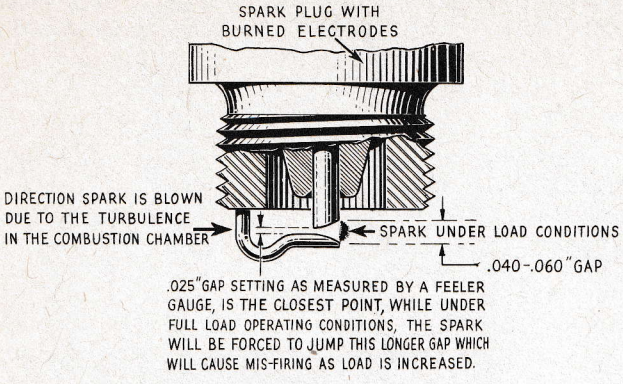
for this type of work, or 0.13 to 0.18 inches.



ILLUST. 28--DIFFERENCE BETWEEN ACTUAL AND MEASURED SPARK GAP.

The use of colder spark plugs than those recommended for standard production will give greater life and better operation when using natural gas. Since no trouble will be experienced with fouling when operating under these conditions, a plug one or two steps colder may be used. (See Service Bulletin S-3145A-1408). This will greatly increase the spark plug life and also result in better engine performance. Do not use a plug so cold that the spark will jump between the center electrode and the shell of the plug, for this will cause the engine to mis-fire.

All parts of the special F-6 magneto are the same as the standard F-6 magneto except for the coil, frame, secondary leadout, rotor and the setting of the breaker points.

Distributor Shaft and Bearing

After the distributor gear is properly meshed with the rotor pinion as mentioned on Page 17, Illust. 27, see that the teeth have a very slight amount of clearance so that no radial pressure is exerted on the distributor shaft bearing. Use shims under the bearing bracket, if necessary, to provide this clearance.

The distributor shaft end play should not be more than .014" or less than .003"; preferably .003". The reason for this is that excess end play at this point allows the distributor disc to travel back and forth, causing more or less uneven brush pressure and creating excessive wear on the disc brush track. This end play may be adjusted by placing special shim washers Number 12588-C which are .004" thick and Number 12589-C which are .008" thick, between the retainer spring and the rear thrust washer.

Effective with F-4 Serial No. 409158 and F-6 Serial No. 34967, the bushing in the distributor bearing is changed to a porous bronze which permits oil to filter through from oil passage. Oil passage is also changed to a short lead over the bushing, eliminating the oil wick and cork.

Primary Lead-Out

The primary lead-out fastening and positioning on the condenser end has been described under "The Condenser" (Page 15). This wire carries the primary current from the winding to the breaker. It is made of carefully insulated stranded copper wire chosen for its long fatigue life when flexed repeatedly. It is long enough so that the circuit breaker may be removed and examined without disconnecting at the breaker end. When the breaker is replaced, this extra length of wire should be tucked under the primary lead-out shield 21331-D in the magneto frame.

Distributor Disc

The distributor disc and brushes should be examined periodically and the disc should be kept clean. Disc can be cleaned with a soft rubber eraser which is free of grit and abrasives and will not scratch disc surface. If the disc becomes badly worn it may be replaced on the F-4 by driving out three bakelite pins that hold the disc to the gear, and on the F-6 by removing three bakelite screws that hold the disc to the distributor block. When replacing the bakelite pins or screws the heads should be given a light coat of shellac. This will help prevent them from loosening and seals them against the possibility of changing shape from the effects of moisture. The pins on the F-4 magneto must be a tight fit in the distributor gear and a close push fit in the disc.

When the brushes and the disc are properly related the brush track will wear very slowly; it will be polished and reasonably smooth. If other than this condition exists, check the gaskets for moisture entrance, or dirt entry, and be sure that the proper brushes are used.

If the magneto has been operating with the proper spark advance in relation to the distributor gear setting, a slightly blackened condition ("spark spot") will exist on the insert at the