

United States of America  
Department of Transportation -- Federal Aviation Administration  
**Supplemental Type Certificate**

*Number* SA2933SO

*This certificate is issued to*

Davis Aviation Services  
P.O. Box 192  
Bristol, TN 37621

DAVIS AVIATION SERVICES, INC.  
WARNING: This STC and all  
information furnished with it are the  
proprietary property of Davis Aviation  
Services. This STC and any  
information furnished with it is to be  
used on and is applicable to the  
following aircraft only. Use on any  
other aircraft may be unsafe and is in  
violation of Davis's license to use as  
well as violation of the civil and  
criminal law.

AC Model: 185  
AC SN: 185 02213  
AC Reg: N3946Q

*certifies that the change in the type design for the following product with the limitations and conditions  
therefor as specified hereon meets the airworthiness requirements of Part 3 of the Civil Air Regulations.*

*Original Product - Type Certificate Number:* 3A24

*Makes:* Cessna

*Model:* 185 & A thru E; A185E; A185F

*Description of Type Design Change:*

Installation of Teledyne Continental Motors model IO-550-D engine and Hartzell model PHC-C3YF-1RF/F7691(), PHC-C3YF-1RF/F8468A()-6R, or IIC-C3YF-1RF/9587C-15S, or McCauley model D3A34C401/90DFA-10 or - 8, or B2A37C228/90RDA propeller on Cessna 185 series aircraft in accordance with Bonaire Aviation Company "Instructions Continental IO-550-D Installation Cessna 185 Series Aircraft STC number #SA2933SO", revision D, dated 11/1/98.

*Limitations and Conditions:* "This approval should not be extended to other aircraft of this model on which other previously approved modifications are incorporated, unless it is determine by the installer that the interrelationship between this change and any other previously approved modifications will produce no adverse effect upon the airworthiness of that airplane. If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission." Bonaire Aviation Company FAA approved "Supplemental Airplane Flight Manual" or "Pilot's Operating Handbook and FAA Approved Airplane Flight Manual" Supplement, both dated December 7, 1998 or later FAA approved revision of either document is required with this installation.

*This certificate and the supporting data which is the basis for approval shall remain in effect until  
surrendered, suspended, revoked or a termination date is otherwise established by the Administrator of the  
Federal Aviation Administration.*

*Date of application:* November 03, 1998

*Date reissual:* June 20, 1991; February 18, 1999

*Date of issuance:* April 02, 1991

*Date amended:* November 9, 1993; May 31, 1994;  
December 07, 1998



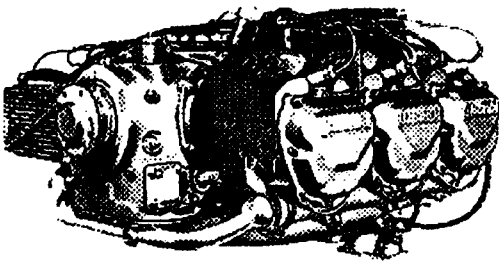
*By direction of the Administrator*

*Paul C. Sconyers*  
(Signature)

Paul C. Sconyers  
Associate Manager  
Atlanta Aircraft Certification Office

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Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.



# Davis Aviation Services Inc.

*(Tennessee Office)*

December 4, 2001

Paul Mennen  
1452 Owen Sound Drive  
Sunnyvale, CA 94087

Dear Sir:

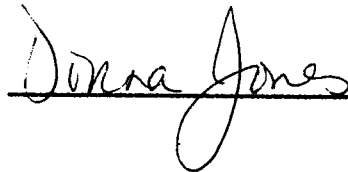
This is your authorization to use Davis Aviation Services, Inc. STC # SA2933SO in Cessna 185, S/N 18502213.

This authorization is a **Limited License to Use** STC # SA2933SO in Cessna 185 serial number 18502213 only. This **Limited License to Use** shall not be assigned or sub-licensed. The use of this STC in any other aircraft is unauthorized, is a civil and criminal misappropriation of the property of Davis Aviation Services, Inc.

Davis Aviation Services, Inc. maintains a permanent record of all authorizations that have been issued. For answers to any questions regarding use of this STC for a specific aircraft, please contact Davis Aviation Services, Inc.

Davis Aviation Services, Inc.  
Authorized Representative

By:

\_\_\_\_\_

P. O. Box 192, Bristol, TN 37621-0192  
Delivery address: 117 Foxhall Circle, Bristol, TN 37620  
(423) 652-1113 fax (423) 652-2503  
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N3946Q

# **BONAIRE AVIATION COMPANY**

## **INSTRUCTIONS**

**CONTINENTAL IO-550-D INSTALLATION  
CESSNA 185 SERIES AIRCRAFT  
STC NUMBER #SA2933SO**

**DOCUMENT #BOAC 1009  
REVISION A, DATED 9-18-92  
REVISION B, DATED 9-1-93  
REVISION C, DATED 1-17-94  
REVISION D, DATED 11-1-98**

## LOG OF REVISIONS

Rev No.	Pages	Description	Date	Approved
A	Dwg. 3	Deletion of Operational Placard FAA APPROVED Date <u>7-29-92</u> Initials <u>JCR</u>	9/18/92	
B	All	Revised Company name on entire manual to Bonaire Aviation Company	9/1/93	
	MDL1009	Revised Master Document List	9/1/93	
	1009-1	Revised Installation Instructions number 2 to add drawing #5. Number 8 - revised aircraft weights	9/1/93	
	1009-3	Revised tachometer and fuel flow instrument markings	9/1/93	
	1009-4	Revised "parts to be ordered" list	9/1/93	
		Revised placards	9/1/93	
	Dwg #4	Revised Item #51 in Parts Description list	9/1/93	
	Dwg #5	Added Hartzell Propeller	9/1/93	
		FAA APPROVED Date <u>11-12-93</u> Initials <u>JCR</u>		

Note: Revised text is indicated by a vertical black line along the right margin.

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# LOG OF REVISIONS (CONTINUED)

Rev. No.	Pages	Description	Date	Approved
C	MDL1009	Revised Master Document List	1/17/94	5-27-94 <i>Jerry Robinson</i>
	1009-1	Revised Installation Instructions	1/17/94	
	1009-2	Revised Applicable Models	1/17/94	
	1009-3	Revised Approved Engine Instrument Markings	1/17/94	
	1009-3A	New page, Approved Instrument Markings (Continued)	1/17/94	
	1009-4	Replaced parts list with kit lists	1/17/94	
	1009-4A	New Page - kit list	1/17/94	
	1009-4B	New page - kit list	1/17/94	
	1009-4C	New page - kit list	1/17/94	
	1009-4D	New page - kit list	1/17/94	
	1009-5	Revised Fuel pump part number	1/17/94	
	Dwg #1	Revised drawing	1/17/94	
	Dwg #2	Revised drawing	1/17/94	
	Dwg #3	Revised and added placards	1/17/94	
	Dwg #4	Revised parts list for propeller installation	1/17/94	
	Dwg #5	Revised parts list for propeller installation	1/17/94	
	Dwg #6	New page - Added Hartzell Propeller	1/17/94	
	Dwg #7	New page - Added Hartzell Propeller	1/17/94	
	Dwg #8	New page - Added McCauley Propeller	1/17/94	
FAA APPROVED Date <u>5-27-94</u> Initials <u>JRB</u>				

Note: Revised text is indicated by a vertical black line along the right margin.

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## LOG OF REVISIONS (CONTINUED)

Rev. No.	Pages	Description	Date
D	MDL1009	Revised Master Document List	11/1/98
	1009-1, 1A, 1B	Revised Installation Instructions	11/1/98
	1009-3	Revised Engine Instrument Markings	11/1/98
	1009-4, 4A	Revised Kit Parts List	11/1/98
	1009-4B through 4D	Deleted	11/1/98
	1009-5	Revised Required Aircraft Equipment	11/1/98
	1009-6, 6A	Revised Placards	11/1/98
	Dwg #1-3	Deleted	11/1/98
	1009-7 -14	New Pages - Installation Drawings	11/1/98
FAA Approved Date <u>12/7/98</u> Initials <u>JC</u>			

Note: Revised text is indicated by a vertical black line along the right margin.

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CONTINENTAL IO-550-D INSTALLATION  
CESSNA 185 SERIES AIRCRAFT  
MASTER DOCUMENT LIST (MDL) NO. BOAC 1009  
REVISION A, DATED 9-18-92  
REVISION B, DATED 9-1-93  
REVISION C, DATED 1-17-94  
REVISION D, DATED 11-1-98

PAGE NO.	DATE	REVISION	DESCRIPTION
INSTALLATION			
1009-1	11/1/98	D	Installation Instructions
1009-1A	11/1/98	D	Installation Instructions (continued)
1009-1B	11/1/98	D	Installation Instructions (continued)
1009-2	11/1/98	D	Applicable Models
1009-3	11/1/98	D	Approved Engine Instrument Markings
1009-4	11/1/98	D	Kit Parts List
1009-4A	11/1/98	D	Kit Parts List (continued)
1009-5	11/1/98	D	List of Required Aircraft Equipment
1009-6	11/1/98	D	Required Placards
1009-6A	11/1/98	D	Required Placards (continued)
1009-7 -14	11/1/98	D	Installation Dwgs

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INSTALLATION INSTRUCTIONS  
CONTINENTAL IO-550-ENGINE  
IN A CESSNA 185 SERIES AIRCRAFT

N3946Q

TO AIRCRAFT OWNER:

This conversion should only be performed by a Qualified Airframe and Powerplant Technician and inspected by an Aircraft Inspector who has significant experience with this aircraft.

TO AIRCRAFT OWNER, MECHANIC AND INSPECTOR:

These instructions are generic to the aircraft as originally manufactured by Cessna. The aircraft covered by this STC at the time of conversion have been in service many hours over many years and exhibit varying degrees of wear over all aircraft assemblies. It is the responsibility of the mechanic and inspector to exercise the utmost care and judgment in making this conversion in accordance with the STC. Exercise good judgment in determining the compatibility of this STC, in all regards, with all systems on the particular aircraft being converted.

**NOTE:** Please read all installation instructions carefully before beginning conversion. Installation must conform to Bonaire Aviation Company installation instructions, standard maintenance practices as per AC 43.13-1A and with removal and installation sections of applicable Cessna Service Manual.

1. Check all engine instruments for correct markings as per Bonaire Aviation Company approved Engine Instrument Marking Table BOAC 1009-3. Remove instruments as required. Have approved instrument shop install instrument markings, reinstall instruments. It is recommended that the engine gauges be calibrated at this time.
2. Remove existing engine, propeller and spinner from aircraft, saving original alternator, baffling, engine controls, exhaust system, accessories, plumbing and electrical for reinstallation. Replace or repair all worn or damaged parts. Pay particular attention to the condition of the baffling and baffle seals. Note: Aircraft must be equipped with an alternator in order to perform conversion. Contact InterAv or other STC holder for alternator upgrade.
3. Remove old propeller governor. If governor is being overhauled, send to overhaul shop to be reset to 2700 RPM. If a McCauley propeller governor is being overhauled or exchanged inform the overhauling facility to build the governor to P/N C290D3[X]/T5 with A-20069-2 spring, 2700 RPM. Certain governor models may not be converted to the /T5, check with the overhauling facility to verify compatibility. If a replacement governor is being supplied by Bonaire Aviation Company return the core governor to Bonaire.
4. Inspect the following components and accessories and determine serviceability. Repair or replace as required. Tachometer Cable, Vacuum Pump(s), Temperature measuring equipment and systems, including but not limited to, probes and wiring. Oil Temperature. Cylinder Head Temperature (CHT). Exhaust Gas Temperature (EGT). Complete Electrical System, firewall and forward, including but not limited to, battery, alternator, feeder cables, wiring, gauges and indicators. Air Intake Assembly. Replace filter if warranted.
5. Serial Numbers 185-0001 through 185-0413:  
Refer to BOAC page 1009-7; remove items (44) shield Assembly, tubes (14) and (16), tee (17) and the two Bendix piston pumps with all associated plumbing and hardware. Refer to page BOAC 1009-8; install elbow (11), bracket (26) and associated hardware, resistor (31) (MOR20-2), pump (24) and all associated plumbing and drains. Rework item (44) shield assembly removed in step a) by moving the plumbing and wire pass-through holes to the locations shown in BOAC 1009-8 (or replace with Cessna P/N 0716130-1). Rewire new pump as per BOAC 1009-9. Reinstall modified shield assembly.



INSTALLATION INSTRUCTIONS (CONTINUED)

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6. Serial Numbers 18504295 and on:  
Remove and discard items 32A through 32F shown in BOAC 1009-10. Attach fuel supply hose P/N AE3660060G0316 to fuel pump elbows. Stabilize hose with clamps and silicone adhesive to prevent chaffing.
7. If your previous engine installation was equipped with an Screen oil filter and your replacement engine is equipped with a spin-on oil filter, install spacer BN-HDW-3 and stud 402129P003, or hex spacer BN-HDW-4 as per drawing BOAC 1009-11.
8. Remove Fuel Flow/Manifold Pressure gauge and install Fuel Flow/Manifold Pressure gauge supplied by Bonaire (United Instruments P/N 6331 or other manufacturers equivalent) and return removed gauge to Bonaire.
9. Remove Engine Tachometer gauge and install Engine Tachometer gauge supplied by Bonaire ( Mitchell P/N D1-112-5025, Horizon Digital Tachometer model P-1000 or other manufacturers equivalent) and return removed gauge to Bonaire.
10. Modify cylinder baffling and oil cooler baffling as per BOAC 1009-12 through BOAC 1009-14. Repair or replace baffling that is cracked or broken or that does not fit tightly around the engine. Remove old rubber baffling from metal engine baffling. Install new silicone rubber baffling (supplied by Bonaire) to engine baffles. Install baffling on engine. Fill wide gaps between baffles and engine (more than  $\frac{1}{8}$  in.) with high temperature silicone sealant. Trim soft baffling as necessary for a tight seal with the cowling. Baffling fit is vital to proper engine cooling. NOTE: When installing the cowling soft baffling is to be up and/or forward toward inlet ram air, so that it seals tighter against the cowl when pressurized.
11. Install IO-550-D engine in engine mount using new attaching hardware. Reconnect existing plumbing, electrical and engine controls. Refer to applicable Cessna Service manual for routing and securing of all hoses, wires, tubes, etc.
12. Reinstall existing exhaust system and accessories. Pay particular attention to alternator tensioning arm, replace with Cessna p/n 0750221-1 if necessary.
13. Install propeller and spinner assembly, installation instructions are supplied by the propeller manufacturer in the propeller shipping box. Install Hartzell propeller to align a blade with the " T | C " mark on the crankshaft flange. Hartzell installation decal on propeller not applicable to this installation.
14. Serial numbers 185-0001 through 185-0413:  
Refer to Cessna Service Manual D2000-8-13-CPS-150-2/93 (or latest revision). Pump circuit is described by paragraph 12-60 and 12-61 of the Service Manual. Rig throttle-operated micro switch as per paragraph 12-62 of the Service Manual. Check boost pump operation with engine not running. With throttle full open fuel flow meter should read about 125 lbs./hr. With throttle closed about 40 lbs./hr.
15. With power on and battery cart attached, operationally check electrical fuel boost pump on low position at 6 p.s.i. with pressure gauge attached to fuel line at firewall fitting. (No flow situation.)
16. Re-inspect all assemblies. ADD ENGINE OIL. Make sure oil meets TCM specifications as outlined in TCM IO-550 Maintenance and Operators Manual Chapter 9. Install oil dipstick (P/N 632062-4A1 or 632062-14A1) and oil cap. Service with fuel.

**Bonaire Aviation Company**  
**P.O. Box 1158 TCAS Blountville, TN 37617**  
**INSTALLATION INSTRUCTIONS (CONTINUED)**

17. If the aircraft is on floats, obtain markings from Cessna or STC holder if floats are not a standard Cessna factory installation. Mark backside of dipstick.
18. Perform inspection on complete installation. (Second set of eyes -- Inspector other than installer is recommended.) Check for fuel or oil leaks. Insure that chaffing points for wiring and hoses are properly isolated or protected.
19. Ground run engine (minimal time without cowling), check for 2700 RPM, adjust governor if required. Verify proper engine operation in accordance with TCM IO-550 Maintenance and Operators Manual. In some installations a high speed taxi may be required to determine proper governor settings. Note: An outside observer should watch for leaks during the first start.
20. Operationally test electrical, vacuum, and fuel systems. Check for proper readings on all engine instruments. Reinstall cowling.
21. Install FAA approved Flight Manual Supplement, appropriate to aircraft serial number being modified.
22. Make logbook entries and complete FAA form 337 for aircraft, engine and propeller. Revise aircraft weight and balance using the Propeller Weight and C.G. Location Chart (below). TCM IO-550-D engine dry weight including accessories = 463.2 Lb. See TCM IO-550-D Operators Manual for details.

***Propeller Weight and C.G. Location Chart***

<b><i>Manufacturer</i></b>	<b><i>Propeller Model</i></b>	<b><i>Weight (Lb.)</i></b> <b><i>(incl. Spinner Assy.)</i></b>	<b><i>C.G. Location*</i></b>
Hartzell	HC-C3YF-1RF/F9587C-15S	83.5	3.250"
Hartzell	PHC-C3YF-1RF/F8468A( )-6R	81.0	3.250"
Hartzell	PHC-C3YF-1RF/F7691( )	72.0	3.250"
McCauley	B2A37C223/90RDA-4	65.5	4.375"
McCauley	D3A34C401/90DFA-10 or -8	71.0	3.688"

\*C.G. location is measured in inches from the engine crankshaft flange.

23. Top off fuel and oil. Perform final inspection to insure that any items loosened or that had safety wire removed during adjustment are secured.
24. Fly aircraft using TCM break-in procedures as outlined in the TCM IO-550 Maintenance and Operators Manual. Make all final adjustments before returning the aircraft to service.
25. After flying the aircraft, check one more time for leaks and chaffing points. Repair or adjust as necessary.
26. While this installation is fresh in your memory, record any problems that you encountered during the installation and feed them back to us. Pictures or parts catalog references are very helpful.

**TO MAKE IT BETTER, SEND US A LETTER!**

*N3946Q*

CONTINENTAL IO-550-D ENGINE INSTALLATION

CESSNA 185 SERIES AIRCRAFT

APPLICABLE MODELS

Cessna Models

MODEL NUMBER	SERIAL NUMBER
185	185-0001 through 185-0237
T85A	185-0238 through 185-0512
185B	185-0513 through 185-0653
185C	185-0654 through 185-0776
185D	185-0777 through 185-0967
185E	185-0968 through 185-1149
A185E	185-0968 through 18501934
A185E & AG	18501935 through 18502090
A185F & AG	18502091 through 18503938
A185F	18503939 through 18504425

Note: NON TURBO MODELS ONLY

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CONTINENTAL IO-550-D ENGINE INSTALLATION  
APPROVED ENGINE INSTRUMENT MARKINGS

N3946Q

OIL TEMPERATURE

Caution Range (Yellow Radial) ..... 76 to 100° F  
Operating Range (Green Arc) ..... 100 to 240° F  
Maximum (Red Radial) ..... 240° F

OIL PRESSURE

Minimum (idle) (Red Radial) ..... 10 p.s.i.  
Caution Range (Yellow Arc) ..... 10 to 30 p.s.i.  
Operating Range (Green Arc) ..... 30 to 60 p.s.i.  
Maximum (Red Radial) ..... 100 p.s.i.

TACHOMETER (McCauley and Hartzell Propeller - Land or Sea)

D3A34C401/90DFA-10 or -8

PHC-C3YF-1RF/F8468A ( ) -6R

PHC-C3YF-1RF/F7691 ( )

Operating Range (Green Arc) ..... 1800 to 2700 RPM  
Maximum (Red Radial) ..... 2700 RPM

TACHOMETER (McCauley Propeller - Land Only)

B2A37C228/90RDA

Operating Range (Green Arc) ..... 1800 to 2700 RPM  
Maximum (Red Radial) ..... 2700 RPM

TACHOMETER (Hartzell Propeller - Land or Sea)

HC-C3YF-1RF/F9587C-15S

Continuous Operation

Prohibited Range (Red Arc) ..... 2000 to 2300 RPM  
Operating Range (Green Arc) ..... 1800 to 2700 RPM  
Maximum (Red Radial) ..... 2700 RPM

MANIFOLD PRESSURE

Operating Range (Green Arc) ..... 15.0 to 29.6 in. Hg.  
Maximum (Red Radial) ..... 29.6 in. Hg.

FUEL FLOW

Operating Range (Green Arc) ..... 4.0 to 27.4 GPH  
Maximum (Red Radial) ..... 27.4 GPH

CYLINDER HEAD TEMPERATURE

Operating Range (Green Arc) ..... 360 to 420° F  
Maximum (Red Radial) ..... 460° F

## CONTINENTAL IO-550-D ENGINE INSTALLATION

### KIT PARTS LIST 185 STC KIT

Engine: IO-550-D 12 Volt or 24 Volt

#### STC Kit:

1 ea.	STC Paperwork	
4 ea.	J6543-1(only 2 ea. Supplied if optional mount required)	Shock Mount
2 ea.	J15198-1	Shock Mount (Optional)
1 ea.	632062-4A1	Oil Stick
1 ea.	632062-14A1	Oil Stick (Optional)
1 ea.	BN180-604	Baffle, Closure
1 ea.	BN180-HDW-3	Spacer (Optional)
1 ea.	402129P003	Stud (Optional)
Or	BN-HDW-4	Replaces Stud and Spacer (Optional)
1 ea.	Set Placards	
1 ea.	Hose kit	
1 ea.	Tachometer	
1 ea.	MP/FF Gauge	
1 ea.	AN815-6	Union
1 ea.	S2300-4	Bracket
1 ea.	0700147-124	Line
1 ea.	MS21919WDG6	Clamp
1 ea.	AN7-47A	Bolt
1 ea.	MS20365-720C	Nut
2 ea.	AN960-716	Washer
4 ea.	0851559-1	Tab Washer
2 ea.	10-52305	P-Lead Kit (Optional)
1 ft.	Spiral Wrap	
15 ft.	Silicone Baffle Material	

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#### Hose kit:

1 ea.	S1167-6-0270	Fuel Supply (Serial 185-0001 to 18504294 or
1 ea.	AE3660060G0316	Fuel Supply (Serial 18504295 and on)
1 ea.	S1236-4-0144	Vapor Vent (Serial #0001-1383) or
1 ea.	S1236C4-0134	Vapor Vent (Serial #1389-3389) or
1 ea.	S1236C4-0184	Vapor Vent (Serial #3390-4294) or
1 ea.	S2495-4-0216	Vapor Vent (Serial #4295 and subsequent)
1 ea.	S1236-4-0440	Oil Pressure (Serial #0001-1383) or
1 ea.	S1236-4-0415	Oil Pressure (Serial #1389-3153) or
1 ea.	S1236C3-0235	Oil Pressure (Serial #3154-4294) or
1 ea.	S2495-3-0234	Oil Pressure (Serial #4295 and subsequent)
• 1 ea.	S1236-4-0194	Valve to Engine (Serial #0001-2007, 2026, 2027) or
• 1 ea.	S1236C4-0290	Valve to Engine (Serial #2008-2025, 2028-2563) or
• 1 ea.	S1236C4-0220	Valve to Engine (Serial #2566 and subsequent)
* These hoses only used with oil dilution system		
1 ea.	S2495-6-0124	Vapor Vent (Serial #4295 and subsequent)

# Bonaire Aviation Company

P.O. Box 1158 TCAS Blountville, TN 37617

## CONTINENTAL IO-550-D ENGINE INSTALLATION KIT LIST (CONTINUED)

### Propeller Options:

1 ea. D3A34C401/90DFA-10 OR -8  
1 ea. 1250909K201  
1 ea. 1250909-6  
12 ea. AN960-10L  
12 ea. AN3-4A  
12 ea. AN363-1032  
15 ea. AN526C1032R3  
15 ea. 57A1020  
1 ea. 1250412-3  
6 ea. 0752005-4  
1 ea. 070286K200  
1 ea. 0750234-5

Or

1 ea. HC-C3YF-1RF/F9587C-1SS  
1 ea. C3535-1P or A2295-1P

Or

1 ea. PHC-C3YF-1RF/F8468A() -6R  
1 ea. C3535-1P or A2295-1P

Or

1 ea. PHC-C3YF-1RF/F7691()  
1 ea. C3535-1P or A2295-1P

Or

1 ea. B2A37C228/90RDA-4  
1 ea. D3396

Propeller  
Spinner  
Bulkhead  
Washer  
Bolt  
Nut  
Screw  
Washer  
Support  
Lug  
Spinner (Optional)  
Bulkhead (Optional)

Propeller (Including Mounting Kit)  
Spinner Assembly

Propeller (Including Mounting Kit)  
Spinner Assembly

Propeller (Including Mounting Kit)  
Spinner Assembly

Propeller (Including Mounting Kit)  
Spinner/Bulkhead - Assembly

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Drawings for Manufacturing of Parts: (Not Supplied to Customer)

BN-HDW

BN180-604

Hardware  
Baffle, Closure

NOTE: THESE PART NUMBERS ARE CURRENT AS OF 11/1/98. THESE PART NUMBERS MAY BE SUPERSEDED OR OTHER MANUFACTURER EQUIVALENT PART NUMBERS USED.

BOAC 1009-4A, Revision D  
11/1/98

CONTINENTAL IO-550-D ENGINE INSTALLATION

**FUEL PUMP**  
**DUKES (or other PMA equivalent)**  
**(not supplied)**

N3946Q

1 Dukes Fuel Pump, Part Number	4140-00-17 (Cessna P/N C291504-0101) 12 Volt System
(new, rebuilt or overhauled)	4140-00-15 (Cessna P/N C291504-0201) 24 Volt System

**Propeller and Spinner Cross Reference List**

**Propeller**

**Spinner**

D3A34C401/90DFA-10 or -8

1250909K201 or  
0750286K200

B2A37C228/90RDA-4

D3396

PHC-C3YF-1RF/F7691()

C3535-1P or A2295-1P

PHC-C3YF-1RF/F8468A-6R

C3535-1P or A2295-1P

HC-C3YF-1RF/F9587C-15S

C3535-1P or A2295-1P

NOTE: THESE PART NUMBERS ARE CURRENT AS OF 11/1/98. THESE PART NUMBERS MAY BE SUPERSEDED  
OR OTHER MANUFACTURER EQUIVALENT PART NUMBERS USED.

**Bonaire Aviation Company**  
**P.O. Box 1158 TCAS Blountville, TN 37617**  
**CONTINENTAL IO-550-D ENGINE INSTALLATION**  
**REQUIRED PLACARDS**

*Remove the following placard:*

- S/N 1850001 through S/N 18503153 except 18502300:

Fuel Flow at Full Throttle		
	2850 RPM	2700 RPM
S.L.	24	23
4000 ft.	22	21
8000 ft.	20	19

N3946Q

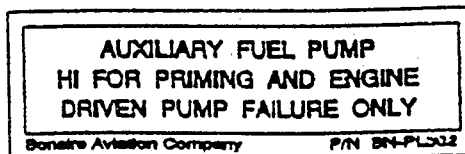
- S/N 18503154 through 18503683:

Maximum Power Settings and Fuel Flow				
Takeoff (5 min. only) 2850 RPM, Maximum Continuous Power 2700 RPM, Fuel Flows at Full Throttle				
R.P.M.	S.L.	4000	8000	12000
2700	23 g.p.h.	21 g.p.h.	19 g.p.h.	17 g.p.h.
2850	24 g.p.h.	22 g.p.h.	20 g.p.h.	18 g.p.h.

- S/N 18502300, 18503684 and On:

Minimum Fuel Flows at Full Throttle				
R.P.M.	S.L.	4000	8000	12000
2700	23 g.p.h.	21 g.p.h.	19 g.p.h.	17 g.p.h.
2850	24 g.p.h.	22 g.p.h.	20 g.p.h.	18 g.p.h.

*Install auxiliary fuel pump placard near auxiliary pump switch:*





**Bonaire Aviation Company**  
**P.O. Box 1158 TCAS Blountville, TN 37617**  
**REQUIRED PLACARDS (CONTINUED)**

*Install placard on the instrument panel near the MP/FF gauge:*

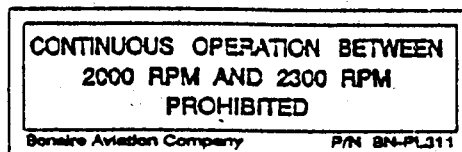
MAXIMUM POWER SETTINGS AND FUEL FLOWS (10-650)	
TAKEOFF: 2700 RPM 29.8 IN. MP., 27.4 GPH OR FULL THROTTLE MAXIMUM CONTINUOUS POWER: 2700 RPM	
PRESSURE ALTITUDE (FEET)	FUEL FLOW (GPH)
SL	27.4
2,000	24.0
4,000	22.5
6,000	21.0
8,000	20.0
10,000	18.5
12,000	17.5

Bonaire Aviation Company  
P/N BN-PL303

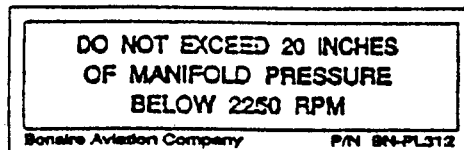
N3946Q

*Install placard on the instrument panel near tachometer:*

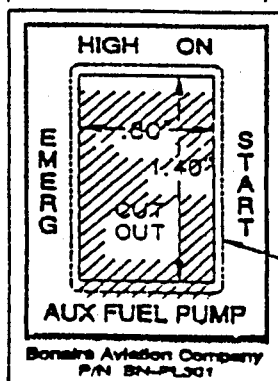
For Hartzell Propeller HC-C3YF-1RF/F9587C-15S- Land or Amphibian



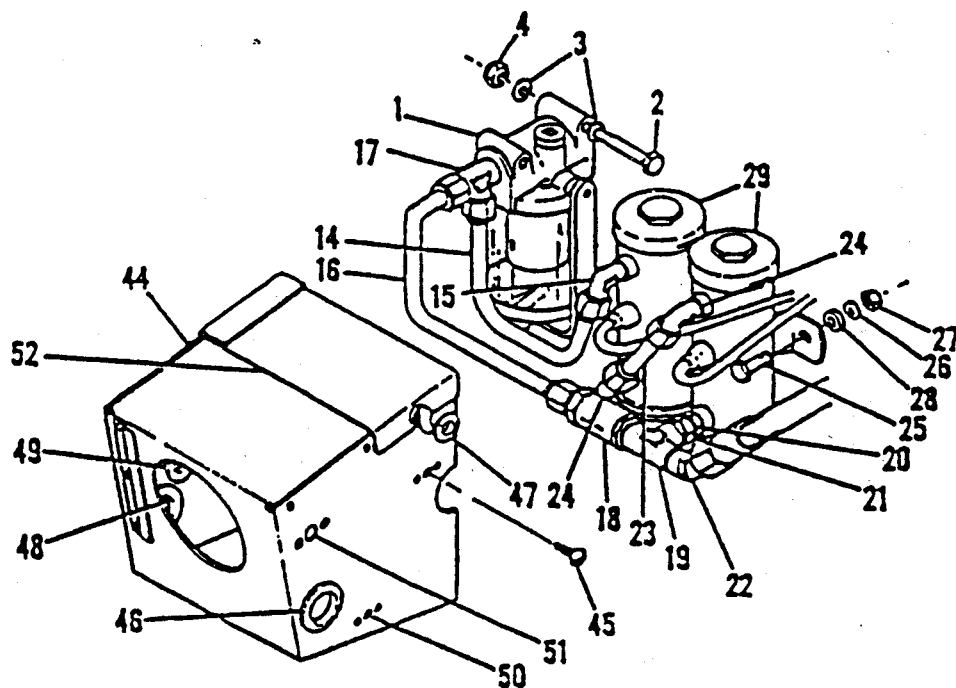
For Hartzell Propeller PHC-C3YF-1RF/F7691 ( )- Land or Amphibian

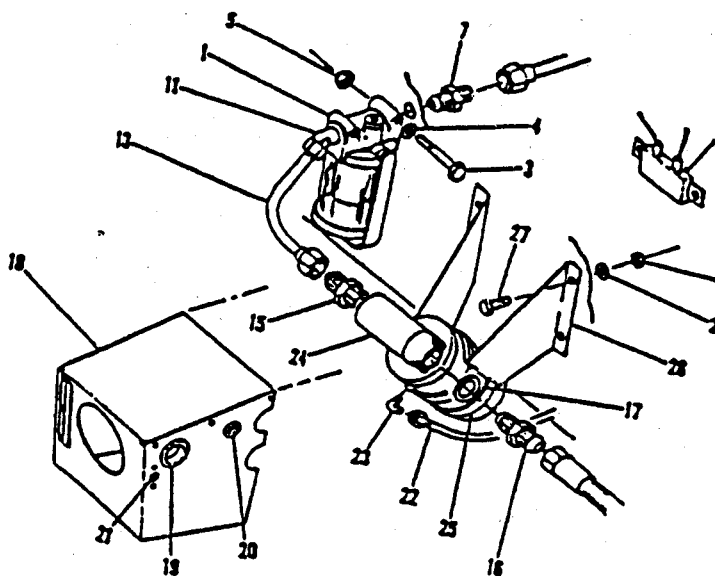


Fuel Pump Switch Placard (S/N 185-0414 and On) :



N3946Q

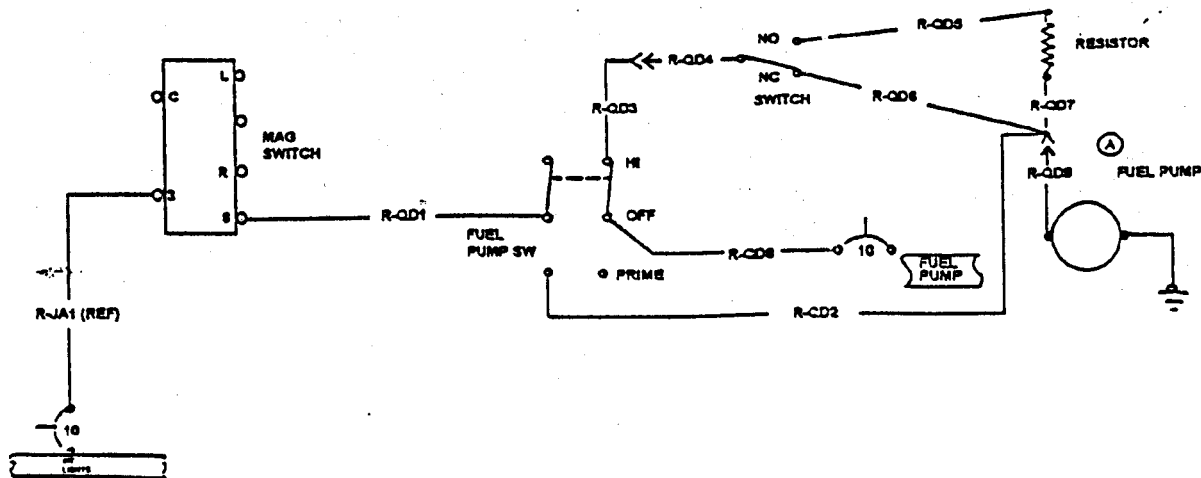




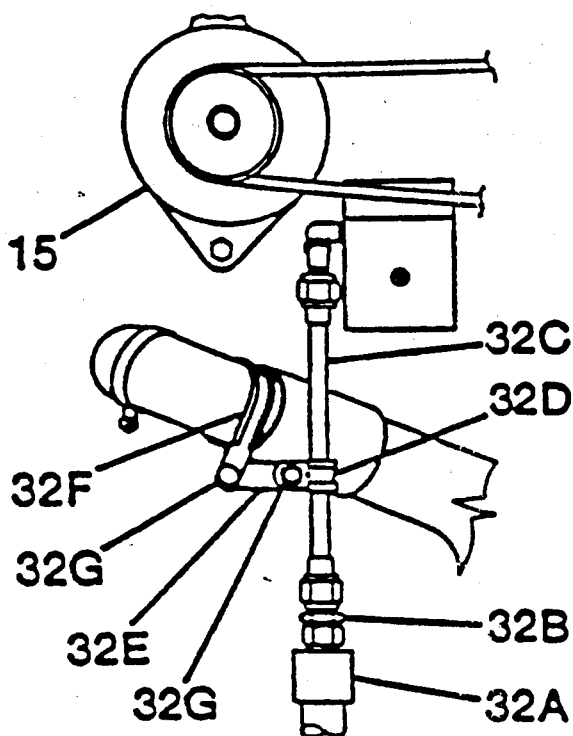
N3946Q

Bonaire Aviation Company  
P.O. Box 1158 TCAS Blountville, TN 37617

N3946Q



R-QD9	18			S-341-2	———
R-QD8	18			S-1367-1-8	S-1357-1-6
R-QD7	18			———	S341-1
R-QD6	18			S-1367-1-4	common R-QD-7
R-QD5	18			S-1367-1-4	———
R-QD4	18			S1367-1-4	S-1370-1
R-QD3	18			S-1367-1-6	S-1370-1
R-QD2	18			S-1367-1-6	common R-QD-7
R-QD1	18			S-1367-1-6	S-1367-1-6
WIRE CODE NO.	GAUGE	MATERIAL	LG	TERMINALS	

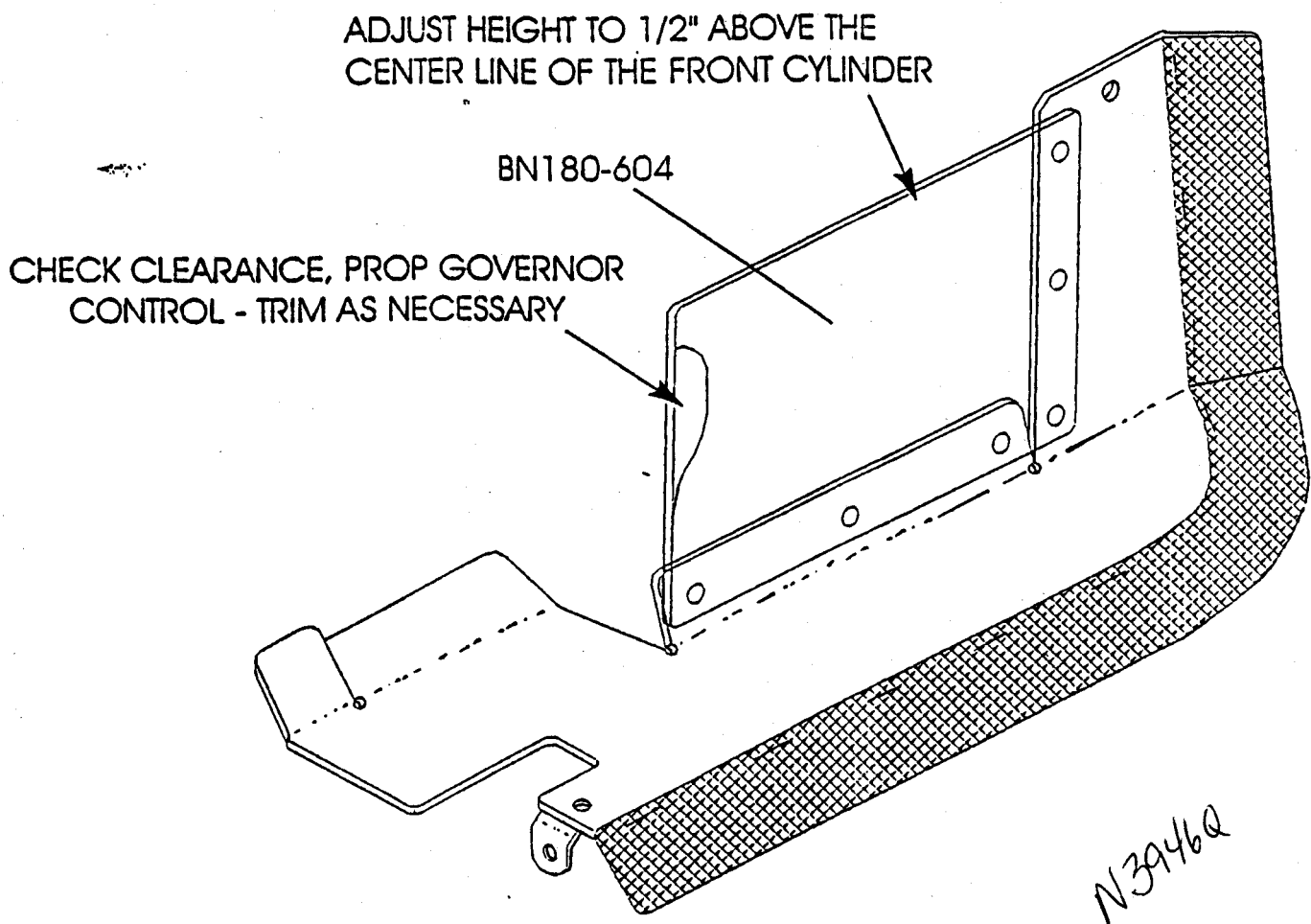


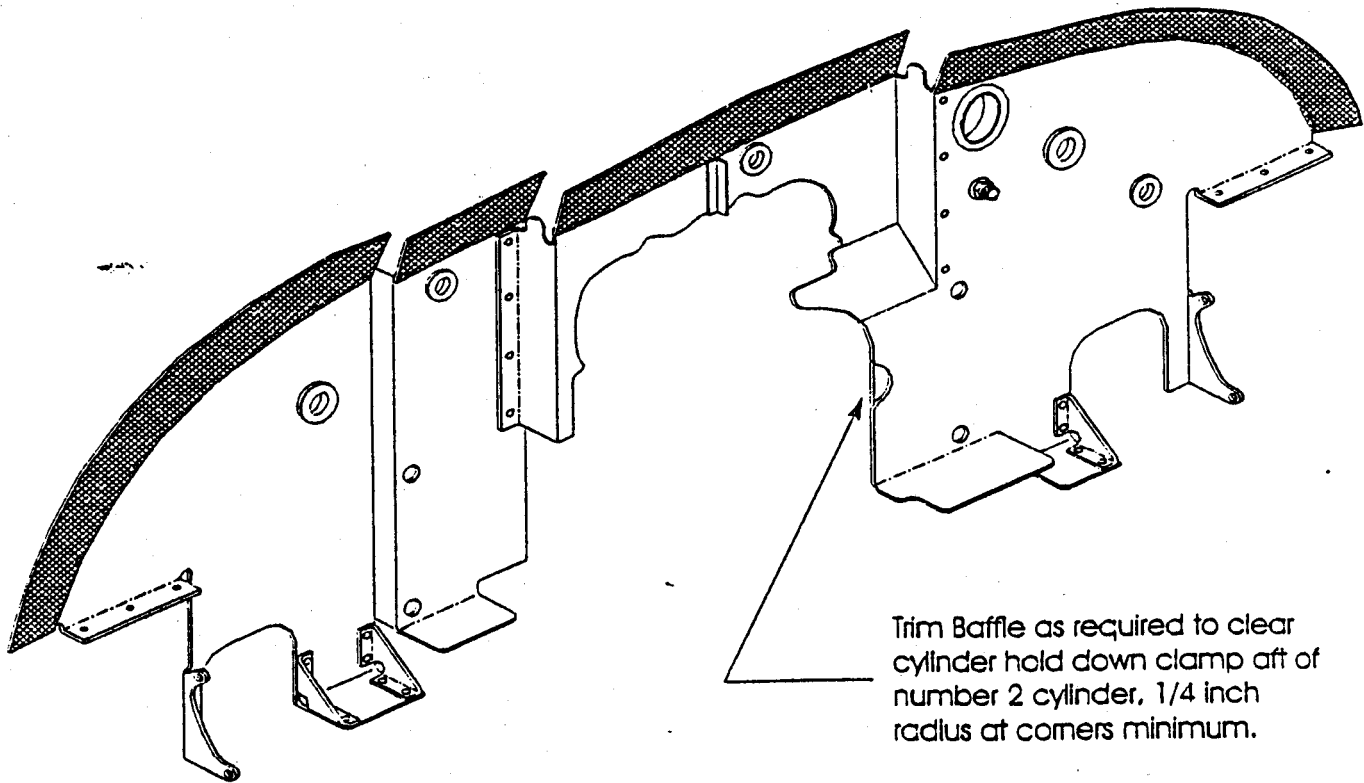
N3946Q

402129P003-Assy 8N-HDW-4  
may be substituted

8N-HDW-3

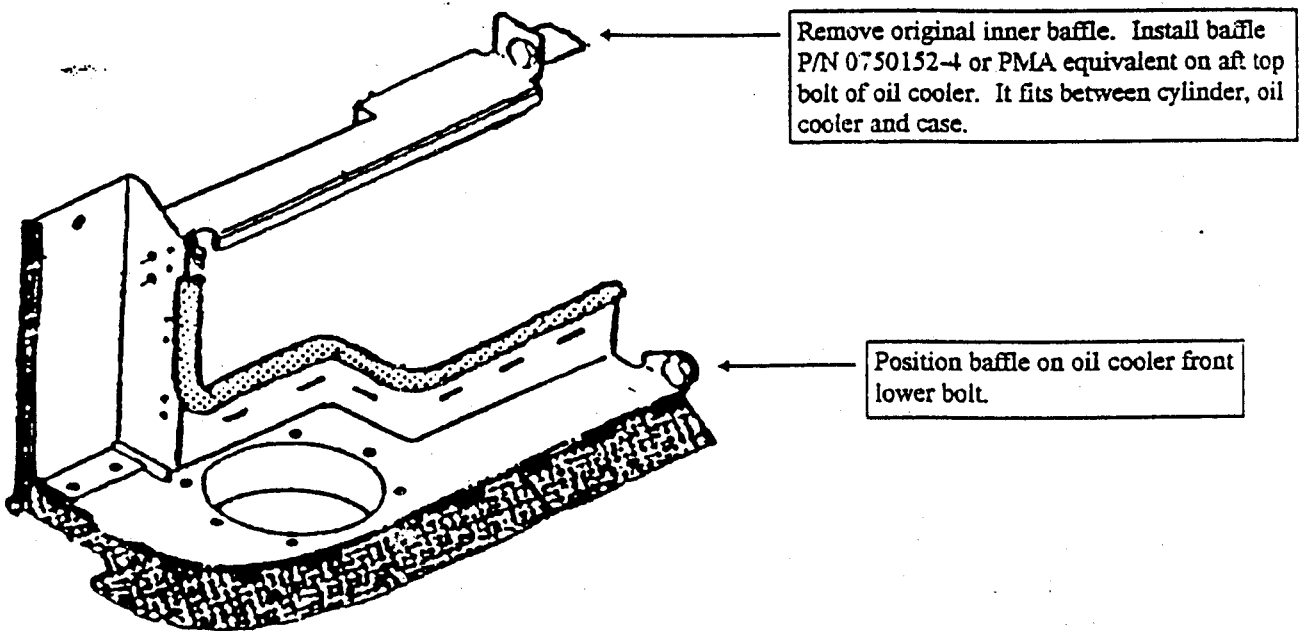
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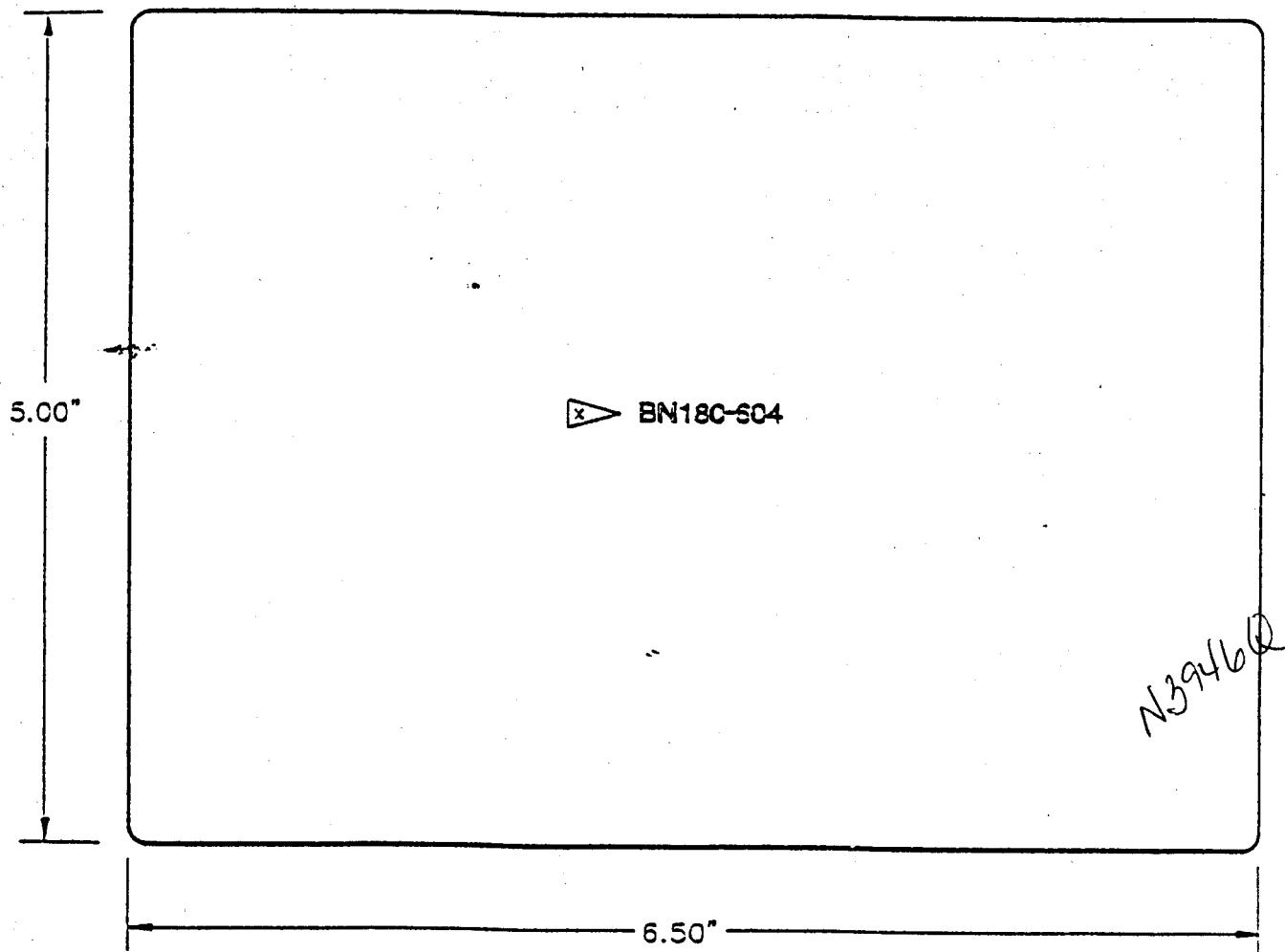
N3946Q






N3946R

		REVISIONS		
LETTER	DESCRIPTION		APPROVED	DATE
N/A	EXIST PART FROM SHT BN180-502		C. T. AYERS	09/29/95



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-	-	-	-	-
1	BN180-604	BAFFLE, CLOSURE	2024-T351~.032"	-
ITEM	PART NUMBER	DESCRIPTION	MATERIAL	QTY.
PARTS LIST				
UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS SHOWN ARE INCHES W/FOLLOWING TOLERANCES. DECIMALS .XX ±.05" ANGULAR XX ±1" BREAK ANY AND ALL SHARP EDGES AND BURRS. PARTS MAY BE ANEAL OR NORMALIZED PARTS MAY BE STAMPED OR WELDED ( ALL WELDING PER BN-SPEC-01 ) (x) MARK W/PERMANENT INK OR ENGRAVE		 <b>BONAIRE AVIATION COMPANY</b>  <b>BAFFLE, CLOSURE</b>		
DRAWN <i>Illustrated Concepts</i>		DATE C50595	RELEASE DATE 24 MAY 95	SHEET NO. 1 OF 1
APPROVED C. T. AYERS		DATE C52495	SIZE B SCALE HALF	DWG NO. BN180-604 REVISION LETTER N/A

# ENGINE MOUNT

## INSTALLATION INSTRUCTIONS

THIS IS A CHECK LIST FOR INSTALLATION OF YOUR KOSOLA REPAIRED ENGINE MOUNT WHICH YOU HAVE PURCHASED AT A GREAT SAVINGS TO YOU AND YOUR CUSTOMER.

DUE TO HARD LANDINGS, ETC., SOME DAMAGE TO AIRCRAFT COULD OCCUR THAT WOULD NOT BE OBVIOUS WITHOUT CHECKING AS SHOWN BELOW.

CONSULT MANUFACTURERS MAINTENANCE MANUAL FOR DETAILED INSTALLATION INSTRUCTIONS OF YOUR ENGINE MOUNT.

Due to welding and stress relieving of engine mount attach points may not line up perfectly with fuselage attach points. A liner up punch can aid in ease of installation should you encounter this problem.

This applies to all Piper, Cessna, Beechcraft, Aero Commander, Taylorcraft, Grumman, Mooney, Bellanca, Rockwell, Maule, and many others.

### FIXED GEAR ENGINE MOUNT:

1. Check firewall for damage before installing engine mount on aircraft. Check firewall by using a straight edge beginning at the top and working to the bottom. Place straight edge horizontally from left to right. Move down, working 1" or 2" increments, checking for uneven places between firewall and straight edge.
2. Check for damage to nose gear strut assembly before installation.
3. Check nose gear for proper alignment.
4. Check nose gear steering horn assembly for proper clearance to the nose wheel stops.

### RETRACTABLE GEAR ENGINE MOUNT:

1. Check firewall as indicated in step one above.
2. Check nose gear assembly and its retracting mechanism on the engine mount before installing. Check its operation to assure no binding or abnormal differences are present during gear retraction.
3. Check nose gear housing at the pivot points for proper alignment.
4. Check nose gear steering horn assembly for proper clearance.

OUR ENGINE MOUNTS ARE REPAIRED TO BE EQUAL TO OR BETTER THAN A NEW OR PMA ENGINE MOUNT. ALL MOUNTS ARE REPAIRED IN RIGID HOLDING FIXTURES WITH ALL TIG WELDING PERFORMED BY CERTIFIED AIRCRAFT WELDERS. ALL WORK IS PERFORMED BY FAA LICENSED A & P MECHANICS OR REPAIRMEN AND REVIEWED BY A FAA DESIGNATED ENGINEERING REPRESENTATIVE (DER SO-271). MOUNTS ARE STRIPPED, PRIMED, AND PAINTED. REPAIRING AND INSPECTION PROCESS IS APPROVED BY THE FEDERAL AVIATION ADMINISTRATION.

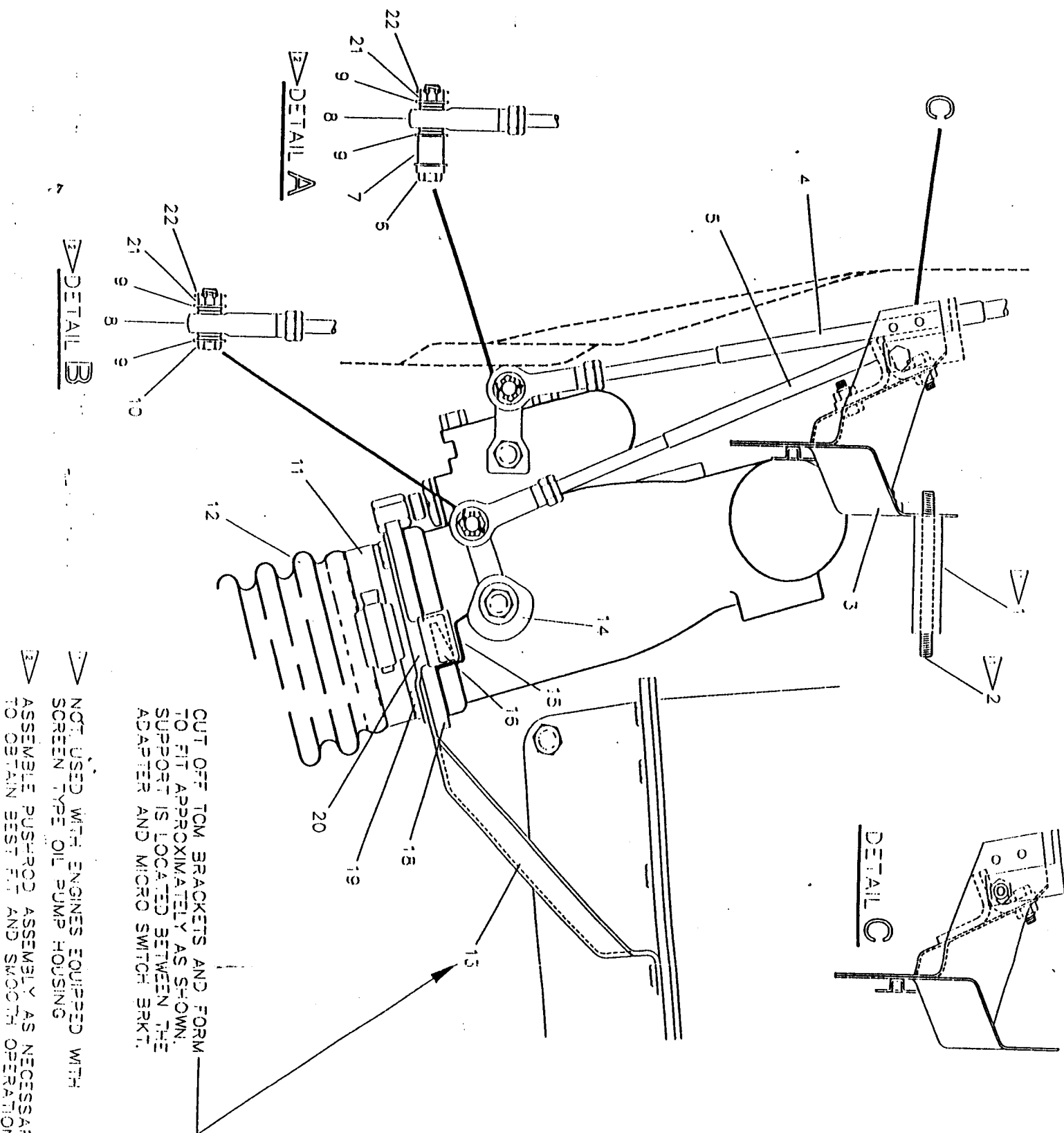
FAA APPROVED REPAIR STATION NO. HE4R229M



KOSOLA AND ASSOCIATES, INC.

AERONAUTICAL ENGINEERS

5601 NEWTON ROAD P.O. BOX 3529 ALBANY, GEORGIA 31706 U.S.A. 229-435-4119 FAX: 229-888-5766



CUT OFF TCM BRACKETS AND FORM TO FIT APPROXIMATELY AS SHOWN. SUPPORT IS LOCATED BETWEEN THE ADAPTER AND MICRO SWITCH BRKT.

- NOT USED WITH ENGINES EQUIPPED WITH SCREEN TYPE OIL PUMP HOUSING
- ASSEMBLE PUSHROD ASSEMBLY AS NECESSARY TO OBTAIN BEST FIT AND SMOOTH OPERATION.

ITEM	PART NUMBER
1	EN-HDW-3
2	EN-HDW-4
3	EN-HDW-5
4	EN-HDW-6
5	EN-HDW-7
6	EN-HDW-8
7	EN-HDW-9
8	EN-HDW-10
9	EN-HDW-11
10	EN-HDW-12
11	EN-HDW-13
12	EN-HDW-14
13	EN-HDW-15
14	EN-HDW-16
15	EN-HDW-17
16	EN-HDW-18
17	EN-HDW-19
18	EN-HDW-20
19	EN-HDW-21
20	EN-HDW-22
21	EN-HDW-23
22	EN-HDW-24

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS SHOWN ARE IN INCHES W/FOLLOWING TOLERANCES:

DECIMALS .005 ANGULAR .005

BREAK ANY AND ALL SHARP EDGES AND SURFACES MAY BE ANNEALED OR NORMALIZED

PARTS MAY BE STAMPED OR WELDED (ALL WELDING PER EN-5000-01)

MARK W/PERMANENT INK OR ENGRAVE

DATE 05-09-93

DESIGNED BY ST

APPROVED BY ST

05-09-93

REVISIONS			
LETTER	DESCRIPTION	APPROVED	DATE
A	ADD NOTES, P/N'S, MOVED -1 TO BN-HDW-3	C. T. AYERS	010196
B	REVISED TCM BRKTS -13 ~ ADD FLAG NOTE	C. T. AYERS	070896

N39462

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ITEM	PART NUMBER	DESCRIPTION	MATERIAL	QTY.
22	MS24665-132	COTTER PIN	-	-
21	AN310-3	NUT	-	-
20	0750234-1	BRACKET	CESSNA	-
	MS20074-04-06	BOLT	-	-
19	MS20074-04-05	BOLT	-	-
	1652013-3	ADAPTER (ALTERNATE)	CESSNA	-
18	BN180-401	ADAPTER	-	-
17	0750175-1	GASKET	CESSNA	-
	125E1-3	SWITCH	MICRO SWITCH	-
16	S2088-3	SWITCH	CESSNA	-
15	JE5	ACTUATOR	CESSNA	-
14	1450009-1	CAM	CESSNA	-
	639411	L/H BRACKET	TCM	-
13	639410	R/H BRACKET	TCM	-
12	1650044-1	DUCT	CESSNA	-
11	OS100M44S	CLAMP	-	-
10	AN3-7	BOLT	-	-
9	S1450-3-10-032	WASHER	CESSNA	-
8	S1104-3	ROD END	CESSNA	-
7	1650037-1	SPACER	CESSNA	-
6	AN3-14	BOLT	-	-
5	BN180-503	THROTTLE FLEX CABLE	BONAIRE	-
4	BN180-505	MIXTURE FLEX CABLE	BONAIRE	-
3	0750613-4	BRACKET	CESSNA	-
2	402129P003	STUD	-	-
	BN-HDW-4	ALTERNATE HEX SPACER	STEEL .50" HEX	-
1	BN-HDW-3	TUBE SPACER (.30"WALL)	STEEL .30" I.D.	-

### PARTS LIST

UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS SHOWN ARE INCHES W/FOLLOWING TOLERANCES.  
 DECIMALS .XX ±.05" ANGULAR XX ±"  
 BREAK ANY AND ALL SHARP EDGES AND BURRS.

PARTS MAY BE ANEAL OR NORMALIZED

PARTS MAY BE STAMPED OR WELDED (ALL WELDING PER BN-SPEC-01)

MARK W/PERMANENT INK OR ENGRAVE



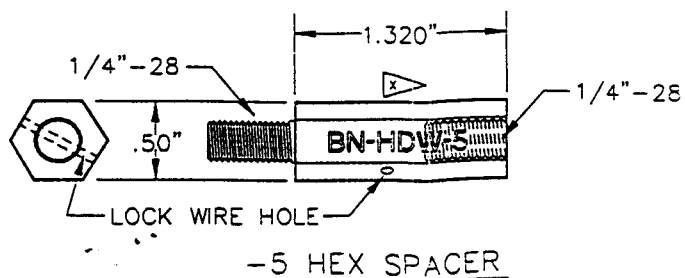
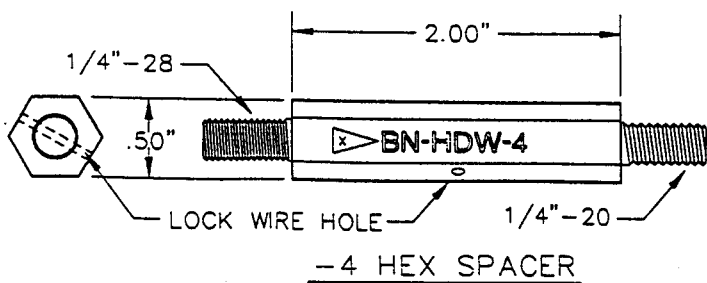
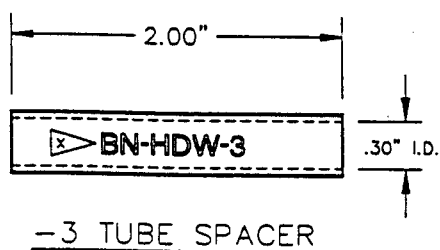
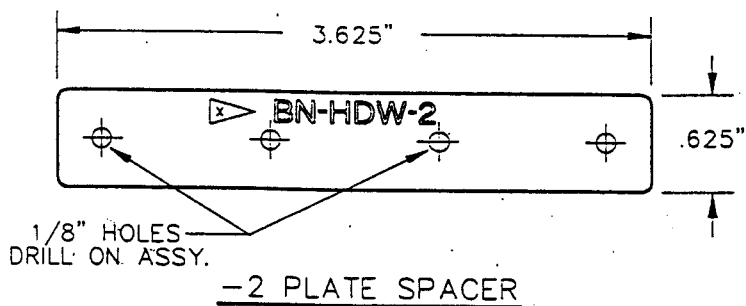
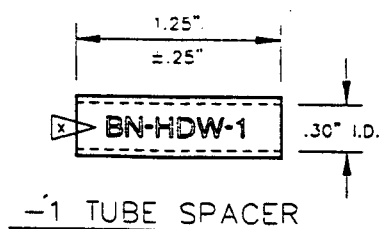
BONAIRE AVIATION COMPANY

CONTROLS  
MIXTURE & THROTTLE

DRAWN: *Illustrated Concepts*  
 DENNIS W. STETT  
 DATE: 050495  
 APPROVED: C. T. AYERS  
 DATE: 052495

RELEASE DATE: 24 MAY 95  
 SHEET NO. 1 OF 1  
 SIZE: B SCALE: N/A DWG NO. BN180-403  
 REVISION: 5

NO FORM SHOWN.  
 BETWEEN THE  
 IN BRKT.  
 EQUIPPED WITH  
 USING  
 AS NECESSARY  
 SMOOTH OPERATION.



REVISIONS			
LETTER	DESCRIPTION	APPROVED	DATE
-	-	-	-
-	-	-	-

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N3946Q

-	-	-	-	-
-5	BN-HDW-5	SPACER, HEX	STEEL ~ 125K PSI	-
-4	BN-HDW-4	SPACER, HEX	STEEL ~ 125K PSI	-
-3	BN-HDW-3	SPACER, TUBE ~ .30" I.D.	STEEL ~ 125K PSI	-
-2	BN-HDW-2	SPACER, PLATE	2024-T3	-
-1	BN-HDW-1	SPACER, TUBE ~ .30" I.D.	STEEL ~ 125K PSI	-
ITEM	PART NUMBER	DESCRIPTION	MATERIAL	QTY.

PARTS LIST


UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS SHOWN ARE INCHES W/FOLLOWING TOLERANCES.

DECIMALS	ANGULAR
.XX ±.05"	XX ±1°

BREAK ANY AND ALL SHARP EDGES AND BURRS.

PARTS MAY BE ANEALD OR NORMALIZED

PARTS MAY BE STAMPED OR WELDED  
( ALL WELDING PER BN-SPEC-01 )

 MARK W/PERMANENT INK OR ENGRAVE



BONAIRE AVIATION COMPANY

HARDWARE  
MISCELLANIOUS

DRAWN <i>Illustrated Concepts</i>		DATE 121895		RELEASE DATE 1 JAN 96		SHEET NO. 1 OF 1	
APPROVED C. T. AYERS		DATE 1 JAN 96		SIZE B	SCALE FULL	DWG NO. BN-HDW	REVISION LETTER N/A