



172 AND SKYHAWK SERIES 1969 THRU 1976 SERVICE MANUAL

CHANGE
NOTICE

THIS REPRINT OF BASIC SERVICE MANUAL D972-13 DATED 1 JULY 1972 INCORPORATES CHANGE 1, DATED 1 JULY 1973, CHANGE 2, DATED 1 JULY 1974, AND CHANGE 3, DATED 15 JUNE 1975.

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NOTE: The portion of the text affected by the changes is indicated by a vertical line in the outer margins of the page. Changes to illustrations are indicated by miniature pointing hands.

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1-4	0	*5-17 thru 5-18 . . .	3	12-11	0	18-8 thru 18-33 .	0
1-5	2	*5-18A	3	12-12 Blank	0	18-34 Blank	0
1-6 Blank	2	*5-18B Blank	3	*13-1 thru 13-2 . . .	3	*19-1 thru 19-2 . .	3
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2-2A	2	5-21	1	14-1 thru 14-2 . . .	0	*20-5	3
2-2B Blank	2	5-22 thru 5-23 . . .	0	14-3	2	20-6	0
2-3	1	*5-24	3	14-4	0	*20-7	3
*2-4	3	5-25 thru 5-26 . . .	0	15-1	1	20-8	0
2-5	0	5-27	1	*15-2	3	*20-9 thru 20-10 .	3
2-6	2	5-28 Blank	1	*15-2A	3	20-11	0
*2-7 thru 2-8	3	6-1 thru 6-2	0	*15-2B Blank	3	*20-12 thru 20-17 .	3
2-9	0	*6-3	3	*15-3 thru 15-4 . . .	3	20-18	0
*2-10 thru 2-14 . . .	3	6-4	0	*15-4A	3	*20-19 thru 20-22 .	3
*2-14A	3	*6-5	3	*15-4B Blank	3	*20-22A thru 20-22B.	3
*2-14B Blank	3	6-6 thru 6-7	0	*15-5 thru 15-6 . . .	3	*20-23	3
*2-15	3	6-8 Blank	0	15-7 thru 15-8 . . .	0	20-24	2
2-16	2	7-1 thru 7-9	1	*15-9	3	*20-24A	3
*2-17 thru 2-18 . . .	3	7-10 thru 7-11 . . .	2	15-10 thru 15-12 . .	0	*20-24B Blank . . .	3
2-19 thru 2-20 . . .	1	7-12 Blank	2	15-13	2	20-25	2
2-21	2	*8-1	3	*15-14	3	*20-26	3
*2-22	3	8-2	0	15-15	2	20-27	0
2-23 thru 2-24 . . .	1	*8-3 thru 8-6	3	15-16 thru 15-17 . .	0	*20-28 thru 20-29 .	3
*2-25 thru 2-26 . . .	3	*9-1 thru 9-7	3	15-18	1	*20-30 Blank	3
3-1	2	*9-8 Blank	3	15-19 thru 15-22 . .	0	*20-31	3
3-2	0	10-1 thru 10-2 . . .	2	15-23	2	20-32	0
*3-3	3	*10-3 thru 10-6 . . .	3	*15-24 thru 15-25 . .	3	20-33	3
3-4	0	10-7 thru 10-8 . . .	2	*15-26 Blank	3	20-34	0
*3-5 thru 3-6	3	*11-1	3	*16-1	3	20-35	2
*3-6A thru 3-6B . . .	3	11-2	0	16-2 thru 16-4 . . .	0	20-36	1
*3-7	3	11-3	2	16-5 thru 16-6 . . .	1	*20-36A	3
3-8	0	*11-4 thru 11-7 . . .	3	16-7	0	*20-36B Blank . . .	3
3-9	1	11-8	0	*16-8	3	20-37	0
*3-10	3	*11-9 thru 11-11 . .	3	16-9 thru 16-12 . .	0	*20-38	3
3-11 thru 3-12 . . .	1	11-12 thru 11-13 . .	0	16-13	1	20-39 thru 20-40 .	1
*3-13	3	11-14 thru 11-15 . .	2	*16-14	3	*20-41	3
3-14	1	11-16	1	16-15 thru 16-16 . .	1	20-42	0
3-14A thru 3-14B . .	1	11-17 thru 11-20 . .	0	16-17 thru 16-18 . .	2	*20-43	3
3-15	0	11-21 thru 11-22 . .	1	16-19 thru 16-21 . .	1	20-44 thru 20-45 .	1
3-16	2	*11-23 thru 11-24 . .	3	*16-22	3	*20-46	3
3-17 thru 3-18 . . .	0	11-25	2	16-22A	2	20-47	0
*3-19 thru 3-20 . . .	3	11-26 thru 11-27 . .	0	*16-22B	3	*20-48	3
*4-1	3	11-28 Blank	0	16-23 thru 16-24 . .	1	20-49	0
4-2 thru 4-3	2	*11A-1	3	*16-24A	3	*20-50 thru 20-53 .	3
*4-4	3	11A-2	0	16-24B	2	*20-54 Blank	3
4-5	0	*11A-3	3	16-25 thru 16-26 . .	2	*20-55 thru 20-85 .	3
*4-6 thru 4-7	3	11A-4	1	*16-27	3	*20-86 Blank	3
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Upon receipt of the second and subsequent changes to this book, personnel responsible for maintaining this publication in current status should ascertain that all previous changes have been received and incorporated.

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CROSS REFERENCE LISTING OF POPULAR NAME VS. MODEL NUMBER AND SERIALS

All aircraft, regardless of manufacturer, are certificated under model number designations. However, popular names are often used for marketing purposes. To provide a consistent method of referring to the various aircraft, model numbers will be used in this publication unless names are required to differentiate between versions of the same basic model. The following table provides a cross reference listing of popular name vs. model numbers.

POPULAR NAME	MODEL YEAR	MODEL	SERIALS	
			BEGINNING	ENDING
172 or SKYHAWK	1969	172K	17257162	17258486
	1970	172K	17258487	17259223
	1971	172L	17259224	17259903
	1972	172L	17259904	17260758
	1973	172M	17260759	17261898
	1974	172M	17261899	17263458
172, SKYHAWK or SKYHAWK II	1975	172M	17263459	17265684
SKYHAWK or SKYHAWK II	1976	172M	17265685	
REIMS 172 REIMS/CESSNA F172	1969	F172H	F17200560	F17200654
	1970	F172H	F17200655	F17200754
	1971	F172K	F17200755	F17200804
	1972	F172L	F17200805	F17200904
	1973	F172M	F17200905	F17201034
	1974	F172M	F17201035	F17201234
	1975	F172M	F17201235	F17201384
	1976	F172M	F17201385	
REIMS/CESSNA F172 SKYHAWK, SKYHAWK II				

FOREWORD

This manual contains factory recommended procedures and instructions for ground handling, servicing and maintaining Cessna Model 172-Series aircraft. This includes the Models 172, Skyhawk, Reims 172 and Reims/Cessna F172. The Reims versions of the Model 172 and Skyhawk are identical to the Model 172 and Skyhawk, through Model year 1971, except that they are powered by O-300-D Rolls Royce engines. Beginning with the 1972 Models, both 172 and F172-Series aircraft are powered by "Blue-Streak" (Lycoming) engines. Besides serving as a reference for the experienced mechanic, this manual also covers step-by-step procedures for the less experienced man. This manual should be kept in a handy place for ready reference. If properly used, it will better enable the mechanic to maintain Cessna 172-Series aircraft and thereby establish a reputation for reliable service.

The information in this manual is based on data available at the time of publication, and is supplemented and kept current by service letters and service news letters published by Cessna Aircraft Company. These are sent to all Cessna Dealers so that they have the latest authoritative recommendations for servicing Cessna aircraft. Therefore, it is recommended that Cessna owners utilize the knowledge and experience of the factory-trained Dealer Service Organization.

In addition to the information in this Service Manual, a group of Vendor publications is available from the Cessna Service Parts Center which describe complete disassembly, overhaul, and parts breakdown of some of the various vendor equipment items. A listing of the available publications is issued periodically in service letters.

Information for Nav-O-Matic Autopilots, Electronic Communications, and Navigation Equipment are not included in this manual. These manuals are available from the Cessna Service Parts Center.

SECTION 1

GENERAL DESCRIPTION

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1-1. GENERAL DESCRIPTION.

1-2. MODEL 172-SERIES.

1-13. DESCRIPTION. Cessna Model 172 Series aircraft, described in this manual, are high-wing monoplanes of all-metal, semimonocoque construction. These aircraft are equipped with a fixed tri-cycle landing gear. Thru 1970 Models, they are equipped with flat spring-steel main landing gear struts. Beginning with 1971 Models, these aircraft are equipped with tubular spring-steel main gear struts. The steerable nose gear is equipped with an air/hydraulic fluid shock strut. Four-place seating is standard, and a double-width, fold-up auxiliary rear seat may be installed as optional equipment. Thru 1971 Models, F172-Series aircraft are equipped with six-cylinder air-cooled O-300-Series, Continental engines, manufactured under license by Rolls Royce. Model 172-Series aircraft, and F172-Series aircraft, beginning with 1972 Models, are powered by four-cylinder, horizontally opposed, air-cooled "Blue Streak" (Lycoming) engines. Each of the engines drives are all-metal, fixed-pitch propeller.

Model 172-Series aircraft feature rear side windows, a "wrap-around" rear window and a swept-back fin and rudder.

1-4. AIRCRAFT SPECIFICATIONS. Leading particulars of these aircraft, with dimensions based on gross weight, are given in figure 1-1. If these dimensions are used for constructing a hangar or computing clearances, remember that such factors as nose gear strut inflation, tire pressures, tire sizes and load distribution may result in some dimensions that are considerably different from those listed.

1-5. STATIONS. Station diagrams are shown in figures 1-2 and 1-3 to assist in locating equipment when a written description is inadequate or impractical.

1-6. TORQUE VALUES. A chart of recommended nut torque values is shown in figure 1-4. These torque values are recommended for all installation procedures contained in this manual, except where other values are stipulated. They are not to be used for checking tightness of installed parts during service.

GROSS WEIGHT	2300 lb	NOTE These specifications are applicable to both Model 172 and F172-Series aircraft, except as indicated.
FUEL CAPACITY		
Standard Wing (Total)	42 gal.	
Standard Wing (Usable)	38 gal.	
Long-Range Wing (Total)	52 gal.	
Long-Range Wing (Usable)	48 gal.	
OIL CAPACITY		
(Without External Filter)	8 qt	
(With External Filter)	9 qt	
ENGINE MODEL		
172-Series (Refer to Section 11 for Engine Data)	LYCOMING O-320 Series	
F172-Series (Refer to Section 11A thru 1971 Models)	CONTINENTAL O-300 Series	
F172-Series (Refer to Section 11 Beginning with 1972 Models)	LYCOMING O-320 Series	
PROPELLER (Fixed Pitch)	76" MCCAULEY	
MAIN WHEEL TIRES		
Pressure (Thru 1970 Models)	6.00 x 6, 4-Ply Rating	
Pressure (Beginning with 1971 Models)	24 psi	
NOSE WHEEL TIRE (Standard)	29 psi	
Pressure (Thru 1970 Models)	5.00 x 5, 4-Ply Rating	
Pressure (Beginning with 1971 Models)	26 psi	
NOSE WHEEL TIRE (172-Series Only, Optional)	31 psi	
Pressure	6.00 x 6, 4-Ply Rating	
NOSE GEAR STRUT PRESSURE (Strut Extended)	26 psi	
WHEEL ALIGNMENT (Flat Spring Struts)	45 psi	
Camber	3° to 5°	
Toe-In	0" to .06"	
WHEEL ALIGNMENT (Tubular Spring Struts)		
Camber	2° to 4°	
Toe-In	0" to .18"	
* (Tubular Gear is non-adjustable)		
AILERON TRAVEL		
Up	20° ± 1°	
Down	15° ± 1°	
WING FLAP TRAVEL		
(Thru 1972 Models)	0° to 40° ± 2°	
(Beginning with 1973 Models)	0° to 40°, +0° -2°	
RUDDER TRAVEL (Measured parallel to water line)		
Right	16° 10' ± 1°	
Left	16° 10' ± 1°	
RUDDER TRAVEL (Measured perpendicular to hinge line)		
Right	17° 44' ± 1°	
Left	17° 44' ± 1°	
ELEVATOR TRAVEL		
Up	28°, +1° - 0°	
Down	23°, +1° - 0°	
ELEVATOR TRIM TAB TRAVEL		
Up	28°, +1° - 0°	
Down	13°, +1° - 0°	
PRINCIPAL DIMENSIONS		
Wing Span (Conventional Wing Tip)	36' 2"	
Wing Span (Conical-Camber Wing Tip)	35' 10"	
Wing Span (Conical-Camber With Strobe Lights)	36'	
Tail Span	11'	
Length	26' 11"	
Fin Height (Maximum with Nose Gear Depressed and Flashing Beacon Installed on Fin)	8' - 9 1/2"	
Track Width (Thru 1970 Models)	7' 2"	
Track Width (Beginning with 1971 Models)	8' - 3 1/2"	
BATTERY LOCATION	Firewall	

* No provisions are made for aligning wheels on tubular gear aircraft. The tolerances provided are to be used only for checking existing wheel alignment.

Figure 1-1. Aircraft Specifications

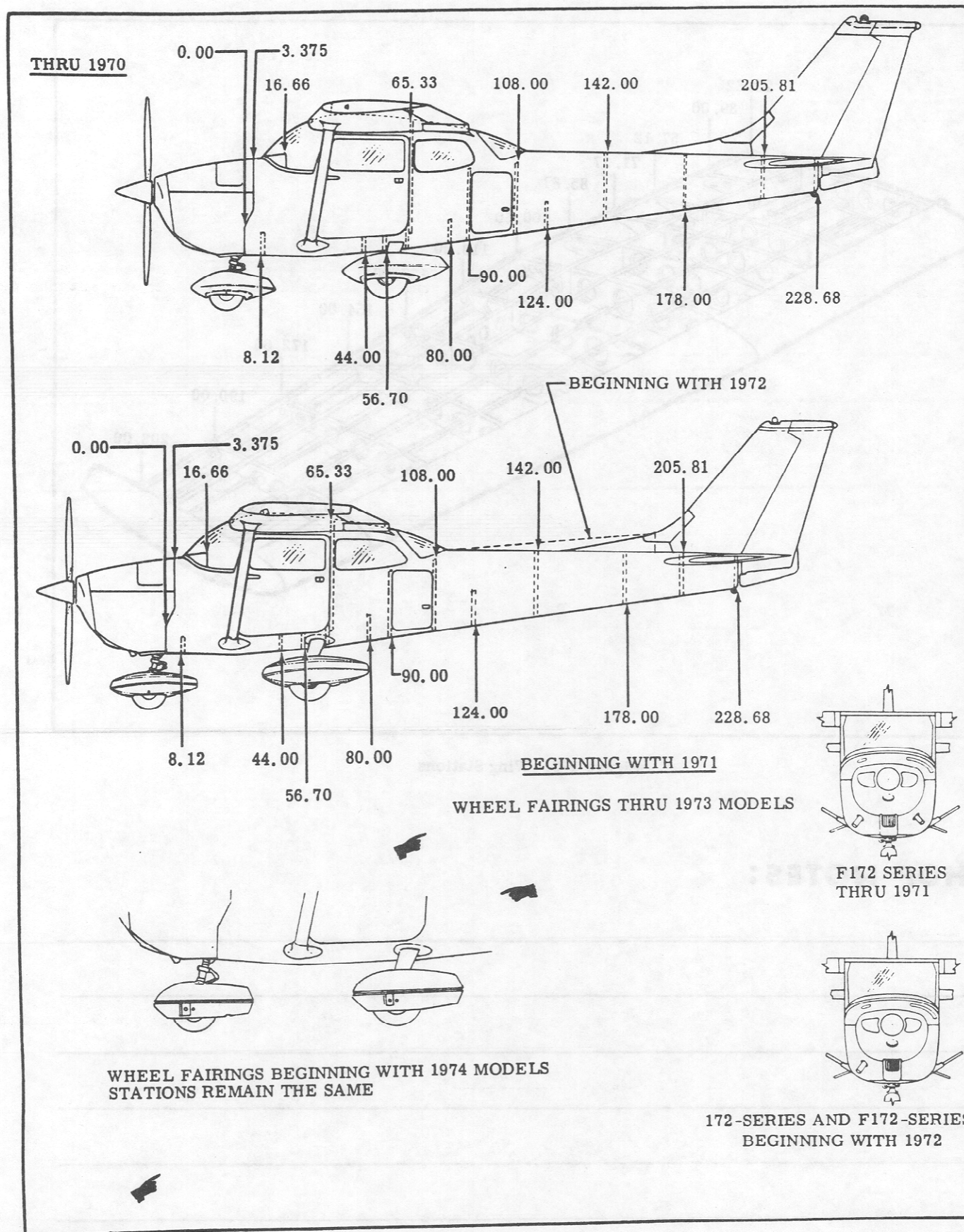


Figure 1-2. Reference Stations

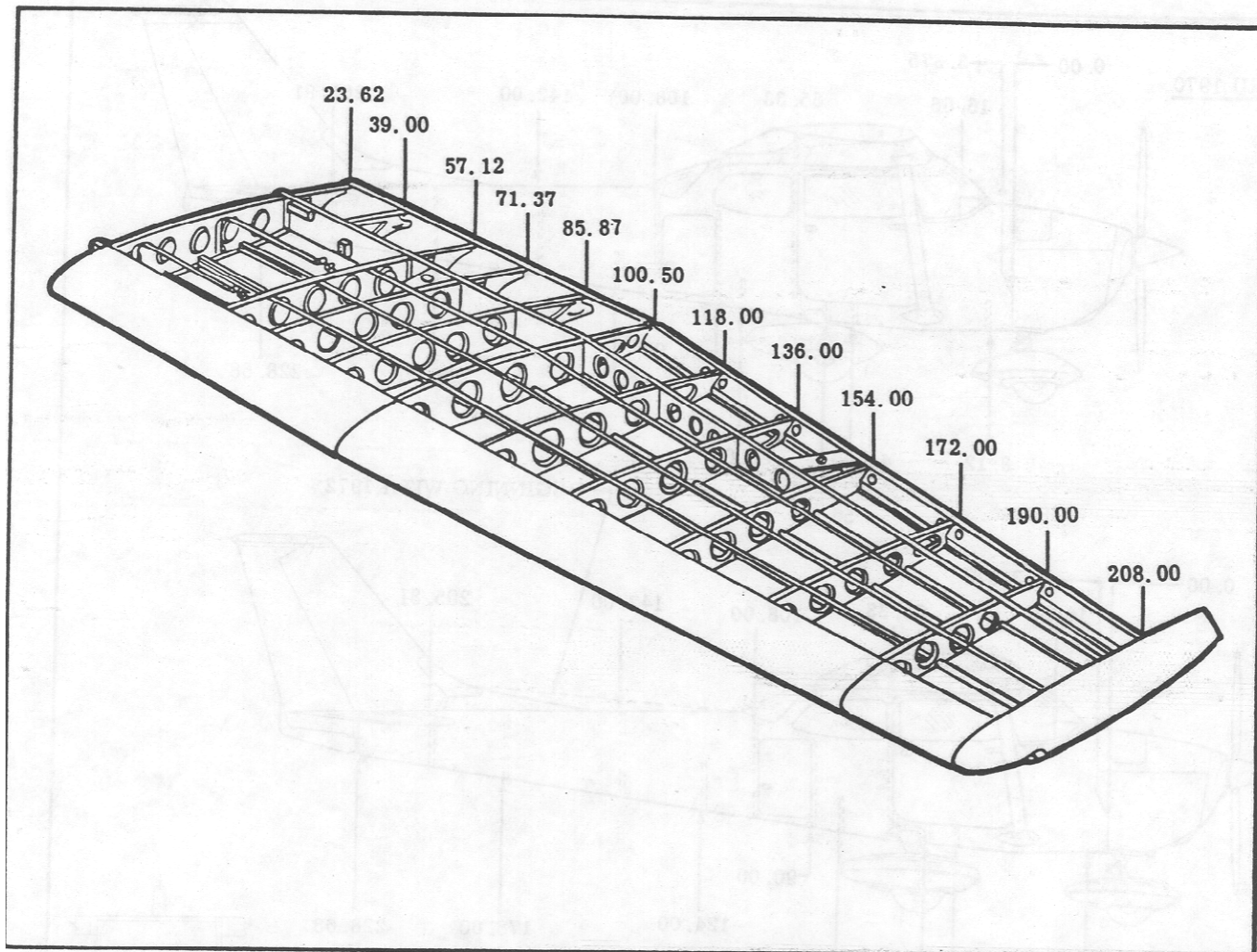


Figure 1-3. Wing Stations

SHOP NOTES:

RECOMMENDED NUT TORQUES

THE TORQUE VALUES STATED ARE POUND-INCHES, RELATED ONLY TO STEEL NUTS ON OIL-FREE CADMIUM PLATED THREADS.				
FINE THREAD SERIES				
TAP SIZE	TENSION		SHEAR	
	TORQUE		TORQUE	
	STD (NOTE 1)	ALT (NOTE 2)	STD (NOTE 3)	ALT (NOTE 2)
8-36	12-15		7-9	
10-32	20-25	20-28	12-15	12-19
1/4-28	50-70	50-75	30-40	30-48
5/16-24	100-140	100-150	60-85	60-106
3/8-24	160-190	160-280	95-110	95-170
7/16-20	450-500	450-580	270-300	270-390
1/2-20	480-690	480-730	290-410	290-500
9/16-18	800-1000	800-1070	480-600	480-750
5/8-18	1100-1300	1100-1600	680-780	660-1060
3/4-16	2300-2500	2300-3350	1300-1500	1300-2200
7/8-14	2500-3000	2500-4650	1500-1800	1500-2900
1-14	3700-5500	3700-6650	2200-3300	2200-4400
1-1/8-12	5000-7000	5000-10000	3000-4200	3000-6300
1-1/4-12	9000-11000	9000-16700	5400-6600	5400-10000
COARSE THREAD SERIES				
	(NOTE 4)		(NOTE 5)	
8-32	12-15		7-9	
10-24	20-25		12-15	
1/4-20	40-50		25-30	
5/16-18	80-90		48-55	
3/8-16	160-185		95-100	
7/16-14	235-255		140-155	
1/2-13	400-480		240-290	
9/16-12	500-700		300-420	
5/8-11	700-900		420-540	
3/4-10	1150-1600		700-950	
7/8-9	2200-3000		1300-1800	
1-8	3700-5000		2200-3000	
1-1/8-8	5500-6500		3300-4000	
1-1/4-8	6500-8000		4000-5000	
NOTES				
1. Covers AN310, AN315, AN345, AN363, MS20365, MS21042, MS21044, MS21045 and MS21046.				
2. When using AN310 or AN320 castellated nuts where alignment between the bolt and cotter pin slots is not reached using normal torque values, use alternate torque values or replace the nut.				
3. Covers AN316, AN320, MS20364 and MS21245.				
4. Covers AN363, MS20365, MS21042, MS21043, MS21044, MS21045 and MS21046.				
5. Covers AN340.				
CAUTION				
DO NOT REUSE SELF-LOCKING NUTS.				
The above values are recommended for all installation procedures contained in this manual, except where other values are stipulated. They are not to be used for checking tightness of installed parts during service.				

Figure 1-4. Torque Values