

INTERNATIONAL F-4 AND F-6 MAGNETOS

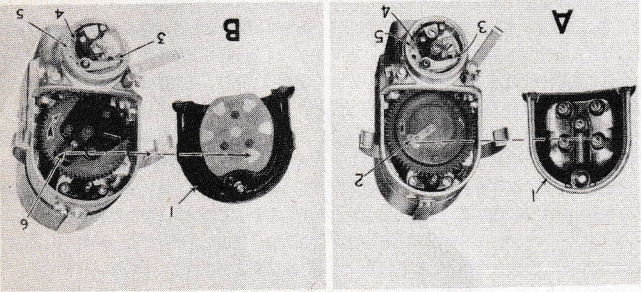
To do magnetic circuit to a minimum. To do this, the rotor clearance is held close. A small amount of end play would allow the rotor to rub, due to the construction of the ball bearings. They are made to take lateral as well as radial load.

To avoid any possibility of the bearings becoming loose, we preload them from .000 to .002" lengthwise. To do this, assemble the rotor with just enough shims to set the end play at nothing, or a point where no perceptible play can be felt and still be free. This is to be tried with the rotor in the frame and the bearing housing in place and all the screws in and tight. The bearings should be free of grease and oil to get an accurate fit. Then remove the bearing housing, bearing inner race and flinger, and add one .002" or .0025" shim. (See Illustr. 36.) The washer shims should be between the inner race and the gear on the rotor shaft. After this setup is completed be sure that the shaft does not bind and that the preloading was all done with the last placed shim of .002 or .0025". Too much preloading will ruin the bearing. Some relief to these bearings is provided as soon as the magneto starts to warm up on the engine. The aluminum frame expands more rapidly than the steel rotor shaft and thus relieves the preloading to a large degree.

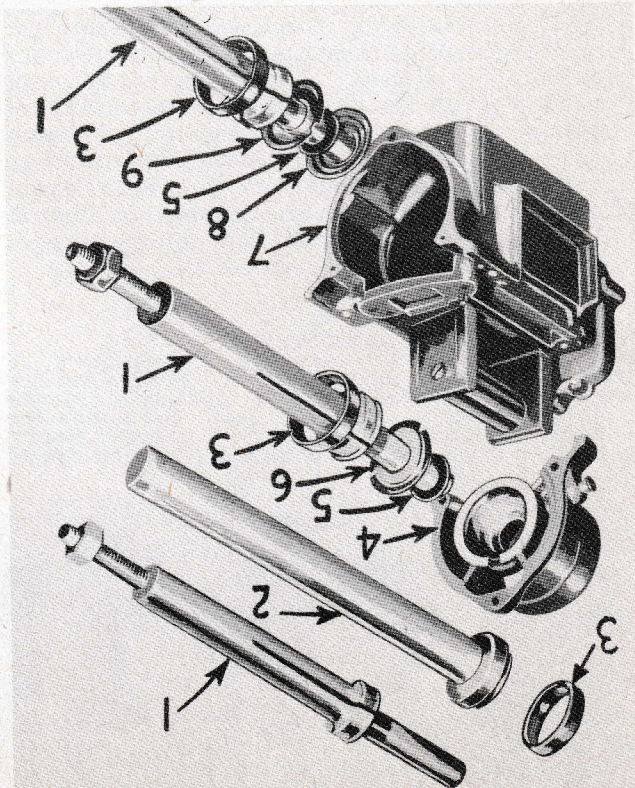
Timing Magnetos to Engine

Illustr. 38--(A) TIMING INTERNATIONAL F-4 MAGNETO TO ENGINE. (B) TIMING INTERNATIONAL F-6 MAGNETO TO ENGINE. 1--DISTRIBUTOR BLOCK. 2--DISTRIBUTOR DISC SEGMENT DELIVERING SPARK TO NO. 1 CYLINDER. 3--BREAKER POINTS JUST OPENING. 4--GROUND CONTACT SPRING AGAINST BREAKER STOP. 5--BREAKER STOP. 6--DISTRIBUTOR BRUSH SET FOR DELIVERING SPARK TO NO. 1 CYLINDER.

With the breaker points cleaned and adjusted as outlined on Page 9, replace breaker housing cover, move the lever end up as high as it will go and remove the cover. This places the breaker assembly in full retard position with ground contact against breaker stop. In this position the magneto will deliver no spark. Secure the magneto in place on the base screws loosely in the magneto. Do not use base screws longer than the originals as they will damage magneto.



Removing and Replacing Magneto Outer Bearing Race



ILLUSTR. 37--TOOLS USED FOR REMOVING AND REPLACING MAGNETO OUTER BEARING RACES. 1--MAGNETO BEARING RACE PULLER TOOL SE-1020. 2--MAGNETO BEARING RACE REPLACEMENT TOOL SE-1021. 3--OUTER BEARING RACE. 4--BREAKER HOUSING. 5--FELT. 6--FELT RETAINER, BREAKER HOUSING END. 7--FRAME. 8--FELT RETAINER, OUTER. 9--FELT RETAINER, INNER.

Magneto outer bearing race in both breaker housing and magneto frame can be readily removed with tool SE-1020 as shown in illustration. Loosen expander and insert tool into bearing race in the direction shown. Manipulate split sleeve flange through bearing race and hold it against felt retainer. Now draw up on expander by applying a wrench to flats on threaded end of expander and turning in an anticlockwise direction until a definite pressure is felt. Then tighten hexagon nut, and carefully drive bearing race from place.

Before replacing outer bearing races make sure felts and retainers are correctly assembled in place. Set bearing race on end of tool SE-1021. A small amount of clean grease will hold race on tool. Carefully line up tool over hole and drive race in place.

Preloading Rotor Bearings

In order to maintain the high efficiency of this type of magneto, it is necessary to reduce the air gaps in the