

service bulletin

M90-6 Technical Portions Are FAA Approved

26 February 1990

SUBJECT: **INSPECTION AND REPLACEMENT OF SCAVENGE PUMP GEARS
P/N 635334 AND 639388**

MODELS
AFFECTED: TSIO520B, BB, D, DB, R, RB, J, JB, K, KB, N, NB, UB, VB

COMPLIANCE: At TCM recommended overhaul time, discovery of metal contamination in the engine, or removal of the scavenge oil pump gears prior to major overhaul.

This service bulletin calls for the replacement of scavenge pump gears 635334 and 639388 which were installed in scavenge pumps at TCM prior to April of 1985. At that time these gears were superseded by p/n 649157 and 649159. These superseding gears are carburized in order to extend their service life. Scavenge pumps which contain the new gears and engines equipped with an air conditioner drive pulley on the starter adapter are excluded from the requirements of this service bulletin. Listed below are the part numbers and serial numbers of starter adapter/scavenge pump assemblies and engines which are excluded. All other affected models must have their scavenge pumps disassembled and the scavenge pump gears replaced with the 649157 and 649159 gears.

Components and engines which are excluded from the requirements of this service bulletin:

1. Starter adapters with ink stamped part numbers 642085A4 and 642085A5. (These contain the new gears 649157 and 649159 and do not need to be disassembled.)
2. The following serial numbered engines. (These engines contain the new gears and do not need to be disassembled.)

TSIO520B

NEW N/A

REB N/A

TSIO520BB

NEW 526027 - AND SUBSEQUENT

REB 236969 - AND SUBSEQUENT

TSIO520D-DB

NEW D N/A

REB D 180083 - AND SUBSEQUENT

NEW DB N/A

REB DB 242005 - AND SUBSEQUENT

(continued)

TSIO520E-EB

NEW E N/A
REB E 275045-275134, 275141-275156 - AND SUBSEQUENT
NEW EB 510818 - AND SUBSEQUENT
REB EB 271058, 271061-271130, 271135-271137 - AND SUBSEQUENT

TSIO520J-JB

NEW J N/A
REB J 218937-218942, 218944 - AND SUBSEQUENT
NEW JB N/A
REB JB 237135 - AND SUBSEQUENT

TSIO520K-KB

NEW K N/A
REB K 224588 - AND SUBSEQUENT
NEW KB 531000
REB KB 245705 - AND SUBSEQUENT

TSIO520N-NB

NEW N N/A
REB N 228549 - AND SUBSEQUENT
NEW NB 521630 - AND SUBSEQUENT
REB NB 276619, 276626, 276629, 276630, 276634 - 273636, 276638 -
276770, 276772, 276773, 276777 - AND SUBSEQUENT

TSIO520U-UB

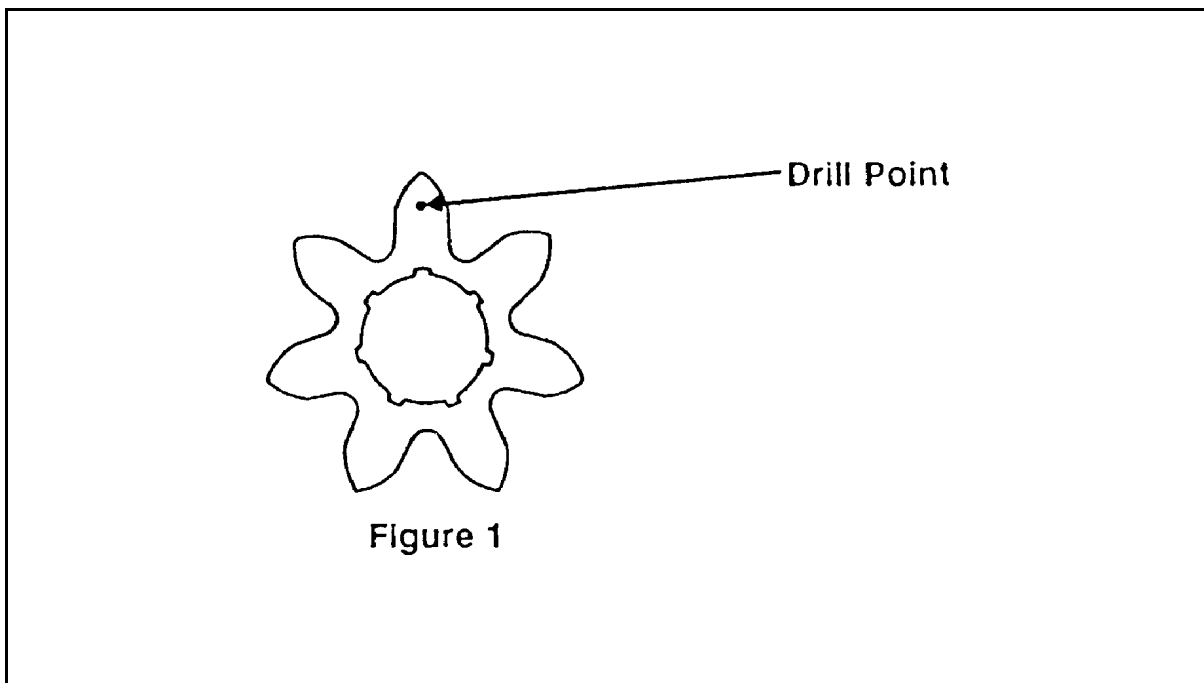
NEW U N/A
REB U N/A
NEW UB 527114 - AND SUBSEQUENT
REB UB 248887-248889, 248893, 248895, 248898 - 248926, 278202, 278203 -
AND SUBSEQUENT

TSIO520VB

NEW VB 529072 - AND SUBSEQUENT
REB VB 266975, 266898, 266990, 266991, 278008-278144, 278147 - 278201
278204 - 278241 - AND SUBSEQUENT

3. Starter adapters equipped with a pulley for an air conditioner compressor drive. (These contain a different set of scavenge pump gears which do not need replacement)

(continued)



If an affected model engine does not fall into one of the above categories, then the scavenge pump must be removed and the scavenge pump gears replaced with p/n 649157 and 649159.

It may be that p/n 649157 and 649159 have been previously installed in the pump during an overhaul or other servicing. Gears removed from a pump may be inspected to determine if they are 649157 and 649159. Prior to inspection, the scavenge pump gears should be cleaned with an approved carbon cleaner and thoroughly rinsed with a mineral spirit solvent. 649157 and 649159 gears can be identified by a drill point on the end of one gear tooth as shown in figure 1.

1. Gears so identified may be reused in the scavenge pump after the visual and dimensional inspection outlined below. Some earlier 649157 and 649159 gears do not have the drill point marking but may be identified by means of a hardness test. The hardness test must be performed in a Rockwell tester with the test point in the same location as the drill point shown in figure 1. If the gears test above 56 Rc or 79 Ra, then the gears are 649157 and 649159. (Rockwell A scale testing is recommended in order to minimize the test indentation.)

Gears intended for reuse should be visually inspected for uneven wear, pitting or excessive galling. A light amount of polishing is normal and acceptable. If the gears pass this visual inspection then they should be inspected to the dimensions specified in the Table of Limits and Magnaflux procedures found in the TSIO520 Permold Series Overhaul Manual X30574A. If the gears pass all of these test they may be reused. All other affected model scavenge pump gears must be replaced with serviceable 649157 and 649159 gears.

CAUTION...Do not abrasive blast gears. This may remove surface hardness which can cause excessive wear in service.