



**HUGHES
SERVICE INFORMATION
NOTICE**

NOTICE NO. N-89

DATE April 16, 1971

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SUBJECT: INSTALLATION - MOUNTING BRACKETS,
DUAL HEAD ALTERNATOR

MODELS AFFECTED: Model 269B and Model 269C Helicopters equipped with
U.S. Energy Empac TA-30 Dual Head Alternator

TIME OF COMPLIANCE: Recommended within next 50 hours of helicopter
operation, or sooner, after receipt of parts.

PREFACE: The information given in this Service Information Notice lists a
procedure for field installation of new support brackets for the
U.S. Energy Empac TA-30 dual head alternator, to provide addi-
tional reinforcement and security of attachment at the alternator
housing mounts and the engine crankcase.

Reference

269 Series - Basic Handbook of Maintenance Instructions, Issued 1 September 1970

269 Series - HMI Supplement B, Issued 1 September 1970

269 Series - HMI Supplement C, Issued 1 September 1970

PARTS LIST

<u>Nomenclature</u>	<u>Part Number</u>	<u>Qty.</u>	<u>Mfg.</u>
Bracket	BK-431	1	U.S. Energy
Bracket	BK-430	1	U.S. Energy
Bracket	BK-429	1	U.S. Energy
Kit, Stud Installation	KM6-SF-SC101	1	Rosan
Stud	SF101-95A(14)A	4	Rosan
Lockring	RL24SB-7	4	Rosan
Bolt	AN5-7	1	Commercial
Bolt	BE7-94	2	U.S. Energy
Bolt	BE4-318	2	U.S. Energy
Bolt	NAS1306-81	1	Commercial
Bolt	NAS1306-12D	1	Commercial
Bolt	NAS1306-105	1	Commercial
Nut	AN310-5	1	Commercial
Nut	MS21042-6	2	Commercial
Nut	MS21042-4	4	Commercial
Washer	AN960-616 or 616L	A/R	Commercial
Washer	AN960-516	2	Commercial
Washer	AN960-416	4	Commercial
Cotter Pin	AN380-2-2	1	Commercial
Belt, Alternator	#8441	1	Gates

TOOLS & EQUIPMENT

Drill Press
Drill Motor
Drill Bit - 0.0700 in. dia. (#50)
Drill Bit - 0.1285 in. dia. (#30)
Drill Bit - 0.1875 in. dia. (3/16)
Drill Bit - 0.250/0.254 in. dia. (#E)
Wrench, Torque
Scale, Spring

MATERIALS

Primer, zinc chromate
Lubriplate, or equivalent

INSTALLATION - ALTERNATOR MOUNTING BRACKETS

- a. Check that all electrical power is OFF.
- b. Remove upper belt drive cover assembly, clutch spring assembly, and strut assembly. (Refer to Section 10 of Basic HMI)
- c. Remove lower belt drive cover; disconnect lower pulley caps and remove lower pulley with coupling drive shaft.
- d. Remove upper frame caps and "H" frame; slide "H" frame and belts aft on tail rotor drive shaft.
- e. Remove exhaust muffler, if installed.
- f. Remove lower center frame diagonal brace, if required.
- g. Remove oil cooler from scroll assembly.
- h. Disconnect exhaust couplings and lower exhaust stacks.
- i. Remove scroll assembly simultaneously with impeller and starter drive gear.
- j. Remove dual head alternator; modify alternator housing (See page 6).
- k. Remove slide adjusting arm from engine.

NOTE

1. Remove and install engine hanger bolts one at a time.
2. Use jack or equivalent to support bottom of engine during removal and installation of engine hanger bolts.
3. When removing and installing engine hanger bolts, coat exposed threads of bolts with Lubriplate or equivalent, to help prevent damage to engine O-rings (Lycoming #72075).
4. Carefully push or pull bolts - do not twist or turn through engine mount. Also, wipe off Lubriplate for dry torquing of bolts.

l. Install BK-429 adjusting arm mounting bracket to engine hanger, using new bolts and existing nuts and washers. (See Figure 1) As required, add washer(s) as spacers between bracket and engine hanger.

m. Install slide adjusting arm to BK-429 bracket, using hardware as shown.

NOTE

If bolts securing existing BK-420 bracket on engine pad are not secured with lockwire, remove bracket and drill (#50) bolt heads. Reinstall bracket; torque bolts 80/90 inch-pounds lockwire.

Also check that HS13SP498-398-187 spacer is re-installed in scroll support bracket to prevent breaking bracket.

n. Install alternator on BK-420 mounting bracket on engine, using existing bolt and washer and new self-locking nut; snug bolt but do not tighten.

o. Install BK-431 support bracket on studs of center housing; secure with four nuts and washers as shown.

p. Install BE4-318 alternator through bolts (one or two bolts as applicable) through center housing and BK-431 bracket; secure with existing hardware as shown.

q. Install BK-430 "T" mounting bracket on engine pad next to BK-420 bracket; install "T" bracket loosely with two bolts as shown.

NOTE

As required, use AN960-616 or AN960-616L washer as shim between BK-430 and BK-431 brackets.

r. Install NAS1306-12D bolt through BK-430 and BK-431 brackets; snug bolt with washer and self-locking nut to align "T" bracket; do not torque bolt.

s. Torque bolts securing "T" bracket to engine pad 80/90 inch-pounds; secure bolts with lockwire.

t. Place new belt on alternator pulley.

u. Loosely attach alternator to slide adjusting arm with existing bolt and washer.

- v. Apply outward pressure to alternator to tighten belt.
- w. Tighten the bolt at the slide adjusting arm and adjust belt tension, per Section 16 of Basic HMI.
- x. When correct belt tension is obtained, tighten bolt on slide adjusting arm and secure with lockwire.
- y. Torque bolt securing alternator to BK-420 mounting bracket to 225/300 inch-pounds. (See step n.)
- z. Torque bolt securing "T" bracket to BK-431 center housing support bracket to 225/300 inch-pounds. (See step r.)
 - aa. Connect electrical wiring to alternator.
 - ab. Check alternator installation for discrepancies.
 - ac. Reinstall removed components in reverse order of removal.
 - ad. Perform operational check of alternator and aircraft electrical system.

WEIGHT & BALANCE DATA

ADD: 1.5 lbs. at 102.3 inch arm

MODIFICATION - ALTERNATOR HOUSING

a. Modify alternator center housing and BK-431 support bracket as follows:

1. Cut lockwire and remove existing through bolt (one or two bolts, as applicable, to permit bracket installation) from alternator housing.
2. Position BK-431 support bracket on center housing; align 3/8-inch holes in bracket and housing, using a through bolt, or drill blank or equivalent.

NOTE

End of existing 3/16-inch through bolt may be ground to a point, to use as a center punch.

3. Center punch and drill 0.1875 in. dia. hole(s) in support bracket to match through bolt hole(s) in center housing.
4. Place BK-431 bracket on alternator housing and align with 3/8-inch bolt or drill blank. Install new BE4-318 bolt (one or two as applicable) through housing and bracket. Secure bolt(s) with existing hardware.
5. With bracket secured in place, line drill (#30) through four pilot holes in bracket and into alternator housing to total depth (bracket and housing) of 1.05 inches. Remove bracket from housing.

NOTE

Apply zinc chromate primer when installing Rosan studs.

6. Using Rosan stud installation kit, drill and tap (use bottom tap) center housing four places; install four Rosan studs and lockrings, per kit instructions.
7. Check fit of bracket on alternator studs, and with BE4-318 through bolt(s).
8. Remove BK-431 support bracket from alternator housing.

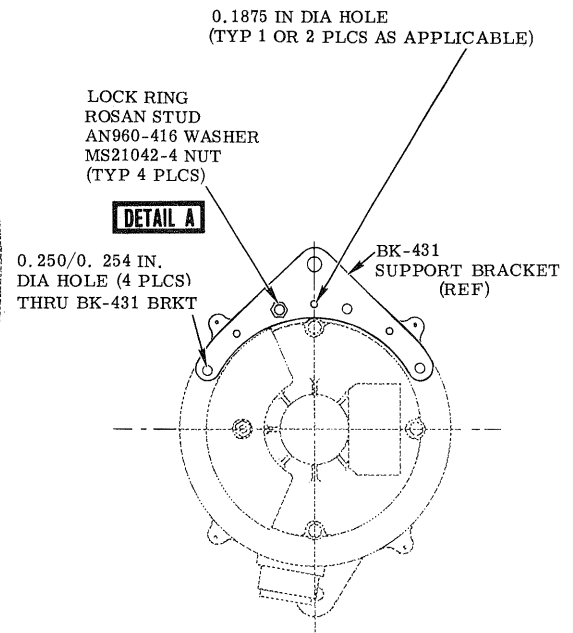
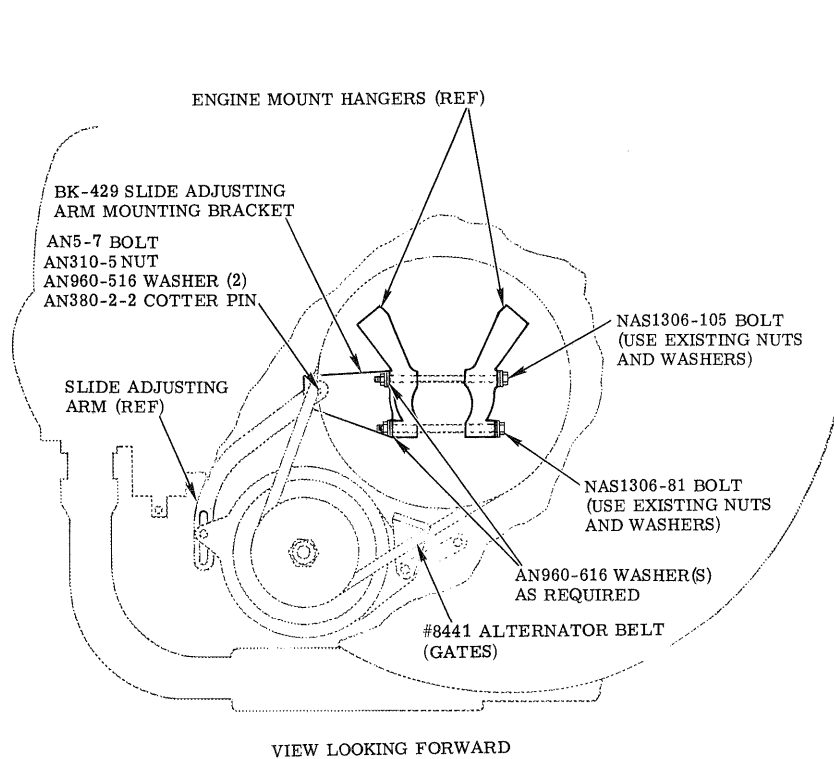
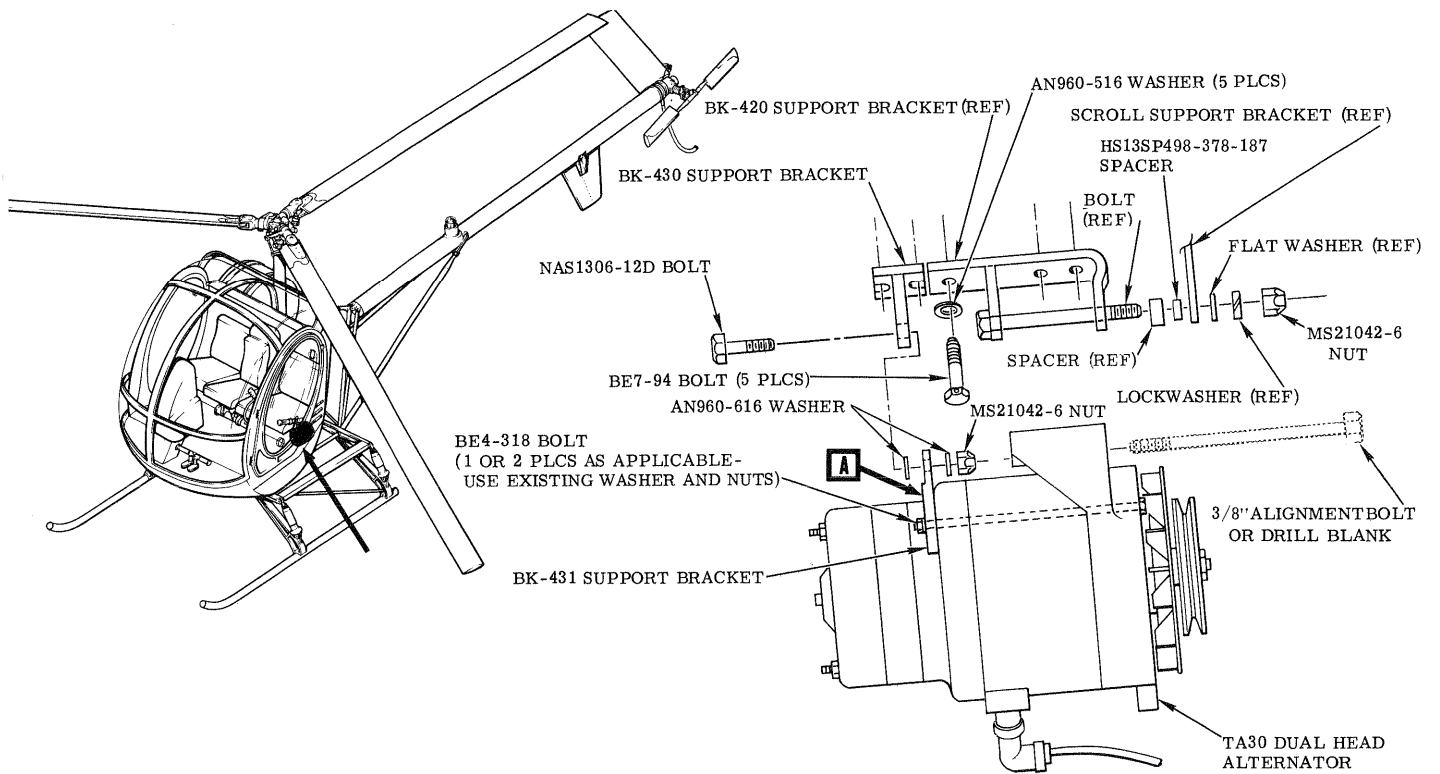


FIGURE 1. MODIFICATION - TA-30 DUAL HEAD ALTERNATOR INSTALLATION.

