

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

Number SR01059LA

This Certificate issued to Stephen C. Murray
2016 Palomar Airport Road
Hangar A
Carlsbad, California 92008

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 27 of the Federal Aviation Regulations. *Certification basis is set forth in Type Certificate Data Sheet H3WE*

Original Product Type Certificate Number: H3WE

Make: MDHC (HUGHES)

Model: 369, 369A, 369H, 369HM, 369HS, 369HE, 369D,
369E, 369F, 369FF, 500N

Description of Type Design Change: Installation of right side dual utility mount, in accordance with FAA Approved Aero Pacific Master Data List 500UM03R-30, Revision "NEW" dated August 20, 2002, or later FAA Approved Revisions. Flight Manual Supplement 500UM03R-RFM dated August 8, 2002 or later FAA Approved Revisions is also required as part of this installation.

Limitations and Conditions: The installation should not be incorporated in any aircraft unless it is determined that the interrelationship between this installation and any previously approved configuration will not introduce any adverse effect upon the airworthiness of the aircraft. The approval of this modification applies to the above noted aircraft model series only. A copy of this STC must be included in the permanent records of the modified aircraft. 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. The equipment for which these provisions are intended has not been certified. Additional FAA Approval is required for the installation of this equipment and must be evaluated to assure satisfactory compliance with the applicable airworthiness standards.

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: May 17, 1999

Date reissued:

Date of issuance: August 8, 2000

Date amended: SEP 13 2002



By direction of the Administrator

Michael E. Meif

(Signature)

for Manager, Airframe Branch
Los Angeles Aircraft Certification Office

(Title)

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

Master Data List
Aero Pacific Document Number 500UM03R-30 8/20/02 Revision A

Item	Document Number	Description	Date/Revision
1.	500UM03R-20	Master Drawing List 5003	8/20/02 Rev A
2.	500UM03R-08	Installation Manual p/n AP500UM03R-MM	7/4/00 Rev. New
3.	500UM03R-02	Instructions for Continued Airworthiness p/n AP600UM02-ICA	7/10/00 Rev. New
4.	500UM03R-13	List of Qualified Payload Equipment	8/20/02 Rev. A
5.	500UM03R-01	Description of Use	5/1/02 Rev. B
6.	500UM03R-RFM	Flight Manual Supplement	8/8/00 Rev. New

FAA APPROVED

SEP 13 2002

LOS ANGELES
AIRCRAFT CERTIFICATION OFFICE
INITIALS: jm

Aero Pacific
2016 Palomar Airport Road
Hangar A
Carlsbad, CA. 92008

PROJECT NUMBER ST7350LA-R
MASTER DRAWING LIST 5003
Aero Pacific AP500UM03R Right Side Dual Utility Mount
Aero Pacific Document Number 500UM03R-20
8/20/02 Rev. A

DRAWING NUMBER	DESCRIPTION	PART NUMBER	DATE	REVISION
5003-01	Mount Assembly	AP500UM03R	8/20/02	Rev. A
5003-02	Sub-Assembly A, AF	AP500UM03R-A, AF	9/22/99	New
5003-03	Tube, Aft	AP500UM03-01	9/21/99	New
5003-04	Tube, Forward	AP500UM03-02	8/28/99	New
5003-05	Tube, Center	AP500UM03-03	8/28/99	New
5003-06	Yoke	AP500UM03-05	8/27/99	New
5003-07	Tube, Aft (Fargo)	AP500UM03-06	8/21/99	New
5003-08	Platform	AP500UM03-07R	9/15/99	New
5003-09	Block	AP500UM03-08	9/16/99	New
5003-10	Bracket	AP500UM03-09R	8/20/02	Rev. A
5003-11	Standoff	AP600UM01-03	8/20/02	Rev. A
5003-12	Shaft	AP600UM01-05	8/20/02	Rev. A
5003-13	Mount Ring Fitting	AP500UM01-01	8/14/99	New
5003-14	Transition Collar	AP500UM01-12	8/14/99	New
5003-15	Jam Nut	AP500UM01-13	8/12/99	New
5003-16	Fork End	AP500UM01-14	9/20/99	New
5003-17	Mount Plate, Aft	AP500UM01-05R	9/10/99	New
5003-18	Eyebolt	AP500UM01-07	9/17/99	New
5003-19	Mount Plate, Forward	AP500UM01-04	9/18/99	New
5003-20	Dovetail Plate, Upper	AP001UM01B	9/17/99	New
5003-21	Dovetail Plate, Lower	AP001UM02-01	6/18/02	Rev. A
5003-22	Side Clamp	AP001UM02-02	6/18/02	Rev. A
5003-23	Bolt	AP500UM03-10	9/23/99	New
5003-24	Adapter, Polytech	AP500UM03-12	8/20/02	New

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AP500UM03R LOWER RIGHT SIDE DUAL UTILITY MOUNT

Aero Pacific Document Number 500UM03R-13

8/20/02 Rev. A

LIST OF QUALIFIED PAYLOAD EQUIPMENT

The following camera gimbal assemblies and other equipment are qualified for attachment to the AP500UM03R Lower Right Side Dual Utility Mount. They must be attached using specific attachment hardware and the correct approved adapters and parts supplied by the manufacturer. Changes in Make or Model of installed equipment at a later date is permissible provided that the correct approved adapters and hardware are used and the equipment is included in the list below. This approved modification to these mounts requires written permission from the STC holder. This STC covers only the installation of the Mount Structure, and does not approve installation of any electronic/electrical equipment. Under no circumstance may the total weight of any equipment and attachments suspended below the mount at either payload attachment point exceed 80 pounds U.S. individually or exceed 135 pounds U.S. combined, nor exceed individually a combined maximum cylindrical area of 1.618 square feet and spherical area of 0.903 square feet (Total 2.52 square feet).

APPROVED QUALIFIED PAYLOAD EQUIPMENT LIST

<u>MANUFACTURER</u>	<u>PART NUMBER / DESCRIPTION</u>	<u>WEIGHT</u>	<u>DIA</u>	<u>HEIGHT</u>
1. AERIAL FILMS	GYROCAM DAY / NIGHT VISION	50-70 LBS	15"	20.8"
2. AERIAL FILMS	GYROCAM TRIPLE SENSOR	50-70 LBS	15"	20.8"
3. AERIAL FILMS	GYROCAM 36 XLD BROADCAST	45-60 LBS	15"	20.8"
4. FLIR SYSTEMS INC	MODEL 445G MKII IMAGER: 10365-202	26 LBS	9"	13.5"
5. FLIR SYSTEMS INC	MODEL 445G MKIII / U7000: 10369-206	26 LBS	9"	13.5"
6. FLIR SYSTEMS INC	ULTRA 7500: 17500-X	26 LBS	9"	13.5"
7. FLIR SYSTEMS INC	ULTRA MEDIA RS: 94001002-X	35 LBS	11"	14"
8. FLIR SYSTEMS INC	ULTRA MEDIA II SERIES TURRET TURRET ASSY. 94001000-5	79.3 LBS	15"	17.5"
9. FLIR SYSTEMS INC	TURRET CAMERA ASSY. 94001002-X	35.0 LBS	11"	18.9"
10. FLIR SYSTEMS INC	TURRET FLIR UNIT ASSY. 94001100-X (ULTRA 6000)	43.9 LBS	11"	16.1"
11. ISRAEL AIRCRAFT IND	POP SERIES SENSOR 200 SERIES	36.4 LBS	11"	15"
12. ISRAEL AIRCRAFT IND	HMOSP SERIES SENSOR	70.5 LBS	15"	20"
13. POLYTECH INC	KELVIN 275 MK I / II / III	25 LBS	11"	15"
14. POLYTECH INC	KELVIN 350 MK I / III	49 LBS	14"	17"
15. POLYTECH INC	KELVIN 350 MK II	51 LBS	14"	17"
16. SAGEBRUSH TECH/EMXINC	AERO 20 THERMAL IMAGER	46 LBS	18"	19.5"
17. SPECTROLAB INC	SX-5 STARBURST SEARCHLIGHT	19 LBS	7.5"	11.25"
18. SPECTROLAB INC	SX-16 NIGHTSUN SEARCHLIGHT	40 LBS	11"	18"
19. SPECTROLAB INC	SX-16 NIGHTSUN (IIFCO)	47 LBS	11"	21.5"
20. SPECTROLAB INC	NIGHTSUN II SEARCHLIGHT	54 LBS	12"	23.7"
21. WESCAM INC	MODEL 12 SERIES IMAGER GIMBAL	46 LBS	12"	14.6"
22. WESCAM INC	MODEL 14 SERIES IMAGER GIMBAL	75 LBS	14"	16.5"
23. WESCAM INC	MODEL 16 SERIES IMAGER GIMBAL	79 LBS	16"	20"

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DESCRIPTION OF USE AND APPLICABILITY AP500UM03R RIGHT SIDE DUAL UTILITY MOUNT

Aero Pacific Document Number 500UM03R-01

5/1/02 Rev. B

This mount is designed to provide sturdy attachment for both a camera gimbal and a searchlight (or other qualifying payload equipment) simultaneously on the right side of McDonnell-Douglas/Hughes/MD Helicopter 500 Series Helicopters. The mount is located on the helicopter at a position below the right aft cabin door such that the door will open sufficiently for normal egress with or without equipment installed. Attachment is accomplished utilizing two existing hardpoints located forward and aft of the right aft cabin door, the existing jackpoint hole located centered and just below the right aft cabin door, and one created attachment point located just aft of the right aft cabin door level with the lower door jamb. A platform of approximately 1.25 square feet in surface area connects the mount structure to this created hardpoint to provide stabilization of the mount and aid in egress. Two attachment locations are provided for a variety of gimbals and searchlight configurations such that their operation will not conflict with one-another. These pieces of equipment are restricted for use by size and weight as follows:

Rated load for forward or aft payload attachment point is 80 pounds U.S. maximum.

Rated load for remaining payload attachment points is 55 pounds U.S. maximum.

(Combined total weight may not exceed 135 pounds U.S., or 80 pounds U.S. at either point.)

Combined Maximum Cylindrical area of 1.618 square feet and Spherical area of 0.903 square feet (2.52 square feet combined) may not be exceeded for either payload.

Aircraft must be equipped with Type Certificated High Skid Gear.

This mount structure is designed for use and installation on the following MDH 500 Series models only:

369, 369A, 369H, 369HE, 369HM, 369HS, 369D, 369E, 369F, 369FF, 500N

MANUFACTURERS EQUIPMENT INSTALLATION RECOMMENDATIONS

1. Recommended position for searchlights is at the forward payload attachment point. Recommended location of flir/camera gimbals is at the rear payload attachment point. Experience in the field has shown this positioning minimizes visual heat interference to the flir unit caused by the searchlight.
2. If desired, the aft payload attachment point may be used for searchlight installation. However, due to proximity of the rear landing gear strut to the location of the aft payload attachment point, the SX-16 searchlight must be restricted in travel to prevent contact with the aft landing gear strut in certain positions. The SX-5 searchlight will not contact the rear landing gear strut under normal operating conditions. It is the responsibility of the installer to verify clearances and operation of equipment before flight.
3. On certain larger or longer flir/camera gimbals or searchlights, it is necessary to remove the right side aft landing gear leg step stub for clearance during hard landing or low oleo strut pressure. If in doubt, remove step stub.

CAUTION TO INSTALLING AGENCY "It is the responsibility of the Installing Agency to verify that existing parts of the aircraft or other equipment and devices installed on the aircraft do not contact or conflict with operation of equipment installed with this Supplemental Type Certificate in all possible configurations, and that in the case of multiple equipment installations installed with this Supplemental Type Certificate, that they do not contact or conflict with one another in all possible configurations."

Aero Pacific 2016 Palomar Airport Road Hangar A Carlsbad, CA. 92008

AERO PACIFIC
2016 Palomar Airport Road
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Document Number 500UM03R-RFM

**FAA APPROVED FLIGHT MANUAL SUPPLEMENT FOR
MD HELICOPTERS 369, 369A, H, HE, HM, HS, D, E, F, FF, & 500N WITH THE
AERO PACIFIC AP500UM03R RIGHT SIDE DUAL UTILITY MOUNT**

This supplement must be attached to the MDHI FAA Approved Flight Manual when the Aero Pacific **Right Side Dual Utility Mount, AP500UM03R** has been installed in accordance with:

STC SR01059LA

The information contained herein supplements or supersedes the basic manual only in those areas listed herein. For limitations, procedures, and performance information not contained in this supplement, consult the basic Rotorcraft Flight Manual.

1. INTRODUCTION

The Aero Pacific Lower Right Side Dual Utility Mount is designed to provide an attachment for camera gimbal and a searchlight on MD 500 series helicopters. The mount is located on the helicopter at a position below the right aft cabin door.

2. OPERATING LIMITATIONS

- 2.1 Power on Vne is limited to 130 kts up to 4,000 ft, decrease Vne 4.5 kts /1,000 ft above 4,000 ft. Power off Vne is 30 kts less than power on Vne.
- 2.2 Each utility mount attach points is limited to a maximum weight of 80 lbs. or a combine weight of 135 lbs. The combine frontal flat plate area is limited to a maximum of 2.52 sq. ft.

3. EMERGENCY PROCEDURES

No Change

4. NORMAL PROCEDURES

Check mount installation for general condition and security.

5. PERFORMANCE

No Change

6. WEIGHT AND BALANCE DATA

No Change

FAA APPROVED BY _____

Susan F. Cohen

Acting
Manager, Flight Test Branch, ANM-160L
Federal Aviation Administration
Los Angeles Aircraft Certification Office
Transport Airplane Directorate

DATE OF APPROVAL _____

August 8, 2000

INSTALLATION MANUAL

Aero Pacific Document Number 500UM03R-08

AERO PACIFIC MODEL AP500UM03R UTILITY MOUNT

Manual Part Number AP500UM03R-MM

7/4/00 Rev. NEW

APPLICABLE TO McDONNELL-DOUGLAS / HUGHES / MD HELICOPTER 500 SERIES

369, 369A, 369H, 369HE, 369HM, 369HS, 369D, 369E, 369F, 369FF, 500N

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REVISION LIST

INSTALLATION MANUAL
AERO PACIFIC MODEL AP500UM03R UTILITY MOUNT
Manual Part Number AP500UM03R-MM
7/4/00 Rev. NEW

REVISION	DESCRIPTION	DATE
NEW	INITIAL RELEASE	7/4/00

INSTALLATION MANUAL
AERO PACIFIC MODEL AP500UM03R UTILITY MOUNT
Manual Part Number AP500UM03R-MM
7/4/00 Rev. NEW

LIST OF EFFECTIVE PAGES

LIST OF REVISIONS

Initial Release 7/4/00

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Revision List	ii	I.R.
List of Effective Pages	iii	I.R.
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Section B Installation	3 through 9.	I.R.
Section C Drawings	10 through 17.	I.R.
Section D Processes	18 through 21.	I.R.

INSTALLATION MANUAL
AERO PACIFIC MODEL AP500UM03R UTILITY MOUNT
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INSTALLATION MANUAL
AERO PACIFIC MODEL AP500UM03R UTILITY MOUNT
Manual Part Number AP500UM03R-MM

7/4/00 Rev. NEW

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A. INTRODUCTION.

1. GENERAL This Installation Manual contains information describing the initial installation of the mount structure Aero Pacific part number AP500UM03R Assembly and modification to the aircraft.

2. DESCRIPTION OF USE

This mount is designed to provide sturdy attachment for both a camera gimbal and a searchlight (or other qualifying payload equipment) simultaneously on the right side of McDonnell-Douglas/Hughes/MD Helicopter 500 Series Helicopters. The mount is located on the helicopter at a position below the right aft cabin door such that the door will open sufficiently for normal egress with or without equipment installed. Attachment is accomplished utilizing two existing hardpoints located forward and aft of the right aft cabin door, the existing jack-point hole located centered and just below the right aft cabin door, and one created attachment point located just aft of the right aft cabin door level with the lower door jamb. A platform of approximately 1.25 square feet in surface area connects the mount structure to this created hardpoint to provide stabilization of the mount and aid in egress. Two attachment locations are provided for a variety of gimbals and searchlight configurations such that their operation will not conflict with one-another. These pieces of equipment are restricted for use by size and weight as follows:
Rated load for forward or aft payload attachment point is 80 pounds U.S. maximum.
Rated load for remaining payload attachment point is 55 pounds U.S. maximum.
(Combined total weight may not exceed 135 pounds U.S., or 80 pounds U.S. at either point.)
Maximum operational speed (Vne) is restricted to 130 Knots.
Combined Cylindrical and Spherical projected flat area of 2.52 square feet may not be exceeded for either payload. The mount may be operated with either payload removed, both removed, or both installed.

3. APPLICABILITY

This installation is applicable to the following McDonnell-Douglas/Hughes/MD Helicopters Rotor Wing Aircraft Models only:

369, 369A, 369H, 369HE, 369HM, 369HS, 369D, 369E, 369F, 369FF, and 500N.

4. REQUIREMENTS

All above listed helicopter models must be equipped with Type Certificated High Skid Gear and factory installed side hardpoints (or approved hardpoint Kit) when this mount structure is installed.

5. EXPLANATION OF ABBREVIATIONS

p/n = Part Number # = number (as in number 12 drill....#12)

MD, MDH, Hughes = All in reference to McDonnell-Douglas, Boeing, Hughes, or MD Helicopters representing the particular Type Certificate holder at the time.

6. MEASUREMENTS

All measurements are in inches (in. or "), pounds U.S. (lbs.), inch-pounds (in-lb.) or degrees (deg.)

7. INSTALLATION TIME

Estimated time to complete installation: 8 Man-Hours.

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INSTALLATION MANUAL
AERO PACIFIC MODEL AP500UM03R UTILITY MOUNT
Manual Part Number AP500UM03R-MM

A. INTRODUCTION

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8. SPECIAL TOOLS

This installation requires several special tools in addition to standard mechanics tools for initial installation of this mount assembly. They are:

1. Standard air or electric drill with capacity up to 5/16 inch diameter drill bits.
2. Drill press or milling machine. and .1875" diameter end mill (provided with installation hardware).
3. Drill bits of the following sizes: #40, #30, #21, #27, #12, 1/4, 5/16 inch diameter; 100 degree countersink.
4. Rivet Gun and Rivet Sets for universal head rivets MS20470AD4-(xx) and/or MS20470AD5-(xx) rivets.
5. Torque wrench capable of values from 15 to 150 inch-pounds torque.
6. (12) "Cleco " or other brand rivet hole location temporary spring loaded fasteners, 3/32", 1/8", 5/32" size.
7. Rivet puller approved for pulling Cherrymax Brand pull-type rivets such as Huck model 227 puller and 456MAX-701-17 pulling head for Cherry Max Rivets CR3213-04-(xx) or CR3213-05-(xx).
8. 4" by 6" sheet of clear plastic .050" - .125" thick for match-drilling rivet holes.

9. SPECIAL PRODUCTS

The following special products will be necessary to complete this installation:

- A. ProSeal 890B-2 Sealant available from:

Packaging Systems
1517 Flower Street
Glendale, CA. 91201
(818) 246-5568

- B. Cherry Max Rivets type CR3213-04-(xx), CR3213-05-(xx) for standard holes.
Cherry Max Rivets type CR3242-04-(xx), CR3242-05-(xx) for oversize holes.
Cherry Max Rivet Gage Number 269C3

Cherry Max Products and information is available from:

Cherry Division of Textron Inc.
1224 East Warner Ave. Box 2157
Santa Ana, CA. 92707-0157

- C. NAPA/Balkamp Anti Seize Compound Part Number 765-2569 available from:

NAPA/Balkamp Inc.
Indianapolis, IN. 46241
(317) 244-7241 or local NAPA distributor

10. REFERENCE MATERIAL

This installation manual contains installation instructions for multiple specific models of the 500 Series (369) helicopter. It is recommended you have access to the **Aircraft Manufacturers Handbook of Maintenance Instructions**.

11. WARNINGS, CAUTIONS, OR NOTES

Certain procedures carried out during the course of completing instructions contained in this instruction manual could cause unnecessary damage to parts of the helicopter, work resulting in unacceptable results, or harm to the installer. Warnings are used to help prevent major damage to the aircraft or harm to the installer. Cautions are used to help prevent minor damage to the aircraft or unacceptable work. Notes are informative in nature and generally contain recommendations or suggestions that will result in a successful installation.

12. WEIGHT AND BALANCE DATA

Weight and balance data is detailed on Drawing W of this installation manual. You will be required to prepare and have available in the aircraft a weight and balance calculation expressing the mount and payload configuration which you are using.

INSTALLATION MANUAL
AERO PACIFIC MODEL AP500UM03R UTILITY MOUNT
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B. INSTALLATION

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Reference Drawings A-1, A-2, A-3, B, C, D, T, and W for installation. Drawings A-1, A-2, and A-3 depict expanded Top View, Side View, And Rear View respectively for the AP500UM03R Mount Assembly and location of attachment points. Drawing B depicts the Factory pre-assembled state in which the Mount Structure is supplied, and is referred in this installation as the Mount Structure Assemblage to eliminate the necessity of repeatedly mentioning the individual parts. Drawing C details information concerning installation of the Forward and Aft Mount Plates attached to existing factory hardpoints. Drawing D details information concerning installation of the Aft Lower Mount Bracket part number AP500UM03R. Reference Drawing T for bolt and nut torque on all models. Reference drawing W for weight and balance information on all models.

1. Place (1) Eyebolt p/n AP500UM01-07 into top side of Forward Mount Plate p/n AP500UM01-04. Place (1) Nut p/n MS21083C8 onto threaded end of Eyebolt, and tighten to a degree which will allow rotation of the Eyebolt in the Forward Mount Plate but with enough friction to hold position for set-up purposes. **Note: these parts may be Factory pre-assembled for shipping purposes.**
2. Place (1) Eyebolt p/n AP500UM01-07 into top side of Aft Mount Plate p/n AP500UM01-05R. Place (1) Nut p/n MS21083C8 onto threaded end of Eyebolt, and tighten to a degree which will allow rotation of the Eyebolt in the Aft Mount Plate but with enough friction to hold position for set-up purposes. **Note: these parts may be Factory pre-assembled for shipping purposes.**
3. Locate the Forward Cabin Hardpoint at Station 85.86 Butt-line 25.65R Waterline 44.42. Remove any plugs or screws in the (3) attachment holes. **Note: The Aircraft Manufacturers Handbook of Maintenance Instructions contains information concerning removal and re-installation of fasteners.**
4. Refer to Drawing C Figures 1, 2, 3, and Notes. Place the Forward Mount Plate p/n AP500UM01-04 over the location of the Forward Cabin Hardpoint and line up the (3) holes. Place (3) AN3-7A Bolts and (3) AN960C1032 (NAS1149C0363R) Washers through the mounting holes in the Forward Mount Plate into the threaded hole in the cabin wall. Thread bolt in by hand several threads. Once started by hand, continue to tighten bolt down to flush. Do not torque at this time. If a bolt will not engage the threads by hand, do not force the bolt. **CAUTION: The blind threaded nut-plate fasteners inside the cabin wall for these Hardpoint locations are extremely difficult and time consuming to replace. Never force a bolt in or over-torque. Proceed to next step if any bolts do not line up.**
5. Due to anomalies in airframe manufacture, it is occasionally necessary to alter the mounting hole(s) in the Forward Mount Plate. **Refer to Drawing C figures 2, 3, and notes detailing procedure for altering mount holes.** **CAUTION: Never alter or change holes in aircraft cabin wall.**
6. Refer to Drawing C Figures 1, 2, 3, and Notes. Locate the Aft Cabin Hardpoint at Station 119.65 Butt- line 25.15R Waterline 47.98. and remove any plugs or screws in the (3) attachment holes. Place the Aft Mount Plate p/n AP500UM01-05R over the location of the Aft Cabin Hardpoint and line up the (3) holes. Place (3) AN3-7A Bolts and (3) AN960C1032 (NAS1149C0363R) Washers through the mounting holes in the Aft Mount Plate into the threaded hole in the cabin wall. Thread bolt in by hand several threads. Once started by hand, continue to tighten bolt down to flush. Do not torque at this time. If a bolt will not engage the threads by hand, do not force the bolt. **CAUTION: The blind threaded nut-plate fasteners inside the cabin wall for these Hardpoint locations are extremely difficult and time consuming to replace. Never force a bolt in or over-torque. Proceed to next step if any bolts do not line up.**

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B. INSTALLATION

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7. Due to anomalies in airframe manufacture, it is occasionally necessary to alter the mounting hole(s) in the Aft Mount Plate. **Refer to Drawing C figures 2, 3, and notes detailing procedure for altering mount holes. CAUTION: Never alter or change holes in aircraft cabin wall.**
8. Locate the Jacking Plug-in Hardpoint below the right aft cabin door at Station 96.89 Butt-line 25.6R Waterline 44.42. If there is a step or other accessory at this location it must be removed. **Note: The Aircraft Manufacturers Handbook of Maintenance Instructions contains information concerning removal and re-installation of accessories and fasteners.**
9. Locate the bolt hole in the right side aft cabin floor used to secure the step or jacking accessory. The hole is approximately 2 inches in from the outer edge of the lower aft cabin door jamb in line laterally with jacking accessory hole. Measure the diameter of this hole. **If hole diameter measures .250 inch (or slightly larger) no modification to the hole is necessary.** If hole diameter is smaller than .250 inch the hole must be enlarged to .250 inch. **Refer to Drawing C Figure 4 and Notes.** Enlarge hole using 1/4 inch diameter drill bit. **Note: To prevent drilling hole deeper than required or causing damage, place 3/8 inch diameter metal rod inside jacking accessory hole such that it blocks access to the lower part of the securing bolt hole. CAUTION: do not drill out vertical securing bolt hole below horizontal jacking accessory hole. Damage to components below may result.**
10. **Refer to Drawing B- Defining Mount Structure Assemblage.** Lift Mount Structure Assemblage (hereafter referred to as "assemblage") up to the right side of the helicopter. Plug Shaft p/n AP600UM01-05 and Assemblage fully into Jacking Accessory Hole at Station 96.89 Butt-line 25.6R. Place Bolt p/n AP500UM03-10 with (1) Washer AN960C416 and (1) Nylon Washer p/n 90295A140 into Jacking Accessory securing bolt hole and engage Bolt into threads in Shaft p/n AP600UM01-05 approximately 8 complete turns by hand or lightly with an Allen wrench. Do not force threads.
11. Observe the location of the aft corner of the Platform p/n AP500UM03-07R. Pivot the Assemblage carefully forward or aft about the Shaft p/n AP600UM01-05 until approximately 3/16 inch distance is between the aft cabin door bottom and the top edge of the Platform p/n AP500UM03-07R, and the Platform top inboard edge is parallel to the right aft cabin door lower edge. **CAUTION: Do not use excessive force rotating Assemblage as damage to Shaft or Bolt p/n AP500UM03-10 securing Shaft may result.** This position is the initial starting location to begin set-up and adjustment of the Assemblage to fit the aircraft.
12. With Assemblage in the above position, rotate clockwise Eyebolt p/n AP500UM01-07 located in Forward Mount Plate p/n AP500UM01-04 to align with slot in Fork End p/n AP500UM01-14 at the forward end of the Assemblage.
13. At the forward end of the Assemblage, loosen Jam Nut p/n AP500UM01-13, and rotate threaded Fork End p/n AP500UM01-14 in or out until bolt holes in Fork End align with bolt hole in Eyebolt. Adjust Fork End and Eyebolt until they fit together. **Note: It is permissible to flex the forward tubular end of Assemblage up to .75 inch. Do not use excessive force locating Fork End.** Place (1) Bolt AN5C13A through hole to locate these parts. Do not use nuts or washers at this time.
14. Check relative position of Platform and aft cabin door bottom is unchanged (as per Step 11). Readjust as necessary.
15. With Assemblage in the above position, rotate clockwise Eyebolt p/n AP500UM01-07 located in Aft Mount Plate p/n AP500UM01-05R to align with slot in Fork End p/n AP500UM01-14 at the aft end of the Assemblage.

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16. At the aft end of the Assemblage, loosen Jam Nut p/n AP500UM01-13, and rotate threaded Fork End p/n AP500UM01-14 in or out until bolt holes in Fork End align with bolt hole in Eyebolt. Adjust Fork End and Eyebolt until they fit together. **Note: It is permissible to flex the aft tubular end of Assemblage up to .75 inch. Do not use excessive force locating Fork End.** Place (1) Bolt AN5C13A through hole to locate these parts. Do not use nuts or washers at this time.
17. Check relative position of Platform and aft cabin door bottom is unchanged (as per Step 11).
18. Open aft cabin door carefully to verify clearance between door bottom and all parts of Assemblage. Readjust Fork Ends as necessary
19. Refer to Drawing D Figures 1, 2, and Notes. Place Bracket p/n AP500UM03-09R on top of Platform p/n AP500UM03-07R at the aft inboard corner. With right aft cabin door closed, verify clearance between door and bracket. After positioning Bracket in a satisfactory location, draw a pencil line around the perimeter of the Bracket. Remove the Bracket.
20. On the vertical rivet rows, determine rivet diameters. Drill out and remove only rivets which lay completely inside the pencil line and will provide adequate rivet edge distance if match-drilled onto the Bracket p/n AP500UM03-09R. A minimum of (6) rivets must be used in each vertical rivet row. Remove the Mount Structure Assemblage to prevent damage to it during rivet removal process. Clean and de-burr the area where rivets were removed. **Note: Forward vertical rivet row is generally Cherry Max type rivets and aft vertical rivet row is generally solid rivets.**
21. It is necessary at this time to make a template for match drilling the blind Cherry Max type rivet holes on the forward vertical rivet row. Using a piece of thin clear plastic sheet (.050" to .125" thick), trim perimeter to the size of the pencil line drawn on the cabin side previously depicting the perimeter of Bracket p/n AP500UM03-09R. Trim away any excess such that plastic sheet will lay flat against cabin skin and overlap all rivet holes. Determine the correct rivet hole diameters for the forward and aft vertical rivet rows. Holding plastic sheet in place, drill through any one of the holes in the aft vertical rivet row and insert a Cleco. Drill through all remaining aft vertical rivet row holes inserting Clecos as you go. Proceed to the forward vertical rivet row. Align the correct drill bit with any forward rivet hole looking through the plastic sheet, and drill the hole. Insert a Cleco. Drill remaining holes in the forward rivet row in similar fashion and cleco as you go. Mark template orientation for future reference and remove template.
22. Re-install Mount Structure Assemblage. Put Bracket p/n AP500UM03-09R back in previously determined location. Fine adjustment of Bracket location is now necessary. Place the Bracket firmly against the cabin side, and down against the Platform p/n AP500UM03-07R. Allow for right aft cabin door clearance. If the Bracket touches any rivet head not drilled out, the Bracket must be trimmed to allow clearance. Mark the Bracket and rough trim away the excess.
23. Put Bracket back in previously determined location. Verify extrapolated location of vertical rivet row holes to be drilled into Bracket will provide adequate rivet hole edge distance, be clear of Bracket inner radius corners and that offset lower rear side of Bracket clears rivet heads in lower double rivet row. Adjust Platform p/n AP500UM03-07R up or down at aft inboard corner by adjusting Fork Ends p/n AP500UM01-14 at Forward and Aft Upper Hardpoint locations in or out (lengthen one Fork End, shorten the other) until desired result is achieved. Forward edge of Bracket may be trimmed as shown in Drawing D Figure 1 if necessary to clear right side aft cabin door. Complete all trimming as necessary.
24. Holding Bracket firmly in finalized location, match drill aft rivet row from the inside and Cleco as you go. Remove Bracket and de-burr holes. Cleco clear plastic template completed earlier to back side of Bracket in correct orientation using holes in aft row. Using correct drill size, match-drill holes in plastic template in forward rivet row through Bracket. Remove template and de-burr Bracket.

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25. It is necessary to drill a .250 inch diameter hole through Bracket p/n AP500UM03-09R and Platform AP500UM03-07R to attach them to one another. Refer to Drawing D Figure 2. Cleco Bracket firmly in place. Clamp the Platform to the Bracket. Locate approximate pad area center on upper side of Bracket. Examine relieved area on bottom side of Platform at aft inboard corner. Select a hole location as close as possible to center of the bottom pad area of Bracket while maintaining sufficient bolt and nut edge distance or from any corner radius on Platform or Bracket. Exact location of .250 diameter hole is not critical as long as it is within parameters mentioned. Using a #30 drill from the bottom side of Platform at this pre-determined location, drill upward through the Platform and Bracket. Examine location of the hole. If satisfactory, enlarge using a .250 inch diameter drill bit. Note: Using a smaller diameter drill bit first allows some latitude for re-adjustment if hole location after drilling is unsatisfactory. Place (1) Bolt p/n NAS6608-08 through hole to check fit.
26. Using a pencil mark a visible line across the Forward Mount Plate p/n AP500UM01-04 and onto the Eyebolt p/n AP500UM01-07 as a reference to verify rotational position of Eyebolt to Forward Mount Plate at a later time.
27. Using a pencil mark a visible line across the Aft Mount Plate p/n AP500UM01-05R and onto the Eyebolt p/n AP500UM01-07 as a reference to verify rotational position of Eyebolt to Aft Mount Plate at a later time.
28. Remove Mount Structure Assemblage. With Bracket p/n AP500UM03-09R still in position, place masking tape around the Bracket perimeter on the cabin side wall.
29. Determine correct length, diameter, and type of rivet by measurement for each rivet hole in Bracket p/n AP500UM03-09R and aircraft cabin side wall and have these parts available before proceeding to the next step. **Note: the Rivet Fastener Manufacturer provides information concerning application, installation, type, size, and measurement of these Rivets.**
30. Remove Bracket. Remove all paint or other chemical coatings from inside taped area on cabin side. Remove tape.
31. As per accompanying instructions found in Aero Pacific Process AP006 "LOCAL AREA SURFACE PREPARATION AND CONVERSION COATING FOR ALUMINUM clean and apply conversion coating to cabin side area under Bracket p/n AP500UM03-09R and to any areas on Bracket where bare aluminum has been exposed due to trimming.
32. As per accompanying instructions found in Aero Pacific Process AP010 "SEALANT APPLICATION", Apply Proseal 890B-2 Sealant to area of cabin side at location of Bracket p/n AP500UM03-09R and contact surface on Bracket. Cleco Bracket in place.
33. Install all rivets attaching Bracket p/n AP500UM03-09R to cabin right side. **Note: the Rivet Fastener Manufacturer provides information concerning application, installation, type, size, and measurement of these Rivets.** Remove any excess sealant as per instructions found in Aero Pacific Process AP010.
34. Prime and paint Bracket p/n AP500UM03-09R at this time. **Note: the Paint and Primer Manufacturer provides information concerning chemical properties, color, and application of their Products.**
35. Remove Aft Mount Plate p/n AP500UM01-05R and attached Eyebolt p/n AP500UM01-07 as a unit. Notice previously made pencil mark across both. Torque Nut MS21083C8 securing Eyebolt to specification in Drawing T. maintain relative position of Eyebolt to Aft Mount Plate using pencil mark.
36. Remove Forward Mount Plate p/n AP500UM01-04 and attached Eyebolt p/n AP500UM01-07 as a unit. Notice previously made pencil mark across both. Torque Nut MS21083C8 securing Eyebolt to specification in Drawing T. Maintain relative position of Eyebolt to Forward Mount Plate using pencil mark.

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37. Install Aft Mount Plate p/n AP500UM01-05R / Eyebolt p/n AP500UM01-07 to cabin side at Aft Right Side Hardpoint located at Station 119.85 Butt-line 25.15R Waterline 47.98 using (3) Bolts AN3-7A and (3) Washers AN960C1032 (NAS1149C363R). Torque to specification in Drawing T.
38. Install Forward Mount Plate p/n AP500UM01-04 / Eyebolt p/n AP500UM01-07 to cabin side at Forward Right Side Hardpoint located at Station 85.86 Butt-line 25.65R Waterline 44.42 using (3) Bolts AN3-7A and (3) Washers AN960C1032 (NAS1149C363R). Torque to specification in Drawing T.
39. Coat exposed area of Shaft p/n AP600UM01-05 with NAPA/Balkamp Anti-Seize Compound part number 765-2569. **Note: The Consumable Products Manufacturers Instructions for Use and Container Label contain information concerning application and safe use of their Product.**
40. Place Mount Structure Assemblage in place by pushing Shaft p/n AP600UM01-05 fully into Center Plug-In Accessory Hole located at Station 96.89 Butt-line 25.60R Waterline 12.00. Line up threaded hole in Shaft with hole in cabin right aft floor used to secure jacking accessory. Install (1) Bolt p/n AP500UM03-10, (1) Washer AN960C416 (NAS1149C0463R) and (1) Nylon Washer 90295A140. Tighten Bolt but do not make contact with floor or torque bolt at this time. Place forward and aft Fork Ends p/n AP500UM01-14 over Eyebolts p/n AP500UM01-07. Do not use excessive force placing Fork Ends over Eyebolts. Re-adjust Eyebolt rotational position, if necessary, in a clockwise direction only. **Note: It is permissible to flex the forward or aft tubular ends of Assemblage up to .75 inch. Do not use excessive force locating Fork End.**
41. Place (1) Bolt AN5C13A, (2) Washers AN960C516L (NAS1149C0532R) and (1) Nut MS21044C5 through Fork End and Eyebolt at Forward Hardpoint location Station 85.86 Butt-line 25.65R Waterline 44.42. Tighten but do not fully tighten or torque bolt/nut at this time.
42. Place (1) Bolt AN5C13A, (2) Washers AN960C516L (NAS1149C0532R) and (1) Nut MS21044C5 through Fork End and Eyebolt at Aft Hardpoint location Station 119.85 Butt-line 25.15R Waterline 47.98. Tighten but do not fully tighten or torque bolt/nut at this time.
43. Place (1) Bolt NAS6604-08, (2) Washers AN960C416L (NAS1149C0432R) and (1) nut MS21043-4 through hole in Bracket p/n AP500UM03-09R and Platform p/n AP500UM03-07R at location Station 114.30 Butt-line 25.10 Waterline 12.00 securing Platform to Bracket. Bolt may be inserted top-to-bottom or bottom-to-top. Tighten but do not fully tighten or torque bolt/nut at this time.
44. Remove (2) Lower Dovetail Plates p/n AP001UM02-01 and Side Clamps p/n AP001UM02-02 located at the Forward and Aft Payload Suspension Points if attached by Factory for shipping purposes by loosening (2) bolts AN4H10A on each of the two Side Clamps and sliding the Lower Dovetail Plate(s) forward or aft and free of the Mount Structure Assemblage.
45. Referring to Drawing T for torque specifications, check torque on all Factory installed nuts and bolts on Mount Structure Assemblage.
46. At Forward Hardpoint location Station 85.86 Butt-line 25.65R Waterline 44.42 tighten and torque Bolt AN5C13A, Nut MS21044C5, and Jam Nut p/n AP500UM01-13 to specification in Drawing T.
47. At Aft Hardpoint location Station 119.85 Butt-line 25.15R Waterline 47.98 tighten and torque Bolt AN5C13A, Nut MS21044C5, and Jam Nut p/n AP500UM01-13 to specification in Drawing T.
48. At Platform to Bracket Attach Point at location Station 114.30 Butt-line 25.10 Waterline 12.00 securing Platform to Bracket tighten and torque Bolt NAS6604-08 and Nut MS21043-4 to specification in Drawing T.
49. At hole in cabin right aft floor used to secure jacking accessory located at Station 96.89 Butt-line 25.60R Waterline 12.00, tighten and torque Bolt p/n AP500UM03-10 securing Shaft p/n AP600UM01-05 to specification in Drawing T. **The Mount Structure Assemblage is now fitted to your helicopter. The lower aft hardpoint, forward and aft mount plates, and center plug-in hardpoint are installed.**

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50. Refer to Drawing A-3 for series of bolts which may be used to secure Lower Dovetail Plates p/n AP001UM02-01 to the Payload Equipment being used. Use drilled-head (-H) bolts. The Lower Dovetail Plates are supplied with (4) .250 (1/4 inch) diameter holes. If your Equipment has .313 (5/16 inch) diameter holes, enlarge the (4) holes using a 5/16 inch diameter drill bit. **Caution: drill the holes using a drill press and clamp part in place to prevent inaccurate hole enlargement.** Chamfer top side of holes (side in counterbored hole) using 100 degree countersink to a depth of .050 inch for bolt shank radius relief. De-burr opposite end of holes.

51. **The Accessory or Payload Equipment Manufacturers Handbook of Maintenance Instructions contains information concerning removal and re-installation of accessories and fastener Torque. Warning: Safety wire bolt heads attaching Lower Dovetail Plate to Payload.**

52. You must physically weigh the Payload Equipment being used on a calibrated scale as various internal configurations exist and published generic weight may vary. Write this weight down for later use. The maximum allowable suspended payload weight is 80 pounds (31.50 Kilograms) from either the forward or aft suspension point, and 55 pounds (21.65 Kilograms) from the remaining suspension point.

53. Referring to Drawing W, complete weight and balance report to reflect this installation. Use Payload weight derived from physically weighing Payload. Weight of the Upper and Lower Dovetail Plates is included in the weight of the AP500UM03R Mount Assembly. If you plan to operate the aircraft in a variety of configurations such as mount on/payload(s) on, mount on, payload(s) off, mount off, you will need a separate weight and balance report for each condition available in the aircraft. **Note: Use Aero Pacific Jack Point Accessory p/n AP500UM03-11 for jacking aircraft with AP500UM03R Mount installed, with or without Payloads. Jack Point Accessory plugs into bottom of Mount Structure Assembly at Center Plug-in Support as shown in Drawing B. Always Remove Jack Point Accessory before flight.**

54. Complete Form 337 as required.

55. Place p/n AP500UM03R-FMS Flight Manual Supplement in Aircraft Flight Manual.

-----END-----

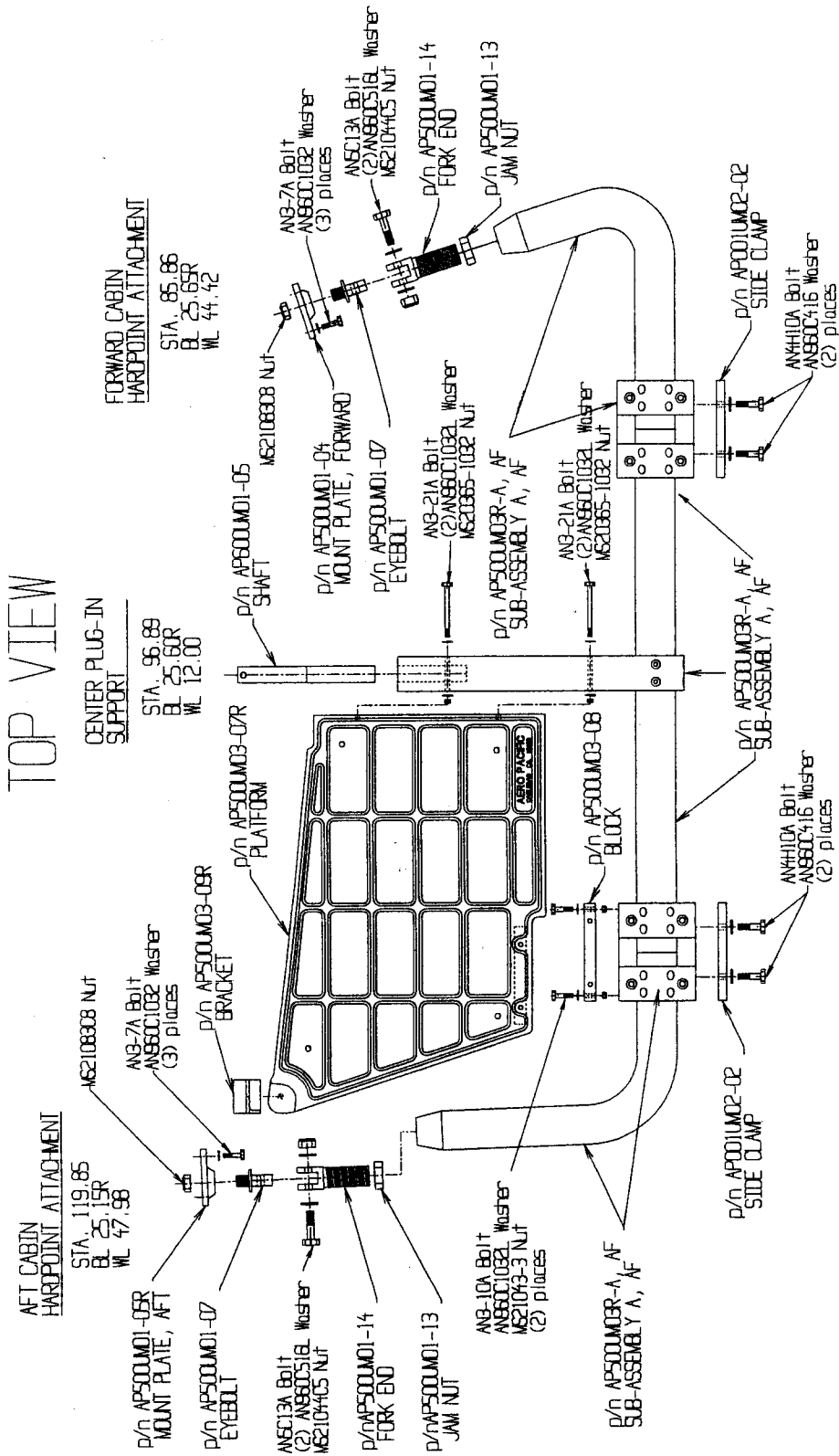
INSTALLATION PARTS LIST
AERO PACIFIC MODEL AP500UM03R LOWER RIGHT SIDE DUAL UTILITY MOUNT
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ITEM	PART NUMBER	DESCRIPTION	QTY. per ASSY.
1.	AP500UM03R-A	MAJOR SUB-ASSEMBLY, STANDARD	1.
	AP500UM03R-AF	MAJOR SUB-ASSEMBLY, FARGO TANK	(1.)
2.	AP500UM03-07R	PLATFORM	1.
3.	AP500UM03-08	BLOCK	1.
4.	AP500UM03-09R	BRACKET	1. *
5.	AP600UM01-05	SHAFT	1.
6.	AP500UM01-13	JAM NUT	2.
7.	AP500UM01-14	FORK END	2.
8.	AP500UM01-05R	MOUNT PLATE AFT	1. *
9.	AP500UM01-07	EYEBOLT	2. *
10.	AP500UM01-04	MOUNT PLATE FORWARD	1. *
11.	AP001UM01B	DOVE TAIL PLATE UPPER	2.
12.	AP001UM02-01	DOVETAIL PLATE LOWER	2.
13.	AP001UM02-02	SIDE CLAMP	2.
14.	AP500UM03-10	BOLT 1/4 X 28	1. *
15.	AN3-7A	BOLT 3/16 X 32	6. *
16.	AN5C13A	BOLT 5/16 X 24	2. *
17.	AN3-10A	BOLT 3/16 X 32	2.
18.	AN4H10A	BOLT 1/4 X 28 Drilled Head	4.
19.	AN3-21A	BOLT 3/16 X 32	2.
20.	AN3H5A	BOLT 3/16 X 32 Drilled Head	2.
21.	NAS6604-08	BOLT 1/4 X 28	1. *
22.	NAS6604-24	BOLT 1/4 X 28	8.
23.	AN960C516L (NAS1149C0532R)	WASHER	4. *
24.	AN960C416L (NAS1149C0432R)	WASHER	12*
25.	AN960C416 (NAS1149C0463R)	WASHER	5. (1) *
26.	90295A140	WASHER, PLASTIC	1. *
27.	AN960C1032 (NAS1149C0363R)	WASHER	6. *
28.	AN960C1032L (NAS1149C0332R)	WASHER	6.
29.	MS21044C5	NUT	2. *
30.	MS21043-3	NUT	2.
31.	MS21044N3	NUT	2.
32.	MS21043-4	NUT	9.
33.	MS21083C8	NUT	2. *
34.	AP500UM03R-MM	INSTALLATION MANUAL	1. *
35.	AP500UM03R-ICS	INSTRUCTIONS FOR CONTINUED AIRWORTHINESS	1. *
36.	AP500UM03R-FMS	ROTOR-WING FLIGHT MANUAL SUPPLEMENT	1. *
37.	AP500UM03-11	JACK-POINT ACCESSORY	1. *
38.	Tool	.1875 Diameter 4-flute end-cutting End Mill	1. *

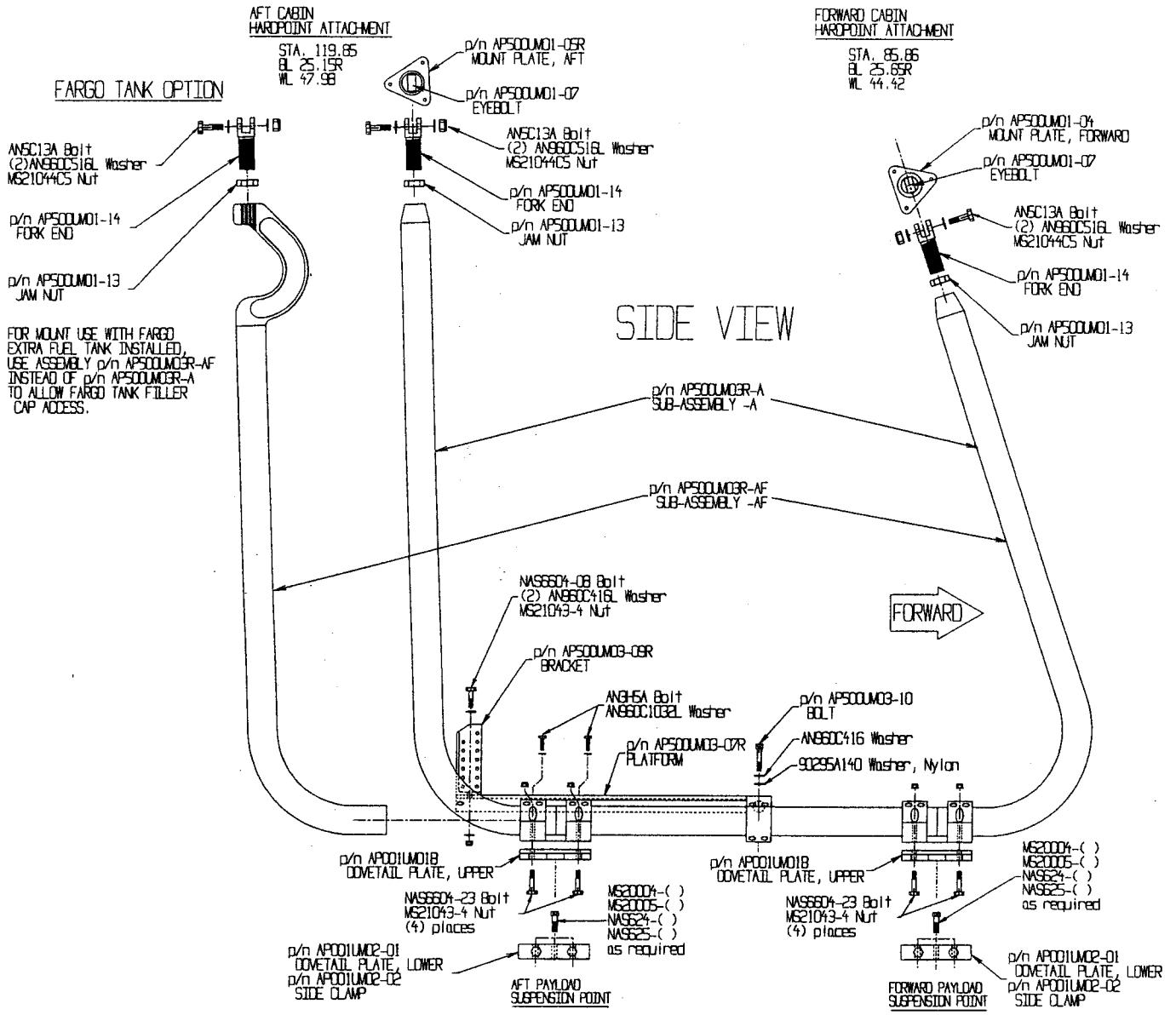
NOTES:

1. Parts marked with Asterisk (*) are supplied in Kit separate from Mount Structure Assemblage, the factory pre-assembled structure as defined and pictured in Drawing B of this Installation Manual. All other parts listed come Factory pre-assembled as part of Assemblage.

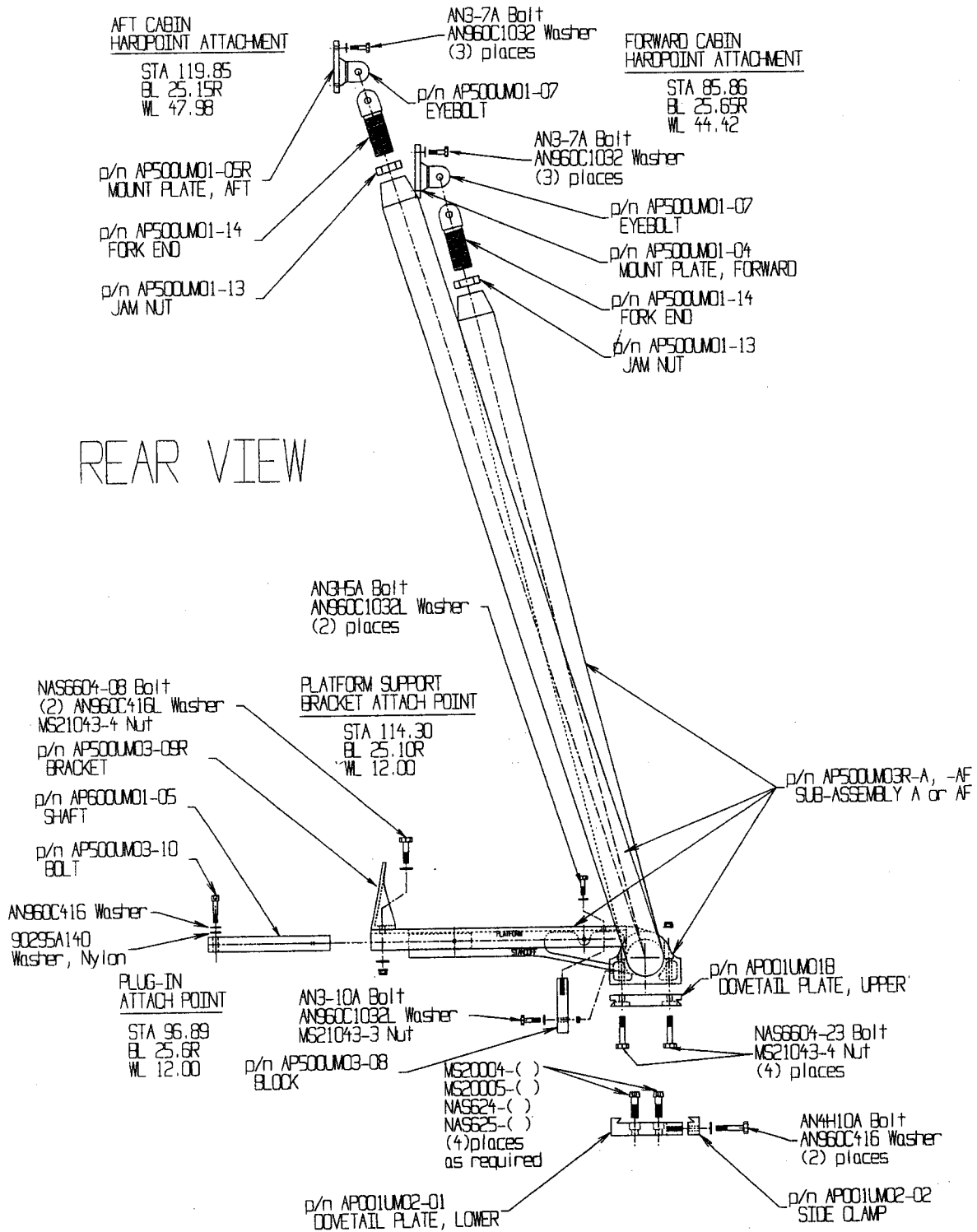
DRAWING A-1
MOUNT STRUCTURE - TOP VIEW EXPANDED



DRAWING A-2
MOUNT STRUCTURE - SIDE VIEW EXPANDED

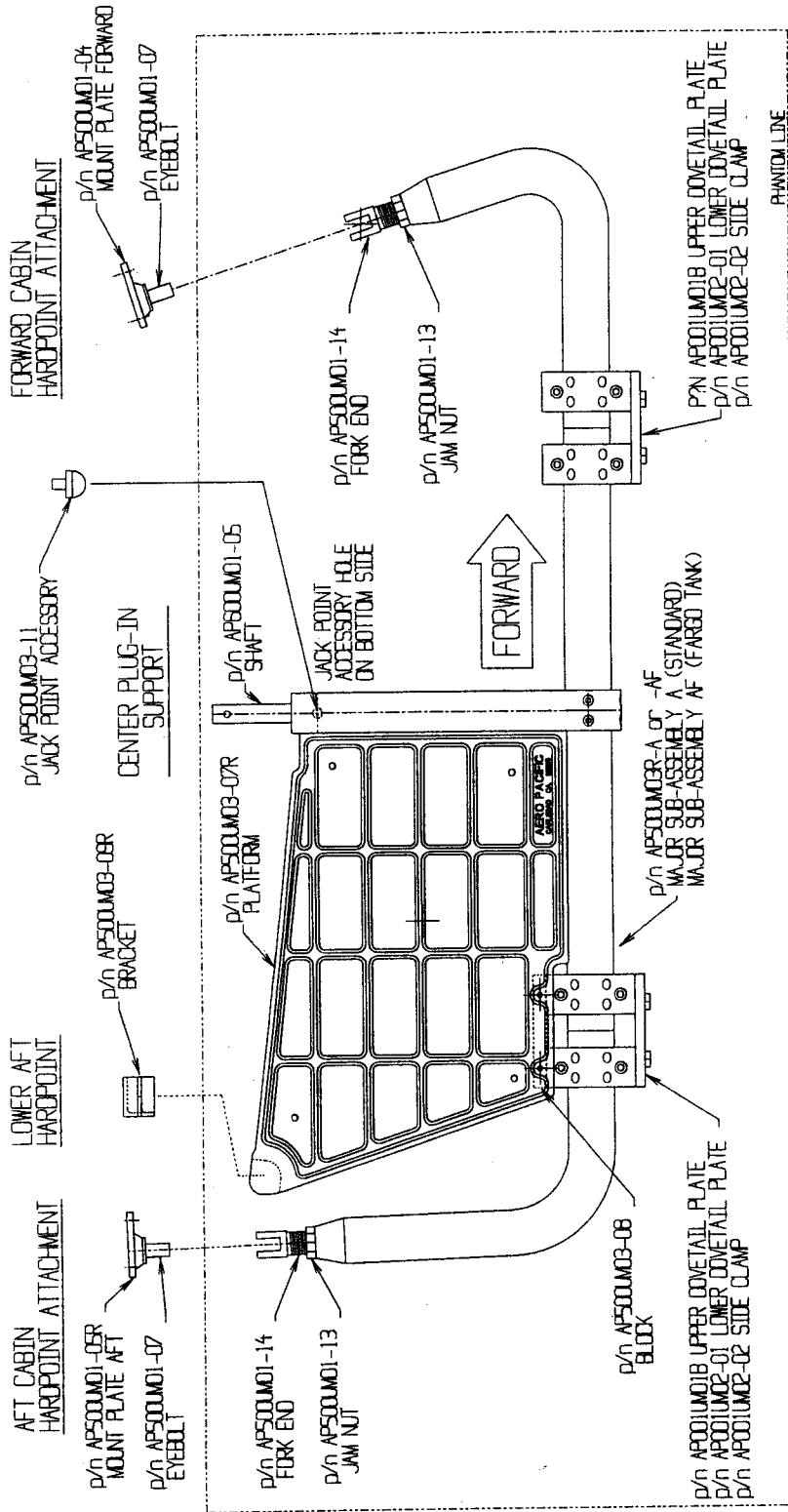


DRAWING A-3
MOUNT STRUCTURE - REAR VIEW EXPANDED



DRAWING B DEFINING MOUNT ASSEMBLY

TOP VIEW



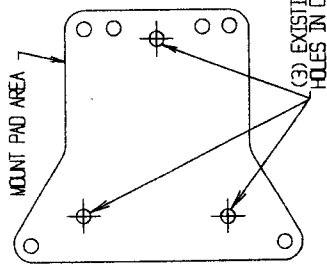
- NOTES:
1. PARTS LOCATED INSIDE PHANTOM LINE AREA ARE FACTORY PRE-ASSEMBLED AND ARE SUPPLIED AS A UNIT AND ARE DESIGNATED AS "MOUNT STRUCTURE ASSEMBLY" IN THIS INSTALLATION MANUAL.
 2. PARTS AND HARDWARE OUTSIDE THE PHANTOM LINE AREA ARE PROVIDED IN THE INSTALLATION KIT SEPARATELY UNLESS FURTHER ASSEMBLY IS COMPLETED AT THE FACTORY FOR SHIPPING REASONS.
 3. IT IS THE INSTALLERS RESPONSIBILITY TO VERIFY BOLT AND NUT TORQUE ON ALL PRE-ASSEMBLED PARTS IN THE SUPPLIED "MOUNT STRUCTURE ASSEMBLY".

DRAWING C

FORWARD AND AFT MOUNT PLATES

TYPICAL SITUATION—FORWARD AND AFT MOUNT PLATES

RIGHT SIDE VIEW
 FORWARD PAD DEPICTED
 FIGURE 1.



3/16" DIAMETER BOLT HOLE
 FOR SECURING JACKING ACCESSORY
 OR STEP
 ENLARGE UPPER PORTION OF THIS
 HOLE TO .250 DIAMETER.

FIGURE 4.

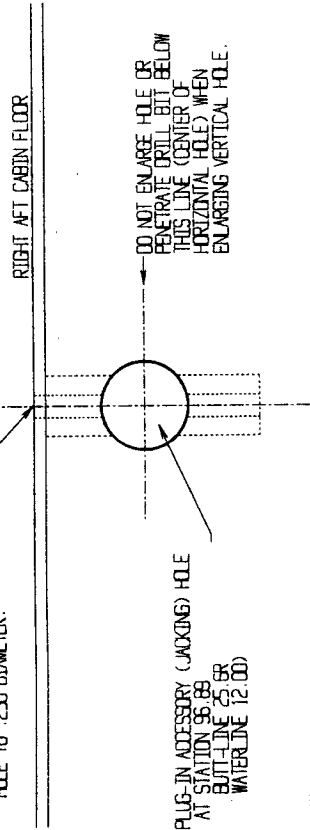
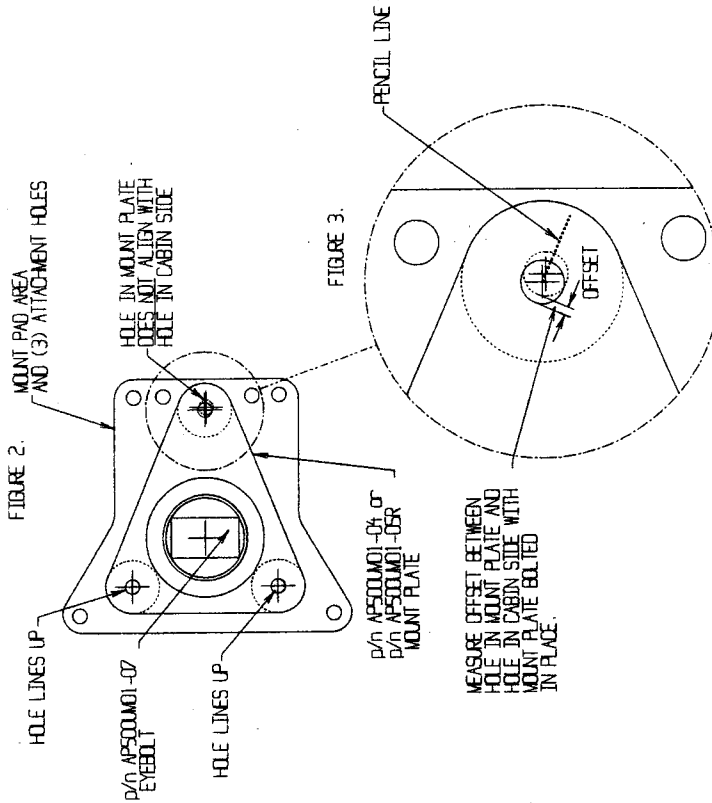


FIGURE 4. NOTES

1. LOCATE BOLT HOLE IN RIGHT AFT CABIN FLOOR USED TO SECURE STEP OR AIRCRAFT MANUFACTURERS JACKING ACCESSORY. IF STEP OR ACCESSORY IS PRESENT, REMOVE SECURING BOLT AND ACCESSORY.
2. LOCATE HORIZONTAL .700 DIAMETER RECEPTACLE HOLE USED FOR ACCESSORY OR JACKING. PLACE 3/8 INCH DIAMETER ROUND METAL BAR FULLY INTO HORIZONTAL HOLE SUCH THAT IT BLOCKS VERTICAL HOLE. THIS IS TO PREVENT DRILLING OUT VERTICAL HOLE DEEPER THAN ALLOWED.
3. USING A .250 INCH DIAMETER DRILL BIT, ENLARGE EXISTING 3/16 INCH DIAMETER HOLE. DO NOT DRILL BELOW CENTER OF HORIZONTAL HOLE.

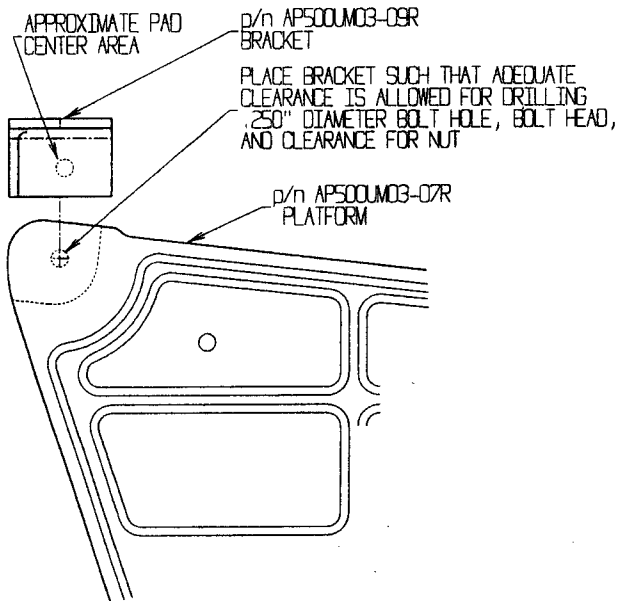


FIGURES 1., 2., AND 3. NOTES:

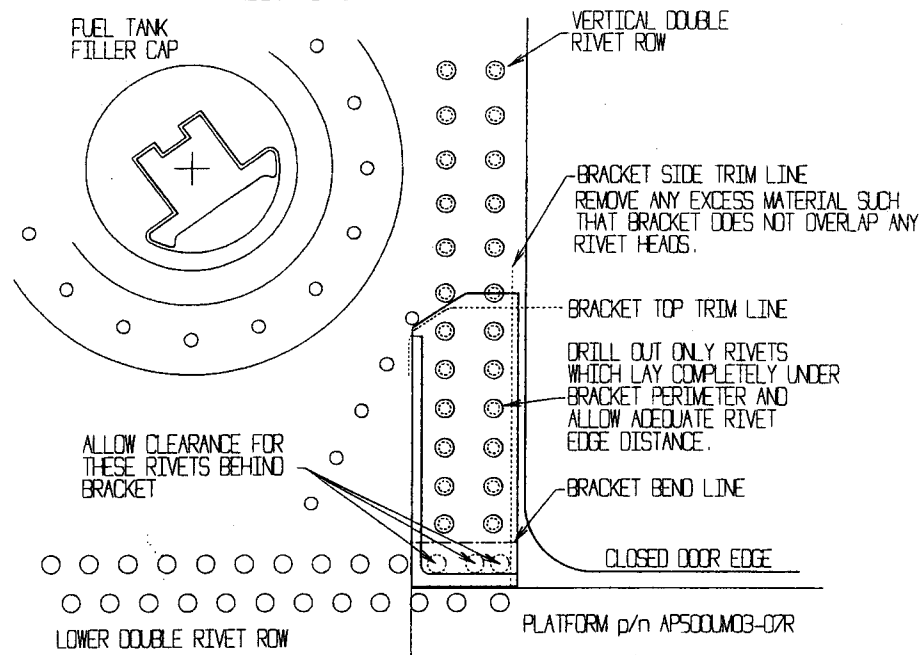
1. WITH FORWARD AND/OR AFT MOUNT PLATE BOLTED IN POSITION USING AS MANY OF THE (3) ANG-7A BOLTS AS POSSIBLE, MARK A PENCIL LINE INDICATING CENTER OF HOLE IN CABIN SIDE AND DIRECTION HOLE IN MOUNT PLATE WILL HAVE TO BE OFFSET TO ALLOW BOLT TO FIT.
2. MEASURE AMOUNT OF OFFSET. IF MORE THAN (1) HOLE IN MOUNT PLATE WILL NOT ALIGN MACHINE OFFSET AT (1) POSITION, RE-INSTALL MOUNT PLATE. INSTALL BOLTS IN BOTH POSITIONS, THEN MARK AND MEASURE DIRECTION AND OFFSET AND MACHINE LAST HOLE.
3. FOR MACHINING OPERATION USE .1875 DIAMETER END WILL PROVIDED WITH INSTALLATION PACKAGE. USING MILLING MACHINE OR DRILL PRESS, CLAMP (OR USE VISE) MOUNT PLATE FIRMLY IN PLACE. SET AMOUNT OF DESIRED OFFSET. USE VERTICAL PLUNGES TO REMOVE MATERIAL. DE-BURR MACHINED AREAS.

DRAWING D
BRACKET AP500UM03-09R INSTALLATION

TOP VIEW
 FIGURE 2.



RIGHT SIDE VIEW
 FIGURE 1.



NOTES:

1. WHEN POSITIONING BRACKET p/n AP500UM03-09R OVER VERTICAL RIVET ROW AS SHOWN ABOVE, MINIMUM OF (6) RIVETS IN EACH ROW (12 TOTAL) MUST BE USED TO ATTACH BRACKET.
2. BRACKET EDGES MAY NOT LAY OVER ANY ADJACENT RIVET HEADS. TRIM BRACKET AS SHOWN. DRAWING IS A REPRESENTATION OF RIVET LOCATIONS. ANOMALIES IN MANUFACTURE MAY HAVE DIFFERENT OR UNEVEN SPACING BETWEEN RIVETS. YOU MUST MATCH-DRILL TO FACTORY RIVET HOLES. PLACE BRACKET SUCH THAT RIVET HEADS AND RIVET HOLES WILL NOT PENETRATE INNER RADIUS EDGES OF BRACKET.
3. ALLOW SUFFICIENT CLEARANCE BETWEEN CLOSED AFT CABIN DOOR AND BRACKET. TRIM FORWARD EDGE OF BRACKET AS NECESSARY AS SHOWN. MAINTAIN ADEQUATE RIVET EDGE DISTANCE.
4. VERIFY THAT OFFSET LOWER REAR SIDE OF BRACKET (DENOTED IN DRAWING BY BRACKET BEND LINE) CLEARS RIVET HEADS OF DOUBLE LOWER RIVET ROW. DO NOT REMOVE ANY OF THESE RIVETS.

DRAWING T

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FASTENER TORQUE REQUIREMENT PROCEDURE

The following torque limits are stipulated for initial installation, repairs, and subsequent removal and/or reinstallation of the AP500UM03R mount or any parts thereof. All torques are stated in inch-pounds. The importance of correct application of torque cannot be overemphasized. Under-torque can result in unnecessary wear of nuts and bolts as well as to the parts they are holding. Over-torque can be equally damaging because of failure of a bolt or nut from over stressing the threaded areas, resulting in structural failure.

1. Always use a calibrated torque wrench.
2. If possible, always use torque wrench on nut end of fastener assembly.
3. Do not lubricate threads prior to torque application. Threads must be clean and dry on both the bolt and the nut. Apply a smooth even pull when applying torque pressure. If chattering or jerking motion occurs during final torque, back off and retorque.
4. On self locking nuts, run nut down near contact with the washer or bearing surface and check "friction drag torque" required to turn the nut (or bolt if going into hidden self-locking nut plate). If "friction drag torque" is less than the minimum listed below, the nut (or hidden self locking nut plate) is not to be used. Minimum allowable "friction drag torque" values are listed by size below. Bolts and Nuts should be torqued to the values listed below. These values include "friction drag torque". Apply recommended torque.
5. Re-use of self locking nuts is not recommended. Minimum "friction drag torque" values are listed below. Under no circumstance should any nut or bolt combination testing a friction drag torque less than the limits expressed below be used for flight. Nuts or bolts exhibiting corrosion which has penetrated the outer plated coating should be replaced.

BOLTS

<u>ITEM</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>	<u>(inch-pounds) TORQUE VALUE</u>
9.	AP500UM01-07	EYEBOLT	230+/-5
14.	AP500UM03-10	BOLT, 1/4	30+/-5
15.	AN3-7A	BOLT, 3/16	25+/-3
16.	AN5C13A	BOLT, 5/16	135+/-5
17.	AN3-10A	BOLT, 3/16	25+/-3
18.	AN4H10A	BOLT, 1/4	70+/-5
19.	AN3-21A	BOLT, 3/16	25+/-3
20.	AN3H5A	BOLT, 3/16	25+/-3
21.	NAS6604-08	BOLT, 1/4	90+/-5
22.	NAS6604-23	BOLT, 1/4	90+/-5

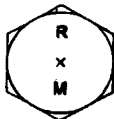
NUTS

<u>ITEM</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>	<u>(inch-pounds) TORQUE VALUE</u>	<u>MINIMUM FRICTION DRAG TORQUE</u>
29.	MS21044C5	NUT, LOCKING (NYLON), 5/16	135+/-5	10
30.	MS21043-3	NUT, LOCKING (METAL), 3/16	25+/-2	5
31.	MS20365-1032	NUT, LOCKING (NYLON), 3/16	25+/-3	3
32.	MS21043-4	NUT, LOCKING (METAL), 1/4	90+/-5	15
33.	MS21083C8	NUT, LOCKING (NYLON) 1/2	230+/-5	15

BOLT HEAD MARKINGS

Specifications require that most bolts which are made to conform with standard drawings be identified by a specific marking on the bolt head. Shown here are the markings of sample bolts. The initials "RM" and "RBM" identify the manufacturer of the bolt.

AN3-(length), AN4-(length), AN5-(length)



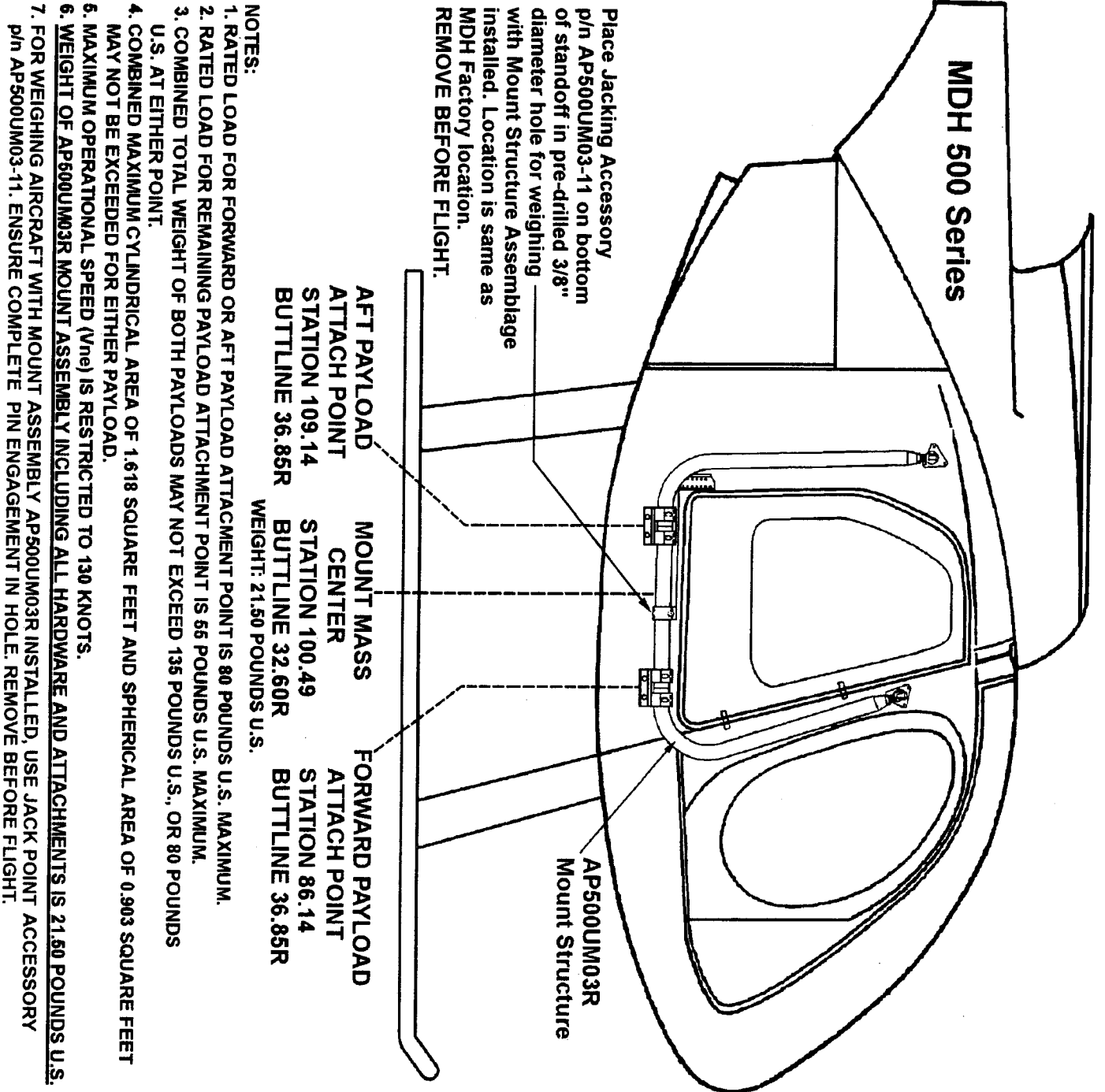
NAS6604-(length)



COMPONENT LOCATION

WEIGHT AND BALANCE INFORMATION

DRAWING W



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AERO PACIFIC PROCESS AP010

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SEALANT APPLICATION

USING CORTAULD AEROSPACE BRAND PROSEAL 890B-2 TWO PART SEALANT (1 PINT KIT)

A. INITIAL REQUIREMENTS

1. Mixing and application of sealant agent shall be conducted within a temperature range of 70 to 90 degrees Fahrenheit. Recommended storage temperature of unmixed adhesive agents in sealed can is 77 degrees Fahrenheit +/-5 degrees. At this temperature shelf life is six months.
2. Normal working time is (2) hours at temperature of 75 degrees Fahrenheit. Working time is decreased at temperatures above 75 degrees Fahrenheit, and extended at temperatures below 75 degrees Fahrenheit.

B. MIXING

1. Mix and combine agents Part A (Accelerator) and Part B (Base Compound) in accordance with and in the ratios stated by the Product Manufacturer on the container label.
2. Stir and combine Part A and Part B until a uniform combined color is attained, and then stir continuously for an additional two minute to assure complete mixing. Seal parent agent containers immediately. Prevent agent residue contamination by using separate mixing sticks.
3. If mixed container is to sit for longer than 15 minutes before use, cover container to keep out contaminants.
4. It is extremely important to mix Part A and Part B exactly to the ratios by weight or volume stated by the manufacturer on the container, as a mixture that will not cure or will not be pliable upon cure may result.

C. CLEANING OF PARTS TO BE BONDED

1. Thoroughly clean all parts surfaces to be sealed using Methyl Ethyl Keytone (M.E.K.) and allow to evaporate dry.
2. Application of sealant agent shall be within 30 minutes of cleaning time.
3. Keep parts to be sealed clean and dry until application of sealant agent.

D. APPLICATION OF MIXED SEALANT AGENT

1. Mask any areas necessary to help prevent excess sealant agent from reaching undesired areas of part(s).
2. When masking perimeter of part(s) leave approximately 1/16 inch free space around part perimeter to create a "bead" of sealant.
2. Apply sealant agent completely to both surfaces to be sealed. A slight excess of agent is desirable, as all voids between surfaces must be filled and the excess will provide for the "bead" around the perimeter.

E. ASSEMBLY OF PARTS

1. Flat surfaces being sealed should be pressed together evenly and riveted, bolted, or clamped.
2. Round tubular telescopic assembly parts shall be pressed into one-another in a slow rotational manner to help keep sealant agent from being pushed from between surfaces.

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SEALANT APPLICATION

USING CORTAULD AEROSPACE BRAND PROSEAL 890B-2 TWO PART SEALANT (1 PINT KIT)

F. CLEANUP

1. Remove excess agent with clean dry rags (no solvent).
2. Final clean with rags lightly soaked with M.E.K. Avoid excess amounts of M.E.K., as agent must not be removed from between bonded surfaces and an edge "bead" of sealant agent must be maintained around perimeter.

G. CURING

1. Upon completion of cleanup, assembly must be kept in a clean dry area and allowed to sit undisturbed for a 24 hour period for a curing temperature of 70 degrees Fahrenheit. Full cure time is 24 hours at this temperature. Higher temperatures produce a faster cure time, and lower temperatures produce a longer cure time.

H. PRODUCT INFORMATION

Product Description: Sealant

ProSeal 890B-2 One Pint Kit
Part Number 0890B002BM012PT

Manufacturer: Courtauld Aerospace Inc.
5454 San Fernando Road
Glendale, CA. 91203

Available From: Packaging Systems Inc.
(among others) (818) 246-5568

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AERO PACIFIC PROCESS AP006

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**LOCAL AREA SURFACE PREPARATION AND
CONVERSION COATING FOR ALUMINUM**

SURFACE PREPARATION

1. Remove any excessive amounts of oil, dirt, chemicals, or other coatings from the part(s) if necessary by wiping thoroughly with Stoddard Number 5 Solvent or Dupont First Kleen 3900S fast-dry initial surface cleaner. Use protective clothing, eye protection, and gloves as necessary on this and all following operations.
2. Remove any final surface film from part(s) by wiping thoroughly with Dupont Kwik-Kleen 3949S or Dupont Prep-Sol 3919S cleaning solutions. Use clean rags.
3. Blow dry or thoroughly wipe off part(s) with clean dry rag. Keep part(s) clean and dry until step 4.
4. Carefully wipe part(s) with rag moderately soaked with Dupont Aluminum Metal Cleaner 225S or a 2% solution of Muriatic Acid and water. Contain solution to immediate area of repair by wiping with dry rag or masking unwanted areas. Reaction will be indicated by a small amount of white bubbling at exposed area of unprotected aluminum. Reaction may be accelerated by light scrubbing of part(s) with 3M brand Scotchbrite pad 07448 lightly soaked with solution. Dilute 225S Cleaner as per manufacturers instructions if used.
5. Immediately rinse part thoroughly with clean water, temperature between 40 and 120 degrees Fahrenheit.
Conversion coating must be applied within five minutes, or before part is allowed to completely dry.
Do not blow dry.

CONVERSION COATING

1. Within five minutes, or before part is allowed to dry, wipe immediate area with a clean rag moderately soaked with DuPont 226S Conversion Coating or Chemical Commodities Alodine 1200 Conversion Coating. Both these products are used full strength with no dilution. Follow respective manufacturers instructions. Wipe and soak for five minutes. Temperature at time of application should be between 40 and 90 degrees Fahrenheit. Examine part occasionally and continue to soak area until desired gold finish density is obtained.
2. Immediately rinse with clean water. Blow or wipe dry with clean rag. Inspect for complete coverage of coating. Re-coat with conversion coating if necessary and repeat this step.

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**LOCAL AREA SURFACE PREPARATION AND
CONVERSION COATING FOR ALUMINUM**

REQUIRED MATERIALS

PRODUCTS:

First Kleen 3900S
Kwick Kleen 3949S
Prep Sol 3919S
Cleaner 225S
Aluminum 226S
Conversion
Coating

PRODUCT:

Scotchbrite Pad 07448

MANUFACTURED BY:

3-M Company
Automotive Trades Div.
St. Paul MN. 55144-1000

MANUFACTURED BY:

E.I. Dupont De Nemours
Wilmington Delaware
19898 (800) 441-7515

PRODUCT:

Alodine 1200
Aluminum Conversion Coating

MANUFACTURED BY:

Chemical Commodities
27447 Pacific St.
Highland, CA. 92346
(909) 864-2310