
3 Bolt 5-12-OCT1 31132-80
4 Nut 5-OCT1 33055-80
5 Washer 1-5-10-OCT1 34505-80
Installation of parts item No. 2-5 on the right-hand side of fuselage - mirrored view
1040

PAGE FIVE

DRAWING NUMBER 1.130

Installing the Upper Central Support

SEE DRAWING FOR PARTS REQUIRED

Recommended two persons job with the fuselage monocoque supported as required

1. Locate and inspect the support bracket as illustrated in the drawing.

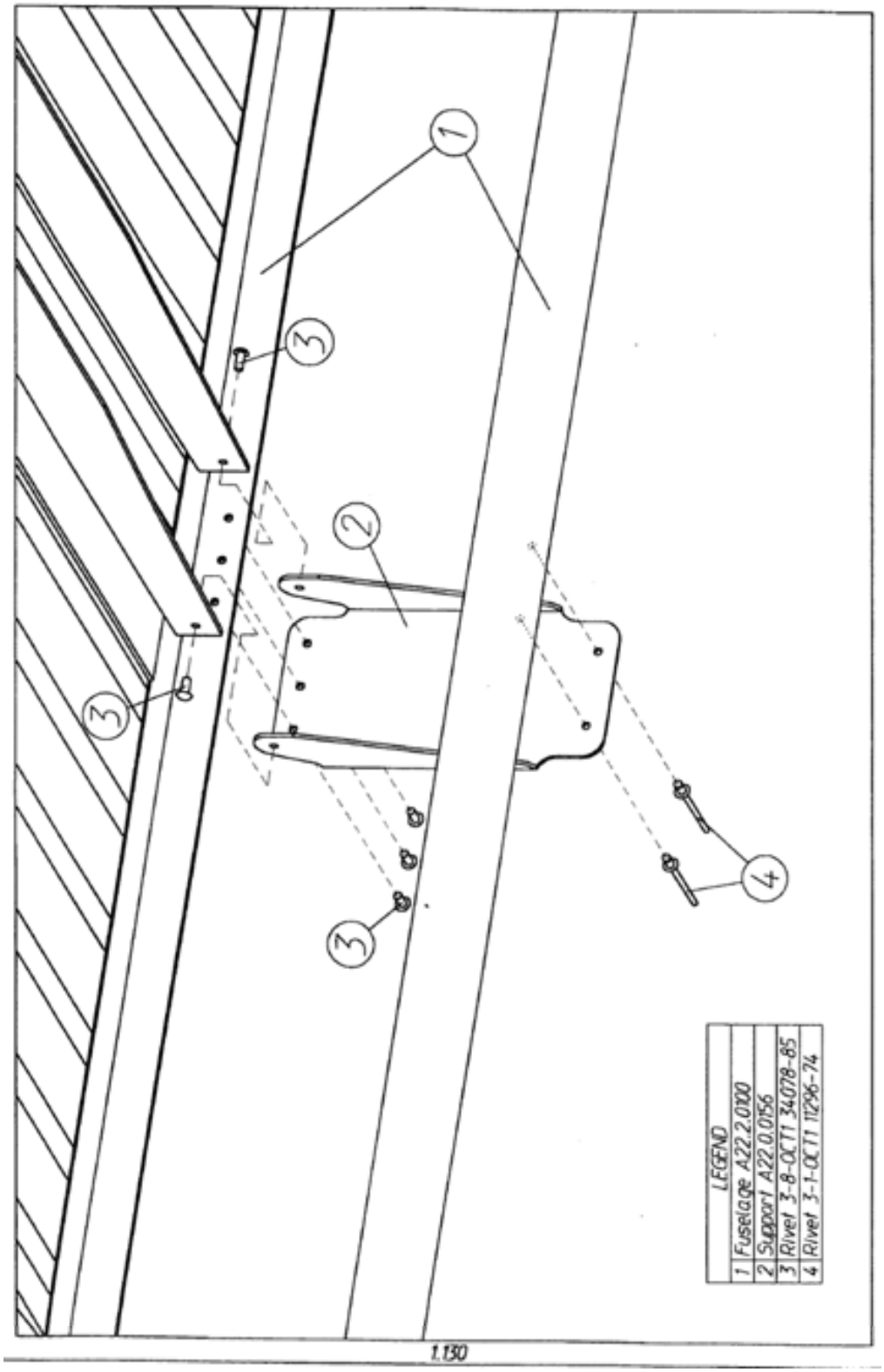
2. Offer up parts and pre-assemble with clicos exactly as shown in the drawing.

3. Re-check steps 1 and 2. When you are completely satisfied that the assembly is correct replace clicos with rivets working outwards from the top centre.

4. Very carefully centre-punch, drill and pop-rivet the bottom of the bracket to the cross-spar as shown in the drawing. Make certain to use the correct drill and rivet size. Double-check before drilling.

5. Thoroughly examine the finished work.

Notes:


1
3
2
3
3
4
LEGEND
1 Fuselage A22.2.0100
2 Support A22.0.0156
3 Rivet 3-8-DCT1 34078-85
4 Rivet 3-1-DCT1 11296-74
1.130

PAGE SIX

DRAWING NUMBER 1.140

Installing the Wing Rear Hinge Bracket

SEE DRAWING FOR PARTS REQUIRED

Recommended one person job with the fuselage monocoque supported as required

1. Locate and inspect base plate and rear hinge bracket as illustrated in the drawing. Select correct sized bolts with stiff-nuts and washers.

2. Offer up and loosely assemble parts exactly as shown in the drawing.

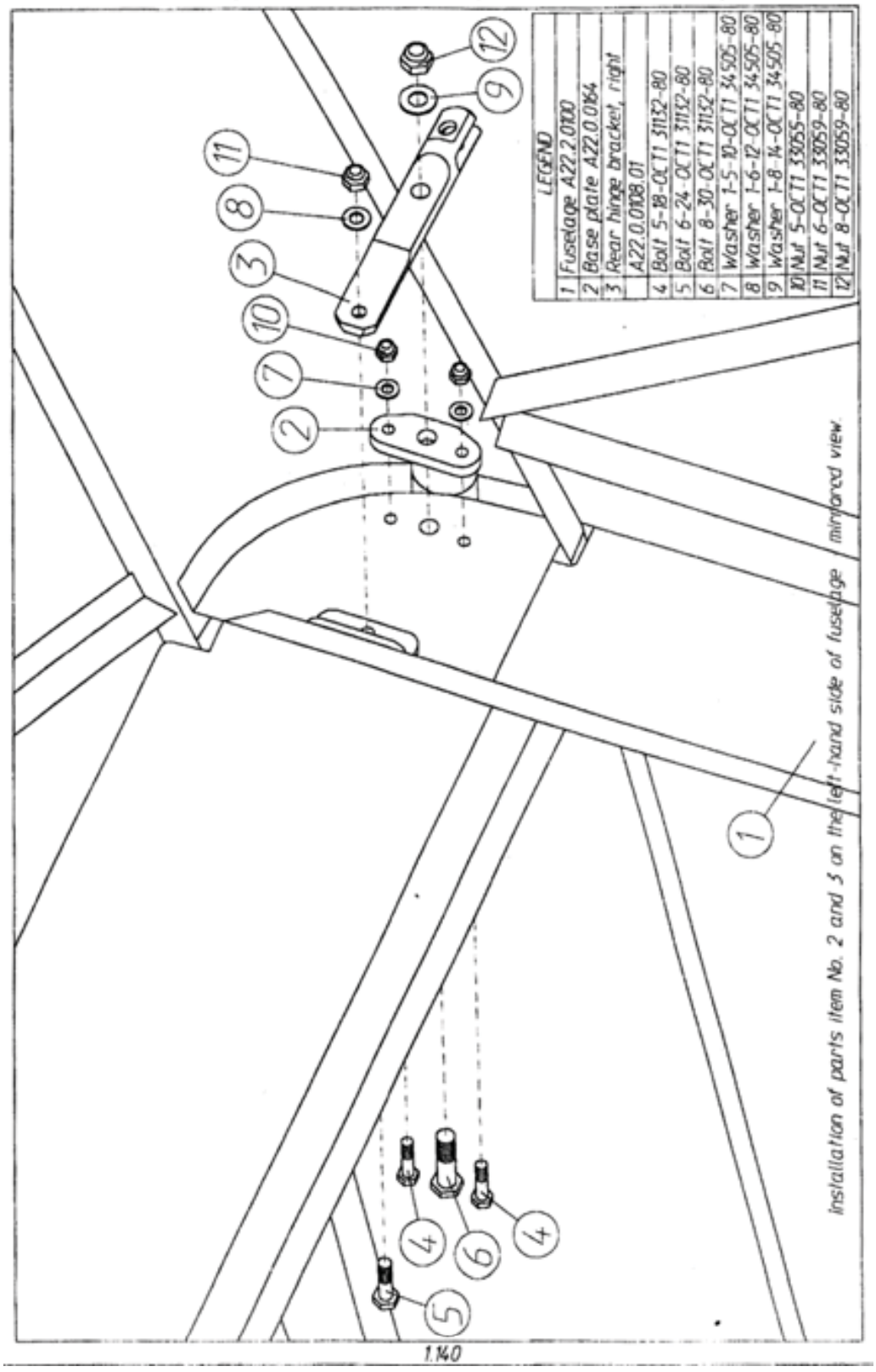
3. Re-check steps 1 and 2.

4. Tighten stiff-nuts until the assembly is snug and firm. Don't over-tighten.

5. Thoroughly examine finished work.

6. Repeat on left-hand side.

Notes:


LEGEND
1 Fuselage A22.2.0000
2 Base plate A22.0.0164
3 Rear hinge bracket, right A22.0.0108.01
4 Bolt 5-18-OCT1 31152-80
5 Bolt 6-24-OCT1 31152-80
6 Bolt 8-30-OCT1 31152-80
7 Washer 1-5-10-OCT1 34505-80
8 Washer 1-6-12-OCT1 34505-80
9 Washer 1-8-14-OCT1 34505-80
10 Nut 5-OCT1 33065-80
11 Nut 6-OCT1 33059-80
12 Nut 8-OCT1 33059-80
installation of parts item No. 2 and 3 on the left-hand side of fuselage mirrored view
1.140

PAGE SEVEN

DRAWING NUMBER 1.150

Installing the LG Spring Upper Brackets and Braces

SEE DRAWING FOR PARTS REQUIRED

Recommended one person job with fuselage supported as required

1. Locate and inspect LG spring bracket and brace as illustrated on the drawing. Select the correct size bolts with stiff-nuts and washers.

2. Offer up and loosely assemble parts exactly as shown on the drawing.

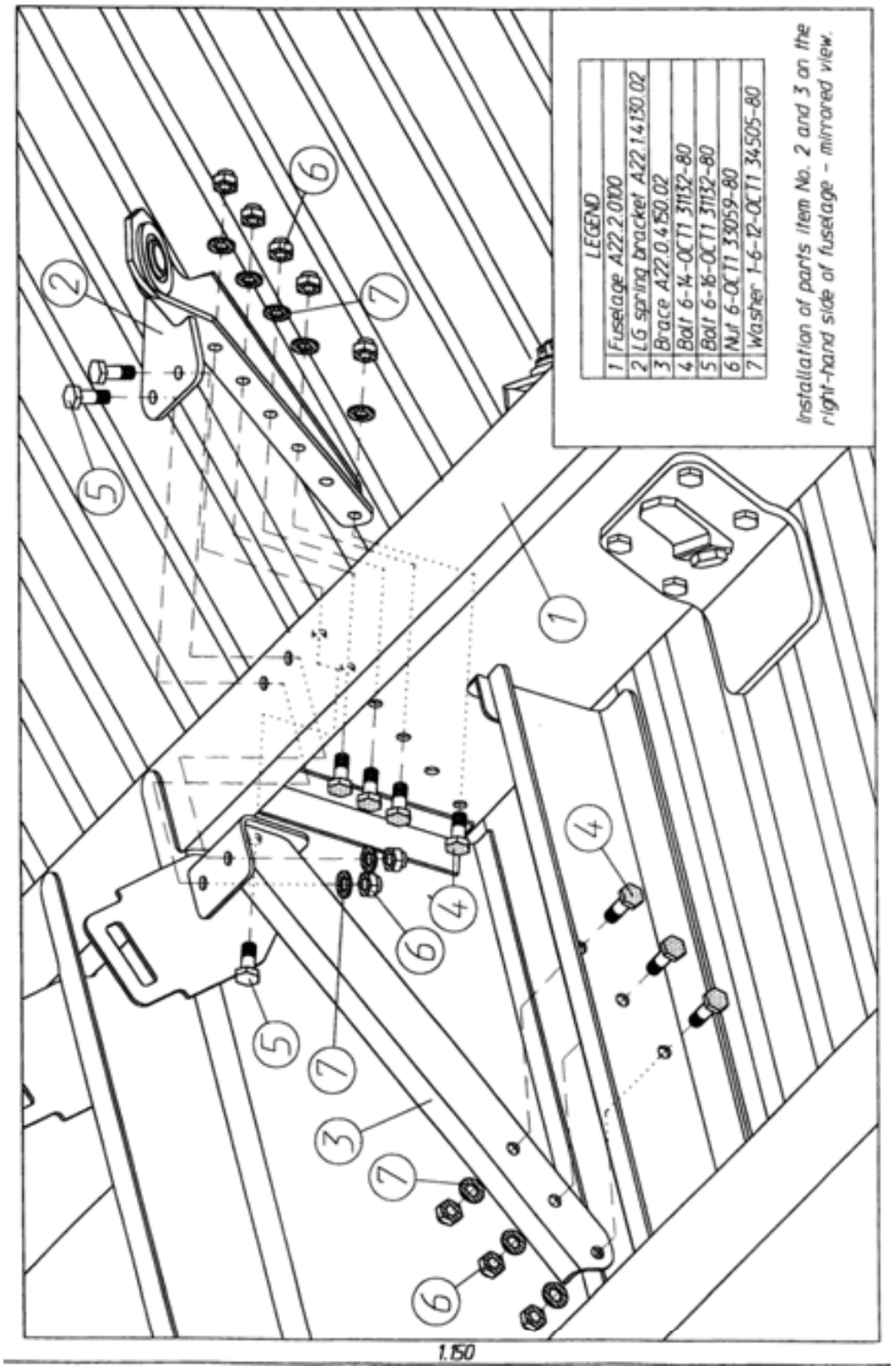
3. Re-check steps 1 and 2.

4. Tighten stiff-nuts until the assembly is snug and firm. Don't over-tighten.

5. Thoroughly inspect finished work.

6. Repeat on right-hand side.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 LG spring bracket A22.1.4130.02
3 Brace A22.0.4150.02
4 Bolt 6-14-OCT1 31132-80
5 Bolt 6-16-OCT1 31132-80
6 Nut 6-OCT1 33059-80
7 Washer 1-6-12-OCT1 34505-80
Installation of parts item No. 2 and 3 on the right-hand side of fuselage - mirrored view.
1.150

PAGE EIGHT

DRAWING NUMBER 1.160

Installing the LG Spring Lower Brackets and Fittings

SEE DRAWING FOR PARTS REQUIRED

Recommended one person job with the fuselage monocoque supported as required

1. Locate and inspect the LG spring bracket and fitting as illustrated on the Drawing. Select correct size bolts with stiff nuts and washers.

2. Offer up and loosely assemble the parts exactly as shown on the drawing. *Note that the rivets (item 8 in drawing) will not be fitted until after the floor pan is fitted. The lower face of the fitting (item 3) should align flush with the lower edge of the fuselage (item 1). Study this drawing very carefully and remember that although the floor pan is illustrated on the drawing it is not yet in place on the actual work.*

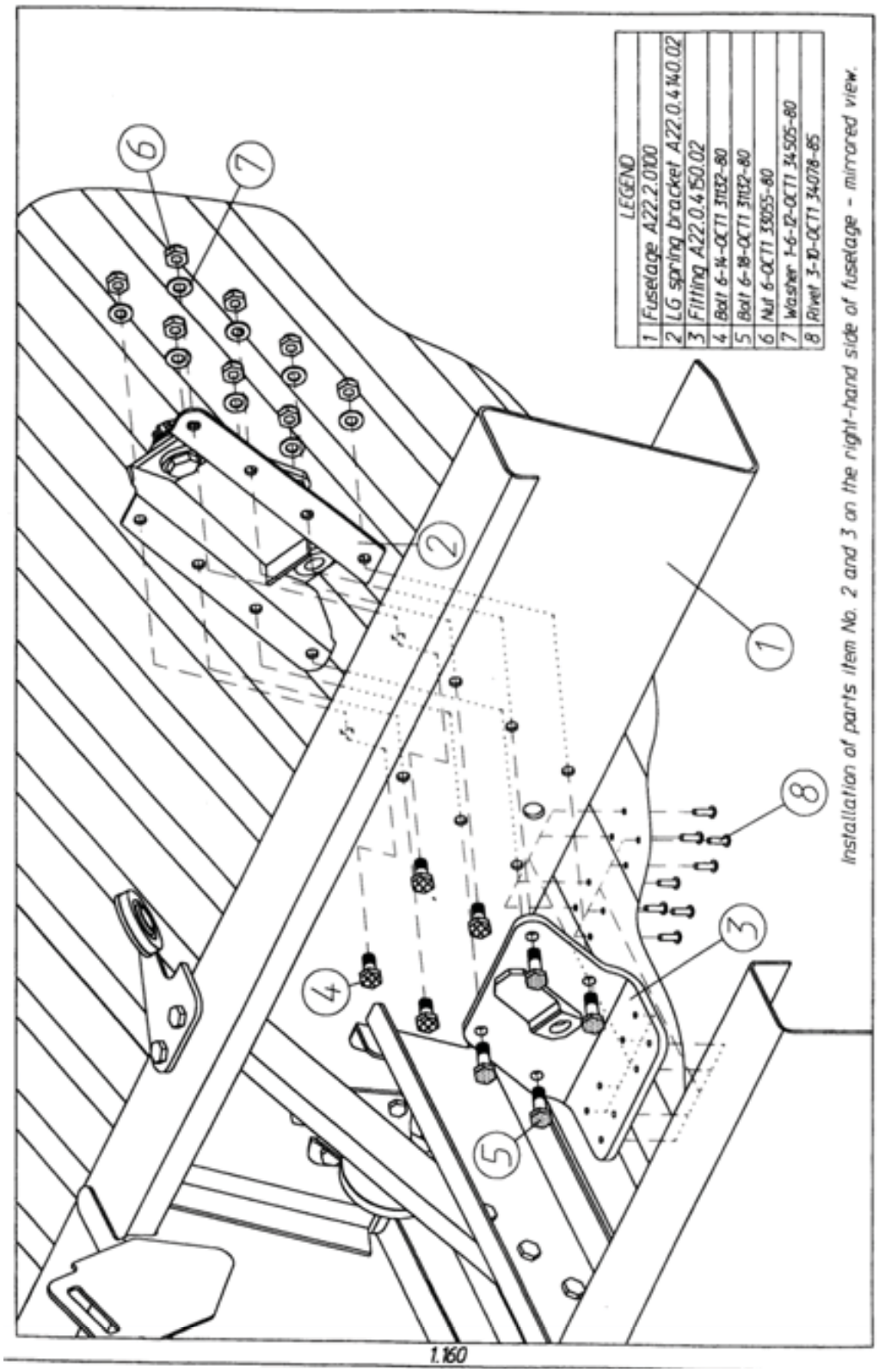
3. Re-check steps 1 and 2.

4. Tighten the stiff-nuts until the assembly is snug and firm. Don't over-tighten.

5. Thoroughly examine the finished work.

6. Repeat on right-hand side.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 LG spring bracket A22.0.4140.02
3 Fitting A22.0.4150.02
4 Bolt 6-14-OCT1 3112-80
5 Bolt 6-18-OCT1 3112-80
6 Nut 6-OCT1 33055-80
7 Washer 1-6-12-OCT1 34505-80
8 Rivet 3-10-OCT1 34078-85
Installation of parts item No. 2 and 3 on the right-hand side of fuselage - mirrored view.
1.160

PAGE NINE

DRAWING NUMBERS 1.050/060/070/080/18.010

Installing the Fuselage Side Braces and Battery Tray

SEE DRAWING FOR PARTS REQUIRED

Recommended job for two persons with the fuselage monocoque supported as required

1. After carefully studying the four drawings locate and inspect the braces, fittings and battery tray.

2. Offer up parts and pre-assemble with clicos exactly as shown in the drawings.

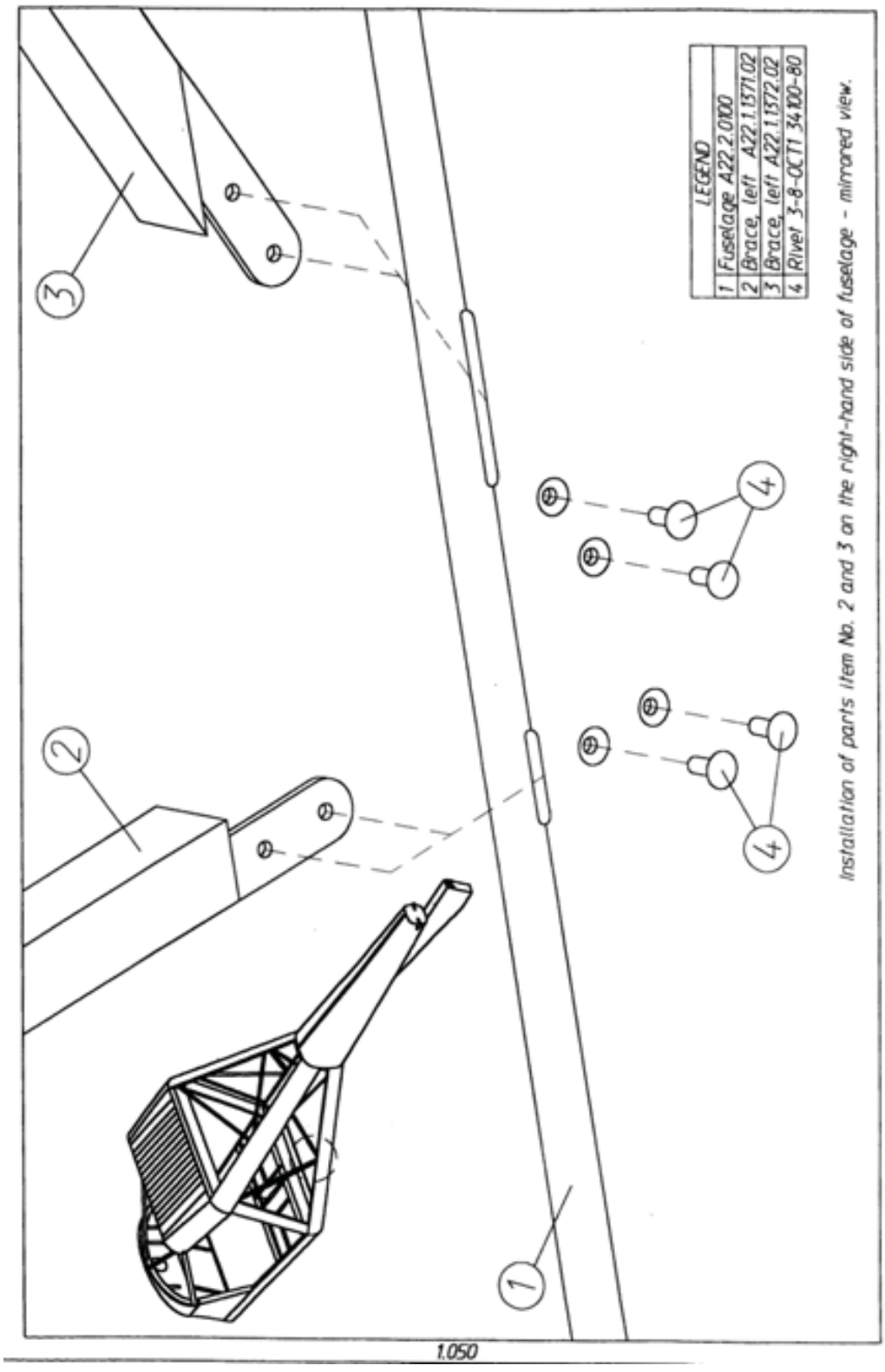
3. Re-check steps 1 and 2. Ensure good fit and alignment.

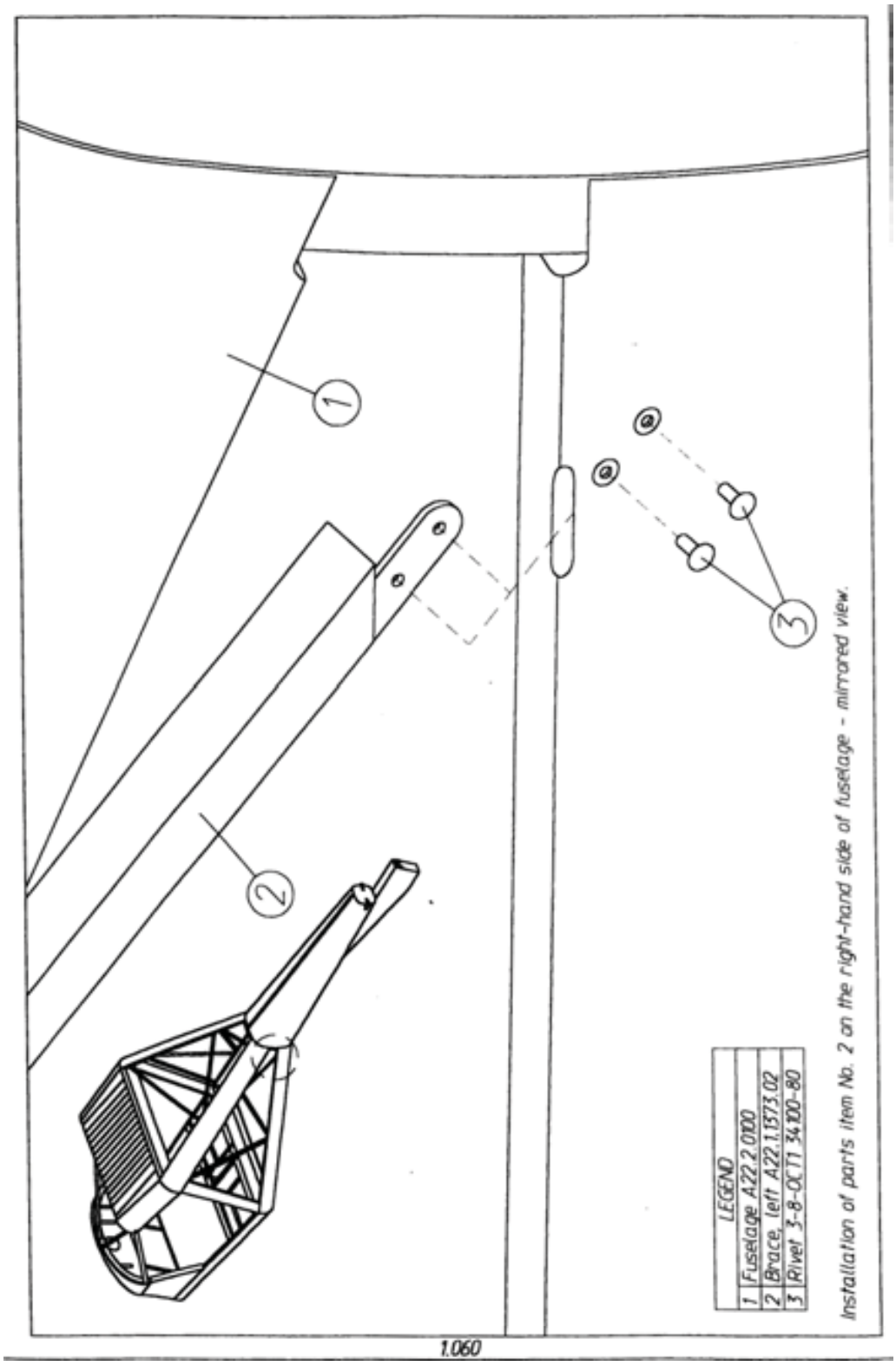
4. Replace clicos with rivets.

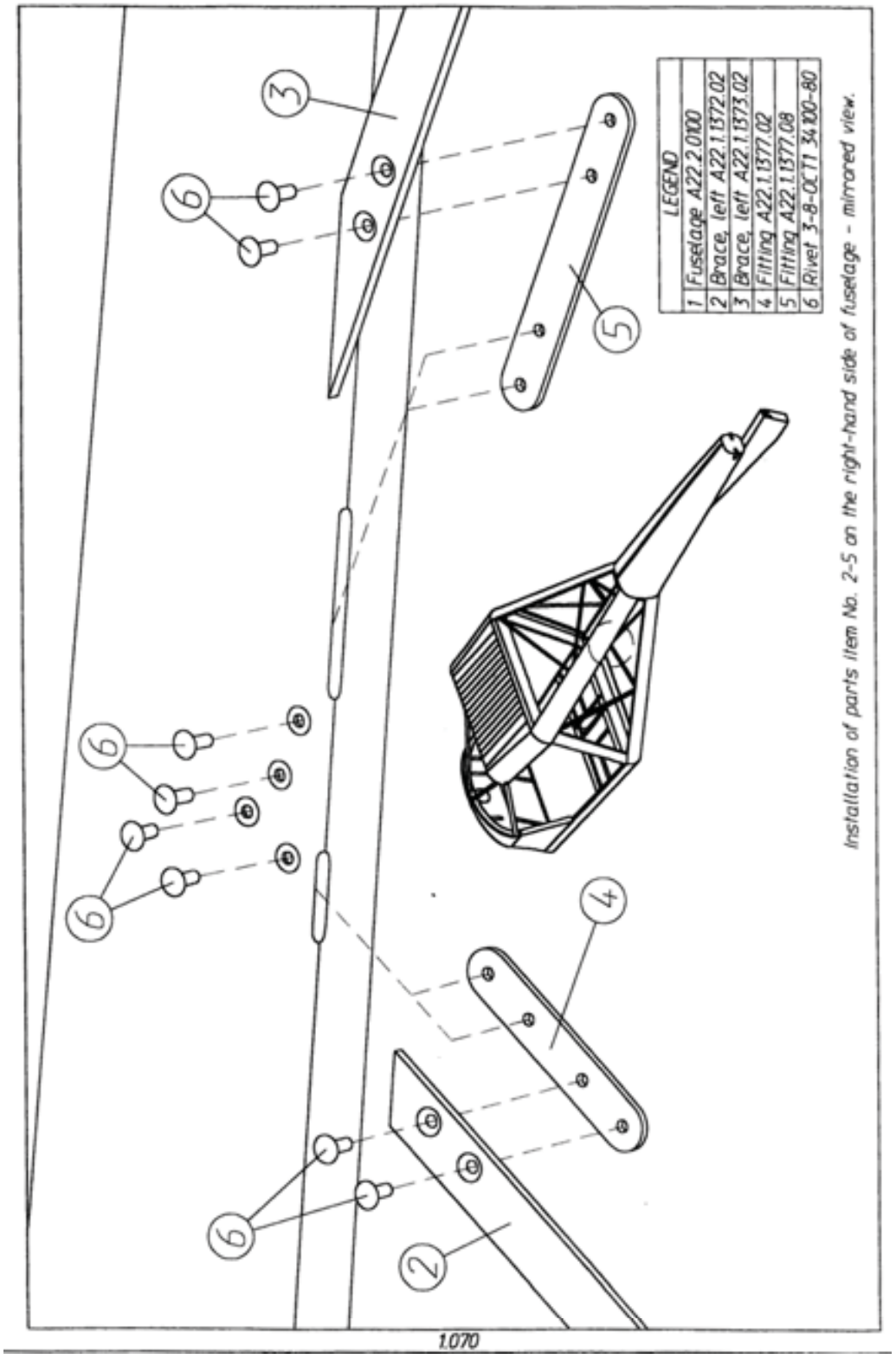
5. Thoroughly examine the finished work.

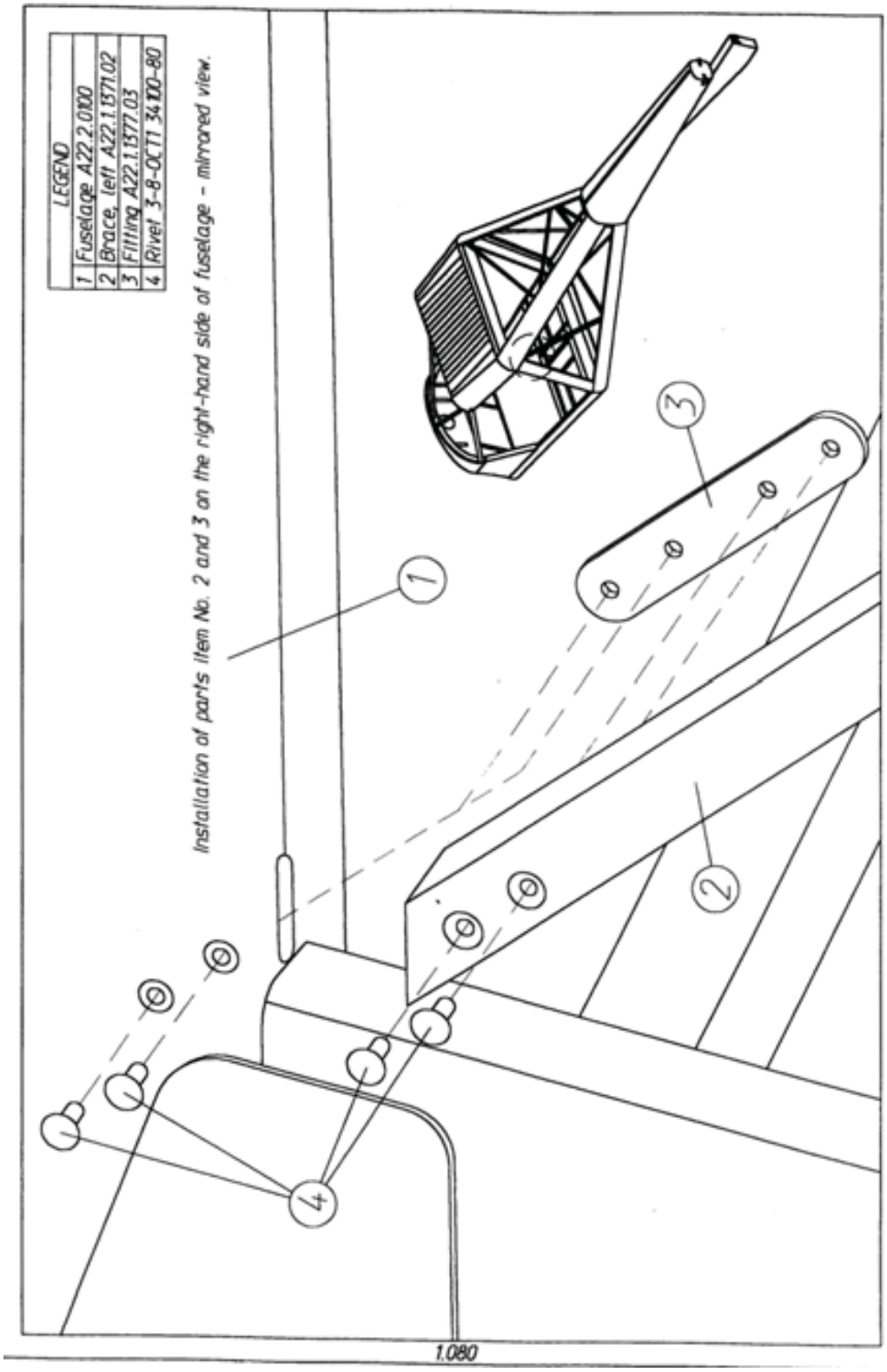
6. Repeat on right-hand side.

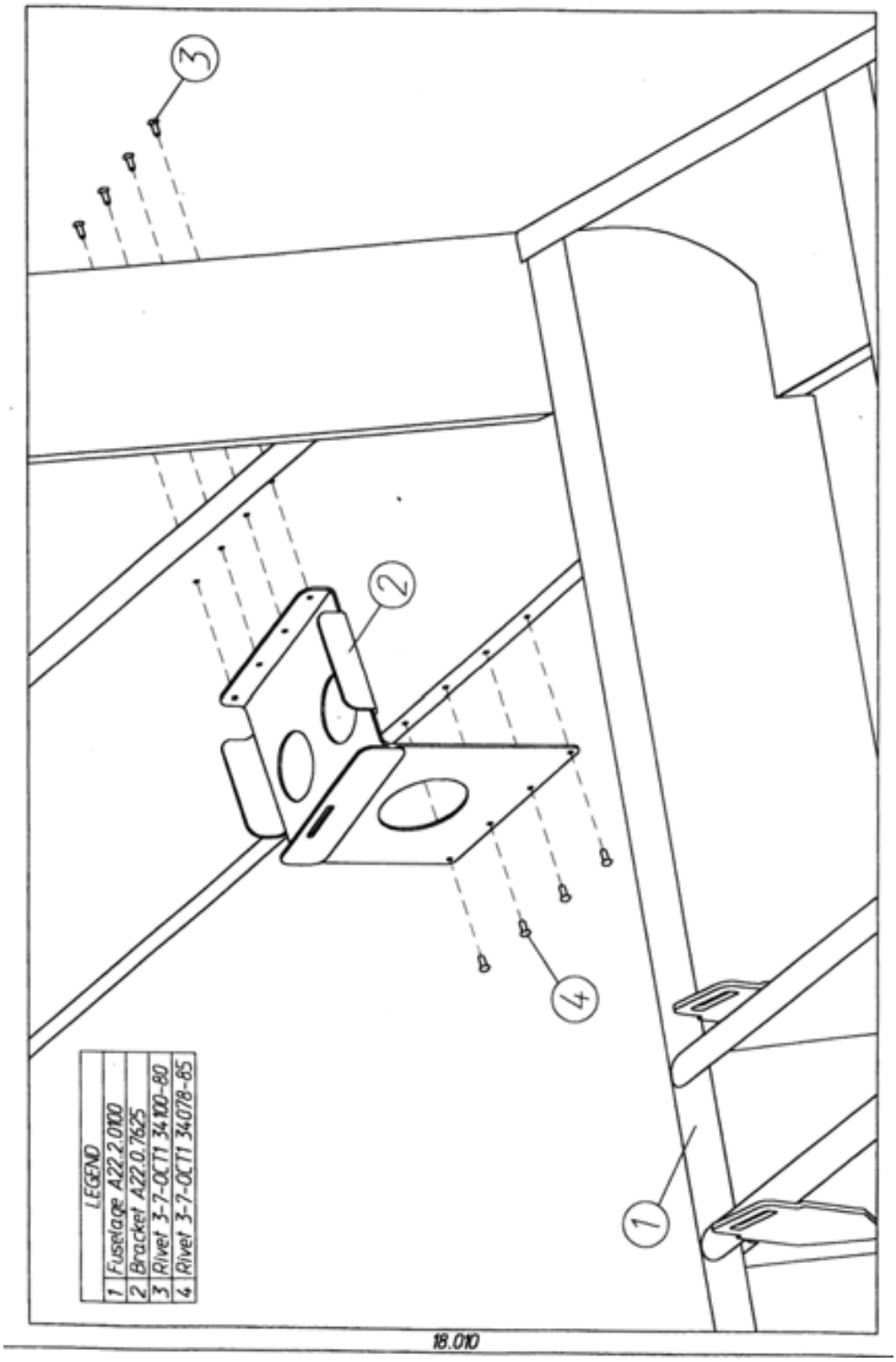
Notes:


LEGEND
1 Fuselage A22.2.0000
2 Brace, left A22.1.1571.02
3 Brace, left A22.1.1572.02
4 Rivet 3-8-DCT1 34100-80
Installation of parts item No. 2 and 3 on the right-hand side of fuselage - mirrored view.
1.050


1
2
3
LEGEND
1 Fuselage A22.2.0100
2 Brace, left A22.1.1573.02
3 Rivet 3-8-DC11.34.100-80
Installation of parts item No. 2 on the right-hand side of fuselage - mirrored view.
1.060


LEGEND
1 Fuselage A22.2.0100
2 Brace, left A22.1.1372.02
3 Brace, left A22.1.1373.02
4 Fitting A22.1.1377.02
5 Fitting A22.1.1377.08
6 Rivet 3-8-DC'T1 34100-80
Installation of parts item No. 2-5 on the right-hand side of fuselage - mirrored view.
1.070


LEGEND
1 Fuselage A22.2.0100
2 Brace, left A22.1.1371.02
3 Fitting A22.1.1377.03
4 Rivet 3-8-DCT1 34100-80
Installation of parts item No. 2 and 3 on the right-hand side of fuselage - mirrored view.
1.080


3
2
4
1
LEGEND
1 Fuselage A22.2.0100
2 Bracket A22.0.7625
3 Rivet 3-7-0CT11 34100-80
4 Rivet 3-7-0CT11 34078-85
18.010

PAGE TEN

DRAWING NUMBERS 1.090/100/110/120

Installing the Fuselage Top Braces

SEE DRAWING FOR PARTS REQUIRED

Recommended job for two persons with the fuselage monocoque supported as required

1. After carefully studying the four drawings locate and inspect braces and fittings.

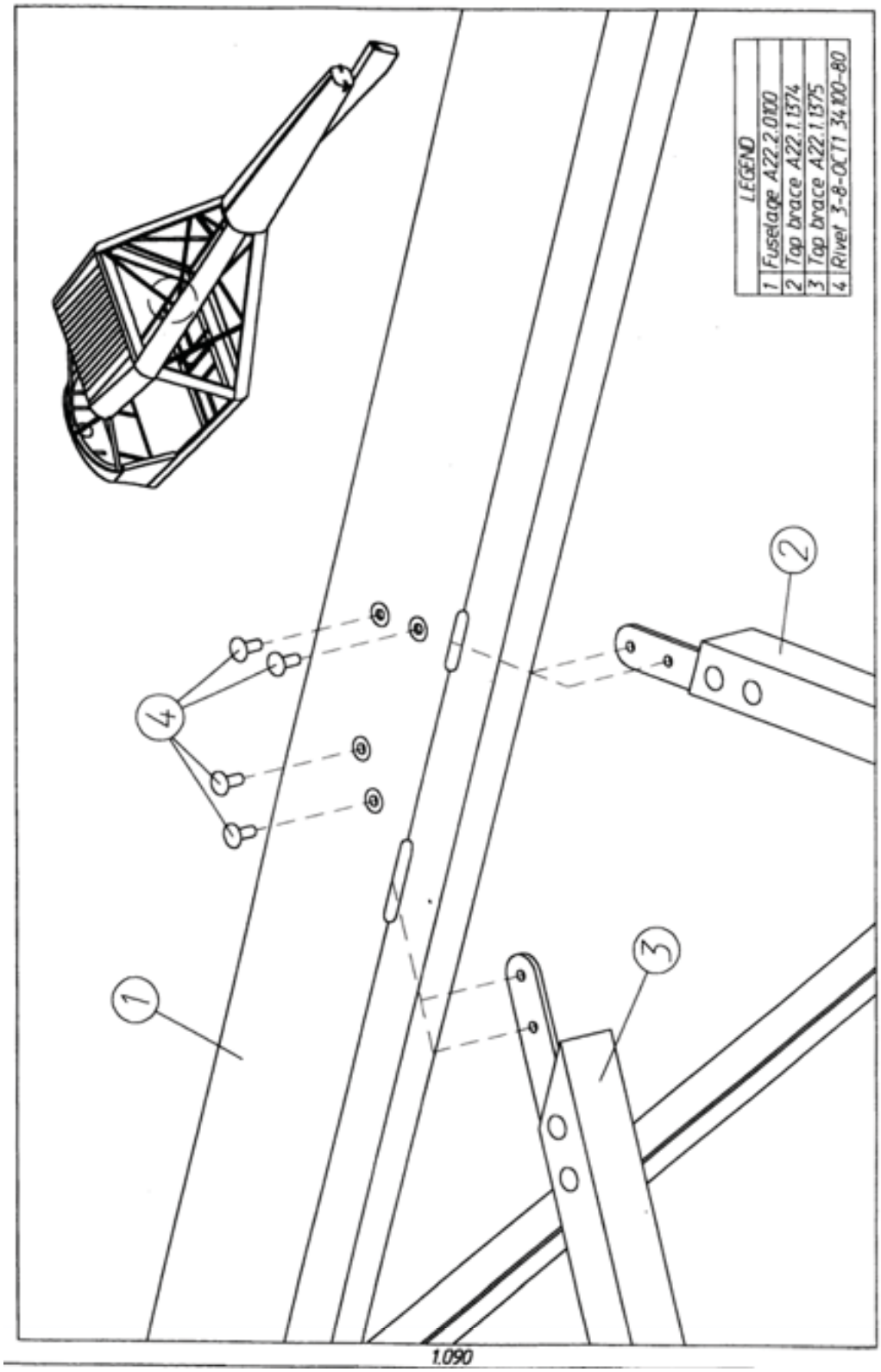
2. Offer up parts and pre-assemble with clicos exactly as shown in the drawings.

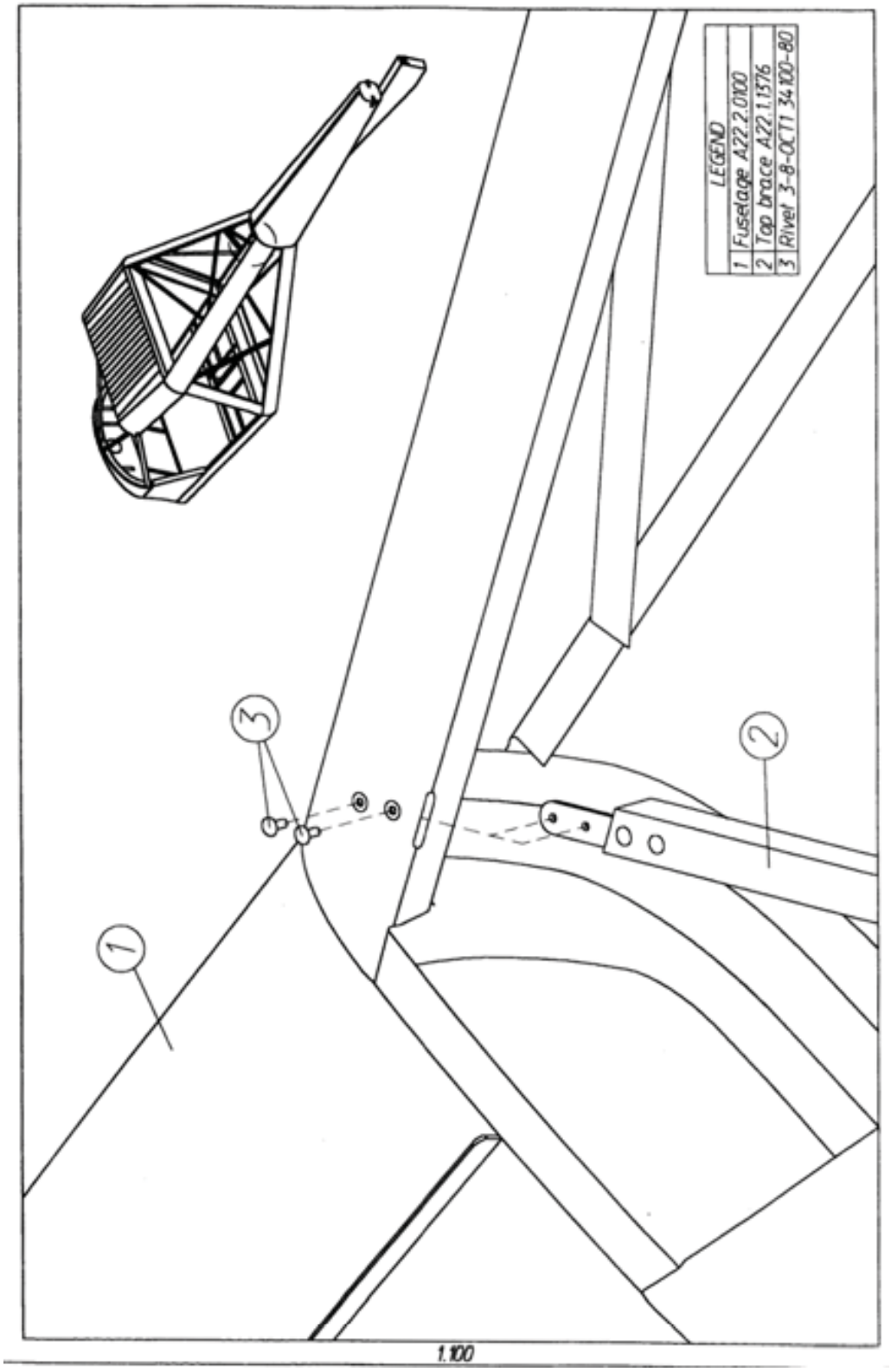
3. Re-check steps 1 and 2. Ensure good fit and alignment.

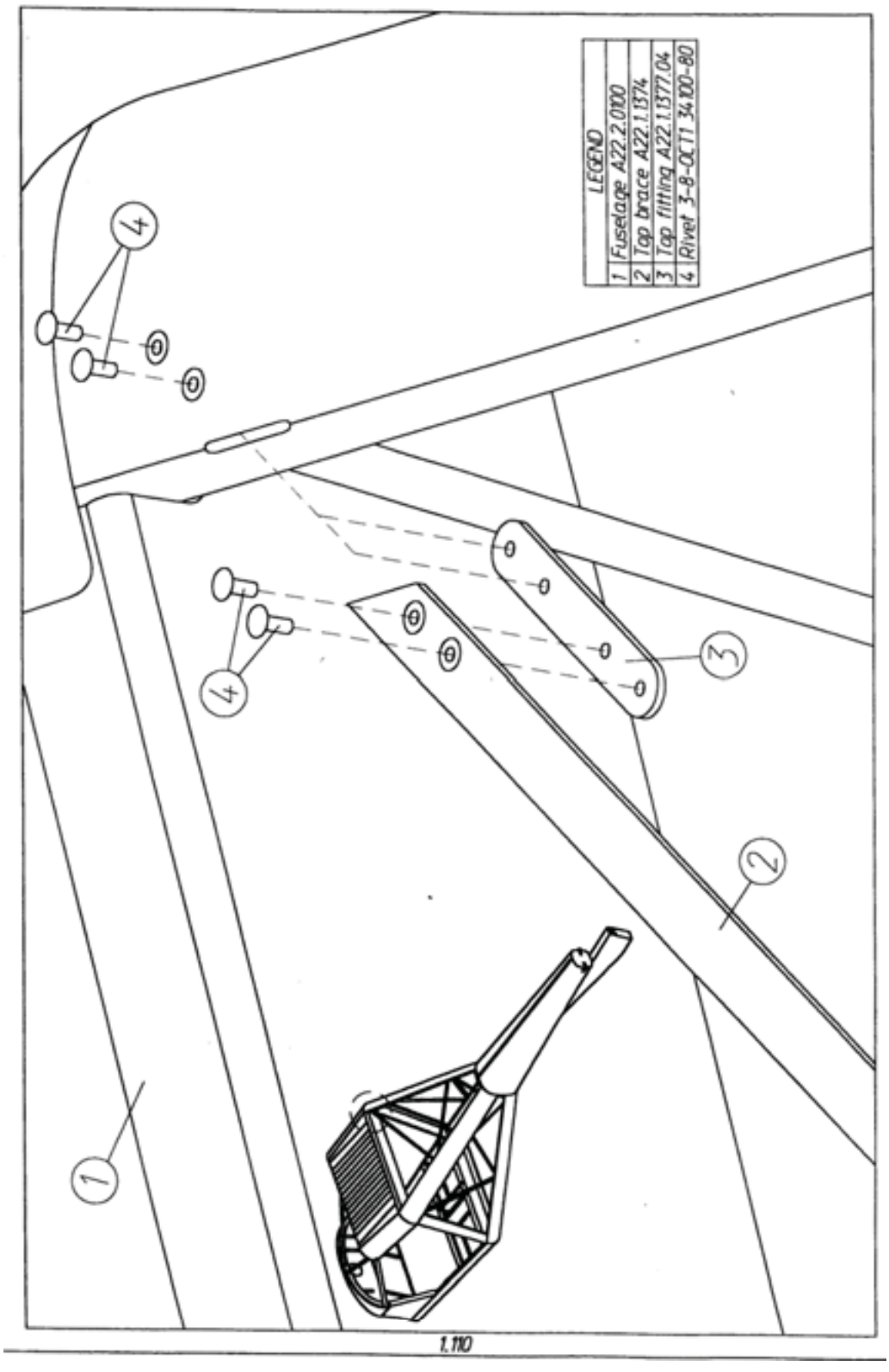
4. Working from end to end alternately replace clicos with rivets.

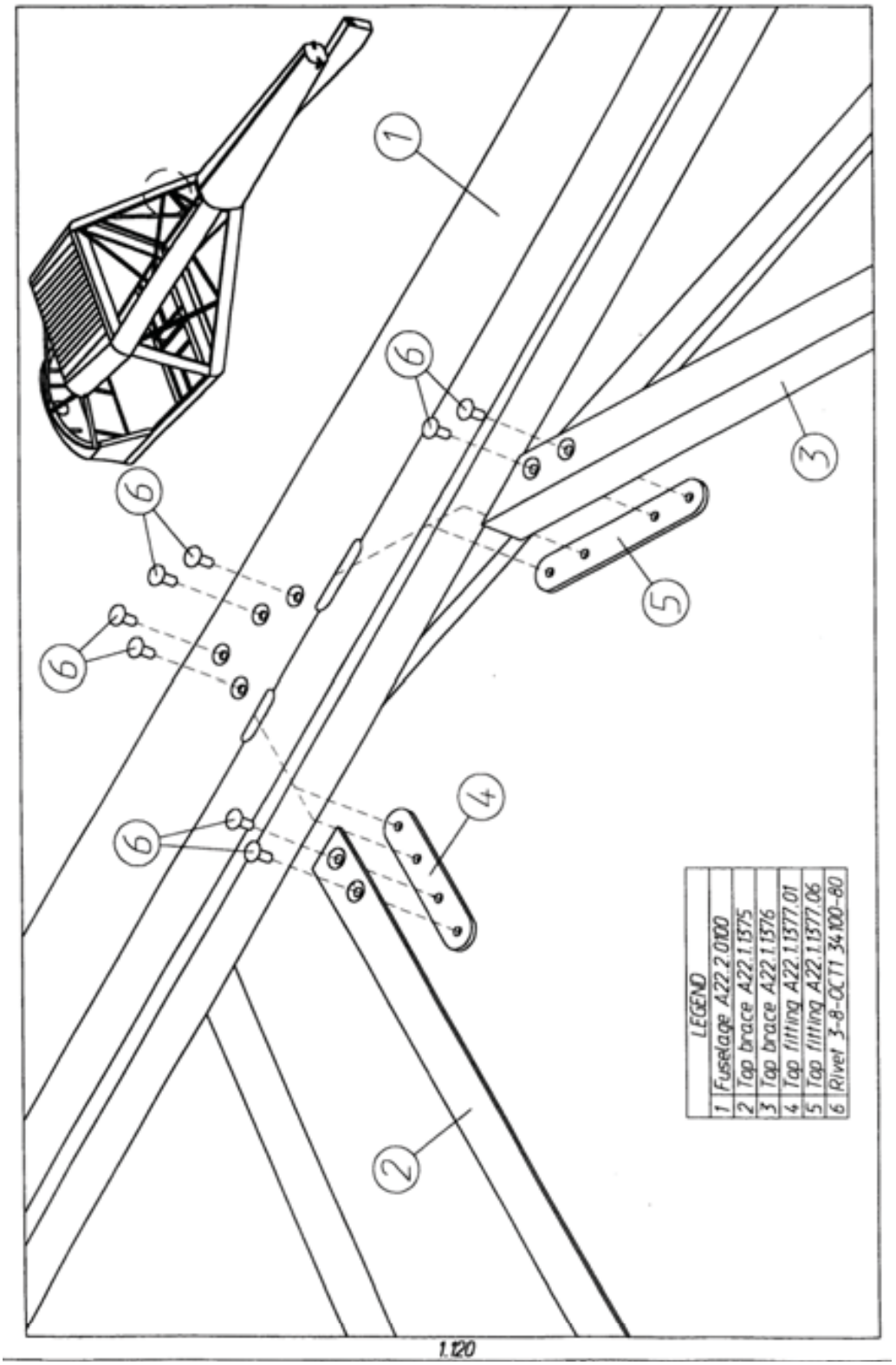
5. Thoroughly examine the finished work.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Top brace A22.1.1374
3 Top brace A22.1.1375
4 Rivet 3-8-DCT1 34100-80
1
2
3
4
1.090


LEGEND
1 Fuselage A22.2.0100
2 Top brace A22.1.1576
3 Rivet 3-8-DCT1 34100-80
1
2
3
1.100


LEGEND
1 Fuselage A22.2.0100
2 Top brace A22.1.1374
3 Top fitting A22.1.1377.04
4 Rivet 3-8-DC11 34100-80
1
2
3
4
4
1.110


LEGEND
1 Fuselage A22.2.0100
2 Top brace A22.1.1575
3 Top brace A22.1.1576
4 Top fitting A22.1.1377.01
5 Top fitting A22.1.1377.06
6 Rivet 3-8-DC11 34100-80
1:20

PAGE ELEVEN

DRAWING NUMBER 1.170

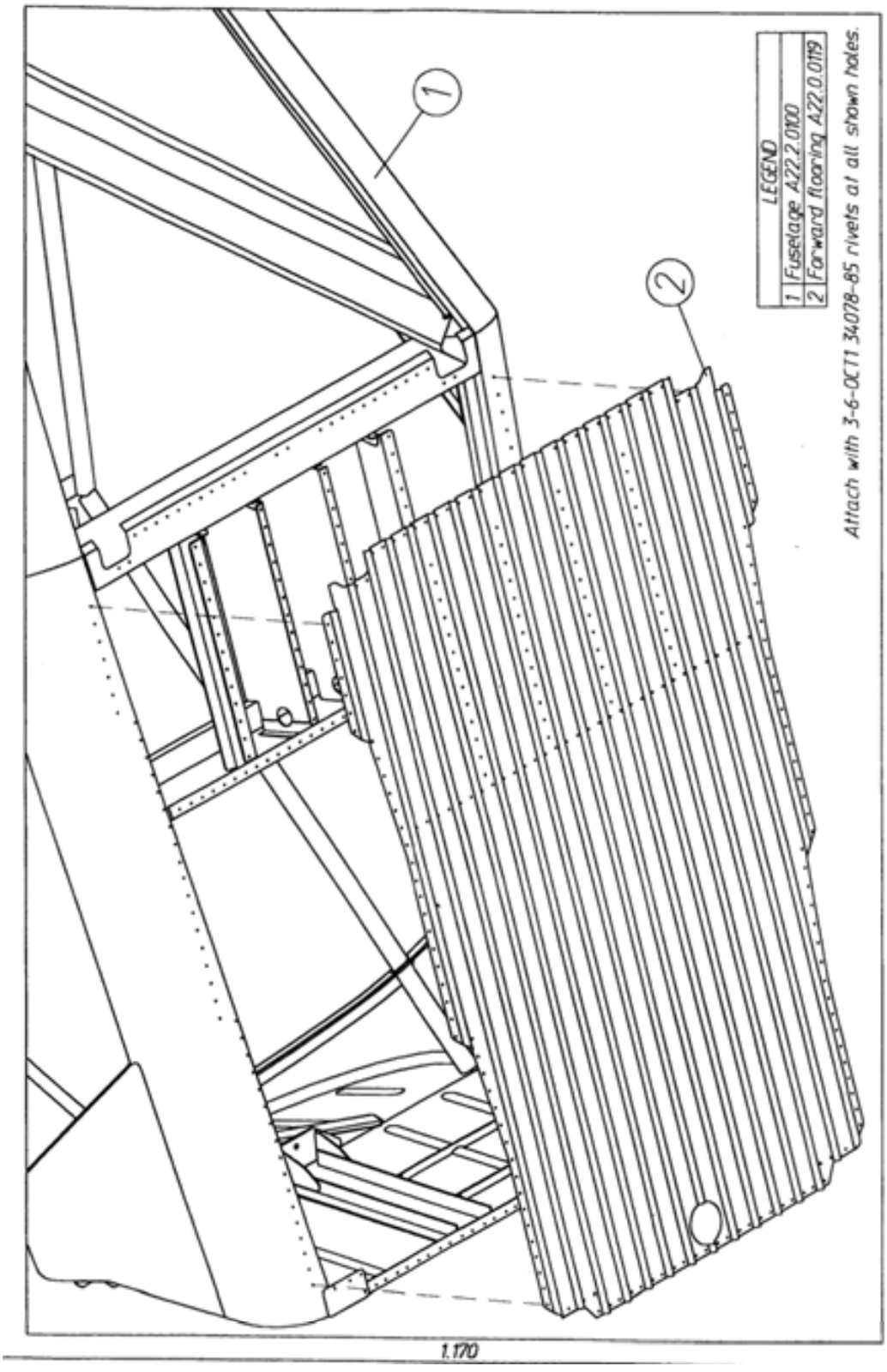
Installing the Fuselage Forward Flooring

SEE DRAWING FOR PARTS REQUIRED

Recommended job for two persons with the fuselage supported as required

1. Locate and inspect the forward floor panel as illustrated on the drawing.
2. Offer up to the fuselage and clico in place exactly as shown on the drawing.
3. Re-check steps 1 and 2. Be especially careful to ensure correct positioning and alignment with the pre-drilled holes in the fuselage.
4. Replace clicos with rivets working in an alternating “spread” pattern.
5. Thoroughly examine the finished work.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Forward flooring A22.0.0119
Attach with 3-6-0CT1 34078-85 rivets at all shown holes.
1
2
1.170

PAGE TWELVE

DRAWING NUMBER 1.180

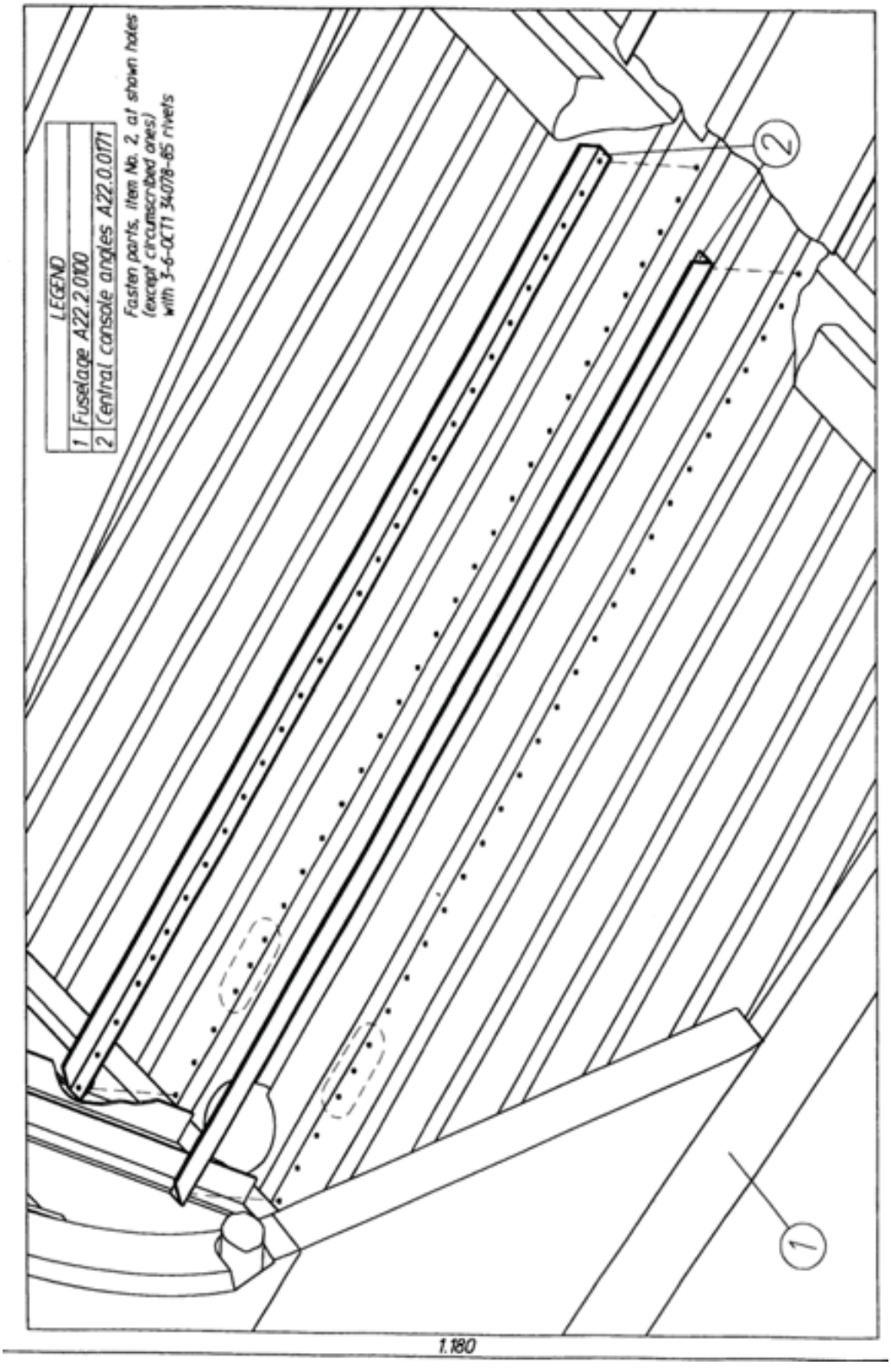
Installing the Central Console Angles

SEE DRAWING FOR PARTS REQUIRED

Recommended job for two persons with the fuselage supported as required

1. Locate and inspect central console angles as illustrated on the drawing.
2. Offer up parts and clico in place exactly as shown on the drawing.
3. Re-check 1 and 2.
4. Working alternately and from side to side replace clicos with rivets but *do not* rivet the holes circumscribed on the drawing *(4^{th}, 5^{th} and 6^{th} from the front on each side).*
5. Thoroughly examine the finished work.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Central console angles A22.0.0171
Fasten parts, item No. 2, at shown holes (except circumscribed ones) with 3-6-0C11 340178-65 rivets
2
1
1.180

PAGE THIRTEEN

DRAWING NUMBER 1.190

Installing the Nose Leg Doublers

SEE DRAWING FOR PARTS REQUIRED

Recommended two persons job with fuselage supported as required

1. Locate and inspect one medium doubler and two small doublers as illustrated on the drawing.

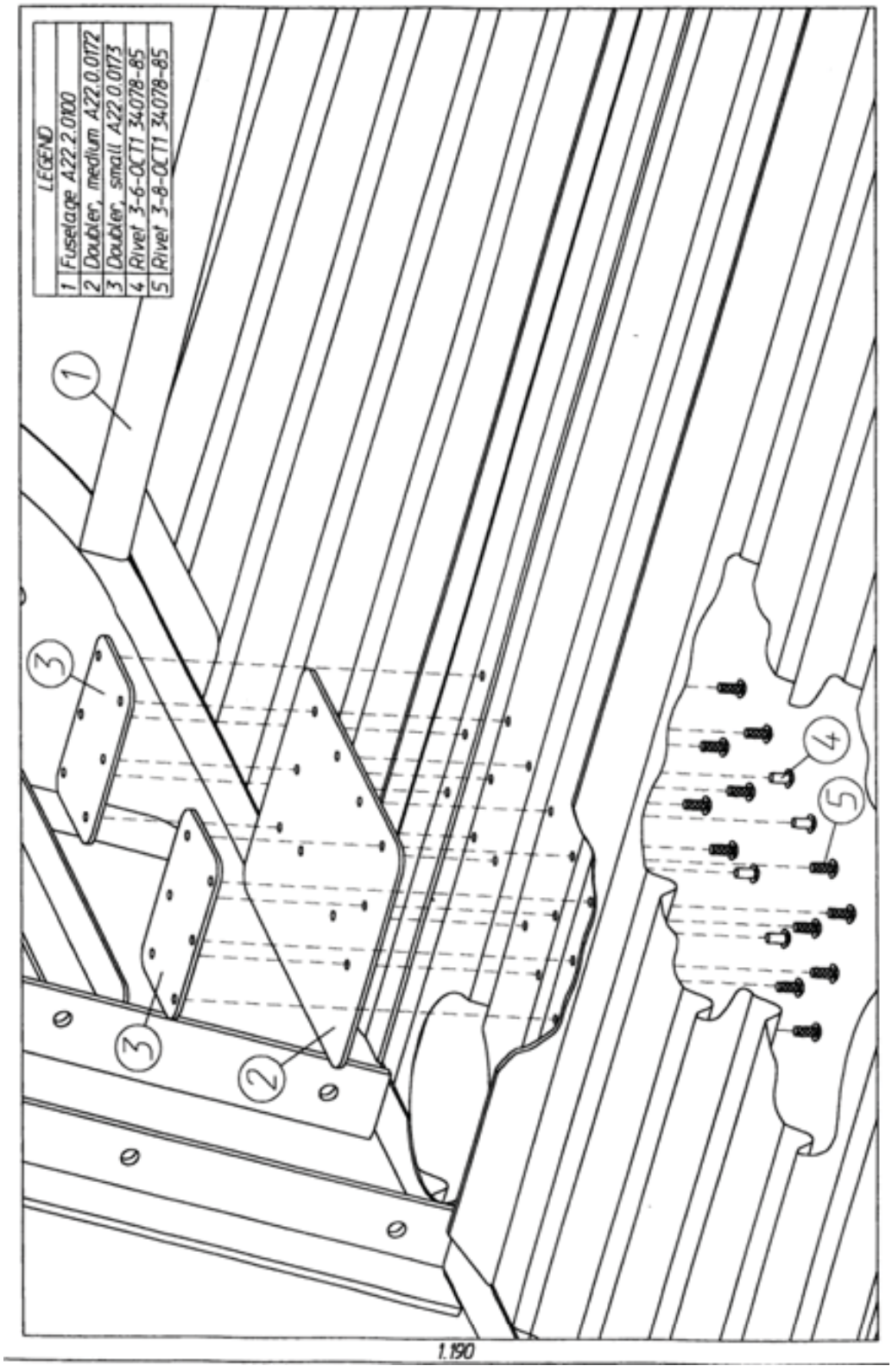
2. Offer up parts and clico in place exactly as shown on the drawing. *Note that the outer 3 holes in the small doublers mate with the holes previously left un-riveted (see page twelve).*

3. Re-check steps 1 and 2.

4. Replace clicos with rivets in the holes in the indicated holes only. *Note. Pre-view page fourteen for clarification of nose leg support assembly.*

5. Thoroughly examine the finished work.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Doubler, medium A22.0.0172
3 Doubler, small A22.0.0173
4 Rivet 3-6-DCT1 34078-85
5 Rivet 3-8-DCT1 34078-85
1
2
3
3
4
5
1.190

PAGE FOURTEEN

DRAWING NUMBER 1.200

Installing the Noseleg Supports

SEE DRAWING FOR PARTS REQUIRED

Recommended job for two people with fuselage monocoque supported as required

1. Locate and inspect the support and gussets as illustrated in the drawing. Select the correct size bolts with stiff-nuts and washers, and the stud. *Note. After airframe 016 the gussets were replaced with straight link plates connecting the stud (4) to the bolts (6).*

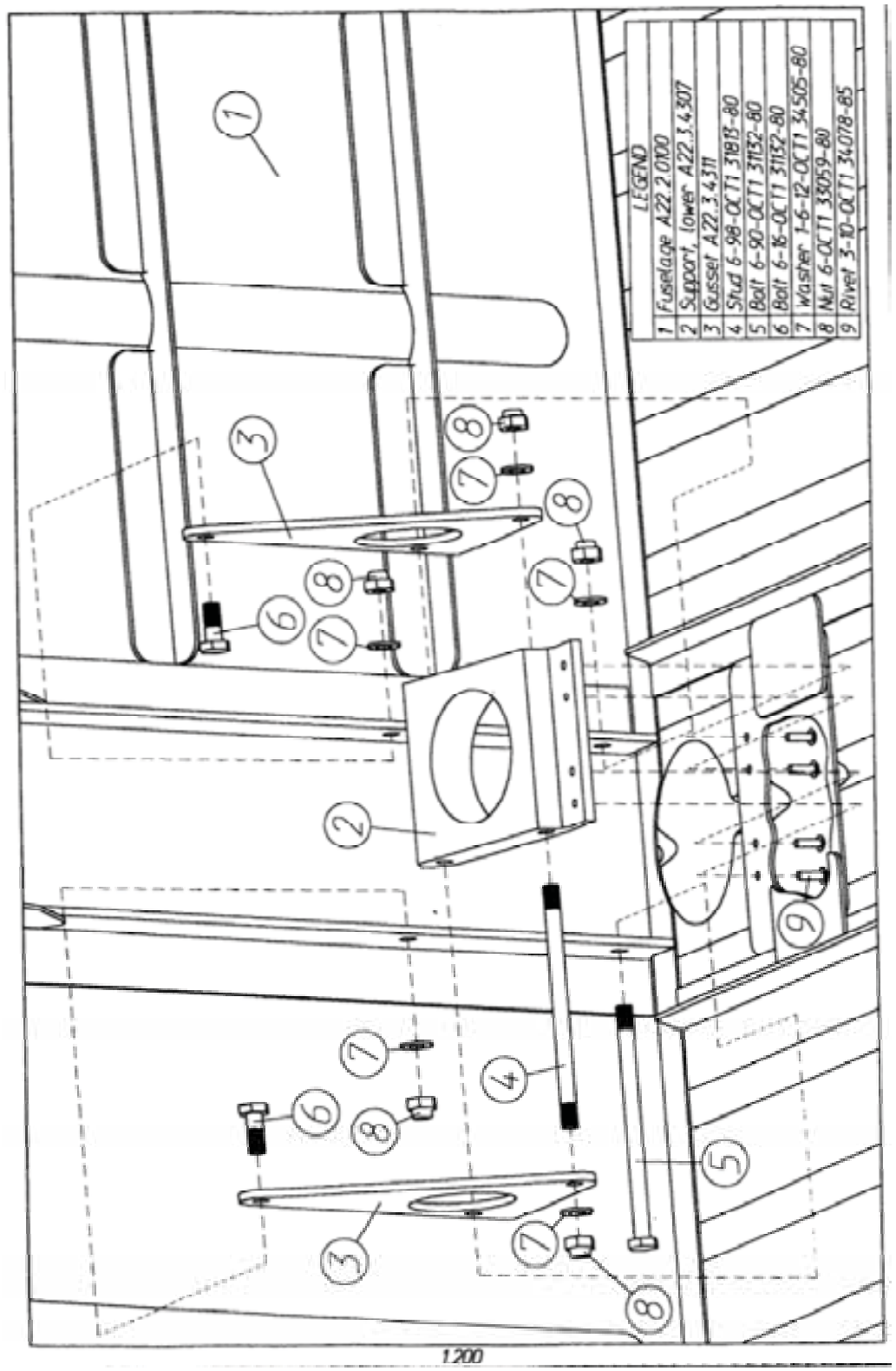
2. Offer up the parts exactly as shown on the drawing. Clico support (2) in place and assemble the other parts loosely. *Note. Pre-view page twenty for further clarification of this assembly.*

3. Re-check 1 and 2.

4. Replace Clicos with rivets then progressively tighten the stiff-nuts working from side to side until the assembly is snug and firm. Don't over-tighten.

5. Thoroughly examine the finished work.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Support, lower A22.3.4307
3 Gusset A22.3.4311
4 Stud 6-98-OCT1 31813-80
5 Bolt 6-90-OCT1 31132-80
6 Bolt 6-16-OCT1 31132-80
7 Washer 1-6-12-OCT1 34505-80
8 Nut 6-OCT1 35059-80
9 Rivet 3-10-OCT1 34078-85
1200

PAGE FIFTEEN

DRAWING NUMBERS 1.210/220

Installing the Fuselage Aft Flooring

SEE DRAWINGS FOR PARTS REQUIRED

Recommended job for two people with fuselage monocoque supported as required

1. Locate and inspect aft flooring panel and floor gussets as illustrated on the drawing.

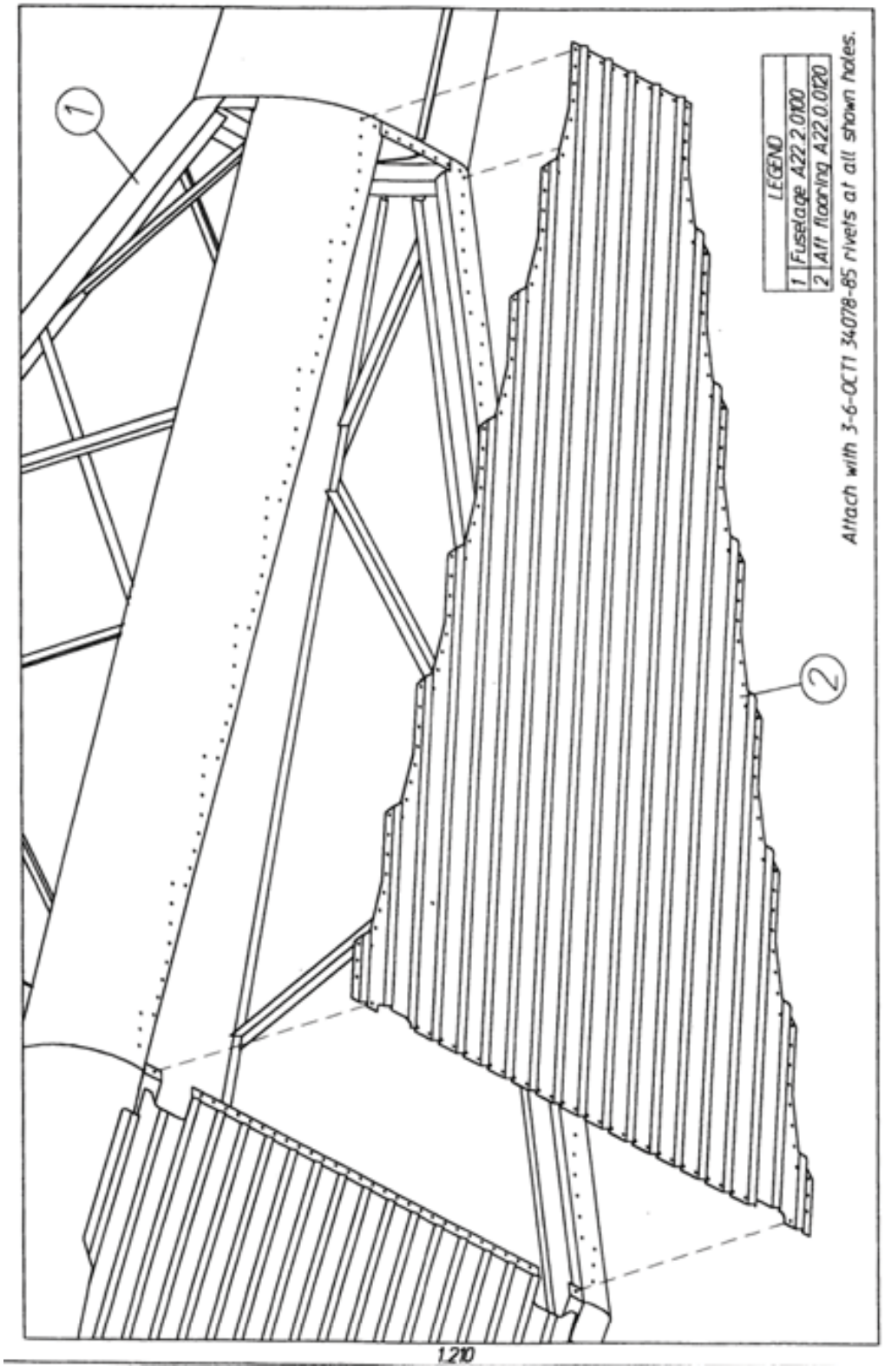
2. Offer up the floor panel and floor gussets making sure the pre-drilled holes in each are aligned with the fuselage holes exactly as shown in the drawing. Clico in place.

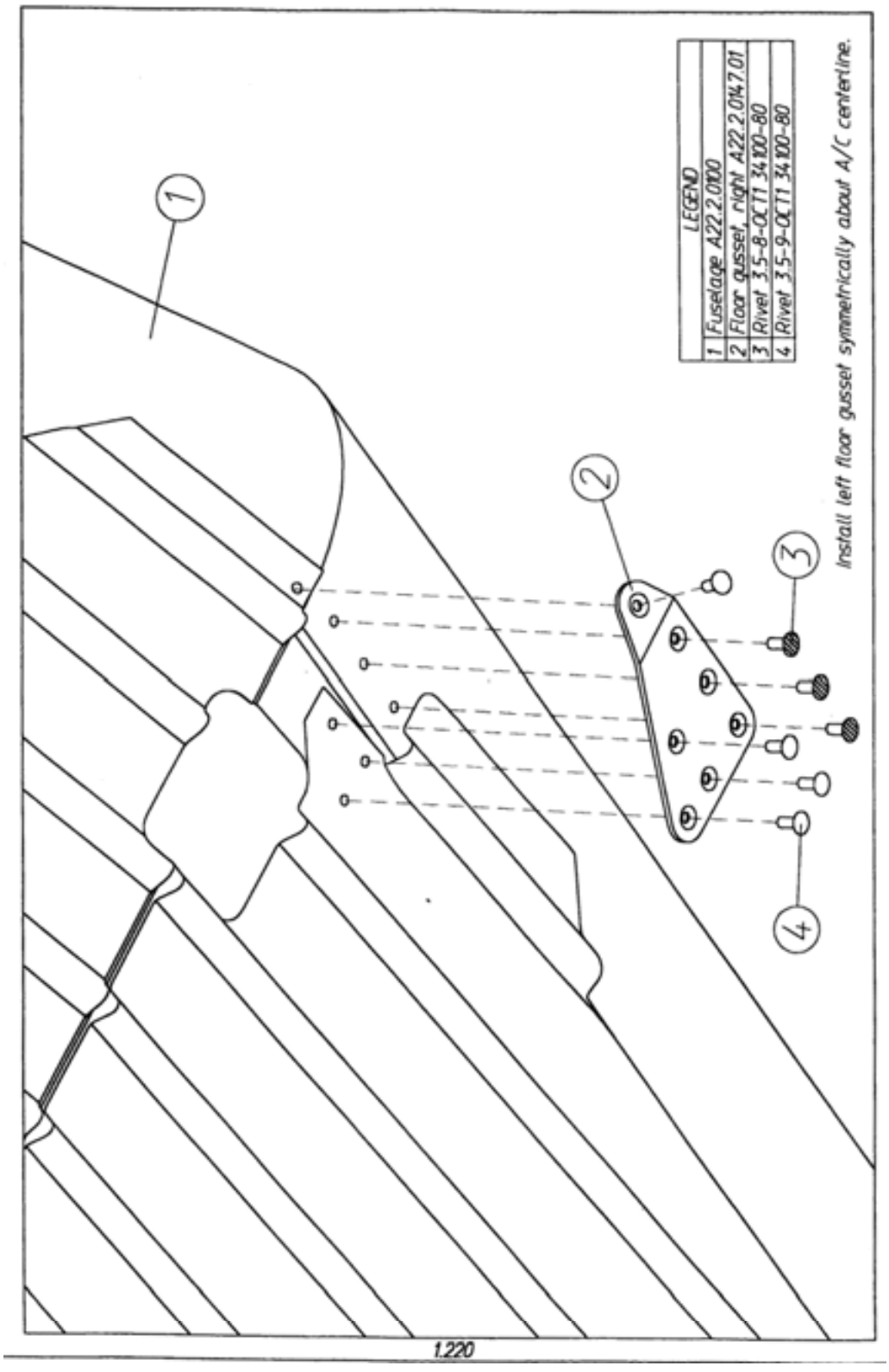
3. Re-check 1 and 2.

4. Replace clicos with rivets working from end to end and diagonally in a “spread” pattern.

5. Thoroughly examine the finished work.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Aft flooring A22.0.0120
Attach with 3-6-OCT1 34078-85 rivets at all shown holes.
1
2
1.210


LEGEND
1 Fuselage A22.2.0100
2 Floor gusset, right A22.2.0147.01
3 Rivet 3.5-8-DCT1 34100-80
4 Rivet 3.5-9-DCT1 34100-80
Install left floor gusset symmetrically about A/C centerline.
1
2
3
4
1.220

PAGE SIXTEEN

DRAWING NUMBERS 1.230/240

Sealing the Corrugation Gaps

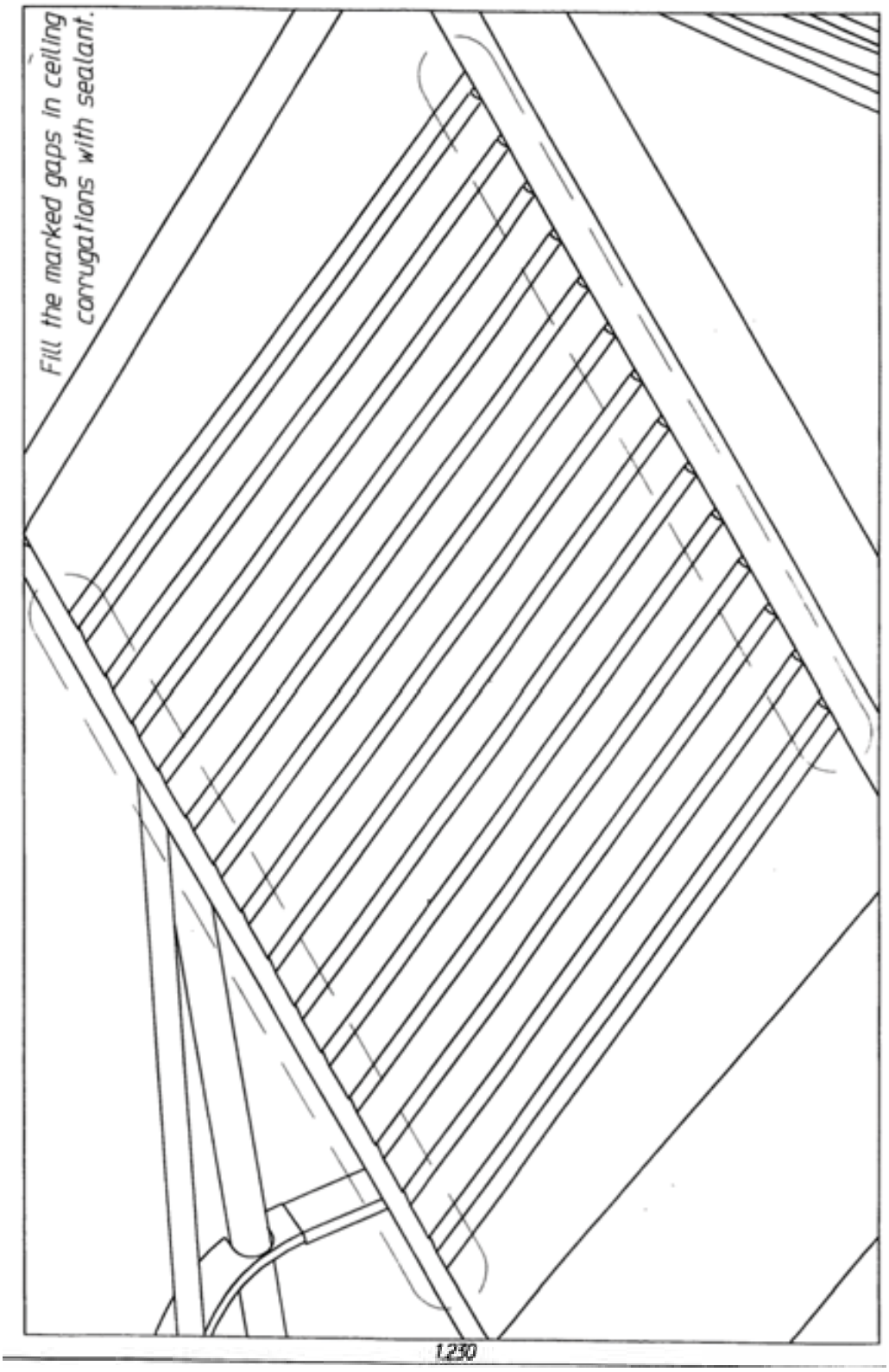
NON-SILICONE SEALANT REQUIRED

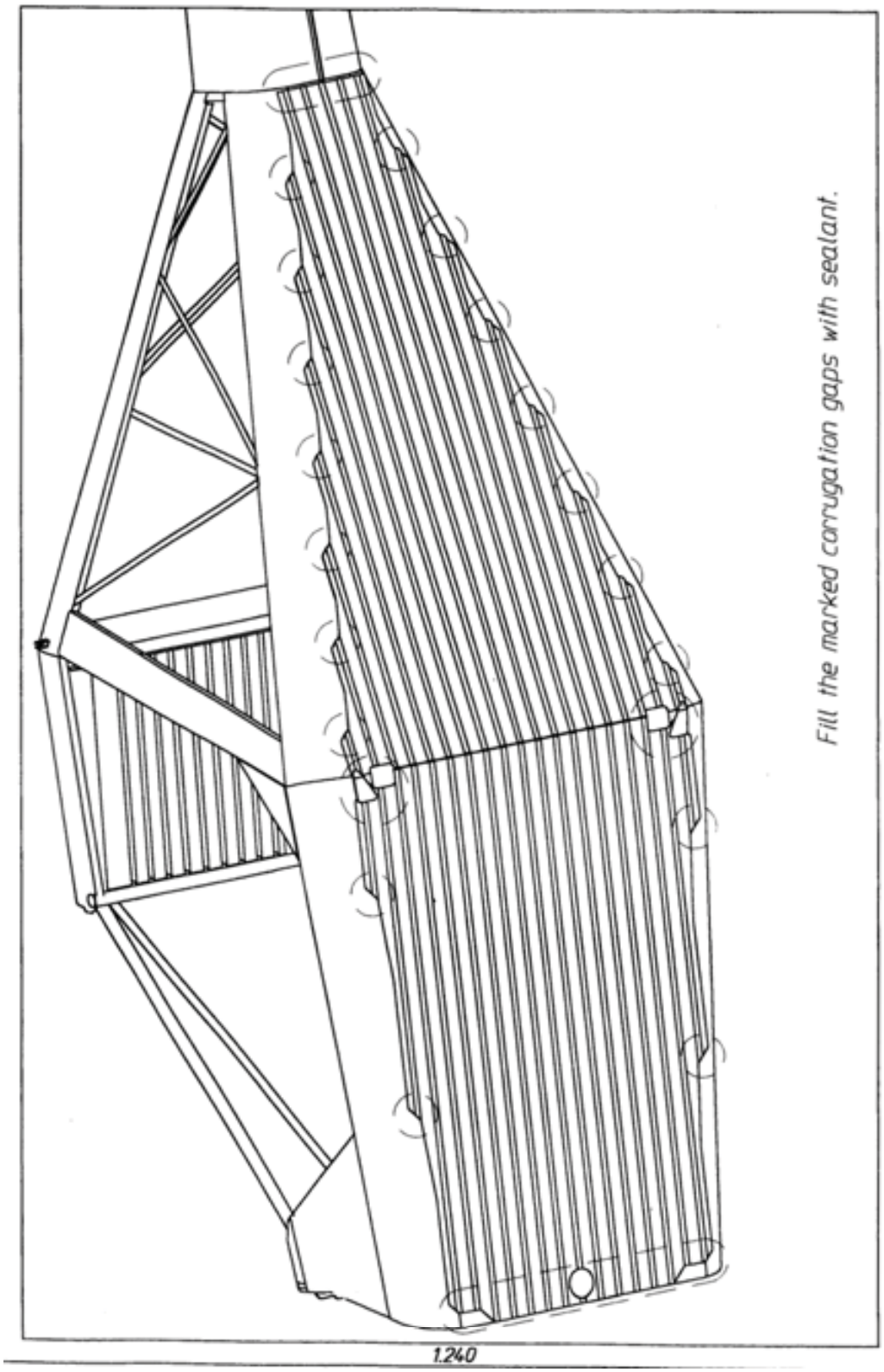
Recommended one person job. This work can be left until a later time but is shown now for continuity with the previous drawings.

1. Using a small spatula or other suitable tool neatly fill the triangular end-gaps in the floor and ceiling panels with a proprietary non-silicone sealant. *Note. Many paint types will either not cover, or react with, silicone sealants. Consult your paint supplier for more specific guidance.*

2. Thoroughly examine and make good.

Notes:


Fill the marked gaps in ceiling corrugations with sealant.
1250


Fill the marked corrugation gaps with sealant.
1.240

PAGE SEVENTEEN

DRAWING NUMBER 1.250

Installing the Wing Fillets

SEE DRAWING FOR PARTS REQUIRED

Recommended two persons job with the fuselage monocoque supported as required

1. Locate and inspect the wing fillets as illustrated on the drawing.

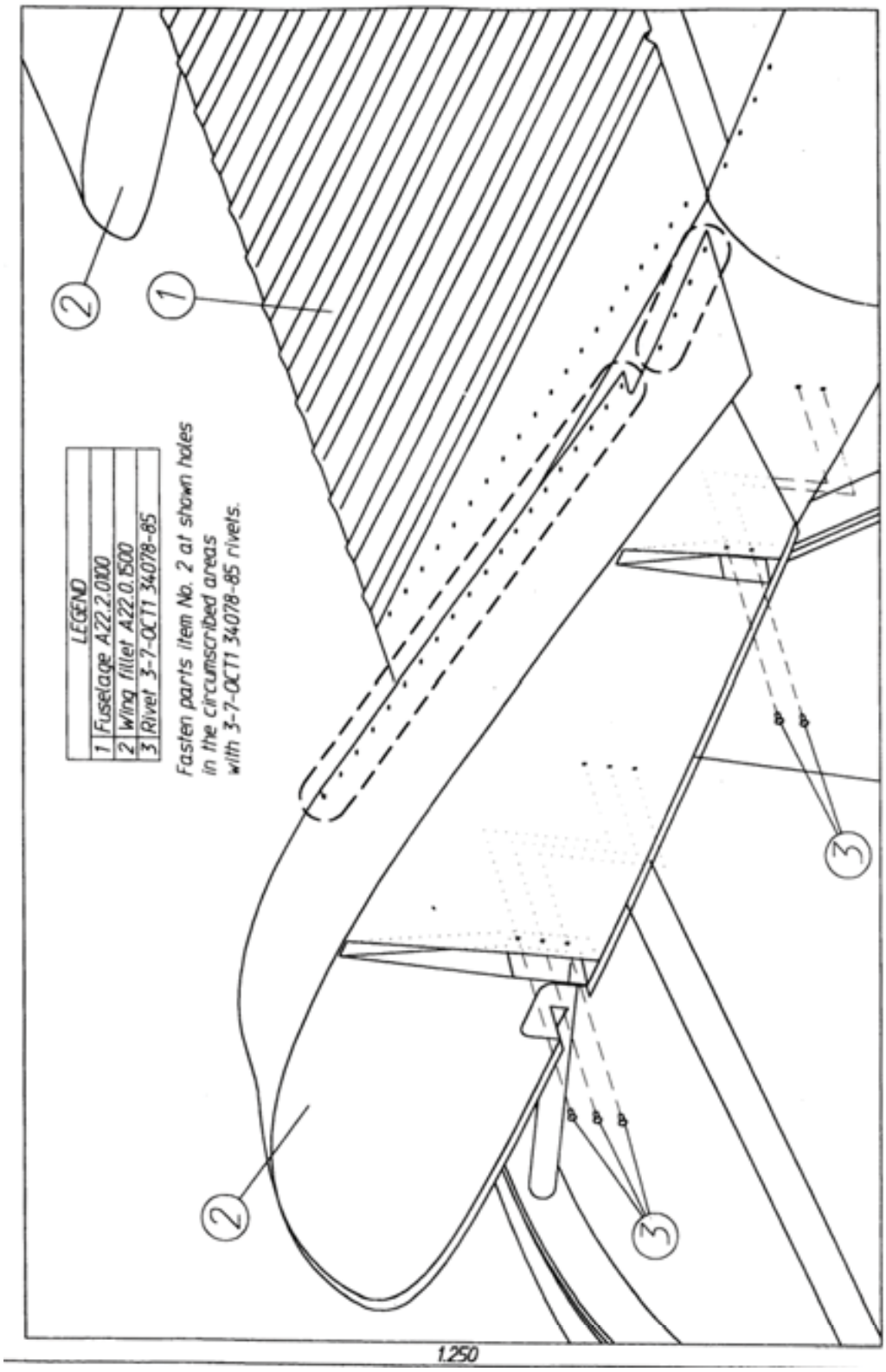
2. Clico in place exactly as shown on the drawing. *Note. It's advisable to check that the fillets are symetrical prior to riveting. That is equal distance from the fuselage centreline. Any out-of-alignment will create a slightly asymetric gap between the left and right fillet/wing junctions when the aircraft is assembled.*

3. Re-check 1 and 2.

4. Replace clicos with rivets where shown. *Leave the circumscribed holes just clico'd for now.*

5. Thoroughly examine the finished work.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Wing fillet A22.0.1500
3 Rivet 3-7-0CT1 34078-85
Fasten parts item No. 2 at shown holes in the circumscribed areas with 3-7-0CT1 34078-85 rivets.
1.250

PAGE EIGHTEEN

DRAWING NUMBERS 1.270/300

Installing the Main LG Legs, Wheels and Disc-Brakes

SEE DRAWING FOR PARTS REQUIRED

Recommended two persons job with fuselage monocoque supported as required. If you are limited for workshop width this job can be left until later.

1. Locate and inspect main LG legs, Matco wheels and brake components as illustrated on the drawing. Select correct size bolts with castle nuts, washers and cotter pins.

2. Offer up the left LG leg first and fit loosely exactly as shown on drawing number 1.270.

3. Re-check 1 and 2.

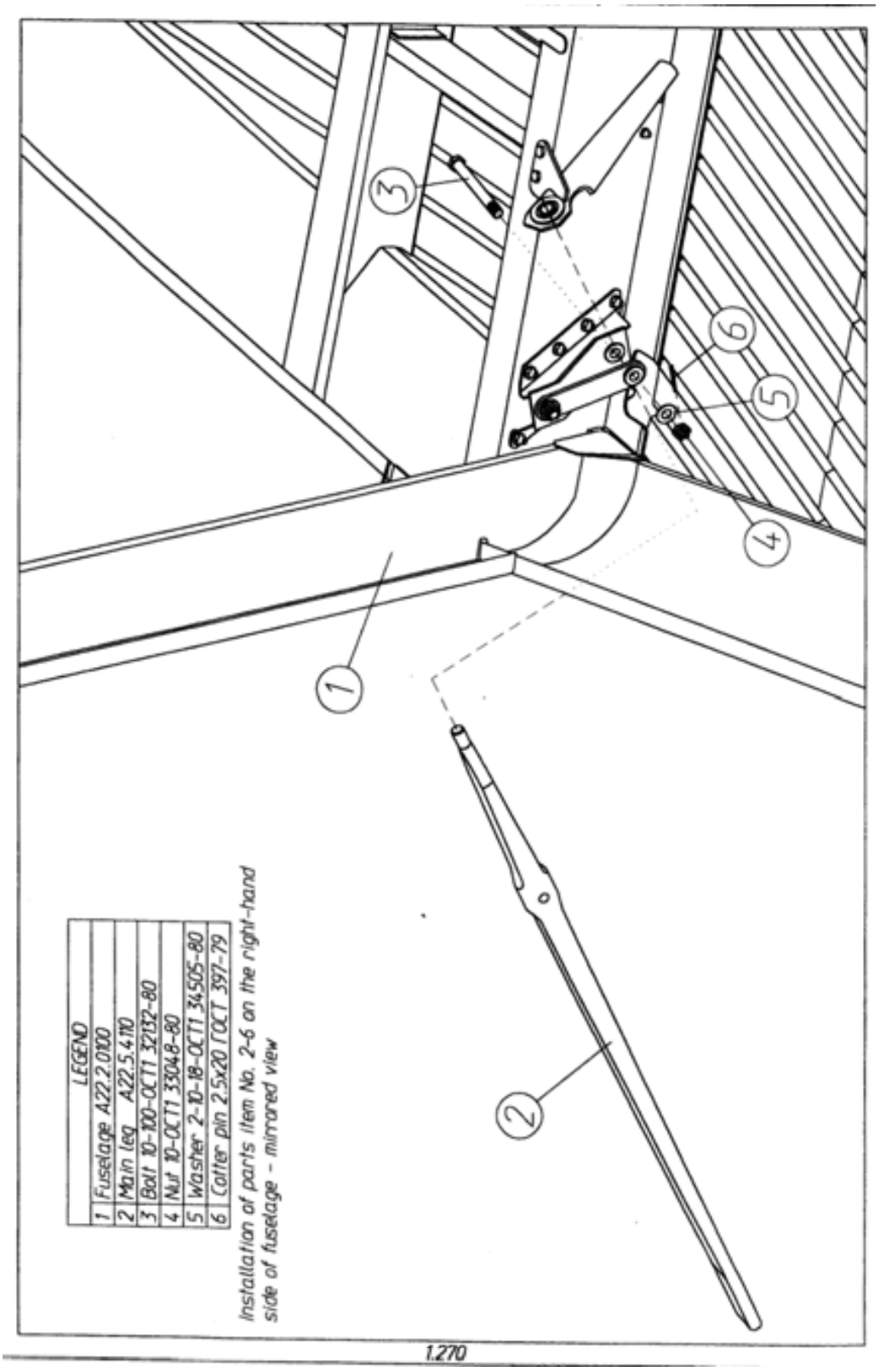
4. Tighten castle nut *but don't over-tighten* and insert cotter pin.

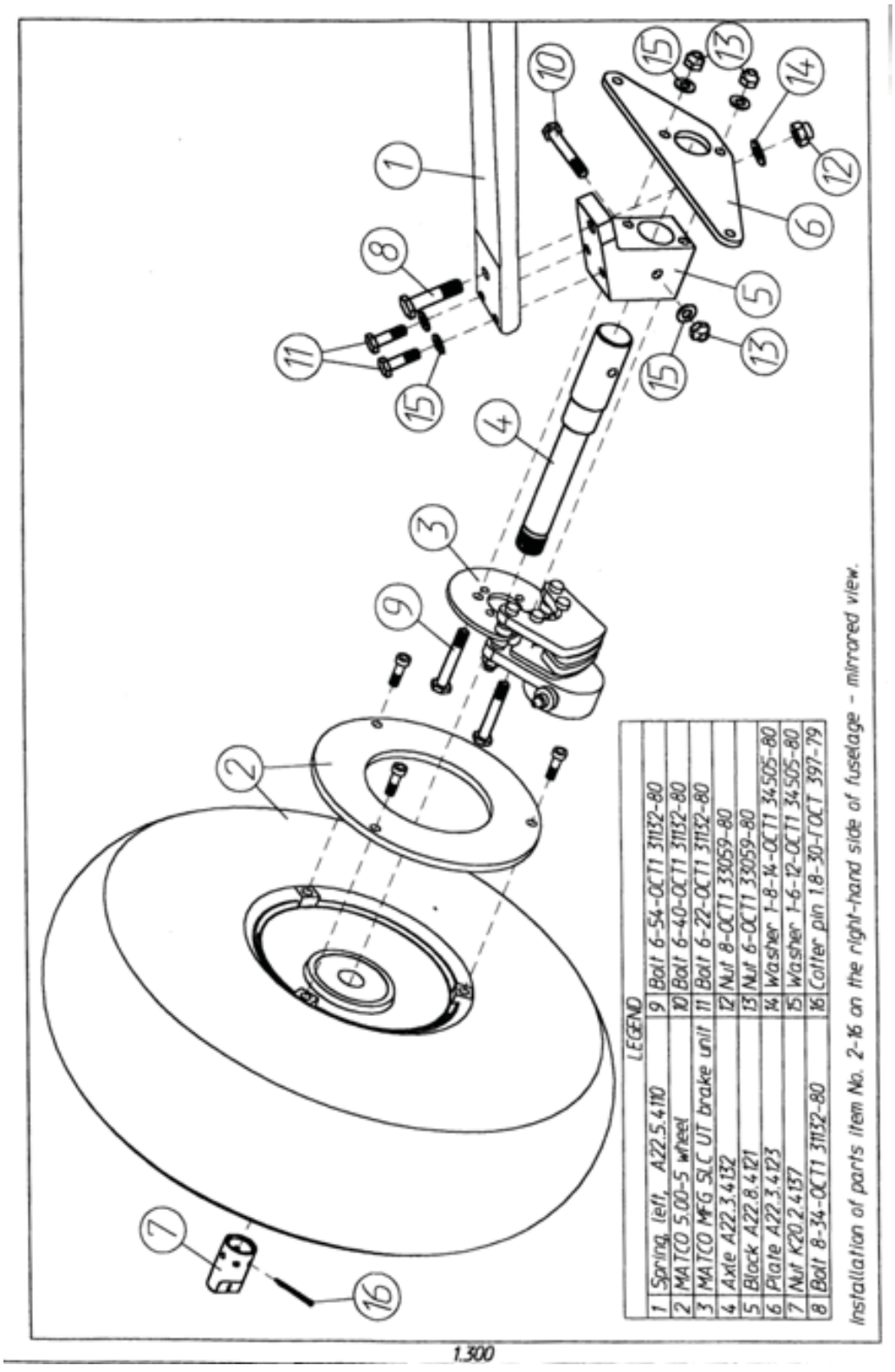
5. Offer up the Matco brake components, plate, block and axle. Assemble them exactly as shown on drawing number 1.300. Tighten nuts securely. Lightly grease the axle before fitting the wheel.

6. Thoroughly examine the finished work.

7. Repeat on right hand side.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Main leg A22.5.4.110
3 Bolt 10-100-OCT1 32132-80
4 Nut 10-OCT1 33048-80
5 Washer 2-10-18-OCT1 34505-80
6 Cotter pin 2.5x20 FOCT 397-79
Installation of parts item No. 2-6 on the right-hand side of fuselage - mirrored view
1.270


LEGEND
1 Spring, left, A22.5.4110
2 MATCO 5.00-5 wheel
3 MATCO MFG SLC UT brake unit
4 Axle A22.3.4132
5 Block A22.8.4121
6 Plate A22.3.4123
7 Nut K20.2.4137
8 Bolt 8-34-OCT1 31132-80
9 Bolt 6-54-OCT1 31132-80
10 Bolt 6-40-OCT1 31132-80
11 Bolt 6-22-OCT1 31132-80
12 Nut 8-OCT1 33059-80
13 Nut 6-OCT1 33059-80
14 Washer 1-8-14-OCT1 34505-80
15 Washer 1-6-12-OCT1 34505-80
16 Cotter pin 1.8-30-FOCT 397-79
Installation of parts item No. 2-16 on the right-hand side of fuselage - mirrored view.
1.300

PAGE NINETEEN

DRAWING NUMBERS 1.280/90

Installing the LG Nose Strut and Wheel

SEE DRAWING FOR PARTS REQUIRED

Recommended job for two people with the fuselage monocoque positioned in the cradle.

Note. The nose-leg assembly may be manufactured "tight" and require reaming before it will rotate freely. This is not a big job but needs professional equipment and skill, if you are not able to get the work done locally contact Foxbat Aircraft. Remember that the nosewheel assembly is linked into the rudder control circuit so it must rotate freely.

1. Locate and inspect the LG nose strut as illustrated on the drawing. Select the correct size bolts with stiff-nuts, castle nut, washers and safety pin.

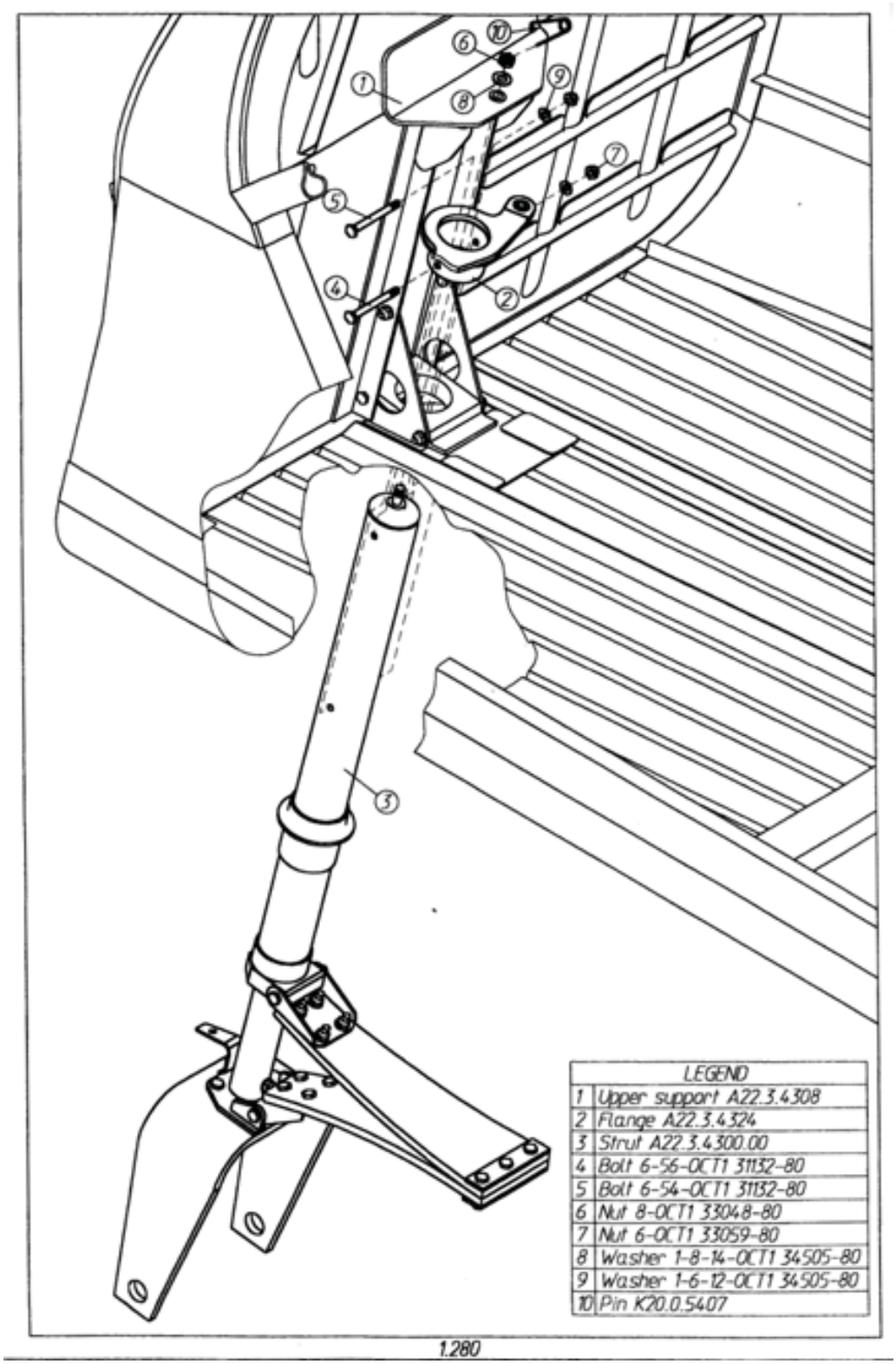
2. Offer up the parts and assemble exactly as shown on the drawing.

3. Re-check 1 and 2, in particular check for free rotation.

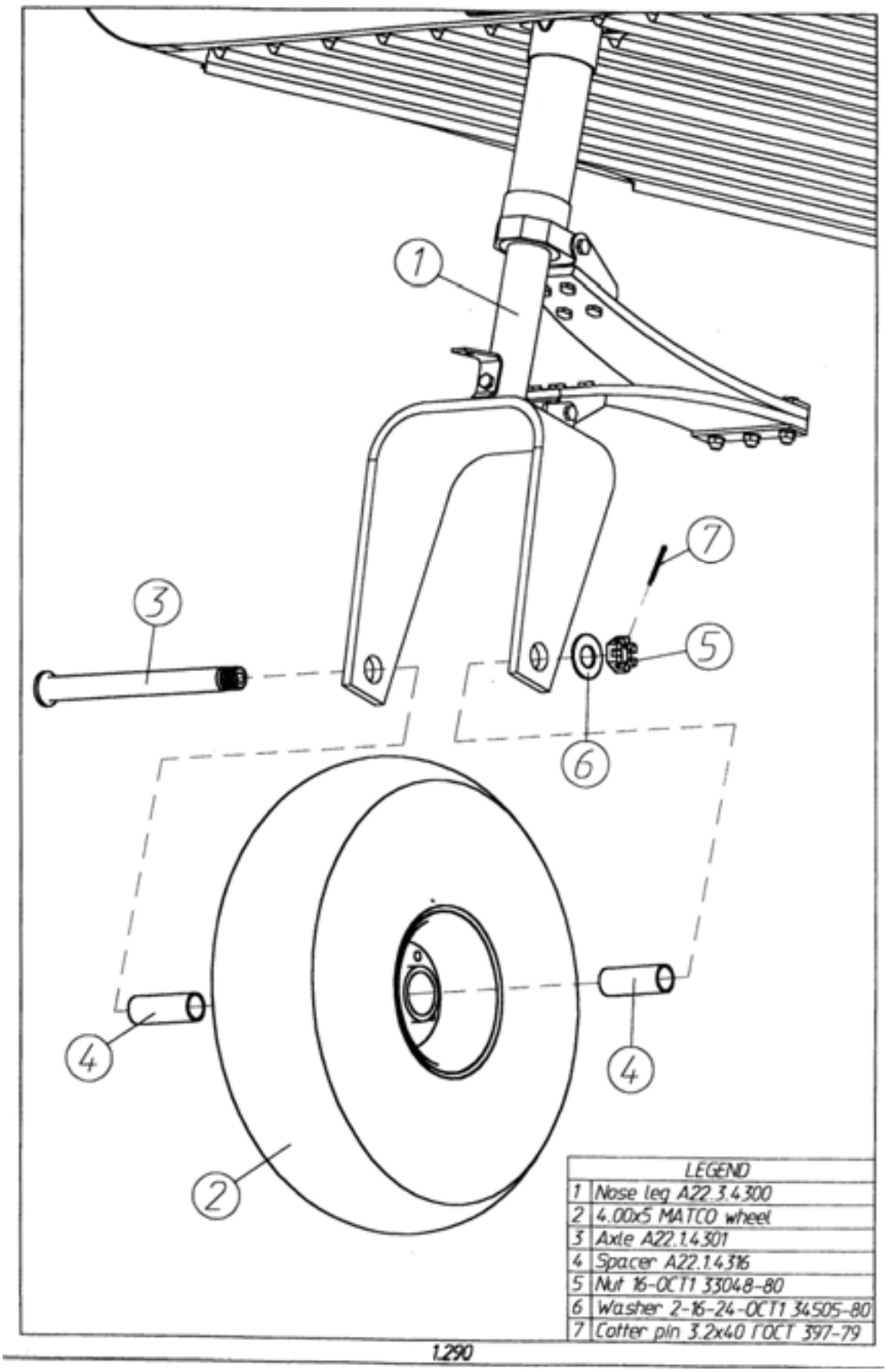
4. Tighten assembly until firm and snug. Don't over-tighten.

5. Thoroughly examine the finished work and check again for free rotation.

Notes:


LEGEND
1 Upper support A22.3.4308
2 Flange A22.3.4324
3 Strut A22.3.4300.00
4 Bolt 6-56-OCT1 31132-80
5 Bolt 6-54-OCT1 31132-80
6 Nut 8-OCT1 33048-80
7 Nut 6-OCT1 33059-80
8 Washer 1-8-14-OCT1 34505-80
9 Washer 1-6-12-OCT1 34505-80
10 Pin K20.0.5407

1.280


1
2
3
4
4
5
6
7
LEGEND
1 Nose leg A22.3.4300
2 4.00x5 MATCO wheel
3 Axle A22.1.4301
4 Spacer A22.1.4316
5 Nut 16-OCT1 33048-80
6 Washer 2-16-24-OCT1 34505-80
7 Cotter pin 3.2x40 ГОСТ 397-79
1.290

PAGE TWENTY

DRAWING NUMBER 1.310

Installing the Centre Bulkhead Crossbeam

SEE DRAWING FOR PARTS REQUIRED

Recommended two persons job with fuselage monocoque supported as required

1. Locate and inspect the centre bulkhead crossbeam as illustrated on the drawing. Select the correct size bolts with stiff-nuts and washers. *Note. The crossbeam is not fully shown on the drawing but is the transverse component that also forms the seat-back and luggage container mount.*

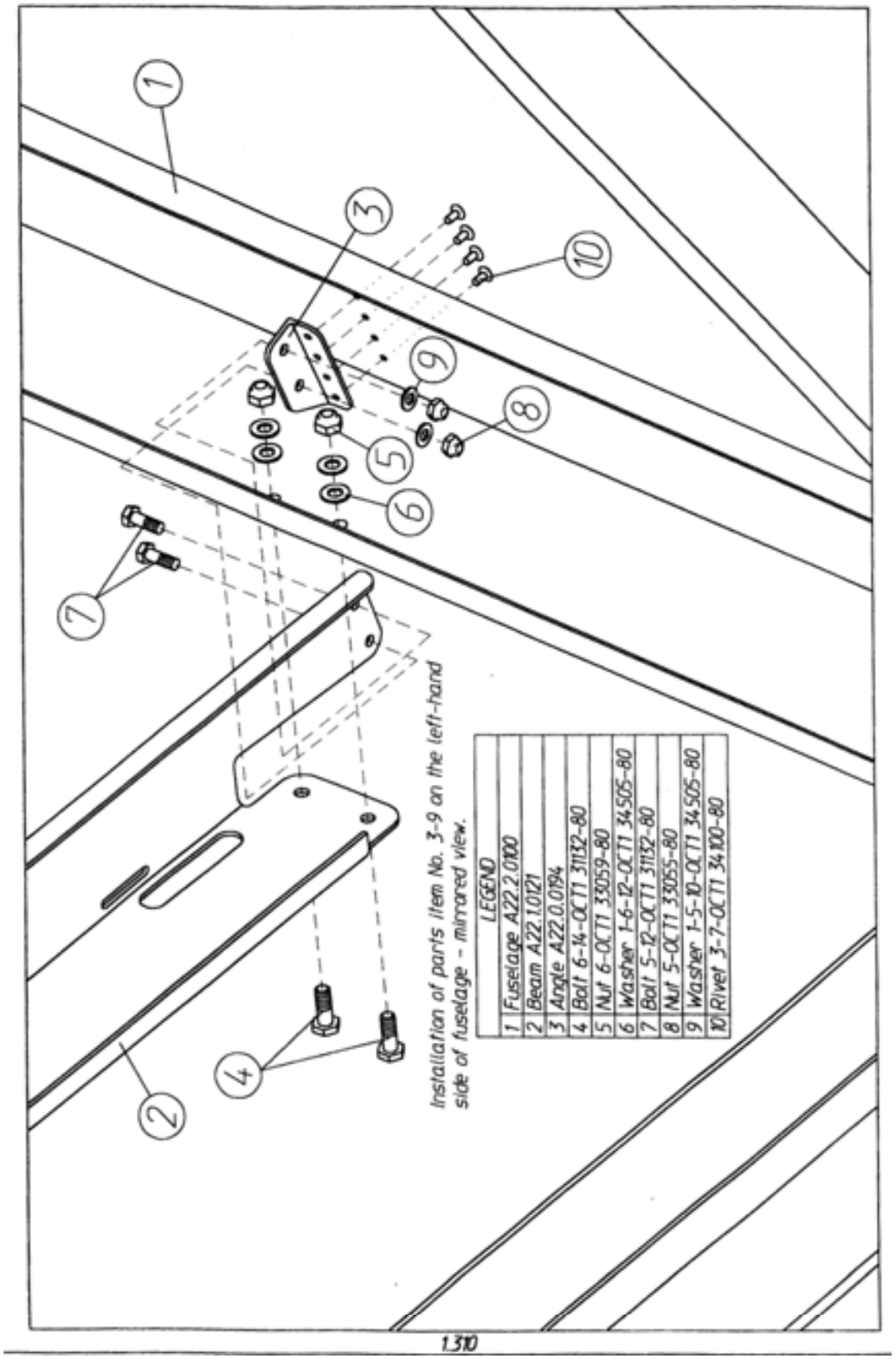
2. Offer up the part and clico in place exactly as shown in the drawing with the nuts finger-tight.

3. Re-check 1 and 2.

4. Replace clicos with rivets alternately and then tighten the nuts. Don't over-tighten.

5. Thoroughly examine the finished work.

Notes:


1
3
10
9
8
5
6
7
2
4
Installation of parts item No. 3-9 on the left-hand side of fuselage - mirrored view.
LEGEND
1 Fuselage A22.2.0100
2 Beam A22.1.0121
3 Angle A22.0.0194
4 Bolt 6-14-OCT1 31132-80
5 Nut 6-OCT1 33059-80
6 Washer 1-6-12-OCT1 34505-80
7 Bolt 5-12-OCT1 31132-80
8 Nut 5-OCT1 33055-80
9 Washer 1-5-10-OCT1 34505-80
10 Rivet 3-7-OCT1 34100-80
1.310

PAGE TWENTY-ONE

DRAWING 13.040 (1 of 9)

Installing the Central Pitch/Roll Mixer Mechanisms

SEE DRAWINGS FOR PARTS REQUIRED

Recommended job for two persons with fuselage supported as required

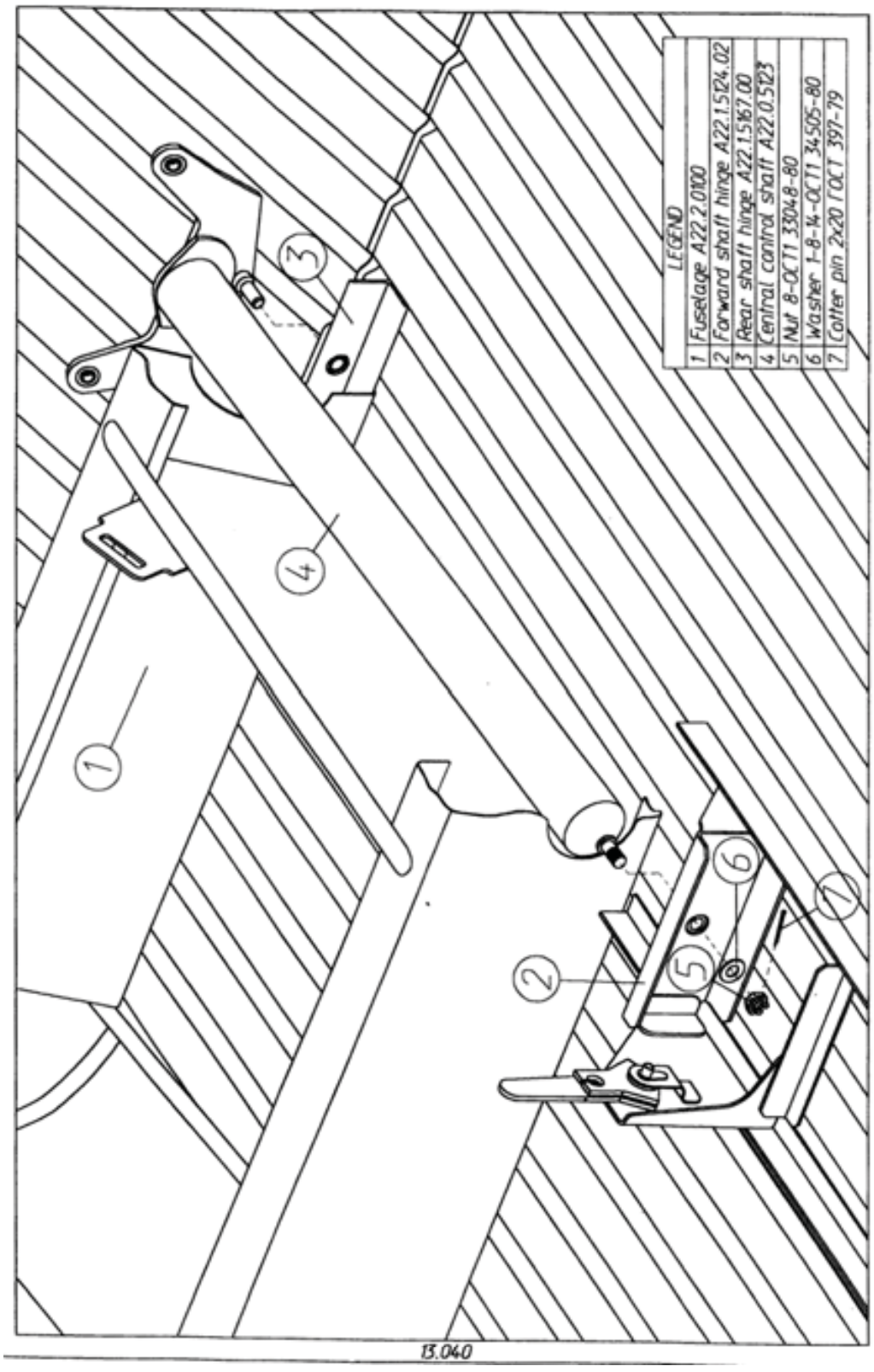
1. Locate and inspect all the parts as illustrated on the nine drawings. Separate the ones that will be riveted to the fuselage.

2. Study the next nine drawings until you have a good grasp of how the mixer system works. The heart of it is the central control shaft illustrated in the drawing 13.040. Note how it locates in the bearings pressed into the brackets (2) forward and (3) aft. *Note. Do not commence any assembly or riveting until you are sure you know how the system works!*

3. The brackets and lever forward of (2), are for the manual trim system. Option: some Foxbats have a MAC electric trim activator mounted in the aft fuselage and operated by a rocker switch on the control stick. See separate fitting instructions with the electric trim, if you ordered this option.

4. Re-check 1, 2 and 3.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Forward shaft hinge A22.1.5124.02
3 Rear shaft hinge A22.1.5167.00
4 Central control shaft A22.0.5123
5 Nut B-OCT1 33048-80
6 Washer 1-8-14-OCT1 34505-80
7 Cotter pin 2x20 FOCT 397-79
13.040

PAGE TWENTY-TWO

DRAWING NUMBER 13.030 (2 OF 9)

Installing the Central Pitch/Roll Mixer Mechanisms

SEE DRAWING FOR PARTS REQUIRED

Recommended two persons job with fuselage monocoque supported as required

1. Locate and inspect all parts aft of (3) as illustrated on the drawing. If you are using the electric trim option ignore the manual trim parts that are illustrated forward of (4). For the electric option there is a right-hand bracket (5) that is not illustrated on the drawing. The right-hand bracket (5) gives the strength previously provided by trim bracket (4) but is fitted aft of the hinge bracket (3).

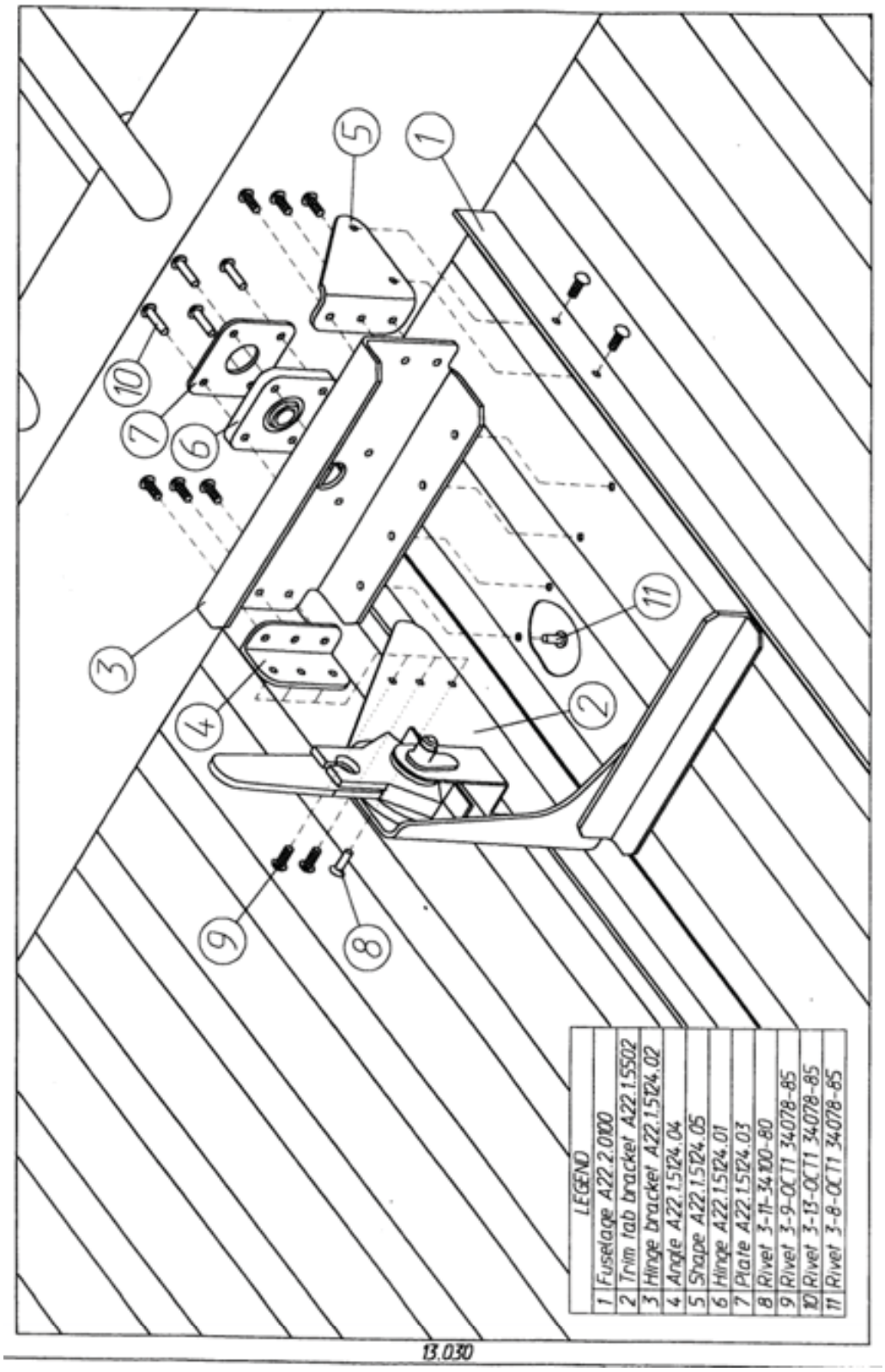
2. Offer up the parts and clico in place exactly as shown on the drawing.

3. Re-check 1 and 2.

4. Replace clicos with rivets. *Note. You can rivet the hinge bearing plate (6) and plate (7) to the bracket (3) before offering up to the fuselage.*

5. Thoroughly examine the finished work.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Trim tab bracket A22.1.5502
3 Hinge bracket A22.1.5124.02
4 Angle A22.1.5124.04
5 Shape A22.1.5124.05
6 Hinge A22.1.5124.01
7 Plate A22.1.5124.03
8 Rivet 3-11-34100-80
9 Rivet 3-9-OCT1 34078-85
10 Rivet 3-13-OCT1 34078-85
11 Rivet 3-8-OCT1 34078-85
13.030

PAGE TWENTY-THREE

DRAWING NUMBER 13.010 (3 OF 9)

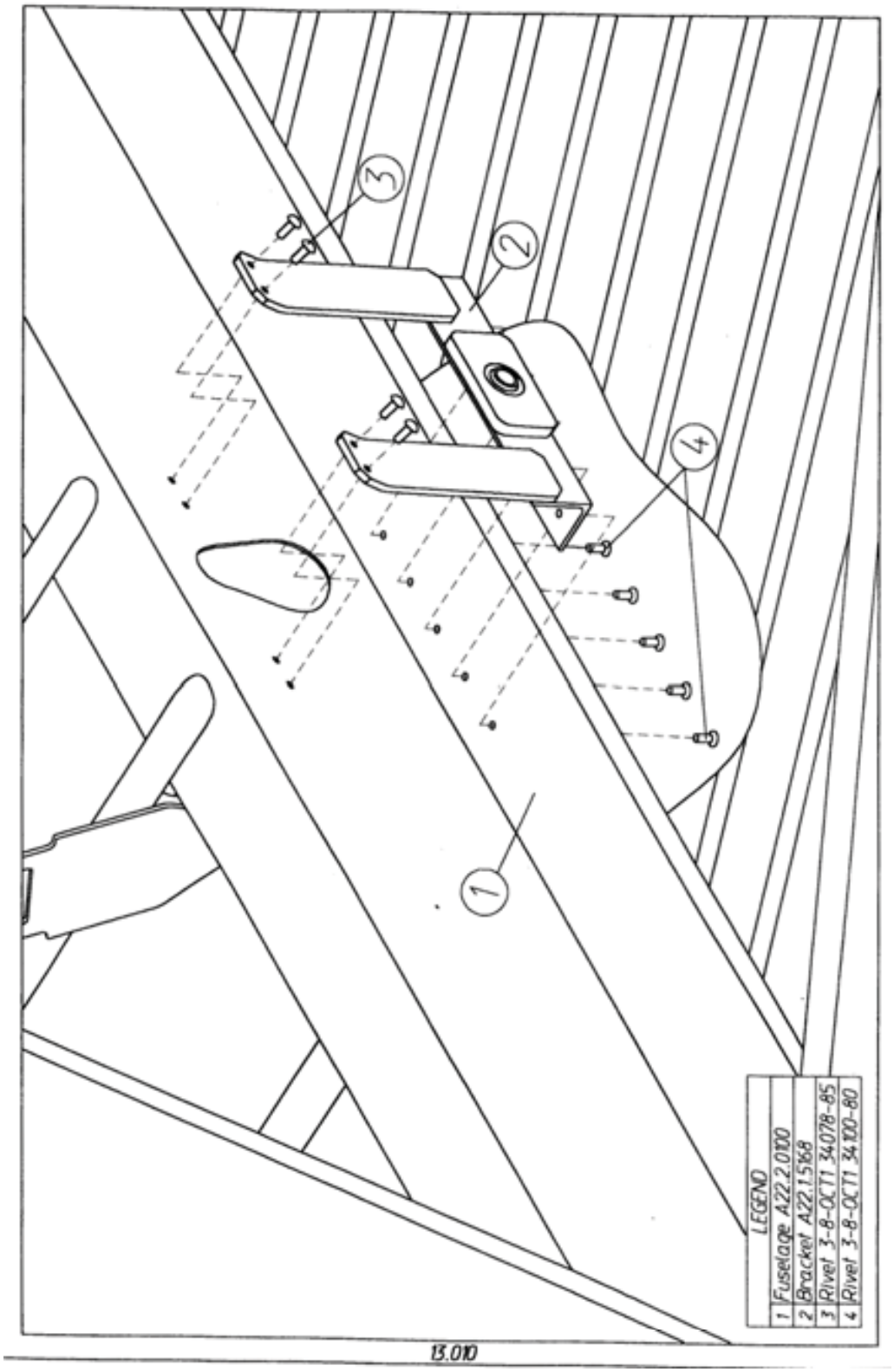
Installing the Central Pitch/Roll Mechanisms

SEE DRAWING FOR PARTS REQUIRED

Recommended job for two persons with fuselage monocoque supported as required

1. Locate and inspect the bracket as illustrated on the drawing.
2. Offer up the part and clico in place exactly as shown on the drawing.
3. Re-check 1 and 2.
4. Replace clicos with rivets.
5. Thoroughly examine the finished work.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Bracket A22.1.5168
3 Rivet 3-8-DCT1 34078-85
4 Rivet 3-8-DCT1 34100-80
15.010

PAGE TWENTY-FOUR

DRAWING NUMBER 12.020 (4 OF 9)

Installing the Central Pitch/Roll Mixer Mechanisms

SEE DRAWING FOR PARTS REQUIRED

Recommended two persons job with fuselage monocoque supported as required

1. Locate and inspect the elevator bell crank bracket as illustrated on the drawing. Select the correct bolt, stiff-nut and washers.

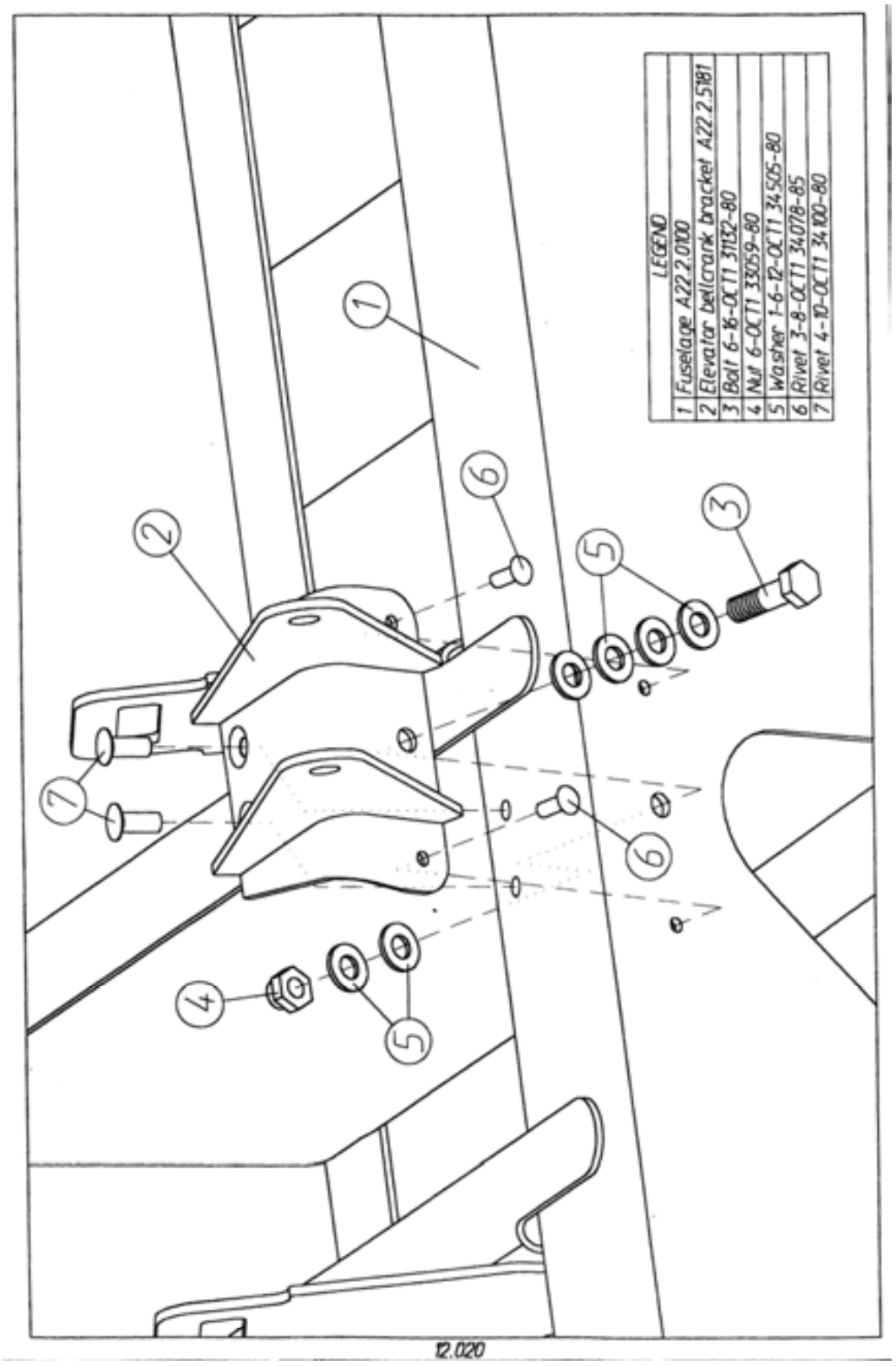
2. Clico in place exactly as shown on the drawing with the nut finger-tight.

3. Re-check 1 and 2.

4. Replace clicos with rivets and tighten the bolt. Don't over-tighten.

5. Thoroughly examine the finished work.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Elevator bellcrank bracket A22.2.5181
3 Bolt 6-16-OCT1 31132-80
4 Nut 6-OCT1 33059-80
5 Washer 1-6-12-OCT1 34505-80
6 Rivet 3-8-OCT1 34078-85
7 Rivet 4-10-OCT1 34100-80
12.020

PAGE TWENTY-FIVE

DRAWING NUMBER 13.020 (5 OF 9)

Installing the Central Pitch/Roll Mixer Mechanisms

SEE DRAWING FOR PARTS REQUIRED

Recommended job for two people with fuselage monocoque supported as required

1. Locate and inspect the stops and pads as illustrated on the drawing. These are the “bump” stops for the aileron bell crank which is fixed to the aft end of the central control shaft.

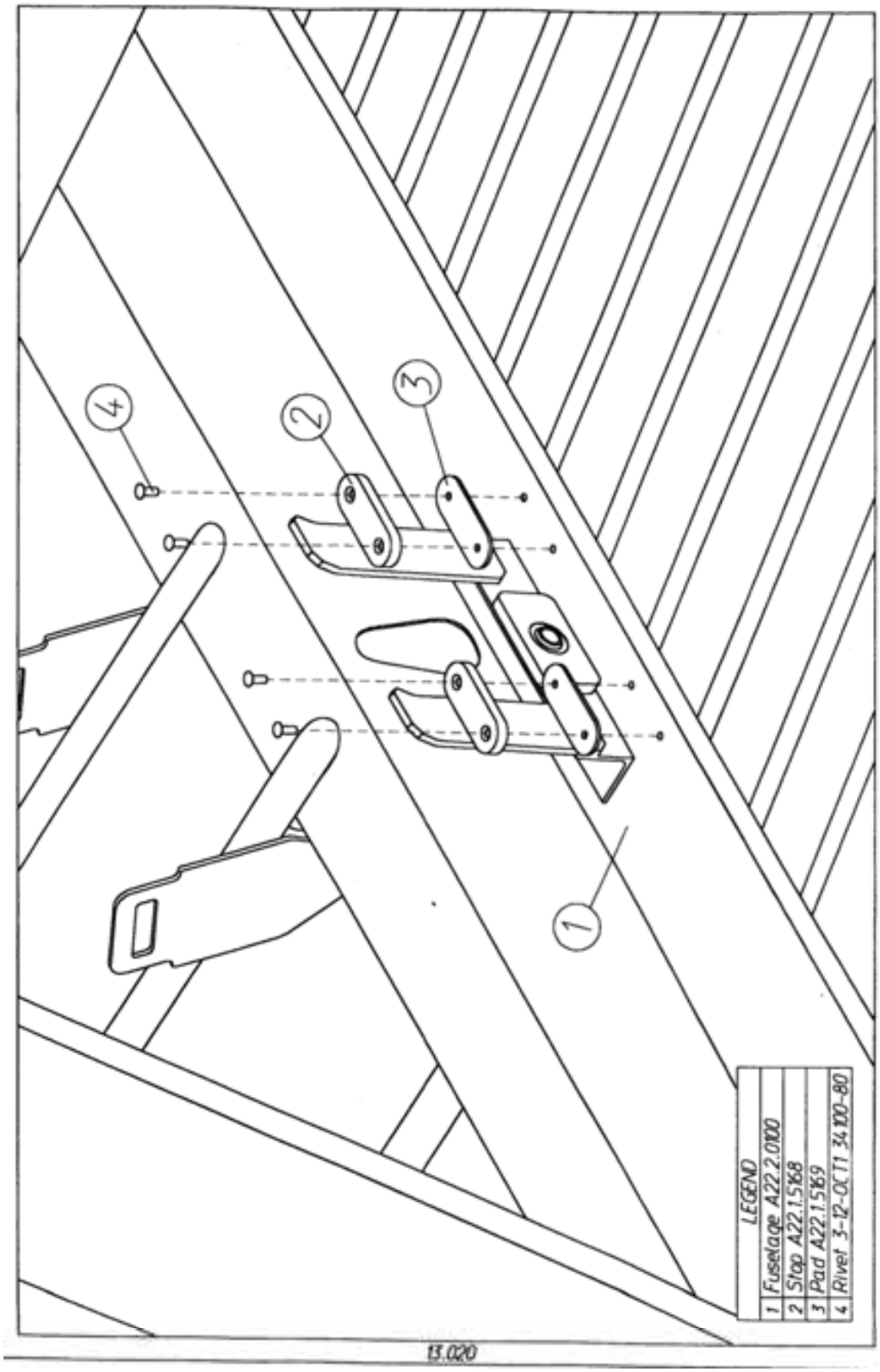
2. Offer up the parts and clico in place exactly as shown on the drawing.

3. Re-check 1 and 2.

4. Replace clicos with rivets.

5. Thoroughly examine the finished work.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Stop A22.1.5168
3 Pad A22.1.5169
4 Rivet 3-12-0CT1 34100-80
13.020

PAGE TWENTY-SIX

DRAWING NUMBERS 13.040 AND 1.260 (6 OF 9)

Installing the Central Pitch/Roll Mixer Mechanisms

SEE DRAWING FOR PARTS REQUIRED

Recommended one person job with fuselage monocoque supported as required

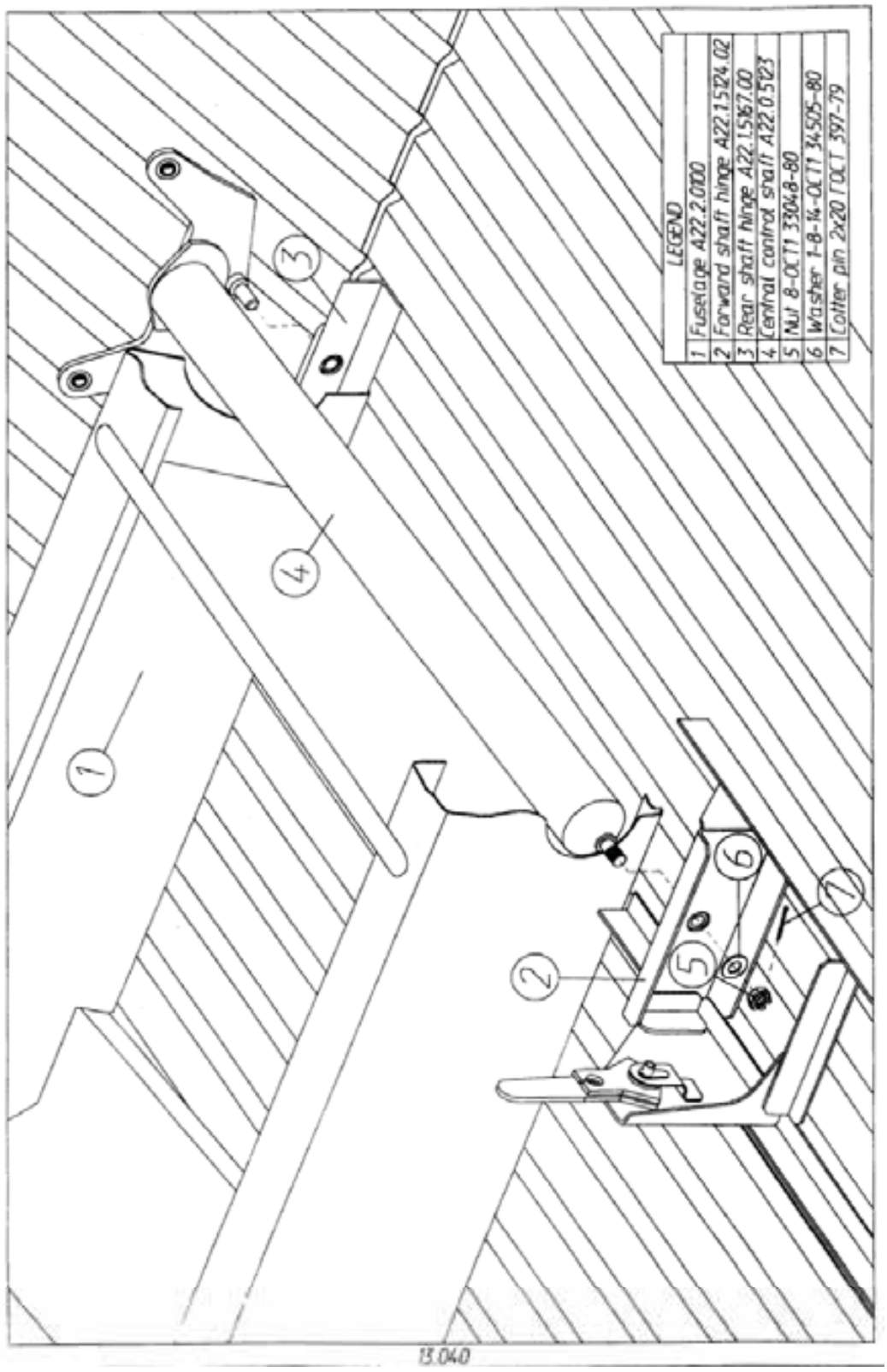
1. Review drawing 13.040 on page twenty one (21). Locate and inspect the central control shaft as illustrated on that drawing. Select the correct castle nut, washer and cotter pin. Lightly grease the shaft locating pins.

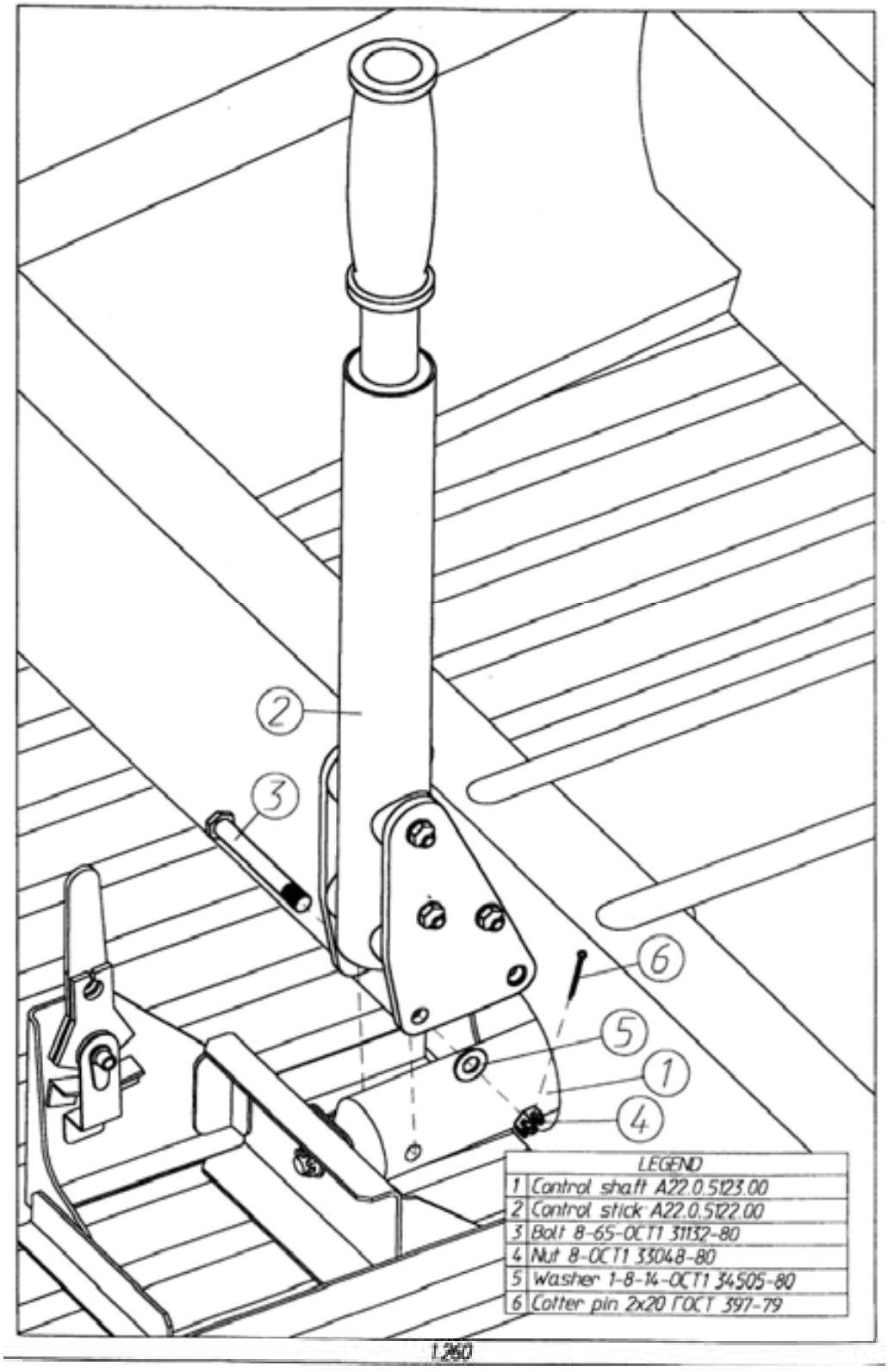
2. Offer up the central control shaft exactly as shown on drawing 13.040 on page twenty one, re- check assembly, then tighten the castle nut *(don't over-tighten)* and fit cotter pin.

3. Locate and inspect the control stick *(with pre-assembled side plates)*. Select the correct bolt with castle-nut, washer and cotter pin. Offer up to the central control shaft exactly as shown on the drawing on the right *(1.260)*. Re-check the entire assembly. Tighten castle nut and fit cotter pin.

4. Thoroughly examine the finished work and check for free rotation of the central control shaft.

Notes:


LEGEND
1 Fuselage A22.2.0000
2 Forward shaft hinge A22.15124.02
3 Rear shaft hinge A22.15167.00
4 Central control shaft A22.05123
5 Nut 8-OCT1 33048-80
6 Washer 1-8-14-OCT1 34505-80
7 Cotter pin 2x20 FOCT 397-79
13.040


2
3
6
5
1
4
LEGEND
1 Control shaft A22.0.5123.00
2 Control stick A22.0.5122.00
3 Bolt 8-65-OCT1 31132-80
4 Nut 8-OCT1 33048-80
5 Washer 1-8-14-OCT1 34505-80
6 Cotter pin 2x20 ГОСТ 397-79
1.260

PAGE TWENTY-SEVEN

DRAWING NUMBER 12. 030 (7 OF 9)

Installing the Central Pitch/Roll Mixer Mechanisms

SEE DRAWING FOR PARTS REQUIRED

Recommended one person job with the fuselage monocoque supported as required.

1. Locate and inspect the elevator bellcrank and sleeve as illustrated on the drawing. Select the correct bolt with stiff-nut and washer. Lightly grease the sleeve inside and out.

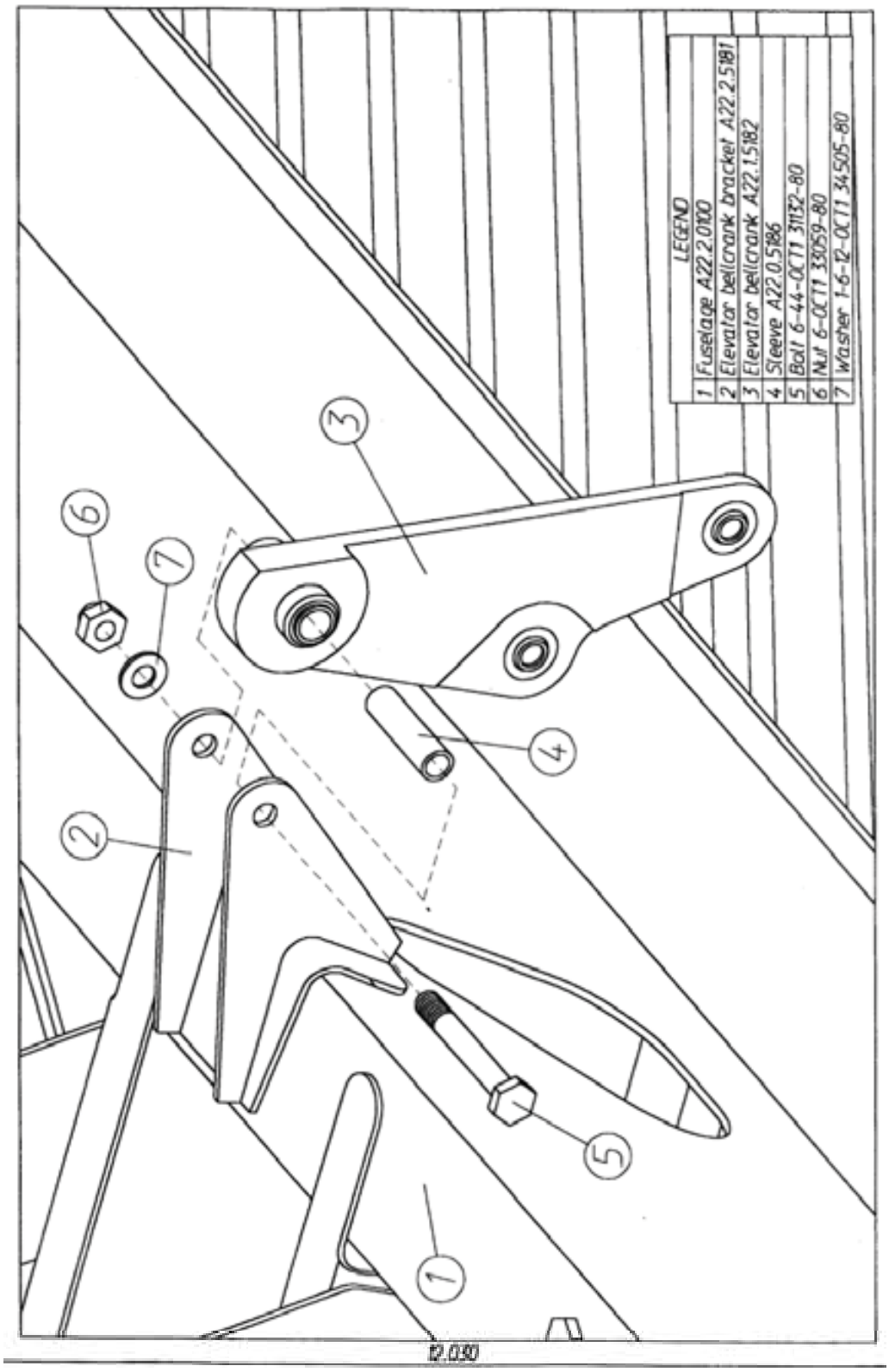
2. Offer up the part and assemble exactly as shown in the drawing with the nut finger-tight.

3. Re-check 1 and 2.

4. Tighten the bolt *(don't over-tighten)*.

5. Thoroughly examine the finished work and check for free rotation of the bellcrank.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Elevator bellcrank bracket A22.2.5181
3 Elevator bellcrank A22.1.5182
4 Sleeve A22.0.5186
5 Bolt 6-44-0C11 31132-80
6 Nut 6-0C11 33059-80
7 Washer 1-6-12-0C11 34505-80
P 0.00

PAGE TWENTY-EIGHT

DRAWING NUMBER 12.040 (8 OF 9)

Installing the Central Pitch/Roll Mixer Mechanisms

SEE DRAWING FOR PARTS REQUIRED

Recommended job for one person with the fuselage monocoque supported as required

1. Locate and inspect the rod (3) as illustrated on the drawing. Don't include the rod (4) at this stage, it will be installed later. Select the correct size bolts with castle nuts, washers and cotter pins.

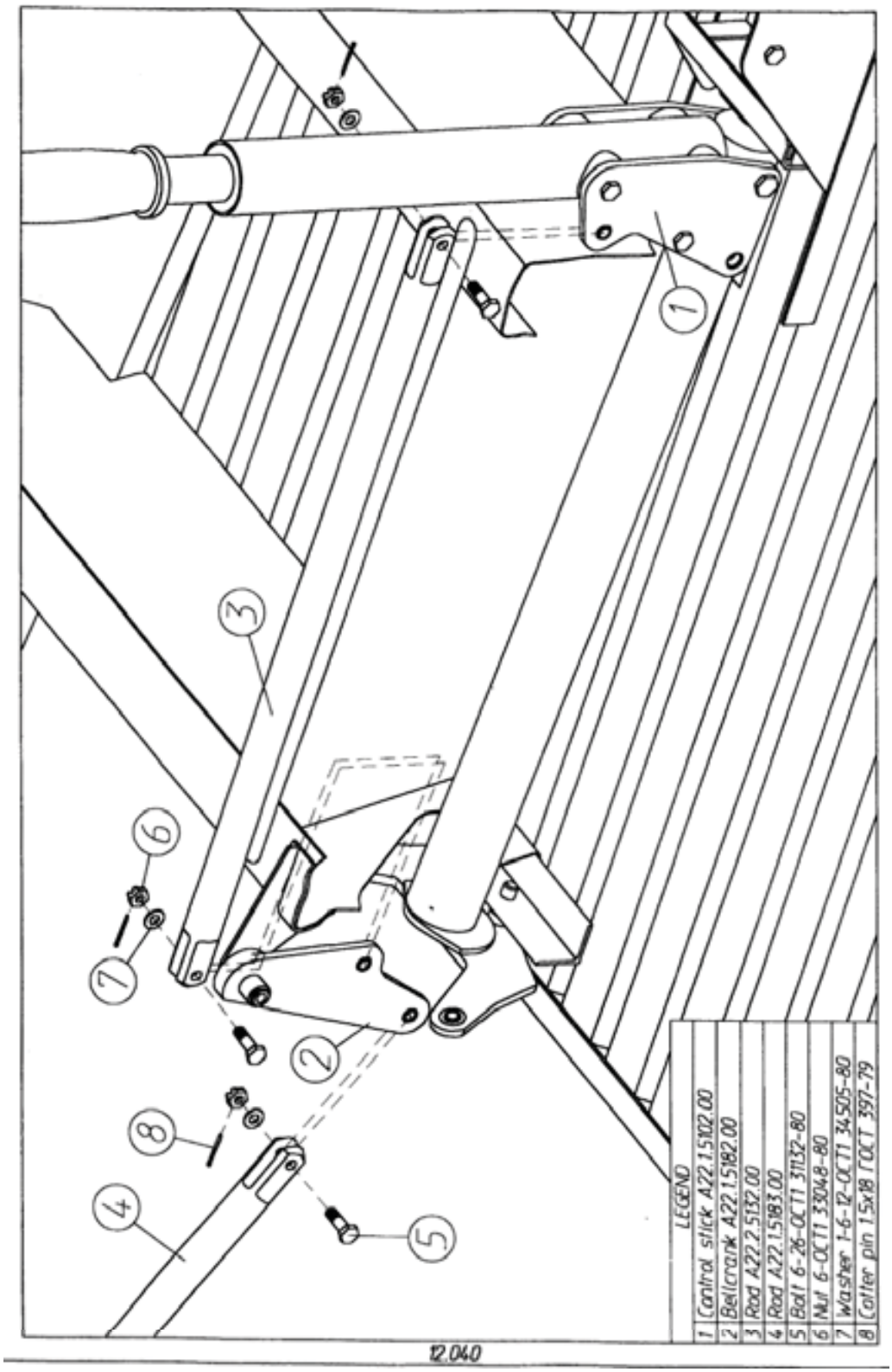
2. Offer up using the rod to connect the control stick to the elevator bellcrank. Assemble finger-tight.

3. Re-check 1 and 2.

4. Tighten castle-nuts *(don't over-tighten)* and insert cotter pins.

5. Thoroughly examine the finished work.

Notes:


LEGEND
1 Control stick A22.15102.00
2 Bellcrank A22.15182.00
3 Rod A22.2.5132.00
4 Rod A22.15183.00
5 Bolt 6-26-OCT1 31132-80
6 Nut 6-OCT1 33048-80
7 Washer 1-6-12-OCT1 34505-80
8 Cotter pin 1.5x18 ROCT 397-79
12.040

PAGE TWENTY-NINE

DRAWING NUMBER 1.330 (9 OF 9)

Installing the Central Pitch/Roll Mixer Mechanisms

SEE DRAWING FOR PARTS REQUIRED

Recommended job for one person.

Note. This job can be left until later, the cover is supplied in bare aluminium but many people prefer to paint or upholster it before final fitting.

1. Locate and inspect the cover as illustrated on the drawing. Select the correct size screws.

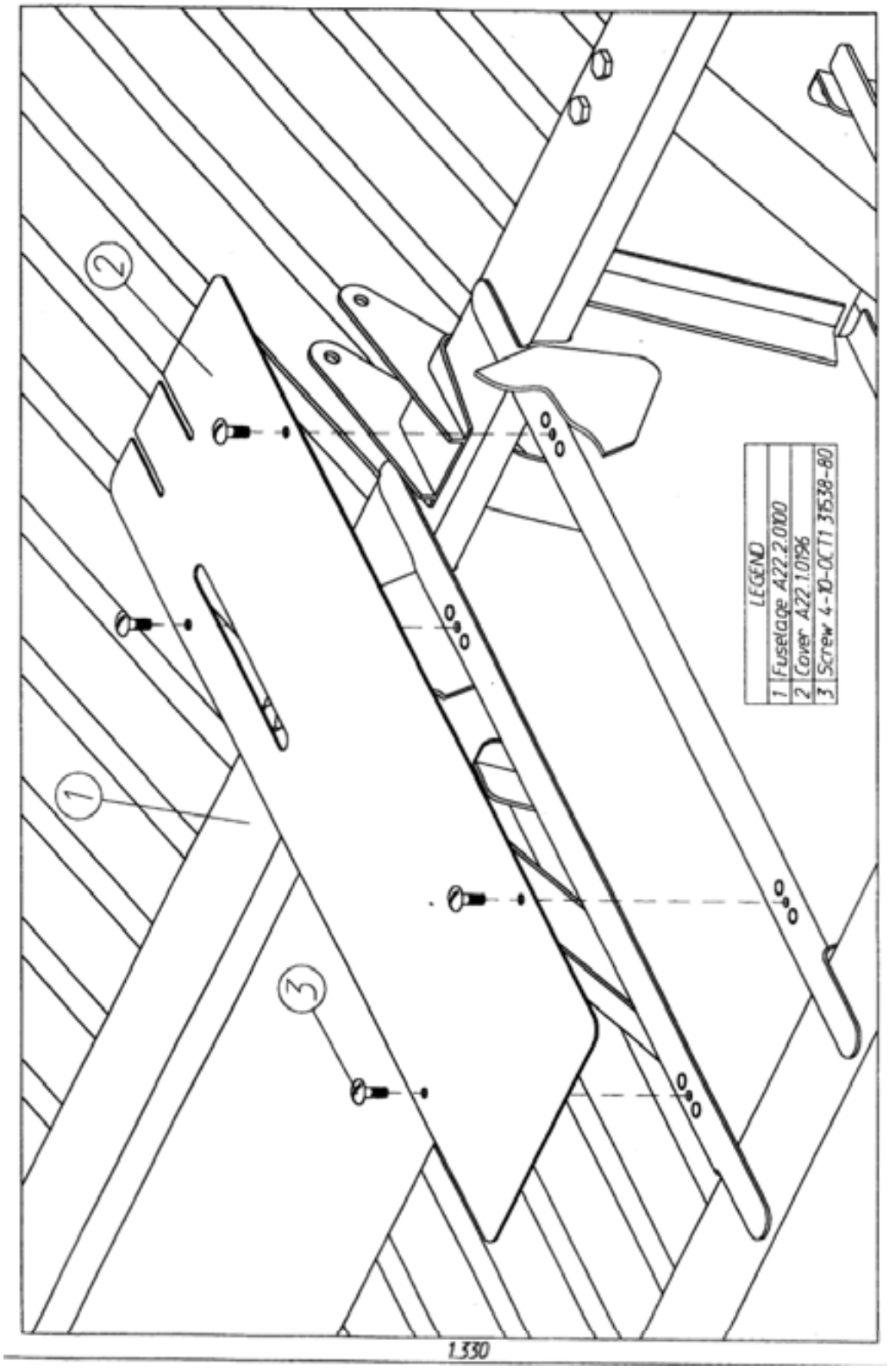
2. Offer up the part and start screws in the captive stiff-nuts.

3. Re-check 1 and 2.

4. Tighten screws.

5. Thoroughly examine the finished work.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Cover A22.1.0196
3 Screw 4-40-UCT1 31538-80
1.330

PAGE THIRTY

DRAWING NUMBER 15.010

Installing the Trim Cable Guide

SEE DRAWING FOR PARTS REQUIRED

Recommended one person job with the fuselage monocoque supported as required

1. Locate and inspect the trim cable guides as illustrated on the drawing.

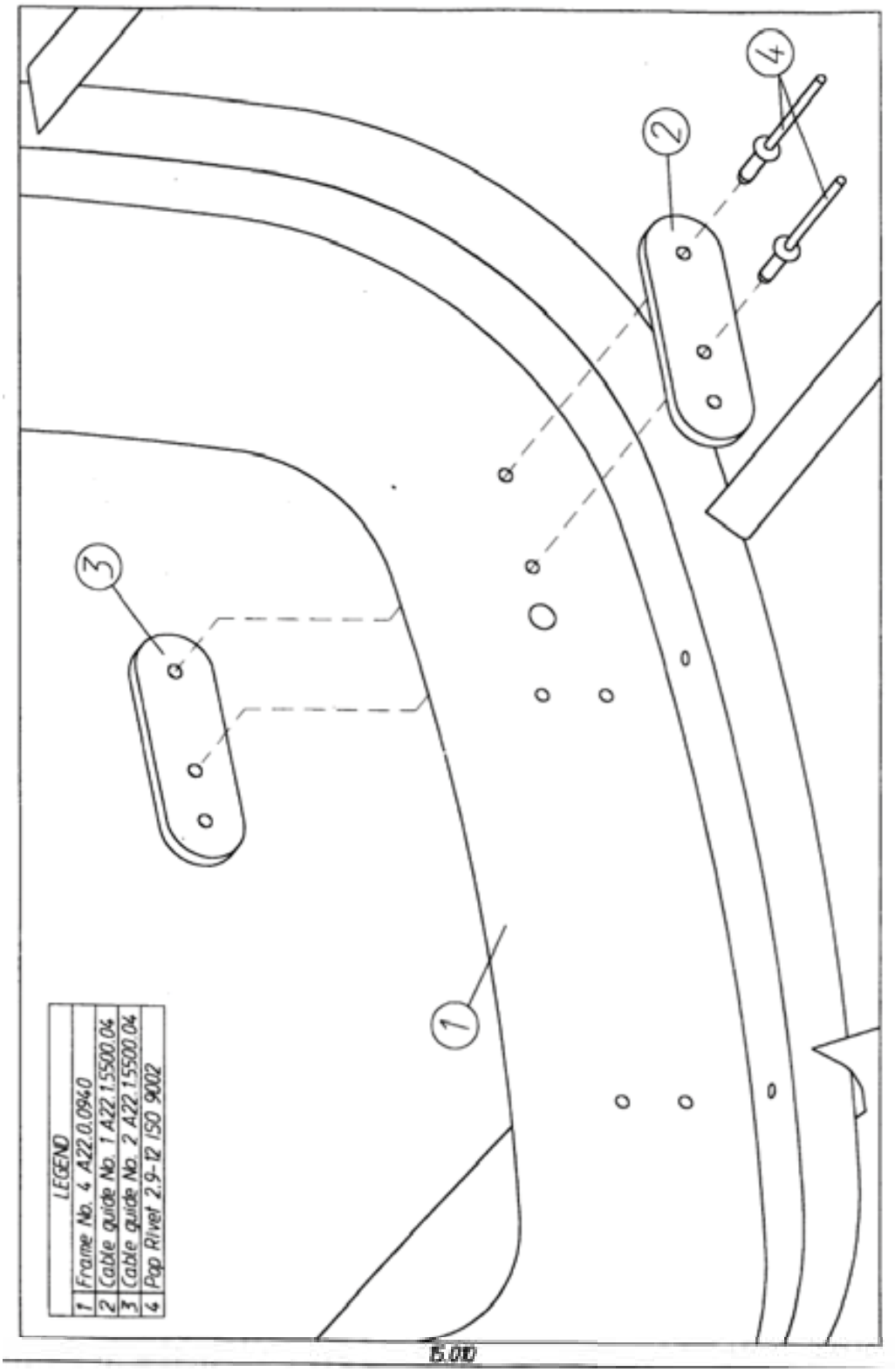
2. Offer up the parts and hold loosely in place with pop rivets exactly as shown on the drawing.

3. Re-check 1 and 2.

4. Compress the pop rivets.

5. Thoroughly examine the finished work.

Notes:


LEGEND
1 Frame No. 4 A22.0.0940
2 Cable guide No. 1 A22.15500.04
3 Cable guide No. 2 A22.15500.04
4 Pop Rivet 2.9-12 ISO 9002
5.00

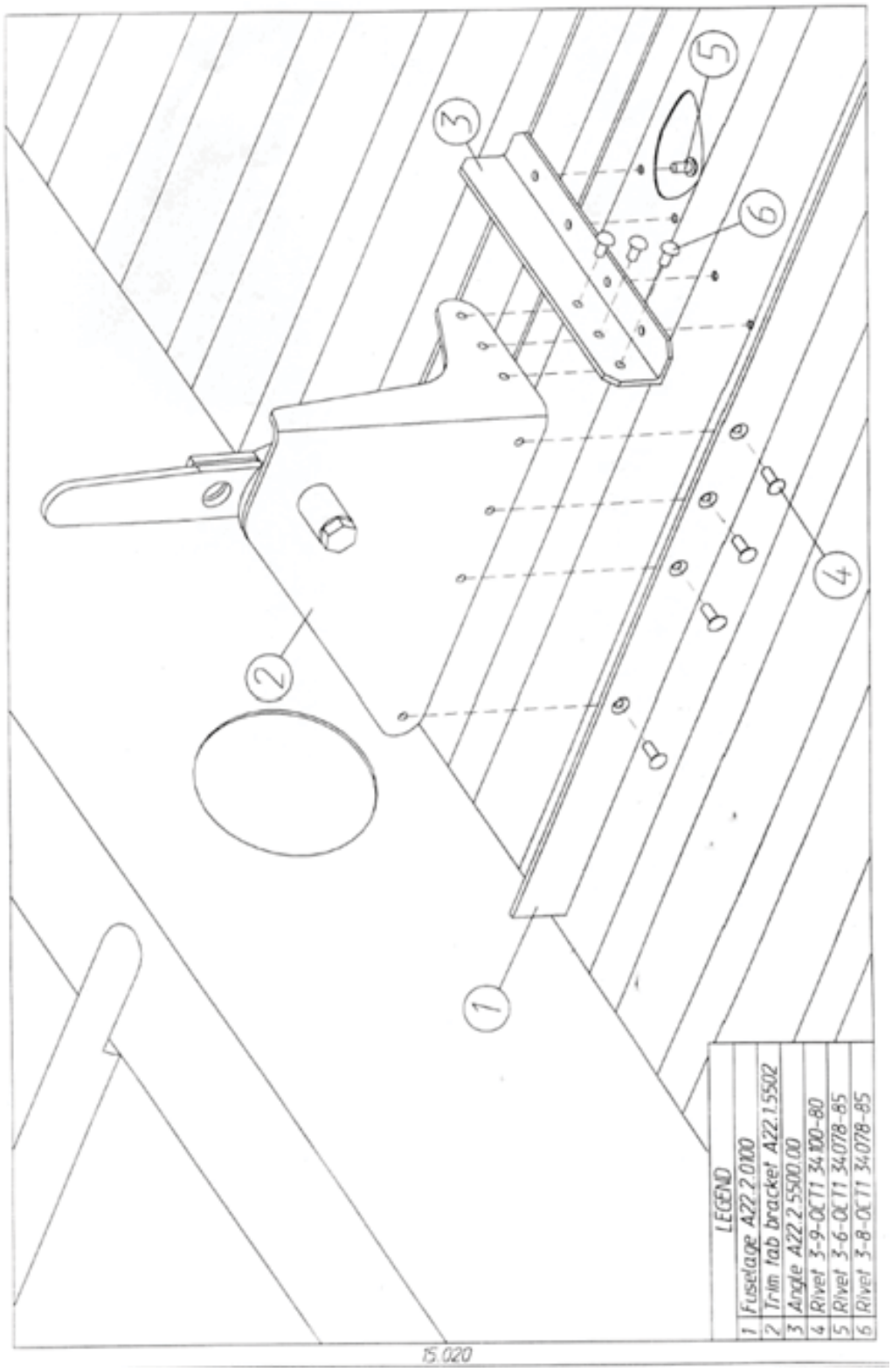
PAGE THIRTY-ONE

DRAWING NUMBER 15.020

Installing the Manual trim lever

SEE DRAWING FOR PARTS REQUIRED

Recommended job for two persons with fuselage monocoque supported as required


LEGEND
1 Fuselage A22.2.0100
2 Trim tab bracket A22.1.5502
3 Angle A22.2.5500.00
4 Rivet 3-9-DCT1 34100-80
5 Rivet 3-6-DCT1 34078-85
6 Rivet 3-8-DCT1 34078-85
15.020

PAGE THIRTY-TWO

DRAWING NUMBER 11.020

Installing the Rudder-Cable Forward Guides and Pads

SEE DRAWING FOR PARTS REQUIRED

Recommended job for two persons with fuselage monocoque supported as required

1. Locate and inspect the pad and cable guide as illustrated on the drawing. *Note. Item (3) is the cable guide.*

2. Offer up the parts exactly as shown on the drawing and clico in place. *Note. Providing the rudder cables are still "open" at their forward ends the cable guides can be threaded through later. In this instance "open" means just a cut cable-end with nothing swaged on to it. Normally the ferrules securing the forward thimbles and turnbuckles are swaged "in situ" later but at the time of writing that method is under review. Examine the forward ends of the supplied rudder cables to confirm.*

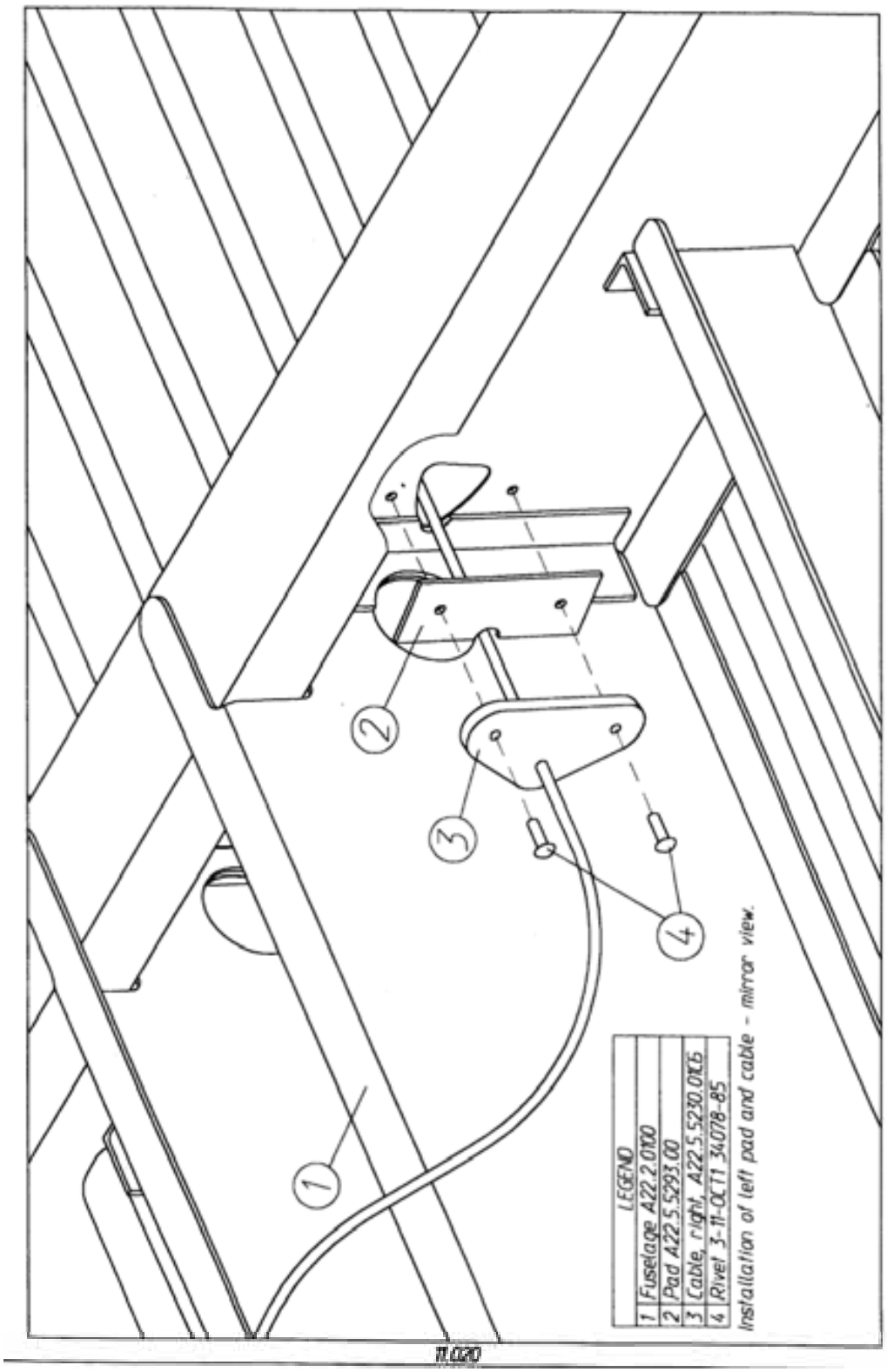
3. Re-check 1 and 2.

4. Replace clicos with rivets.

5. Repeat on the left-hand side.

6. Thoroughly examine the finished work.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Pad A22.5.5293.00
3 Cable, right, A22.5.5230.0105
4 Rivet 3-11-DCT11 34.078-85
Installation of left pad and cable - mirror view.
11.020

PAGE THIRTY-THREE

DRAWING NUMBER 11.030

Installing the Forward Rudder-Cable Pulleys

SEE DRAWING FOR PARTS REQUIRED

Recommended job for one person with the fuselage monocoque supported as required

1. Locate and inspect the rudder-cable, the outer and inner brackets, the pulley and the guard as illustrated on the drawing. Select the correct size bolts, stiff-nuts, castle nut, washers and cotter pin.

2. Offer up and loosely assemble exactly as in the drawing.

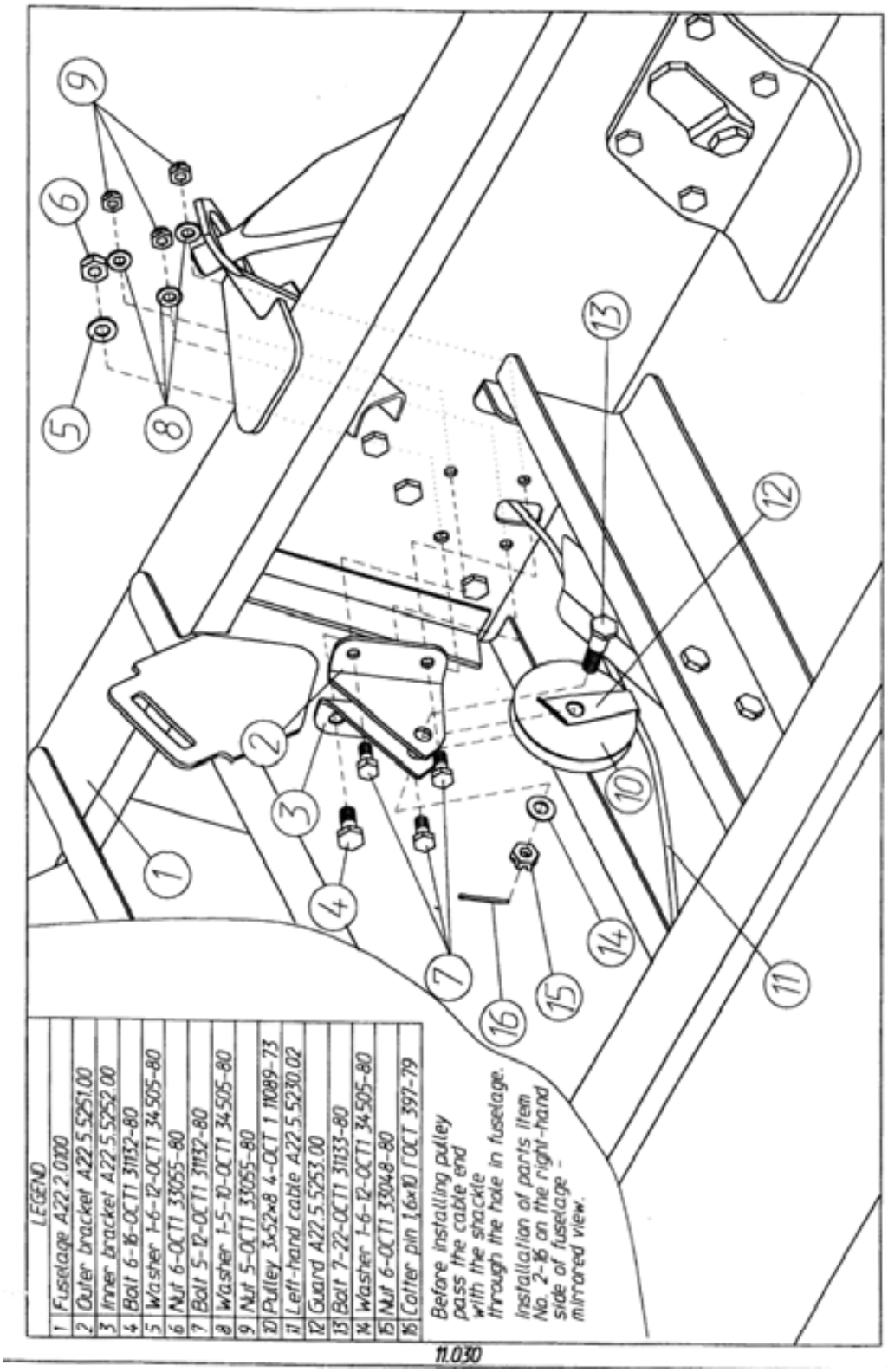
3. Re-check 1 and 2.

4. Tighten the nuts until the assembly is snug and firm *(don't over-tighten)*. Ensure that the pulley can rotate freely.

5. Repeat on the right-hand side.

6. Thoroughly examine the finished work.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Outer bracket A22.5.5251.00
3 Inner bracket A22.5.5252.00
4 Bolt 6-16-OCT1 31132-80
5 Washer 1-6-12-OCT1 34505-80
6 Nut 6-OCT1 33055-80
7 Bolt 5-12-OCT1 31132-80
8 Washer 1-5-10-OCT1 34505-80
9 Nut 5-OCT1 33055-80
10 Pulley 3x52x8 4-OCT 1 11089-73
11 Left-hand cable A22.5.5230.02
12 Guard A22.5.5253.00
13 Bolt 7-22-OCT1 31133-80
14 Washer 1-6-12-OCT1 34505-80
15 Nut 6-OCT1 33048-80
16 Cotter pin 1,6x10 1 OCT 3971-79
Before installing pulley pass the cable end with the shackle through the hole in fuselage.
Installation of parts item No. 2-16 on the right-hand side of fuselage - mirrored view.
11.030

PAGE THIRTY-FOUR

DRAWING NUMBER 11.010

Installing the Aft Rudder-Cable Pulleys

SEE DRAWING FOR PARTS REQUIRED

Recommended job for one person with the fuselage supported as required

1. Locate and inspect the rudder-cables, the shackles and the pulleys as illustrated on the drawing. Select the correct size bolts, stiff-nuts, castle-nuts, washers and cotter pins.

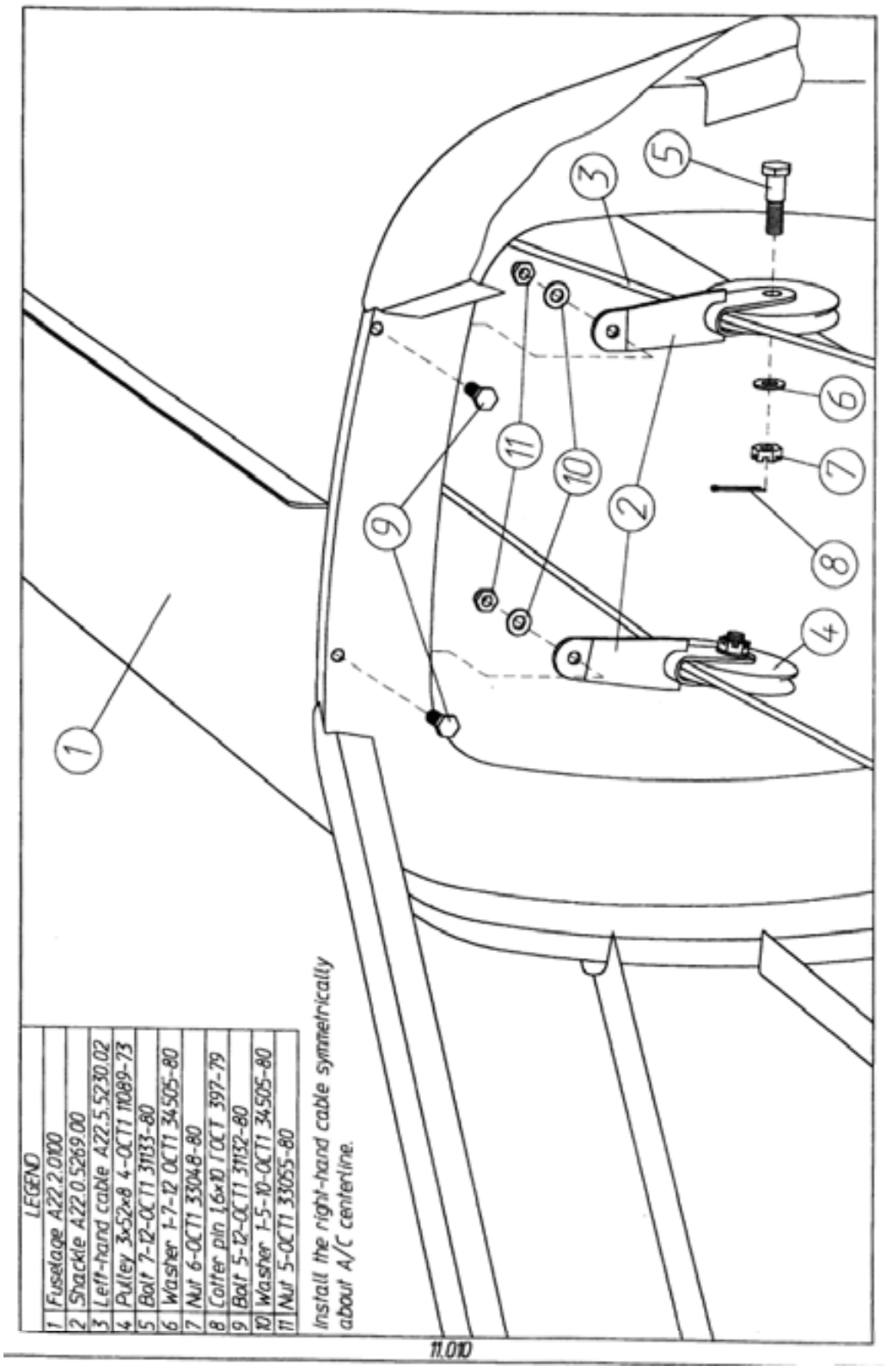
2. Offer up the parts and assemble loosely exactly as shown on the drawing.

3. Re-check 1 and 2.

4. Tighten the nuts until the assembly is snug and firm *(don't over-tighten)*. Ensure that the pulleys rotate freely.

5. Thoroughly examine the finished work.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Shackle A22.0.5269.00
3 Left-hand cable A22.5.5230.02
4 Pulley 3x52x8 4-OCT1 11089-73
5 Bolt 7-12-OCT1 31133-80
6 Washer 1-7-12 OCT1 34505-80
7 Nut 6-OCT1 33048-80
8 Cotter pin 1,6x10 1 OCT 397-79
9 Bolt 5-12-OCT1 31132-80
10 Washer 1-5-10-OCT1 34505-80
11 Nut 5-OCT1 33055-80
Install the right-hand cable symmetrically about A/C centerline.
11.010

PAGE THIRTY-FIVE

DRAWING NUMBER 12.010

Installing the Aft Elevator Bellcrank

SEE DRAWING FOR PARTS REQUIRED

Recommended job for two persons with the fuselage monocoque supported as required

1. Locate and inspect the elevator bellcrank. This should be pre-assembled to the pivot-brackets with bolts, stiff-nuts and washers as illustrated on the drawing.

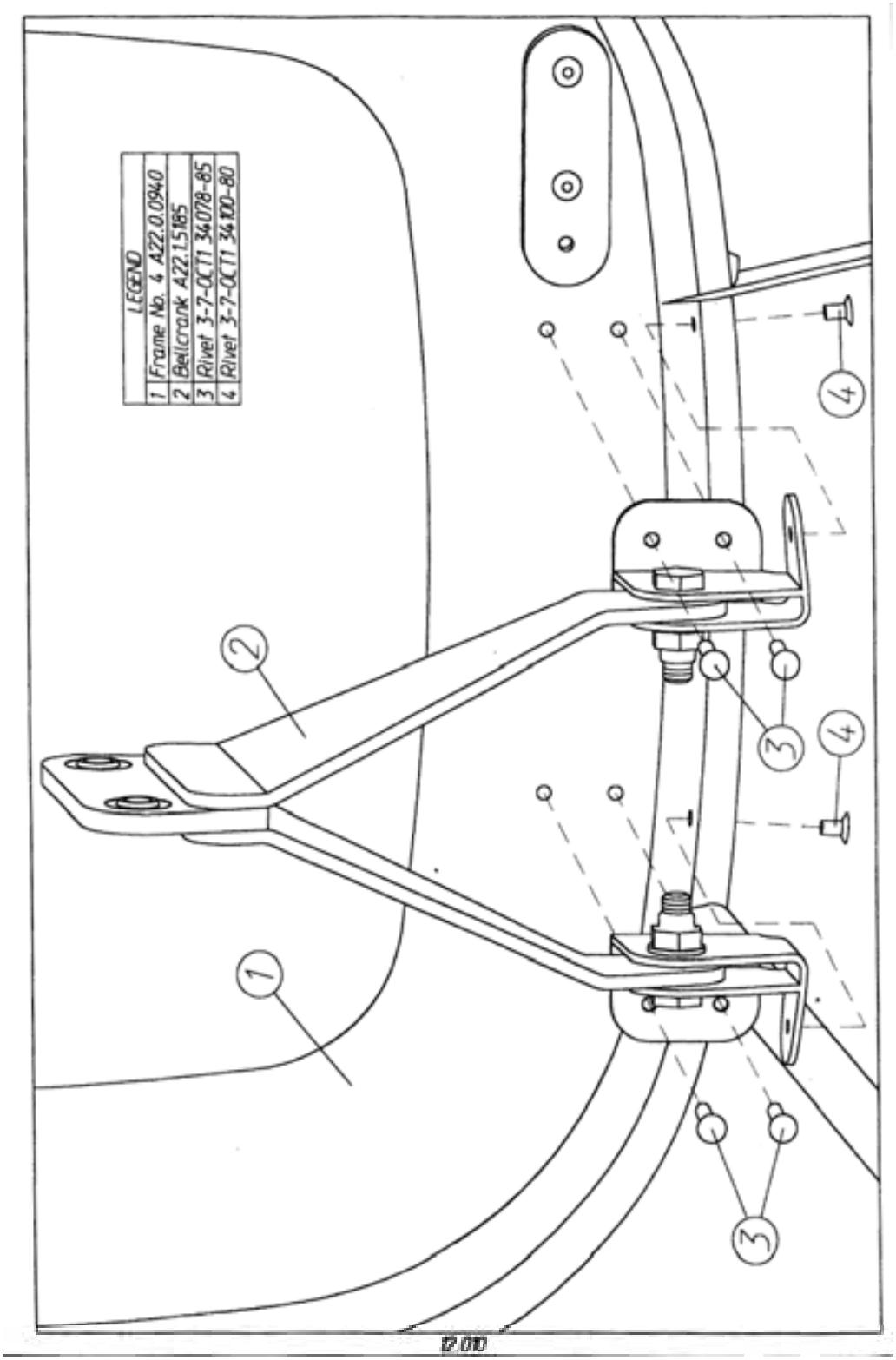
2. Offer up the part and clico in place.

3. Re-check 1 and 2.

4. Replace clicos with rivets.

5. Thoroughly examine the finished work.

Notes:


LEGEND
1 Frame No. 4 A22.0.0940
2 Bellcrank A22.1.585
3 Rivet 3-7-0CT1 34078-85
4 Rivet 3-7-0CT1 34100-80
1
2
3
4
3
4

PAGE THIRTY-SIX

DRAWING NUMBER 12.O50

Installing the Elevator Rods

SEE DRAWING FOR PARTS REQUIRED

Recommended job for one person with fuselage monocoque supported as required

1. Locate and inspect the elevator rods as illustrated on the drawing. Select the correct size bolts, castle-nuts, washers and cotter pins. *Note. The rod (2) on this drawing is the same part as the rod (4) on drawing number 12.040 (see page twenty eight). Refer to that drawing for view of forward rod connection.*

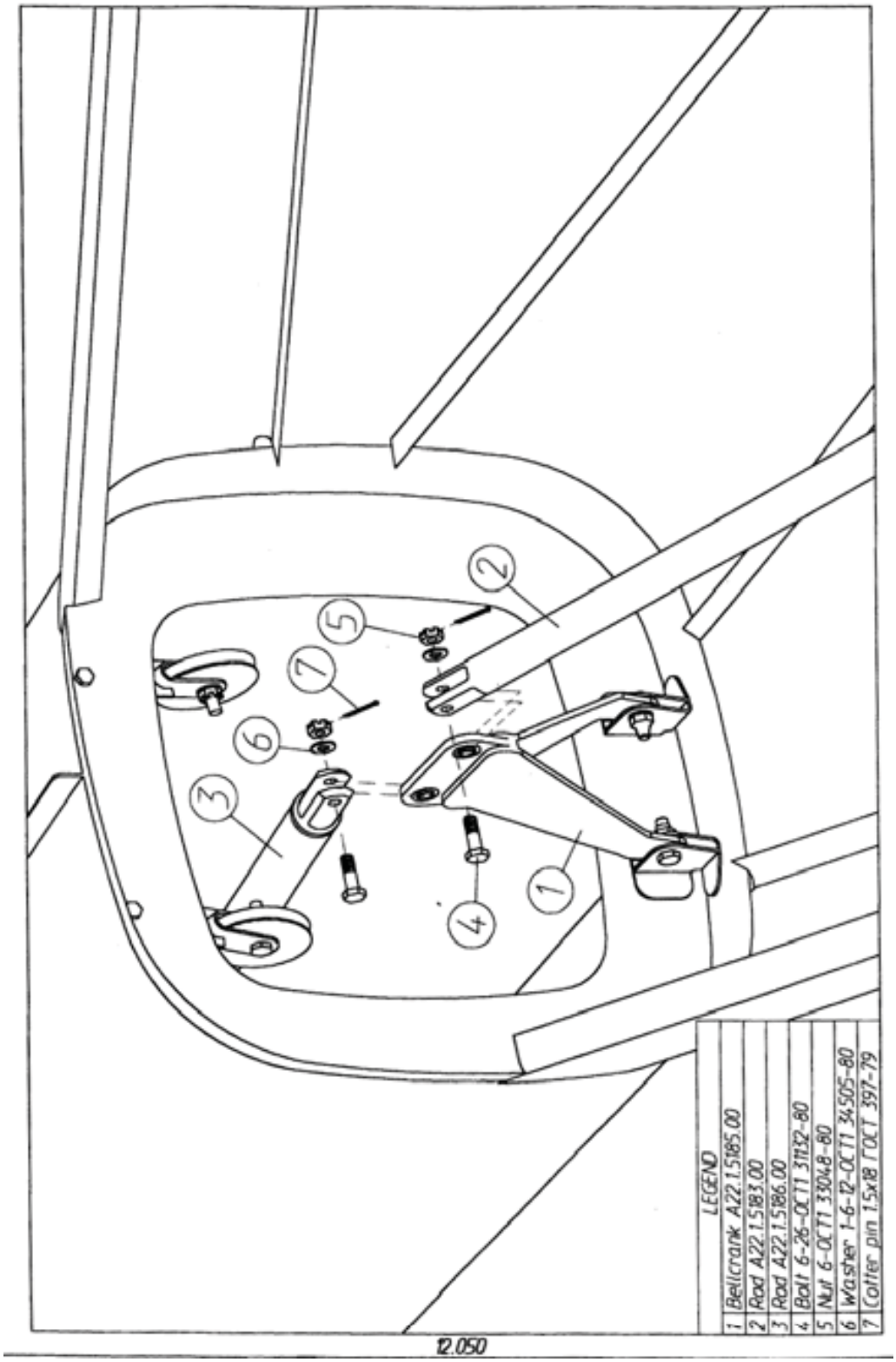
2. Offer up the parts and assemble them loosely exactly as illustrated on the drawings.

3. Re-check 1 and 2.

4. Tighten the nuts and install the cotter pins *(don't over-tighten)*. Ensure free rotation at each rod-to-bellcrank connection and at both bellcrank pivots.

5. Thoroughly examine the finished work.

Notes:


LEGEND
1 Bellcrank A22.1.5185.00
2 Rod A22.1.5183.00
3 Rod A22.1.5186.00
4 Bolt 6-26-OCT1 31132-80
5 Nut 6-OCT1 33048-80
6 Washer 1-6-12-OCT1 34505-80
7 Cotter pin 1.5x18 ГОСТ 397-79
12.050

PAGE THIRTY-SEVEN

DRAWING NUMBER 14.010 (1 of 6)

Installing the Flaperon Mechanism

SEE DRAWINGS FOR PARTS REQUIRED

Recommended job for two persons with fuselage monocoque supported as required

1. Locate and inspect all the parts as illustrated on the four drawings 14.010/20/30/40 and 13.060/50. Separate the parts that will be riveted to the fuselage.

2. Study the next six drawings until you have a good grasp of how the flaperon mechanism works. The key to understanding is the rocker arm (3) *(drawing number 14.020)* and the way the rocking action links to the flaperon control shafts (1) *(drawing number 13.060)*. The drawings are "busy" in comparison with previous ones but the mechanism itself is basic and robust. *Note. Do not commence any assembly or riveting until you are sure how the mechanism works.*

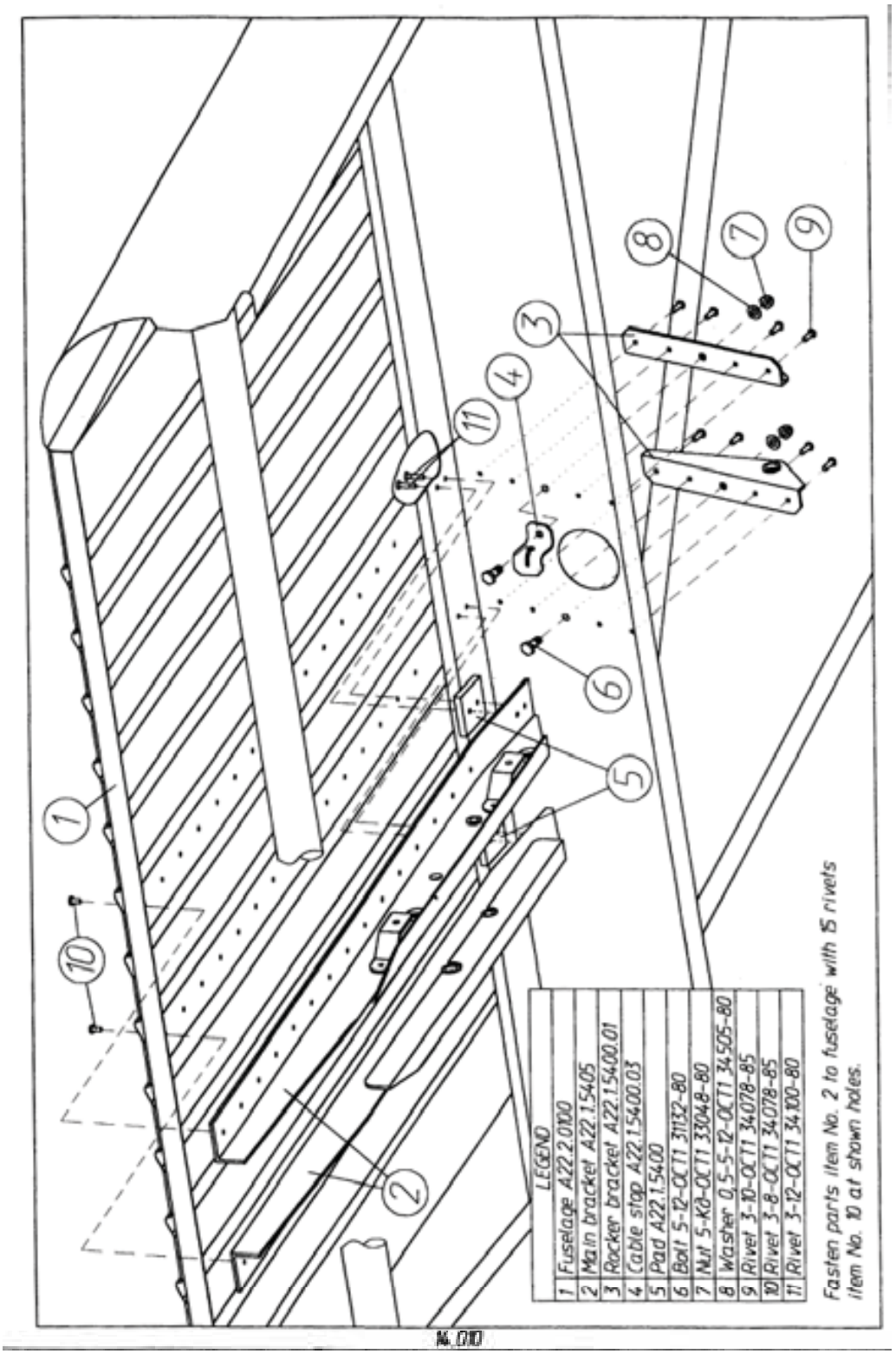
3. Select the main brackets, rocker brackets, cable stop and pad as illustrated on the drawing to the right. Select the correct size bolts, stiff-nuts and washers. Offer up the parts and clico in place exactly as shown on the drawing. Insert bolts and finger-tighten the nuts.

4. Re-check 1, 2 and 3.

5. Replace clicos alternately with rivets then tighten the nuts.

6. Thoroughly examine the finished work.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Main bracket A22.1.5405
3 Rocker bracket A22.1.5400.01
4 Cable stop A22.1.5400.03
5 Pad A22.1.5400
6 Bolt 5-12-OCT1 31132-80
7 Nut 5-K8-OCT1 33048-80
8 Washer 0,5-5-12-OCT1 34505-80
9 Rivet 3-10-OCT1 34078-85
10 Rivet 3-8-OCT1 34078-85
11 Rivet 3-12-OCT1 34100-80
Fasten parts item No. 2 to fuselage with 15 rivets item No. 10 at shown holes.

PAGE THIRTY-EIGHT

DRAWING NUMBER 14.020 (2 OF 6)

Installing the Flaperon Mechanism

SEE DRAWING FOR PARTS REQUIRED

Recommended job for two persons with the fuselage monocoque supported as required

1. Select the rocker, the lever, the bracket, the cogged plate, the bearing and the bracket bearing as illustrated on the drawing. Lightly grease the sleeve-bearing surfaces. Select the correct size bolts with castle-nuts, washers and cotter pins.

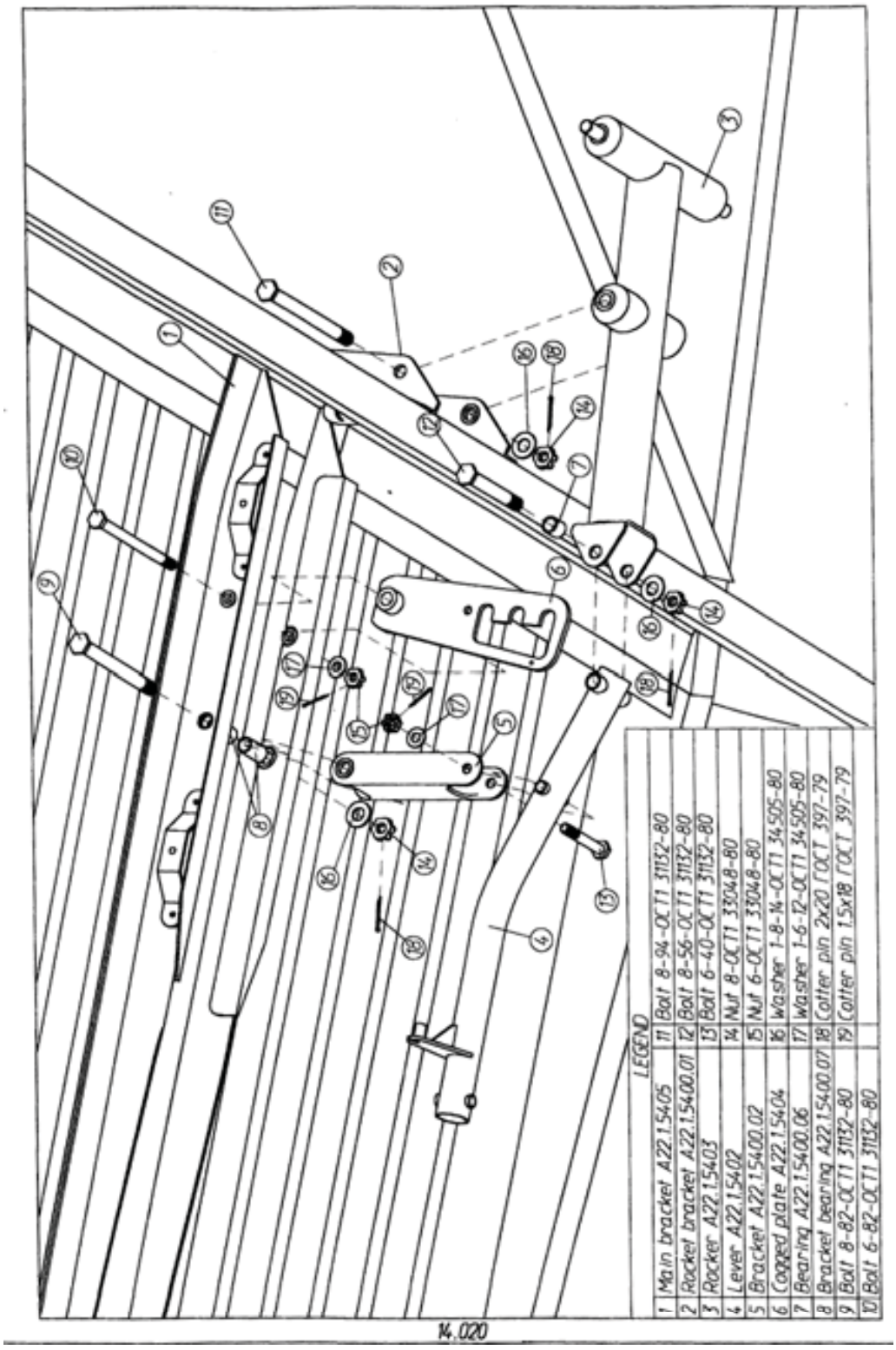
2. Offer up the parts and loosely assemble them exactly as shown in the drawing with the nuts finger-tight.

3. Re-check 1 and 2.

4. Tighten the nuts *(don't over-tighten)* and insert the cotter pins.

5. Thoroughly examine the finished work and check for free action of the partly-assembled mechanism.

Notes:


LEGEND
1 Main bracket A22.1.5405
2 Rocket bracket A22.1.5400.01
3 Rocker A22.1.5403
4 Lever A22.1.5402
5 Bracket A22.1.5400.02
6 Capped plate A22.1.5404
7 Bearing A22.1.5400.06
8 Bracket bearing A22.1.5400.07
9 Bolt 8-82-OCT1 31132-80
10 Bolt 6-82-OCT1 31132-80
11 Bolt 8-94-OCT1 31152-80
12 Bolt 8-56-OCT1 31132-80
13 Bolt 6-40-OCT1 31132-80
14 Nut 8-OCT1 33048-80
15 Nut 6-OCT1 33048-80
16 Washer 1-8-14-OCT1 34505-80
17 Washer 1-6-12-OCT1 34505-80
18 Cotter pin 2x20 FOCT 397-79
19 Cotter pin 1.5x18 FOCT 397-79
14.020

PAGE THIRTY-NINE

DRAWING NUMBER 14.030 (3 of 6)

Installing the Flaperon Mechanism

SEE DRAWING FOR PARTS REQUIRED

Recommended job for one person with the fuselage monocoque supported as required

1. Select the handle, the spring, the cable and the conduit stop as illustrated on the drawing. Select the correct size bolts with castle-nuts, stiff-nuts, washers and cotter pins. Lightly grease the moving surfaces where appropriate.

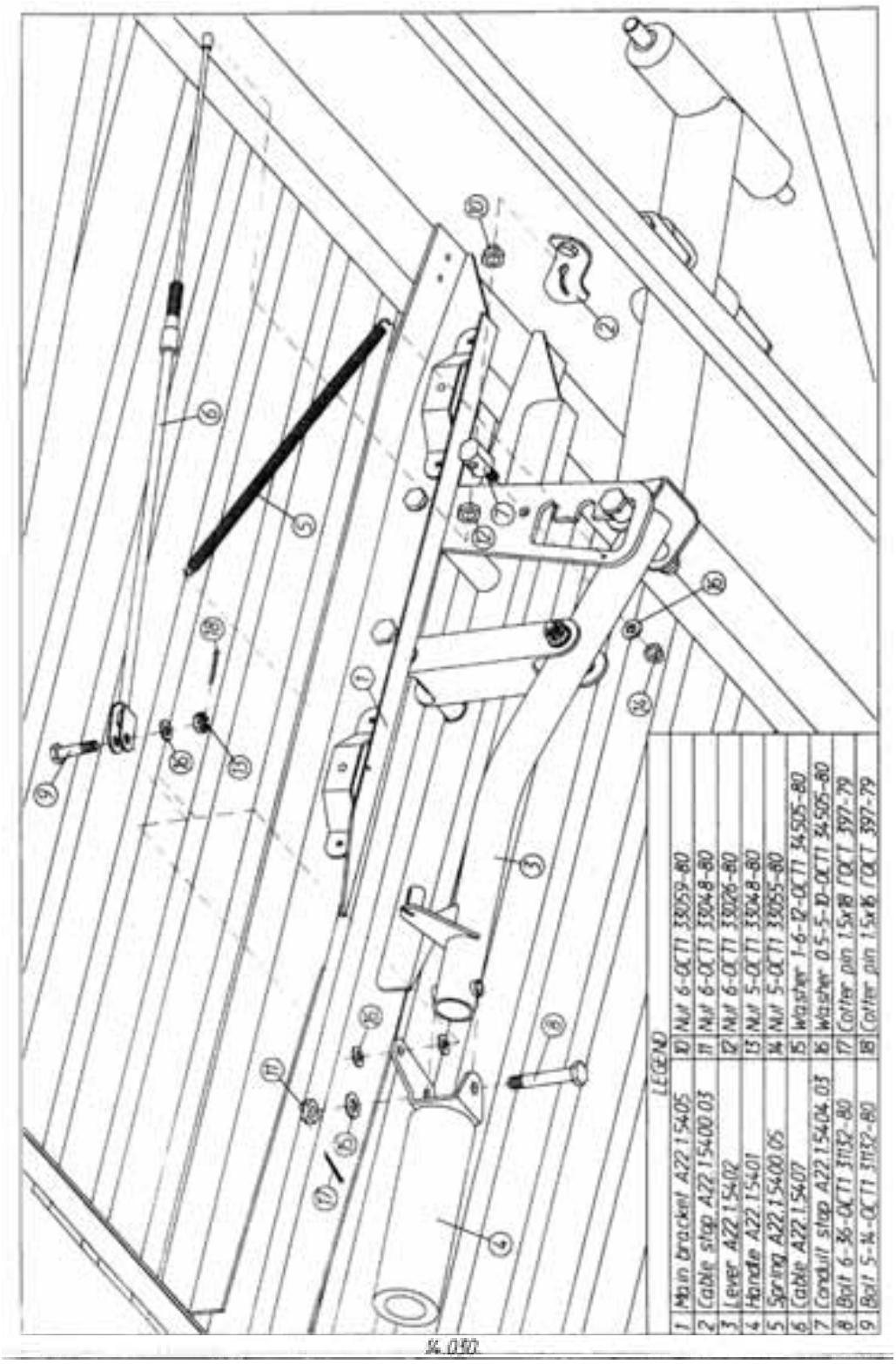
2. Offer up the parts and loosely assemble them exactly as shown in the drawing with the nuts finger-tight.

3. Re-check 1 and 2.

4. Tighten the nuts *(don't over-tighten)* and install the cotter pins.

5. Thoroughly examine the finished work and re-check for free action of the assembled mechanism.

Notes:


LEGEND
1 Main bracket A22 15405
2 Cable stop A22 15400 03
3 Lever A22 15402
4 Handle A22 15401
5 Spring A22 15400 05
6 Cable A22 15407
7 Conduit stop A22 15404 03
8 Bolt 6-36-0CT1 31152-80
9 Bolt 5-14-0CT1 31152-80
10 Nut 6-0CT1 33059-80
11 Nut 6-0CT1 33048-80
12 Nut 6-0CT1 33026-80
13 Nut 5-0CT1 33048-80
14 Nut 5-0CT1 33055-80
15 Washer 1-6-12-0CT1 34505-80
16 Washer 0.5-5-10-0CT1 34505-80
17 Cotter pin 1.5x18 FOCT 397-79
18 Cotter pin 1.5x16 FOCT 397-79

PAGE FORTY

DRAWING NUMBER 14.040 (4 OF 6)

Installing the Flaperon Mechanism

SEE DRAWING FOR PARTS REQUIRED

Recommended job for two persons. Note. This job can be left until later. See "Interior Mouldings" section.

1. Locate and inspect the housing as illustrated on the drawing. Select the correct size screws to match the captive stiff-nuts in the main brackets.

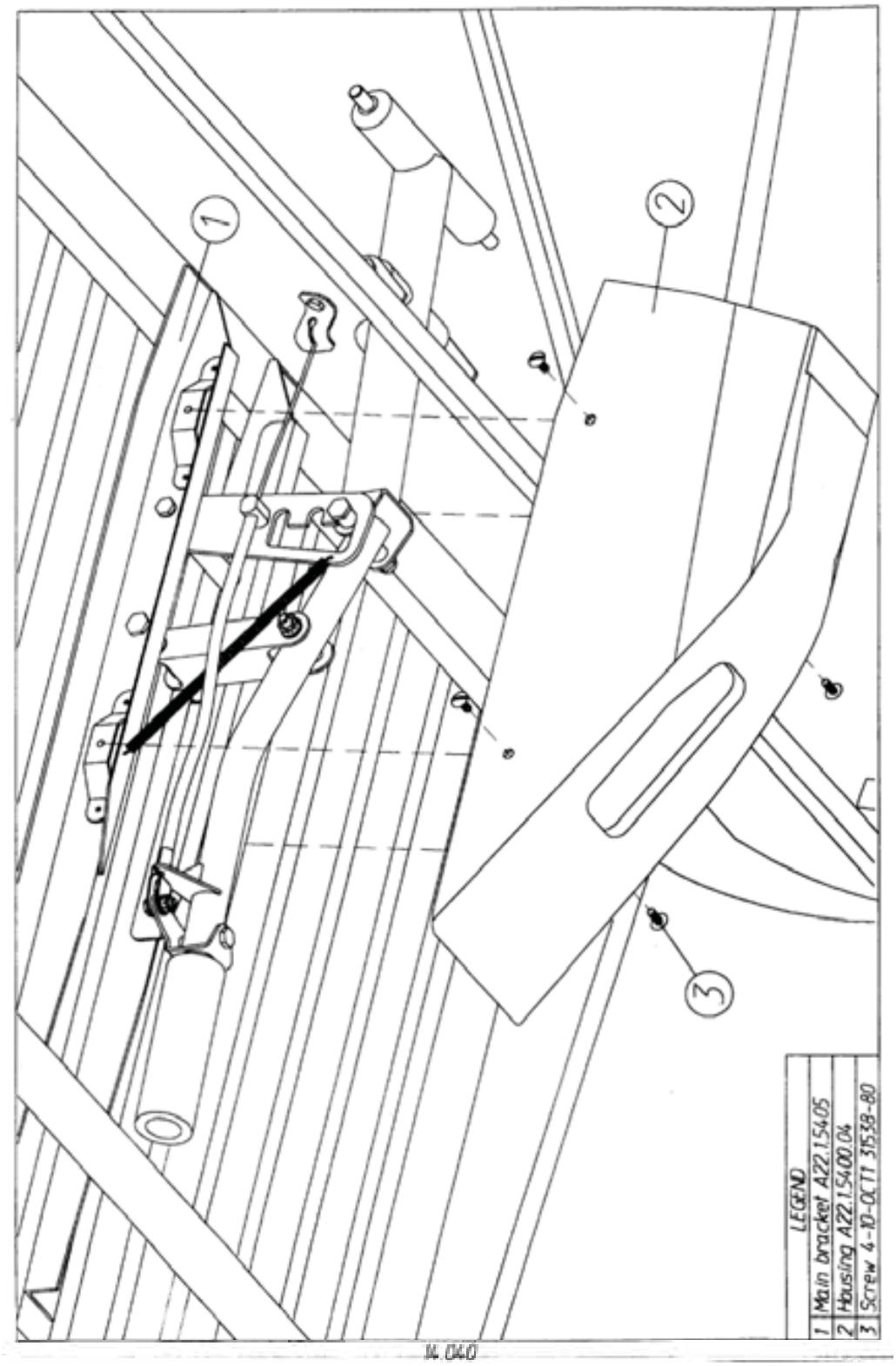
2. Offer up the part and attach with the screws finger-tight. *Note. You will need to hold the housing laterally to the centre-line for the initial fit over the lever and then manoeuvre it horizontally and backwards through 90 degrees to its final position.*

3. Re-check 1 and 2.

4. Tighten screws.

5. Thoroughly examine the finished work.

Notes:


1
2
3
LEGEND
1 Main bracket A22.154.05
2 Housing A22.154.00.04
3 Screw 4-10-OCT1 31538-80

PAGE FORTY-ONE

DRAWING NUMBER 13.050 (5 OF 6)

Installing the Flaperon Mechanism

SEE DRAWING FOR PARTS REQUIRED

Recommended job for one person.

Note. The control shaft is dealt with here for clarity of function. You will not need to install it until you attach the wings. See "Wings and Flaperons" section.

1. Select the flaperon control shafts and the cardan rings as illustrated on the drawing. Select the correct size bolts with castle-nuts washers and cotter pins.

2. Fit the cardan ring to the shaft exactly as shown in the drawing. Offer up the shaft to the rocker.

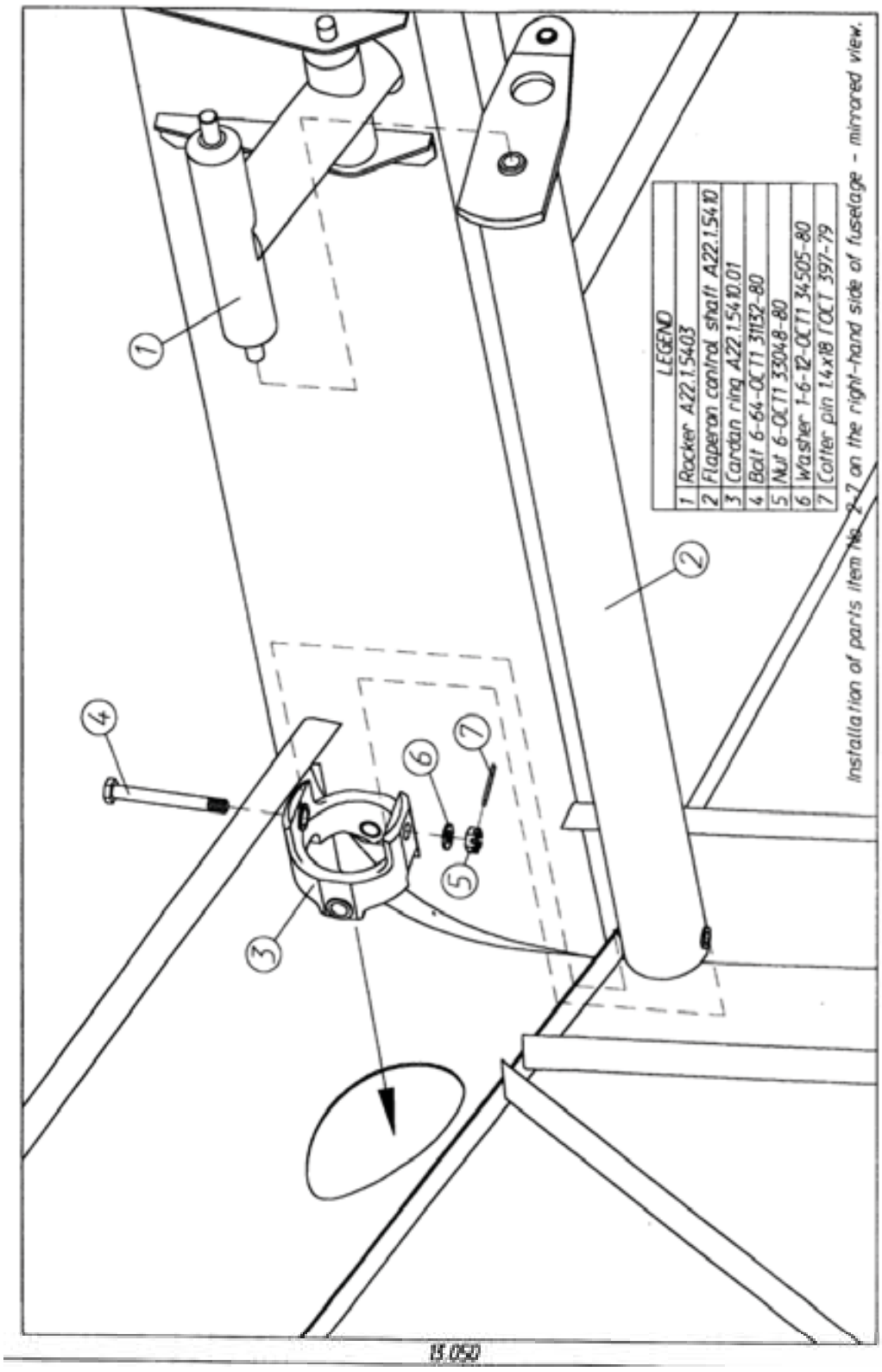
3. Re-check 1 and 2.

4. Tighten the castle-nut *(don't over-tighten)* and fit the cotter pin.

5. Repeat on the right-hand side.

6. Thoroughly examine the finished work.

Notes:


LEGEND
1 Rocker A22.1.54.03
2 Flaperon control shaft A22.1.54.10
3 Cardan ring A22.1.54.10.01
4 Bolt 6-64-OCT1 31132-80
5 Nut 6-OCT1 33048-80
6 Washer 1-6-12-OCT1 34505-80
7 Cotter pin 1.4x18 l'OCT 397-79
Installation of parts item No. 2-7 on the right-hand side of fuselage - mirrored view.

PAGE FORTY-TWO

DRAWING NUMBER 13.060 (6 OF 6)

Installing the Flaperon Mechanism

SEE DRAWING FOR PARTS REQUIRED

Recommended job for two persons

1. Select the aileron rods as illustrated in the drawing. Select the correct size bolts with castle-nuts, washers and cotter pins. Lightly grease the bolts.

2. Offer up the parts and loosely assemble them exactly as shown in the drawing.

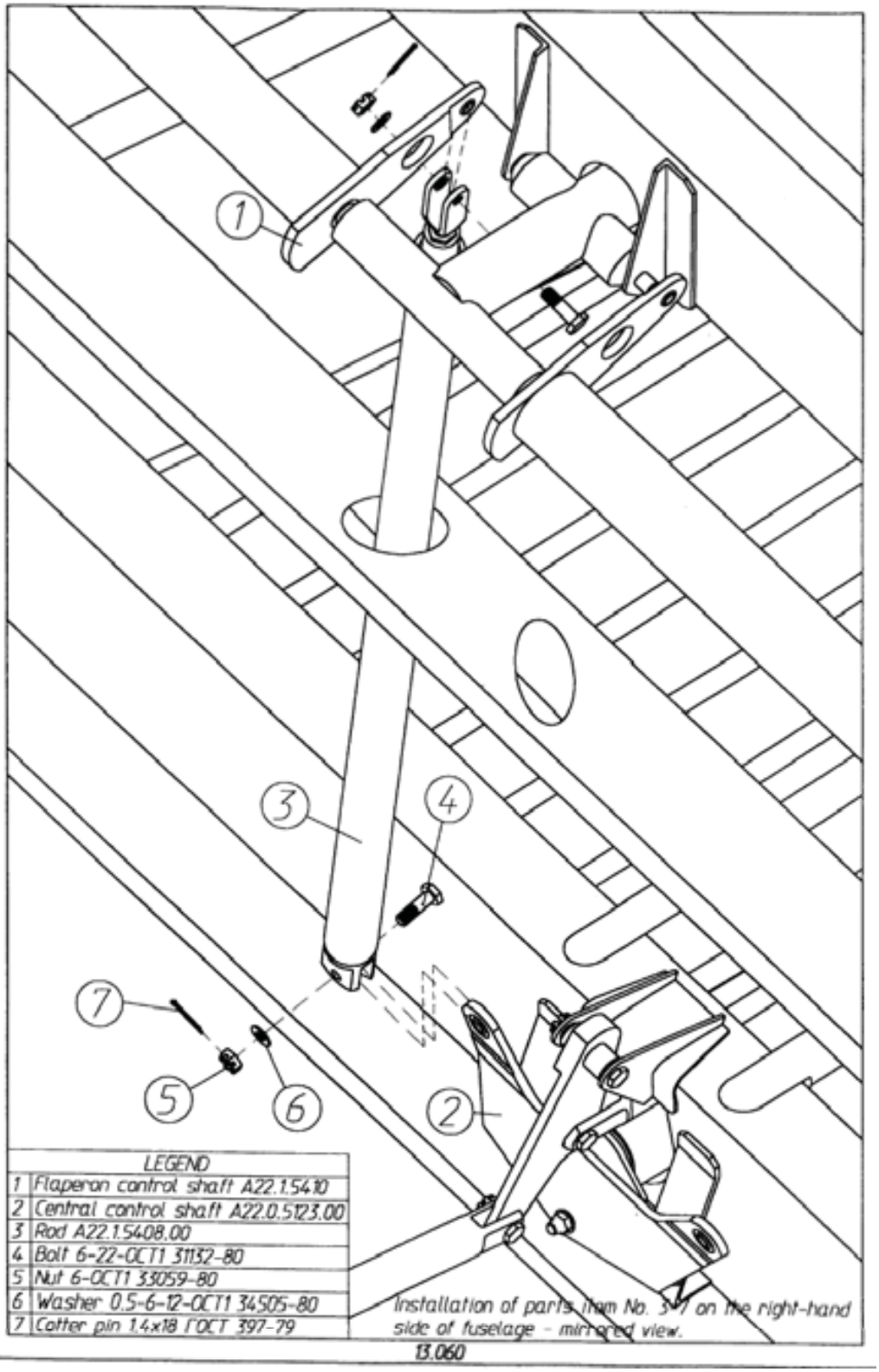
3. Re-check 1 and 2.

4. Tighten the nuts *(don't over-tighten)* and fit the cotter pins.

5. Repeat on the right-hand side.

6. Thoroughly examine the finished work.

Notes:



LEGEND	
1	Flaperon control shaft A22.1.5410
2	Central control shaft A22.0.5123.00
3	Rod A22.1.5408.00
4	Bolt 6-22-OCT1 31152-80
5	Nut 6-OCT1 33059-80
6	Washer 0.5-6-12-OCT1 34505-80
7	Cotter pin 1.4x18 ГОСТ 397-79

Installation of parts item No. 3-7 on the right-hand side of fuselage - mirrored view.

13.060

PAGE FORTY-THREE

DRAWING NUMBER 2.030

Fitting the Fin Tip

SEE DRAWING FOR PARTS REQUIRED

Recommended one person job

1. Locate and inspect the fin tip as illustrated on the drawing.

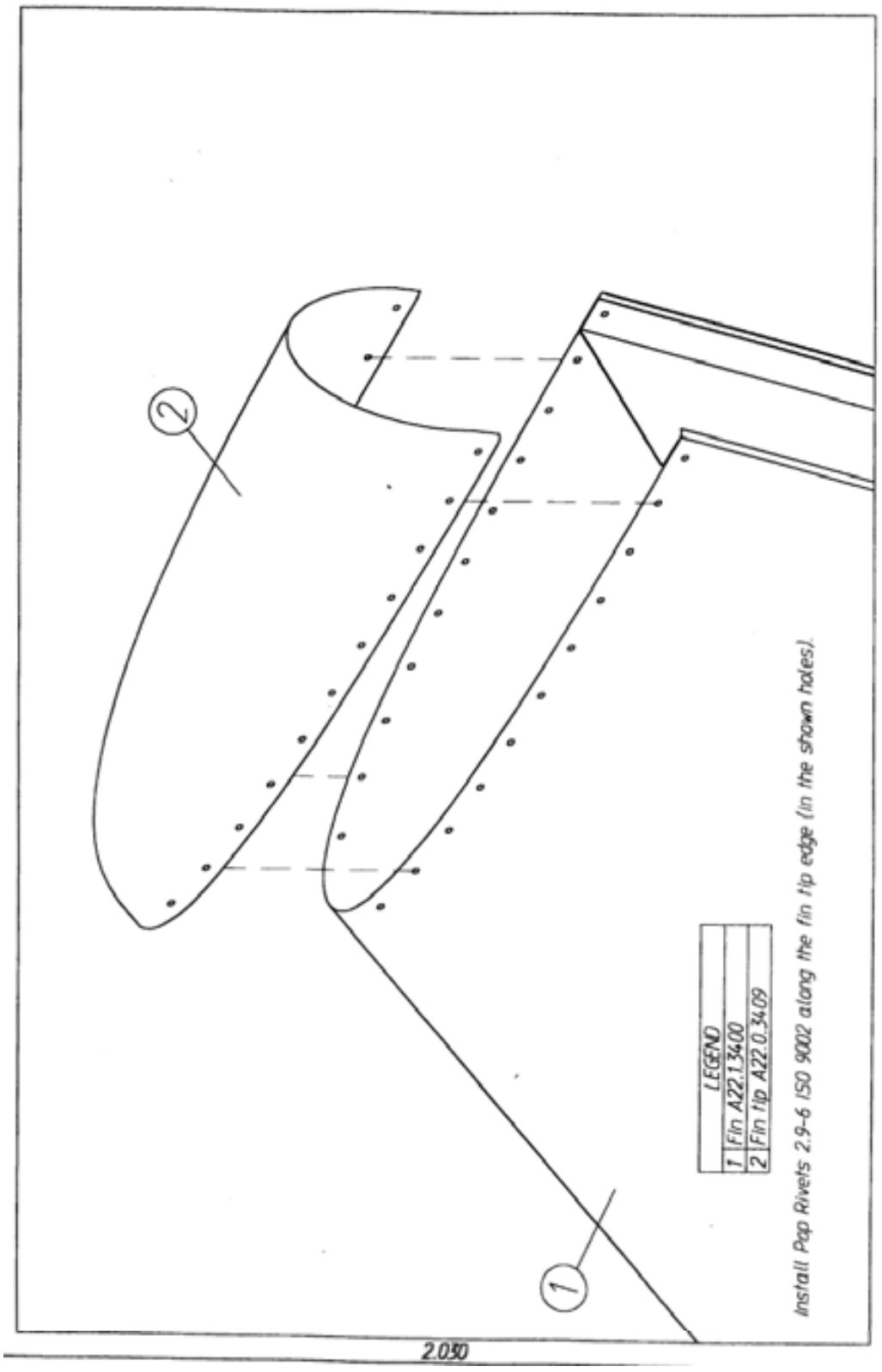
2. Offer it up to the fin and attach loosely in place with pop rivets but don't compress the rivets yet. Ensure that the fin tip is correctly aligned with the fin.

3. Re-check 1 and 2.

4. Compress the pop rivets.

5. Thoroughly examine the finished work.

Notes:


2
1
LEGEND
1 Fin A22.1.3400
2 Fin tip A22.0.3409
Install Pop Rivets 2.9-6 ISO 9002 along the fin tip edge (in the shown holes).
2.050

PAGE FORTY-FOUR

DRAWING NUMBER [ ]

Fitting the Wing Tips

SEE DRAWING FOR PARTS REQUIRED

Recommended one person job

1. Locate and inspect the port wing tip as illustrated on the drawing. Ensure the upward curve of the tip is on the underside of the wing.

2. Offer it up to the wing and attach loosely in place with pop rivets but don't compress the rivets yet. Ensure that the wing tip is correctly aligned with the wing.

3. Re-check 1 and 2.

4. Compress the pop rivets.

5. Repeat for starboard wing and tip.

6. Thoroughly examine the finished work.

Notes:


Foxbat

PAGE FORTY-FIVE

DRAWING NUMBERS 2.010 and 2.020

Fitting the Fin to the Fuselage

SEE DRAWING FOR PARTS REQUIRED

Recommended 3 persons job with fuselage monocoque supported as required.

1. Carefully study both drawings. Locate and inspect the fin and select the correct size bolts washers and 14 pop rivets as illustrated on the drawings. Brief your two assistants to ensure that they both understand their supporting roles.

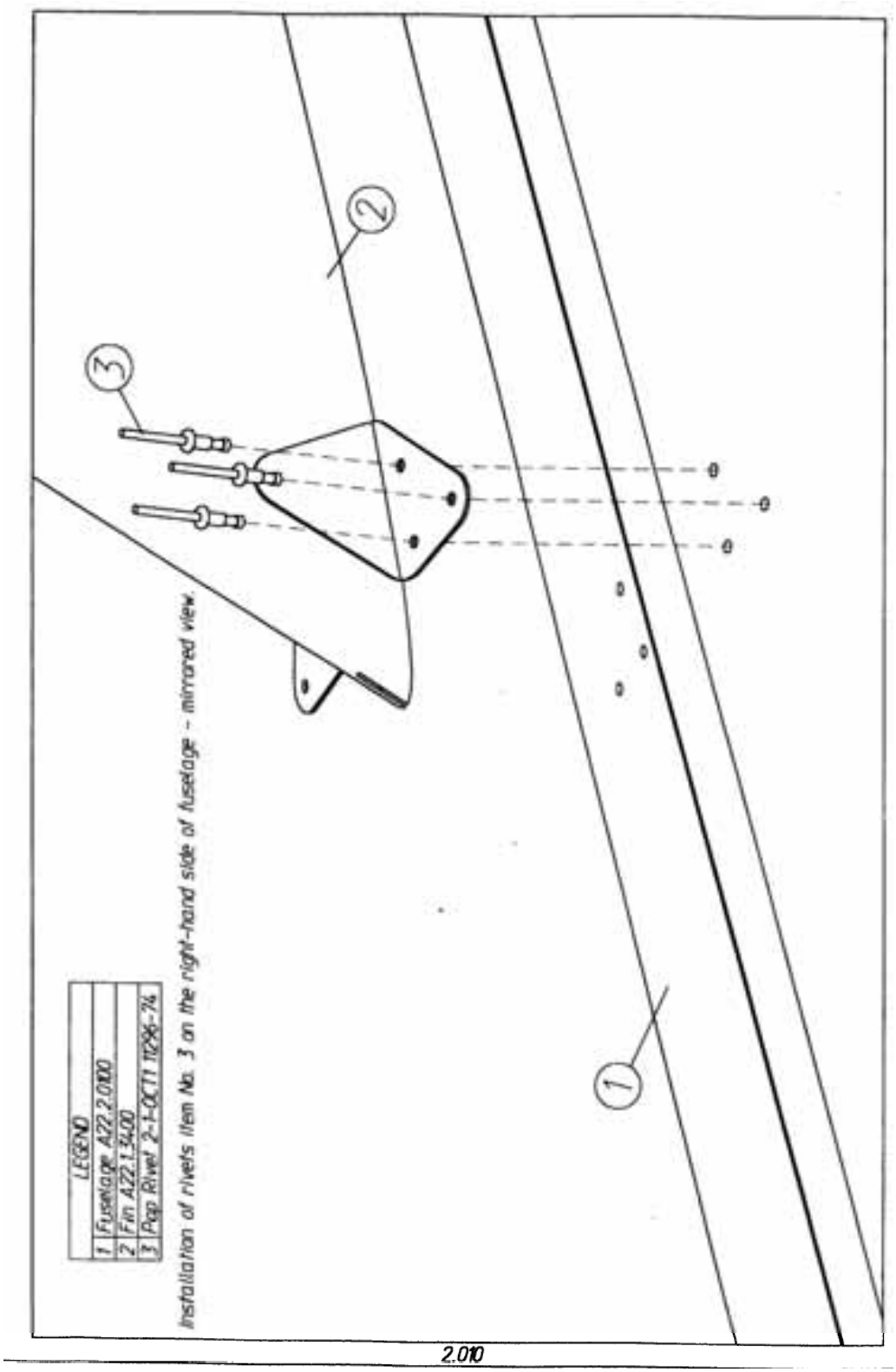
2. With the help of your two assistants offer up the fin to the fuselage exactly as shown on the drawings. Wind in the rear bolts until finger-tight in the captive nuts and insert the pop rivets but *don't* compress them at this stage.

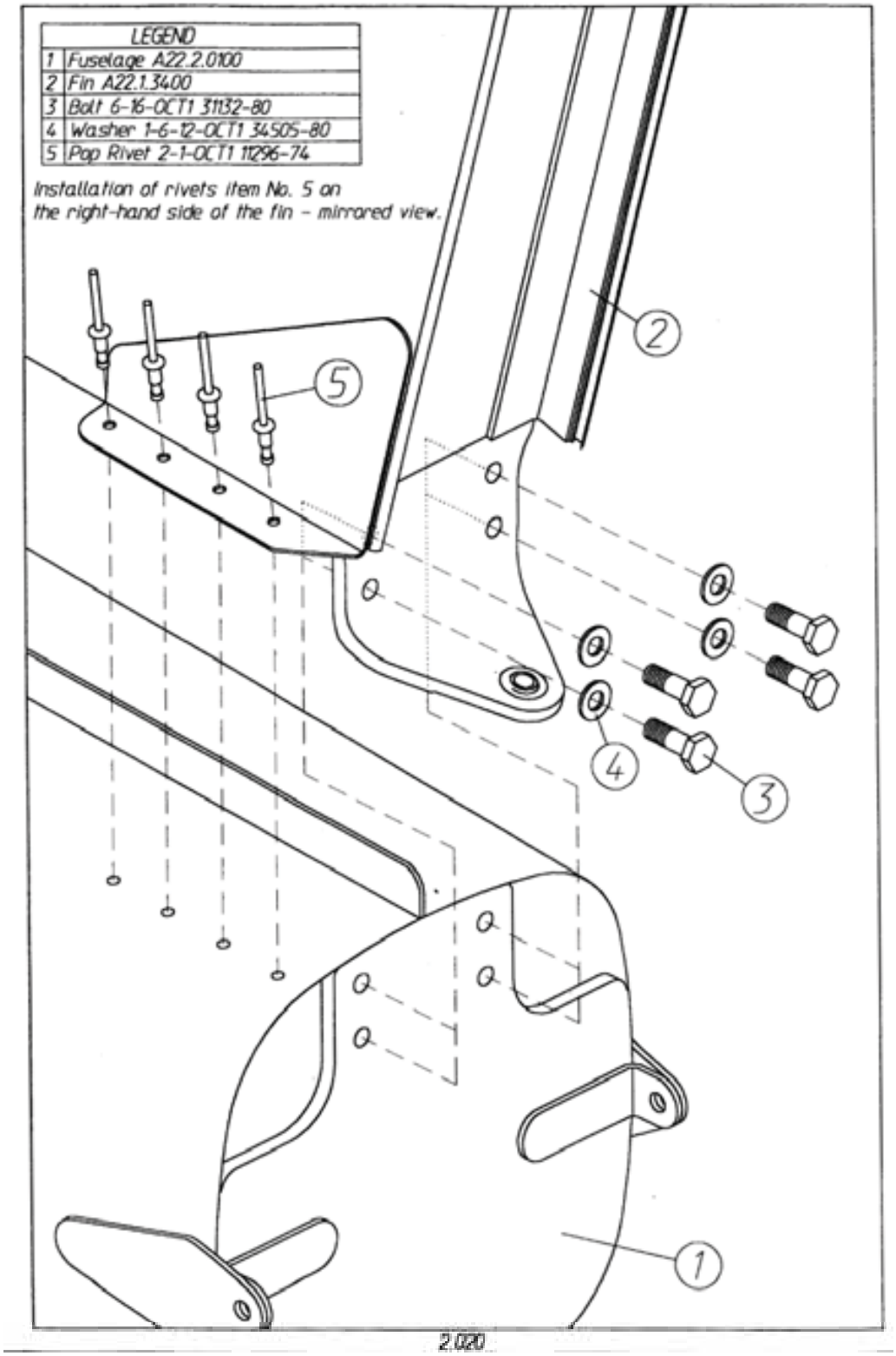
3. Re-check 1 and 2. Ensure that the fin is vertical to the fuselage and in alignment with the "spine" of the aft monocoque, and that the forward and aft pop rivet "tabs" are flush with the fuselage skin.

4. Tighten the bolts until the fin is snug with the rear fuselage and recheck the "tabs" for fit. Starting at the front and working from side to side begin compressing the pop rivets. Ensure that the rivet is fully inserted and that the gun is properly aligned before squeezing the trigger.

5. Thoroughly examine the finished work.

Notes:


LEGEND
1 Fuselage A22.2.0000
2 Fin A22.1.3400
3 Pop Rivet 2-1-0CT1 1226-74
Installation of rivets item No. 3 on the right-hand side of fuselage - mirrored view.
2.010


LEGEND
1 Fuselage A22.2.0100
2 Fin A22.1.3400
3 Bolt 6-16-OCT1 31132-80
4 Washer 1-6-12-OCT1 34505-80
5 Pop Rivet 2-1-OCT1 11296-74
Installation of rivets item No. 5 on the right-hand side of the fin - mirrored view.
2.020

PAGE FORTY-SIX

DRAWING NUMBER 16.010

Installing the Throttle Torque-tube/levers

SEE DRAWING FOR PARTS REQUIRED

Recommended two person job.

Note. This is the standard twin throttle-lever installation as supplied with your kit. If you wish to install an alternative system please consult with Foxbat Aircraft.

1. Carefully study the drawing. Locate and inspect the left and right brackets, the left and right throttle levers, the connecting tube, the friction clamps and the spacers all as illustrated on the drawing. Select the correct size bolts, screws, stiff-nuts and castle-nuts with their respective washers and cotter pins. Lightly grease the spigot ends of the throttle levers (4).

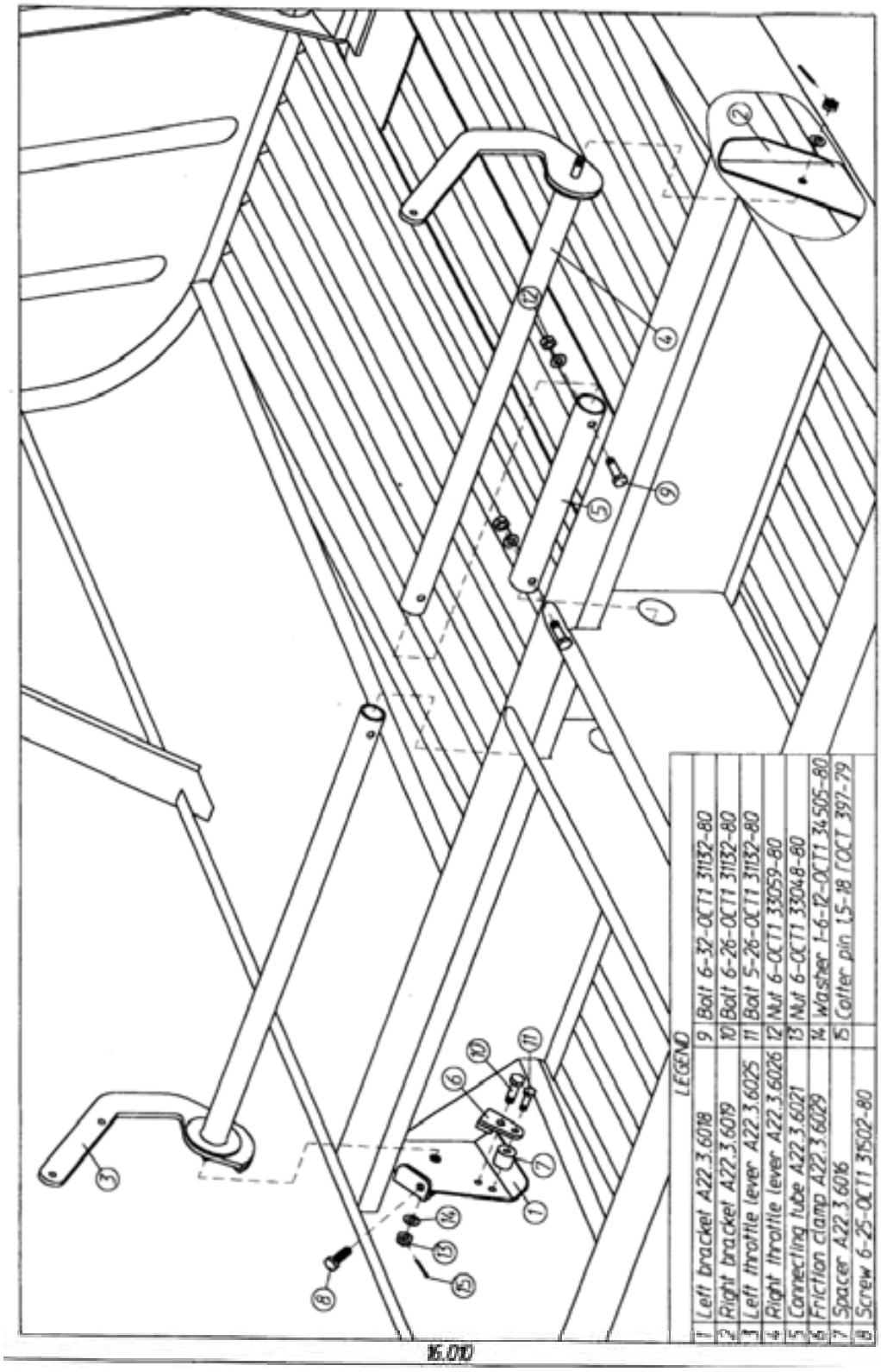
2. Offer up the parts and loosely assemble them *in situ* exactly as shown on the drawing.

3. Re-check 1 and 2.

4. Tighten the nuts as normal but *don't over-tighten* and insert the cotter pins where shown. *Note. The friction clamp (6) will be adjusted later to resist throttle-spring pressure.*

5. Thoroughly examine the finished work.

Notes:


LEGEND
1 Left bracket A22.3.6018
2 Right bracket A22.3.6019
3 Left throttle lever A22.3.6025
4 Right throttle lever A22.3.6026
5 Connecting tube A22.3.6021
6 Friction clamp A22.3.6029
7 Spacer A22.3.6016
8 Screw 6-25-OCT1 31502-80
9 Bolt 6-32-OCT1 31132-80
10 Bolt 6-26-OCT1 31132-80
11 Bolt 5-26-OCT1 31132-80
12 Nut 6-OCT1 33059-80
13 Nut 6-OCT1 33048-80
14 Washer 1-6-12-OCT1 34505-80
15 Cotter pin 1,5-18 ГОСТ 397-79

PAGE FORTY-SEVEN

DRAWING NUMBER 16.020

Fitting the Throttle Handles and Cable-Stops

SEE DRAWING FOR PARTS REQUIRED

Recommended one person job

1. Study the drawing carefully. The system looks unworkable at first until you realise that it's intended for the Rotax 912S engine's "default to open" option. *(The throttles are spring-loaded to the fully open position and the lever's friction nut holds them closed. In the event of throttle cable failure you will still have engine power).* Locate and inspect the conduit stops, the shackles, the handles and the cables/conduits *(Bowden cables)* as illustrated on the drawing. Select the correct size bolts with stiff-nuts, castle nuts, washers and cotter pins.

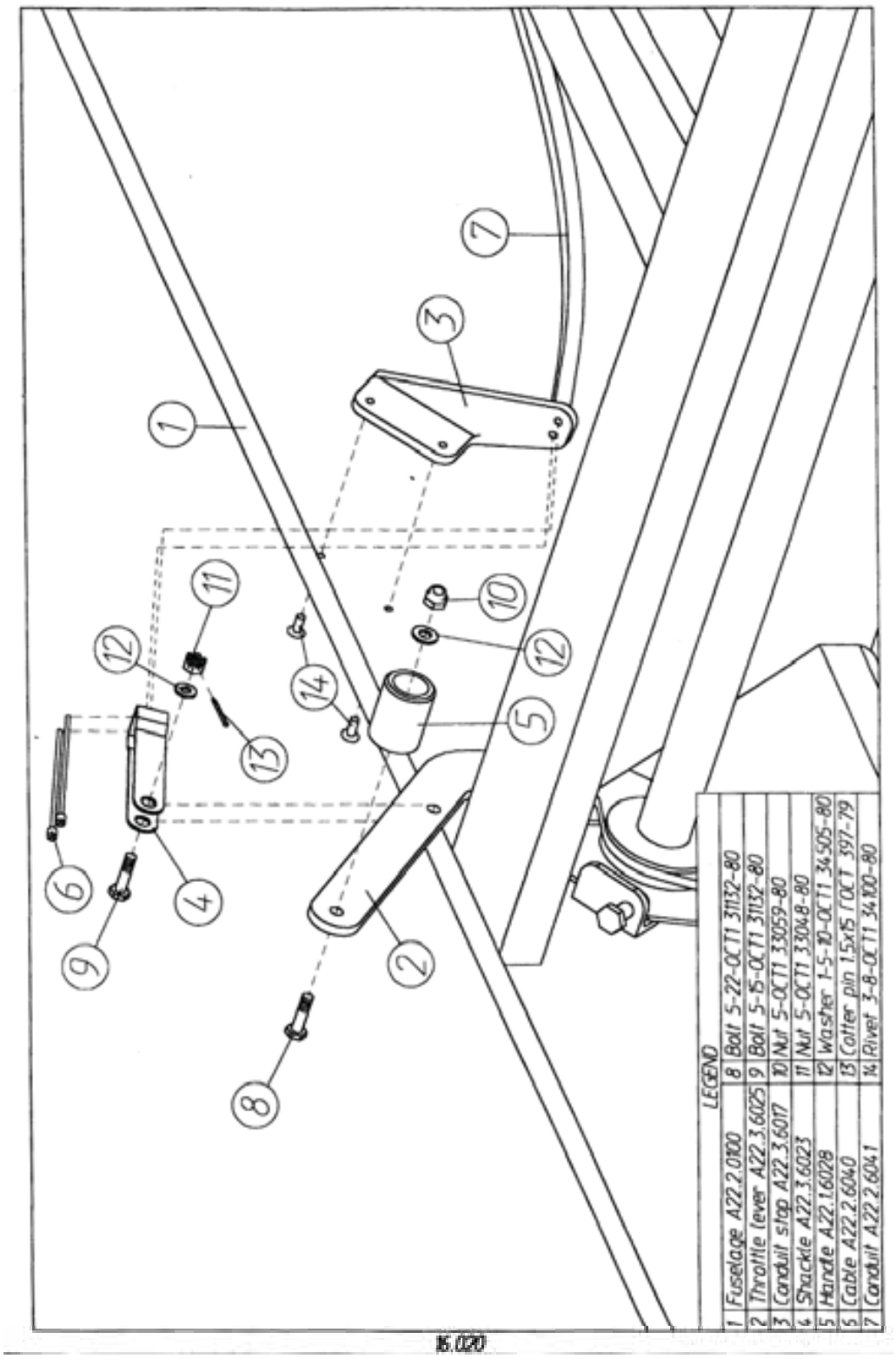
2. Clico the conduit stop (3) in place and fit the throttle handle (5) and shackle (4) exactly as shown on the drawing.

3. Re-check 1 and 2.

4. Replace the clicos with rivets, tighten the nuts and insert the cotter pin. Repeat 2 to 4 on right-hand side. Install the cables as shown on the drawing.

5. Thoroughly examine the finished work. *Note. The throttle cables should be coiled on the fuselage floor until engine installation.*

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Throttle lever A22.3.6025
3 Conduit stop A22.3.6017
4 Shackle A22.3.6023
5 Handle A22.1.6028
6 Cable A22.2.6040
7 Conduit A22.2.6041
8 Bolt S-22-OCT1 31132-80
9 Bolt S-15-OCT1 31132-80
10 Nut S-OCT1 33059-80
11 Nut S-OCT1 33048-80
12 Washer 1-S-10-OCT1 34505-80
13 Cotter pin 1.5x15 FOCT 397-79
14 Rivet 3-8-OCT1 34100-80

PAGE FORTY-EIGHT

DRAWING NUMBER 10.010

Installing the Engine Mounting

SEE DRAWING FOR PARTS REQUIRED

Recommended two person job

1. Locate and inspect the engine mounts part 1 and 2. Pay particular attention to the butt-welding. Your Inspector will also want to inspect the engine mounts prior to installation. Select the correct size bolts with stiff-nuts, castle-nuts washers and spring pins.

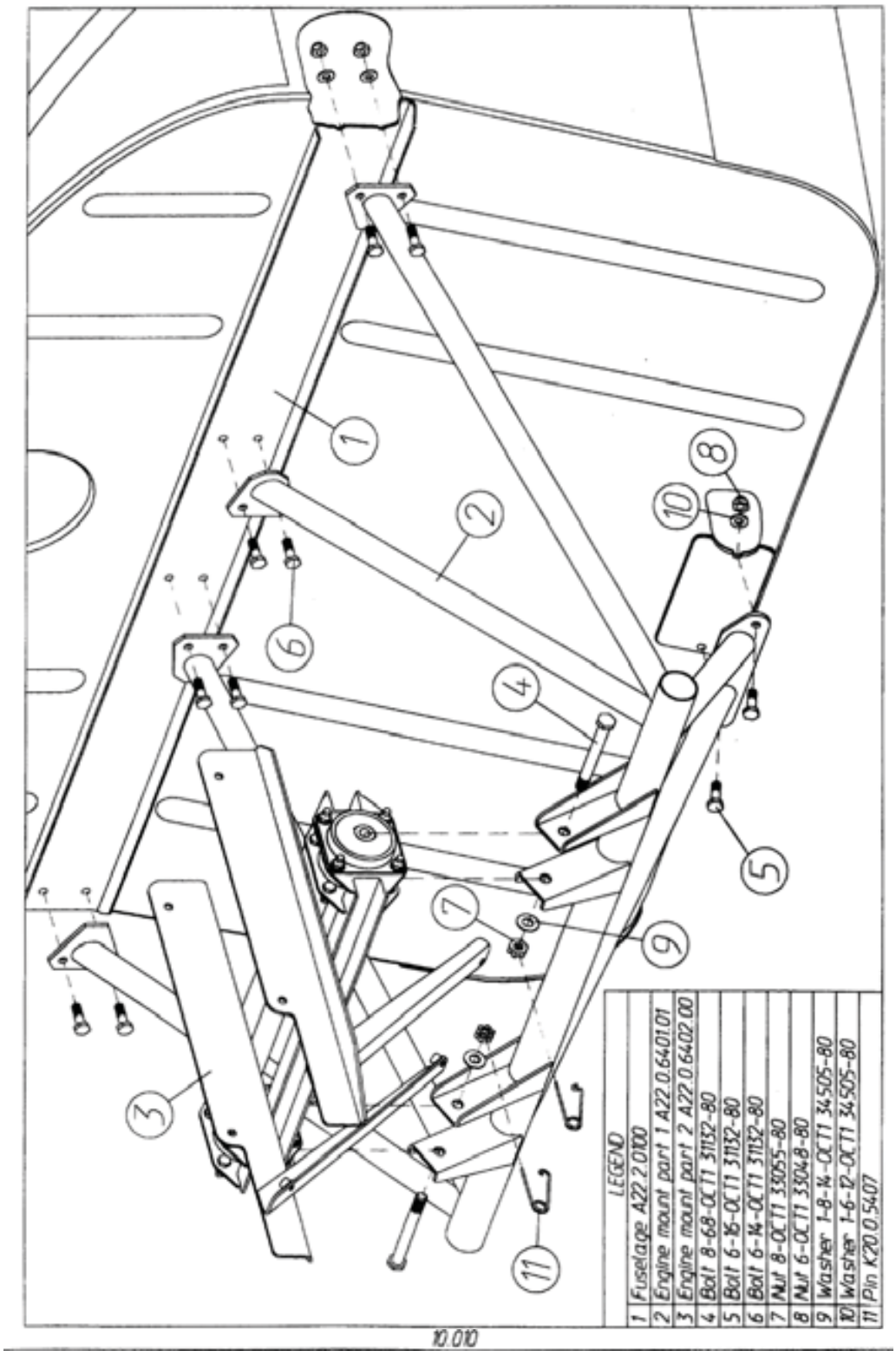
2. Offer up the engine mount part 1 to the fuselage and loosely assemble exactly as shown on the drawing. Re-check your work and then tighten the nuts *(don't over-tighten)*. Offer up the engine mounts part 2 and loosely assemble exactly as shown on the drawing.

3. Re-check 1 and 2.

4. Tighten the castle nuts as normal and insert the spring pins.

5. Thoroughly examine the finished work.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Engine mount part 1 A22.0.6401.01
3 Engine mount part 2 A22.0.6402.00
4 Bolt 8-68-DCT1 31152-80
5 Bolt 6-16-DCT1 31132-80
6 Bolt 6-14-DCT1 31132-80
7 Nut 8-DCT1 33055-80
8 Nut 6-DCT1 33048-80
9 Washer 1-8-14-DCT1 34505-80
10 Washer 1-6-12-DCT1 34505-80
11 Pin K20.0.5407
10.010

PAGE FORTY-NINE

DRAWING NUMBER 10.020

Installing the Engine Unit

SEE DRAWING FOR PARTS REQUIRED

Recommended 3 persons job. You could leave this job until later but if so you will need to secure some ballast to the engine mount to keep the nosewheel on the ground. Please use professionally built engine lifting equipment (a small gantry with castors) that is placarded safe for the engine weight (58kg). Many DIY car enthusiasts have such lifts in their workshops or you can rent one from your local tool-hire shop. Note. Do not trust unsupported garage roof beams to take the weight of an engine!

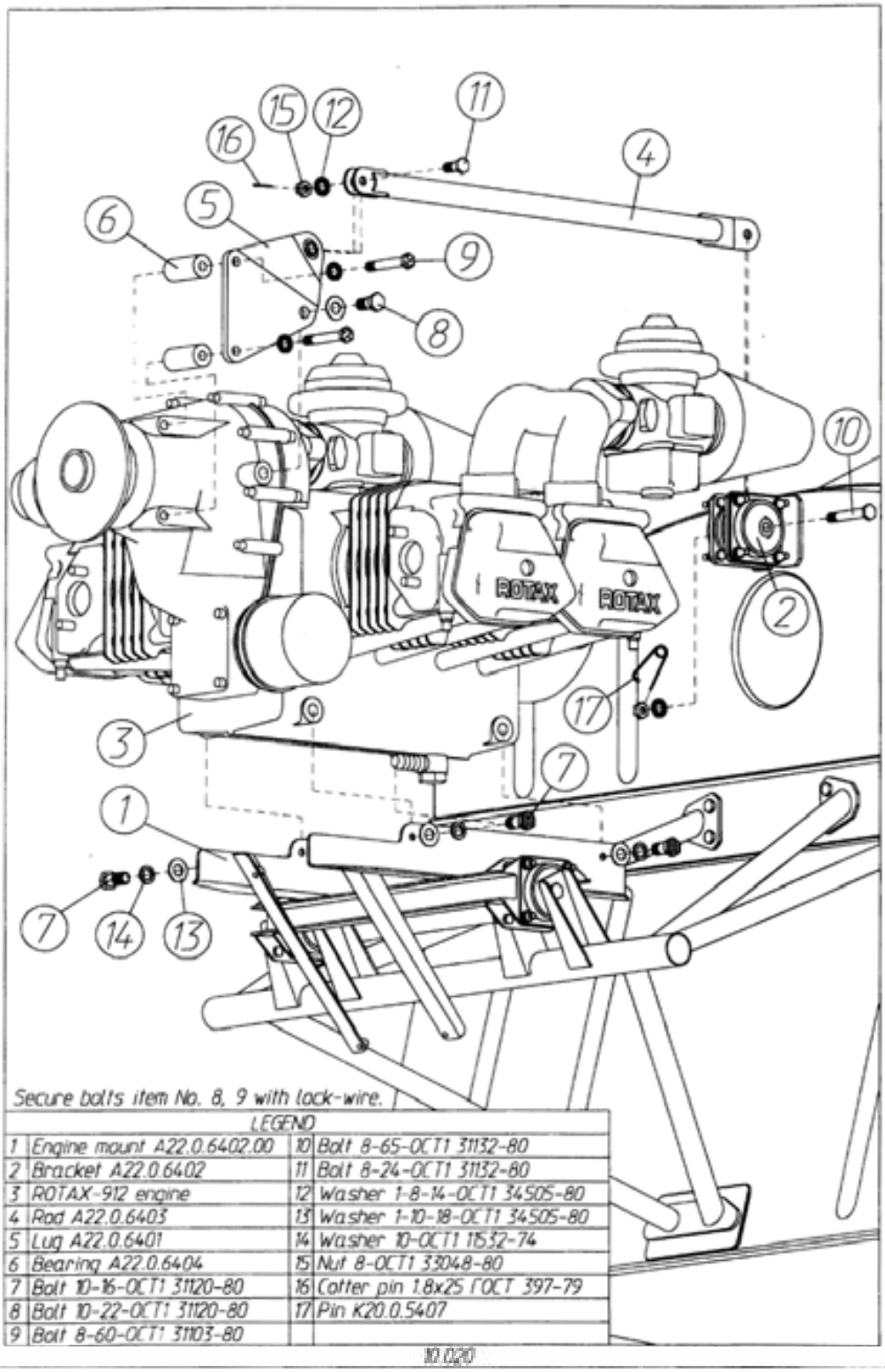
1. Unpack the Rotax 912/912S and read the manufacturer's instructions regarding handling and lifting. Locate and inspect the brackets, the rod, the lug and the bearings as illustrated on the drawing. Select the correct size bolts with nuts, washers, cotter pins and spring pins. Brief your two assistants on their parts in the job so that each person is clear about their area of responsibility. Ensure that you are familiar with the operation and control of the lifting tackle. Practice before you start the job.

2. Lift the engine and offer it up very carefully to the engine mountings. Bolt it in place exactly as shown on the drawing but with the nuts finger-tight and the weight still supported by the lifting equipment.

3. Re-check 1 and 2.

4. Tighten the nuts as normal and insert the cotter pins and the spring pins. Give the mountings one more check then *gradually* transfer the weight to the fuselage.

5. Remove the lifting tackle and thoroughly examine the finished work. *Note that the bolts 8 and 9 are secured with locking wire.*



Secure bolts item No. 8, 9 with lock-wire.

LEGEND			
1	Engine mount A22.0.6402.00	10	Bolt 8-65-OCT1 31132-80
2	Bracket A22.0.6402	11	Bolt 8-24-OCT1 31132-80
3	ROTAX-912 engine	12	Washer 1-8-14-OCT1 34505-80
4	Rod A22.0.6403	13	Washer 1-10-18-OCT1 34505-80
5	Lug A22.0.6401	14	Washer 10-OCT1 11532-74
6	Bearing A22.0.6404	15	Nut 8-OCT1 33048-80
7	Bolt 10-16-OCT1 31120-80	16	Cotter pin 1.8x25 ГОСТ 397-79
8	Bolt 10-22-OCT1 31120-80	17	Pin K20.0.5407
9	Bolt 8-60-OCT1 31103-80		

PAGE FIFTY

DRAWING Nos: 7.500/8.510/8.500/9.500/3.500/3.510/15.030

Pre-assembling the Stabiliser and Aft Flying Surfaces

SEE DRAWINGS FOR PARTS REQUIRED

Recommended two or three person job. Note. The next seven drawings illustrate the various mounting points of the stabiliser, elevator, rudder and trim tab. Prior to covering and painting these parts must be pre-assembled and checked for alignment.

1. Carefully study the drawings in the following sequence before offering up any parts: 3.500/3.510/8.500/8.510/7.500/9.500/15.030. Select and inspect the components and all necessary fittings as illustrated on the drawings. Lightly grease all bearing surfaces.

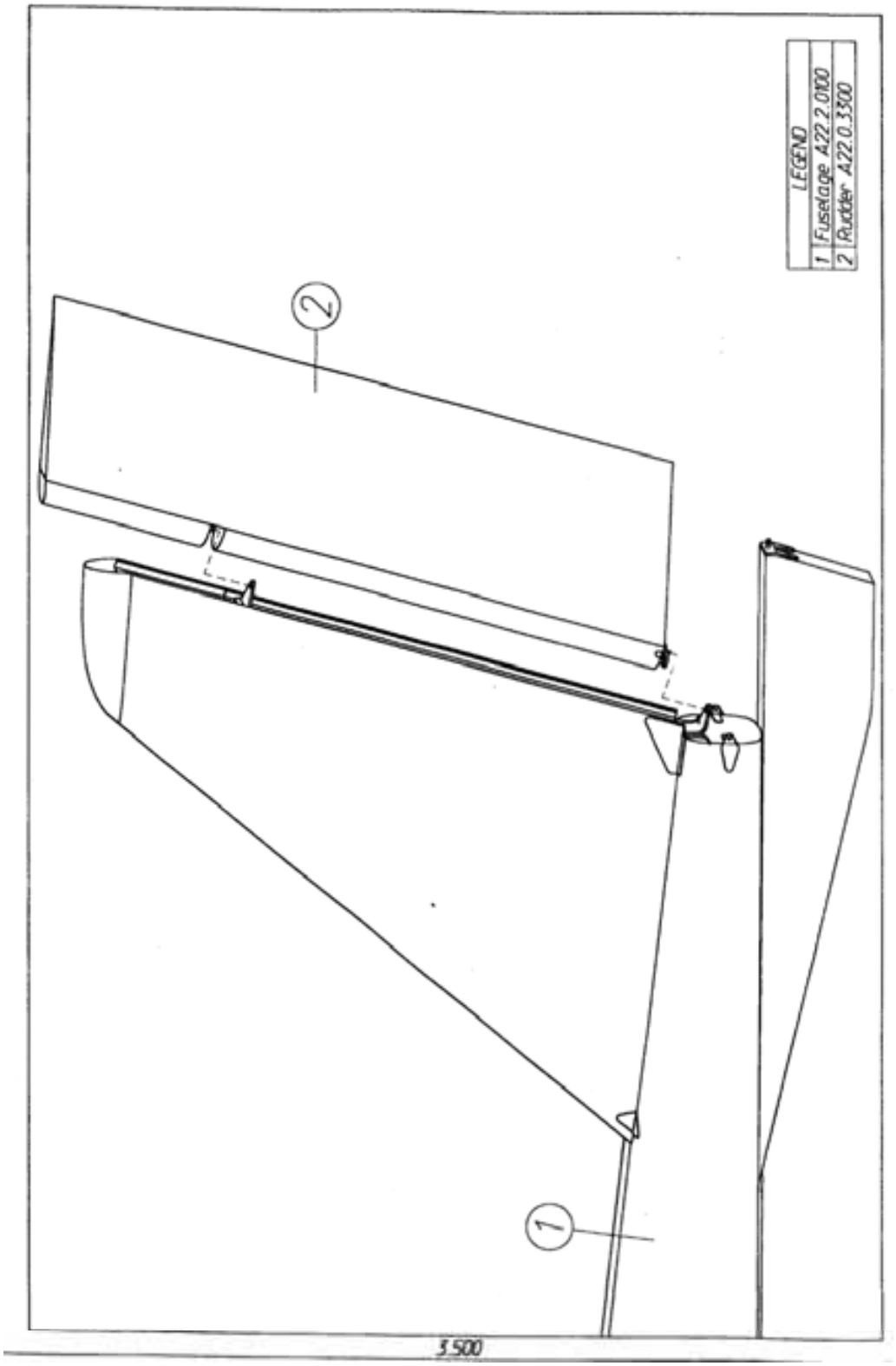
2. Offer up the parts exactly as shown on the drawings and assemble finger-tight. Connect the operating rod and cables. *Note. The rudder cables will be fitted at the forward connections whilst the rudder is pre-assembled but see separate instructions for that job. You can install the electric trim motor and cable at a later stage.*

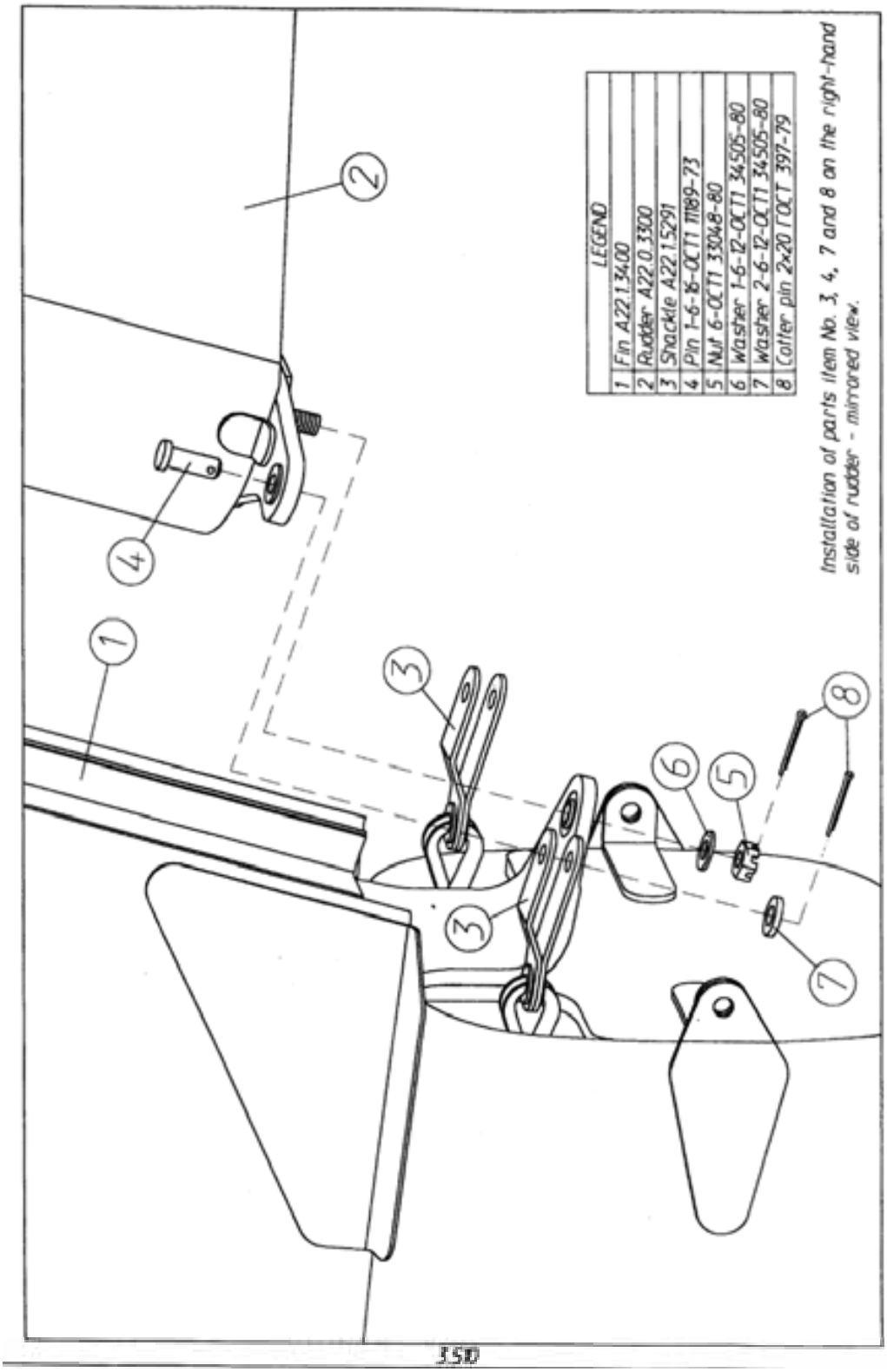
3. Re-check 1 and 2.

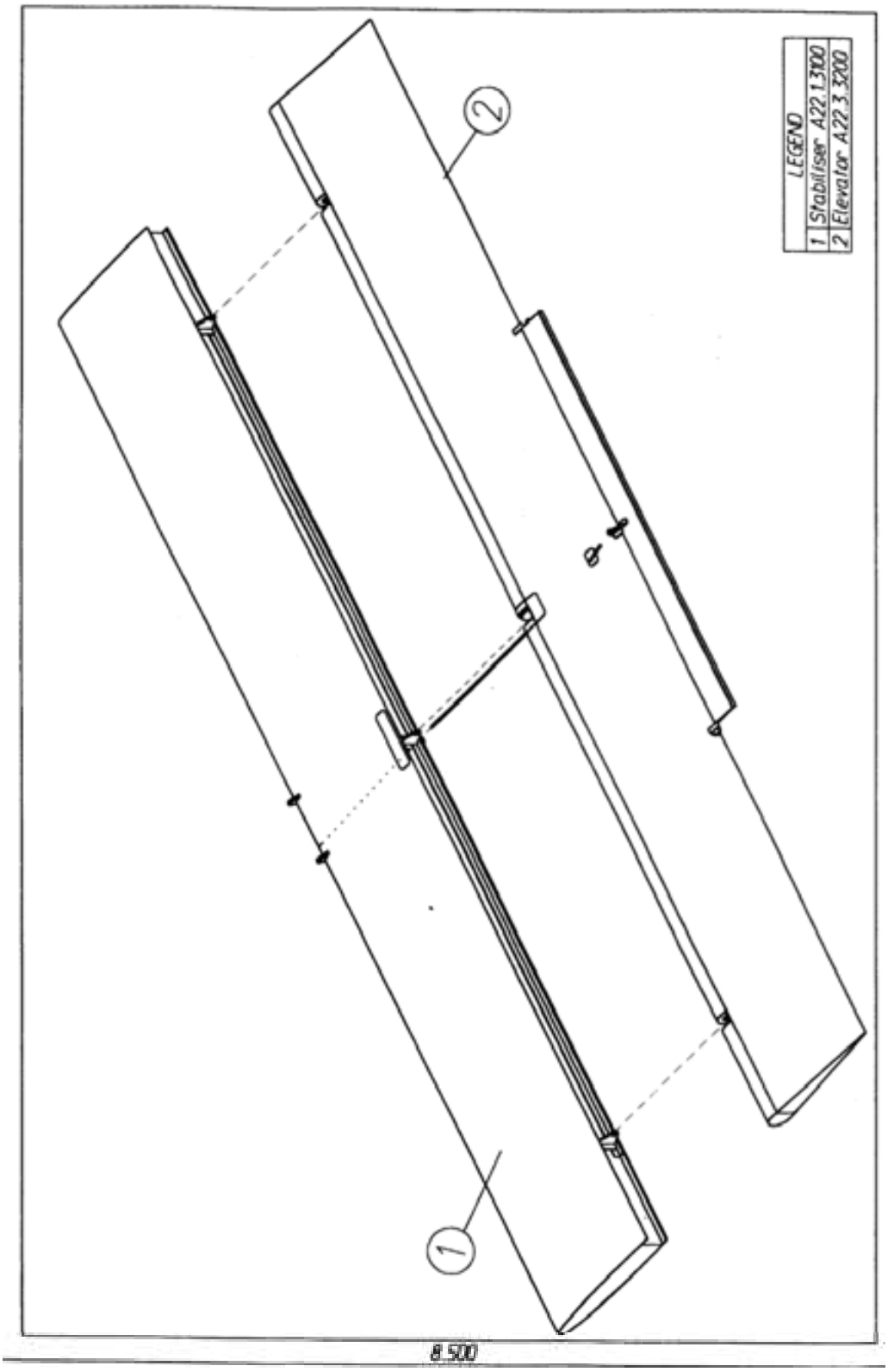
4. Tighten the nuts until the assembly is snug but *don't over-tighten.*

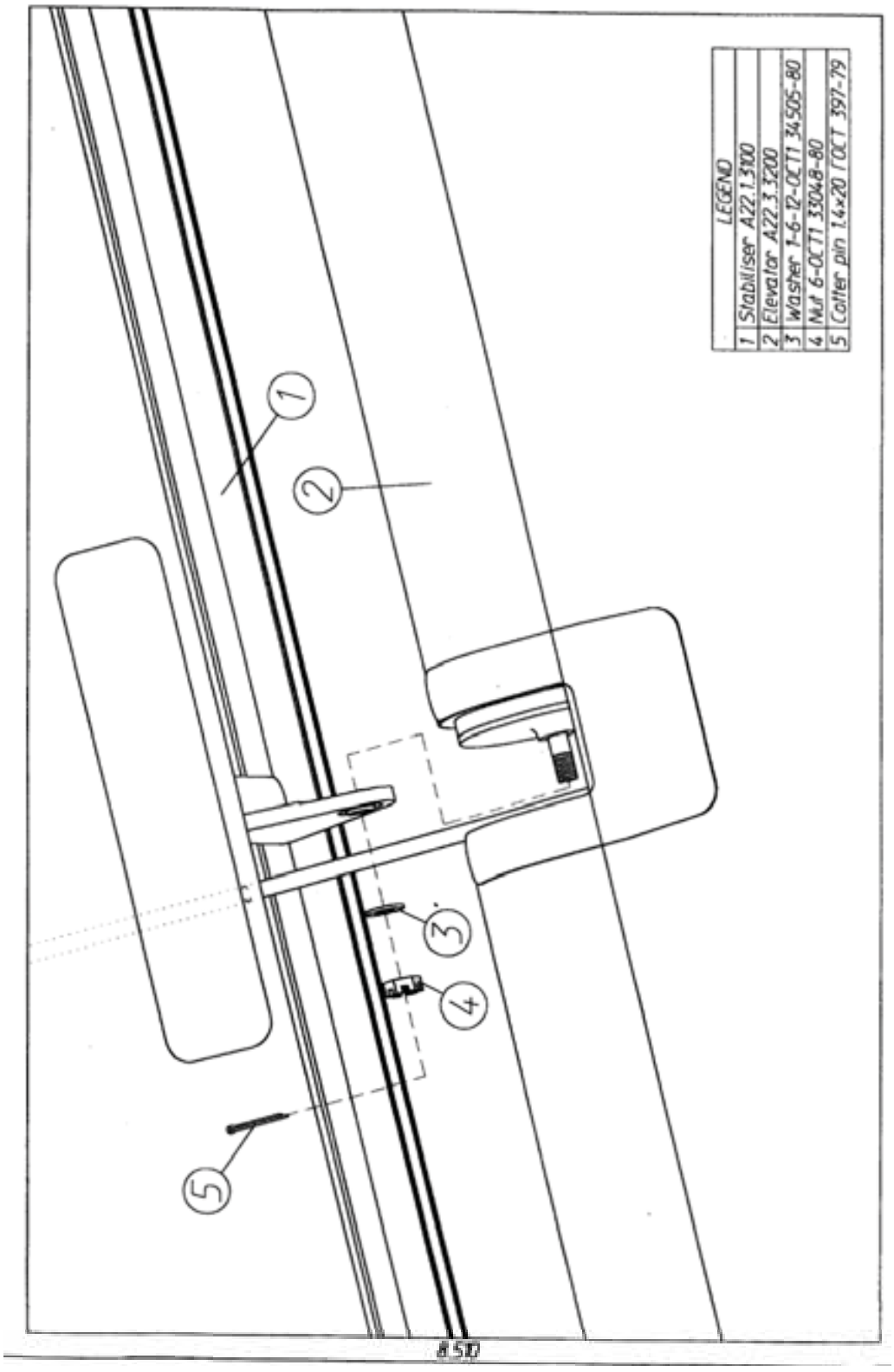
5. Thoroughly examine the assembly checking for good alignment and free movement of the flying surfaces. Consult your PFA Inspector then dismantle all except rudder.

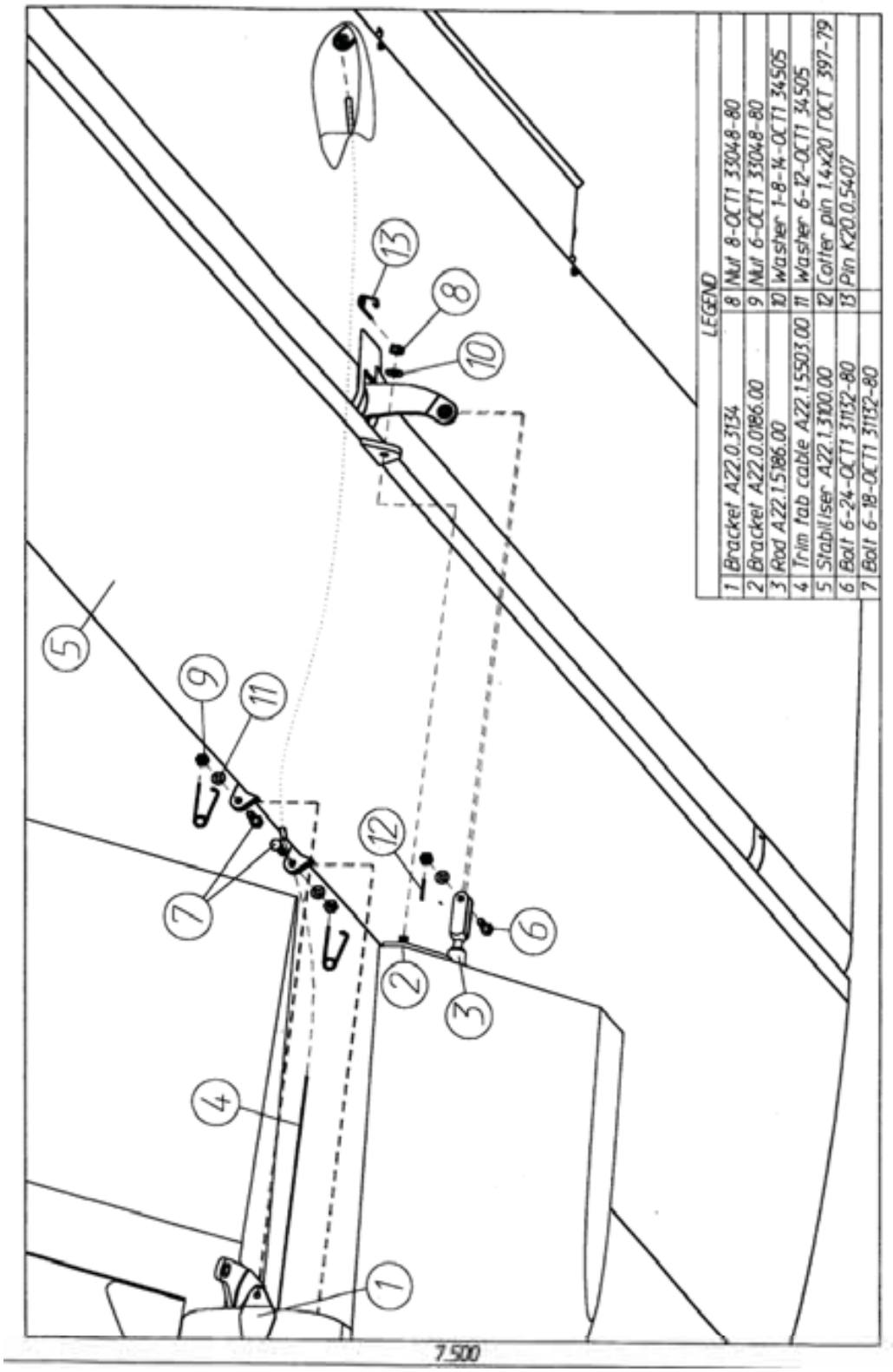
Notes:

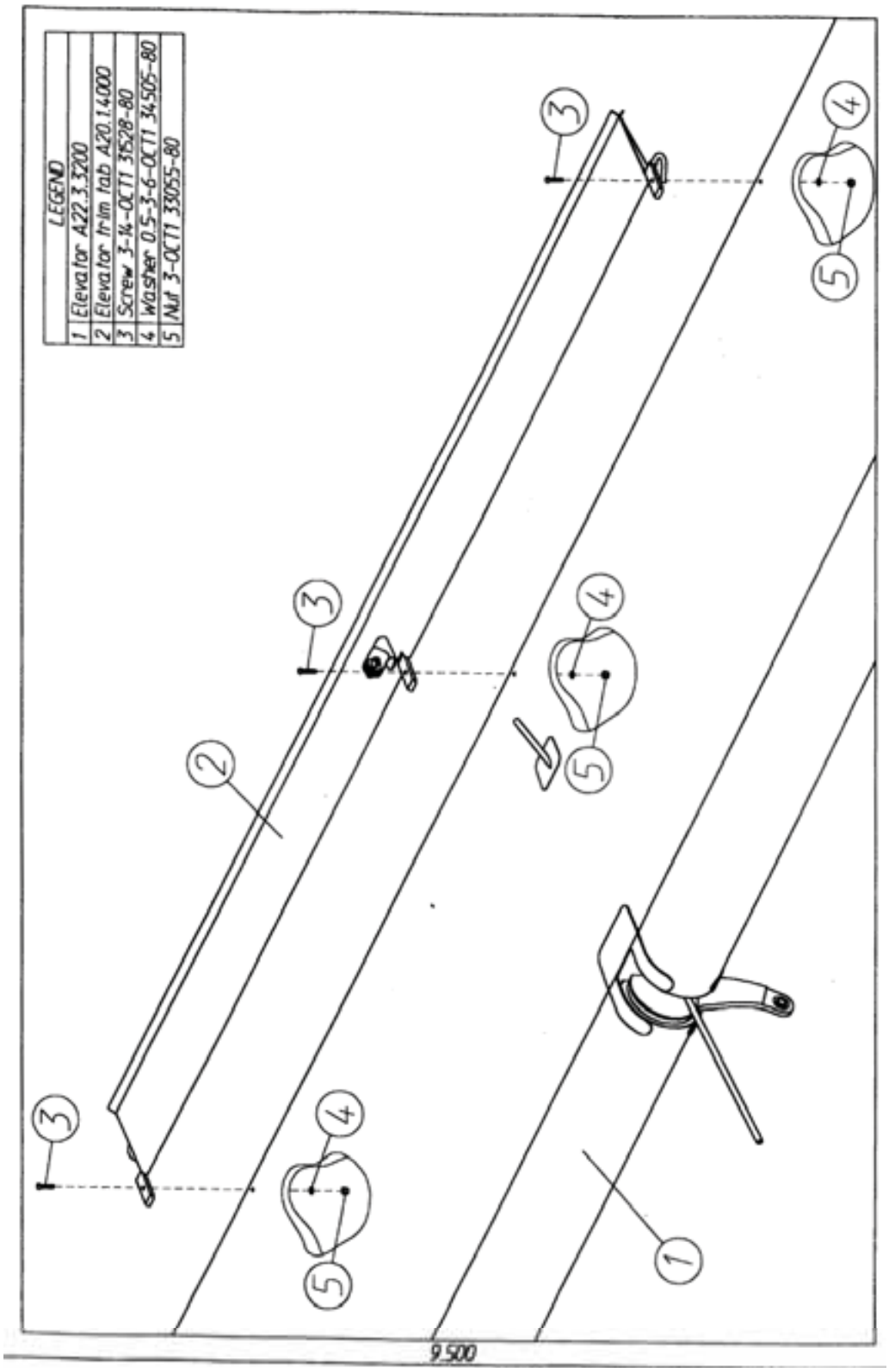

LEGEND
1 Fuselage A22.2.0100
2 Rudder A22.0.3500
2
1
3.500

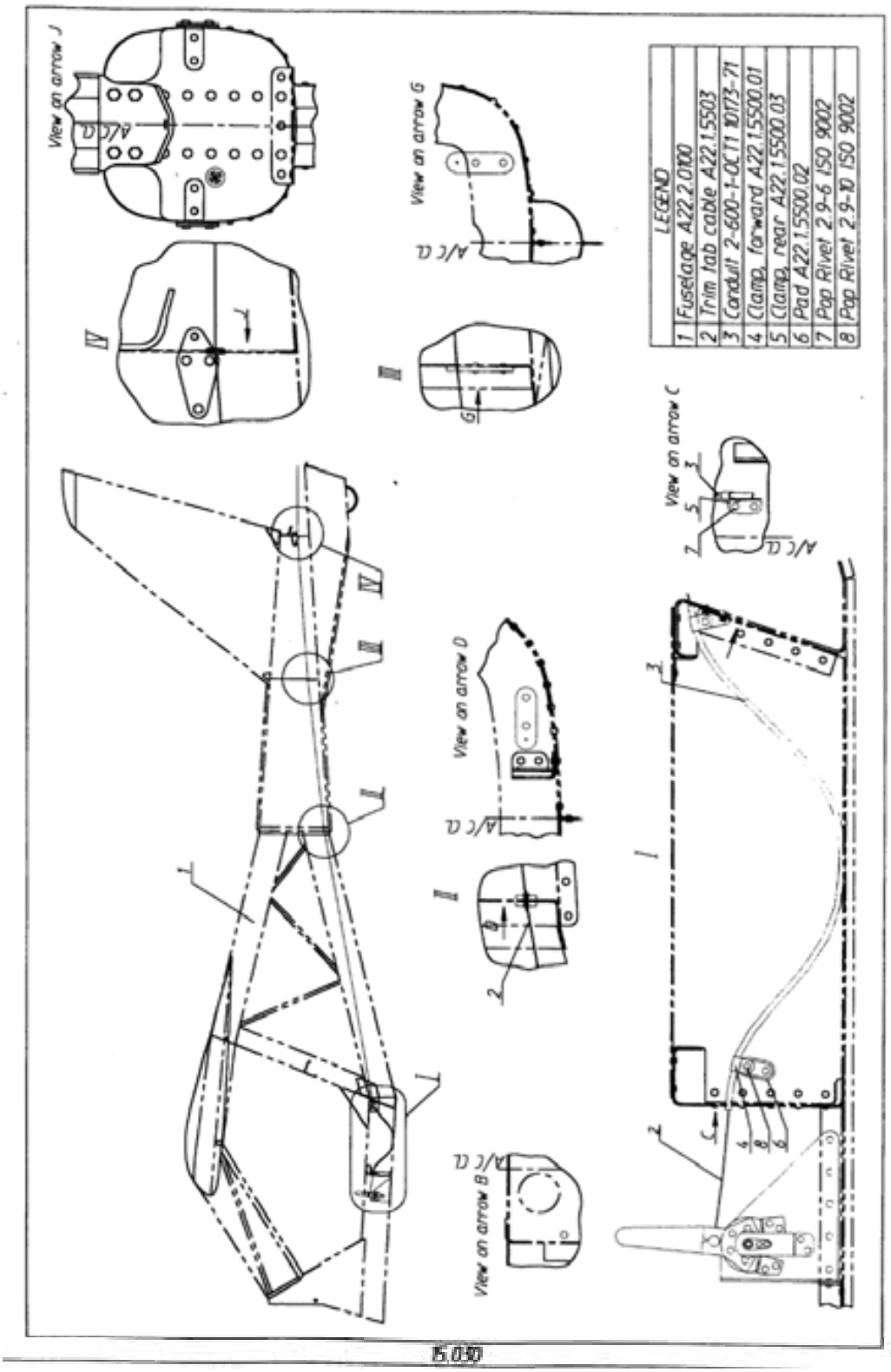

LEGEND
1 Fin A22.1.34.00
2 Rudder A22.0.3300
3 Shackle A22.1.5291
4 Pin 1-6-16-OCT1 11189-73
5 Nut 6-OCT1 33048-80
6 Washer 1-6-12-OCT1 34505-80
7 Washer 2-6-12-OCT1 34505-80
8 Cotter pin 2x20 FOCT 397-79
Installation of parts item No. 3, 4, 7 and 8 on the right-hand side of rudder - mirrored view.
JSD


LEGEND
1 Stabiliser A22 1.3100
2 Elevator A22 3.3200
2
1
8 500


LEGEND
1 Stabiliser A22.1.3100
2 Elevator A22.3.3200
3 Washer 1-6-12-OCT1 34505-80
4 Nut 6-OCT1 33048-80
5 Cotter pin 1.4x20 FOCT 3397-79
1
2
3
4
5


LEGEND
1 Bracket A22.0.3134
2 Bracket A22.0.0186.00
3 Rod A22.15186.00
4 Trim tab cable A22.15503.00
5 Stabiliser A22.1.3100.00
6 Bolt 6-24-OCT1 31132-80
7 Bolt 6-18-OCT1 31132-80
8 Nut 8-OCT1 33048-80
9 Nut 6-OCT1 33048-80
10 Washer 1-8-14-OCT1 34505
11 Washer 6-12-OCT1 34505
12 Cotter pin 1.4x20 FOCT 397-79
13 Pin K20.0.5407
7.500


LEGEND
1 Elevator A22.3.3200
2 Elevator trim tab A20.14.000
3 Screw 3-14-OCT1 31528-80
4 Washer 0.5-3-6-OCT1 34505-80
5 Nut 3-OCT1 33055-80
9.500


LEGEND
1 Fuselage A22.2.0100
2 Trim tab cable A22.15503
3 Conduit 2-600-1-0C11 10173-71
4 Clamp, forward A22.15500.01
5 Clamp, rear A22.15500.03
6 Pad A22.15500.02
7 Pop Rivet 2.9-6 ISO 9002
8 Pop Rivet 2.9-10 ISO 9002
View on arrow J
View on arrow G
View on arrow C
View on arrow D
View on arrow B
A/C Q
5.00

PAGE FIFTY-ONE

DRAWING NUMBERS 11.050 AND 11.040

Installing the Rudder Pedals and Cables

SEE DRAWINGS FOR PARTS REQUIRED

Recommended job for two persons.

Note. Instruction number 8 on drawing 11.050 refers to the standard method of wire-locking turnbuckles.

1. Carefully study drawing number 11.050 before proceeding. Make sure you have fully grasped how the system operates, including the nosewheel linkages. Select and inspect the components as listed in the drawings.

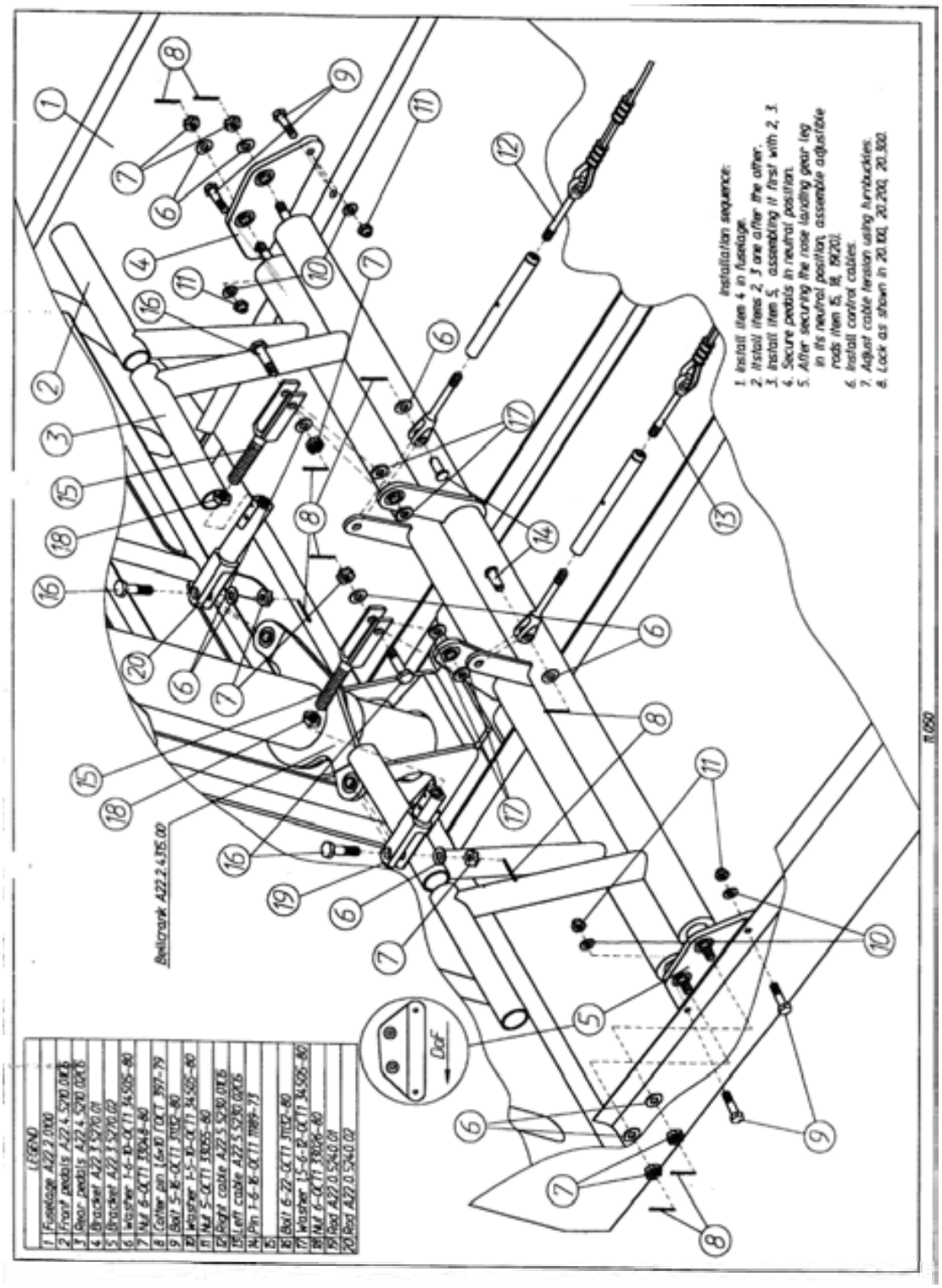
2. Follow the installation sequence on drawing 11.050 to step 5 but *don't* connect the cables until you have carefully studied and fully grasped the installation method described on drawing 11.040.

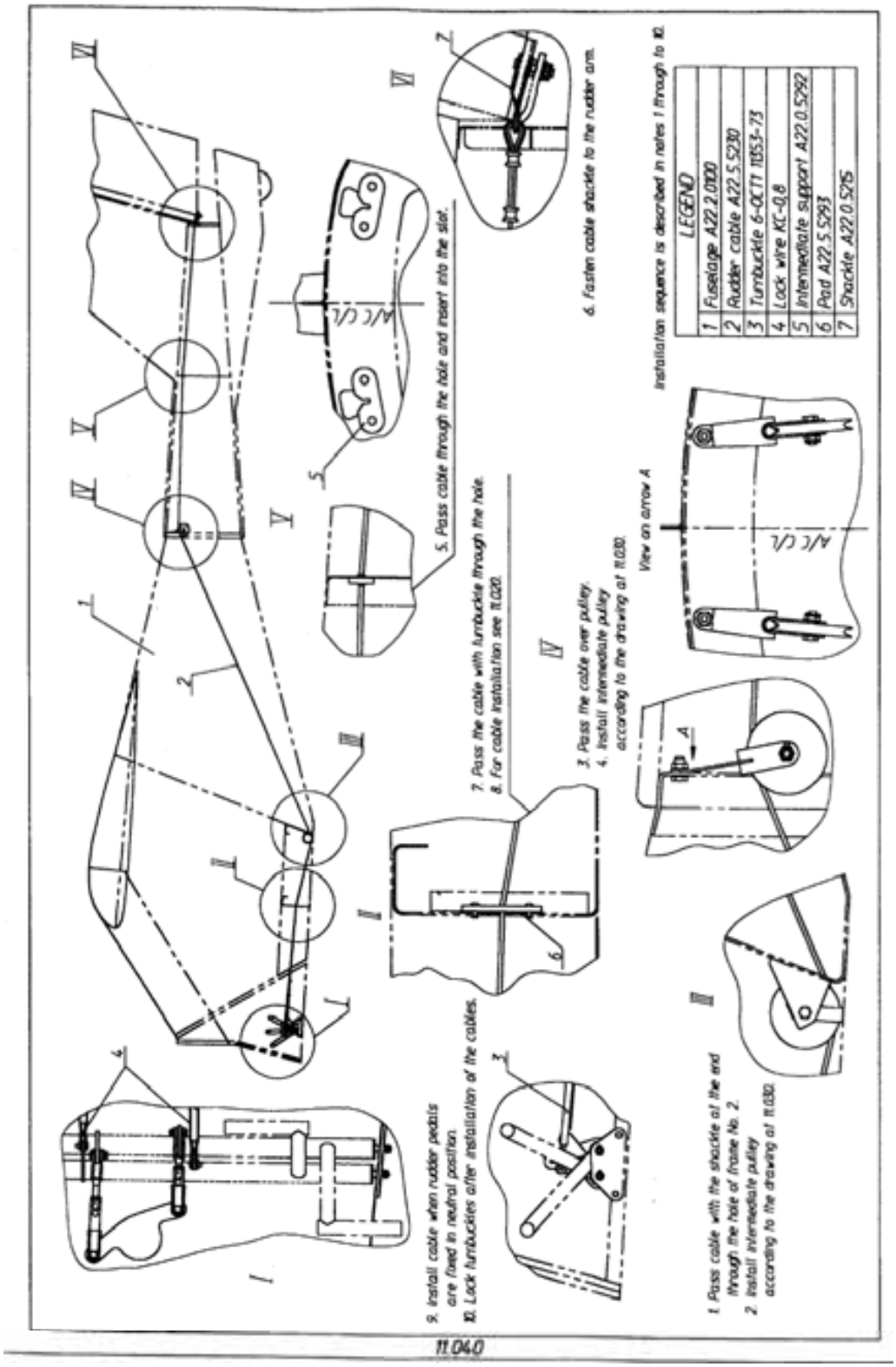
3. Re-check 1 and 2.

4. Proceed with the cable connection sequence.

5. Thoroughly examine the finished assembly and check operation with the nosewheel clear of the ground.

Notes:


LEGEND
1 Fuselage A22.2.000
2 Front pedals A22.4.5210.0006
3 Rear pedals A22.4.5210.0005
4 Bracket A22.1.5210.01
5 Bracket A22.1.5210.02
6 Washer 1-6-10-OCT1 34505-80
7 Nut 6-OCT1 35044-80
8 Cotter pin 1.6x10 NOCT 397-79
9 Bolt 5-16-OCT1 7038-80
10 Washer 1-5-10-OCT1 34505-80
11 Nut 5-OCT1 11065-80
12 Rigid cable A22.5.5210.0005
13 Left cable A22.5.5210.0005
14 Pin 1-6-16-OCT1 11065-79
15
16 Bolt 6-22-OCT1 7038-80
17 Washer 1.5-6-12-OCT1 34505-80
18 Nut 6-OCT1 11065-80
19 Rod A22.0.5240.01
20 Rod A22.0.5240.02
Bellcrank A22.2.4315.00
Installation sequence:
1. Install item 4 in fuselage.
2. Install items 2, 3 one after the other.
3. Install item 5, assembling it first with 2, 3.
4. Secure pedals in neutral position.
5. After securing the nose landing gear leg in its neutral position, assemble adjustable rods item 15, 16, 19,20.
6. Install control cables.
7. Adjust cable tension using turnbuckles.
8. Lock as shown in 20.100, 20.200, 20.300.
1:050


LEGEND
1 Fuselage A22.2.0100
2 Rudder cable A22.5.5230
3 Turnbuckle 6-0C11 1153-T3
4 Lock wire KC-0.8
5 Intermediate support A22.0.5292
6 Pad A22.5.5293
7 Shackle A22.0.5215
Installation sequence is described in notes 1 through to 10.
1. Pass cable with the shackle at the end through the hole of frame No. 2.
2. Install intermediate pulley according to the drawing at 11.030.
3. Pass the cable over pulley.
4. Install intermediate pulley according to the drawing at 11.030.
5. Pass cable through the hole and insert into the slot.
6. Fasten cable shackle to the rudder arm.
7. Pass the cable with turnbuckle through the hole.
8. For cable installation see 11.020.
9. Install cable when rudder pedals are fixed in neutral position.
10. Lock turnbuckles after installation of the cables.
View on arrow A
11.040

PAGE FIFTY-TWO

DRAWING NUMBERS 16.030/40/50

Installing the Throttle and Choke Bowden Cables

SEE DRAWINGS FOR PARTS REQUIRED

Recommended job for one person.

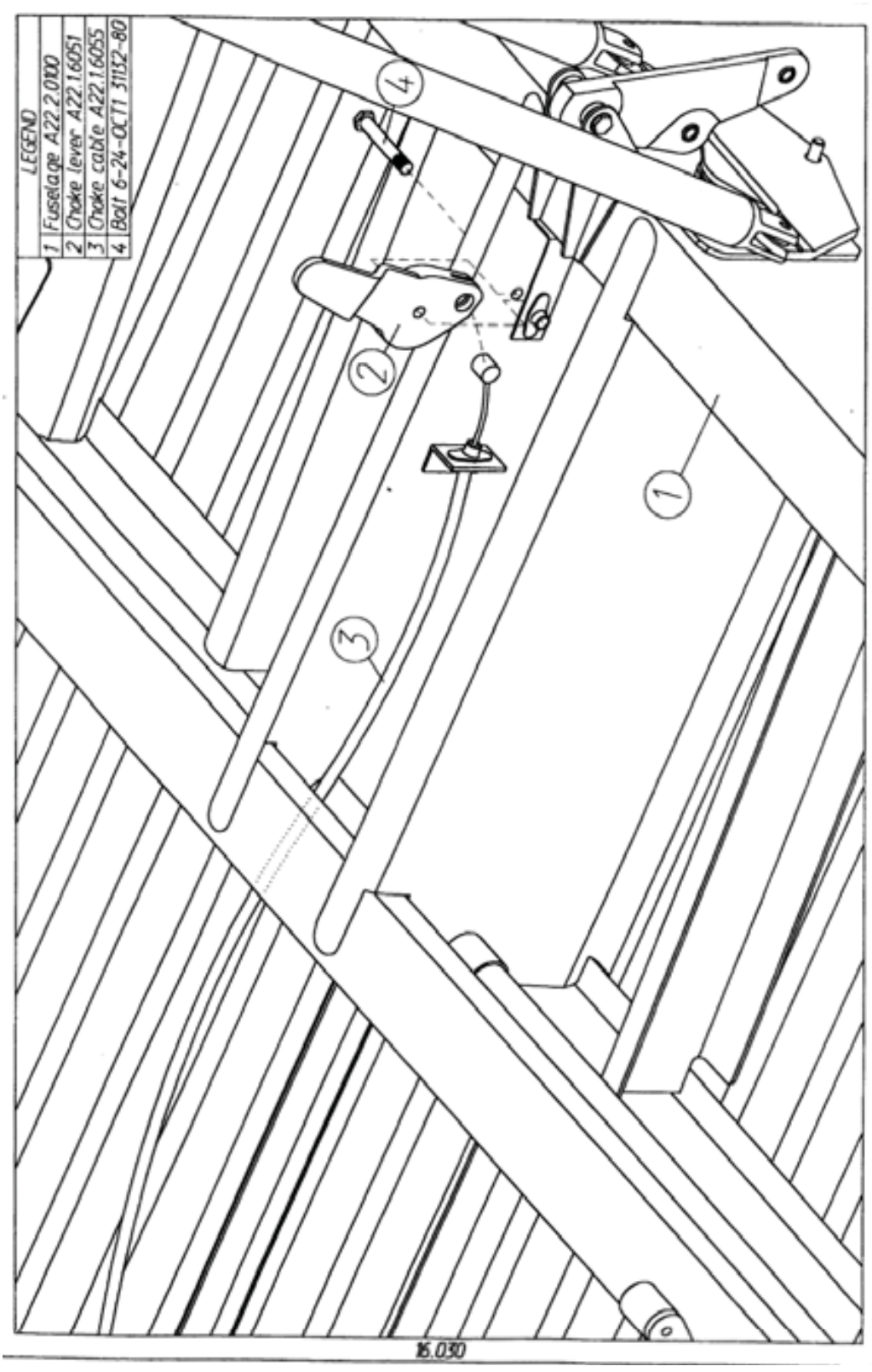
1. Carefully study the drawings then select and inspect the components, fittings and fasteners as listed in the drawings. Lubricate the inner cables at this stage.

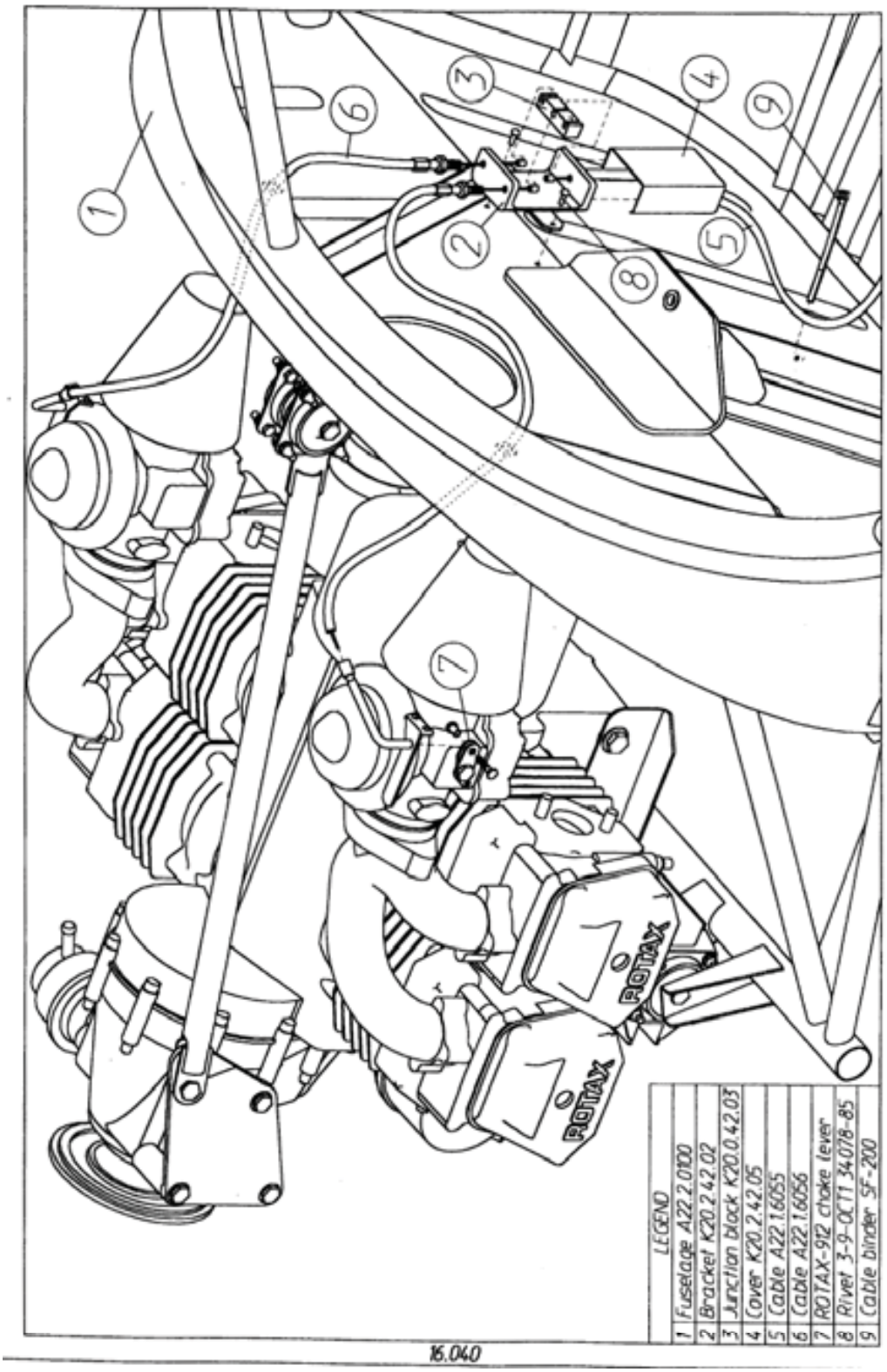
2. Starting with the choke cable you can now offer up and install the components exactly as illustrated on the drawings.

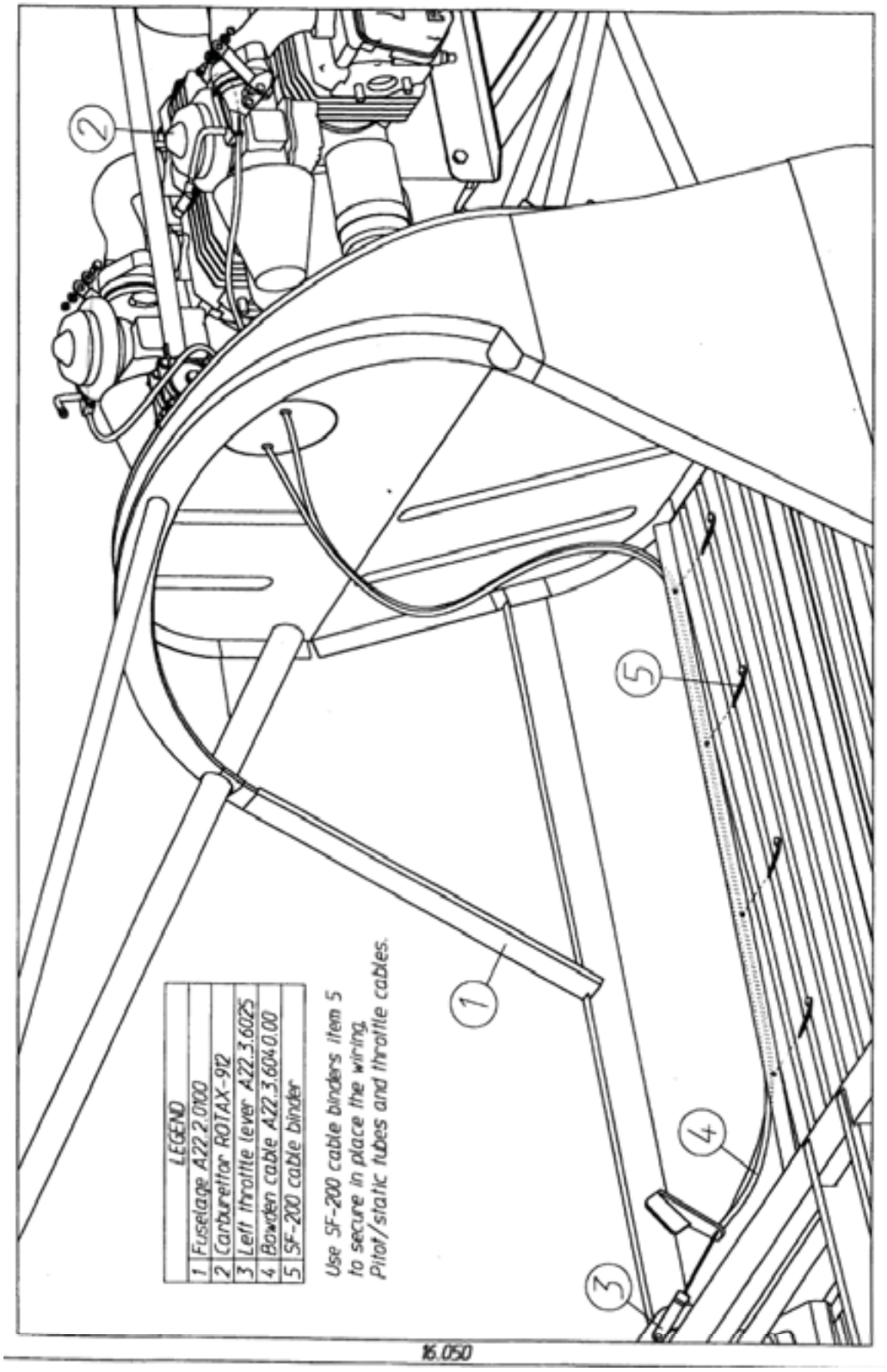
3. Recheck 1 and 2.

4. Thoroughly examine the finished work and check for smooth cable action. Choke and throttle arms should close fully at the carburettors. Adjust the lever frictions so that they stay set in position but *don't over-tighten*. Final adjustment and balancing will be carried out later in accordance with the Rotax engine manual.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Choke lever A22.16051
3 Choke cable A22.16055
4 Bolt 6-24-ACT1 3152-80
1
2
3
4
16.030


LEGEND
1 Fuselage A22.2.0100
2 Bracket K20.2.42.02
3 Junction block K20.0.42.03
4 Cover K20.2.42.05
5 Cable A22.1.6055
6 Cable A22.1.6056
7 ROTAX-912 choke lever
8 Rivet 3-9-OCT1 34078-85
9 Cable binder SF-200
ROTAX
ROTAX
16.04.0


LEGEND
1 Fuselage A22.2.0100
2 Carburettor ROTAX-912
3 Left throttle lever A22.3.6025
4 Bowden cable A22.3.6040.00
5 SF-200 cable binder
Use SF-200 cable binders item 5
to secure in place the wiring,
Pitot/static tubes and throttle cables.
16.050

PAGE FIFTY-THREE

DRAWING NUMBERS 19.010/20

Installing the Brake Lines and Fittings

SEE DRAWINGS FOR PARTS REQUIRED

Recommended one person job.

Note. Some people prefer to use plastic or braided metal brake lines due to the flexing of the LG. Aeroprakt report no problems using copper tube providing it is installed as shown.

1. Carefully study the drawings then select and inspect the copper tube and compression fittings. Make sure the tubes are clear and not crushed at any point. Route the tubes exactly as shown on the drawings. Observe the coil near the master cylinder exit and the slightly raised "slack" at the fuselage exit, these are to accommodate movement. Also note the nylon protection tubes at the cable-tie attachments to the LG legs.

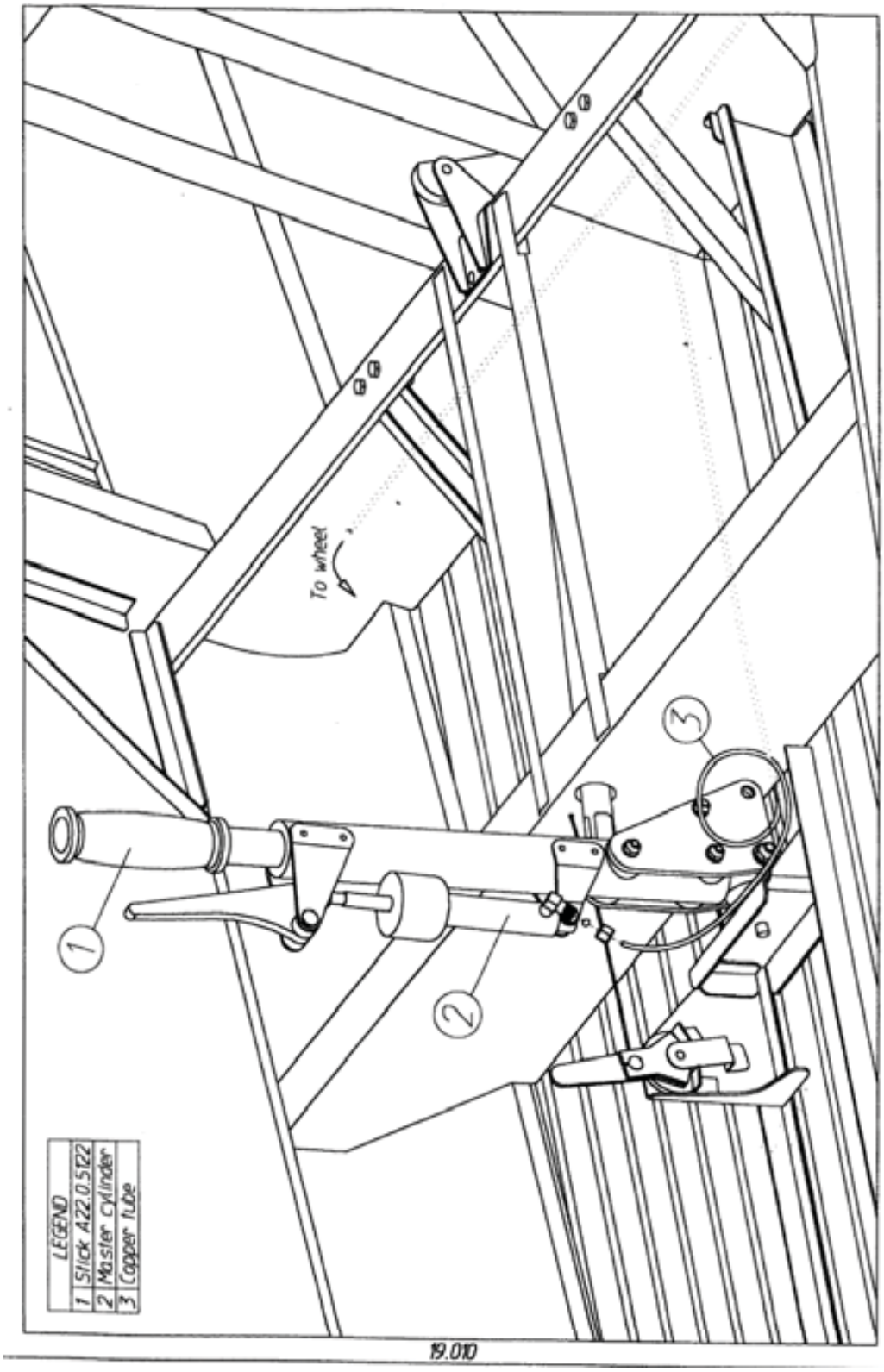
2. Loosely fit the compression fittings and cable ties as shown on the drawings. *Note. Don't fit more cable-ties than shown on the drawing!*

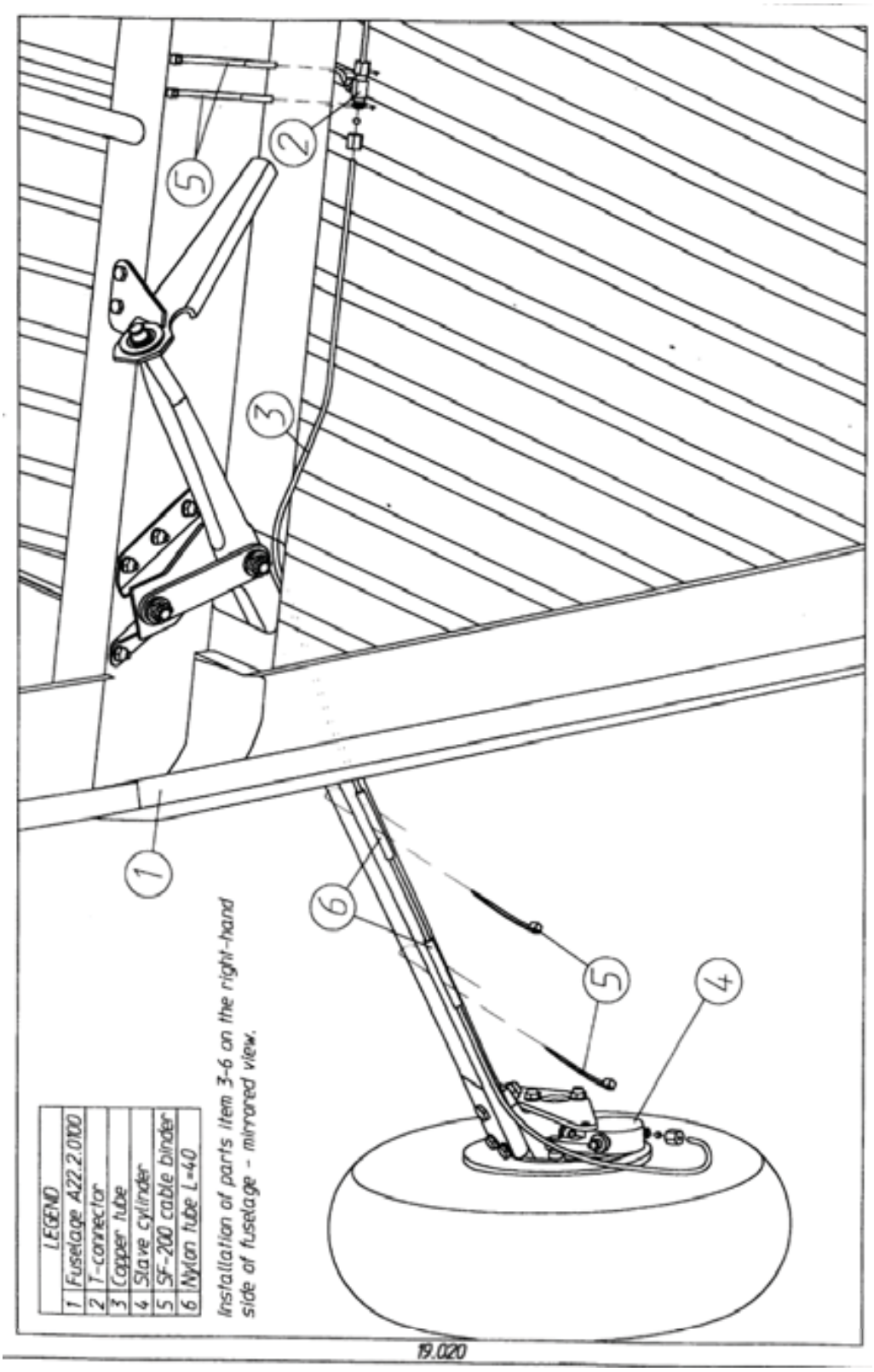
3. Recheck 1 and 2.

4. Tighten the cable-ties, recheck the routing and then tighten the compression joints but don't over-tighten.

5. Thoroughly inspect the finished work. The brake fluid can be added and bled later according to the instructions provided elsewhere. *Note. The Matco brake system is fitted with seals designed for use with "Aviation Hydraulic Fluid". DO NOT USE AUTOMOTIVE BRAKE FLUID!*

Notes:


To wheel
1
2
3
LEGEND
1 Stick A22.0.5122
2 Master cylinder
3 Copper tube
19.010


LEGEND
1 Fuselage A22.2.0100
2 T-connector
3 Copper tube
4 Slave cylinder
5 SF-200 cable binder
6 Nylon tube L=40
Installation of parts item 3-6 on the right-hand side of fuselage - mirrored view.
19.020

PAGE FIFTY-FOUR

DRAWING NUMBERS 17.100/010/025/020/030

Installing the Fuel Tanks, Lines, Taps and Fittings

SEE DRAWINGS FOR PARTS REQUIRED

Recommended two persons job.

1. After carefully studying the five drawings select and inspect the wing-tanks, taps and fittings as illustrated. You will need about six metres of fuel line. Cut the fuel line to the lengths specified allowing about 10% extra on each length for fitting.

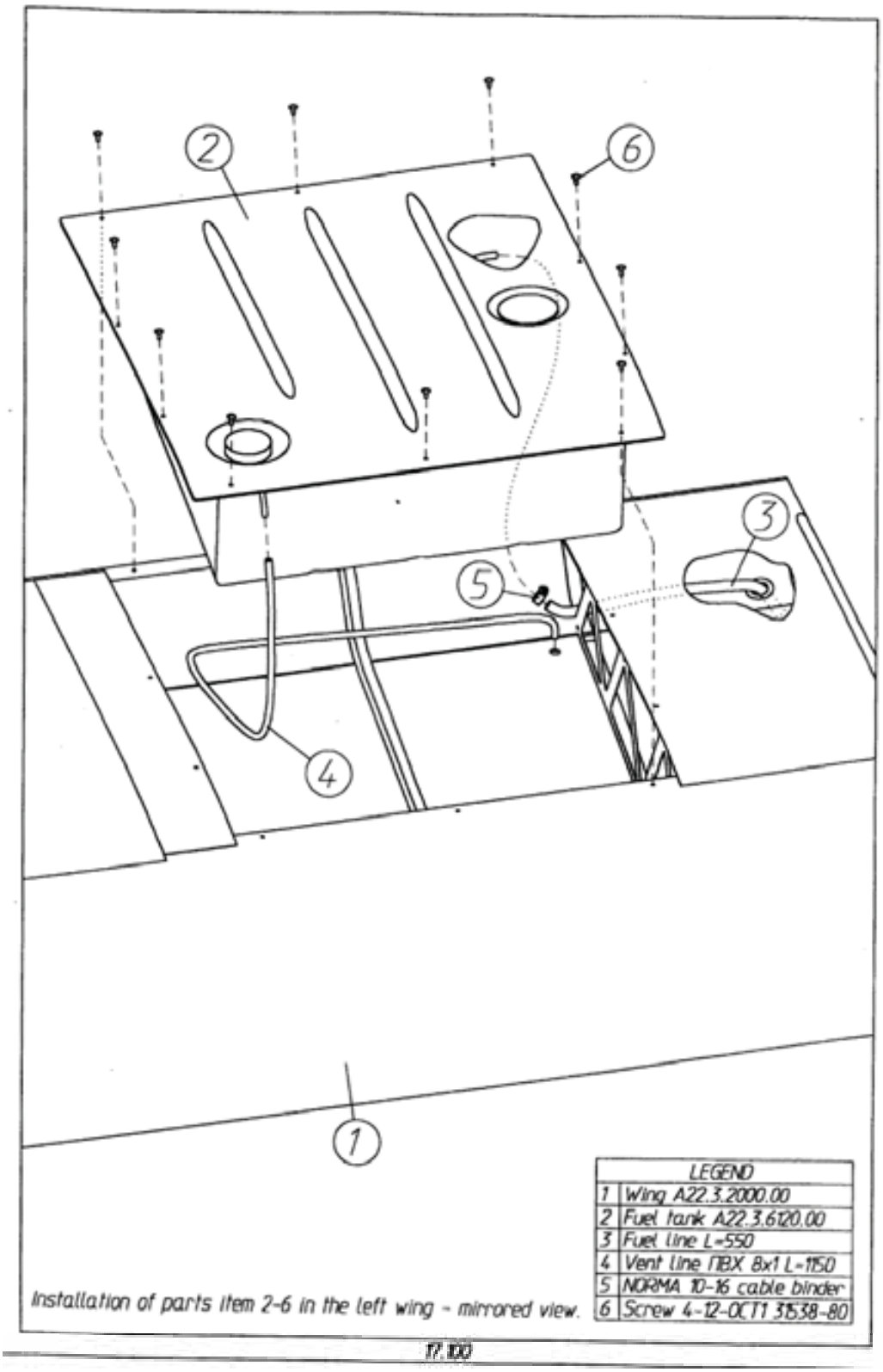
2. Install the wing-tanks first and then loosely connect the lines, hose-clips and fittings following the exact sequence illustrated in the drawings. Temporarily fix the fuel lines in position with duct-tape and trim the lengths as required but when inserting the spigots inside the lines be careful not to shave off a sliver of material that might eventually find its way to the carburettors. *Note 1. Drawing 17.100 shows an under-wing fuel vent line but there is also a "vented-cap" option not illustrated here. Note 2. There is no water trap (gascolator) illustrated in the drawing but a small one should be fitted in the lowest part of the fuel line after the "T" fitting (9) to allow external access for contamination checks. This will require a small hole to be cut in the floor panel.*

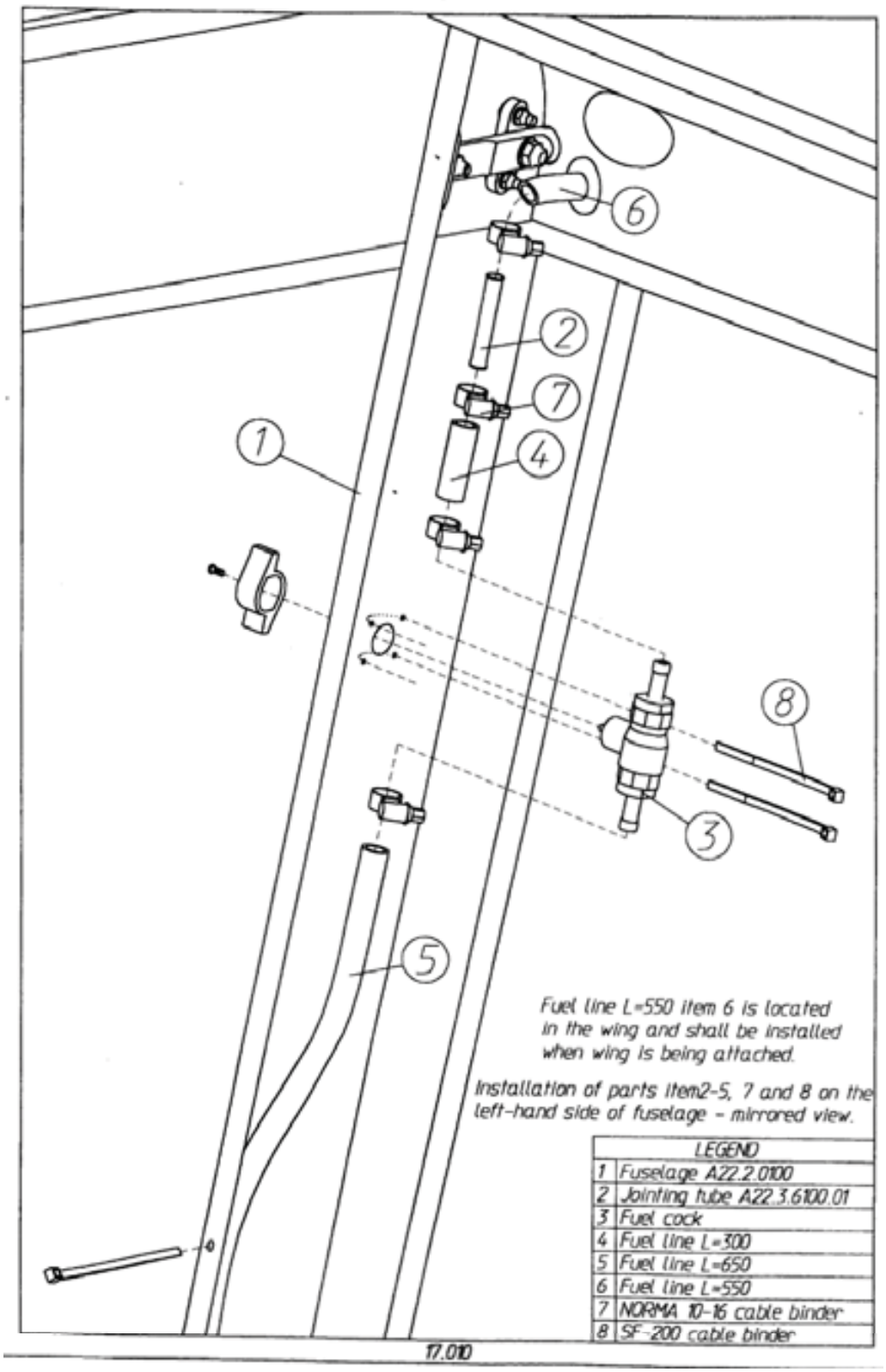
3. Recheck 1 and 2.

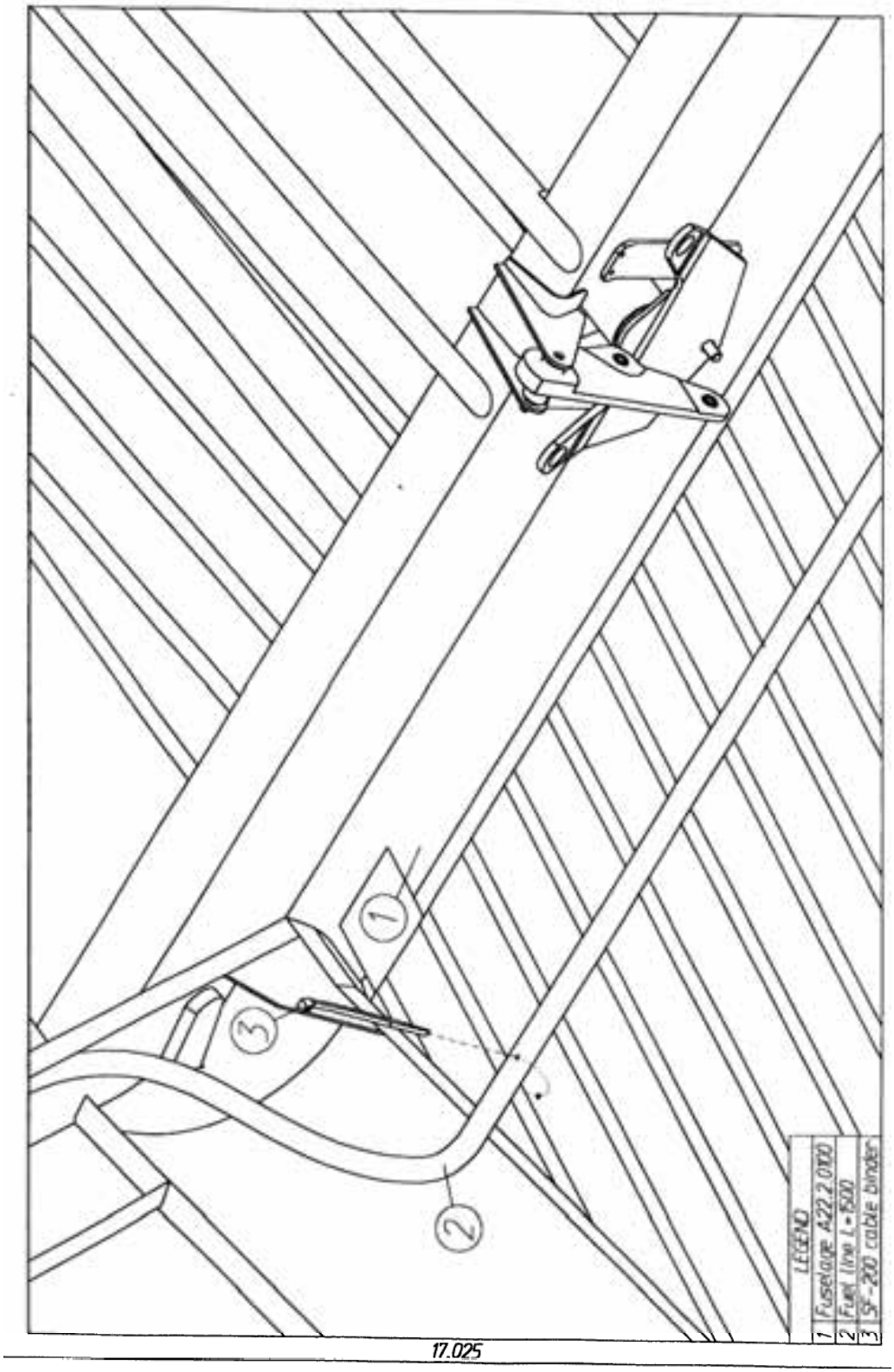
4. Tighten the hose clips and secure the lines with cable-ties as shown.

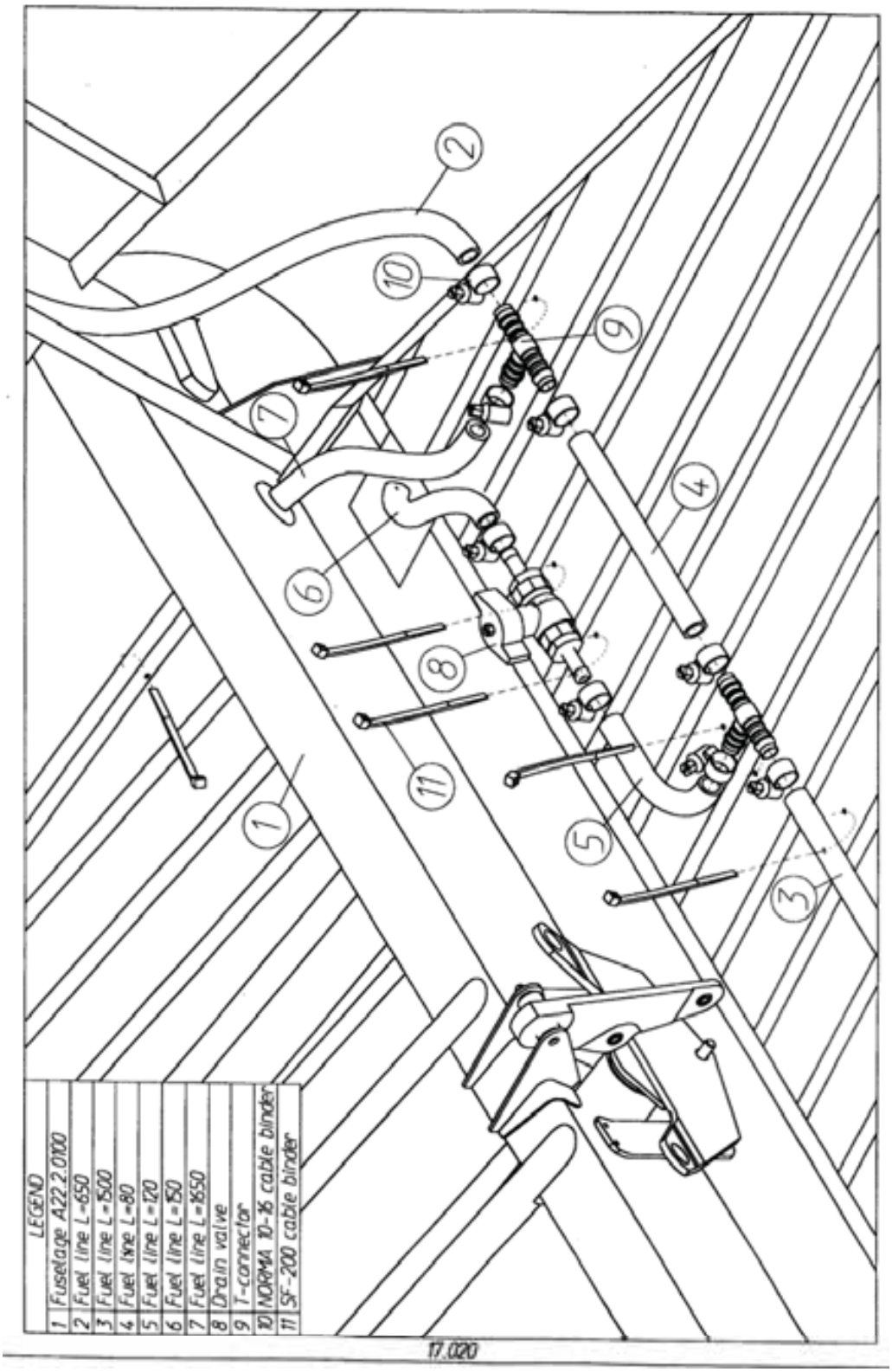
6. Thoroughly inspect the finished work.

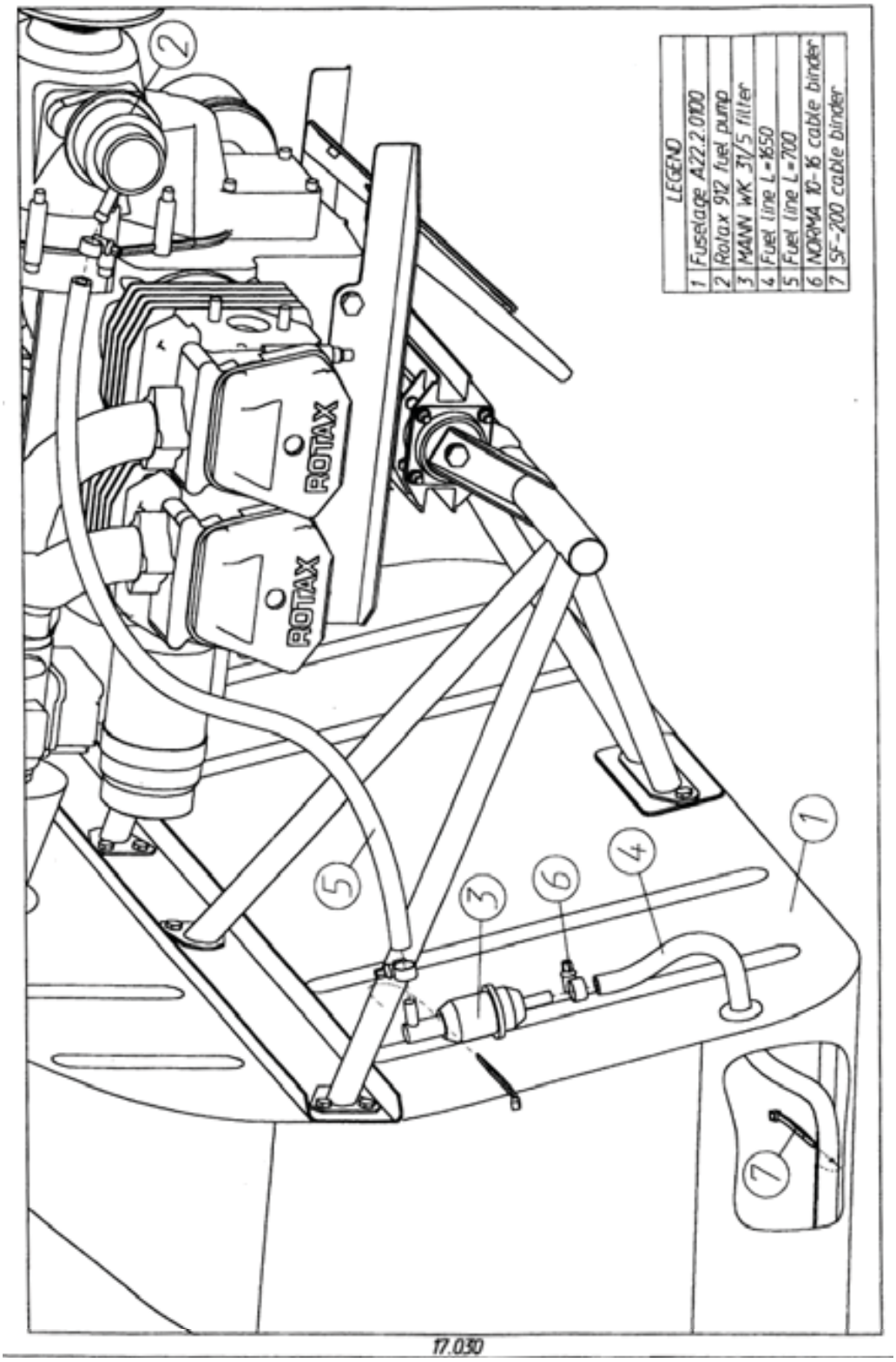
Notes:


2
6
3
5
4
1
LEGEND
1 Wing A22.3.2000.00
2 Fuel tank A22.3.6120.00
3 Fuel line L=550
4 Vent line TBX 8x1 L=1150
5 NORMA 10-16 cable binder
6 Screw 4-12-OCT1 3538-80
Installation of parts item 2-6 in the left wing - mirrored view.
17.100


6
2
7
1
4
8
3
5
Fuel line L=550 item 6 is located in the wing and shall be installed when wing is being attached.
Installation of parts item2-5, 7 and 8 on the left-hand side of fuselage - mirrored view.
LEGEND
1 Fuselage A22.2.0100
2 Jointing tube A22.3.6100.01
3 Fuel cock
4 Fuel line L=300
5 Fuel line L=650
6 Fuel line L=550
7 NORMA 10-16 cable binder
8 SF-200 cable binder
17.010


LEGEND
1 Fuselage A22.2.000
2 Fuel line L-500
3 SF-200 cable binder
17.025


LEGEND
1 Fuselage A22.2.0100
2 Fuel line L=650
3 Fuel line L=1500
4 Fuel line L=80
5 Fuel line L=120
6 Fuel line L=150
7 Fuel line L=1650
8 Drain valve
9 T-connector
10 NORMA 10-16 cable binder
11 SF-200 cable binder
17.020


LEGEND
1 Fuselage A22.2.0100
2 Rotax 912 fuel pump
3 MANN WK 31/5 filter
4 Fuel line L=850
5 Fuel line L=700
6 NORMA 10-16 cable binder
7 SF-200 cable binder
ROTAX
ROTAX
17.030

PAGE FIFTY-FIVE

DRAWING NUMBERS 18.030/060/100/040/050/020

Electrical Installations

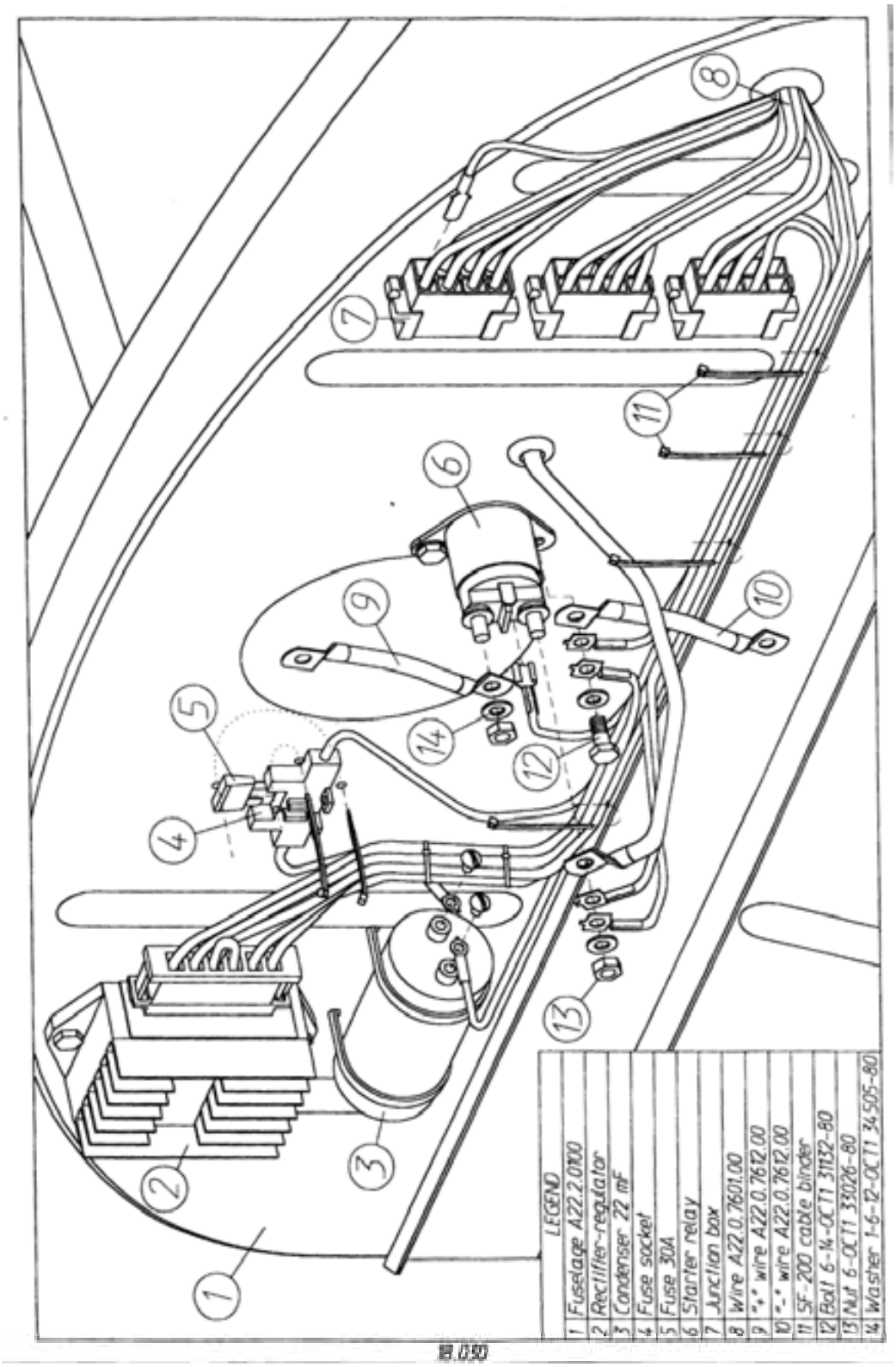
SEE DRAWINGS AND SEPARATE DIAGRAMS FOR PARTS REQUIRED

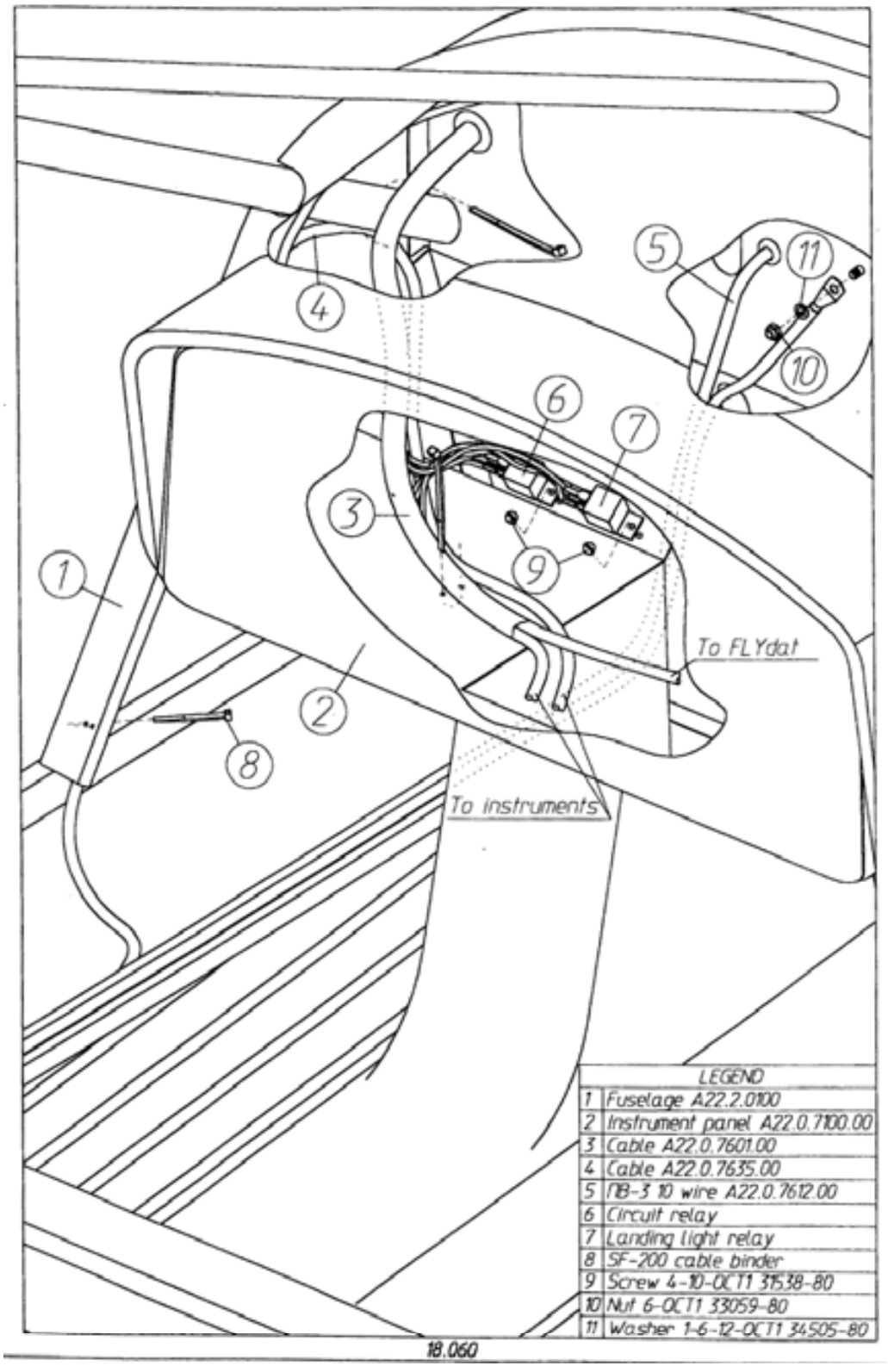
Recommended one person job. Special skills required.

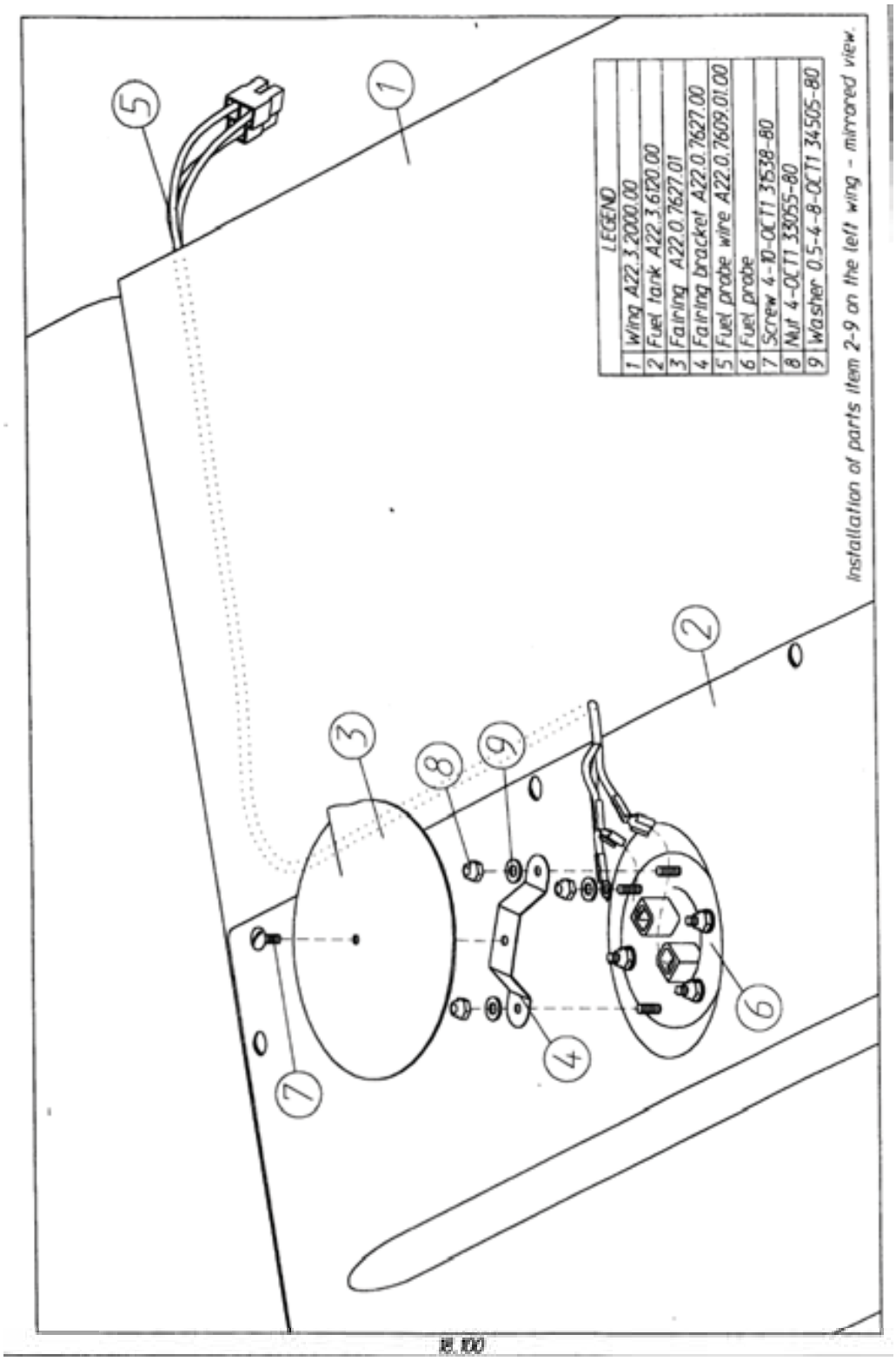
Note 1. These drawings are to be used only as a basic guide in conjunction with the Installation Manual supplied by Rotax and the wiring diagrams supplied by various other component manufacturers. For example you may have a preference for digital rather than the traditional analog engine instruments, or may opt for the advantages of a modern fully digital “glass cockpit” such as the Brauniger Alpha. Instructions for installing the optional MAC electric pitch-trim option are also supplied separately. If in doubt contact Foxbat Aircraft or an aircraft or auto electrician for specific advice.

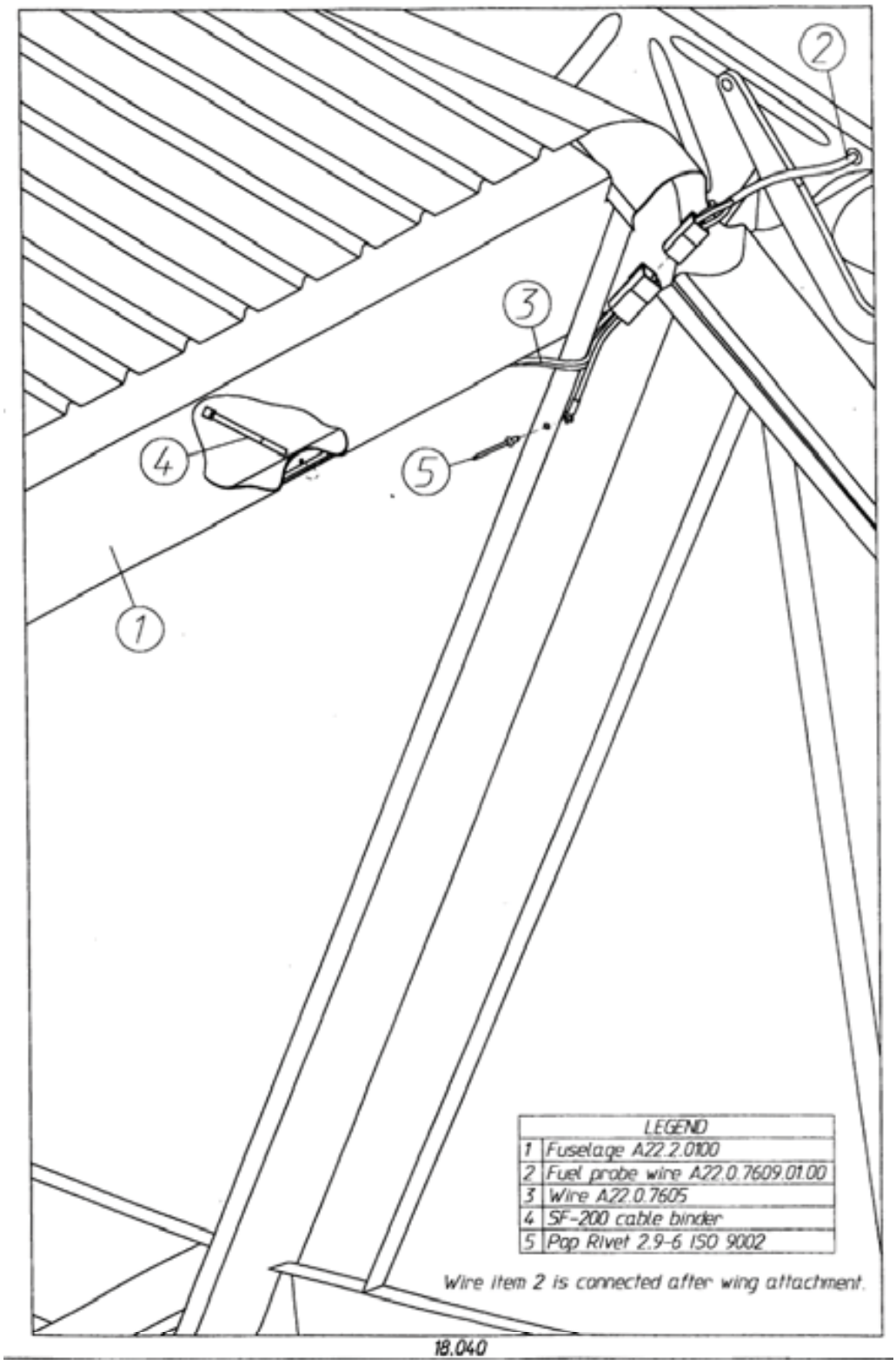
Note 2. Incorrect wiring can damage electrical components beyond repair or can lay the foundations for serious problems in the future! So, unless you are certain of your skills, consult a professional!

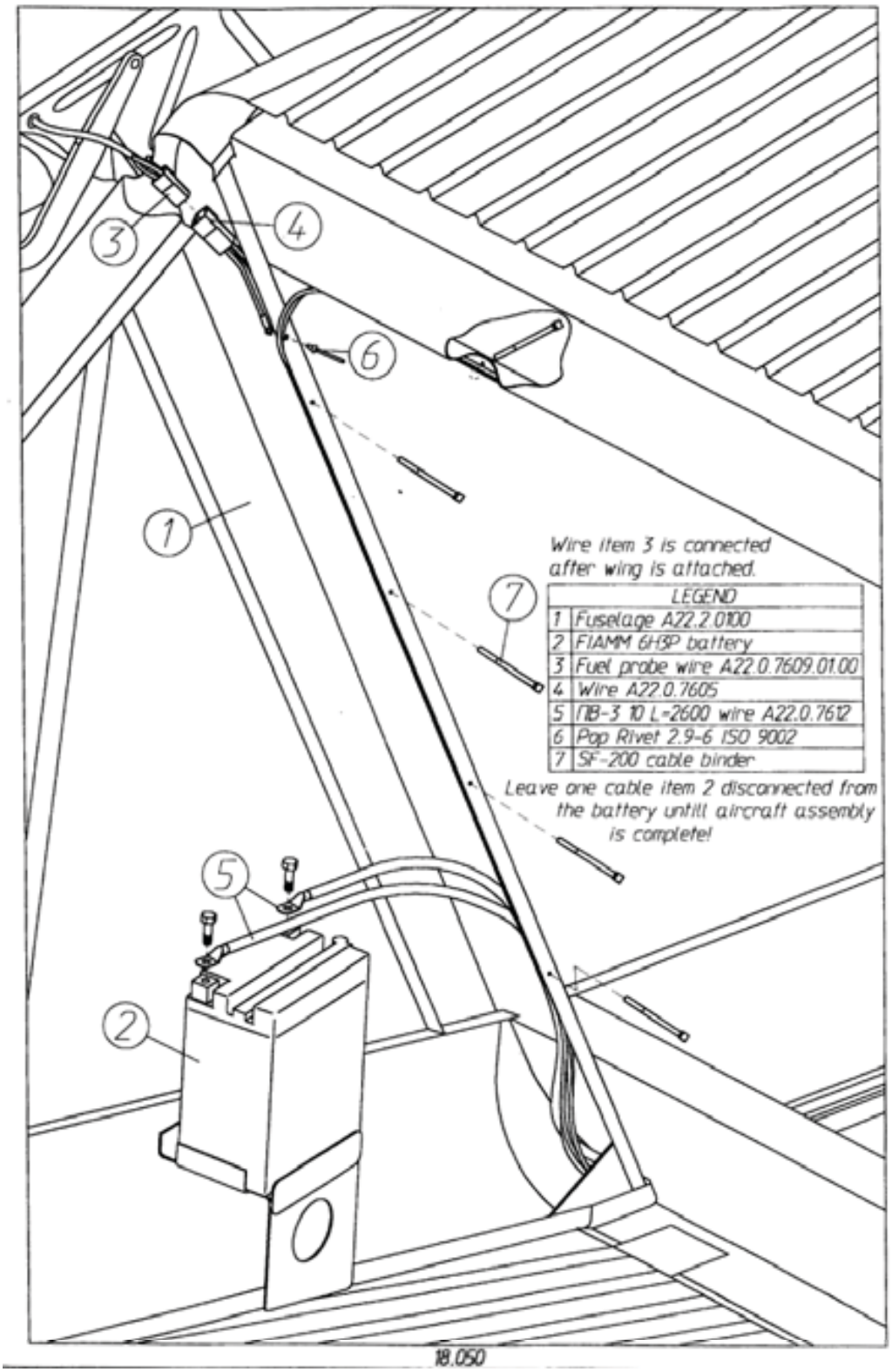
Notes:

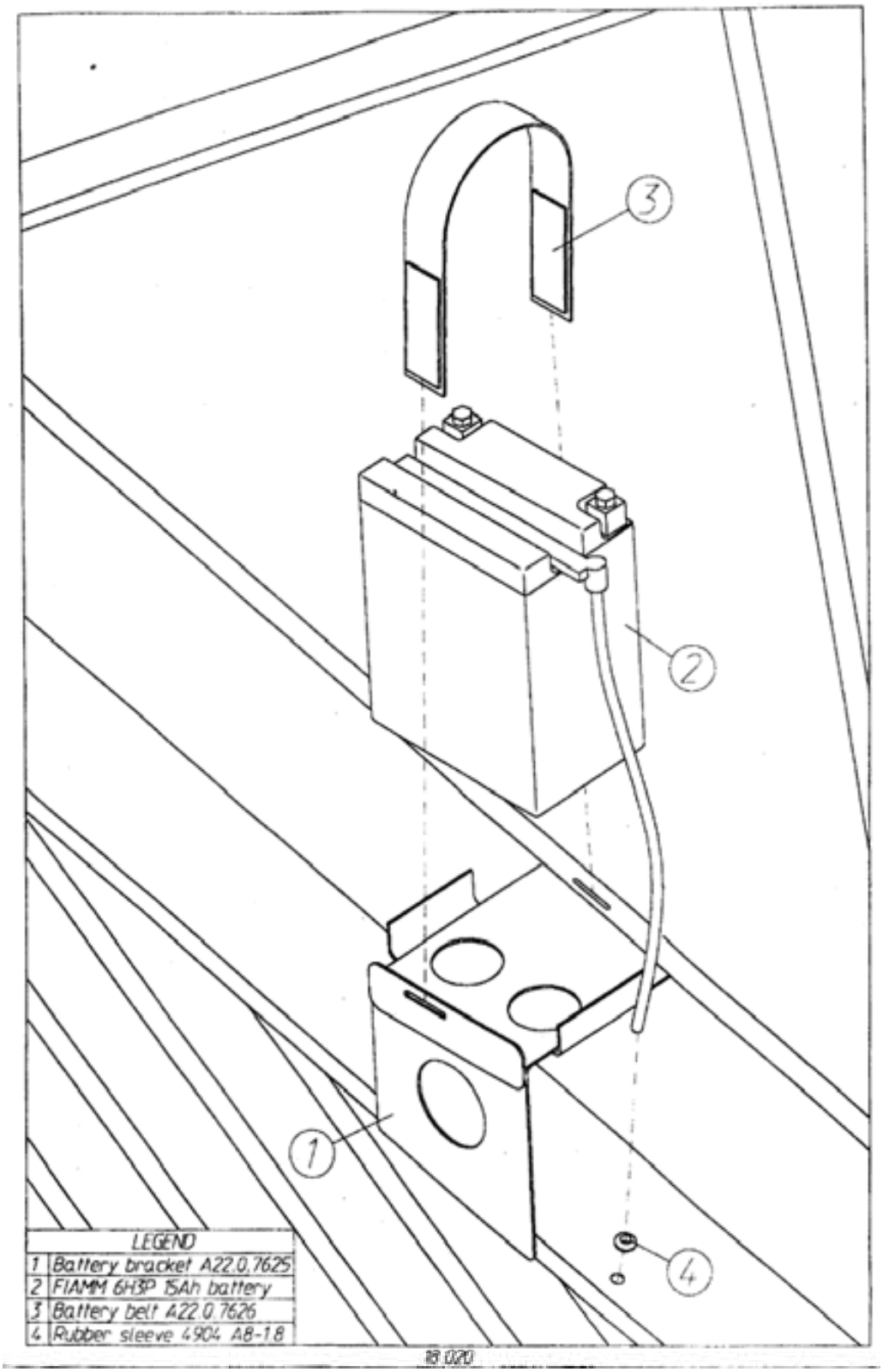

LEGEND
1 Fuselage A22.2.0100
2 Rectifier-regulator
3 Condenser 22 mF
4 Fuse socket
5 Fuse 30A
6 Starter relay
7 Junction box
8 Wire A22.0.7601.00
9 "+" wire A22.0.7612.00
10 "-" wire A22.0.7612.00
11 SF-200 cable binder
12 Bolt 6-14-OCT1 31132-80
13 Nut 6-OCT1 33026-80
14 Washer 1-6-12-OCT1 34505-80


To FLYdat
To instruments
LEGEND
1 Fuselage A22.2.0100
2 Instrument panel A22.0.7100.00
3 Cable A22.0.7601.00
4 Cable A22.0.7635.00
5 MB-3 10 wire A22.0.7612.00
6 Circuit relay
7 Landing light relay
8 SF-200 cable binder
9 Screw 4-10-OCT1 31538-80
10 Nut 6-OCT1 33059-80
11 Washer 1-6-12-OCT1 34505-80
18.060


LEGEND
1 Wing A22.3.2000.00
2 Fuel tank A22.3.6120.00
3 Fairing A22.0.7627.01
4 Fairing bracket A22.0.7627.00
5 Fuel probe wire A22.0.7609.01.00
6 Fuel probe
7 Screw 4-10-0CT1 35538-80
8 Nut 4-0CT1 33055-80
9 Washer 0.5-4-8-0CT1 34505-80
Installation of parts item 2-9 on the left wing - mirrored view.


2
3
4
5
1
LEGEND
1 Fuselage A22.2.0100
2 Fuel probe wire A22.0.7609.01.00
3 Wire A22.0.7605
4 SF-200 cable binder
5 Pop Rivet 2.9-6 ISO 9002
Wire item 2 is connected after wing attachment.
18.040


3
4
6
1
7
5
2
Wire item 3 is connected after wing is attached.
LEGEND
1 Fuselage A22.2.0100
2 FIAMM 6HSP battery
3 Fuel probe wire A22.0.7609.01.00
4 Wire A22.0.7605
5 TIB-3 10 L=2600 wire A22.0.7612
6 Pop Rivet 2.9-6 ISO 9002
7 SF-200 cable binder
Leave one cable item 2 disconnected from the battery untill aircraft assembly is complete!
18.050


3
2
1
4
LEGEND
1 Battery bracket A22.0.7625
2 FIAMM 6H3P 15Ah battery
3 Battery belt A22.0.7626
4 Rubber sleeve 4904 A8-1.8

PAGE FIFTY-SIX

DRAWING NUMBERS 1.360/70/80/20/40/50

Installing the Interior Mouldings, Seats and Luggage Bag

SEE DRAWINGS FOR PARTS REQUIRED

Recommended job for one or two persons. The mouldings should be pre-fitted to check alignment prior to painting or fabric covering.

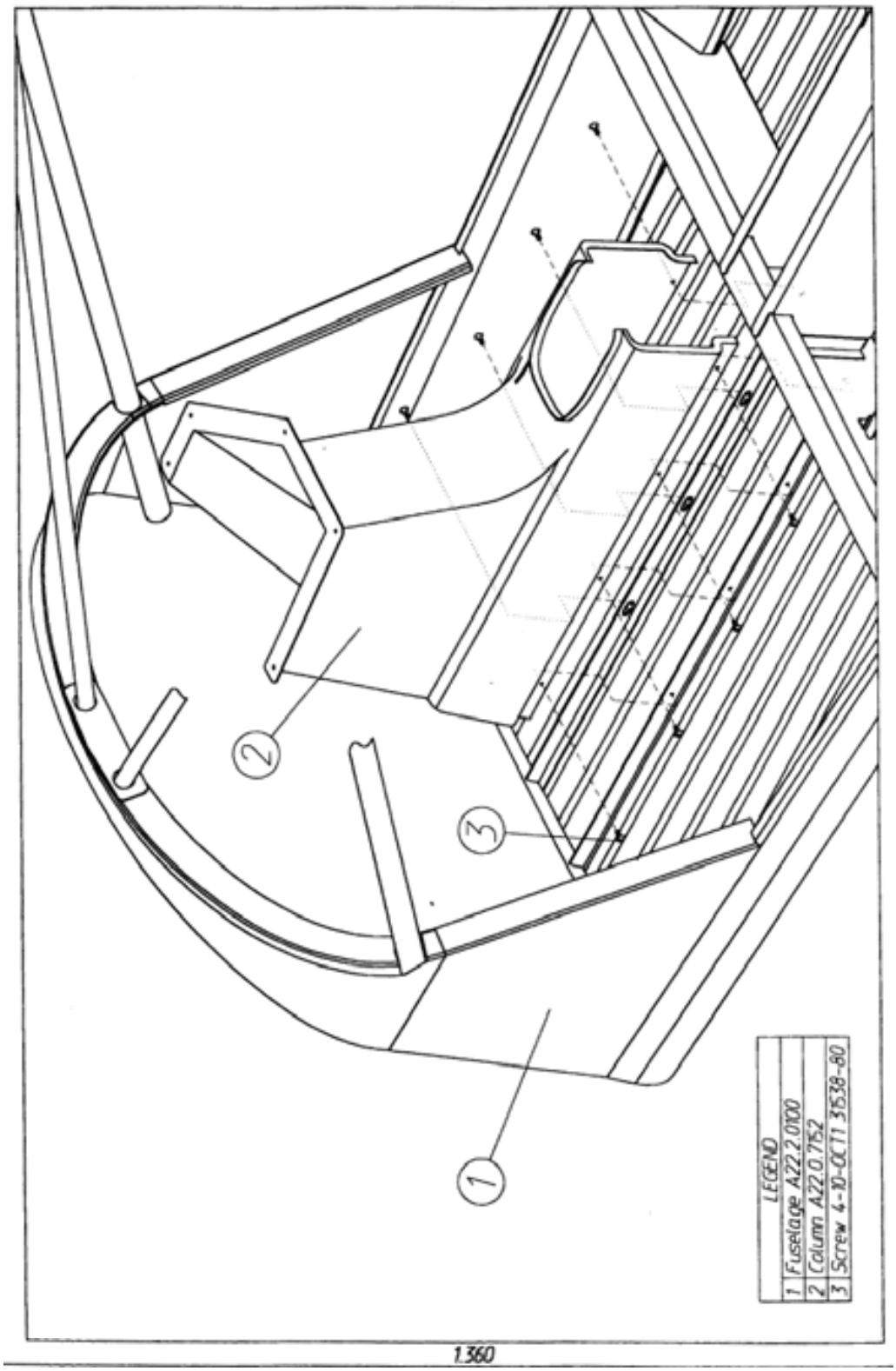
1. Select and inspect the interior mouldings, the luggage bag and fittings, the seat belts, and the seats.

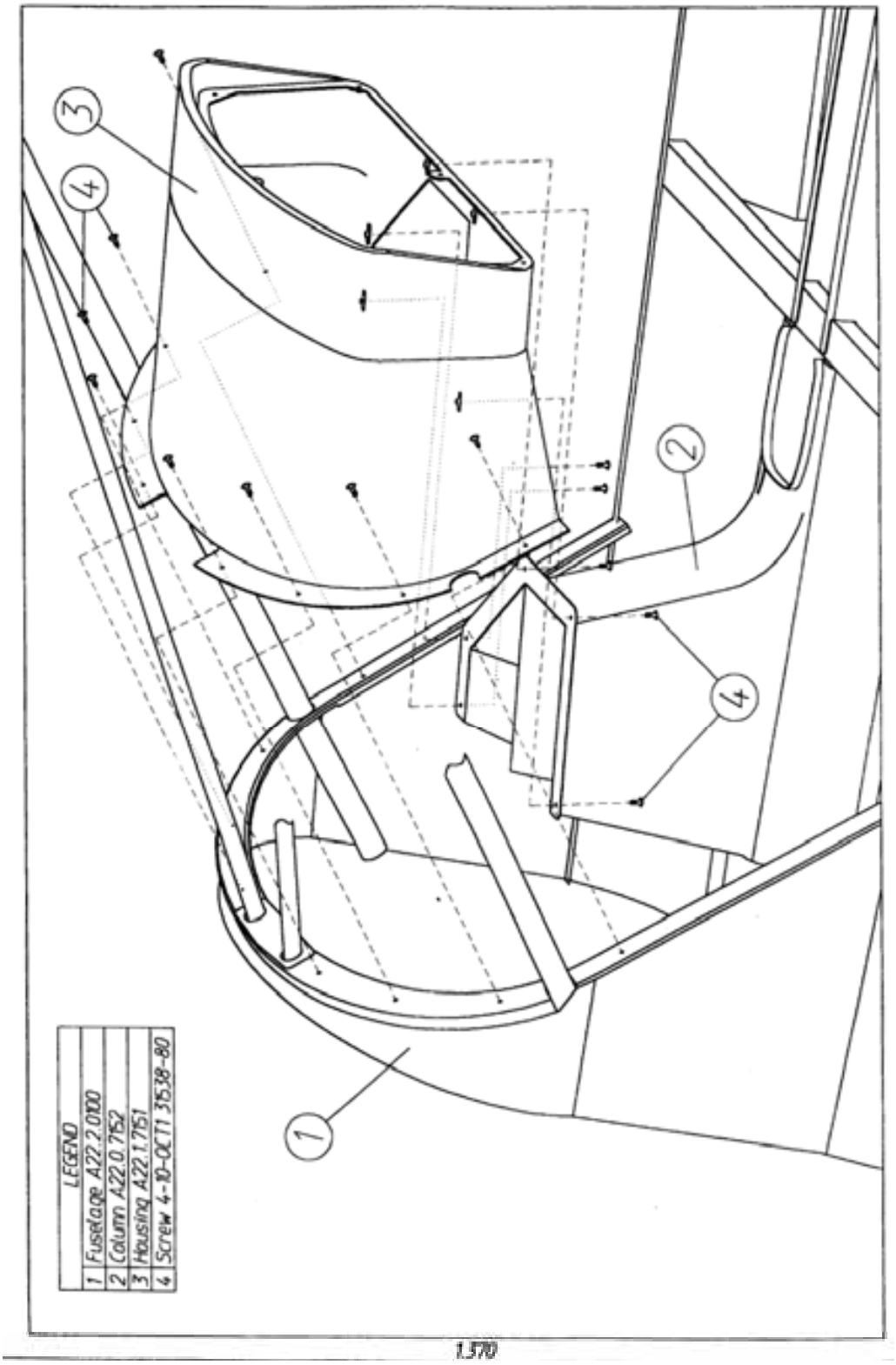
2. Offer up and fix the instrument binnacle and console mouldings according to the drawing sequence. Installation of the flaperon lever cowl is described on page forty (40). The instrument panel itself may be offered up at this stage for an alignment check but final fitting will take place after the instrument type and layout has been decided and holes cut to suit.

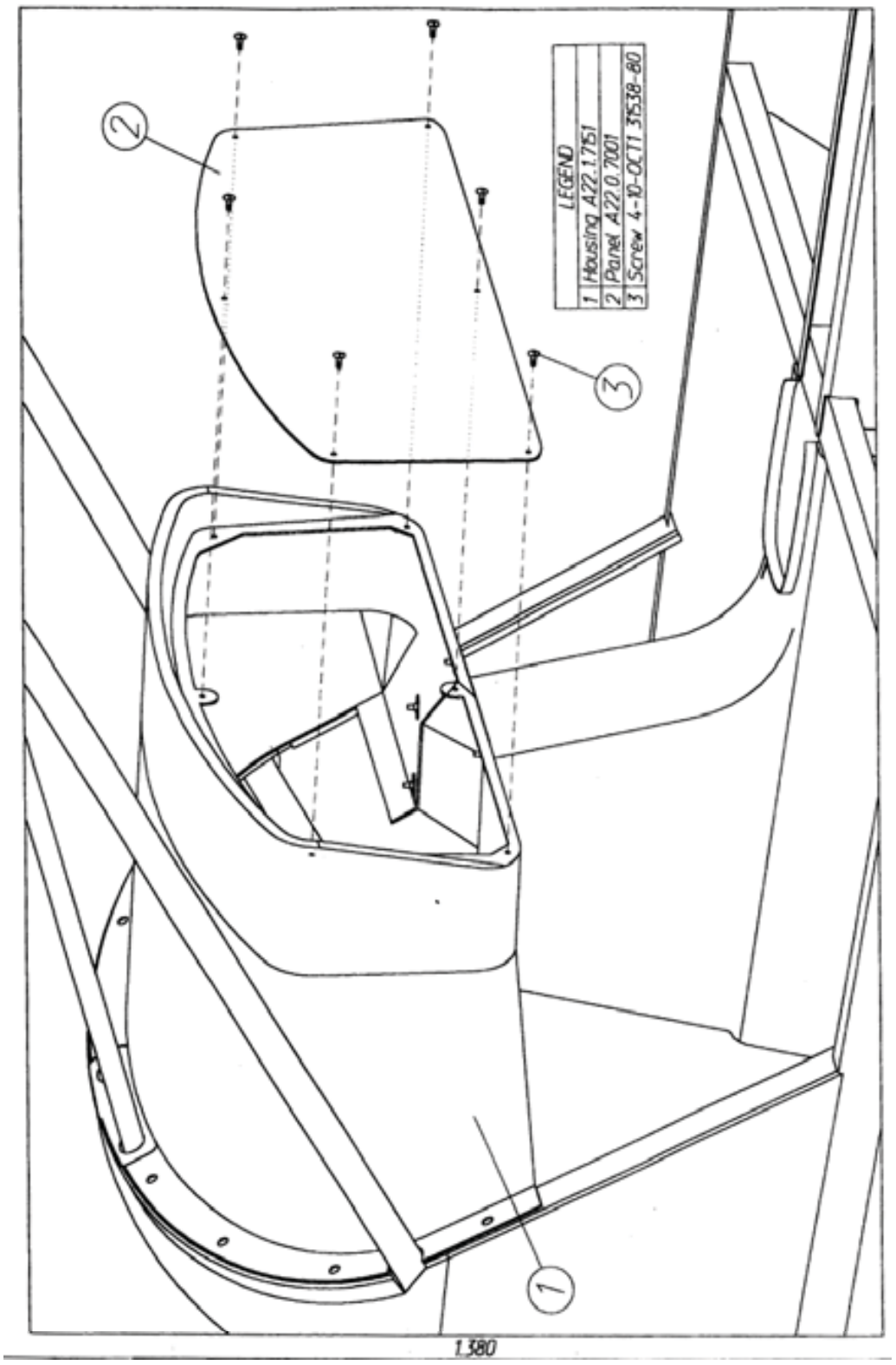
3. Offer up and fit the luggage bag followed by the seat belts and seats exactly as shown in the drawings.

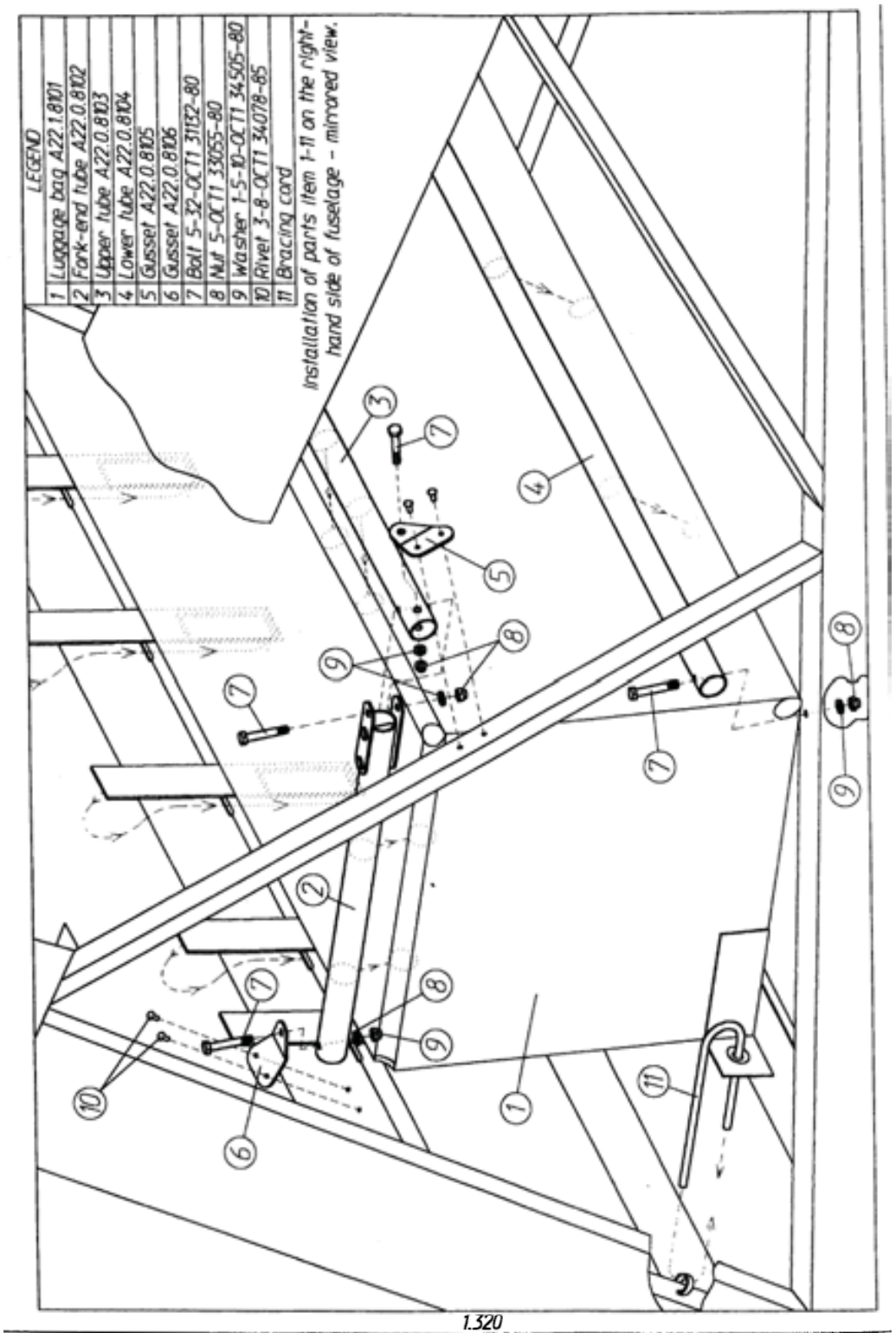
4. Thoroughly inspect the finished work.

Notes:

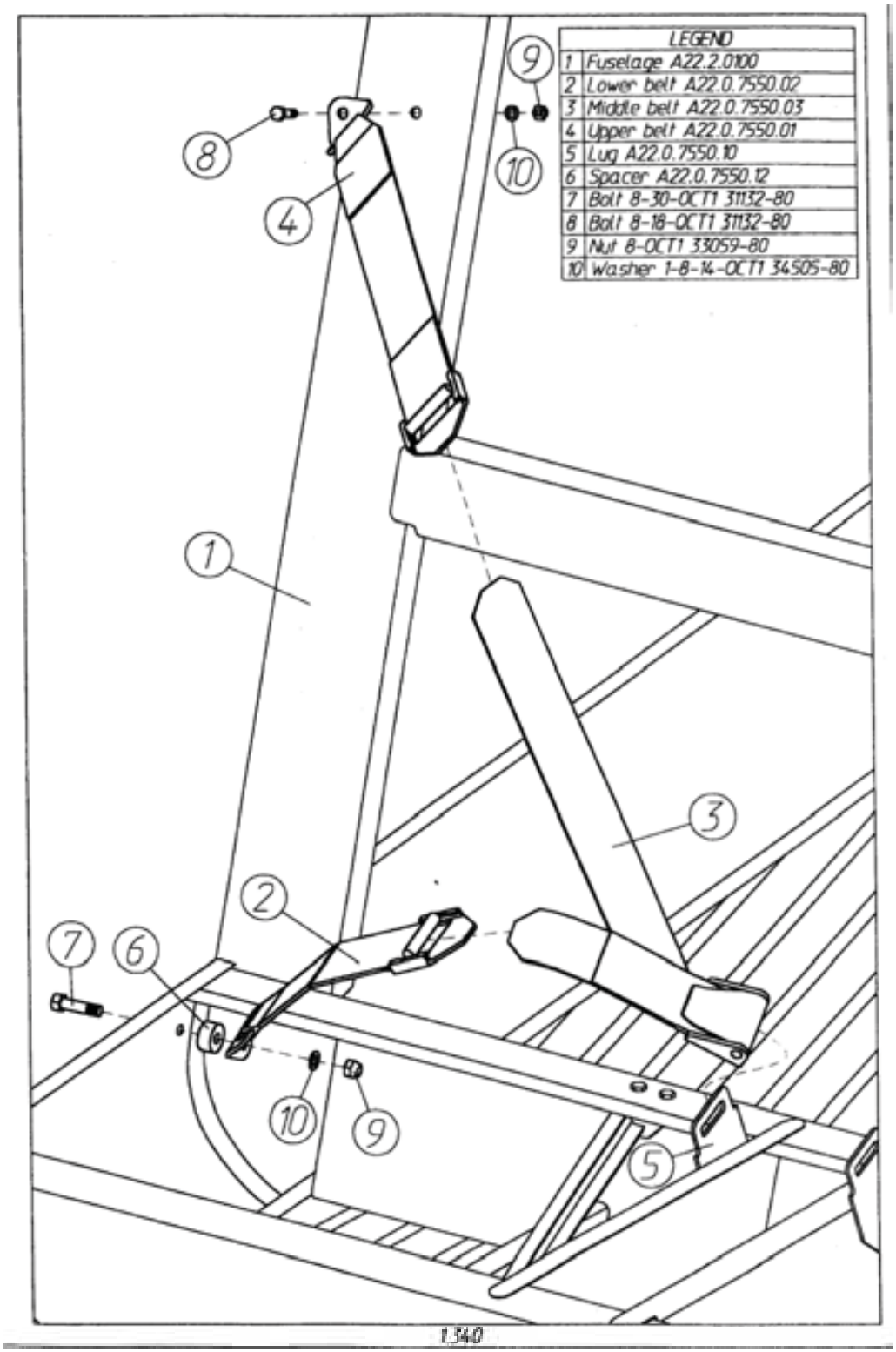

LEGEND
1 Fuselage A22.2.0100
2 Column A22.0.7152
3 Screw 4-10-0C11 35538-80
1.360

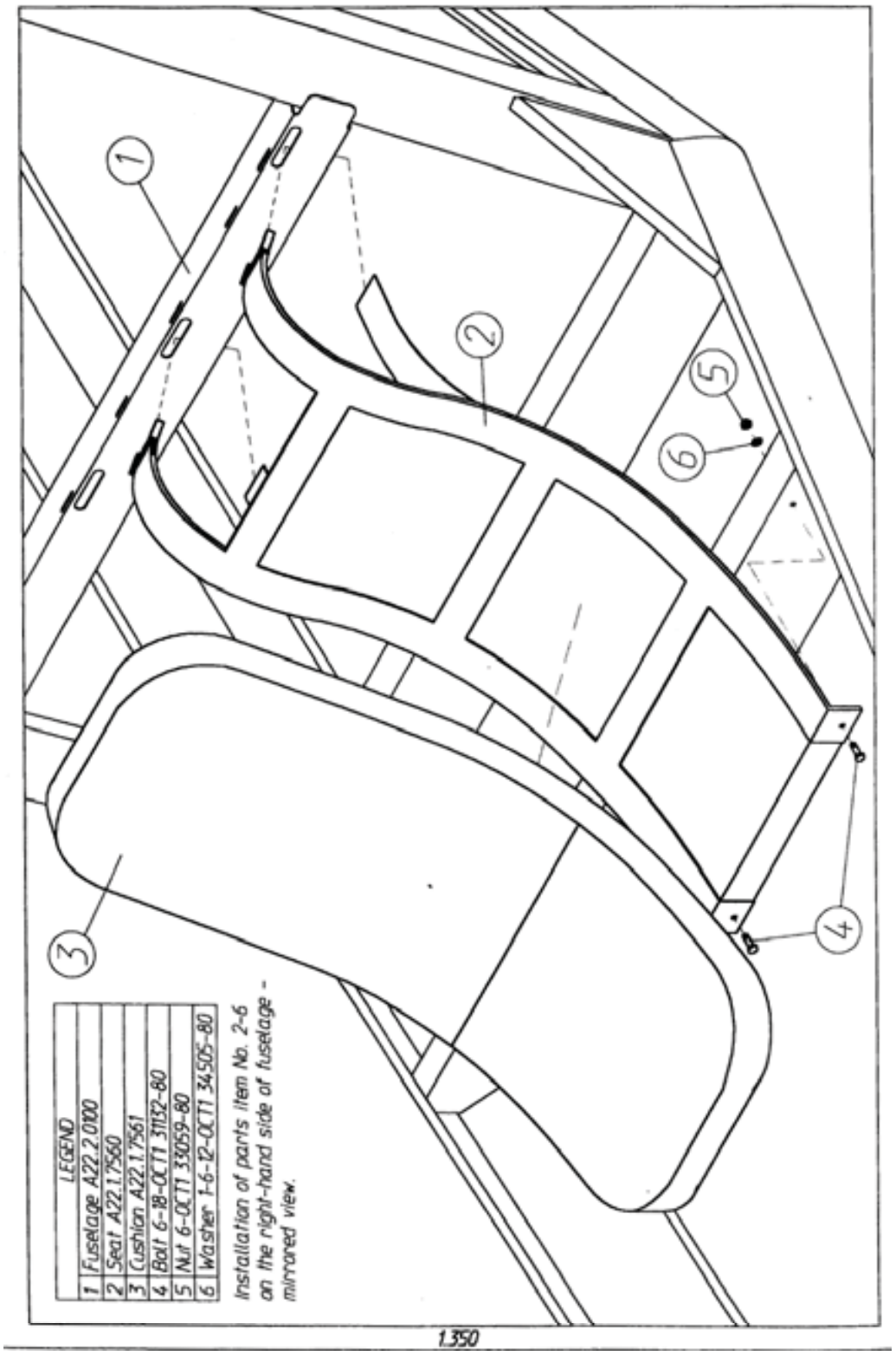

3
4
2
4
1
LEGEND
1 Fuselage A22.2.0100
2 Column A22.0.7152
3 Housing A22.1.7151
4 Screw 4-10-OCT1 31538-80
1.570


LEGEND
1 Housing A22.1.7151
2 Panel A22.0.7001
3 Screw 4-10-OCT1.31538-80
1
2
3
1.380


LEGEND
1 Luggage bag A22.1.8101
2 Fork-end tube A22.0.8102
3 Upper tube A22.0.8103
4 Lower tube A22.0.8104
5 Gusset A22.0.8105
6 Gusset A22.0.8106
7 Bolt 5-32-OCT1 31132-80
8 Nut 5-OCT1 33055-80
9 Washer 1-5-10-OCT1 34505-80
10 Rivet 3-8-OCT1 34078-85
11 Bracing cord
Installation of parts item 1-11 on the right-hand side of fuselage - mirrored view.

1.320


LEGEND
1 Fuselage A22.2.0100
2 Lower belt A22.0.7550.02
3 Middle belt A22.0.7550.03
4 Upper belt A22.0.7550.01
5 Lug A22.0.7550.10
6 Spacer A22.0.7550.12
7 Bolt B-30-OCT1 31132-80
8 Bolt B-18-OCT1 31132-80
9 Nut B-OCT1 33059-80
10 Washer 1-B-14-OCT1 34505-80
1
2
3
4
5
6
7
8
9
10


LEGEND
1 Fuselage A22.2.0100
2 Seat A22.1.7560
3 Cushion A22.1.7561
4 Bolt 6-18-OCT1 31132-80
5 Nut 6-OCT1 33059-80
6 Washer 1-6-12-OCT1 34505-80
Installation of parts item No. 2-6 on the right-hand side of fuselage - mirrored view.
1350

PAGE FIFTY-SEVEN

DRAWING NUMBERS 6.500/10/4.500/10/20

Fitting the Flaperons to Wings and Wings to Fuselage

SEE DRAWINGS FOR PARTS REQUIRED

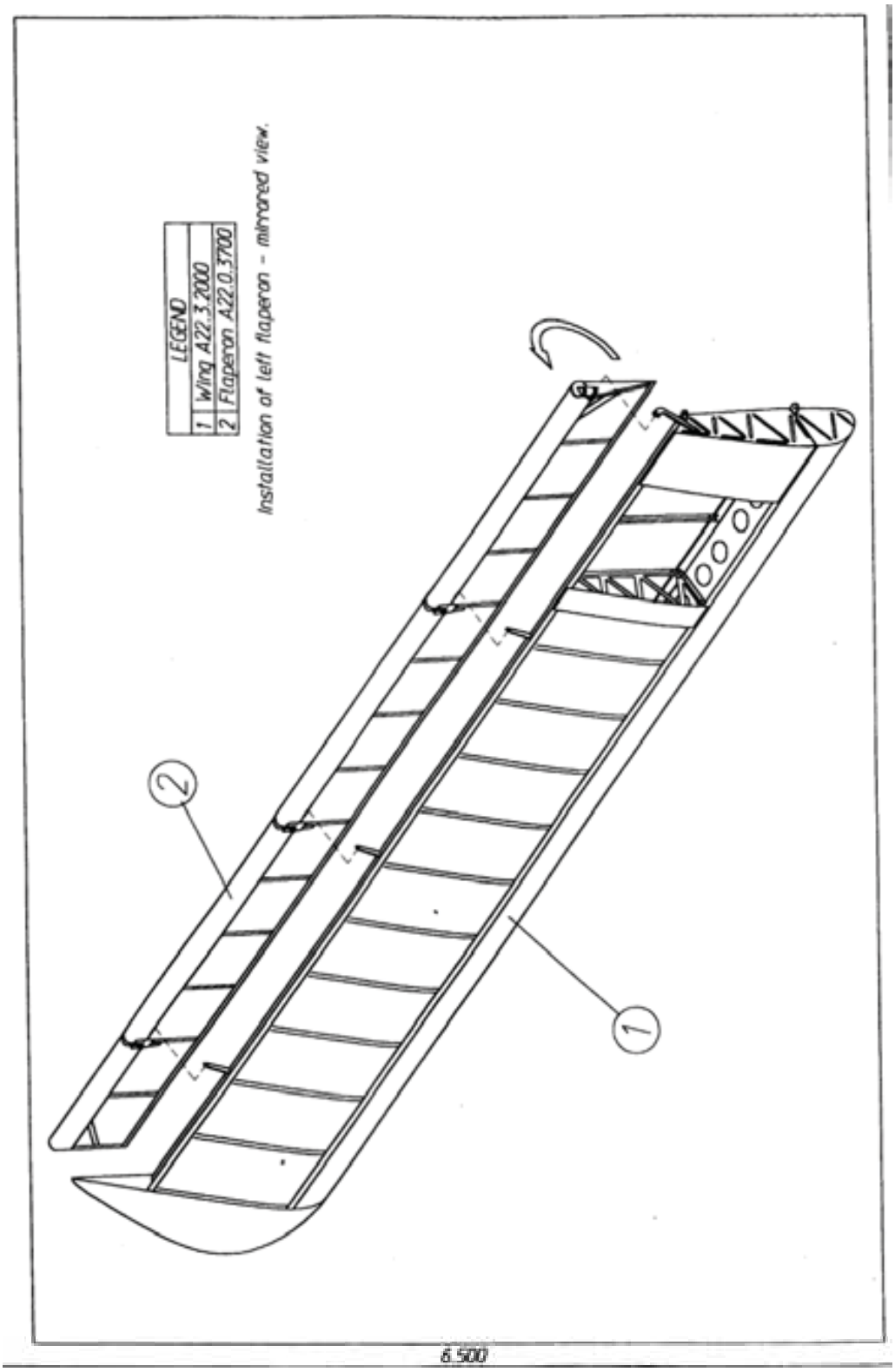
Recommended job for three persons. Note. An initial check fitting should take place prior to covering and painting, and prior to fitting the doors or windscreen.

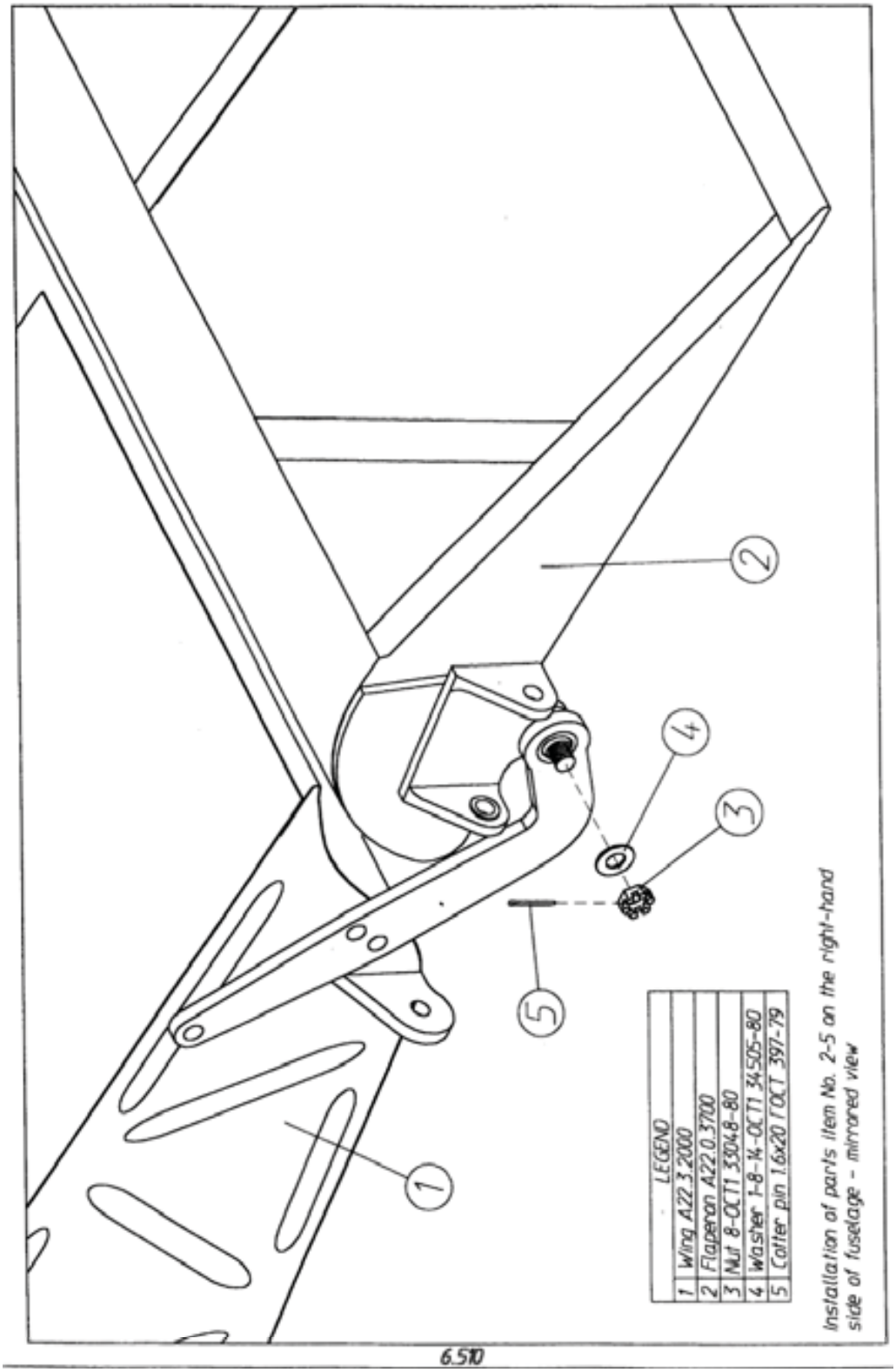
1. Carefully study the drawings. Select and inspect the components as illustrated on the drawings. Position the right wing on a suitably padded flat surface. Connect the flaperon to the wing exactly as shown on drawing number 6.500 and check for free movement. Carefully move the wing into position at approximately 90 degrees to the fuselage and rest the wing tip on a padded trestle.

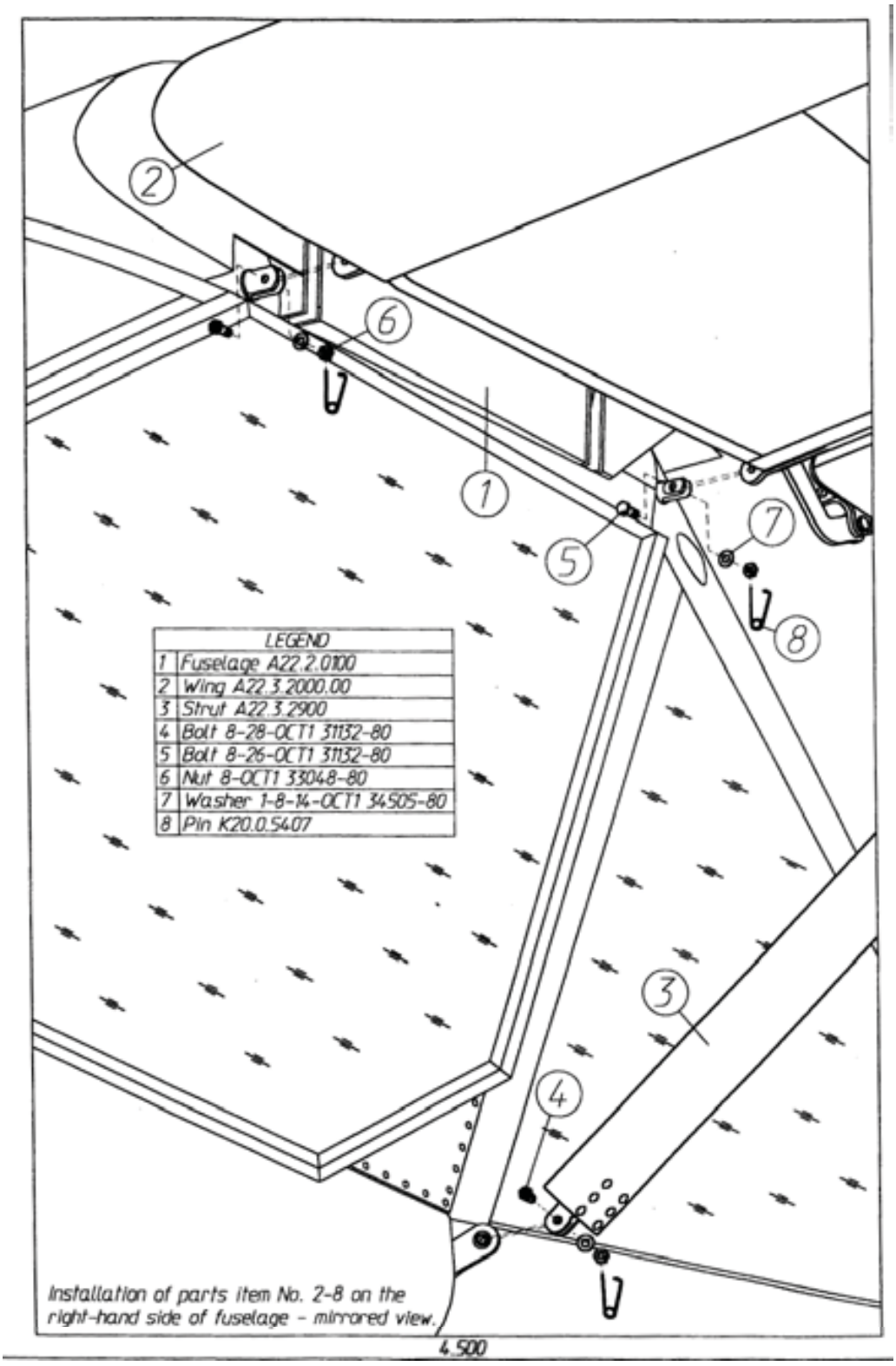
2. Connect the wing root to the fuselage exactly as shown in drawing number 4.500. It's best to have two assistants at this stage. Don't use force. It will be necessary for an assistant to carefully lift the wing tip and adjust the wing's position whilst following your instructions. The safety pins can be inserted later. Connect the lower end of the wing strut to the fuselage. Raise the wing tip as required and connect the upper end of the strut to the wing as shown in drawing 4.510. Providing the engine (or suitable substitute ballast is installed) the fuselage will now support the wing without tipping sideways. Connect the cardan ring to the flaperon exactly as shown in drawing 4.520.

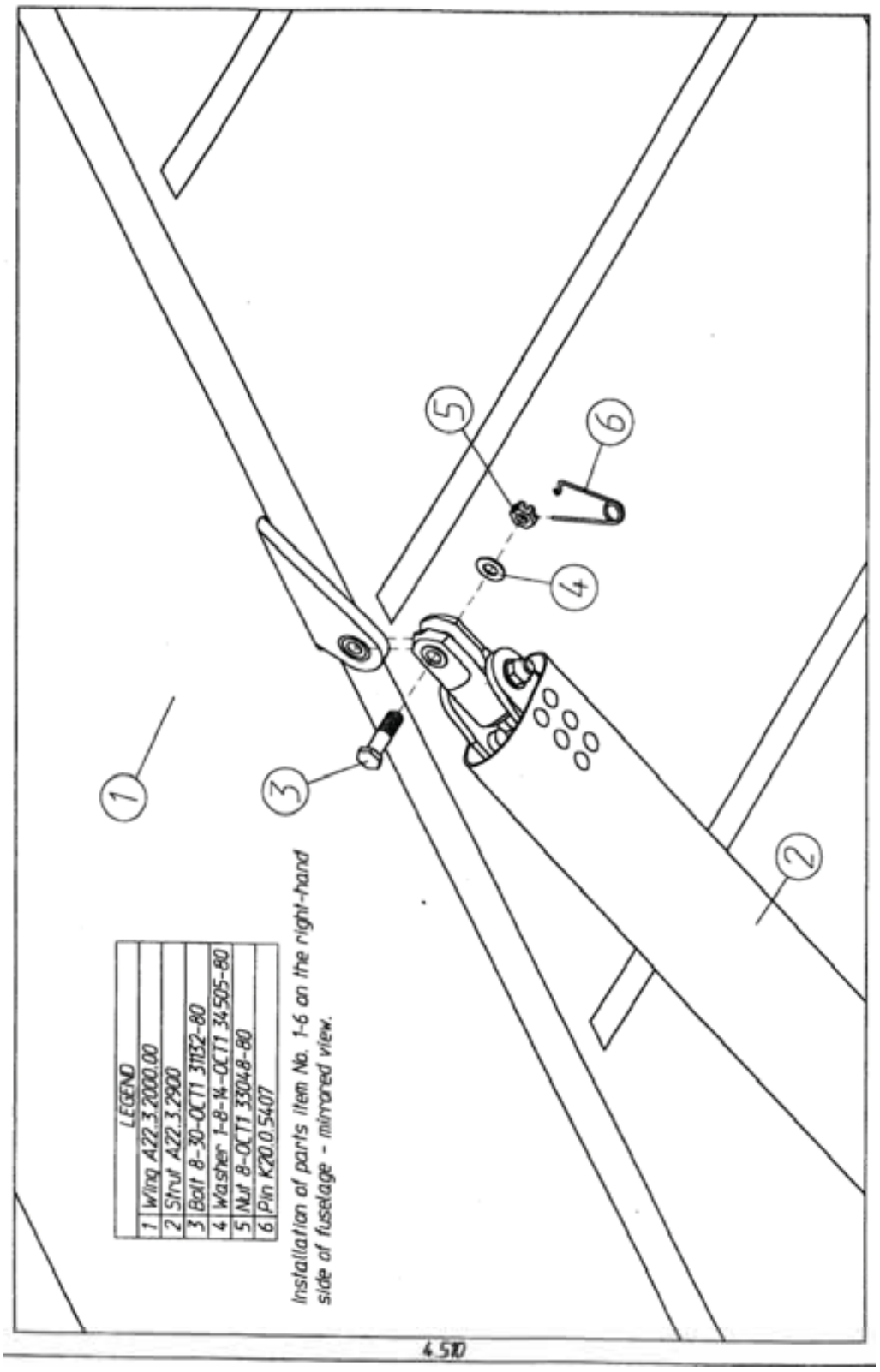
3. Repeat the process on the left-hand side then thoroughly inspect the finished work. Make sure the gaps are equal each side between the wing root mouldings and leading edges. Check the flaperon function using the control stick and flap lever, then carefully remove the wings by the reverse sequence to that described above.

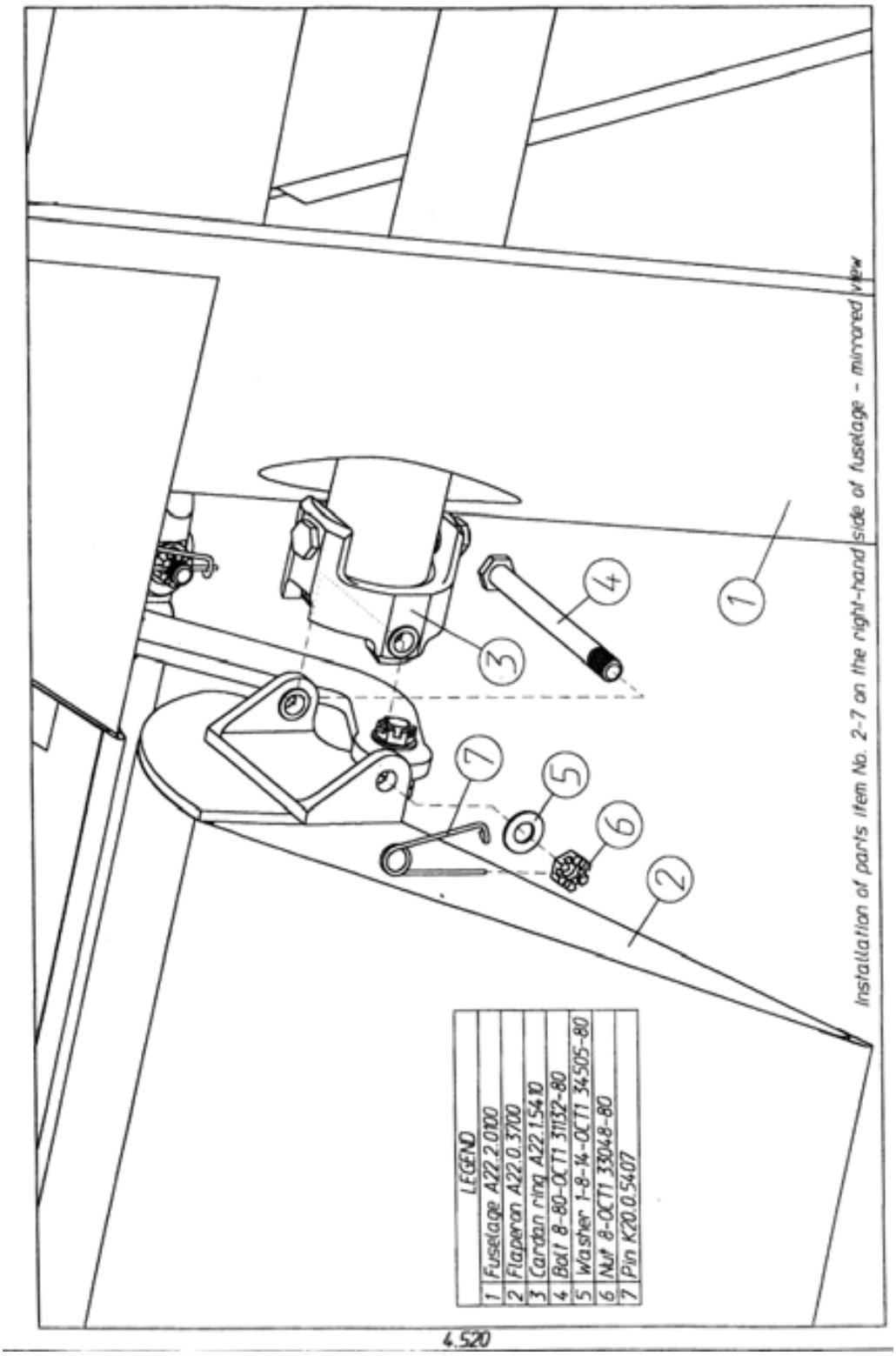
Notes:


LEGEND
1 Wing A22.3.2000
2 Flaperon A22.0.3700
Installation of left flaperon - mirrored view.
2
1
6.500


LEGEND
1 Wing A22.3.2000
2 Flaperon A22.0.3700
3 Nut 8-OCT1 33048-80
4 Washer 1-8-14-OCT1 34505-80
5 Cotter pin 1.6x20 FOCT 397-79
Installation of parts item No. 2-5 on the right-hand side of fuselage - mirrored view
6.510


LEGEND
1 Fuselage A22.2.0100
2 Wing A22.3.2000.00
3 Strut A22.3.2900
4 Bolt 8-28-OCT1 31132-80
5 Bolt 8-26-OCT1 31132-80
6 Nut 8-OCT1 33048-80
7 Washer 1-8-14-OCT1 34505-80
8 Pin K20.0.5407
Installation of parts item No. 2-8 on the right-hand side of fuselage - mirrored view.
4.500


LEGEND
1 Wing A22.3.2000.00
2 Strut A22.3.2900
3 Bolt 8-30-OCT1 31152-80
4 Washer 1-8-14-OCT1 34505-80
5 Nut 8-OCT1 33048-80
6 Pin K20.0.5407
Installation of parts item No. 1-6 on the right-hand side of fuselage - mirrored view.
4.510


Installation of parts item No. 2-7 on the right-hand side of fuselage - mirrored view
LEGEND
1 Fuselage A22.2.0100
2 Flaperon A22.0.3700
3 Cardan ring A22.1.5410
4 Bolt 8-80-OCT1 31132-80
5 Washer 1-8-14-OCT1 34505-80
6 Nut 8-OCT1 33048-80
7 Pin K20.0.5407
4.520

PAGE FIFTY-EIGHT

DRAWING NUMBER 1.400

Fitting the Aft Glazing Panels

SEE DRAWING FOR PARTS REQUIRED

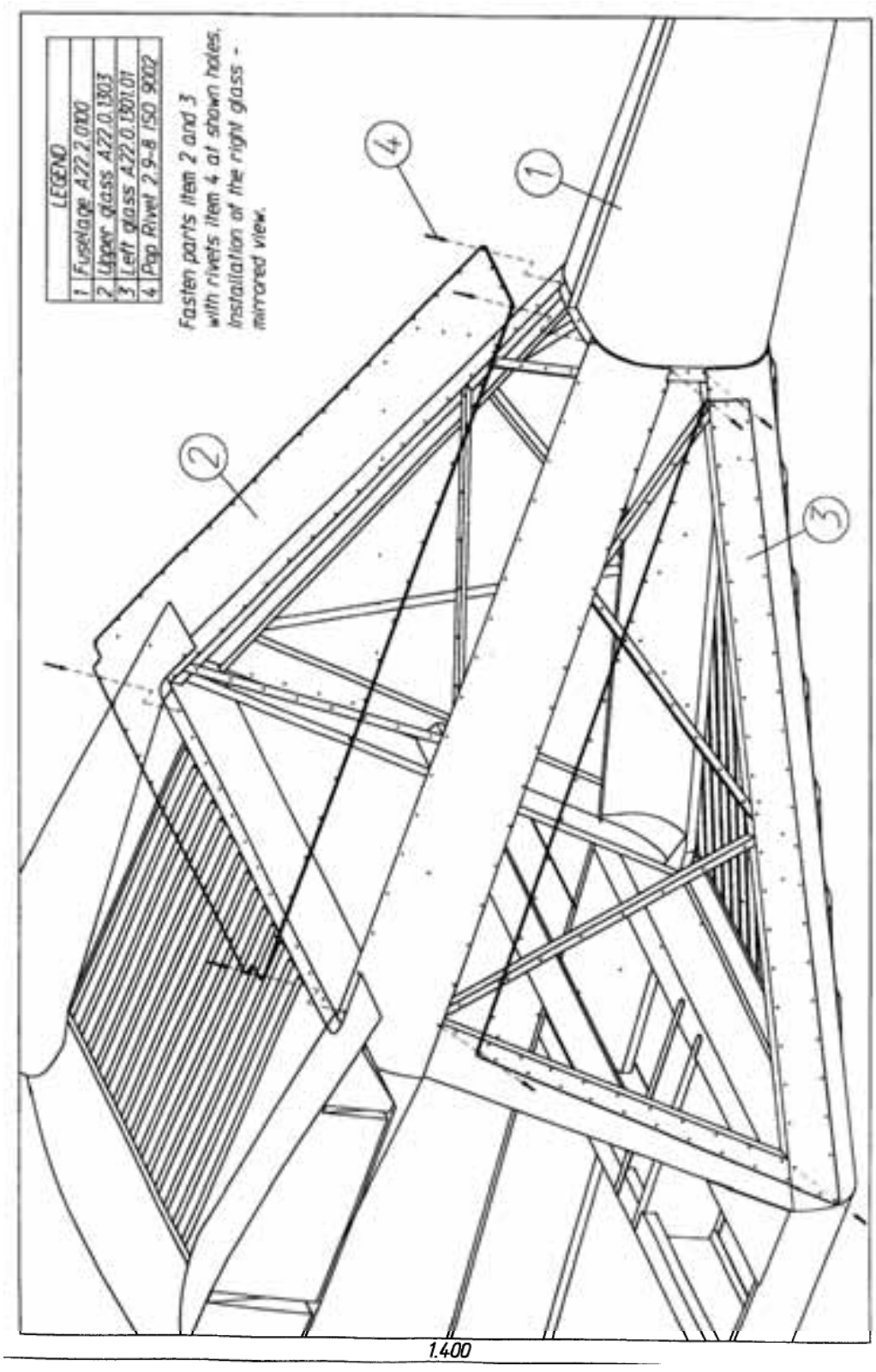
Recommended job for two persons. Note. You may wish to paint the fuselage before installing the glazing. Don't remove the protective film at this stage. Apart from a slight peel-back at the edges it can stay on until after the fuselage has been painted and the glazing has been fitted.

1. Select the pre-cut Lexan panels as illustrated on the drawing and inspect the edges. Remove any burring with course sandpaper wrapped around a straight-edged block. Peel back the edges of the protective film about 50mm inside and out.

2. Offer up the top panel first by butting the front edge against the corrugated Dural roof panel and duct-taping it in place at the sides and rear. Make sure the panel is accurately positioned. The fuselage is pre-drilled so using those holes as a guide carefully drill through the Lexan at strategic positions and fix the panel in place with clicos. Remove the duct-tape. Working from the front and from side to side drill out the remaining holes using clicos as required. Replace the clicos with pop rivets working very carefully and in a sequence so as to avoid "pie-crusting" or "mattressing" of the edges.

3. Repeat this method for fixing the side panels. Note. For access to the aft interior it's recommended that you cut the right-hand panel into three triangles and fix the central (inverted) triangle with button-head M4 bolts and stiff-nuts instead of pop rivets. To ensure a neat join attach the panel temporarily with clicos and using a long straight-edge carefully mark it with a sharp chinagraph pencil. Cut the panel carefully with a pair of shears or get it professionally cut.

Notes:


LEGEND
1 Fuselage A22.2.0100
2 Upper glass A22.0.1303
3 Left glass A22.0.1301.01
4 Pop Rivet 2.9-8 ISO 9002
Fasten parts item 2 and 3 with rivets item 4 at shown holes. Installation of the right glass - mirrored view.
1
2
3
4
1.400

PAGE FIFTY-NINE

DRAWING NUMBER 1.390

Fitting the Windscreen

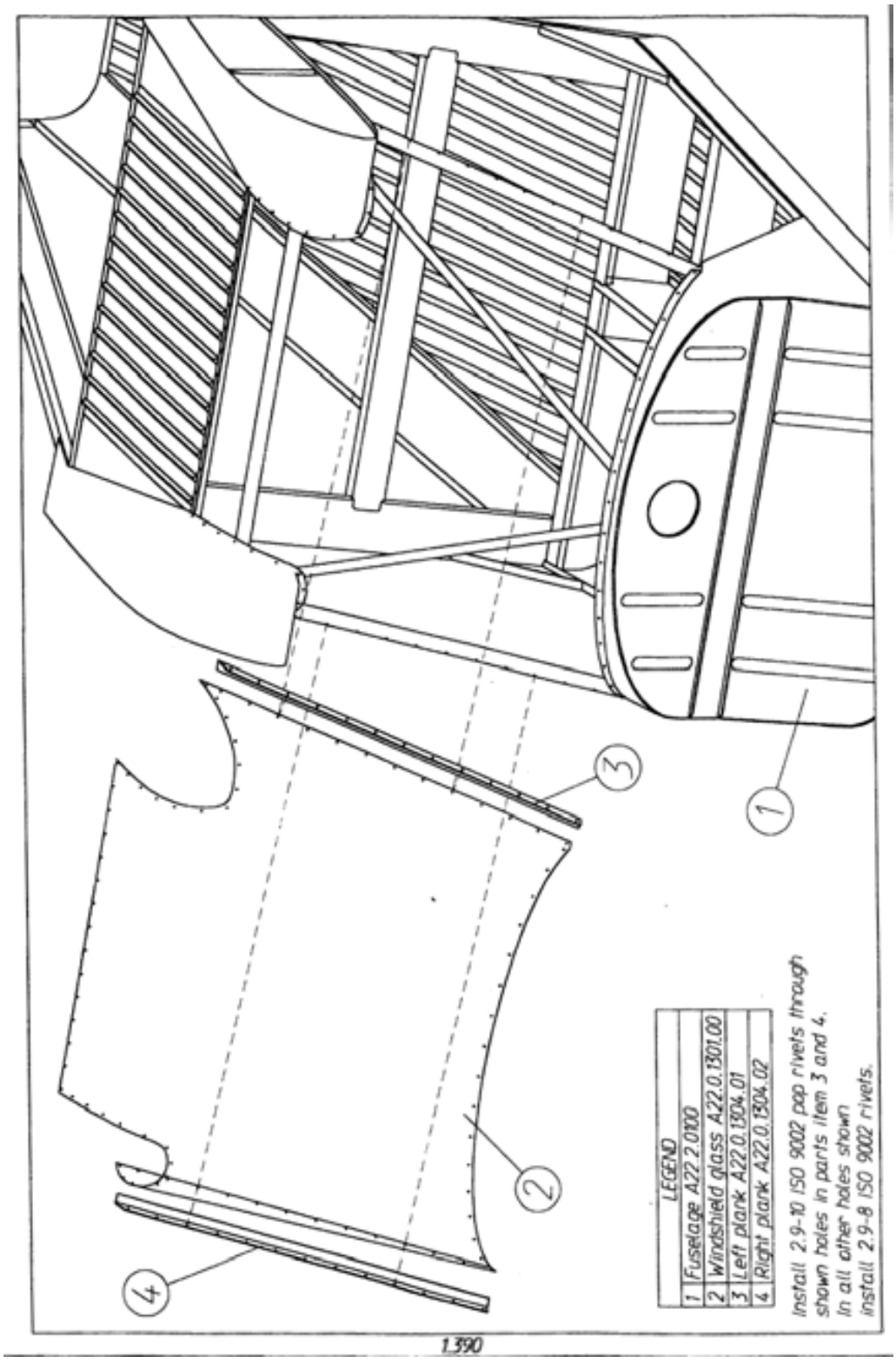
Recommended job for three persons; one at each side and one to position the lower edge. Note. This is a tricky process to complete accurately so each person should be familiar with the method and their own part in it. You will need something secure to stand on at each side of the fuselage. One person to be Leader. Don't rush it!

Locate the pre-cut Lexan windscreen and de-burr the edges using the same method as for the aft glazing. Peel back the protective film about 50mm inside and out. Using a straight-edge very accurately mark a chinagraph line vertically down the exact centre of the windscreen on the outside. Locate and inspect the pre-drilled side angled Dural strips and the curved pre-drilled Dural trimstrip (not illustrated) for the lower side-to-side attachment. Offer up the windscreen by butting the top edge into its slot snug against the corrugated roof panel and *underneath* the wing fillets. The upper transverse support lip is also pre-drilled so, first making sure the screen is exactly central, one of the side assistants must drill and clico the top edge. Next, with the lower assistant supporting the windscreen and keeping it exactly central the side assistants should press the Lexan into a curve snugly following the inside contour of the wing fillets, then drill and clico the Lexan to the curve. *Warning. Don't lean on the wing fillets at this point or they will be "set" inwards possibly resulting in an unequal and unsightly gap at the wing leading edge/fillet junction.*

Now go to the lower windscreen centre and, working outwards equally towards either side, clico and drill to form a Lexan "sandwich" between the Dural trimstrips and the fuselage. If during this process the windscreen "overlaps" its lip in the bulkhead then *very* carefully "un-clico" and shave it to fit with a Multi-file. Now take the Dural strips and fit them tight against the fuselage side tubes thereby sandwiching the Lexan again. Using the Multi-file if necessary make sure the Dural is snug against the tube's side and rear 90 degree points and are also flush with the sides of the fuselage, then drill and clico in place.

Thoroughly examine the work so far for a good fit. "Straight-edge" the wing fillets or offer up the wings if you feel that the fillets may have taken a "set".

Finally, replace the clicos with pop rivets by working carefully outwards or in an appropriate sequence to avoid "pie-crusting" the edges of the Lexan.


LEGEND
1 Fuselage A22.2.0100
2 Windshield glass A22.0.1301.00
3 Left plank A22.0.1304.01
4 Right plank A22.0.1304.02
Install 2.9-10 ISO 9002 pop rivets through shown holes in parts item 3 and 4.
In all other holes shown install 2.9-8 ISO 9002 rivets.
1
2
3
4
1.390

PAGE SIXTY

DRAWING NUMBERS 1.500/10/600/10/520/30

Fitting the Doors

SEE DRAWINGS FOR PARTS REQUIRED

Recommended job for two persons. Note. This job can be left until after the fuselage is painted and the instruments, etc are installed. Don't remove the protective film until all interior work is completed and the doors are fitted. These doors have been blow-moulded so if the film peels of its own accord stick it back with masking tape. Lexan is vulnerable in a workshop!

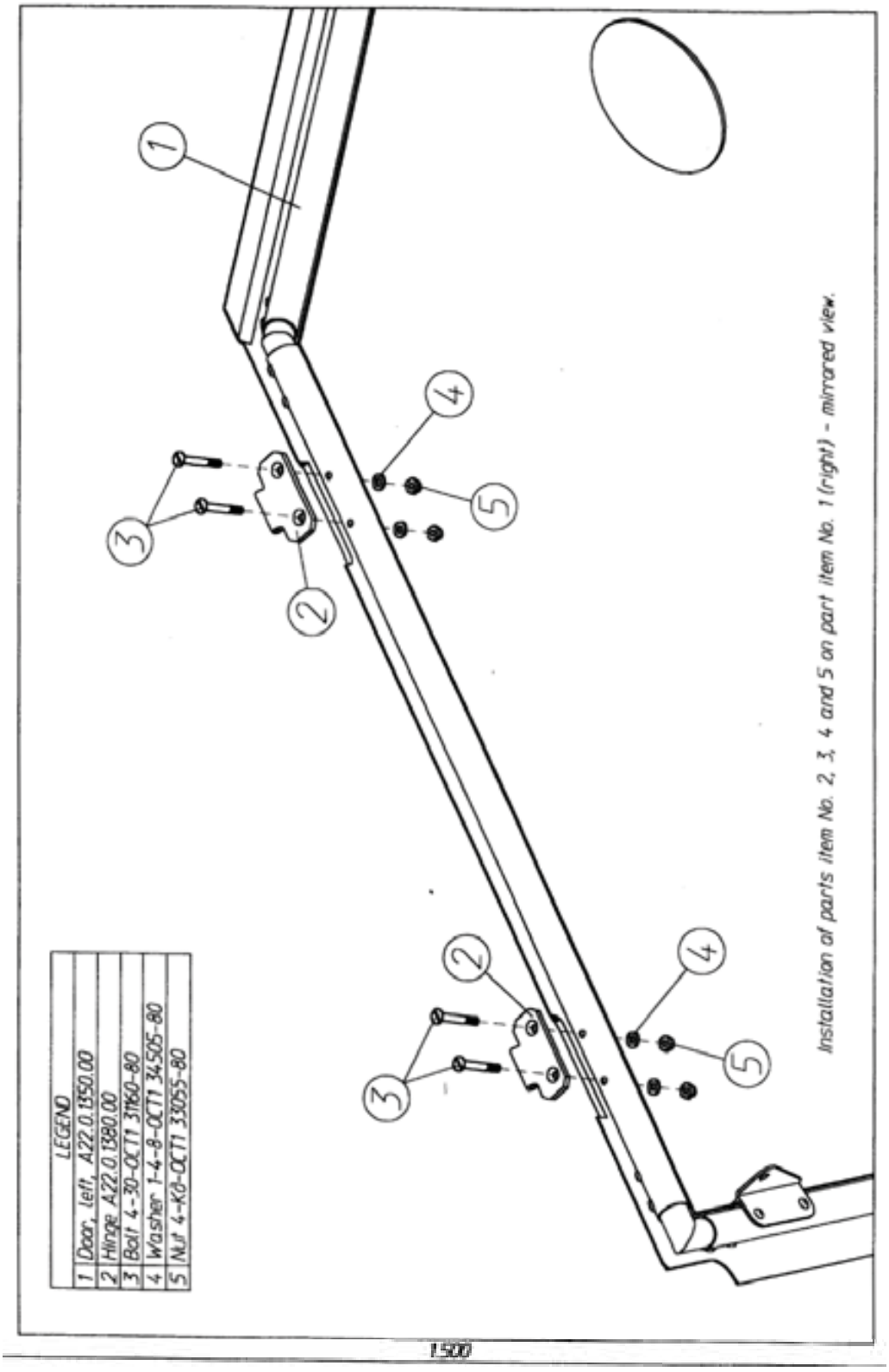
1. Study the six drawings. Locate and inspect the doorframes, gas struts and fittings as illustrated. Select the required nuts and bolts.

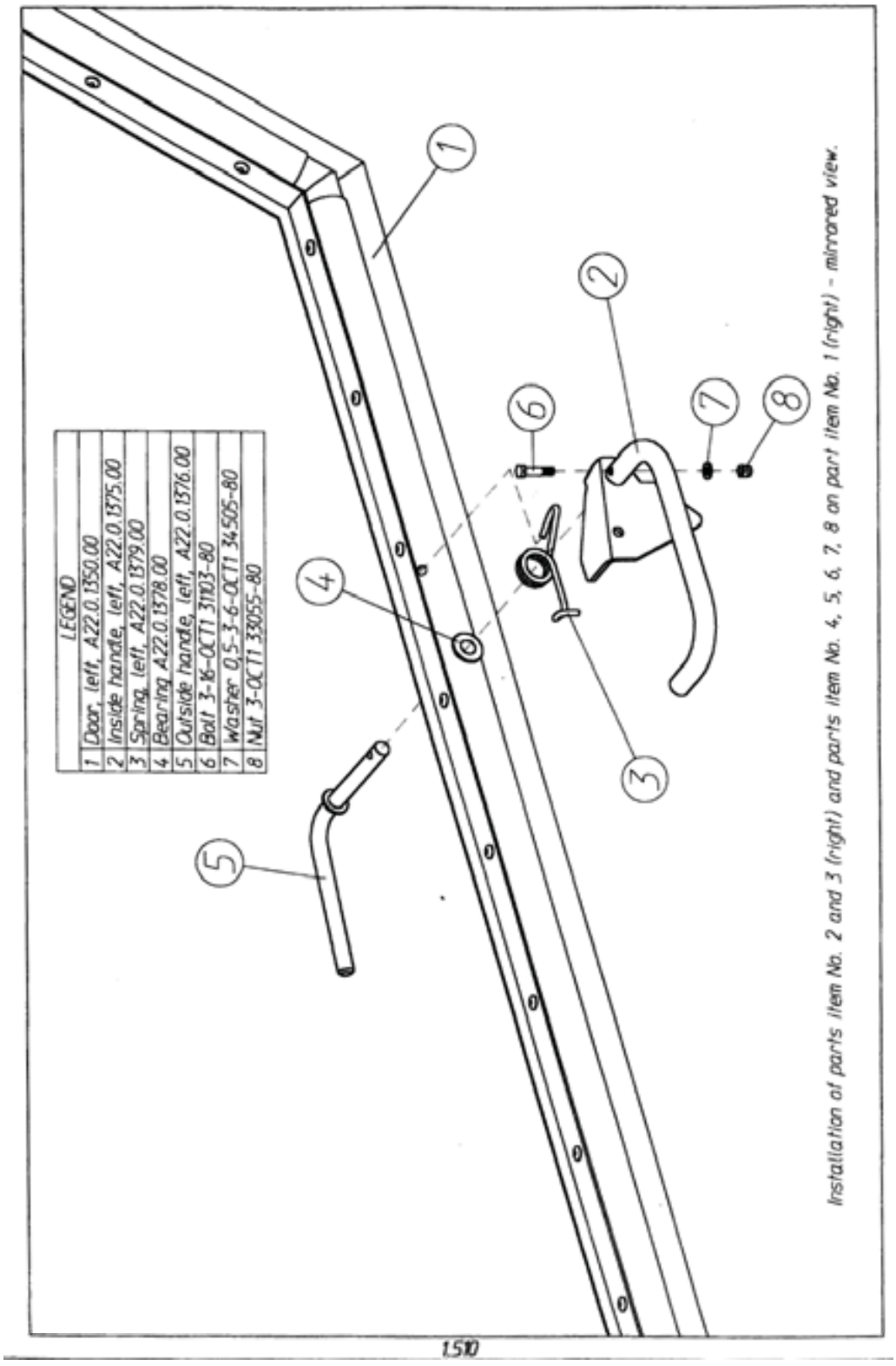
2. Working first on the left door, offer up the components and assemble the door exactly as shown in the drawings. Leave a small amount of play in the hinges shown in drawing 1.500 to allow final alignment of the "R" pins shown in drawing 1.600. Loosely attach the lower end of the gas strut (3) shown in drawing 1.610 and allow it to hang there for now. Slightly loosen the fuselage-side hinges.

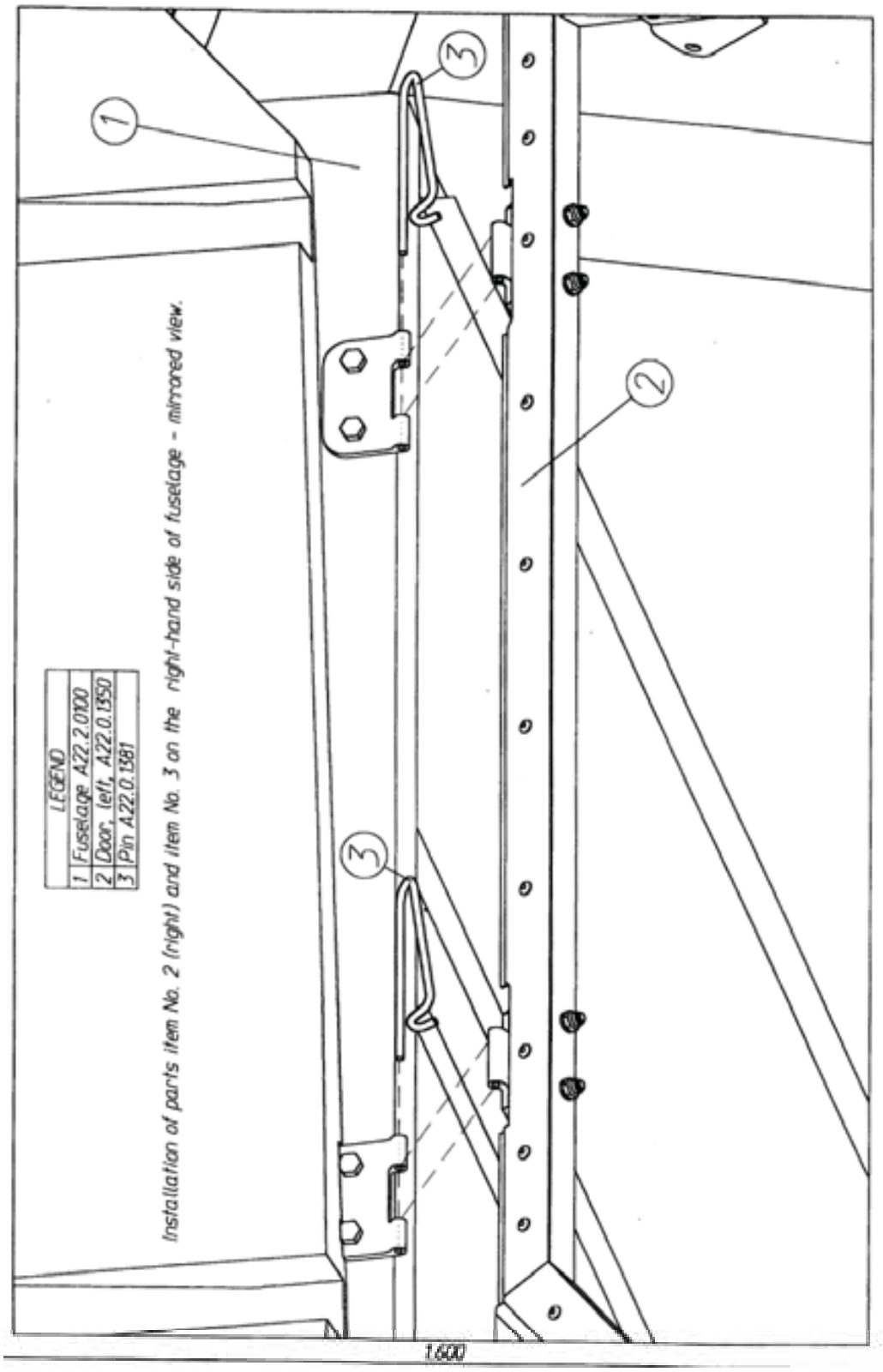
3. Recheck 1 and 2.

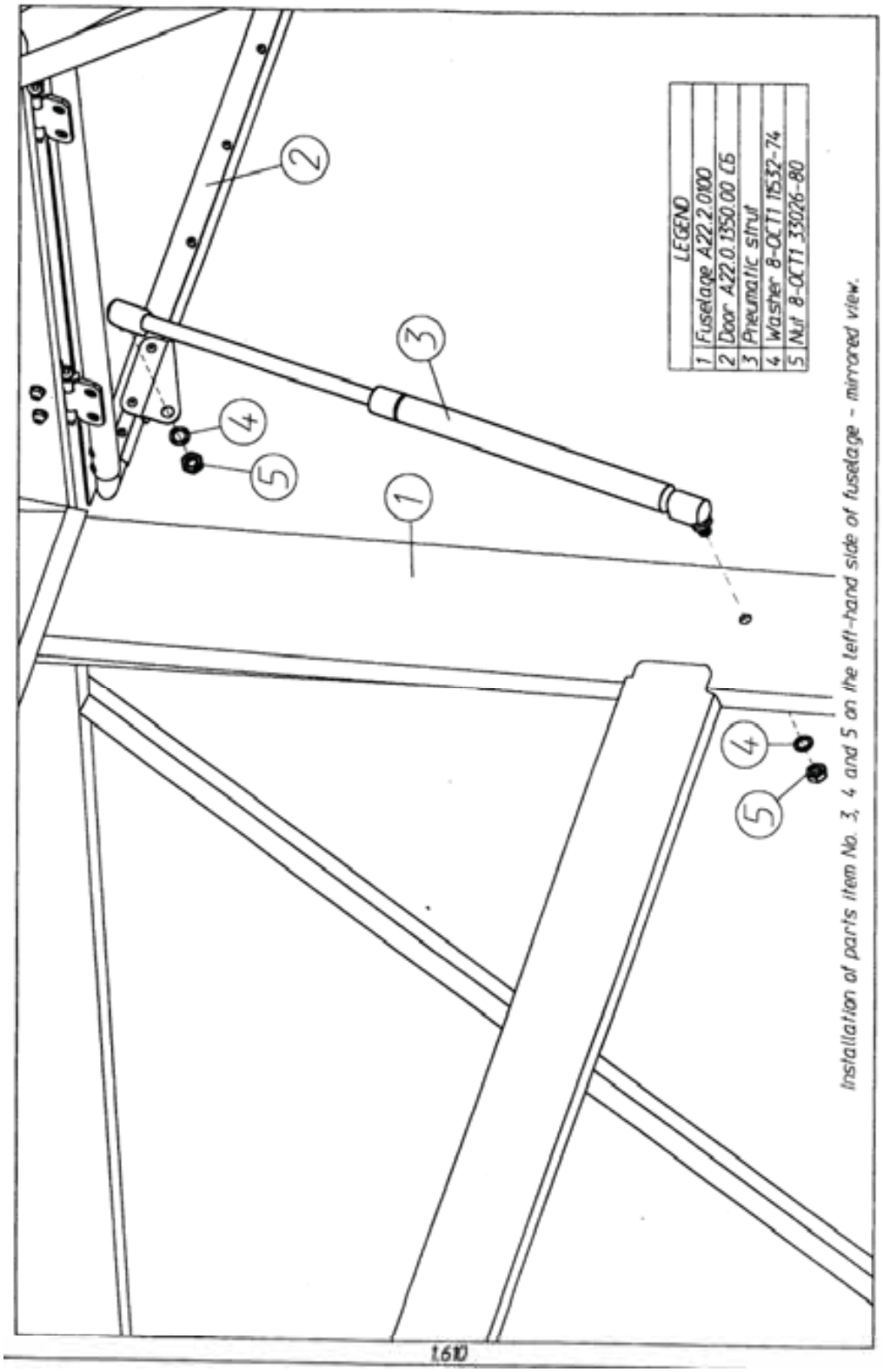
4. Lightly grease two of the "R" pins and with the help of an assistant offer the door up to the left-hand fuselage hinges. Insert the "R" pins on the external side exactly as shown in drawing 1.600. Carefully lift the door up and down a few times. Tighten the nuts on the door- and hinges *(don't over-tighten)* and then recheck for smooth "gull-wing" action. Connect the gas strut as shown in drawing 1.610 and tighten the nuts. Fit the air vent and draught strip. Thoroughly examine the finished work and then repeat on the right-hand side.

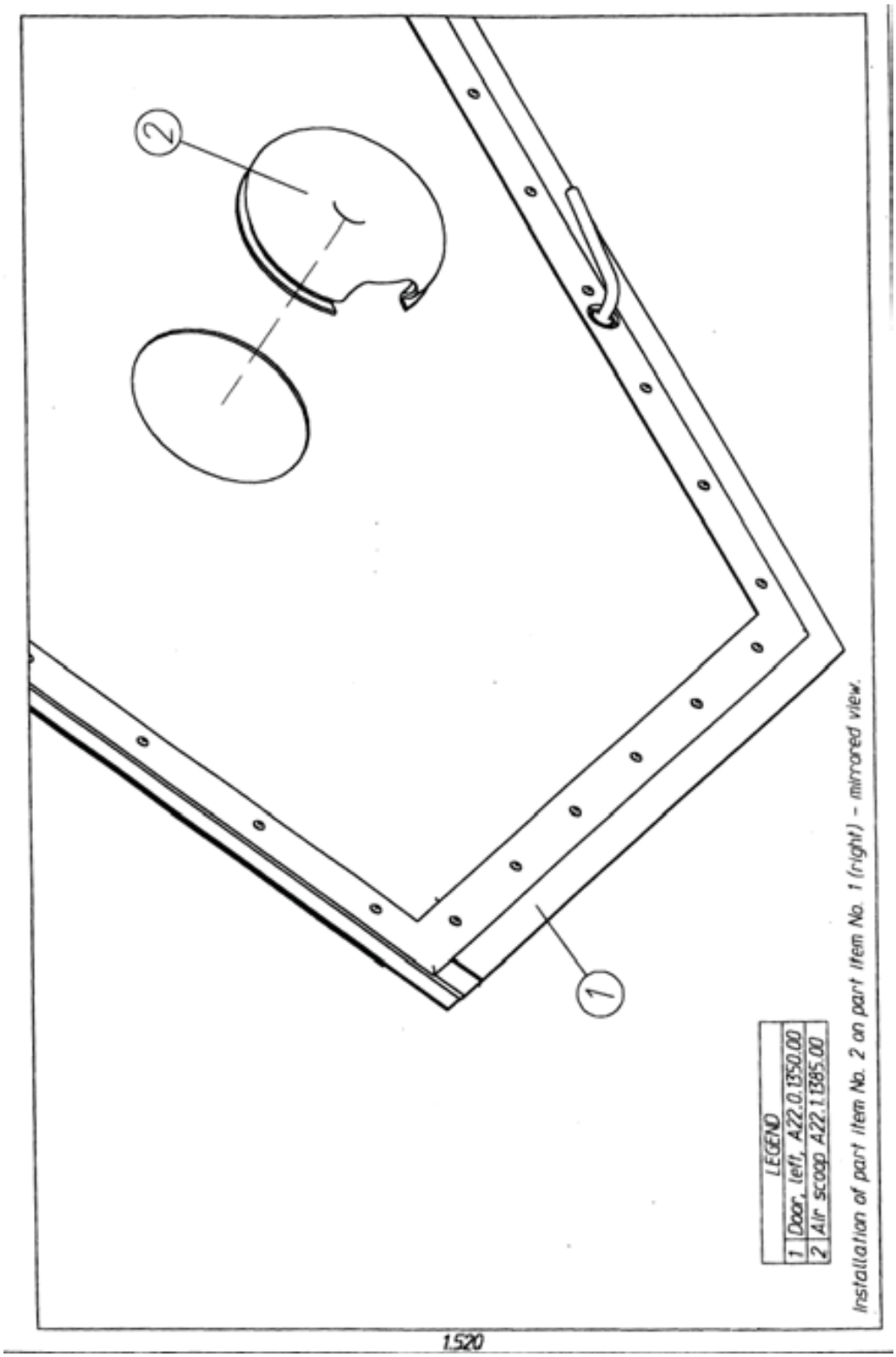
Notes:

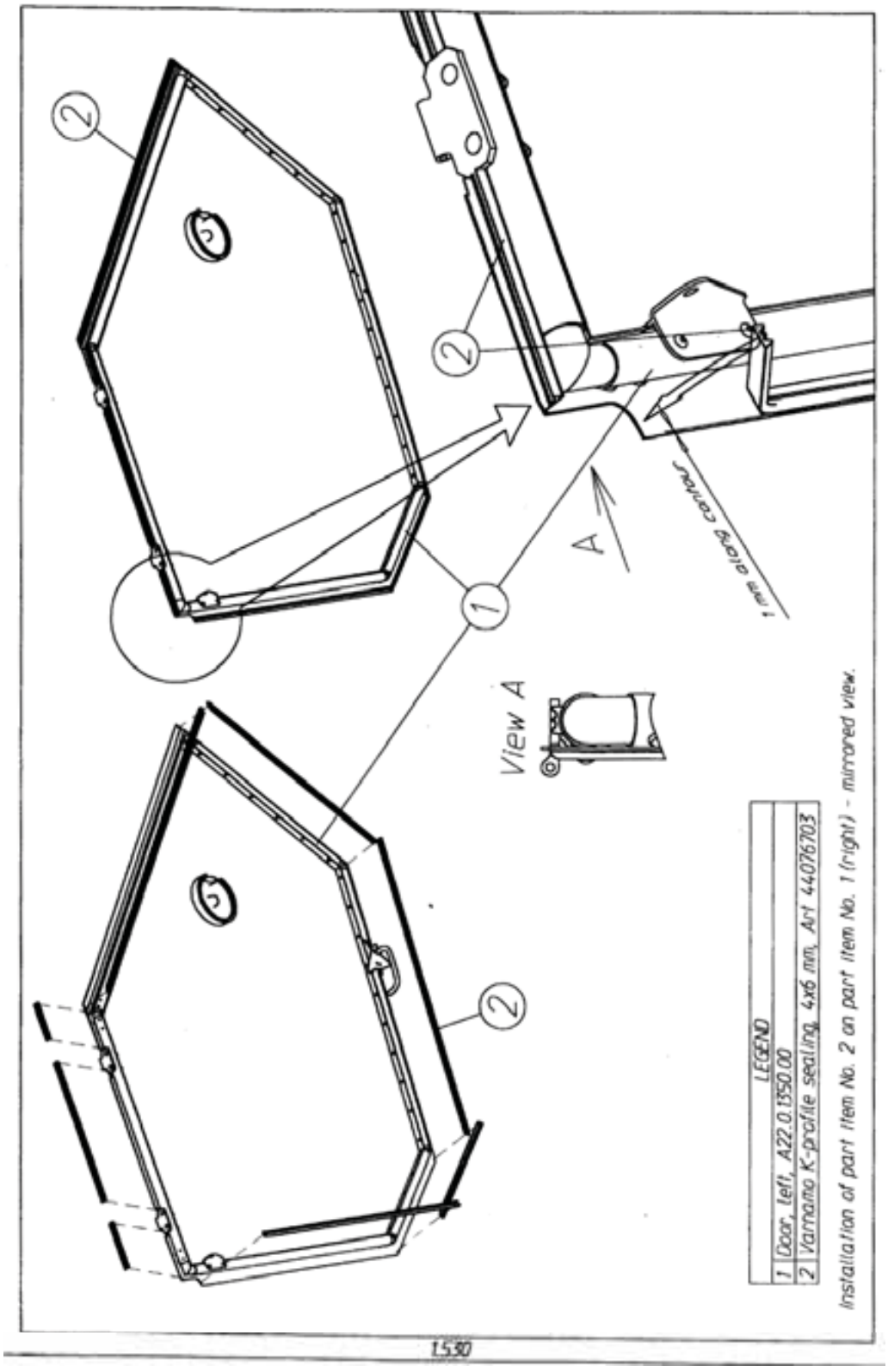

LEGEND
1 Door, left, A22.0.1350.00
2 Hinge A22.0.1380.00
3 Bolt 4-30-OCT1 31160-80
4 Washer 1-4-8-OCT1 34505-80
5 Nut 4-K0-OCT1 33055-80
Installation of parts item No. 2, 3, 4 and 5 on part item No. 1 (right) - mirrored view.
1500


LEGEND
1 Door, left, A22.0.1350.00
2 Inside handle, left, A22.0.1375.00
3 Spring, left, A22.0.1379.00
4 Bearing A22.0.1378.00
5 Outside handle, left, A22.0.1376.00
6 Bolt 3-16-OCT1 31103-80
7 Washer 0,5-3-6-OCT1 34505-80
8 Nut 3-OCT1 33055-80
Installation of parts item No. 2 and 3 (right) and parts item No. 4, 5, 6, 7, 8 on part item No. 1 (right) - mirrored view.
150


LEGEND
1 Fuselage A22.2.0100
2 Door, left, A22.0.1350
3 Pin A22.0.1381
Installation of parts item No. 2 (right) and item No. 3 on the right-hand side of fuselage - mirrored view.
1600


LEGEND
1 Fuselage A22.2.0100
2 Door A22.0.1350.00 C6
3 Pneumatic strut
4 Washer 8-OCT1 11532-74
5 Nut 8-OCT1 33026-80
Installation of parts item No. 3, 4 and 5 on the left-hand side of fuselage - mirrored view.
1610


2
1
LEGEND
1 Door, left, A22.0.1350.00
2 Air scoop A22.1.1385.00
Installation of part item No. 2 on part item No. 1 (right) - mirrored view.
1520


LEGEND
1 Door, left, A22.0.1350.00
2 Varnamo K-profile sealing, 4x6 mm, Art 44076703
Installation of part item No. 2 on part item No. 1 (right) - mirrored view.
View A
A
1:5.30

PAGE SIXTY-ONE

DRAWING NUMBERS 4.400abc/6.400/8.400/3.400

Guidance for Fabric Covering Lay-Out

Recommended job for two or three persons (to complete the covering process).

Description.

We recommend you use the Ceconite system for covering your Foxbat. Other systems may be suitable if you have a preference. However, in our experience the Ceconite team provide a very high quality product and are extremely helpful. They are also familiar with the Foxbat's covering requirements and provide a kit of materials (with Foxbat specific instructions) that is likely to incur the minimum of waste.

There is nothing particularly unusual about covering a Foxbat, it's basically a standard "fabric over aluminium ribs" technique, and almost everything relevant to covering a Foxbat can be found in Ceconite's excellent Instruction Manual. No respiratory apparatus is required when applying the adhesive although skin contact should be avoided. Full instructions for use are provided with our covering kit.

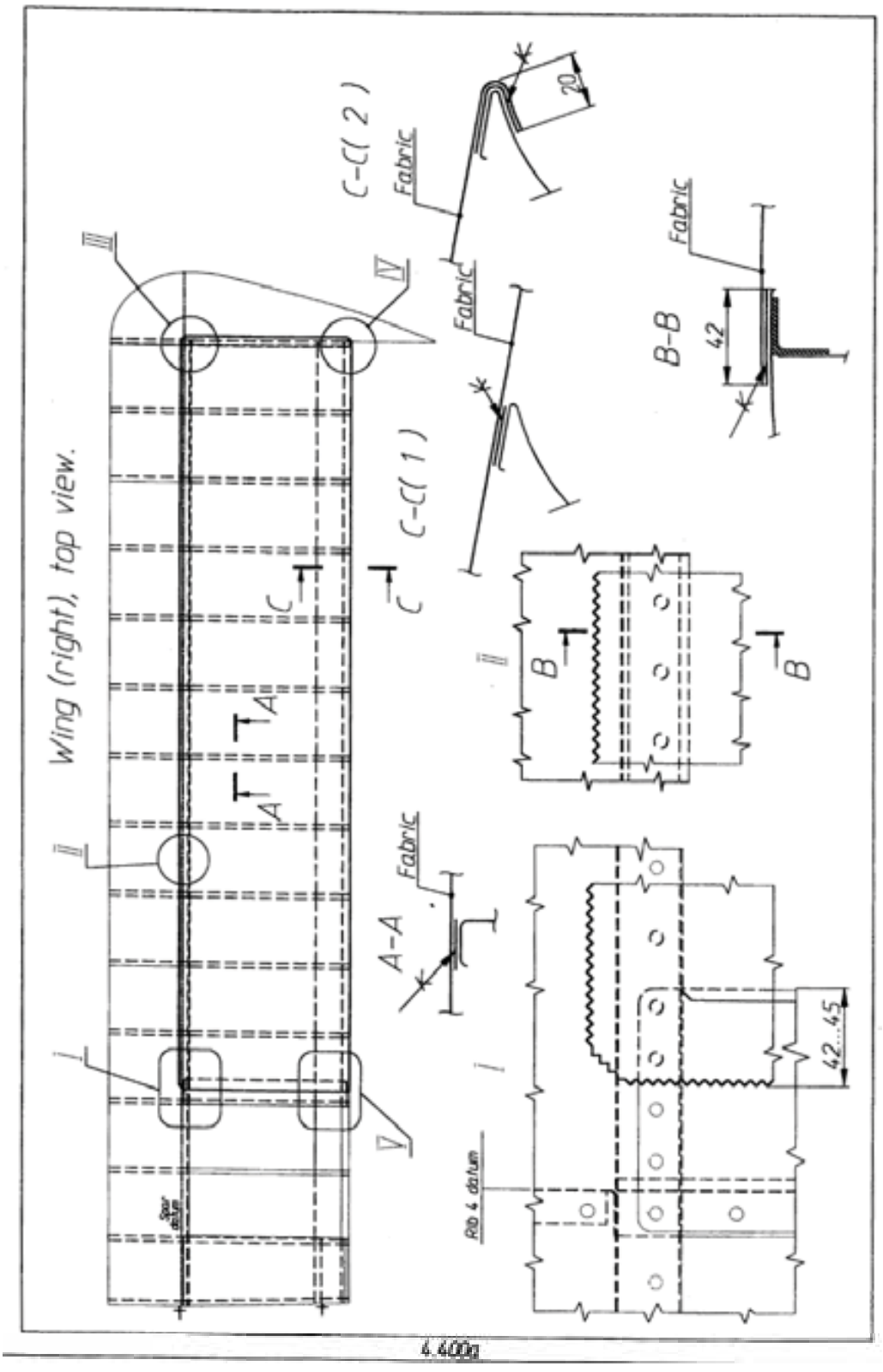
Fabric Covering Process

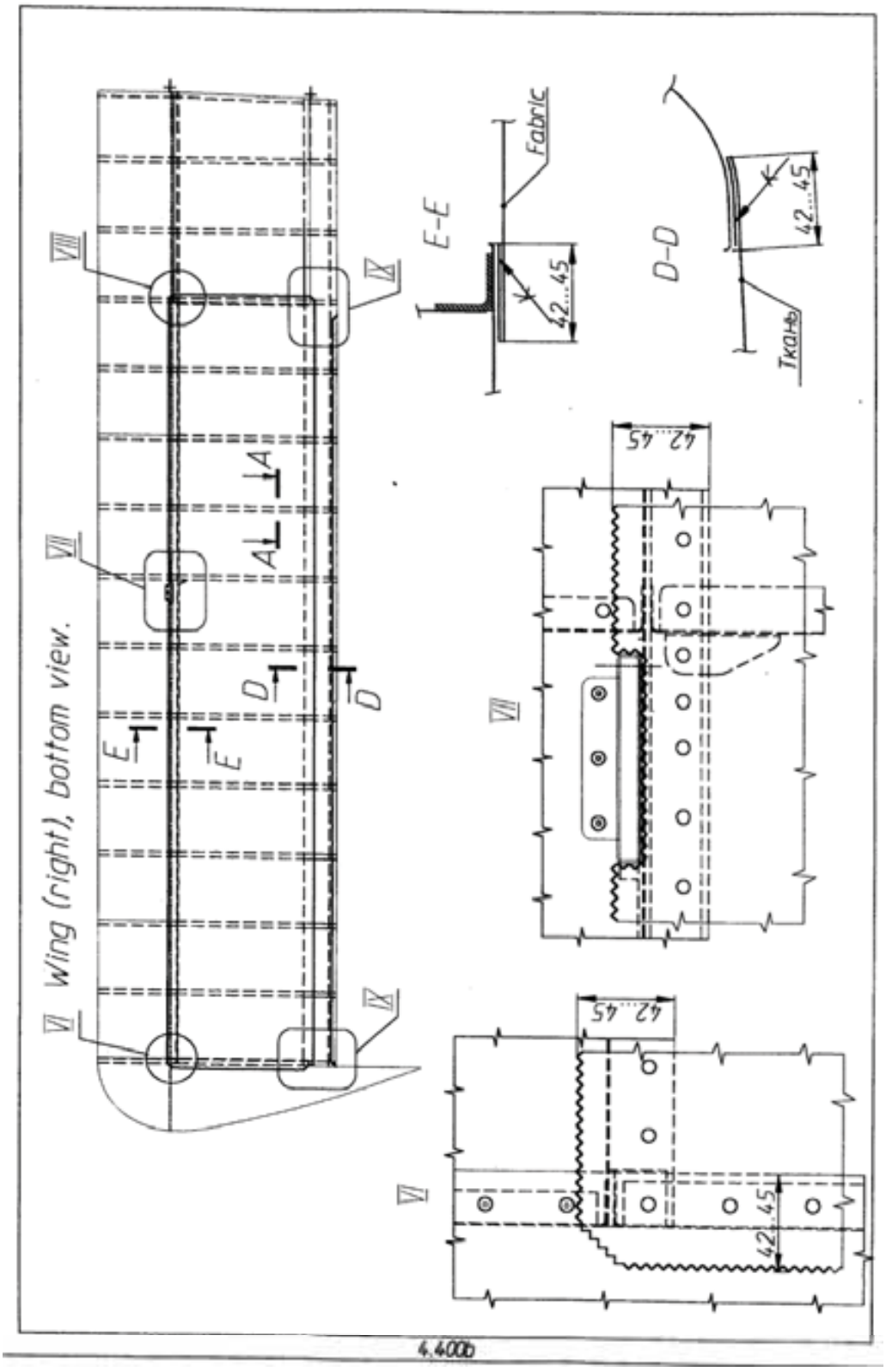
As a general guide, here are some basic instructions for covering the Foxbat – however, refer to the Ceconite Manual for full details.

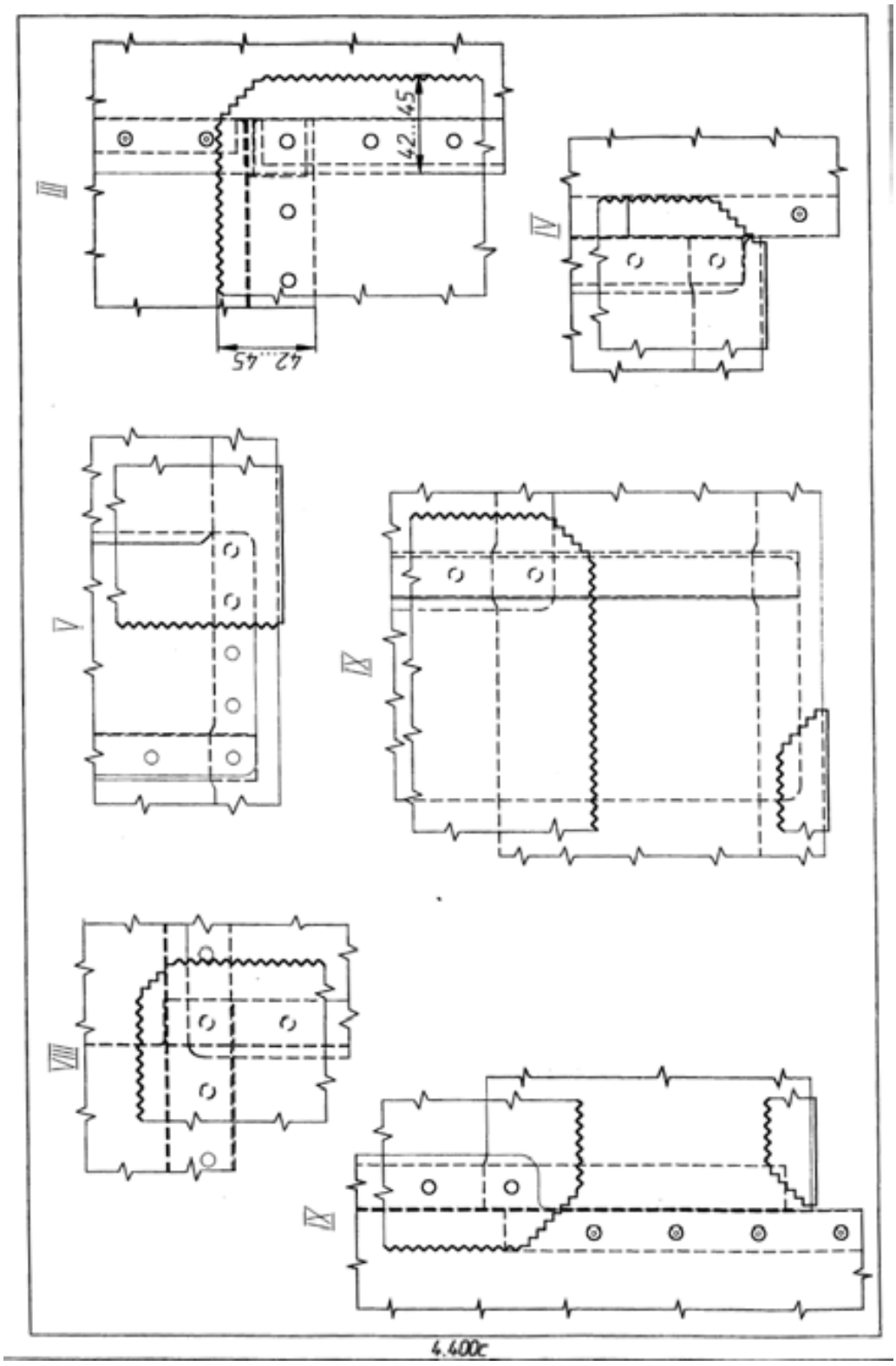
1. Scour and degrease aluminium-cement-fabric contact points. Use scratch pads and fresh cloths or paper wipes from paint shop to avoid contamination with silicone.
2. Brush neat cement onto contact points (two coats).
3. Lay pre-cut Ceconite fabric on job so that it lies naturally without wrinkling or excessive sagging. There is no need to stretch the fabric tight at this stage. Ample fabric is supplied with your kit but take note of the cut pattern illustrated in the build manual.
4. Brush a 9:1 MEK/cement mixture through fabric at contact points around the perimeter of job (but not the inner ribs at this time). This MEK mix will soften the previously applied cement (see #2 above). Use a light rubbing action with a finger to help draw the cement up through the fabric weave. Allow the cement to dry.

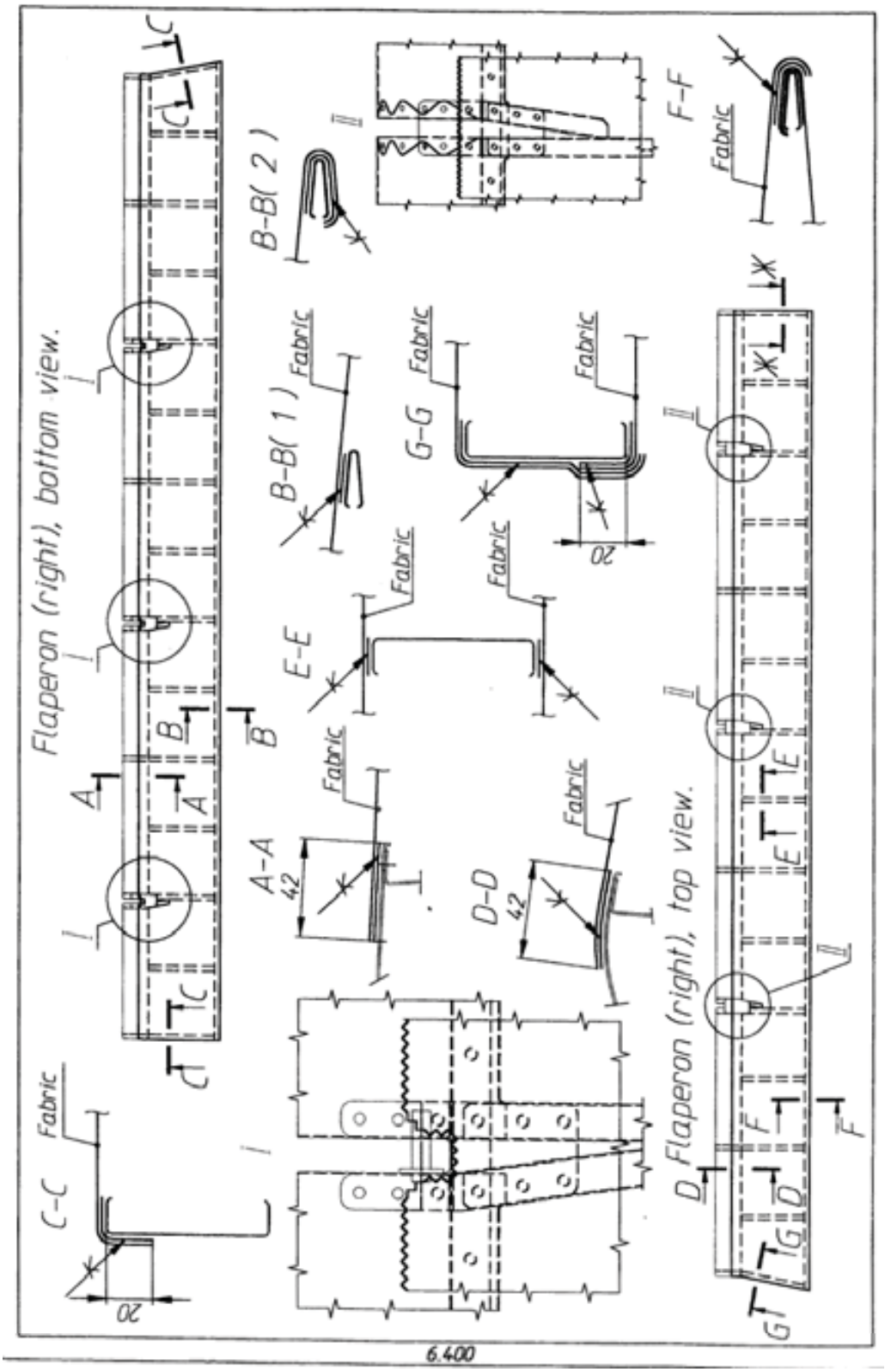
5. Carry out first-stage fabric shrink with a large heat iron set to medium. NEVER use a heat blowgun!
6. Brush the 9:1 MEK/cement mixture through fabric at inner contact points as in #4 above and allow the cement to dry.
7. Tidy up job with small heat iron set to medium, the iron can be used to soften and smooth set cement. Use 600-grade wet-and-dry paper to finish fabric overlaps and a very sharp blade to neatly trim the edges of the job.
8. Carry out final stage fabric shrink (and tidy up) with your heat irons on the higher setting.
9. Brush on one weave-sealing coat using a 9:1 non-tautening nitrate dope/cement mix (NOT the previous 9:1 MEK/cement mix). Add dope thinners as required for easy smooth brushing (less in warm conditions).
10. Tip: - Try to avoid excessive "drip-through" of liquid, it can sometimes remain discernible in the paint texture of the finished aircraft when viewed from certain angles. You can suck still-liquid drips back through the fabric with a vac cleaner (place a patch of scrap fabric over the vac nozzle before applying to the job).
11. Brush on four coats of dope thinned as required for quick brushing (ratio will depend on ambient temperature). Rub with 600-grade paper between each coat.
12. Position pinked-edge tape strips as required and secure the strips using the 9:1 weave-sealing mixture. Allow to dry for 24 hours then finish with 600-grade paper to remove any ‘nibs’ of dope or spikey fabric threads.

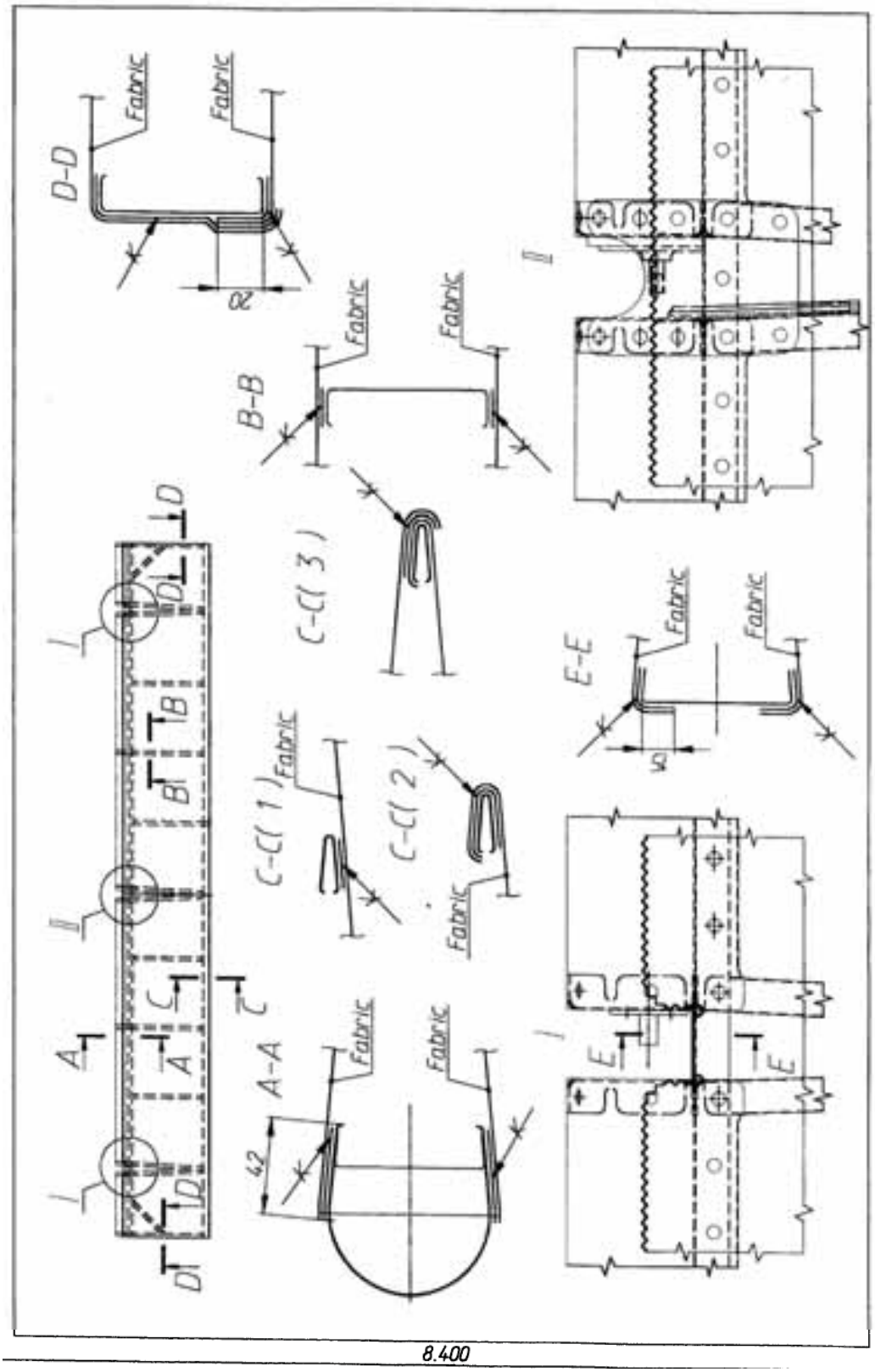
The following six drawings show the general fabric lay-out of an A22. The three drawings 4.400 (a, b and c) show the wings, 6.400 the flaperons, 8.400 the elevator, and 3.400 the rudder. There’s no fabric on the fuselage.


Wing (right), top view.
C-C(2)
Fabric
20
Fabric
C-C(1)
B-B
Fabric
42
A-A
Fabric
42...45
Rib 4 datum
Spar datum

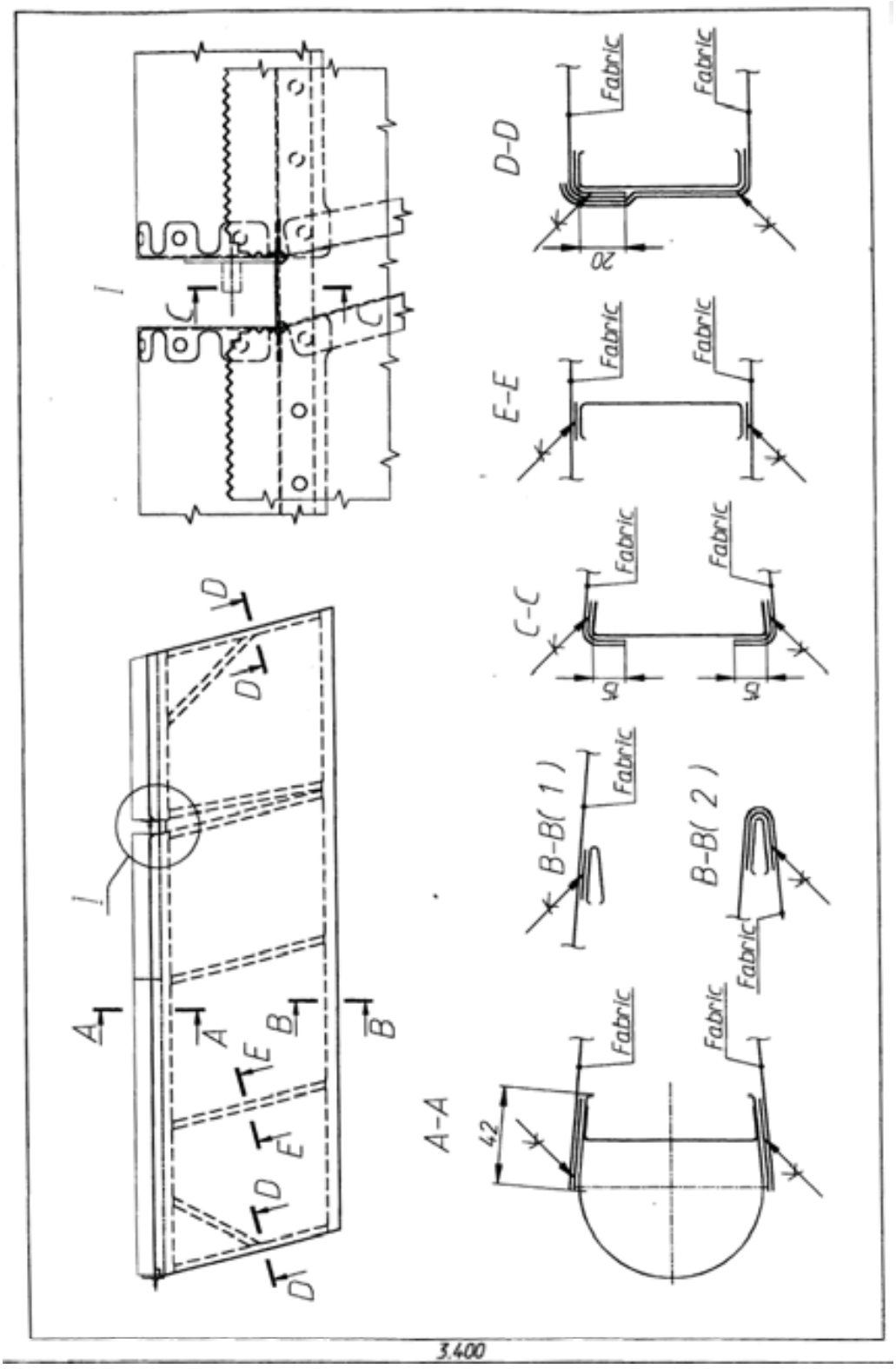

VI Wing (right), bottom view.
VIII
IX
VII
A
D
E
E-E
Fabric
42...45
D-D
Ткань
4.400b


III
42...45
42...45
IV
V
IX
VIII
X
4.400г


Flaperon (right), bottom view.
B-B(2)
F-F
Fabric
B-B(1)
G-G
E-E
A-A
D-D
C-C
20
42
D Flaperon (right), top view.
6.400


D-D
Fabric
Fabric
R2
B-B
Fabric
Fabric
C-C(3)
C-C(1)
Fabric
C-C(2)
Fabric
A-A
Fabric
Fabric
42
E-E
Fabric
Fabric
50
I
II
A
A1
B
B1
C
C1
D
D1
D2
E
E

8.400


D-D
Fabric
Fabric
E-E
Fabric
Fabric
C-C
Fabric
Fabric
B-B(1)
Fabric
B-B(2)
Fabric
A-A
Fabric
Fabric
42
A
B
D
E
3.400

Aeroprakt A22 'Foxbat' Final Checklist

1. **Before flight, all items on this list must be checked and signed off.**
   - 1.1. Do not fly the aircraft until every item on this list has a tick next to it.
   - 1.2. Keep this original Checklist for inspection.
2. **Confirm that all items detailed in the Build Manual have been completed.**
   - 2.1. Confirm that the aircraft incorporates no unauthorised modifications.
   - 2.2. Registration letters correct, right size and affixed to aircraft.
   - 2.3. Registration document checked.
   - 2.4. Fireproof/stainless steel identity plate checked.
   - 2.5. Cockpit placards checked.
   - 2.6. Confirm weight and balance is within the limits specified in the Pilot Manual.
3. **Air frame**
   - 3.1. Confirm all project assembly work checked.
     (See relevant Build Manual page and drawing for each assembly).
   - 3.2. Fuselage monocoque checked.
     (Skin, rivets, joints, doublers, etc)
   - 3.3. Wings checked.
     ('D' boxes, spars, brackets, ribs, rivets, l/edges, tip-cowls, drains, etc)
   - 3.4. Tailplane and fin checked.
     (Skins, rivets, fin-cap, brackets, fittings, fin/monocoque attachment etc)
   - 3.5. Flaperons, elevator and rudder checked.
     ('D' boxes, spars, ribs, rivets, brackets, dowels, fixings, t/edges, etc)
   - 3.6. Wing-struts checked.
     (Doublers, rivets, brackets, pitot/static, left/right and top/bottom alignment, etc)
   - 3.7. Attachment of flaperons to wings and wings to fuselage checked.
     (Bolts, nuts and fasteners, root and spar ends, dowels, flaperon cardan rings, etc)
   - 3.8. Attachment of rudder to fin checked.
     (Bolts, nuts and fasteners, dowels, bearings, etc)
   - 3.9. Attachment of elevator to tailplane checked.
     (Bolts, nuts and fasteners, dowels, bearings, etc)

3.10. Trim tab checked.
(Hinge, torque spring, Bowden cable, attachment to elevator, etc)

3.11. Flying control mechanisms checked.
(Cables, pulleys, turnbuckles, guides, pushrods, cranks, torque tubes, etc)

3.12. Flaperon droop mechanism checked.
(Bolts, nuts/washers/fasteners, springs, lock-stops, rocker, connections, etc)

3.13. Rudder pedals and nose wheel checked.
(Pushrod rose-joint linkages, brackets, spring, leg, steering rotation, axles, tyres, etc)

3.14. Electric pitch-trim operating system and tab torque-spring.
(Servo-cable security, down tab deflection shows panel LED indicator 'up', etc)

4. <u>Fabric covering and paint:</u>

4.1. Checked for satisfactory fabric covering and security.

4.2. Special glue attachment at front top/bottom wing surface checked.

4.3. All drain holes and paintwork checked.

5. <u>Main landing gear legs, mainwheels and brakes:</u>

5.1. Steel LG leg attachments checked.
(Fuselage brackets, axle blocks, calliper mounts, disc/wheel security, axles, tyres, etc)

5.2. Hydraulic brake system operation and effectiveness checked.
(Fluid level, fittings, lever pressure, brake-line security, symmetric operation, park brake etc)

5.3. Wheels checked for free rotation.
(Clear of ground, brakes 'off/on' technique, nose wheel and 'tail wheel' checked, etc)

5.4. Tyres checked, pressure should be 12-14 psi in 15x6.00 tyres

6. <u>Doors, harnesses, seats, windows, cockpit sealing:</u>

6.1. Doors inspected, hinge clips, handles and gas-struts checked.
(Fitting, draught exclusion, operation and security, air-vent scoops, etc)

6.2. Harnesses inspected, and adjustment and release method checked
(Stitching, mount-point security, operation of clips and buckles, no belt twists, etc)

6.3. Seats inspected and energy-absorbing under-seat foam checked.
(Stitching, padding, Velcro positioning, mount security, foam sculpting, etc)

6.4. Windscreen and rear side and top glazing checked.
(Security and neatness of fitting, rivets, rear supports, rear access panel-screws, etc)

6.5. Cockpit weather sealing inspected and passed.
(Sealant filler in the rib-fluted panel-end gaps in top and bottom monocoque)

7. <u>Interior cockpit cowlings, instruments, switches, fuses, levers and taps:</u>

7.1. All interior mouldings secure and correctly mounted.
(Good fit without 'fretting' of cables/wires/tubes/mechanisms, all screws tight etc)

7.2. Instrument panel and instruments secure and correctly positioned.
(Altimeter in reach when 'strapped in', all instruments functioning correctly, etc)

7.3. Adequate VFR/engine instrument array for legal and safe flight.
(Consider relevant advice available as well as legal requirements, etc)

7.4. Master, mag and ignition 'on/off' switches functional and safely positioned.
(Typically a master plus a 5-way key switch, both must be in reach when 'strapped in')

7.5. Circuit breaker fuses fitted and checked as required.
(Consider relevant circuits in the aircraft and other appropriate advice)

7.6. Throttle levers, choke lever and fuel taps.
(Positions identified, placarded, functionally checked and in reach when 'strapped in')

8. <u>Fuel tanks, clips and fittings, senders, drain tap and gascolator:</u>

8.1. Check wing-tank fixings, vent tubes clear and hose routings as Build Manual.
(Tank-holding screws, wiring from senders to gauges, hose security, etc)

8.2. Throughout the fuel system check hose material and bore, clips and fittings.
(Matched bore/fittings, right material, kink free, clips and fittings secure)

8.3. Check gascolator valve.
(Operate gascolator spring valve several times)

8.4. Check connections to carburettors.
(Hose clips, kink-free routing, fuel-flow sender connections if fitted etc)

8.5. Venting checked at gravity flow rate with filler caps tight.
(Unscrew drain-tap and measure fuel into calibrated Jug for one minute)

8.6. Vapour return line checked clear

9. <u>Coolant and oil circulation systems:</u>

9.1. Hoses and connections secure and installed as per Rotax manual.
(Routing okay, no kinks, doublers/heat shields fitted as required, fittings)

9.2. Coolant radiator, oil cooler, pressure cap and expansion tank
(Cush-mounts, cap seal, connections, coolant level, etc)

10. Engine and monitoring instruments:

10.1. Rotax engine installation Checklist completed.
(This Checklist is supplied with the engine, file it with your Project records)

10.2. Engine monitoring system checked as appropriate for type.
(Choice of several digital or analogue systems)

11. Propeller, backplate and spinner:

11.1. Standard prop is the 3-blade KievProp 283 series (71" diameter).
(For alternative propellers consult SilverWing Aviation)

11.2. Check security of prop-bolts, lock-wire, back-plate and spinner.
(Check this prior to engine test run, DO NOT run engine without prop)

12. Control deflections in degrees from the neutral position:

12.1. Tolerance allowed is plus or minus one degree in all cases.

12.2. Elevator: up 22, down 22.

12.3. Trim tab: up 20 (nose down), down 30 (nose up).

12.4. Rudder: 21 left, 21 right.

12.5. Ailerons: up 20, down 13.

12.6. Flaperon droop: First position 10, second position 20.

12.7. Re-confirm that items 12.2 to 12.6 are satisfactory.

13. C of G information, all units are metric:

13.1. Datum point is the front face of the Propeller Flange.

13.2. C of G range loaded is 1.5 to 1.7 aft of datum.

13.3. Nose wheel arm 0.48

13.4. Main wheel arm 1.80

13.5. Pilot/Passenger 1.6

13.6. Fuel 1.90

13.7. Baggage 2.20

13.8. Maximum empty weight 275 kgs

13.9. Maximum take off weight 525 kgs

13.10. Re-confirm that items 13.3 to 13.9 are satisfactory..

14. Airframe symmetry

14.1. Wingtips to prop flange are equal to within 5 mm.

14.2. Wingtips to elevator horn are equal to within 5 mm.

14.3. Wingtips to fuselage lift-strut mount are equal to within 3 mm.