



VSP-33
December 18, 1981

VENDOR SERVICE PUBLICATION

To: All Piper Distributors and CORPAC's
Subject: Bendix Service Bulletins 611, 616, 617, 619

The attached publications may affect Bendix equipment installed in Piper airplanes.

Refer to each publication for identification of specific equipment affected and for detailed information regarding compliance.

AIRCRAFT

SUBJECT:

Part 1. Addition of moisture drains and sealing of vent screens in S-1200 Series Magneto Covers.

Part 2. Internal inspection of distributor assemblies of Bendix S-1200 Series Magnetos installed on Teledyne Continental Motors 470 and 520 engine series.

REASON FOR BULLETIN:

To alert users of Bendix S-1200 Series Magnetos installed on Continental 470 and 520 engines of possible water ingestion and provide instructions to modify existing magnetos at field level.

EQUIPMENT AFFECTED:

Bendix S-1200 Series Magnetos with the following part numbers:

Bendix P/N	Teledyne Continental P/N
1. 10-349260-2	633090
2. 10-349220-2	633091
3. 10-349220-1	632958
4. 10-349260-1	632959
5. 10-349350-1	640030

SPARE PARTS AFFECTED:

Not applicable

COMPLIANCE:

At users discretion, but no later than the next magneto overhaul.

GENERAL INFORMATION:

Field reports indicate that some operators of Teledyne Continental Engines of the 470 and 520 series are experiencing water ingestion in the S-1200

Series Magnetos. This moisture contamination may cause ignition difficulties, resulting in possible engine roughness. The addition of moisture drains and sealing of the screen vent in the magneto cover will provide a means for drainage of accumulated moisture and prevent moisture from entering the magneto through the screen vent.

The magnetos listed below are new part numbers which incorporate the moisture drains and no vent screens when supplied as original equipment.

New Bendix P/N	Magneto Type	New TCM P/N	Replaces P/N	Engine Position
1. 10-349260-7	S6LN-1205	643807	10-349260-2	Right
2. 10-349220-4	S6LN-1201	643729	10-349220-2	Left
3. 10-349220-5	S6RN-1201	643730	10-349220-1	Left
4. 10-349260-6	S6RN-1205	643808	10-349260-1	Right
5. 10-349350-4	S6RN-1225	643809	10-349350-1	Left
6. 10-349350-5	S6RN-1225	643810	10-349350-1	Right

PART 1

DETAILED INSTRUCTIONS TO MODIFY MAGNETO COVER:

1. Remove the magneto cover by removing the ignition harness adapter plate from each magneto and then removing the magneto cover securing screw. Pull the magneto cover away from the magneto and carefully pull the capacitor, and retard lead, if used, from the breaker flag terminal(s).
2. Using Figure 1 as a guide, lay out the positions for the moisture drains. Positions 1 and 2 are in line with the stud holes in the cover and position 3 is centered between 1 and 2. Using a small round file, create the three hemispherical recesses as detailed in view A, figure 1.

Note

The moisture drains must be on the lower side of each cover when it is reinstalled on its related magneto assembly on the engine.

3. Lay out the position for drilling a 0.094 in. \pm 0.005 in. hole in the center of the ledge area of the covers and drill one hole in each cover using a 3/32" or No. 42 drill, as shown in Figure 1.

CAUTION

Do not allow the drill to penetrate through the cover and hit the housing of the capacitor which is directly in line with the hole being drilled. Mask drill bit for maximum allowable depth (1/4 in.).

4. Remove any burrs left during the filing and drilling operations on the covers and clean the covers of any metal shavings. Apply a thin coat of black enamel to the bare metal exposed during the filing of the moisture drains. Avoid getting paint on the adjacent cover-to-magneto mounting surface.

5. With a putty knife, spatula or similar tool, apply a sufficient amount of sealant to the outside of the vent screen to fill the vent screen recess flush with the adjacent cover surface. Acceptable sealants are listed below:
 - a. Dow Corning Sealant No. 3145
 - b. Permatex No. 1
 - c. Hi-Sol Epoxy Patch, Kit 1C
 - d. G.E. Silicone Sealant (Automotive type)

PART 2

INTERNAL INSPECTION:

While the magneto cover is removed, it is recommended that the cleaning and inspection guidelines detailed in Bendix Service Bulletin No. 612 be complied with.

IDENTIFICATION:

After adding moisture drains and sealing vent screen, identify the magnetos by stamping the letter "M" on the magneto nameplate after the magneto part number (i.e., 10-349XXX-XM).

ENGINE LOGBOOK:

Make an appropriate logbook entry signifying compliance with this bulletin.

SPECIAL TOOLS REQUIRED:

None

MAN HOURS REQUIRED:

Approximately one hour per magneto. Time may vary depending on installation.

WEIGHT CHANGE:

None

LEFT MAGNETO COVER

RIGHT MAGNETO COVER

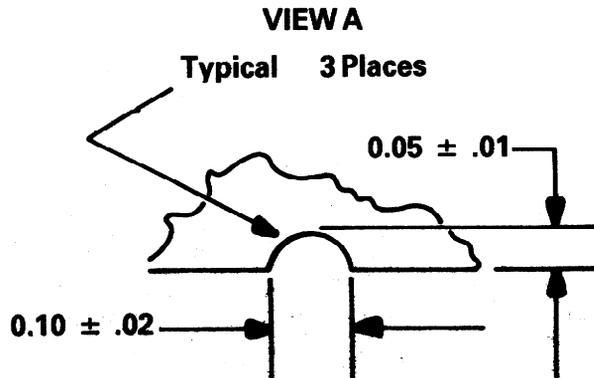
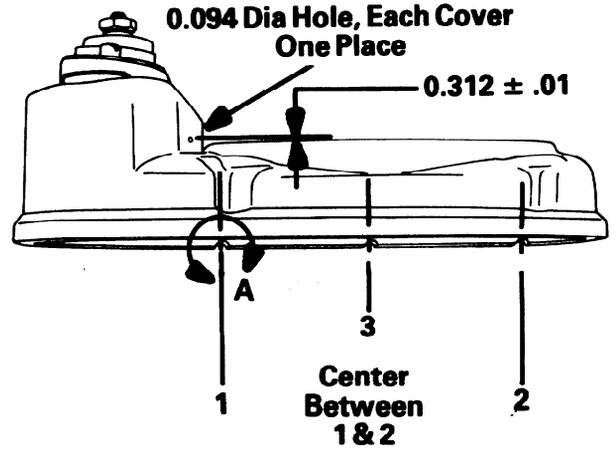
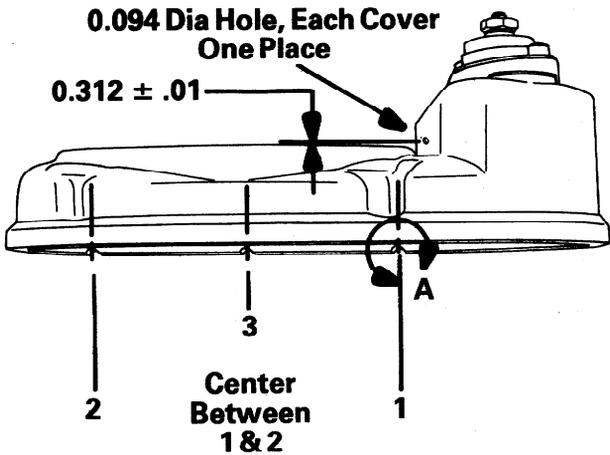
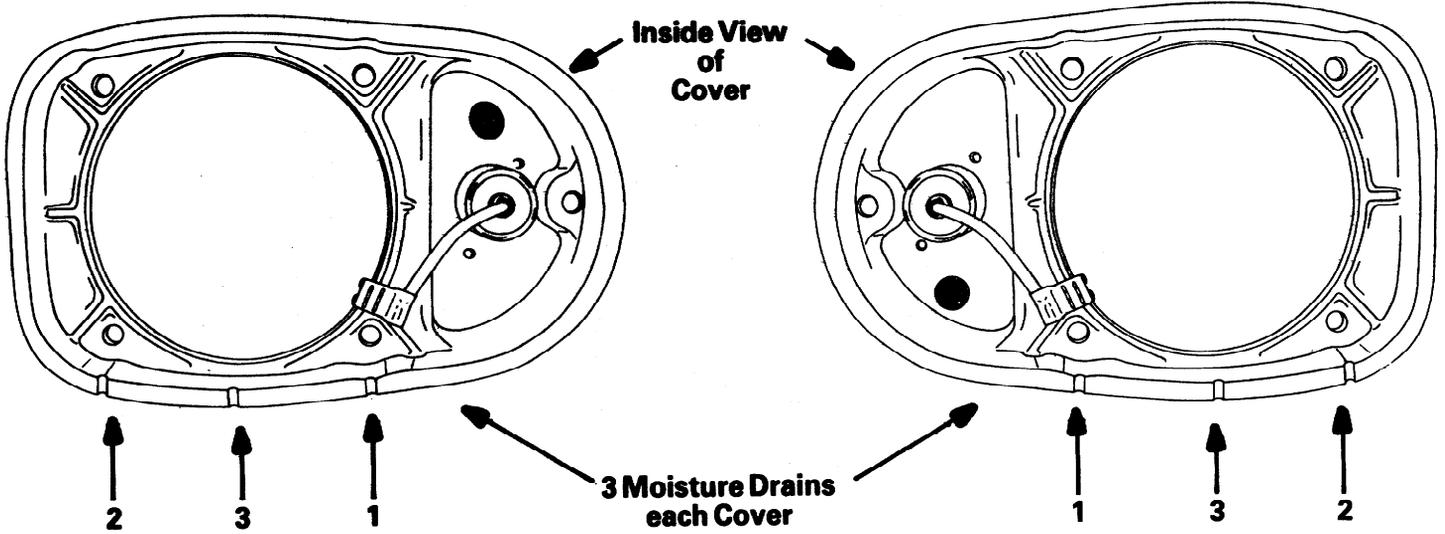


Figure 1. Location of Drain Holes

AIRCRAFT

SUBJECT:

10-357584 and 357586 Insulated Distributor Gear Kits for S-20 and S-200 Series Magnetos.

REASON FOR BULLETIN:

To announce availability of an insulated distributor gear kit for the subject magnetos.

EQUIPMENT AFFECTED:

All S-20 and S-200 Series Magnetos.

Spare Parts Affected:

Distributor gears and related parts for S-20 and S-200 Series Magnetos.

Compliance:

At user's discretion.

General Information:

The 10-357584 and 10-357586 Insulated Distributor Gear Kits for S-20 and S-200 Series Magnetos are being provided as a standardization change for Bendix magnetos. With the introduction of these kits, all new Bendix aircraft magnetos delivered from the factory will be provided with insulated distributor gears. The insulated gear kits include all parts (except distributor block) as identified in figure 1.

The 10-357584 gear kit for four cylinder magnetos will replace the 10-50746Y distributor gear, and the 10-357586 gear kit for six cylinder magnetos will replace the 10-157197 distributor gear when current

stock is exhausted.

Assembly sequence of the gear kit to distributor block is shown in the exploded view of figure 1.

CAUTION

When timing magneto on bench or when reinstalling magneto on engine no gear holding timing device should be used, as hidden gear tooth damage may result.

Parts Required per Magneto:

1 kit 10-357584 4 cylinder
1 kit 10-357586 6 cylinder

Special Tools Required:

11-3071* Retaining Ring Pliers

Man Hours Required:

Not Applicable

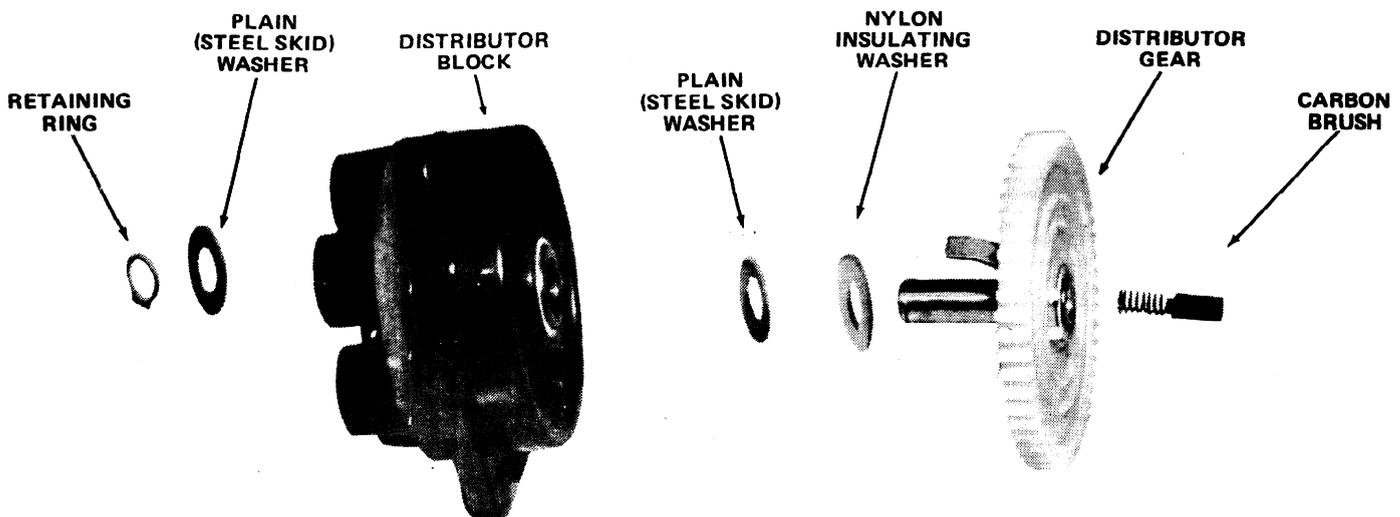


Figure 1. Exploded View

*May be obtained from the Bendix Corporation, Engine Products Division, Sidney, NY 13838 or from TRU-ARC Division, Waldes-Kohinoor, Inc., Long Island City, NY 11101. TRU-ARC Retaining Ring Pliers No. 2.

AIRCRAFT

SUBJECT:

Inspection and/or replacement of distributor gears in D-2000/2200 series magnetos.

REASON FOR BULLETIN:

1. To alert users of a possible loose distributor gear electrode on the subject gears. This condition could lead to rough engine operation or cylinder or engine damage.
2. To provide users with inspection and replacement procedures.

EQUIPMENT AFFECTED:

All D-2000/2200 series magnetos below serial number 35480 (red label magnetos) and below serial number 8122106 (blue label magnetos) unless identified with an "x" in the upper left corner of the identification plate before the word "Bendix" (see figure 1). The "x" on the identification plate indicates previous compliance.

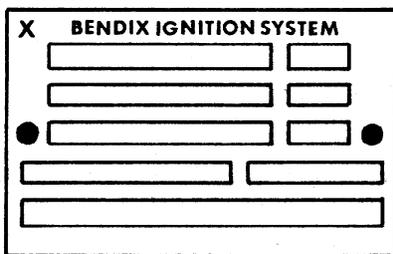


Figure 1. Location of "x" on Identification Plate

Maintenance (Spare) Parts Affected:

Gear P/N 10-382894 4&8 Cyl.
Gear P/N 10-382896 6 Cyl.
Gear Kit P/N 10-682014 4&8 Cyl.
Gear Kit P/N 10-682016 6 Cyl.

All new gears 10-382894 and 10-382896 should be returned to an Authorized Bendix Engine Products Division Distributor for credit.

All Gear Kits 10-682014 and 10-682016 with gears not identified in paragraph 1 of Compliance must be returned to an Authorized Bendix Engine Products Division Distributor.

Compliance:

1. All subject magnetos having from 0 to 500 operating hours must have the distributor gears inspected within the next 100 operating

hours or at the next regularly scheduled inspection, whichever occurs first, and reinspected every 100 operating hours until the magneto has 500 operating hours. If the gears fail the inspection they must be replaced immediately with new, serviceable gears; if they pass each inspection they may remain in service until magneto overhaul, at which time they must be replaced with new, serviceable gears. At owner's option, gears that pass inspection may be replaced at any time during the compliance period with new, serviceable gears as identified in this paragraph and figure 2. Serviceable gears are identified by the presence of the letter "z" or the letters "x" and "o" appearing together, laser etched on the retaining ring end of the gear axle, or the letter "L" stamped on the electrode (see figure 2).

2. All subject magnetos having 500 or more operating hours must have the distributor gears inspected within the next 100 operating hours or at the next regularly scheduled inspection, whichever occurs first. If the gears fail this inspection they must be replaced immediately with new, serviceable gears; if they pass this inspection they may remain in service until magneto overhaul, at which time

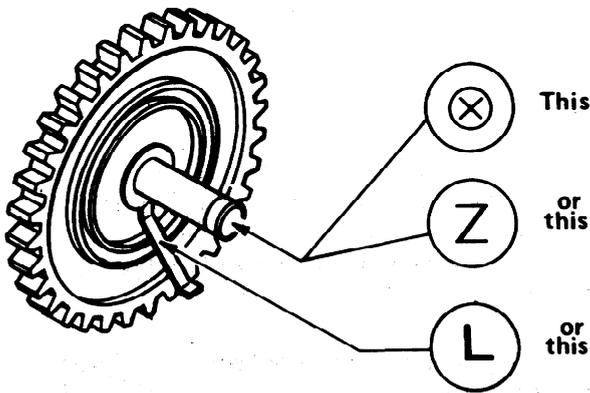


Figure 2. Location of Identification Mark(s)
on Distributor Gear

they must be replaced with new, serviceable gears. At owner's option, gears that pass inspection may be replaced at any time during the compliance period with new, serviceable gears as identified in paragraph 1 of Compliance.

General Information:

Field reports indicate that the distributor gear electrode has been found to be loose on some D-2000/2200 series magnetos. If this condition exists, the distributor gear electrode may contact the distributor block stationary electrodes causing contamination in the distributor in the form of dusty brass particles. This contamination may cause arcing within the distributor resulting in misfiring. This could in turn cause rough engine operation or cylinder or engine damage.

Detailed Instructions:

(Refer to D-2000 Installation Instructions, Bendix Publication L-928 and D-2000 Overhaul Instructions, Bendix Publication L-945.)

1. Remove cover from magneto and inspect the retaining ring end of the distributor gear axles for the letter "z" or the letters "x" and "o". (The letter "x" may or may not be circled by the letter "o".) If the letter "z" or the letters "x" and "o" together are laser etched on the end of the axles, the gears are serviceable and the cover can be reinstalled. Identify the magneto per

paragraph 6 of Detailed Instructions.

2. If the axle ends are not identified with "z" or "x" and "o", remove the magneto from the engine. Remove the block from the magneto and remove the gears from the block.
3. Inspect the block for serviceability and replace any block found to be unserviceable.
4. Clean and inspect each gear. If the gear is part of an insulated gear kit (identifiable by the presence of a nylon insulating washer on the gear axle between the gear and the block) inspect for the presence of the letter "L" on the electrode (see figure 2). If "L" is stamped on the electrode, the gear is serviceable and can be reinstalled. If "L" is not present, the gear must be replaced with serviceable gear, P/N 10-682014 for 4 or 8 cylinder magnetos or P/N 10-682016 for 6 cylinder magnetos.
5. If the gear is the uninsulated type (no nylon washer) inspect the gear for a loose electrode. Grasp the gear firmly in one hand and alternately exert clockwise and counterclockwise force against the electrode with maximum hand pressure. This should be done in a manner that would attempt to pivot the electrode around the axle (see figure 3). If any movement is detected between the electrode and the gear, the gear must be discarded and replaced with a new, serviceable gear.

If gears are found to be serviceable, they may be reinstalled or replaced at owner's option.

CAUTION

When timing magneto on bench or when reinstalling magneto on engine, no gear holding timing device should be used as hidden gear tooth damage may result.

6. If new serviceable gears, identified with the "z", the "x" and "o", or the "L" are installed in the magneto, identify the magneto by stamping the letter "x" in the upper left corner of the identification plate, before the word "Bendix" (see figure 1).



Figure 3. Checking for Loose Electrode

7. Make an appropriate engine log book entry recording magneto serial number to indicate that the distributor gears have been inspected and comply with the requirements of this service bulletin, or that the gears have been replaced with new, serviceable gears.

Warranty Consideration:

All D-2000/2200 series magnetos that are within Bendix Engine Products Division Standard Warranty period will be covered for these procedures. Standard Warranty period is twelve months from date of delivery to the first end user, or 1,000 operating hours, whichever occurs first.

Compensation:

Compensation for the work and parts involved in complying with this service bulletin for those magnetos under warranty will be made upon submission of a Warranty Claim submitted through a currently Authorized Bendix Engine Products Division Distributor. Compensation will be made in accordance with established Bendix Warranty procedures.

Parts Required per Magneto

2 Kits 10-682014	4&8 Cylinder Magnetos
2 Kits 10-682016	6 Cylinder Magnetos

Special Tools Required:

Refer to applicable manuals

Man Hours Required:

2.5 hours per engine

Weight Change:

None



AIRCRAFT

SUBJECT:

Replacement of distributor gears in D-3000/3200 Series (blue) Magnetos.

REASON FOR BULLETIN:

1. To alert users of a possible loose distributor gear electrode on the subject gears. This condition could lead to rough engine operation or cylinder or engine damage.

2. To require replacement of subject gears and provide users with replacement procedures.

EQUIPMENT AFFECTED:

All D-3000/3200 Series (blue) Magnetos with Serial Numbers 100 through 1968 not identified by the letter "x" in the upper left corner of the identification plate (see figure 1). The "x" on the identification plate indicates previous compliance.

Maintenance (Spare) Parts Affected:

All distributor gear kits P/N 10-682014 and P/N 10-682016 which contain gears that are not identified by the presence of the letter "z" or the letters "x" and "o" together, laser etched on the retaining ring end of the gear axle, or the letter "L" stamped on the electrode (see figure 2).

Compliance:

All affected magnetos with over 100 operating hours must have the distributor gears replaced within the next 100 operating hours, or at the next regularly scheduled inspection, whichever occurs first.

contact the distributor block stationary electrodes causing contamination in the distributor in the form of dusty brass particles. This contamination may cause arcing within the distributor resulting in mis-firing. This could in turn cause rough engine operation or cylinder or engine damage. In order to preclude the possibility of service difficulties, the distributor gears of all affected D-3000 and D-3200 magnetos must be replaced.

Detailed Instructions:

(Refer to D-2000 Installation Instructions, Bendix Publication L-928 and D-2000 Overhaul Instructions, Bendix Publication L-945. These are comparable to D-3000/D3200 Series Magnetos and will suffice for these procedures until D-3000/3200 manuals are available.)

1. Following published procedures, remove the cover from the magneto and remove the magneto from the engine.

2. Remove the distributor block from the magneto and remove the gears from the block.

3. Inspect the block for serviceability and replace any block found to be unserviceable.

4. Return the distributor gears to any Authorized

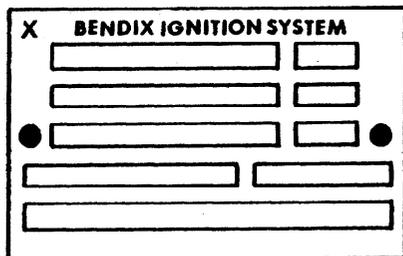


Figure 1. Location of "x" on Identification Plate

General Information:

The distributor gear electrode has come loose in service on some D-3200 Series Magnetos. If this condition exists, the distributor gear electrode may



Bendix Engine Products Division Distributor to exchange for new gears under warranty.

5. Reassemble the distributor block with new serviceable gears. Serviceable gears are identified by the presence of the letter "z" or the letters "x" and "o" together, laser etched on the retaining ring end of the gear axle, or the letter "L" stamped on the electrode (see figure 2).

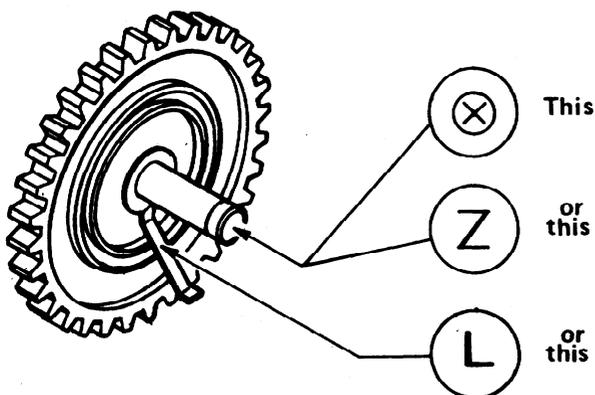


Figure 2. Location of Identification Mark(s) on Distributor Gear

CAUTION

When timing magneto on bench or when reinstalling magneto on engine, no gear holding timing device should be used as hidden gear tooth damage may result.

6. Reassemble the magneto.

7. After the magneto has been reassembled with new serviceable gears, identify the magneto by stamping the letter "x" in the upper left corner of the identification plate, before the word "Bendix" (see figure 1).

8. Reinstall the magneto on the engine.

9. Make an appropriate engine log book entry indicating that this Service Bulletin has been complied with.

Warranty Consideration:

All affected magnetos will be covered by warranty, allowing 2.5 hours for replacement of distributor gears. Compensation for the work involved in complying with this Service Bulletin will be made in accordance with established warranty policy upon submission of a Warranty Claim submitted through a currently Authorized Bendix Engine Products Division Distributor.

Special Tools Required:

Refer to applicable manuals

Man Hours Required:

2.5 hours per engine

Weight Change:

None