

FUSELAGE HULL - STAGE ONE

SECTION 3

REVISION DATE: 4/17/01 REVISION: 1

PART NO	REV.	DRAWING	ASSEMBLY	DESCRIPTION	QTY	CODE	BUILDER
				WITH A MARKER, MARK AROUND THE AREA WHERE THE MAIN GEAR SUPPORT 640-F-19-1 WILL BE LOCATED. DO NOT PUT HOLES IN THAT AREA FOR NOW. INSTALL THE REST OF THE FUSELAGE SIDE UPRIGHTS.			
				MAKE SURE THAT YOU LOCATE THE UPRIGHTS AS PER DRAWING 640-F-20			
20-F-25-1		20-F-25/	20-F-20	GEAR UPRIGHT MAIN LEFT, DRILL AND CLECO ONLY	1		
20-F-25-1		20-F-25	20-F-3/F-2	GEAR UPRIGHT MAIN RIGHT, DRILL AND CLECO ONLY	1		
20-F-25-2		20-F-25/	20-F-20	GEAR UPRIGHT CENTER LEFT, DRILL AND CLECO ONLY	1		
20-F-25-2		20-F-25	20-F-3/F-2	GEAR UPRIGHT CENTER RIGHT, DRILL AND CLECO ONLY	1		
640-F-40-1		20-F-21	20-F-41	REAR SEAT FRONT SUPPORT. INSTALL TO THE FLOOR AND FLUSH TO THE SIDE SKINS. DRILL TO THE FRONT OF MAIN GEAR UPRIGHT 640-25-1. CUT OUT TOP ENDS OF 640-F-41-1 FOR THE UPRIGHT.			
				REAR FUSELAGE AREA (ALSO SEE DRAWING 640-F-39)			
640-F-6-6		640-F-6-	640-F-6-5	REAR FUSELAGE PANEL. POSITION, DRILL AND RIVET THE TWO L ANGES AS PER 640-F-6-6. POSITION THE ASSEMBLY TO THE REAR OF THE FUSELAGE. 640-F-6-6 IS LOCATED ON TOP OF THE LOWER TOP RUDDER HINGE 640-F-5-2. BOLT OR SOLID RIVET TOGETHER.	1		
20-F-2-3		20-F-2	640-F-4	REAR UPPER SKIN. DRILL AND CLECO	1		
20-F-5-1		20-F-5	640-F-4	UPPER RUDDER HINGE-DRILL AND CLECO. DO NOT BOLT	1		
640-F-4-3		640-F-4	640-F-4	HORIZONTAL TAIL ATTACHMENT. LOCATE HOLES AS PER 640-F-4 AND DRILL TO 1/8" DIA. ONLY. CLECO TO FUSELAGE FROM THE INSIDE - DO NOT BOLT. IT IS IMPORTANT THE BOTH SIDES ARE SIMILAR SO THAT THE HORIZONTAL TAIL WILL BE STRAIGHT. MAKE SURE THAT THE FUSELAGE BOTTOM IS COMPLETELY FLAT AND THAT THERE IS NO TWISTING IN THE FUSELAGE.	2		
20-F-26-1L		20-F-26	20-M-49	UPPER REAR SIDE SKIN LEFT. DRILL AND CLECO. DO NOT DRILL AT HT FRAME AT THIS TIME. DRILL AFTER THE RUDDER IS INSTALLED.	1		
20-F-26-1R		20-F-26	20-M-49	UPPER REAR SIDE SKIN RIGHT.	1		
20-F-26-5		20-F-26	20-F-26	REAR SIDE SKIN STIFFENER-DO NOT RIVET	1		
20-C-13-1		20-C-13	20-C-13	RUDDER CABLE OUTLET FAIRING-DO NOT RIVET AT THIS TIME	2		
20-C-10-9		20-C-10	20-C-13	REAR RUDDER FAIRLEAD. DRILL AND CLECO -DO NOT RIVET	2		
				INSTALL BULKHEADS. THIS IS A TOUGH PROCEDURE. MAKE SURE THAT YOU HANDLE THE TOP SKINS SO THAT THEY DO NOT GET BEND MARKS.			
				MARK THE POSITION OF THE BULKHEADS ON THE TOP LONGERON, AS PER DRAWING 640-F-22. STATION 0 STARTS AT THE REAR OF THE HT FRAME. THEREFORE, BULKHEAD #7 IS LOCATED ON TOP OF THE HT FRAME. BULKHEAD #6 IS 690mm FROM THE HT FRAME, ETC.			
				PRE DRILL #3-4-5-6-7 BULKHEADS WITH #40 BIT. THIS IS DONE BY: DRAW CENTER-LINE ON BULKHEAD FLANGES. LOCATE THE TOP CENTER HOLE BY MEASURING FROM BOTH ENDS. DRILL A HOLE BETWEEN EACH CRIMP AND ONE EXTRA ONE AT THE ENDS ON THE LARGE BULKHEADS. PITCH SHOULD BE ABOUT 40mm OR LESS.			

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				CHECK FIT OF BULKHEADS AT LONGERON WHEN INSTALLING THE BULKHEADS TO THE FUSELAGE. BULKHEAD SIDES MUST BE FLUSH TO THE SIDE OF THE FUSELAGE. DRILL ONE HOLE FROM BULKHEAD BOTTOM FLANGE INTO TOP LONGERON. ONE RIVET IS INSTALLED FROM THE BULKHEADS INTO THE LONGERONS PER SIDE.			
				ALL FIVE BULKHEADS SHOULD NOW BE INSTALLED TO THE FUSELAGE LONGERONS.			
				INSTALLING THE TOP SKINS.			
				PLACE BOTH REAR SKINS FLAT ON THE TABLE AND DRAW THE CENTER LINE. FROM DRAWING 640-F-22, THE REAR SKIN MUST BE 1334mm LING. AT 10mm FROM THE FRONT, DRILL A HOLE LINED UP WITH THE CENTER LINE. MEASURE 1262mm AND DRILL A SECOND HOLE FOR BULKHEAD #7. MEASURE BACK 690mm FOR BULKHEAD #6. THE REAR TOP SKIN MUST NOW HAVE THREE HOLES ON THE CENTER LINE.			
				DO THE SAME FOR THE FRONT SKIN. MEASURE 10mm FROM THE REAR AND DRILL INTO THE CENTER LINE. MEASURE 600mm FOR BULKHEAD #4. DO NOT DRILL ANY HOLES FOR #3 AT THIS TIME. THE FRON SKIN MUST NOW HAVE TWO HOLES IN THE CENTER LINE.			
				THE ANGLE OF THE BULKHEADS IS IMPORTANT. THEREFORE, AS PER DRAWING 640-F-8, THE BOTTOM ANGLES OF THE BULKHEAD IS 9 DEG. MAKE A JIG WITH A WOOD SHEET, CUT OUT 9 DEG. FROM 90 DEG. FOR POSITIONING #7. #7 MUST BE SECURE AT 9 DEG.			
640-F-22-2		20-F-22	20-F-22	REAR TOP SKIN. LINE UP CENTER HOLES WITH CENTER BULKHEAD HOLES.	1		
640-F-22-1		20-F-22	20-F-22	MIDDLE TOP SKIN. LINE UP CENTER HOLES WITH CENTER BULKHEAD HOLES. MIDDLE TOP SKIN OVERLAPS THE REAR TOP SKIN AT BULKHEAD #5. CLECO TOGETHER.	1		
20-F-8-7		20-F-8	20-F-22	BULKHEAD	1		
20-F-8-6		20-F-8	20-F-22	BULKHEAD	1		
20-F-8-5		20-F-8	20-F-22	BULKHEAD	1		
20-F-8-4		20-F-8	20-F-22	BULKHEAD	1		
20-F-8-3		20-F-8	20-F-22	BULKHEAD. POSITION AND DRILL INTO PLACE. DO NOT RIVET. MEASURE 2495mm FROM THE HT FRAME FOR POSITION. DRILL THE BULKHEAD TO THE LONGERON.	1		
Z				STIFFENER Z L=850mm. INSTALL TO REAR SIDE OF #3 AS PER DRAWING 640-F-22 (BAGGAGE WALL)	2		
640-F-30-11		640-F-41	64-F-C-17	FLAP MOTOR MOUNTING BRACKET. INSTALL AS PER 640-C-17. THE BRACKET MOUNTS TO BULKHEAD #3 AND 45mm FROM THE SIDE OF THE FUSELAGE.	1		
20-F-40-5		20-F-40	20-F-41	REAR SEAT BACK HORIZONTAL STIFFENER. POSITION BEHIND BULKHEAD #3. SEE DRAWING 640-F-41, BOTTOM LEFT CORNER FOR ASSEMBLY. CUT ENDS FLUSH TO FUSEALGE SIDES. CUT OUT AREA AROUND THE FLAP MOTOR MOUNTING BRACKET AND RE-INFORCE AREA WITH L ANGES AS PER DRAWING 640-F-41 TOP CENTER.	1		
				640-F-41-5 IS FLUSH TO THE FRONT ANGLE ON BULKHEAD #3. DRILL AND CLECO TO THE FUSELAGE TOP LONGERONS. BOTH SIDES.			
640-F-40-6		640-F-40	640-F-41	REAR UPPER SEAT BACK Z. POSITION IN FRONT OF BULKHEAD #3. THE Z FITS BETWEEN THE FUSELAGE TOP LONGERONS. DRILL AND CLECO TWO RIVET LINES INTO BULKHEAD AS SHOWN IN 640-F-41. A5 P.40	1		
				WITH STRAPS, TIGHTEN THE TOP SKINS AGAINST THE BULKHEADS. TOP CENTER OF THE REAR FUSELAGE MUST BE ONE STRAIGHT LINE. SHIMING MAY BE REQUIRED IF SOME BULKHEADS DO NOT KIT TIGHTLY AGAINST THE SKINS.			

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				FROM THE INSIDE OF THE FUSELAGE, DRILL THROUGH THE PRE-DRILLED BULKHEAD HOLES INTO THE TOP SKINS. CLECO AS YOU GO AND DRILL FROM THE TOP CENTER DOWN EACH SIDE EVENLY. FOR DRILLING #7, A HOLE FINDER CAN BE USED FROM THE OUTSIDE.			
				DRILL INTO THE TOP LONGERONS A4 P35 OR LESS. MAKE SURE THAT THE HOLES ARE IN THE CENTER OF THE LONGERONS AND HAVE PROPER EDGE DISTANCE ON THE TOP SKINS.			
				FOR POSITIONING THE FRONT BULKHEAD, #3, PUSH THE TOP OF THE BULKHEAD FLUSH TO THE TOP SKIN. THE ANGLES OF THE BULKHEAD IS NOT IMPORTANT. A TIGHT FIT AROUND THE SKIN IS. ONCE POSITIONED, DRILL FROM THE INSIDE INTO THE TOP SKIN.			
				CABIN AREA			
				INSTALLING THE UPPER LONGERON DOUBLERS TO THE TOP LONGERONS. THE REAR TOP OF THE DOUBLERS MUST BE CUT TO FIT UNDER THE BULKHEAD AT THE LONGERONS. DRAWING 640-F-41 TOP LEFT SHOWS THE DETAIL. THE THREE HOLES WITH THE + INDICATES 3 AN3 BOLTS. SEE DRAWING 640-F-14 FOR THE FRONT.			
640-F-24-1L		640-F-24	640-F-41	UPPER LONGERON DOUBLER LEFT. IT IS IMPORTANT THAT THE LONGERON DOUBLERS ARE CUT AS PER TEMPLATE IN DRAWING 640-F-24. THIS SETS THE EXACT FUSELAGE SIDE DIMENSIONS. SEE DRAWING 640-F-14 FOR THE FRONT.	1		
640-F-24-1R		640-F-24	640-F-41	UPPER LONGERON DOUBLER RIGHT. SEE DRAWING 640-F-14 FOR THE FRONT.	1		
20-F-14-6		20-F-14	20-F-14	UNDER INSTRUMENT STIFFENER. INSTALL AS PER DRAWING 640-F-14, 360mm FROM THE FIREWALL. CUT TO FIT AROUND THE UPPER LONGERON DOUBLERS. THREE BOLTS ARE INSTALLED PER SIDE INTO THE LONGERONS.	1		
20-E-6-2		20-E-6	20-F-14	INSTRUMENT PANEL REINFORCED. POSITION ON TOP OF 640-F-14-6, FLUSH TO THE FRONT. ENDS MUST BE FLUSH TO THE FUSELAGE SIDES.	1		
20-E-4-3		20-M-35	20-M-35	FIREWALL FITTING	1		
126-6B		20-M-37	20-M-37	COUPLER BARB FITTING	1		
20-E-4-4		20-M-37	20-M-37	FUEL LINE CONDUIT	1		
HAS-10			20-M-37	3/4 HOSE CLAMP	1		
HS4			20-M-37	HOSECLAMP	1		
SAE30R7			20-M-37	3/8 ID FUEL LINE L=1120mm	1		
				COVER ALL OPEN ENDS OF FUEL LINES WITH MASKING TAPE			
				INSTALL THE FRONT FLOOR PANELS			
20-E-5-5		20-E-5	20-E-5	FLOOR PANELS. CUT AS PER 640-E-5. PLYWOOD NOT SUPPLIED IN KIT. RIVNUTS MAY BE INSTALLED IN 640-F-15-6 AND L ANGLES SO THAT THE PLYWOOD CAN BE BOLTED.	1		
94733			20-E-5	RIVNUTS	14		
640-F-9-1		640-F-9	20-F-20	FRONT SIDE SKIN L&R, DRILL AND CLECO ONLY. INSTALL FLUSH WITH THE TOP LONGERONS. EXTEND ABOUT 5mm PAST THE FIREWALL AND BEND AROUND FIREWALL ONCE RIVETED. DO NOT BEND/FORM THE SKIN AROUND THE BOTTOM PART OF THE FIREWALL AT THIS TIME.	2		
Z		640-F-12	20-F-20	STD ZEE, FORWARD SKIN STIFFENER. EXACT LOCATION IS NOT IMPORTANT.	6		
640-F-9-6		640-F-9	20-F-20	STIFFENER. INSTALL.	4		

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				REMOVE THE ABOVE PARTS, CLEAN, CLECO BACK TO GETHER AND RIVET.			
					1		
20-F-2-3		20-F-2	640-F-4	REAR UPPER SKIN. LEAVE THIS SKIN OFF. DO NOT RIVET. ALSO, DO NOT RIVET THE INSTRUMENT PANEL INTO PLACE.	1		
20-F-5-1				BOLT UPPER RUDDER HINGE	1		
AN3-6A				BOLTS	4		
AN960-10				WASHERS	8		
AN365-1032				S/L NUTS	4		
640-F-4-3				BOLT HORIZONTAL TAIL ATTACH L&R	2		
AN4-5A				BOLTS	6		
AN960-416				WASHERS	6		
AN365-428A				S/L NUTS	6		
20-C-10-9				RIVET REAR RUDDER FAIRLEAD L&R	2		
20-C-13-1				RIVET CABLE OUTLER FAIRINGS L&R	2		
				NOTE: CABLES MUST BE PULLED THROUGH PRIOR TO INSTALLATION OF FAIRINGS			
20-V-4-5		20-V-5		SEAT BELT ATTACH BRACKET. SEE DRAWING 640-F-5. RIVET AND BOLT.	2		
AN3-3A				BOLT	4		
AN960-10				WASHER	4		
AN365-1032				SL NUT	4		
A5				RIVETS	6		
				FLAP CONTROL INSTALLATION.			
20-F-30-6		20-C-17	20-C-16	FLAP CONTROL BEARING. ON OUTSIDE OF REAR SIDE FUSELAGE SKIN, MEASURE BACK 175mm FROM THE REAR SPAR AND 55mm + THICKNESS OF BOTTOM EXTRUSION. THIS IS THE LOCATION OF THE BEARINGS. POSITION BEARING AND DRILL TWO HOLES FROM BEARING INTO LONGERONS. HOLE MUST BE IN THE CENTER OF THE LONGERON.	2		
AN3-7A		20-F-30	20-C-16	BOLTS	4		
AN960-10		20-F-30	20-C-16	WASHER	8		
AN365-10-32		20-F-30	20-C-16	SL NUT	4		
20-C-15-3		20-C-15	20-C-17	FLAP LEVER (SHORT)	1		
20-C-15-8		20-C-15	20-C-16	FLAP LEVER (LONG) (DO NOT DRILL)	1		
20-C-15-2		20-C-15	20-C-16	FLAP SECTOR. ALL THREE PARTS MUST FIT TOGETHER. DO NOT DRILL THEM TOGETHER AT THIS TIME.	1		

ZENAIR CH 640

I.P.L. INSPECTION PARTS LIST

STANDARD 49% KIT	
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PART NO	REV.	DRAWING	ASSEMBLY	DESCRIPTION	QTY	CODE	BUILDER
INSPECTION				SIGNATURE: _____ DATE: _____			