

## Section 14

### Fan Drive, Water Pump and Alternator

**Procedures covered in this section:**

Install fan drive countershaft, water pump, and alternator.

**Cards used in this section:**

E29 CARD 1                      E35 CARD 1  
E31 CARD 1                      E42 CARD 1

**Prints used in this section:**

E30-2000                      E31-2000                      E35-2001

**Templates used in this section:**

None

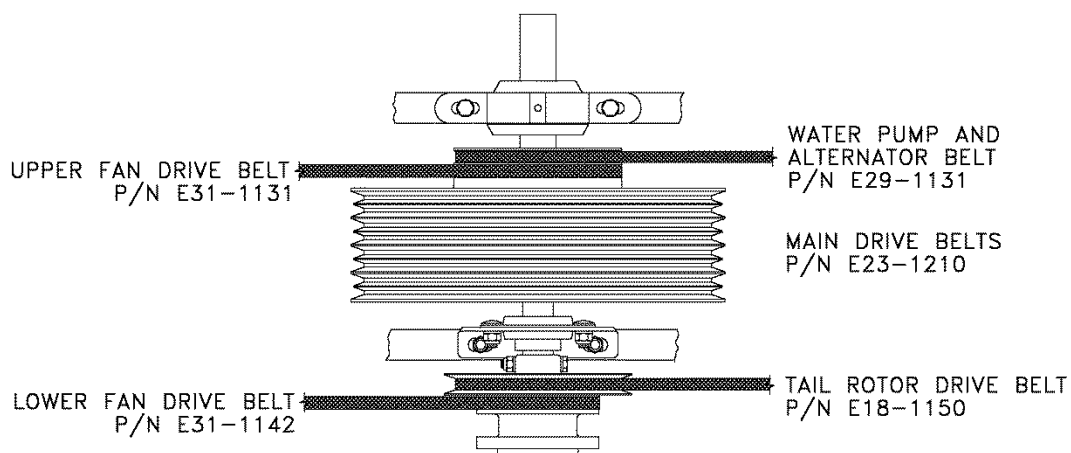
**Tools required for this section:**

Air or electric drill              Drift punch                      Straight edge  
Allen wrench                      Hammer  
Band saw or hacksaw      Screwdriver

Drill bits of the following sizes: 3/16", 1/4", 5/16", Letter "D"  
Ratchet with sockets of the following sizes: 3/8", 7/16", 1/2"  
Wrenches of the following sizes: 3/8", 7/16", 1/2"

**Notes:**

1. DRIVE BELTS: The drawing below shows placement of the different drive belts on the secondary assembly.





## FAN DRIVE COUNTERSHAFT

### Photo #1

Use print E31-2000 when installing the fan drive countershaft assembly.

Parts as received from RotorWay.



### Photo #2

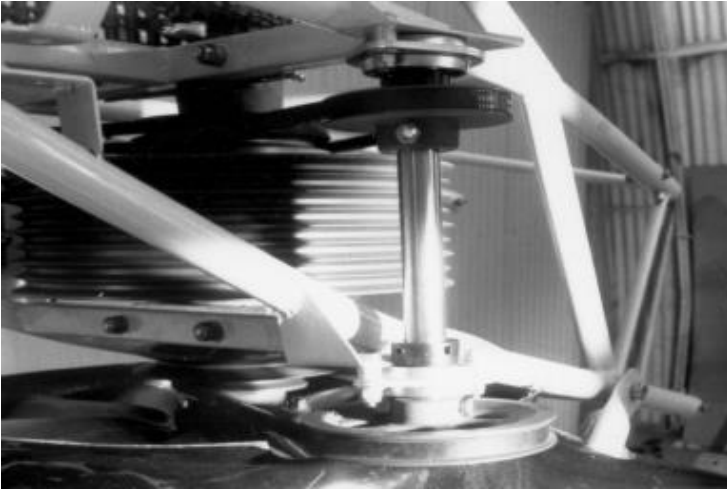
Place the pulleys and bearings on the shaft. The lower (large) pulley should be even with the end of the shaft. Space the pulleys apart to match the corresponding pulleys on the secondary unit.



### Photo #3

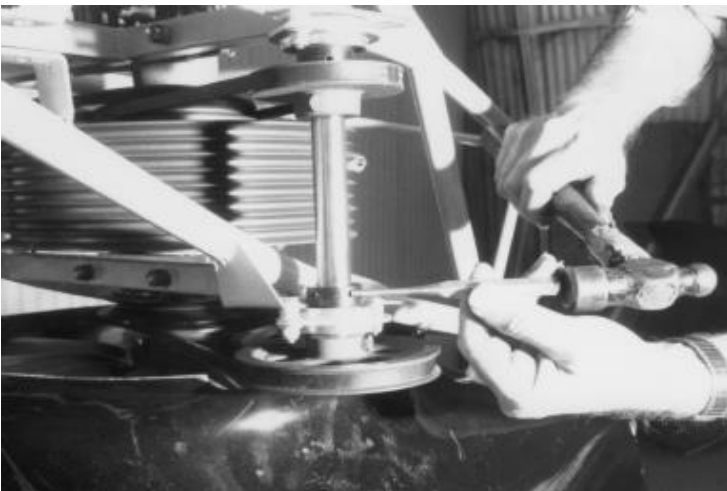
Using a letter "D" drill bit, drill the holes for the bolts that hold the pulleys to the shaft. Then install the bolts. This must be a tight fit.





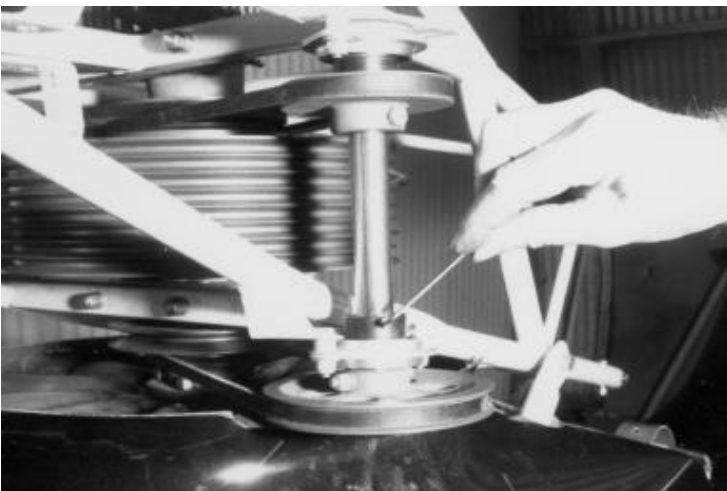
**Photo #4**

Mount the assembly on the airframe brackets and install the belts. Move the assembly up or down in the bearings for alignment. The lower bearing flanges may be placed above or below the airframe bracket as required. The aluminum spacers may be trimmed or not used if necessary.



**Photo #5**

On final assembly, Loctite both pulleys and bearings to the shaft. Set the lock rings with a hammer and punch.



**Photo #6**

Tighten the set screws on both lock rings.

**Photo #7**

Another view of the assembled fan drive.



**WATER PUMP**

**Photo #8**

Use print E30-2000, E31-2000 and E37-2000 when installing the water pump.

Parts as received from RotorWay.

Attach the water pump strap, part number E29-8300, to the water pump as shown.



**Photo #9**

Mount the water pump to the airframe. Flow should be forward to engine.  
See Section 18 and prints E30-2000 and E37-2000 for installation of coolant hoses.



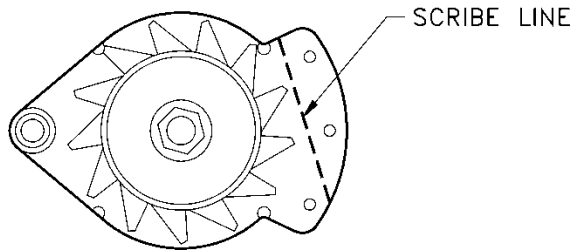


## ALTERNATOR

### Photo #10

Use prints E30-2000 and E31-2000 when installing the alternator assembly.

Parts as received from RotorWay.



### Photo #11

Mask the openings in the alternator to prevent metal chips from entering, then cut off the excess material on the scribe line.



### Photo #12

Cut the existing connector off of the yellow wire on the bottom of the alternator. Replace it with the 1 pin female connector (E35-8570, E35-8280) supplied on E35 CARD 1T.

**Photo #13**

Mount the alternator on the airframe bracket. Check alignment between alternator pulley and the top belt groove on the secondary. Add washers between the bracket and the alternator if necessary to achieve alignment. Install the bolt from the bottom. E00-4700 parts on E42 CARD 1T.



**Photo #14**

Fabricate the belt adjusting strap, found on card E42 CARD 1T. Install and tension the belt, part number E42-1310. It should be tight enough so that the alternator pulley is just able to be turned by hand.



**Photo #15**

Run a ground wire from the negative terminal on the alternator to the gusset under the alternator bracket on the airframe. Use a 3/16" bolt, and remove paint where the terminal contacts the gusset.

