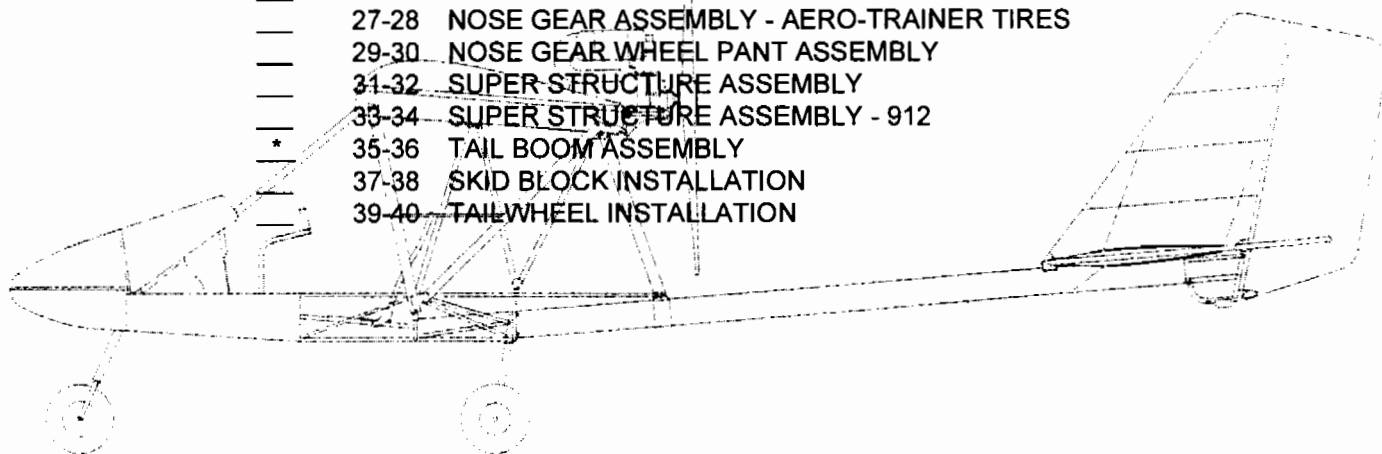


RANS S-12 AIRAILE

PARTS MANUAL PAGES

SECTION 01. - FUSELAGE ASSEMBLY

- * 02 GENERAL INFORMATION
- * 03-04 COCKPIT CAGE
- * 05-06 MAIN GEAR LEG ASSEMBLY
- 07-08 WHEEL & MECHANICAL BRAKE ASSEMBLY
STOCK TIRES w/o WHEEL PANTS
- 09-10 WHEEL & MECHANICAL BRAKE ASSEMBLY
TUNDRA TIRES
- 11-12 WHEEL & MECHANICAL BRAKE ASSEMBLY
STOCK TIRES with WHEEL PANTS
- 13-14 WHEEL & MECHANICAL BRAKE ASSEMBLY
STD 5" - AERO-TRAINER TIRES w/o WHEEL PANTS
- 14A-14B WHEEL & MECHANICAL BRAKE ASSEMBLY
OPTIONAL 6" - AERO-TRAINER TIRES w/o WHEEL PANTS
- 15-16 WHEEL & MECHANICAL BRAKE ASSEMBLY
STD 5" - AERO-TRAINER TIRES with WHEEL PANTS
- 16A-16B WHEEL & MECHANICAL BRAKE ASSEMBLY
OPTIONAL 6" - AERO-TRAINER TIRES with WHEEL PANTS
- 17-18 WHEEL & HYDRAULIC BRAKE ASSEMBLY
STD 6" - AERO-TRAINER TIRES w/o WHEEL PANTS
- 18A-18B WHEEL & HYDRAULIC BRAKE ASSEMBLY
OPTIONAL 5" - AERO-TRAINER TIRES w/o WHEEL PANTS
- 19-20 WHEEL & HYDRAULIC BRAKE ASSEMBLY
TUNDRA TIRES
- 21-22 WHEEL & HYDRAULIC BRAKE ASSEMBLY
STD 6" - AERO-TRAINER TIRES with WHEEL PANTS
- 22A-22B WHEEL & HYDRAULIC BRAKE ASSEMBLY
OPTIONAL 5" - AERO-TRAINER TIRES with WHEEL PANTS
- 23-24 NOSE GEAR ASSEMBLY
- 25-26 NOSE GEAR ASSEMBLY - TUNDRA TIRES
- 27-28 NOSE GEAR ASSEMBLY - AERO-TRAINER TIRES
- 29-30 NOSE GEAR WHEEL PANT ASSEMBLY
- 31-32 SUPER STRUCTURE ASSEMBLY
- 33-34 SUPER STRUCTURE ASSEMBLY - 912
- * 35-36 TAIL BOOM ASSEMBLY
- 37-38 SKID BLOCK INSTALLATION
- 39-40 TAILWHEEL INSTALLATION



RANS S-12 AIRAILE

PARTS MANUAL PAGES

All variations of the S-12 enclosure are covered under the Fuselage Enclosure headings of the Manuals.

If you purchased the entire Full enclosure, all the section details under the Fuselage Enclosure heading will need to be completed except those designated Mini-pod only. The sections move in order, no matter which enclosure system you purchased; Mini-pod, Partial, Full Enclosure or any combination of the three. If you purchase the standard S-12 (Mini-pod), only the sections pertaining to your purchase should be completed. Skip sections which do not pertain to your purchase; however remember the sections will still follow sequence. The following lists show which sections are applicable to each of the enclosure stages.

SECTION 02. - MINI-POD - FUSELAGE ENCLOSURE

- * 01-02 NOSE POD ASSEMBLY - MINI POD
- 03-04 NOSE POD ASSEMBLY
- 05-06 #4 BELLY PAN INSTALLATION
- 07-08 #3 BELLY PAN INSTALLATION
- 09-10 BOOM SEAL INSTALLATION
- 11-12 #2 BELLY PAN INSTALLATION
- * 13-14 #1 BELLY PAN INSTALLATION
- * 15-16 CENTER COVER ASSEMBLY
- with MINI-POD - STANDARD DACRON COVERING
- 16A-16B CENTER COVER ASSEMBLY
- with MINI-POD - OPTIONAL DOPE & FABRIC COVERING
- 17-18 CENTER COVER ASSEMBLY with PARTIAL OR FULL ENCLOSURE - STANDARD DACRON COVERING
- 18A-18B CENTER COVER ASSEMBLY with PARTIAL OR FULL ENCLOSURE - OPTIONAL DOPE & FABRIC COVERING
- * 19-20 MINI-POD WINDSHIELD INSTALLATION
- 21-22 WINDSHIELD INSTALLATION
- 23-24 AFT ENCLOSURE INSTALLATION
- 25-26 FULL DOOR ASSEMBLY
- 27-28 HALF-DOOR ASSEMBLY
- 29-30 CABANE/STRUT FAIRING INSTALLATION - 503 PARTIAL
- 31-32 FLOW FENCE INSTALLATION - 503 FULL ENCLOSURE
- 33-34 CABANE/STRUT FAIRING INSTALLATION - 582 PARTIAL
- 35-36 FLOW FENCE INSTALLATION - 582 FULL ENCLOSURE
- 37-38 CABANE/STRUT FAIRING INSTALLATION - 912 PARTIAL
- 39-40 FLOW FENCE INSTALLATION - 912 FULL ENCLOSURE
- 41-42 MAIN GEAR LEG FAIRING INSTALLATION
- 43-44 NOSE GEAR STRUT FAIRING INSTALLATION

SECTION 02. - PARTIAL ENCLOSURE - FUSELAGE ENCLOSURE

- 01-02 NOSE POD ASSEMBLY - MINI POD
- * 03-04 NOSE POD ASSEMBLY
- 05-06 #4 BELLY PAN INSTALLATION
- 07-08 #3 BELLY PAN INSTALLATION
- 09-10 BOOM SEAL INSTALLATION
- * 11-12 #2 BELLY PAN INSTALLATION
- * 13-14 #1 BELLY PAN INSTALLATION
- 15-16 CENTER COVER ASSEMBLY
- with MINI-POD - STANDARD DACRON COVERING
- 16A-16B CENTER COVER ASSEMBLY
- with MINI-POD - OPTIONAL DOPE & FABRIC COVERING
- 17-18 CENTER COVER ASSEMBLY with PARTIAL OR FULL ENCLOSURE - STANDARD DACRON COVERING
- 18A-18B CENTER COVER ASSEMBLY with PARTIAL OR FULL ENCLOSURE - OPTIONAL DOPE & FABRIC COVERING
- 19-20 MINI-POD WINDSHIELD INSTALLATION
- * 21-22 WINDSHIELD INSTALLATION
- 23-24 AFT ENCLOSURE INSTALLATION
- 25-26 FULL DOOR ASSEMBLY
- 27-28 HALF-DOOR ASSEMBLY
- 29-30 CABANE/STRUT FAIRING INSTALL - 503 PARTIAL
- 31-32 FLOW FENCE INSTALLAT - 503 FULL ENCLOSURE
- 33-34 CABANE/STRUT FAIRING INSTALL - 582 PARTIAL
- 35-36 FLOW FENCE INSTALL - 582 FULL ENCLOSURE
- 37-38 CABANE/STRUT FAIRING INSTALL - 912 PARTIAL
- 39-40 FLOW FENCE INSTALL - 912 FULL ENCLOSURE
- 41-42 MAIN GEAR LEG FAIRING INSTALLATION
- 43-44 NOSE GEAR STRUT FAIRING INSTALLATION

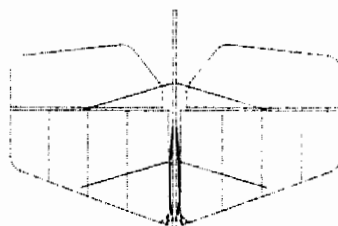
SECTION 02. - FULL ENCLOSURE - FUSELAGE ENCLOSURE

- 01-02 NOSE POD ASSEMBLY - MINI POD
- * 03-04 NOSE POD ASSEMBLY
- * 05-06 #4 BELLY PAN INSTALLATION
- * 07-08 #3 BELLY PAN INSTALLATION
- * 09-10 BOOM SEAL INSTALLATION
- * 11-12 #2 BELLY PAN INSTALLATION
- * 13-14 #1 BELLY PAN INSTALLATION
- * 15-16 CENTER COVER ASSEMBLY
- with MINI-POD - STANDARD DACRON COVERING
- 16A-16B CENTER COVER ASSEMBLY
- with MINI-POD - OPTIONAL DOPE & FABRIC COVERING
- 17-18 CENTER COVER ASSEMBLY with PARTIAL OR FULL ENCLOSURE - STANDARD DACRON COVERING
- 18A-18B CENTER COVER ASSEMBLY with PARTIAL OR FULL ENCLOSURE - OPTIONAL DOPE & FABRIC COVERING
- * 19-20 MINI-POD WINDSHIELD INSTALLATION
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- * 23-24 AFT ENCLOSURE INSTALLATION
- * 25-26 FULL DOOR ASSEMBLY
- * 27-28 HALF-DOOR ASSEMBLY
- 29-30 CABANE/STRUT FAIRING INSTALLATION - 503 PARTIAL
- 31-32 FLOW FENCE INSTALLATION - 503 FULL ENCLOSURE
- 33-34 CABANE/STRUT FAIRING INSTALLATION - 582 PARTIAL
- 35-36 FLOW FENCE INSTALLATION - 582 FULL ENCLOSURE
- 37-38 CABANE/STRUT FAIRING INSTALLATION - 912 PARTIAL
- 39-40 FLOW FENCE INSTALLATION - 912 FULL ENCLOSURE
- 41-42 MAIN GEAR LEG FAIRING INSTALLATION
- 43-44 NOSE GEAR STRUT FAIRING INSTALLATION

** Depends on Engine

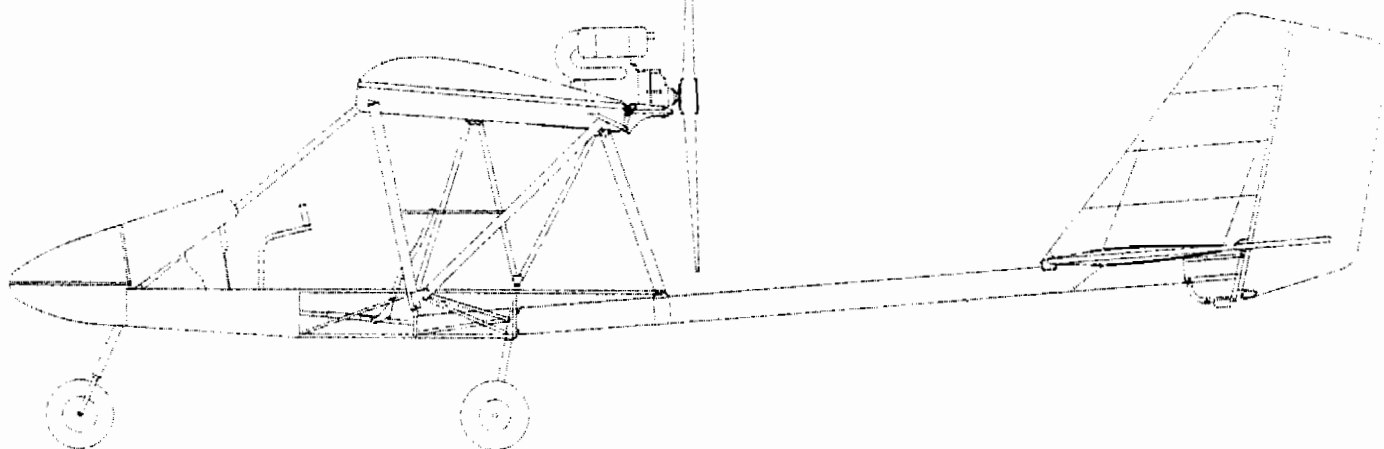
RANS S-12 AIRAILE

PARTS MANUAL PAGES



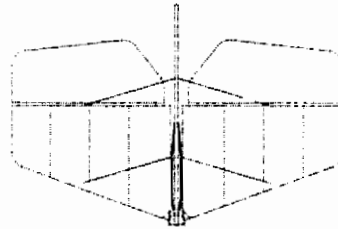
SECTION 03. - INTERNAL SYSTEMS

*	01-02	FLOORBOARD INSTALLATION
—	03-04	RUDDER PEDAL ASSEMBLY - w/o TOE BRAKES
—	05-06	RUDDER PEDAL ASSEMBLY - with HYDRAULIC TOE BRAKES
*	07-08	RUDDER CABLE SYSTEM ASSEMBLY
—	09-10	BRAKE SYSTEM - HAND BRAKE ASSEMBLY
—	11-12	BRAKE SYSTEM - HAND BRAKE ASSY w/ INFLIGHT ADJUST FLAP
—	13-14	BRAKE SYSTEM - SINGLE HYDRAULIC TOE BRAKES
—	15-16	BRAKE SYSTEM - DUAL HYDRAULIC TOE BRAKES
*	17-18	SEAT ASSEMBLY
—	19-20	OPTIONAL HEADREST ASSEMBLY
*	21-22	SEAT BELT INSTALLATION
*	23-24	CONTROL STICK MOUNT & ASSEMBLY
*	25-26	AILERON CABLE SYSTEM
—	27-28	FLAP SYSTEM ASSEMBLY
*	29-30	THROTTLE LEVER MOUNT
—	31-32	503/582 INSTRUMENT PANEL ASSEMBLY - w/o PANEL TRIM
—	33-34	503/582 INSTRUMENT PANEL ASSEMBLY - with PANEL TRIM
—	35-36	912 INSTRUMENT PANEL ASSEMBLY - w/o PANEL TRIM
—	37-38	912 INSTRUMENT PANEL ASSEMBLY - with PANEL TRIM
—	39-40	TRIM WHEEL ASSEMBLY - PANEL MOUNT
—	41-42	TRIM WHEEL ASSEMBLY - FLAP LEVER MOUNT
—	43-44	STROBE BOX MOUNT



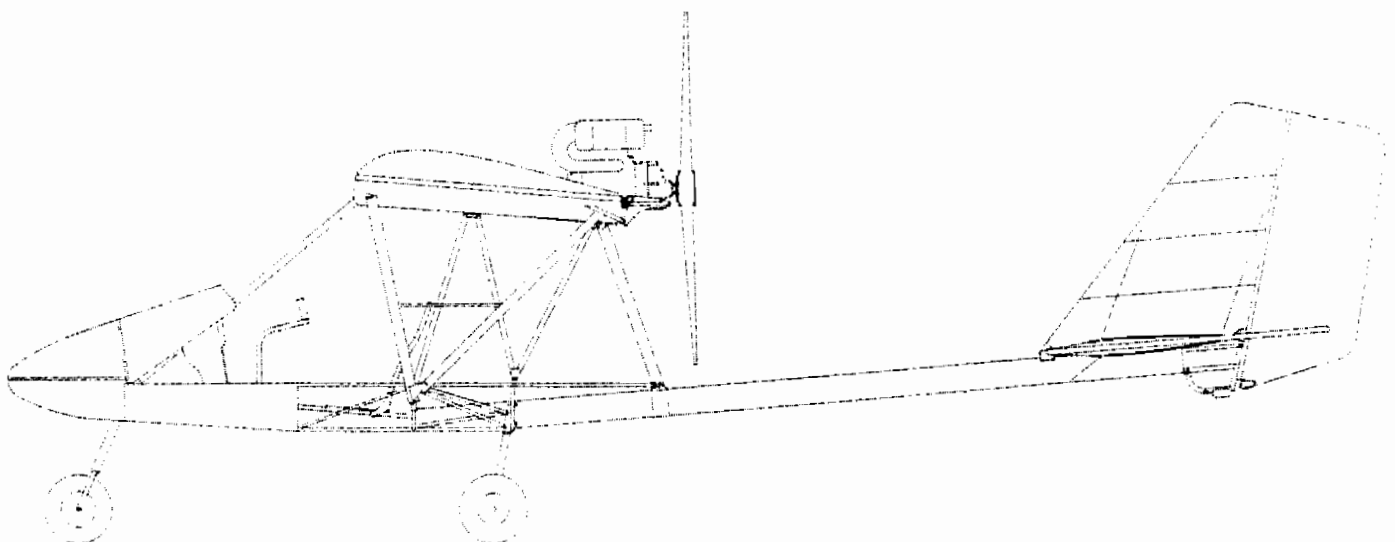
RANS S-12 AIRAILE

PARTS MANUAL PAGES



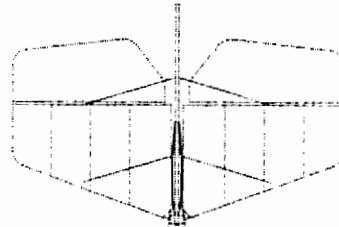
SECTION 04. - 503 ENGINE, INSTRUMENTATION, and ELECTRICAL SYSTEMS

—	01-02	503 ENGINE MOUNT ASSEMBLY
—	03-04	503 SINGLE CARB ENGINE INSTALLATION
—	05-06	503 DUAL CARB ENGINE INSTALLATION
—	07-08	503 EXHAUST ASSEMBLY
—	09-10	503 FUEL SYSTEM - SINGLE WING TANK
—	11-12	503 FUEL SYSTEM - DUAL WING TANKS
—	13-15	503 INSTRUMENTS & ELECTRICAL - w/o OPTIONAL ELECT START
—	16-18	503 INSTRUMENTS & ELECTRICAL - with ELECTRIC START
—	19-20	503 BATTERY BOX INSTALLATION
—	21-22	503 MUFFLER WRAP HEATER
—	23-24	503 STROBE SYSTEM SCHEMATIC



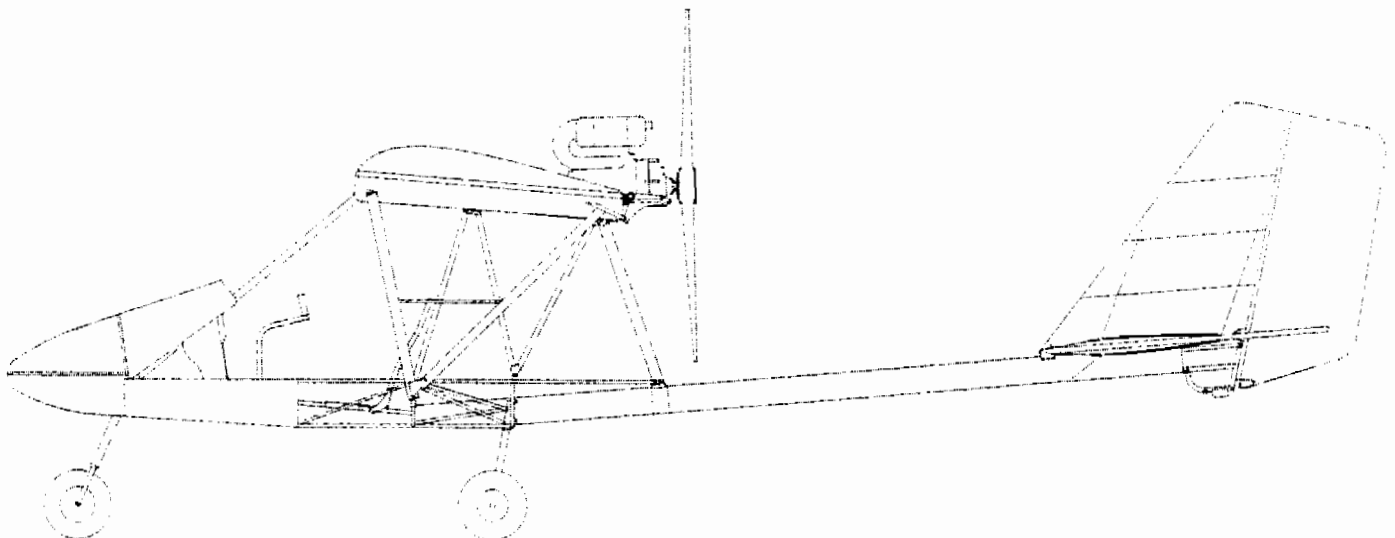
RANS S-12 AIRRAILE

PARTS MANUAL PAGES



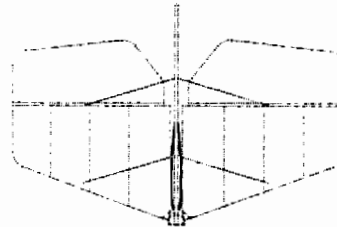
SECTION 04. - 582 ENGINE, INSTRUMENTATION, and ELECTRICAL SYSTEMS

—	01-02	582 ENGINE MOUNT ASSEMBLY
—	03-04	582 ENGINE
—	05-06	582 EXHAUST ASSEMBLY
—	07-08	582 FUEL SYSTEM - SINGLE WING TANK
—	09-10	582 FUEL SYSTEM - DUAL WING TANKS
—	11-12	582 OIL INJECTION TANK & MOUNT
—	13-14	582 COOLING SYSTEM - MINI-POD OR PARTIAL ENCLOSURE
—	15-16	582 COOLING SYSTEM - FULL ENCLOSURE
—	17-19	582 INSTRUMENTS & ELECTRICAL - w/o OPTIONAL ELECT START
—	20-22	582 INSTRUMENTS & ELECTRICAL - with ELECTRIC START
—	23-24	582 BATTERY BOX INSTALLATION
—	25-26	582 MUFFLER WRAP HEATER
—	27-28	582 RADIANT HEATER CORE ASSEMBLY
—	29-30	582 RADIANT HEATER INSTALLATION
—	31-32	582 STROBE SYSTEM SCHEMATIC



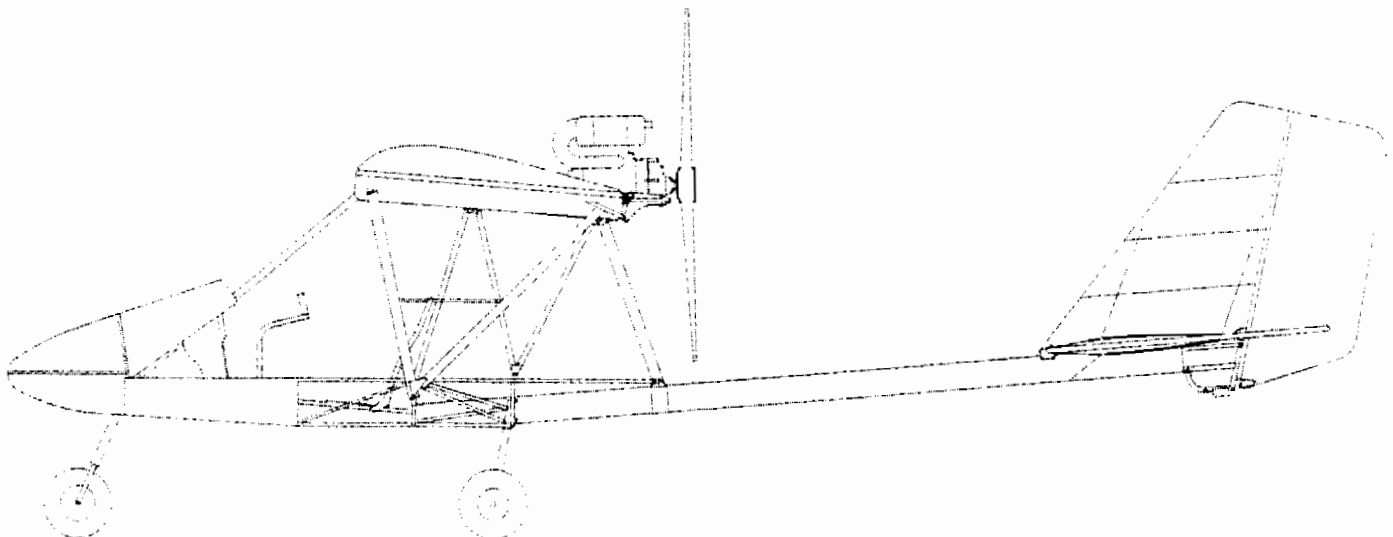
RANS S-12 AIRAILE

PARTS MANUAL PAGES



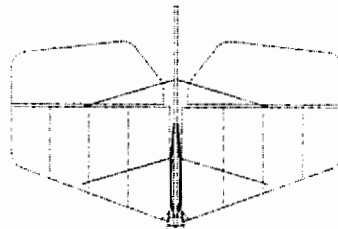
SECTION 04. - 912 ENGINE, INSTRUMENTATION, and ELECTRICAL SYSTEMS

—	01-02	912 ENGINE MOUNT ASSEMBLY
—	03-04	912 ENGINE, THROTTLE/FUEL HOOK UPS
—	05-06	912 EXHAUST ASSEMBLY
—	07-08	912 FUEL SYSTEM - SINGLE WING TANK
—	09-10	912 FUEL SYSTEM - DUAL WING TANKS
—	11-12	912 OIL TANK & MOUNT
—	13-14	912 COOLING SYSTEM - MINI-POD OR PARTIAL ENCLOSURE
—	15-16	912 COOLING SYSTEM - FULL ENCLOSURE
—	17-19	912 INSTRUMENTS & ELECTRICAL
—	20-21	912 BATTERY BOX INSTALLATION
—	22-23	912 RADIANT HEATER CORE ASSEMBLY
—	24-25	912 RADIANT HEATER INSTALLATION
—	26-27	912 STROBE SYSTEM SCHEMATIC



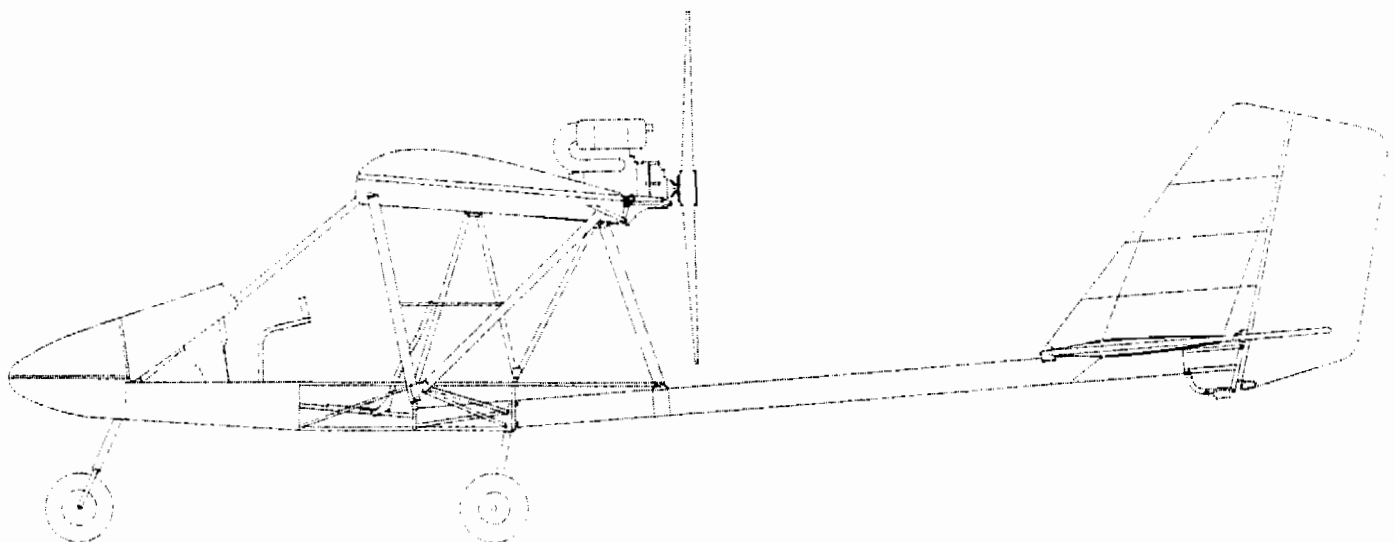
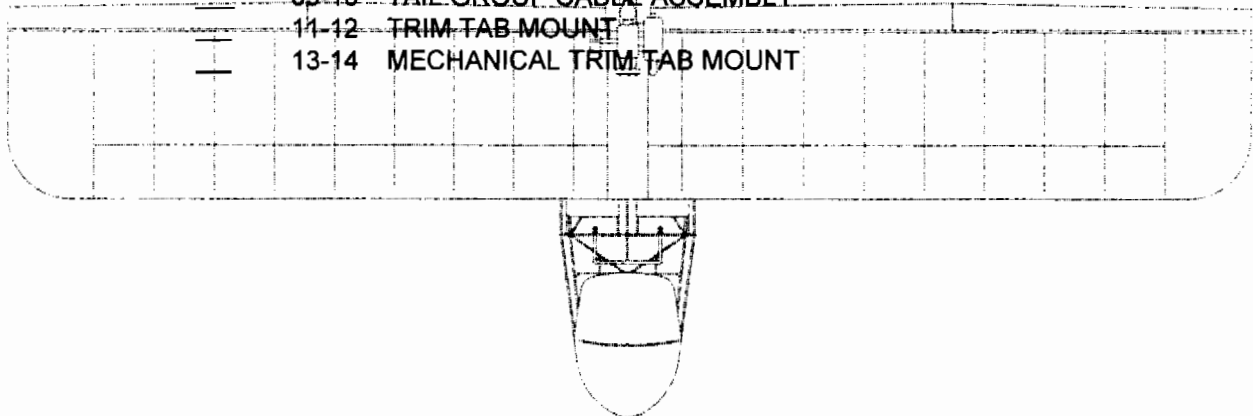
RANS S-12 AIRAILE

PARTS MANUAL PAGES



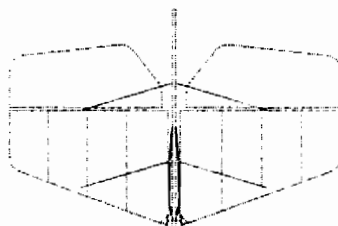
SECTION 05. - TAIL GROUP FRAME ASSEMBLY

- * 01-02 VERTICAL STABILIZER FRAME ASSEMBLY
- * 03-04 HORIZONTAL STABILIZER FRAME ASSEMBLY
- * 05-06 ELEVATOR FRAME ASSEMBLY
- * 07-08 RUDDER FRAME ASSEMBLY
- * 09-10 TAIL GROUP CABLE ASSEMBLY
- 11-12 TRIM TAB MOUNT
- 13-14 MECHANICAL TRIM TAB MOUNT



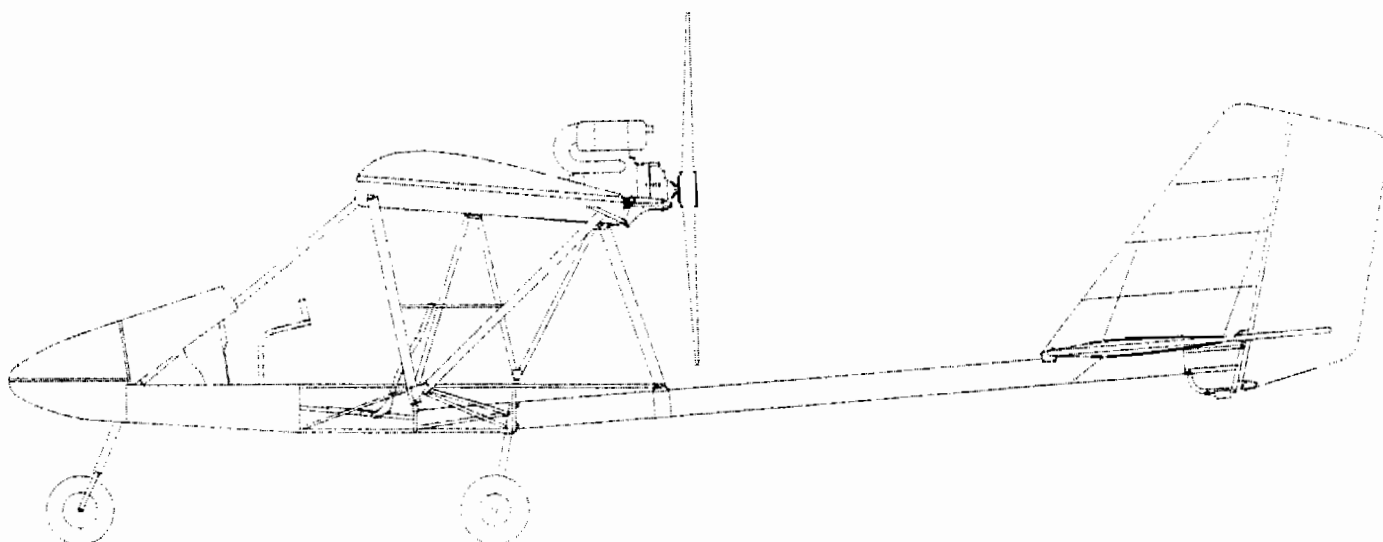
RANS S-12 AIRAILE

PARTS MANUAL PAGES



SECTION 06. - WING FRAME ASSEMBLY

*	01-02	LEADING & TRAILING EDGE SPAR ASSEMBLY
*	03-04	UNIVERSAL HINGE ASSEMBLY
—	05-06	INTERNAL STRUCTURE
—	07-08	OUTBOARD RIB ASSEMBLY
—	09-10	ROOT RIB TENSIONING SYSTEM
—	11-12	FUEL TANK MOUNT - SINGLE WING TANK
—	13-14	FUEL TANK MOUNT - DUAL WING TANKS
*	15-16	AILERON PUSH PULL SYSTEM
—	17-18	STROBE MOUNT
*	19-20	FLAP FRAME ASSEMBLY
*	21-22	AILERON FRAME ASSEMBLY
—	23-24	FLAP SYSTEM - GROUND ADJUSTABLE
—	25-26	FLAP SYSTEM - IN FLIGHT ADJUSTABLE
—	27-28	LIFT STRUT ASSEMBLY - NON-ADJUSTABLE
—	29-30	LIFT STRUT ASSEMBLY - ADJUSTABLE
*	31-32	JURY STRUT ASSEMBLY
—	33-34	JURY STRUT FAIRING INSTALLATION
—	35-36	FLAP FILLET INSTALLATION

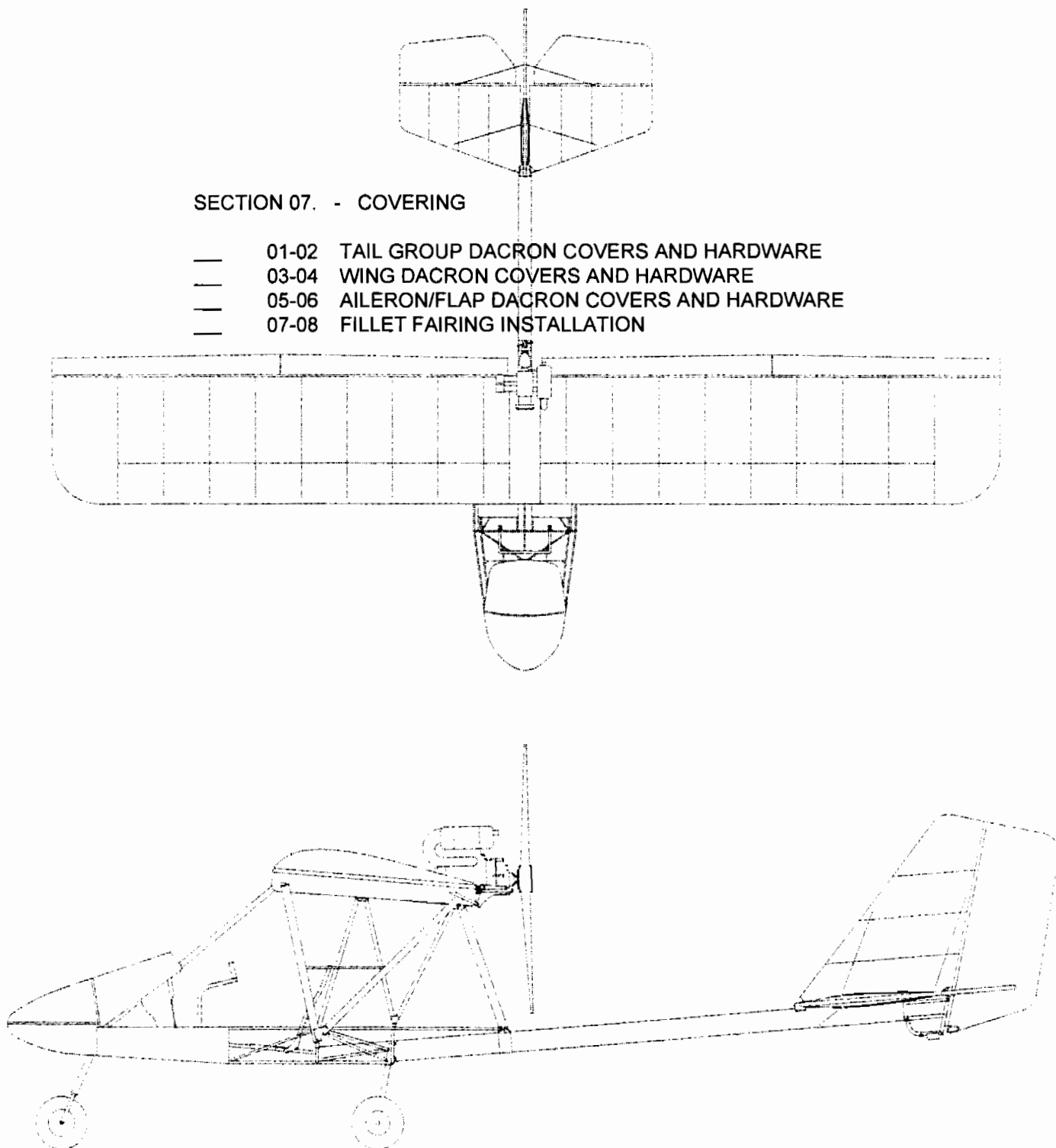


RANS S-12 AIRAILE

PARTS MANUAL PAGES

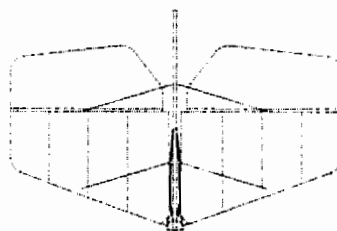
SECTION 07. - COVERING

- 01-02 TAIL GROUP DACRON COVERS AND HARDWARE
- 03-04 WING DACRON COVERS AND HARDWARE
- 05-06 AILERON/FLAP DACRON COVERS AND HARDWARE
- 07-08 FILLET FAIRING INSTALLATION



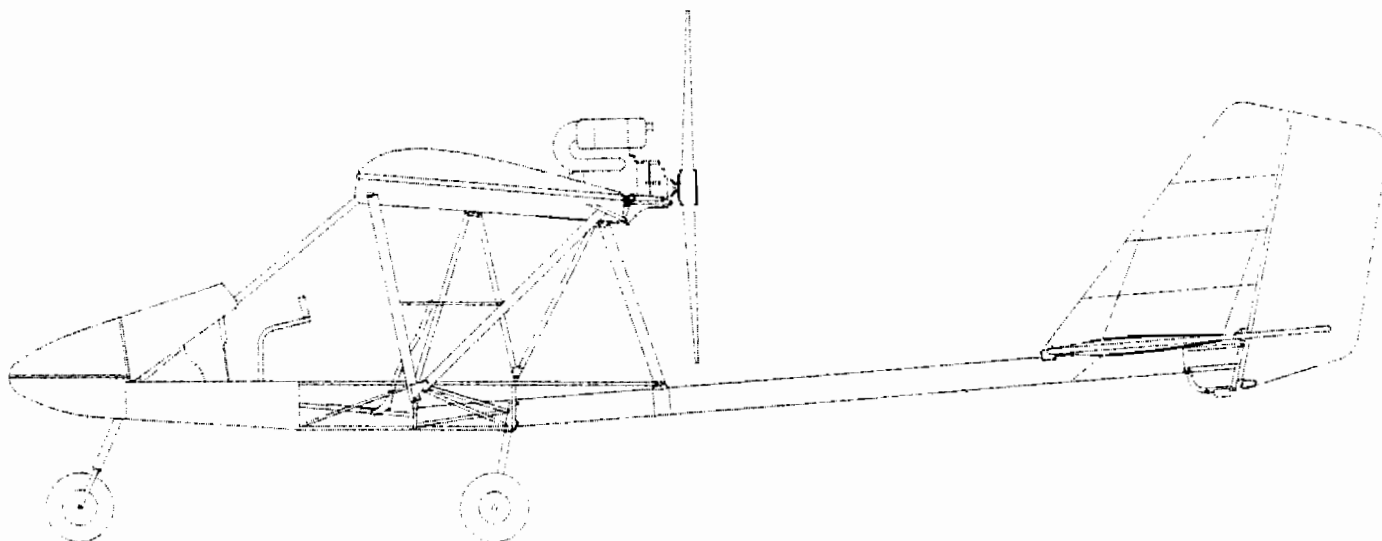
RANS S-12 AIRAILE

PARTS MANUAL PAGES



SECTION 08. - PROPELLERS

—	01-02	503 TENNESSEE WOOD PROP INSTALLATION
—	03-04	582 TENNESSEE WOOD PROP INSTALLATION
—	05-06	912 TENNESSEE WOOD PROP INSTALLATION
—	07-08	503 WARP DRIVE PROP INSTALLATION - STANDARD HUB
—	09-10	503 WARP DRIVE PROP INSTALLATION - HP-L HUB
—	11-12	582 WARP DRIVE PROP INSTALLATION - STANDARD HUB
—	13-14	582 WARP DRIVE PROP INSTALLATION - HP-L HUB
—	15-16	912 WARP DRIVE PROP INSTALLATION - w/o FULL ENCLOSURE
—	17-18	912 WARP DRIVE PROP INSTALLATION - with FULL ENCLOSURE
—	19-20	503 IVO PROP INSTALLATION
—	21-22	582 IVO PROP INSTALLATION

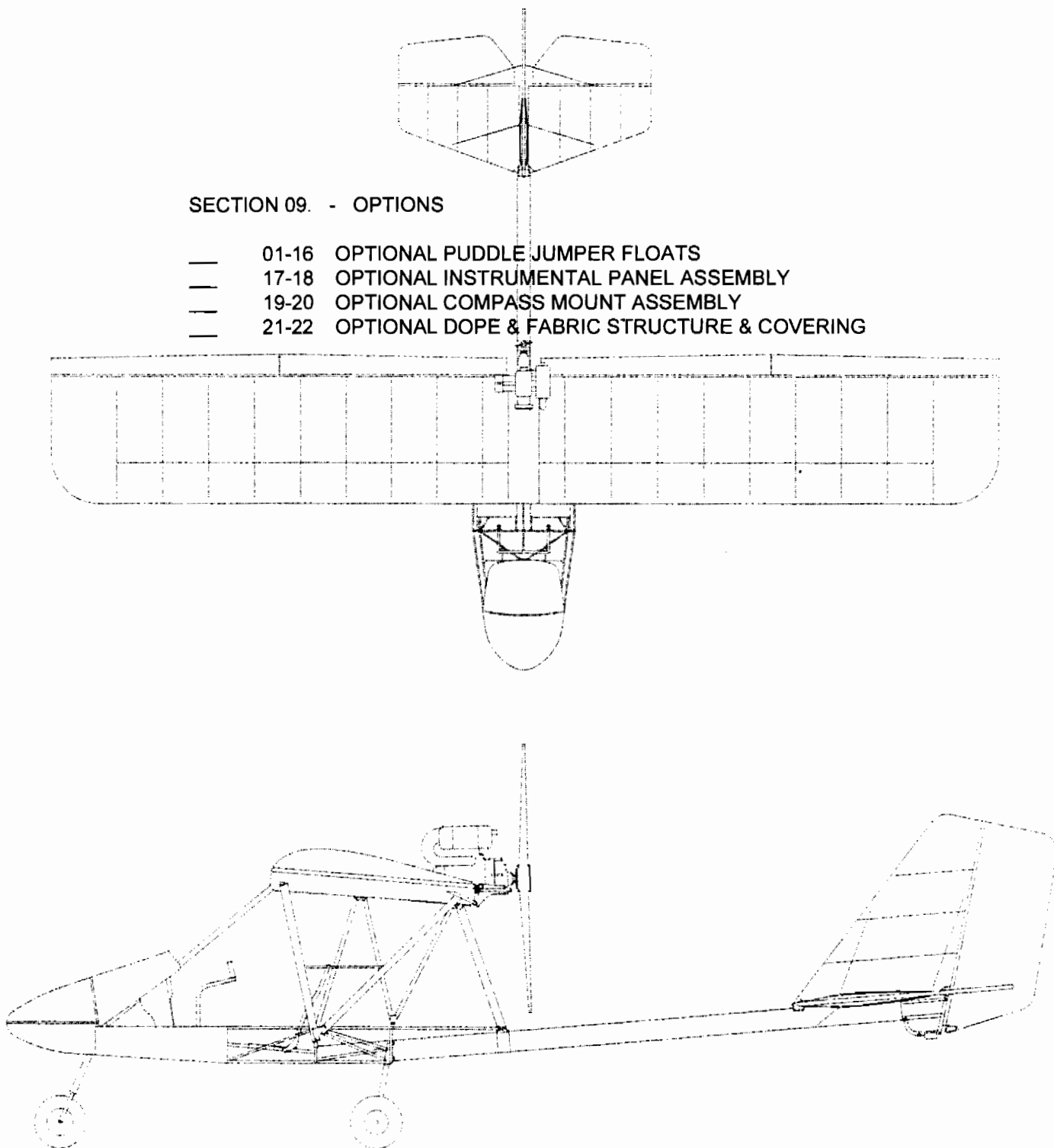


RANS S-12 AIRAILE

PARTS MANUAL PAGES

SECTION 09. - OPTIONS

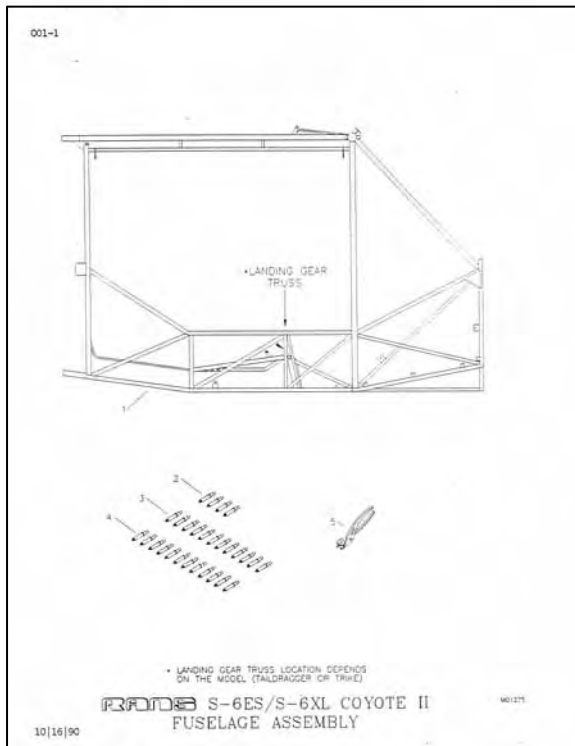
- 01-16 OPTIONAL PUDDLE JUMPER FLOATS
- 17-18 OPTIONAL INSTRUMENTAL PANEL ASSEMBLY
- 19-20 OPTIONAL COMPASS MOUNT ASSEMBLY
- 21-22 OPTIONAL DOPE & FABRIC STRUCTURE & COVERING



The RANS CD manual is designed to be printable on 3-hole punched paper on your home printer. If you have the pre-printed manual, follow the directions for rotation below.

If you desire to NOT print the pages, you may use the features available with ADOBE Reader to rotate the pages on your computer screen.

After the manual pages are printed, rotate the Parts Drawing page 180° to face the Parts List page. See the diagram below.



Parts Drawing page

001-2

S-6ES COYOTE II - FUSELAGE

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	S-6ES Fuselage (Taildragger)	KAFU0003	1
1.	S-6ES Fuselage (Trike)	KAFU0005	1
2.	#40 Silver Clecos	#40CLECOS	4
3.	#30 Copper Clecos	#30CLECOS	12
4.	#11 Gold Clecos	#11CLECOS	12
5.	Cleco Pliers	CLECO PLIERS	1

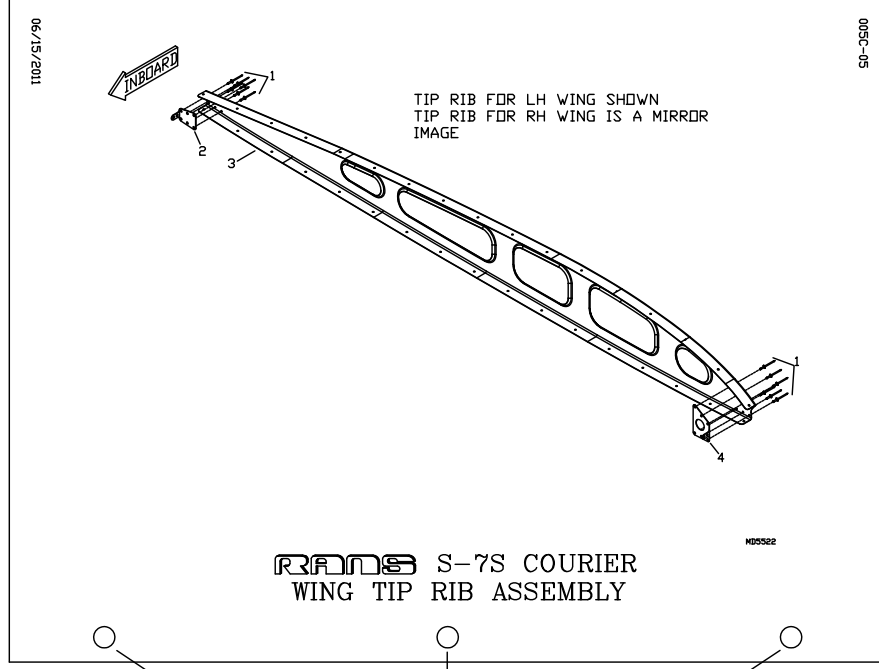
2/24/98

Parts List page

STEP 1:

PARTS MANUAL AS SHIPPED or PRINTED.
PLACE IN 3-RING BINDER TO SECURE.

PARTS DRAWING PAGE



3-HOLE PUNCH

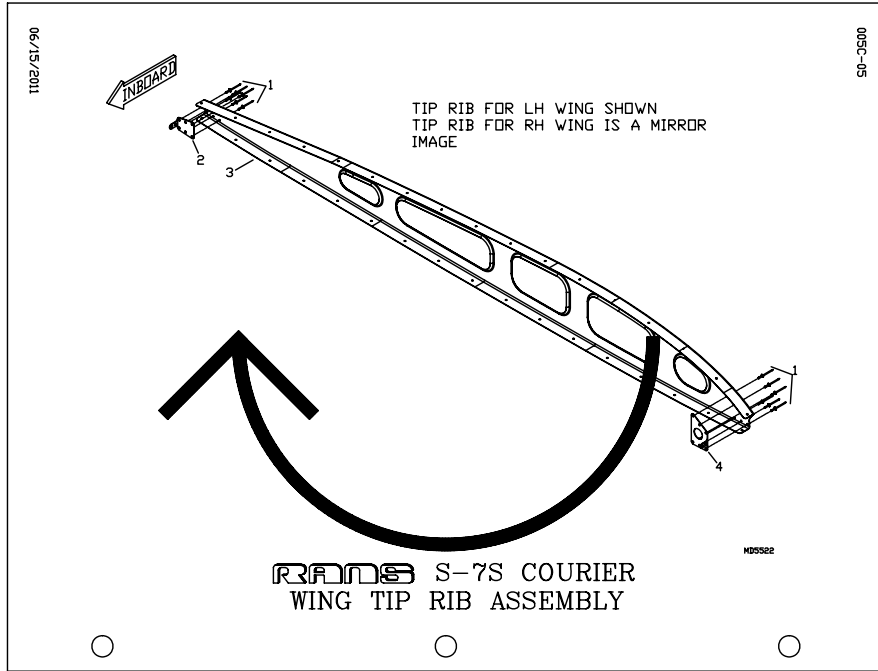
EXAMPLE ONLY.
MAY NOT REPRESENT ACTUAL PAGES
FROM YOUR MANUAL.

SEE NEXT PAGE

STEP 2:

OPEN 3-RING BINDER.
REMOVE PARTS DRAWING PAGE AND
ROTATE 180° TO FACE
CORRESPONDING
PARTS DESCRIPTION PAGE.
REPEAT FOR REMAINING PAGES

PARTS DRAWING PAGE



PARTS DESCRIPTION PAGE

S-7S COURIER - WING - TIP RIB ASSEMBLY				PAGE 005C-06	
#	DESCRIPTION	PART NUMBER	QUANTITY		
1.	1/8" ALUMINUM RIVET	AAQ-41	24		
2.	RIB CLIP TRAILING EDGE - LH	KPW0372-L	4		
2.	RIB CLIP TRAILING EDGE - RH	KPW0372-R	1		
3.	WING TIP RIB - LH	KPW0544-L	1		
3.	WING TIP RIB - RH	KPW0544-R	1		
4.	RIB CLIP LEADING EDGE - LH	KPW0373-L	1		
4.	RIB CLIP LEADING EDGE - RH	KPW0373-R	1		

6/15/2011

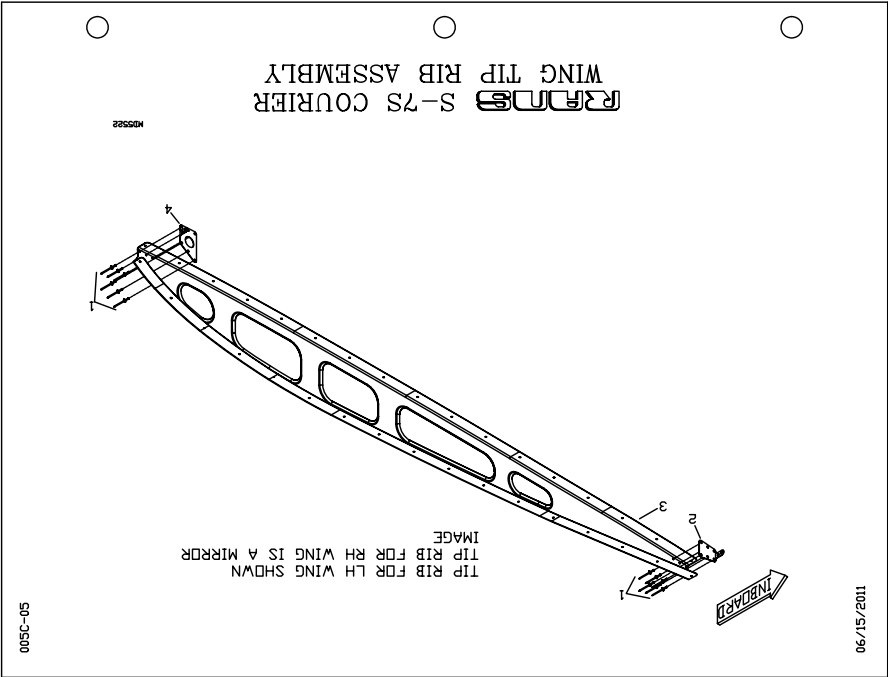
EXAMPLE ONLY.
MAY NOT REPRESENT ACTUAL PAGES
FROM YOUR MANUAL.

SEE NEXT PAGE

STEP 3:

PARTS DRAWING PAGE
FACES CORRESPONDING
PARTS DESCRIPTION PAGE
WHEN FINAL SECURED IN
BINDER

PARTS DRAWING PAGE



PARTS DESCRIPTION PAGE

S-7S COURIER - WING - TIP RIB ASSEMBLY			
#	DESCRIPTION	PART NUMBER	QUANTITY
1.	1/8" ALUMINUM RIVET	AAQ41	24
2.	RIB CLIP TRAILING EDGE - LH	KPW0372-L	4
2.	RIB CLIP TRAILING EDGE - RH	KPW0372-R	1
3.	WING TIP RIB - LH	KPW0544-L	1
3.	WING TIP RIB - RH	KPW0544-R	1
4.	RIB CLIP LEADING EDGE - LH	KPW0373-L	1
4.	RIB CLIP LEADING EDGE - RH	KPW0373-R	1

EXAMPLE ONLY.
MAY NOT REPRESENT ACTUAL PAGES
FROM YOUR MANUAL.

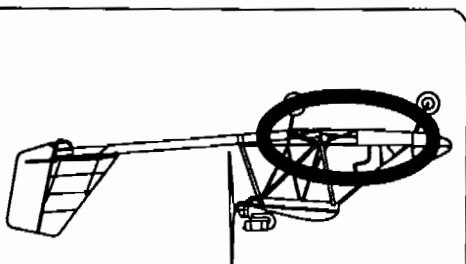
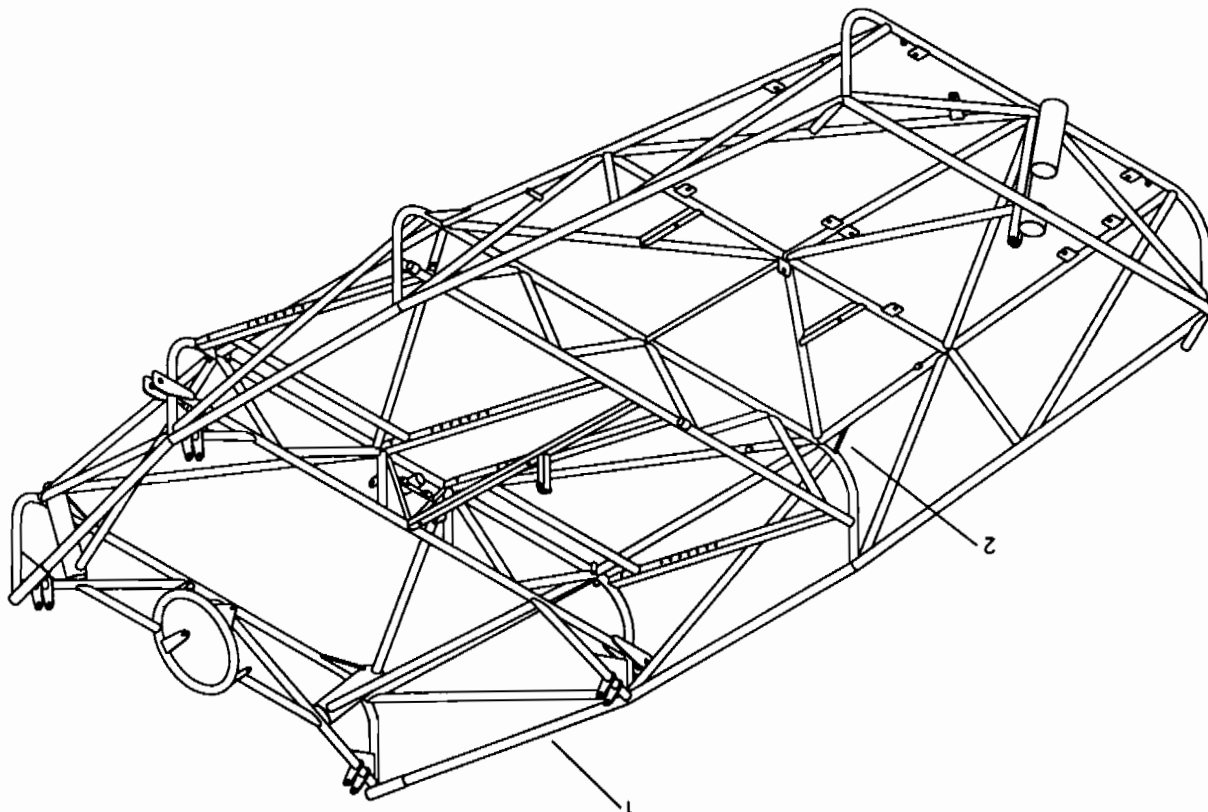
S-12XL AIRAILE - GENERAL INFORMATION

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Flight Log	FLIGHT LOG	1
2.	Maintenance Log Book	MAINTENANCE LOG	1
3.	Assembly Manual	ASSEMBLY MANUAL	1
4.	1" x .032 x 8" Aluminum Strip *	KAAC0001-9	1
4.	Raw Stock Kit	KAAC0001	1
4.	7/8" x .058 x 6' Anodized Aluminum Tubing *	KAAC0001-1	1
4.	1/2" x .083 x 3" Aluminum Tubing *	KAAC0001-2	1
4.	3/4" x .058 x 11" Anodized Aluminum Tubing *	KAAC0001-3	1
4.	3/8" x .058 x 6" Aluminum Tubing *	KAAC0001-4	1
4.	1/2" x .035 x 12' Anodized Aluminum Tubing *	KAAC0001-5	2 stk
4.	1/4" x .028 x 24" Aluminum Tubing *	KAAC0001-6	1
4.	1/2" x .058 x 3" Aluminum Tubing *	KAAC0001-7	1
4.	1" x .049 x 9' Anodized Aluminum Tubing *	KAAC0001-8	1
4.	3/8" x .095 x 8" Anodized Aluminum Tubing *	KAAC0001-10	1
5.	Foam Rubber Strip, 3/8" x 3/16" x 17'	WS-FS	1 rls
6.	Experimental Decal Sheets	EXPER-DECAL	1
7.	Range Decal	RANGE DECAL	1
8.	#40 Silver Clecos	#40CLECOS	6
9.	#30 Copper Clecos	#30CLECOS	12
10.	#11 Gold Clecos	#11CLECOS	6
11.	Decals	PP-DECAL	2
12.	Safety Wire	SAFETY WIRE	1 ft
13.	Loctite Blue	LOC-TITE	1
14.	Epoxy	EPOXY	1
15.	Cleco Pliers	CLECO PLIERS	1
16.	Warning Label	KPPL0001	1

*Supplied in Raw Stock Kit.

RMS
S-12 AIRAILE

Made in the
USA



FUSELAGE ASSEMBLY
COCKPIT CAGE

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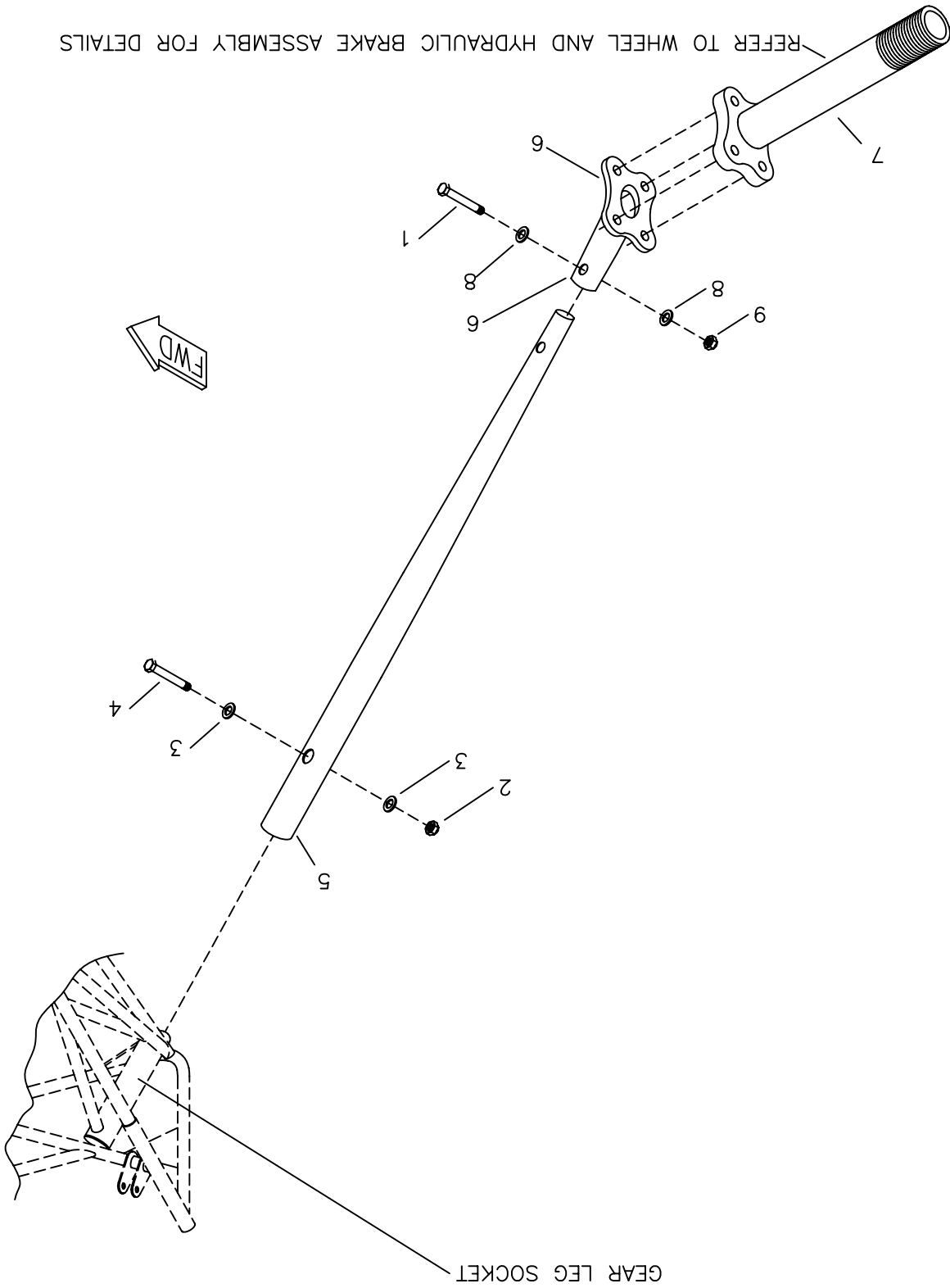
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#	Description	Part Number	Quantity
1.	Cockpit Cage	KAFU0015	1
2.	Serial Number Location	-----	0

RANDS S-12XL AIRRAILE MAIN GEAR LEG ASSEMBLY HYDRAULIC BRAKES

MD3495

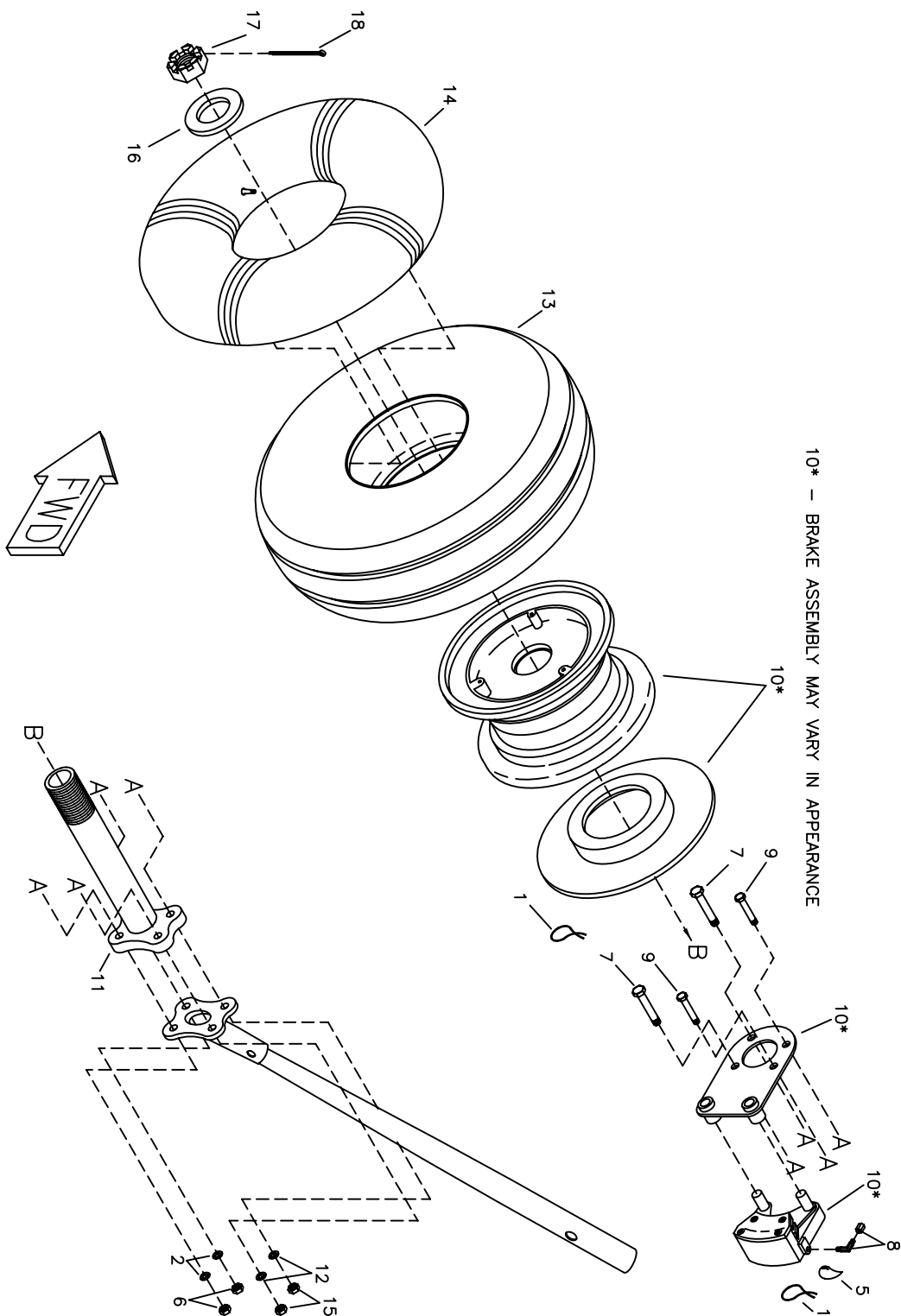


S-12XL AIRIALE - MAIN GEAR LEG ASSEMBLY - HYDRAULIC BRAKES

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	1/4" Bolt	AN4-14A	2
2.	5/16" Shear Nut	AN364-524A	2
3.	5/16" Thin Washer	AN960-516L	4
4.	5/16" Bolt	AN5-16A	2
5.	Gear Leg	KPMG0064	2
6.	Axle Mount Socket	KPMG0168	2
7.	Axle *	-----	0
8.	1/4" Thin Washer	AN960-416L	4
9.	1/4" Shear Nut	AN364-428A	2

*See wheel and hydraulic brake assembly for part number.

RRMS S-12XL AIRRAIL WHEEL AND HYDRAULIC BRAKE ASSEMBLY— STANDARD 6" AERO-TRAINER TIRES WITHOUT WHEEL PANTS



MD1967

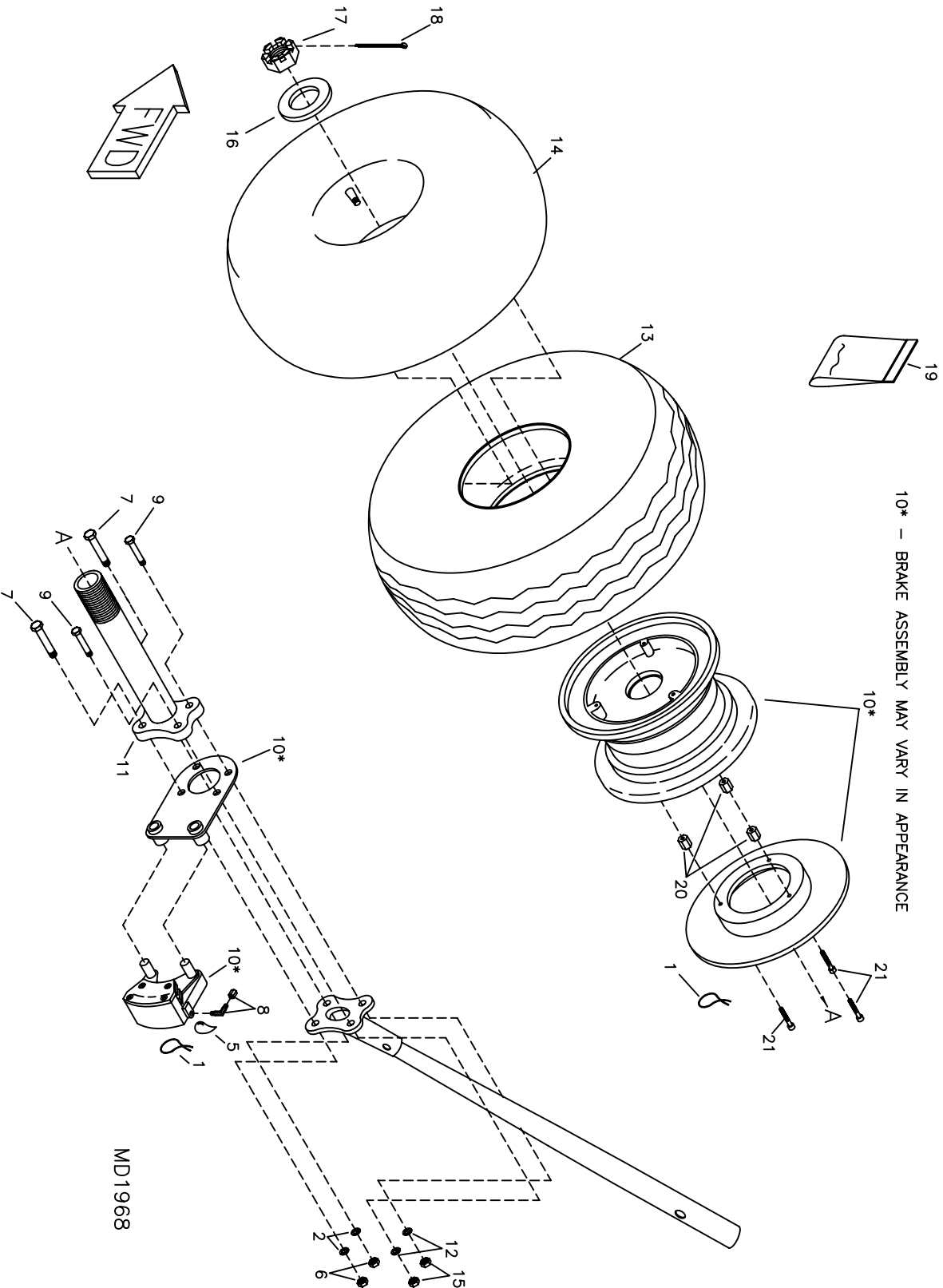
S-12XL AIRAILE - WHEEL & HYDRAULIC BRAKE ASSEMBLY**STD 6" - AERO-TRAINER TIRES WITHOUT WHEEL PANTS**

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Safety Wire **	-----	0
2.	3/8" Thick Washer	AN960-616	4
3.	5/16" Thick Washer	AN960-516	4
4.	5/16" Shear Nut	AN364-524A	2
5.	Thread Sealant **	-----	0
6.	3/8" Tensile Nut	AN365-624A	4
7.	3/8" Bolt	AN6-17A	4
8.	90 Fitting	KSBS0001	2
9.	5/16" Bolt	AN5-16A	4
10.	Hydraulic Brake Assembly, 6"	KSBS0030	2
11.	Axle *	-----	0
12.	5/16" Thin Washer	AN960-516L	4
13.	Tire, 6"	KSMG0013	2
14.	Tire Tube, 6"	KSMG0016	2
15.	5/16" Tensile Nut	AN365-524A	4
16.	Washer *	-----	0
17.	Castle Nut *	-----	0
18.	Cotter Pin *	-----	0

*Supplied pre-assembled to KSBS0030.

**Builder Supplied.

RPM S-12XL AIRRAIL WHEEL AND HYDRAULIC BRAKE ASSEMBLY- TUNDRA TIRES



S-12XL AIRAILE - WHEEL & HYDRAULIC BRAKE ASSEMBLY**TUNDRA TIRES**

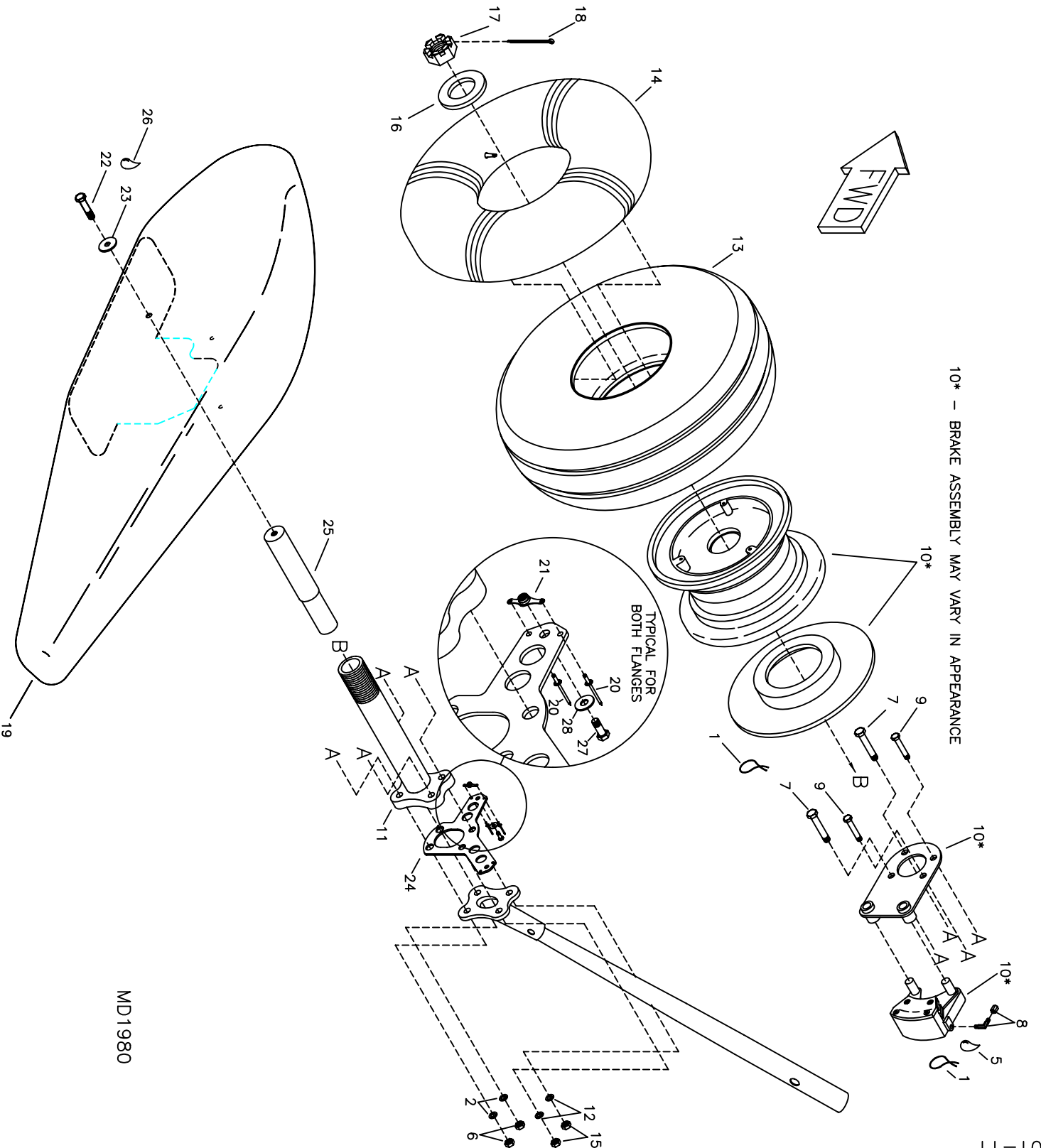
#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Safety Wire **	----	0
2.	3/8" Thick Washer	AN960-616	4
3.	5/16" Thick Washer	AN960-516	4
4.	5/16" Shear Nut	AN364-524A	2
5.	Thread Sealant **	----	0
6.	3/8" Tensile Nut	AN365-624A	4
7.	3/8" Bolt	AN6-17A	4
8.	90 Fitting	KSBS0001	2
9.	5/16" Bolt	AN5-16A	4
10.	Hydraulic Brake Assembly, 6"	KSBS0030	2
11.	Axle *	----	0
12.	5/16" Thin Washer	AN960-516L	4
13.	Tundra Tire, 6"	KSMG0002	2
14.	Tundra Tire Tube, 6"	KSMG0003	2
15.	5/16" Tensile Nut	AN365-524A	4
16.	Washer *	----	0
17.	Castle Nut *	----	0
18.	Cotter Pin *	----	0
19.	MATCO Adaptor Kit (w/ Tundra Tires Only)	KSBS0032	1
20.	Disc Spacer ***	----	0
21.	Socket Head Cap Screw ***	----	0

*Supplied pre-assembled to KSBS0030.

**Builder supplied.

***Supplied with KSBS0032

RRMS S-12XL AIRAILE WHEEL AND HYDRAULIC BRAKE ASSEMBLY- STANDARD 6" AERO-TRAINER TIRES WITH WHEEL PANTS



MD1980

S-12XL AIRAILE - WHEEL & HYDRAULIC BRAKE ASSEMBLY**STD 6" - AERO-TRAINER TIRES WITH WHEEL PANTS**

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Safety Wire **	-----	0
2.	3/8" Thick Washer	AN960-616	4
3.	5/16" Thick Washer	AN960-516	4
4.	5/16" Shear Nut	AN364-524A	2
5.	Thread Sealant **	-----	0
6.	3/8" Tensile Nut	AN365-624A	4
7.	3/8" Bolt	AN6-17A	4
8.	90 Fitting	KSBS0001	2
9.	5/16" Bolt	AN5-16A	4
10.	Hydraulic Brake Assembly, 6"	KSBS0030	2
11.	Axle *	-----	0
12.	5/16" Thin Washer	AN960-516L	4
13.	Tire, 6"	KSMG0013	2
14.	Tire Tube, 6"	KSMG0016	2
15.	5/16" Tensile Nut	AN365-524A	4
16.	Washer *	-----	0
17.	Castle Nut *	-----	0
18.	Cotter Pin *	-----	0
19.	Main Wheel Pant, 6"	KPMG0105	2
20.	3/32" Aluminum Pop Rivet	40APR1/8	8
21.	3/16" Nut Plate	K-1000-3	4
22.	1/4" Bolt	AN4-4A	2
23.	1/4" Large Washer	AN970-4	2
24.	Wheel Pant Mount Plate	KPMG0162	2
25.	Wheel Axle Extender - 6"	KPMG0171	2
26.	Loctite Blue **	-----	0
27.	3/16" Bolt	AN3-3A	4
28.	3/16" Large Washer	AN970-3	4

*Supplied pre-assembled to KSBS0030.

**Builder supplied.

PARTS PAGES

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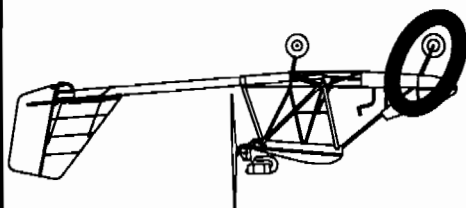


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S-12XL AIRAILE - NOSE GEAR ASSEMBLY
TUNDRA TIRES

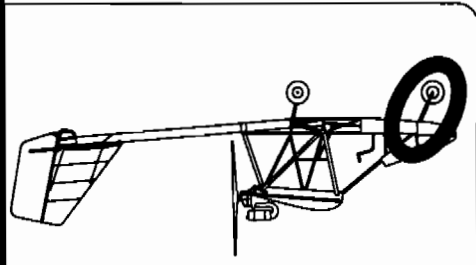
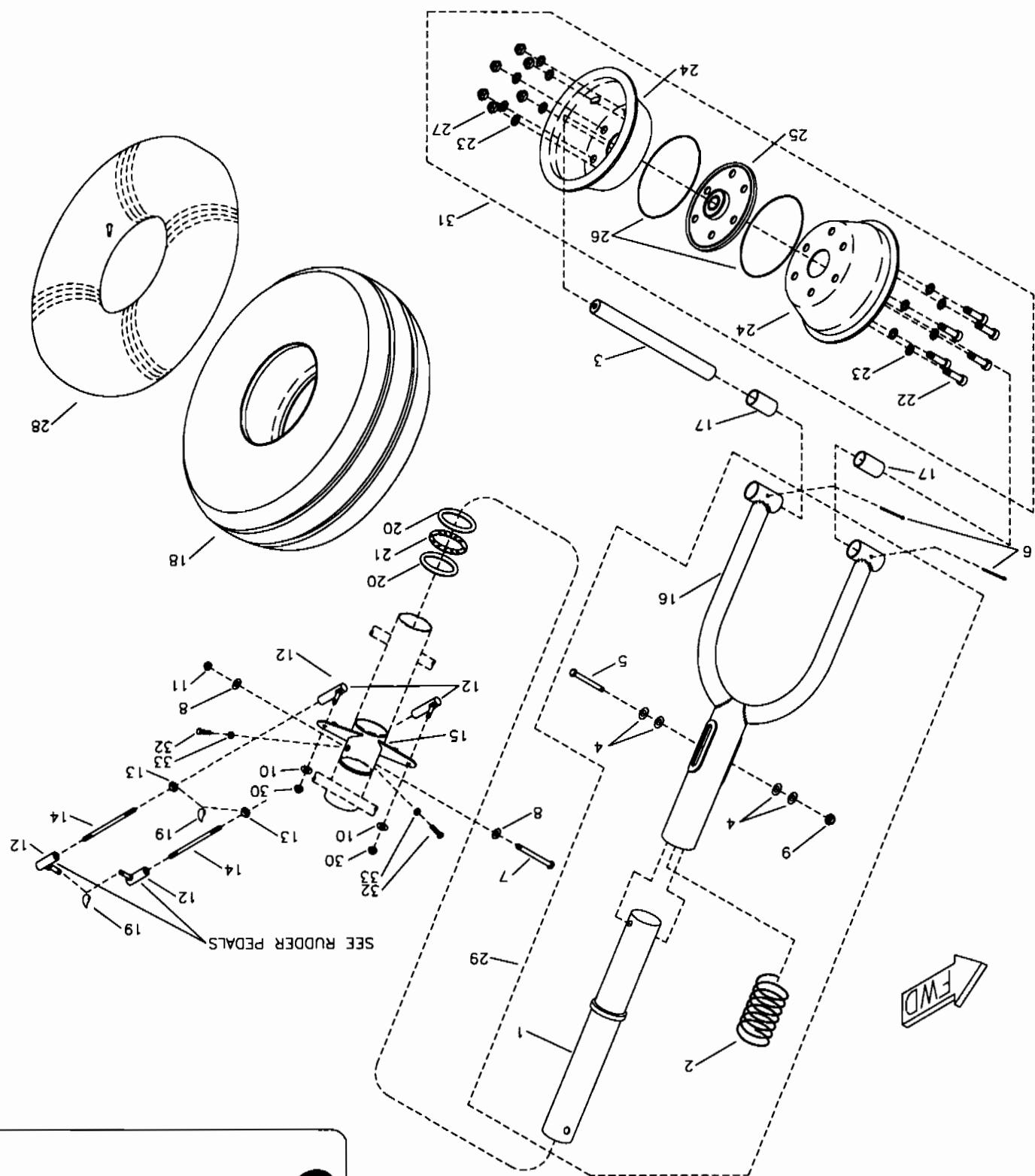
#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Nose Gear Strut *	NG-STRUT	1
2.	Spring *	10372	1
3.	Nose Gear Axle	KPNG0038	1
4.	1/4" Plastic Washer *	PW-4	4
5.	1/4" Bolt *	AN4-24A	1
6.	Large Cotter Pin	MS24665-285	2
7.	3/16" Bolt	AN3-20A	1
8.	3/16" Thin Washer	AN960-10L	2
9.	1/4" Shear Nut *	AN364-428A	1
10.	1/4" Thin Washer	AN960-416L	2
11.	3/16" Shear Nut	AN364-1032A	1
12.	Steering Linkage	NG-SL	4
13.	1/4" Plain Nut	AN345-416	2
14.	Steer Rod	KPNG0039	2
15.	Steer Horn	KPNG0035	1
16.	Fork-Tundra *	NG-FORK-12-T	1
17.	Wheel Bushing	NG-WB-T	2
18.	6" Tundra Tire	KSMG0002	1
19.	Loctite Blue	LOC-TITE	0
20.	Bearing Washer	TRA2435	2
21.	Thrust Bearing	NTA2435	1
22.	Socket Head Cap Screw **	KSNG0001-1	6
23.	Washer **	KSNG0001-2	12
24.	6" Hegar Nosewheel Rim Set	LG-NW-RIM	1
25.	Seal Plate **	KSNG0001-3	1
26.	O Ring **	KSNG0001-4	2
27.	Loc Nut **	KSNG0001-5	6
28.	6" Tundra Tube	KSMG0003	1
29.	Nose Gear Assembly - Tundra	KANG0007	1
30.	1/4" Shear Nut	AN364-428A	2
31.	Hegar Nosewheel Hub Kit	KSNG0001	1
32.	1/4" Plain Bolt	1/4X1 BOLT	2
33.	1/4" Plain Nut	AN345-416	2

*Supplied pre-assembled to KANG0007.

**Supplied in hub kit (KSNG0001).

S-12 AIRAILE

USA
Made in the



FUSELAGE ASSEMBLY
NOSE GEAR ASSEMBLY
WITH AERO-TRAINER TIRE

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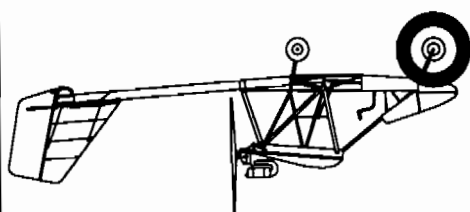
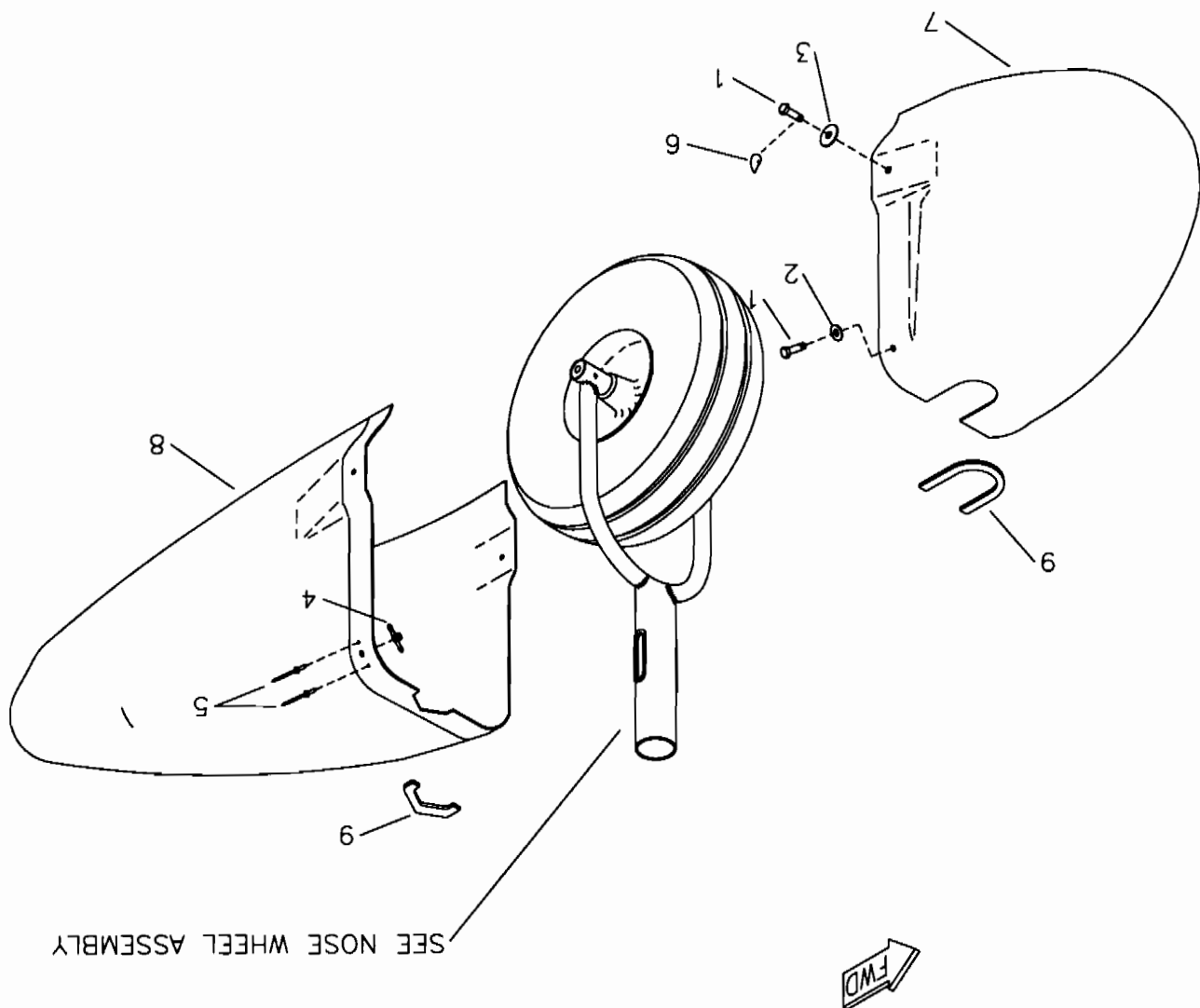
S-12XL AIRAILE - NOSE GEAR ASSEMBLY
AERO-TRAINER TIRES

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Nose Gear Strut *	NG-STRUT	1
2.	Spring *	10372	1
3.	Nose Gear Axle	KPNG0074	1
4.	1/4" Plastic Washer *	PW-4	4
5.	1/4" Bolt *	AN4-24A	1
6.	Large Cotter Pin	MS24665-285	2
7.	3/16" Bolt	AN3-20A	1
8.	3/16" Thin Washer	AN960-10L	2
9.	1/4" Shear Nut *	AN364-428A	1
10.	1/4" Thin Washer	AN960-416L	2
11.	3/16" Shear Nut	AN364-1032A	1
12.	Steering Linkage	NG-SL	4
13.	1/4" Plain Nut	AN345-416	2
14.	Steer Rod	KPNG0039	2
15.	Steer Horn	KPNG0035	1
16.	Fork *	KPNG0073	1
17.	Aluminum Bushing, 3/4" x .058 x X ***	KAAC0001	0
18.	Aero-Trainer Tire, 5"	KSMG0005	1
19.	Loctite Blue	LOC-TITE	0
20.	Bearing Washer	TRA2435	2
21.	Thrust Bearing	NTA2435	1
22.	Socket Head Cap Screw **	KSNG0001-1	6
23.	Washer **	KSNG0001-2	12
24.	5" Hegar Nosewheel Rim Set	LG-NW-RIM-5	1
25.	Seal Plate **	KSNG0001-3	1
26.	O Ring **	KSNG0001-4	2
27.	Loc Nut **	KSNG0001-5	6
28.	Aero-Trainer Tube, 5"	KSMG0007	1
29.	Nose Gear Assembly	KANG0012	1
30.	1/4" Shear Nut	AN364-428A	2
31.	Hegar Nosewheel Hub Kit	KSNG0001	1
32.	1/4" Plain Bolt	1/4X1 BOLT	2
33.	1/4" Plain Nut	AN345-416	2

*Supplied pre-assembled to KANG0012.

**Supplied in hub kit (KSNG0001).

***Builder must fabricate from raw stock.



FUSELAGE ASSEMBLY
NOSE GEAR WHEEL
PANT ASSEMBLY

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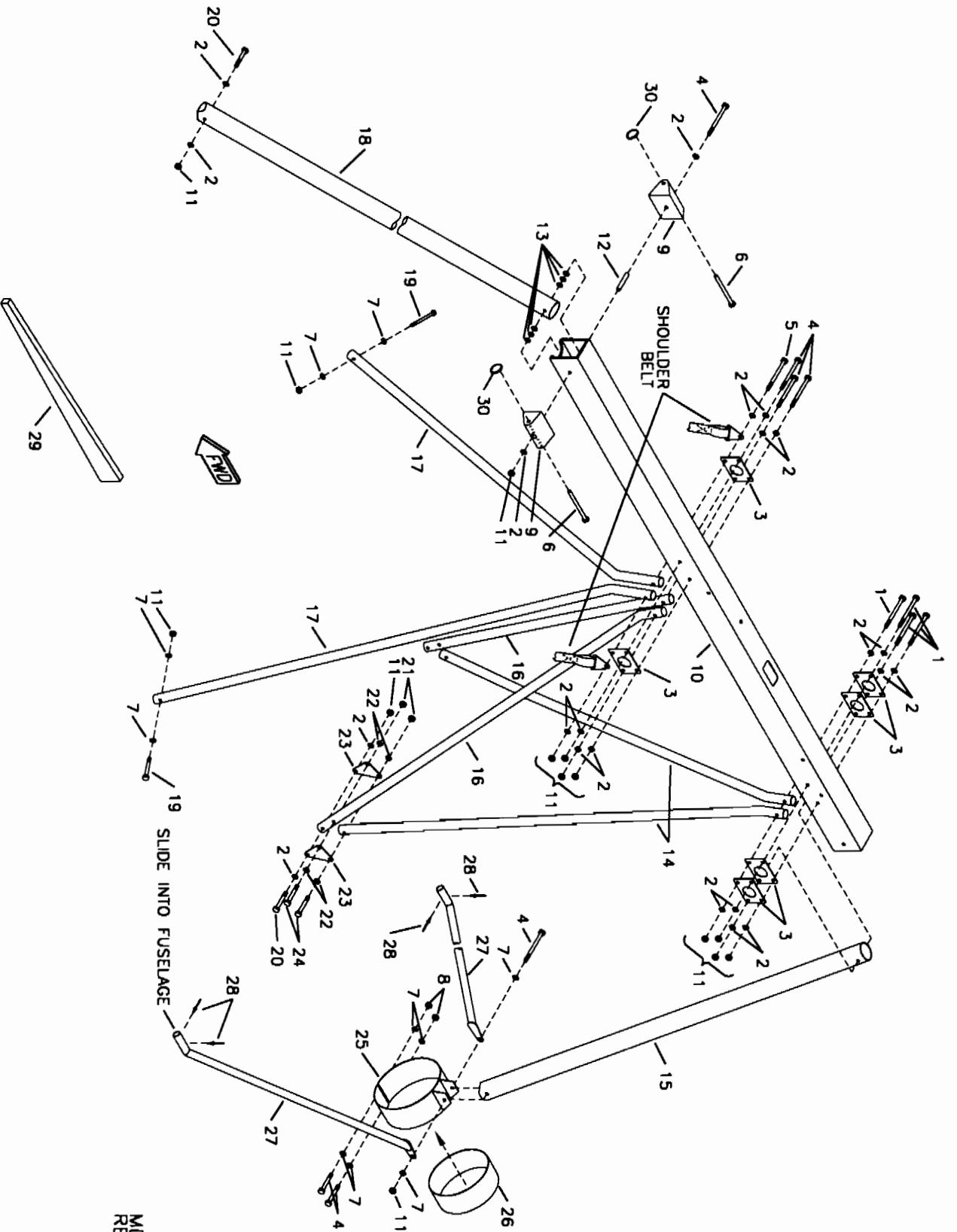
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#	Description	Part Number	Quantity
1.	3/16" Bolt	AN3-5A	4
2.	3/16" Thick Washer	AN960-10	2
3.	3/16" Large Wood Washer	AN970-3	2
4.	3/16" Nut Plate	K-1000-3	2
5.	3/32" Aluminum Pop Rivet	40APR1/8	4
6.	Loctite Blue	LOC-TITE	0
7.	Nose Wheel Pant, FWD	NWP-FWD	1
8.	Nose Wheel Pant, AFT	NWP-AFT	1
9.	Rubber Edging	X1011	12 in

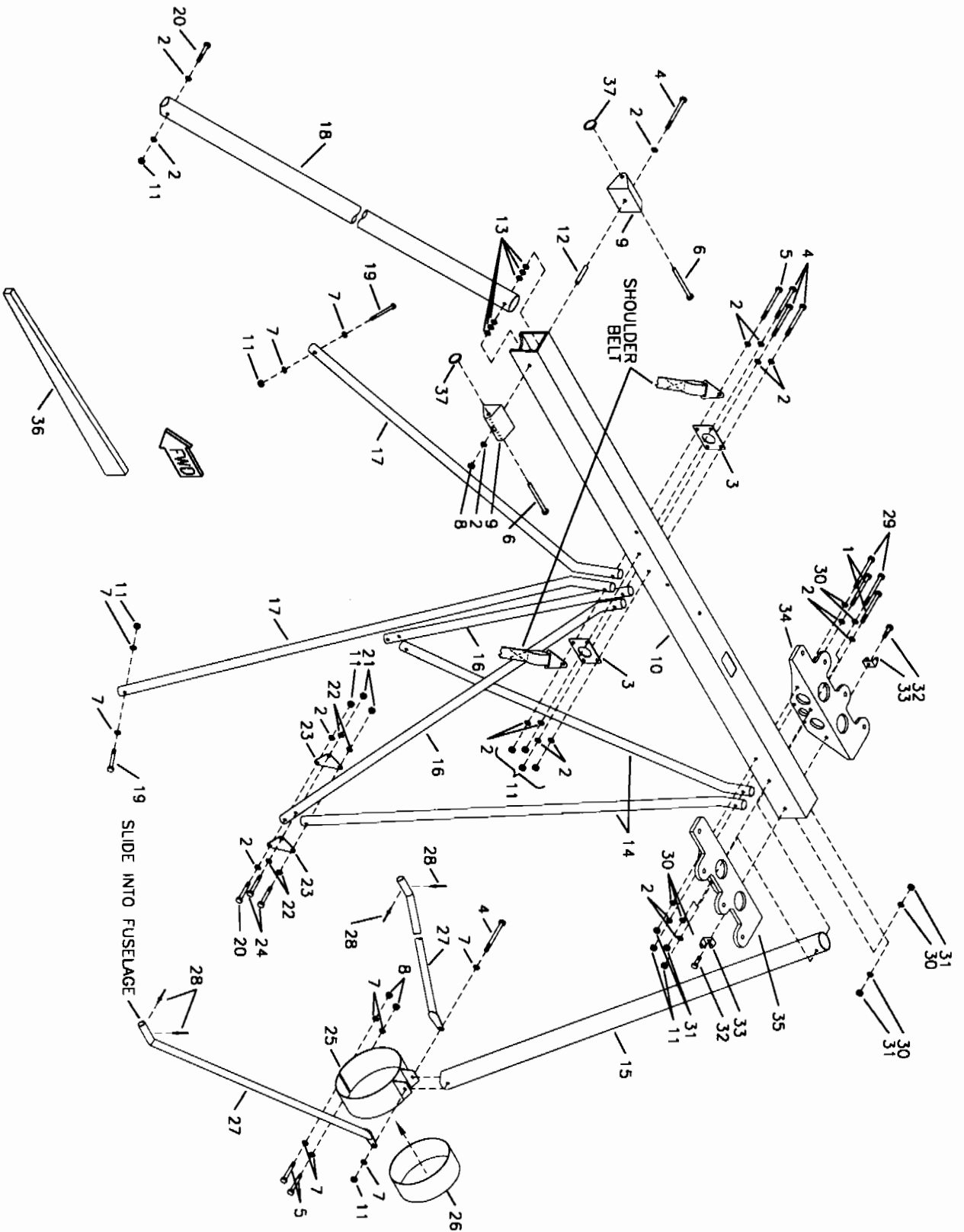


RAID S-12 AIRAILE SUPER STRUCTURE ASSEMBLY

MD1923
REV. A

S-12XL AIRAILE - SUPER STRUCTURE ASSEMBLY - 503/582

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	1/4" Bolt	AN4-30A	4
2.	1/4" Thick Washer	AN960-416	24
3.	Keel Plate	K-KP	6
4.	1/4" Bolt	AN4-26A	7
5.	1/4" Bolt	AN4-27A	1
6.	3/8" Clevis Pin	MS20392-5C97	2
7.	1/4" Thin Washer	AN960-416L	12
8.	1/4" Tensile Nut	AN365-428A	2
9.	Bracket	W-BRKT	2
10.	Keel	KPFU0043	1
11.	1/4" Shear Nut	AN364-428A	15
12.	Spacer Bushing, 3/8" x .058 x 2"	SB-3/8X2	1
13.	3/8" Thick Washer	AN960-616	6
14.	AFT Cabane, LH	KPFU0048-LH	1
14.	AFT Cabane, RH	KPFU0048-RH	1
15.	AFT Strut	KPFU0045	1
16.	Middle Cabane, LH	KPFU0047-LH	1
16.	Middle Cabane, RH	KPFU0047-RH	1
17.	Forward Cabane, LH	KPFU0046-LH	1
17.	Forward Cabane, RH	KPFU0046-RH	1
18.	Forward Strut	KPFU0044	1
19.	1/4" Bolt	AN4-15A	2
20.	1/4" Bolt	AN4-17A	3
21.	3/16" Shear Nut	AN364-1032A	4
22.	3/16" Thin Washer	AN960-10L	8
23.	Triangle Plate	AUF-13	4
24.	3/16" Bolt	AN3-15A	4
25.	Tail Boom Bracket	KPFU0035	1
26.	Plastic Strip	K-PS	1
27.	Tail Boom - Brace Tube	KPFU0049	2
28.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-42	4
29.	Keel Template	KPFU0070	1
30.	Loc Ring	RL 27 1/4	2

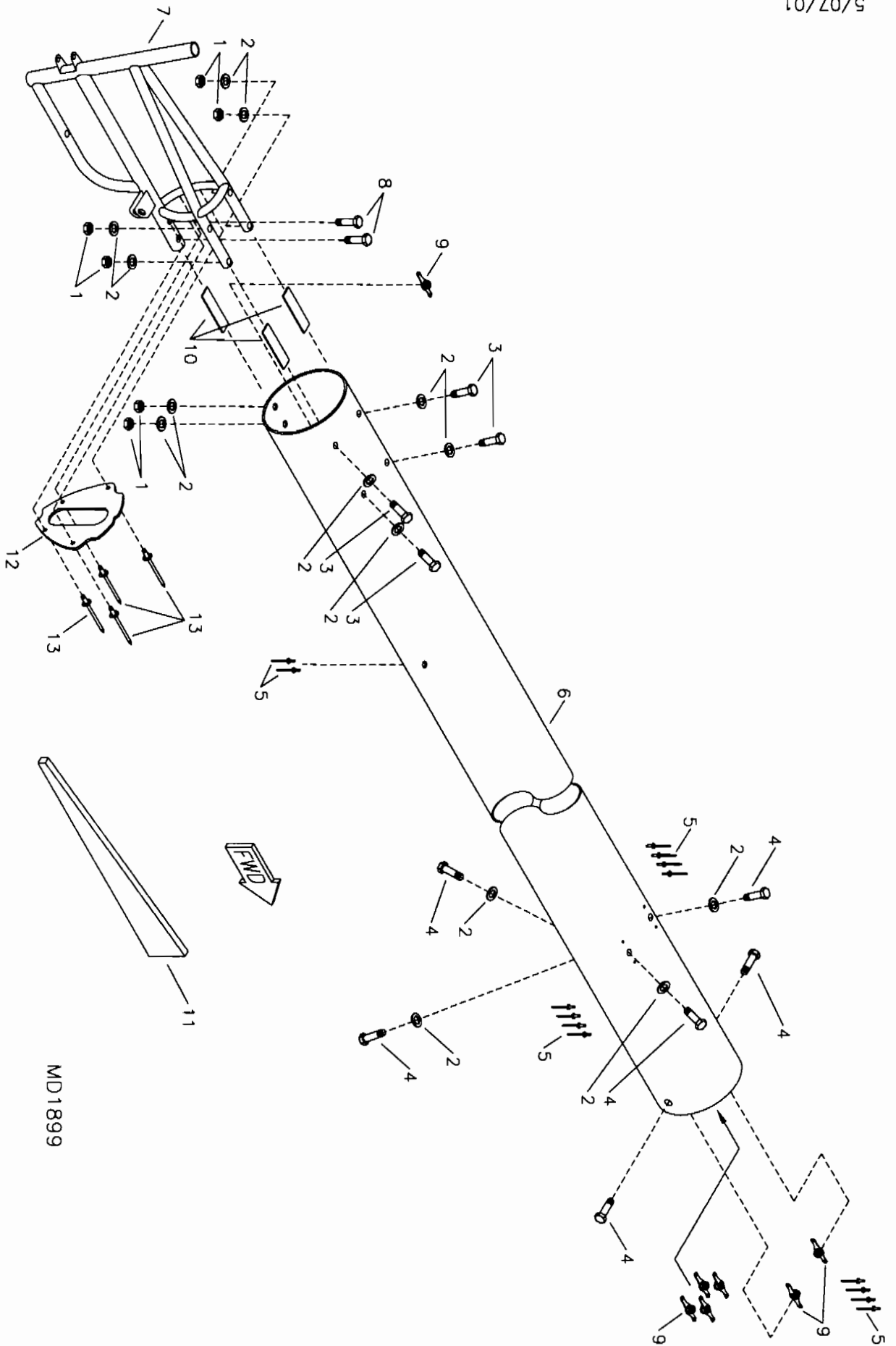


MD1924
REV. B

S-12 AIRAILLE SUPER STRUCTURE ASSEMBLY - 912 ENGINE

S-12XL AIRAILE - SUPER STRUCTURE ASSEMBLY - 912

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	1/4" Bolt	AN4-32A	2
2.	1/4" Thick Washer	AN960-416	20
3.	Keel Plate	K-KP	2
4.	1/4" Bolt	AN4-26A	5
5.	1/4" Bolt	AN4-27A	3
6.	3/8" Clevis Pin	MS20392-5C97	2
7.	1/4" Thin Washer	AN960-416L	12
8.	1/4" Tensile Nut	AN365-428A	3
9.	Bracket	W-BRKT	2
10.	Keel	KPFU0043	1
11.	1/4" Shear Nut	AN364-428A	13
12.	3/8" x .058 x 2" Bushing	SB-3/8X2	1
13.	3/8" Thick Washer	AN960-616	6
14.	AFT Cabane, LH	KPFU0048-LH	1
14.	AFT Cabane, RH	KPFU0048-RH	1
15.	AFT Strut	KPFU0045	1
16.	Middle Cabane, LH	KPFU0047-LH	1
16.	Middle Cabane, RH	KPFU0047-RH	1
17.	Forward Cabane, LH	KPFU0046-LH	1
17.	Forward Cabane, RH	KPFU0046-RH	1
18.	Forward Strut	KPFU0044	1
19.	1/4" Bolt	AN4-15A	2
20.	1/4" Bolt	AN4-17A	3
21.	3/16" Shear Nut	AN364-1032A	4
22.	3/16" Thin Washer	AN960-10L	8
23.	Triangle Plate	AUF-13	4
24.	3/16" Bolt	AN3-15A	4
25.	Tail Boom Bracket	KPFU0035	1
26.	Plastic Strip	K-PS	1
27.	Tail Boom - Brace Tube	KPFU0049	2
28.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-42	4
29.	5/16" Bolt	AN5-32A	2
30.	5/16" Thin Washer	AN960-516L	6
31.	5/16" Tensile Nut	AN365-524A	4
32.	5/16" Bolt	AN5-10A	2
33.	Stainless Steel U Bracket	SU-118	2
34.	912 Engine Mount Angle, RH	KPPW0035-R	1
35.	912 Engine Mount Angle, LH	KPPW0035-L	1
36.	Keel Template	KPFU0070	1
37.	Loc Ring	RL 27 1/4	2

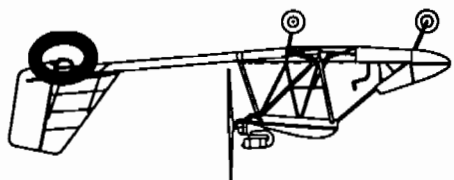
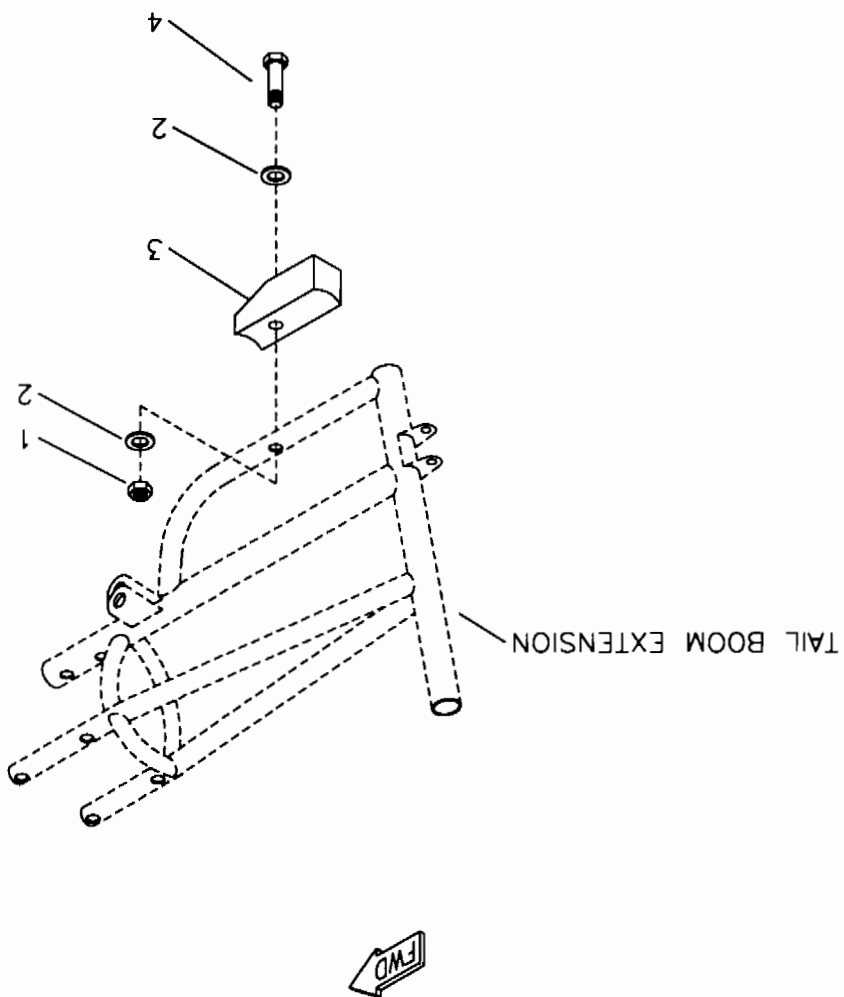


MD1899

RRR S-12 AIRAIL TAIL BOOM ASSEMBLY

S-12XL AIRAILE - TAIL BOOM ASSEMBLY

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	3/16" Shear Nut	AN364-1032A	6
2.	3/16" Thin Washer	AN960-10L	14
3.	3/16" Bolt	AN3-10A	4
4.	3/16" Bolt	AN3-4A	6
5.	3/32" Aluminum Pop Rivet	40APR1/8	14
6.	Tail Boom	KAFU0016	1
7.	Tail Boom Extension	TB-EXT	1
8.	3/16" Bolt	AN3-12A	2
9.	3/16" Nut Plate	K-1000-3	7
10.	Tape	KSAC0003	12 in
11.	Boom Template	KPFU0069	1
12.	Elevator Push Pull Tube Guide	KPFU0329	1
13.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-44	4



SKID BLOCK INSTALLATION

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SKID BLOCK INSTALLATION

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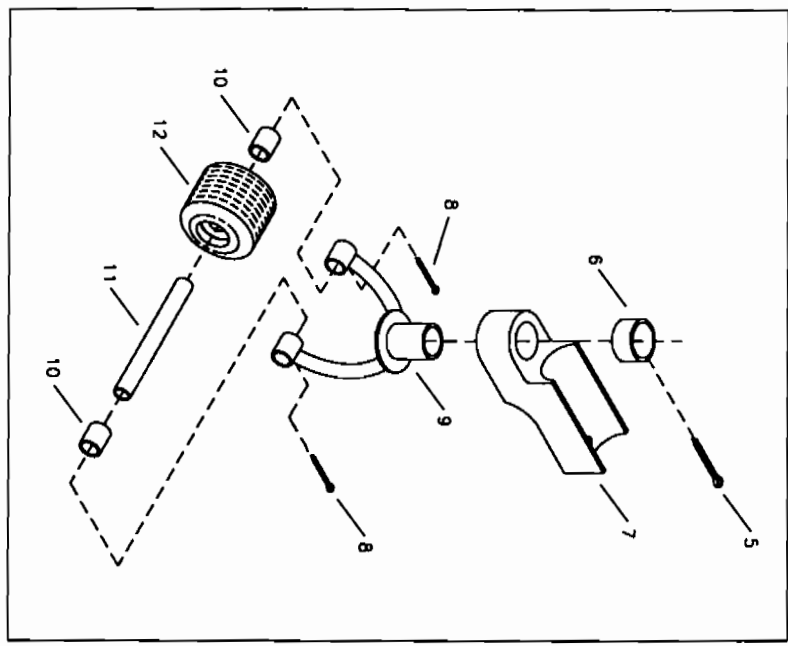
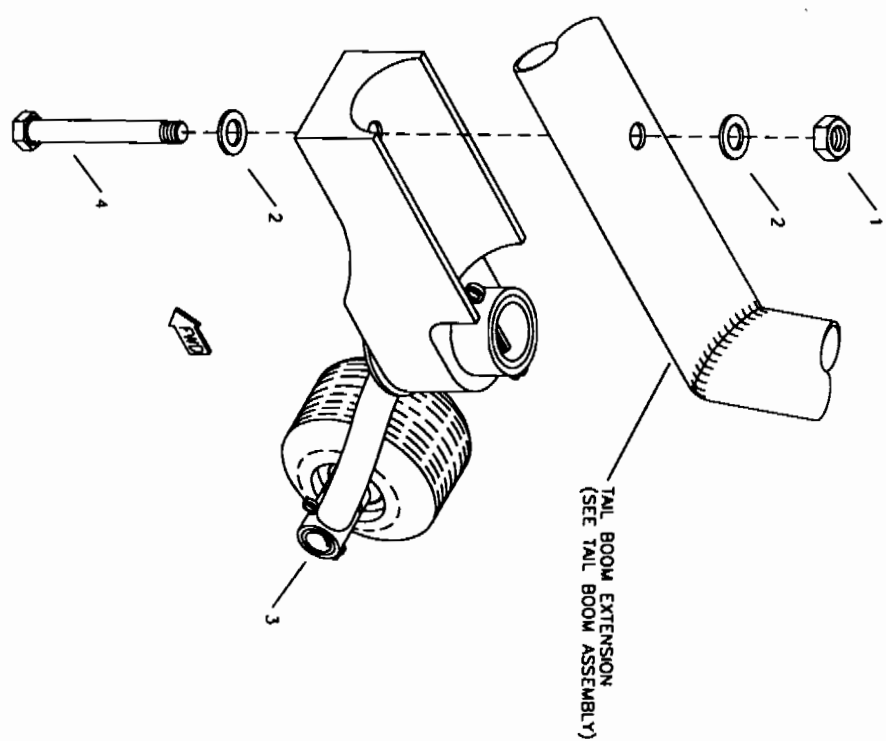
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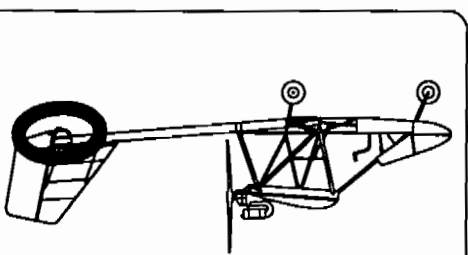
#	Description	Part Number	Quantity
1.	3/16" Shear Nut	AN364-1032A	1
2.	3/16" Thin Washer	AN960-10L	2
3.	Skid Block	TB-SB	1
4.	3/16" Bolt	AN3-20A	1

RPM S
 S-12 AIRAILE

Made in the
 USA



TAILWHEEL ASSEMBLY DETAIL



TAILWHEEL INSTALLATION

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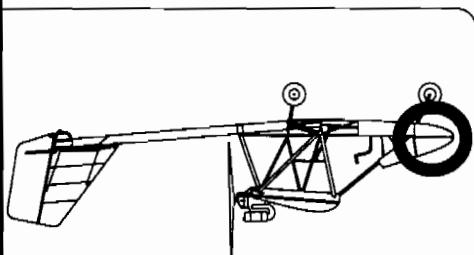
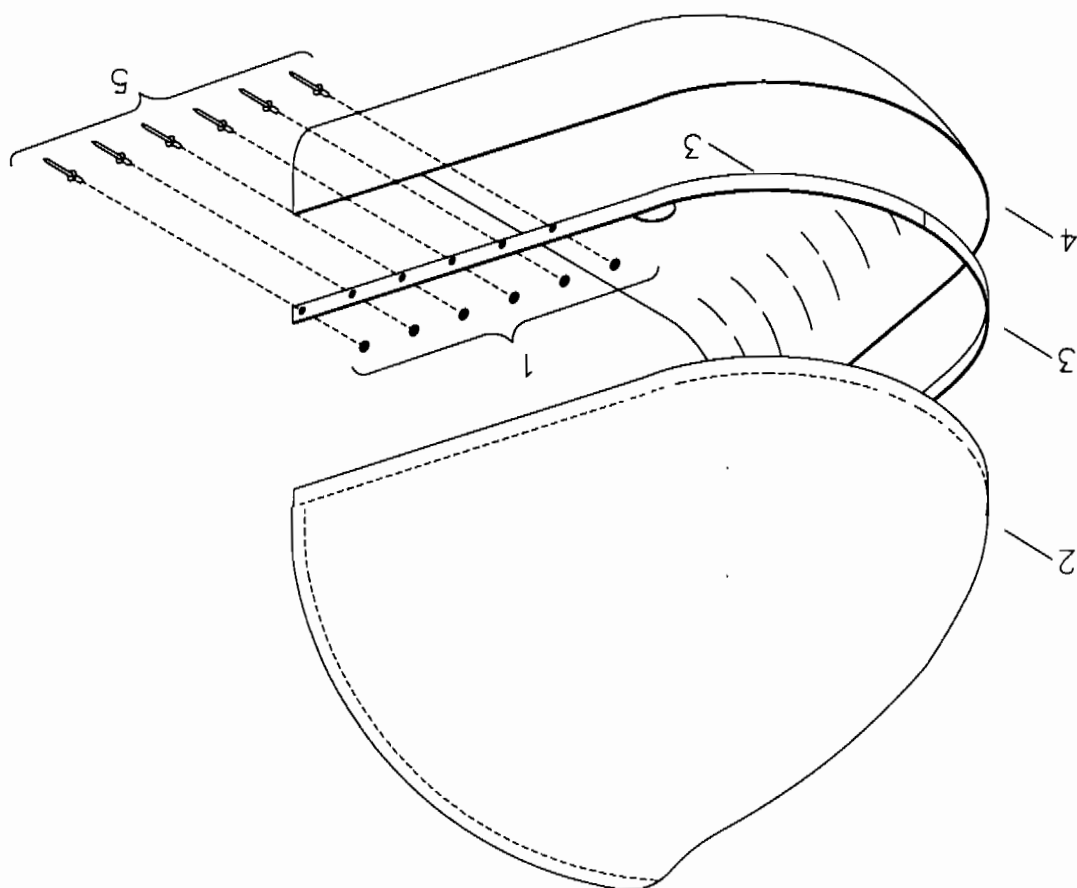
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#	Description	Part Number	Quantity
1.	3/16" Shear Nut	AN364-1032A	1
2.	3/16" Thin Washer	AN960-10L	2
3.	Tailwheel Assembly	KATG0003	1
4.	3/16" Bolt	AN3-17A	1
5.	Large Cotter Pin*	MS24665-287	1
6.	Bushing*	KPAC0035	1
7.	Tailwheel Swivel Block*	KPTG0002	1
8.	Small Cotter Pin*	MS24665-134	2
9.	Tailwheel Fork*	KPTG0001	1
10.	Bushing*	KPAC0034	2
11.	Tailwheel-Axle*	KPTG0008	1
12.	Tailwheel*	KSTG0001	1

*Comes pre-assembled to KATG0003.



FUSELAGE ENCLOSURE
- NOSE POD ASSEMBLY
- MINI-POD

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FUSELAGE ENCLOSURE

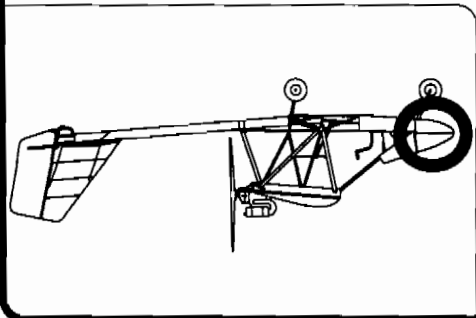
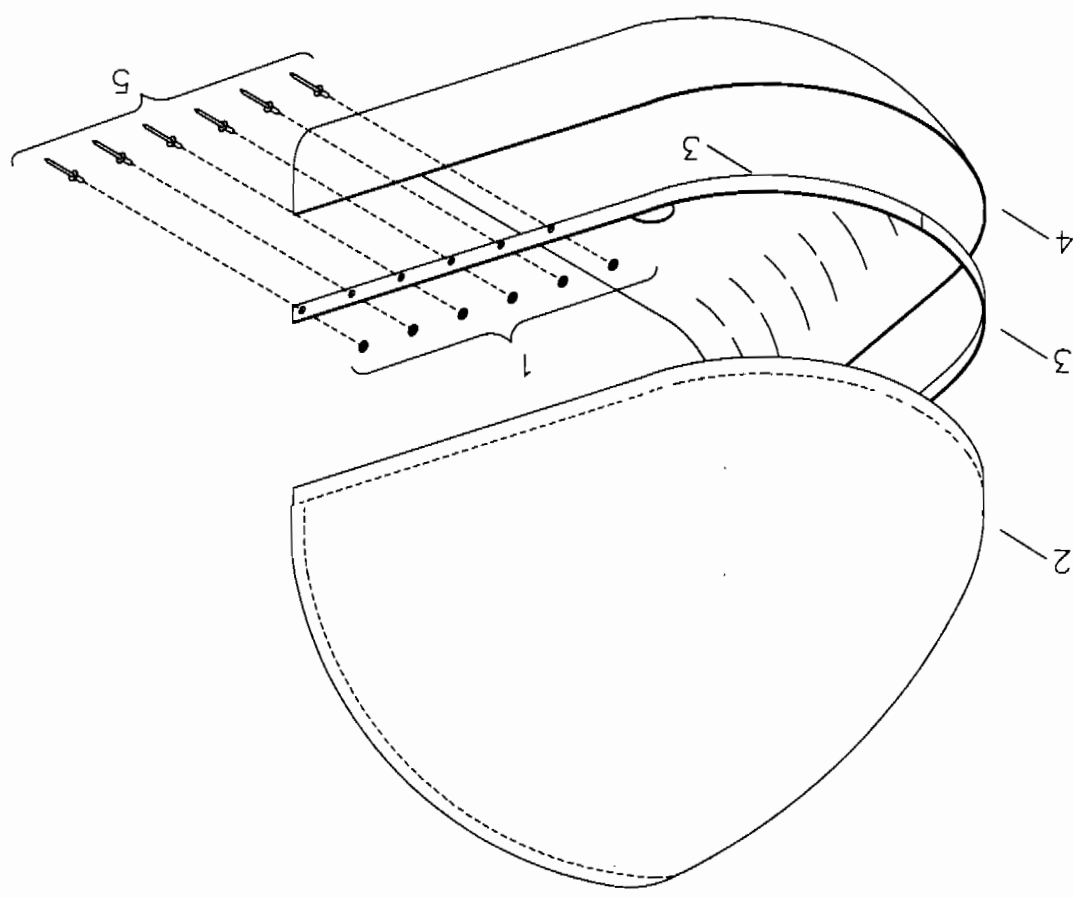
Detail:

NOSE POD ASSEMBLY - MINI POD

Page:
02-02

Date:
8/15/96

#	Description	Part Number	Quantity
1.	1/8" Brass Washer	AN960-B4	24
2.	Nose Cone Top	PP-NCTOP	1
3.	Nose Cone Mating Strip	PP-NCMS	2
4.	Nose Cone Bottom	PP-NCBOT	1
5.	1/8" Aluminum Pop Rivet	1691-0410	24



DETAIL:
NOSE POD ASSEMBLY
- PARTIAL OR FULL ENCLOSURE

FUSELAGE ENCLOSURE

SECTION:

Section:

FUSELAGE ENCLOSURE

Detail:

**NOSE POD ASSEMBLY
WITH PARTIAL OR FULL ENCLOSURE**

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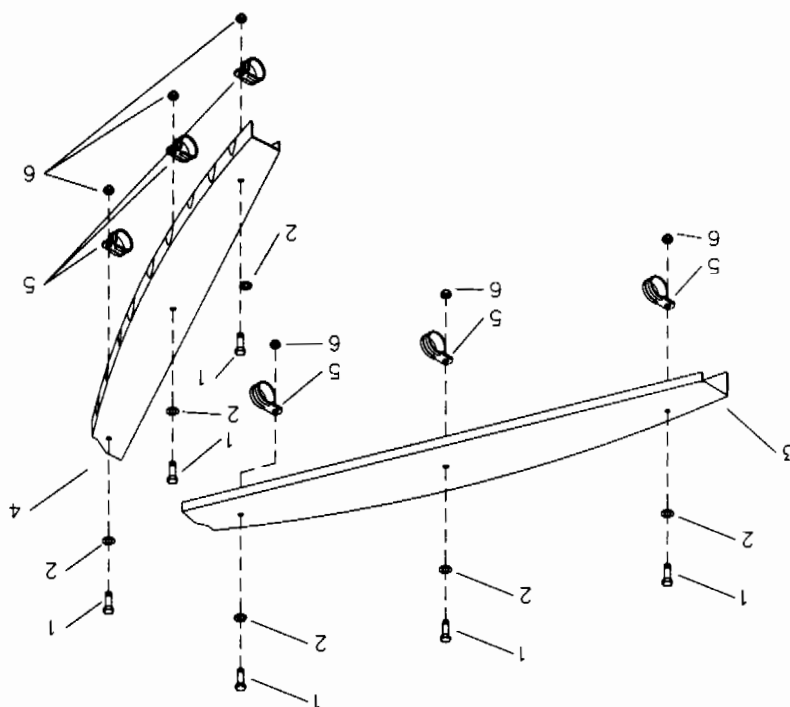
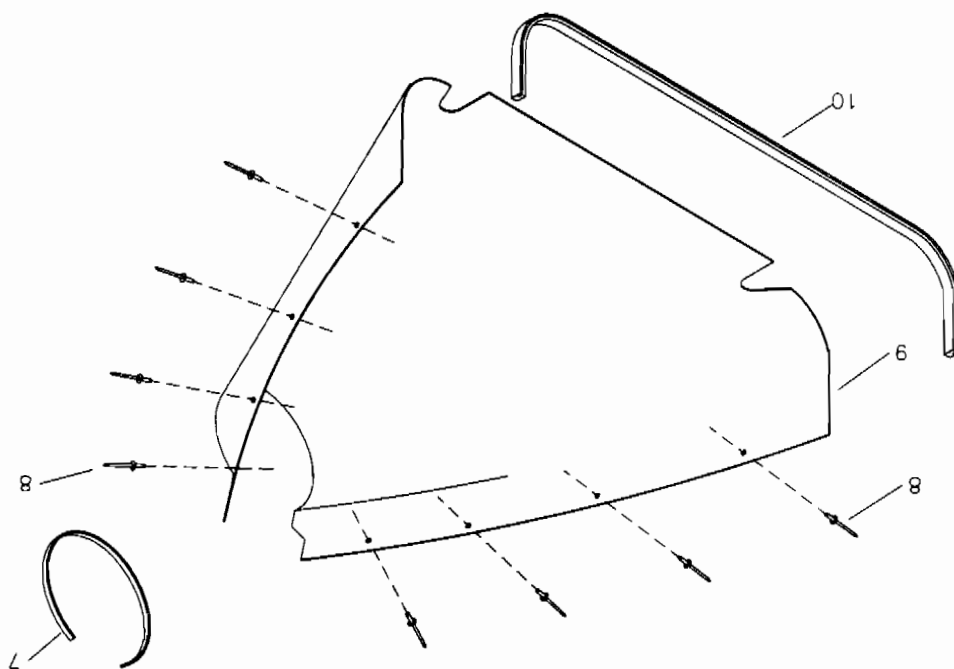
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8/15/96

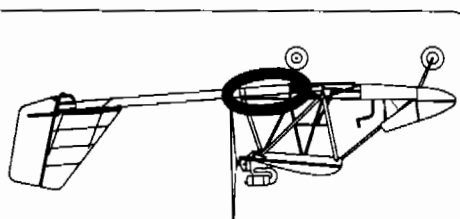
#	Description	Part Number	Quantity
1.	1/8" Brass Washer	AN960-B4	24
2.	Nose Cone Top	KPFU0107	1
3.	Nose Cone Mating Strip	PP-NCMS	2
4.	Nose Cone Bottom	PP-NCBOT	1
5.	1/8" Aluminum Pop Rivet	1691-0410	24

RPM S-12 AIRAILE

Made in the USA



FWD



#4 BELLY PAN INSTALLATION

FUSELAGE ENCLOSURE

DETAIL

SECTION

Section:**FUSELAGE ENCLOSURE****Detail:****#4 BELLY PAN INSTALLATION****Page:**

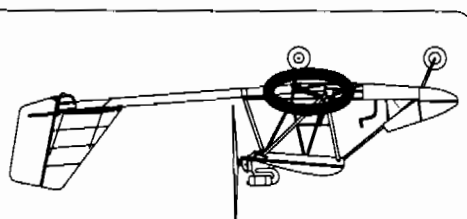
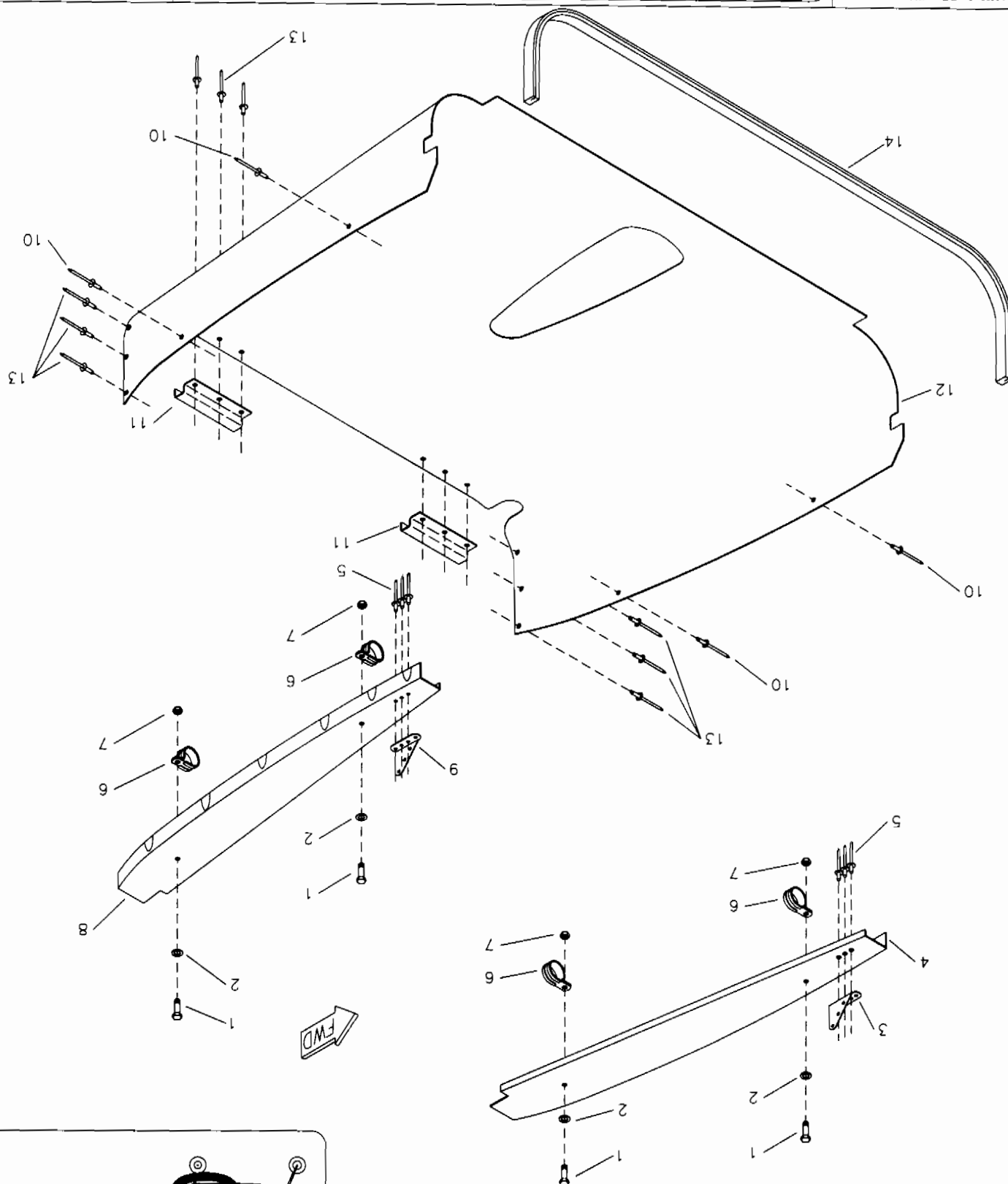
02-06

Date:

1/21/98

#	Description	Part Number	Quantity
1.	3/16" Bolt	AN3-3A	6
2.	3/16" Thick Washer	AN960-10	6
3.	#4 Belly Pan Former - RH	KPFU0085-R	1
4.	#4 Belly Pan Former - LH	KPFU0085-L	1
5.	5/8" Cushioned Tube Clamp	MS21919-DG10	6
6.	3/16" Shear Nut	AN364-1032A	6
7.	Rubber Edging	X1011	13 in
8.	3/32" Aluminum Pop Rivet	40APR1/8	8
9.	#4 Belly Pan	KPFU0095	1
10.	Foam Strip, 3/16" x 3/8" x X *	KAAC0001	0

*Builder cuts from raw stock.



#3 BELLY PAN INSTALLATION

FUSELAGE ENCLOSURE

DETAIL:

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Section:**FUSELAGE ENCLOSURE****Detail:****#3 BELLY PAN INSTALLATION****Page:**

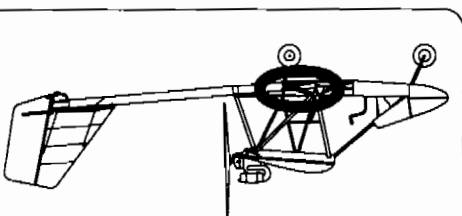
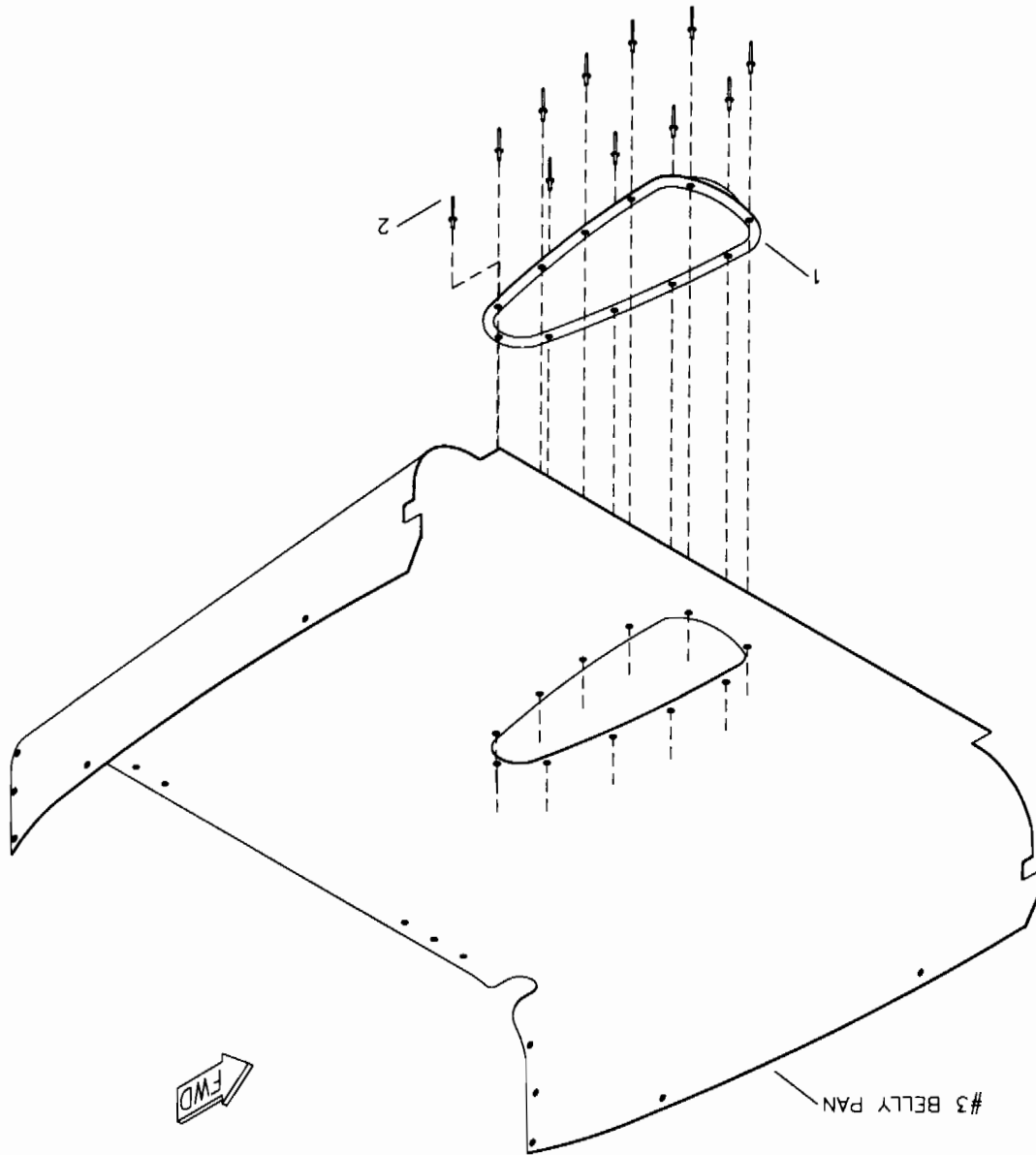
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1/21/98

#	Description	Part Number	Quantity
1	3/16" Bolt	AN3-3A	4
2	3/16" Thick Washer	AN960-10	4
3	Gusset - RH	KPAC0065-R	1
4	#3 Belly Pan Former - RH	KPFU0084-R	1
5	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-41	6
6	5/8" Cushioned Tube Clamp	MS21919-DG10	4
7	3/16" Shear Nut	AN364-1032A	4
8	#3 Belly Pan Former - LH	KPFU0084-L	1
9	Gusset - LH	KPAC0065-L	1
10	3/32" Aluminum Pop Rivet	40APR1/8	4
11	Z Strip	KPAC0067	2
12	#3 Belly Pan	KPFU0096	1
13	1/8" Aluminum Pop Rivet - Avex	1691-0410	14
14	Foam Strip, 3/16" x 3/8" x X *	KAAC0001	0

*Builder cuts from raw stock.



BOOM SEAL INSTALLATION

FUSELAGE ENCLOSURE

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FUSELAGE ENCLOSURE

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BOOM SEAL INSTALLATION

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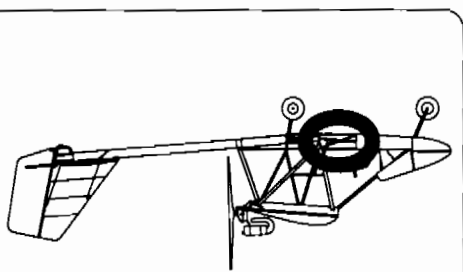
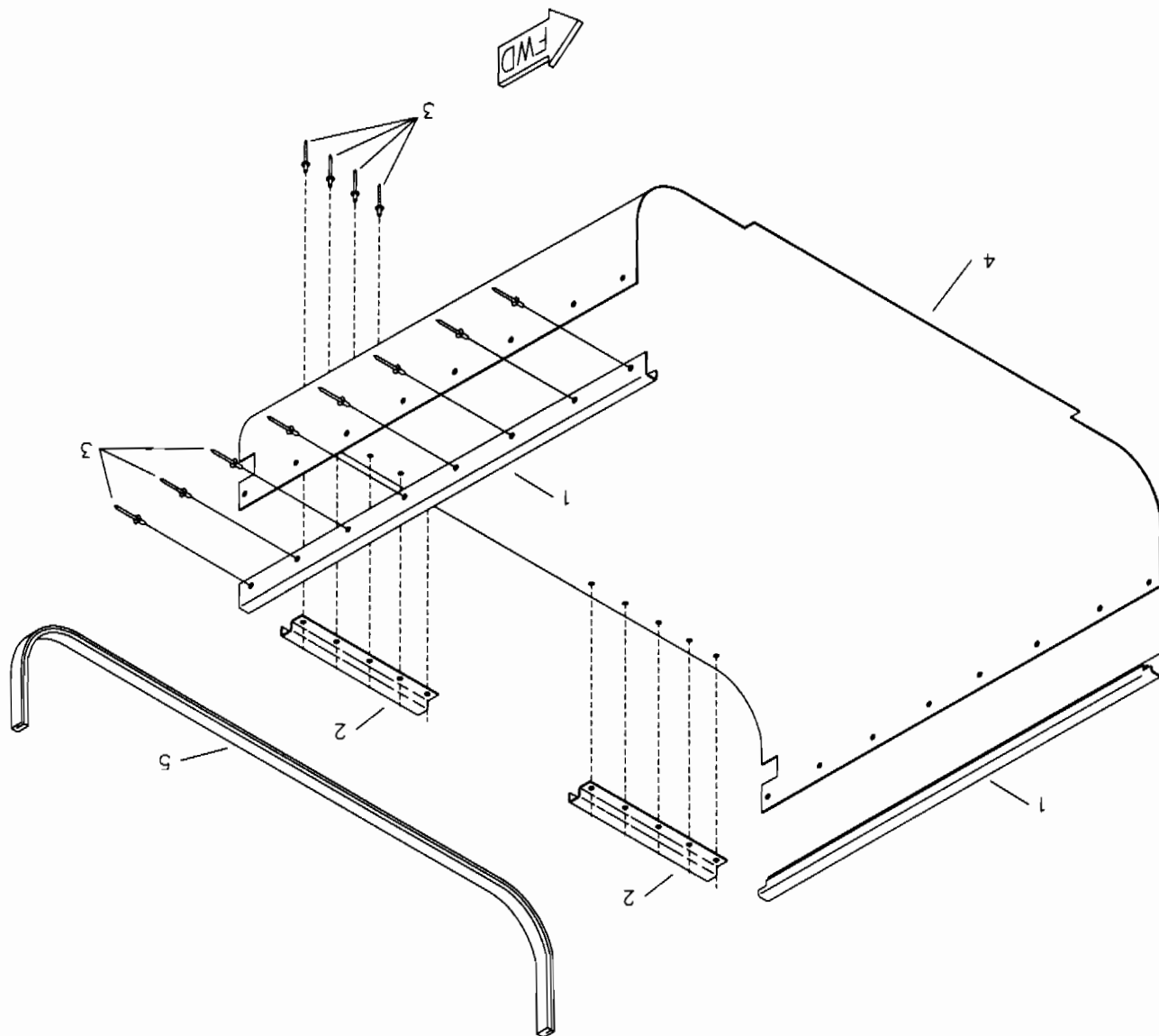
#	Description	Part Number	Quantity
1.	Radiator/Boom Seal*	KPPW0049	1
2.	1/8" Aluminum Pop Rivet	1691-0410	12

*This part is called out & hardware is supplied on the cooling system drawing for 582/912.

RANS, Inc.
S-12 Airaile

dBase Page #:

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#2 BELLY PAN INSTALLATION

FUSELAGE ENCLOSURE

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8/15/96

#	Description	Part Number	Quantity
1.	Top Channel, LH	KPFU0060-LH	1
1.	Top Channel, RH	KPFU0060-RH	1
2.	Z Strip	KPAC0039	2
3.	1/8" Aluminum Pop Rivet	1691-0410	26
4.	#2 Belly Pan	KPFU0061	1
5.	Foam Strip, 3/16" *	KAAC0001	6 ft

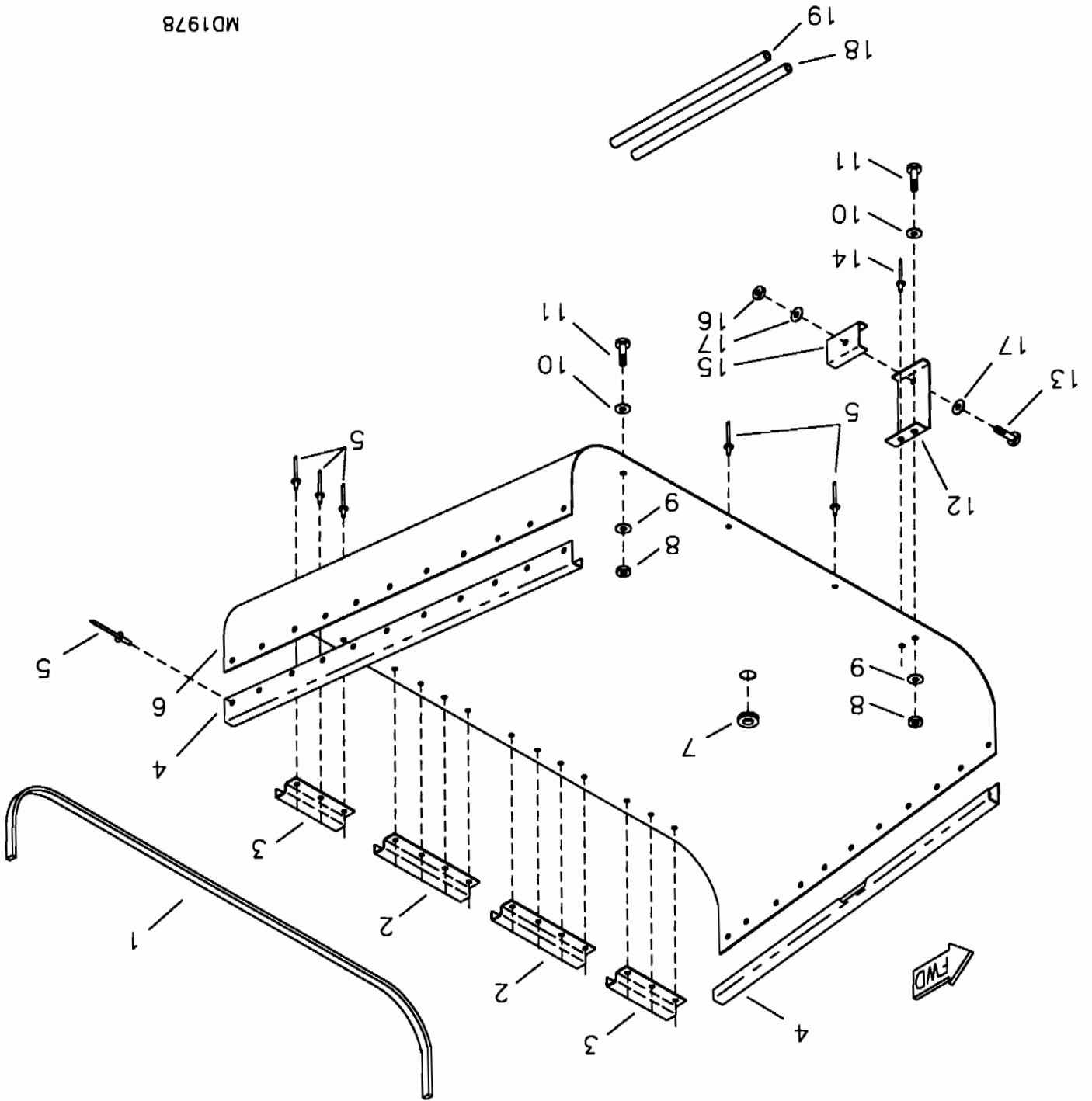
*Builder cuts from raw stock.

RANS, Inc.
S-12 Airaile**dBase Page #:**

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RAMP S-12 AIRAILE #1 BELLY PAN INSTALLATION

MD1978



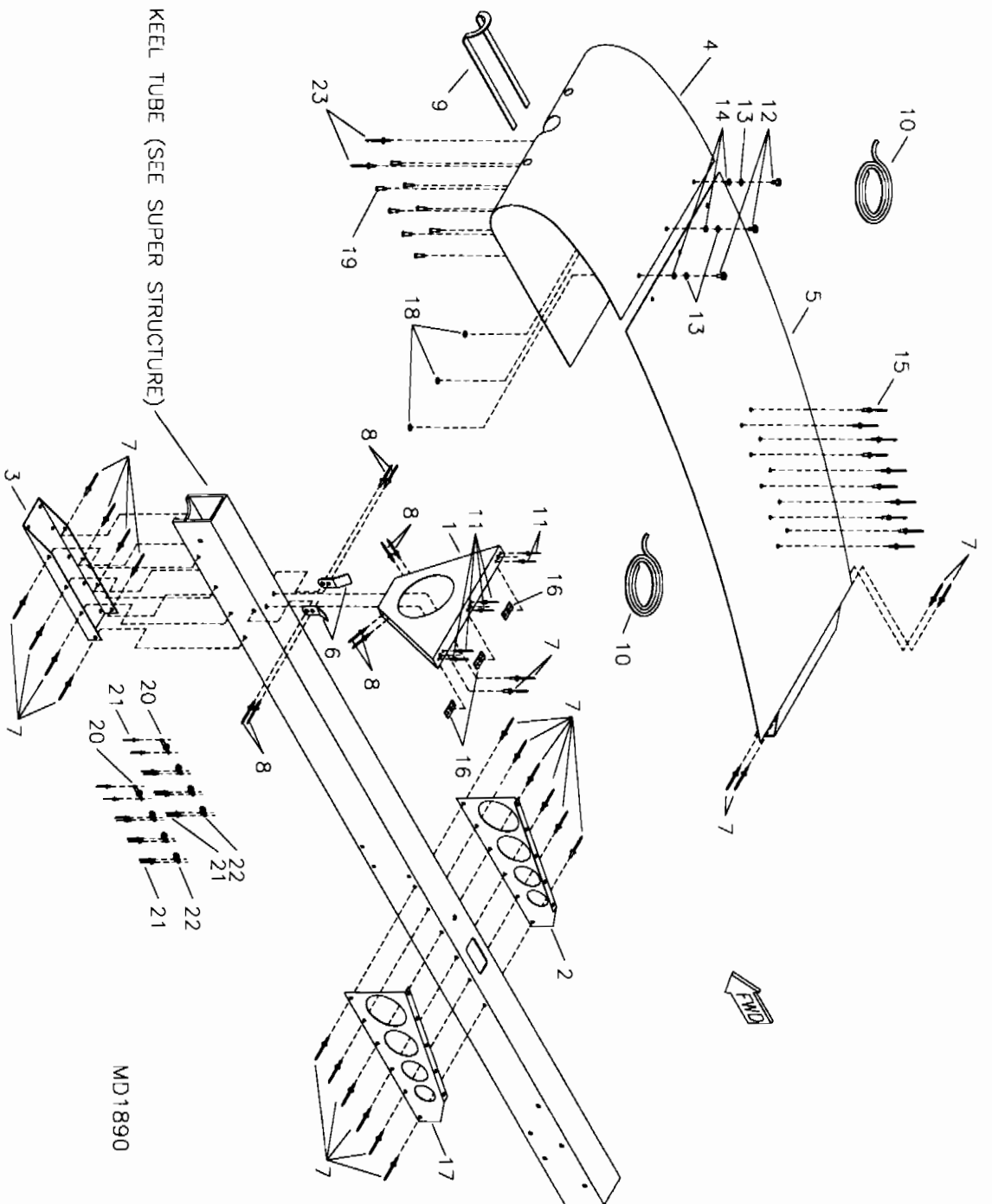
S-12XL AIRAILE - #1 BELLY PAN INSTALLATION

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Foam Strip, 3/16" *	WS-FS(KAAC0001)	6 ft
2.	8" Z Strip	PP-8Z	2
3.	Z Strip	KPAC0040	2
4.	Top Channel, LH	KPFU0062-LH	1
4.	Top Channel, RH	KPFU0062-RH	1
5.	1/8" Aluminum Pop Rivet - Avex	1691-0410	38
6.	#1 Belly Pan	KPFU0063	1
7.	Rubber Grommet	MS35489-17	1
8.	3/16" Shear Nut **	AN364-1032A	0
9.	3/16" Large Washer **	AN970-3	0
10.	3/16" Thick Washer **	AN960-10	0
11.	3/16" Bolt **	AN3-12A	0
12.	Static/Pitot Mount	IP-SPM	1
13.	3/16" Bolt	AN3-5A	1
14.	3/16" Aluminum Pop Rivet - Cherry Q	AAPQ-62	1
15.	Static/Pitot Mount Clamp	IP-SPMC	1
16.	3/16" Shear Nut	AN364-1032A	1
17.	3/16" Thick Washer	AN960-10	2
18.	Static Tube	W-ST	1
19.	Pitot Tube ***	W-ST	0

*Builder cuts from raw stock.

**Referenced from floorboard assembly.

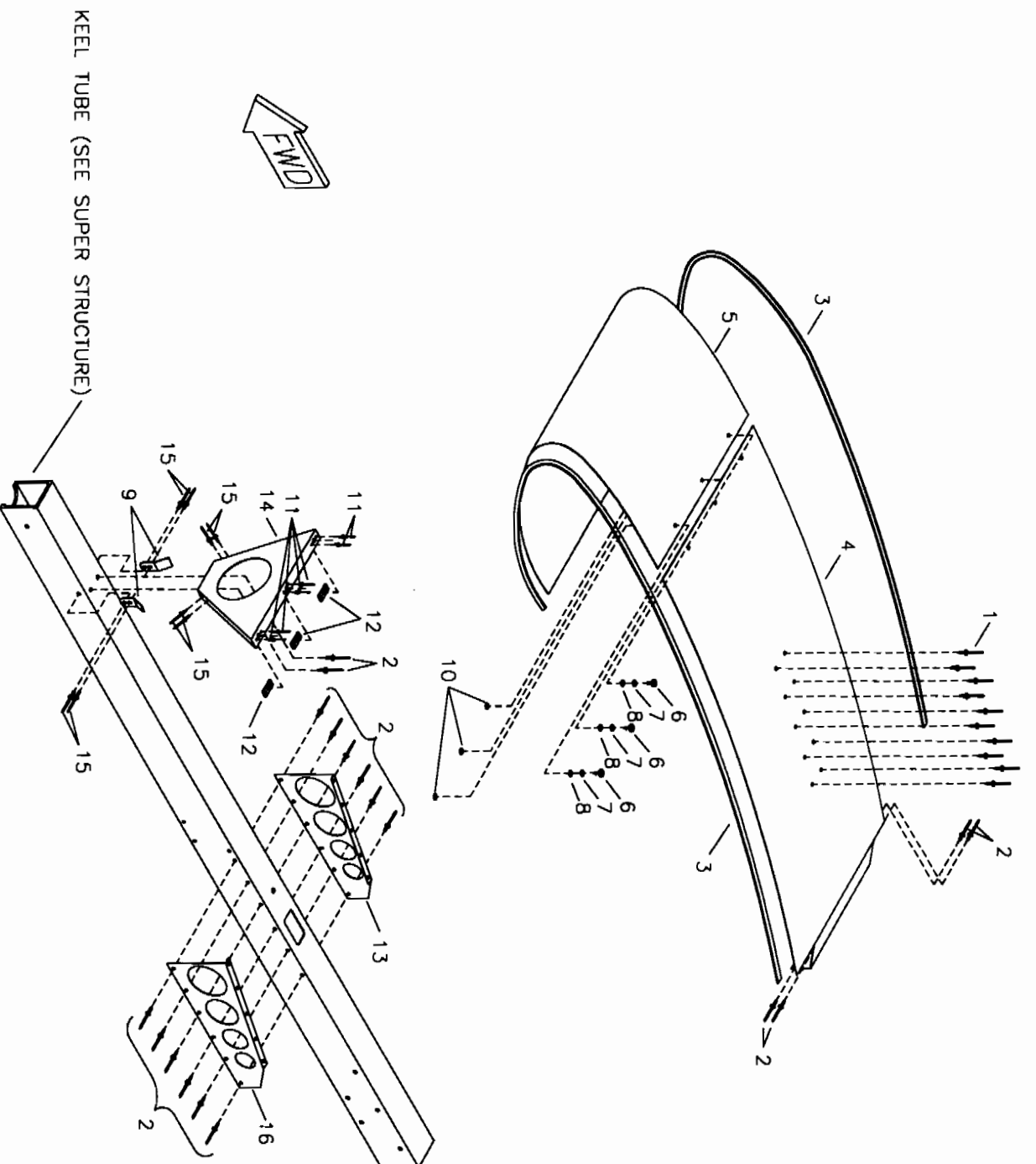
***Builder makes pitot tube by cutting static tube in half.



RRM S-12 AIRAILE
CENTER COVER ASSEMBLY WITH MINI-POD
STANDARD DACRON COVERING

S-12XL AIRAILE - CENTER COVER ASSEMBLY
WITH MINI-POD - STANDARD DACRON COVERING

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Center Cover - FWD Mount	KPFU0038	1
2.	Center Cover AFT Mount, RH	KPFU0039-R	1
3.	Center Cover Bottom Mount	KPFU0040	1
4.	Center Cover Forward Wrap	KPFU0041	1
5.	Center Cover - AFT Wrap	KPFU0042	1
6.	Reinforcement Tang	KPAC0041	2
7.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-44	24
8.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-42	8
9.	Small Rubber Edging	8510K11	24 in
10.	Rubber Edging	X1011	120 in
11.	3/32" Aluminum Pop Rivet	40APR1/4	6
12.	1/4 Turn Stud	#200	3
13.	Rubber Washer	#201	3
14.	Wear Washer Nylon	#103	3
15.	1/8" Aluminum Pop Rivet - Avex	1691-0410	12
16.	1/4 Turn Receptacle	#302	3
17.	Center Cover AFT Mount, LH	KPFU0039-L	1
18.	Snap Ring	#101	3
19.	8-32 Machine Bolt	AN526-832R6	8
20.	8-32 Nut Plate	MS21047-08	6
21.	3/32" Aluminum Pop Rivet	40APR1/8	16
22.	8-32 Single Ear Nut Plate	MS21051-08	2
23.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-41	2

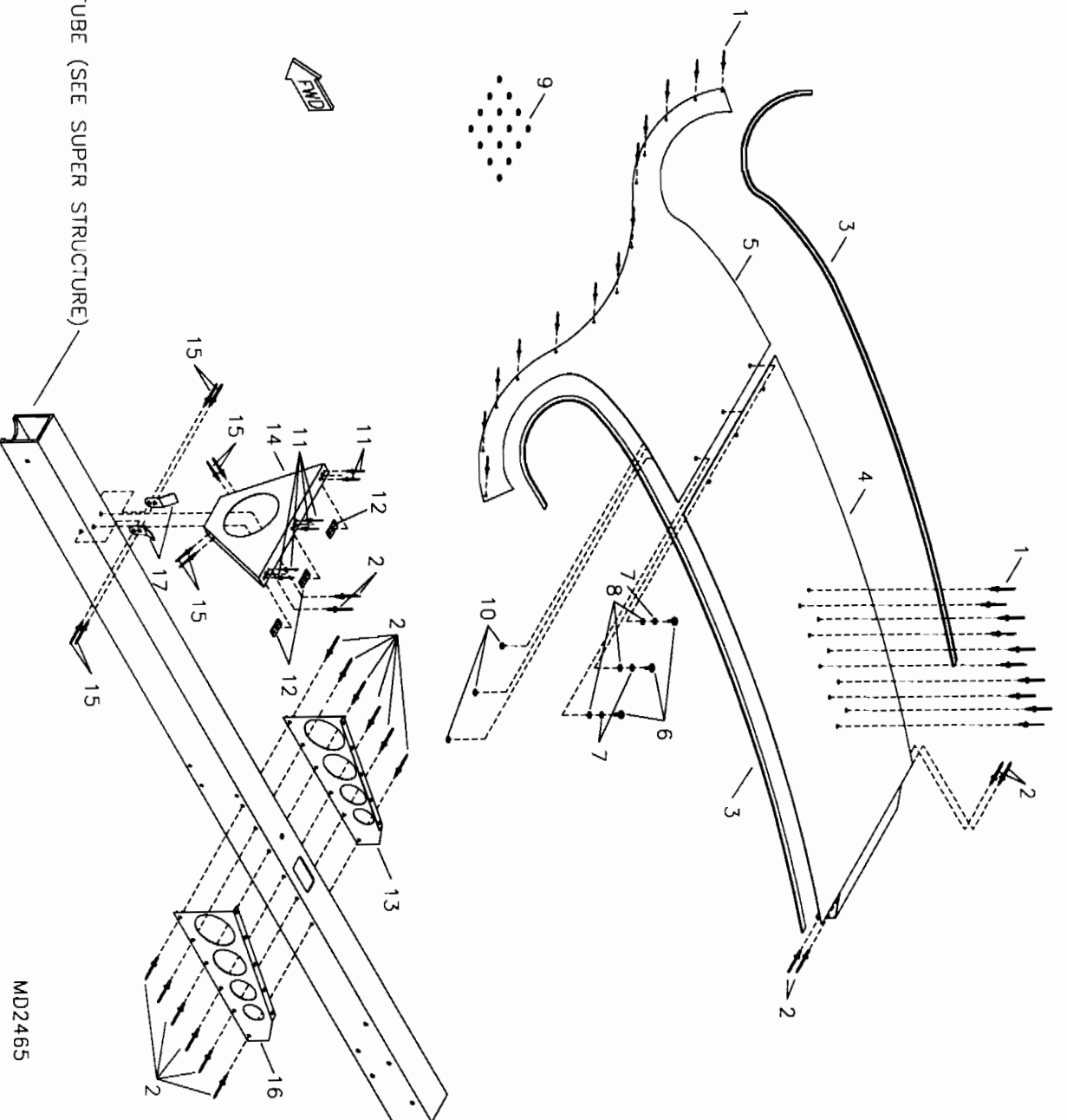


RRM8 S-12XL AIRRAILE
CENTER COVER ASSEMBLY WITH MINI-POD
AND OPTIONAL DOPE & FABRIC COVERING

MD3942

S-12XL AIRAILE - CENTER COVER ASSEMBLY
WITH MINI-POD - OPTIONAL DOPE & FABRIC COVERING

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	1/8" Aluminum Pop Rivet - Avex	1691-0410	10
2.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-44	18
3.	Rubber Edging	X1011	120 in
4.	Center Cover - AFT Wrap	KPFU0262	1
5.	Center Cover - FWD Wrap	KPFU0321	1
6.	1/4 Turn Stud	#200	3
7.	Rubber Washer	#201	3
8.	Wear Washer Nylon	#103	3
9.	Reinforcement Tang	KPAC0041	2
10.	Snap Ring	#101	3
11.	3/32" Aluminum Pop Rivet	40APR1/4	6
12.	Receptacle	#302	3
13.	Center Cover AFT Mount, RH	KPFU0261-R	1
14.	Center Cover - FWD Mount	KPFU0260	1
15.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-42	8
16.	Center Cover AFT Mount, LH	KPFU0261-L	1

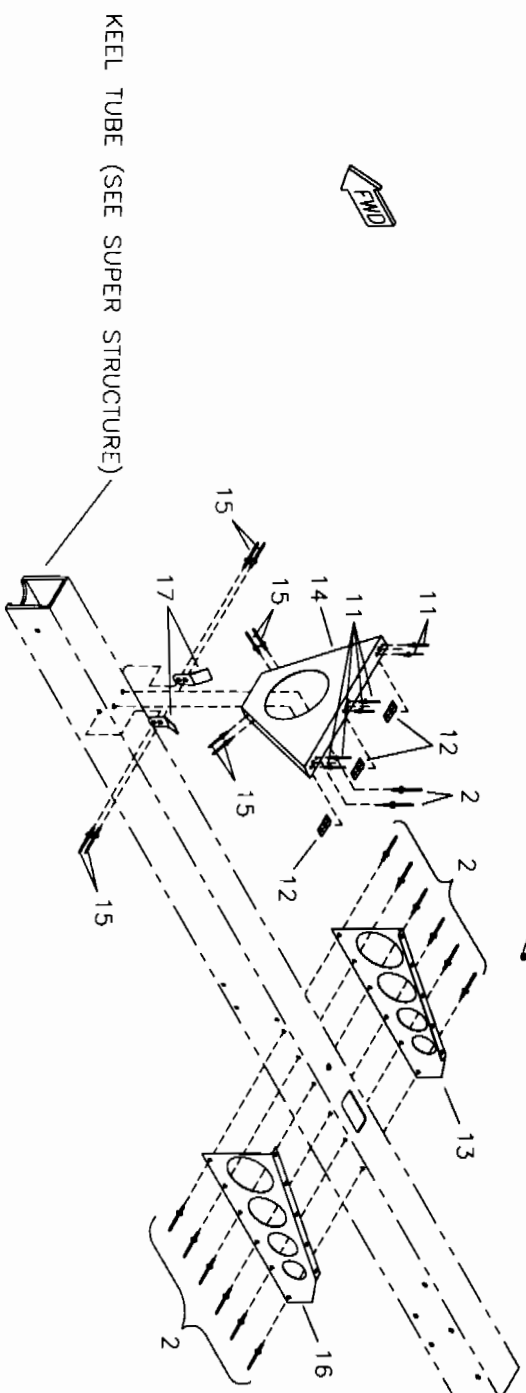
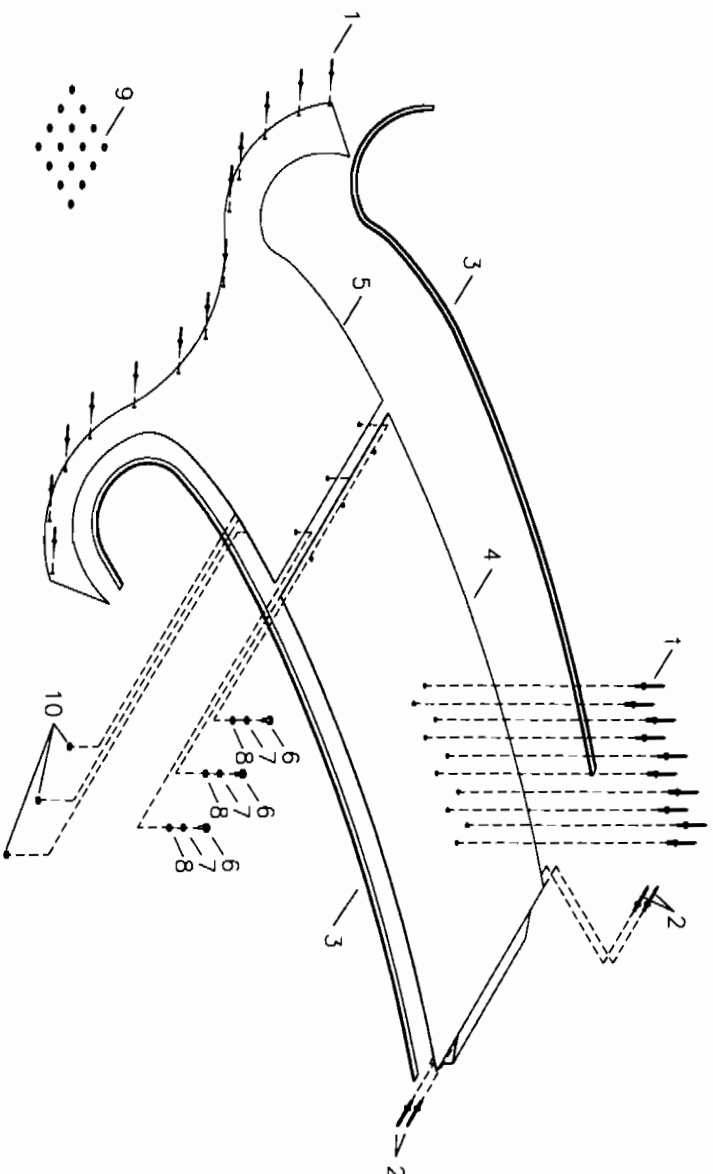


REF ID: A66588 S-12 AIRRAIL
 CENTER COVER ASSEMBLY WITH PARTIAL OR FULL
 ENCLOSURE-STANDARD DACRON COVERING

S-12XL AIRAILE - CENTER COVER ASSEMBLY

WITH PARTIAL OR FULL ENCLOSURE - STANDARD DACRON COVERING

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	1/8" Aluminum Pop Rivet - Avex	1691-0410	23
2.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-44	18
3.	Rubber Edging	X1011	120 in
4.	Center Cover - AFT Wrap	KPFU0042	1
5.	Center Cover - FWD Enclosure	KPFU0114	1
6.	1/4 Turn Stud	#200	3
7.	Rubber Washer	#201	3
8.	Wear Washer Nylon	#103	3
9.	1/8" Small Brass Washer	AN960-B4	11
10.	Snap Ring	#101	3
11.	3/32" Aluminum Pop Rivet	40APR1/4	6
12.	1/4 Turn Receptacle	#302	3
13.	Center Cover AFT Mount, RH	KPFU0039-R	1
14.	Center Cover - FWD Mount	KPFU0038	1
15.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-42	8
16.	Center Cover AFT Mount, LH	KPFU0039-L	1
17.	Reinforcement Tang	KPAC0041	2



KEEL TUBE (SEE SUPER STRUCTURE)

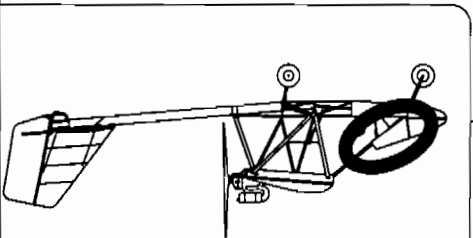
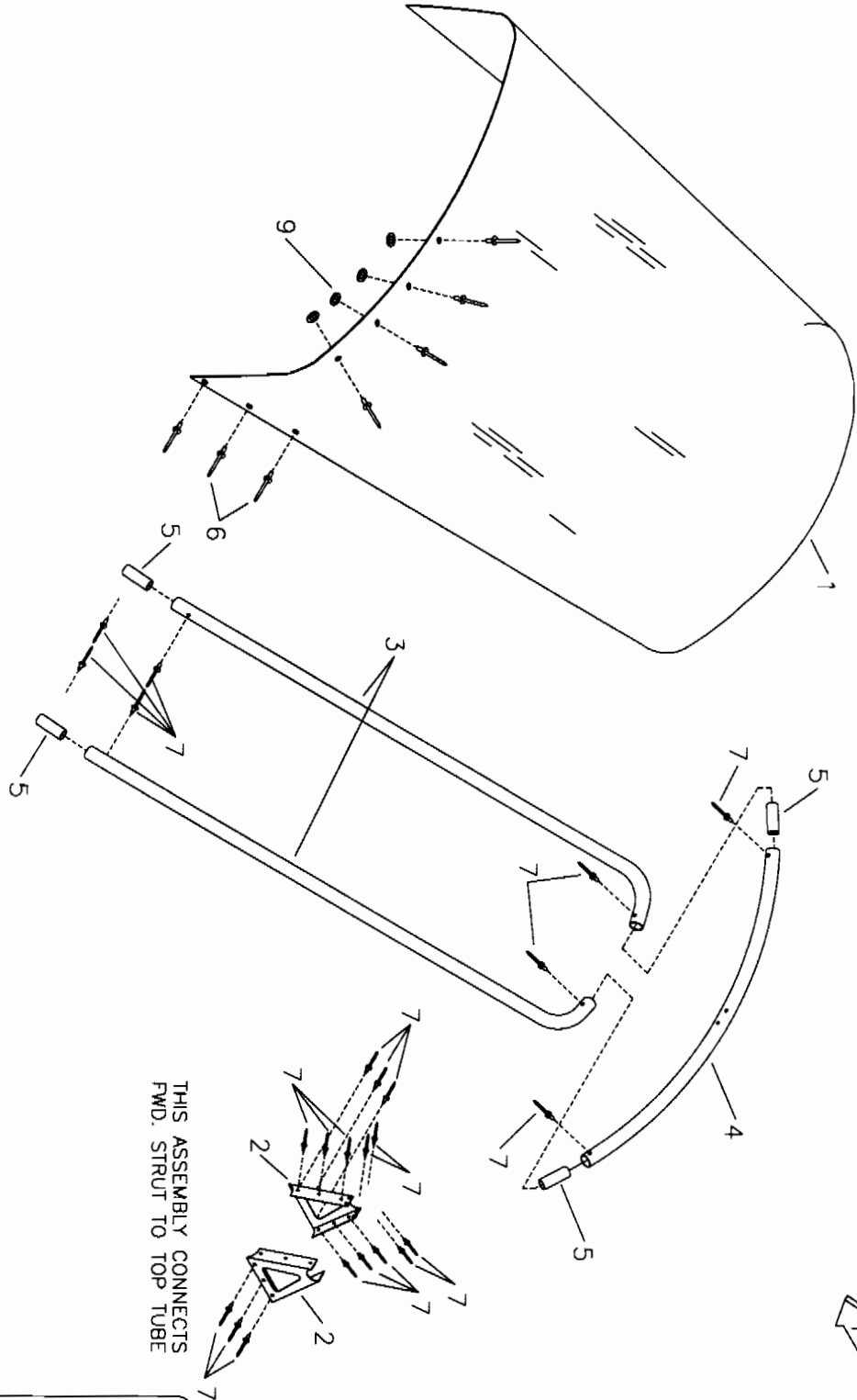
MD3943

RRM S-12XL AIRRAILE
CENTER COVER ASSEMBLY WITH PARTIAL OR
FULL ENCLOSURE AND DOPE & FABRIC COVERING

S-12XL AIRAILE - CENTER COVER ASSEMBLY

WITH PARTIAL OR FULL ENCLOSURE - OPTIONAL DOPE & FABRIC COVERING

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	1/8" Aluminum Pop Rivet - Avex	1691-0410	23
2.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-44	18
3.	Rubber Edging	X1011	120 in
4.	Center Cover - AFT Wrap	KPFU0262	1
5.	Center Cover - FWD Wrap	KPFU0322	1
6.	1/4 Turn Stud	#200	3
7.	Rubber Washer	#201	3
8.	Wear Washer Nylon	#103	3
9.	1/8" Small Brass Washer	AN960-B4	11
10.	Snap Ring	#101	3
11.	3/32" Aluminum Pop Rivet	40APR1/4	6
12.	Receptacle	#302	3
13.	Center Cover AFT Mount, RH	KPFU0261-R	1
14.	Center Cover - FWD Mount	KPFU0260	1
15.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-42	8
16.	Center Cover AFT Mount, LH	KPFU0261-L	1
17.	Reinforcement Tang	KPAC0041	2



FUSELAGE ENCLOSURE
MINI-POD WINDSHIELD
INSTALLATION

SECTION:
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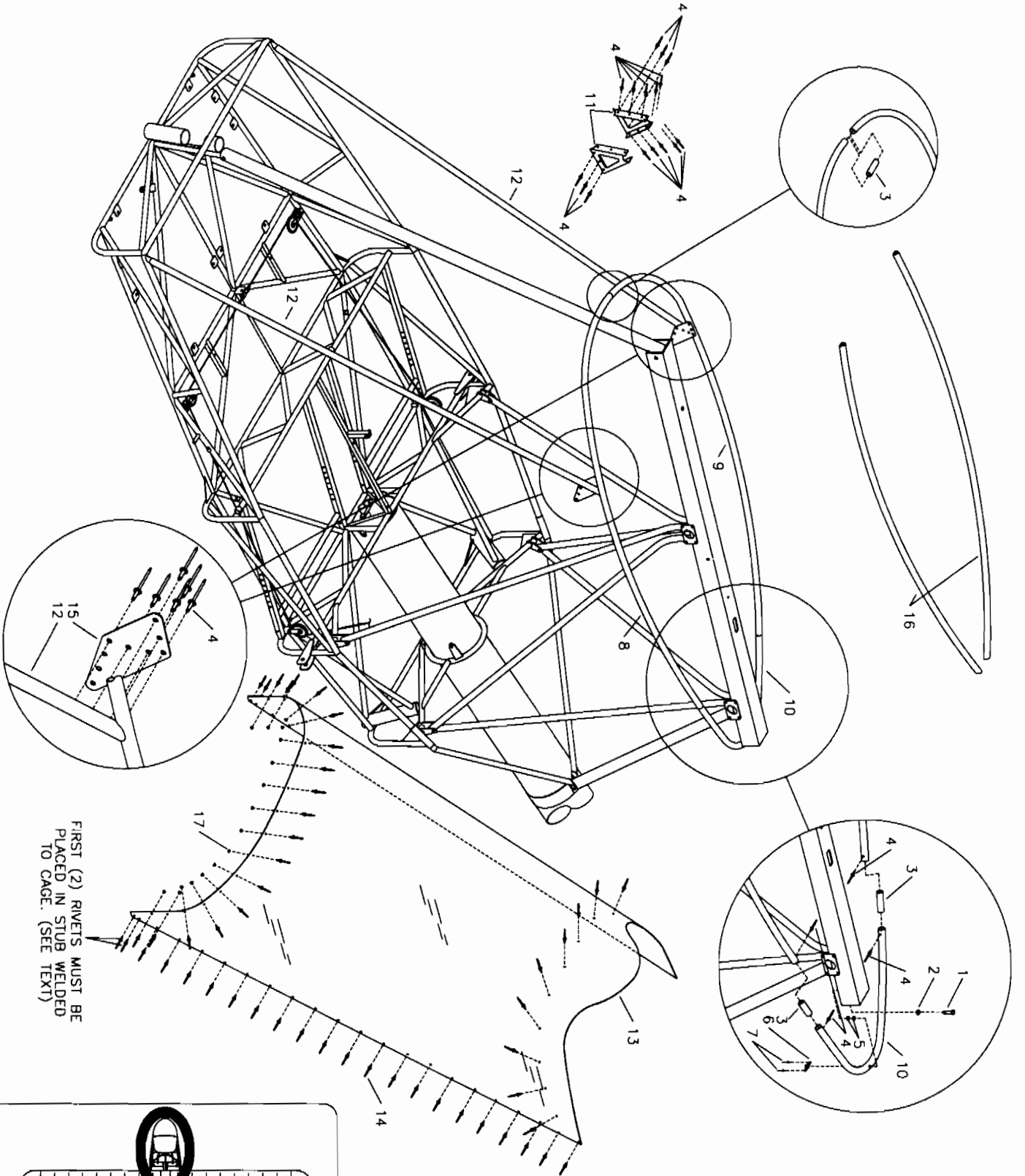
8/15/96

#	Description	Part Number	Quantity
1.	Mini-Pod Windshield	KPWS0007	1
2.	Mini-Pod Frame Support	KPFU0053	2
3.	Mini-Pod Side Tube	KPFU0033	2
4.	Mini-Pod Top Tube	KPFU0034	1
5.	Mini-Pod Splice Tube*	KAAC0001	4
6.	1/8" Aluminum Pop Rivet	1691-0410	44
7.	1/8" Stainless Steel Pop Rivet	CCPQ-42	24
8.	1/8" Brass Washer	AN960-B4	17

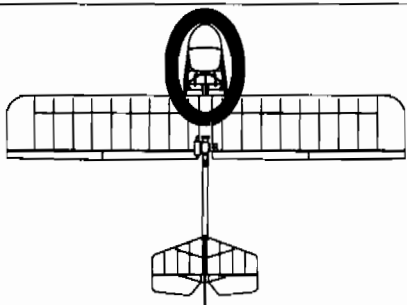
*Builder cuts from raw stock.

RAMS S-12 AIRRAIL

Made in the USA



FIRST (2) RIVETS MUST BE PLACED IN STUB WELDED TO CAGE. (SEE TEXT)



FUSELAGE ENCLOSURE WINDSHIELD INSTALLATION

DETAIL

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Section:**FUSELAGE ENCLOSURE****Detail:****WINDSHIELD INSTALLATION****Page:**

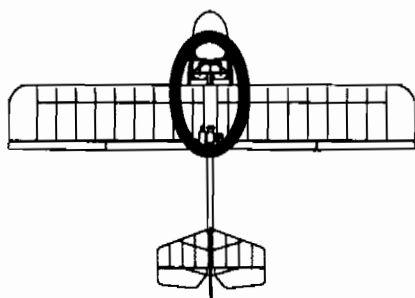
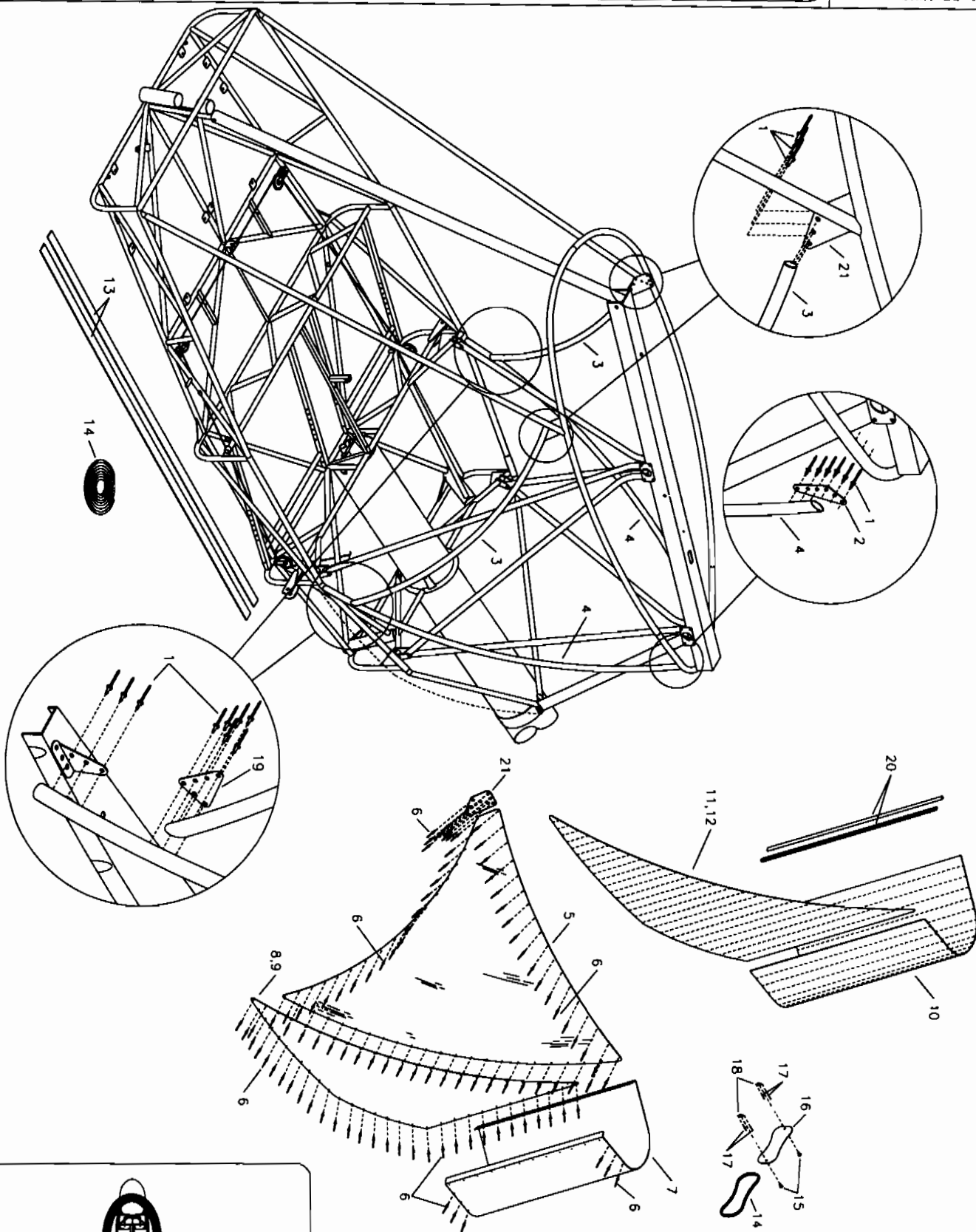
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Date:

8/15/96

#	Description	Part Number	Quantity
1.	3/16" Bolt	AN3-13A	1
2.	3/16" Thick Washer	AN960-10	1
3.	Splice Tube*	KPFU0110	1
4.	1/8" Aluminum Pop Rivet	AAPQ-42	32
5.	3/16" Plastic Washer	PW-3	2
6.	3/16" Nut Plate	K-1000-3	1
7.	3/32" Aluminum Pop Rivet	40APR1/8	2
8.	Top Former, LH	KPFU0108-L	1
9.	Top Former, RH	KPFU0108-R	1
10.	Top Former - AFT	KPFU0109	1
11.	Top Former Support	KPFU0086	2
12.	Windshield Side Tube	KPFU0111	2
13.	Windshield (Tinted or Clear)	KPFU0103	1
14.	1/8" Aluminum Pop Rivet	1691-0410	64
15.	Gusset	FE-DF-ST-GUS	4
16.	Foam Seal	KSAC0013	9 ft
17.	1/8" Washer	AN960-B4	17

*Builder cuts into (3) equal pieces, see text.



AFT ENCLOSURE INSTALLATION

DETAIL

FUSELAGE ENCLOSURE

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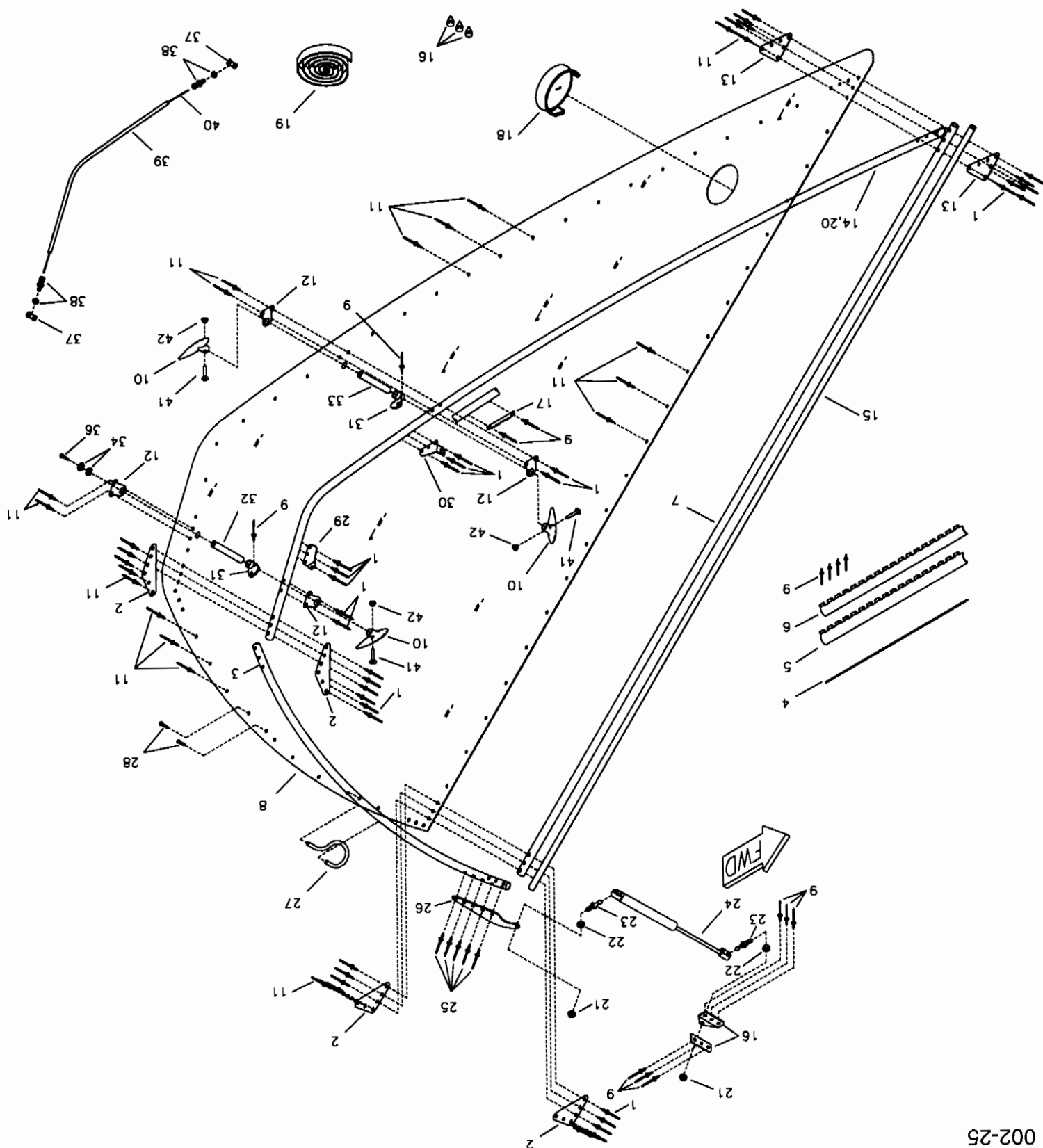
#	Description	Part Number	Quantity
1.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-42	36
2.	Gusset	FE-WF-TF-GUS	2
3.	Door Former	KPFU0112	2
4.	AFT Window Former	KPFU0113	2
5.	AFT Window (Tinted or Clear)	KPFU0104	2
6.	1/8" Aluminum Pop Rivet - Avex	1691-0410	192
7.	AFT Enclosure	KPFU0102	1
8.	Upper Panel, LH	KPFU0101-L	1
9.	Upper Panel, RH	KPFU0101-R	1
10.	Soundproofing - AFT	KPAC0068	1
11.	Soundproofing - LH	KPAC0069-L	1
12.	Soundproofing - RH	KPAC0069-R	1
13.	Seal Strip	KPAC0070	2
14.	Small Rubber Edging	8510K11	120 in
15.	8-32 Machine Bolt	AN526-832R8	2
16.	Tail Boom Access Panel	KPFU0106	1
17.	3/32" Aluminum Pop Rivet	40APR1/8	4
18.	8-32 Nut Plate	MS21047-08	2
19.	Gusset	D-CG	2
20.	Rubber Edging	X1011	60 in
21.	Gusset *	FE-DF-ST-GUS	0

*Referenced from Windshield Installation.

RRMS S-12 AIRAILE FULL DOOR ASSEMBLY

11/10/00

MD2423
REV A



002-25

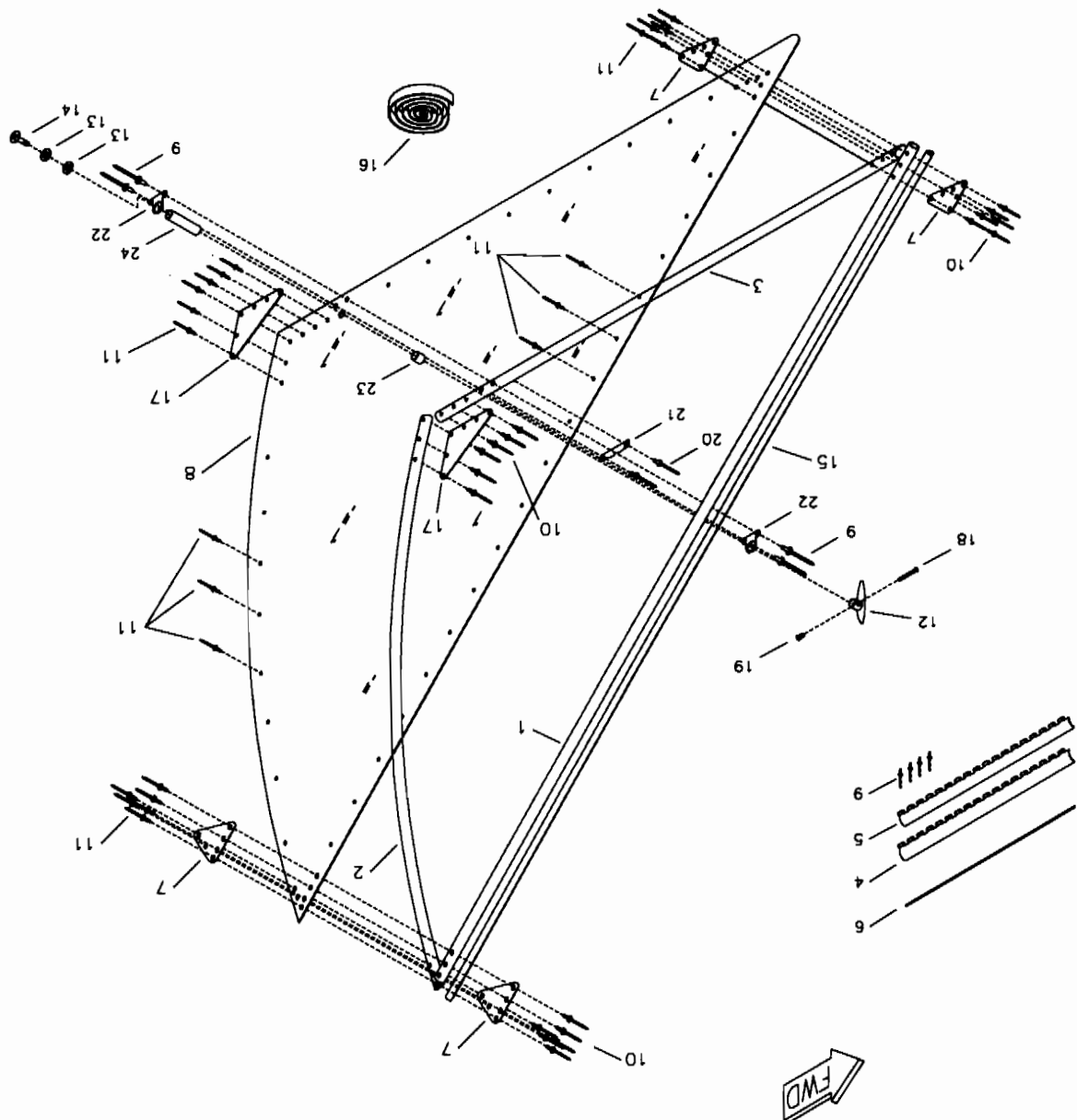
S-12XL AIRAILE - FULL DOOR ASSEMBLY

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-42	52
2.	Gusset	D-CG	8
3.	Door - Upper Frame Tube	KPDR0033	2
4.	1/8" Stainless Steel Wire Hinge Pin	D-HP	1
5.	Formed Hinge - 3/4"	KPDR0032	1
6.	Formed Hinge - 1/2"	KPDR0031	1
7.	Door Hinge - Tube	KPDR0034	2
8.	Door - Lexan (Tinted or Clear)	KPFU0105	2
9.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-42	52
10.	Door Handle	KPDR0026	6
11.	1/8" Aluminum Pop Rivet - Avex	1691-0410	128
12.	Door Handle Gusset	D-DHG	8
13.	Gusset	KPAC0064	4
14.	Door - Lower Frame Tube, LH	KPDR0035-L	1
15.	Foam Seal	KSAC0013	9 ft
16.	Mount Bracket	KPFU0026	4
17.	Door Rub Block	D-RB	2
18.	Air Vent	AIR-VENT	2
19.	1" Black Foam Tape	KSAC0011	10 ft
20.	Door - Lower Frame Tube, RH	KPDR0035-R	1
21.	5/16" Loc Nut - Coarse	KSHW0022	4
22.	5/16" Thick Washer	AN960-516	4
23.	Ball Stud	KSHW0021	4
24.	Gas Strut	KSHW0023	2
25.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-44	10
26.	Lift Bracket	KPDR0036	2
27.	Upper Door Handle	D-UDH	2
28.	3/16" Countersunk Machine Bolt	AN509-1032R14	4
29.	Housing Mount Bracket	KPAC0072	2
30.	Housing Mount Bracket	KPAC0075	2
31.	Pivot Arm	KPAC0071	4
32.	Door Handle Bushing, 3/8" x .095 x 1 1/4" *	KAAC0001-10	0
33.	Aluminum Spacer, 3/8" x .095 x 2" *	KAAC0001-10	0
34.	3/16" Plastic Washer	PW-3	2
35.	3/16" Thin Washer	AN960-10L	2
36.	Button Head Cap Screw	BSHW0010	2
37.	Wire Swivel/Screw Stop	2361	4
38.	Adjustable Cable Ferrule/Nut	12553	4
39.	Door Handle - Link Tube	KPDR0037	2
40.	Stainless Steel Rod, 3/32"	TG-SSW3/32	2
41.	Button Head Screw	KSHW0024	6
42.	Brass Flange Nut	KSHW0025	6

*Builder cuts to length, see text.

RRMS S-12 AIRAILE HALF DOOR ASSEMBLY

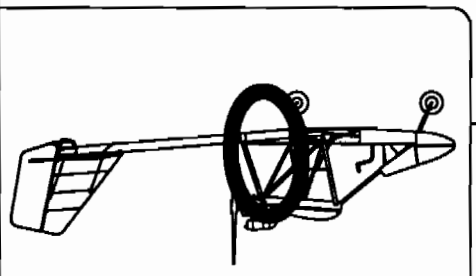
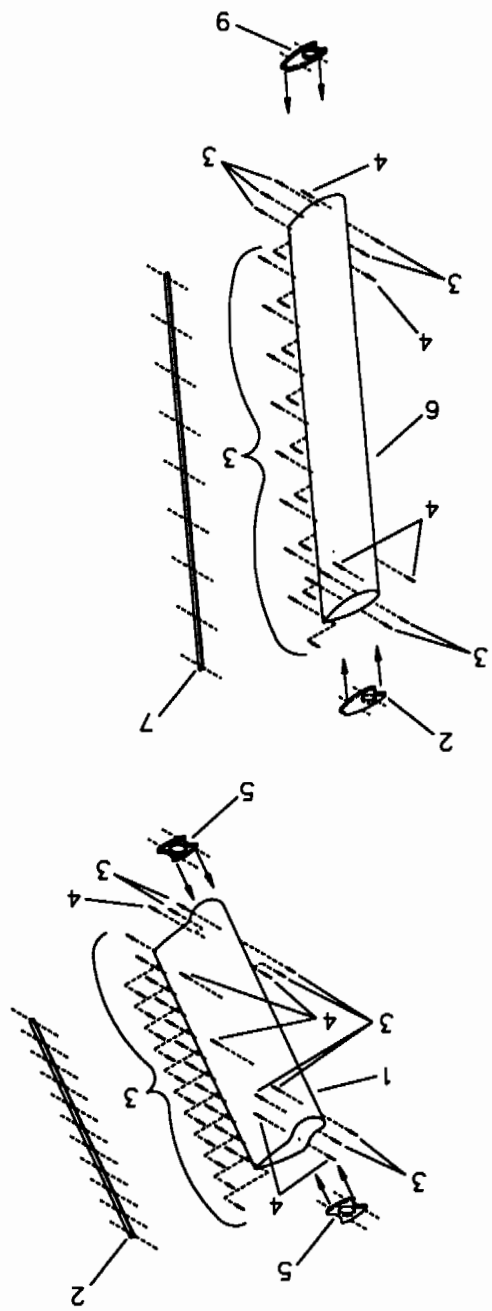
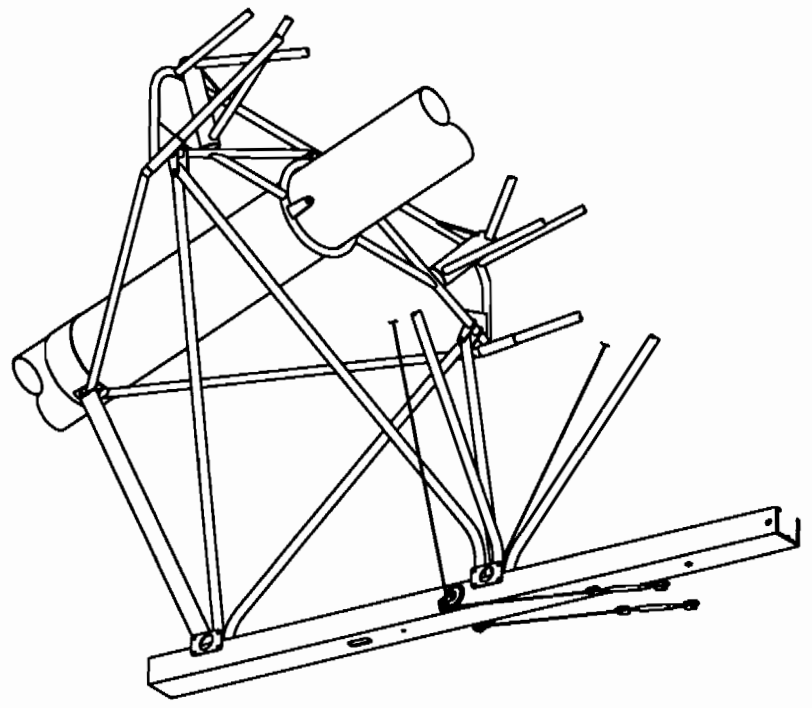
MD2418



S-12XL AIRAILE - HALF-DOOR ASSEMBLY

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Half Door - Hinge Tube	KPDR0038	2
2.	Half Door - Frame Tube	KPDR0039	2
3.	Half Door - Frame Tube	KPDR0041	2
4.	Formed Hinge - 3/4"	KPDR0032	1
5.	Formed Hinge - 1/2"	KPDR0031	1
6.	1/8" Stainless Steel Wire Hinge Pin	D-HP	1
7.	Gusset	KPAC0064	8
8.	Half Door - Lexan (Clear)	KPDR0040-C	2
8.	Half Door - Lexan (Tinted)	KPDR0040-T	2
9.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-42	44
10.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-41	36
11.	1/8" Aluminum Pop Rivet - Avex	1691-0410	108
12.	Door Handle	KPDR0026	2
13.	3/16" Plastic Washer	PW-3	4
14.	Button Head Cap Screw (M5 x .8mm)	BSHW0010	2
15.	Foam Seal - "D-Cell" - double	KSAC0013	5 ft
16.	1" Black Foam Tape	KSAC0011	6 ft
17.	Gusset	KPAC0014	4
18.	Button Head Screw	KSHW0024	2
19.	Brass Flange Nut	KSHW0025	2
20.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-45	4
21.	Door Rub Block	D-RB	2
22.	Door Handle Gusset	D-DHG	4
23.	Aluminum Bushing, 1/2" x .058 x 5/8" *	KAAC0001-7	0
24.	Aluminum Bushing, 3/8" x .095 x 1 1/4" *	KAAC0001-10	0

*Builder must fabricate from raw stock.



DETAIL: CABANE/STRUT FAIRING INST. - 503 PARTIAL ENCLOSURE

FUSELAGE ENCLOSURE

SECTION:

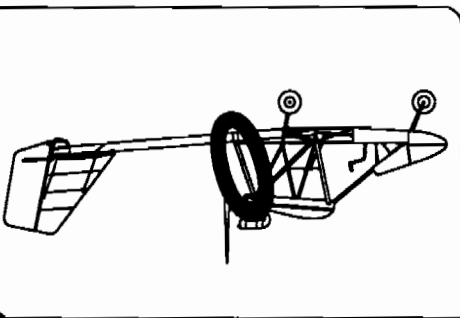
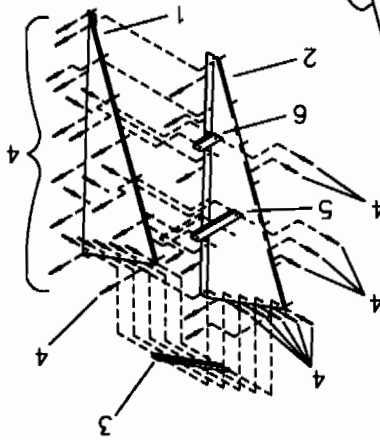
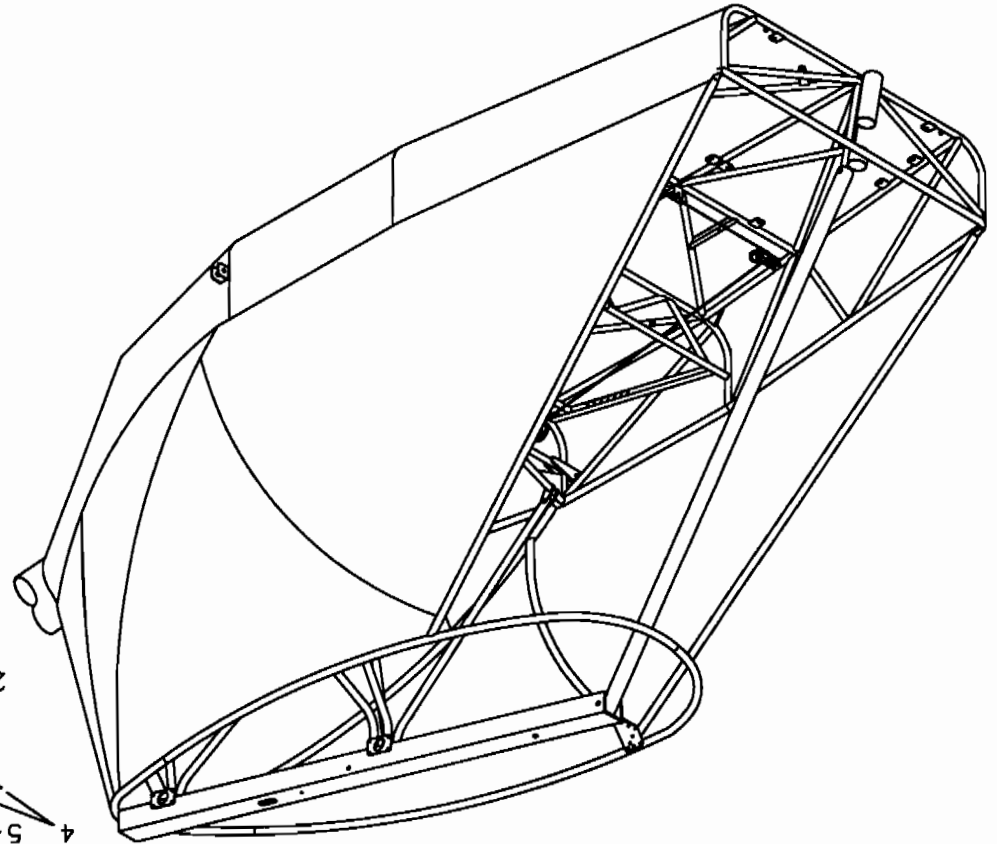
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503 PARTIAL****Page:**

02-30

Date:

9/23/96

#	Description	Part Number	Quantity
1.	AFT Strut Fairing	KPFU0125	1
2.	Rivet Strip - AFT Strut Fairing	KPFU0127	1
3.	3/32" Aluminum Pop Rivet	40APR1/8	82
4.	1/8" Stainless Steel Pop Rivet	CCPQ-42	16
5.	Plastic Rib - AFT Strut Fairing	KPFU0129	2
6.	Cabane Fairing	KPFU0124	2
7.	Rivet Strip - Cabane Fairing	KPFU0126	2
8.	Plastic Rib - Cabane Fairing Top	KPFU0128	2
9.	Plastic Rib - Cabane Fairing Bottom	KPFU0130	2



FLOW FENCE INSTALLATION
- 503 FULL ENCLOSURE

FUSELAGE ENCLOSURE

SECTION:

PAGE 02-31

NOTES:

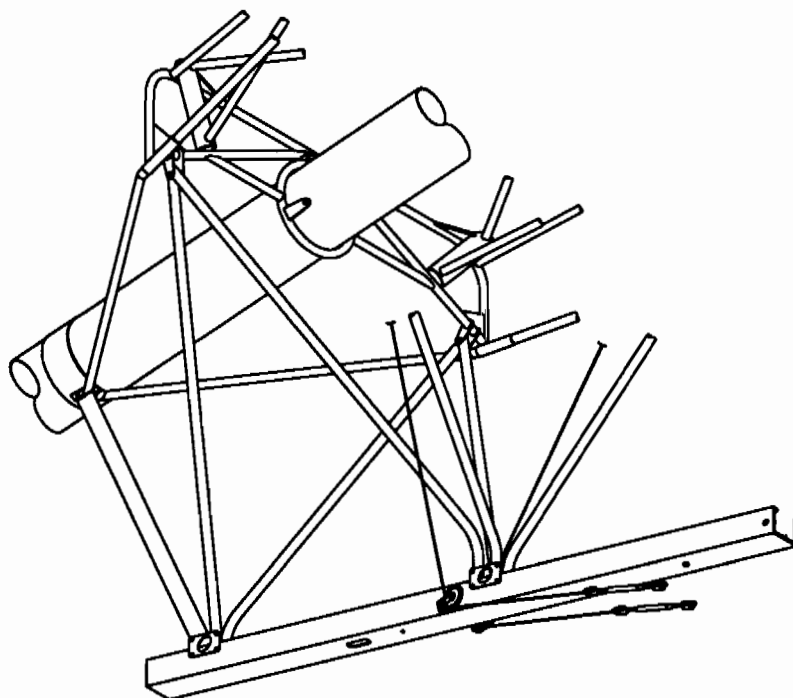
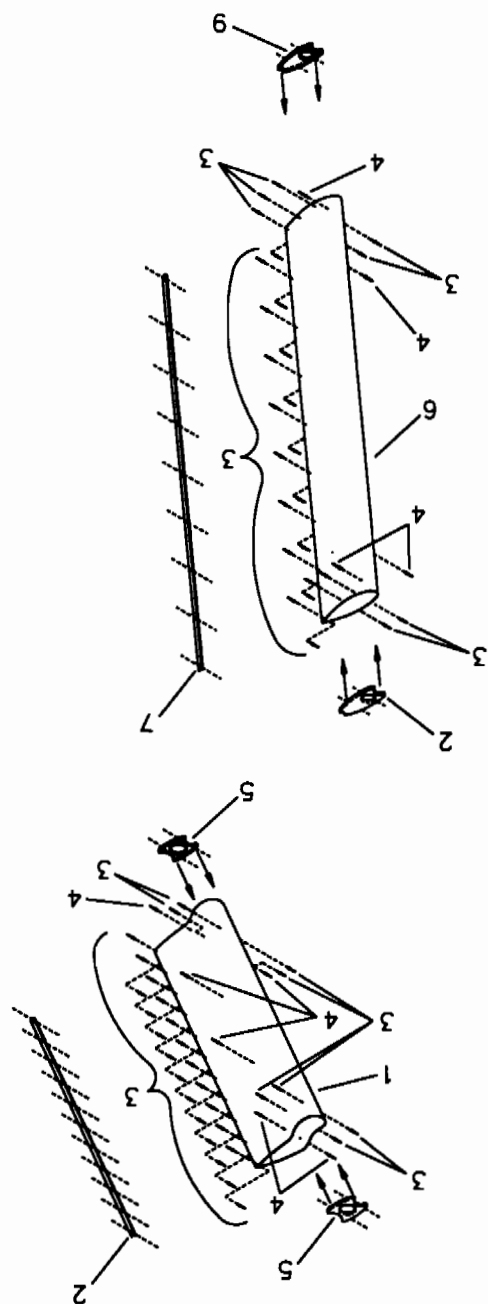
Section:**FUSELAGE ENCLOSURE****Detail:****FLOW FENCE INSTALLATION
503 FULL ENCLOSURE****Page:**

02-32

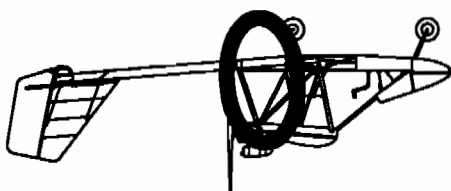
Date:

8/29/96

#	Description	Part Number	Quantity
1.	Vertical Fence - LH	KPFU0115-L	1
2.	Vertical Fence - RH	KPFU0115-R	1
3.	Vertical Fence - Top Rib	KPFU0132	1
4.	1/8" Aluminum Pop Rivet	1691-0410	42
5.	Vertical Fence - Rib	KPFU0131	1
6.	Vertical Fence - Rib	KPFU0117	1



FWD



DETAIL:
CABANE/STRUT FAIRING INST.
- 582 PARTIAL ENCLOSURE

FUSELAGE ENCLOSURE

SECTION:

02-33

NOTES:

PAGE

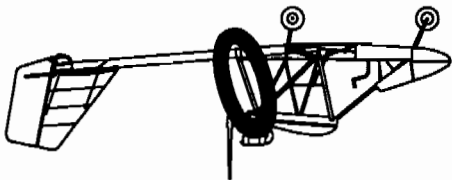
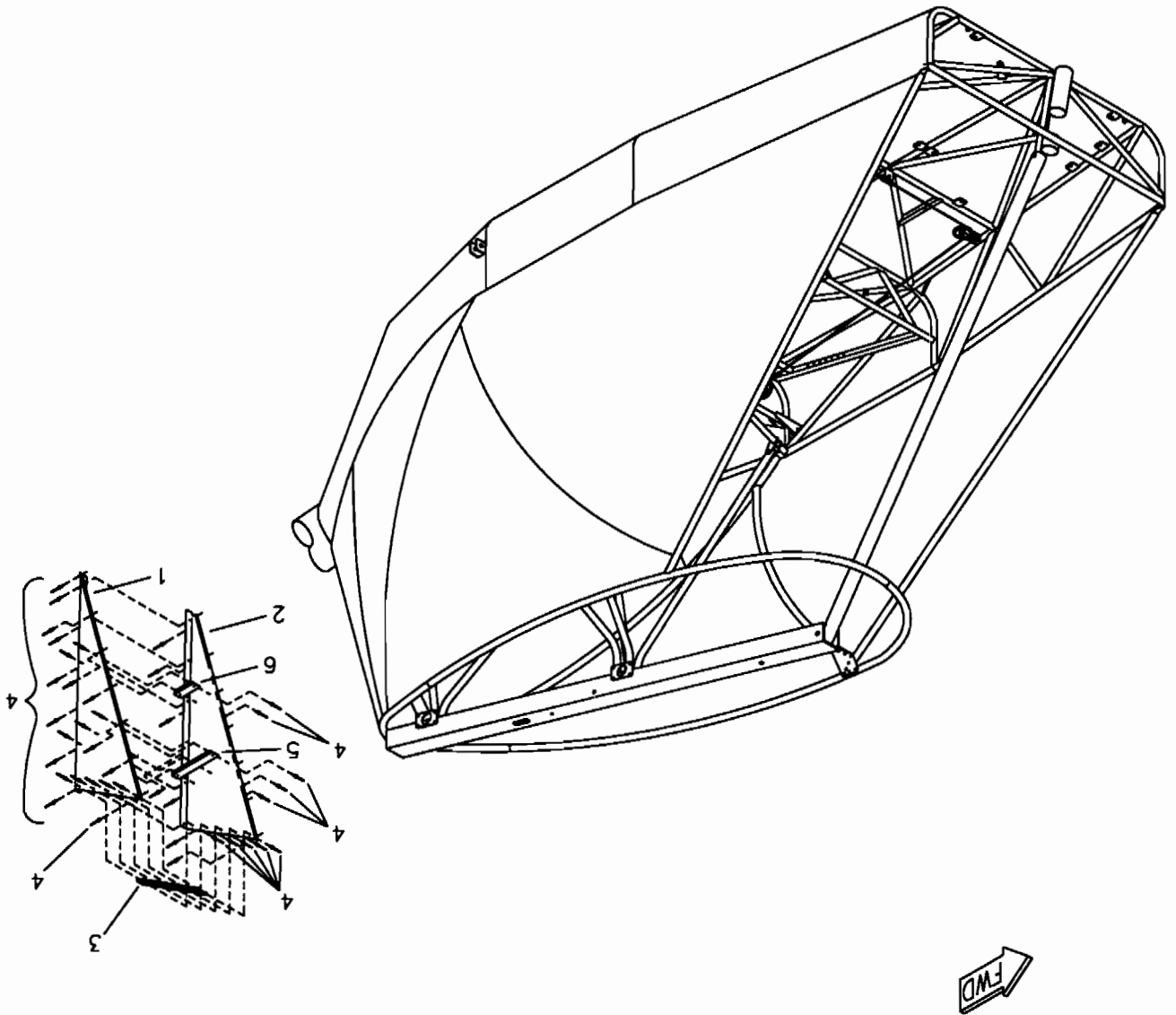
Section:**FUSELAGE ENCLOSURE****Detail:****CABANE/STRUT FAIRING INSTALLATION
582 PARTIAL****Page:**

02-34

Date:

9/23/96

#	Description	Part Number	Quantity
1.	AFT Strut Fairing	KPFU0125	1
2.	Rivet Strip - AFT Strut Fairing	KPFU0127	1
3.	3/32" Aluminum Pop Rivet	40APR1/8	82
4.	1/8" Stainless Steel Pop Rivet	CCPQ-42	16
5.	Plastic Rib - AFT Strut Fairing	KPFU0129	2
6.	Cabane Fairing	KPFU0124	2
7.	Rivet Strip - Cabane Fairing	KPFU0126	2
8.	Plastic Rib - Cabane Fairing Top	KPFU0128	2
9.	Plastic Rib - Cabane Fairing Bottom	KPFU0130	2



FLOW FENCE INSTALLATION
- 582 FULL ENCLOSURE

FUSELAGE ENCLOSURE

SECTION:

PAGE 02-35

NOTES:

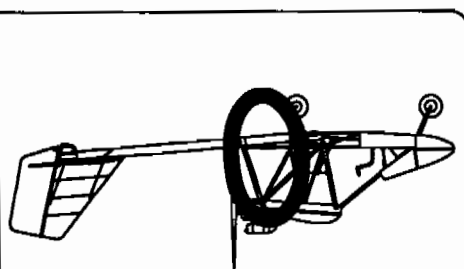
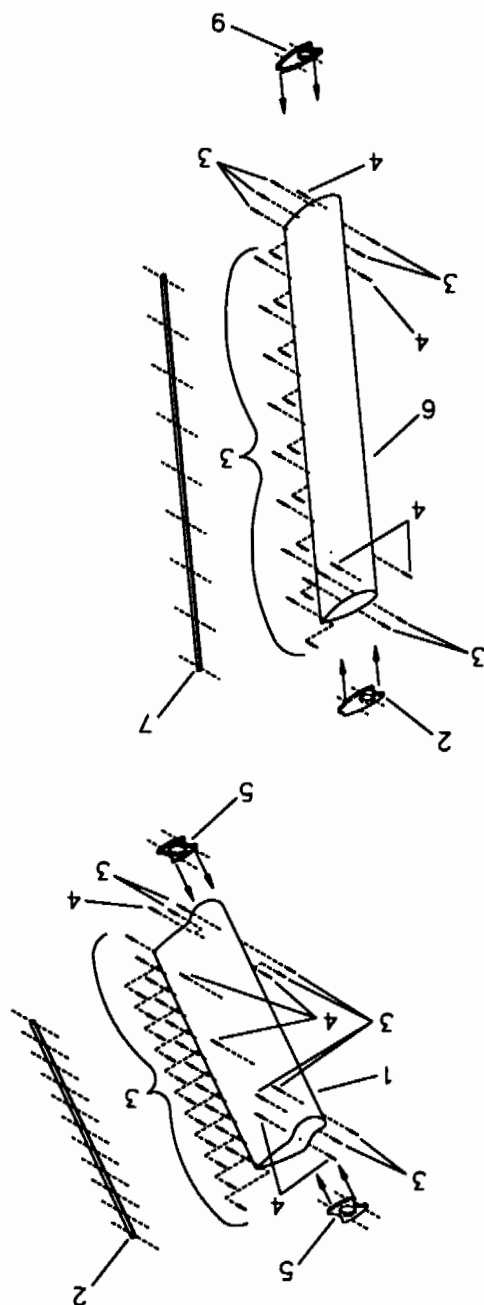
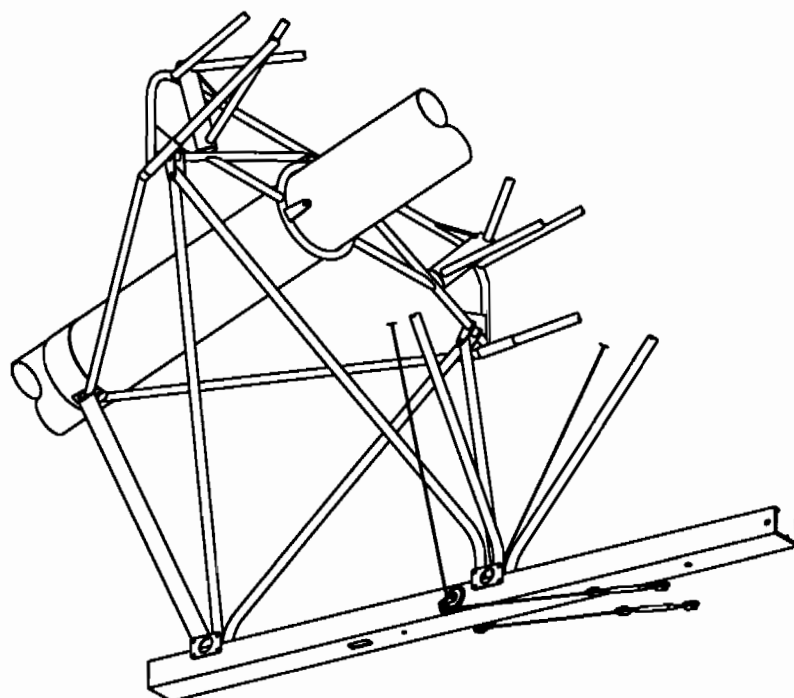
Section:**FUSELAGE ENCLOSURE****Detail:****FLOW FENCE INSTALLATION
582 FULL ENCLOSURE****Page:**

02-36

Date:

8/29/96

#	Description	Part Number	Quantity
1.	Vertical Fence - LH	KPFU0115-L	1
2.	Vertical Fence - RH	KPFU0115-R	1
3.	Vertical Fence - Top Rib	KPFU0132	1
4.	1/8" Aluminum Pop Rivet	1691-0410	42
5.	Vertical Fence - Rib	KPFU0131	1
6.	Vertical Fence - Rib	KPFU0117	1



DETAIL: CABANE/STRUT FAIRING INST. - 912 PARTIAL ENCLOSURE

FUSELAGE ENCLOSURE

SECTION:

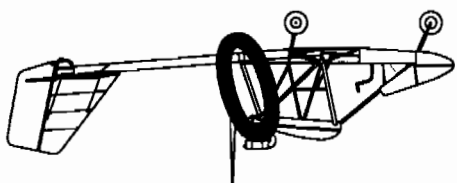
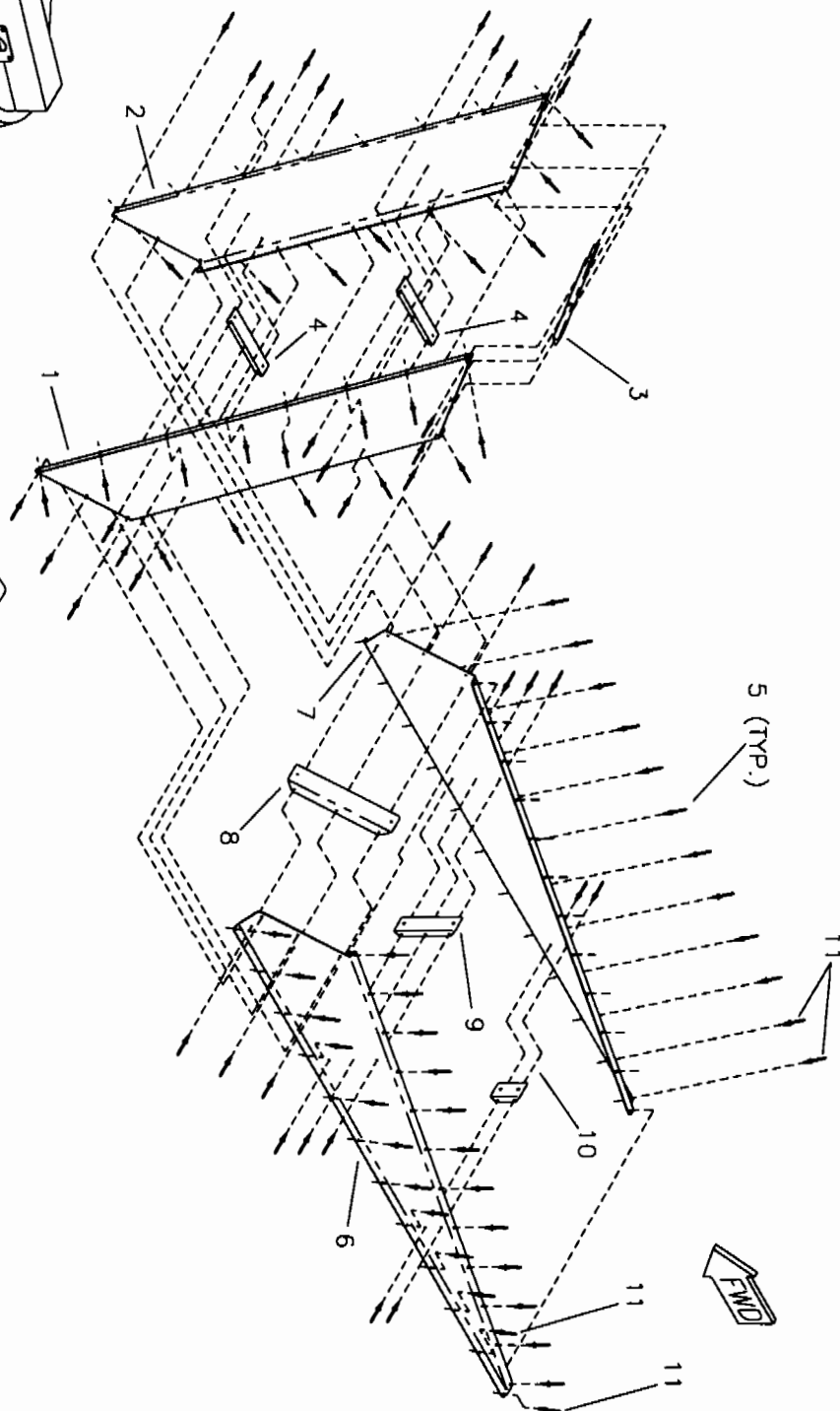
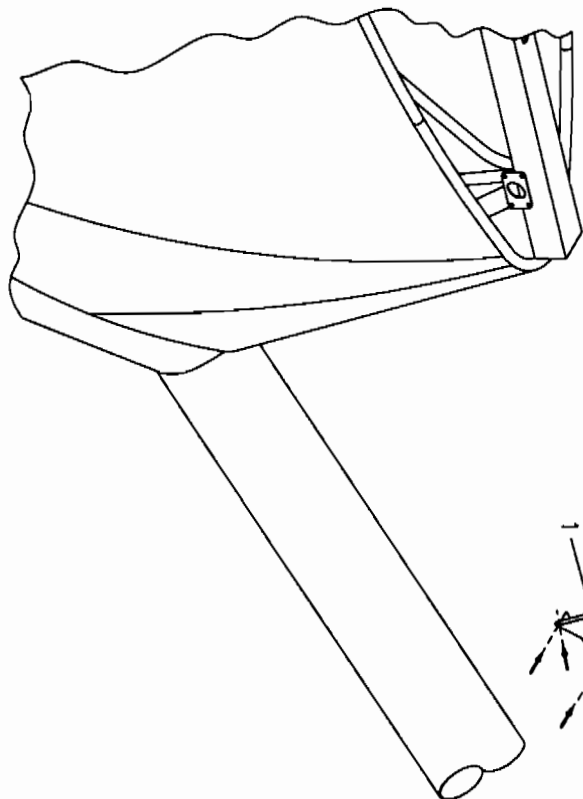
Section:**FUSELAGE ENCLOSURE****Detail:****CABANE/STRUT FAIRING INSTALLATION
912 PARTIAL****Page:**

02-38

Date:

9/23/96

#	Description	Part Number	Quantity
1.	AFT Strut Fairing	KPFU0125	1
2.	Rivet Strip - AFT Strut Fairing	KPFU0127	1
3.	3/32" Aluminum Pop Rivet	40APR1/8	82
4.	1/8" Stainless Steel Pop Rivet	CCPQ-42	16
5.	Plastic Rib - AFT Strut Fairing	KPFU0129	2
6.	Cabane Fairing	KPFU0124	2
7.	Rivet Strip - Cabane Fairing	KPFU0126	2
8.	Plastic Rib - Cabane Fairing Top	KPFU0128	2
9.	Plastic Rib - Cabane Fairing Bottom	KPFU0130	2



FLOW FENCE INSTALLATION
- 912 FULL ENCLOSURE

DETAIL

FUSELAGE ENCLOSURE

SECTION

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Section:**FUSELAGE ENCLOSURE****Detail:****FLOW FENCE INSTALLATION
912 FULL ENCLOSURE****Page:**

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Date:

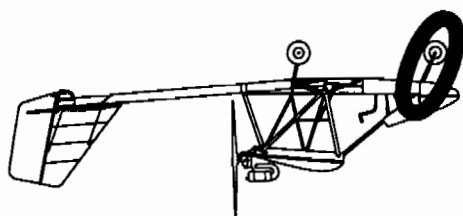
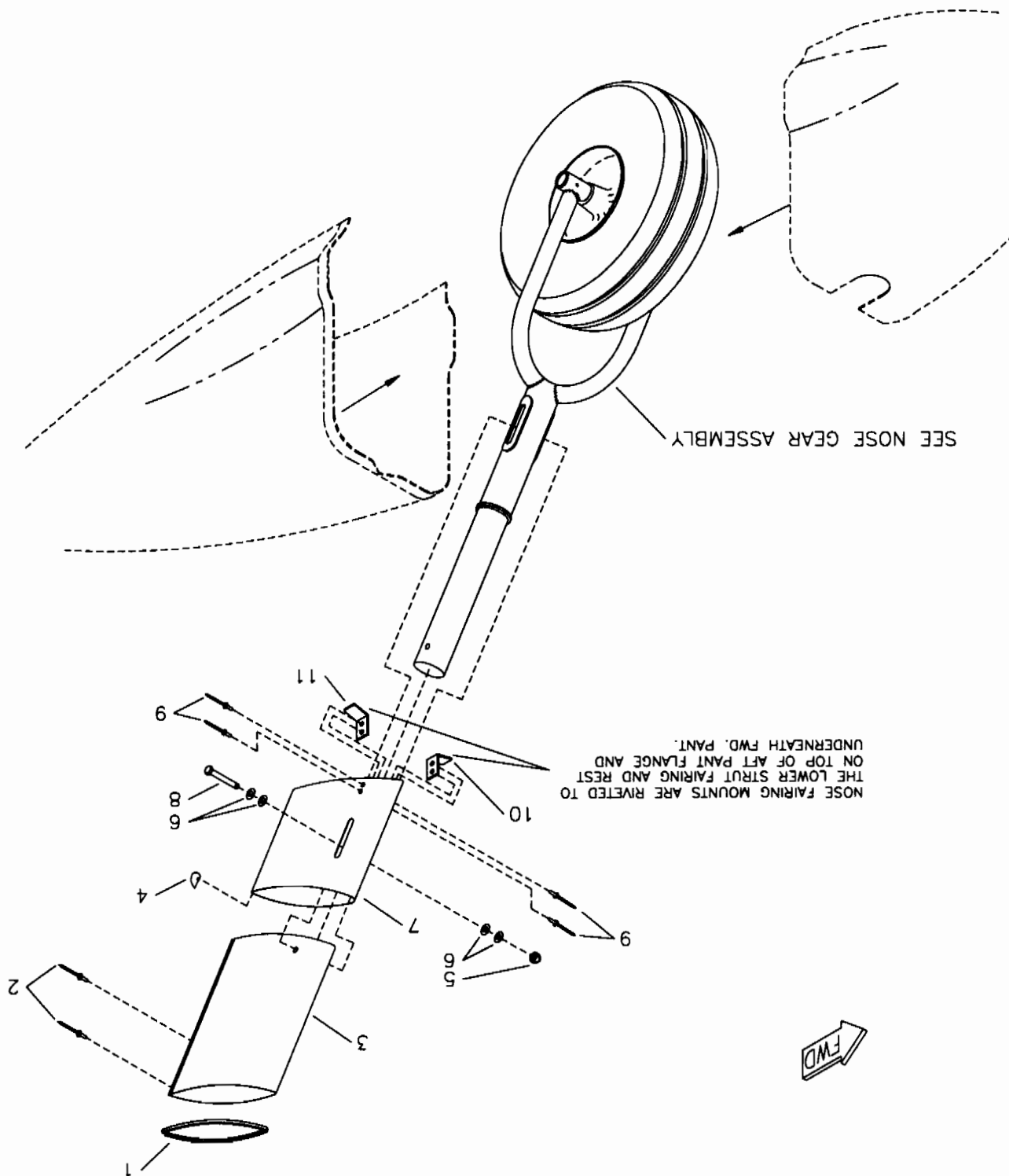
9/24/97

#	Description	Part Number	Quantity
1.	Vertical Fence - LH	KPFU0123-L	1
2.	Vertical Fence - RH	KPFU0123-R	1
3.	Vertical Fence - Top Rib	KPFU0120	1
4.	Vertical Fence - Middle Rib	KPFU0118	2
5.	1/8" Aluminum Pop Rivet - Avex	1691-0410	91
6.	Horizontal Fence - LH	KPFU0122-L	1
7.	Horizontal Fence - RH	KPFU0122-R	1
8.	Horizontal Fence - FWD Rib	KPFU0121	1
9.	Horizontal Fence - Middle Rib	KPFU0119	1
10.	Horizontal Fence - AFT Rib	KPFU0117	1
11.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-42	4

S-12XL AIRAILE - MAIN GEAR LEG FAIRING INSTALLATION**HYDRAULIC BRAKES**

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Gear Leg Fairing - LH	KPMG0170-LH	1
1.	Gear Leg Fairing - RH	KPMG0170-RH	1
2.	3/32" Aluminum Pop Rivet	40APR1/8	18
3.	Rubber Trim	X1011	3 ft
4.	Adhesive - Super Glue *	-----	0
5.	Fairing Rib - Main Gear	KPMG0091	2
6.	#8 Pan Head Screw	8X1/2 PHS	4
7.	Tinnerman	A1789-8Z-1	4
8.	Main Gear Fairing Lower Bracket - LH	KPMG0127-L	1
8.	Main Gear Fairing Lower Bracket - RH	KPMG0127-R	1

*Builder supplied.



SECTION: FUSELAGE ENCLOSURE
DETAIL: NOSE GEAR STRUT FAIRING

NOTES:

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PAGE

Section:**FUSELAGE ENCLOSURE****Detail:****NOSE GEAR STRUT FAIRING INSTALLATION****Page:**

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Date:

12/16/97

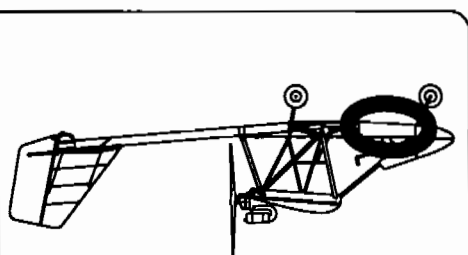
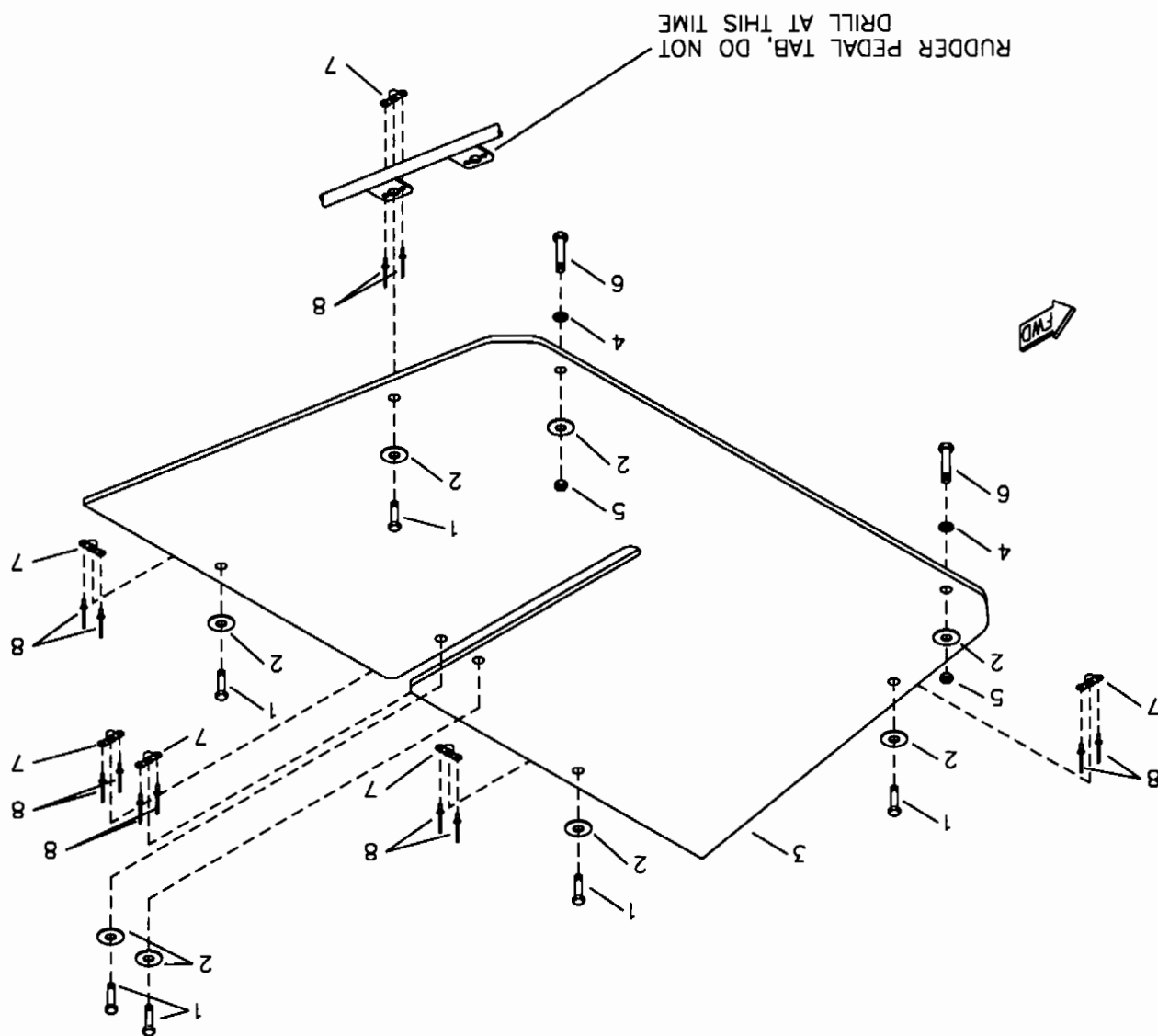
#	Description	Part Number	Quantity
1	Small Rubber Edging	8510K11	12 in
2	3/32" Aluminum Pop Rivet	40APR1/8	2
3	Upper Fairing	12-LG-UN-FAIR	1
4	J & B Weld Epoxy *	J & B	0
5	1/4" Shear Nut **	AN364-428A	0
6	1/4" Plastic Washer **	PW-4	0
7	Lower Fairing	LG-LN-FAIR	1
8	1/4" Bolt **	AN4-24A	0
9	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-41	4
10	Nose Fairing Mount, RH	LG-NFMNT-R	1
11	Nose Fairing Mount, LH	LG-NFMNT-L	1

*Use J & B Weld packed with original kit.

**Referenced from nose gear assembly.

RRMS S-12 AIRAILE

Made in the USA



FLOORBOARD INSTALLATION

INTERNAL SYSTEMS

DETAIL:

SECTION:

NOTES:

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PAGE

Section:

INTERNAL SYSTEMS

Detail:

FLOORBOARD INSTALLATION

Page:

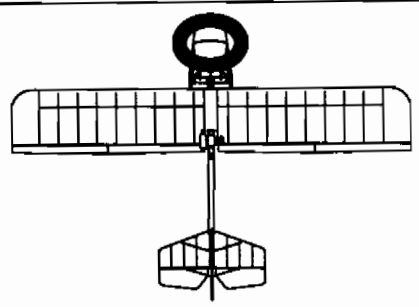
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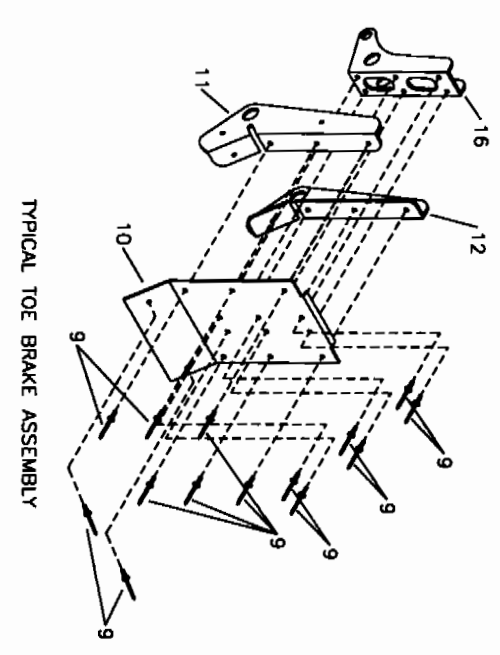
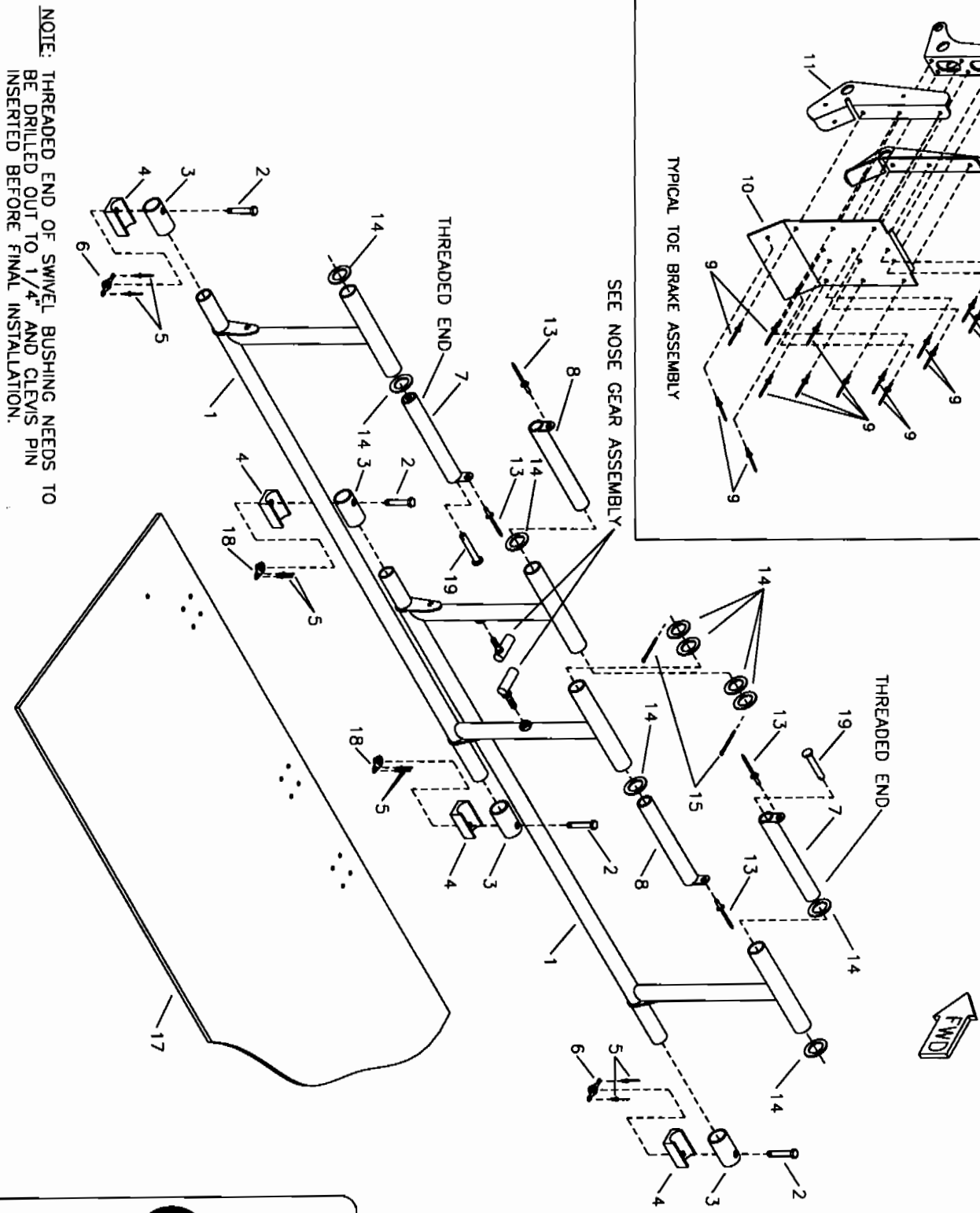
8/14/95

#	Description	Part Number	Quantity
1.	3/16" Bolt	AN3-5A	6
2.	3/16" Large Wood Washer	AN970-3	8
3.	Floorboard	KPFU0058	1
4.	3/16" Thick Washer	AN960-10	2
5.	3/16" Shear Nut	AN364-1032A	2
6.	3/16" Bolt	AN3-12A	2
7.	3/16" Nut Plate	K-1000-3	6
8.	3/32" Aluminum Pop Rivet	40APR1/8	12

INTERNAL SYSTEMS
RUDDER PEDALS - WITH
HYDRAULIC TOE BRAKES



NOTE: THREADED END OF SWIVEL BUSHING NEEDS TO BE DRILLED OUT TO 1/4" AND CLEVIS PIN INSERTED BEFORE FINAL INSTALLATION.



Section:**INTERNAL SYSTEMS****Detail:****RUDDER PEDAL ASSEMBLY
WITH HYDRAULIC TOE BRAKES****Page:**

03-06

Date:

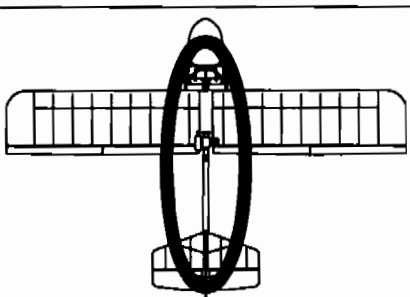
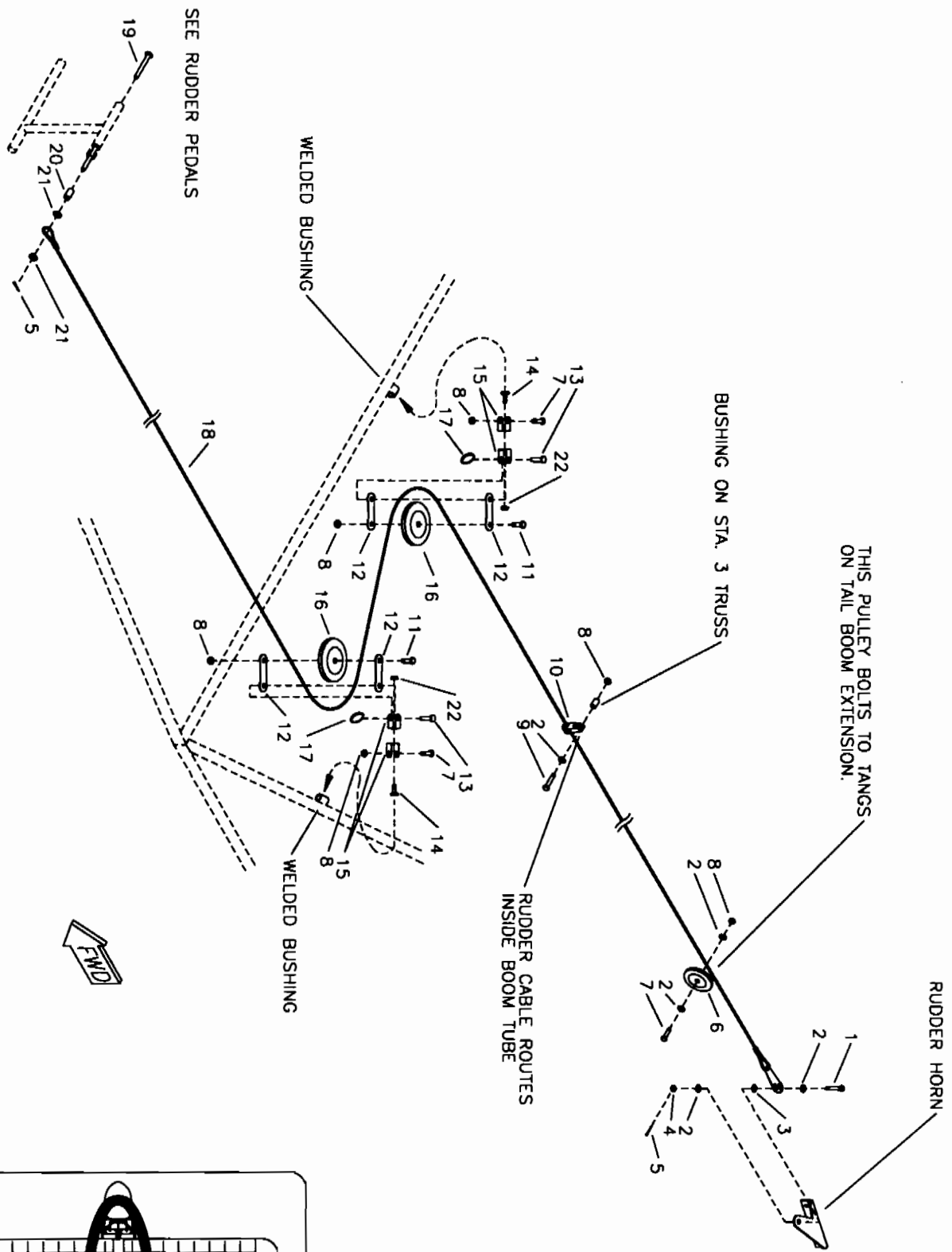
2/ 9/96

#	Description	Part Number	Quantity
1.	Rudder Pedal	KPCS0066	2
2.	3/16" Bolt	AN3-13A	4
3.	Rudder Pedal Bushing	KPCS0017	4
4.	Brake Saddle	KPCS0024	4
5.	3/32" Aluminum Pop Rivet	40APR1/8	8
6.	3/16" Nut Plate	K-1000-3	2
7.	Swivel Bushing	KPCS0055	2
8.	Swivel Bushing	KPCS0056	2
9.	1/8" Aluminum Pop Rivet	AAPQ-42	56
10.	Rudder Pedal-Web	KPCS0063	4
11.	Rudder Pedal-Hinge Plate, LH	KPCS0064-LH	4
12.	Rudder Pedal-Hinge Plate, RH	KPCS0064-RH	4
13.	3/16" Stainless Steel Pop Rivets	CCPQ-62	4
14.	1/2" Plastic Washer	KSAC0005	10
15.	Large Cotter Pin	MS24665-285	2
16.	Rudder Pedal-Cylinder Attach Bracket	KPCS0065	4
17.	Wear Plate	KPFU0064	1
18.	Single Ear Nut Plate	MS21051-L3	2
19.	5/16" Clevis Pin*	MS20392-4C65	0

*Referenced from rudder cable system.

S-12 AIRRAIL

Made in the USA



RUDDER CABLE SYSTEM

INTERNAL SYSTEMS

SECTION:
DETAIL:

NOTES:
LEFT SIDE OF
ASSEMBLY SHOWN

Section:**INTERNAL SYSTEMS****Detail:****RUDDER CABLE SYSTEM ASSEMBLY****Page:**

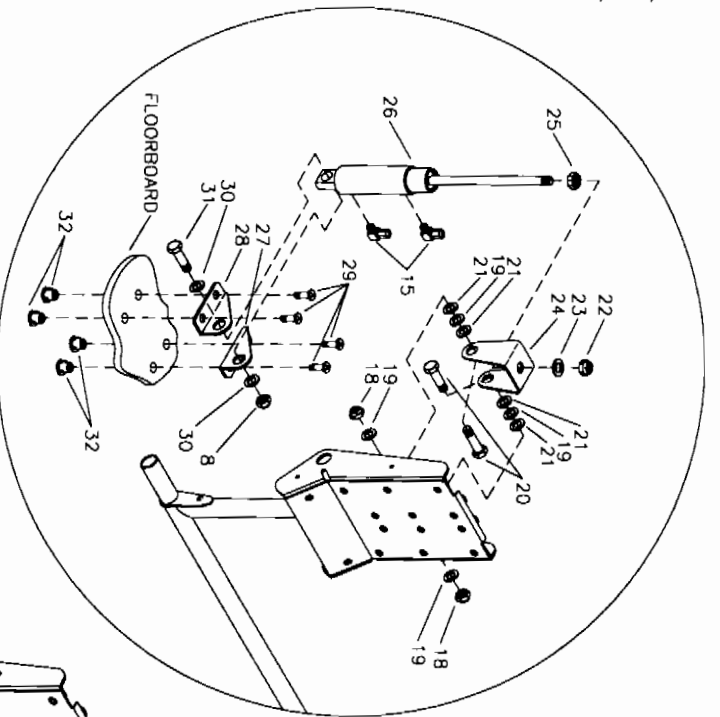
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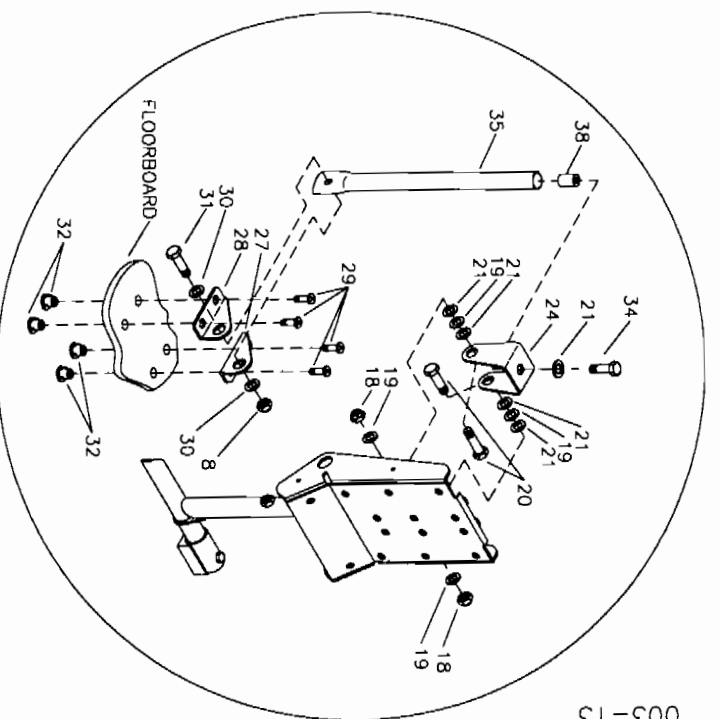
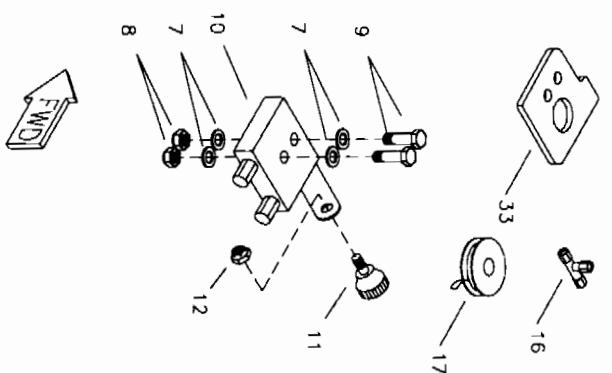
2/ 9/96

#	Description	Part Number	Quantity
1.	3/16" Bolt	AN3-5	2
2.	3/16" Thin Washer	AN960-10L	10
3.	3/16" Thick Washer	AN960-10	2
4.	3/16" Castle Nut	AN310-3	2
5.	Small Cotter Pin	MS24665-134	4
6.	Small Pulley	AN210-1A	2
7.	3/16" Bolt	AN3-7A	4
8.	3/16" Shear Nut	AN364-1032A	12
9.	3/16" Bolt	AN3-13A	2
10.	Cable Guide	HA-144	2
11.	3/16" Bolt	AN3-6A	4
12.	Hummertang	T12-HT6	8
13.	Clevis Pin	MS20392-2C17	4
14.	3/16" Bolt	AN3-3A	4
15.	Shackle	RL-205-T	8
16.	Pulley	AN210-2A	4
17.	Loc Ring	RL 27 1/4	4
18.	Rudder Cable	KARD0002	2
19.	5/16" Clevis Pin	MS20392-4C65	2
20.	Spacer Bushing, 1/2" X .083 X 1"	KAAC0001	2
21.	5/16" Thick Washer	AN960-516	4
22.	3/16" Tensile Nut	AN365-1032A	4

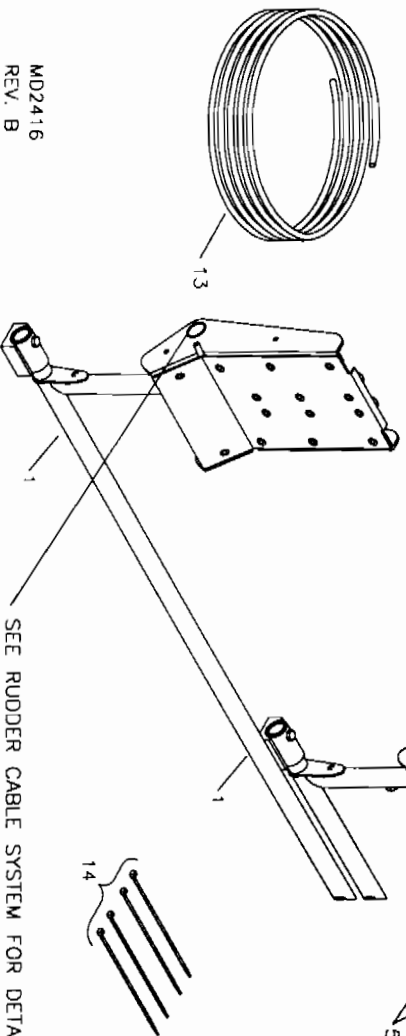
*Builder fabricates from raw stock.



PILOT'S SIDE HYDRAULIC BRAKE ASSEMBLY



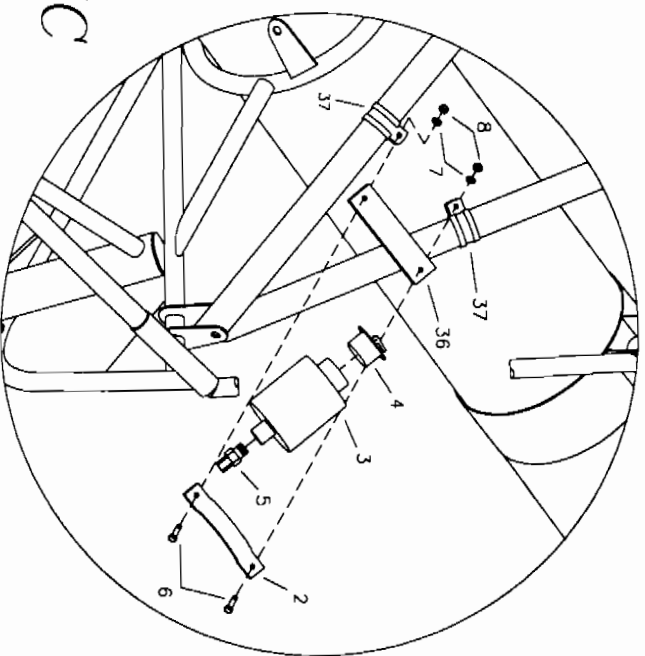
PASSENGER'S SIDE TOE PEDAL ASSEMBLY



MD2416
REV. B

SEE RUDDER CABLE SYSTEM FOR DETAILS

RAMS S-12 AIRRAIL BRAKE SYSTEM SINGLE HYDRAULIC TOE BRAKES



S-12XL AIRAILE - BRAKE SYSTEM
SINGLE HYDRAULIC TOE BRAKES

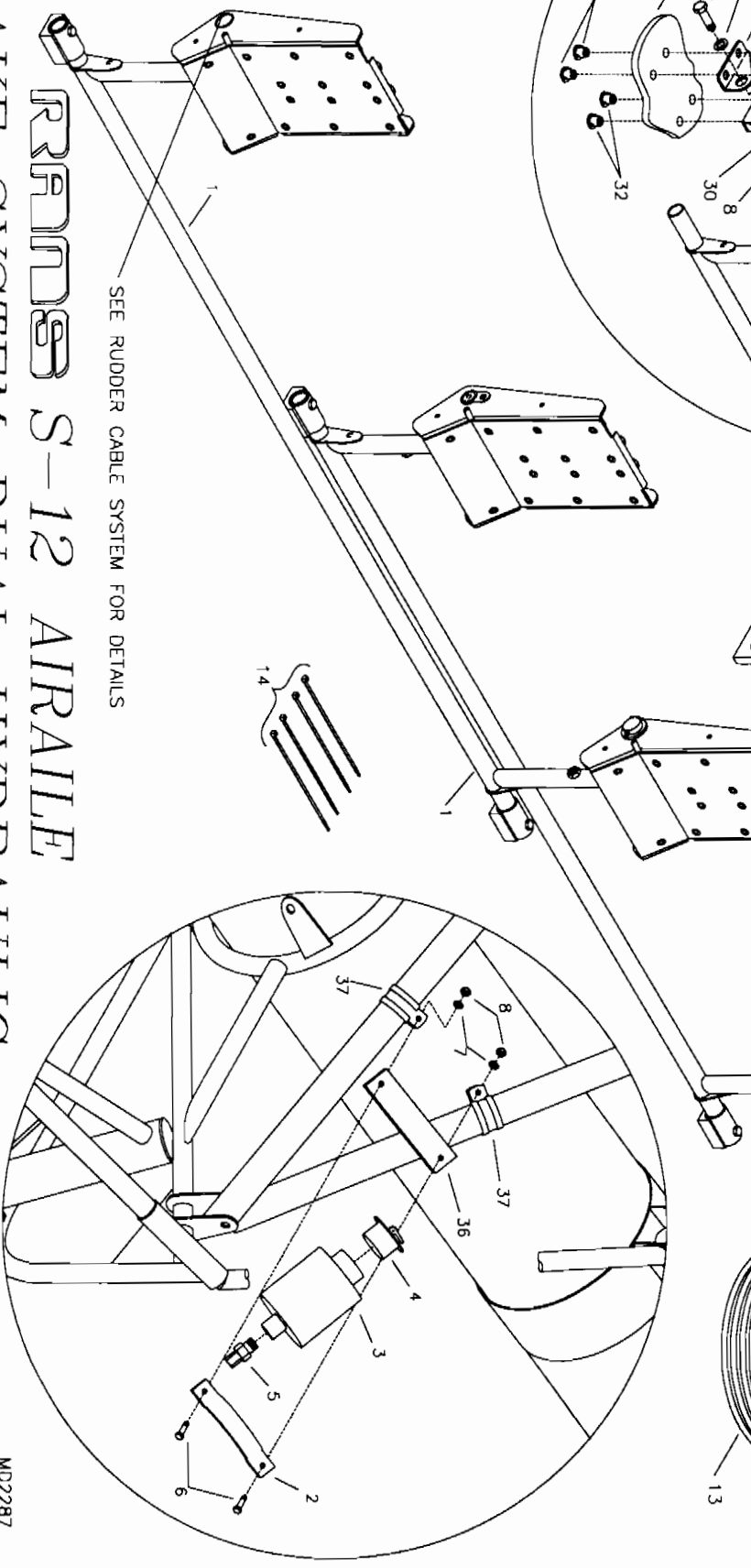
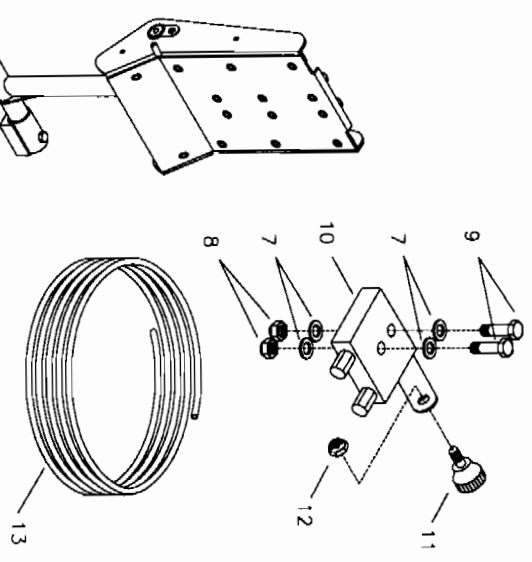
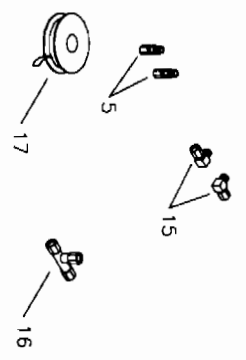
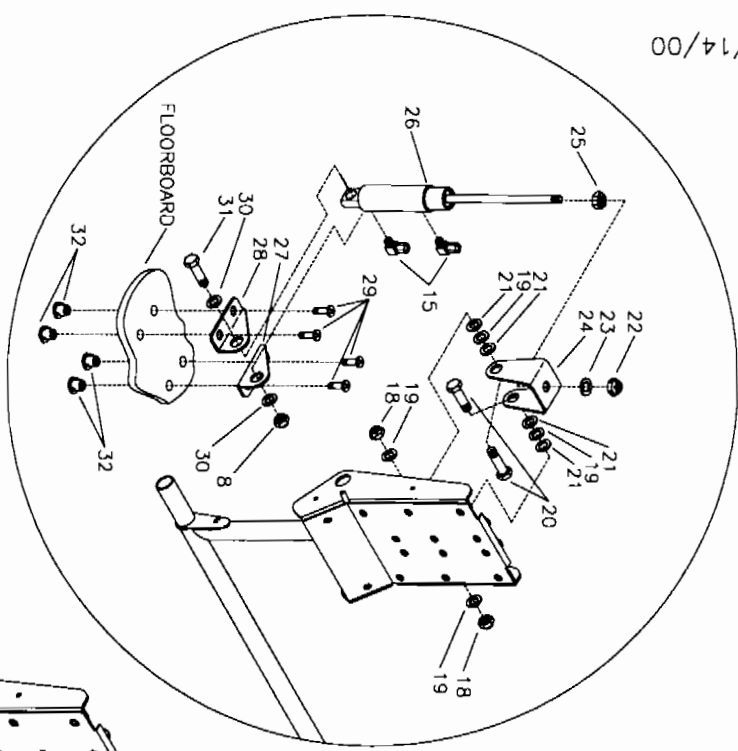
#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Rudder Pedals *	KPCS0066	0
2.	Hydraulic Reservoir Clamp	FS-HS	1
3.	Hydraulic Brake Reservoir	KPBS0007	1
4.	7/8" Expansion Cap	2598K29	1
5.	Straight Fitting	KSBS0002	3
6.	3/16" Bolt	AN3-3A	3
7.	3/16" Thin Washer	AN960-10L	6
8.	3/16" Shear Nut	AN364-1032A	8
9.	3/16" Bolt	AN3-15A	2
10.	Parking Brake	KSBS0007	1
11.	Knob	KSAC0012	1
12.	3/16" Shear Acorn Nut	22NKM02	1
13.	Hydraulic Brake Line	KSBS0004	20 ft
14.	Zip Ties	ZIP TIES	10
15.	90 Fitting	KSBS0001	6
16.	Tee Fitting	KSBS0003	1
17.	Teflon Tape **	TEFLON TAPE	0
18.	1/4" Shear Nut	AN364-428A	8
19.	1/4" Thick Washer	AN960-416	16
20.	1/4" Bolt	AN4-5A	8
21.	1/4" Thin Washer	AN960-416L	18
22.	5/16" Shear Nut	AN364-524A	4
23.	5/16" Thin Washer	AN960-516L	4
24.	Stainless Steel U Bracket	SU-118	4
25.	5/16" Plain Nut ***	----	0
26.	Master Cylinder - Brake	KSBS0015	2
27.	Brake Mount Bracket, LH	B-MBRKT-L	4
28.	Brake Mount Bracket, RH	B-MBRKT-R	4
29.	8-32 Pan Head Machine Screw	KSHW0008	16
30.	3/16" Thick Washer	AN960-10	8
31.	3/16" Bolt	AN3-10A	4
32.	8-32 Tee Nut	KSHW0007	16
33.	Parking Brake Stop Plate	KPBS0018	1
34.	1/4" Bolt	AN4-4A	2
35.	Aluminum Tube, 1/2" x .035 x 7" ****	KAAC0001-5	0
36.	Aluminum Strap, 1" x .032 x X ****	KAAC0001-9	0
37.	Cushioned Clamp	MS21919-DG18	2
38.	3/16" Insert Nut	I-NUT	2

*Referenced from rudder pedals.

***Supplied with Master Cylinder.

**Builder provides.

****Builder must fabricate from raw stock.



S-12 AIRFRAME BRAKE SYSTEM DUAL HYDRAULIC TOE BRAKES

S-12XL AIRAILE - BRAKE SYSTEM
DUAL HYDRAULIC TOE BRAKES

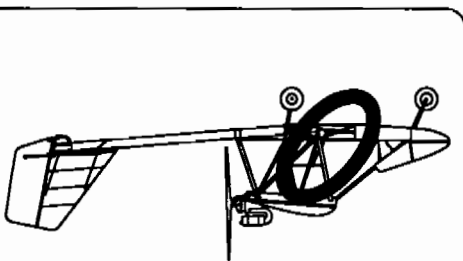
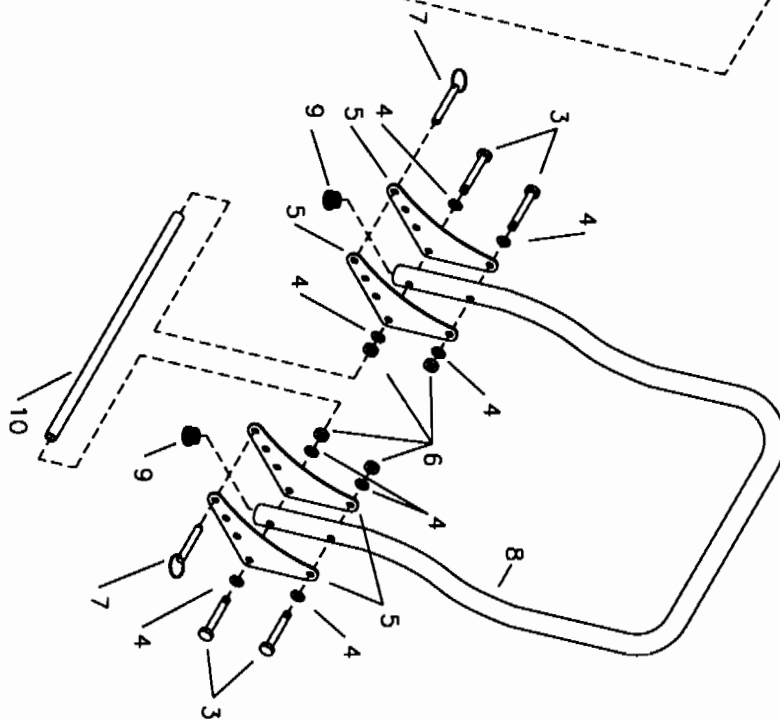
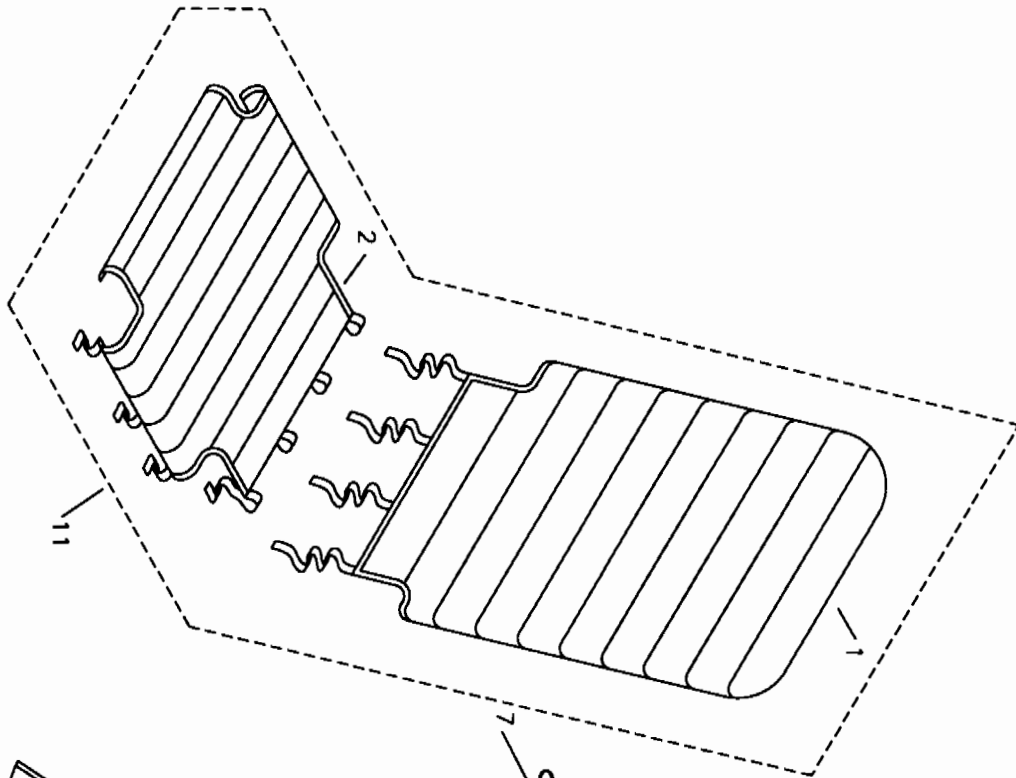
#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Rudder Pedal *	KPCS0066	0
2.	Hydraulic Reservoir Clamp	FS-HS	1
3.	Hydraulic Brake Reservoir	KPBS0007	1
4.	7/8" Expansion Cap	2598K29	1
5.	Straight Fitting	KSBS0002	3
6.	3/16" Bolt	AN3-3A	3
7.	3/16" Thin Washer	AN960-10L	6
8.	3/16" Shear Nut	AN364-1032A	8
9.	3/16" Bolt	AN3-15A	2
10.	Parking Brake	KSBS0007	1
11.	Knob	KSAC0012	1
12.	3/16" Shear Acorn Nut	22NKM02	1
13.	Hydraulic Brake Line	KSBS0004	25 ft
14.	Zip Ties	ZIP TIES	10
15.	90 Fitting	KSBS0001	10
16.	Tee Fitting	KSBS0003	1
17.	Teflon Tape **	TEFLON TAPE	0
18.	1/4" Shear Nut	AN364-428A	8
19.	1/4" Thick Washer	AN960-416	16
20.	1/4" Bolt	AN4-5A	8
21.	1/4" Thin Washer	AN960-416L	16
22.	5/16" Shear Nut	AN364-524A	4
23.	5/16" Thin Washer	AN960-516L	4
24.	Stainless Steel U Bracket	SU-118	4
25.	5/16" Plain Nut ***	----	0
26.	Master Cylinder - Brake	KSBS0015	4
27.	Brake Mount Bracket, LH	B-MBRKT-L	4
28.	Brake Mount Bracket, RH	B-MBRKT-R	4
29.	8-32 Pan Head Machine Screw	KSHW0008	16
30.	3/16" Thick Washer	AN960-10	8
31.	3/16" Bolt	AN3-10A	4
32.	8-32 Tee Nut	KSHW0007	16
33.	Parking Brake Stop Plate	KPBS0018	1
34.	Aluminum Strap, 1" x .032 x X ****	KAAC0001-9	0
35.	Cushioned Clamp	MS21919-DG18	2

*Referenced from rudder pedals.

***Supplied with Master Cylinder.

**Builder provides.

****Builder must fabricate from raw stock.



INTERNAL SYSTEMS
SEAT ASSEMBLY

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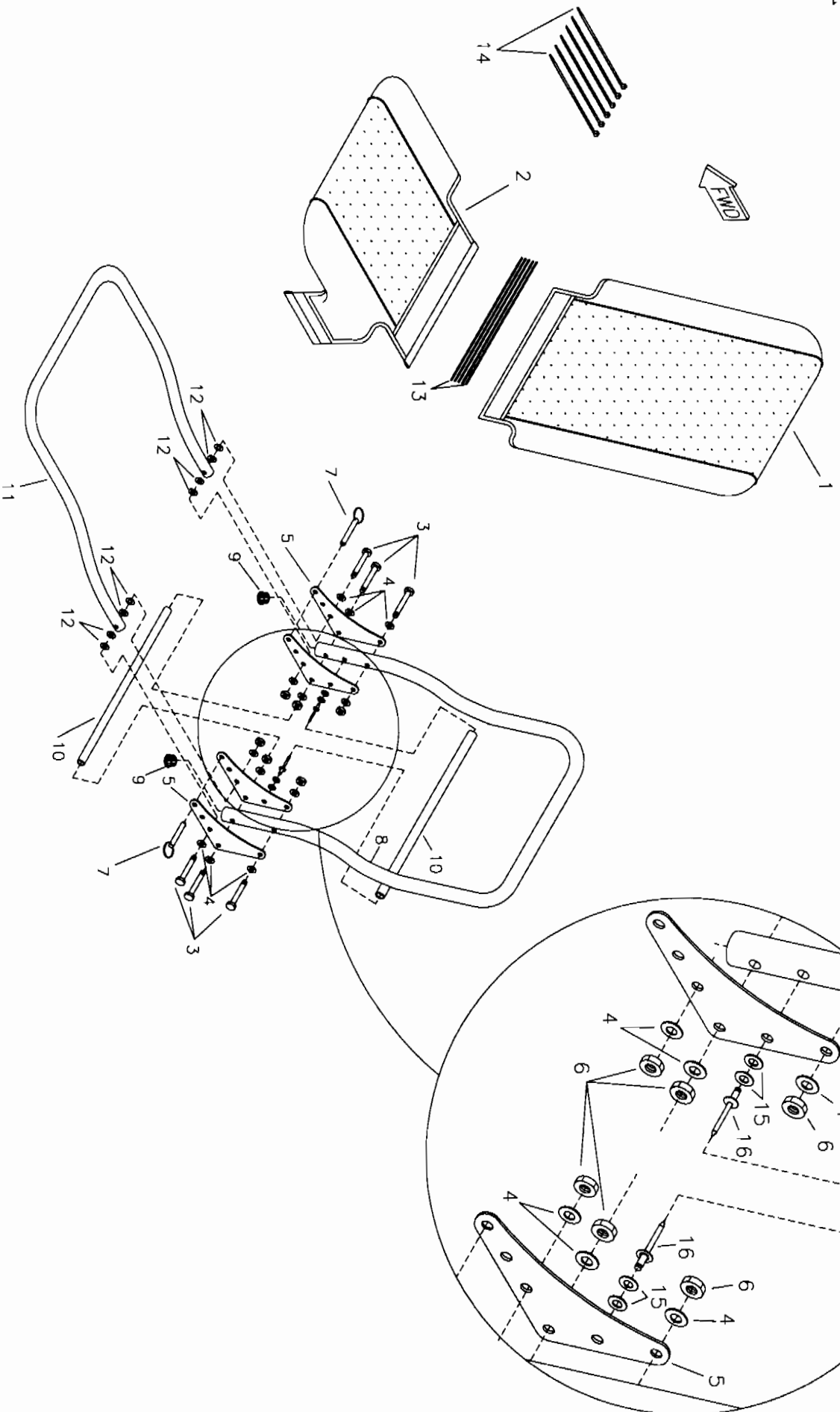
#	Description	Part Number	Quantity
1.	Seat Back Cover	ST-SBC	2
2.	Seat Bottom Cover	ST-SBOT	2
3.	3/16" Bolt	AN3-14A	8
4.	3/16" Thin Washer	AN960-10L	16
5.	Seat Back Gusset	ST-GUS	8
6.	3/16" Shear Nut	AN364-1032A	8
7.	1/4" Quick Pin	PIN 1/4X1/2	4
8.	Seat Back Frame	ST-SBF	2
9.	7/8" End Cap	CS-EC	4
10.	Seat Back Lower Tube*	KAAC0001	2

*Builder fabricates from raw stock (KAAC0001).

RANS, Inc.
S-12 Airaile

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MD4162

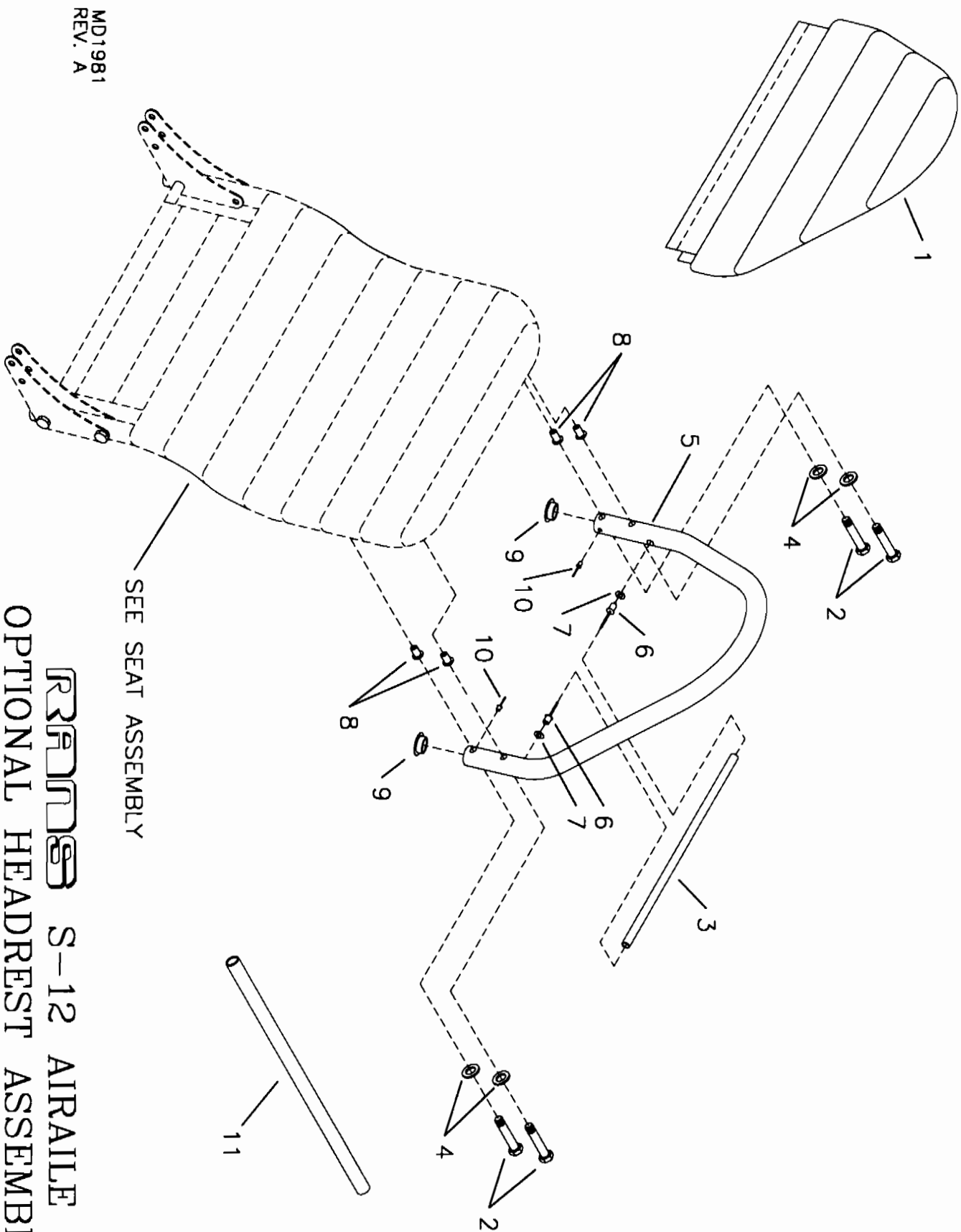
OPTIONAL FLIP-UP SEAT ASSEMBLY

S-12XL AIRAILE - OPTIONAL FLIP-UP SEAT ASSEMBLY

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Seat Back Cover	ST-SBC-A	2
2.	Seat Bottom Cover	ST-SBTC-A	2
3.	3/16" Bolt	AN3-14A	12
4.	3/16" Thin Washer	AN960-10L	24
5.	Seat Back Gusset	ST-GUS	8
6.	3/16" Shear Nut	AN364-1032A	12
7.	1/4" Quick Pin	PIN 1/4X1.2	4
8.	Seat Back Frame	ST-SBF	2
9.	7/8" End Cap	CS-EC	4
10.	Seat Back Lower Tube, 1/2" x .035 x X *	KAAC0001-5	4
11.	Seat Bottom Frame	KPST0001	2
12.	3/16" Plastic Washer	PW-3	16
13.	Lacing Wire (Stick) 36" x 1/16"	TG-LW-1/16	5
14.	Long Zip Ties	LONG ZIP TIES	40
15.	3/16" Thick Washer	AN960-10	8
16.	3/16" Aluminum Rivet - Cherry Q	AAPQ-64	4

*Builder must fabricate from raw stock (KAAC0001).

12/04/2001



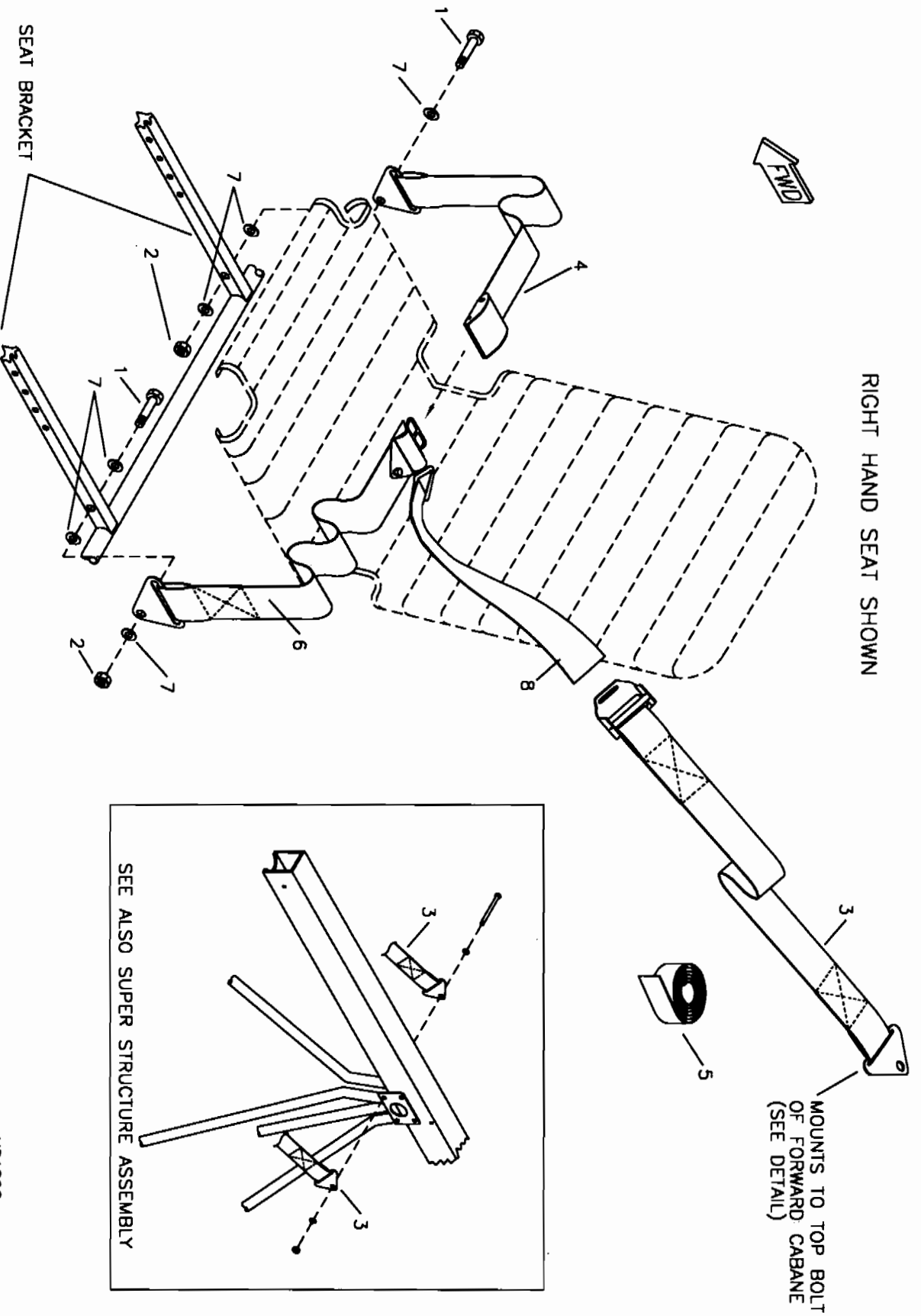
S-12XL AIRAILE - OPTIONAL HEADREST ASSEMBLY

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Headrest Cover	ST-HRC	2
2.	3/16" Bolt	AN3-13A	8
3.	Aluminum Internal Brace *	KAAC0014-1	0
4.	3/16" Thin Washer	AN960-10L	8
5.	Headrest Frame	ST-HRF(6/12)	2
6.	3/16" Aluminum Pop Rivet - Cherry Q	AAPQ-62	4
7.	3/16" Thick Washer	AN960-10	4
8.	3/16" Rivet Nut	MS27130-A25K	8
9.	1" End Cap	1 CAP	4
10.	3/32" Aluminum Pop Rivet	40APR1/8	4
11.	Headrest - Raw Stock Kit	KAAC0014	1

*Builder must fabricate from raw stock.



RIGHT HAND SEAT SHOWN

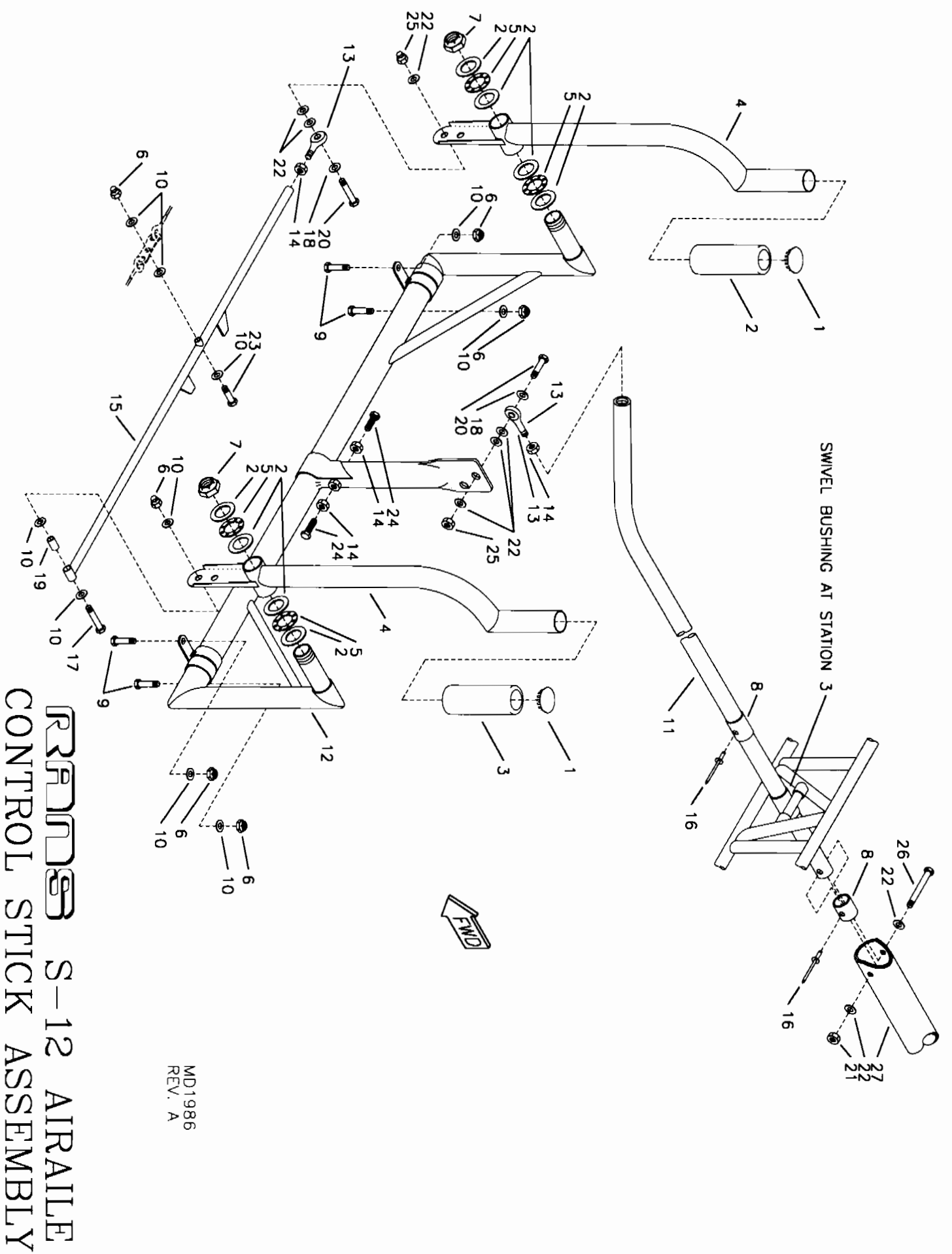


S-12XL AIRAILE - SEAT BELT INSTALLATION

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	1/4" Bolt	AN4-12A	4
2.	1/4" Shear Nut	AN364-428A	4
3.	Shoulder Belt - Slider End *	KAST0025-4	0
4.	Lap Belt - Clip Side *	KAST0025-1	0
5.	Seat Belt Kit	KAST0025	1
6.	Lap Belt - Buckle Side *	KAST0025-2	0
7.	1/4" Thick Washer	AN960-416	12
8.	Shoulder Belt - Swivel Clip End *	KAST0025-3	0

*Supplied in seat belt kit.

9/5/02

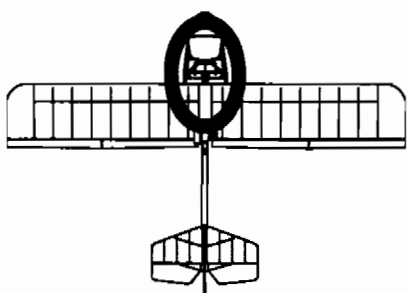
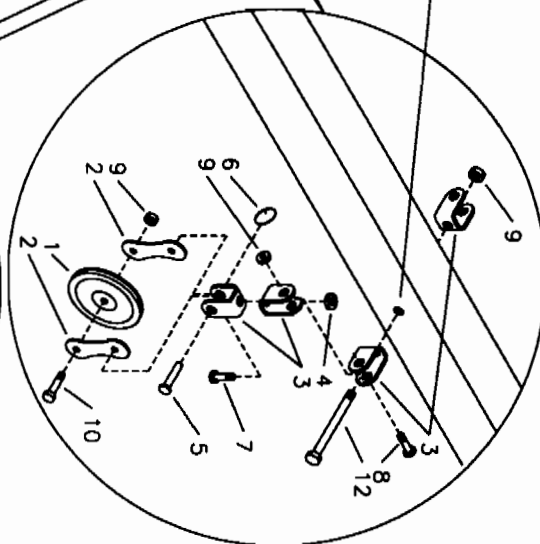
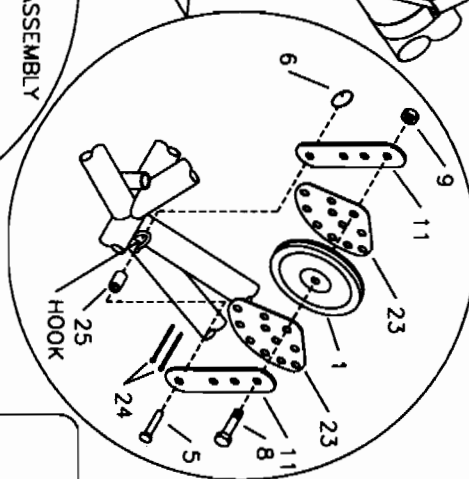
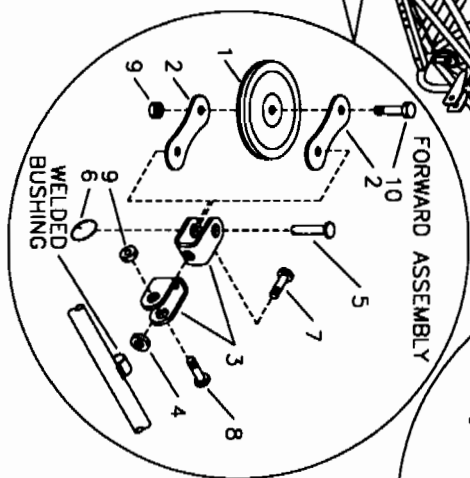
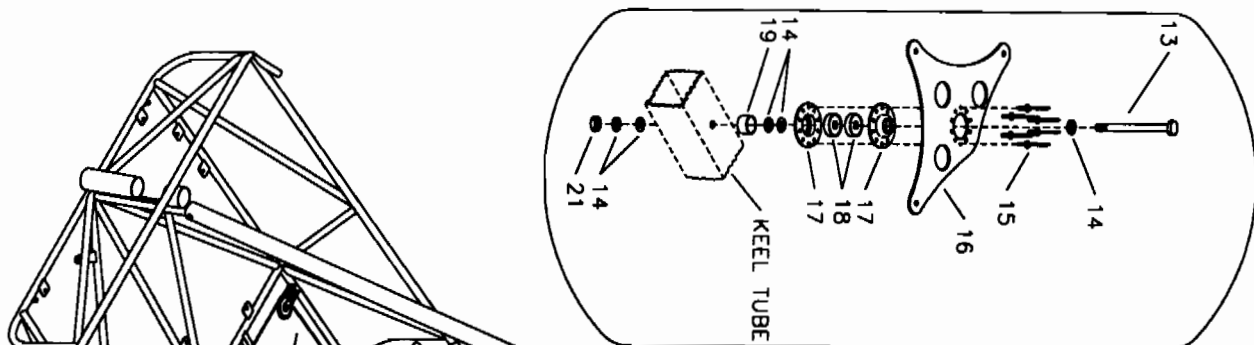


S-12XL AIRAILE - CONTROL STICK MOUNT & ASSEMBLY

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	7/8" End Cap	CS-EC	2
2.	Bearing Washer	CS-BW	8
3.	Control Stick Grip	CS-G	2
4.	Control Stick	KPCS0072	2
5.	Thrust Bearing	CS-TB	4
6.	3/16" Shear Nut	AN364-1032A	6
7.	3/4" Nyloc Nut	CS-3/4LOCNUT	2
8.	Elevator Stop, 3/4" x .058 x 3/4" *	KAAC0001-3	0
9.	3/16" Bolt	AN3-10A	4
10.	3/16" Thin Washer	AN960-10L	10
11.	5/8" Push Pull Tube	CS-5/8PPT(12)	1
12.	Control Stick Torque Tube	CS-TT-A	1
13.	Male Rod End, 1/4" X 1/4"	NM-4	2
14.	1/4" Plain Nut	AN345-416	4
15.	Control Stick Link Tube	CS-CSLT-3	1
16.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-41	2
17.	3/16" Bolt	AN3-10A	1
18.	1/4" Plastic Washer	PW-4	2
19.	Spacer Bushing, 1/4" x .028 x 17/32" *	KAAC0001-6	1
20.	1/4" Bolt	AN4-10A	2
21.	1/4" Shear Nut	AN364-428A	1
22.	1/4" Thick Washer	AN960-416	8
23.	3/16" Bolt	AN3-12A	1
24.	1/4" Plain Bolt	1/4X1 BOLT	2
25.	1/4" Shear Acorn Nut	52NKTE-048	2
26.	1/4" Bolt	AN4-15A	1
27.	1 1/4" Push Pull Tube **	TG 1 1/4PPT-141 5/8	0

*Builder must fabricate from raw stock.

**Referenced from elevator assembly.



AILERON CABLE SYSTEM

INTERNAL SYSTEMS

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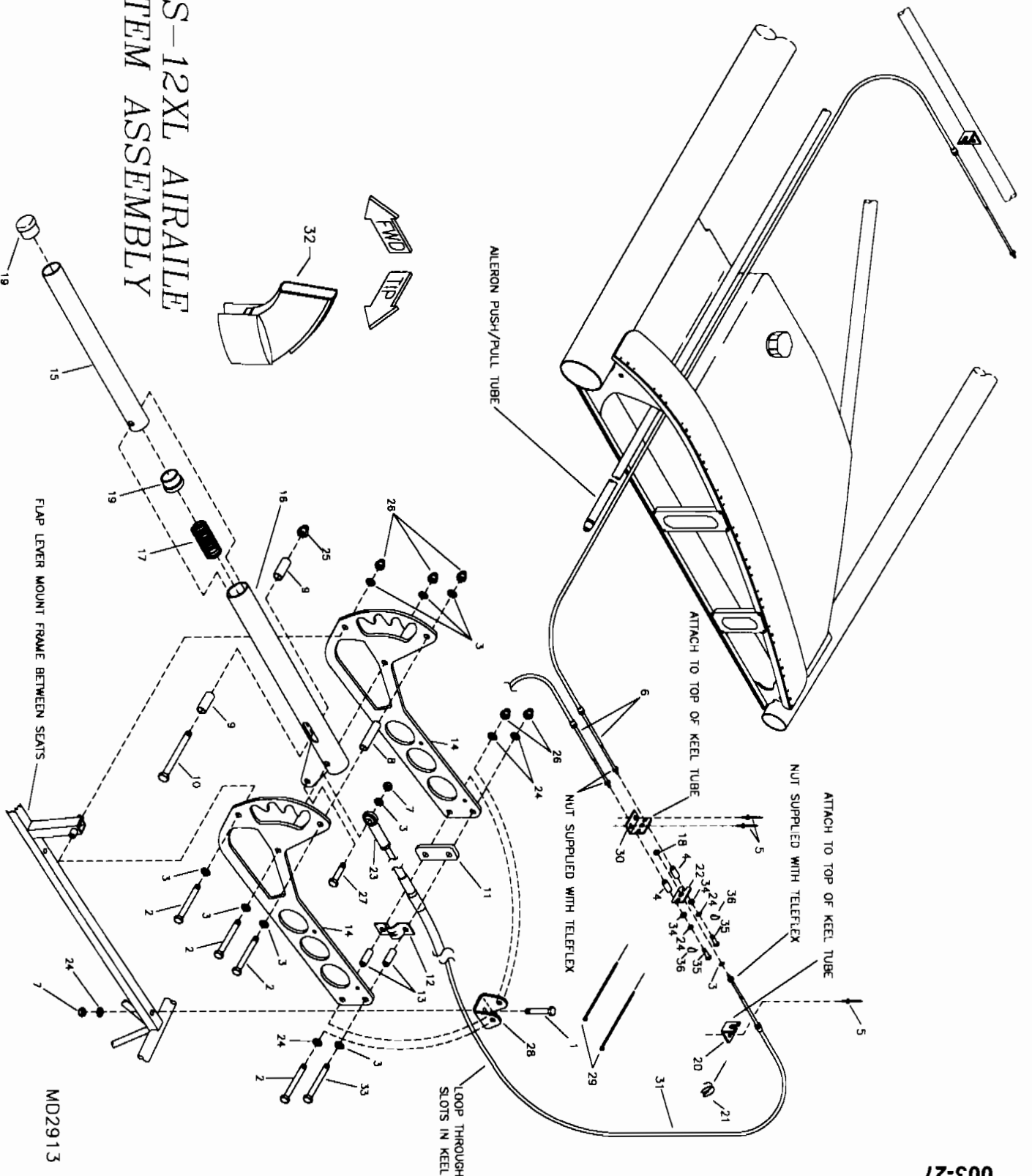
3/ 7/96

#	Description	Part Number	Quantity
1.	Pulley	AN210-2A	6
2.	Hummertang	T12-HT6	8
3.	Shackle	RL-205-T	10
4.	3/16" Tensile Nut	AN365-1032A	4
5.	Clevis Pin	MS20392-2C17	6
6.	Loc Ring	RL 27 1/4	6
7.	3/16" Bolt	AN3-3A	4
8.	3/16" Bolt	AN3-7A	6
9.	3/16" Shear Nut	AN364-1032A	12
10.	3/16" Bolt	AN3-6A	4
11.	Tang	ST-16	4
12.	3/16" Bolt	AN3-24A	1
13.	1/4" Bolt	AN4-37A	1
14.	1/4" Thick Washer	AN960-416	5
15.	1/8" Aluminum Pop Rivet	AAPQ-44	6
16.	Control Stick Tee	CS-TEE14	1
17.	Bearing Flange	BR-FLNG	2
18.	Bearing	SR4APP	2
19.	Stand Off, 3/4" X 3/4"	SO-3/4X3/4	1
20.	Aileron Cable	KACS0009	1
21.	1/4" Acorn Nut, Shear	52NKTE-048	1
22.	Turnbuckle (W/Pins & Loc Rings)	RL-335-AT	2
23.	Cable Keeper	SP-CK	4
24.	Small Cotter Pin	MS24665-134	4
25.	Bushing, 1/4" X .028 X 3/8"	KAAC0001	2

*Builder fabricates from raw stock.

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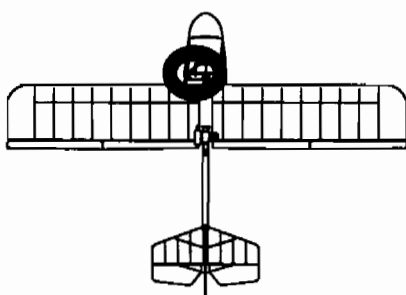
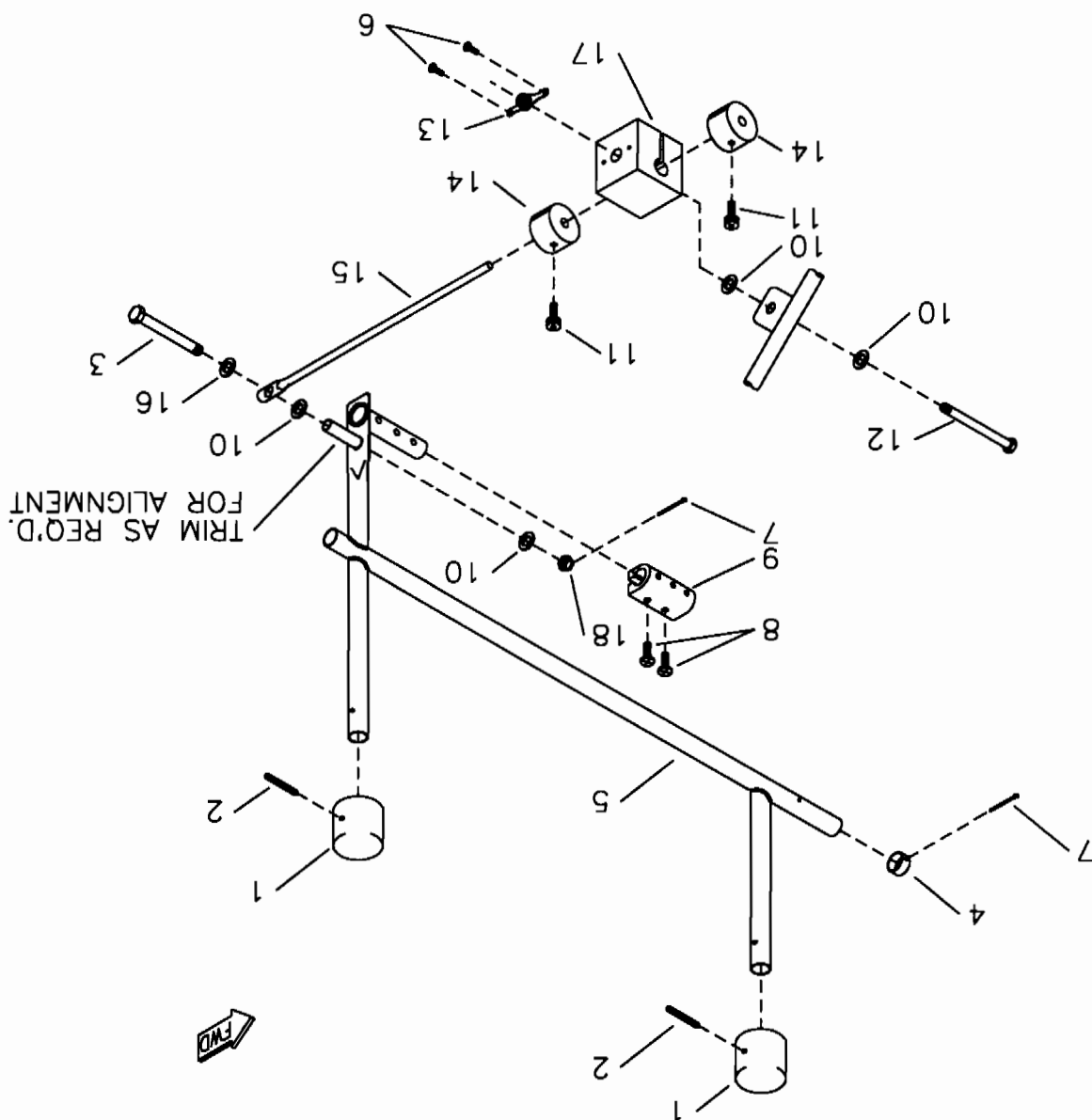
S-12XL AIRRAIL FLAP SYSTEM ASSEMBLY

S-12XL AIRAILE - FLAP SYSTEM ASSEMBLY

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	3/16" Bolt	AN3-7A	1
2.	3/16" Bolt	AN3-14A	4
3.	3/16" Thick Washer	AN960-10	9
4.	Insert Nut	KPAC0012	2
5.	3/16" Stainless Steel Pop Rivet - Cherry Q	CCPQ-64	3
6.	Flap Teleflex, 8'	W-F-TELFEX-8	2
7.	3/16" Shear Nut	AN364-1032A	2
8.	Aluminum Bushing, 1/4" x .028 x 7/8" *	KAAC0001-6	0
9.	Aluminum Bushing, 3/8" x .058 x 3/8" *	KAAC0001-4	0
10.	1/4" Bolt	AN4-20A	1
11.	Plastic Shim	KPAC0121	1
12.	Teleflex Retainer Bracket	KSCS0001	1
13.	Aluminum Bushing, 1/4" x .028 x 9/16" *	KAAC0001-6	0
14.	Flap Lever Side Plate	KPFL0046	2
15.	Flap Trip Release Tube	KPFL0045	1
16.	Flap Lever	KPFL0044	1
17.	Spring	C-21	1
18.	3/16" Tensile Nut	AN365-1032A	1
19.	3/4" Endcap	3/4 ENDCAP	2
20.	Teleflex Retainer	W-TEL-R	1
21.	Safety Wire	SAFETY WIRE	0 ft
22.	Flap Dual Teleflex Retainer, AFT	FL-DTR-AFT	1
23.	Female Rod End	NF-3	1
24.	3/16" Thin Washer	AN960-10L	6
25.	1/4" Shear Acorn Nut	52NKTE-048	1
26.	3/16" Shear Acorn Nut	22NKM02	5
27.	3/16" Bolt	AN3-6A	1
28.	Horizontal Stabilizer Attach Bracket	S2-SAB	1
29.	Zip Ties	ZIP TIES	2
30.	Flap Dual Teleflex Retainer (FWD S-12 Style)	FL-DTR-FWD	1
31.	Flap Teleflex, 7'	W-F-TELFEX-7	1
32.	Flap Lever Cover	KAFL0004	1
33.	3/16" Bolt	AN3-13A	1
34.	Aluminum Bushing, 1/4" X .028 X 1/8" *	KAAC0001-6	0
35.	3/16" Bolt	AN3-3A	2
36.	Loctite Blue	LOC-TITE	0

*Builder must fabricate from raw stock.

2/27/04



INTERNAL SYSTEMS
THROTTLE LEVER MOUNT

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THROTTLE LEVER MOUNT

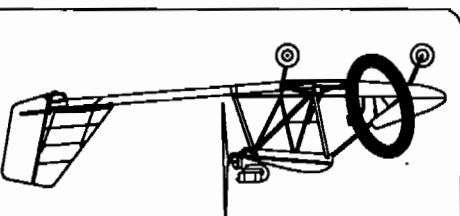
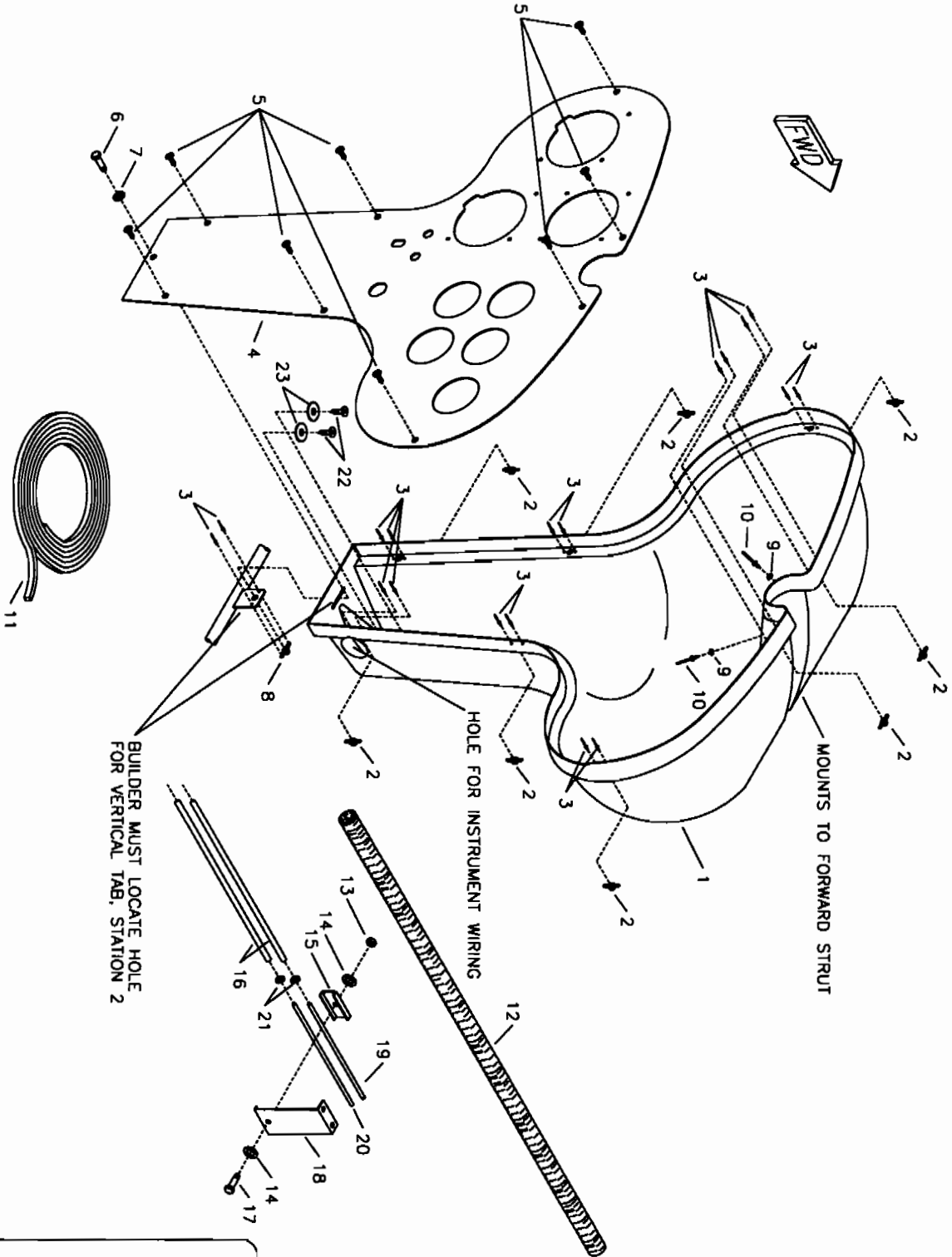
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#	Description	Part Number	Quantity
1.	Throttle Knob	T-KNOB	2
2.	1/8" Roll Pin, 1"	20032446	2
3.	3/16" Bolt	AN3-6	1
4.	Stop Ring, 5/8" X .058 X 1/2"	T-SR-5/8	1
5.	Throttle Lever	T-TL	1
6.	Small Pan Head Screw	PHS-4X1/4	2
7.	Small Cotter Pin	MS24665-134	2
8.	Machine Screw	MS35206-218	2
9.	Throttle Retension Block	T-RB	1
10.	3/16" Thick Washer	AN960-10	3
11.	Set Screw	T-SC	2
12.	3/16" Bolt	AN3-14A	1
13.	3/16" Nut Plate	K-1000-3	1
14.	Throttle Stop	T-STOP	2
15.	Friction Rod	T-FR	1
16.	3/16" Thin Washer	AN960-10L	2
17.	Friction Block	T-FB	1
18.	3/16" Castle Nut	AN310-3	1

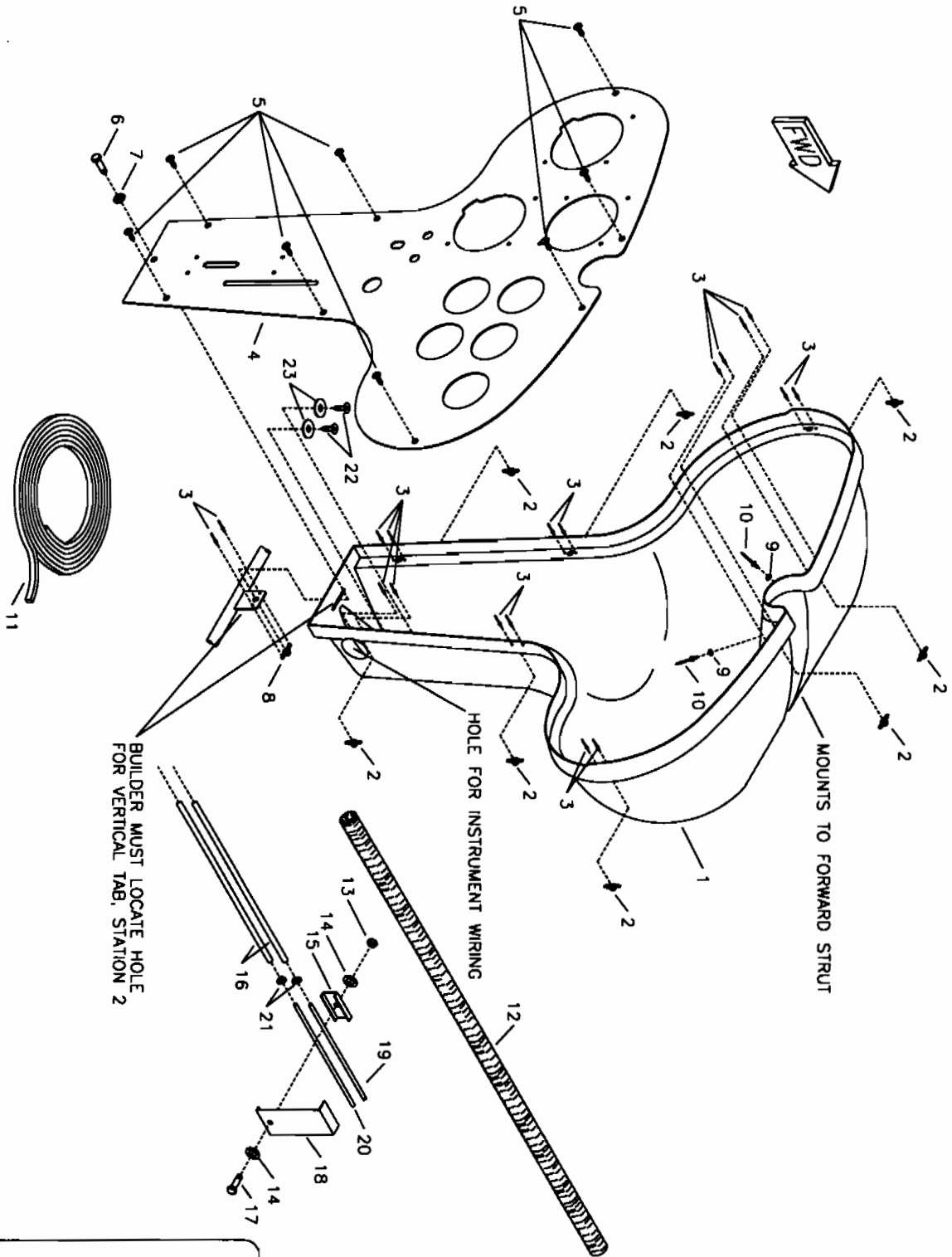


S-12XL AIRAILE - 503/582 INSTRUMENT PANEL ASSEMBLY
WITHOUT PANEL TRIM

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Instrument Panel Housing	KPIP0014	1
2.	8-32 Nut Plate	MS21047-08	8
3.	3/32" Aluminum Pop Rivet	40APR1/8	16
4.	Instrument Panel, 503/582	KPIP0013	1
5.	8-32 Machine Bolt	AN526-832R8	8
6.	3/16" Bolt	AN3-4A	1
7.	3/16" Thin Washer	AN960-10L	1
8.	3/16" Nut Plate	K-1000-3	1
9.	1/8" Small Brass Washer	AN960-B4	2
10.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-44	2
11.	Trim Loc	TRIM-LOC	7 ft
12.	Wire Casing	IP-WCASE	13 ft
13.	3/16" Shear Nut **	AN364-1032A	0
14.	3/16" Thick Washer **	AN960-10	0
15.	Static/Pitot Mount Clamp **	IP-SPMC	0
16.	1/4" Blue Static/ASI Line *	FS-FL	0
17.	3/16" Bolt **	AN3-5A	0
18.	Static/Pitot Mount **	IP-SPM	0
19.	Static Tube **	W-ST	0
20.	Pitot Tube **	W-ST	0
21.	Line Clamp, 3/8" *	FS-LCL 3/8	2
22.	#8 Pan Head Screw	8X1/2 PHS	2
23.	3/16" Large Washer	AN970-3	2

*Referenced from instrument schematic.

**Referenced from #1 Belly Pan Assembly.



FWD

MOUNTS TO FORWARD STRUT

HOLE FOR INSTRUMENT WIRING

BUILDER MUST LOCATE HOLE
FOR VERTICAL TAB, STATION 2

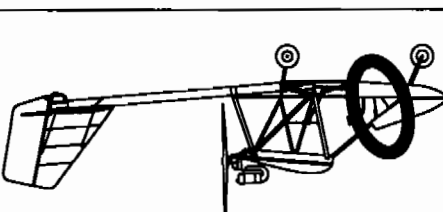
503/582 INSTRUMENT PANEL
ASSEMBLY WITH PANEL TRIM

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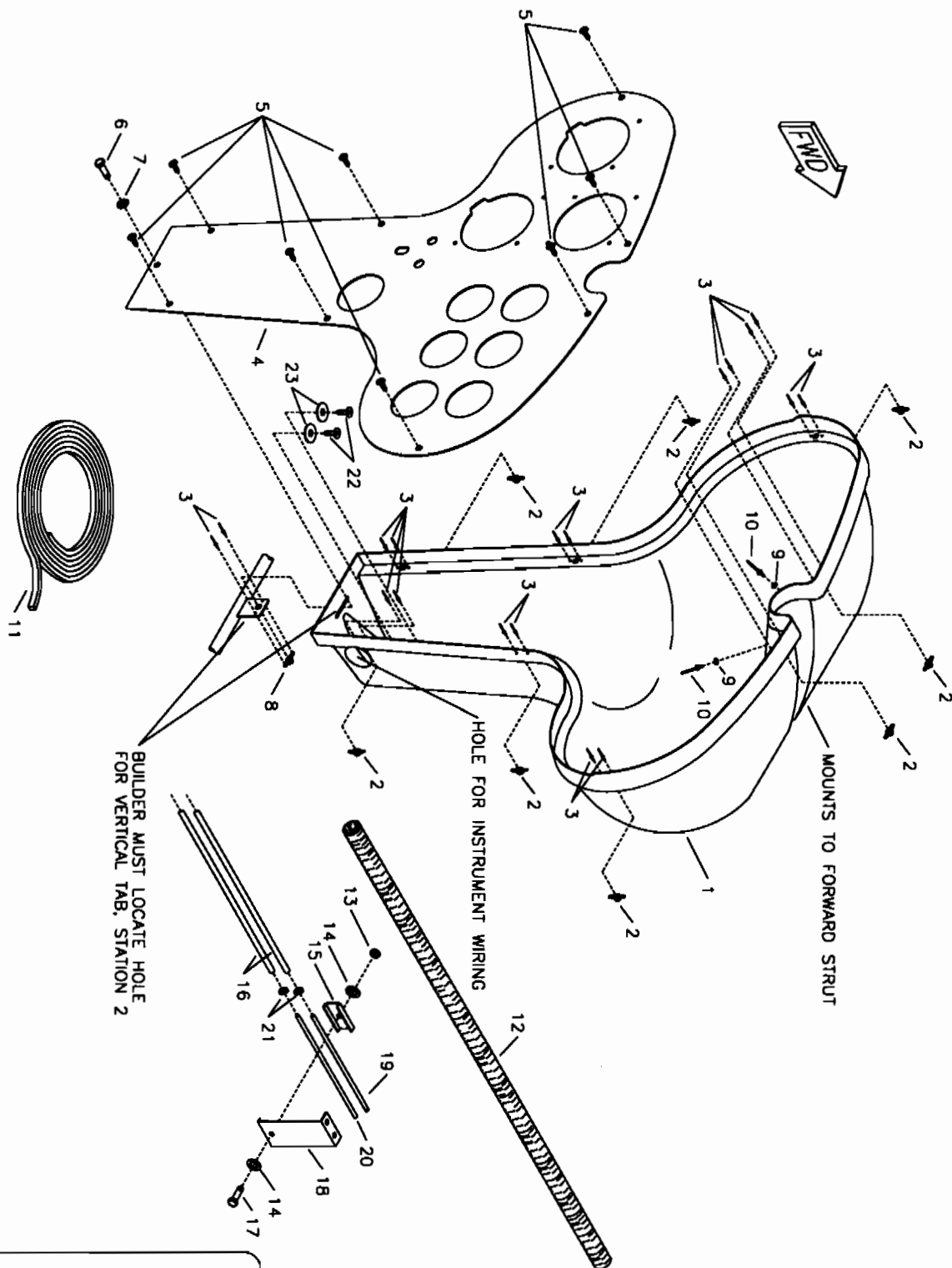


S-12XL AIRAILE - 503/582 INSTRUMENT PANEL ASSEMBLY
WITH PANEL TRIM

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Instrument Panel Housing	KPIP0014	1
2.	8-32 Nut Plate	MS21047-08	8
3.	3/32" Aluminum Pop Rivet	40APR1/8	16
4.	Instrument Panel, 503/582 (W/Trim)	KPIP0012	1
5.	8-32 Machine Bolt	AN526-832R8	8
6.	3/16" Bolt	AN3-4A	1
7.	3/16" Thin Washer	AN960-10L	1
8.	3/16" Nut Plate	K-1000-3	1
9.	1/8" Small Brass Washer	AN960-B4	2
10.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-44	2
11.	Trim Loc	TRIM-LOC	7 ft
12.	Wire Casing	IP-WCASE	13 ft
13.	3/16" Shear Nut **	AN364-1032A	0
14.	3/16" Thick Washer **	AN960-10	0
15.	Static/Pitot Mount Clamp **	IP-SPMC	0
16.	1/4" Blue Static/ASI Line *	FS-FL	0
17.	3/16" Bolt **	AN3-5A	0
18.	Static/Pitot Mount **	IP-SPM	0
19.	Static Tube **	W-ST	0
20.	Pitot Tube **	W-ST	0
21.	Line Clamp, 3/8" *	FS-LCL 3/8	2
22.	#8 Pan Head Screw	8X1/2 PHS	2
23.	3/16" Large Washer	AN970-3	2

*Referenced from instrument schematic.

**Referenced from #1 Belly Pan Assembly.



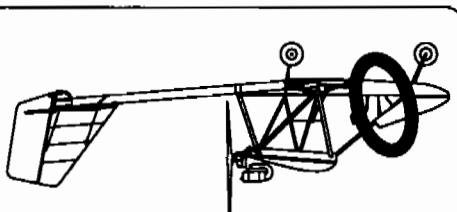
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912 - INSTRUMENT PANEL ASSEMBLY
WITHOUT PANEL TRIM

INTERNAL SYSTEMS

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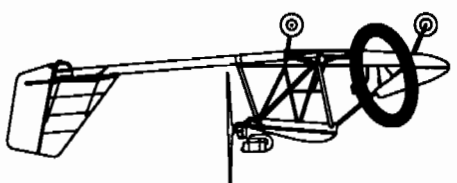
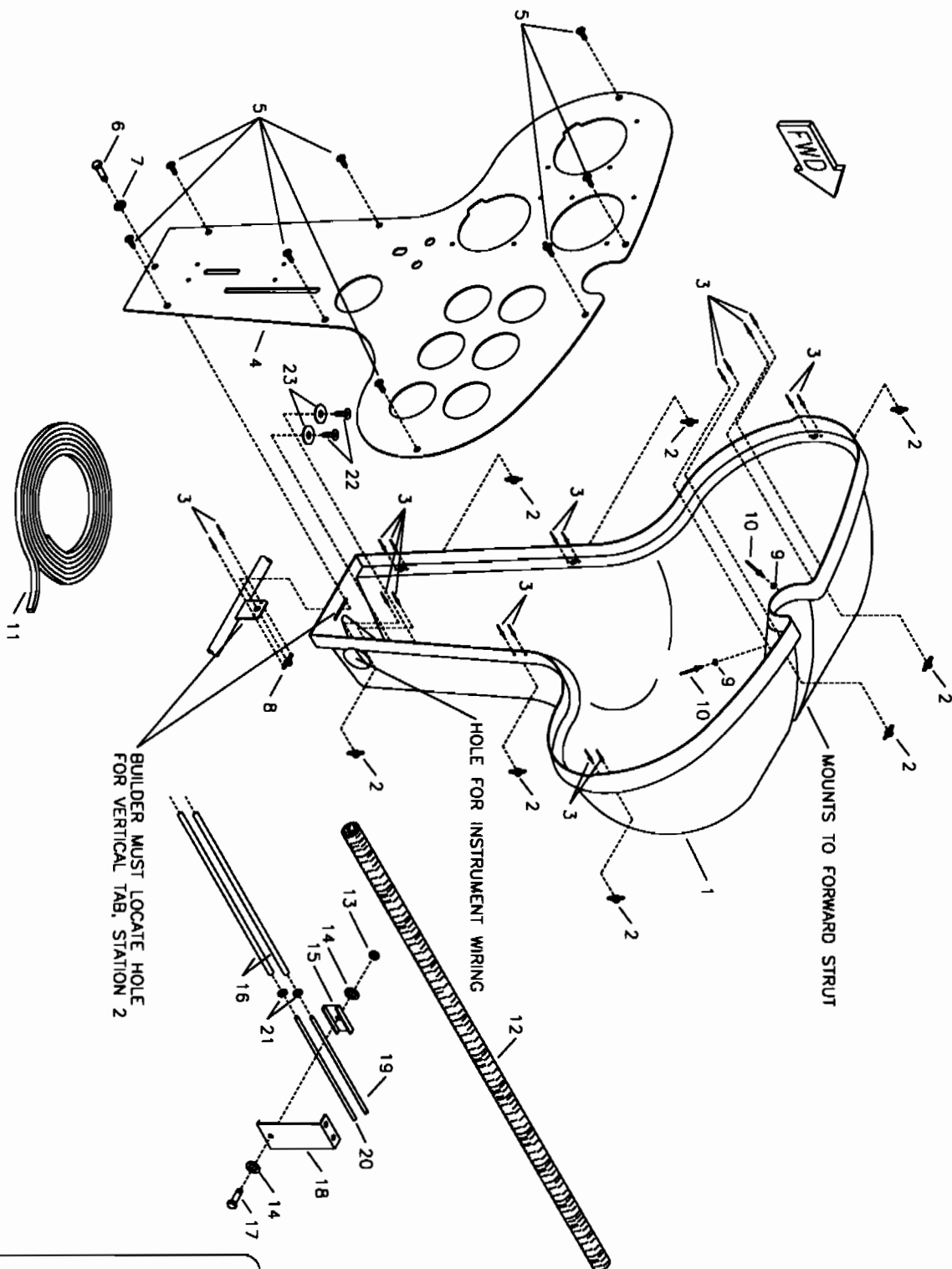


S-12XL AIRAILE - 912 INSTRUMENT PANEL ASSEMBLY
WITHOUT PANEL TRIM

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Instrument Panel Housing	KPIP0014	1
2.	8-32 Nut Plate	MS21047-08	8
3.	3/32" Aluminum Pop Rivet	40APR1/8	18
4.	Instrument Panel, 912 (W/O Trim)	KPIP0027	1
5.	8-32 Machine Bolt	AN526-832R8	8
6.	3/16" Bolt	AN3-4A	1
7.	3/16" Thin Washer	AN960-10L	1
8.	3/16" Nut Plate	K-1000-3	1
9.	1/8" Small Brass Washer	AN960-B4	2
10.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-44	2
11.	Trim Loc	TRIM-LOC	7 ft
12.	Wire Casing	IP-WCASE	13 ft
13.	3/16" Shear Nut **	AN364-1032A	0
14.	3/16" Thick Washer **	AN960-10	0
15.	Static/Pitot Mount Clamp **	IP-SPMC	0
16.	1/4" Blue Static/ASI Line *	FS-FL	0
17.	3/16" Bolt **	AN3-5A	0
18.	Static/Pitot Mount **	IP-SPM	0
19.	Static Tube **	W-ST	0
20.	Pitot Tube **	W-ST	0
21.	Line Clamp, 3/8" *	FS-LCL 3/8	2
22.	#8 Pan Head Screw	8X1/2 PHS	2
23.	3/16" Large Washer	AN970-3	2

*Referenced from instrument schematic.

**Referenced from #1 Belly Pan Assembly.



912 - INSTRUMENT PANEL ASSEMBLY WITH PANEL TRIM

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S-12XL AIRAILE - 912 INSTRUMENT PANEL ASSEMBLY
WITH PANEL TRIM

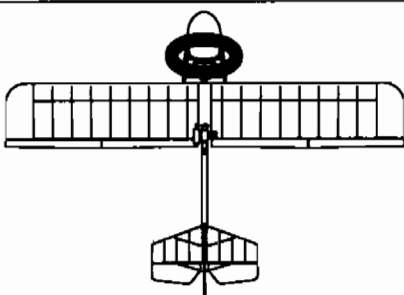
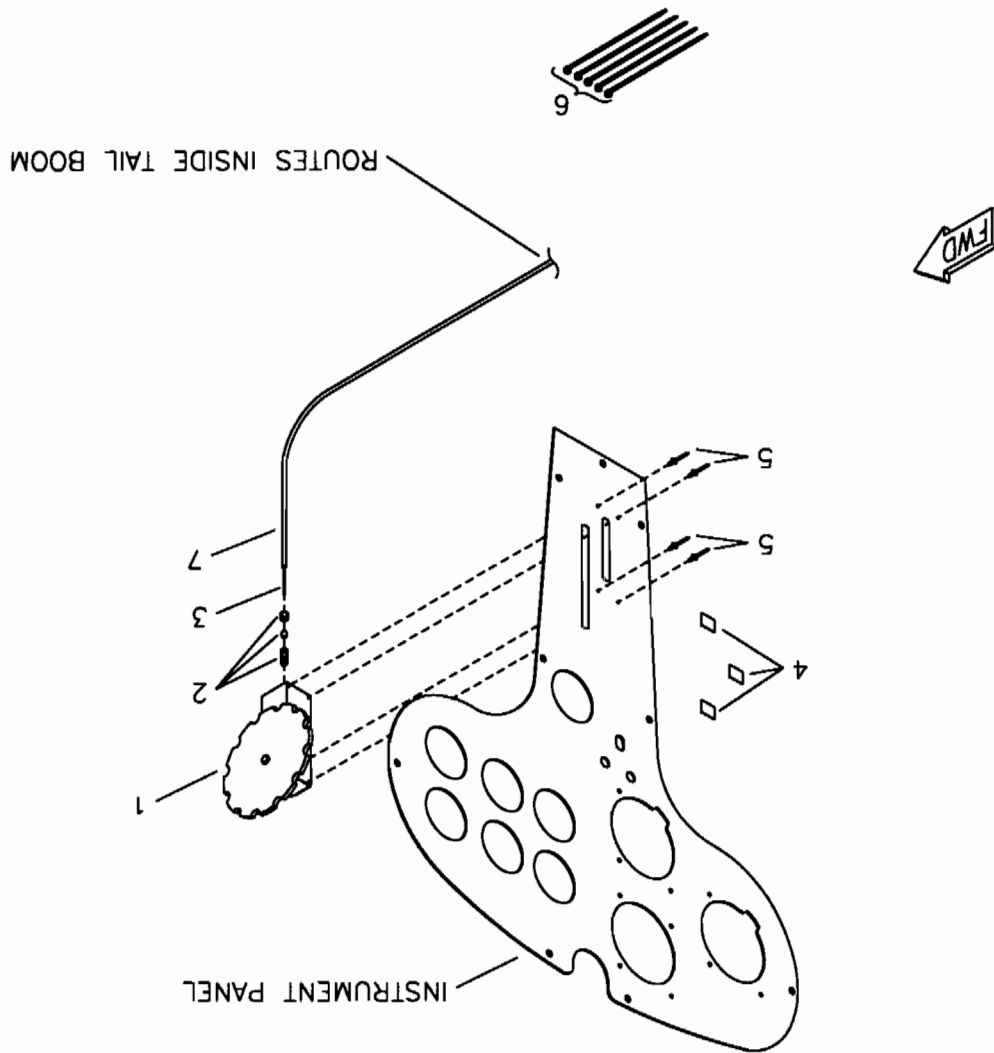
#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Instrument Panel Housing	KPIP0014	1
2.	8-32 Nut Plate	MS21047-08	8
3.	3/32" Aluminum Pop Rivet	40APR1/8	18
4.	Instrument Panel, 912 (W/Trim)	KPIP0011	1
5.	8-32 Machine Bolt	AN526-832R8	8
6.	3/16" Bolt	AN3-4A	1
7.	3/16" Thin Washer	AN960-10L	1
8.	3/16" Nut Plate	K-1000-3	1
9.	1/8" Small Brass Washer	AN960-B4	2
10.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-44	2
11.	Trim Loc	TRIM-LOC	7 ft
12.	Wire Casing	IP-WCASE	13 ft
13.	3/16" Shear Nut **	AN364-1032A	0
14.	3/16" Thick Washer **	AN960-10	0
15.	Static/Pitot Mount Clamp **	IP-SPMC	0
16.	1/4" Blue Static/ASI Line *	FS-FL	0
17.	3/16" Bolt **	AN3-5A	0
18.	Static/Pitot Mount **	IP-SPM	0
19.	Static Tube **	W-ST	0
20.	Pitot Tube **	W-ST	0
21.	Line Clamp, 3/8" *	FS-LCL 3/8	2
22.	#8 Pan Head Screw	8X1/2 PHS	2
23.	3/16" Large Washer	AN970-3	2

*Referenced from instrument schematic.

**Referenced from #1 Belly Pan Assembly.

USA
Made in the

RRMS
S-12 AIRAILE



Section:**INTERNAL SYSTEMS****Detail:****TRIM WHEEL ASSEMBLY
PANEL MOUNT****Page:**

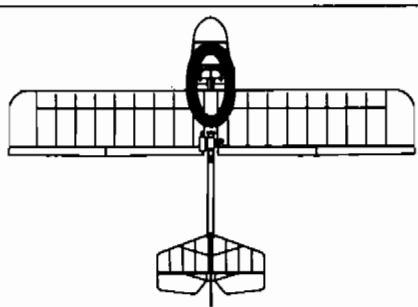
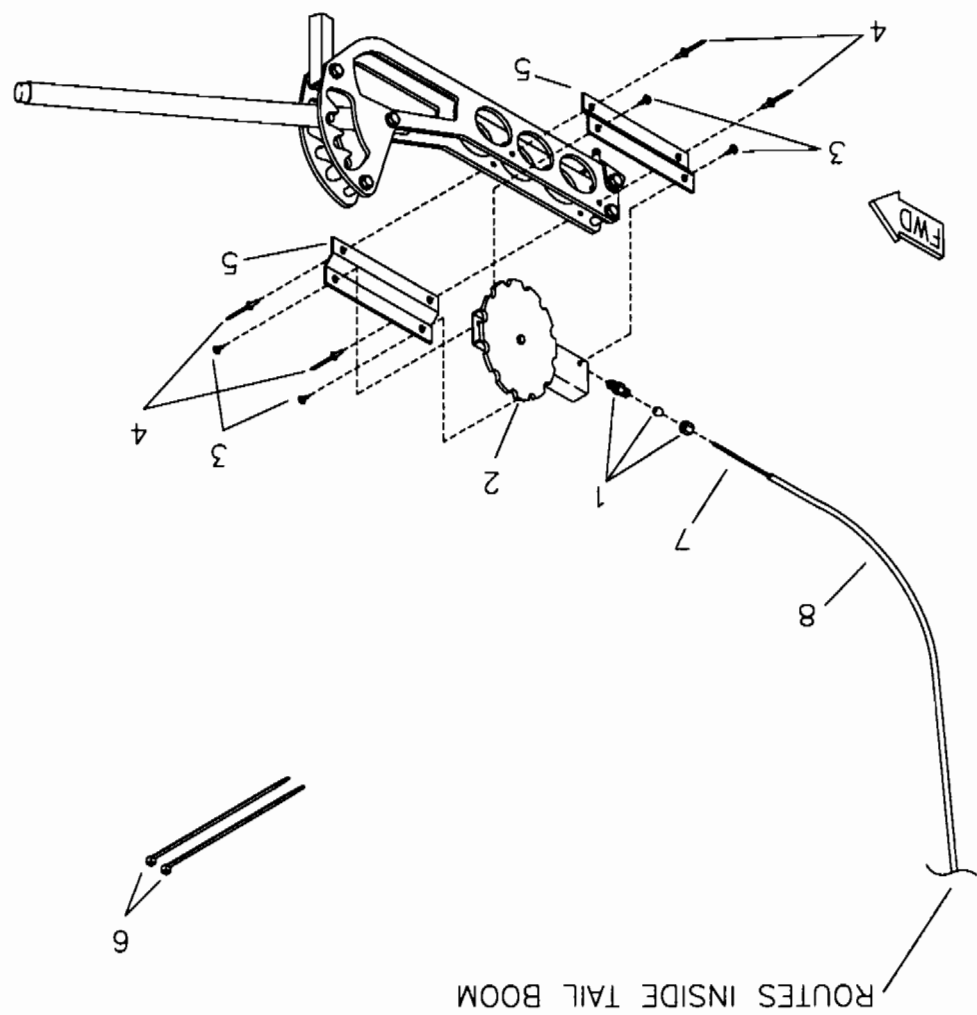
03-40

Date:

6/26/97

#	Description	Part Number	Quantity
1.	Trim Wheel Assembly	TR-WA	1
2.	Fitting	IMP68-3/16X1/8	1
3.	Trim Push Wire	TR-PW	22 ft
4.	Panel Decals *	DECAL	0
5.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-42	4
6.	Zip Ties	ZIP TIES	5
7.	Trim Cable Housing	KSAC0008	22 ft

*On main decal sheet.



TRIM WHEEL ASSEMBLY -
FLAP LEVER MOUNT

DETAIL:

INTERNAL SYSTEMS

SECTION:

NOTES:

PAGE: 03-41

PAGE:

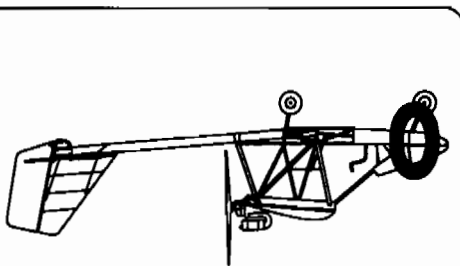
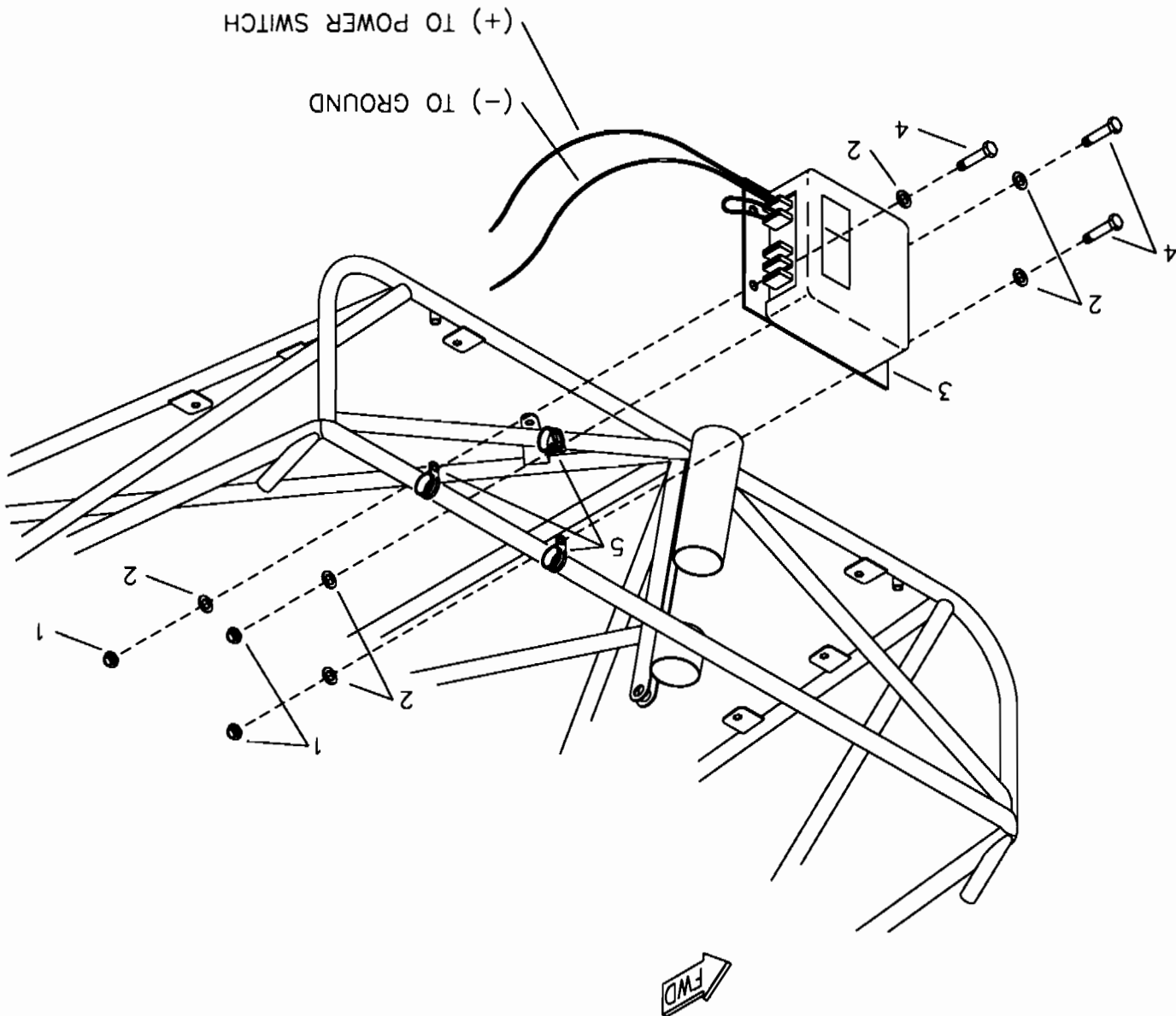
Section:**INTERNAL SYSTEMS****Detail:****TRIM WHEEL ASSEMBLY
FLAP LEVER MOUNT****Page:**

03-42

Date:

3/23/98

#	Description	Part Number	Quantity
1.	Fitting	IMP68-3/16X1/8	1
2.	Trim Wheel Assembly	TR-WA	1
3.	#4 Small Pan Head Screw	4X1/4 PHS	4
4.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-44	4
5.	Attach Angle - Trim Wheel	KPTR0025	2
6.	Zip Ties	ZIP TIES	2
7.	Trim Push Wire	TR-PW	22 ft
8.	Trim Cable Housing	KSAC0008	22 ft



STROBE BOX MOUNT

DETAIL

INTERNAL SYSTEMS

SECTION

Section:**INTERNAL SYSTEMS****Detail:****STROBE BOX MOUNT****Page:**

03-44

Date:

6/26/97

#	Description	Part Number	Quantity
1.	3/16" Shear Nut	AN364-1032A	3
2.	3/16" Thick Washer	AN960-10	6
3.	Whelen Strobe Light Power Supply *	A413A, HDA-DF	0
4.	3/16" Bolt	AN3-5A	3
5.	1/2" Cushioned Tube Clamp	MS21919-DG8	3

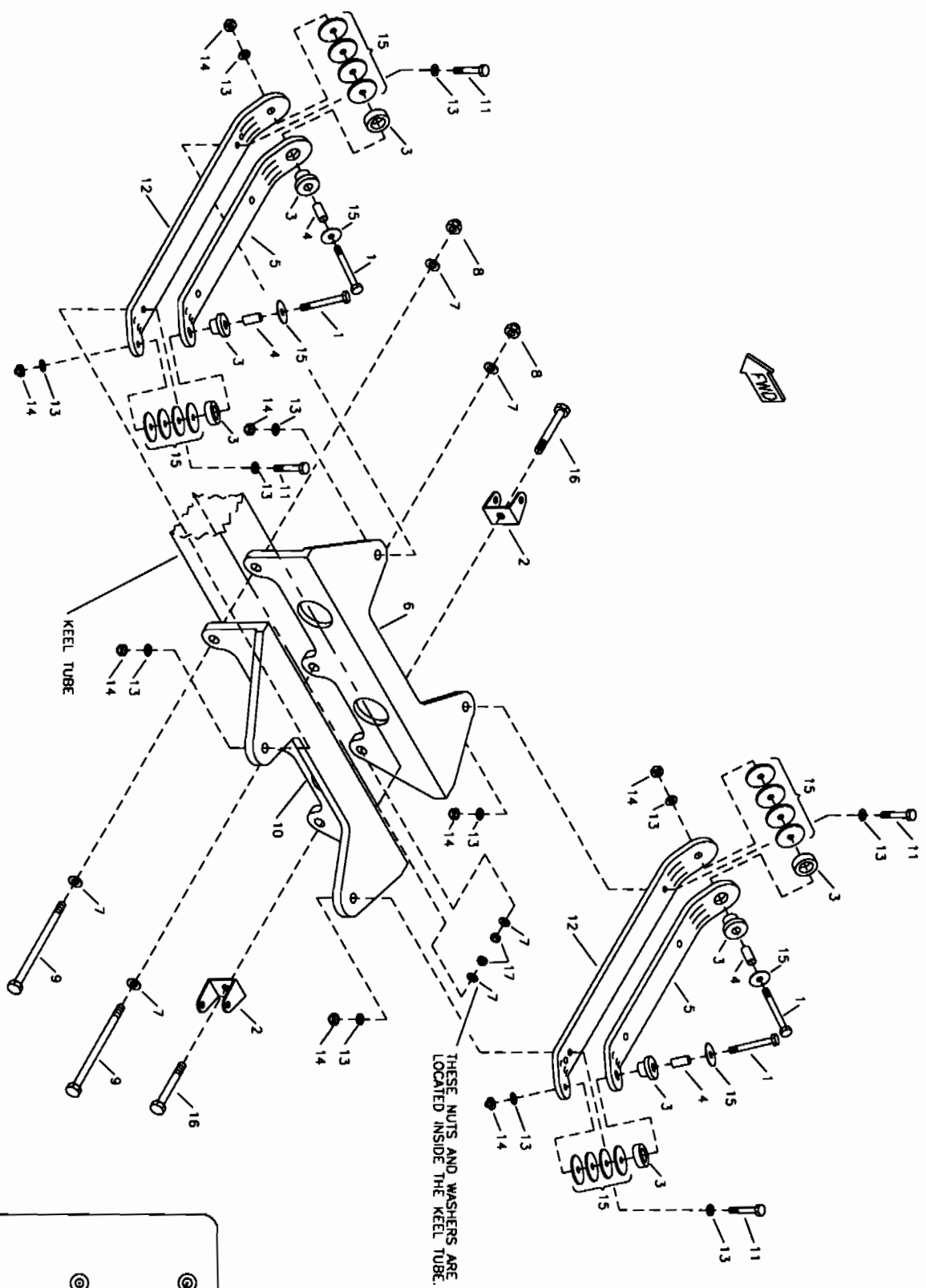
*Referenced from strobe system schematic.

RANS, Inc.
S-12 Airaile**dBase Page #:**

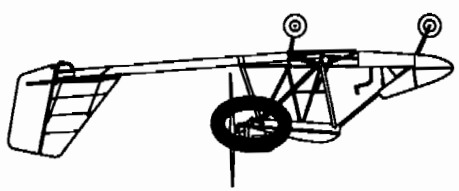
003-40

S-12 AIRRALE

Made in the USA



THESE NUTS AND WASHERS ARE LOCATED INSIDE THE KEEL TUBE.



503 ENGINE MOUNT ASSEMBLY

DETAIL:

503 ENGINE, INSTRUMENTATION, AND ELECTRICAL

SECTION:

Section:**503 ENGINE, INSTRUMENTATION & ELECTRICAL SYSTEMS****Detail:****503 ENGINE MOUNT ASSEMBLY****Page:**

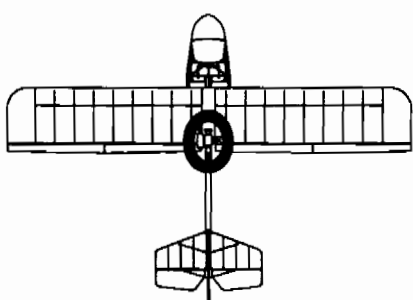
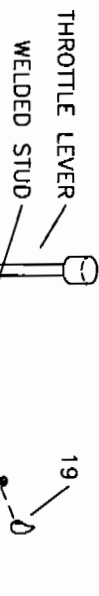
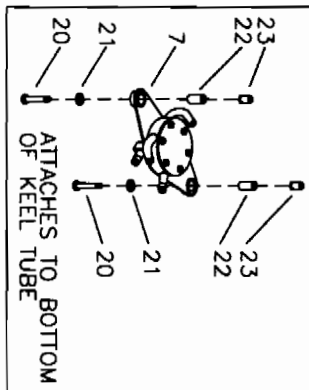
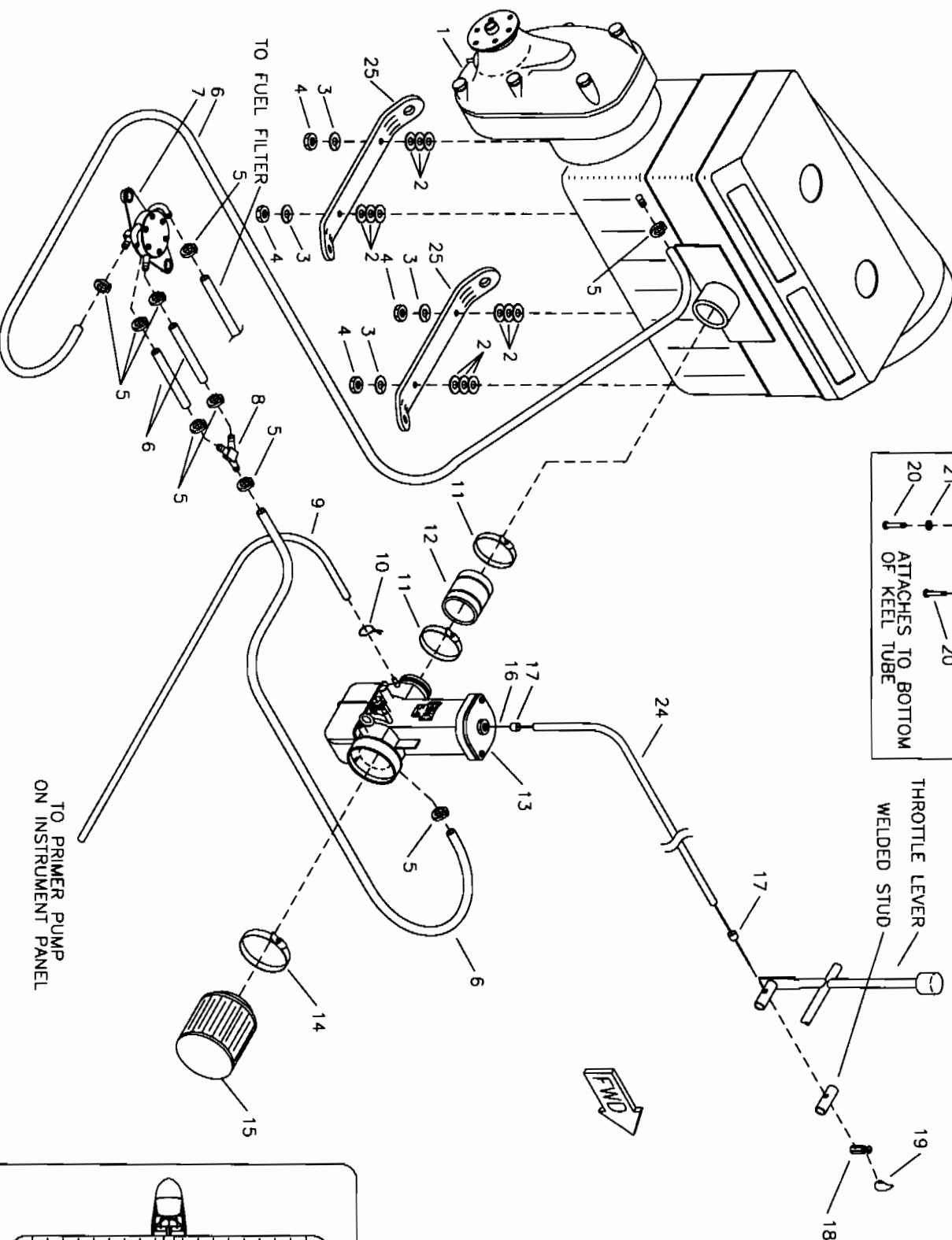
04-02

Date:

7/25/96

#	Description	Part Number	Quantity
1.	1/4" Bolt	AN4-25A	4
2.	Stainless Steel U Bracket	SU-118	2
3.	Barry Mount	22001	4
4.	Spacer Bushing, 1 1/8" X 3/8" X .058	EG-B-3/8X1 1/8	4
5.	Engine Upper Mount Plate	KPPW0063	2
6.	Engine Mount Angle, RH	KPPW0040-RH	1
7.	5/16" Thin Washer	AN960-516L	6
8.	5/16" Shear Nut	AN364-524A	2
9.	5/16" Bolt	AN5-31A	2
10.	Engine Mount Angle, LH	KPPW0040-LH	1
11.	1/4" Bolt	AN4-12A	4
12.	Engine Lower Mount Plate	KPPW0064	2
13.	1/4" Thick Washer	AN960-416	12
14.	1/4" Tensile Nut	AN365-428A	8
15.	1/8" Aluminum Washer	EG-AW	20
16.	5/16" Bolt	AN5-10A	2
17.	5/16" Tensile Nut	AN365-524A	2

GEAR BOX COMES FROM FACTORY IN UP POSITION, MUST BE ROTATED TO DOWN POSITION FOR PROPER ALIGNMENT OF THRUST LINE.



SECTION: 503 ENGINE, INSTRUMENTATION, AND ELECTRICAL
DETAIL: 503 SINGLE CARB ENGINE
INSTALLATION

PAGE 04-03
NOTES: SEE ALSO WING TANK ASS'Y AND THROTTLE ASS'Y

Section:**503 ENGINE, INSTRUMENTATION & ELECTRICAL SYSTEMS****Detail:****503 SINGLE CARB ENGINE INSTALLATION****Page:**

04-04

Date:

9/27/95

#	Description	Part Number	Quantity
1.	Rotax 503 Engine	EG-EG-503	1
2.	7/16" Thick Washer	AN960-716	12
3.	Loc Washer *	EG-EG-503-1	4
4.	Nut *	EG-EG-503-2	4
5.	Line Clamp, 5/16" ID	FS-LCL 5/16ID	9
6.	1/4" Fuel Line ****	FS-FL	0 ft
7.	Fuel Pump *	EG-EG-503-3	1
8.	Fuel Line "Y" Connector	8345	1
9.	Primer Pump Kit	SINGLE PRIMER	1
10.	Safety Wire	SAFETY WIRE	0 ft
11.	Carb Clamp *	EG-EG-503-4	2
12.	Carb Boot *	EG-EG-503-5	1
13.	Bing Carburetor *	EG-EG-503-6	1
14.	Air Filter Clamp *	EG-EG-503-7	1
15.	Air Filter, K & N	EG-AF	1
16.	Throttle Cable	EG-CAB-12	1
17.	Cable Ferrule Cap	ENDCAP-12000	2
18.	Wire Stop/Screw	2360	1
19.	Loctite Blue	LOC-TITE	0
20.	3/16" Bolt	AN3-15A	2
21.	3/16" Thick Washer	AN960-10	2
22.	Spacer Bushing, 3/8" X .058 X 1" ***	KAAC0001	2
23.	3/16" Rivet Nut	MS27130-A25K	2
24.	Cable Housing	EG-T-CAB-H	9 ft
25.	Focalized Mount Plate **	EG-FOMP	0

*Supplied with engine.

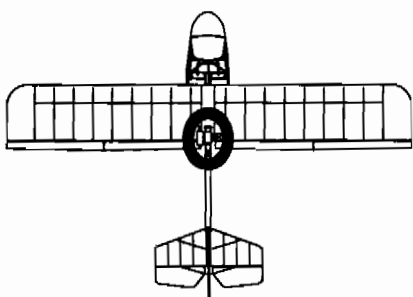
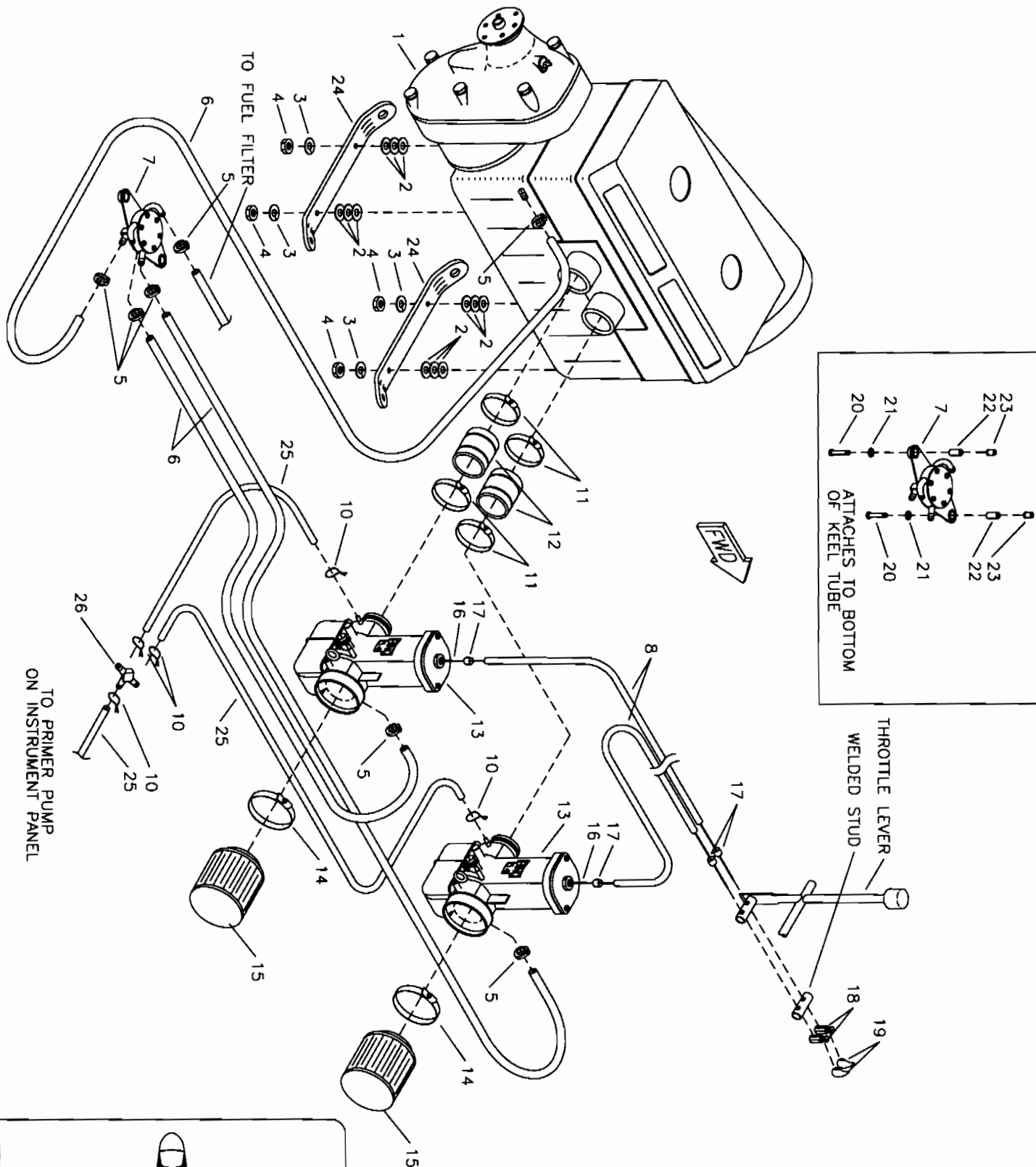
**Referenced from engine mount.

***Builder fabricates from raw stock.

****Referenced from fuel system.

S-12 AIRRALE

Made in the USA



SECTION: 503 ENGINE, INSTRUMENTATION, AND ELECTRICAL

DETAIL: 503 ENGINE WITH DUAL CARBURETOR ASSEMBLY

NOTES: SEE ALSO WING TANK ASS'Y AND THROTTLE ASS'Y

Section:**503 ENGINE, INSTRUMENTATION & ELECTRICAL SYSTEMS****Detail:****503 DUAL CARB ENGINE INSTALLATION****Page:**

04-06

Date:

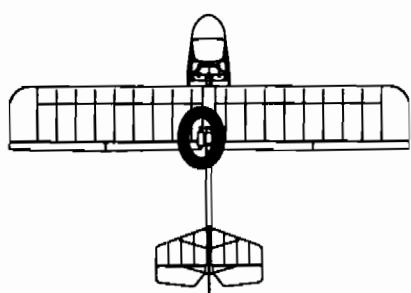
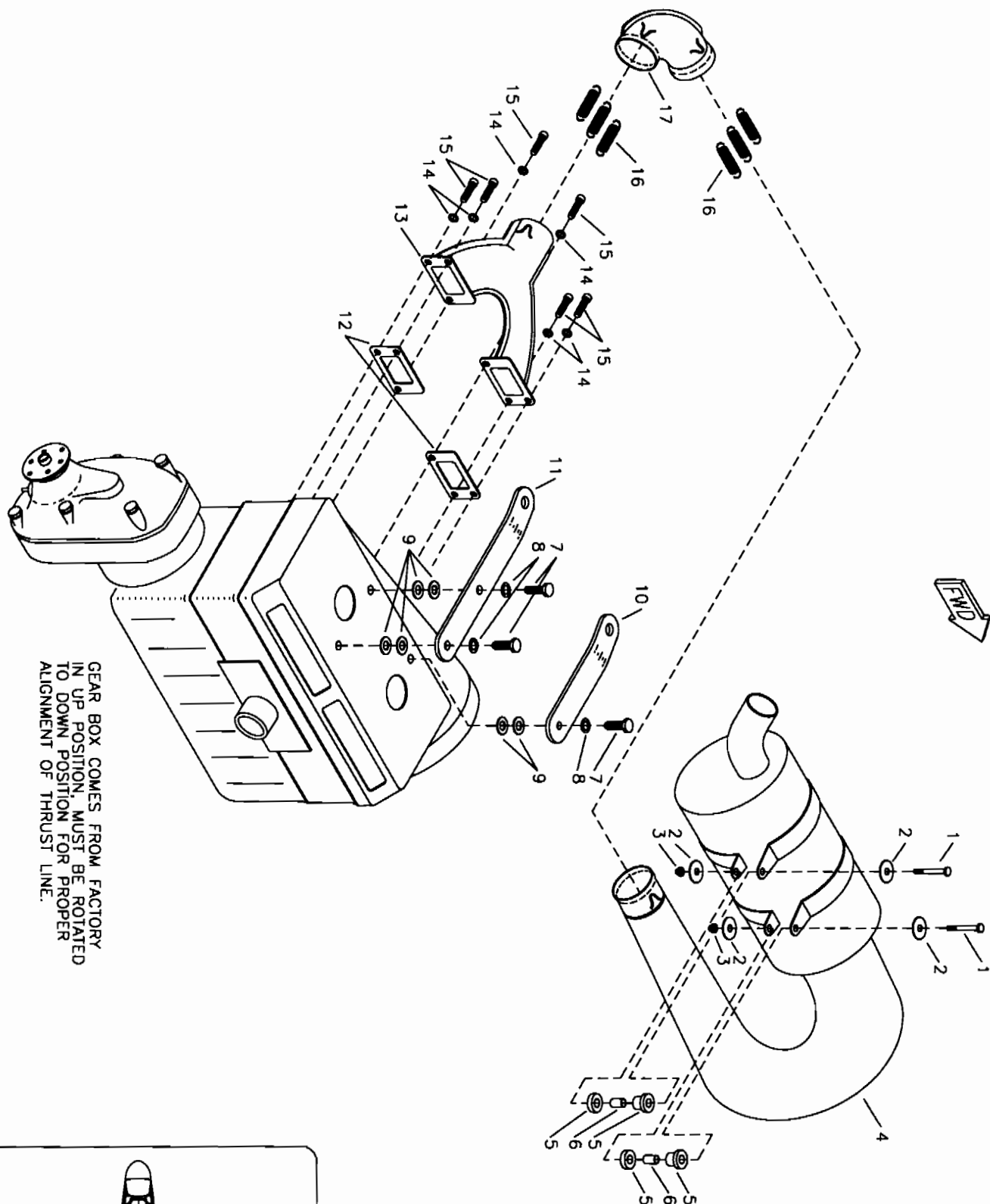
5/ 1/97

#	Description	Part Number	Quantity
1.	Rotax 503 Engine	EG-EG-503DC	1
2.	7/16" Thick Washer	AN960-716	12
3.	Loc Washer *	EG-EG-503-1	4
4.	Nut *	EG-EG-503-2	4
5.	Line Clamp, 5/16" ID	FS-LCL 5/16ID	7
6.	1/4" Fuel Line ****	FS-FL	0 ft
7.	Fuel Pump *	EG-EG-503-3	1
8.	Cable Housing	EG-T-CAB-H	18 ft
9.	Primer Pump Kit	DUAL PRIMER	1
10.	Safety Wire	SAFETY WIRE	0 ft
11.	Carb Clamp *	EG-EG-503-4	4
12.	Carb Boot *	EG-EG-503-5	2
13.	Bing Carburetor *	EG-EG-503-6	2
14.	Air Filter Clamp *	EG-EG-503-7	2
15.	Air Filter, K & N	EG-AF	2
16.	Throttle Cable	EG-CAB-12	2
17.	Cable Ferrule Cap	ENDCAP-12000	4
18.	Wire Stop Screw	2360	2
19.	Loctite Blue	LOC-TITE	0
20.	3/16" Bolt	AN3-15A	2
21.	3/16" Thick Washer	AN960-10	2
22.	Spacer Bushing, 3/8" X .058 X 1" ***	KAAC0001	2
23.	3/16" Rivet Nut	MS27130-A25K	2
24.	Focal Mount Plate, Upper **	EG-FOMP	0
25.	1/8" Primer Line *****	PRIMER LINE	0 ft
26.	Primer Line Tee *****	PRIME-LINE-T	0

*Comes with engine. **Referenced from engine mount.

Builder fabricates from raw stock. *Referenced from fuel system.

*****Comes with Primer Kit.



503 EXHAUST AND MOUNT ASSEMBLY

DETAIL:

503 ENGINE, INSTRUMENTATION, AND ELECTRICAL

SECTION:

NOTES:

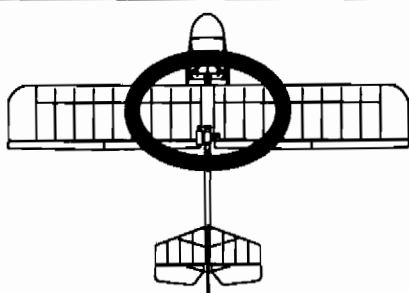
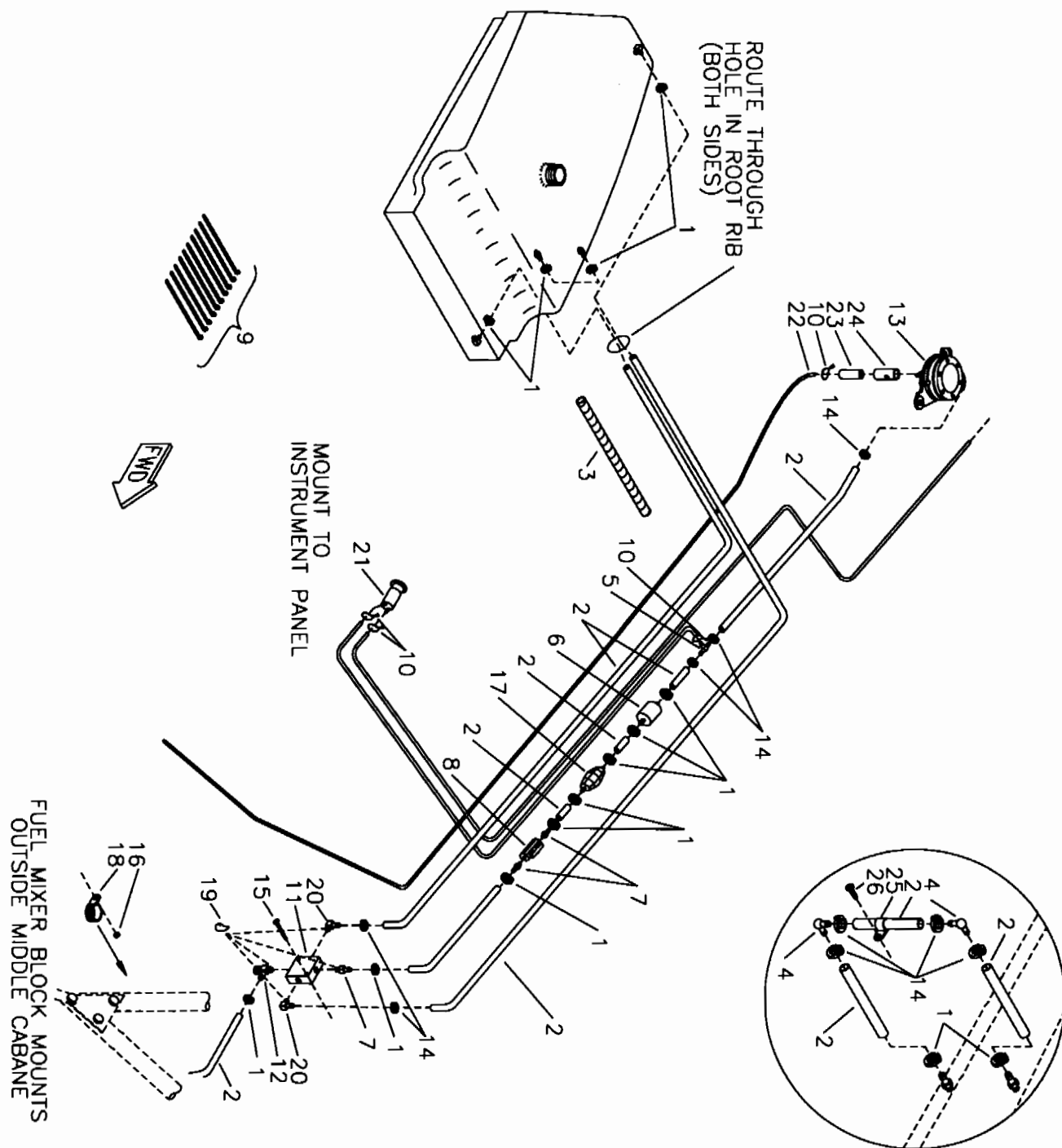
04-07

PAGE:

S-12XL AIRAILE - 503 EXHAUST ASSEMBLY

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	1/4" Bolt	AN4-20A	2
2.	1/8" Aluminum Washer	EG-AW	4
3.	1/4" Shear Nut	AN364-428A	2
4.	Muffler, 503	KSEX0006	1
5.	Barry Mount	22001	2
6.	Spacer Bushing, 1 1/8" x 3/8" x .058	EG-B-3/8X1 1/8	2
7.	8MM x 30MM Bolt	M8X30 BOLT	3
8.	5/16" Loc Washer	AN935-516	3
9.	5/16" Thick Washer	AN960-516	6
10.	FWD Mount Plate	EG-FMP(12/14)	1
11.	AFT Mount Plate	EG-AMP(12/14)	1
12.	Exhaust Gasket *	----	0
13.	Exhaust Manifold, 503	KSEX0008	1
14.	10MM Loc Washer *	----	0
15.	10MM Shoulder Screw *	----	0
16.	Muffler Springs , 503	EG-MUFF-SPRINGS	6
17.	Muffler Elbow, 503	KAEX0008	1

*Supplied with engine.



SECTION: 503 ENGINE, INSTRUMENTATION, AND ELECTRICAL

DETAIL: 503 FUEL SYSTEM - SINGLE WING TANK

Section:**503 ENGINE, INSTRUMENTATION & ELECTRICAL SYSTEMS****Detail:****503 FUEL SYSTEM
SINGLE WING TANK****Page:**

04-10

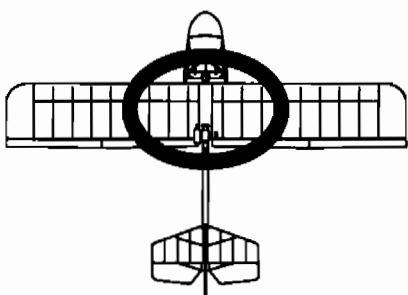
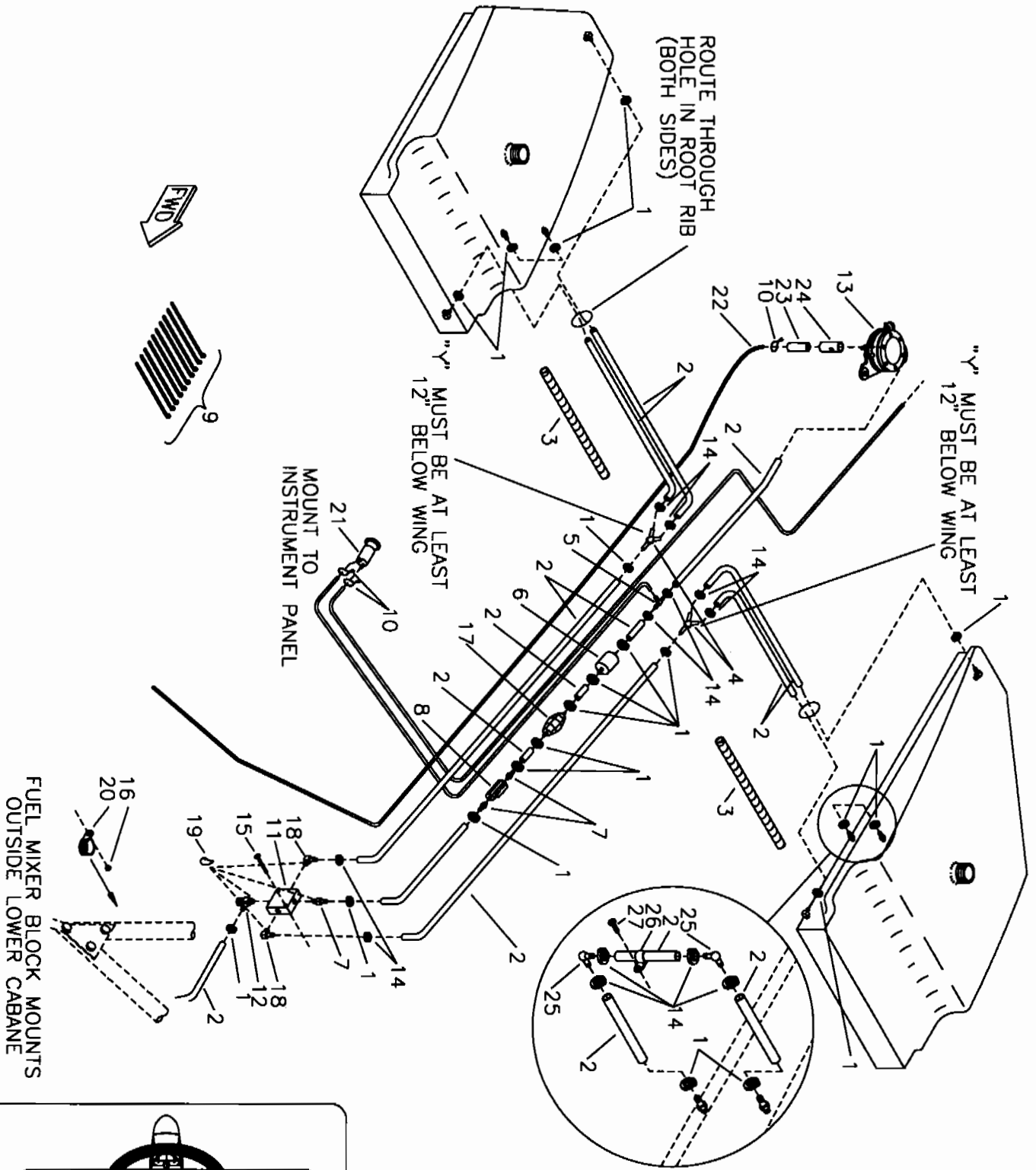
Date:

11/27/95

#	Description	Part Number	Quantity
1.	Line Clamp, 3/8"	FS-LCL 3/8	11
2.	1/4" Fuel Line	FS-FL	25 ft
3.	Coil Wrap	1/2 SPIRAL LOOM	1 ft
4.	1/4" X 1/4" Elbow	7-11044	2
5.	Primer Line T*	PRIME-LINE-T	0
6.	Fuel Filter	FS-FIL	1
7.	Straight Fitting	8330	3
8.	Fuel Shut Off Valve	FS-S-OFF	1
9.	Zip Ties	ZIP TIES	10
10.	Safety Wire	SAFETY WIRE	0
11.	Fuel Mixer Block	FS-FMB	1
12.	Sump Drain Valve	8336	1
13.	Fuel Pump**	EG-EG-503-3	0
14.	Line Clamp, 5/16" ID	FS-LCL 5/16ID	8
15.	8 X 32 Bolt	AN526-832R16	1
16.	8 X 32 Nut	AN364-832A	1
17.	Primer Bulb	FS-PB	1
18.	1" Cushioned Clamp	MS21919-DG16	1
19.	Loctite Blue	LOC-TITE BLUE	0
20.	90 Fitting	8342	2
21.	Primer Pump*	PRIME-PUMP	0
22.	Primer Line	PRIME LINE	6 ft
23.	Overflow Hose	EGCS-OFH	6 in
24.	Shrink Wrap	KSAC0006	5 in
25.	3/8" Loop Clamp	KSHW0015	1
26.	#6 Pan Head Screw	6RX1/2 PHS	1

*Comes with primer kit.

**Comes with engine.



SECTION: 503 ENGINE, INSTRUMENTATION, AND ELECTRICAL
DETAIL: 503 FUEL SYSTEM - DUAL WING TANKS

Section:**503 ENGINE, INSTRUMENTATION & ELECTRICAL SYSTEMS****Detail:****503 FUEL SYSTEM
DUAL WING TANKS****Page:**

04-12

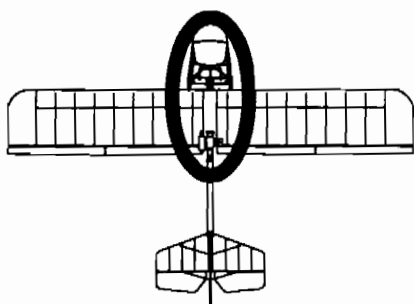
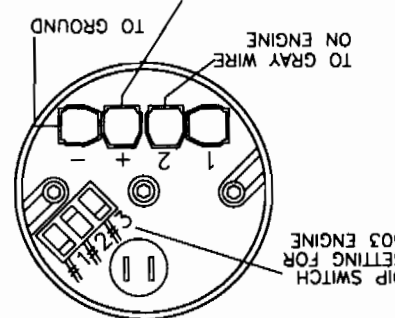
Date:

11/27/95

#	Description	Part Number	Quantity
1.	Line Clamp, 3/8"	FS-LCL 3/8	24
2.	1/4" Fuel Line	FS-FL	45 ft
3.	Coil Wrap	1/2 SPIRAL LOOM	2 ft
4.	Line Y	8345	2
5.	Primer Fuel Line T*	PRIME-LINE-T	0
6.	Fuel Filter	FS-FIL	1
7.	Straight Withdrawl Fitting	8330	3
8.	Fuel Shut Off Valve	FS-S-OFF	1
9.	Zip Ties	ZIP TIES	10
10.	Safety Wire	SAFETY WIRE	0
11.	Fuel Mixer Block	FS-FMB	1
12.	Sump Valve	8336	1
13.	Fuel Pump**	EG-EG-503-3	0
14.	Line Clamp, 5/16" ID	FS-LCL 5/16ID	12
15.	8 X 32 Bolt	AN526-832R16	1
16.	8 X 32 Nut	AN364-832A	1
17.	Primer Bulb	FS-PB	1
18.	90 Withdrawl Fitting	8342	2
19.	Loctite Blue	LOC-TITE BLUE	0
20.	1" Cushioned Clamp	MS21919-DG16	1
21.	Primer Pump*	PRIME PUMP	0
22.	1/8" Primer Line	PRIME LINE	6 ft
23.	Overflow Hose	EGCS-OFH	6 in
24.	Shrink Wrap	KSAC0006	5 in
25.	1/4" X 1/4" Elbow	7-11044	4
26.	3/8" Loop Clamp	KSHW0015	2
27.	#6 Pan Head Screw	6RX1/2 PHS	2

*Comes with primer kit.

**Comes with engine.



INSTRUMENTS AND ELECTRICAL
WITHOUT ELECTRICAL START

S-12XL AIRAILE - 503 INSTRUMENTS & ELECTRICAL - WITHOUT OPTIONAL ELECTRIC START

NOTE: Gauges may vary, consult directions provided with gauge for wiring diagram.

# DESCRIPTION	PART NUMBER	QUANTITY
1. Hour Meter	KSPW0022	1
2. Vertical Speed Indicator - Feet per Minute *	KSAV0008	1
3. Altimeter *	KSAV0001	1
4. Air Speed Indicator, 0-120	KSAV0004	1
5. Ignition Switch	MS35058-22	2
6. Exhaust Gas Temperature Gauge *	KSPW0008	1
7. Cylinder Head Temperature Gauge	KSPW0010	1
8. RPM Gauge	KSPW0028	1
9. 14 Gauge Female Spade Terminal, Blue	IP-7128	7
10. 90 Withdrawal Fitting	8342	1
11. Line Clamp, 3/8"	FS-LCL 3/8	8
12. Straight Withdrawal Fitting	8330	2
13. Line Tee	8338	1
14. 14 Gauge Black Wire	14 GA WIRE/BLACK	30 ft
15. 14 Gauge Eye Terminal, Blue 3/16"	IP-7102	4
16. 14 Gauge Eye Terminal, Blue 5/32"	KSES0003	4
17. EGT End Plug **	KSPW0008-1	0
18. Female Terminal ***	KSPW0010-1	0
19. 14 Gauge Red Wire	14 GA WIRE/RED	16 ft
20. Terminal Y Connector, Brass	IP-YC	1
21. CHT Wire, Red ***	KSPW0010-2	0
22. 14 Gauge Splice, Butt Connector	IP-7132	2
23. 3/16" Rivet Nut	MS27130-A25K	2
24. 14 Gauge White Wire	14 GA WIRE/WHITE	12 ft
25. Regulator/Rectifier	KSES0005	1
26. Keel ****	KPFU0043	0
27. Starter Pulley	109	1
28. 3/16" Stainless Steel Pop Rivet - Cherry Q	CCPQ-64	4
29. EGT Wires **	KSPW0008-2	0
30. 1/4" Blue Pitot/Static Line	FS-FL	8 ft
31. 14 Gauge Male Spade Terminal, Blue	IP-7126	7
32. EGT Probe **	KSPW0008-3	0
33. 14 Gauge Eye Terminal, Blue 1/4"	1/4 EYE 14 GA	1
34. CHT Probe ***	KSPW0010-3	0
35. 14 Gauge Yellow Wire	14 GA WIRE/YELLOW	6 ft
36. CHT Wire, Black ***	KSPW0010-4	0
37. 14 Gauge, In Line Fuse Holder	KSES0019	1
38. 25 AMP Fuse	KSES0020-25	1
39. Female Bullet Terminal	02-09-1103	8
40. Shrink Wrap	KSAC0009	1 ft

*Optional gauge. **Supplied with EGT.

***Supplied with CHT.

****Referenced from super structure assembly.

S-12XL AIRAILE - 503 INSTRUMENTS & ELECTRICAL - WITHOUT OPTIONAL ELECTRIC START

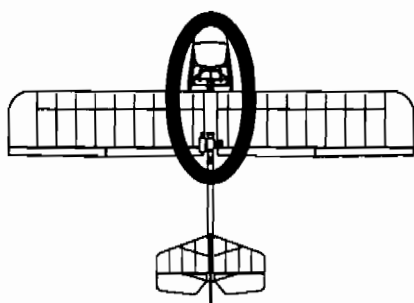
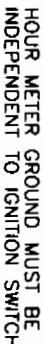
NOTE: Gauges may vary, consult directions provided with gauge for wiring diagram.

#	DESCRIPTION	PART NUMBER	QUANTITY
41.	Pan Head Phillips Bolt (10-32)	KSHW0006	2
42.	Pulley	KSHW0040	1
43.	Eye Strap	KSHW0019	1
44.	Small Rubber Edging	8510K11	6 in

*Optional gauge. **Supplied with EGT.

***Supplied with CHT.

****Referenced from super structure assembly.



503 ENGINE, INSTRUMENTATION, AND ELECTRICAL

NOTES:

S-12XL AIRAILE - 503 INSTRUMENTS & ELECTRICAL - WITH ELECTRIC START

NOTE: Gauges may vary, consult directions provided with gauge for wiring diagram.

# DESCRIPTION	PART NUMBER	QUANTITY
1. Hour Meter	KSPW0022	1
2. Vertical Speed Indicator - Feet per Minute *	KSAV0008	1
3. Altimeter *	KSAV0001	1
4. Air Speed Indicator, 0-120	KSAV0004	1
5. Switch	MS35058-23	2
6. Exhaust Gas Temperature Gauge *	KSPW0008	1
7. Cylinder Head Temperature Gauge	KSPW0010	1
8. RPM Gauge	KSPW0028	1
9. 14 Gauge Female Spade Terminal, Blue	IP-7128	5
10. 90 Withdrawal Fitting	8342	1
11. Line Clamp, 3/8"	FS-LCL 3/8	8
12. Straight Withdrawal Fitting	8330	2
13. 1/4" Blue Pitot/Static Line	FS-FL	8 ft
14. 14 Gauge Eye Terminal, Blue 3/16"	IP-7102	10
15. 14 Gauge Black Wire	14 GA WIRE/BLACK	30 ft
16. 14 Gauge Eye Terminal, Blue 5/32"	KSES0003	6
17. EGT End Plug **	KSPW0008-1	0
18. Female Terminal ***	KSPW0010-1	0
19. CHT Wire, Black ***	KSPW0010-4	0
20. CHT Wire, Red ***	KSPW0010-2	0
21. 14 Gauge Red Wire	14 GA WIRE/RED	38 ft
22. Key Start Switch	25-6	1
23. 14 Gauge Eye Terminal, Blue 1/4"	1/4 EYE 14 GA	2
24. 4 Gauge Eye Cable Terminal	4 GA CABLE LUG	8
25. 4 Gauge Battery Cable, Black Wire	4 GA WIRE/BLACK	20 ft
26. 3/16" Rivet Nut	MS27130-A25K	2
27. 14 Gauge, In Line Fuse Holder	KSES0019	1
28. 25 AMP Fuse	KSES0020-25	1
29. 14 Gauge Splice, Butt Connector	IP-7132	2
30. Battery ****	PS12150-NB	0
31. Regulator/Rectifier	KSES0005	1
32. 14 Gauge White Wire	14 GA WIRE/WHITE	12 ft
33. 14 Gauge Eye Terminal, Blue 5/16"	5/16 I TERM	1
34. 14 Gauge Yellow Wire	14 GA WIRE/YELLOW	6 ft
35. 14 Gauge Male Spade Terminal, Blue	IP-7126	6
36. Electric Starter Kit (503)	MESK-1-503	1
37. CHT Probe ***	KSPW0010-3	0
38. EGT Wires **	KSPW0008-2	0
39. EGT Probe **	KSPW0008-3	0
40. Female Bullet Terminal	02-09-1103	8

*Optional gauge. **Supplied with EGT.

***Supplied with CHT.

****Referenced from battery box installation.

S-12XL AIRAILE - 503 INSTRUMENTS & ELECTRICAL - WITH ELECTRIC START

NOTE: Gauges may vary, consult directions provided with gauge for wiring diagram.

#	DESCRIPTION	PART NUMBER	QUANTITY
41.	Shrink Wrap	KSAC0009	1 ft
42.	3/16" Aluminum Pop Rivet - Cherry Q	AAPQ-64	2
43.	Pan Head Phillips Bolt (10-32)	KSHW0006	2

*Optional gauge. **Supplied with EGT.

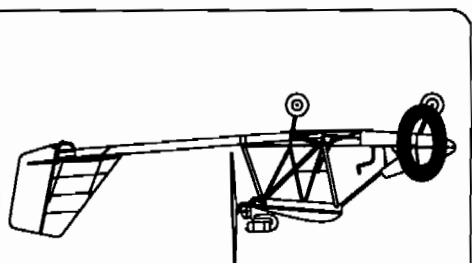
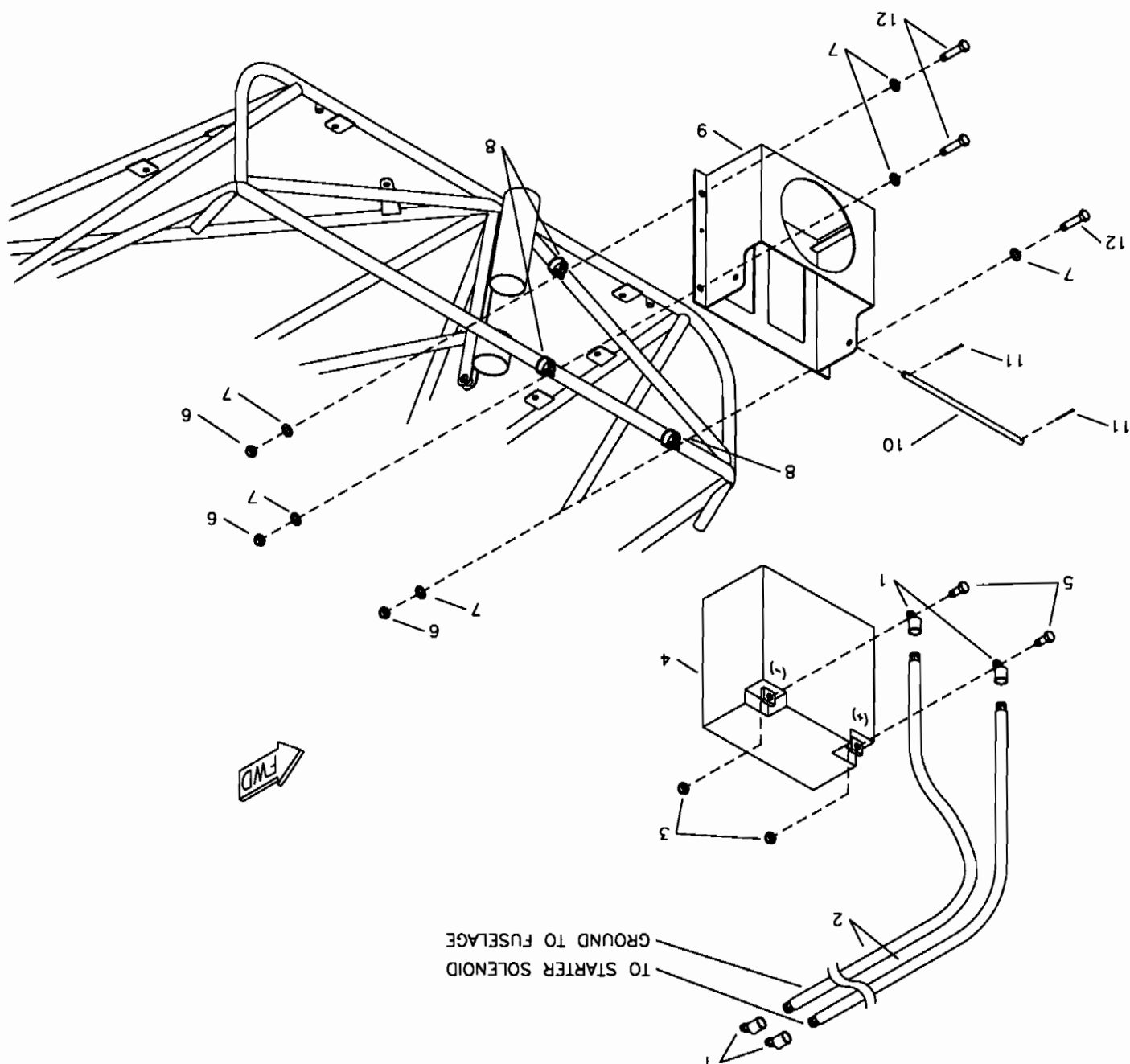
***Supplied with CHT.

****Referenced from battery box installation.

S-12 AIRAILE

СУУЗ

Made in the
USA



503 BATTERY BOX INSTALLATION

DETAIL:

503 ENGINE, INSTRUMENTATION, AND ELECTRICAL

SECTION:

Section:**503 ENGINE, INSTRUMENTATION & ELECTRICAL SYSTEMS****Detail:****503 BATTERY BOX INSTALLATION****Page:**

04-20

Date:

7/25/95

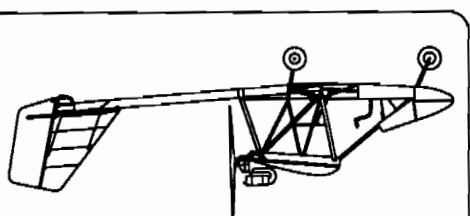
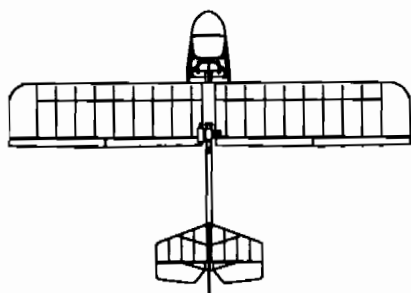
#	Description	Part Number	Quantity
1.	4 Gauge Terminal Cable	4 GA CABLE LUG	0
2.	Battery Cable**	4 GA WIRE/BLACK	0
3.	Nut*	BATT-1	2
4.	Battery	PS12150-NB	1
5.	Bolt*	BATT-2	2
6.	3/16" Shear Nut	AN364-1032A	3
7.	3/16" Thick Washer	AN960-10	6
8.	1/2" Cushioned Clamp	MS21919-DG8	3
9.	Battery Box	503-BAT-BOX	1
10.	Battery Bar***	503-BAT-BAR	1
11.	Small Cotter Pin***	MS24665-134	2
12.	3/16" Bolt	AN3-3A	3

*Comes with battery.

**Referenced from 503 Instruments & Electrical.

***Comes with 503 battery box.

503 MUFFLER WRAP AT A LATER DATE.
503 DEVELOPMENT, TO BE RELEASED FOR
503 PRODUCTION.



SECTION: 503 ENGINE, INSTRUMENTATION, AND ELECTRICAL
DETAIL: 503 MUFFLER WRAP HEATER

Section:

503 ENGINE, INSTRUMENTATION & ELECTRICAL SYSTEMS

Detail:

503 MUFFLER WRAP HEATER

Page:

04-22

Date:

Description

Part Number

Quantity

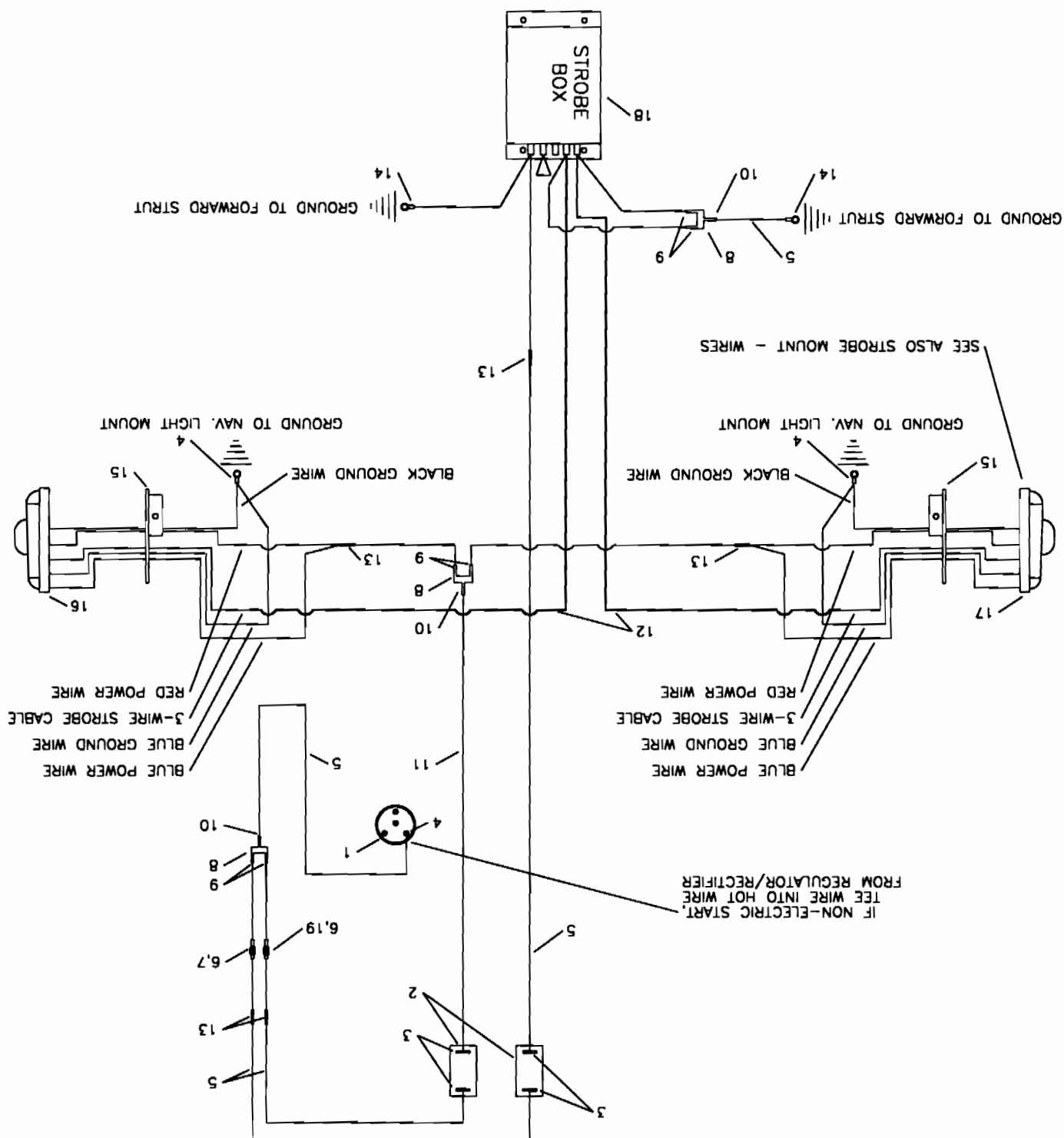
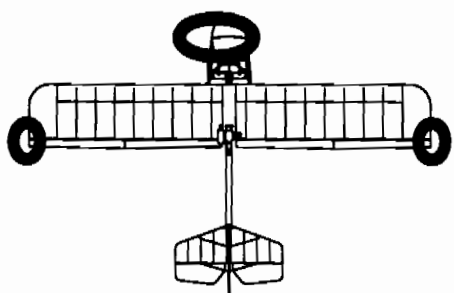
**503 MUFFLER WRAP HEATER IN DEVELOPMENT.
TO BE RELEASED FOR PRODUCTION AT A LATER DATE.**

**RANS, Inc.
S-12 Airaile**

dBase Page #:

004-20

STROBE SYSTEM SCHEMATIC



S-12XL AIRAILE - 503 STROBE SYSTEM SCHEMATIC

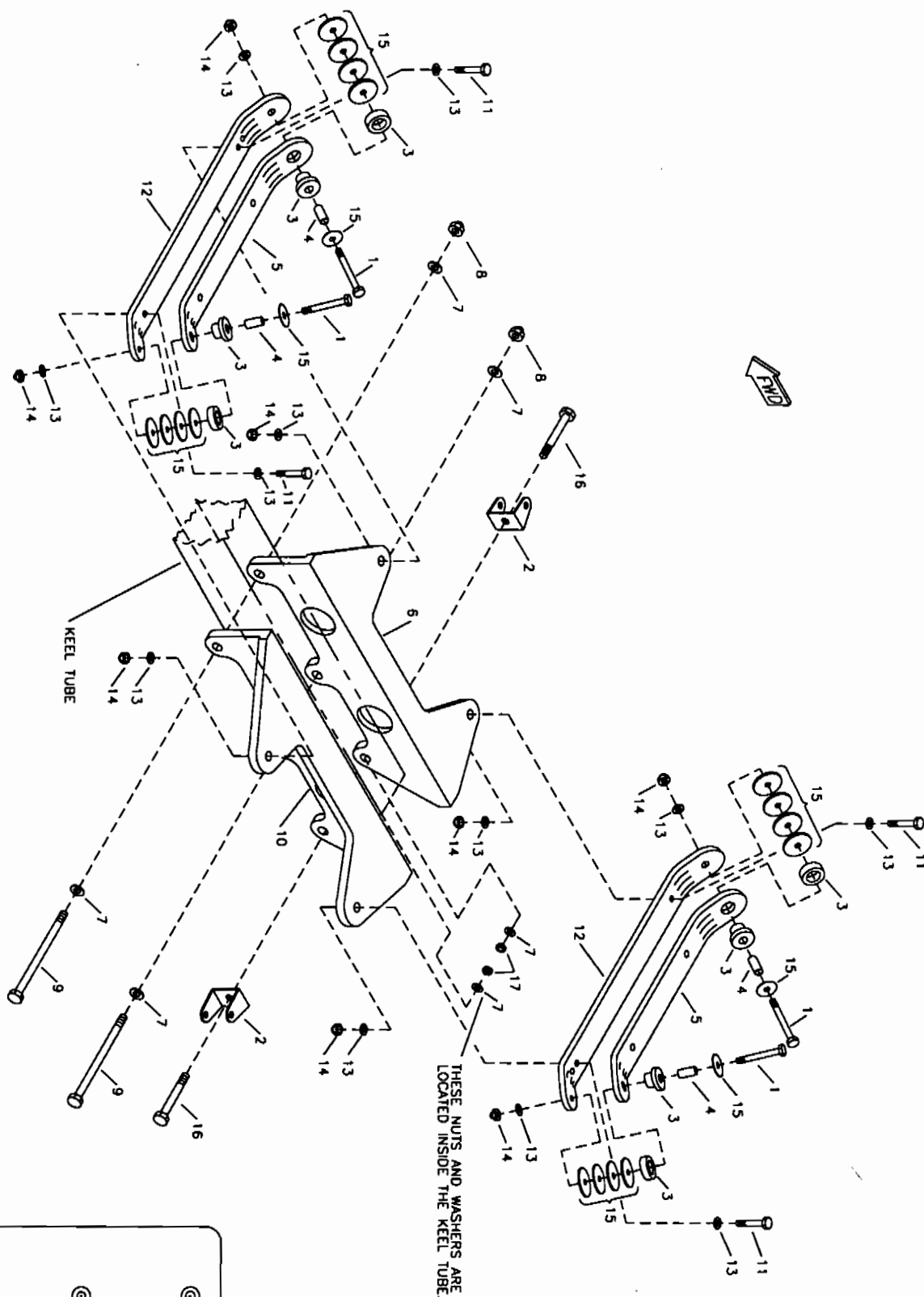
#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Key Start Switch *	25-6	0
2.	Switch	MS35058-22	2
3.	14 Gauge Eye Terminal, Blue 5/32"	KSES0003	4
4.	14 Gauge Eye Terminal, Blue 3/16"	IP-7102	3
5.	14 Gauge Red Wire	14 GA WIRE/RED	8 ft
6.	14 Gauge, In Line Fuse Holder	KSES0019	2
7.	15 AMP Fuse	KSES0020-15	1
8.	Terminal Y Connector, Brass	IP-YC	1
9.	14 Gauge Female Spade Terminal, Blue	IP-7128	6
10.	14 Gauge Male Spade Terminal, Blue	IP-7126	3
11.	14 Gauge Yellow Wire	14 GA WIRE/YELLOW	50 ft
12.	Whelen Installation & Cable	HD-60	1
13.	14 Gauge Splice, Butt Connector	IP-7132	4
14.	14 Gauge Eye Terminal, Blue 1/4"	1/4 EYE 14 GA	2
15.	Navigation Light Tip Mount **	NAV-TIP-MT	0
16.	Whelen Left Strobe Light **	A600-PR	0
17.	Whelen Right Strobe Light **	A600-PG	0
18.	Whelen Strobe Light Power Supply	A413A, HDA-DF	1
19.	10 AMP Fuse	KSES0020-10	1

*Referenced from Instruments & Electrical.

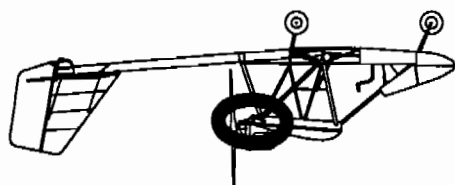
**Referenced from Strobe Mount.

RPM S-12 AIRRAIL

Made in the USA



THESE NUTS AND WASHERS ARE LOCATED INSIDE THE KEEL TUBE.



582 ENGINE MOUNT ASSEMBLY

SECTION: 04-01
 582 ENGINE, INSTRUMENTATION, AND ELECTRICAL
 DETAIL:

Section:**582 ENGINE, INSTRUMENTATION & ELECTRICAL SYSTEMS****Detail:****582 ENGINE MOUNT ASSEMBLY****Page:**

04-02

Date:

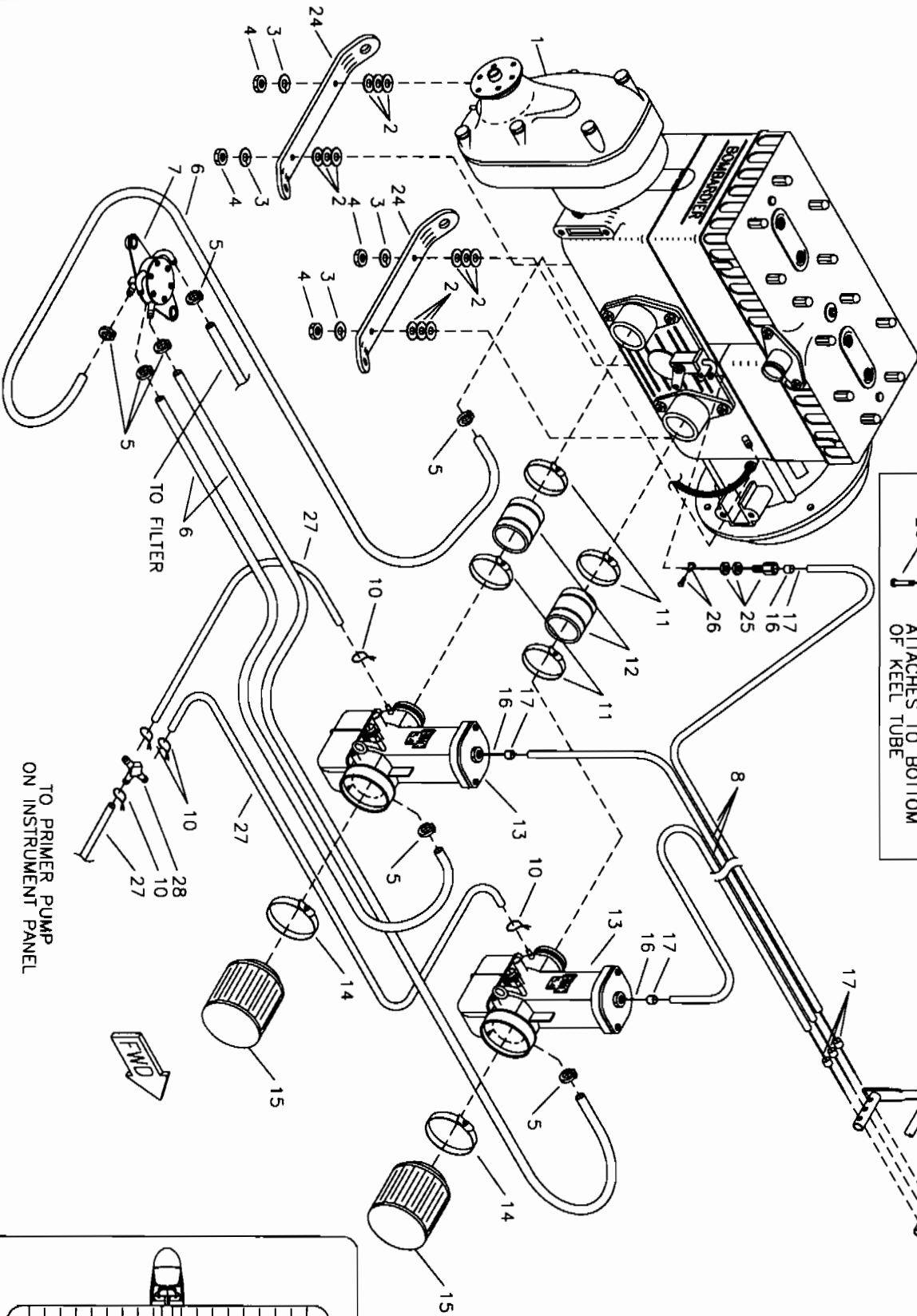
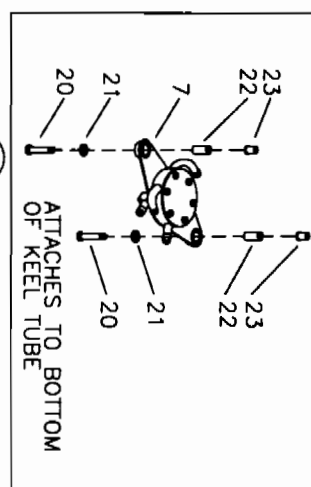
7/25/96

#	Description	Part Number	Quantity
1.	1/4" Bolt	AN4-25A	4
2.	Stainless Steel U Bracket	SU-118	2
3.	Barry Mount	22001	4
4.	Spacer Bushing, 1 1/8" X 3/8" X .058	EG-B-3/8X1 1/8	4
5.	Engine Upper Mount Plate	KPPW0063	2
6.	Engine Mount Angle, RH	KPPW0040-RH	1
7.	5/16" Thin Washer	AN960-516L	7
8.	5/16" Shear Nut	AN364-524A	2
9.	5/16" Bolt	AN5-31A	2
10.	Engine Mount Angle, LH	KPPW0040-LH	1
11.	1/4" Bolt	AN4-12A	4
12.	Engine Lower Mount Plate	KPPW0064	2
13.	1/4" Thick Washer	AN960-416	12
14.	1/4" Tensile Nut	AN365-428A	8
15.	1/8" Aluminum Washer	EG-AW	20
16.	5/16" Bolt	AN5-10A	2
17.	5/16" Tensile Nut	AN365-524A	2

RRMS S-12 AIRAILE

Made in the
USA

GEAR BOX COMES FROM FACTORY
IN UP POSITION. MUST BE ROTATED
TO DOWN POSITION FOR PROPER
ALIGNMENT OF THRUST LINE.



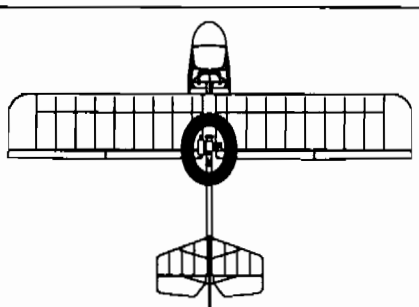
TO PRIMER PUMP
ON INSTRUMENT PANEL



582 ENGINE

SECTION:
582 ENGINE, INSTRUMENTATION, AND ELECTRICAL

DETAIL:



NOTES:

04-03

PAGE

Section:**582 ENGINE, INSTRUMENTATION & ELECTRICAL SYSTEMS****Detail:****582 ENGINE****Page:**

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Date:

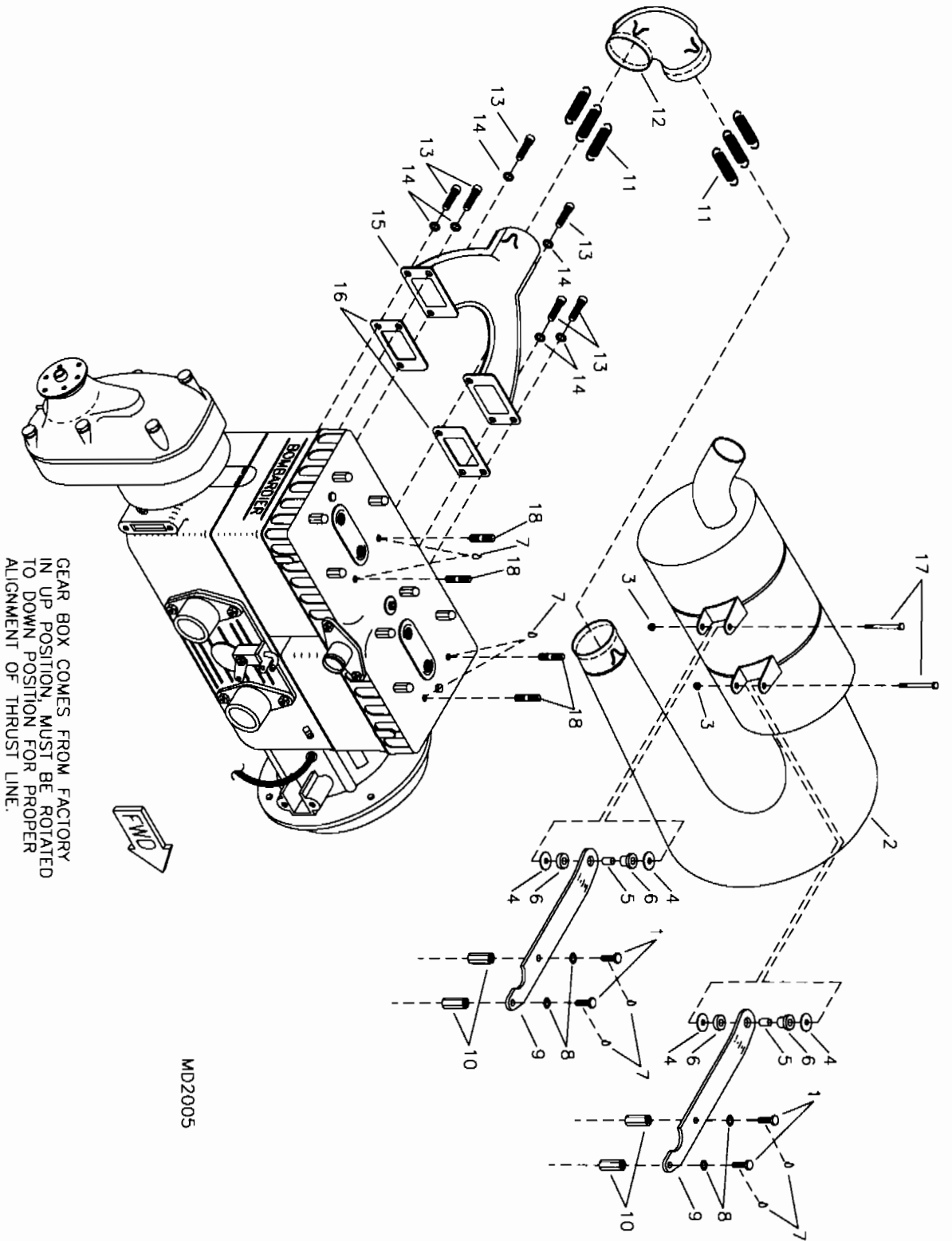
5/ 1/97

#	Description	Part Number	Quantity
1.	Rotax 582 Engine	EG-EG-582	1
2.	7/16" Thick Washer	AN960-716	12
3.	Loc Washer *	EG-EG-582-1	4
4.	Nut *	EG-EG-582-2	4
5.	Line Clamp, 5/16" ID	FS-LCL 5/16ID	7
6.	1/4" Fuel Line **	FS-FL	0 ft
7.	Fuel Pump *	EG-EG-582-3	1
8.	Cable Housing	EG-T-CAB-H	27 ft
9.	Primer Pump Kit	DUAL PRIMER	1
10.	Safety Wire	SAFETY WIRE	0 ft
11.	Carb Clamp *	EG-EG-582-4	4
12.	Carb Boot *	EG-EG-582-5	2
13.	Bing Carburetor *	EG-EG-582-6	2
14.	Air Filter Clamp *	EG-EG-582-7	2
15.	Air Filter, K & N	EG-AF	2
16.	Throttle Cable	EG-CAB-12	3
17.	Cable Ferrule Cap	ENDCAP-12000	6
18.	Wire Stop Screw	2360	3
19.	Loctite Blue	LOC-TITE	0
20.	3/16" Bolt	AN3-15A	2
21.	3/16" Thick Washer	AN960-10	2
22.	Spacer Bushing, 3/8" X .058 X 1" ****	KAAC0001	2
23.	3/16" Rivet Nut	MS27130-A25K	2
24.	Focal Mount Plate ***	EG-FOMP	0 ft
25.	Adjustor Cable Ferrule	2373	1
26.	Wire Swivel Stop Screw	2361	1
27.	1/8" Primer Line *****	PRIMER LINE	0 ft
28.	Primer Line Tee *****	PRIME-LINE-T	0

*Comes with engine.

Referenced from fuel system. *Referenced from engine mount.

****Builder fabricates from raw stock kit. ***** Comes with primer kit.



MD2005

RR-12 AIRFRAME 582 EXHAUST ASSEMBLY

S-12XL AIRAILE - 582 EXHAUST ASSEMBLY

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	8MM x 20 Bolt	M8X20 BOLT	4
2.	Muffler, 582	KAEX0006	1
3.	1/4" Shear Nut	AN364-428A	2
4.	1/8" Aluminum Washer	EG-AW	4
5.	Spacer Bushing, 1 1/8" x 3/8" x .058	EG-B-3/8X1 1/8	2
6.	Barry Mount	22001	2
7.	Loctite Blue	LOC-TITE	0
8.	5/16" Loc Washer	AN935-516	4
9.	582 Muffler Mount Plate	EG-582MP	2
10.	8MM x 25 Stand Off	M8X25 SO	4
11.	Muffler Spring, 582	KSEX0002	6
12.	Muffler Elbow, 582	KAEX0005	1
13.	10MM Shoulder Screw *	----	0
14.	10MM Loc Washer *	----	0
15.	Exhaust Manifold, 582	KSEX0007	1
16.	Exhaust Gasket *	----	0
17.	1/4" Bolt	AN4-22A	2
18.	8mm x 79 Stud **	941-390	4

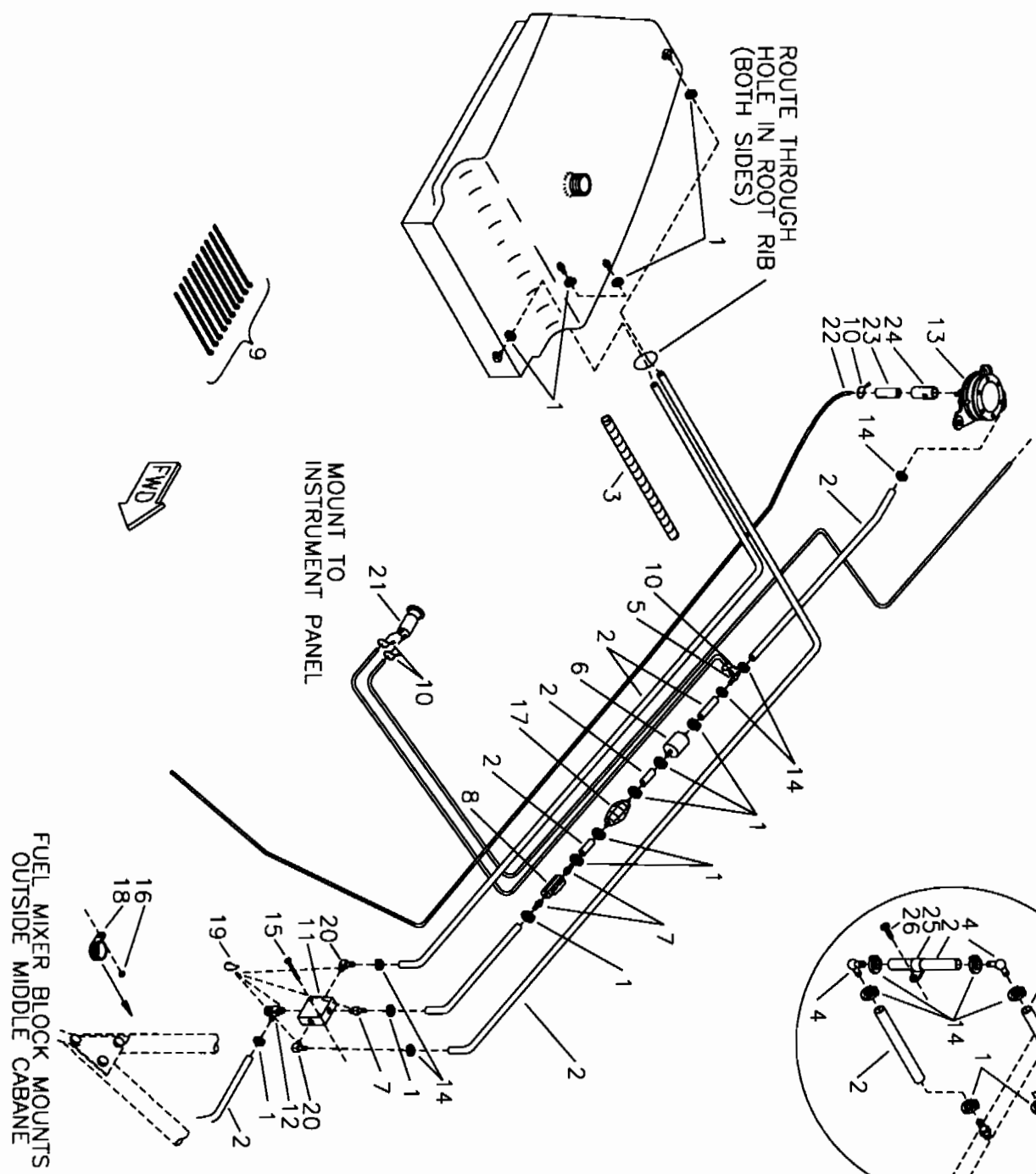
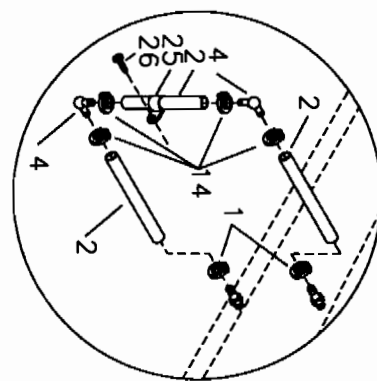
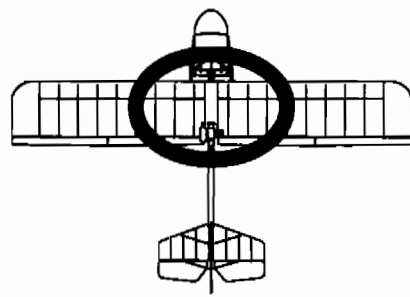
*Supplied with engine.

**Remove bolts from head and install studs with Loc-tite.

Consult engine manual for proper torque values.

SECTION: 582 ENGINE, INSTRUMENTATION, AND ELECTRICAL

DETAIL: 582 FUEL SYSTEM - SINGLE WING TANK



Section:**582 ENGINE, INSTRUMENTATION & ELECTRICAL SYSTEMS****Detail:****582 FUEL SYSTEM
SINGLE WING TANK****Page:**

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Date:

11/27/95

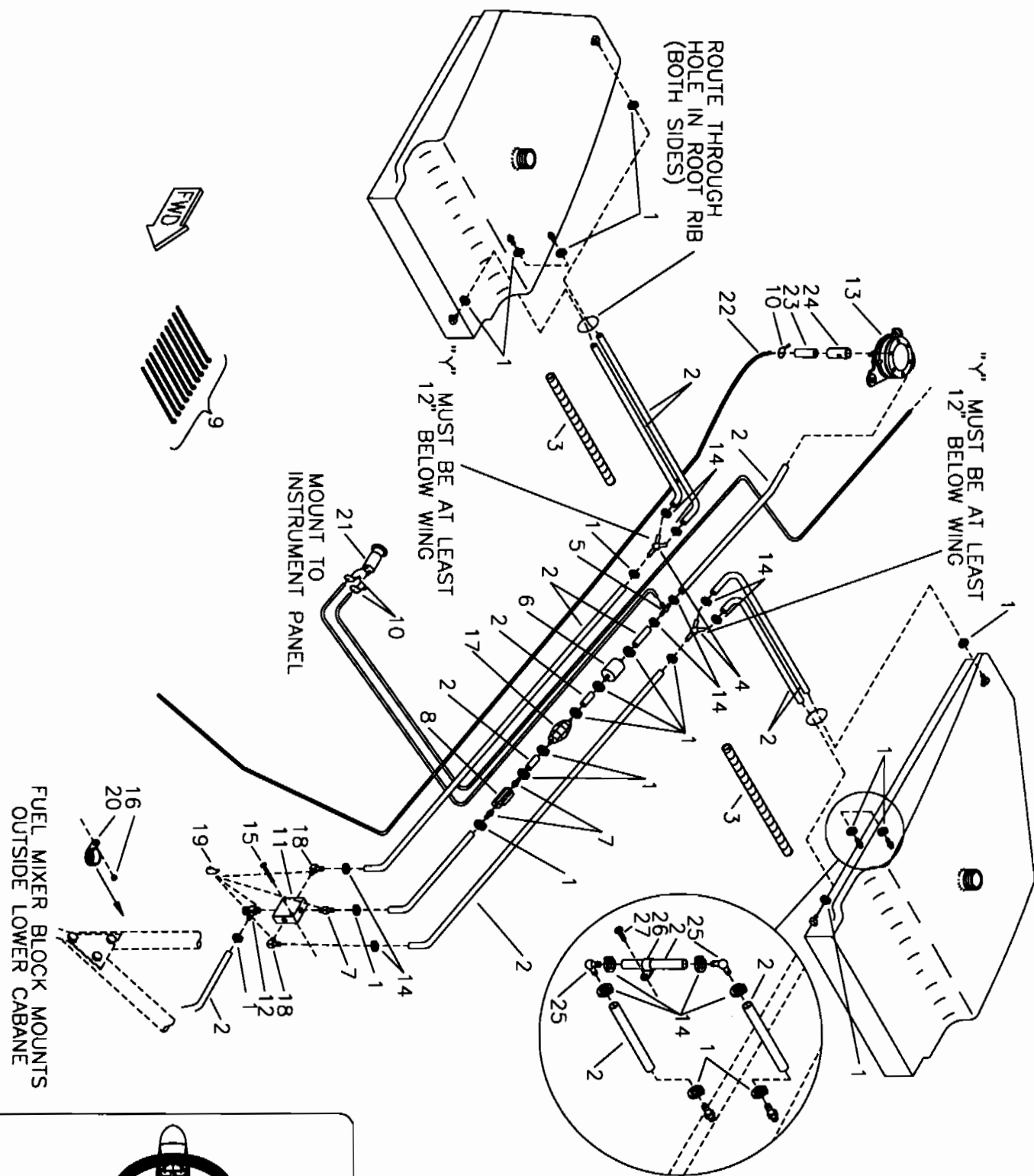
#	Description	Part Number	Quantity
1.	Line Clamp, 3/8"	FS-LCL 3/8	11
2.	1/4" Fuel Line	FS-FL	25 ft
3.	Coil Wrap	1/2 SPIRAL LOOM	1 ft
4.	1/4" X 1/4" Elbow	7-11044	2
5.	Primer Line T*	PRIME-LINE-T	0
6.	Fuel Filter	FS-FIL	1
7.	Straight Fitting	8330	3
8.	Fuel Shut Off Valve	FS-S-OFF	1
9.	Zip Ties	ZIP TIES	10
10.	Safety Wire	SAFETY WIRE	0
11.	Fuel Mixer Block	FS-FMB	1
12.	Sump Drain Valve	8336	1
13.	Fuel Pump**	EG-EG-503-3	0
14.	Line Clamp, 5/16"	FS-LCL 5/16ID	8
15.	8 X 32 Bolt	AN526-832R16	1
16.	8 X 32 Nut	AN364-832A	1
17.	Primer Bulb	FS-PB	1
18.	1" Cushioned Clamp	MS21919-DG16	1
19.	Loctite Blue	LOC-TITE BLUE	0
20.	90 Fitting	8342	2
21.	Primer Pump*	PRIME-PUMP	0
22.	Primer Line	PRIME LINE	6 ft
23.	Overflow Hose	EGCS-OFH	6 in
24.	Shrink Wrap	KSAC0006	5 in
25.	3/8" Loop Clamp	KSHW0015	1
26.	#6 Pan Head Screw	6RX1/2 PHS	1

*Comes with primer kit.

**Comes with engine.

RRMS S-12 AIRRAIL

Made in the USA

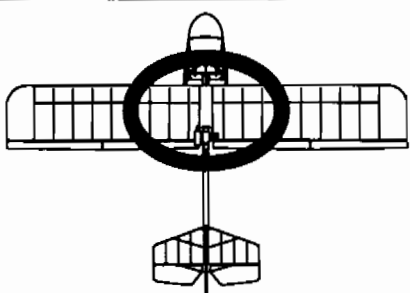


NOTES:

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PAGE

SECTION: 582 ENGINE, INSTRUMENTATION, AND ELECTRICAL
 DETAIL: 582 FUEL SYSTEM - DUAL WING TANKS



Section:**582 ENGINE, INSTRUMENTATION & ELECTRICAL SYSTEMS****Detail:****582 FUEL SYSTEM
DUAL WING TANKS****Page:**

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Date:

2/13/96

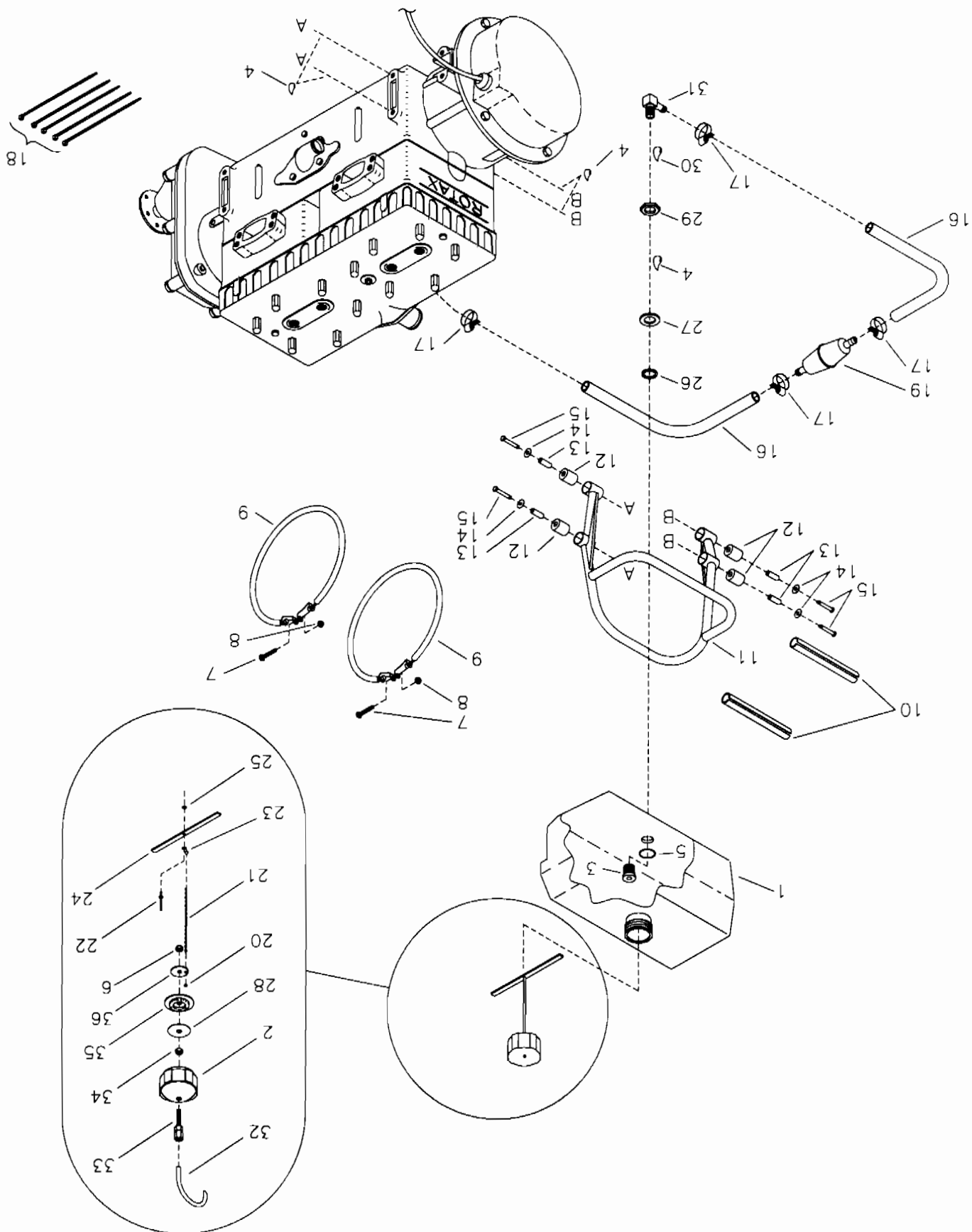
#	Description	Part Number	Quantity
1.	Line Clamp, 3/8"	FS-LCL 3/8	24
2.	1/4" Fuel Line	FS-FL	45 ft
3.	Coil Wrap	1/2 SPIRAL LOOM	2 ft
4.	Line Y	8345	2
5.	Primer Fuel Line T*	PRIME-LINE-T	0
6.	Fuel Filter	FS-FIL	1
7.	Straight Withdrawl Fitting	8330	3
8.	Fuel Shut Off Valve	FS-S-OFF	1
9.	Zip Ties	ZIP TIES	10
10.	Safety Wire	SAFETY WIRE	0
11.	Fuel Mixer Block	FS-FMB	1
12.	Sump Valve	8336	1
13.	Fuel Pump**	EG-EG-503-3	0
14.	Line Clamp, 5/16" I.D.	FS-LCL 5/16ID	12
15.	8 X 32 Bolt	AN526-832R16	1
16.	8 X 32 Nut	AN364-832A	1
17.	Primer Bulb	FS-PB	1
18.	90 Withdrawl Fitting	8342	2
19.	Loctite Blue	LOC-TITE BLUE	0
20.	1" Cushioned Clamp	MS21919-DG16	1
21.	Primer Pump*	PRIME-PUMP	0
22.	1/8" Primer Line	PRIME LINE	6 ft
23.	Overflow Hose	EGCS-OFH	1 ft
24.	Shrink Wrap	KSAC0006	5 in
25.	1/4" X 1/4" Elbow	7-11044	4
26.	3/8" Loop Clamp	KSHW0015	2
27.	#6 Pan Head Screw	6RX1/2 PHS	2

*Comes with primer kit.

**Comes with engine.

RRMS S-12 AIRAILE 582 OIL INJECTION TANK AND MOUNT ASSEMBLY

MD2234
REV. A



S-12XL AIRAILE - 582 OIL INJECTION TANK & MOUNT

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Oil Tank	KPPW0021	1
2.	Fuel Cap	KSFS0007	1
3.	Tank Withdrawal Fitting	KPFS0017	1
4.	Loctite Blue	LOC-TITE	0
5.	O-Ring	KSFS0009	1
6.	1/4" Shear Nut	AN364-428C	1
7.	3/16" Truss Head Bolt	AN526-C1032R12	2
8.	3/16" Shear Nut	AN364-1032A	2
9.	Oil Injection Tank Clamp	KAPW0013	2
10.	7/16" Black Fuel Line	KSFS0005	16 in
11.	Oil Tank Mount	OI-OTMT	1
12.	Rubber Hose	OI-RH3/4	4
13.	Rubber Hose	OI-RH7/16	4
14.	3/16" Large Washer *	AN970-3	4
15.	8MM x 35MM Bolt	M8X35	4
16.	5/16" Black Fuel Line	KSFS0003	24 in
17.	Small Hose Clamp	5-6202	4
18.	Zip Ties	ZIP TIES	5
19.	Oil Filter	414-5365	1
20.	Bead Chain - Retainer Sleeve	KSHW0014	1
21.	#3 Bead Chain	KSHW0012	7 in
22.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-44	1
23.	Bead Chain - End Coupling	KSHW0013	1
24.	Plastic Retainer	KPFS0012	1
25.	1/8" Small Brass Washer	AN960-B4	1
26.	Rubber Washer	KSFS0010	1
27.	1/2" Thick Washer	AN960-816	1
28.	Plastic Baffle ***	KSFS0012	0
29.	Nut-Flared Tube Bulkhead	AN924-5D	1
30.	Thread Sealant **	KSAC0014	0
31.	90 Withdrawal Fitting	3-83125	1
32.	Vent Tube	KPFS0020	1
33.	Conduit Adjuster Assembly	KSFS0014	1
34.	1/4" Plain Nut	AN345-416	1
35.	Rubber Gasket ***	KSFS0013	0
36.	1/4" Large Washer	AN970-4	1

*Will need to be drilled out to accept an 8mm bolt (5/16 drill bit is acceptable).

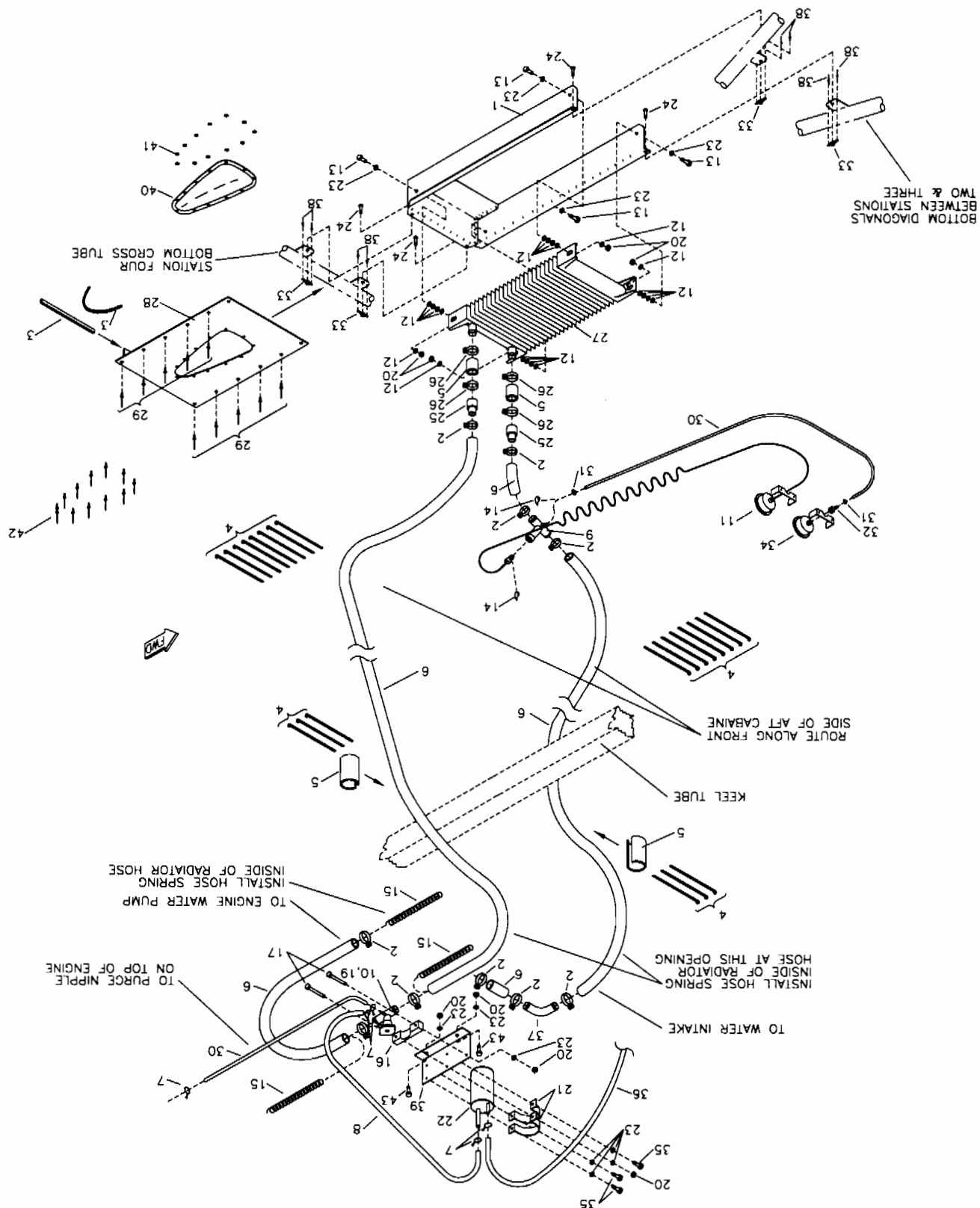
**Builder Supplied.

***Supplied with Fuel Cap.

RRMS S-12 AIRAILE 582 COOLING SYSTEM MINI-POD OR PARTIAL ENCLOSURE

11/26/01

MD2231
REV. A

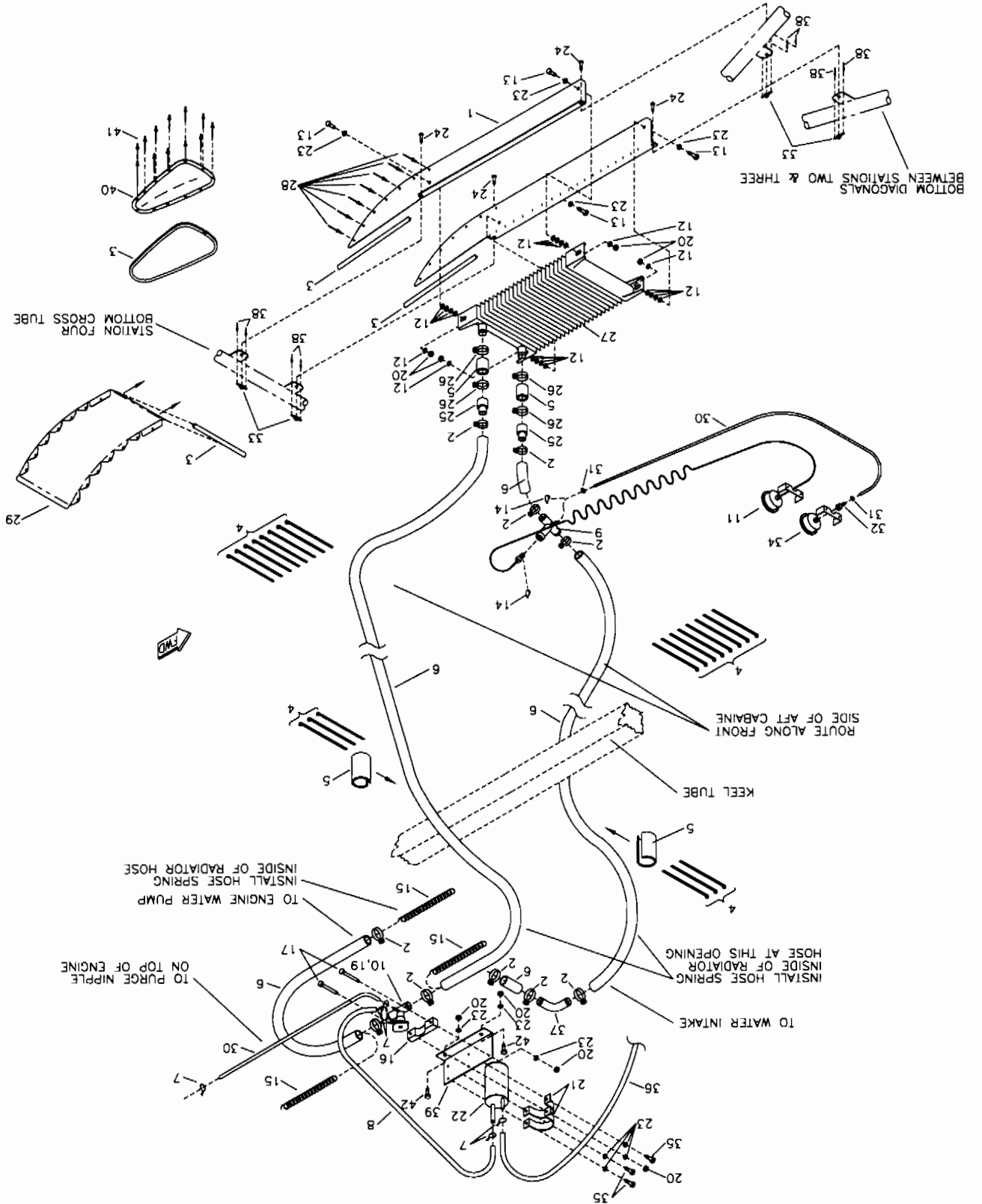


S-12XL AIRAILE - 582 COOLING SYSTEM**MINI-POD OR PARTIAL ENCLOSURE**

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Short Style Cooling Scoop	EGCS-SSCOOP	1
2.	Hose Clamp, 1 1/2"	5-5216	8
3.	Rubber Edging	X1011	36 in
4.	Zip Ties	ZIP TIES	20
5.	1 1/4" Radiator Hose	EGCS-RHOSE	4
6.	1" Radiator Hose	RADIATOR HOSE	15 ft
7.	Safety Wire	SAFETY WIRE	0 ft
8.	5/16" Overflow Hose	EGCS-OFH	12 in
9.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-42	12
10.	16 lb Pressure Cap	EGCS-CAP16	1
11.	Water Temperature Gauge	KSPW0016	1
12.	3/16" Plastic Washer	PW-3	20
13.	3/16" Bolt	AN3-6A	6
14.	Loctite Blue	LOC-TITE	0
15.	Hose Spring	EGCS-HS	4
16.	Mount Block	EGCS-FNMPVC	1
17.	3/16" Bolt	AN3-14A	2
18.	Filler T Mount Strap	EGCS-FNSTRAP	1
19.	Filler Cap Tee	EGCS-FCT-N	1
20.	3/16" Shear Nut	AN364-1032A	11
21.	Coolant Recovery Clamp	FS-HS	2
22.	Coolant Recovery Bottle	EGCS-CRB	1
23.	3/16" Thin Washer	AN960-10L	14
24.	3/16" Bolt	AN3-4A	4
25.	Reducer Coupler	EGCS-RC	2
26.	Hose Clamp, 1 3/4"	5-5220	4
27.	Radiator	EGCS-RAD	1
28.	Radiator Top Panel	KPPW0048	1
29.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-41	10
30.	1/8" Black Fuel Coolant Pressure Line	1/8 FUEL LINE	18 in
31.	Filler "T" Mount	EGCS-FNSTRAP	1
32.	1/8" Small Brass Washer	AN960-B4	12
33.	3/16" Nut Plate	K-1000-3	4
34.	Water Outlet Socket	922-025	1
35.	3/16" Bolt	AN3-3A	3
36.	1/4" Blue Fuel Line	FS-FL	6 ft
37.	90 Copper Fitting	EGCS-90CF1	1
38.	3/32" Aluminum Pop Rivet	40APR1/8	8
39.	Filler Tee and Overflow Bottle Bracket	EG-FTOB	1
40.	Radiator/Boom Seal	KPPW0049	1

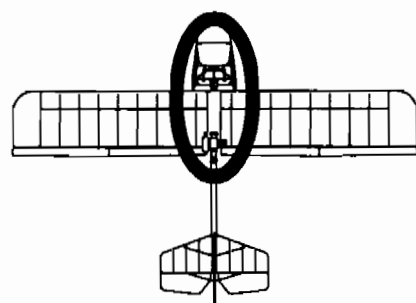
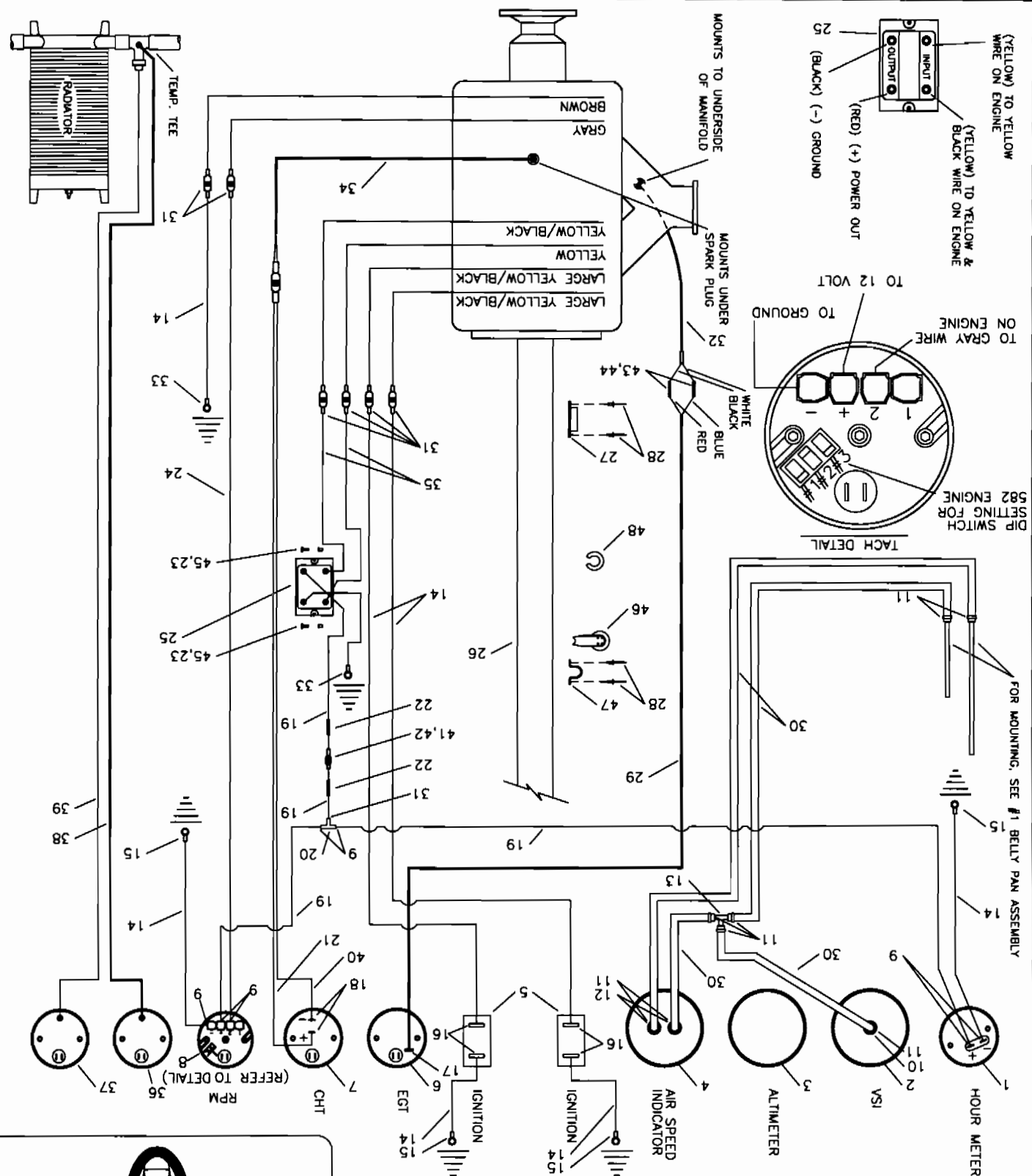
RRMS S-12 AIRAILE 582 COOLING SYSTEM FULL ENCLOSURE

MD2523
REV. A



S-12XL AIRAILE - 582 COOLING SYSTEM**FULL ENCLOSURE**

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Radiator Scoop - Side Panel - RH	KPPW0070-R	1
1.	Radiator Scoop - Side Panel - LH	KPPW0070-L	1
2.	Hose Clamp, 1 1/2"	5-5216	10
3.	Rubber Edging	X1011	48 in
4.	Zip Ties	ZIP TIES	20
5.	1 1/4" Radiator Hose	EGCS-RHOSE	4
6.	1" Radiator Hose	RADIATOR HOSE	15 ft
7.	Safety Wire	SAFETY WIRE	0 ft
8.	5/16" Overflow Hose	EGCS-OFH	12 in
9.	Temperature Probe Tee	EGCS-TEMP-T-N	1
10.	16 lb Pressure Cap	EGCS-CAP16	1
11.	Water Temperature Gauge	KSPW0013	1
12.	3/16" Plastic Washer	PW-3	20
13.	3/16" Bolt	AN3-6A	6
14.	Loctite Blue	LOC-TITE	0
15.	Hose Spring	EGCS-HS	3
16.	Mount Block	EGCS-FNMPVC	1
17.	3/16" Bolt	AN3-14A	2
19.	Filler Cap Tee	EGCS-FCT-N	1
20.	3/16" Shear Nut	AN364-1032A	11
21.	Coolant Recovery Clamp	FS-HS	2
22.	Coolant Recovery Bottle	EGCS-CRB	1
23.	3/16" Thin Washer	AN960-10L	14
24.	3/16" Bolt	AN3-4A	4
25.	Reducer Coupler	EGCS-RC	2
26.	Hose Clamp, 1 3/4"	5-5220	4
27.	Radiator	EGCS-RAD	1
28.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-41	19
29.	Radiator Scoop - Bottom Panel	KPPW0069	1
30.	1/8" Black Fuel Coolant Pressure Line	1/8 FUEL LINE	10 ft
31.	Small Hose Clamp	5-6202	2
32.	1/8" Straight Brass Female Fitting	26-4-2	1
33.	3/16" Nut Plate	K-1000-3	4
34.	Water Pressure Gauge	KSPW0021	1
35.	3/16" Bolt	AN3-3A	3
36.	1/4" Blue Fuel Line	FS-FL	6 ft
37.	90 Copper Fitting	EGCS-90CF1	1
38.	3/32" Aluminum Pop Rivet	40APR1/8	8
39.	Filler Tee and Overflow Bottle Bracket	EG-FTOB	1
40.	Radiator/Boom Seal	KPPW0049	1
41.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-42	12



SECTION: 582 ENGINE, INSTRUMENTATION, AND ELECTRICAL
DETAIL: 582 INSTRUMENTS AND ELECTRICAL WITHOUT ELECTRICAL START

S-12XL AIRAILE - 582 INSTRUMENTS & ELECTRICAL - WITHOUT ELECTRIC START

NOTE: Gauges may vary, consult directions provided with gauge for wiring diagram.

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Hour Meter	KSPW0022	1
2.	Vertical Speed Indicator - Feet per Minute *	KSAV0008	1
3.	Altimeter *	KSAV0001	1
4.	Air Speed Indicator, 0-120	KSAV0004	1
5.	Ignition Switch	MS35058-22	2
6.	Exhaust Gas Temperature Gauge	KSPW0008	1
7.	Cylinder Head Temperature Gauge *	KSPW0010	1
8.	RPM Gauge	KSPW0028	1
9.	14 Gauge Female Spade Terminal, Blue	IP-7128	7
10.	90 Withdrawal Fitting	8342	1
11.	Line Clamp, 3/8"	FS-LCL 3/8	8
12.	Straight Withdrawal Fitting	8330	2
13.	Line Tee	8338	1
14.	14 Gauge Black Wire	14 GA WIRE/BLACK	30 ft
15.	14 Gauge Eye Terminal, Blue 3/16"	IP-7102	4
16.	14 Gauge Eye Terminal, Blue 5/32"	KSES0003	4
17.	EGT End Plug **	KSPW0008-1	0
18.	Female Terminal ***	KSPW0010-1	0
19.	14 Gauge Red Wire	14 GA WIRE/RED	16 ft
20.	Terminal Y Connector, Brass	IP-YC	1
21.	CHT Wire, Red ***	KSPW0010-2	0
22.	14 Gauge Splice, Butt Connector	IP-7132	2
23.	3/16" Rivet Nut	MS27130-A25K	2
24.	14 Gauge White Wire	14 GA WIRE/WHITE	12 ft
25.	Regulator/Rectifier	KSES0005	1
26.	Keel ****	KPFU0043	0
27.	Starter Pulley	109	1
28.	3/16" Stainless Steel Pop Rivet - Cherry Q	CCPQ-64	4
29.	EGT Wires **	KSPW0008-2	0
30.	1/4" Blue Pitot/Static Line	FS-FL	8 ft
31.	14 Gauge Male Spade Terminal, Blue	IP-7126	7
32.	EGT Probe **	KSPW0008-3	0
33.	14 Gauge Eye Terminal, Blue 1/4"	1/4 EYE 14 GA	2
34.	CHT Probe ***	KSPW0010-3	0
35.	14 Gauge Yellow Wire	14 GA WIRE/YELLOW	6 ft
36.	Coolant Pressure Gauge *****	KSPW0021	0
37.	Coolant Temperature Gauge *****	KSPW0013	0
38.	1/8" Black Fuel Coolant Pressure Line *****	1/8 FUEL LINE	0 ft
39.	Coolant Temperature Probe *****	KSPW0013-1	0
40.	CHT Wire, Black ***	KSPW0010-4	0

*Optional gauge. **Supplied with EGT. ***Supplied with CHT.

****Referenced from super structure assembly. *****Referenced from cooling system.

S-12XL AIRAILE - 582 INSTRUMENTS & ELECTRICAL - WITHOUT ELECTRIC START

NOTE: Gauges may vary, consult directions provided with gauge for wiring diagram.

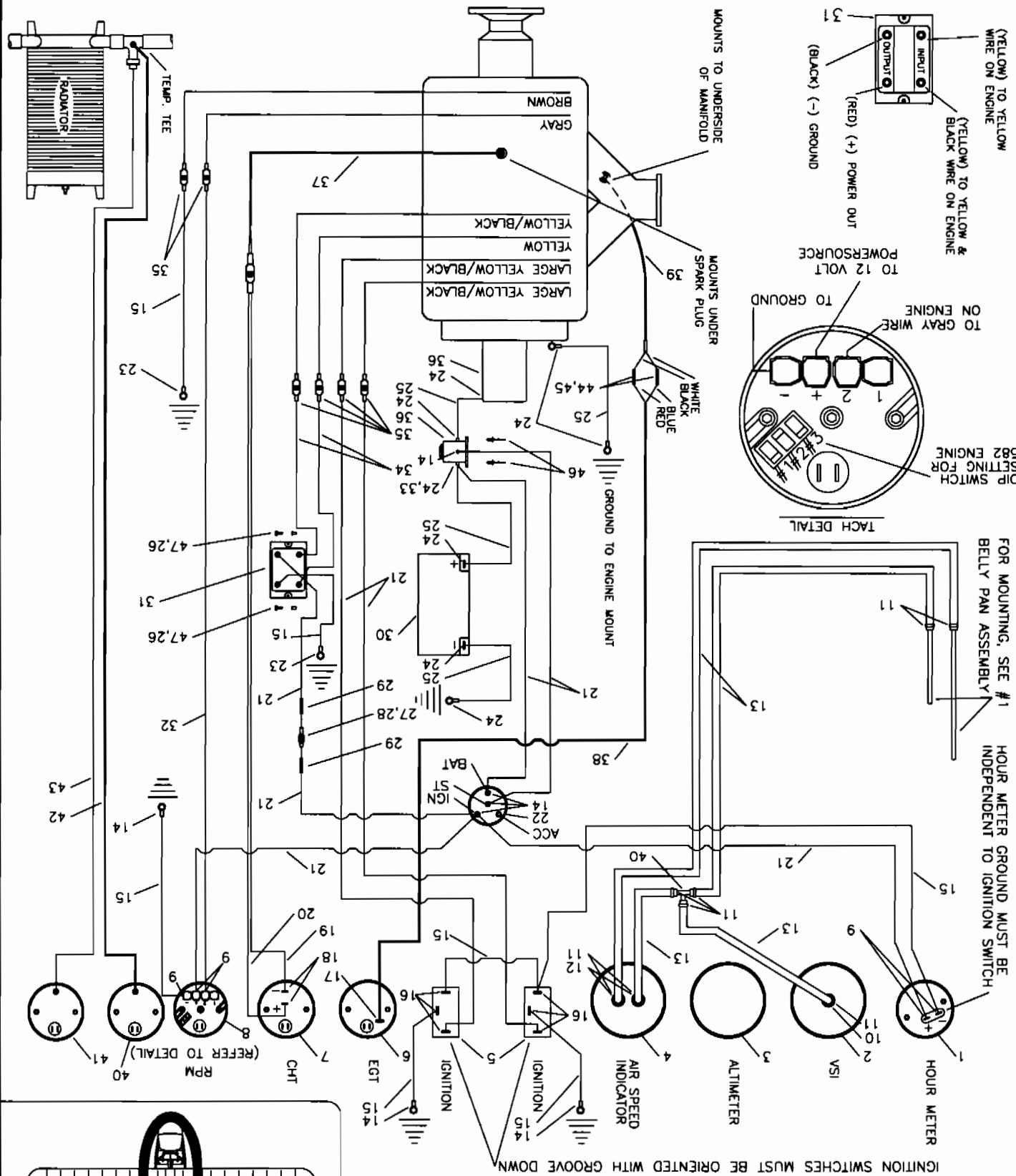
#	DESCRIPTION	PART NUMBER	QUANTITY
41.	14 Gauge, In Line Fuse Holder	KSES0019	1
42.	25 AMP Fuse	KSES0020-25	1
43.	Female Bullet Terminal	02-09-1103	8
44.	Shrink Wrap	KSAC0009	1 ft
45.	Pan Head Phillips Bolt (10-32)	KSHW0006	2
46.	Pulley	KSHW0040	1
47.	Eye Strap	KSHW0019	1
48.	Small Rubber Edging	8510K11	6 in

*Optional gauge.

**Supplied with EGT.

***Supplied with CHT.

****Referenced from super structure assembly. *****Referenced from cooling system.

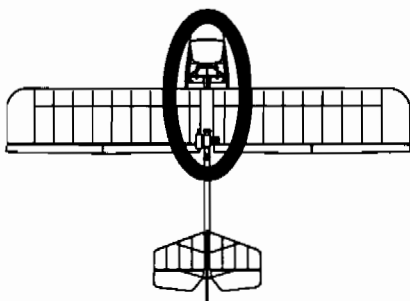


582 INSTRUMENTS AND ELECTRICAL DETAIL	582 ENGINE, INSTRUMENTATION, AND ELECTRICAL
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S-12XL AIRAILE - 582 INSTRUMENTS & ELECTRICAL - WITH ELECTRIC START

NOTE: Gauges may vary, consult directions provided with gauge for wiring diagram.

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Hour Meter	KSPW0022	1
2.	Vertical Speed Indicator - Feet per Minute *	KSAV0008	1
3.	Altimeter *	KSAV0001	1
4.	Air Speed Indicator, 0-120	KSAV0004	1
5.	Ignition Switch	MS35058-23	2
6.	Exhaust Gas Temperature Gauge	KSPW0008	1
7.	Cylinder Head Temperature Gauge *	KSPW0010	1
8.	RPM Gauge	KSPW0028	1
9.	14 Gauge Female Spade Terminal, Blue	IP-7128	5
10.	90 Withdrawal Fitting	8342	1
11.	Line Clamp, 3/8"	FS-LCL 3/8	8
12.	Straight Withdrawal Fitting	8330	2
13.	1/4" Blue Pitot/Static Line	FS-FL	8 ft
14.	14 Gauge Eye Terminal, Blue 3/16"	IP-7102	10
15.	14 Gauge Black Wire	14 GA WIRE/BLACK	30 ft
16.	14 Gauge Eye Terminal, Blue 5/32"	KSES0003	6
17.	EGT End Plug **	KSPW0008-1	0
18.	Female Terminal ***	KSPW0010-1	0
19.	CHT Wire, Black ***	KSPW0010-4	0
20.	CHT Wire, Red ***	KSPW0010-2	0
21.	14 Gauge Red Wire	14 GA WIRE/RED	38 ft
22.	Key Start Switch	25-6	1
23.	14 Gauge Eye Terminal, Blue 1/4"	1/4 EYE 14 GA	2
24.	4 Gauge Eye Cable Terminal	4 GA CABLE LUG	8
25.	4 Gauge Battery Cable, Black Wire	4 GA WIRE/BLACK	20 ft
26.	3/16" Rivet Nut	MS27130-A25K	2
27.	14 Gauge, In Line Fuse Holder	KSES0019	1
28.	25 AMP Fuse	KSES0020-25	1
29.	14 Gauge Splice, Butt Connector	IP-7132	4
30.	Battery ****	PS12150-NB	0
31.	Regulator/Rectifier	KSES0005	1
32.	14 Gauge White Wire	14 GA WIRE/WHITE	12 ft
33.	14 Gauge Eye Terminal, Blue 5/16"	5/16 I TERM	1
34.	14 Gauge Yellow Wire	14 GA WIRE/YELLOW	6 ft
35.	14 Gauge Male Spade Terminal, Blue	IP-7126	6
36.	Electric Starter Kit (582)	MESK-3-582	1
37.	CHT Probe ***	KSPW0010-3	0
38.	EGT Wires **	KSPW0008-2	0
39.	EGT Probe **	KSPW0008-3	0
40.	Coolant Pressure Gauge *****	KSPW0021	0

*Optional gauge. **Supplied with EGT. ***Supplied with CHT.

****Referenced from battery box installation. *****Referenced from 582 cooling system.

S-12XL AIRAILE - 582 INSTRUMENTS & ELECTRICAL - WITH ELECTRIC START

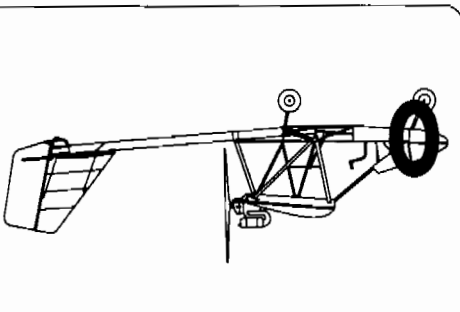
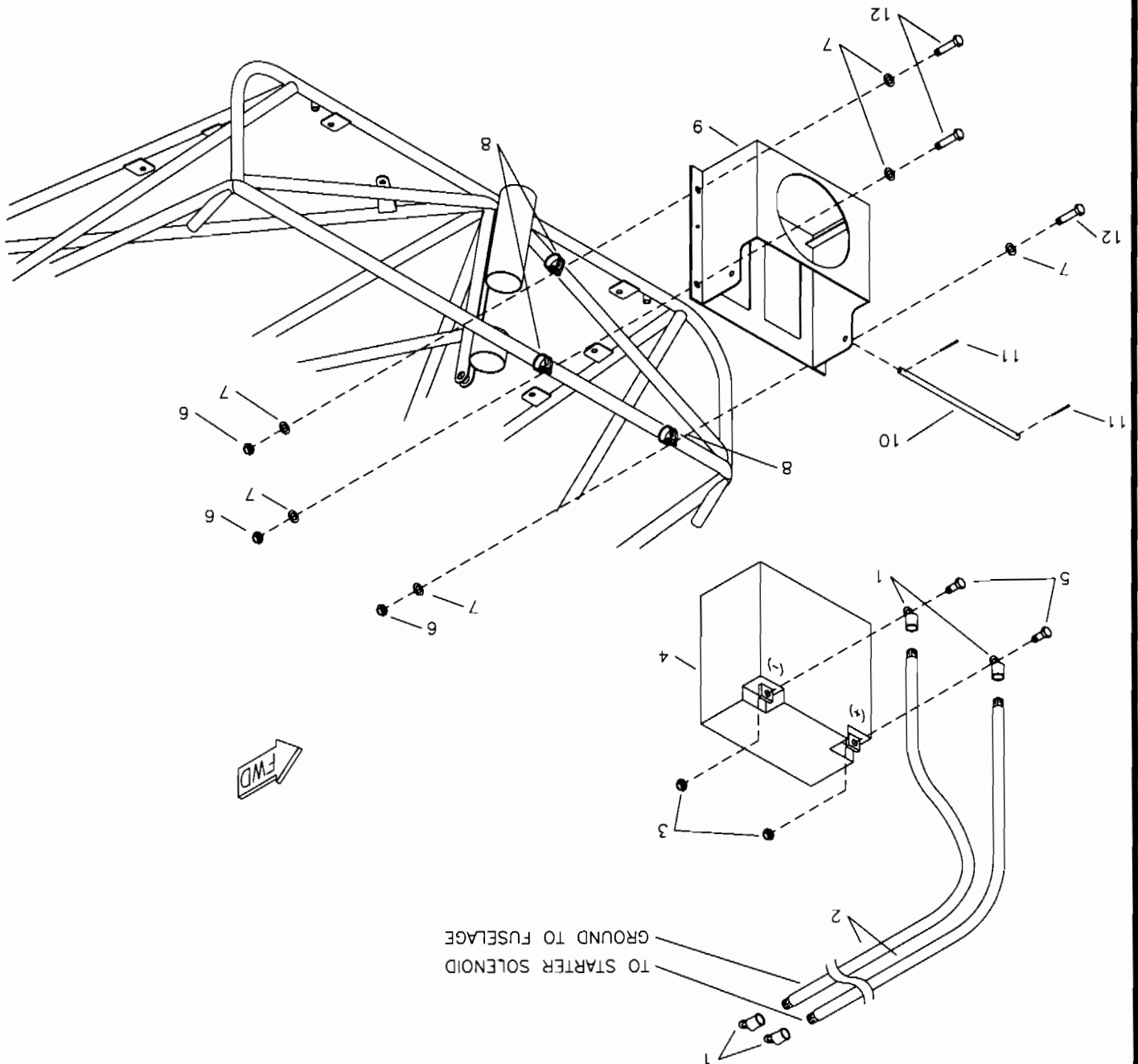
NOTE: Gauges may vary, consult directions provided with gauge for wiring diagram.

#	DESCRIPTION	PART NUMBER	QUANTITY
41.	Coolant Temperature Gauge *****	KSPW0013	0
42.	1/8" Black Fuel Coolant Pressure Line *****	1/8 FUEL LINE	0 ft
43.	Coolant Temperature Probe *****	KSPW0013-1	0
44.	Female Bullet Terminal	02-09-1103	8
45.	Shrink Wrap	KSAC0009	1 ft
46.	3/16" Aluminum Pop Rivet - Cherry Q	AAPQ-64	2
47.	Pan Head Phillips Bolt (10-32)	KSHW0006	2

*Optional gauge. **Supplied with EGT. ***Supplied with CHT.
 ****Referenced from battery box installation. *****Referenced from 582 cooling system.

RRMS S-12 AIRRAIL

Made in the USA



582 BATTERY BOX INSTALLATION

SECTION: 582 ENGINE, INSTRUMENTATION, AND ELECTRICAL
DETAIL:

Section:**582 ENGINE, INSTRUMENTATION & ELECTRICAL SYSTEMS****Detail:****582 BATTERY BOX INSTALLATION****Page:**

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Date:

8/15/96

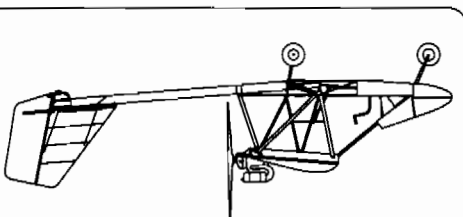
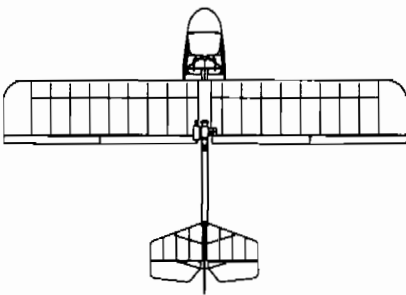
#	Description	Part Number	Quantity
1.	4 Gauge Terminal Cable	4 GA CABLE LUG	0
2.	Battery Cable**	4 GA WIRE/BLACK	0 ft
3.	Nut*	BATT-1	2
4.	Battery	PS12150-NB	1
5.	Bolt*	BATT-2	2
6.	3/16" Shear Nut	AN364-1032A	3
7.	3/16" Thick Washer	AN960-10	6
8.	1/2" Cushioned Clamp	MS21919-DG8	3
9.	Battery Box	(582) BAT-BOX	1
10.	Battery Bar***	(582) BAT-BAR	1
11.	Small Cotter Pin***	MS24665-134	2
12.	3/16" Bolt	AN3-3A	3

*Comes with battery.

**Referenced from 582 Instruments & Electrical.

***Comes with 582 battery box.

582 MUFFLER WRAP AT A LATER DATE
IN DEVELOPMENT, TO BE RELEASED FOR
PRODUCTION



582 MUFFLER WRAP HEATER

DETAIL:

582 ENGINE, INSTRUMENTATION, AND ELECTRICAL

SECTION:

Section:

582 ENGINE, INSTRUMENTATION & ELECTRICAL SYSTEMS

Detail:

582 MUFFLER WRAP HEATER

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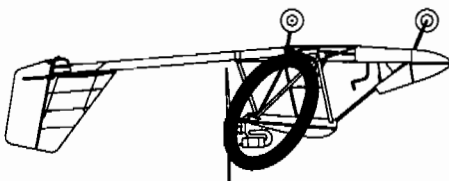
#	Description	Part Number	Quantity
0.	582 Muffler Wrap Heater in development.	-----	0

RANS, Inc.
S-12 Airaile

dBase Page #:

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582 RADIANT HEATER CORE ASSEMBLY IN
DEVELOPMENT, TO BE RELEASED TO PRODUCTION
AT A LATER DATE.



SECTION: 04-27
582 ENGINE, INSTRUMENTATION, AND ELECTRICAL
DETAIL: RADIANT HEATER CORE ASSEMBLY

Section:

582 ENGINE, INSTRUMENTATION & ELECTRICAL SYSTEMS

Detail:

582 RADIANT HEATER CORE ASSEMBLY

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Date:

#	Description	Part Number	Quantity
0.	582 Radiant Heater Core in development.	-----	0

RANS, Inc.
S-12 Airaile

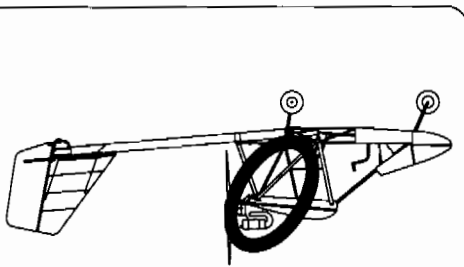
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005-24

Made in the
USA

RRMS
S-12 AIRAILE

DATE: 11/8/95
MANUAL DRAWING # MD2074

582 RADIANT HEATER ASSEMBLY IN DEVELOPMENT
TO BE RELEASED TO PRODUCTION AT A
LATER DATE.



SECTION: 582 ENGINE, INSTRUMENTATION, AND ELECTRICAL
DETAIL: RADIANT HEATER ASSEMBLY

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582 ENGINE, INSTRUMENTATION & ELECTRICAL SYSTEMS

Detail:

582 RADIANT HEATER INSTALLATION

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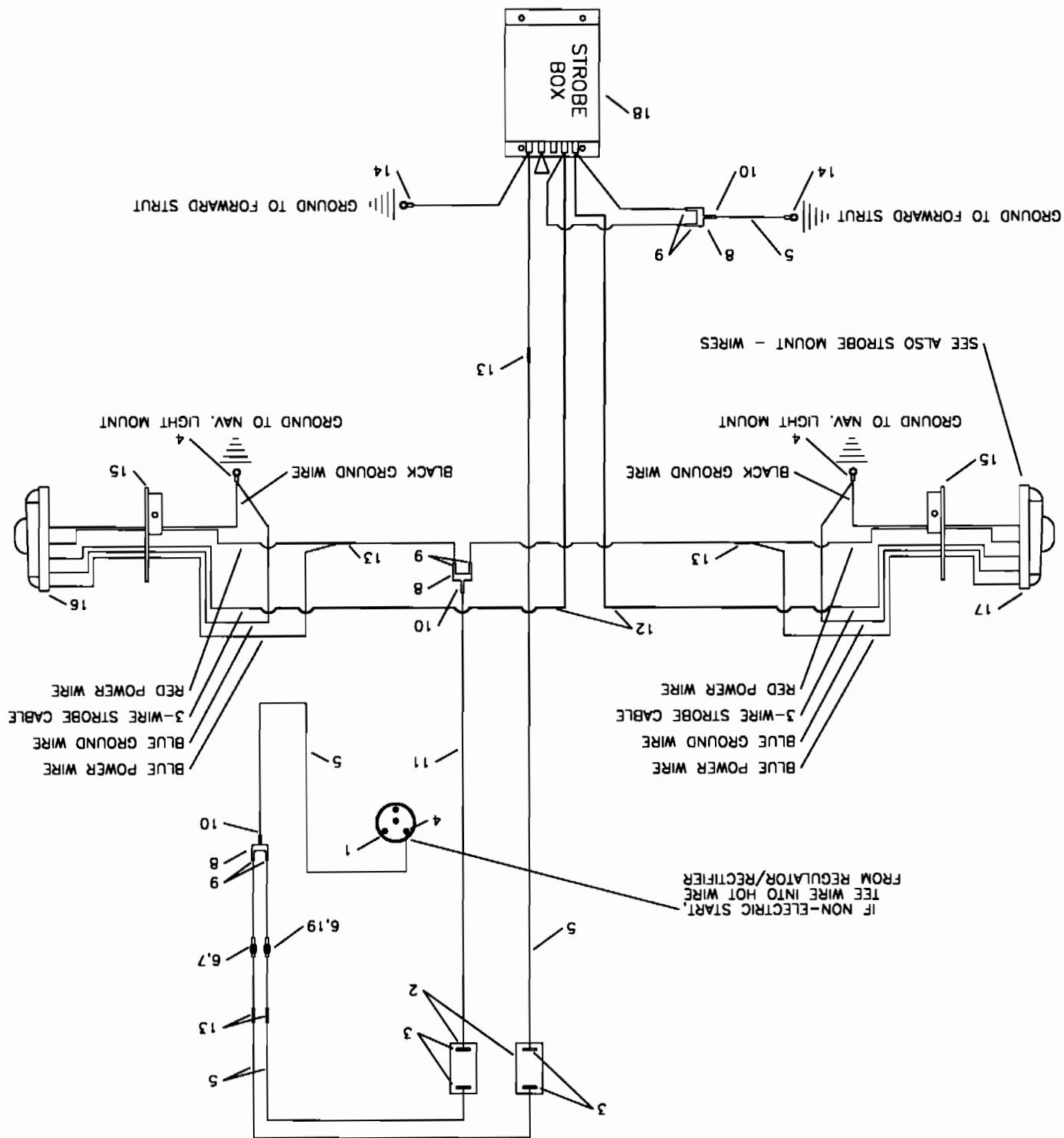
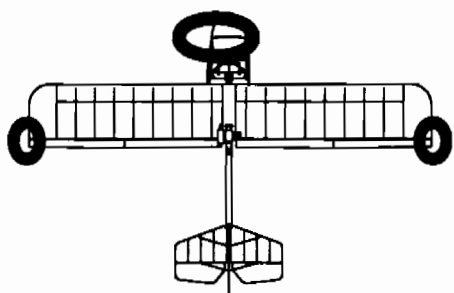
#	Description	Part Number	Quantity
0.	582 Radiant Heater Installation in development.	-----	0

RANS, Inc.
S-12 Airaile

dBase Page #:

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STROBE SYSTEM SCHEMATIC

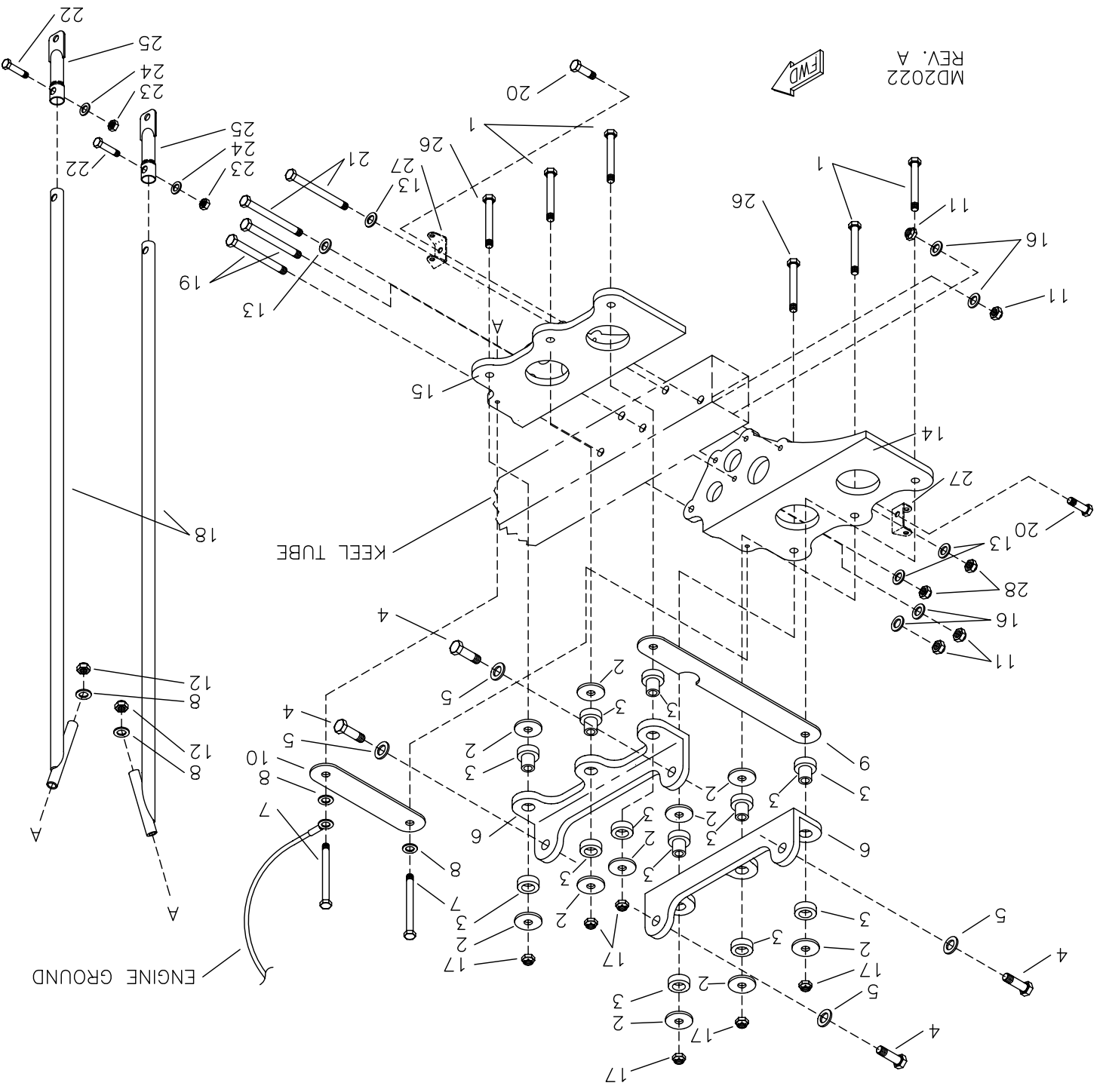


S-12XL AIRAILE - 582 STROBE SYSTEM SCHEMATIC

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Key Start Switch *	25-6	0
2.	Switch	MS35058-22	2
3.	14 Gauge Eye Terminal, Blue 5/32"	KSES0003	4
4.	14 Gauge Eye Terminal, Blue 3/16"	IP-7102	3
5.	14 Gauge Red Wire	14 GA WIRE/RED	8 ft
6.	14 Gauge, In Line Fuse Holder	KSES0019	2
7.	15 AMP Fuse	KSES0020-15	1
8.	Terminal Y Connector, Brass	IP-YC	1
9.	14 Gauge Female Spade Terminal, Blue	IP-7128	6
10.	14 Gauge Male Spade Terminal, Blue	IP-7126	3
11.	14 Gauge Yellow Wire	14 GA WIRE/YELLOW	50 ft
12.	Whelen Installation & Cable	HD-60	1
13.	14 Gauge Splice, Butt Connector	IP-7132	4
14.	14 Gauge Eye Terminal, Blue 1/4"	1/4 EYE 14 GA	2
15.	Navigation Light Tip Mount **	NAV-TIP-MT	0
16.	Whelen Left Strobe Light **	A600-PR	0
17.	Whelen Right Strobe Light **	A600-PG	0
18.	Whelen Strobe Light Power Supply	A413A, HDA-DF	1
19.	10 AMP Fuse	KSES0020-10	1

*Referenced from Instruments & Electrical.

**Referenced from Strobe Mount.



S-12XL AIRAILE - 912/912S ENGINE MOUNT ASSEMBLY

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	3/8" Bolt	AN6-23A	4
2.	1/8" Aluminum Washer	EG-AW	10
3.	Barry Mount	22001	6
4.	10MM Bolt	M10 X 35	4
5.	10MM Loc Washer	945-753	4
6.	912 Mount Angle	KPPW0057	2
7.	1/4" Bolt	AN4-24A	2
8.	1/4" Thin Washer	AN960-416L	4
9.	AFT Mount Strap	EG-912-AMS	1
10.	Forward Mount Strap	KPPW0210	1
11.	5/16" Tensile Nut *	AN365-524A	0
12.	1/4" Tensile Nut	AN365-428A	2
13.	1/4" Thick Washer *	AN960-416	0
14.	912 Mount Angle, LH *	KPPW0035-L	0
15.	912 Mount Angle, RH *	KPPW0035-R	0
16.	5/16" Thin Washer *	AN960-516L	0
17.	3/8" Tensile Nut	AN363-624A	6
18.	Torsion Strut	KPPW0044	2
19.	5/16" Bolt *	AN5-32A	0
20.	5/16" Bolt *	AN5-10A	0
21.	1/4" Bolt *	AN4-32A	0
22.	3/16" Bolt	AN3-10A	2
23.	3/16" Shear Nut	AN364-1032A	2
24.	3/16" Thin Washer	AN960-10L	2
25.	Torsion Strut End Fitting	EG-912-TSFF	2
26.	Low Profile Bolt	AN6-23ALP	2
27.	Stainless Steel U Bracket *	SU-118	0
28.	1/4" Shear Nut	AN364-428A	2

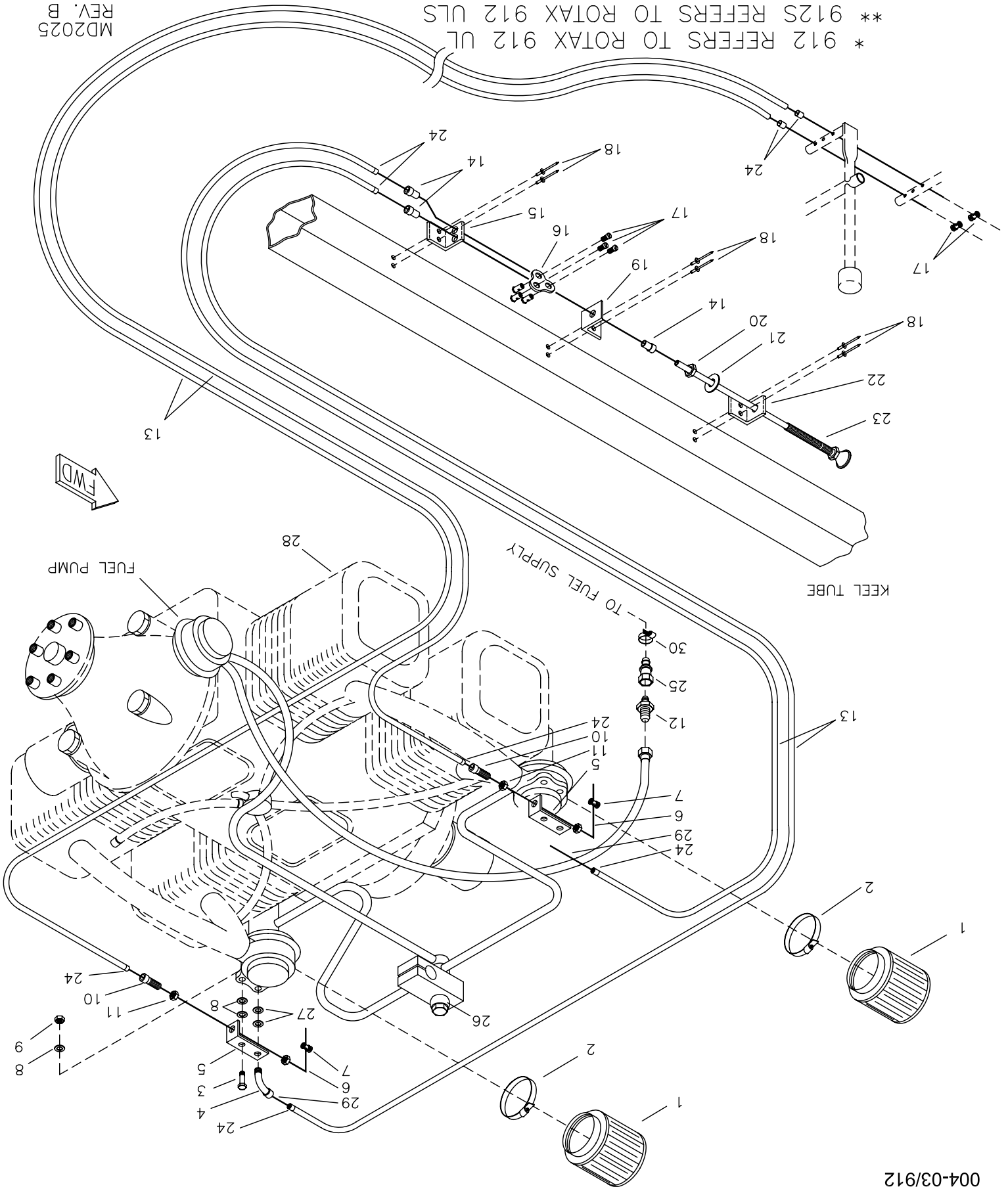
*Referenced from 912 Super Structure.

2/21/2007

RRMS S-12XL AIRAILE / 912 ULS ENGINE

MD2025
REV. B

* 912 REFERS TO ROTAX 912 UL
** 912S REFERS TO ROTAX 912 ULS



S-12XL AIRAILE - 912/912S ENGINE, THROTTLE/FUEL HOOK UPS

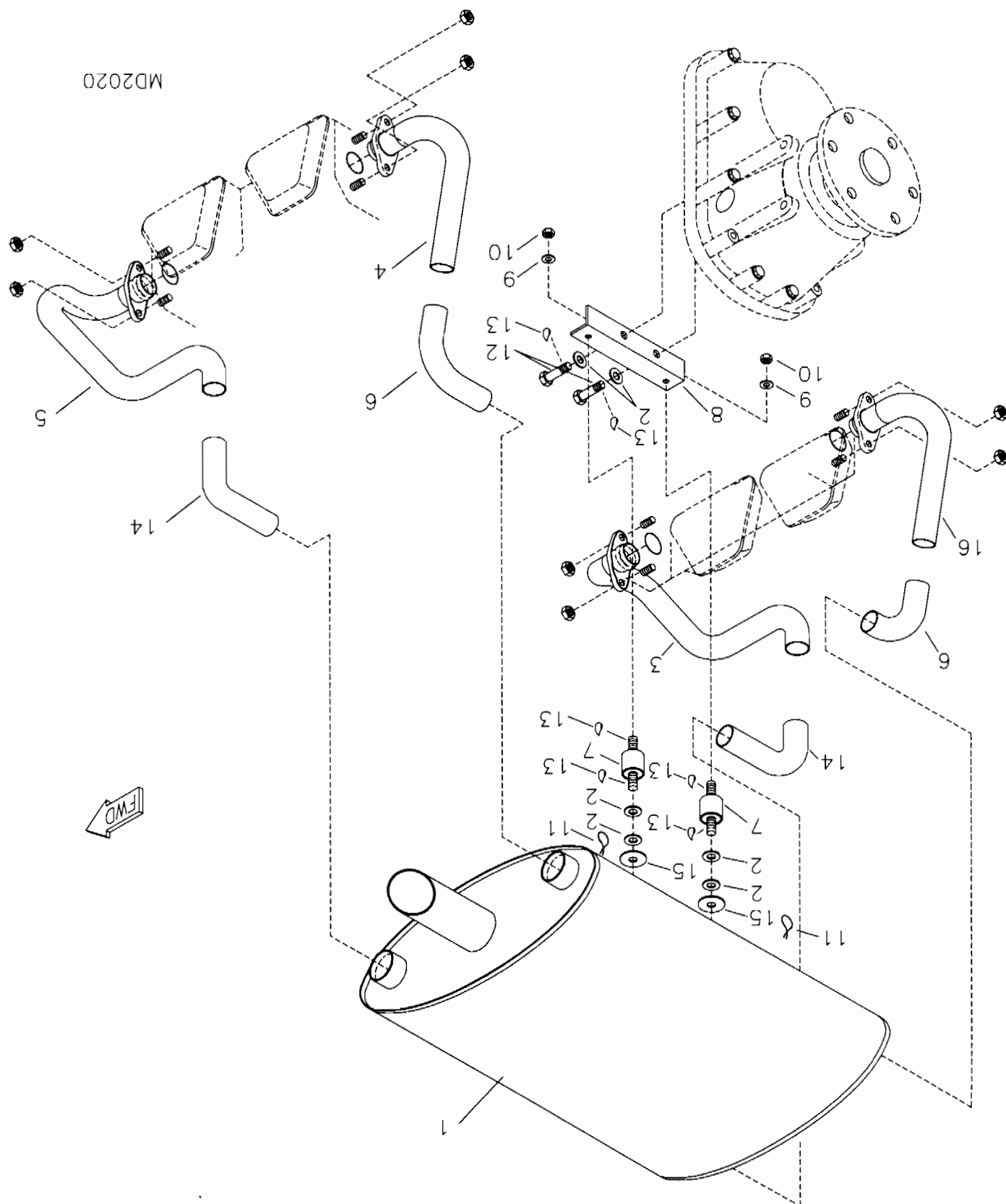
#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Air Filter, K & N (503/582 filter)	EG-AF	2
2.	63MM Clamp *	EG-AF-CLAMP	0
3.	3/16" Bolt	AN3-7A	2
4.	Choke Cable Guide **	EG-EG-912-1	0
5.	Throttle Cable Mount, 912, LH	EG-TCM-L	1
5.	Throttle Cable Mount, 912, RH	EG-TCM-R	1
6.	Throttle Cable	EG-CAB-12	2
7.	Wire Stop Screw **	EG-EG-912-2	0
8.	3/16" Thick Washer	AN960-10	6
9.	3/16" Shear Nut	AN364-1032A	2
10.	Throttle Adjust Ferrule **	EG-EG-912-3	0
11.	1/8" Ferrule Nut **	EG-EG-912-4	0
12.	Reducer	AN919-6D	1
13.	Cable Housing	EG-T-CAB-H	28 ft
14.	Cable Conduit Ferrule	2394	3
15.	Double Choke Cable Stop	CK-DCS	1
16.	Choke Mixer Plate	KPPW0076	1
17.	Wire Swivel/Screw Stop	2361	5
18.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-44	6
19.	Choke Cable Stop	CK-CS	1
20.	Choke Assembly Nut ***	4-336-1	0
21.	Choke Assembly Washer ***	4-336-2	0
22.	Pull Choke Mount	CK-MT	1
23.	Choke Assembly	4-336	1
24.	Cable Ferrule Cap	ENDCAP-12000	8
25.	1/4" Hose Fitting	30682-4-4	1
26.	Bushing	BPBK0018	1
27.	1/4" Thick Washer	AN960-416	4
28.	912 Engine ****	EG-EG-912	0
29.	Choke Cable	BC-105	2
30.	Small Hose Clamp	5-6202	1

*Supplied with air filter.

**Supplied with engine.

***Supplied with choke assembly

RMS S-12XL AIRAILE EXHAUST ASSEMBLY - 912



S-12XL AIRAILE - 912/912S EXHAUST ASSEMBLY

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	912 Muffler, S-12, S-18	KPEX0058	1
2.	1/4" Thick Washer	AN960-416	6
3.	S-12, S18 Forward Lower Manifold, LH	KPEX0059	1
4.	S-12, S-18 AFT Lower Manifold	KPEX0061	1
5.	S-12, S-18 Forward Lower Manifold, RH	KPEX0060	1
6.	S-12, S-18 AFT Upper Manifold	KPEX0062	2
7.	Rubber Isolator	EG-RI	2
8.	Muffler Mount Angle	KPEX0010	1
9.	6 MM Loc Washer *	AN935-416L	0
10.	6 MM Nut *	6MM NUT	0
11.	Safety Wire	SAFETY WIRE	0 ft
12.	6MM x 16MM Bolt	M6X16 BOLT	2
13.	Loctite Blue	LOC-TITE	0
14.	S-12, S-18 Forward Upper Manifold	KPEX0063	2
15.	1/8" Aluminum Washer	EG-AW	2
16.	S-12, S-18 AFT Lower Manifold, LH	KPEX0066	1

*Supplied with rubber isolator.

S-12XL AIRAILE - 912/912S FUEL SYSTEM**DUAL WING TANKS**

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Line Clamp, 3/8"	FS-LCL 3/8	5
2.	1/4" Black Fuel Line	KSFS0002	50 ft
3.	Zip Ties	ZIP TIES	10
4.	1/4" Clear Fuel Line	KSFS0008	3 ft
5.	Straight Withdrawal Fitting	8330	3
6.	Line Clamp, 5/16" ID	FS-LCL 5/16ID	8
7.	1/4" x 1/4" 90 Fitting	7-11044	2
8.	Coil Wrap	1/2 SPIRAL LOOM	1 ft
9.	Fuel Filter *	-----	0
10.	Fuel Shut Off Valve	FS-S-OFF	1
11.	90 Withdrawal Fitting	8342	2
12.	Fuel Mixer Block	FS-FMB	1
13.	Sump Drain Valve	8336	1
14.	8 x 32 Bolt	AN526-832R16	1
15.	Loctite Blue **	LOC-TITE	0
16.	8 x 32 Nut	AN364-832A	1
17.	1" Cushioned Tube Clamp	MS21919-DG16	1
18.	Fuel Line "Y" Connector	8345	2
19.	3/8" Loop Clamp	KSHW0015	2
20.	#6 Small Pan Head Screw	6RX1/2 PHS	2
21.	Small Hose Clamp	5-6202	3
22.	Line Clamp, 1/2"	FS-LCL 1/2	14
23.	1/4" Blue Fuel Line	FS-FL	1 ft

* Refer to ROTAX for recommended part

** Builder Provided

IF NOT INSTALLING OIL COOLER
ROUTE DIRECTLY TO OIL PUMP

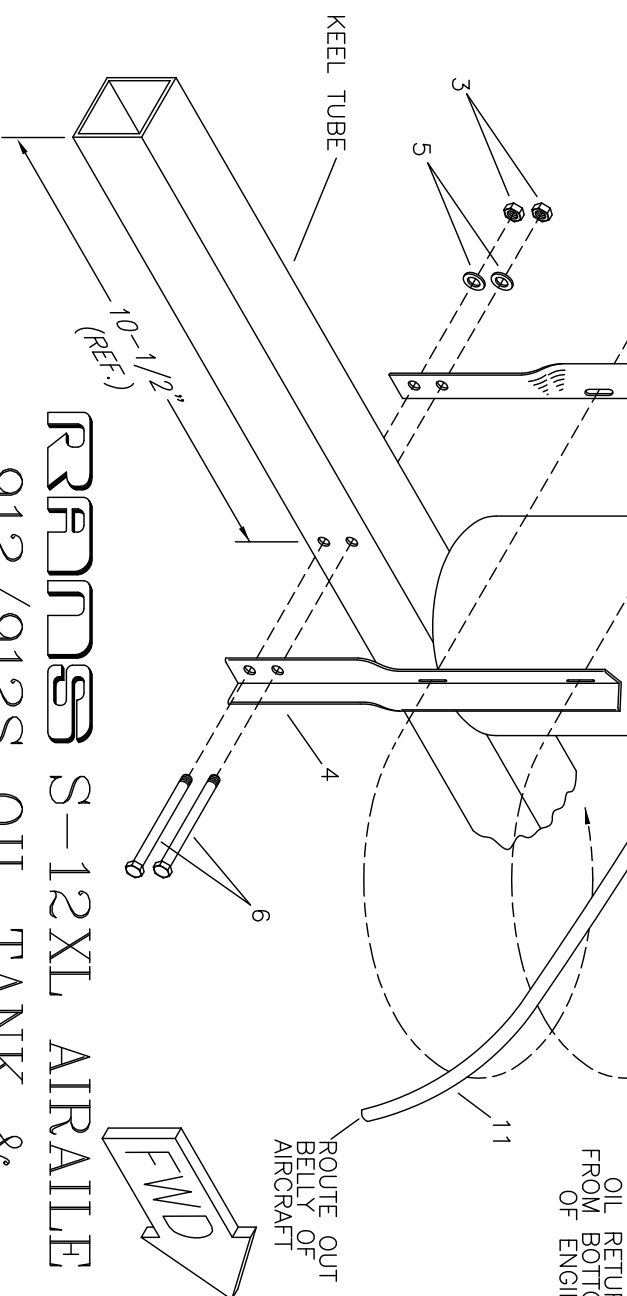
TO OIL PUMP
(BELOW GEAR BOX)

OIL PICKUP, ROUTE
OIL LINE TO TOP
FITTINGS ON COOLER

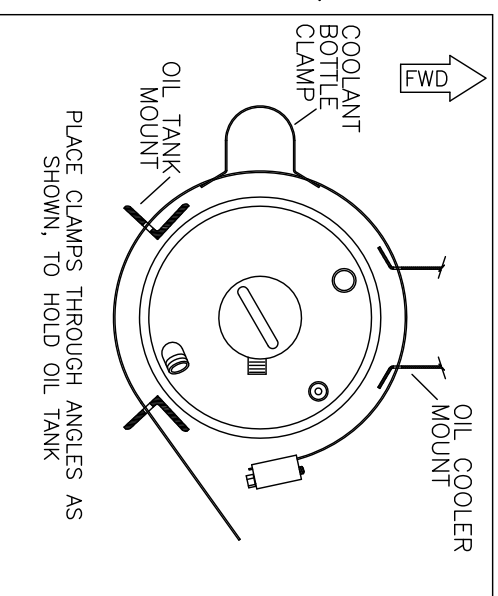
REMOVE MOUNT TABS
(FOUR PLACES)

OIL RETURN
FROM BOTTOM
OF ENGINE

ROUTE OUT
BELLY OF
AIRCRAFT



RRR S-12XL AIRRAIL 912/912S OIL TANK & OPTIONAL COOLER INSTALLATION



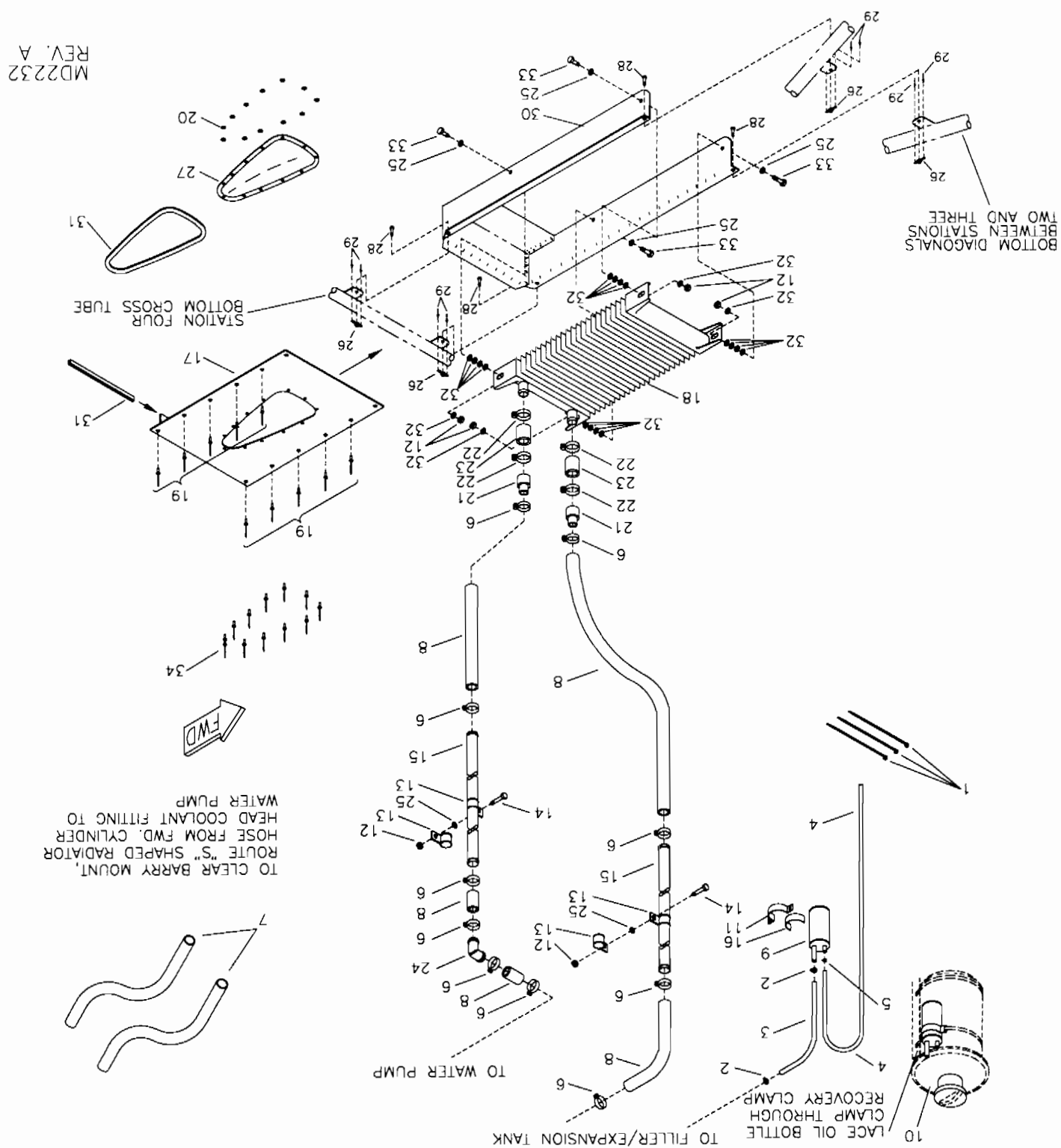
MD2021
REV. A

S-12XL AIRAILE - 912/912S OIL TANK & MOUNT**Oil Tank and Optional Cooler Installation**

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Hose Clamp	5-5288	2
2.	Oil Tank Mount, RH	KPPW0047-R	1
3.	3/16" Shear Nut	AN364-1032A	2
4.	Oil Tank Mount, LH	KPPW0047-L	1
5.	3/16" Thick Washer	AN960-10	2
6.	3/16" Bolt	AN3-25A	2
7.	Straight Fitting	KSPW0026	1
8.	Oil Line	KSPW0080	6 ft
9.	90 Degree Fitting - Long	KSPW0082	1
10.	Safety Wire	-----	0
11.	5/16" Overflow Hose	EGCS-OFH	72 in
12.	3/16" Bolt *	AN3-4A	8
13.	Loctite Blue	LOC-TITE	0
14.	3/16" Thin Washer *	AN960-10L	8
15.	Oil Cooler Mount Bracket *	KPPW0191	2
16.	Upper Bracket Mount - Oil Cooler *	KPPW0071	1
17.	.093 Silicone Sheet *	KPPW0254	2
18.	Threaded Bushing-Oil Cooler *	KPPW0192	4
19.	Small Oil Cooler *	20708	1
20.	Lower Bracket Mount - Oil Cooler *	KPPW0072	1
21.	90 Degree Fitting	KSPW0002	2
22.	Straight Fitting *	KSPW0026	1
23.	90 Degree Fitting *	KSPW0002	1
24.	Banjo Fitting	KSPW0083	1
25.	Banjo Bolt - M16 x 1.5 x 28	940-878	1
26.	Gasket Ring - 16 x 22	430-622	2

*Optional.

RRMS S-12 AIRAILE
912 COOLING SYSTEM MINI-POD
OR PARTIAL ENCLOSURE



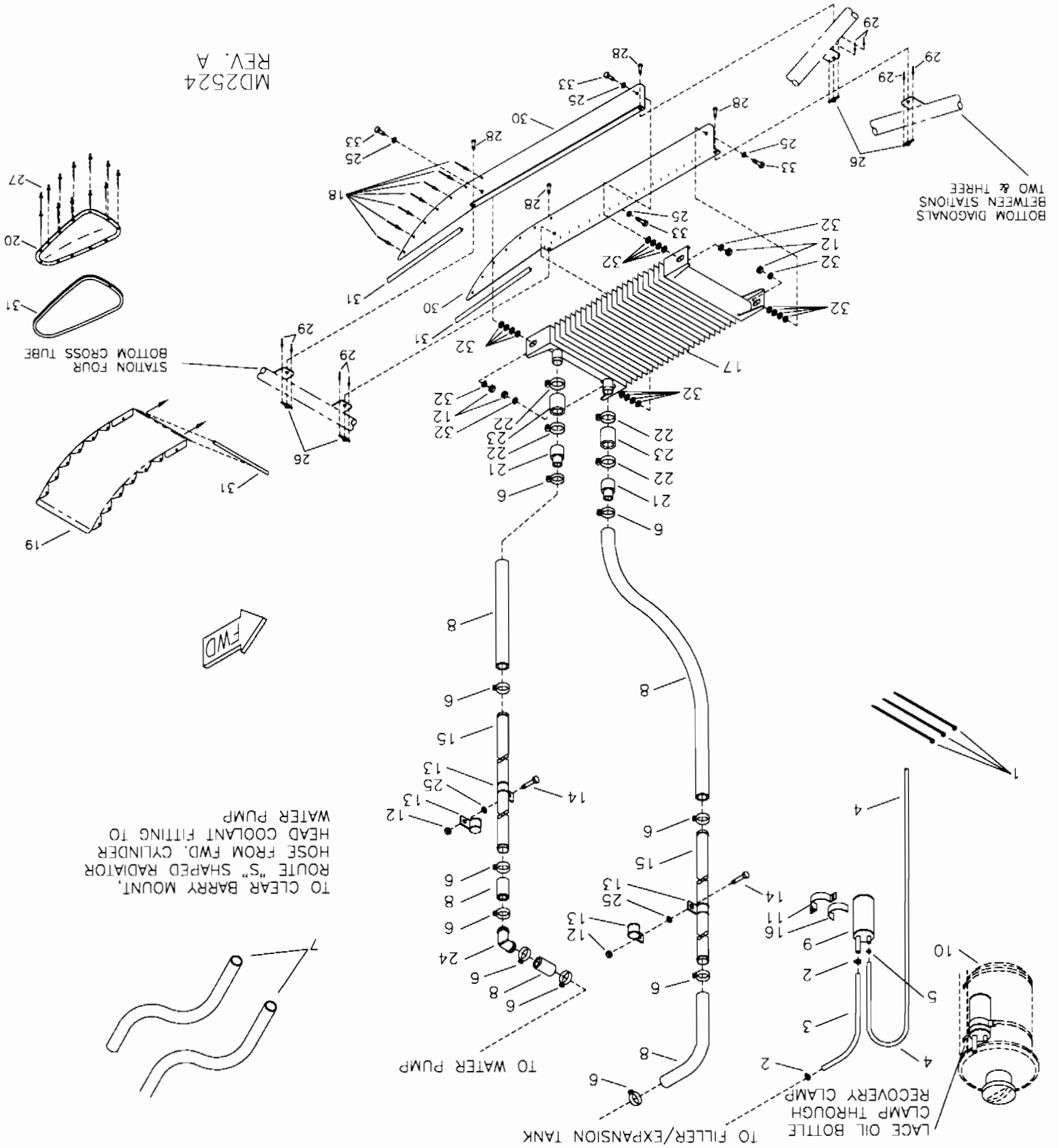
S-12XL AIRAILE - 912 COOLING SYSTEM
MINI-POD OR PARTIAL ENCLOSURE

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Zip Ties	ZIP TIES	8
2.	Line Clamp, 1/2"	FS-LCL 1/2	2
3.	5/16" Overflow Hose	EGCS-OFH	24 in
4.	1/4" Blue Fuel Line	FS-FL	6 ft
5.	Line Clamp, 3/8"	FS-LCL 3/8	1
6.	Hose Clamp, 1 1/2"	5-5216	10
7.	Pre-Formed Radiator "S" Hose	KSPW0025	2
8.	1" Radiator Hose	RADIATOR HOSE	5 ft
9.	Coolant Recovery Bottle	EGCS-CRB	1
10.	Oil Bottle *	EG-EG-912-5	1
11.	Coolant Recovery Clamp	KPPW0058	1
12.	3/16" Shear Nut	AN364-1032A	6
13.	1" Cushioned Tube Clamp	MS21919-DG16	4
14.	3/16" Bolt	AN3-5A	2
15.	1" Coolant Tube	EGCS-32	2
16.	1" Black Foam Tape	KSAC0011	1 ft
17.	Radiator Top Panel	KPPW0048	1
18.	Radiator	EGCS-RAD	1
19.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-41	10
20.	1/8" Small Brass Washer	AN960-B4	12
21.	Reducer Coupler	EGCS-RC	2
22.	Hose Clamp, 1 3/4"	5-5220	4
23.	1 1/4" Radiator Hose	EGCS-RHOSE	2
24.	90 Aluminum Elbow	EGCS-ALUM-90	1
25.	3/16" Thin Washer	AN960-10L	6
26.	3/16" Nut Plate	K-1000-3	4
27.	Radiator/Boom Seal	KPPW0049	1
28.	3/16" Bolt	AN3-4A	4
29.	3/32" Aluminum Pop Rivet	40APR1/8	8
30.	Short Style Cooling Scoop	EGCS-SSCOOP	1
31.	Rubber Edging	X1011	36 in
32.	3/16" Plastic Washer	PW-3	20
33.	3/16" Bolt	AN3-6A	4
34.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-42	12

*Referenced from 912 engine.

RRMS S-12 AIRAILE 912 COOLING SYSTEM FULL ENCLOSURE

MD2524
REV. A



S-12XL AIRAILE - 912 COOLING SYSTEM
FULL ENCLOSURE

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Zip Ties	ZIP TIES	8
2.	Line Clamp, 1/2"	FS-LCL 1/2	2
3.	5/16" Overflow Hose	EGCS-OFH	24 in
4.	1/4" Blue Fuel Line	FS-FL	6 ft
5.	Line Clamp, 3/8"	FS-LCL 3/8	1
6.	Hose Clamp, 1 1/2"	5-5216	10
7.	Pre-Formed Radiator "S" Hose	KSPW0025	2
8.	1" Radiator Hose	RADIATOR HOSE	5 ft
9.	Coolant Recovery Bottle	EGCS-CRB	1
10.	Oil Bottle *	EG-EG-912-5	1
11.	Coolant Recovery Clamp	KPPW0058	1
12.	3/16" Shear Nut	AN364-1032A	6
13.	1" Cushioned Tube Clamp	MS21919-DG16	4
14.	3/16" Bolt	AN3-5A	2
15.	1" Coolant Tube	EGCS-32	2
16.	1" Black Foam Tape	KSAC0011	1 ft
17.	Radiator	EGCS-RAD	1
18.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-41	19
19.	Radiator Scoop - Bottom Panel	KPPW0069	1
20.	Radiator/Boom Seal	KPPW0049	1
21.	Reducer Coupler	EGCS-RC	2
22.	Hose Clamp, 1 3/4"	5-5220	4
23.	1 1/4" Radiator Hose	EGCS-RHOSE	2
24.	90 Aluminum Elbow	EGCS-ALUM-90	1
25.	3/16" Thin Washer	AN960-10L	6
26.	3/16" Nut Plate	K-1000-3	4
27.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-42	12
28.	3/16" Bolt	AN3-4A	4
29.	3/32" Aluminum Pop Rivet	40APR1/8	8
30.	Radiator Scoop - Side Panel - LH	KPPW0070-L	1
30.	Radiator Scoop - Side Panel - RH	KPPW0070-R	1
31.	Rubber Edging	X1011	48 in
32.	3/16" Plastic Washer	PW-3	20
33.	3/16" Bolt	AN3-6A	4

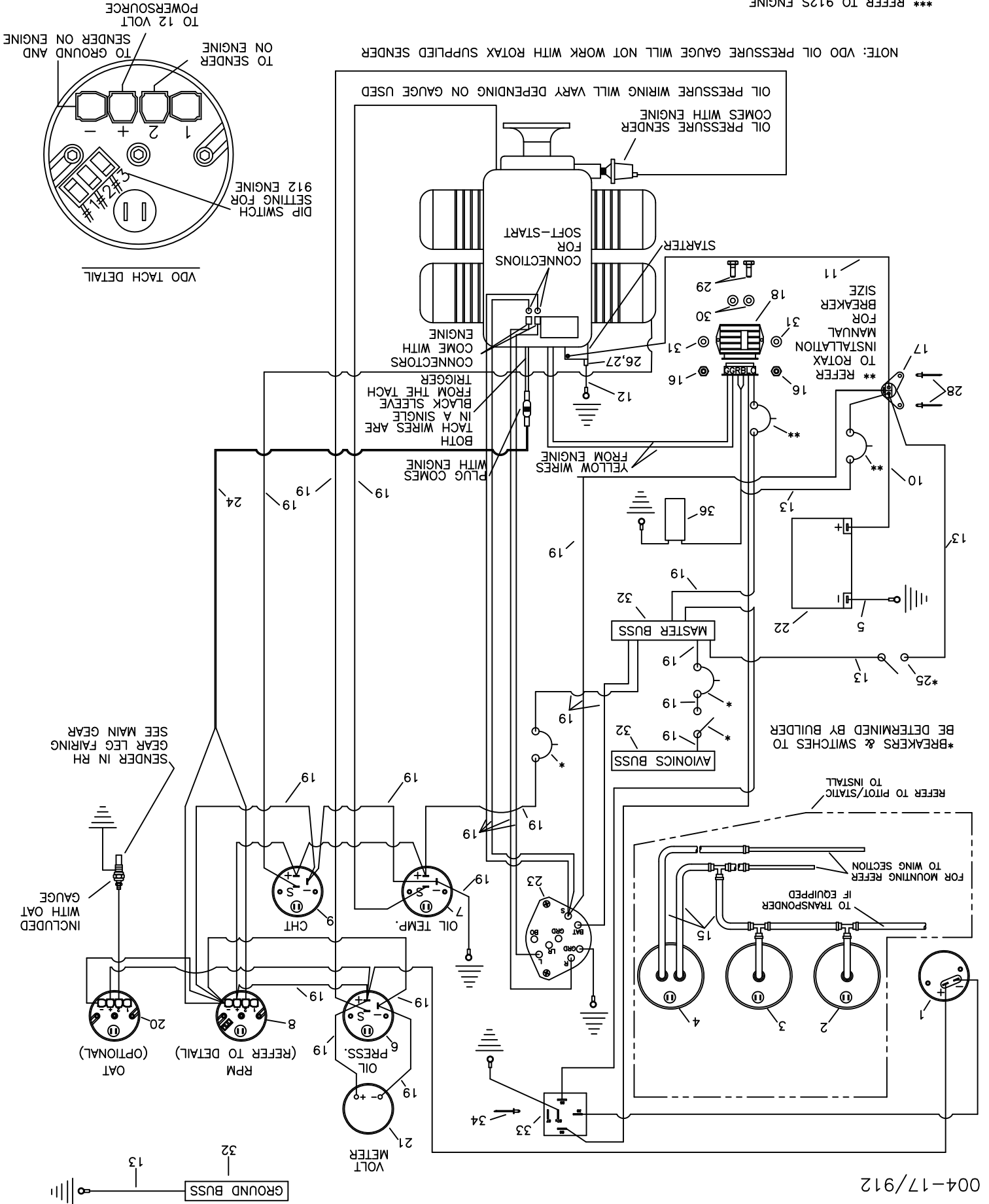
*Referenced from 912 engine.

RPM S-12XL AIRFAIR INSTRUMENTS AND ELECTRICAL

MD1460
REV. B

*** REFER TO 912S ENGINE

NOTE: VDO OIL PRESSURE GAUGE WILL NOT WORK WITH ROTAX SUPPLIED SENDER



S-12XL AIRAILE - 912/912S INSTRUMENTS & ELECTRICAL

NOTE: Gauges may vary, consult directions provided with gauge for wiring diagram.

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Hour Meter - VDO *	KSPW0022	0
2.	Vertical Speed Indicator - Feet per Minute *	KSAV0008	0
2.	Vertical Speed Indicator - Meters per Second *	KSAV0009	0
3.	Altimeter with Window *	KSAV0002	0
3.	Altimeter with Millibar - Metric *	KSAV0003	0
3.	Altimeter *	KSAV0001	0
4.	Air Speed Indicator, 0-120 *	KSAV0004	0
5.	4 Gauge Eye Cable Terminal	4 GA CABLE LUG	8
6.	Oil Pressure Gauge *	-----	0
7.	Oil Temperature Gauge - VDO * **	KSPW0017	0
8.	RPM Gauge - VDO *	KSPW0028	0
9.	Cylinder Head Temperature Gauge * **	KSPW0017	0
12.	4 Gauge Battery Cable, Black Wire	4 GA WIRE/BLACK	16 ft
13.	12 Gauge Wire *	-----	0
14.	Line Clamp, 3/8"	FS-LCL 3/8	2
15.	1/4" Blue Fuel Line	FS-FL	8 ft
17.	Solenoid ****	-----	0
18.	Regulator/Rectifier ****	-----	0
19.	14 Gauge Wire	-----	0
20.	Outside Air Temp Gauge Kit - VDO *	KSIP0009	0
21.	Voltmeter - VDO *	KSES0009	0
22.	Battery ***	-----	0
23.	Ignition Switch	KSES0027	1
24.	2 Plex 20 Gauge Wire *	-----	0
25.	Master Switch *	-----	0
26.	1/4" Bolt	AN4-10A	1
27.	1/4" Steel Shear Nut	AN364-428C	1
28.	3/16" Aluminum Pop Rivet - Cherry Q	AAPQ-64	3
29.	3/16" Bolt	AN3-5A	2
30.	3/16" Thin Washer	AN960-10L	2
31.	3/16" Rivet Nut	MS27130-A25K	2
32.	Buss Bar *	AMW 636	0
33.	Hour Meter Relay Assembly	KAES0016	1
34.	Capacitor - 22,000 microFarad / 25V*	IP-7132	0

*Optional or builder supplied **Oil Temperature and CHT use the same type of gauge.

***Referenced from 912 battery box installation.

****Supplied with engine.

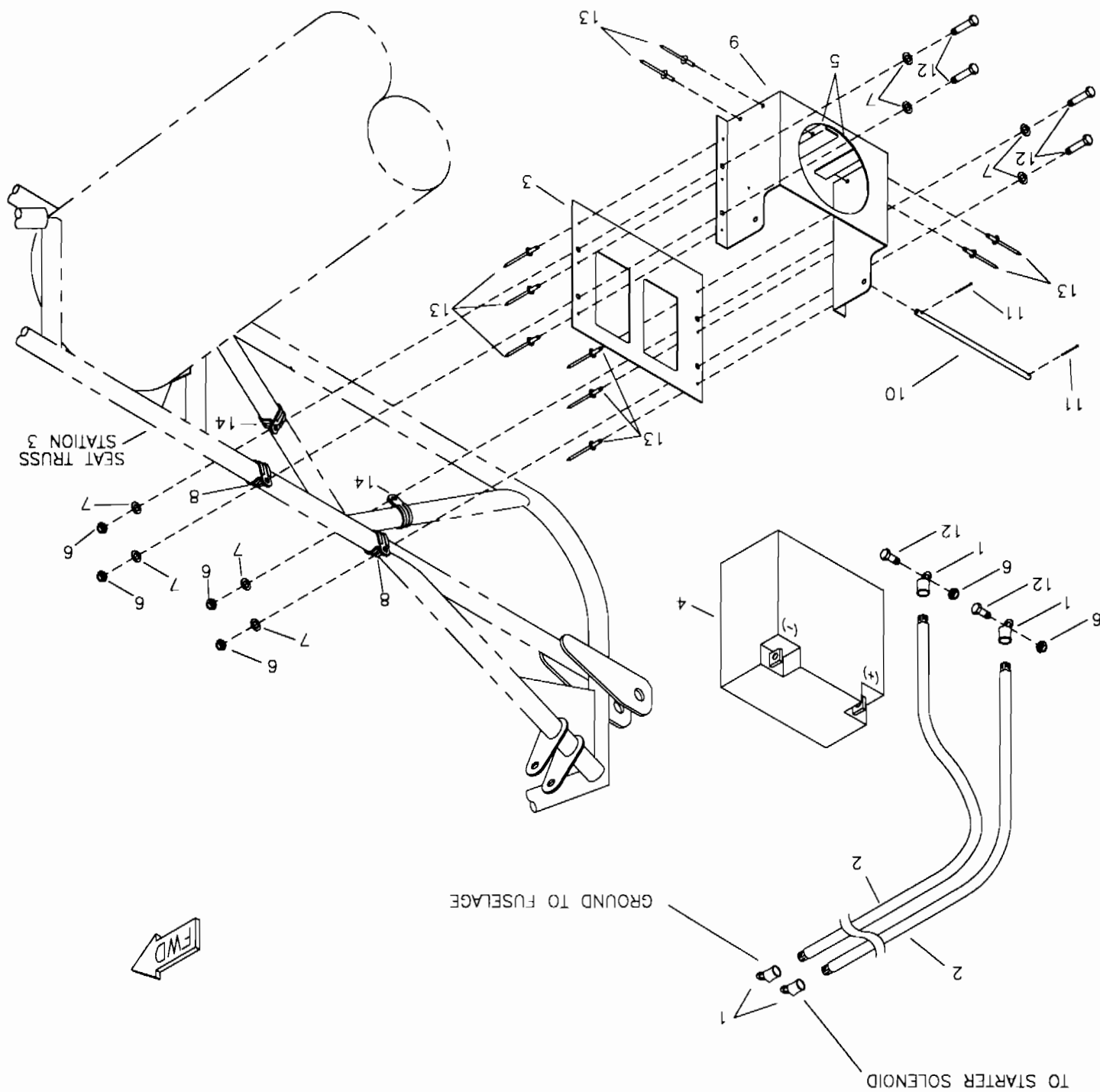
S-12XL AIRAILE - THIS PAGE INTENTIONALLY LEFT BLANK**THIS PAGE INTENTIONALLY LEFT BLANK**

#	DESCRIPTION	PART NUMBER	QUANTITY
1 .	Intentionally Blank	-----	0

RRMS S-12 AIRALE 912 BATTERY BOX INSTALLATION

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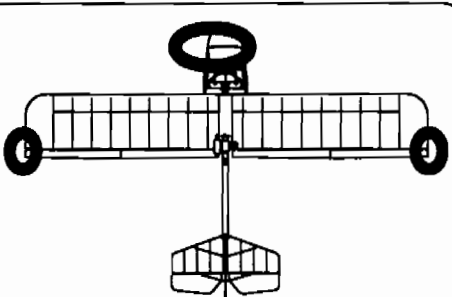
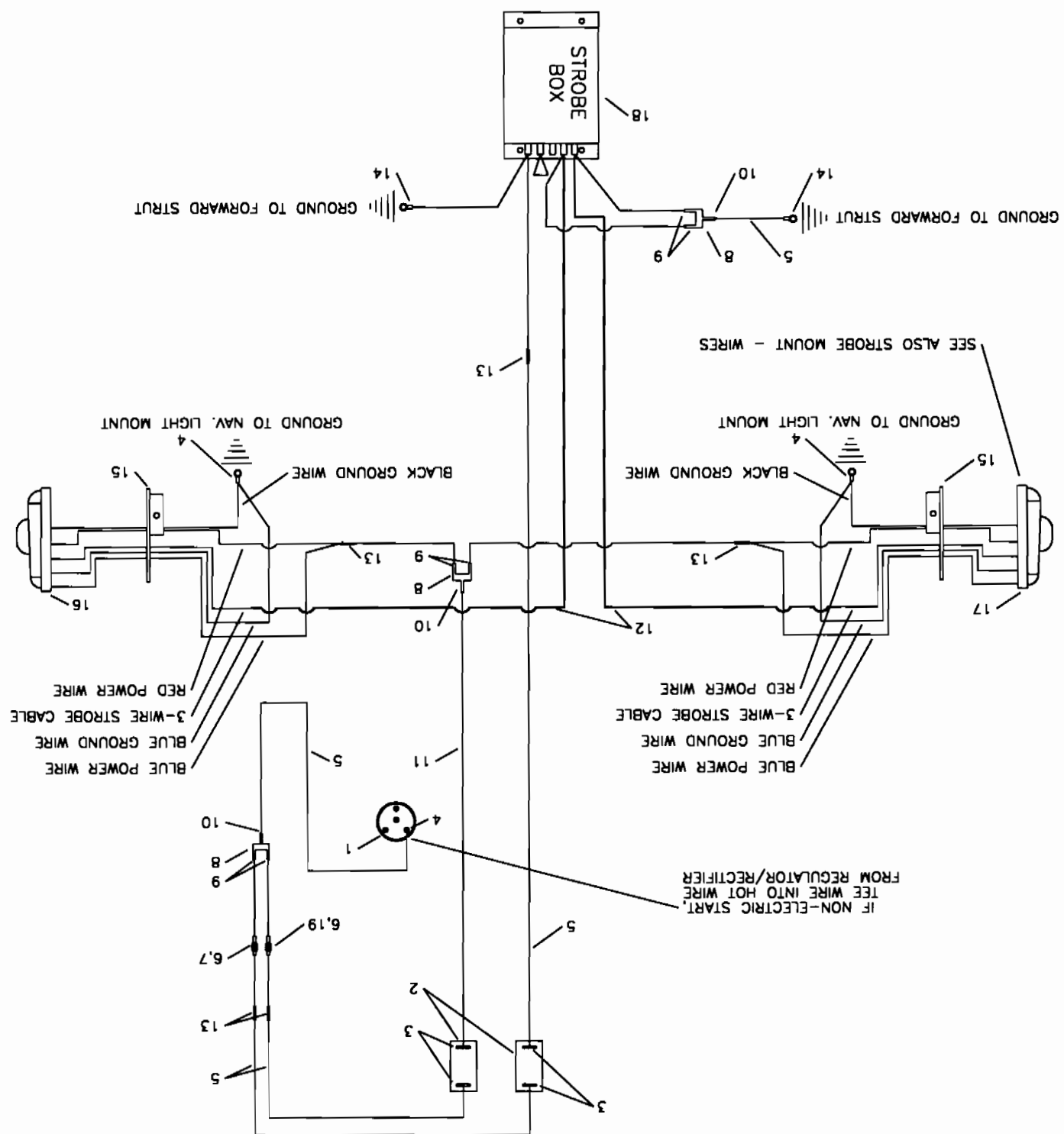


S-12XL AIRAILE - 912/912S BATTERY BOX INSTALLATION

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	4 Gauge Eye Cable Terminal *	4 GA CABLE LUG	0
2.	4 Gauge Battery Cable, Black Wire *	4 GA WIRE/BLACK	0 ft
3.	Battery Box Mount Plate	BAT-BOX-2	1
4.	Battery	PS12150-NB	1
5.	Battery Box Support Angle	BAT-BOX-3	2
6.	3/16" Shear Nut	AN364-1032A	6
7.	3/16" Thick Washer	AN960-10	8
8.	3/4" Cushioned Tube Clamp	MS21919-DG12	2
9.	Battery Box Front Plate	BAT-BOX-1	1
10.	Battery Bar	BAT-BAR-503/582	1
11.	Small Cotter Pin	MS24665-134	2
12.	3/16" Bolt	AN3-3A	6
13.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-42	11
14.	5/8" Cushioned Tube Clamp	MS21919-DG10	2

*Referenced from 912 Instruments & Electrical.

1/26/04



STROBE SYSTEM SCHEMATIC

SECTION: 912 ENGINE, INSTRUMENTATION, AND ELECTRICAL
 DETAIL:

S-12XL AIRAILE - 912 STROBE SYSTEM SCHEMATIC

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Key Start Switch *	25-6	0
2.	Switch	MS35058-22	2
3.	14 Gauge Eye Terminal, Blue 5/32"	KSES0003	4
4.	14 Gauge Eye Terminal, Blue 3/16"	IP-7102	3
5.	14 Gauge Red Wire	14 GA WIRE/RED	8 ft
6.	14 Gauge, In Line Fuse Holder	KSES0019	2
7.	15 AMP Fuse	KSES0020-15	1
8.	Terminal Y Connector, Brass	IP-YC	1
9.	14 Gauge Female Spade Terminal, Blue	IP-7128	6
10.	14 Gauge Male Spade Terminal, Blue	IP-7126	3
11.	14 Gauge Yellow Wire	14 GA WIRE/YELLOW	50 ft
12.	Whelen Installation & Cable	HD-60	1
13.	14 Gauge Splice, Butt Connector	IP-7132	4
14.	14 Gauge Eye Terminal, Blue 1/4"	1/4 EYE 14 GA	2
15.	Navigation Light Tip Mount **	NAV-TIP-MT	0
16.	Whelen Left Strobe Light **	A600-PR	0
17.	Whelen Right Strobe Light **	A600-PG	0
18.	Whelen Strobe Light Power Supply	A413A, HDA-DF	1
19.	10 AMP Fuse	KSES0020-10	1

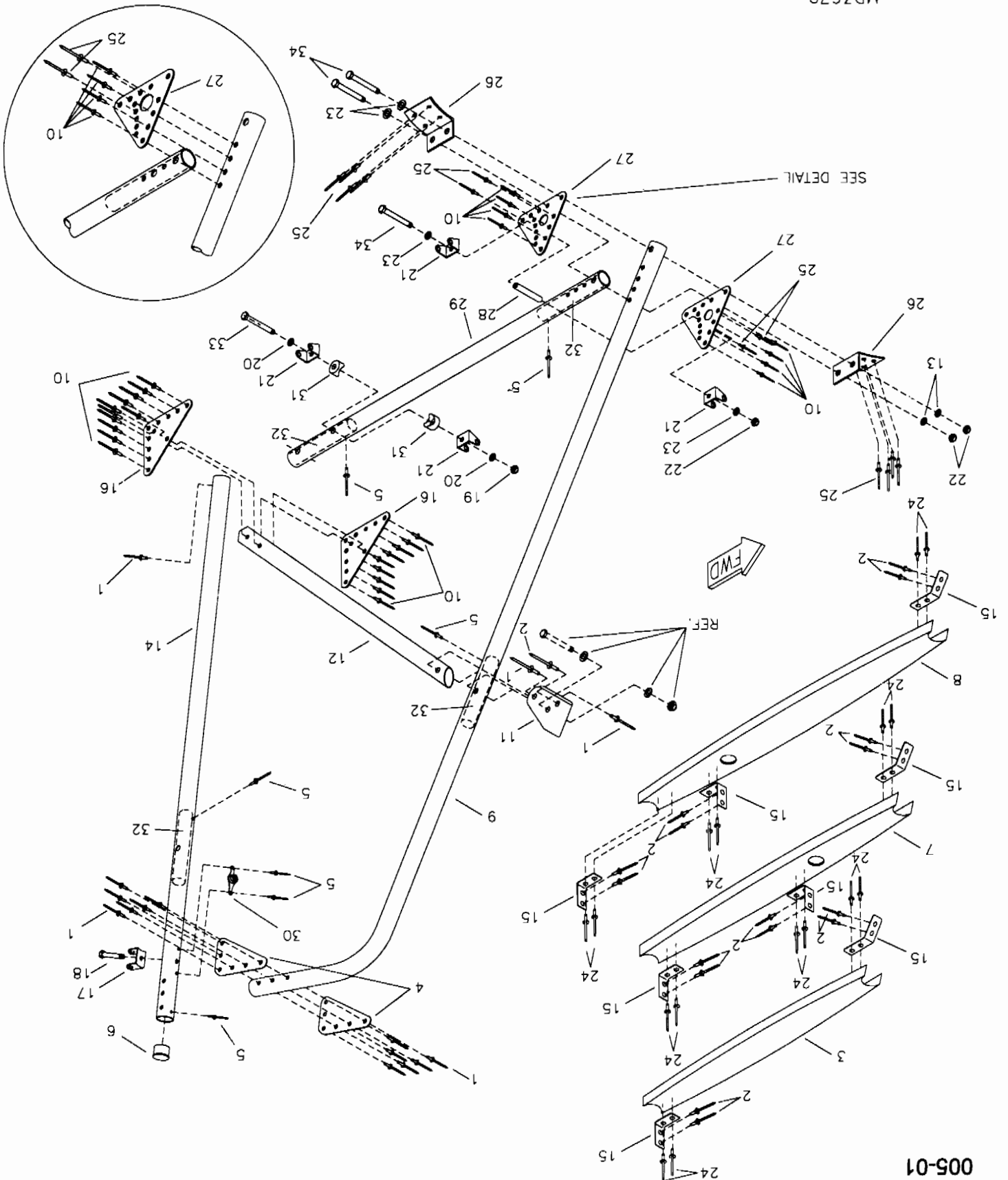
*Referenced from Instruments & Electrical.

**Referenced from Strobe Mount.

RRMS S-12XL AIRAILE VERTICAL STABILIZER FRAME ASSEMBLY

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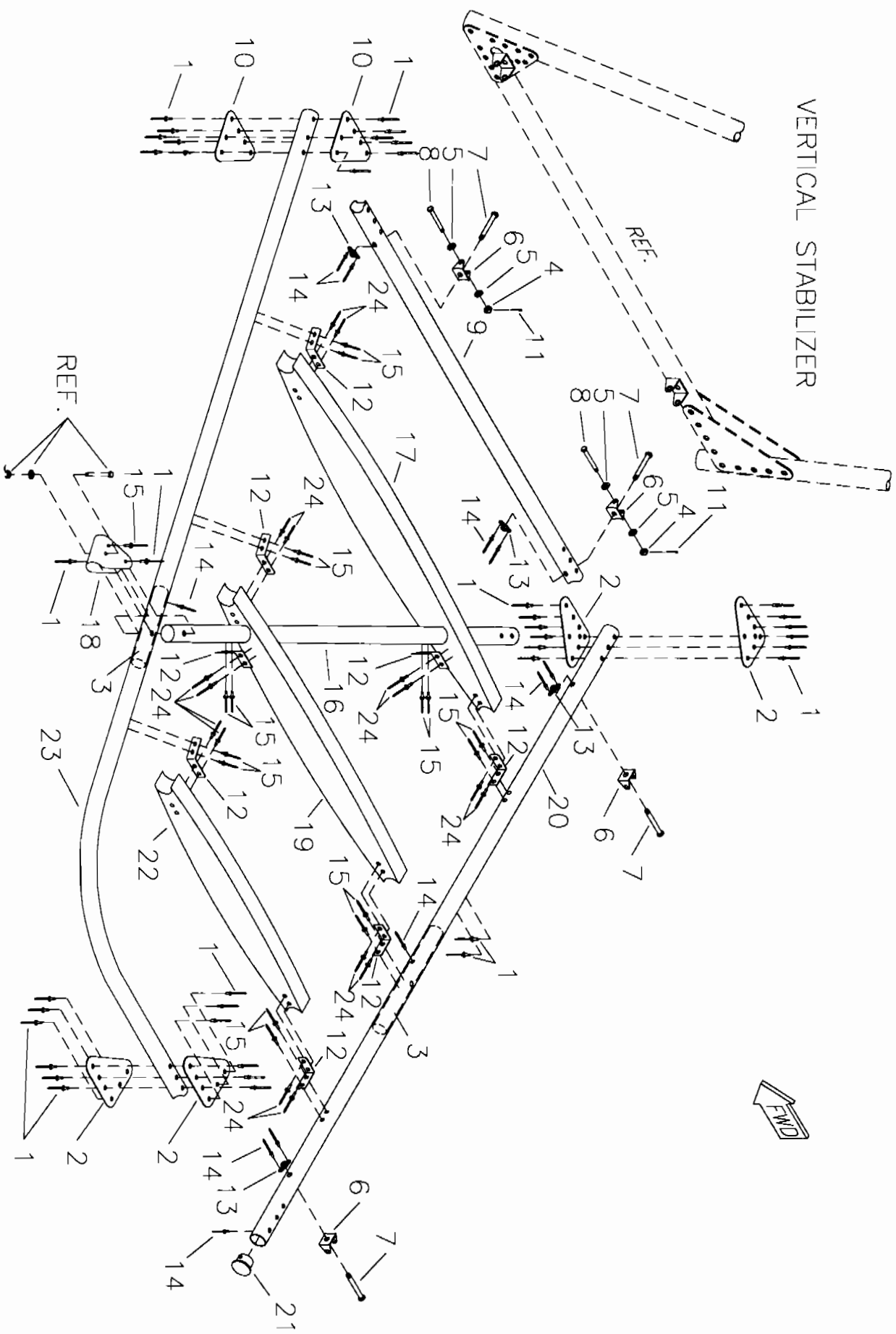
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S-12XL AIRAILE - VERTICAL STABILIZER FRAME ASSEMBLY

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-42	18
2.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-42	18
3.	Vertical Stabilizer - Top Rib	KPVS0035	1
4.	Gusset	KPAC0044	2
5.	3/32" Aluminum Pop Rivet	40APR1/8	8
6.	1" End Cap	1 CAP	1
7.	Vertical Stabilizer - Middle Rib	KPVS0040	1
8.	Vertical Stabilizer - Bottom Rib	KPVS0039	1
9.	Vertical Stabilizer - Leading Edge	KPVS0042	1
10.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-44	28
11.	U-Bracket	KPAC0055	1
12.	Aluminum Brace, 1" x .049 x X *	KAAC0001	0
13.	3/16" Thick Washer	AN960-10	2
14.	Vertical Stabilizer - Trailing Edge	KPVS0043	1
15.	Attach Tang	U-ST001	8
16.	Gusset	KPAC0149	2
17.	Hinge Bracket	W-HB	1
18.	3/16" Bolt	AN3-13A	1
19.	1/4" Shear Nut	AN364-428A	1
20.	1/4" Thin Washer	AN960-416L	2
21.	U Bracket	KPAC0036	4
22.	3/16" Shear Nut	AN364-1032A	3
23.	3/16" Thin Washer	AN960-10L	9
24.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-41	16
25.	3/16" Stainless Steel Pop Rivet - Cherry Q	CCPQ-64	12
26.	Horizontal Stabilizer - Boom Bracket	KPHS0008	2
27.	Horizontal Stabilizer - Adjust Bracket	KPHS0010	2
28.	Aluminum Bushing, 1/4" x .028 x 1 3/16" *	KAAC0001	0
29.	Vertical Stabilizer - Spreader Tube	KPVS0038	1
30.	3/16" Nut Plate	K-1000-3	1
31.	1" Saddle	1-NS	2
32.	Aluminum Doubler, 7/8" x .058 x 6" *	KAAC0001	0
33.	1/4" Bolt	AN4-17A	1
34.	3/16" Bolt	AN3-16A	3

*Builder must fabricate from raw stock.

VERTICAL STABILIZER



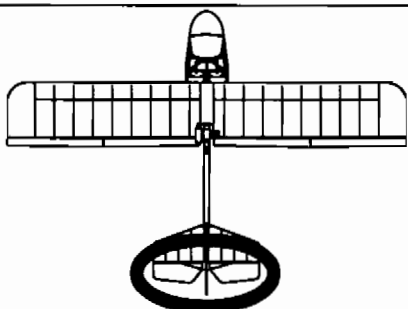
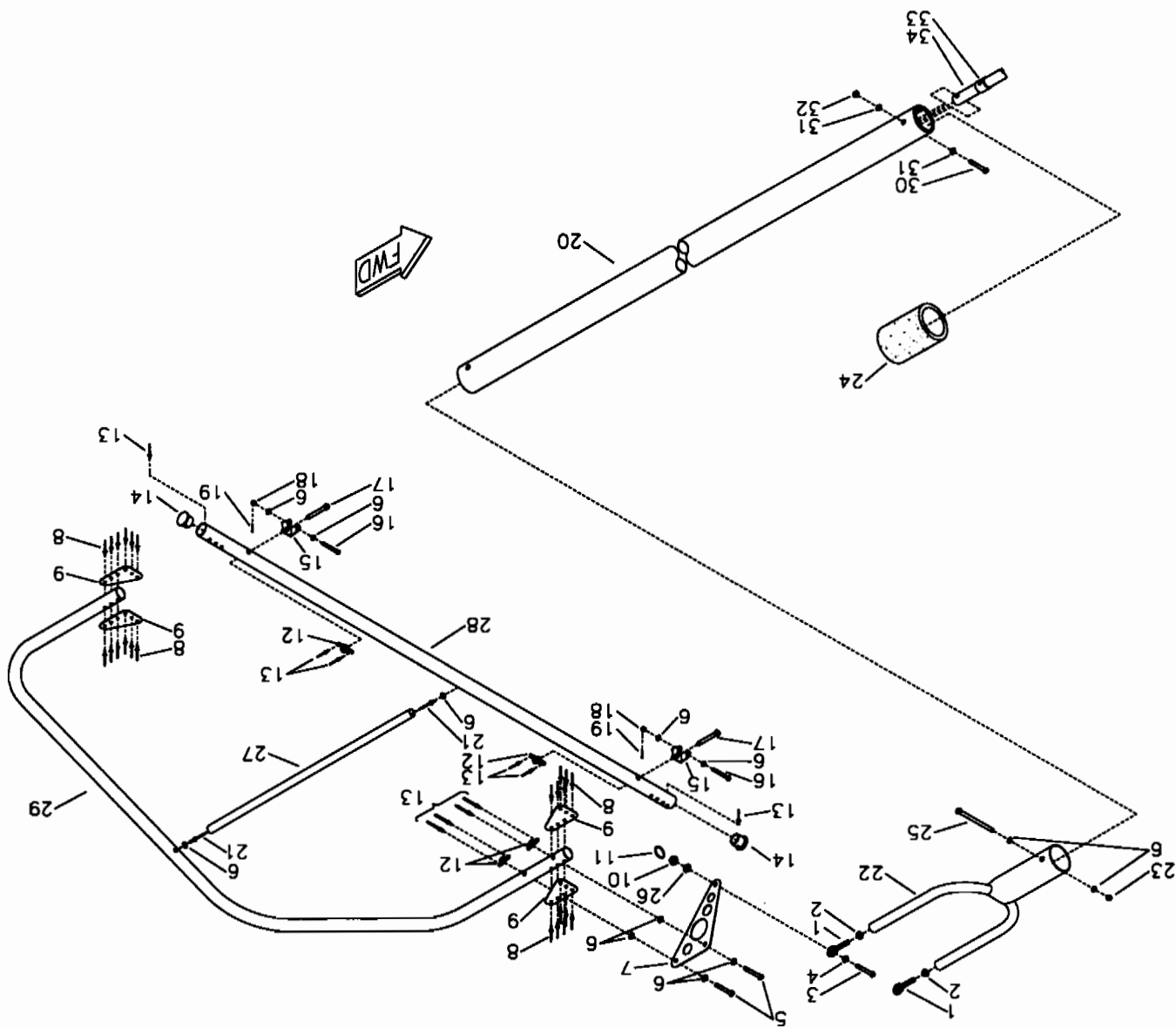
RRR S-12XL AIRRAILE HORIZONTAL STABILIZER ASSEMBLY

S-12XL AIRAILE - HORIZONTAL STABILIZER FRAME ASSEMBLY

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-42	84
2.	Gusset	KPAC0044	8
3.	Aluminum Doubler, 7/8" x .058 x 6" & 10" *	KAAC0001-1	0
4.	3/16" Castle Nut	AN310-3	4
5.	3/16" Thin Washer	AN960-10L	8
6.	Stainless Steel Hinge	W-HB	8
7.	3/16" Bolt	AN3-13A	8
8.	3/16" Bolt	AN3-15	4
9.	Horizontal Stabilizer Spreader Tube, LH	KPHS0031-LH	1
9.	Horizontal Stabilizer Spreader Tube, RH	KPHS0031-RH	1
10.	Gusset	KPAC0045	4
11.	Small Cotter Pin	MS24665-134	4
12.	Attach Tang	U-ST001	16
13.	3/16" Nut Plate	K-1000-3	8
14.	3/32" Aluminum Pop Rivet	40APR1/8	22
15.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-42	36
16.	Aluminum Brace, 1" x .049 x X *	KAAC0001-8	0
17.	Horizontal Stabilizer - Inboard Rib	KPHS0028	2
18.	U Bracket	KPAC0055	2
19.	Horizontal Stabilizer - Middle Rib	KPHS0029	2
20.	Horizontal Stabilizer - Trailing Edge	KPHS0032	2
21.	1" End Cap	1 CAP	2
22.	Vertical Stabilizer - Top Rib	KPVS0035	2
23.	Horizontal Stabilizer - Leading Edge	KPHS0033	2
24.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-41	32

*Builder must fabricate from raw stock.

6/9/2003



ELEVATOR FRAME ASSEMBLY

TAIL GROUP FRAME ASSEMBLY

DETAIL:

SECTION:

S-12XL AIRAILE - ELEVATOR FRAME ASSEMBLY

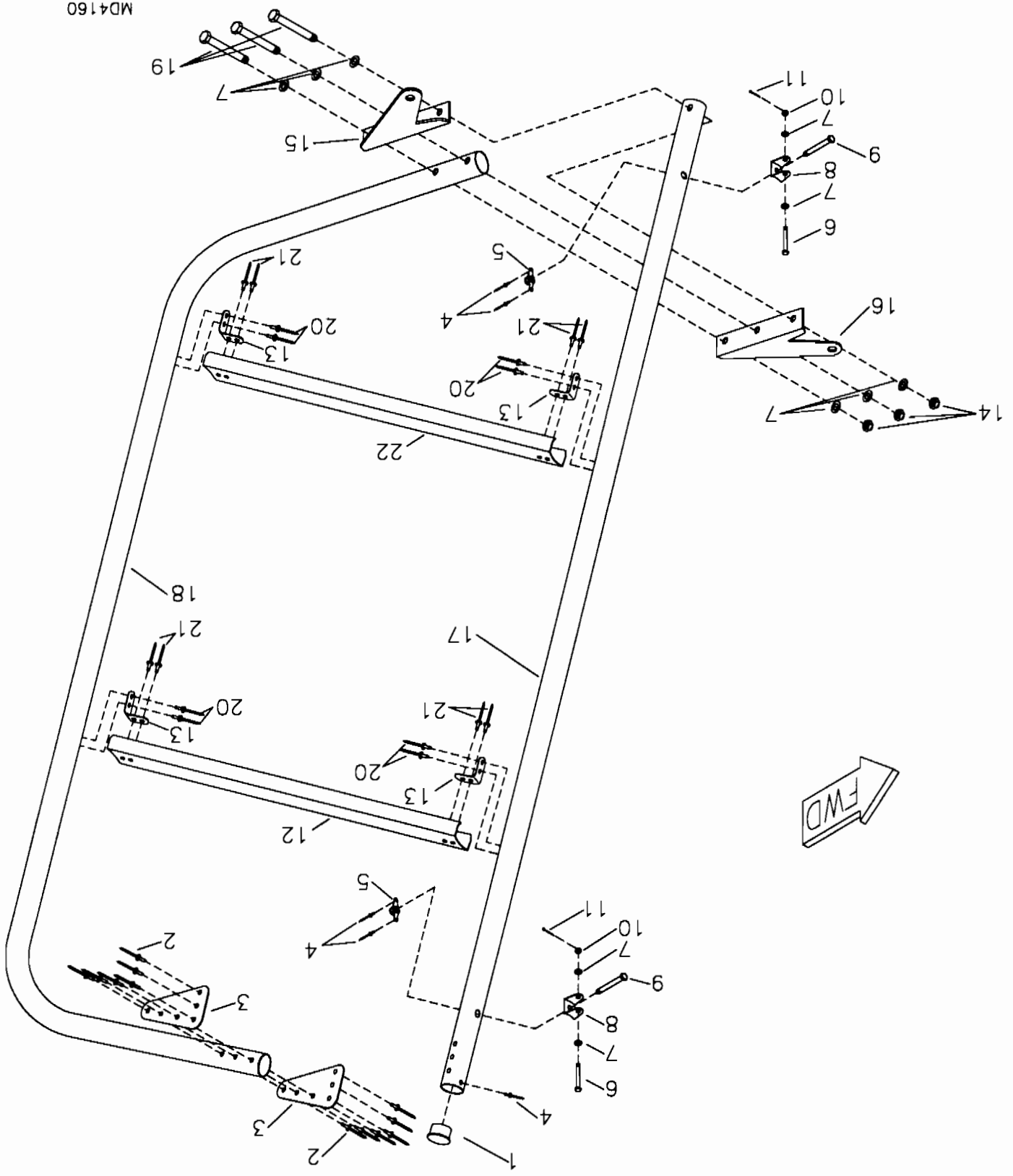
#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Male Rod End, 1/4" X 1/4"	NM-4	2
2.	1/4" Plain Nut	AN345-416	2
3.	1/4" Bolt	AN4-7	2
4.	1/4" Plastic Washer	PW-4	2
5.	3/16" Bolt	AN3-14A	4
6.	3/16" Thick Washer	AN960-10	21
7.	Elevator Horn	TG-EH-A	2
8.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-42	48
9.	Gusset	KPAC0044	8
10.	1/4" Castle Nut	AN310-4	2
11.	Loc Ring	RL 27 5/16	2
12.	3/16" Nut Plate	K-1000-3	8
13.	3/32" Aluminum Pop Rivet	40APR1/8	20
14.	1" End Cap	1 CAP	4
15.	Stainless Steel Hinge	W-HB	4
16.	3/16" Bolt	AN3-15	4
17.	3/16" Bolt	AN3-13A	4
18.	3/16" Castle Nut	AN310-3	4
19.	Small Cotter Pin	MS24665-134	4
20.	1 1/4" Push Pull Tube	TG 1 1/4PPT-141 5/8	1
21.	3/16" Aluminum Pop Rivet - Cherry Q	AAPQ-62	4
22.	Elevator Yoke	KPEL0015	1
23.	3/16" Shear Nut	AN364-1032A	1
24.	Foam Rubber Insulator	TG-FRI	1
25.	3/16" Bolt	AN3-15A	1
26.	1/4" Thin Washer	AN960-416L	2
27.	Internal Brace, 1/2" x .035 x X *	KAAC0001-5	0
28.	Elevator-Leading Edge	KPEL0012	2
29.	Elevator-Trailing Edge	KPEL0013	2
30.	1/4" Bolt **	AN4-17A	0
31.	1/4" Thick Washer **	AN960-416	0
32.	1/4" Shear Nut **	AN364-428A	0
33.	Forward Elevator Stop Bushing, 3/4" x .058 x 3/4"***	KAAC0001-3	0
34.	5/8" Push Pull Tube **	CS-5/8PPT(12)	0

*Builder must fabricate from raw stock.

**Referenced from control stick assembly.

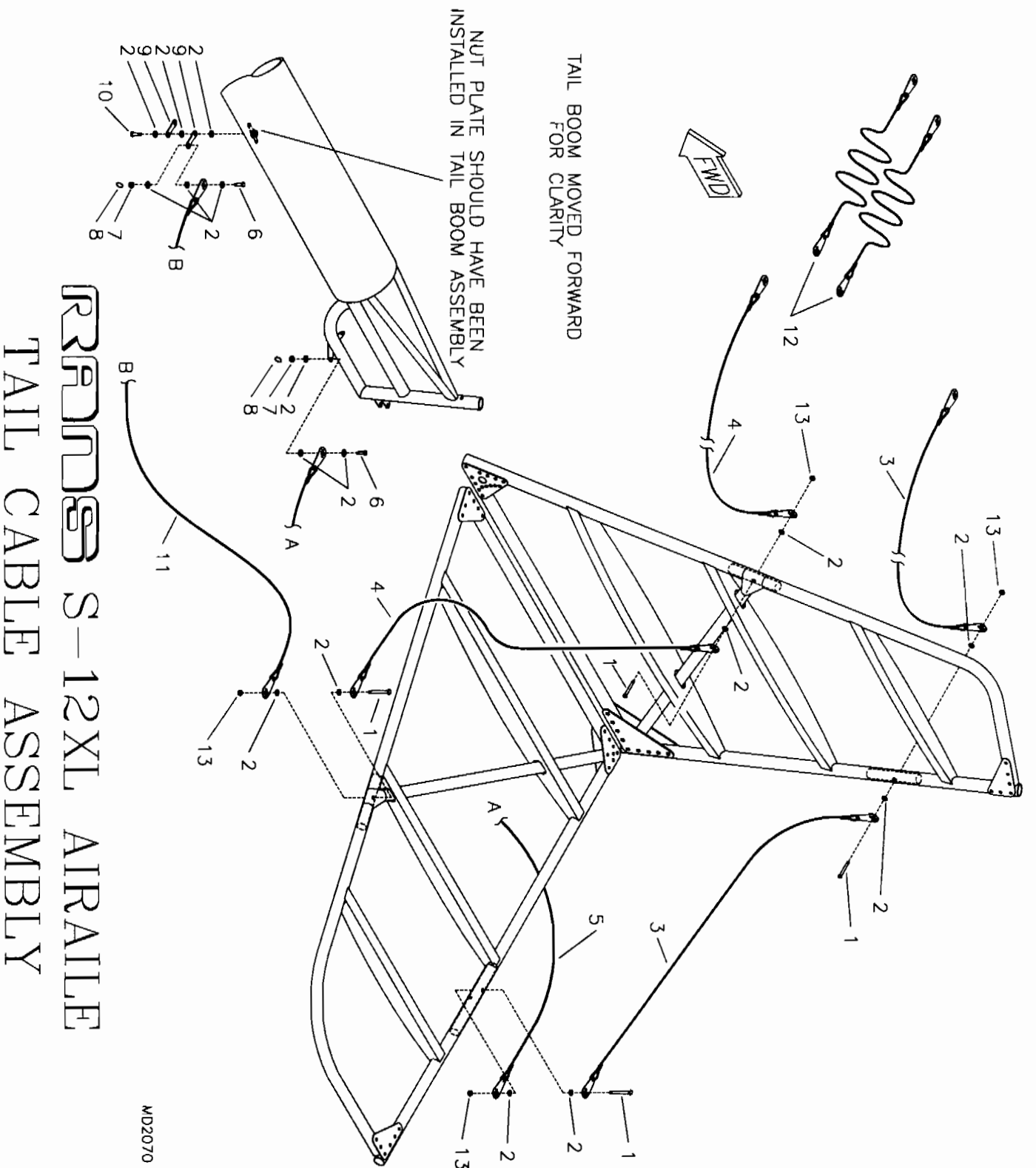
RAMS-12XL AIRAILE RUDDER FRAME ASSEMBLY

MD4160



S-12XL AIRAILE - RUDDER FRAME ASSEMBLY

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	1" End Cap	1 CAP	1
2.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-42	12
3.	Gusset	KPAC0044	2
4.	3/32" Aluminum Pop Rivet	40APR1/8	5
5.	3/16" Nut Plate	K-1000-3	2
6.	3/16" Bolt	AN3-15	2
7.	3/16" Thick Washer	AN960-10	14
8.	Stainless Steel Hinge	W-HB	2
9.	3/16" Bolt	AN3-13A	2
10.	3/16" Castle Nut	AN310-3	2
11.	Small Cotter Pin	MS24665-134	2
12.	Rudder Rib - Upper	KPRD0061	1
13.	Attach Tang	U-ST001	4
14.	3/16" Shear Nut	AN364-1032A	3
15.	Rudder Horn, LH	TG-RHL	1
16.	Rudder Horn, RH	TG-RHR	1
17.	Rudder-Leading Edge	KPRD0016	1
18.	Rudder-Trailing Edge	KPRD0017	1
19.	3/16" Bolt	AN3-15A	3
20.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-42	8
21.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-41	8
22.	Rudder Rib - Lower	KPRD0062	1



Section:

TAIL GROUP FRAME ASSEMBLY

Detail:

TAIL GROUP CABLE ASSEMBLY

Page:

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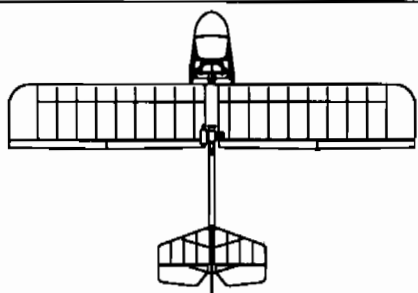
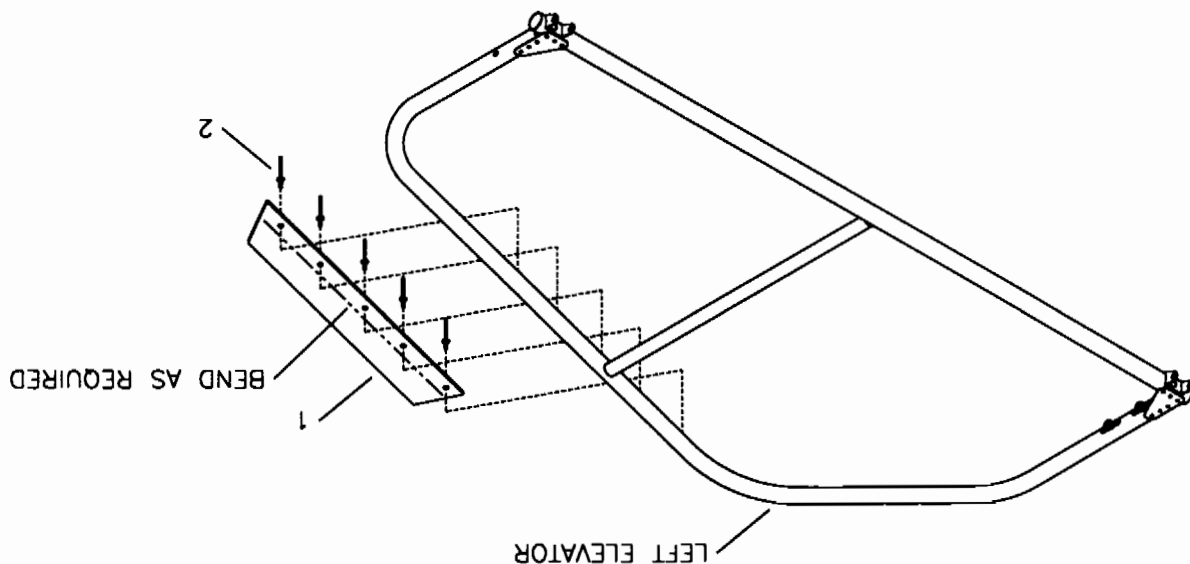
#	Description	Part Number	Quantity
1.	3/16" Bolt	AN3-15A	6
2.	3/16" Thick Washer	AN960-10	27
3.	Top AFT Cable	KAHS0011	2
4.	Top FWD Cable (1, 2, 3)	KAHS0012	2
5.	Lower AFT Cable	KAHS0014	2
6.	3/16" Bolt	AN3-5	4
7.	3/16" Castle Nut	AN310-3	4
8.	Loc Ring	RL 27 1/4	4
9.	Tang	KPAC0038	2
10.	3/16" Bolt	AN3-6A	1
11.	Lower FWD Cable	KAHS0015	2
12.	Top FWD Cable (4, 5, 6) *	KAHS0013	2
13.	3/16" Tensile Nut	AN365-1032A	6

*These cables are not supplied with the kit.
Order these only if flight testing necessitates them.

RANS, Inc.
S-12 Airaile

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TRIM TAB MOUNT

TAIL GROUP FRAME ASSEMBLY

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TAIL GROUP FRAME ASSEMBLY

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TRIM TAB MOUNT

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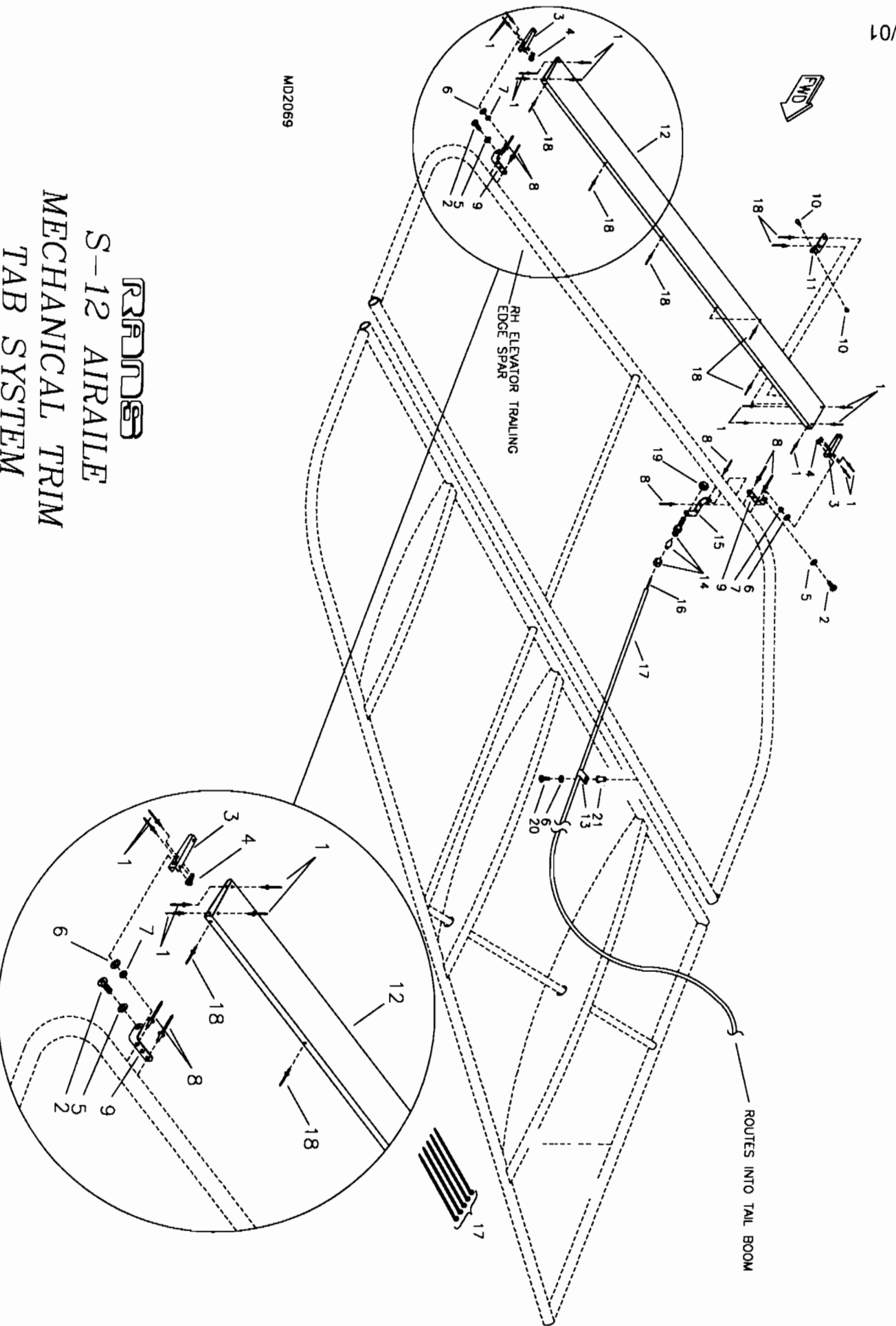
7/27/95

#	Description	Part Number	Quantity
1.	Trim Tab	KPTR0001	1
2.	1/8" Stainless Steel Pop Rivet	CCPQ-42	5



MD2069

RRR
S-12 AIRAILE
MECHANICAL TRIM
TAB SYSTEM

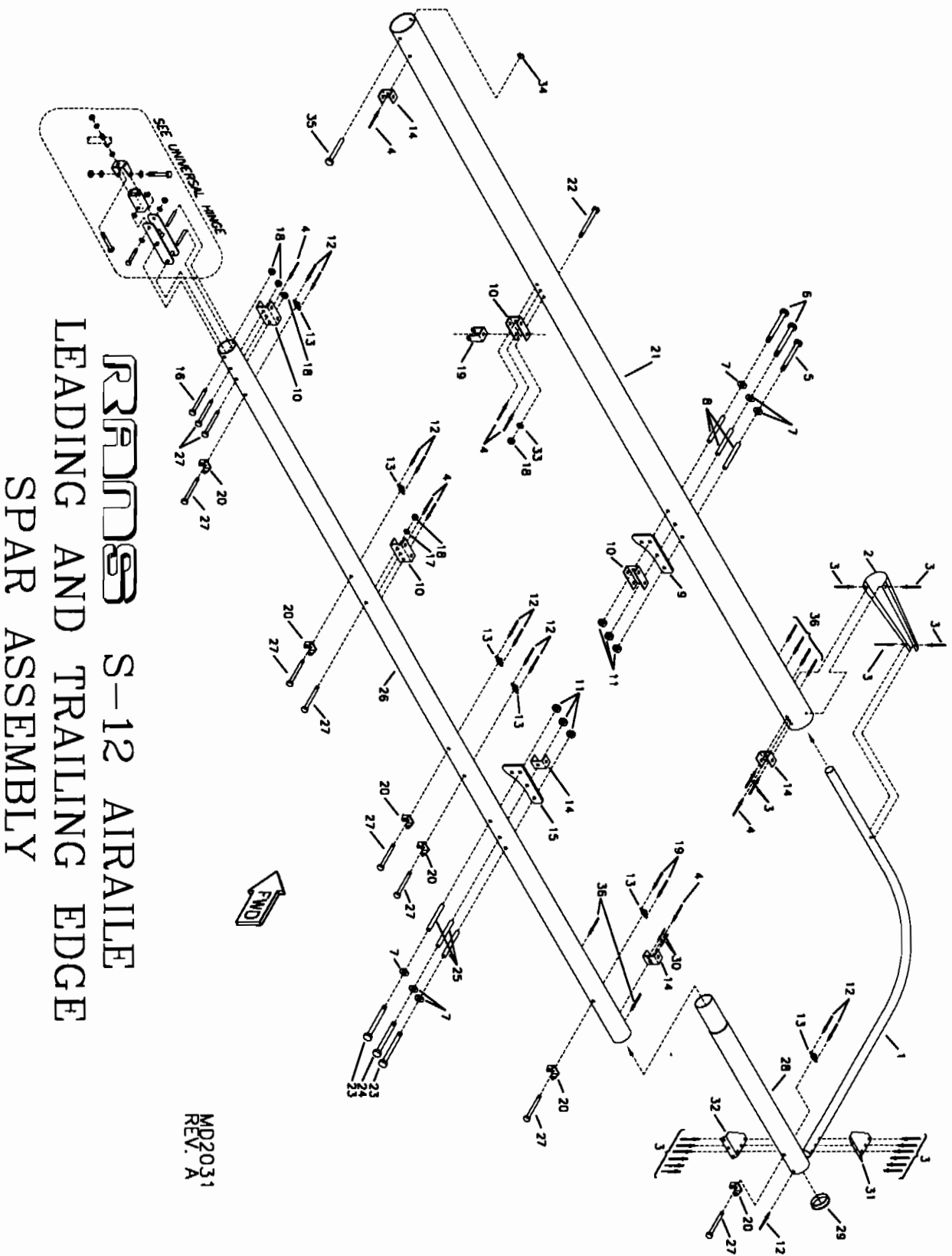


S-12XL AIRAILE - MECHANICAL TRIM TAB MOUNT

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	3/32" Aluminum Pop Rivet	40APR1/8	13
2.	3/16" Truss Head Bolt	AN526-C1032R12	2
3.	Trim Tab End Rib	KPTR0007	2
4.	3/16" Single Ear Nut Plate	MS21051-L3	2
5.	3/16" Thin Washer	AN960-10L	2
6.	3/16" Thick Washer	AN960-10	3
7.	Aluminum Bushing, 1/4" x .028 x 1/16" **	KAAC0001-6	0
8.	3/16" Aluminum Pop Rivet - Cherry Q	AAPQ-62	6
9.	Trim Tab Hinge	ST-16-BENT	2
10.	Wire Swivel/Screw Stop	2361	1
11.	Trim Tab Horn	KPTR0008	1
12.	Trim Tab	KPTR0009	1
13.	Cushioned Tube Clamp	MS21919WDG3	1
14.	Conduit Adjuster Assembly	KSFS0014	1
15.	Cable Housing Stop Bracket	KPTR0005	1
16.	Trim Push Wire *	TR-PW	0
17.	Trim Cable Housing *	KSAC0008	0
18.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-41	7
19.	1/4" Plain Nut	AN345-416	1
20.	3/16" Bolt	AN3-3A	1
21.	3/16" Rivet Nut	MS27130-A25K	1

*Reference from trim wheel assembly.

**Builder must fabricate from raw stock.

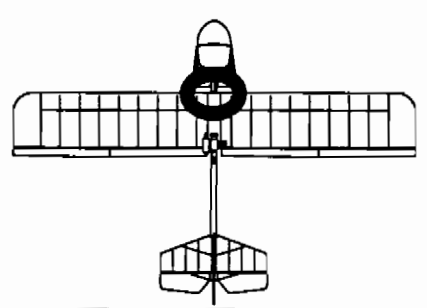
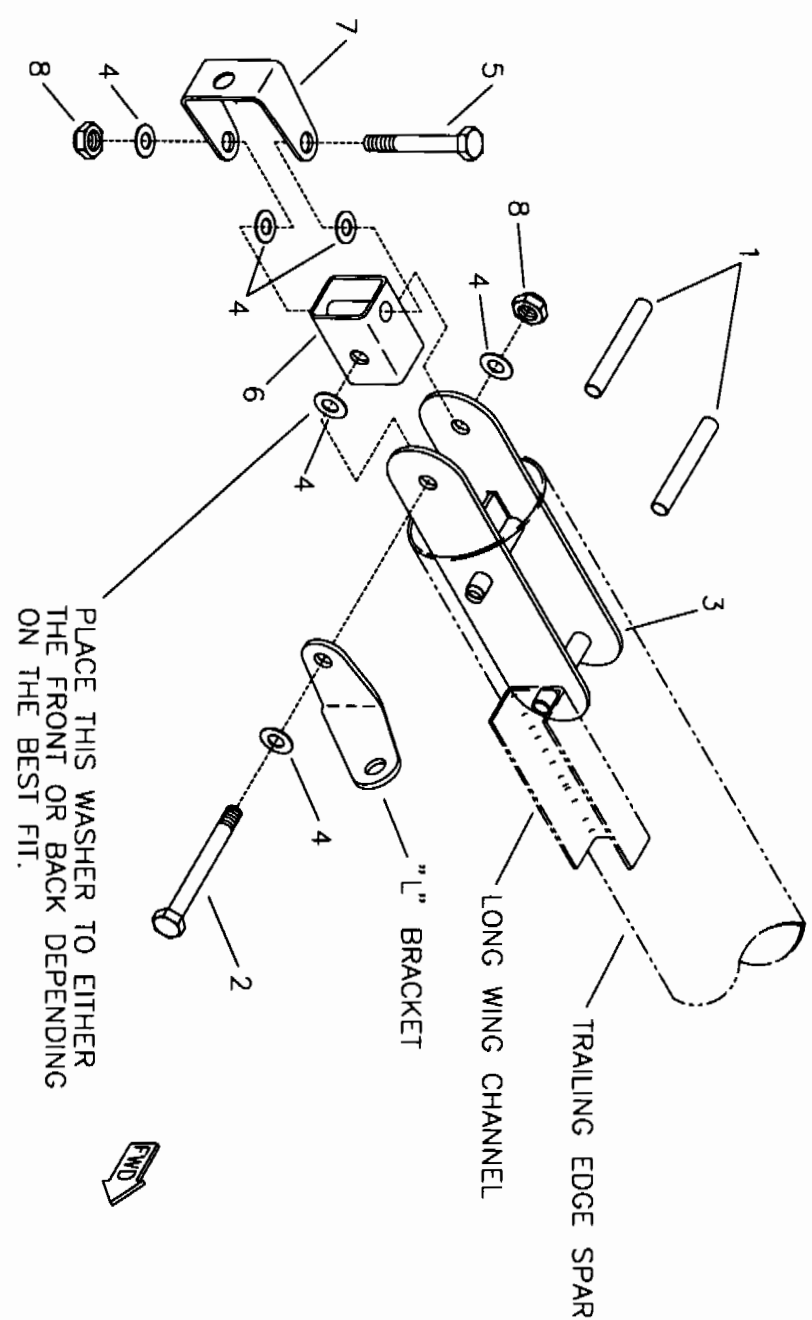


S-12XL AIRAILE - LEADING & TRAILING EDGE SPAR ASSEMBLY

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Tip Bow	W-TIP(12)	2
2.	Tip Wrap	W-TW-F	2
3.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-42	36
4.	3/16" Stainless Steel Pop Rivet - Cherry Q	CCPQ-64	16
5.	1/4" Bolt *	AN4-35ALP	2
6.	1/4" Bolt *	AN4-36ALP	4
7.	1/4" Thin Washer	AN960-416L	12
8.	Spacer Bushing, 3/8" x .058 x 3"	SB-3/8X3	6
9.	FWD Strut Plate	W-SAP-LE	2
10.	Long Wing Channel	W-WCL	8
11.	1/4" Shear Nut	AN364-428A	12
12.	3/32" Aluminum Pop Rivet	40APR1/8	22
13.	3/16" Nut Plate	K-1000-3	12
14.	Horizontal Stabilizer Attach Bracket	S2-SAB	8
15.	AFT Strut Plate	W-SAP-TE	2
16.	3/16" Bolt	AN3-22A	2
17.	3/16" Thin Washer	AN960-10L	2
18.	3/16" Tensile Nut	AN365-1032A	10
19.	3/32" Aluminum Pop Rivet	40APR1/4	4
20.	Stainless Steel Hinge	W-HB	12
21.	Leading Edge Spar	W-LES	2
22.	3/16" Bolt *	AN3-34ALP	2
23.	1/4" Bolt *	AN4-25ALP	4
24.	1/4" Bolt *	AN4-26ALP	2
25.	Spacer Bushing, 3/8" x .058 x 2"	SB-3/8X2	6
26.	Trailing Edge Spar	KPWI0139	2
27.	3/16" Bolt	AN3-23A	18
28.	Trailing Edge Spar Tip	KPWI0140	2
29.	2" End Cap	EC-10	2
30.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-45	4
31.	Tip Gusset Top	W-TG-T	2
32.	Tip Gusset Bottom	W-TG-B	2
33.	3/16" Thick Washer	AN960-10	2
34.	Loc Ring **	RL 27 1/4	0
35.	3/8" Clevis Pin **	MS20392-5C97	0
36.	3/16" Stainless Steel Pop Rivet - Cherry Q	CCPQ-62	12

*These bolts have a special thin head painted.
They must be used to allow the wing skins to slide on.

**Referenced from Super Structure Assembly.



UNIVERSAL HINGE ASSEMBLY

WING FRAME ASSEMBLY

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WING FRAME ASSEMBLY

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UNIVERSAL HINGE ASSEMBLY

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#	Description	Part Number	Quantity
1.	Spacer Bushing*	KAAC0001	4
2.	1/4" Bolt	AN4-17A	2
3.	Trailing Edge Spar Root Fittings	W-TES-RF	2
4.	1/4" Thick Washer	AN960-416	12
5.	1/4" Bolt	AN4-16A	2
6.	Hinge Cube	W-H-CUBE	2
7.	Stainless Steel U Bracket**	SU-118	0
8.	1/4" Shear Nut	AN364-428A	4

*Builder fabricates from raw stock.

**Referenced from engine mount or 912 super structure.

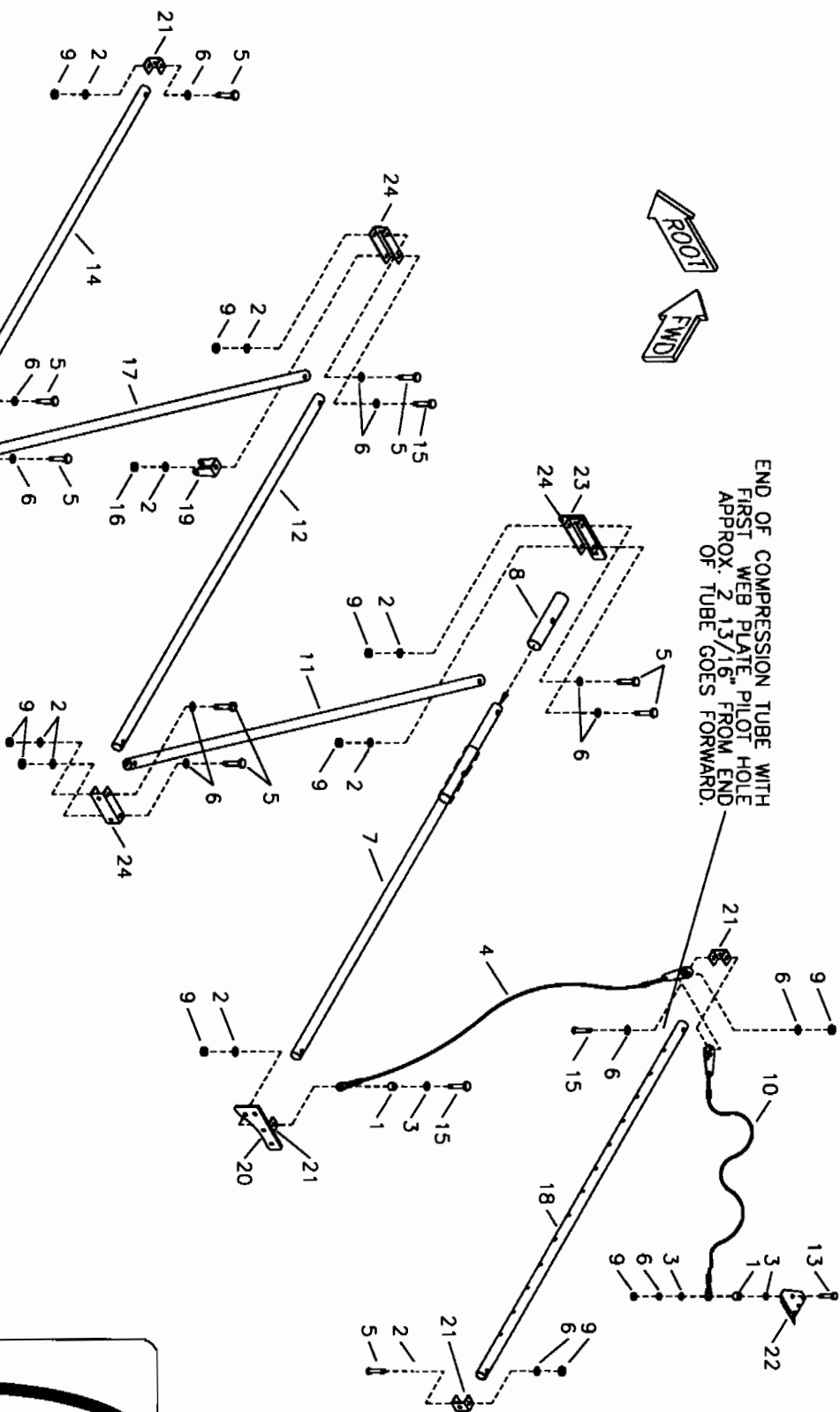
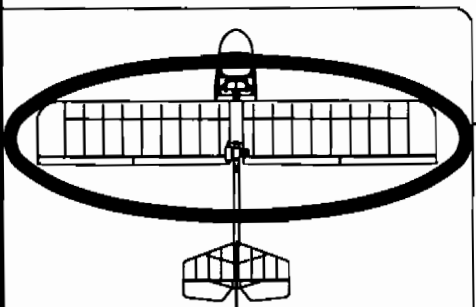
RANS, Inc.
S-12 Airaile

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WING FRAME ASSEMBLY

INTERNAL STRUCTURE

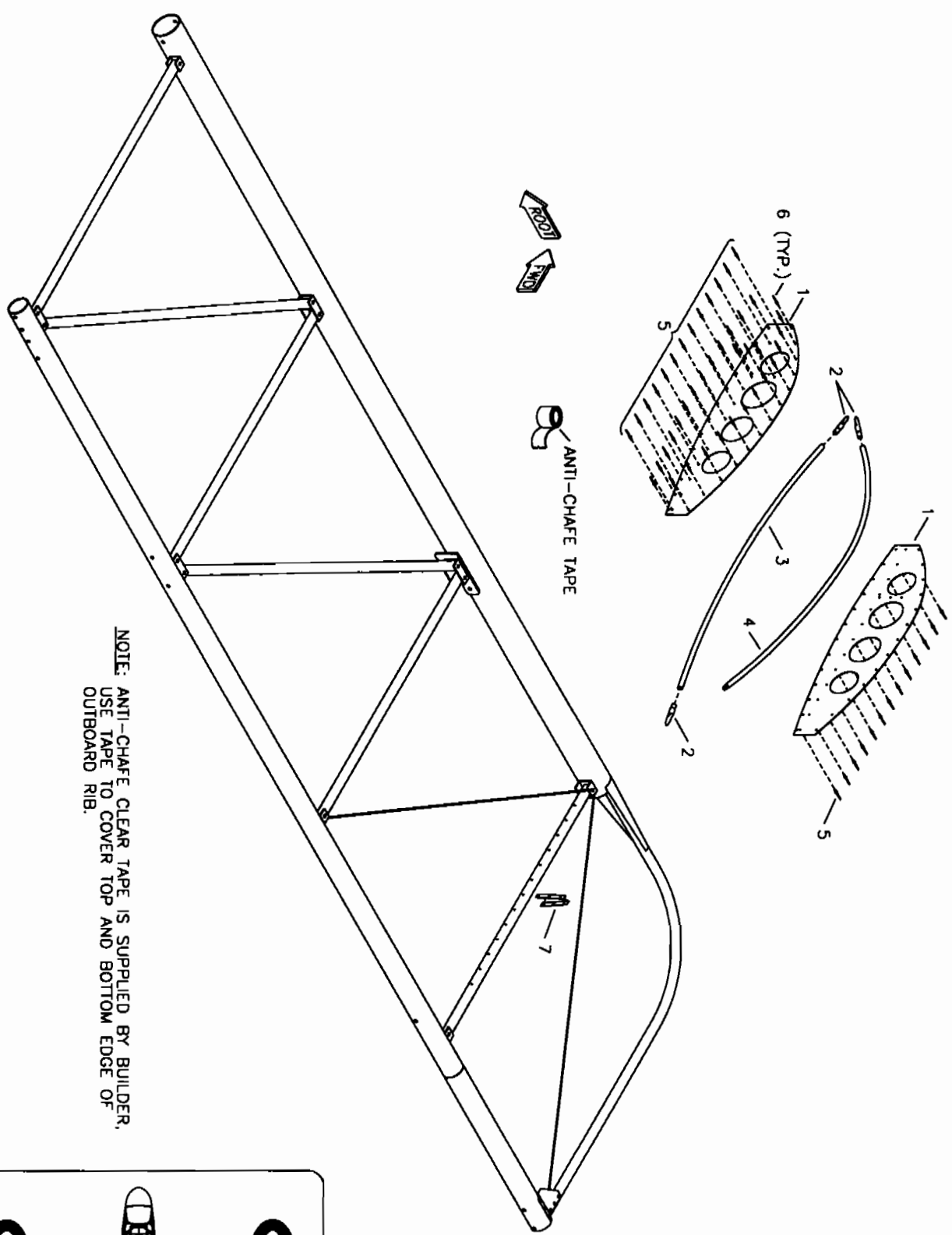


S-12XL AIRAILE - INTERNAL STRUCTURE

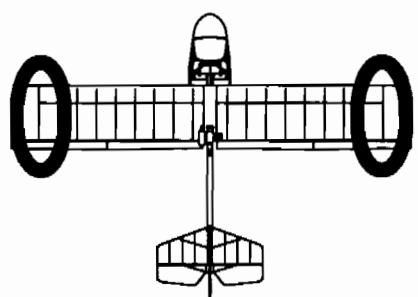
#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Spacer Bushing, 1/4" .028 x 3/16" *	KAAC0001-6	0
2.	3/16" Thick Washer	AN960-10	22
3.	3/16" Plastic Washer	PW-3	6
4.	Wing Cable, 51"	W-WC-51	2
5.	3/16" Bolt	AN3-15A	18
6.	3/16" Thin Washer	AN960-10L	26
7.	Middle Compression Tube	W-MC-151	2
8.	Compression Tube Doubler	CS-CTD	2
9.	3/16" Shear Nut	AN364-1032A	24
10.	Wing Cable, 61	W-WC-59	2
11.	Drag Brace	W-DB-151	2
12.	Flap Compression Tube	W-FCT-151	2
13.	3/16" Bolt	AN3-4A	2
14.	Inner Compression Tube	W-IO-151	2
15.	3/16" Bolt	AN3-16A	6
16.	3/16" Tensile Nut	AN365-1032A	2
17.	Drag Brace Root	W-DBR-151	2
18.	Outer Compression Tube	KPW10117	2
19.	Jury Strut Bracket	JS-BK	2
20.	AFT Strut Plate **	W-SAP-TE	0
21.	Attach Bracket **	S2-SAB	0
22.	Tip Gusset Top **	W-TG-T	0
23.	FWD Strut Plate **	W-SAP-LE	0
24.	Long Wing Channel **	W-WCL	0

*Builder must fabricate from raw stock.

**Referenced from leading and trailing edge spar assembly.



NOTE: ANTI-CHAFE CLEAR TAPE IS SUPPLIED BY BUILDER, USE TAPE TO COVER TOP AND BOTTOM EDGE OF OUTBOARD RIB.



OUTBOARD RIB ASSEMBLY

WING FRAME ASSEMBLY

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WING FRAME ASSEMBLY

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OUTBOARD RIB ASSEMBLY

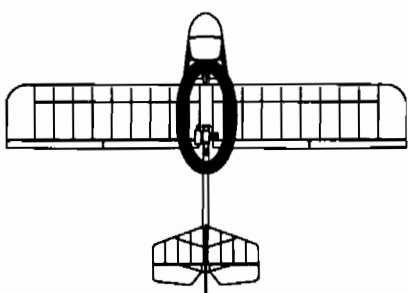
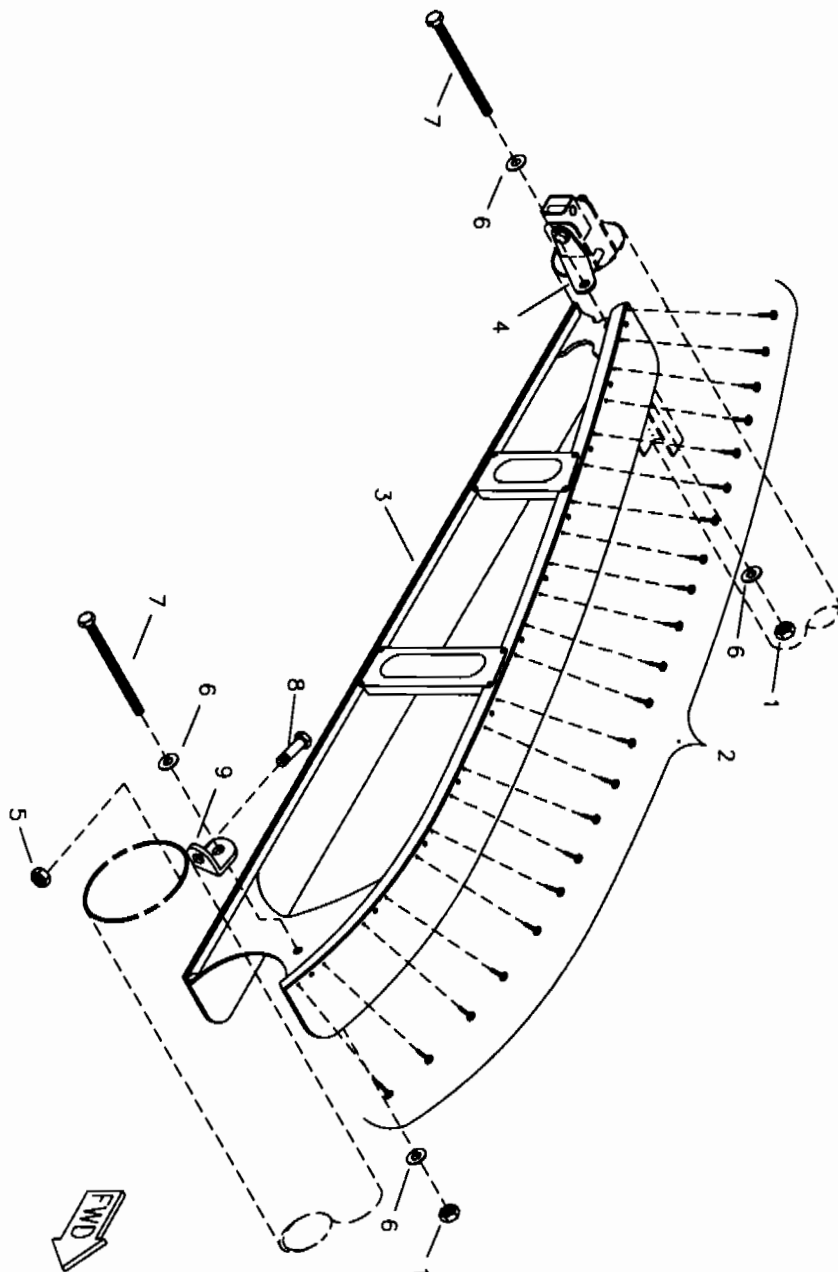
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7/27/95

#	Description	Part Number	Quantity
1.	Outboard Rib-Web Plate, LH	KPWI0096-LH	2
1.	Outboard Rib-Web Plate, RH	KPWI0096-RH	2
2.	Rip Tip	RIB-TIP	6
3.	Outboard Rib-Bottom Tube	KPWI0145	2
4.	Outboard Rib-Top Tube	KPWI0095	2
5.	1/8" Aluminum Pop Rivet	AAPQ-42	36
6.	1/8" Aluminum Pop Rivet	AAPQ-41	80
7.	Outboard Rib-Web Cap	KPWI0118	2



ROOT RIB TENSIONING SYSTEM

WING FRAME ASSEMBLY

DETAIL

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Section:**WING FRAME ASSEMBLY****Detail:****ROOT RIB TENSIONING SYSTEM****Page:**

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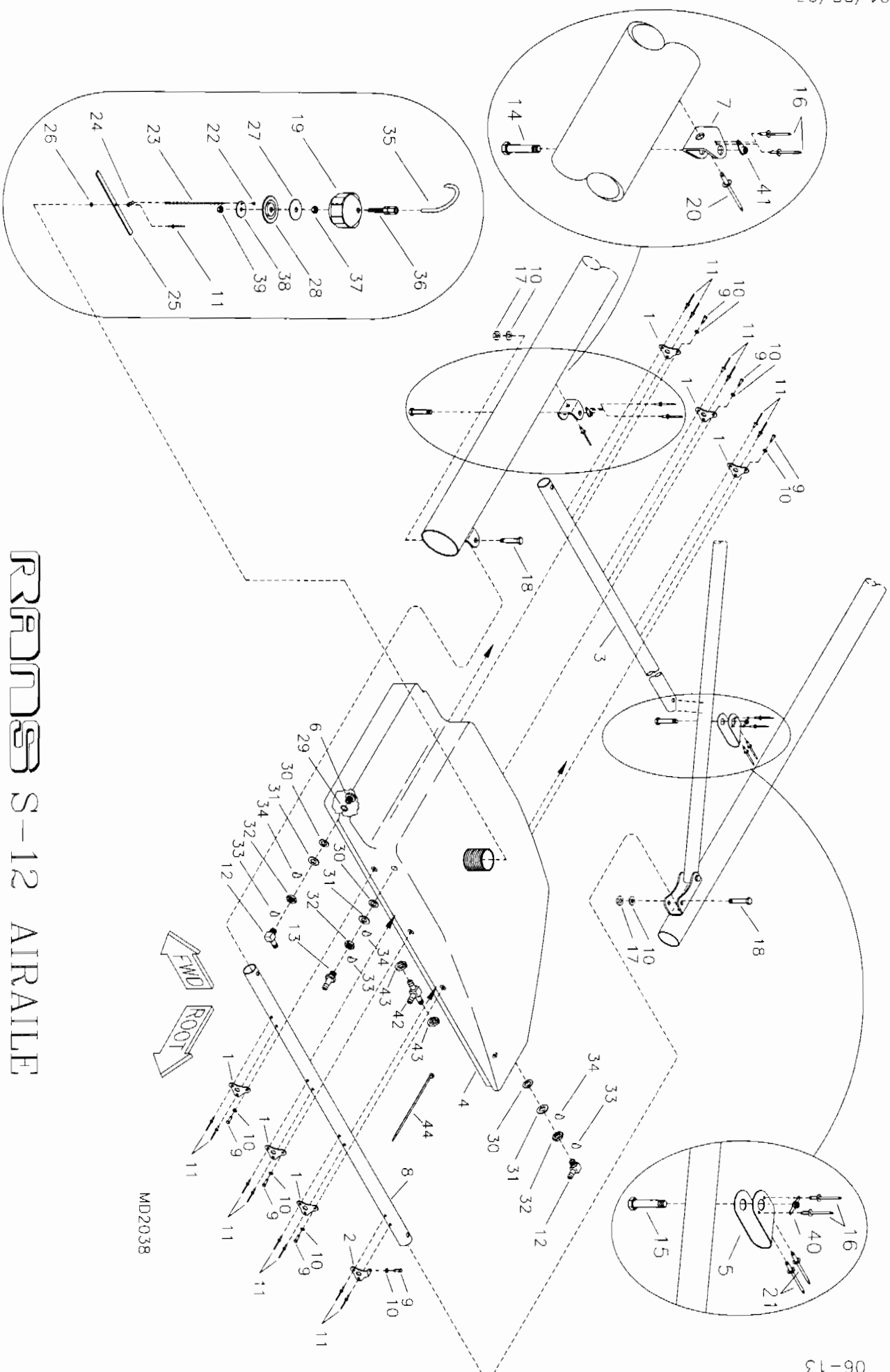
#	Description	Part Number	Quantity
1.	1/4" Tensile Nut	AN365-428A	4
2.	#8 Pan Head Screw	8X1/2 PHS	102
3.	Root Rib, LH	KAWI0011-L	1
3.	Root Rib, RH	KAWI0011-R	1
4.	"L" Bracket	KPWI0169-L	1
4.	"L" Bracket	KPWI0169-R	1
5.	3/16" Shear Nut	AN364-1032A	2
6.	1/4" Thin Washer	AN960-416L	8
7.	1/4" Bolt *	KSHW0049	4
8.	3/16" Bolt	AN3-5A	2
9.	"L" Bracket	KPWI0170	2

*This bolt is nearly threaded it's whole length.

RANS, Inc.
S-12 Airaile

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REFUGES - 12 AIRRAIL FUEL TANK MOUNT - DUAL WING TANK

S-12XL AIRAILE - FUEL TANK MOUNT**DUAL WING TANKS**

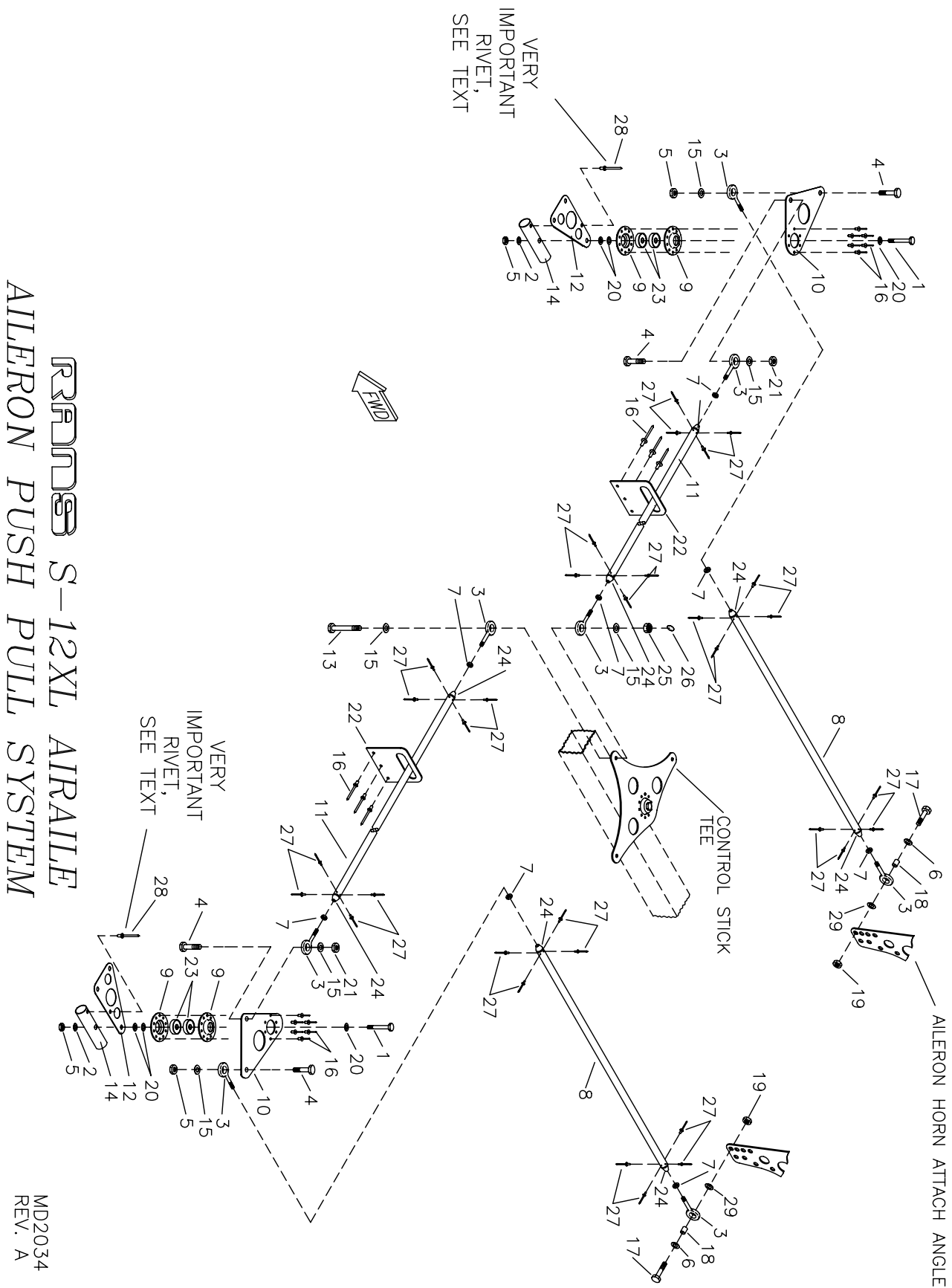
#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Wing Tank - Mount Bracket	KPFS0007	12
2.	Wing Tank - AFT Mount Bracket, LH	KPFS0011-L	1
2.	Wing Tank - AFT Mount Bracket, RH	KPFS0011-R	1
3.	Outer Tank Support	KPFS0043	2
4.	Fuel Tank, LH	KPFS0005-L	1
4.	Fuel Tank, RH	KPFS0005-R	1
5.	U Bracket	KPAC0055	2
6.	Tank Withdrawal Fitting	KPFS0017	6
7.	Attach Bracket	S2-SAB	2
8.	Inner Compression Tube *	W-IO-151	0
9.	3/16" Bolt	AN3-3A	14
10.	3/16" Thick Washer	AN960-10	18
11.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-44	30
12.	90 Withdrawal Fitting	8342	4
13.	Straight Withdrawal Fitting	8330	2
14.	3/16" Bolt	AN3-15A	2
15.	3/16" Bolt	AN3-14A	2
16.	3/32" Aluminum Pop Rivet	40APR1/8	8
17.	3/16" Shear Nut *	AN364-1032A	0
18.	3/16" Bolt *	AN3-15A	0
19.	Fuel Cap	KSFS0007	2
20.	3/16" Stainless Steel Pop Rivet - Cherry Q	CCPQ-64	2
21.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-42	4
22.	Bead Chain - Retainer Sleeve	KSHW0014	2
23.	#3 Bead Chain	KSHW0012	14 in
24.	Bead Chain - End Coupling	KSHW0013	2
25.	Plastic Retainer	KPFS0012	2
26.	1/8" Small Brass Washer	AN960-B4	2
27.	Plastic Baffle ***	KSFS0012	0
28.	Rubber Gasket ***	KSFS0013	0
29.	O-Ring	KSFS0009	6
30.	Rubber Washer	KSFS0010	6
31.	1/2" Thick Washer	AN960-816	6
32.	Nut-Flared Tube Bulkhead	AN924-5D	6
33.	Thread Sealant **	KSAC0014	0
34.	Loctite Blue	LOC-TITE	0
35.	Vent Tube	KPFS0020	2
36.	Conduit Adjuster Assembly	KSFS0014	2
37.	1/4" Plain Nut	AN345-416	2
38.	1/4" Large Washer	AN970-4	2
39.	1/4" Shear Nut	AN364-428C	2
40.	3/16" Nut Plate	K-1000-3	2
41.	3/16" Single Ear Nut Plate	MS21051-L3	2
42.	1/4" Tee	8338	2
43.	Line Clamp, 5/16" ID	FS-LCL 5/16ID	4
44.	Long Nylon Tie	LG-N-TIE	2

*Referenced from wing tank assembly.

**Thread Sealant (builder provides) is recommended but Loctite Blue can also be used.

***Supplied with Fuel Cap.

12/24/2004



RRM S-12XL AIRRAIL
AILERON PUSH PULL SYSTEM

MD2034
REV. A

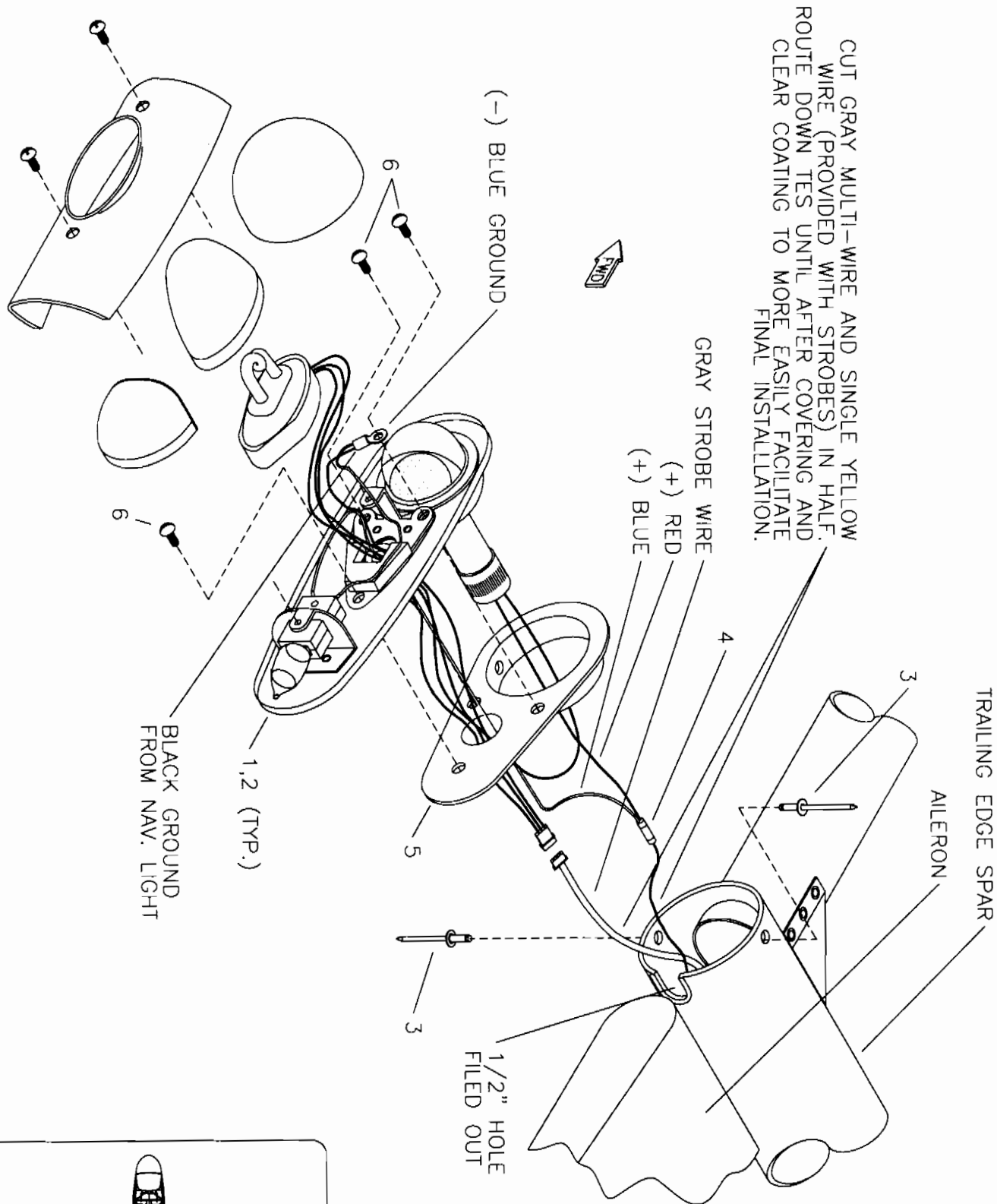
S-12XL AIRAILE - AILERON PUSH PULL SYSTEM

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	1/4" Bolt	AN4-22A	2
2.	1/4" Thin Washer	AN960-416L	2
3.	Male Rod End, 1/4" X 1/4"	NM-4	8
4.	1/4" Bolt	AN4-7A	4
5.	1/4" Shear Nut	AN364-428A	4
6.	#10 SS Washer	BSHW0022	2
7.	1/4" Plain Nut	AN345-416	8
8.	Aileron Push Pull Tube, 42 1/8"	CS-42PPT	2
9.	Bearing Flange	BR-FLNG	4
10.	Bell Crank	AIL-2/1BC	2
11.	Aileron Push Pull Tube, 109"	CS-109PPT	2
12.	Bell Crank Gusset, RH	CS-BELGU-RH	1
12.	Bell Crank Gusset, LH	CS-BELGU-LH	1
13.	1/4" Bolt	AN4-13	1
14.	Compression Tube Doubler *	CS-CTD	0
15.	1/4" x 5/8" Zinc Plated Washer	KSHW0075	6
16.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-44	18
17.	3/16" Bolt	AN3-7A	2
18.	Spacer Bushing, 1/4" x 3/8" **	KAAC0001-6	2
19.	3/16" Shear Acorn Nut	22NKM02	2
20.	1/4" Thick Washer	AN960-416	6
21.	1/4" Shear Nut	AN364-428A	2
22.	Push Pull Tube Guide	KPCS0150	2
23.	Bearing	SR4APP	4
24.	Push Pull Tube End Fitting	CS-3/4PTEF	8
25.	1/4" Castle Nut	AN310-4	1
26.	Loc Ring	RL 27 1/4	1
27.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-42	32
28.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-44	2
29.	3/16" Thick Washer	AN960-10	2

*Referenced from internal structure.

**Builder must fabricate from raw stock.

1/2/2007



CUT GRAY MULTI-WIRE AND SINGLE YELLOW WIRE (PROVIDED WITH STROBES) IN HALF-ROUTE DOWN TIES UNTIL AFTER COVERING AND CLEAR COATING TO MORE EASILY FACILITATE FINAL INSTALLATION

TRAILING EDGE SPAR

AILERON

1/2" HOLE
FILED OUT

WING FRAME ASSEMBLY

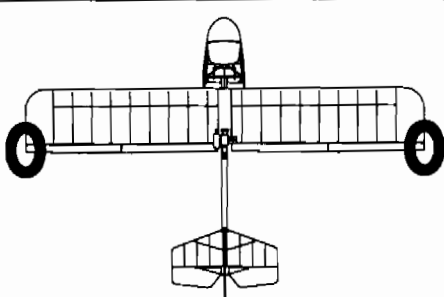
STROBE MOUNT

DETAIL:

LEFT ASSEMBLY SHOWN

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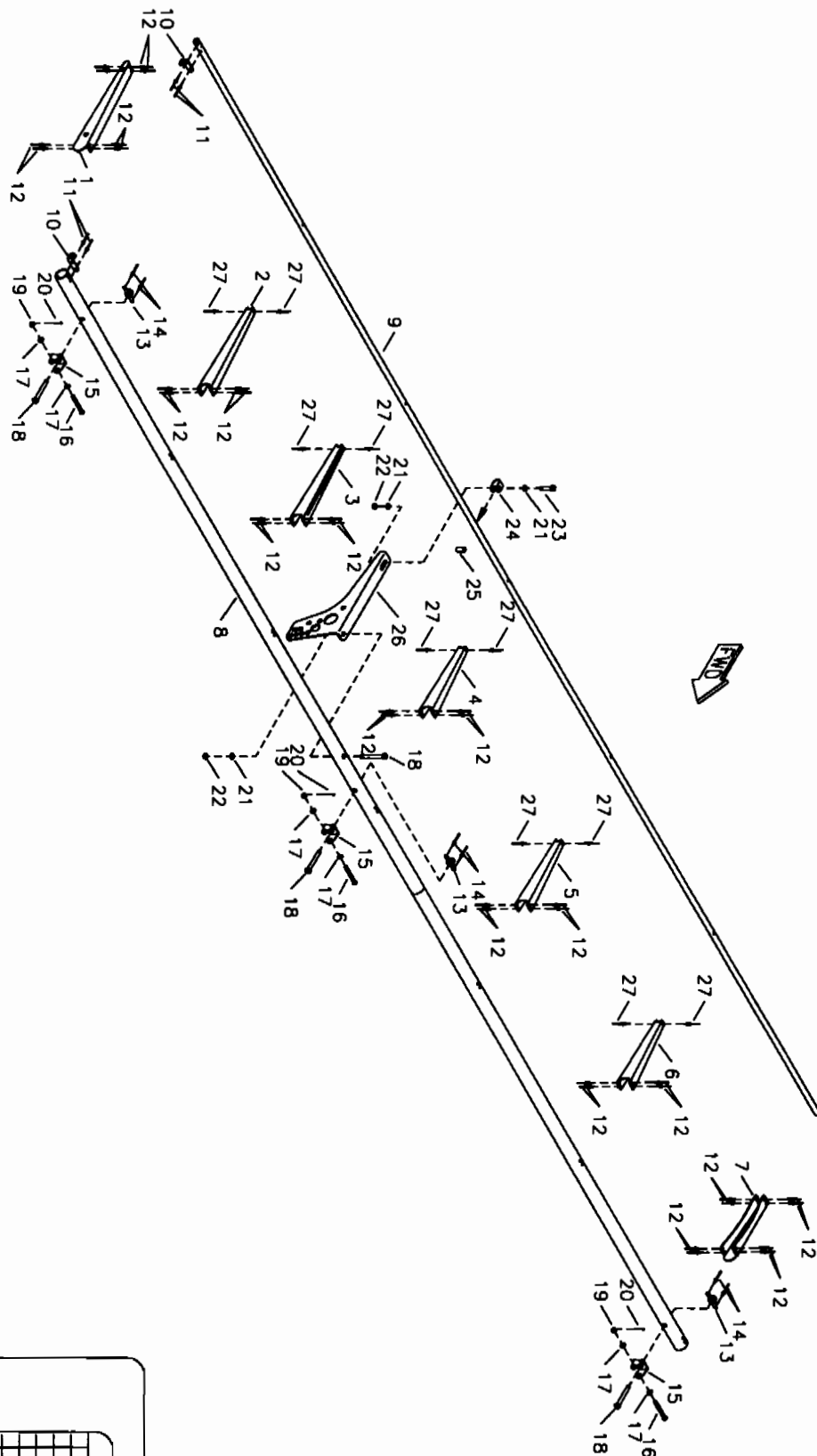
S-12XL AIRAILE - STROBE MOUNT

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Whelen Left Strobe Light	A600-PR	1
2.	Whelen Right Strobe Light	A600-PG	1
3.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-42	4
4.	14 Gauge Splice, Butt Connector *	IP-7132	0
5.	Navigation Light Tip Mount	NAV-TIP-MT	2
6.	8/32" Truss Head Bolt	AN515-8R7	6

*Referenced from strobe system schematic.

RPM S-12 AIRAILE

Made in the
USA



NOTES:
RIGHT SIDE OF
ASSEMBLY SHOWN

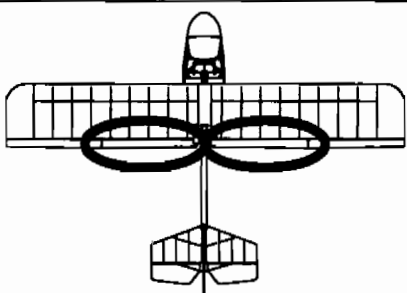
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WING FRAME ASSEMBLY FLAP FRAME ASSEMBLY

DETAIL

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S-12XL AIRAILE - FLAP FRAME ASSEMBLY

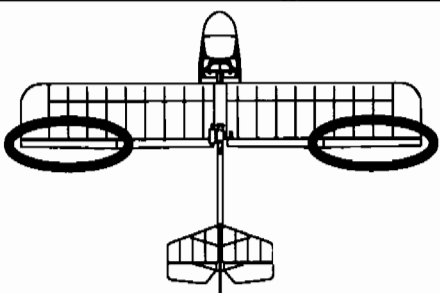
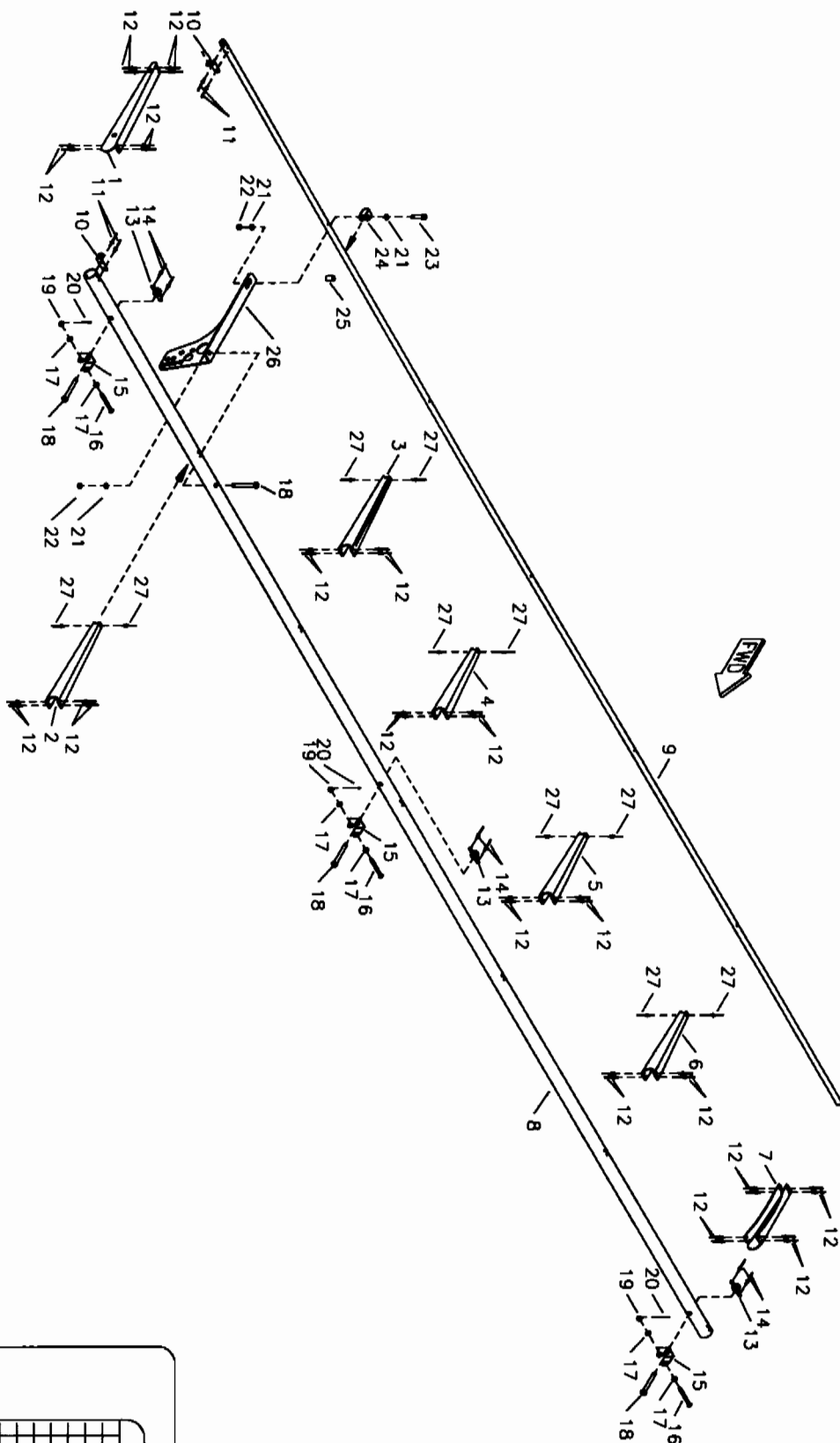
#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Flap/Aileron Rib #1	KPAL0006	2
2.	Flap/Aileron Rib #2	KPAL0007	2
3.	Flap/Aileron Rib #3	KPAL0008	2
4.	Flap/Aileron Rib #4	KPAL0009	2
5.	Flap/Aileron Rib #5	KPAL0010	2
6.	Flap/Aileron Rib #6	KPAL0011	2
7.	Flap/Aileron Rib #7	KPAL0012	2
8.	Flap Spar Assembly	KPFL0030	2
9.	Flap/Aileron Trailing Edge Spar	KPAL0014	2
10.	Trim Tab Hinge	ST-16-BENT	4
11.	3/16" Aluminum Pop Rivet - Cherry Q	AAPQ-62	8
12.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-42	72
13.	3/16" Nut Plate	K-1000-3	6
14.	3/32" Aluminum Pop Rivet	40APR1/8	12
15.	Hinge Bracket	W-HB	6
16.	3/16" Bolt	AN3-15	6
17.	3/16" Thick Washer	AN960-10	12
18.	3/16" Bolt	AN3-14A	8
19.	3/16" Castle Nut	AN310-3	6
20.	Small Cotter Pin	MS24665-134	6
21.	3/16" Thin Washer	AN960-10L	6
22.	3/16" Shear Acorn Nut	22NKM02	4
23.	3/16" Bolt	AN3-10A	2
24.	Aileron Clip	W-A-CLIP	2
25.	Spacer Bushing, 1/4" x 0.28 x 1/2" *	KAAC0001-6	2
26.	Flap/Aileron Horn Attach Angle, LH	KPAL0015-L	2
27.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-41	20

*Builder must fabricate from raw stock.

S-12 AIRRALE

RPM 8

Made in the
USA



AILERON FRAME ASSEMBLY

WING FRAME ASSEMBLY

DETAIL:

SECTION:

LEFT SIDE OF
ASSEMBLY SHOWN

NOTES:

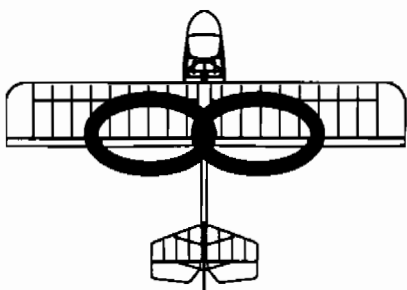
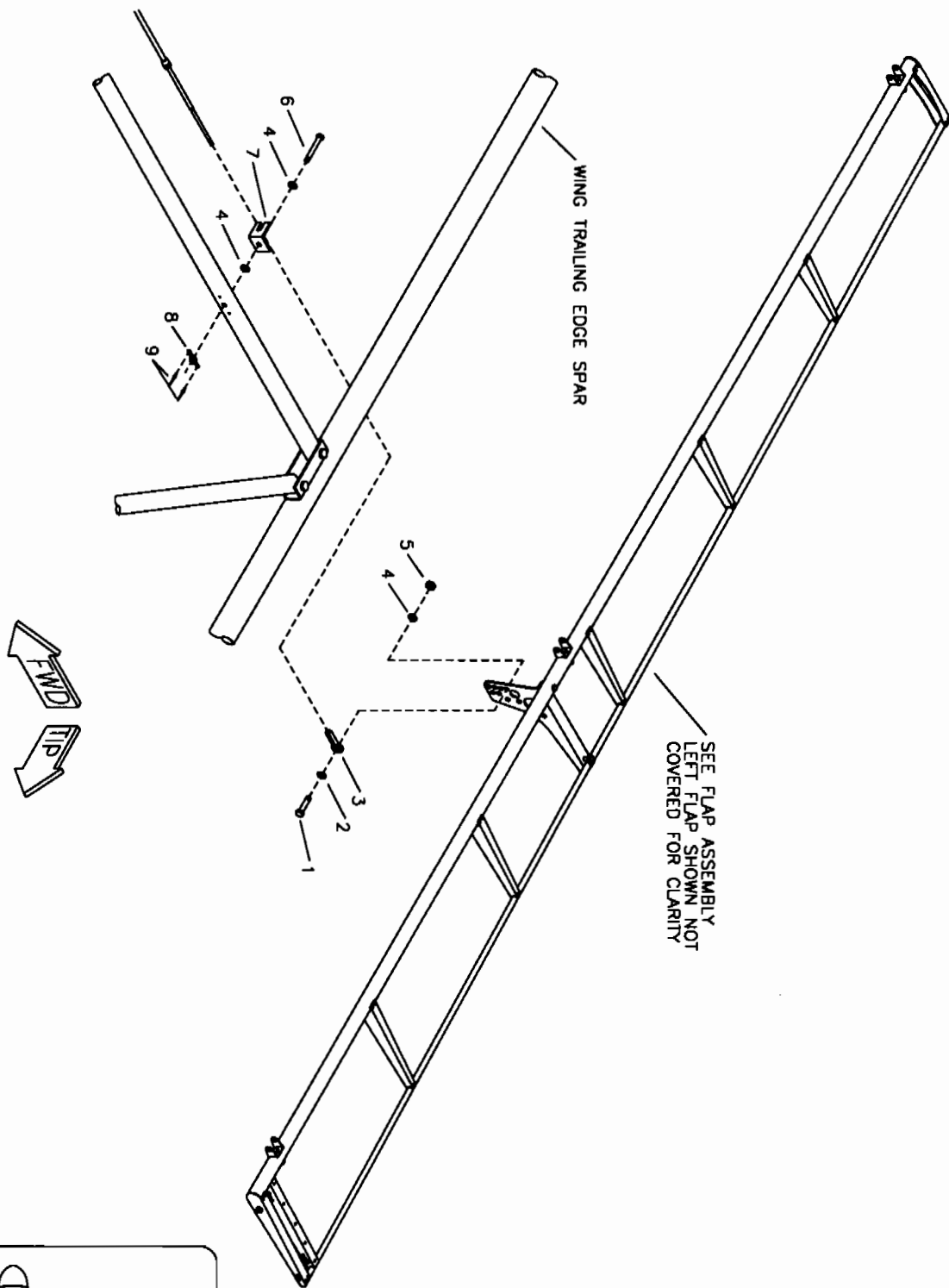
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S-12XL AIRAILE - AILERON FRAME ASSEMBLY

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Flap/Aileron Rib #1	KPAL0006	2
2.	Flap/Aileron Rib #2	KPAL0007	2
3.	Flap/Aileron Rib #3	KPAL0008	2
4.	Flap/Aileron Rib #4	KPAL0009	2
5.	Flap/Aileron Rib #5	KPAL0010	2
6.	Flap/Aileron Rib #6	KPAL0011	2
7.	Flap/Aileron Rib #7	KPAL0012	2
8.	Aileron Spar	KPAL0005	2
9.	Flap/Aileron Trailing Edge Spar	KPAL0014	2
10.	Trim Tab Hinge	ST-16-BENT	4
11.	3/16" Aluminum Pop Rivet - Cherry Q	AAPQ-62	8
12.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-42	72
13.	3/16" Nut Plate	K-1000-3	6
14.	3/32" Aluminum Pop Rivet	40APR1/8	12
15.	Hinge Bracket	W-HB	6
16.	3/16" Bolt	AN3-15	6
17.	3/16" Thick Washer	AN960-10	12
18.	3/16" Bolt	AN3-14A	8
19.	3/16" Castle Nut	AN310-3	6
20.	Small Cotter Pin	MS24665-134	6
21.	3/16" Thin Washer	AN960-10L	6
22.	3/16" Shear Acorn Nut	22NKM02	4
23.	3/16" Bolt	AN3-10A	2
24.	Aileron Clip	W-A-CLIP	2
25.	Spacer Bushing, 1/4" x 0.28 x 1/2" *	KAAC0001-6	2
26.	Flap/Aileron Horn Attach Angle, RH	KPAL0015-R	2
27.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-41	20

*Builder must fabricate from raw stock.



SECTION: WING FRAME ASSEMBLY
DETAIL: FLAP SYSTEM - IN FLIGHT ADJUSTABLE

Section:

WING FRAME ASSEMBLY

Detail:

**FLAP SYSTEM
IN FLIGHT ADJUSTABLE**

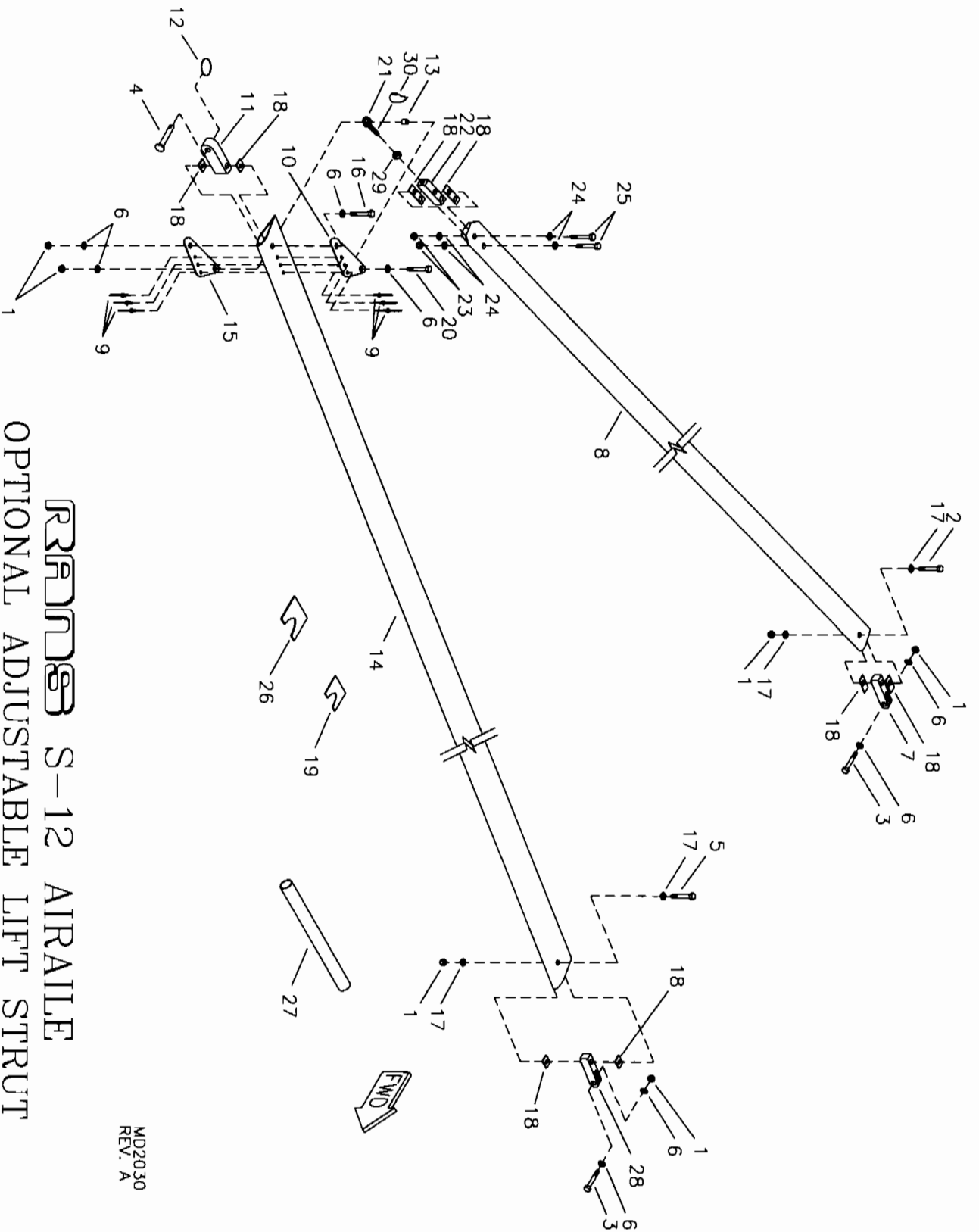
Page:

06-26

Date:

7/27/95

#	Description	Part Number	Quantity
1.	3/16" Bolt	AN3-7A	2
2.	3/16" Plastic Washer	PW-3	2
3.	Female Rod End	NF-3	2
4.	3/16" Thin Washer	AN960-10L	6
5.	3/16" Shear Acorn Nut	22NKM02	2
6.	3/16" Bolt	AN3-14A	2
7.	Teleflex Retainer	W-TEL-R	2
8.	3/16" Nut Plate	K-1000-3	2
9.	3/32" Aluminum Pop Rivet	40APR1/8	4



RRR S-12 AIRAILLE
OPTIONAL ADJUSTABLE LIFT STRUT

MD2030
REV. A

S-12XL AIRAILE - LIFT STRUT ASSEMBLY**OPTIONAL ADJUSTABLE**

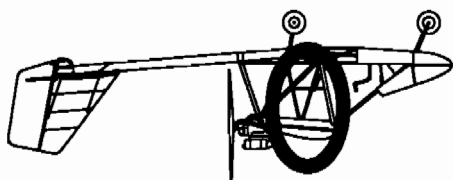
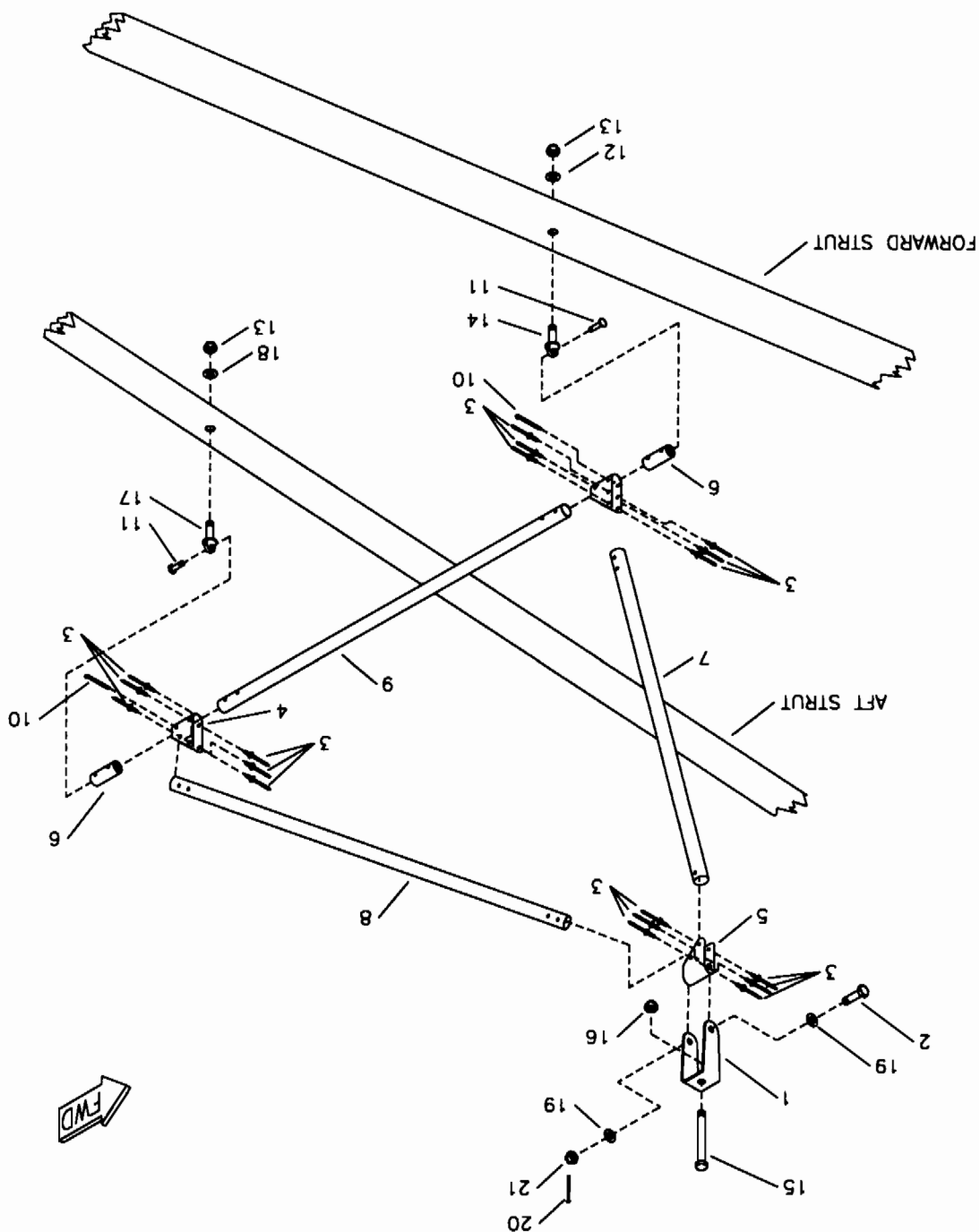
#	DESCRIPTION	PART NUMBER	QUANTITY
1.	5/16" Shear Nut	AN364-524A	12
2.	5/16" Bolt	AN5-13A	2
3.	5/16" Bolt	AN5-12A	4
4.	5/16" Clevis Pin	MS20392-4C33	2
5.	5/16" Bolt	AN5-15A	2
6.	5/16" Thick Washer	AN960-516	16
7.	AFT Upper Lift Strut Connector	LS-ACU-2	2
8.	AFT Lift Strut	KPW10144	2
9.	3/16" Stainless Steel Pop Rivet - Cherry Q	CCPQ-64	12
10.	AFT Lift Strut Gusset	116-S-GUSS-A	2
11.	Lower Strut Fitting - FWD - LH	KPLS0013-L	1
11.	Lower Strut Fitting - FWD - RH	KPLS0013-R	1
12.	Loc Ring	RL 27 5/16	2
13.	Aluminum Bushing, 3/8" x .035 x 1/2" **	KAAC0020-1	0
14.	FWD Lift Strut	KPW10143	2
15.	AFT Lift Strut Gusset	116-S-GUSS-B	2
16.	5/16" Bolt	AN5-17A	2
17.	5/16" Thin Washer	AN960-516L	8
18.	Shim *	UNV-SHIM	4
19.	Small Lift Strut Chord Template	KPLS0004	1
20.	5/16" Bolt	AN5-11A	2
21.	Rod End	3/8X24 ROD END	2
22.	Adjustor End	S-AE-3/4	2
23.	3/16" Shear Acorn Nut	22NKM02	4
24.	3/16" Thick Washer	AN960-10	8
25.	3/16" Bolt	AN3-13A	4
26.	Large Lift Strut Chord Template	KPLS0003	1
27.	Adjustable Lift Strut - Raw Stock Kit	KAAC0020	1
28.	Upper Strut Fitting - FWD	KPLS0012	2
29.	3/8" Plain Nut	MS35650-3382	2
30.	Loctite Blue	LOC-TITE	0

*Make shim from .020 blank provided if necessary.

**Builder fabricates from 3/8X.058. Drill out bushing to 5/16".

RRMS S-12 AIRAILE

Made in the USA



WING FRAME ASSEMBLY

JURY STRUT ASSEMBLY

DETAIL:

SECTION:

Section:**WING FRAME ASSEMBLY****Detail:****JURY STRUT ASSEMBLY****Page:**

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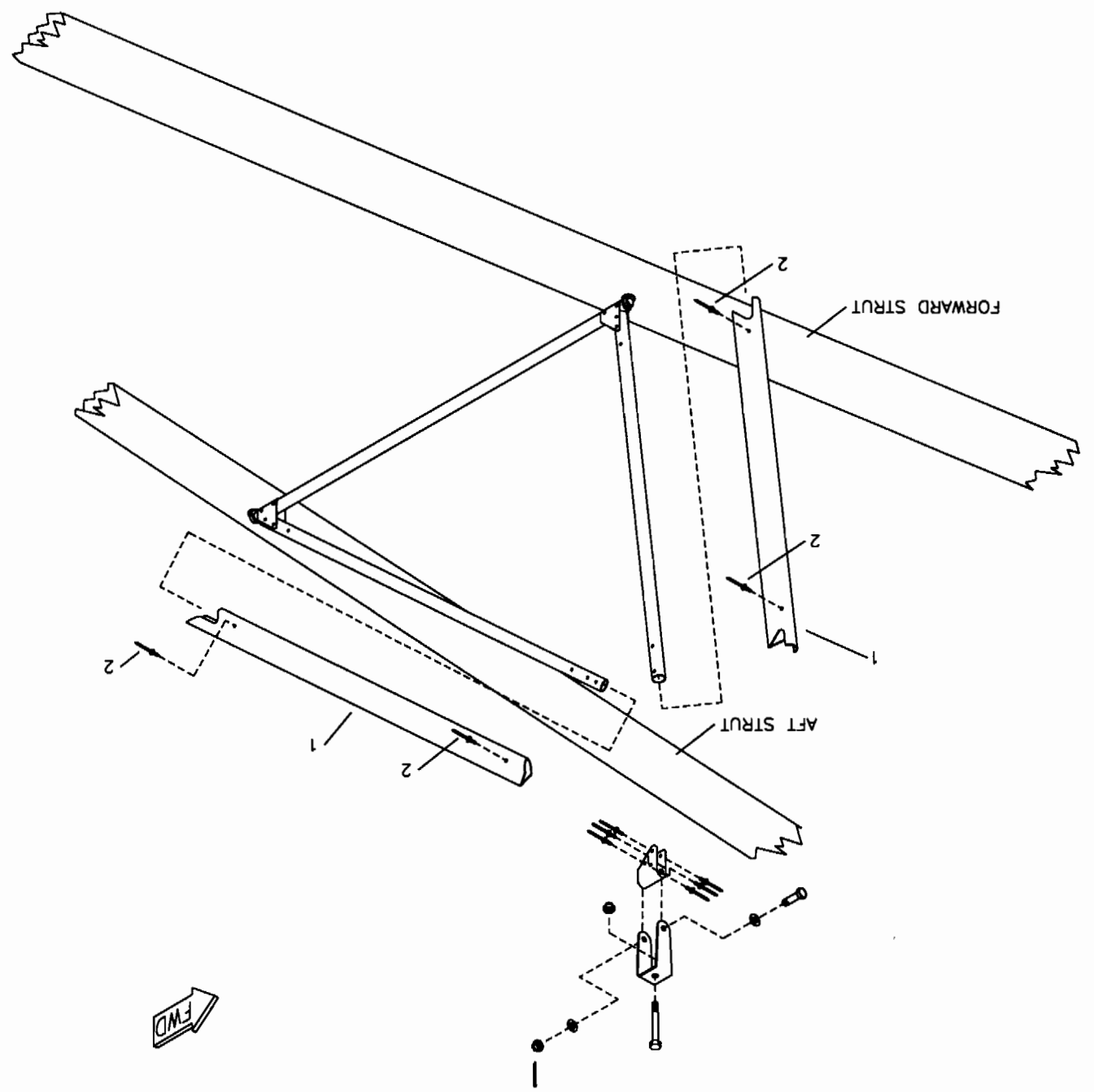
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8/22/95

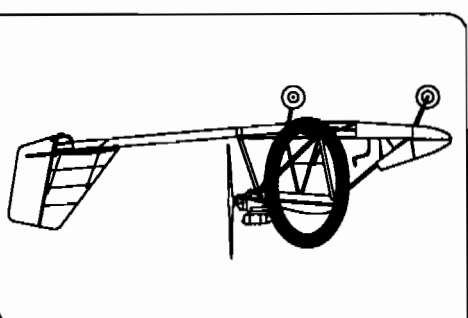
#	Description	Part Number	Quantity
1.	Jury Strut Bracket**	JS-BK	0
2.	3/16" Bolt	AN3-15	2
3.	1/8" Stainless Steel Pop Rivet	CCPQ-42	36
4.	Gusset	JS-JGN	4
5.	Gusset	JS-JGNW	2
6.	Drilled Bushing Aluminum Insert	JS-BUC-B	4
7.	Forward Jury Strut*	KAAC0001	2
8.	Diagonal Jury Strut*	KAAC0001	2
9.	Cross Strut*	KAAC0001	2
10.	Small Cotter Pin	MS24665-134	4
11.	Clevis Pin	MS20392-2C17	4
12.	1/4" Thin Washer	AN960-416L	2
13.	1/4" Tensile Acorn Nut	42NKE-048	4
14.	Eye Bolt	AN43B-15A	2
15.	3/16" Bolt**	AN3-16A	0
16.	3/16" Tensile Nut**	AN365-1032A	0
17.	Eye Bolt	AN43B-14A	2
18.	1/4" Thick Washer	AN960-416	2
19.	3/16" Thick Washer	AN960-10	4
20.	Small Cotter Pin	MS24665-134	2
21.	3/16" Castle Nut	AN310-3	2

*Builder fabricates from raw stock.

**Referenced from internal structure.



FWD



SECTION: WING FRAME ASSEMBLY
DETAIL: JURY STRUT FAIRING INSTALLATION

Section:

WING FRAME ASSEMBLY

Detail:

JURY STRUT FAIRING INSTALLATION

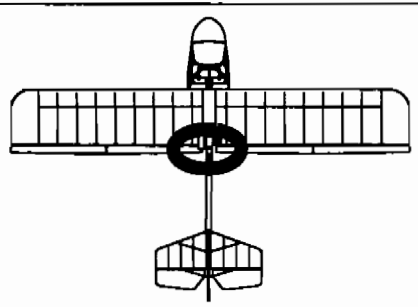
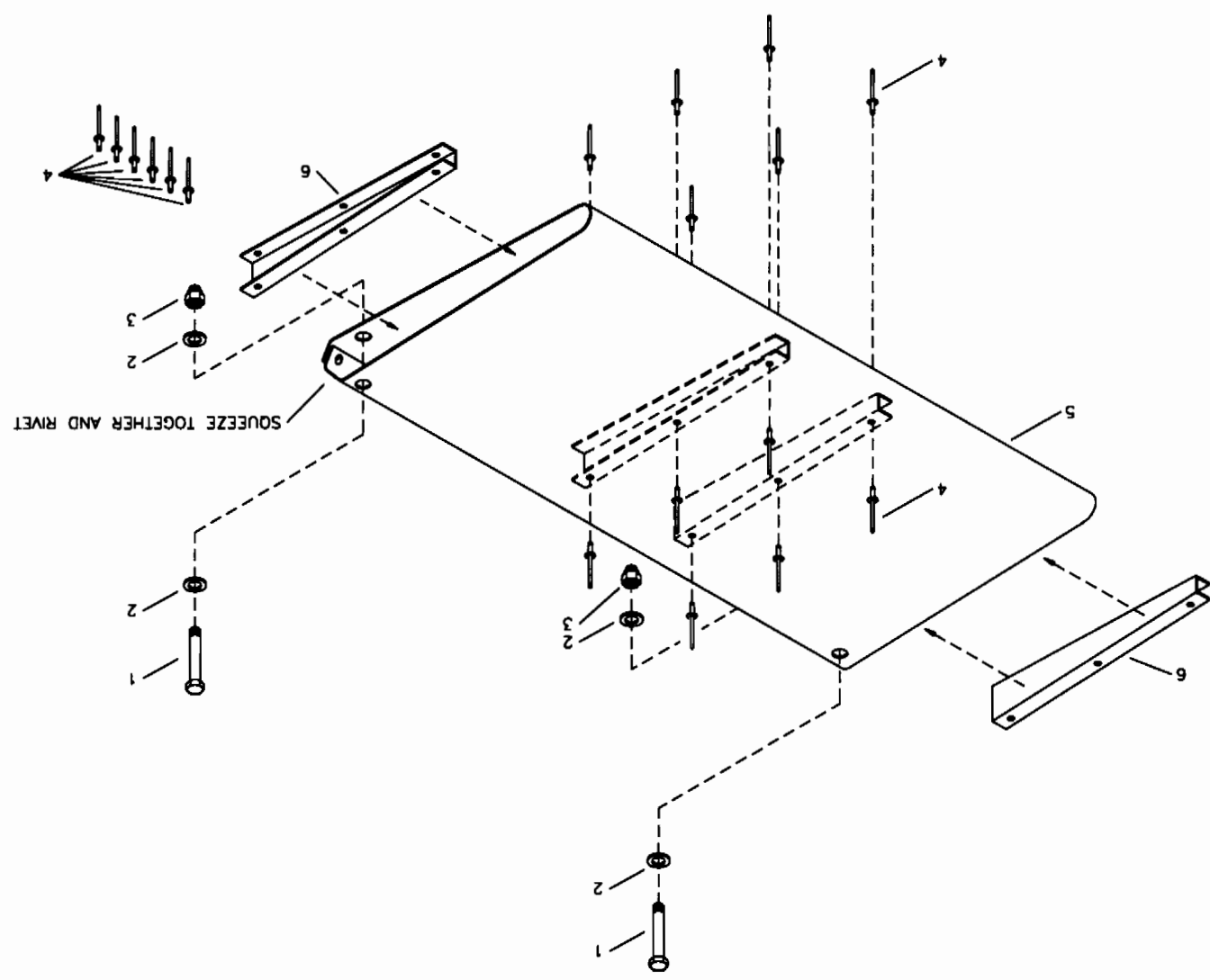
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Date:

7/27/95

#	Description	Part Number	Quantity
1.	Jury Strut Fairing	JS-FAIR	2
2.	3/32" Aluminum Pop Rivet	40APR1/8	8



FLAP FILLET INSTALLATION

WING FRAME ASSEMBLY

DETAIL:

SECTION:

Section:

WING FRAME ASSEMBLY

Detail:

FLAP FILLET INSTALLATION

Page:

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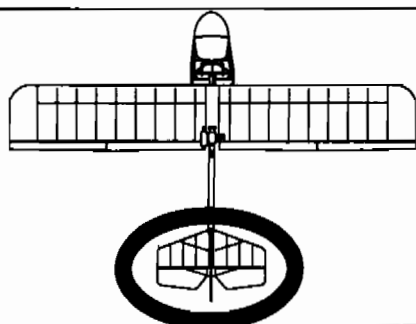
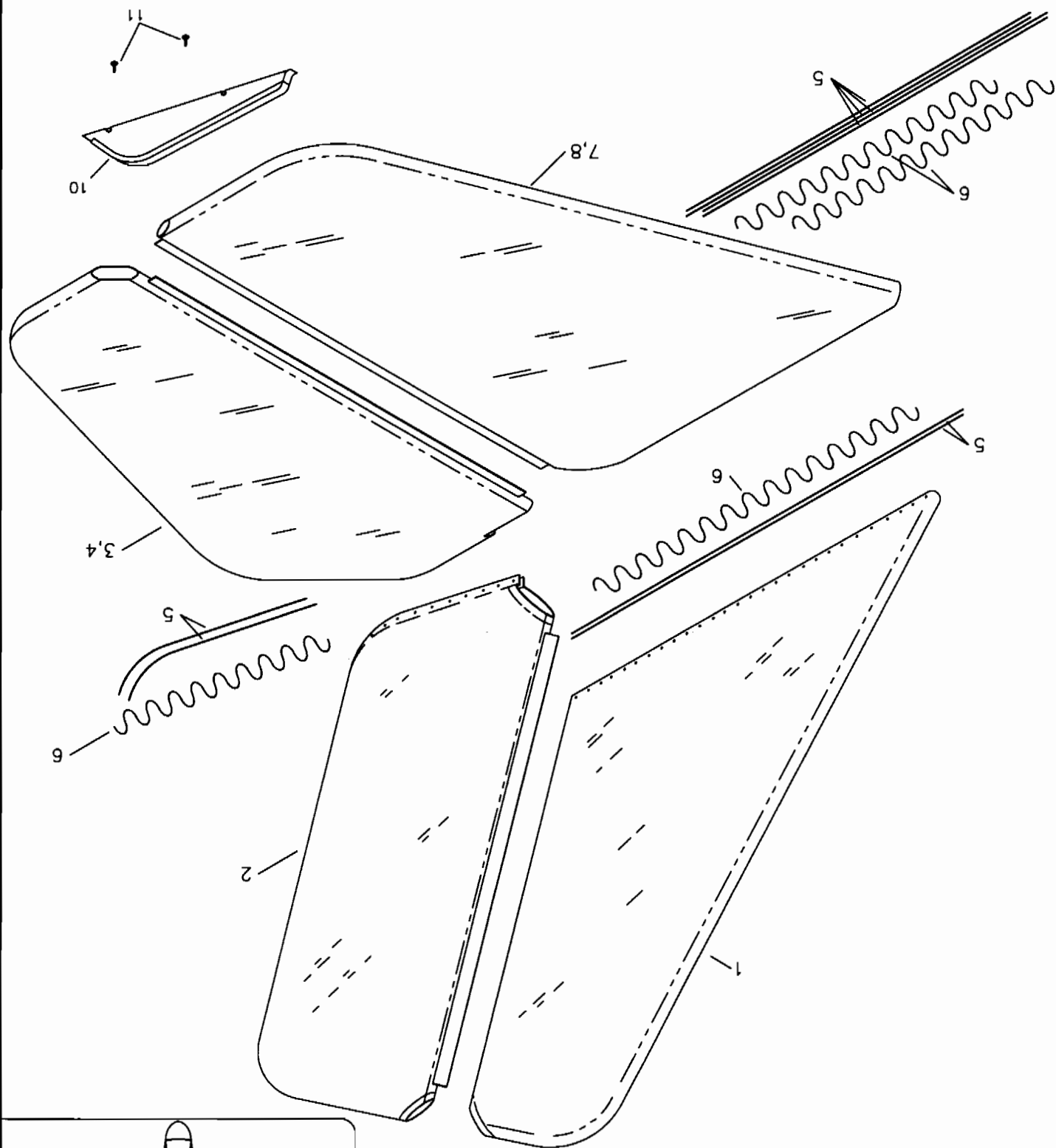
Date:

4/24/96

#	Description	Part Number	Quantity
1.	3/16" Bolt	AN3-13A	2
2.	3/16" Thin Washer	AN960-10L	4
3.	3/16" Shear Acorn Nut	22NKM02	2
4.	1/8" Aluminum Pop Rivet	AAPQ-41	16
5.	Flap Fillet-Outer Wrap	KPFL0028	1
6.	Flap Fillet-Rib	KPFL0029	2

RPM S-12 AIRAILE

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TAIL GROUP DACRON COVERS AND HARDWARE

DETAIL:

COVERING

SECTION:

NOTES:

07-01

PAGE

Section:**COVERING****Detail:****TAIL GROUP DACRON COVERS AND HARDWARE****Page:**

07-02

Date:

10/24/97

#	Description	Part Number	Quantity
1.	Vertical Stabilizer Dacron Cover *	KICV0001-7	1
2.	Rudder Dacron Cover *	KICV0001-8	1
3.	Elevator Dacron Cover, LH *	KICV0001-11	1
4.	Elevator Dacron Cover, RH *	KICV0001-12	1
5.	Lacing Wires, 36" X 1/16" (stick)	TG-LW-1/16	8
6.	Nylon Lace Up Rope	36 SEINE	36 ft
7.	Horizontal Stabilizer Dacron Cover, LH *	KICV0001-9	1
8.	Horizontal Stabilizer Dacron Cover, RH *	KICV0001-10	1
9.	S-12 Airaile Covering Kit	KICV0001	1
10.	Rudder Lacing Cap **	KPRD0035	1
11.	#6 Small Pan Head Screw	6RX1/2 PHS	2

*Supplied with S-12 Airaile covering kit (KICV0001).

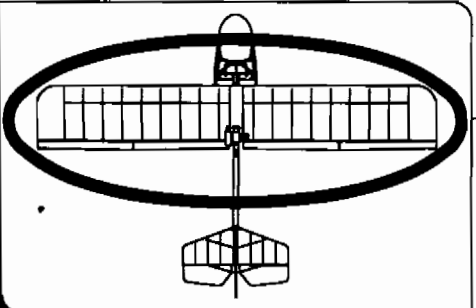
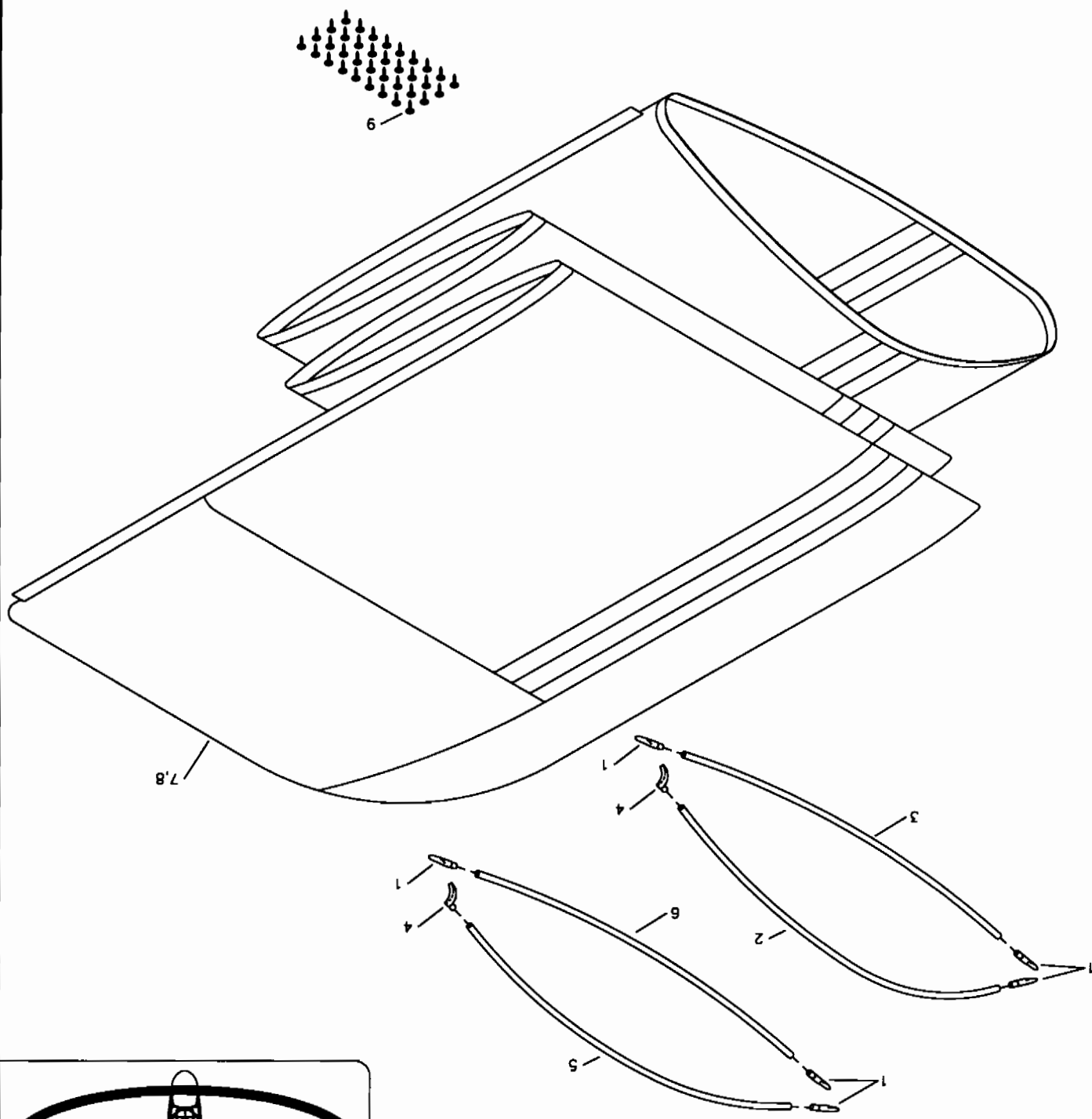
**Builder trims to fit. Refer to text for details.

**RANS, Inc.
S-12 Airaile****dBase Page #:**

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RMS S-12 AIRAILE

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SECTION: COVERING
DETAIL: WING DACRON COVERS AND HARDWARE

Section:

COVERING

Detail:

WING DACRON COVERS AND HARDWARE

Page:

07-04

Date:

7/28/95

#	Description	Part Number	Quantity
1.	Rip Tip	RIB-TIP	48
2.	Wing-Top Rib	KPWI0093	14
3.	Wing-Bottom Rib	KPWI0094	14
4.	Rib-Contour Fitting	2-CON	16
5.	Wing-Top Tip Rib	KPWI0098	2
6.	Wing-Bottom Tip Rib	KPWI0097	2
7.	Wing-Dacron Cover, RH*	KICV0001-2	1
8.	Wing-Dacron Cover, LH*	KICV0001-1	1
9.	#8 Stainless Steel Pan Head Screw**	8X1/2-PHS	0

*Comes with S-12 Airaile covering kit (KICV0001).

**Referenced from root rib tensioning system.

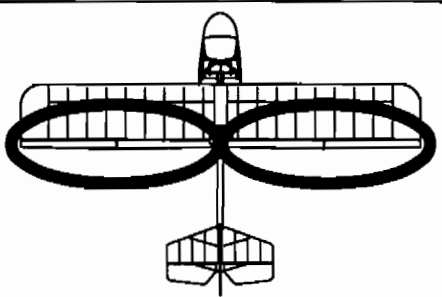
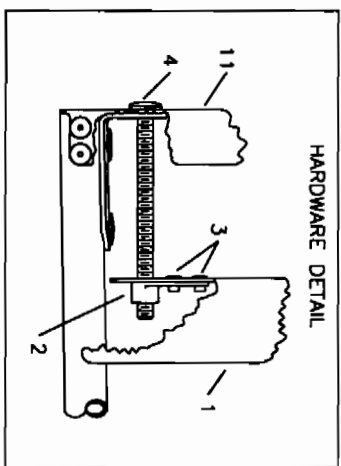
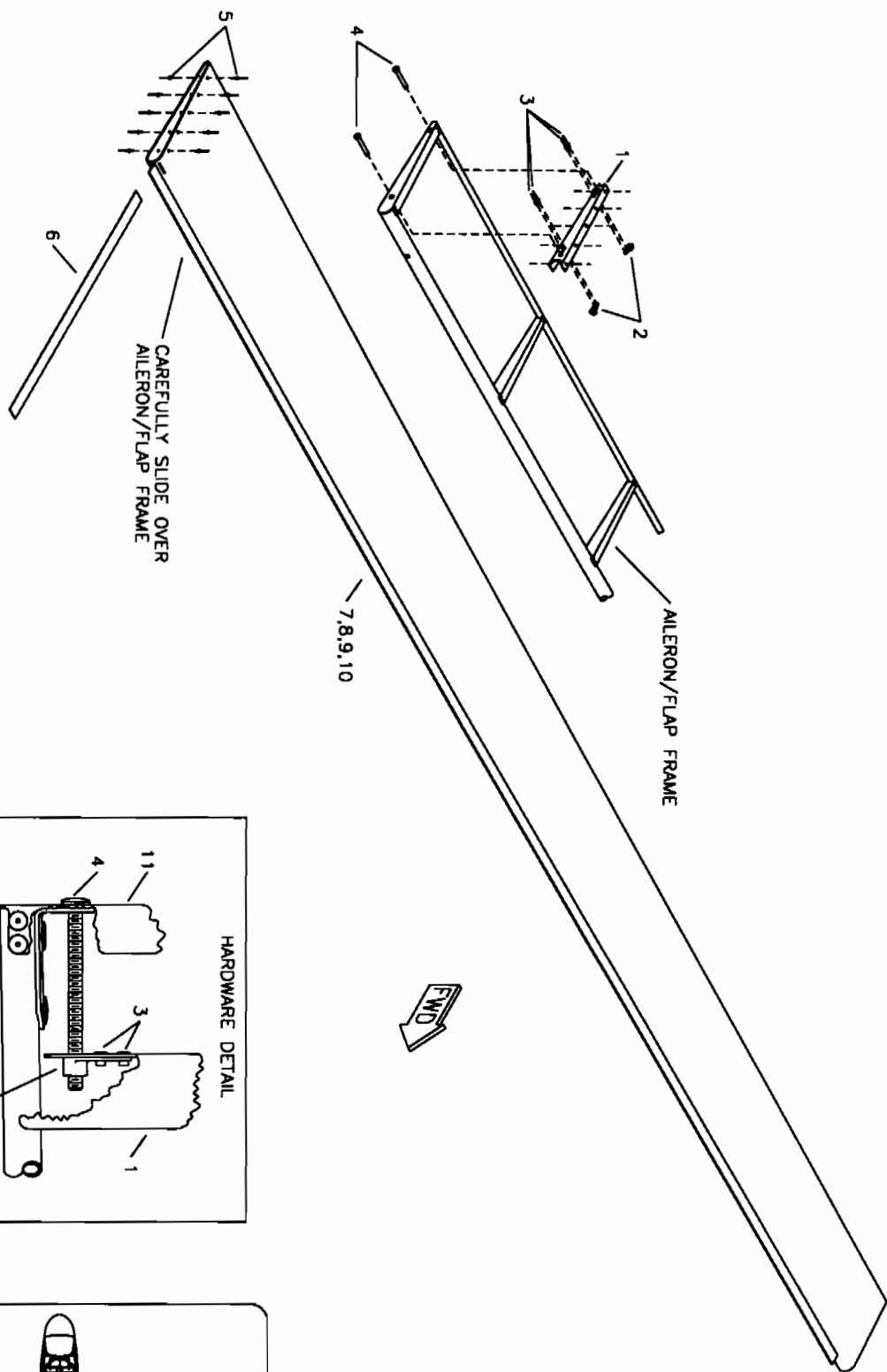
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S-12 Airaile

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RPM S-12 AIRRAIL

Made in the USA



SECTION: COVERING
DETAIL: AILERON/FLAP DACRON COVERS AND HARDWARE

Section:

COVERING

Detail:

AILERON/FLAP DACRON COVERS AND HARDWARE

Page:

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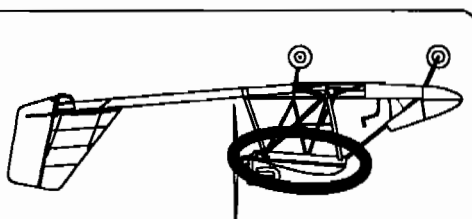
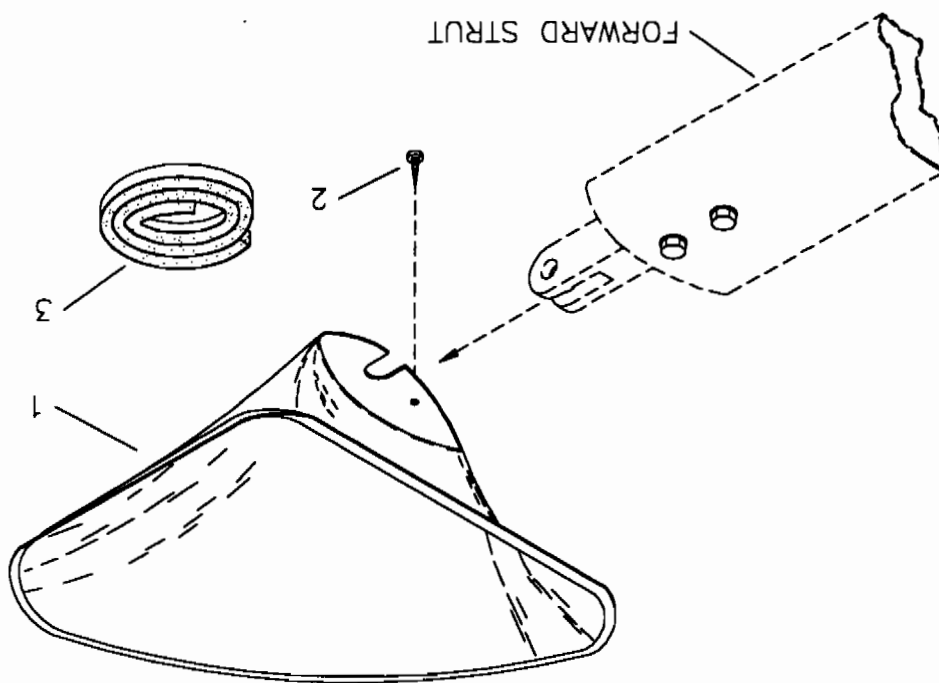
Date:

8/18/95

#	Description	Part Number	Quantity
1.	Flap/Aileron Tensioning Rib	KPAL0013	4
2.	3/16" Single Ear Nut Plate	MS21051-L3	8
3.	3/32" Aluminum Pop Rivet	40APR1/8	16
4.	Aileron/Flap Tension Screw	10/32X2 1/2SSPAN	8
5.	1/8" Aluminum Pop Rivet	AAPQ-42	40
6.	Flap/Aileron-Tension Strip	KPFL0031	4
7.	Flap Dacron Cover, LH*	KICV0001-3	1
8.	Flap Dacron Cover, RH*	KICV0001-4	1
9.	Aileron Dacron Cover, RH*	KICV0001-5	1
10.	Aileron Dacron Cover, LH*	KICV0001-6	1
11.	Flap/Aileron Rib #1**	KPAL0006	0

*Comes with covering kit (KICV0001).

**Referenced from Flap/Aileron Frame Assembly.



FILLET FAIRING INSTALLATION

COVERING

DETAIL:

SECTION:

LEFT SIDE
SHOWN

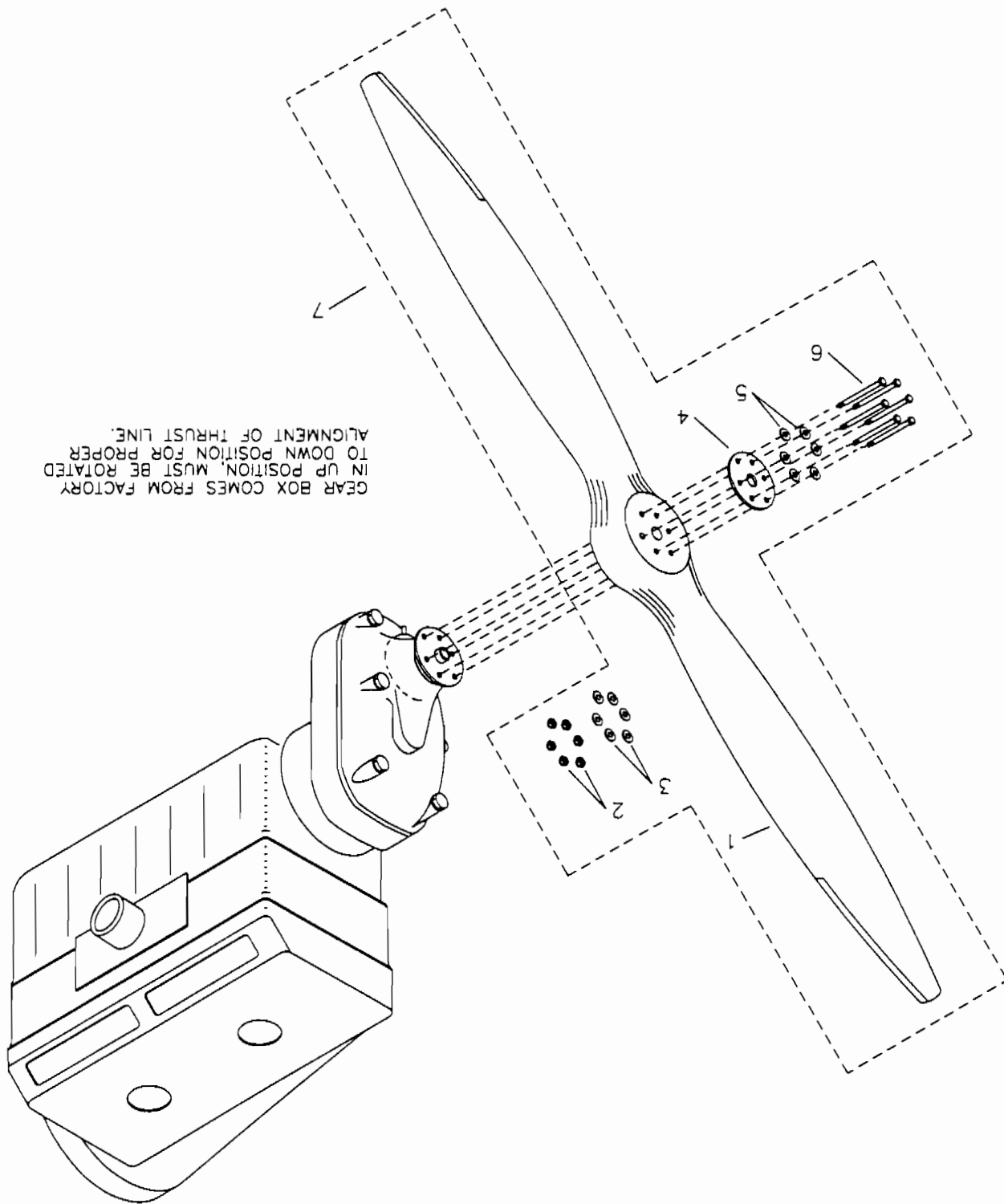
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07-07

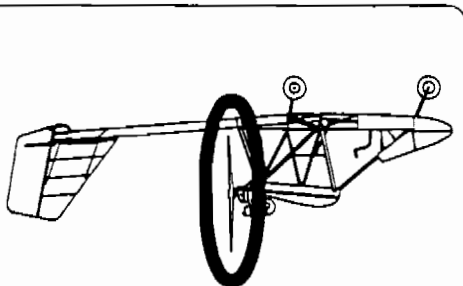
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S-12XL AIRAILE - FILLET FAIRING INSTALLATION

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Forward Strut Fairing, RH	W-FSFF-RH	1
1.	Forward Strut Fairing, LH	W-FSFF-LH	1
2.	#6 Small Pan Head Screw	6RX1/2 PHS	2
3.	High Density Foam Tape, 1/8" x 1/4"	1/8-FS	4 ft



GEAR BOX COMES FROM FACTORY
IN UP POSITION, MUST BE ROTATED
TO DOWN POSITION FOR PROPER
ALIGNMENT OF THRUST LINE.



SECTION: 503 ENGINE, INSTRUMENTATION, AND ELECTRICAL
DETAIL: 503 TENNESSEE WOOD
PROP INSTALLATION

Section:

PROPELLERS

Detail:

503 TENNESSEE WOOD PROP INSTALLATION

Page:

08-02

Date:

8/ 3/95

#	Description	Part Number	Quantity
1.	Tennessee Wood Propeller	KIPR0001-1	1
2.	1/4" Tensile Nut*	AN365-428A	6
3.	1/4" Thin Washer*	AN960-416L	6
4.	Crush Plate**	EG-EG-503-11	1
5.	1/4" Thick Washer*	AN960-416	6
6.	1/4" Bolt*	AN4-32A	6
7.	503 Tennessee Wood Propeller Installation Kit	KIPR0001	1

*Comes in 503 Tennessee Wood Propeller Installation Kit.

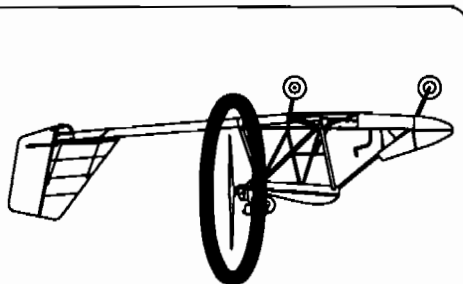
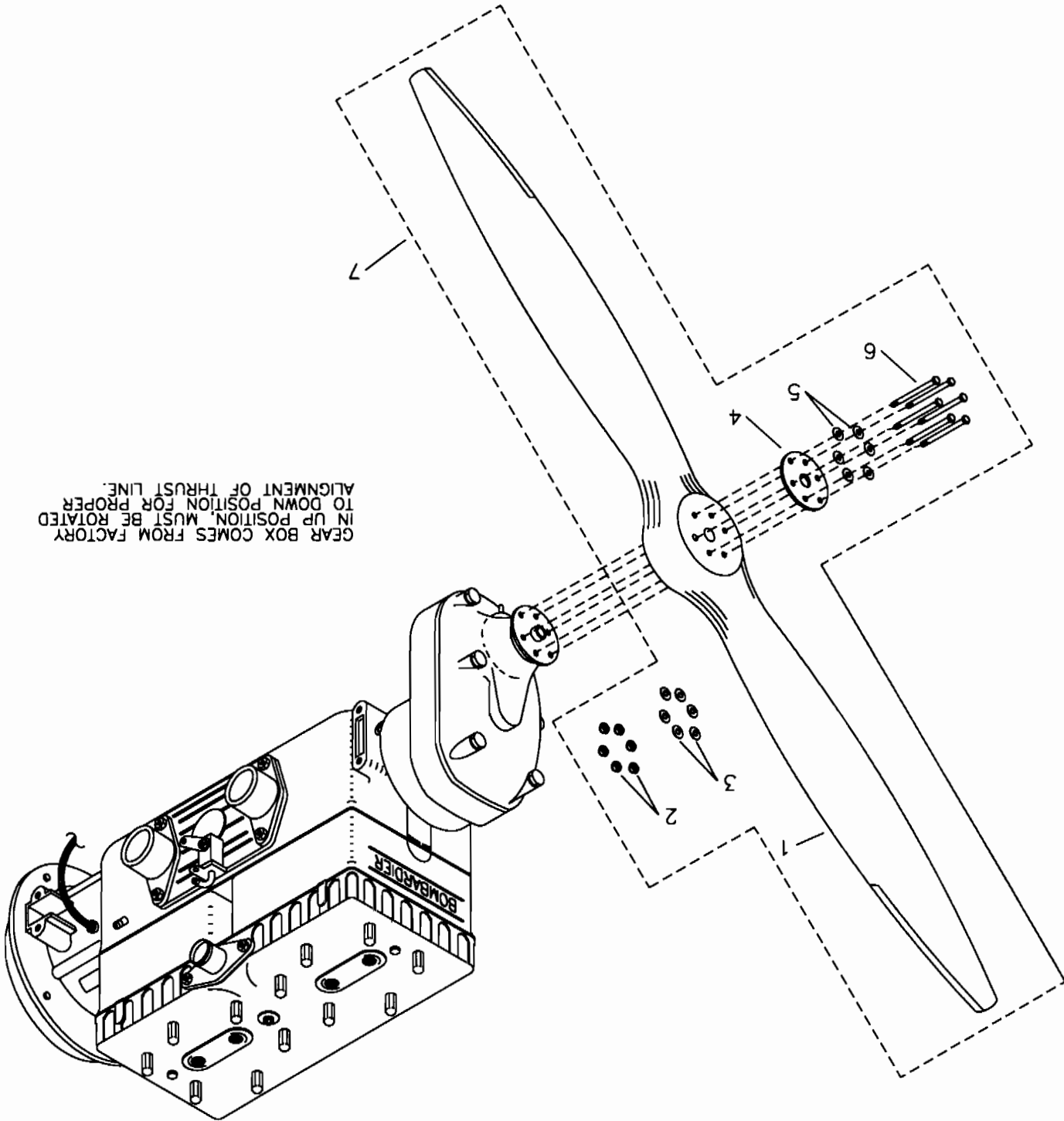
**Comes with engine.

RANS, Inc.
S-12 Airaile

dBase Page #:

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GEAR BOX COMES FROM FACTORY
IN UP POSITION, MUST BE ROTATED
TO DOWN POSITION FOR PROPER
ALIGNMENT OF THRUST LINE.



SECTION: 582 ENGINE, INSTRUMENTATION, AND ELECTRICAL
DETAIL: 582 TENNESSEE WOOD
PROP INSTALLATION

Section:

PROPELLERS

Detail:

582 TENNESSEE WOOD PROP INSTALLATION

Page:

08-04

Date:

8/ 3/95

#	Description	Part Number	Quantity
1.	Tennessee Wood Propeller	KIPR0002-1	1
2.	1/4" Tensile Nut*	AN365-428A	6
3.	1/4" Thin Washer*	AN960-416L	6
4.	Crush Plate**	EG-EG-582-13	1
5.	1/4" Thick Washer*	AN960-416	6
6.	1/4" Bolt*	AN4-32A	6
7.	582 Tennessee Wood Propeller Installation Kit	KIPR0002	1

*Comes in 582 Tennessee Wood Propeller Installation Kit.

**Comes with engine.

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S-12 Airalle

dBase Page #:

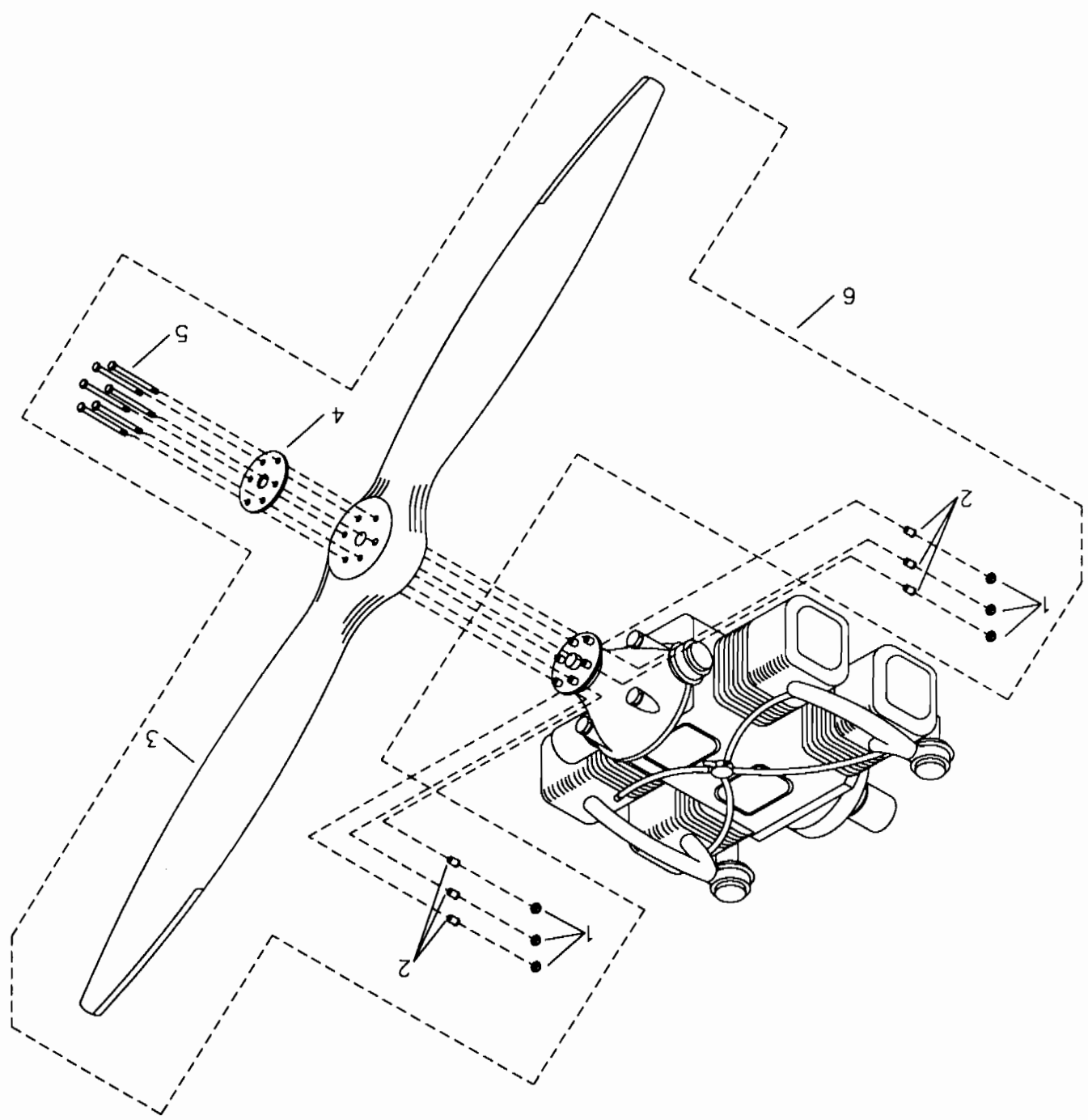
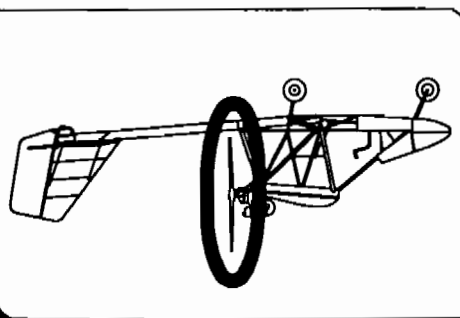
0010-4

SECTION:

912 ENGINE, INSTRUMENTATION, AND ELECTRICAL

DETAIL:

912 TENNESSEE WOOD
PROP INSTALLATION



MANUAL DRAWING #
MD2044

DATE
7/11/95

RPM S
S-12 AIRAILE

Made in the
USA

Section:

PROPELLERS

Detail:

912 TENNESSEE WOOD PROP INSTALLATION

Page:

08-06

Date:

8/ 3/95

#	Description	Part Number	Quantity
1.	5/16" Steel Insert Loc Nut*	AN365-524C	6
2.	Flange Bushing-912*	KPPW0038	6
3.	Tennessee Wood Propeller	KIPR0003-1	1
4.	Crush Plate**	EG-EG-912-5	1
5.	5/16" Bolt*	AN5-37A	6
6.	912 Tennessee Wood Propeller Installation Kit	KIPR0003	1

*Comes in 912 Tennessee Wood Propeller Installation Kit.

**Comes with engine.

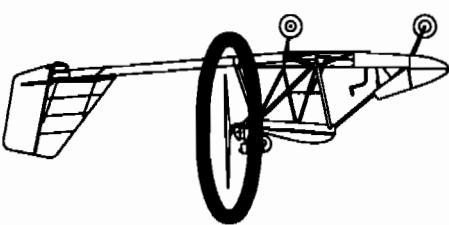
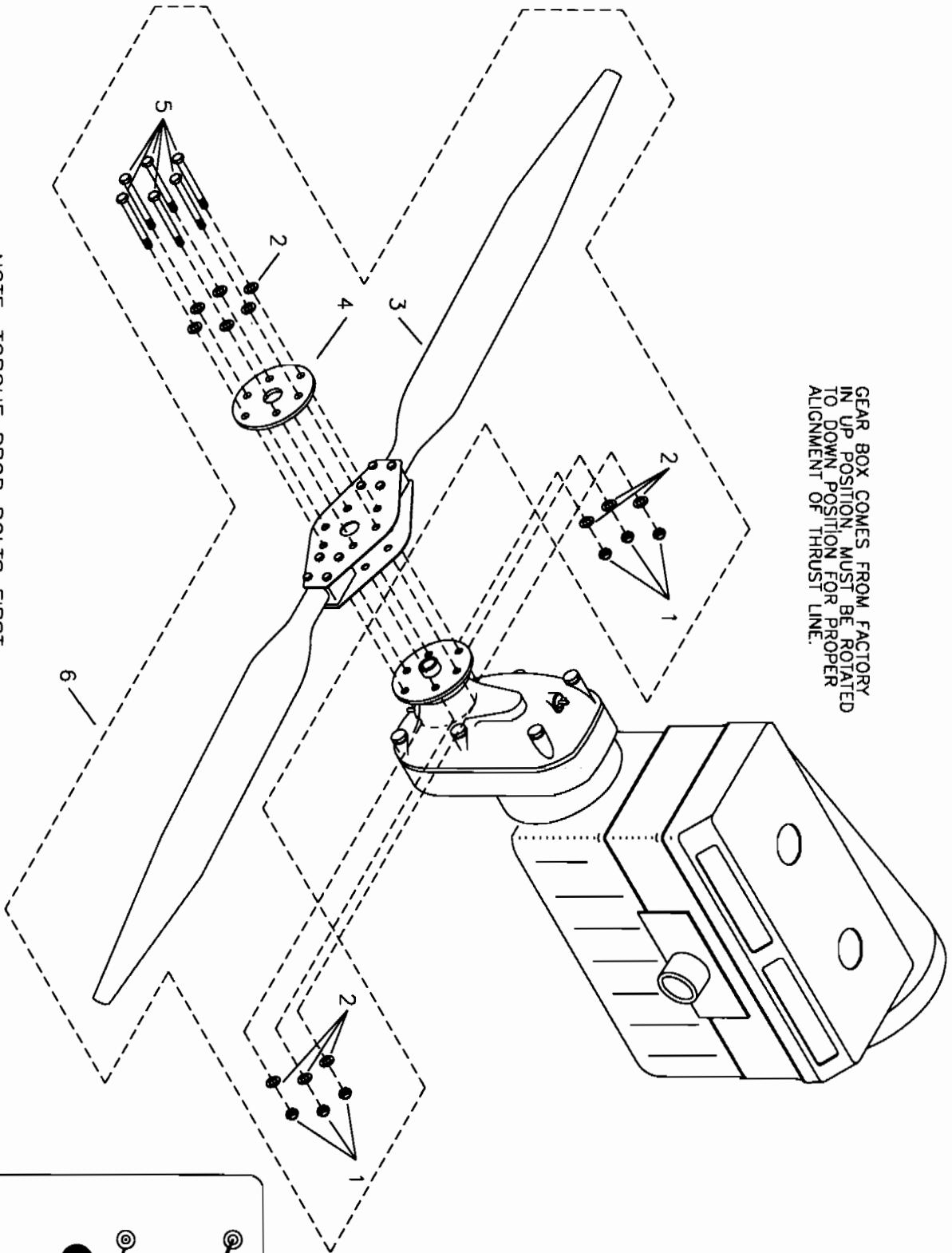
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S-12 Airaile

dBase Page #:

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GEAR BOX COMES FROM FACTORY IN UP POSITION. MUST BE ROTATED TO DOWN POSITION FOR PROPER ALIGNMENT OF THRUST LINE.

NOTE: TORQUE PROP BOLTS FIRST, THEN TIGHTEN LOCK NUTS.



Section:

PROPELLERS

Detail:

**503 WARP DRIVE PROP INSTALLATION
STANDARD HUB**

Page:

08-08

Date:

8/ 3/95

#	Description	Part Number	Quantity
1.	8MM Tensile Nut*	KIPR0004-2	6
2.	8MM Thick Washer*	KIPR0004-3	12
3.	Warp Drive Propeller, Standard Hub	KIPR0004-1	1
4.	Crush Plate**	EG-EG-503-11	1
5.	8MM X 90MM Bolt*	KIPR0004-4	6
6.	503 Warp Drive Propeller Installation Kit***	KIPR0004	1

*Comes in 503 Warp Drive Propeller Installation Kit,

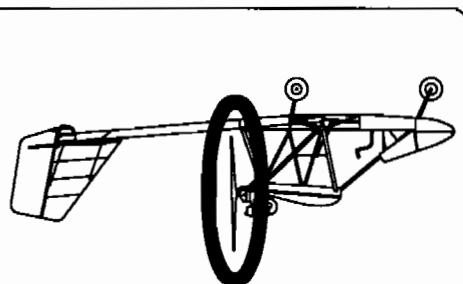
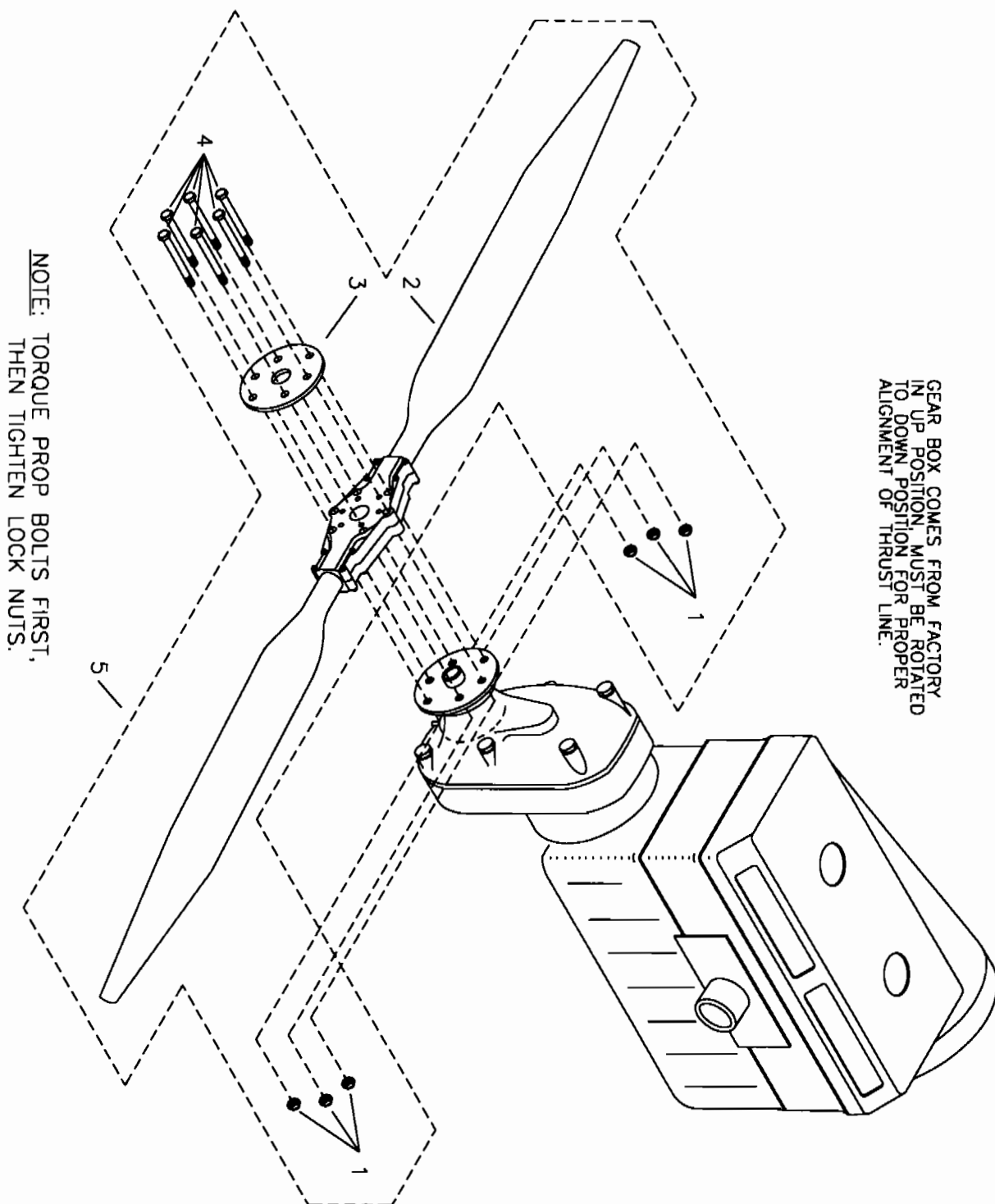
**Comes with engine.

***Comes with propeller.

**RANS, Inc.
S-12 Airaile**

dBase Page #:

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SECTION: 503 ENGINE, INSTRUMENTATION, AND ELECTRICAL

DETAIL: 503 WARP DRIVE PROP INSTALLATION HP-L HUB

Section:

PROPELLERS

Detail:

**503 WARP DRIVE PROP INSTALLATION
HP-L HUB**

Page:

08-10

Date:

8/ 3/95

#	Description	Part Number	Quantity
1.	8MM Tensile Nut*	KIPR0005-2	6
2.	Warp Drive Propeller, HP-L Hub	KIPR0005-1	1
3.	Crush Plate**	EG-EG-503-11	1
4.	8MM X 75MM Bolt*	KIPR0005-3	6
5.	503 Warp Drive Prop Installation Kit/HP-L Hub***	KIPR0005	1

*Comes in 503 Warp Drive Propeller Installation Kit.

**Comes with engine.

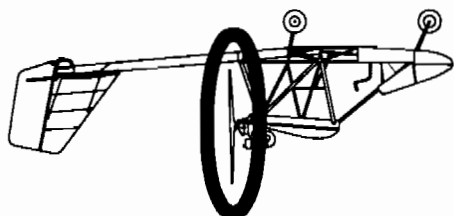
***Comes with propeller.

**RANS, Inc.
S-12 Airaile**

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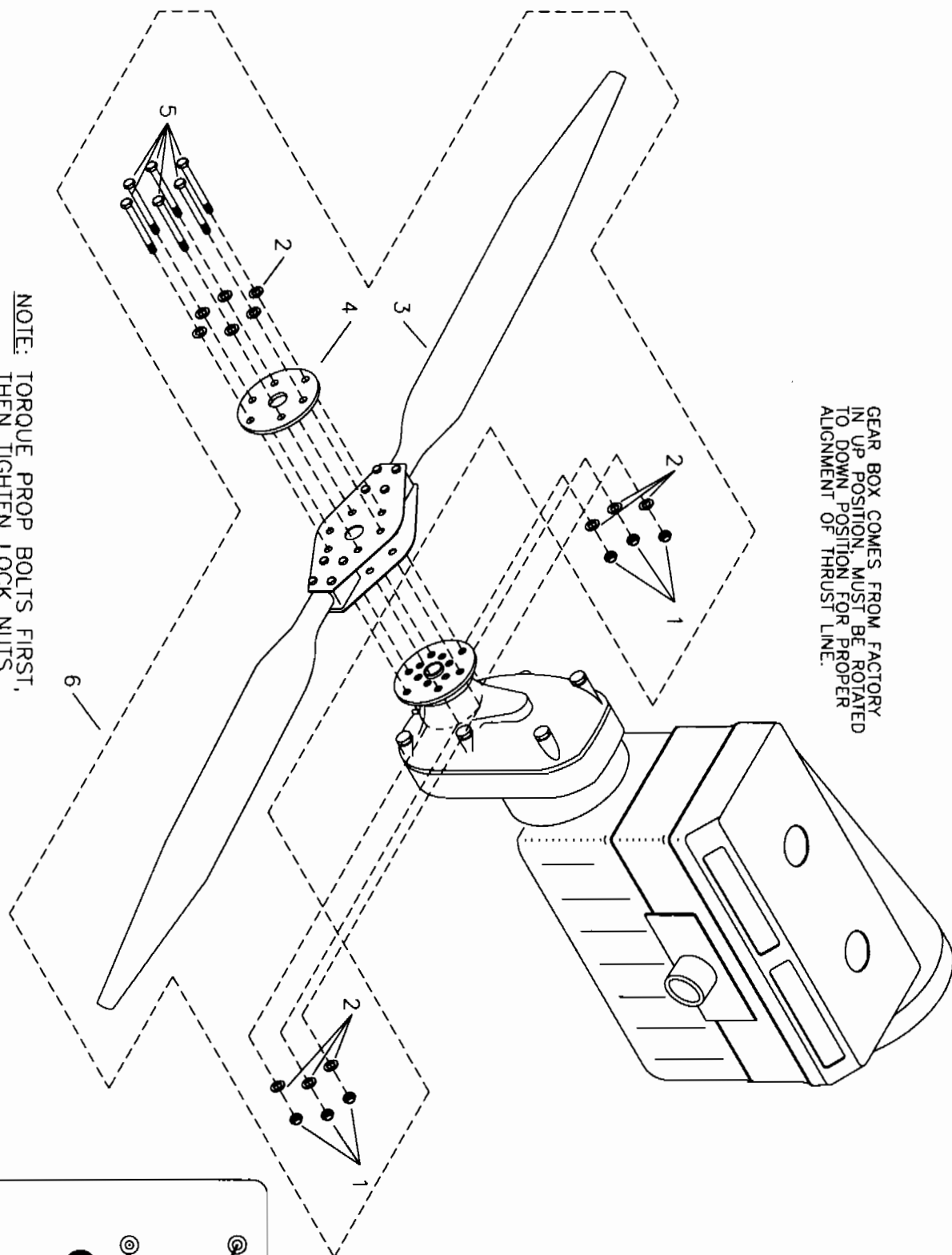
0010-10

SECTION: 582 ENGINE, INSTRUMENTATION, AND ELECTRICAL
 DETAIL: 582 WARP DRIVE PROP
 INSTALLATION STANDARD HUB



GEAR BOX COMES FROM FACTORY
 IN UP POSITION. MUST BE ROTATED
 TO DOWN POSITION FOR PROPER
 ALIGNMENT OF THRUST LINE.

NOTE: TORQUE PROP BOLTS FIRST,
 THEN TIGHTEN LOCK NUTS.



Section:

PROPELLERS

Detail:

**582 WARP DRIVE PROP INSTALLATION
STANDARD HUB**

Page:

08-12

Date:

4/10/96

#	Description	Part Number	Quantity
1.	8MM Tensile Nut*	KIPR0006-2	6
2.	8MM Thick Washer*	KIPR0006-3	12
3.	Warp Drive Propeller, Standard Hub	KIPR0006-1	1
4.	Crush Plate**	EG-EG-582-13	1
5.	8MM X 90MM Bolt*	KIPR0006-4	6
6.	582 Warp Drive Prop Installation Kit/Std Hub***	KIPR0006	1

*Comes in 582 Warp Drive Propeller Installation Kit.

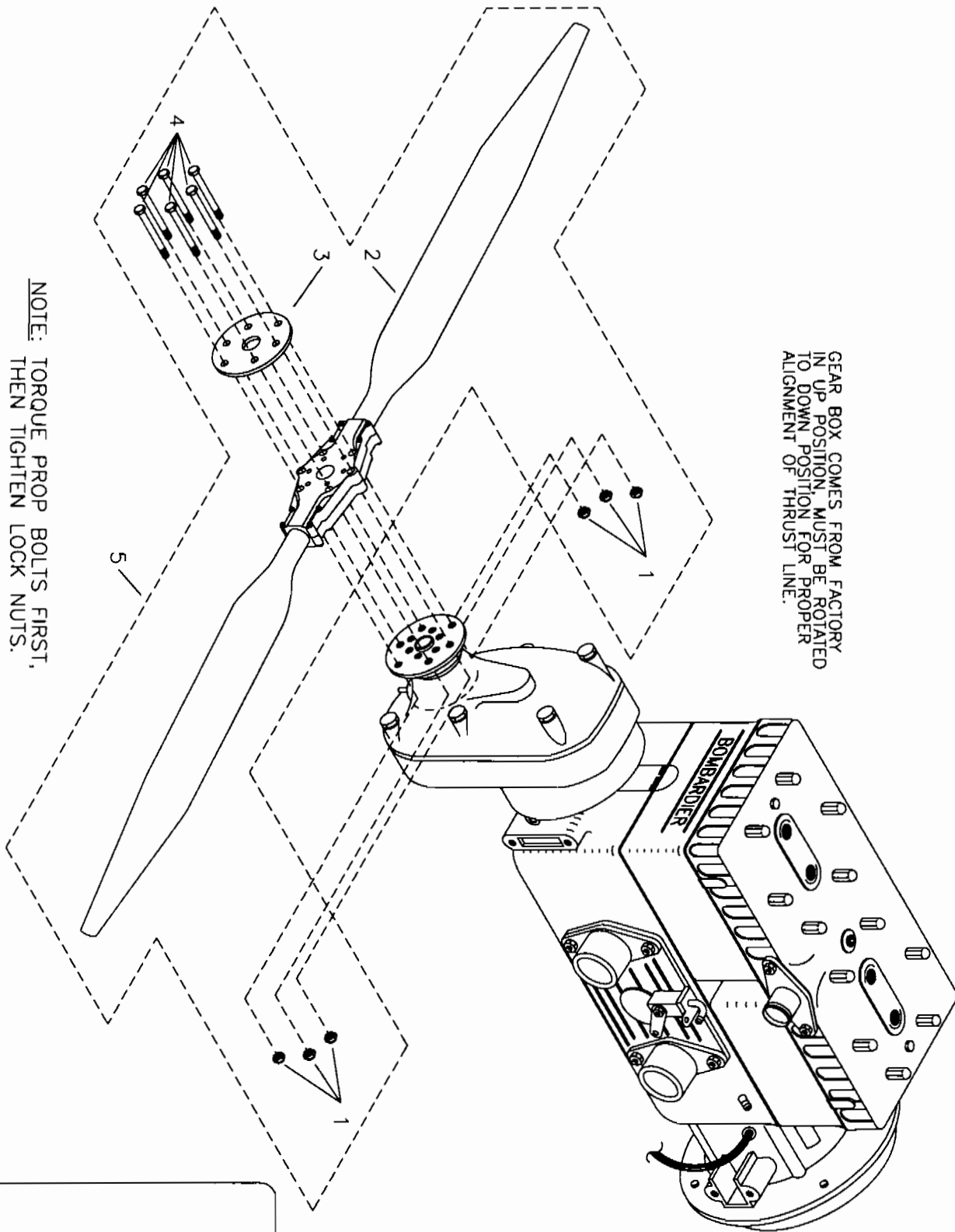
**Comes with engine.

***Comes with propeller.

**RANS, Inc.
S-12 Airaile**

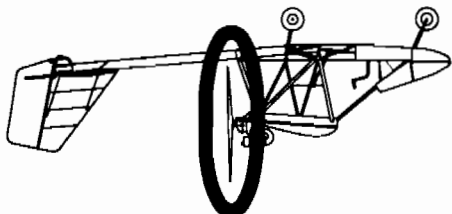
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GEAR BOX COMES FROM FACTORY
IN UP POSITION. MUST BE ROTATED
TO DOWN POSITION FOR PROPER
ALIGNMENT OF THRUST LINE.

NOTE: TORQUE PROP BOLTS FIRST,
THEN TIGHTEN LOCK NUTS.



SECTION:
582 ENGINE, INSTRUMENTATION, AND ELECTRICAL

DETAIL:

582 WARP DRIVE PROP
INSTALLATION HP-L HUB

Section:

PROPELLERS

Detail:

**582 WARP DRIVE PROP INSTALLATION
HP-L HUB**

Page:

08-14

Date:

8/ 3/95

#	Description	Part Number	Quantity
1.	8MM Tensile Nut*	KIPR0007-2	6
2.	Warp Drive Propeller, HP-L Hub	KIPR0007-1	1
3.	Crush Plate**	EG-EG-582-13	1
4.	8MM X 75MM Bolt*	KIPR0007-3	6
5.	582 Warp Drive Prop Installation Kit/HP-L Hub***	KIPR0007	1

*Comes in 582 Warp Drive Propeller Installation Kit.

**Comes with engine.

***Comes with propeller.

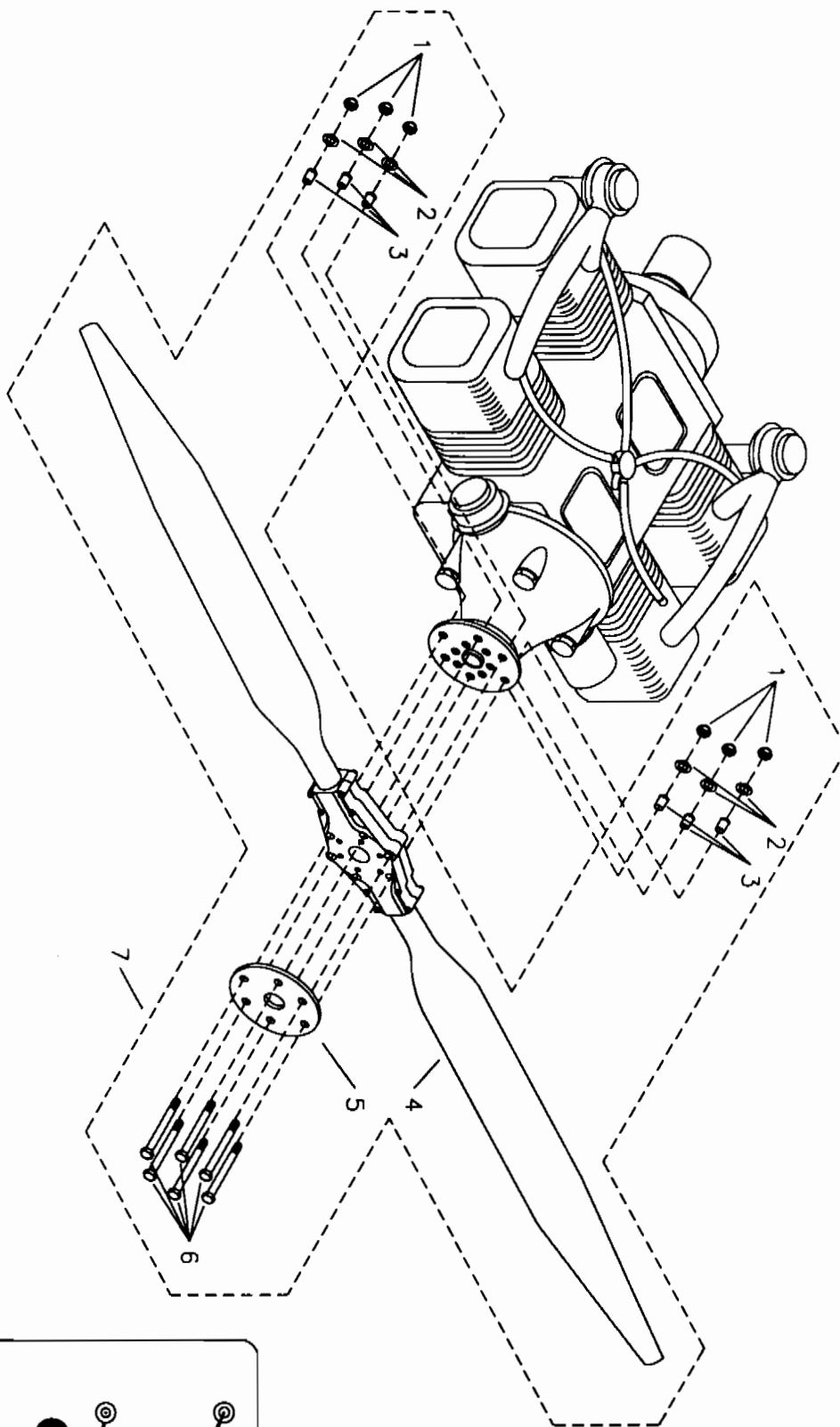
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S-12 Airaile**

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RRMS S-12 AIRALE

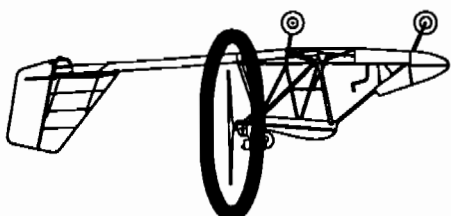
Made in the USA



NOTES:

PAGE 08-15

SECTION: 912 ENGINE, INSTRUMENTATION, AND ELECTRICAL
DETAIL: 912 WARP DRIVE PROP INSTALLATION



Section:**PROPELLERS****Detail:****912 WARP DRIVE PROP INSTALLATION
WITHOUT FULL ENCLOSURE****Page:**

08-16

Date:

7/23/97

#	Description	Part Number	Quantity
1.	5/16" Steel Insert Loc-Nut *	AN365-524C	6
2.	5/16" Thick Washer *	AN960-516	6
3.	Flange Bushing-912 *	KPPW0038	6
4.	Warp Drive Propeller	KIPR0008-1	1
5.	Crush Plate **	EG-EG-912-5	0
6.	5/16" Bolt *	AN5-32A	6
7.	912 Warp Drive Prop Installation Kit/HP-L Hub	KIPR0008	1

*Comes in 912 Warp Drive Propeller Installation Kit.

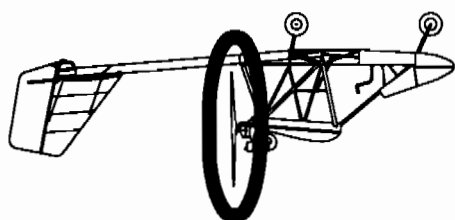
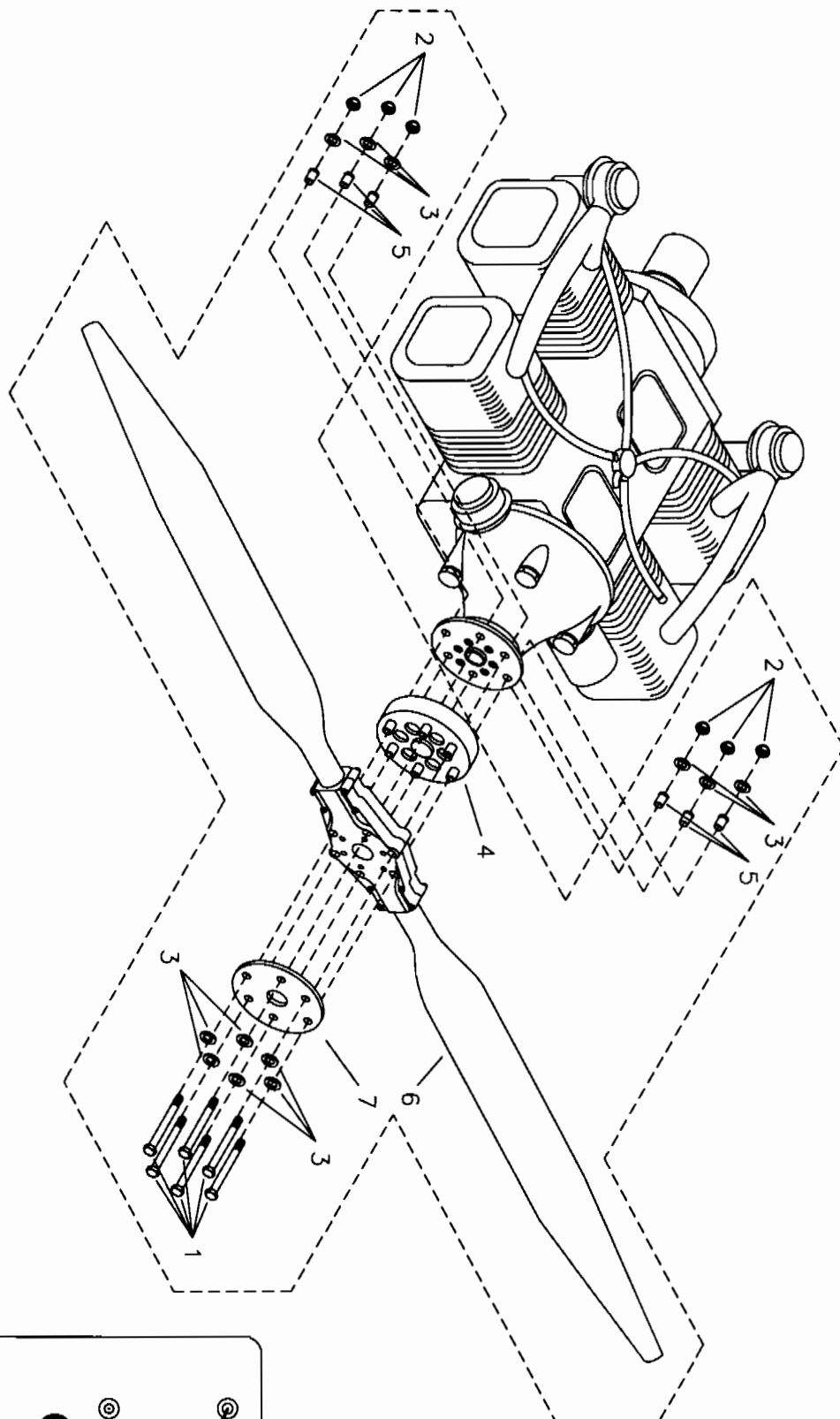
**Comes with engine.

**RANS, Inc.
S-12 Airaile****dBase Page #:**

0010-16

RRMS S-12 AIRAILE

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SECTION: 912 ENGINE, INSTRUMENTATION, AND ELECTRICAL
 DETAIL: 912 WARP DRIVE PROP INSTALLATION WITH FULL ENCLOSURE

Section:**PROPELLERS****Detail:****912 WARP DRIVE PROP INSTALLATION
WITH FULL ENCLOSURE****Page:**

08-18

Date:

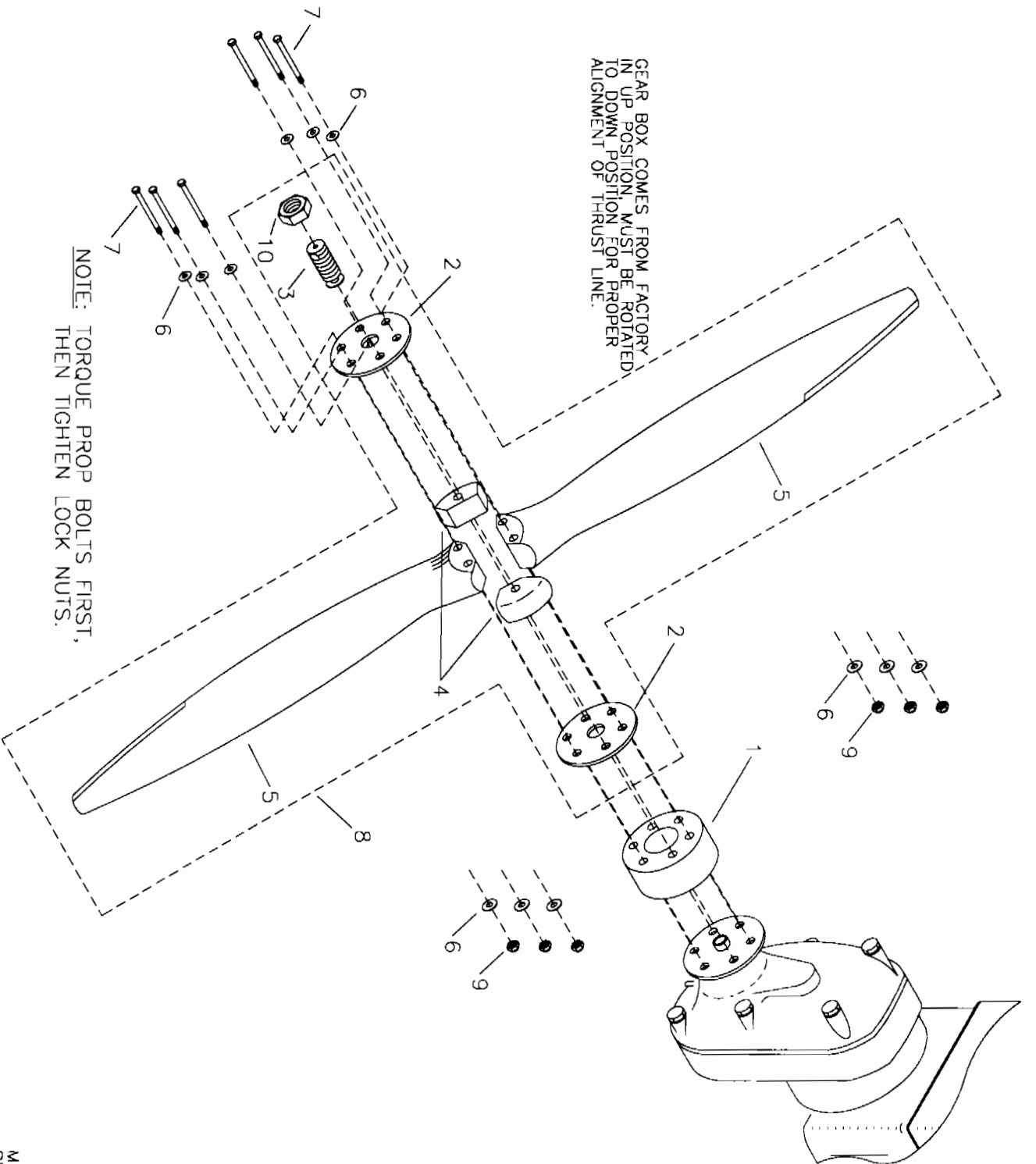
8/ 4/97

#	Description	Part Number	Quantity
1.	5/16" Bolt	AN5-41A	6
2.	5/16" Steel Insert Loc Nut	AN365-524C	6
3.	5/16" Thin Washer	AN960-516L	12
4.	1" Prop Extension Assembly-912	KAPW0012	1
5.	Flange Bushing-912	KPPW0038	6
6.	Warp Drive Propeller	WARP	1
7.	Crush Plate *	----	0

*Supplied with Engine.

**RANS, Inc.
S-12 Airaile****dBase Page #:**

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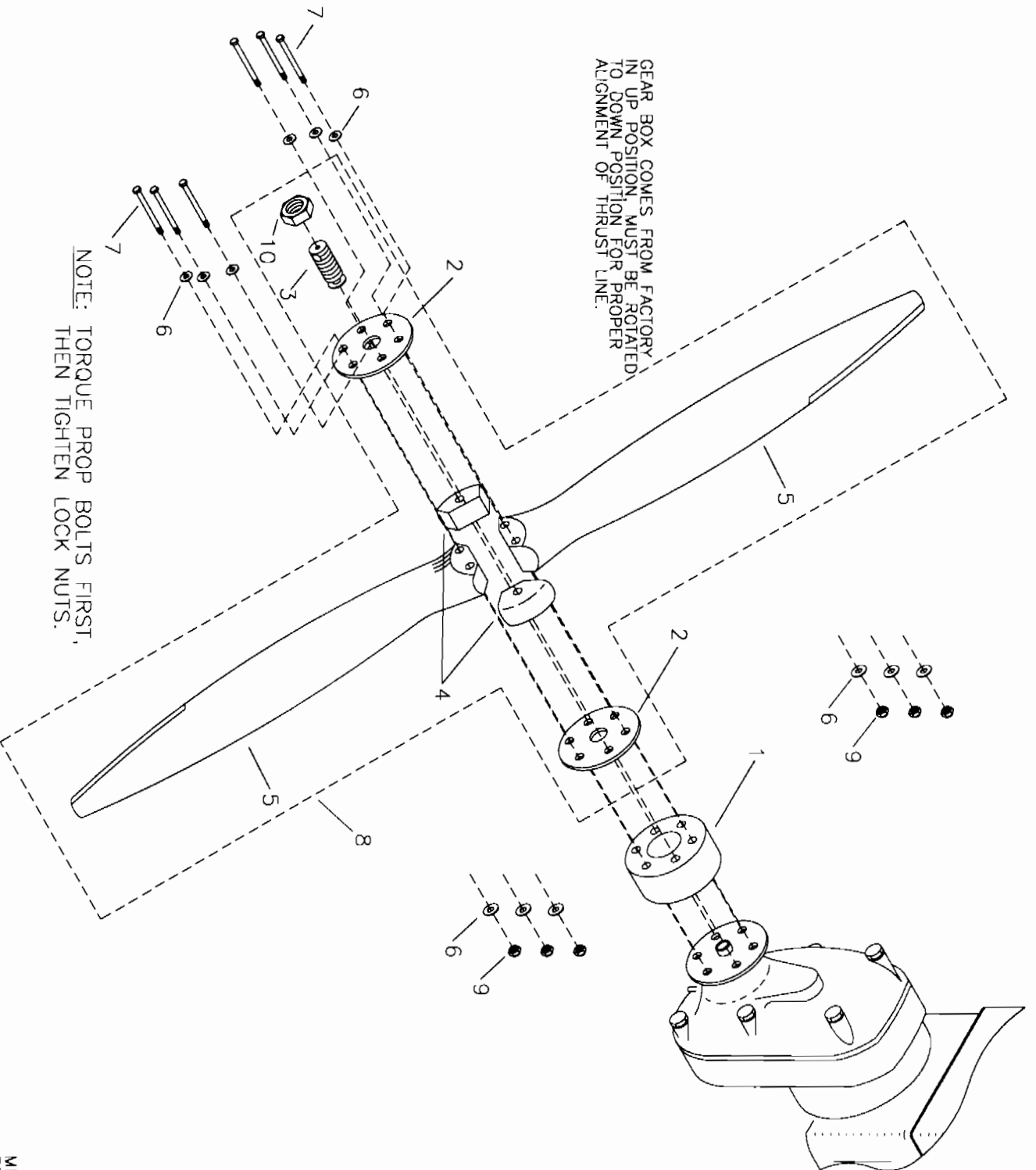
RRM S-12 AIRRAIL **503 IVO PROP INSTALLATION**

MD2062
 REV. A

S-12XL AIRAILE - 503 IVO PROP INSTALLATION

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	2" IVO Prop Spacer	2-IVO-SP	1
2.	Cam Crush Plate *	----	0
3.	Prop Pitch Adjustment Screw *	----	0
4.	Prop Blade Fillet *	----	0
5.	IVO Prop Blade *	----	0
6.	1/4" Thick Washer	AN960-416	12
7.	8MM x 120MM Bolt	M8X120 BOLT	6
8.	IVO Prop Assembly	KIPR0009	1
9.	8MM Nut	8MMX1.25 NUT	6
10.	Loc Nut *	----	0

*Supplied with propeller.



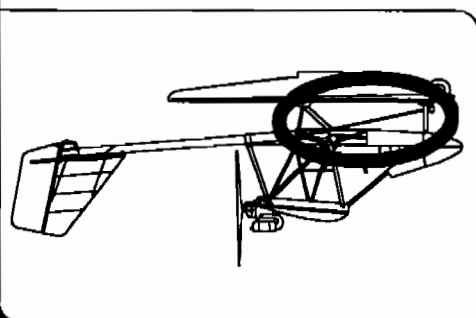
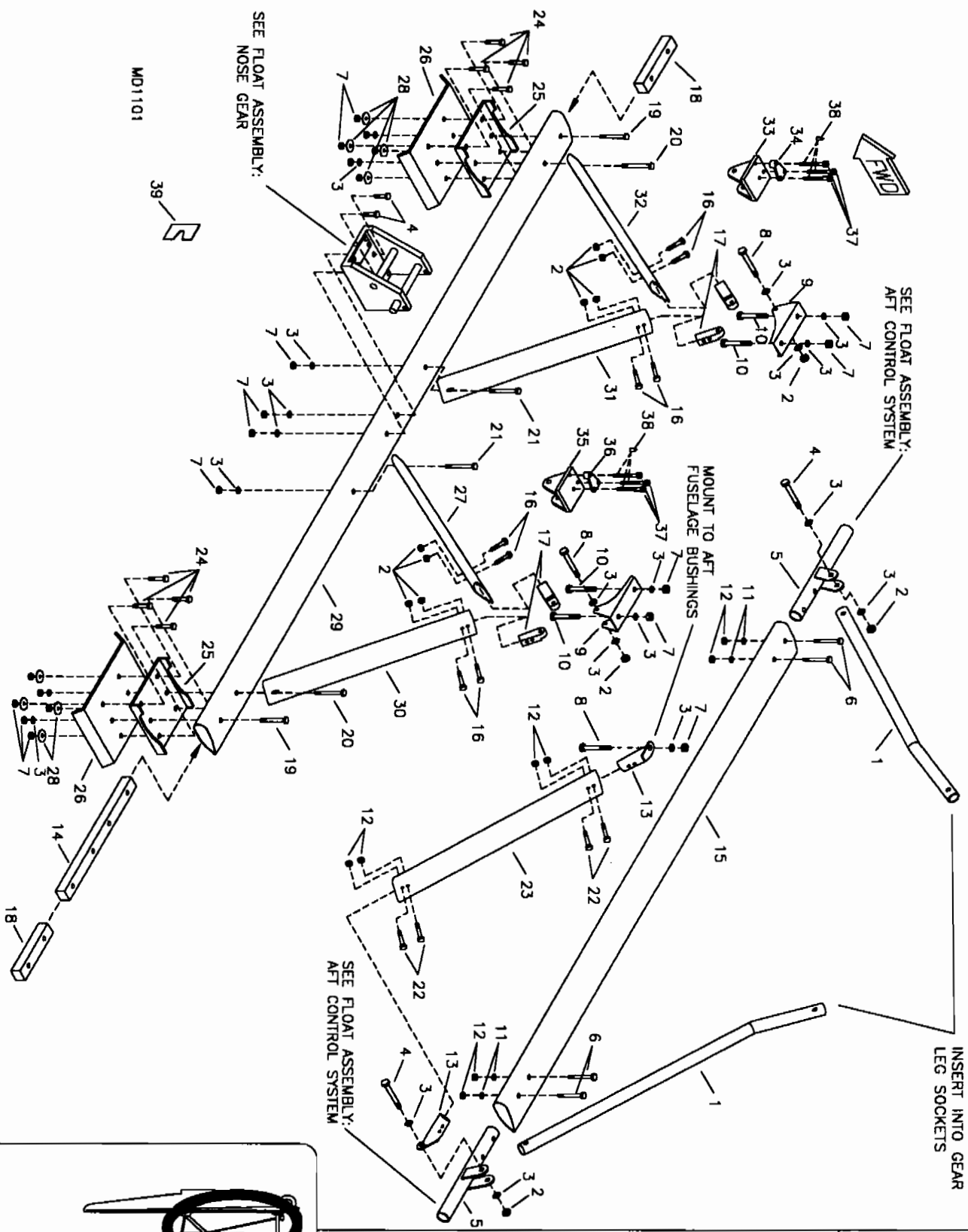
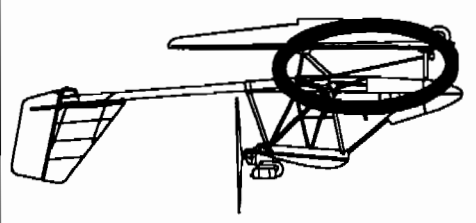
RRP S-12 AIRRAIL 582 IVO PROP INSTALLATION

MD2063
REV. A

S-12XL AIRAILE - 582 IVO PROP INSTALLATION

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	2" IVO Prop Spacer	2-IVO-SP	1
2.	Cam Crush Plate *	-----	0
3.	Prop Pitch Adjustment Screw *	-----	0
4.	Prop Blade Fillet *	-----	0
5.	IVO Prop Blade *	-----	0
6.	1/4" Thick Washer	AN960-416	12
7.	8MM x 120MM Bolt	M8X120 BOLT	6
8.	IVO Prop Assembly	KIPR0010	1
9.	8MM Nut	8MMX1.25 NUT	6
10.	Loc Nut *	-----	0

*Supplied with propeller.



Section:**OPTIONS****Detail:****PUDDLE JUMPER FLOATS
FLOAT MOUNT ASSEMBLY****Page:**

09-02

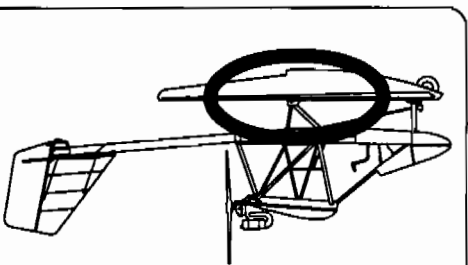
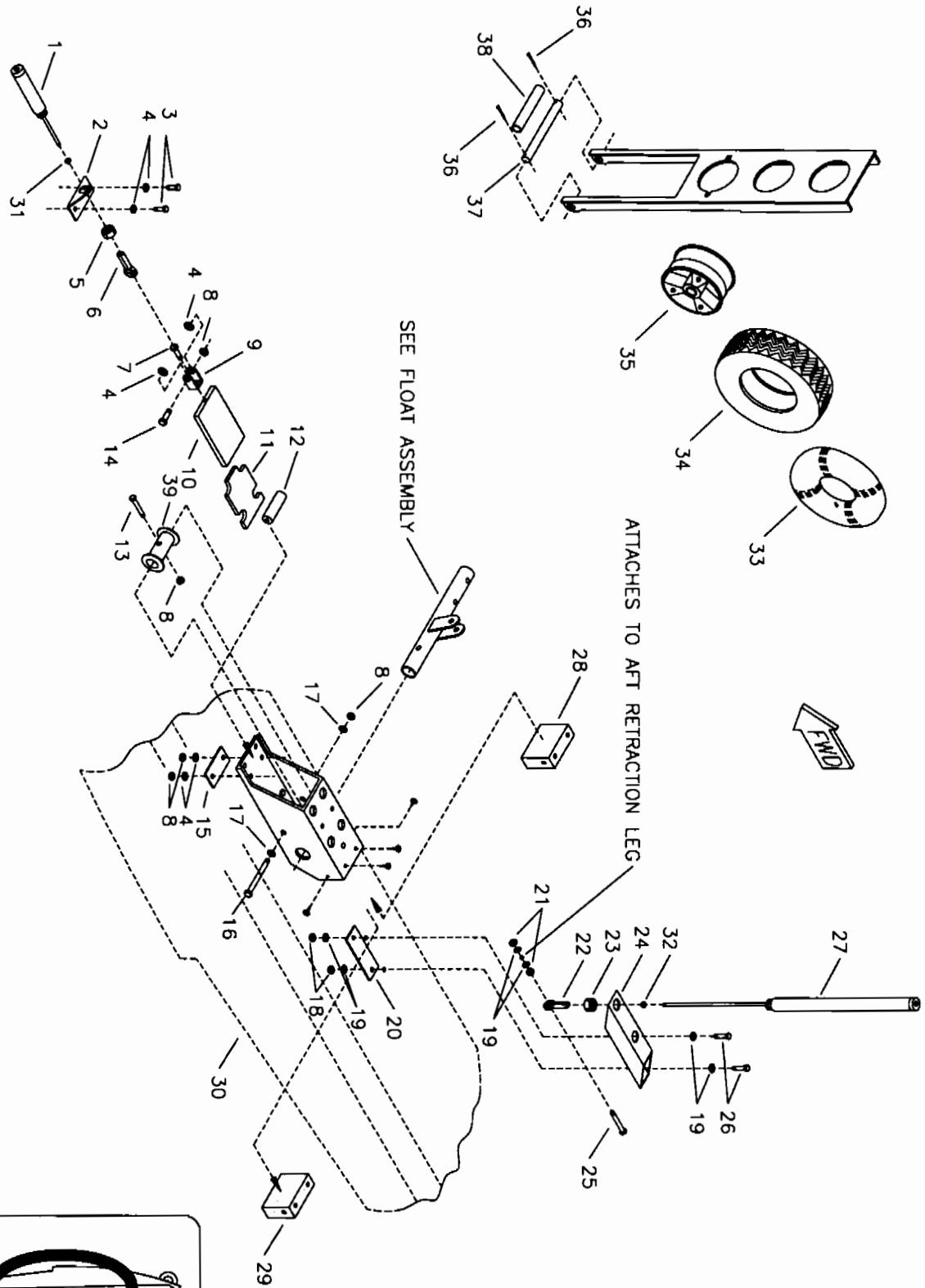
Date:

11/18/97

#	Description	Part Number	Quantity
1	Float - Main Gear Leg	KPMG0073	2
2	1/4" Shear Nut	AN364-428A	12
3	1/4" Thick Washer	AN960-416	22
4	1/4" Bolt	AN4-20A	4
5	Float - Main Gear Socket	KPMG0074	2
6	3/16" Bolt	AN3-15A	4
7	1/4" Tensile Nut	AN365-428A	24
8	1/4" Bolt	AN4-12A	4
9	FWD Attach Channel	KPMG0098	2
	Used Post Serial #08970808, including #08970808		
10	1/4" Bolt	AN4-11A	4
11	3/16" Thick Washer	AN960-10	4
12	3/16" Shear Nut	AN364-1032A	12
13	Float - Mounting Bracket	KPMG0075	4
14	PVC Insert - Inner	KPMG0044	1
15	Float - Cross Brace	KPMG0077	1
16	1/4" Bolt	AN4-13A	8
17	Float - Strut Attach Block	KPMG0004	4
18	PVC Insert - Outer	KPMG0045	2
19	1/4" Bolt	AN4-24A	2
20	1/4" Bolt	AN4-33A	2
21	1/4" Bolt	AN4-32A	2
22	3/16" Bolt	AN3-13A	8
23	Float - Fuselage Support	KPMG0076	2
24	1/4" Bolt	AN4-12A	8
25	Forward Cross Brace Saddle	KPNG0032	2
26	Float Doubler Plate	KPNG0033	2
27	Forward Fuselage Support - Inner LH	KPNG0029-L	1
28	1/8" Aluminum Washer	EG-AW	8
29	Forward Cross Brace	KPNG0031	1
30	Forward Fuselage Support - Outer LH	KPNG0030-L	1
31	Forward Fuselage Support - Inner RH	KPNG0029-R	1
32	Forward Fuselage Support - Outer RH	KPNG0030-R	1
33	Float Attach Bracket - RH	KPMG0095	1
	Used Pre Serial #08970807, including #08970807		
34	Float Attach Bracket Top - RH	KPMG0097	1
	Used Pre Serial #08970807, including #08970807		
35	Float Attach Bracket - LH	KPMG0094	1
	Used Pre Serial #08970807, including #08970807		
36	Float Attach Bracket Top - LH	KPMG0096	1
	Used Pre Serial #08970807, including #08970807		
37	1/4" Bolt	KSHW0050	6
	Used Pre Serial #08970807, including #08970807		
38	Loctite Blue	LOC-TITE	0
39	Large Lift Strut Chord Template	KPLS0003	1

MD1784

NOTE: LEFT SIDE SHOWN
NOTE: REPLACE (#29) WOOD BLOCK WITH (#28) POLYETHYLENE BLOCK, INSTALL WITH EXISTING SCREWS.



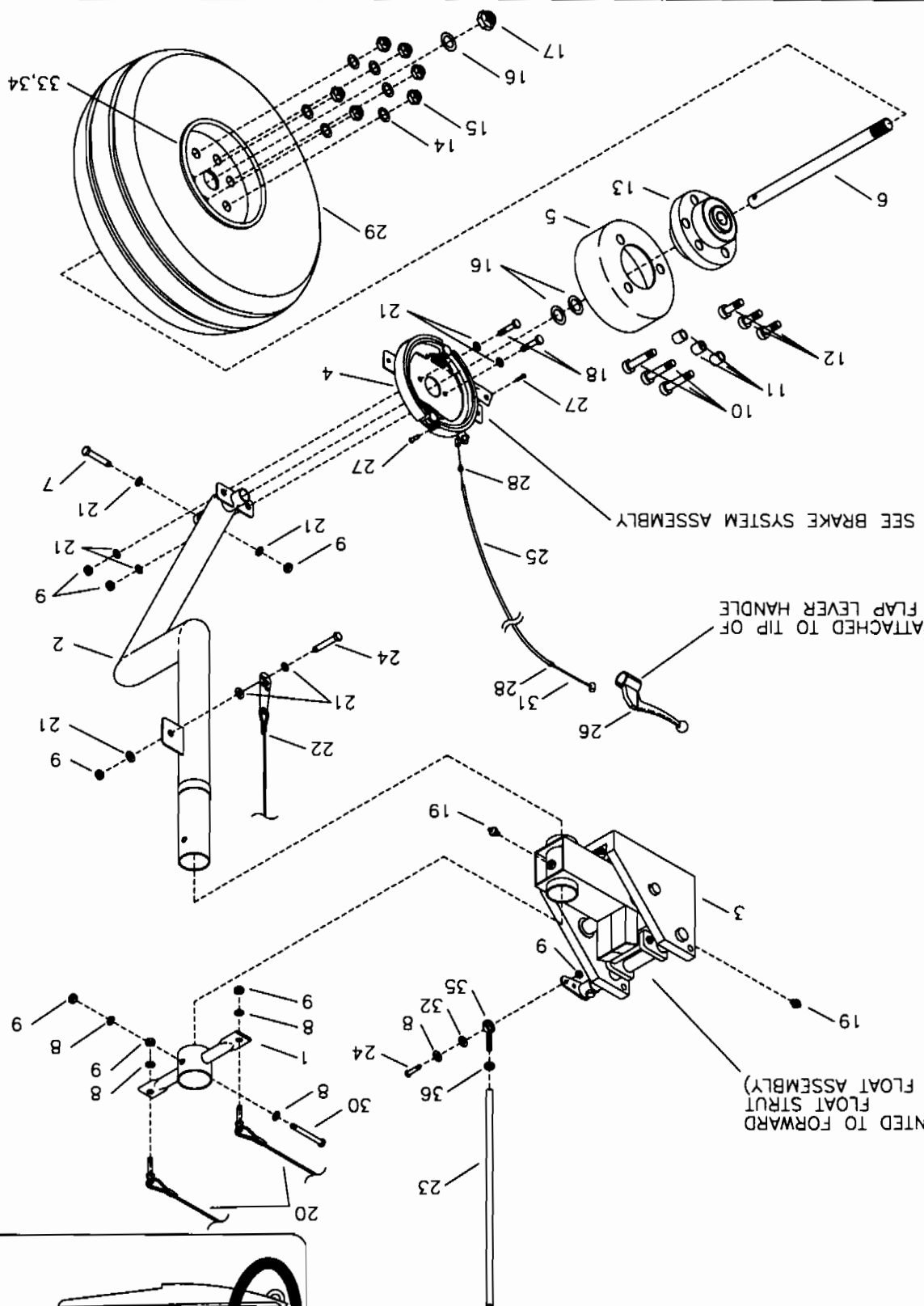
S-12XL AIRAILE - OPTIONAL PUDDLE JUMPER FLOATS**MAIN GEAR RETRACTION SYSTEM**

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Air Cylinder	KSHW0029	2
2.	Cylinder Mount Angle	KPMG0040	2
3.	3/16" Bolt	AN3-12A	4
4.	3/16" Thick Washer	AN960-10	12
5.	7/16" Stainless Steel Nut *	KSHW0028	2
6.	Female Rod End	NF-3	2
7.	3/16" Bolt	AN3-3A	2
8.	3/16" Shear Nut	AN364-1032A	10
9.	Shackle	RL-205-T	2
10.	Main Gear Lock Plate **	KAMG0004-1	2
11.	Lower Guide	KPMG0032	2
12.	Upper Guide	KPMG0036	2
13.	3/16" Bolt	AN3-13A	2
14.	3/16" Bolt	AN3-7A	2
15.	Cylinder Mount Backing Plate	KPMG0038	2
16.	3/16" Bolt	AN3-32A	2
17.	3/16" Thin Washer	AN960-10L	4
18.	1/4" Tensile Nut	AN365-428A	4
19.	1/4" Thick Washer	AN960-416	12
20.	Cylinder Mount Backing Plate	KPMG0035	2
21.	1/4" Tensile Nut - Stainless	KSHW0001	4
22.	Female Rod End - Stainless Steel	KSHW0035	2
23.	5/8" Stainless Steel Nut	KSHW0027	2
24.	Main Cylinder Mount	KPMG0034	2
25.	1/4" Bolt - Stainless	KSHW0002	2
26.	1/4" Bolt	AN4-10A	4
27.	Air Cylinder	KSHW0030	2
28.	Main Gear Guide Block	KPMG0033	2
29.	Wood Block **	KAMG0004-2	2
30.	Puddle Jumper Float Container	KAMG0004	1
31.	3/16" Stainless Steel Nut	KSHW0033	2
32.	1/4" Stainless Steel Nut	KSHW0034	2
33.	5" Tire Tube	KSMG0010	2
34.	5" Tire	KSMG0011	2
35.	Wheel Assembly	KAMG0005	2
36.	Cotter Pin **	KAMG0004-3	4
37.	Axle **	KAMG0004-4	2
38.	Spacer Bushing **	KAMG0004-5	2
39.	Float - Socket Clamp	KPMG0029	2

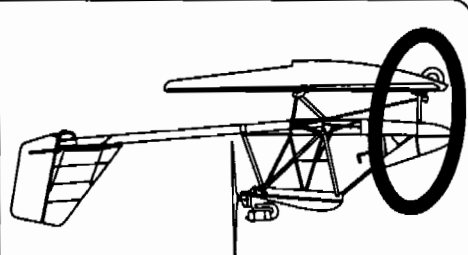
*Replaces steel nut that comes with cylinder.

**Supplied with Float Assembly.

MD1783



FWD



NOSE GEAR

OPTIONS

DETAIL

SECTION:

NOTES:

09-05

PAGE

S-12XL AIRAILE - OPTIONAL PUDDLE JUMPER FLOATS**NOSE GEAR**

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Steer Horn	KPNG0025	1
2.	Nose Gear Strut	KPNG0022	1
3.	Nose Gear - Retract Assembly	KANG0001	1
4.	4 1/2" Brake - RH	2269	1
5.	4 1/2" Brake Drum	2211	1
6.	Axle	LG-AXLE	1
7.	3/16" Bolt	AN3-12A	1
8.	3/16" Thin Washer	AN960-10L	5
9.	3/16" Shear Nut	AN364-1032A	7
10.	Socket Head Cap Screw, 1 3/4" *	LG-MW-HUB-1	3
11.	Spacer Bushing	SB-1/2X5/16	3
12.	Socket Head Cap Screw, 1" *	LG-MW-HUB-2	3
13.	Wheel Hub *	LG-MW-HUB-3	1
14.	Washer *	LG-MW-HUB-6	6
15.	Nut *	LG-MW-HUB-7	6
16.	5/8" Shim	5/8 SHIM	3
17.	5/8" Loc Nut	5/8 LOC NUT	1
18.	3/16" Bolt	AN3-5A	2
19.	Grease Fitting	11-101	2
20.	Float - Steering Cable **	KANG0008	0
21.	3/16" Thick Washer	AN960-10	9
22.	Nose Wheel Retracting Cable **	KANG0009	0
23.	Nose Wheel Lock Rod **	KANG0010	0
24.	3/16" Bolt	AN3-6A	1
25.	Large Cable Housing	B-CH	9 ft
26.	Brake Lever	KSBS0009	1
27.	Wire Swivel/Screw Stop	2361	1
28.	Cable Conduit Ferrule End Cap	80-0002-01	2
29.	6" Tire	LG-T	1
30.	3/16" Bolt	AN3-20A	1
31.	Wire	TR-PW	9 ft
32.	3/16" Plastic Washer	PW-3	1
33.	6" Hegar Main Gear Rim Kit	LG-MW-RIM-6	1
34.	6" Hegar Main Gear Hub Kit	LG-MW-HUB	1
35.	3/16" Rod End	MM-3	1
36.	3/16" Stainless Steel Nut	KSHW0033	1

*Supplied in Hub Kit.

**Referenced from Steer Control System.

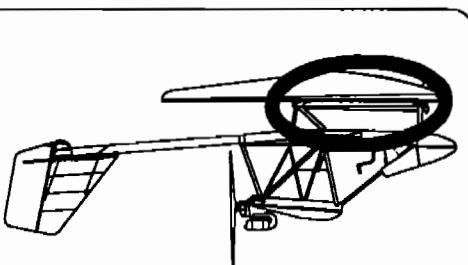
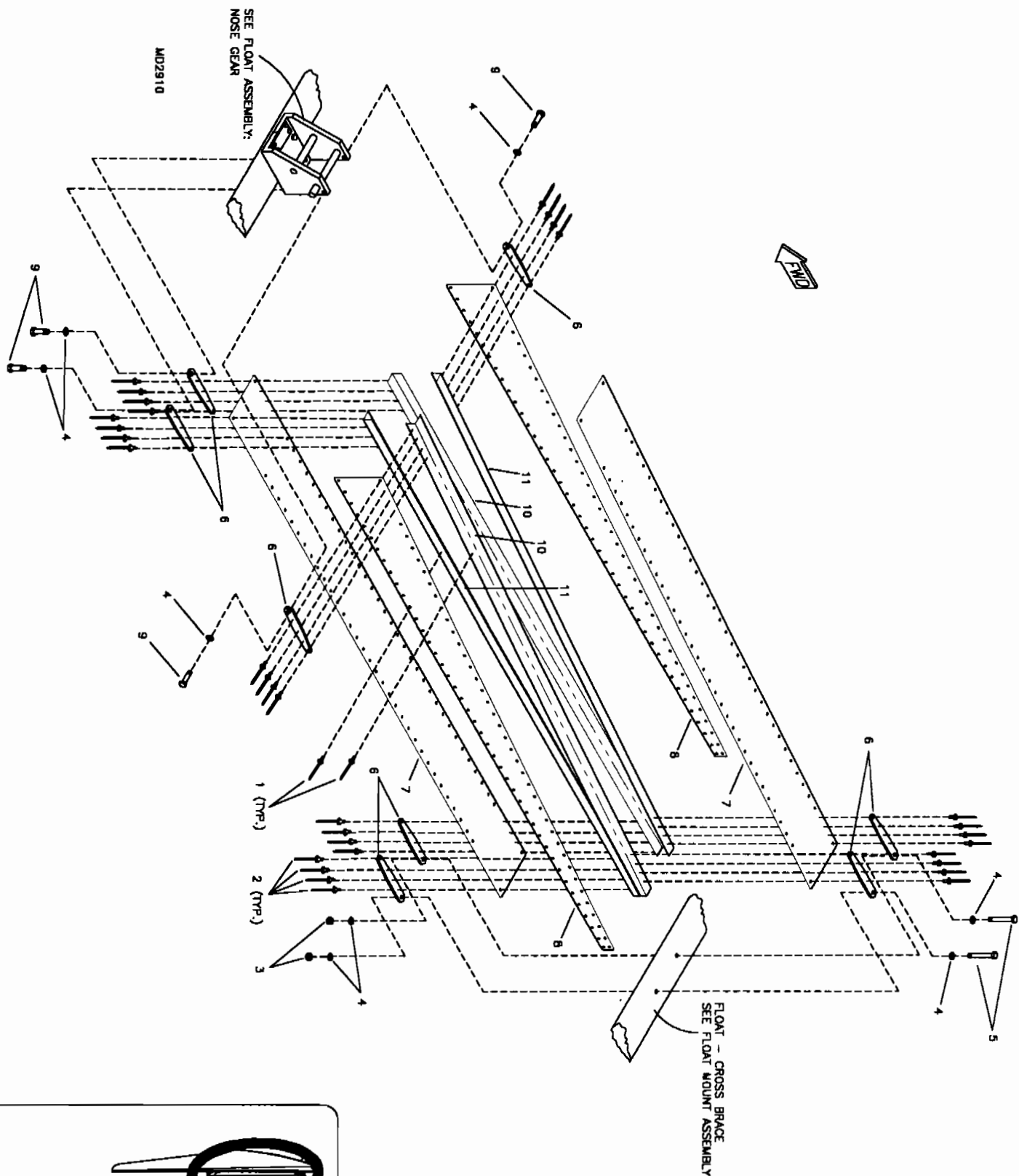
DATE

11/21/97

MANUAL DRAWING #
MD2910

RRMS
S-12 AIRAILE

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USA



DETAIL: FLOAT BOX ASSEMBLY

OPTIONS

SECTION:

NOTES:

PAGE 09-07

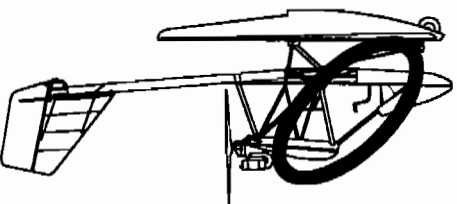
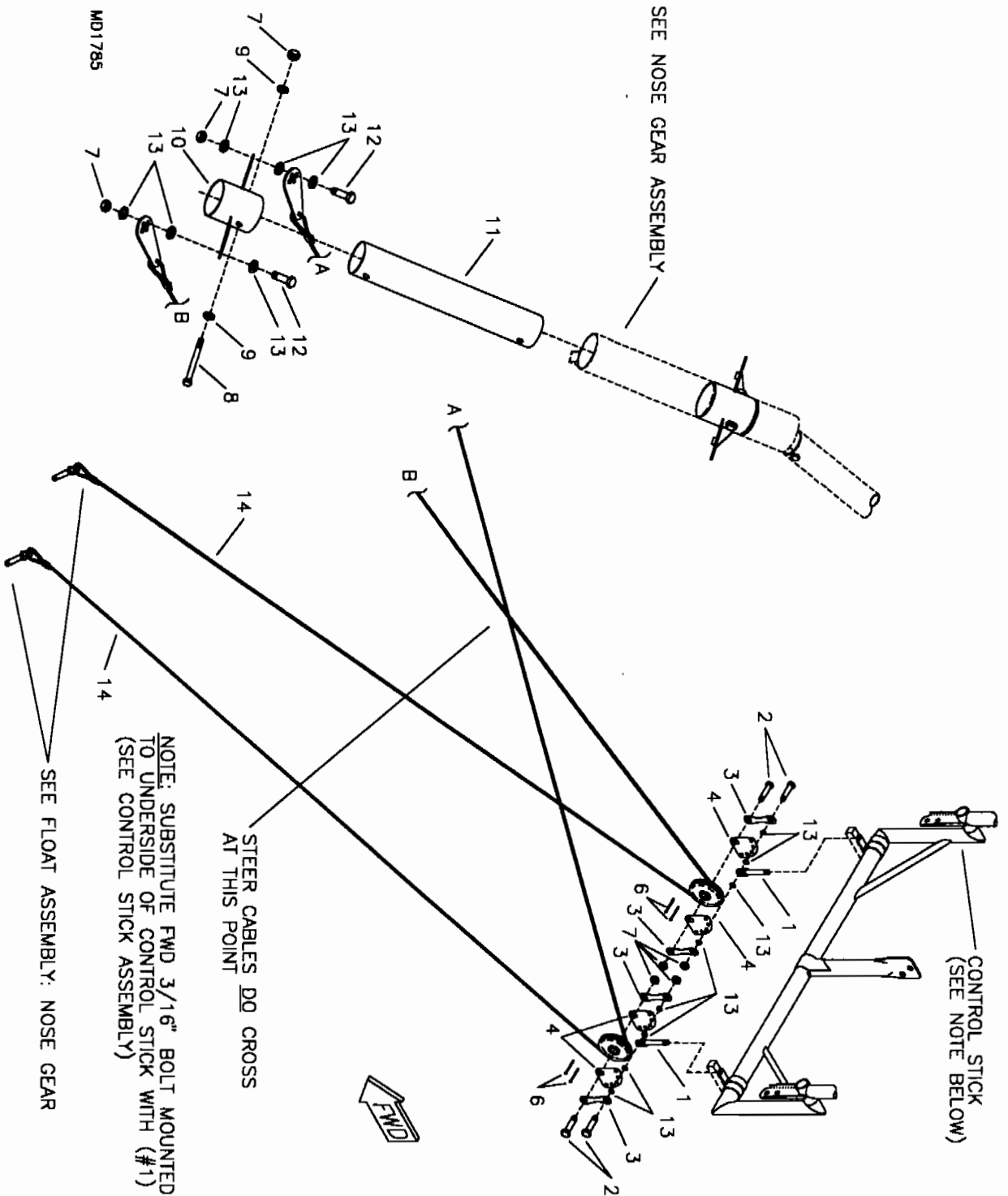
PAGE

Section:**OPTIONS****Detail:****PUDDLE JUMPER FLOATS
FLOAT BOX ASSEMBLY****Page:**
09-08**Date:**
11/24/97

#	Description	Part Number	Quantity
1.	1/8" Aluminum Pop Rivet - Avex	1691-0410	284
2.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-44	32
3.	1/4" Tensile Nut	AN365-428A	2
4.	1/4" Thin Washer	AN960-416L	8
5.	1/4" Bolt	AN4-17A	2
6.	Float Box Attach Lug	KPMG0089	8
7.	Float Box Horizontal Panel	KPMG0087	2
8.	Float Box Vertical Panel	KPMG0086	2
9.	1/4" Bolt	AN4-4A	4
10.	Float Box Panel Angle - RH	KPMG0088-R	2
11.	Float Box Panel Angle - LH	KPMG0088-L	2

RRMS
S-12 AIRAILE

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FLOAT ASSEMBLY:
STEER CONTROL SYSTEM

OPTIONS

DETAIL:

SECTION:

NOTES

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PAGE

Section:**OPTIONS****Detail:****PUDDLE JUMPER FLOATS
STEER CONTROL SYSTEM****Page:**

09-10

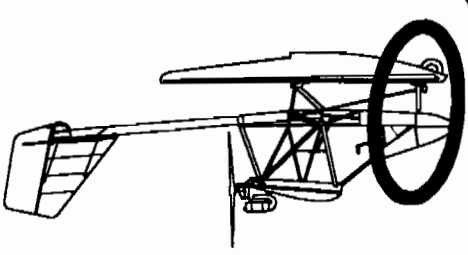
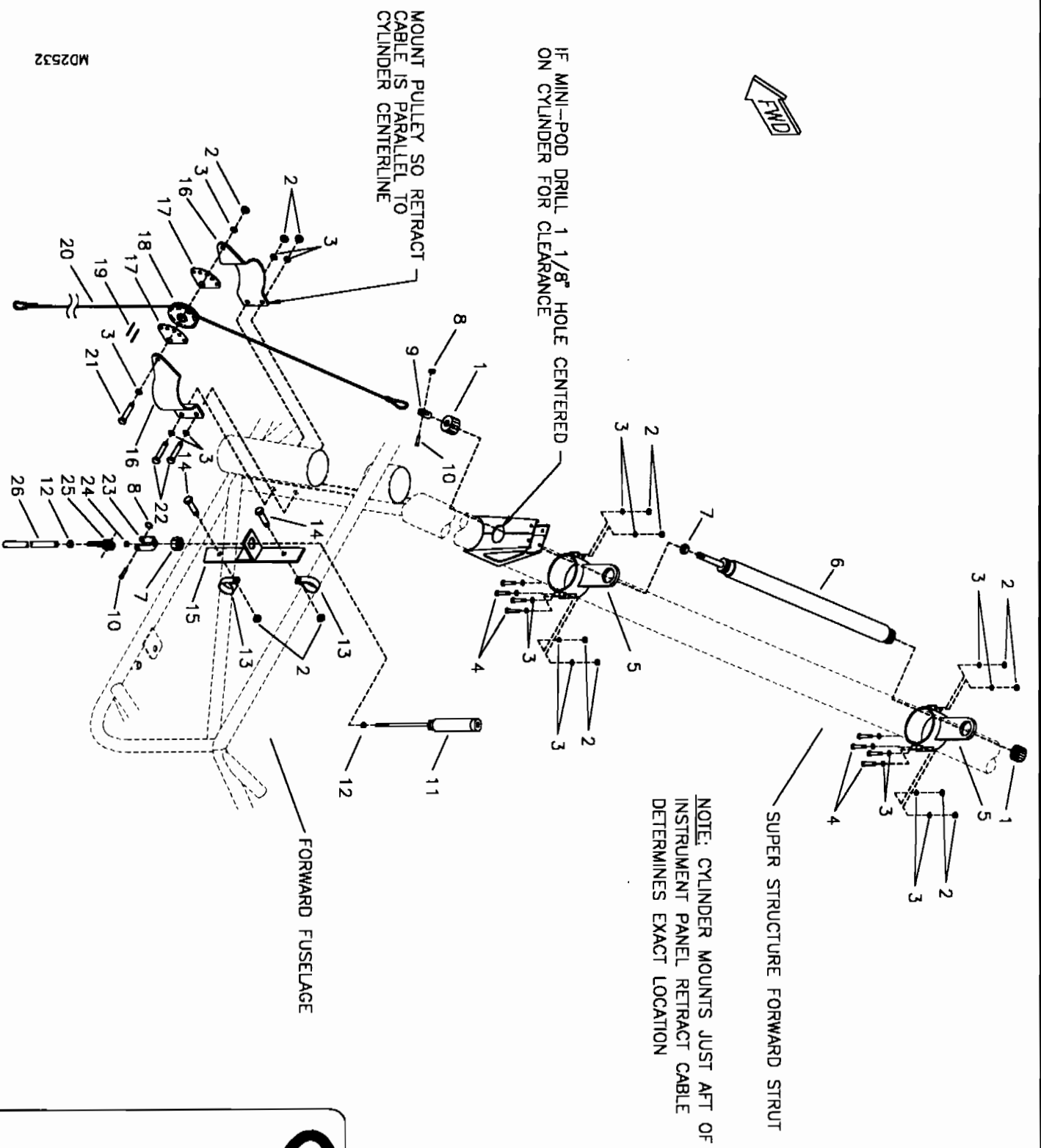
Date:

11/24/97

#	Description	Part Number	Quantity
1 .	3/16" Eyebolt	AN42B-10A	2
2 .	3/16" Bolt	AN3-6A	4
3 .	Hummertang	T12-HT6	4
4 .	Small Pulley Cable Keeper	SP-CK	4
5 .	Small Pulley	AN210-1A	2
6 .	Small Cotter Pin	MS24665-134	4
7 .	3/16" Shear Nut	AN364-1032A	7
8 .	3/16" Bolt	AN3-20A	1
9 .	3/16" Thin Washer	AN960-10L	2
10 .	Steer Horn	KPNG0051	1
11 .	Float - Nose Gear Insert	KPNG0034	1
12 .	3/16" Bolt	AN3-5A	2
13 .	3/16" Thick Washer	AN960-10	14
14 .	Float - Steering Cable	KANG0008	2

RPM S-12 AIRAILE

Made in the USA



SECTION: OPTIONS
DETAIL: FLOAT ASSEMBLY: NOSE GEAR RETRACTION SYSTEM

Section:**OPTIONS****Detail:****PUDDLE JUMPER FLOATS
NOSE GEAR RETRACTION SYSTEM****Page:**

09-12

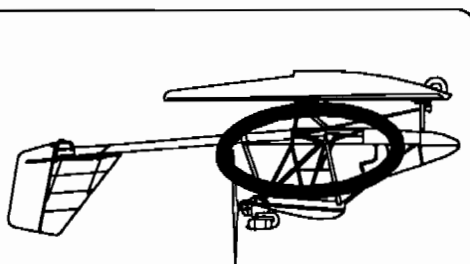
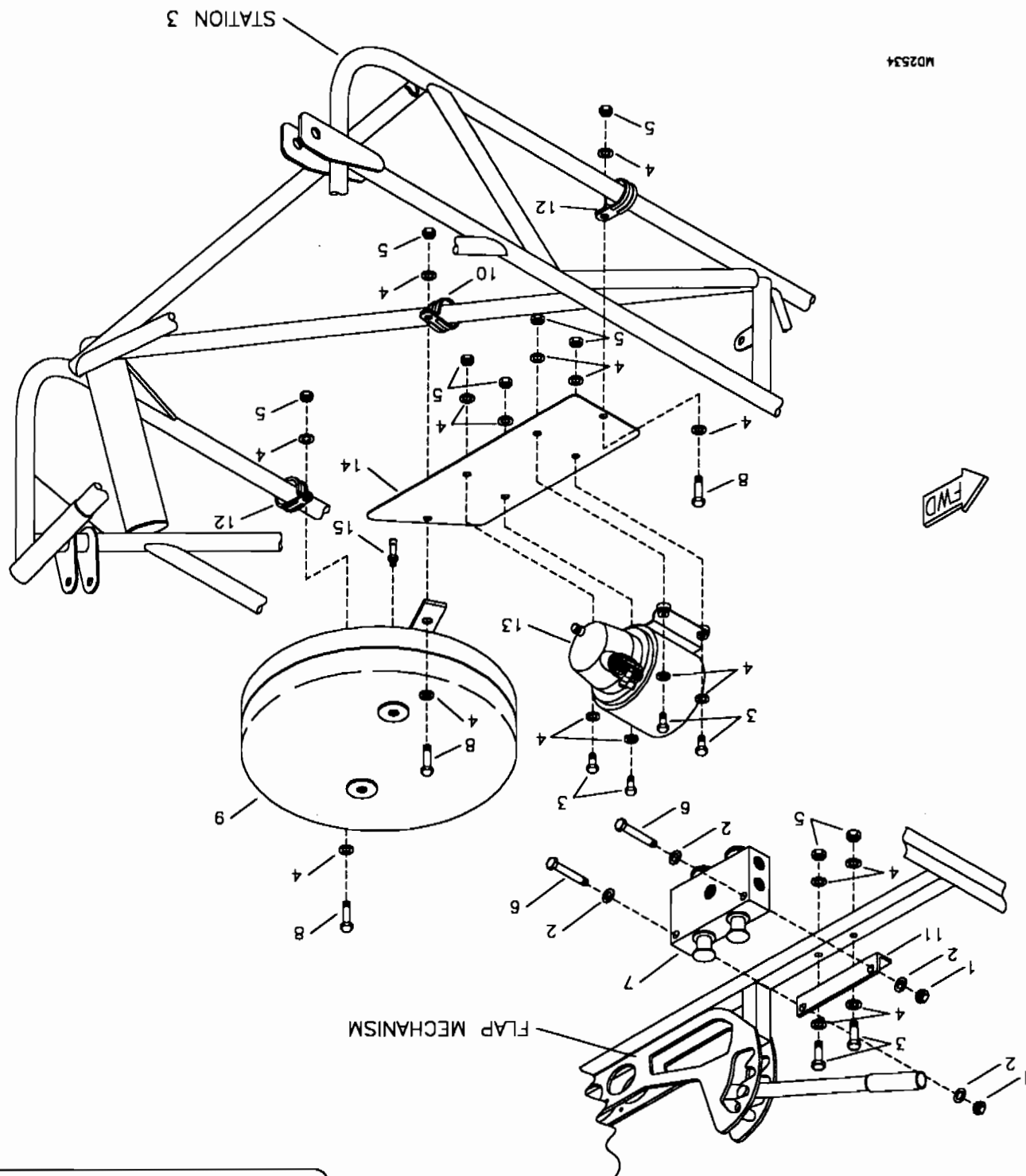
Date:

11/24/97

#	Description	Part Number	Quantity
1 .	3/4" Stainless Steel Nut	KSHW0026	2
2 .	3/16" Shear Nut	AN364-1032A	13
3 .	3/16" Thin Washer	AN960-10L	14
4 .	3/16" Bolt	AN3-13A	8
5 .	Cylinder Clamp	KPMG0026	2
6 .	Air Cylinder	KSHW0031	1
7 .	7/16" Stainless Steel Nut	KSHW0028	2
8 .	Loc Ring	RL 27 1/4	2
9 .	Clevis Kit	KSAC0025	1
10 .	3/16" Clevis Pin	MS20392-2C17	2
11 .	Air Cylinder	KSHW0032	1
12 .	3/16" Stainless Steel Nut	KSHW0033	2
13 .	1/2" Non-Cushioned Tube Clamp	AN742-D8	2
14 .	3/16" Bolt	AN3-4A	2
15 .	Cylinder Mount Bracket	KPNG0026	1
16 .	Pulley Mount Bracket	KPNG0049	2
17 .	Small Pulley Cable Keeper	SP-CK	2
18 .	Pulley	AN210-2A	1
19 .	Small Cotter Pin	MS24665-134	2
20 .	Nose Wheel Retracting Cable	KANG0009	1
21 .	3/16" Bolt	AN3-6A	1
22 .	3/16" Bolt	AN3-12A	2
23 .	Shackle	RL-205-T	1
24 .	3/16" Tensile Nut	AN365-1032A	1
25 .	3/16" Rod End	MM-3	1
26 .	Nose Wheel Lock Rod	KANG0010	1

MD2534

FWD



VALVE TANK AND
COMPRESSOR INSTALLATION

OPTIONS

DETAIL:

SECTION:

NOTES:

Section:**OPTIONS****Detail:****PUDDLE JUMPER FLOATS
VALVE, TANK AND COMPRESSOR INSTALLATION****Page:**

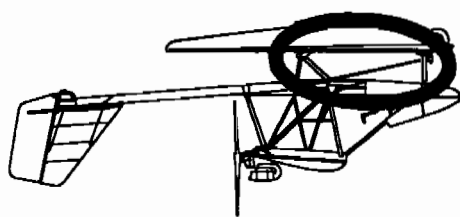
09-14

Date:

11/24/97

#	Description	Part Number	Quantity
1 .	1/4" Shear Nut	AN364-428A	2
2 .	1/4" Thick Washer	AN960-416	4
3 .	3/16" Bolt	AN3-7A	6
4 .	3/16" Thick Washer	AN960-10	18
5 .	3/16" Shear Nut	AN364-1032A	9
6 .	1/4" Bolt	AN4-14A	2
7 .	Air Control Valve	V-88	1
8 .	3/16" Bolt	AN3-5A	3
9 .	Air Tank	1143	1
10 .	1/2" Cushioned Tube Clamp	MS21919-DG8	1
11 .	Float - Air Valve Bracket	KPMG0046	1
12 .	5/8" Cushioned Tube Clamp	MS21919-DG10	2
13 .	Compressor	KSHW0036	1
14 .	Compressor Mount Plate	KPAC0078	1
15 .	Valve Stem Fitting	KSHW0037	1

RETRACTION SYSTEM SCHEMATIC



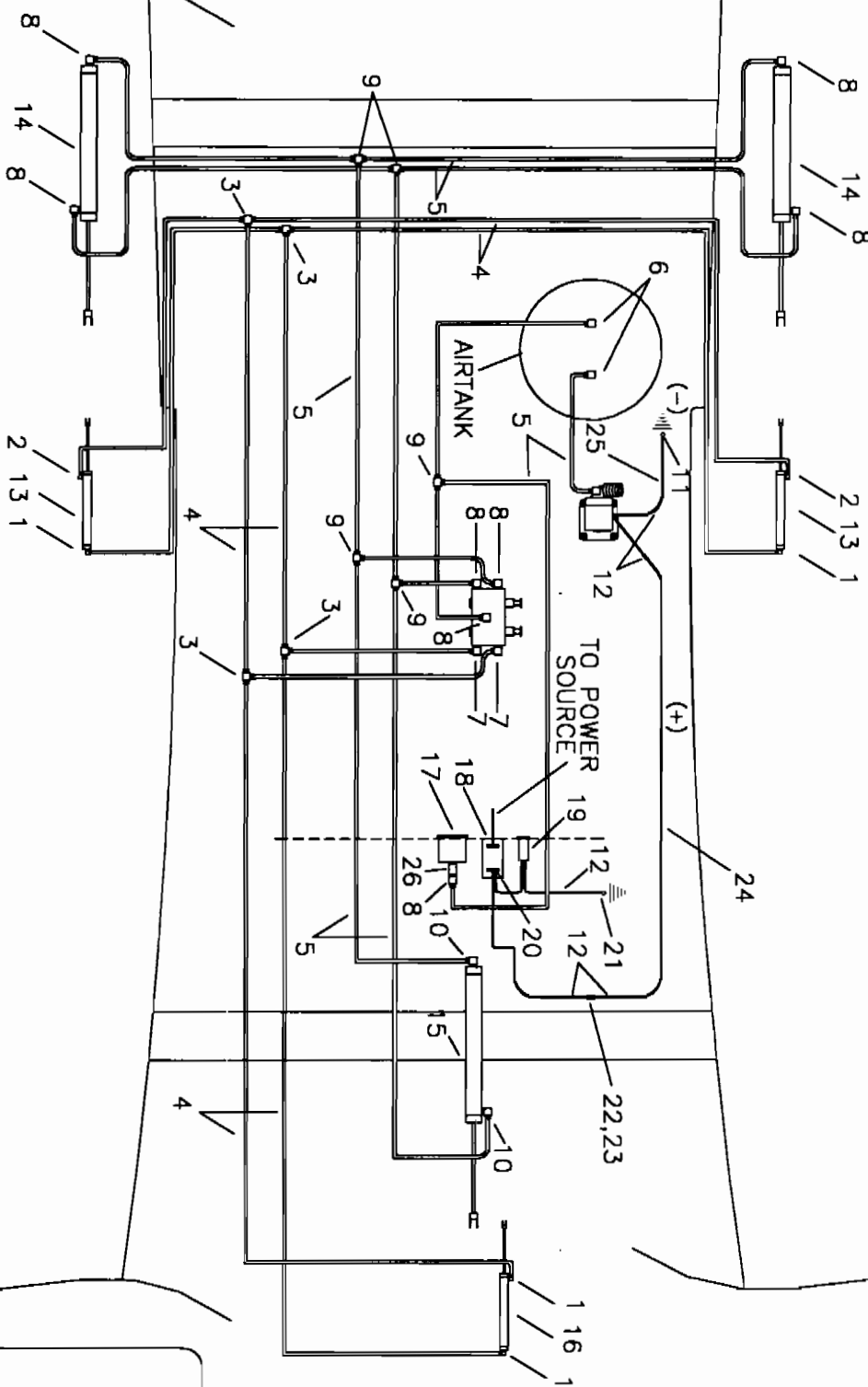
MD2533

Made in the
USA

RPM S-12 AIRRAIL

DATE: 11/21/97

MANUAL DRAWING #:
MD2533



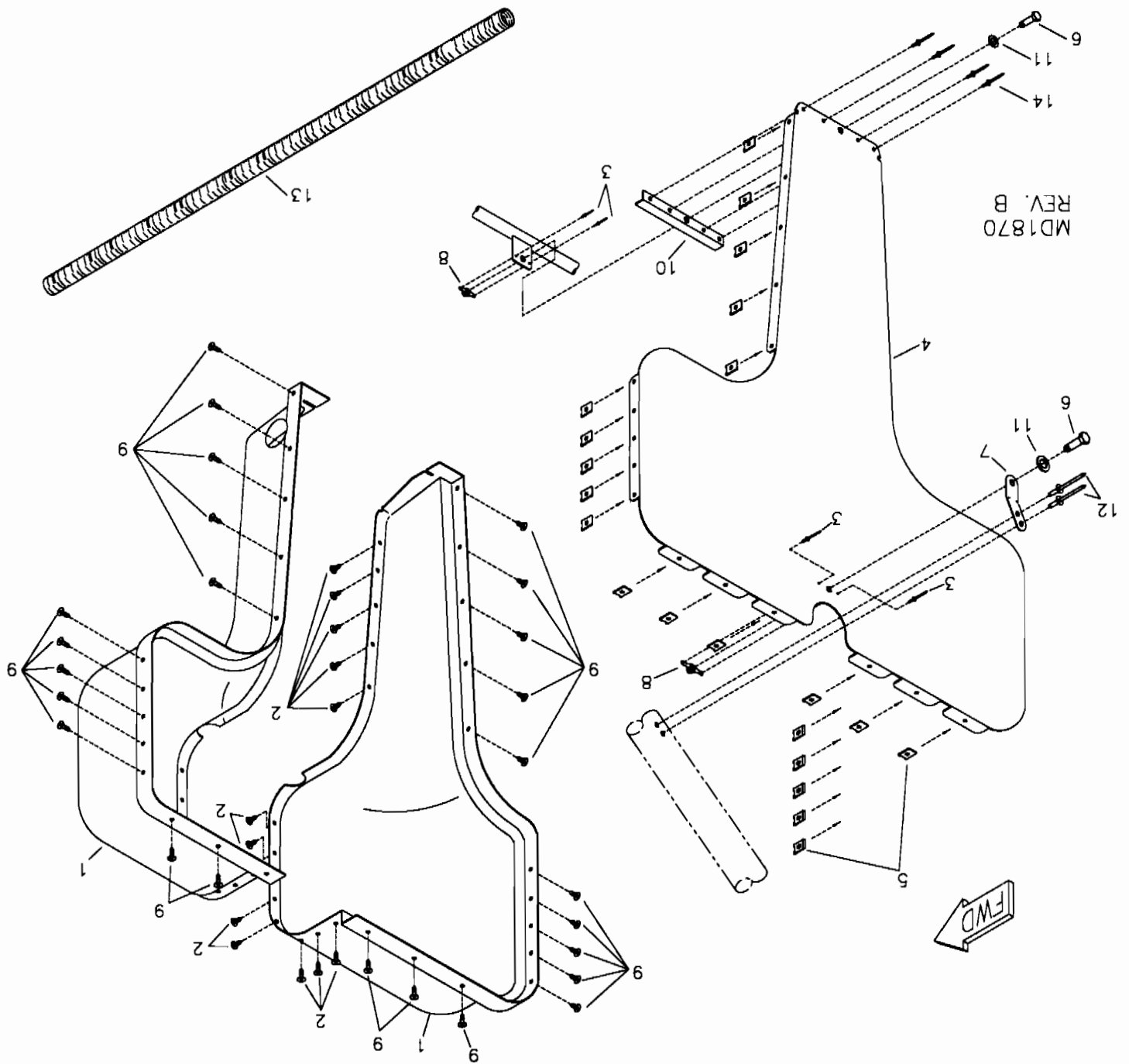
S-12XL AIRAILE - OPTIONAL PUDDLE JUMPER FLOATS
RETRACTION SYSTEM SCHEMATIC

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Air Fitting - Male Elbow	KQL-01-32	4
2.	Air Fitting - Male Connector	KQH-01-32	2
3.	Air Fitting - Union Tee	KQT-01-00	4
4.	1/8" Air Line	KSAC0015	33 ft
5.	1/4" Air Line	KSAC0016	50 ft
6.	Air Fitting - Male Elbow	KQL-07-35S	2
7.	Air Fitting - Male Elbow	KQL-01-34S	2
8.	Air Fitting - Male Elbow	KQL-07-34S	8
9.	Air Fitting - Union Tee	KQT-07-00	5
10.	Air Fitting - Male Elbow - Regulated	NAS2211F-N01-07S	2
11.	14 Gauge Eye Terminal, Blue 1/4"	1/4 EYE 14 GA	1
12.	14 Gauge Splice, Butt Connector	IP-7132	5
13.	Air Cylinder *	KSHW0029	0
14.	Air Cylinder *	KSHW0030	0
15.	Air Cylinder **	KSHW0031	0
16.	Air Cylinder **	KSHW0032	0
17.	Pressure Gauge	KSIP0004	1
18.	Switch	MS35058-22	1
19.	Indicator Light	KSIP0005	1
20.	14 Gauge Eye Terminal, Blue 5/32"	KSES0003	2
21.	14 Gauge Eye Terminal, Blue 3/16"	IP-7102	1
22.	14 Gauge, In Line Fuse Holder	KSES0019	1
23.	7.5 AMP Fuse	KSES0020-7.5	1
24.	14 Gauge Red Wire	14 GA WIRE/RED	10 ft
25.	14 Gauge Black Wire	14 GA WIRE/BLACK	2 ft
26.	1/8" Union	3-20320	1

*Referenced from Main Gear Retraction System.

**Referenced from Nose Gear Retraction System.

RRMS S-12 AIRAILE
OPTIONAL INSTRUMENT
PANEL ASSEMBLY



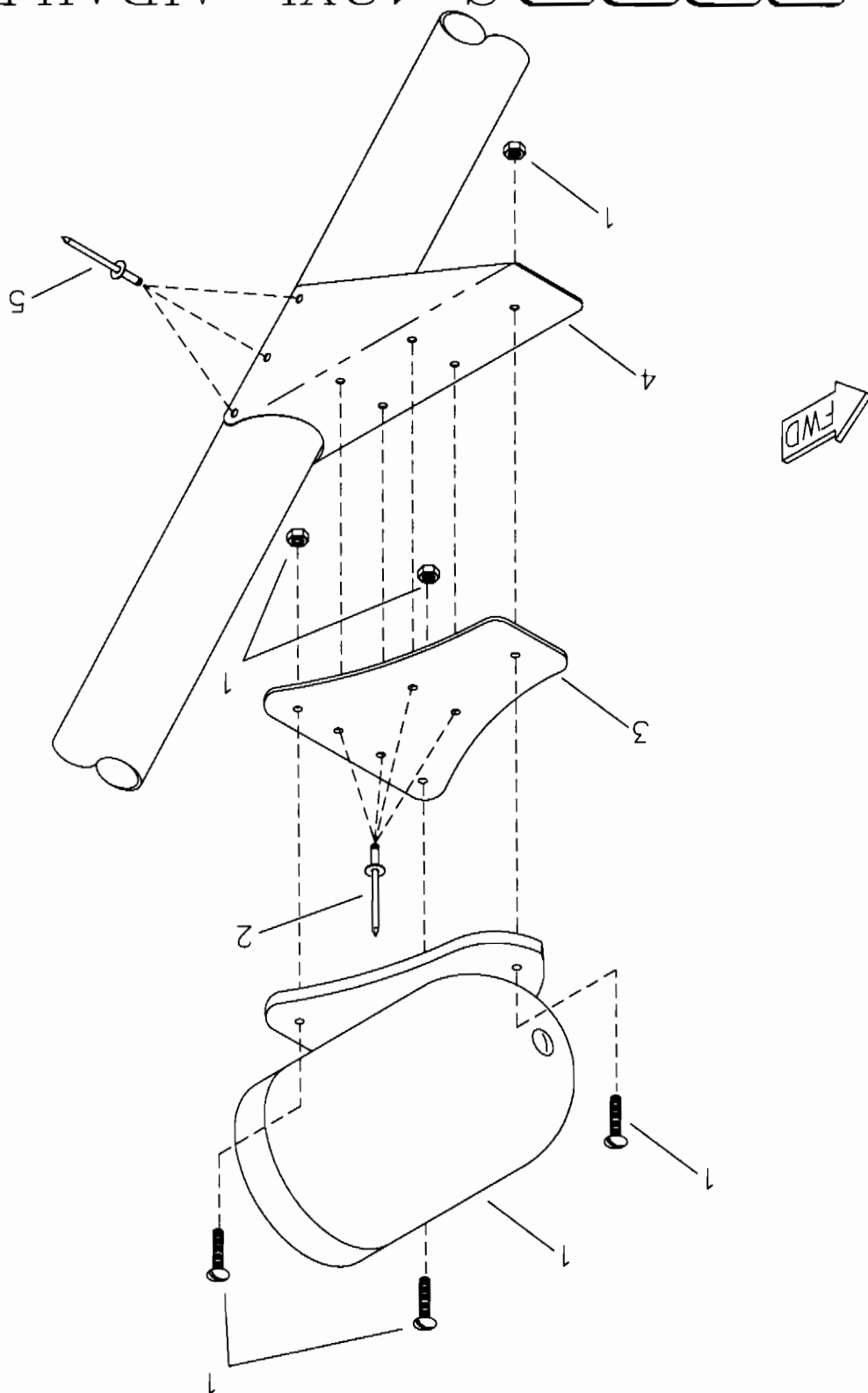
S-12XL AIRAILE - OPTIONAL INSTRUMENTAL PANEL ASSEMBLY

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Instrument Panel Housing	KPIP0032	1
2.	#6 Small Pan Head Screw	6RX1/2 PHS	15
3.	3/32" Aluminum Pop Rivet	40APR1/8	4
4.	Instrument Panel - Standard Pre-cut	KPIP0035	1
4.	Instrument Panel - Optional	KPIP0030	1
5.	Tinnerman	A1789-8Z-1	30
6.	3/16" Bolt	AN3-3A	2
7.	Mount Tang	ST-16	1
8.	3/16" Nut Plate	K-1000-3	2
9.	#8 Pan Head Screw	8X1/2 PHS	30
10.	Attach Angle	KPIP0031	1
11.	3/16" Thin Washer	AN960-10L	2
12.	3/16" Stainless Steel Pop Rivet - Cherry Q	CCPQ-62	2
13.	Wire Casing	IP-WCASE	13 ft
14.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-42	4

OPTIONAL COMPASS MOUNT ASSEMBLY

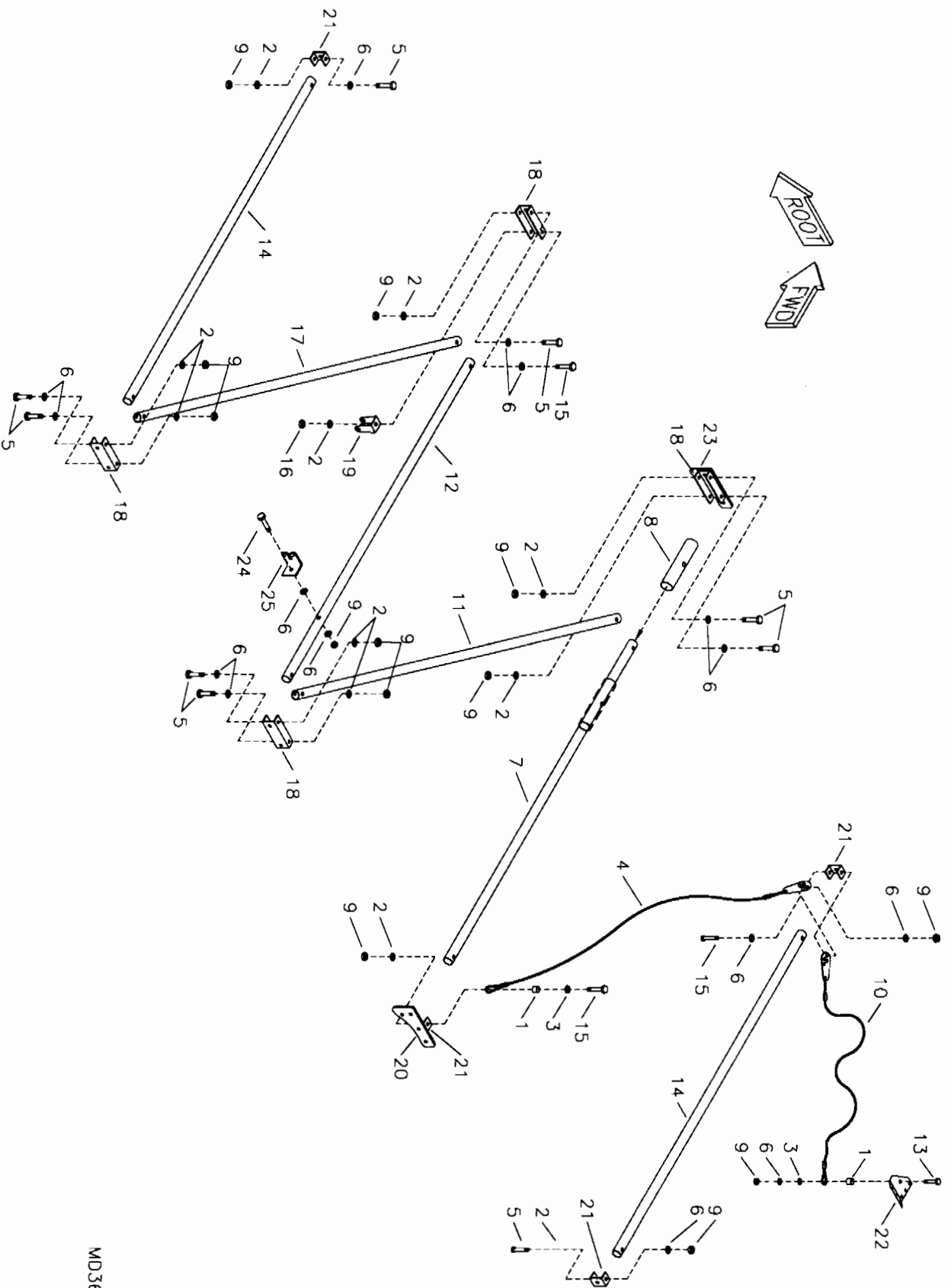
MD3621

RMS-12XL AIRALE



S-12XL AIRAILE - OPTIONAL COMPASS MOUNT ASSEMBLY

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Pedestal Mount Compass & Hardware	KSAV0011	1
2.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-44	4
3.	Compass Mount - Base	KPIP0034	1
4.	Compass Mount	KPIP0033	1
5.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-42	6



MD3660

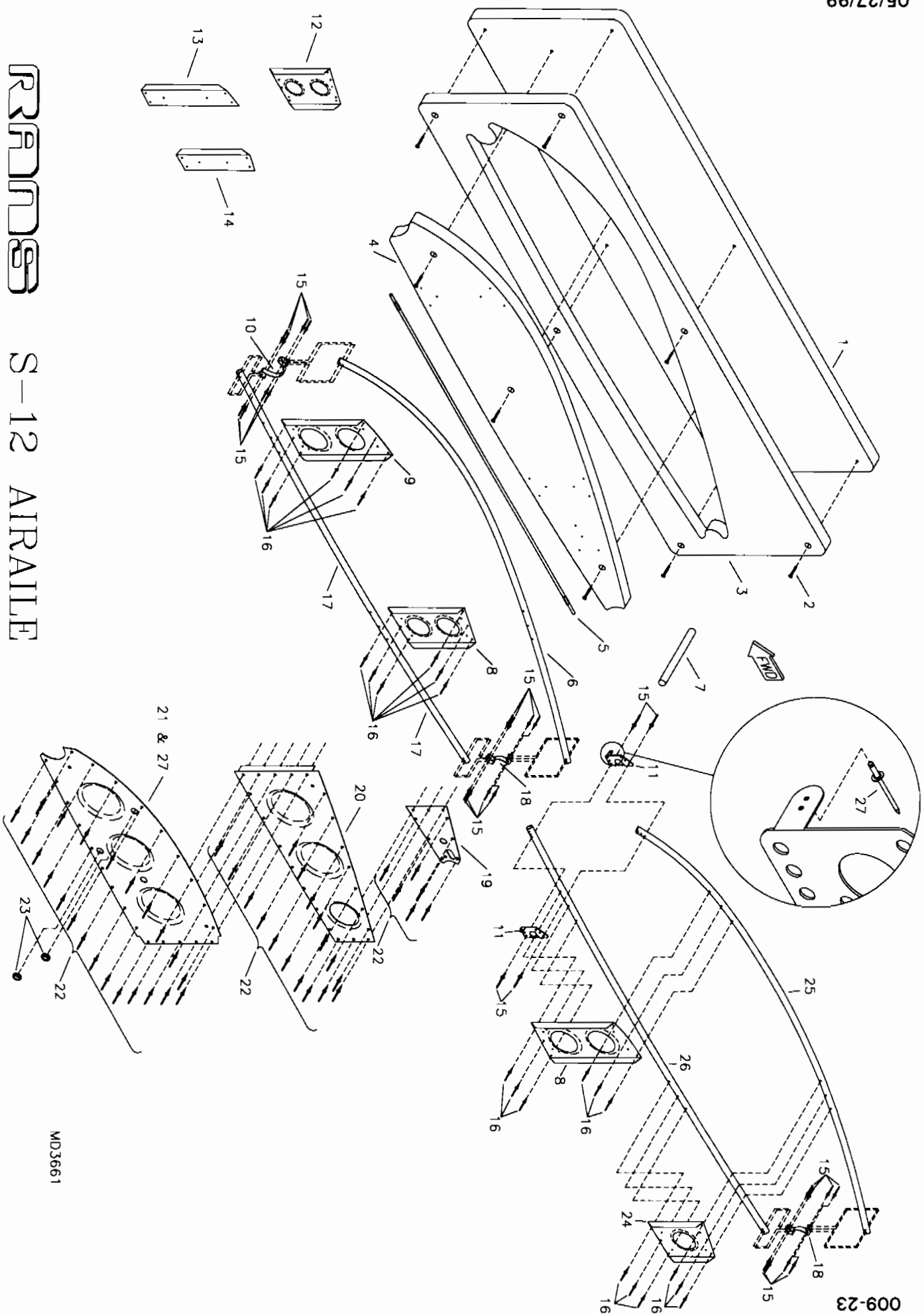
REF S-12 AIRFRAME OPTIONAL D&F WING FRAME ASSEMBLY INTERNAL STRUCTURE

S-12XL AIRAILE - OPTIONAL DOPE & FABRIC - WING INTERNAL STRUCTURE

# DESCRIPTION	PART NUMBER	QUANTITY
1. Aluminum Bushing, 1/4" x .028 x 1/4" *	KAAC0026-1	0
2. 3/16" Thick Washer	AN960-10	22
3. 3/16" Plastic Washer	PW-3	4
4. Wing Cable, 51"	W-WC-51	2
5. 3/16" Bolt	AN3-15A	18
6. 3/16" Thin Washer	AN960-10L	32
7. Middle Compression Tube	W-MC-151	2
8. Compression Tube Doubler	CS-CTD	2
9. 3/16" Shear Nut	AN364-1032A	26
10. Wing Cable, 61	W-WC-59	2
11. Drag Brace	W-DB-151	2
12. Flap Compression Tube	W-FCT-151	2
13. 3/16" Bolt	AN3-4A	2
14. Inner Compression Tube	W-IO-151	4
15. 3/16" Bolt	AN3-16A	6
16. 3/16" Tensile Nut	AN365-1032A	2
17. Drag Brace Root	W-DBR-151	2
18. Long Wing Channel **	W-WCL	0
19. Jury Strut Bracket	JS-BK	2
20. AFT Strut Plate **	W-SAP-TE	0
21. Attach Bracket **	S2-SAB	0
22. Tip Gusset Top **	W-TG-T	0
23. FWD Strut Plate **	W-SAP-LE	0
24. 3/16" Bolt	AN3-14A	2
25. Teleflex Retainer	W-TEL-R	2

*Builder must fabricate from raw stock.

**Referenced from leading and trailing edge spar assembly.

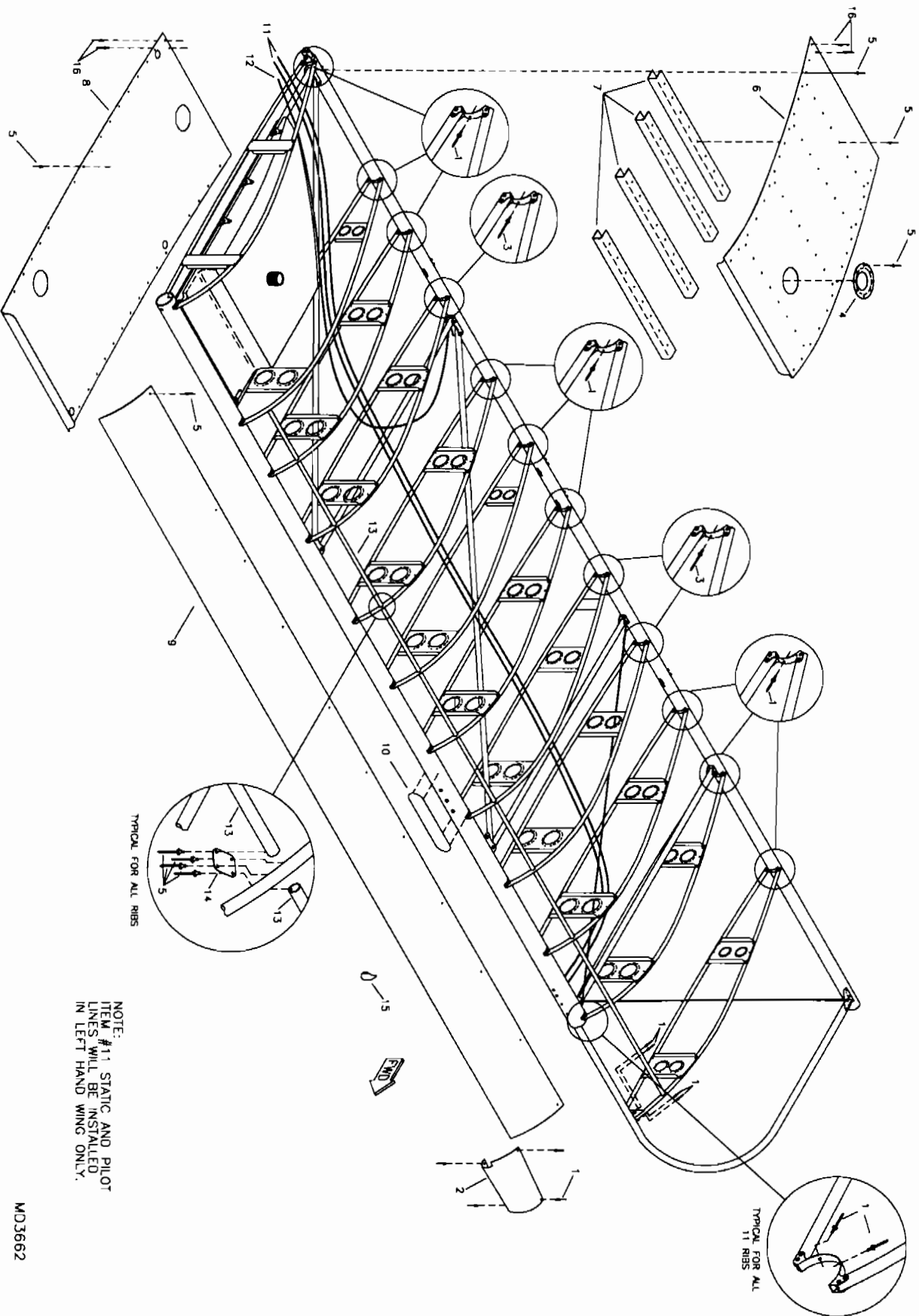


S-12XL AIRAILE - OPTIONAL DOPE & FABRIC - WING RIB ASSEMBLY & JIG

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Jig Backing Plate *	JIG PLATE	0
2.	Wood Screw	KSHW0046	9
3.	Outer Jig - Wing Rib	KPWI0289	1
4.	Inner Jig - Wing Rib	KPWI0313	1
5.	1/8" Stainless Steel Wire	KAAC0026-9	0
6.	Upper Rib - Wing	KPWI0287	22
7.	Wooden Dowel **	DOWEL	0
8.	AFT Channel - Wing Rib - RH	KPWI0211-R	9
8.	AFT Channel - Wing Rib - LH	KPWI0211-L	9
9.	Forward Channel - Wing Rib - RH	KPWI0210-R	10
9.	Forward Channel - Wing Rib - LH	KPWI0210-L	10
10.	Rib Clip - Leading Edge	KPWI0214	22
11.	Rib Clip - Leading Edge - RH	KPWI0292-R	2
11.	Rib Clip - Leading Edge - LH	KPWI0292-L	2
12.	AFT Channel - Wing Rib #2 - RH	KPWI0222-R	2
12.	AFT Channel - Wing Rib #2 - LH	KPWI0222-L	2
13.	Forward Channel - Root Rib - RH	KPWI0216-R	1
13.	Forward Channel - Root Rib - LH	KPWI0216-L	1
14.	AFT Channel - Root Rib - RH	KPWI0218-R	1
14.	AFT Channel - Root Rib - LH	KPWI0218-L	1
15.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-42	402
16.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-41	300
17.	Lower Rib - Wing	KPWI0288	22
18.	Rib Clip - Trailing Edge	KPWI0215	24
19.	Root Rib Access Panel - Wing - RH	KPWI0291-R	1
19.	Root Rib Access Panel - Wing - LH	KPWI0291-L	1
20.	AFT Root Rib Skin - Wing - RH	KPWI0220-R	1
20.	AFT Root Rib Skin - Wing - LH	KPWI0220-L	1
21.	Forward Root Rib Skin - Wing - RH	KPWI0290	1
22.	1/8" Aluminum Pop Rivet - Avex	1691-0410	100
23.	Rubber Grommet	MS35489-11	6
24.	Compression Channel - Wing Tip - RH	KPWI0293-R	1
24.	Compression Channel - Wing Tip - LH	KPWI0293-L	1
25.	Tip Rib - Upper	KPWI0294	2
26.	Tip Rib - Lower	KPWI0295	2
27.	FWD Root Rib Skin - Wing - LH	KPWI0297	1

*Builder must fabricate from 3/8" crate material. Refer to text for instructions.

**Builder provides.



NOTE:
ITEM #11 STATIC AND PILOT
LINES WILL BE INSTALLED
IN LEFT HAND WING ONLY.

MD3662

OPTIONAL D&F WING RIBS AND SHEET METAL

S-12XL AIRAILE - OPTIONAL DOPE & FABRIC - WING RIBS & SHEET METAL

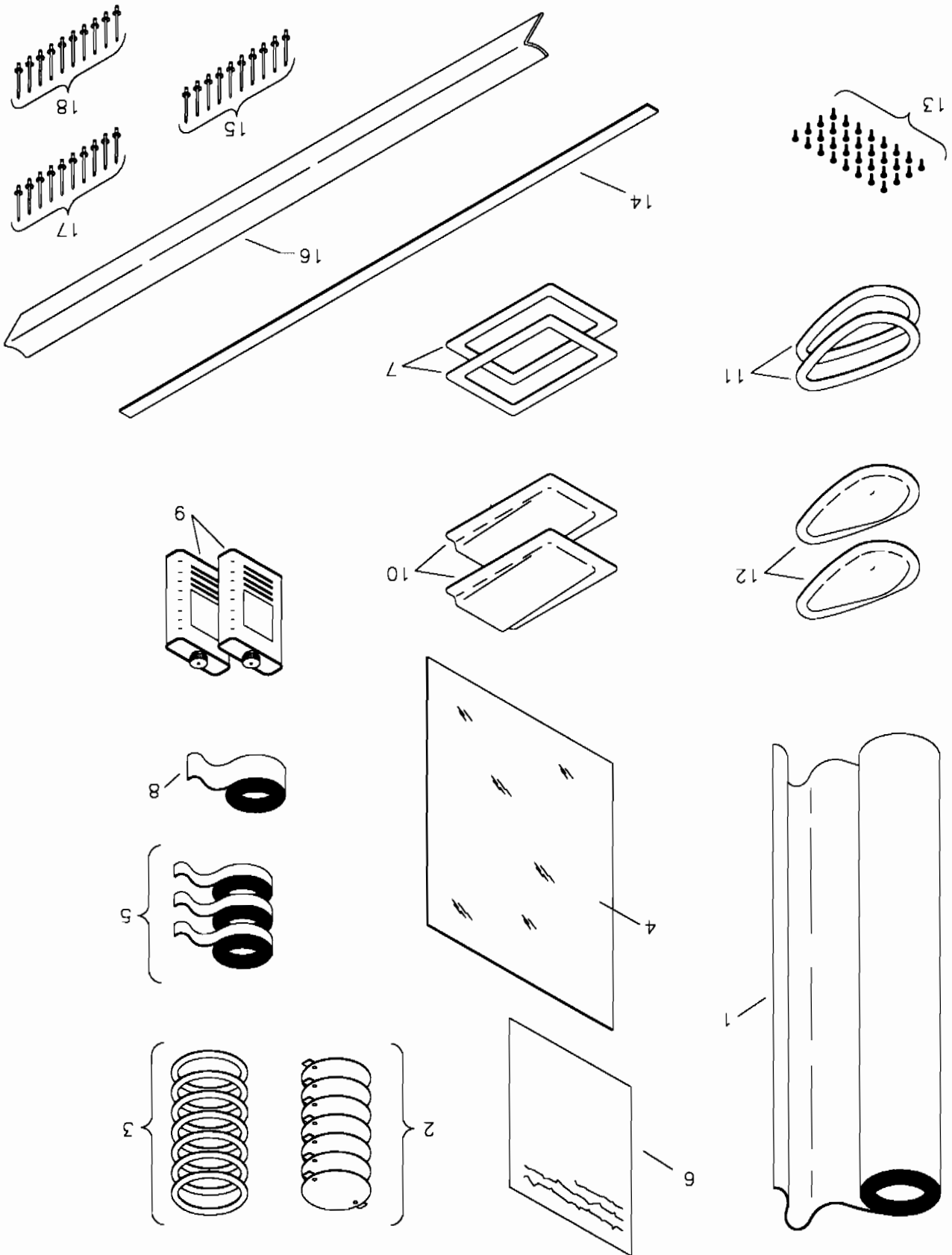
#	DESCRIPTION	PART NUMBER	QUANTITY
1.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-42	80
2.	Leading Edge Tip Wrap - RH	KPWI0296-R	1
2.	Leading Edge Tip Wrap - LH	KPWI0296-L	1
3.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-44	10
4.	Upper Root Skin Scupper - Wing	KPWI0206	2
5.	1/8" Aluminum Pop Rivet - Avex	1691-0410	320
6.	Upper Root Skin - Wing	KPWI0203	2
7.	Root Skin Stiffener - Wing	KPWI0207	8
8.	Lower Root Skin - Wing - LH	KPWI0204-L	1
8.	Lower Root Skin - Wing - RH	KPWI0204-R	1
9.	Leading Edge Wrap	W-LE-W	2
10.	Bolt Cover	KPWI0208	2
11.	Pitot/Static Line, Blue	FS-FL	40 ft
12.	Flap Teleflex **	W-F-TELFEX-8	0
13.	Aluminum Support Tubes, 1/2" x .028 x X *	KAAC0035-2	0
14.	Gusset	KPWI0255	20
15.	J & B Weld Epoxy	J & B	0
16.	1/8" Stainless Steel Pop Rivet - Cherry Q	CCPQ-42	8
17.	Raw Stock Kit - Dope & Fabric Option	KAAC0035	1

*Builder must fabricate from raw stock.

**Reference Flap System Assembly.

9/1/2010

RMS S-12 AIRAILE OPTIONAL D&F COVERING SUPPLIES



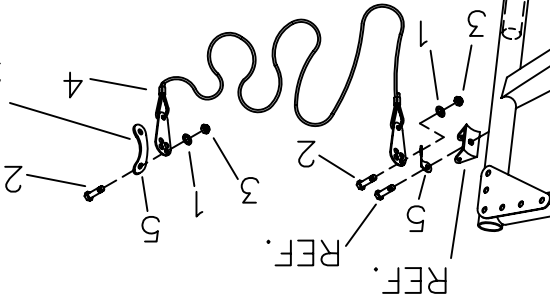
S-12XL AIRAILE - OPTIONAL DOPE & FABRIC - COVERING SUPPLIES

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	Aircraft Fabric	CV-S6S-116	28 yds
2.	Inspection Plate	CV-IP	7
3.	Inspection Ring	CV-IR	7
4.	.020 Lexan 24" x 24"	LEX-24X24	1
5.	2" Surface Tape	2 TAPE	3 rls
6.	Super Flight Covering Manual	KSCV0002	1
7.	Aileron Exit Ring	KPCV0005	2
8.	4" Surface Tape	4 TAPE	10 yds
9.	U-500 Urethane Adhesive	KSCV0001	2 qts
10.	Aileron Exit	CV-AX	2
11.	Flap Exit Rings	KPCV0006	2
12.	Flap Exit Fairings	CV-FX	2
13.	#4 Small Pan Head Screw	4X1/4 PHS	40
14.	Cover Strap	KPCV0012	70
15.	1/8" Aluminum Pop Rivet - Avex	1691-0410	650
16.	Gap Seal	GAP-2	7 pcs
17.	1/8" Aluminum Pop Rivet - Cherry Q	AAPQ-44	52
18.	3/32" Aluminum Pop Rivet	40APR1/8	200

RPM S-12XL AIRAILE OPTIONAL TAIL CABLE ASSEMBLY

MD4088

ATTACHES
TO WING
AT CENTER
FLAP
ATTACH
HINGE



S-12XL AIRAILE - OPTIONAL TAIL CABLE ASSEMBLY

#	DESCRIPTION	PART NUMBER	QUANTITY
1.	3/16" Thick Washer	AN960-10	4
2.	3/16" Bolt	AN3-4A	4
3.	3/16" Tensile Nut	AN365-1032A	4
4.	Tail Cable	KPTG0029	2
5.	Hummertang	T12-HT6	4