

SIL 136

Page 6 of 6

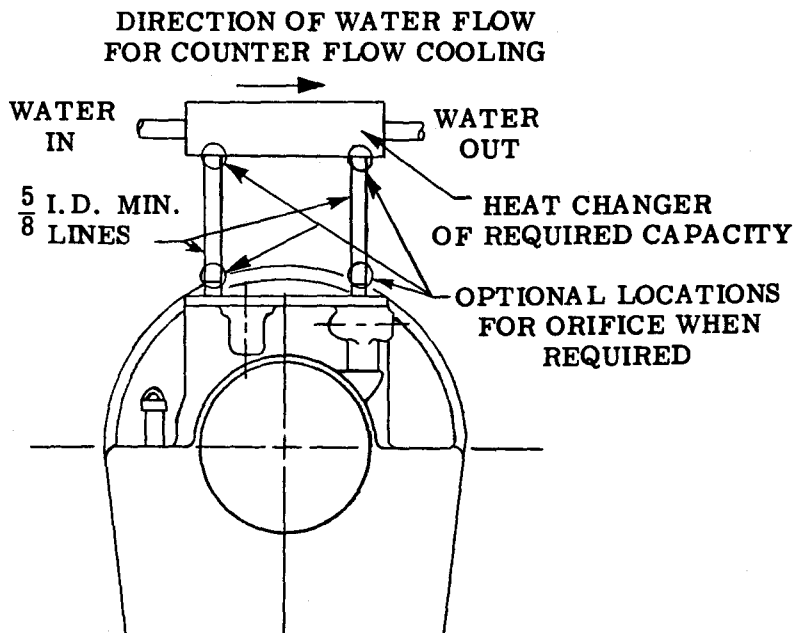
August 9, 1954

Rev. "A" 1-24-55

Rev. "B" 3-16-55

Rev. "C" 6-17-55

REMOTE HEAT EXCHANGER
WITH INTEGRAL
BYPASS VALVE



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August 2, 1954

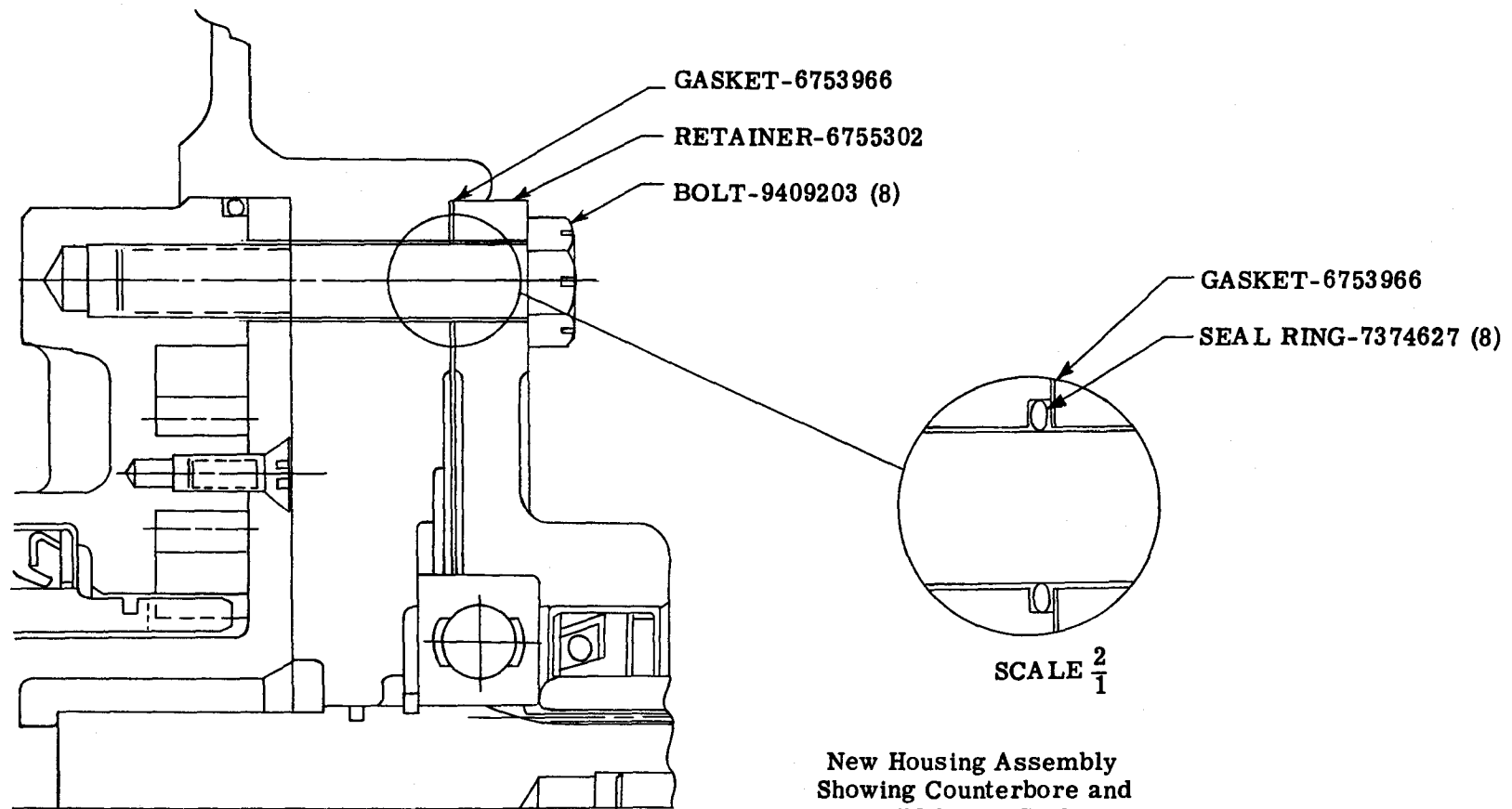
SUBJECT: TORQMATIC CONVERTERS - ALL MODELS OF
TC-300 SERIES - ADDITION OF "O" RINGS
P/N 7374627 TO THE CONVERTER HOUSING
P/N 6754489.

Starting with Torqmatic Converter Serial Number 5165, counterbores and seal rings were added to the eight (8) mounting holes at the rear of the Converter Housing P/N 6754489.

The "O" Rings P/N 7374627 are recessed in the counterbores and were added in order to preclude the possibility of oil leakage around the mounting bolts.

Note: This same converter Housing P/N 6754489 is used with the TC-200 Series Converters. The "O" Rings are not necessary with the TC-200 Series Converters because of the addition of Gasket P/N 6756872 (Ref.: Service Bulletin #25). Interchangeability is not affected.

Service Manager - Transmissions



Old Housing Assembly
No Counterbore or
"O" Ring Seal

New Housing Assembly
Showing Counterbore and
"O" Ring Seal

Note: Gasket P/N 6753966
is Retained

S.I.L. 137

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Page 1 of 1
January 13, 1955

**SUBJECT: TORQMATIC CONVERTER - TC-200 SERIES - ALL
MODELS - RELEASE OF SEAL RING P/N 3713622
TO REPLACE SEAL RING P/N 3702082.**

In order to assure a better seal between the Converter Pump Assembly P/N 6756519 and the Gear and Cover Assembly P/N 6755221, the round section Seal Ring P/N 3702082 has been replaced by a square section Seal Ring P/N 3713622. This change became effective with Torqmatic Converter Serial Number 6058. The following list of TC-200 Series Torqmatic Converters also incorporate the square section Seal Ring P/N 3713622:

<u>S/N</u>	<u>S/N</u>
4790	5392
5102	5476
5343	5637
5387	5651

The square section Seal Ring places more sealing material between the two parts thereby giving more press on the seal, thus assuring a better seal.

The possibility of a pinched or out of position seal is eliminated with the square section Seal Ring. Some difficulty was encountered with the round section Seal Ring which would often roll off the lip of the cover at time of assembly.

Spare Parts Information:

It is recommended that all stock of the P/N 3702082 Seal Ring be scrapped and new P/N 3713622 Seal Ring ordered.

Service Manager - Transmission

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Page No. 1 of 4
April 20, 1955

**SUBJECT: TORQMATIC CONVERTER - TC-300 SERIES - ALL
MODELS - REPLACING SINGLE ROW CONVERTER
PUMP BEARING P/N 903209 WITH A DOUBLE ROW
ANGULAR CONTACT BEARING P/N 905209 FOR
INCREASED BEARING LIFE.**

As a product improvement, we are announcing the release of an angular contact double row ball Bearing P/N 905209 which replaces the single row ball Bearing P/N 903209.

The double row ball bearing will have a longer life than the single row ball bearing, which will also increase the life of related parts. Therefore, it is recommended that when replacement of the Bearing P/N 903209 is necessary, the new Bearing P/N 905209 should be used. This change was effective with subject Torqmatic Converter Serial No. 7144. NOTE: This bearing will be replaced by double row ball Bearing P/N 6757374 effective with Serial No. 7256.

Parts affected by the release of the new bearing and an explanation of interchangeability of old and new parts are listed below:

1. The following parts were released or cancelled (as noted) by the release of the new bearing:

<u>Parts Released</u>	<u>Part Name</u>	<u>Parts Cancelled</u>	<u>Quan. Per Unit</u>
6757634	Retainer - Bearing	6755803	1
6757605	Hub - Converter Pump	6754519	1
6757621	Pump Assy. - Charging Oil	6754550	1
6757599	Sleeve - Converter Ground	6754528	1
905209	Bearing - Conv. Pump Hub	903209	1
	Spacer	6755896	1
6757698	Shim		1
6757699	Shim		1

2. Installing the new double row ball Bearing P/N 905209 in units presently using the single row ball Bearing P/N 903209 and retaining the old converter pump Hub P/N 6754519 and converter ground sleeve P/N 6754528.

- 2.1 In order to use the new bearing in units before S/N 7144 , two (2) Shims P/N 6757698 and 6757699 were released. Proper use of these shims with the new bearing is as directed below.
 - 2.1.1 When installing a new Bearing P/N 905209 in the converter pump Hub P/N 6754519, use one (1) Shim P/N 6757699 between the bearing outer race and bearing shoulder in the converter pump hub. The other Shim P/N 6757698 is used between the bearing inner race and bearing shoulder on the converter ground Sleeve P/N 6754528. (See sketch).
 - 2.1.2 Use the new bearing Retainer P/N 6757634 (old Retainer P/N 6755803 cannot be used with the new bearing).
 - 2.1.3 With use of the new bearing, the Spacer P/N 6755896 is not required.
3. Installing the new bearing with a new converter pump Hub P/N 6757605 and old converter Ground Sleeve P/N 6754528.
 - 3.1 The new bearing may be used with a new converter pump hub and old converter ground sleeve by using one (1) Shim P/N 6757698 between the bearing inner race and bearing shoulder on the converter ground sleeve.
 - 3.2 Caution: Do not use Shim P/N 6757699 between bearing outer race and bearing shoulder in converter pump hub.
 - 3.3 Use new bearing Retainer P/N 6757634 - Spacer P/N 6755896 is not required.
4. Installing new bearing with a new converter ground Sleeve P/N 6757599 and old converter pump Hub P/N 6754519.
 - 4.1 The new bearing may be used with a new converter ground sleeve and old converter pump hub by using one (1) Shim P/N 6757699 between the bearing outer race and bearing shoulder on the converter pump hub.

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- 4.2 Caution: Do not use Shim P/N 6757698 between bearing inner race and bearing shoulder on converter ground sleeve.
- 4.3 Use new bearing Retainer P/N 6757634 - Spacer P/N 6755896 is not required.
- 5. It should be noted that the Shims P/N 6757698 and 6757699 are used with the new bearing only in units using old and new parts together (new bearing, old sleeve and hub; new bearing, new sleeve and old hub; new bearing, old sleeve and new hub): the shims are not required in units using the new bearing when a new hub and ground sleeve are also used.

Spare Parts Information:

All spare parts presently in stock should be used. Wherever possible, the new double row ball bearing should be used as directed above.

A stock of service parts will be maintained on the Shims P/N 6757698 and P/N 6757699.

Service Manager - Transmissions

SECTIONAL VIEW OF
CONVERTER SHOWING
USE OF NEW DOUBLE
ROY BALL BEARING

CONVERTER PUMP

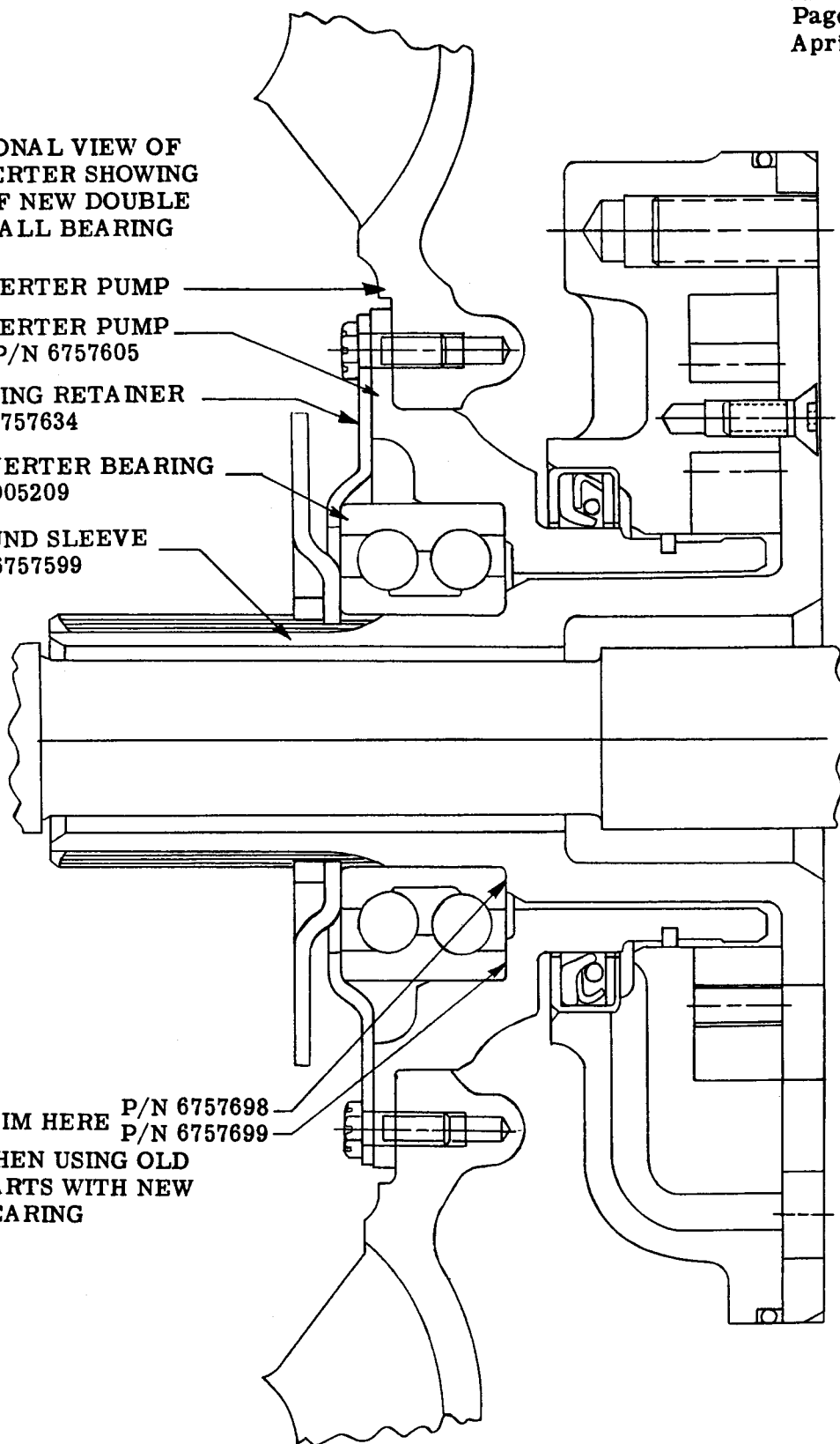
CONVERTER PUMP
HUB P/N 6757605

BEARING RETAINER
P/N 6757634

CONVERTER BEARING
P/N 905209

GROUND SLEEVE
P/N 6757599

SHIM HERE P/N 6757698
P/N 6757699
WHEN USING OLD
PARTS WITH NEW
BEARING



Note: This letter supersedes and
replaces pages 1 and 2 of S.I.L.
#161 dated March 21, 1955.

SIL 161
Page 1 of 2
March 21, 1955
Rev. "A" 9-23-55

**SUBJECT: TORQMATIC CONVERTER - TC-200 & 300 SERIES -
ALL MODELS - ADDITION OF TWO (2) SCREWS
P/N 113998 TO RETAIN CONVERTER ASSEMBLY
WHEN REAR BEARING RETAINER OR HOUSING IS
REMOVED.**

Effective with Torqmatic Converter TC-200 Series Serial No. 9357 and Torqmatic Converter TC-300 Series Serial No. 7626, two (2) flat head screws P/N 113998 have been added to hold the converter assembly together when the eight (8) bearing retainer, bearing housing or rear disconnect housing bolts are removed.

In order to accomplish this, two (2) 9/32" holes were drilled (on the horizontal center line) through the converter housing P/N 6757729. Mating holes in adjacent parts are drilled as listed below:

TC-200

1. Through the gasket P/N 6756872.
2. Drilled and tapped into the oil pump adapter P/N 6754968.

TC-300

1. Drilled through the converter ground sleeve P/N 6754528.
2. Drilled and tapped into the charging oil pump body P/N 6753884.

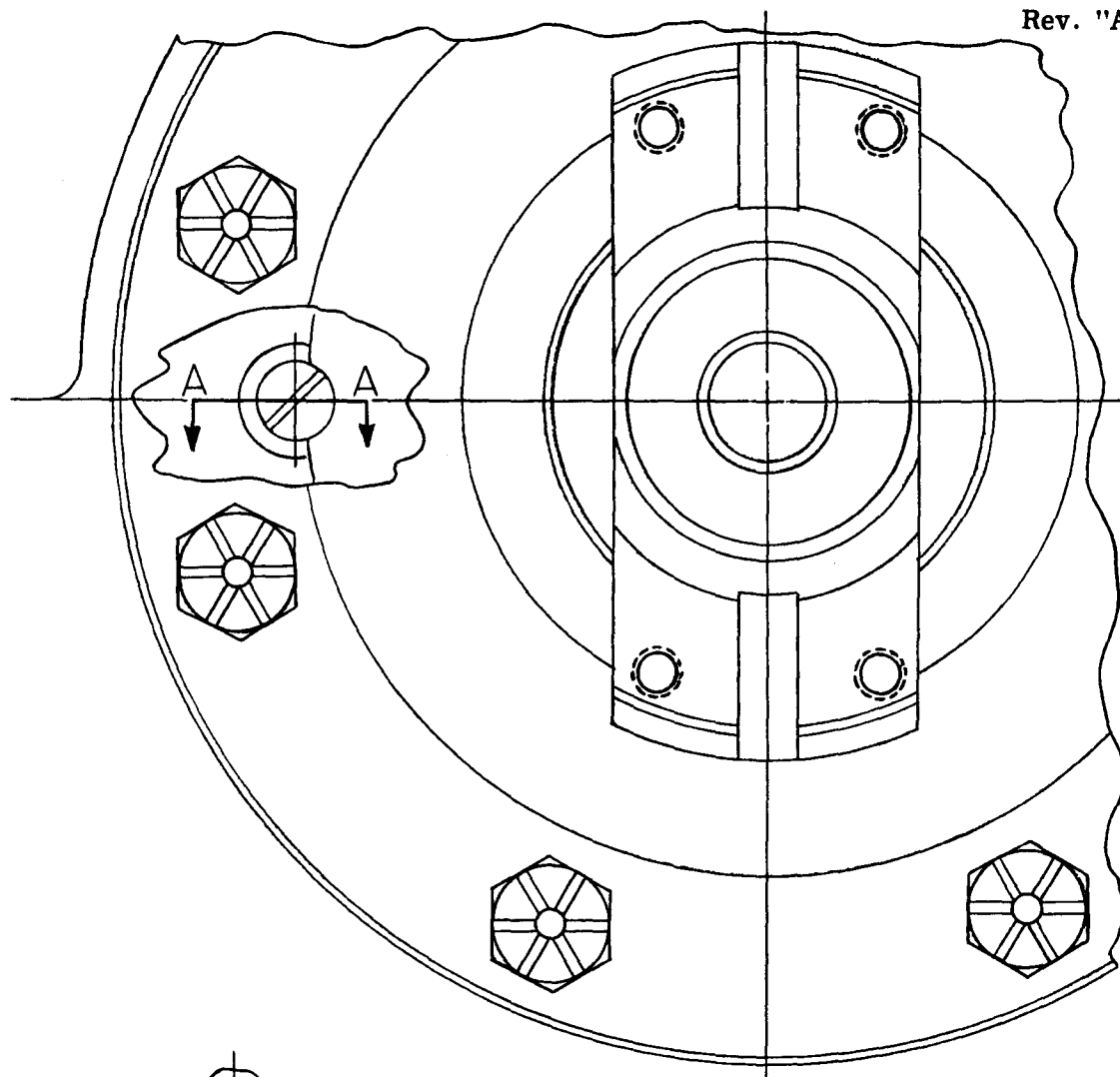
The holes in the converter housing are counter-sunk at the rear face to recess the flat head screws below the mounting face of the bearing retainer, bearing housing or rear disconnect housing. (See sketch).

Interchangeability is not affected by this change except that in order to use the flat head screws P/N 113998, all parts affected must be drilled.

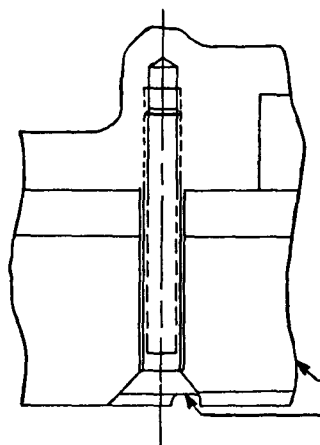
Spare Parts Information: All spare parts presently in stock should be used.

Service Manager - Transmissions

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Rev. "A" 9-23-55



View of Output End of
Converter Showing Location
of Retaining Screws



Sectional View
Showing Retaining Screw

Converter Housing P/N 6757729
Screw P/N 113998

SECTION A-A

ALLISON TORQMATIC CONVERTER SERIES 200-300 PARTS CATALOG

This page supersedes and replaces
page 1 of 3 of S.I.L. No. 165 dated
May 9, 1955.

SIL 165
Page 1 of 3
May 9, 1955
REV. "A" 10-25-55

SUBJECT: TORQMATIC CONVERTER - TC-200 & 300 SERIES -
ALL MODELS - RELEASE OF NEW CHARGING OIL
PUMP SEALS P/N 760612 (TC-200), P/N 6758213
(TC-300).

As a product improvement and to provide a better lip type seal
with longer life, Seal P/N 3702068 (TC-200) has been replaced by
Seal P/N 760612 and Seal P/N 6753849 (TC-300) has been replaced
by Seal P/N 6758213.

The new Seal P/N 6758213 was effective in the TC-300 series with
Torqmatic Converter Serial No. 7256. All service stock of the
old Seal P/N 6753849 should be scrapped.

An effectivity breakpoint for the new Seal P/N 760612 in the TC-200
Series Torqmatic Converter will not be published. Present stock of
Seal P/N 3702068 should continue to be used until depleted.

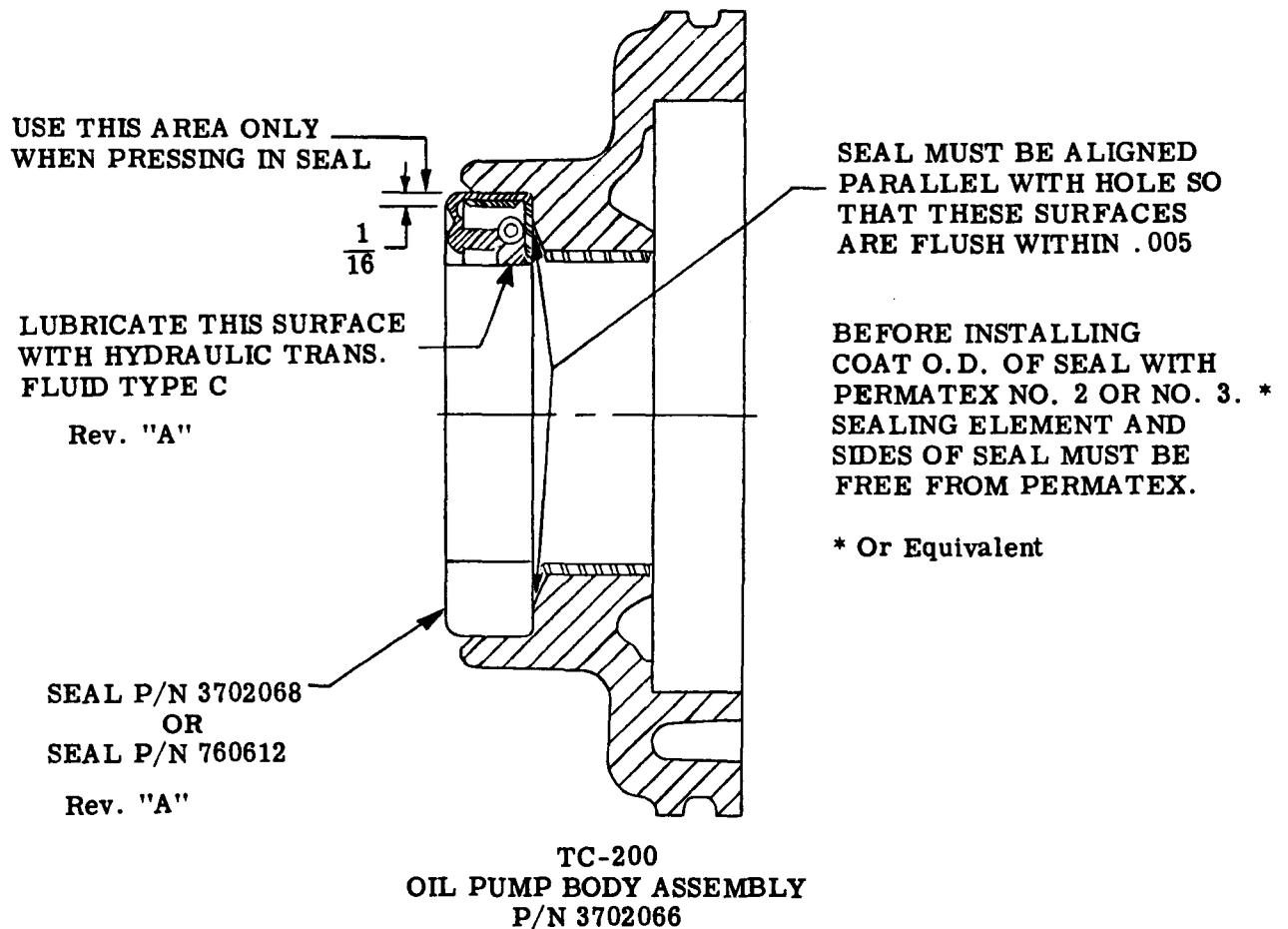
When necessary to replace either seal in the field, the two (2)
attached sketches should be referred to. A hand-operated arbor
press should be used for pressing in the new seal whenever possible.
A hydraulic press must never be used. Use of a hydraulic press
could result in rupturing the seal or seal seating surface.

Service Manager - Transmission

NOTE: This page supersedes and replaces page 2 of 3
of S. I. L. No. 165 dated May 9, 1955.

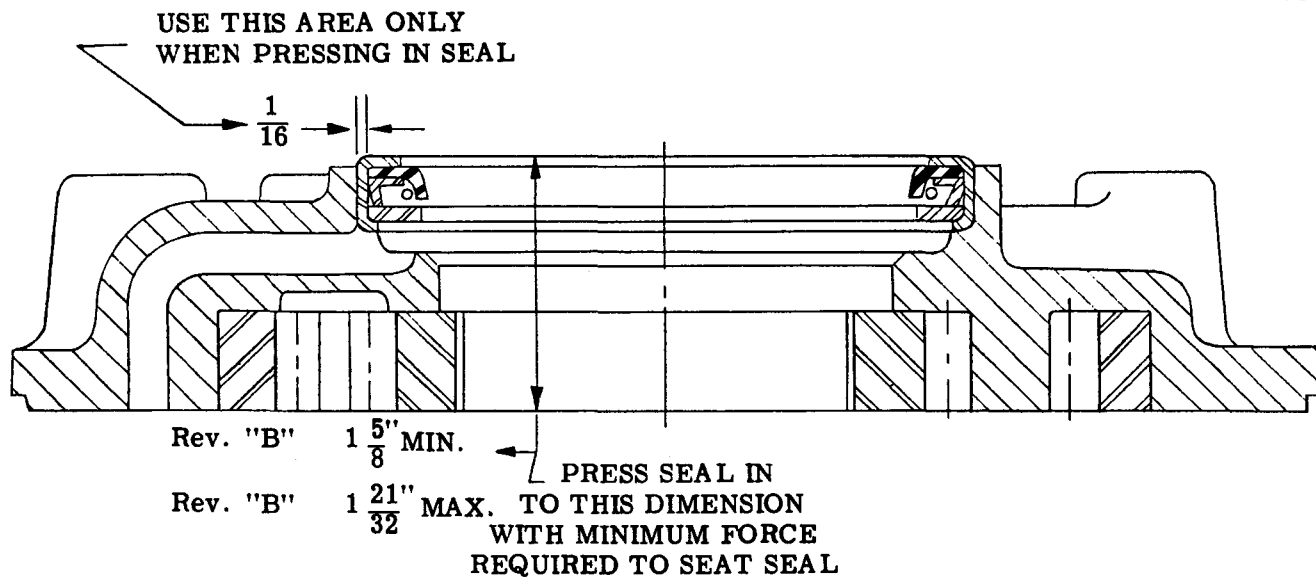
SIL 165
Page 2 of 3
May 9, 1955
Rev. "A" 10-25-55

TO PREVENT DISTORTION
OF PUMP BODY RECESSES,
PRESS SEAL IN PUMP BODY
WITH MINIMUM FORCE
REQUIRED TO SEAT SEAL



NOTE: This page supersedes and replaces Page 3 of 3
pages dated May 9, 1955 of S.I.L. #165.

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Page 3 of 3
May 9, 1955
Rev. "B" 11-29-55



TC-300
OIL PUMP GEAR AND
BODY ASSEMBLY P/N 6757086

Before Installing
Coat O.D. of Seal with
Permatex No. 2 or No. 3. *
Sealing Element and Sides
of Seal Must be Free from
Permatex

* Or Equivalent

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January 24, 1956

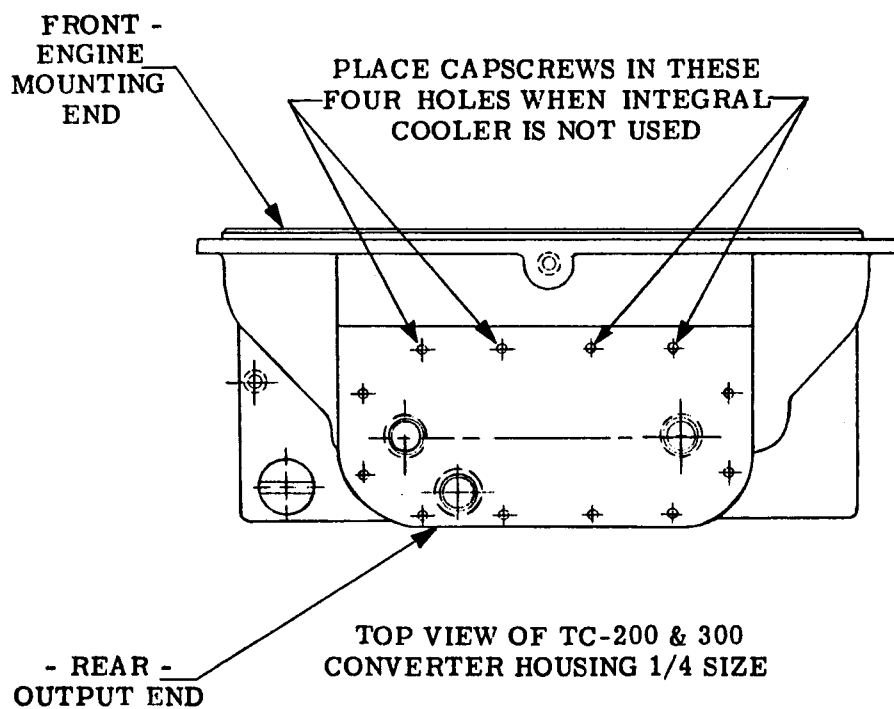
**SUBJECT: TORQMATIC CONVERTER - TC-200 & 300 SERIES -
ALL MODELS NOT USING THE INTEGRAL OIL
COOLER - INSTALLING CAP SCREWS IN CONVERTER
HOUSING COOLER MOUNTING HOLES WHEN COOLER
IS NOT USED.**

There are twelve (12) drilled and tapped cooler mounting holes located in the cooler mounting pad at the top of the converter housing. The four (4) holes located at the front (engine mounting end) of the cooler mounting pad are through holes into the bell housing of the converter housing. When the integral oil cooler is not used, these four (4) holes (see sketch) are open to the elements and it is possible for rain, dust and debris to work down through the holes and into the converter bell housing.

It is recommended that on all units not using the integral cooler, four (4) 5/16"-18 x 1" UNC bolts be installed in the holes in order to prevent the passage of foreign material into the converter bell housing.

Service Manager - Transmissions

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January 24, 1956



NOTE: This letter supersedes Allison
Service Information Letter No. 206,
dated March 9, 1956. Please
destroy your old letter.

SIL 206
Page 1 of 3
March 9, 1956
REV. "A" 4-30-56

SUBJECT: TORQMATIC CONVERTER - TC-300 SERIES AND
TORQMATIC TRANSMISSION - CRT-3300 SERIES -
ALL MODELS - RIVETING STATOR THRUST
WASHER TO FIRST STATOR ASSEMBLY.

Effective with subject Torqmatic Converter Serial No. 12227, and
Torqmatic Transmission Serial No. 1438, the stator thrust washer
P/N 6755850 was cancelled as a separate part and is now riveted
to the first stator assembly. This change was made to increase
the life of the stator thrust washer by assuring that the thrust washer
would remain in proper position during operation.

The following parts were affected by this change:

<u>Parts Released</u>	<u>Part Name</u>	<u>Parts Cancelled</u>	<u>Quan. Per Unit</u>
6758284	Stator Assy. - 1st.	6755463	1
6757753	Washer - Stator Thrust	6755850	1
6757754	Rivet	6754988	4

In the event it should become necessary to replace the stator thrust
washer, the change should be attempted by responsible overhaul
personnel only.

The following equipment will be necessary to properly perform the
operation:

- A. Hand operated arbor press.
- B. Rivet header patterned after attached sketch.
- C. Anvil suitable for supporting the preheaded end of the rivet.
- D. Clamps capable of holding pieces in position during
riveting operation.

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March 9, 1956
REV. "A" 4-30-56

Following is the procedure for replacing the stator thrust washer:

- A. Remove old rivets. Using a sharp chisel, shear off the riveted end of the rivet. Care should be exercised to see that the side plate is not defaced by the chisel.
- B. Knock out remaining part of rivet using a narrow drift or similar tool.

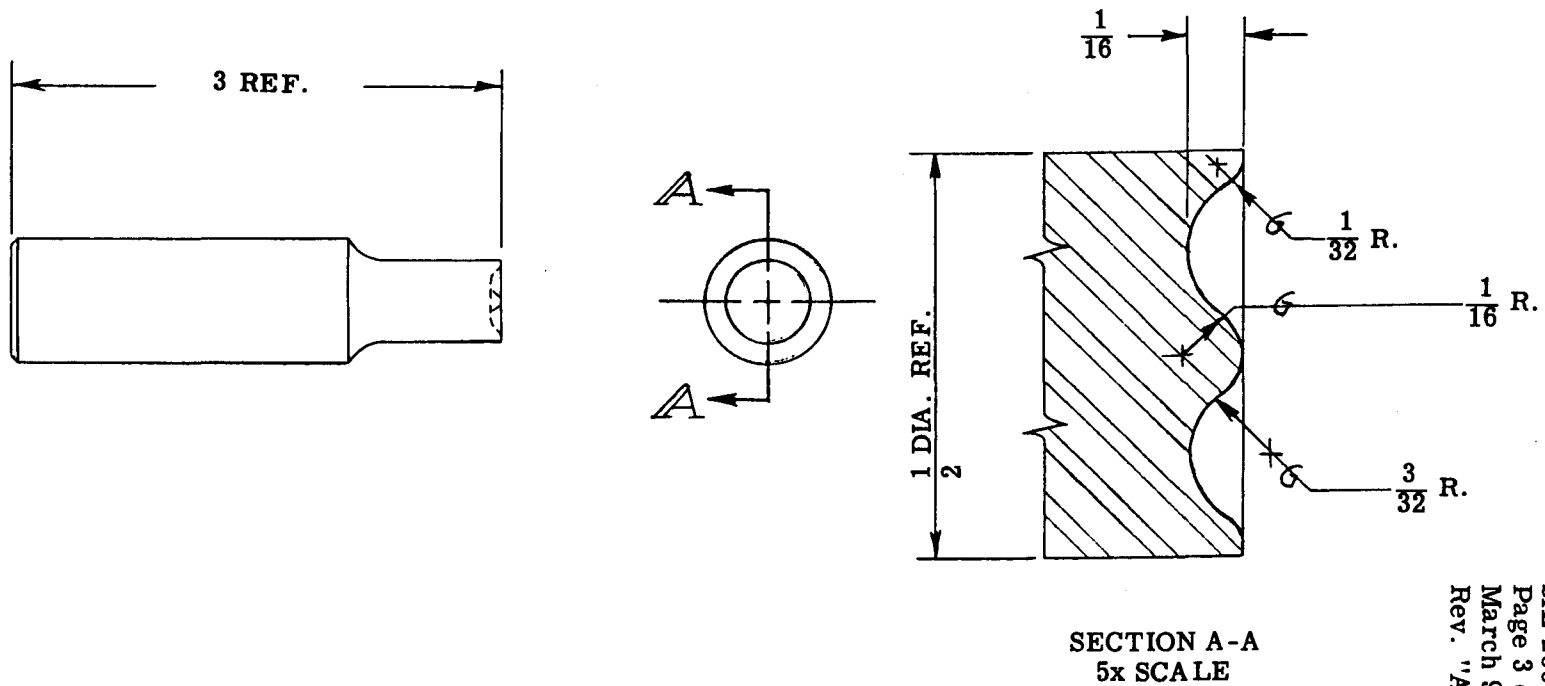
NOTE: Do not remove the cam from the stator.

- C. Using new thrust washer P/N 6757753 and new rivets P/N 6757754, assemble the pieces together, making certain the new thrust washer is replaced in the same position from which the old one was removed. Securely clamp the pieces together.
- D. Using a rivet header patterned after the one shown on the attached sketch, a hand-operated press and an anvil suitable for supporting the preheaded end of the rivet, rivet the stator assembly together. Exert a force on the hand-operated arbor press, sufficient to produce an upset rivet head height of .030 - .050 inches above the stator side plate. A height under .030 inches on rivet head being formed will weaken the rivet at this point and possibly allow it to crack under strain. If the rivet head being formed cracks during the operation, it should be removed and a new rivet inserted.

SPARE PARTS INFORMATION: All spare parts presently in stock should be used.

Service Manager - Transmissions

HEADER PUNCH
TC-300, CRT-3330 & CTP STATOR ASSEMBLY



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March 9, 1956
Rev. "A" 4-30-56

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May 14, 1956

SUBJECT: TORQMATIC CONVERTER - TC-200 - NEW CONVERTER OUTPUT SHAFT P/N 6759462 RELEASED FOR ALL MODELS EXCEPT MODELS USING THE AUTOMOTIVE TYPE OUTPUT FLANGE AND CHAIN COUPLING OUTPUT DRIVE.

Converter output shaft P/N 6754962 is still used on the subject exceptions. The new converter output shaft has been released for all other models. The only difference between the two shafts is a 1/2 inch tapped hole in the output end of shaft P/N 6754962. The automotive type output flange and the chain coupling output drive are bolted to the output end of this shaft by a 1/2 inch bolt.

Interchangeability is affected only with the use of the new shaft P/N 6759462. The new shaft cannot be used with the automotive type output flange or the chain coupling output drive. The old shaft may be used with all models.

SPARE PARTS INFORMATION: All spare parts presently in stock should be used.

Service Manager - Transmissions

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June 5, 1956

SUBJECT: TORQMATIC CONVERTER - TC-300 SERIES AND
TORQMATIC TRANSMISSION - CRT-3330 SERIES -
ALL MODELS - CONVERTER COVER CHANGED TO
INCORPORATE BALL BEARING P/N 903208
INSTEAD OF BUSHING P/N 6754922.

In order to provide a better pilot for the turbine assembly, and thereby increase the life of the converter parts, a ball bearing has been added to the converter cover, replacing the bushing. The turbine hub was changed in order to adapt the hub to the new roller bearing. The new roller bearing eliminates the necessity of the turbine thrust washer.

Effective with TC-300 Series Torqmatic Converter Serial No. 13596 and CRT-3330 Series Torqmatic Transmission Serial No. 1779 for engine mounted units and Serial No. 1820 for remote mounted units, the following parts were released or cancelled as noted:

<u>Parts Released</u>	<u>Part Name</u>	<u>Parts Cancelled</u>	<u>Model Used On</u>	<u>Quantity Per Unit</u>
903208	Bearing - Ball		TC-300	
	Bushing - Conv. Pump Cover	6754922	CRT-3330	1
	Washer - Turbine Thrust	6755004	TC-300	1
	Cover Assem. - Conv. Pump	6755325*	CRT-3330	1
6757712*	Cover - Conv. Pump	6755317*	TC-300	1
	Cover Assem. - Conv. Pump	6757289**	CRT-3330	1
6758274**	Cover - Conv. Pump	6757255**	CRT-3330	1
6757713	Turbine Assembly	6755467	TC-300	1
6757714	Hub - Turbine	6754819	CRT-3330	1

* For engine mounted units only.

** For remote mounted units only.

ALLISON TORQMATIC CONVERTER SERIES 200-300 PARTS CATALOG

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June 5, 1956

NOTE: Cover assemblies 6755325 and 6757289 which included the bushing 6754922 have been replaced by covers 6757712 and 6758274. The new covers do not include a bushing or bearing, therefore, they are not considered assemblies.

Interchangeability is affected by this change in that new and old parts must not be intermixed in a unit. Therefore, a supply of service parts will be maintained on the following parts:

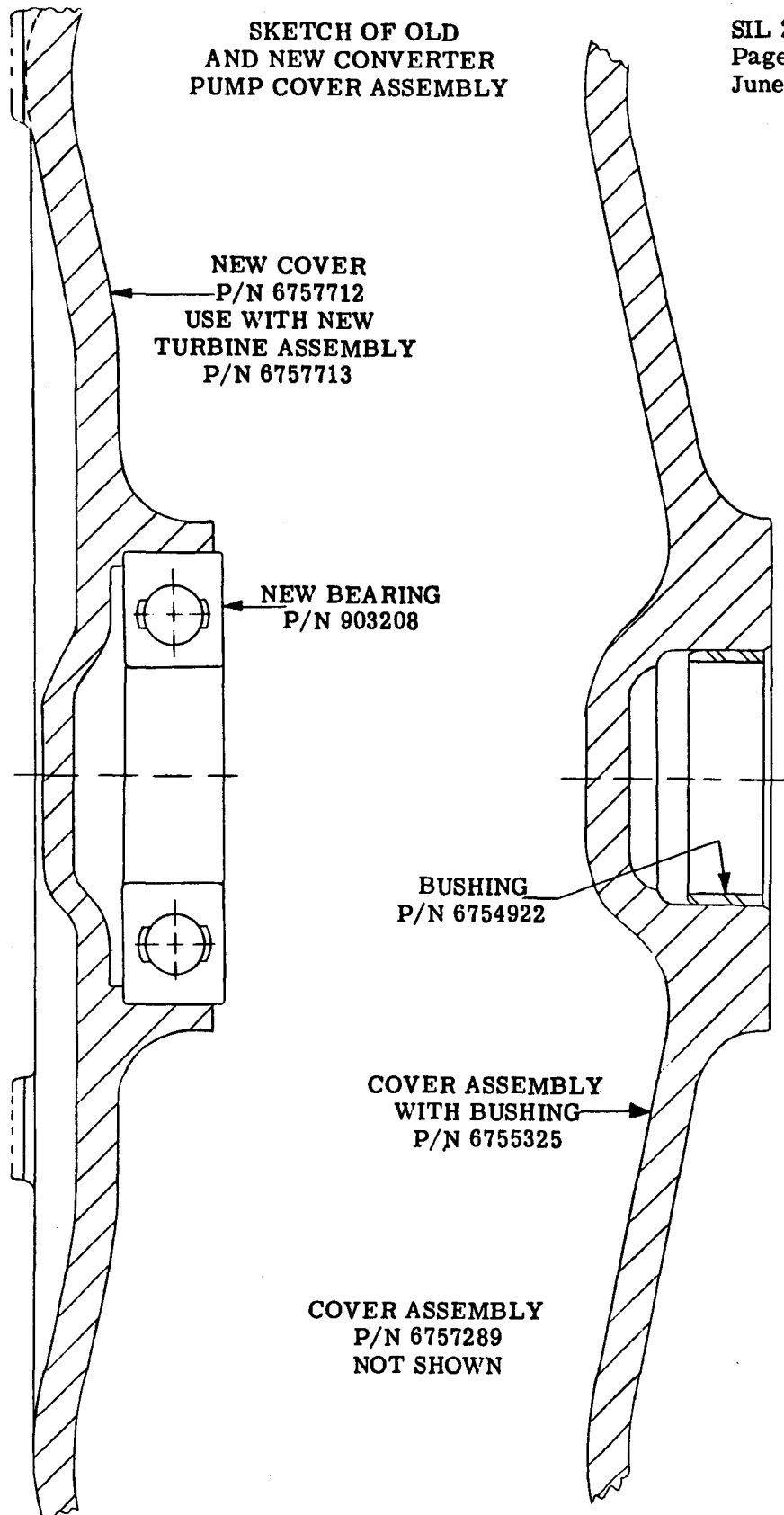
<u>Part No.</u>	<u>Part Name</u>	<u>Model</u>
6754922	Bushing - Conv. Pump Cover	TC-300 CRT-3300
6755004	Washer - Turbine Thrust	TC-300 CRT-3300
6755325	Cover Assem. - Conv. Pump	TC-300 CRT-3300
6757289	Cover Assem. - Conv. Pump	CRT-3300
6755467	Turbine Assembly	TC-300 CRT-3300

All spare parts presently in stock should be used.

Service Manager - Transmissions

**SKETCH OF OLD
AND NEW CONVERTER
PUMP COVER ASSEMBLY**

**SIL 224
Page 3 of 3
June 5, 1956**



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Page 1 of 2
July 5, 1957

**SUBJECT: TORQMATIC CONVERTER - TC-200 - ALL MODELS -
RELEASE OF IMPROVED STATOR ASSEMBLY.**

As a product improvement, a new stator assembly has been released for the subject models. The primary change in the assembly consists of the addition of convoluted roller springs and the deletion of coiled roller springs.

This change became effective in production with converter S/N 19439.

Parts changes are as follows:

<u>New Part Number</u>	<u>Deleted Part No.</u>	<u>Nomenclature</u>	<u>Quantity Per Unit</u>
6769234	6755271	Stator Assembly	1
3719260	3702099	Cam, Stator	1
3719261	3689751	Spring, Roller	8
None	3691806	Guide	8
3702103	3702100	Washer, Thrust (P/N 3702100 deleted. P/N 3702103 increased from 1 to 2).	2

The new springs should be installed as shown in the attached sketch.

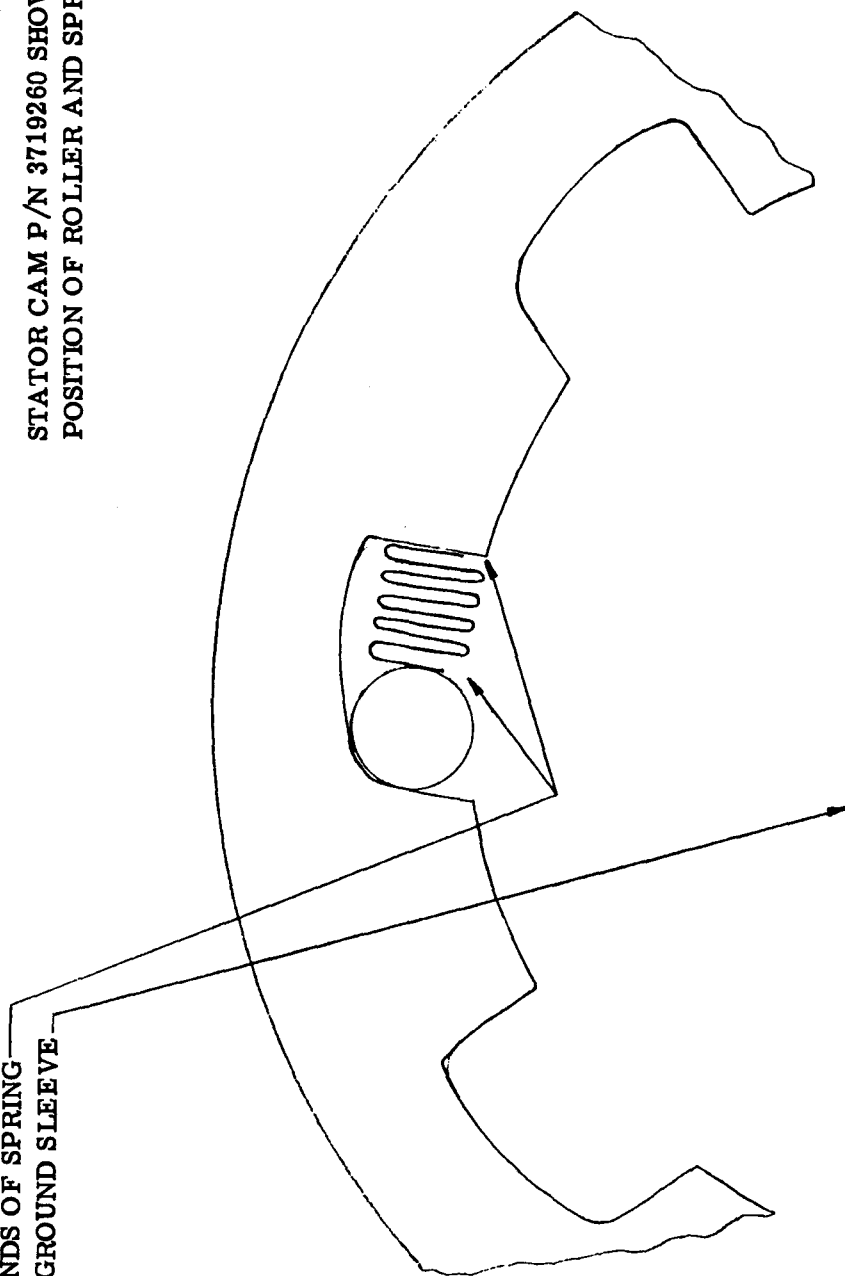
Spare Parts Information:

All superseded parts, in spare parts stock, may be used but should not be used in conjunction with any of the new parts. The complete assemblies P/N 6769234 and P/N 6755271 are interchangeable.

Service Manager - Transmissions

STATOR CAM P/N 3719260 SHOWING
POSITION OF ROLLER AND SPRING

OPEN ENDS OF SPRING
TOWARD GROUND SLEEVE



ALLISON TORQMATIC CONVERTER SERIES 200-300 PARTS CATALOG

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Page 1 of 1
August 5, 1957

SUBJECT: RELEASE OF NEW CONVERTER CHARGING
PUMP AND NEW CONVERTER PUMP HUB.

EQUIPMENT AFFECTED: TC-300 CONVERTER - ALL MODELS.

EFFECTIVE SERIAL NUMBER: S/N 19085 - JUNE 6, 1957

As a product improvement, a new converter charging pump and a new
converter pump hub have been released to the TC-300 converters.
The parts changed are as follows:

<u>New Part Number</u>	<u>Cancelled Part No.</u>	<u>Nomenclature</u>	<u>Quantity Per Unit</u>
6768714	6757605	Hub, Converter Pump	1
6768707	6757621	Pump Assy., Oil	1
6768706	6757086	Gear and Body Assy.	1
6768704	6758349	Body, Pump	1

Spare Parts Information:

The new hub P/N 6768714 may be used for service on all units.
The old hub P/N 6757605 may be used for service in units
containing the old pump assembly. Service on the old hub will
not be maintained.

The new gear and body assembly P/N 6768706 and the new
pump assembly P/N 6768707 may be used for service in all units
but must be used with the new converter hub. The old gear and
body assembly P/N 6757086 and the old pump assembly
P/N 6757621 may be used for service on all units with either
the new or old hub. The old pump body, gear and body assembly
and pump assembly will be maintained for service.

Service Manager - Transmissions

SUBJECT: RELEASE OF HEAVIER STATOR RIVETS

EQUIPMENT AFFECTED: TC-300 CONVERTERS
CRT-3000 SERIES TRANSMISSIONS
MT TRANSMISSIONS

In order to eliminate the possibility of rivet breakage and subsequent stator failure, the size of the stator rivets has been increased from 3/16" to 1/4".

Parts affected by this change are as follows:

<u>New Part Number</u>	<u>Old Part Number</u>	<u>Nomenclature</u>	<u>Quan. Per Unit</u>
6768903	6758284	Stator Assembly, 1st. (TC-300, CRT-3000 Series)	1
6768904	6756894	Stator Assembly, 1st. (MT Transmissions)	1
6768910	6757753	Washer, Thrust (Used in above assemblies)	1
6756544	6757754	Rivet (Used in above assemblies)	4
6769105	6769046	Stator Assembly, 1st. (TC-300 in Oliver Equipment)	1
6769166	6769047	Washer, Thrust	1
6756544	6757754	Rivet	4
6768902	6755464	Stator Assembly, 2nd. (TC-300, CRT-3000, MT)	1

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Parts Interchangeability:

The new stator assemblies are fully interchangeable with the old stator assemblies.

The new thrust washers and new rivets are not interchangeable with the old washers and rivets.

Spare Parts Information:

All old stator assemblies in spare parts stock may be used.

Old thrust washers and rivets may be used but can be used only in old stator assemblies.

The old thrust washers and rivets will be maintained for service.

Service Manager - Transmissions

SUBJECT: CORRECTION OF CONVERTER PUMP HUB
BEARING CREEP.

EQUIPMENT AFFECTED: TC-300 CONVERTERS
CRT-3331 TRANSMISSIONS
CRT-3330 TRANSMISSIONS - Service Only

EFFECTIVE SERIAL NUMBER: S/N 22336 - TC-300
S/N 7611 - CRT-3331

In order to eliminate the possibility of the converter pump hub bearing creeping on the ground sleeve, new ground sleeves and a new bearing have been released. The new ground sleeves have a larger O. D. on the bearing journal, which will provide a tighter fit of the bearing on the ground sleeve.

The new bearing is so designed that the tight fit of the bearing on the ground sleeve will not affect the internal clearances in the bearing.

Parts changes are as follows:

<u>New Part Number</u>	<u>Old Part Number</u>	<u>Name</u>	<u>Quantity Per Unit</u>
6769530	6757599	Sleeve, Conv. Ground (Used on TC-300)	1
6769529	6757175	Sleeve, Conv. Ground (Used on CRT-3330 and 3331)	1
9411628	6757374	Bearing, Conv. Pump Hub	1

Spare Parts Information:

The new ground sleeves P/N 6769529 and P/N 6769530 may be used for service in all units but require the use of the new bearing P/N 9411628.

All old ground sleeves P/N 6757599 and P/N 6757175, in spare parts stock, may be used for service in old units, with either the new or the old bearing. The old ground sleeves will not be maintained for service.

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June 3, 1958

All old bearings P/N 6757374, in spare parts stock, may be used for service in old units but must not be used with new ground sleeves. The old bearing will not be maintained for service.

NOTE: The old bearing P/N 6757374 can be identified by the manufacturers part number stamped on the race. This number is MRC-5209K. The new bearing P/N 9411628 will bear the number MRC-5209K-8.

Service Manager - Transmissions

SUBJECT: RELEASE OF GREASED INPUT DRIVE CONFIGURATION

EQUIPMENT AFFECTED: CRT-3331 TRANSMISSIONS
TC-300 CONVERTERS

As a product improvement, a new input drive configuration has been released to the CRT-3331 transmission and the TC-300 converter.

The new configuration, which was designed to decrease gear noise and extend gear life, incorporates a greased gear type drive. The grease is retained in the area between the flywheel and the converter drive cover by a seal which fits on the drive cover.

The newly released parts are as follows:

<u>Part Number</u>	<u>Part Name</u>	<u>Quantity</u>
6769876	Drive Ring	1
6769818	Sealring	1
6769878	Washer	8
9412270	Bolt	8
6769877	Grease	1 lb.
6769976	Permatex #2	As req.
6769988	Gasket	1
102635	Nut	8
6769849	Cover Assy., Conv. Drive	1
6769913	Kit	

ALLISON TORQMATIC CONVERTER SERIES 200-300 PARTS CATALOG

SIL 351
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October 13, 1958

Installation of the new drive configuration in standard TC-300 converters which now have a gear type drive, and in CRT-3331 transmissions which have a gear type drive, will require the following changes:

<u>Add</u>	<u>Delete</u>	<u>Name</u>	<u>Quantity</u>
6769876	5192163	Drive Ring	1
6769818		Sealring	1
6769878		Washer	8
9412270	9409231	Bolt	8
6769877		Grease	1 Lb.
6769976		Permatex No. 2	As req.

TC-300 converters which have the front disconnect option, with the gear type drive, will require the parts listed above, plus the following:

<u>Add</u>	<u>Delete</u>	<u>Name</u>	<u>Quantity</u>
6769988		Gasket	1
102635	103026	Nut	8
	103321	Washer	8

Standard TC-300 converters with rollpin drive, and CRT-3331 transmissions with rollpin drive, will require the changes listed below:

<u>Add</u>	<u>Delete</u>	<u>Name</u>	<u>Quantity</u>
	6769070	Drive Ring Assy.	1
6769876		Drive Ring	1
6757712	6769071	Cover, Conv. Drive	1
6769818		Sealring	1

<u>Add</u>	<u>Delete</u>	<u>Name</u>	<u>Quantity</u>
6769878		Washer	8
9412270	9409231	Bolt	8
6769877		Grease	1 Lb.
6769976		Permatex No. 2	As req.

TC-300 converters which have the front disconnect option with rollpin drive, will require the same parts changes as standard TC-300 converters with rollpin drive, plus the following:

<u>Add</u>	<u>Delete</u>	<u>Name</u>	<u>Quantity</u>
6769988		Gasket	1
102635	103026	Nut	8
	103321	Washer	8

TC-376 converters, Assy. No. 6759643, will require the following parts changes:

<u>Add</u>	<u>Delete</u>	<u>Name</u>	<u>Quantity</u>
	6769070	Ring Assembly	1
6769876		Ring	1
6769849	6769049	Cover Assy., Converter Drive	1
6769818		Sealring	1
6769878		Washer	8
9412270	9409231	Bolt	8
6769877		Grease	1 Lb.
6769876		Permatex No. 2	As req.

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October 13, 1958

The new drive ring P/N 6769876, seal P/N 6769818, bolts P/N 9412270 and washers P/N 6769878 are contained in a kit P/N 6769913. This kit will also include a one-pound container of grease P/N 6769877.

Since the grease used in this drive is the key factor in decreasing gear wear and gear noise, it is most important that the proper grade and type grease is used. Two readily available brands which are satisfactory are Mobil-Grease Special with molybdenum disulphide and Standard Calumet Viscous Lubricant 8X.

The new parts may be installed as follows:

1. If the converter drive cover on the transmission or converter is a rollpin type cover, or if it is a badly worn gear type cover, it must be replaced by a new gear type cover P/N 6757712. (TC-376 converters, Assy. No. 6759643, require cover assembly P/N 6769849).
2. Remove the ring gear from the engine flywheel.
3. Drill one 1/8" vent hole in the engine flywheel or in the disconnect clutch drive plate. This should be located inside a 4" radius from the center of the flywheel, or, in converters with the front disconnect option, inside a radius of 2 1/2" from the center of the drive plate. Avoid drilling into the area which mates with the crankshaft flanges.

Note: In some Detroit Diesel engines, there may already be a hole in the flywheel. If this engine is mated to a CRT-3331 transmission or to a standard TC-300 converter, the hole should be plugged unless it is within a four inch radius from the center of the flywheel.

4. After cleaning the flywheel or drive plate thoroughly, apply a thin coat of Permatex No. 2 to the flywheel mating surface of the ring gear. (In front disconnect models, apply the Permatex to both sides of gasket P/N 6769988.)

5. Bolt the ring gear P/N 6769876 to the flywheel (Standard Models) or to the clutch drive plate (Front Disconnect Models), using eight bolts P/N 9412270. (Front Disconnect Models will also require eight P/N 102635 nuts, eight P/N 6769878 washers and one P/N 6769988 gasket.) Torque the bolts to 33-40 lb-ft.
6. Apply a thin film of grease to the seal P/N 6769818 and install the seal in the groove behind the gear teeth in the converter drive cover.
7. Distribute evenly approximately one pound of grease P/N 6769877 on the flywheel, inside the ring gear. When the engine is started, the grease will be centrifuged into the gear tooth area.
8. Mesh the gear on the drive cover with the drive ring gear, making sure the seal enters the I. D. of the drive ring.
9. Follow standard procedure in completing the installation.

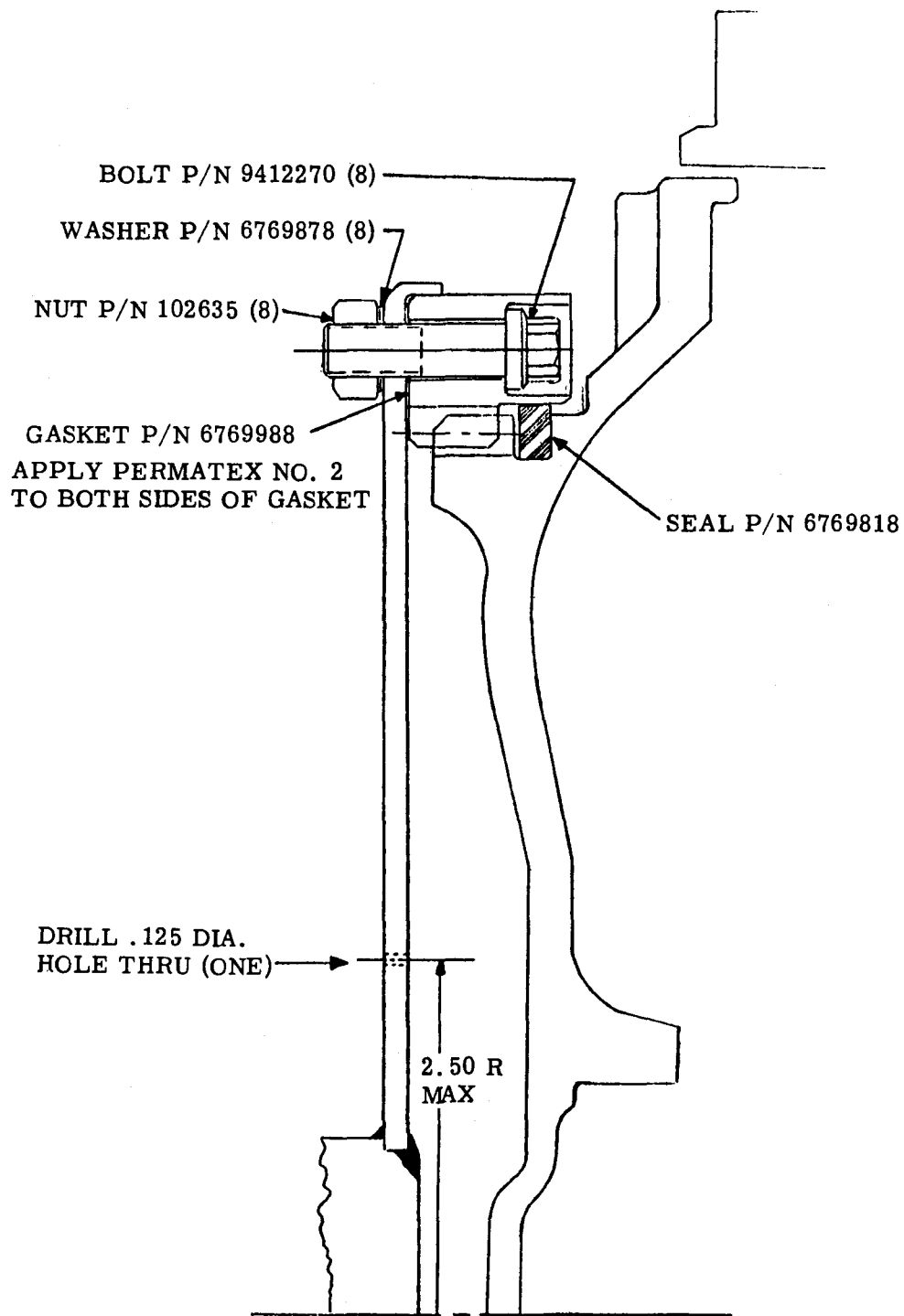
Spare Parts Information:

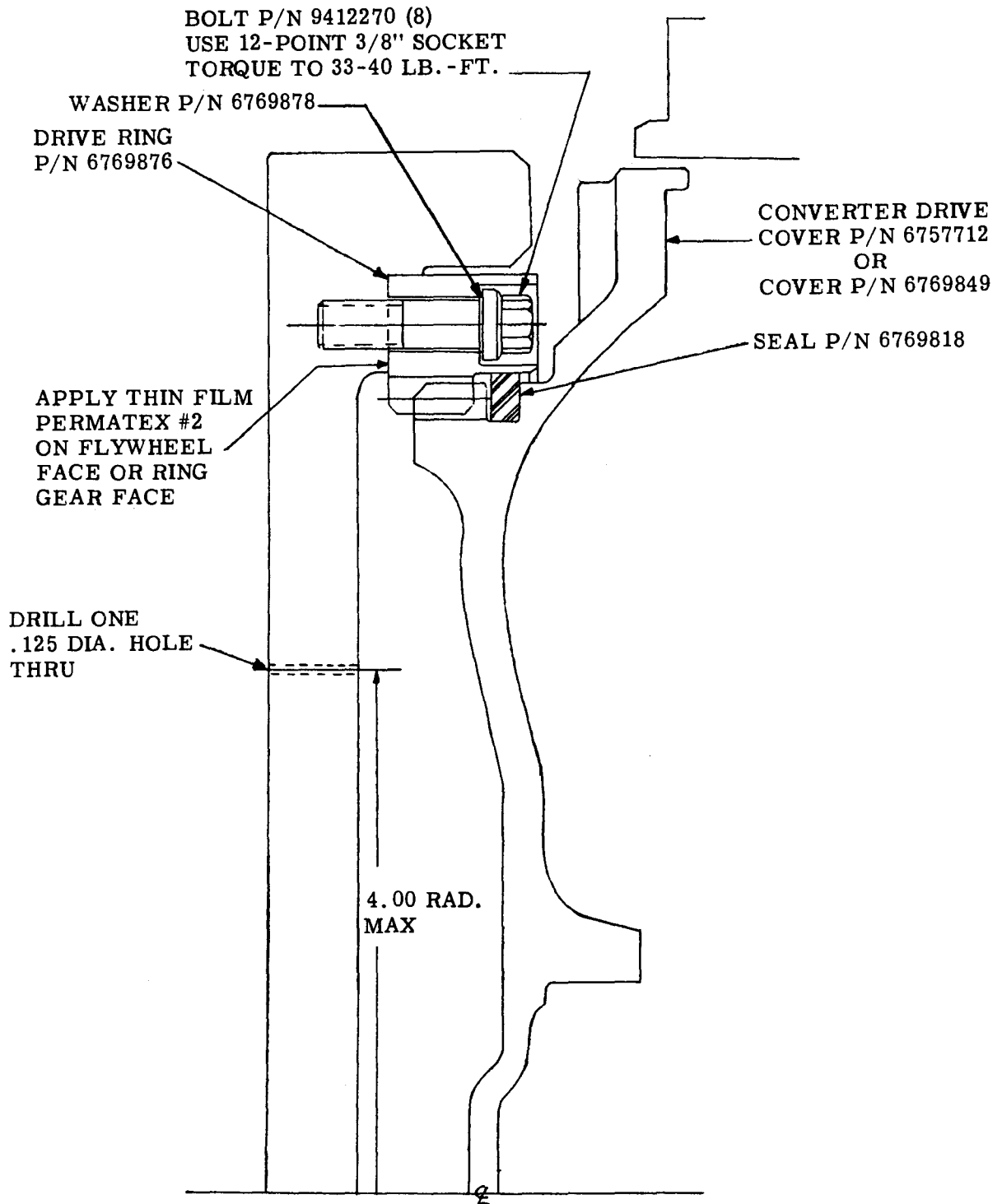
All old parts in spare parts stock, may be used for service on units which do not have the new drive configuration.

NOTE: All CRT-3331 transmissions and TC-300 converters changed in the field to the Greased Input Drive Configuration should be identified by the letter "L" stamped on the name plate following the unit serial number.

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SUPPLEMENT TO SERVICE INFORMATION LETTER NO. 351

In Service Information Letter No. 351, two brands of grease were specified as suitable for use in the greased drive configuration. After this letter was published, tests on other greases were made. The results of these tests indicate that any wheel bearing grease or multi-purpose grease which is specified as suitable for wheel bearings, presently marketed by reputable manufacturers, will perform satisfactorily with the greased drive configuration.

The following is a list of greases, readily available from major oil companies, which are suitable for this application:

<u>Manufacturer</u>	<u>Brand Name</u>
Cities Service Oil Company	Trojan H-2
D-A Lubricants	HMP - Summer Lithium - Extra Heavy
Gulf Oil Corp.	Gulfex A
Ohio Oil Co.	Marathon #5266 GP Lubricant
Phillips Petroleum Co.	Philude HD Wheel Bearing #3
Pure Oil Co.	MS #2
Shell Oil Co.	MP Retinax A
Sinclair Refining Co.	Litholene Multi-Purpose
Socony Mobile Oil Co.	Mobilgrease #5
Standard Oil Co.	Wheel Bearing Grease - Medium Amoco Lithium Multi-Purpose
Sun Oil Co.	Heavy Duty Universal & Wheel Bearing
Texas Co.	Marfax Heavy Duty #2

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Page 1 of 1
May 29, 1959

**SUBJECT: PROCEDURE FOR INSTALLING AND REMOVING
O.D. FIT DRIVE FLANGES**

**EQUIPMENT AFFECTED: ALL 5000 SERIES TRANSMISSIONS
CRT-3331 TRANSMISSIONS
CT-3340 TRANSMISSIONS (Input Flange Only)
TG - TRANSMISSIONS
TC-500, TC-800, TC-900 CONVERTERS**

As a product improvement, the fit between drive shafts and drive flanges has been changed to an O.D. fit. This is a standard SAE fit which minimizes fretting and wear of shaft and flange splines.

Parts interchangeability is not affected by this change except in certain TG transmissions which require a slip-fit flange. A new output shaft P/N 6770109 has been released for use in production and service in these models.

Attached to this letter is a recommended procedure for removing and installing flanges.

Service Manager - Transmissions

PROCEDURE FOR ASSEMBLY
& DISASSEMBLY OF O.D. FIT
FLANGES

This procedure applies to all transmissions having the O.D. fit flange, and a separate retaining washer and bolts or nut holding the flange in the final assembled position.

PROCEDURE FOR ASSEMBLY

1. Make sure that the output shaft is in its most outward position (i. e. all parts between the shaft shoulder and the flange are stacked tight).
 - A typical method is to insert a sleeve over the shaft and pull tight with the washer and bolts as illustrated on Sketch #I. Remove sleeve and washer prior to flange assy.
2. Coat the lip of the output shaft seal with a thin layer of bearing grease.
3. Coat the shaft splines with a thin layer of bearing grease.
4. Heat the flange to a minimum temperature of 250° F prior to assembly.

Suggested methods:

- A - Heat in a controlled temperature furnace at 250° F for a minimum period of 30 min.
 - B - Submerge the flange in a container of oil and heat the oil. (If an Acetylene torch is used, heat the container of oil for 15 minutes with a hot flame.)
5. Immediately upon removing the flange from the heat source, install the flange on the shaft, making sure that the flange is tight against its locating shoulder. (The flange should slide freely to the assembled position.)
CAUTION: Use appropriate equipment for protection when handling the hot flange. Do not let flange cool prior to installation.

6. Install the retaining washer, lock strip, and bolts and torque the bolts to the proper specifications.

CAUTION: If the flange seizes to the shaft prior to its final assembled position, it is necessary to pull the flange (see disassembly procedure) and repeat the entire assembly procedure. Do not attempt to force the flange with a hammer.

7. After assembly has cooled, it is a good practice to check the bolt torque and, if necessary, re-torque to the proper specifications.

PROCEDURE FOR DISASSEMBLY

1. A heavy-duty puller which can be bolted to the U-joint face of the flange should be used. (A typical 4 bolt model and a typical 2 bolt model are illustrated on Sketch II & IIA.)

CAUTION: A puller which pulls on the O.D. of the flange may deform the pilot diameter and mounting face.

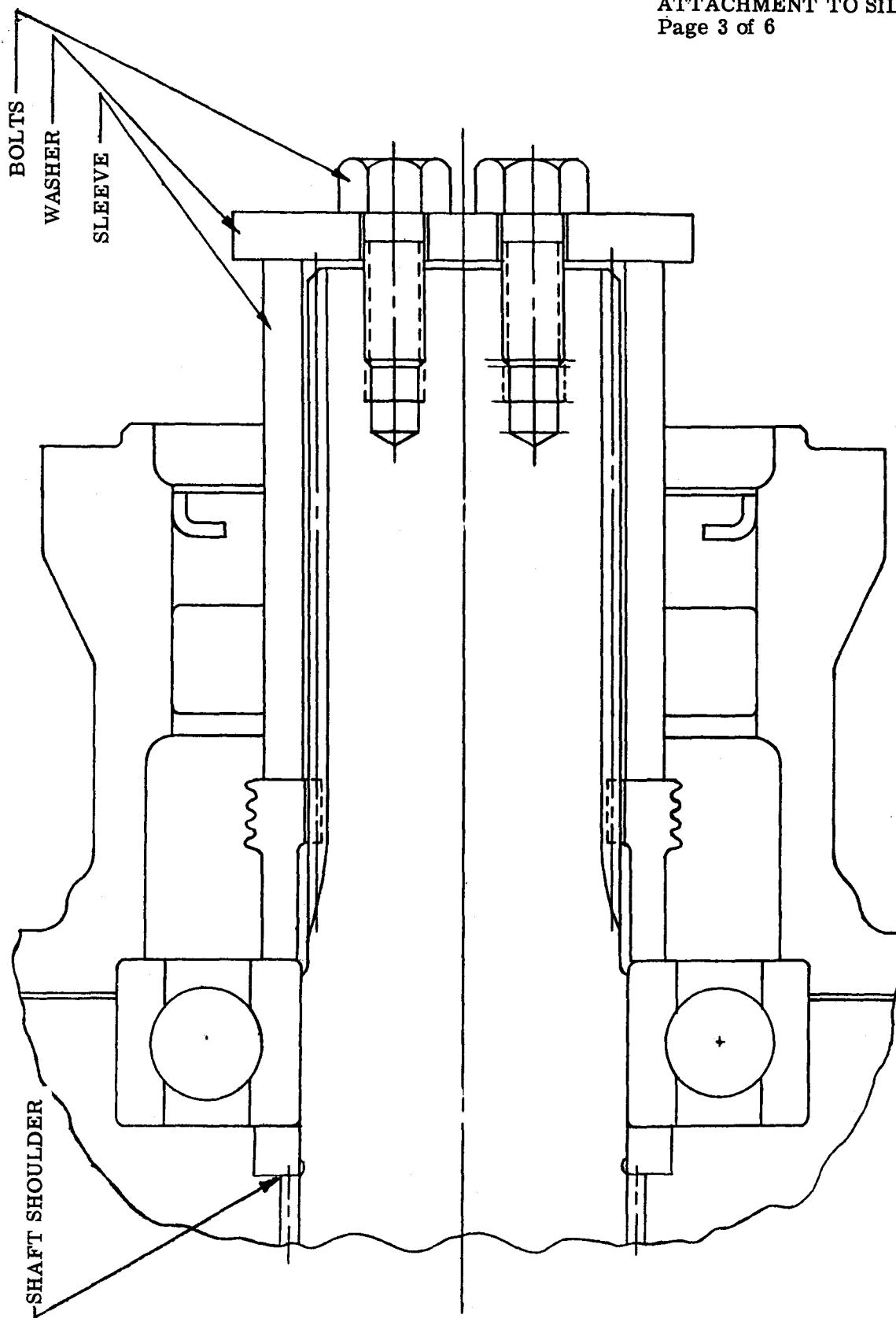
2. In order to protect the tapped holes in the end of the shaft, install a spacer between the puller jack screw point and the end of the shaft.

3. Provide a means for preventing flange rotation when torque is applied to the puller. A typical method is shown on Sketch #III.

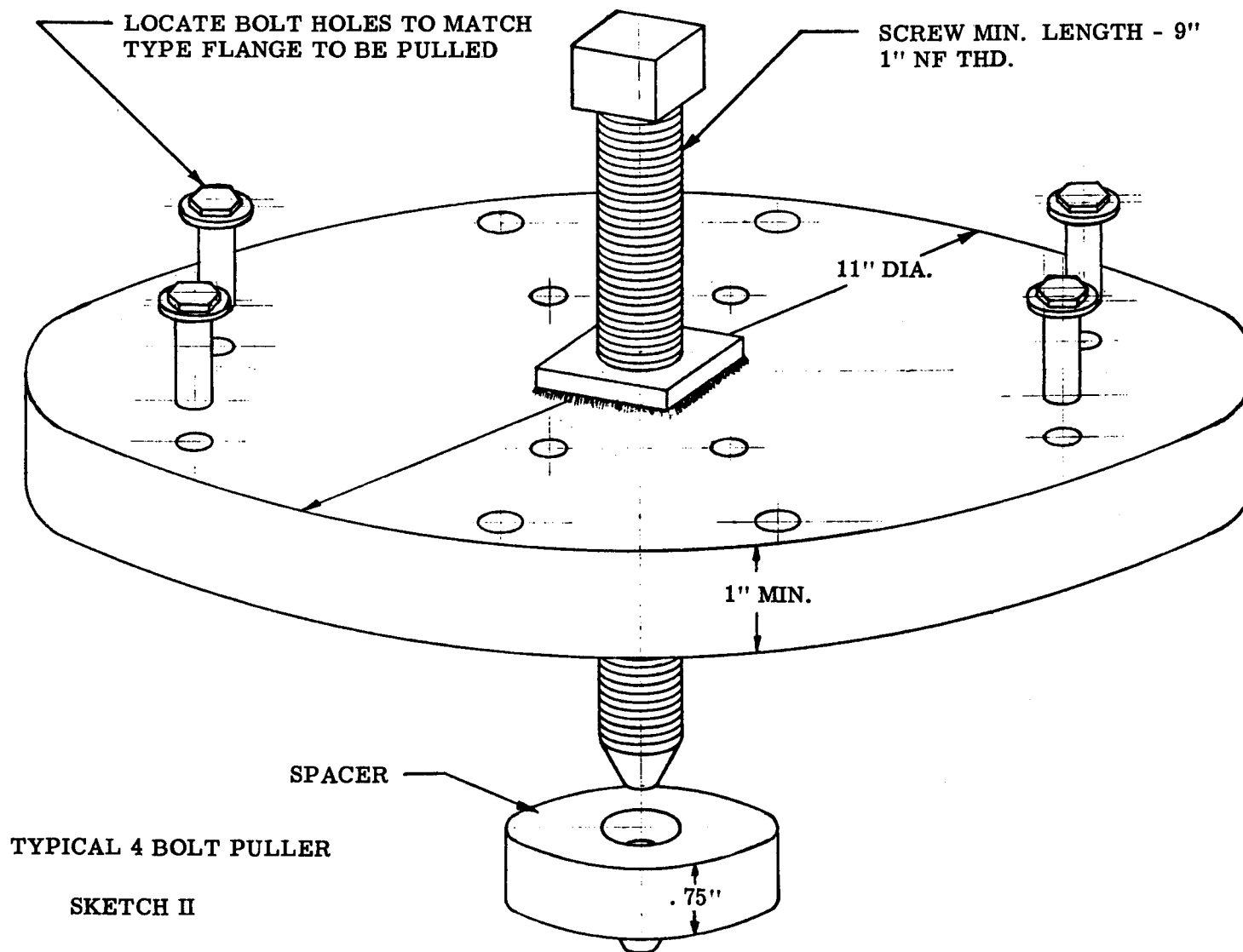
CAUTION: Exercise care in selecting a location for bracing against the flange rotation so that other transmission components will not be damaged when the necessary torque is applied in removing the flange.

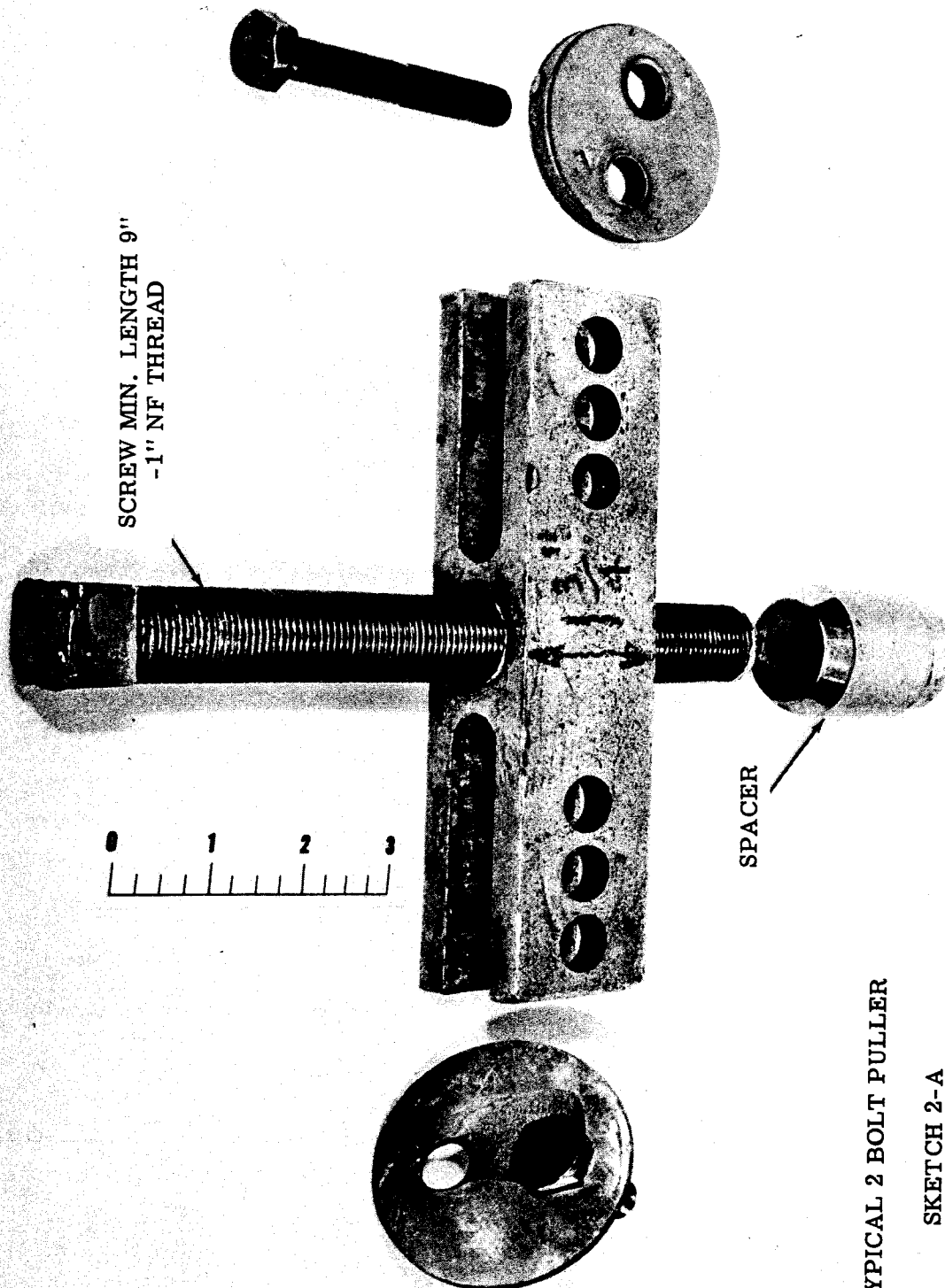
4. Remove the flange by tightening the puller screw against the spacer and shaft.

CAUTION: Do not use a pry bar or hammer to force the flange at assembly or disassembly as damage to the flange and/or internal parts can result.



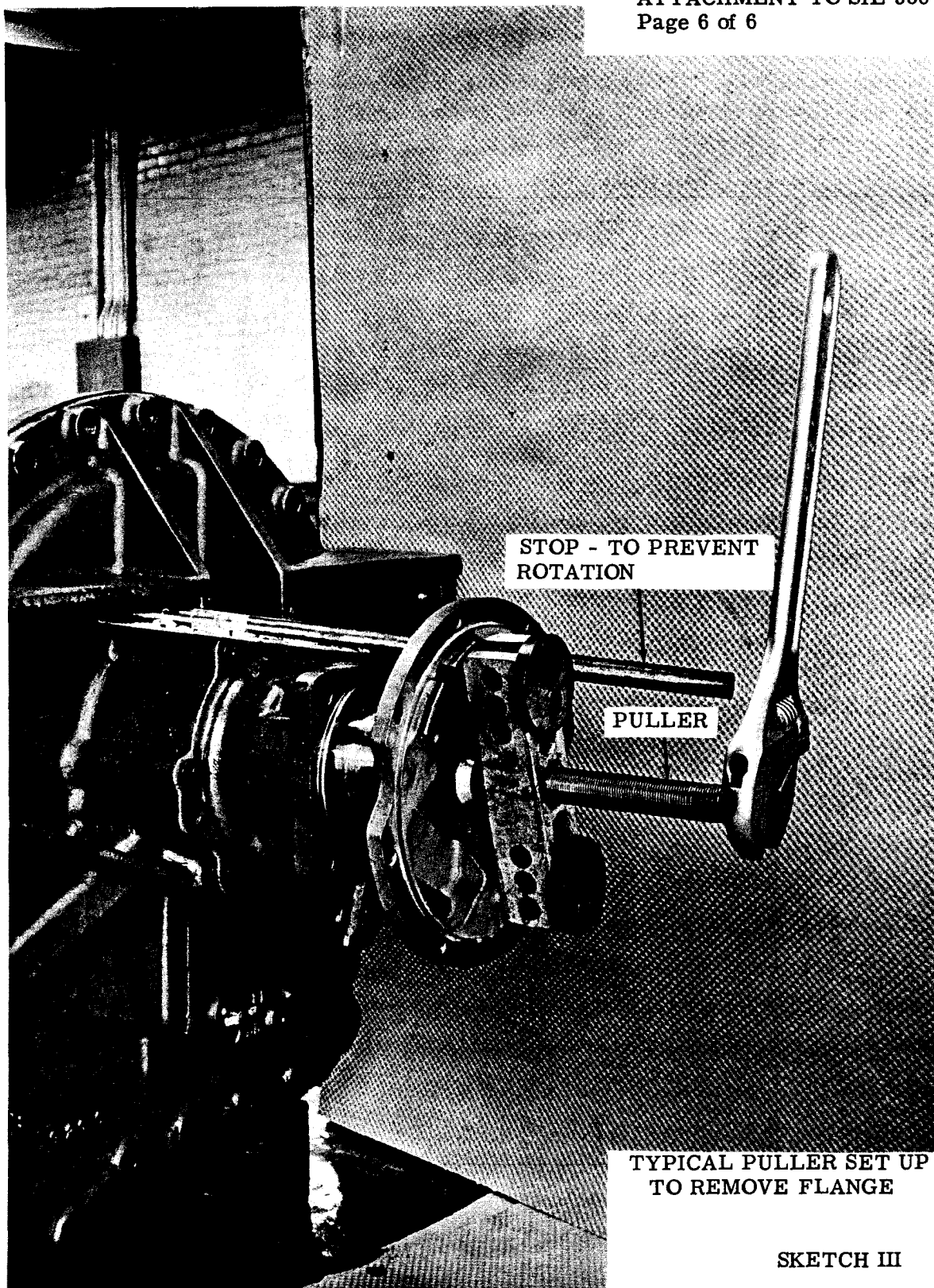
SKETCH I





TYPICAL 2 BOLT PULLER

SKETCH 2-A



SKETCH III

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Page 1 of 2
February 11, 1960

SUBJECT: RELEASE OF NEW FREEWHEEL ROLLER SPRINGS

EQUIPMENT AFFECTED: CRT-3331 TRANSMISSIONS

TC-300 CONVERTERS

EFFECTIVE SERIAL NUMBER: S/N 16354 - CRT-3331

S/N * - TC-300

* Will be included in later revision of letter.

New freewheel roller springs, P/N 6771296, have been released for use in CRT-3331 transmissions and TC-300 converters. These springs supersede springs P/N 6754999.

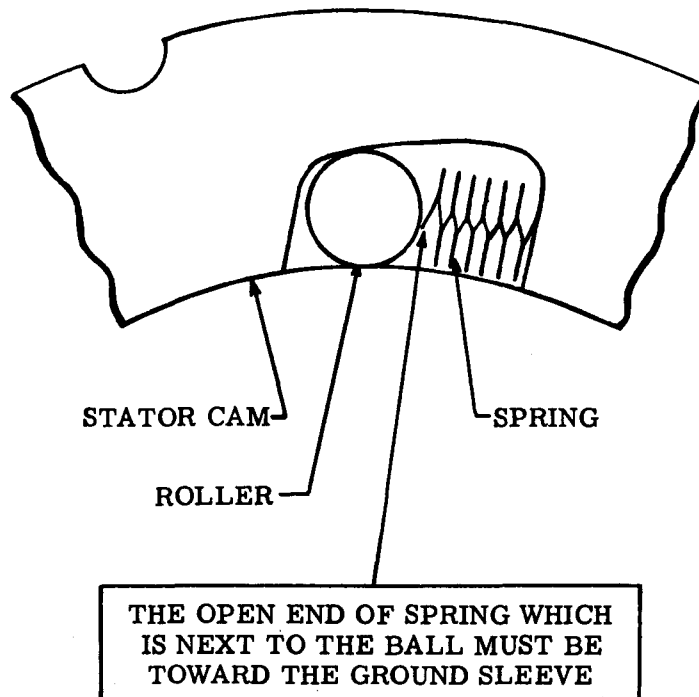
The new springs, which are stronger than the old springs, insure fast, uniform engagement of the stator rollers. This will reduce the possibility of stuck stators and will decrease wear on the rollers and on the roller race.

The new springs should be installed in the stator cam as shown in the sketch on the reverse side of this page.

Springs P/N 6771296 may be used for service in all units but must not be mingled with the old springs.

All old springs, P/N 6754999, in spare parts stock, may be used in TC-300 converters.

Service Manager - Transmissions



ALLISON TORQMATIC CONVERTER SERIES 200-300 PARTS CATALOG

SIL 499

Page 1 of 1

December 13, 1961

Subject: Changes in Turbine Shaft and Rear Bearing

Equipment Affected: TC-200 and TC-300 Series Converters
(Rear Disconnect Models Only)

Effective Serial Numbers: TC-200 - S/N 32093
TC-300 - S/N 32587

Rear disconnect models of TC-200 and TC-300 Series converters include a single-row ball bearing which supports the output end of the turbine shaft. In order to prevent this bearing from turning on the shaft, the diameter of the journal on the shaft has been increased, thus providing a tighter fit between the bearing and the shaft.

A new bearing has been released for use with the heavier shaft. The new bearing is so designed that the tight fit of the bearing on the shaft will not affect the internal clearances in the bearing.

The part number changes are as follows:

<u>New Part Number</u>	<u>Old Part Number</u>	<u>Part Name</u>
907050	903307	Bearing, Rear
6772734	6759948	Shaft, Turbine (TC-300)
6772735	6758592	Shaft, Turbine (TC-200)

Effect on Interchangeability:

The new shafts P/N 6772734 and P/N 6772735 may be used for service on units, regardless of serial number, but require the use of the new bearing P/N 907050.

The new bearing may be used on both old and new shafts.

The old bearing, P/N 903307, must not be used with the new shafts.

Spare Parts Information:

All old shafts, P/N 6759948 and P/N 6758592, and the old bearings, P/N 903307, may be used for service in converters with serial numbers below S/N 32093 (TC-200) and S/N 32587 (TC-300).

Service Manager - Transmissions

Subject: Change in Stator Design

Equipment Affected: TC-200 Series Converters

Effective Serial Number: S/N 31823

For ease of manufacturing, the converter stator used in TC-200 series converters has been changed from a weldment to a die casting.

The change in the stator design made it necessary to redesign the various parts that mate with the stator.

The part number changes are as follows:

<u>New Part No.</u>	<u>Old Part No.</u>	<u>Part Name</u>
	6769234	Stator Assy (This assembly is composed of a stator, a cam, two thrust washers and two snap rings. Because there has been little demand for the complete assembly, this item will be dropped. The new stator will be available as a detail part but not in an assembly.)
3777395	3702688	Stator
3735785		Washer, Thrust (2)
	3702103	Washer, Thrust (2)
	6756233	Washer, Thrust (1)
	3709094	Washer, Thrust (1)
3702744	6756629	Washer, Thrust, Converter Pump
6773200	6755266	Pump Assy., Charging Oil
6773199	6754964	Support, Stator (Groundsleeve)
3796309		Stator (For service only in converters with serial numbers below S/N 31823.)

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Page 2 of 3
December 15, 1961

Explanation of Parts Changes:

In the old configuration, a steel thrust washer, P/N 3702103, was installed on each side of the stator cam, and the cam and washers were retained in the stator by two snap rings. On the turbine side of the stator, an aluminum thrust washer, P/N 3709094, fitted into the stator, bearing against the steel thrust washer. An aluminum thrust washer, P/N 6756233, was similarly used on the converter pump side of the stator; however, this washer splined onto the stator support.

In the new configuration, only one thrust washer is used on each side of the stator cam. On the turbine side, washer P/N 3735785 replaces both the steel washer, P/N 3702103, and the aluminum washer, P/N 3709094. On the converter pump side of the stator, a second washer P/N 3735785 replaces both the steel washer P/N 3702103 and the aluminum thrust washer P/N 6756233. Thus, one part number, 3735785, replaces three part numbers - 3702103, 3709094 and 6756233.

The change in the stator support was brought about by the elimination of the splined thrust washer, P/N 6756233. Since the new thrust washer is not splined to the stator support, a much shorter spline on the support is required.

Affect on Parts Interchangeability:

The new stator, P/N 3777395, can be used in all TC-200 series converters, but requires the use of the new washers, P/N 3735785, and the new converter pump thrust washer, P/N 3702744.

The new service-only stator, P/N 3796309, is for use in converters with serial numbers below S/N 31823. This stator requires the use of all the old parts.

The old stator, P/N 3702688, cannot be used with any of the new parts.

The new thrust washers, P/N 3702744 and P/N 3735785 are for use with the new stator only.

The new stator support, P/N 6773199, and/or the new charging pump assembly, P/N 6773200, can be used with the new stator only.

The old stator support, P/N 6754964, can be used with both the new stator and the old stator.

Spare Parts Information:

All old parts in spare parts stock should be used in converters with serial numbers below S/N 31823.

The parts listed below will be maintained for service:

<u>Part No.</u>	<u>Part Name</u>
6756629	Washer, Thrust
6756233	Washer, Thrust
3709094	Washer, Thrust
6755266	Pump Assy.
6754964	Support, Stator
3702103	Washer, Thrust

Service Manager - Transmissions Operations

SEE PAGE 9 BEFORE USING THIS INDEX

NUMERICAL PARTS INDEX

The numerical parts index lists the parts reference number and the figure number of the illustration in which it appears. The reference numbers are keyed to the group listings. However, you must know the converter assembly part number to identify the right group. Refer to page 9.

NUMERICAL INDEX

PART NO	REFERENCE NO	FIGURE NO	PART NO	REFERENCE NO	FIGURE NO
.02635	11	VI-A	179887	36	V-A
.03026	11	VI-A	181345	24	V-A
103320	54	I	181374	13	VI-A
103320	59	I-A	181429	11	II
103320	44	III	181429	46	IV
.03320	47	III-A	186271	1	VII-A
.03320	8	VII-A			
103321	39	II	191758	Replaces 127800	
103321	5	IV	191758	25	V-A
.03321	30	V-A	191758	9	VI-A
103321	7, 12	VI-A	214279	23	V-A
			436569	Replaced by 113903	
103323	10	II	442812	Replaced by 451006	
103323	45	IV	444576	46	I
103323	35	V-A	444576	49	I-A
105456	37	I	444576	63	III
105456	42	I-A	444576	66	III-A
105456	49	III	444576	19	VII-A
.05456	52	III-A			
111296	Replaced by 127800		444672	41	I
113782	32	V-A	444672	48	I-A
113903	Replaces 436569		444672	51	III
113903	6	VI-A	444672	54	III-A
113989	Replaces 6754527		444678	49	I
113989	41	III	444678	45	I-A
113989	44	III-A	444678	54	III
			444678	57	III-A
113998	55	I	451006	Replaces 442812	
113998	60	I-A	451006	1	I
113998	43	III	451006	7	I-A
113998	46	III-A	451006	5	III
114351	11	V-A	451006	11	III-A
114498	26	V-A	453621	47	I
114604	10	V-A	453621	47	I-A
127800	Replaced by 191758		453621	56	III
127800	Replaces 111296		453621	59	III-A
.42862	44	I	456635	12	II
142862	51	I-A	456635	16	IV
142862	62	III	760612	Replaced by 3737894	
.42862	65	III-A	760612	Replaces 3702068	
.47465	16	VII-A	900454	Replaces 954551	
179793	24	III	900454	3	VI-A
179812	50	I	903010	5	III-A
179812	55	I-A	903011	8	III
179812	53	III	903202	Replaces 954498	
.79812	56	III-A	903202	25	II
			903202	31	IV
.79817	53	I			
179817	58	I-A	903208	5	I-A
179817	45	III	903208	8	III
.79817	48	III-A	903209	Replaced by 6757374	
179819	7	VII-A	903307	Replaced by 907050	
179837	38	II	903307	4	II
179837	6	IV	907050	Replaces 903307	
179840	8	VI-A	907050	4	II
.79841	29	V-A	907050	2	IV

NUMERICAL INDEX

PART NO	REFERENCE NO	FIGURE NO	PART NO	REFERENCE NO	FIGURE NO
954466	25	III	3719262	Replaces 3702718	
954498	Replaced by 903202		3719262	4	I
954528	2	IV	3735785	8, 13	I
954551	Replaced by 900454		3735785	13, 18	I-A
2222424	23, 33, 37	II	3737894	Replaced by 3772748	
2222424	29, 39	IV	3737894	Replaces 760612	
3224085	26	II	3772748	Replaces 3737894	
3224085	32	IV	3772748	25	I
3224773	28	II	3772748	30	I-A
3224773	34	IV	3796309	9	I
3689751	18	I	3796309	14	I-A
3689751	23	I-A	5192142	15	V-A
3689826	31	I	5192153	2	V-A
3689826	36	I-A	5192176	18	V-A
3689838	2	II	5192180	1	V-A
3689838	15	IV	5192180	14	VI-A
3691806	17	I	5192182	7	V-A
3691806	22	I-A	5192489	28	V-A
3702068	Replaced by 760612		5193064	27	V-A
3702069	27	I	5193253	Replaced by 5194671	
3702069	32	I-A	5193255	31	V-A
3702079	3	I	5193258	5	V-A
3702082	Replaced by 3713622		5193259	20	V-A
3702099	Replaced by 3719260		5193260	21	V-A
3702100	Replaced by 3702103		5193420	19	V-A
3702101	15	I	5193421	17	V-A
3702101	20	I-A	5193422	13	V-A
3702103	Replaces 3702100		5193430	12	V-A
3702103	62	I	5193431	6	V-A
3702103	67	I-A	5194138	14	V-A
3702104	7, 14, 60	I	5194140	16	V-A
3702104	12, 19, 65	I-A	5194244	33	V-A
3702688	61	I	5194291	9	V-A
3702688	66	I-A	5194294	8	V-A
3702718	Replaced by 3719262		5194365	4	V-A
3702724	5	I	5194671	Replaces 5193253	
3702742	22	I	5194671	3	V-A
3702742	27	I-A	6700296	49	IV
3702744	Replaces 6756629		6701230	38	I
3702744	19	I	6701230	43	I-A
3702744	25	I-A	6701230	48	III
			6701230	51	III-A
3709094	56	I	6702958	39	III
3709094	61	I-A	6702958	42	III-A
3713622	Replaces 3702082		6702989	4	III-A
3713622	20	I	6703023	1	IV
3713622	24	I-A			
3717166	21	I	6703224	Replaced by 6758296	
3717166	26	I-A	6750046	6, 12	I
3719260	Replaces 3702099		6750046	11, 17	I-A
3719260	10	I	6750046	3	II
3719260	15	I-A	6750046	1	IV
3719261	16	I	6750127	4	I-A
3719261	21	I-A	6750272	Replaced by 6768267	

NUMERICAL INDEX

PART NO	REFERENCE NO	FIGURE NO	PART NO	REFERENCE NO	FIGURE NO
6751524	27	II	6754958	11	I
6751524	33	IV	6754958	16	I-A
6751531	14	II	6754962	Replaced by 6759462	
6751531	18	IV	6754962	1	II
6751541	12	II	6754963	9	II
6751541	16	IV	6754968	33	I
6751822	Replaces 7709143		6754968	38	I-A
6751822	1	VI-A	6754994	17	III
6751839	12, 15	IV	6754994	21	III-A
6752033	9	VII-A	6754999	Replaced by 6771296	
6752034	11	VII-A	6755004	9	III
6752035	10	VII-A	6755031	17	IV
6753487	2	VI-A	6755032	13	II
6753849	Replaced by 6758213		6755221	2	I
6773857	Replaced by 6773249		6755271	Replaced by 6769234	
6753857	10	IV	6755302	6	II
6753859	15	II	6755302	43	IV
6753859	20	IV			
6753860	15	II	6755325	Replaced by 6757712	
6753860	20	IV	6755325	6	III
6753866	29	III	6755333	44	IV
6753866	32	III-A	6755372	Replaced by 6759947	
6753966	5	II	6755377	21	II
6753966	4	IV	6755377	27	IV
			6755380	36	IV
6754299	3	VII-A	6755383	19	II
6754314	5	VII-A	6755463	Replaced by 6758284	
6754349	43	II	6755464	Replaced by 6768902	
6754349	8	IV	6755467	Replaced by 6757713	
6754488	27	III	6755469	42	II
6754488	30	III-A	6755488	2	VII-A
6754489	Replaced by 6757729		6755618	24	II
6754490	51	I	6755618	30	IV
6754490	56	I-A	6755619	20	II
6754490	47	III	6755619	35	IV
6754490	50	III-A			
6754495	52	I	6755786	35	I
6754495	57	I-A	6755786	40	I-A
6754495	46	III	6755786	42	III
6754495	49	III-A	6755786	45	III-A
6754501	Replaced by 6759946		6755789	40	I
6754505	Replaced by 6757783		6755789	54	I-A
			6755789	52	III
			6755789	55	III-A
6754506	17	II			
6754506	22	IV	6755803	Replaced by 6757634	
6754508	16	II	6755838	Replaced by 6769091	
6754508	21	IV	6755850	Replaced by 6757753	
6754519	Replaced by 6757605		6755892	19	III
6754527	Replaced by 113989		6755892	23	III-A
6754528	Replaced by 6757599				
6754549	Replaced by 6758599		6755896	22	III
6754549	Replaced by 6768955		6755897	20	III
6754550	Replaced by 6757621		6755897	24	III-A
6754922	8	III	6755903	Replaces 6770239	
6754947	10	IV	6755903	13	IV

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PART NO	REFERENCE NO	FIGURE NO	PART NO	REFERENCE NO	FIGURE NO
6755988	31	III	6757605	Replaced by 6768714	
6755988	34	III-A	6757605	Replaces 6754519	
6755999	Replaced by 6756847		6757621	Replaced by 6768707	
6756001	30	III	6757621	Replaces 6754550	
6756001	33	III-A	6757634	Replaces 6755803	
6756119	17	VII-A	6757634	23	III
			6757634	26	III-A
6756233	57	I			
6756233	62	I-A	6757709	48	I
6756321	34	II	6757709	46	I-A
6756348	65	III	6757712	Replaced by 6772408	
6756362	12	VII-A	6757712	Replaces 6755325	
6756615	10	VI-A	6757713	Replaced by 6769453	
6756616	Replaced by 6772307		6757713	Replaces 6755467	
6756618	5	VI-A	6757729	Replaces 6754489	
6756620	4	VI-A	6757737	44	II
6756627	4	VI-A	6757757	45	II
6756629	Replaced by 3702744		6757758	47	IV
6756629	58	I	6757783	Replaced by 6759948	
6756629	63	I-A	6758054	26	IV
6756637	34	V-A	6758124	19	II
6756644	24	I	6758213	Replaced by 6768644	
6756644	29	I-A	6758213	Replaces 6753849	
6756658	6	VII-A	6758284	Replaced by 6768903	
6756659	6	VII-A	6758284	Replaces 6755463	
6756689	30	II	6758295	29	II
6756689	40	IV	6758296	Replaces 6703224	
6756691	41	IV	6758296	28	III
6756693	45	I	6758296	31	III-A
6756693	50	I-A	6758592	Replaced by 6772735	
6756693	60	III	6758597	55	III
6756693	63	III-A	6758597	58	III-A
6756706	31	II	6758599	Replaced by 6768956	
6756706	37	IV	6758599	Replaces 6754549	
6756847	Replaces 6755999		6758777	20	III
6756847	30	III	6758987	Replaced by 6772328	
6756847	33	III-A	6758988	10	VI-A
6756856	18	II	6759462	Replaces 6754962	
6756864	15	VII-A	6759462	1	II
6756865	25	IV	6759906	3	I-A
6756869	17	IV	6759906	3	III-A
6756872	34	I	6759926	1	I-A
6756872	39	I-A	6759926	1	III-A
6756913	8	IV	6759927	6	I-A
6756946	26	IV	6759928	8	I-A
6756947	24	IV	6759930	Replaced by 6772312	
6756947	14	VII-A	6759932	10	I-A
6757086	Replaced by 6768706		6759946	Replaces 6754501	
6757374	Replaced by 9411628		6759946	14	IV
6757426	40	II	6759947	Replaces 6755372	
6757426	7	IV	6759947	14	IV
6757521	35	II	6759948	Replaced by 6772734	
6757599	Replaced by 6769530		6759948	Replaces 6757783	
6757599	Replaces 6754528				

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PART NO	REFERENCE NO	FIGURE NO	PART NO	REFERENCE NO	FIGURE NO
6763013	Replaces 7374627		6769090	Replaced by 6769621	
6763013	3, 19	IV	6769091	Replaced by 6769856	
6764025	48	IV	6769091	Replaces 6755838	
6768267	Replaces 6750272		6769105	11	III
6768267	43	I	6769234	Replaces 6755271	
6768267	52	I-A	6769234	59	I
6768267	61	III	6769234	64	I-A
6768267	64	III-A	6769453	Replaces 6757713	
6768346	42	IV	6769453	10	III
6768425	24	II	6769530	Replaces 6757599	
6768425	30	IV	6769530	40	III
6768426	20	II	6769530	43	III-A
6768426	35	IV	6769621	Replaces 6769090	
6768644	Replaces 6758213		6769621	42	III
6768644	35	III	6769622	Replaces 6769089	
6768644	38	III-A	6769622	52	III
6768706	Replaces 6757086		6769623	Replaces 6769044	
6768706	34	III	6769623	50	III
6768706	37	III-A	6769818	4	III
6768707	Replaces 6757621		6769818	10	III-A
6768707	33	III	6769849	Replaces 6769049	
6768707	36	III-A	6769849	64	III
6768714	Replaces 6757605		6769856	Replaces 6769091	
6768714	26	III	6769856	21	III
6768714	29	III-A	6769856	25	III-A
6768727	11	III	6769876	1	III
6768902	Replaces 6755464		6769876	7	III-A
6768902	18	III	6769877	Not shown, listed page VI-3	
6768902	22	III-A	6769878	2	III
6768903	Replaces 6758284		6769878	8	III-A
6768903	11	III	6769908	19	II
6768903	15	III-A	6769988	15	VI-A
6768955	Replaces 6754549		6770239	Replaced by 6755903	
6768955	39	I	6770239	Replaces 8347316	
6768955	44	I-A	6771296	Replaces 6754999	
6768956	Replaces 6758599		6771296	15	III
6768956	50	III	6771296	19	III-A
6768956	53	III-A	6772301	12	III-A
6769044	Replaced by 6769623		6772307	Replaces 6756616	
6769045	21	III	6772307	10	VI-A
6769048	19	III	6772309	6	III-A
6769049	Replaced by 6769849		6772310	14	III-A
6769050	52	IV	6772312	Replaces 6759930	
6769051	50	IV	6772312	2	I-A
6769052	59	III	6772312	2	III-A
6769053	Not shown, listed page III-5		6772328	Replaces 6758987	
6769055	40	III	6772328	10	VI-A
6769057	43	IV	6772408	Replaces 6757712	
6769060	10	III	6772408	7	III
6769061	33	III	6772734	Replaces 6759948	
6769062	26	III	6772734	11	IV
6769073	57	III	6772735	Replaces 6758592	
6769089	Replaced by 6769622		6772735	42	II

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PART NO	REFERENCE NO	FIGURE NO	PART NO	REFERENCE NO	FIGURE NO
6772786	19	II	9409073	Replaced by 9409088	
6773199	32	I	9409088	Replaces 9409073	
6773199	37	I-A	9409088	24	III
6773200	23	I	9409088	27	III-A
6773200	28	I-A			
			9409203	Replaced by 9409240	
6773249	Replaces 6753857		9409203	Replaces 9409240	
6773249	8	II	9409203	Replaces 9409055	
7374627	Replaced by 6763013		9409203	7, 41	II
7450737	Replaces 8347400		9409203	9, 23	IV
7450737	16	III	9409227	23	IV
7450737	20	III-A	9409227	13	VII-A
7709143	Replaced by 6751822		9409240	Replaced by 9409203	
8347316	Replaced by 6770239		9409240	Replaces 9409203	
8347400	Replaced by 7450737		9409240	7	II
8522609	4	VII-A	9411628	Replaced by 9417910	
8618363	9	I-A	9411628	Replaces 6757374	
8618363	13	III-A			
			9412270	3	III
9409055	Replaced by 9409203		9412270	9	III-A
9409055	7	II	9417910	Replaces 9411628	
9409060	18	VII-A	9417910	25	III
9409062	36	I	9417910	28	III-A
9409062	41	I-A			