

SIL 15-TR-20
October 21, 2020
Page 1 of 6

SUBJECT: Release of Redesigned Torque Converter Components for 6630 ORS

MODELS AFFECTED: 6630 ORS

SERIAL NUMBERS AFFECTED: Beginning with S/N 3110122874

INTRODUCTION:

Beginning with S/N 3110122874, all 6630 ORS transmissions will be produced with redesigned torque converter components as part of a continuous product improvement. The main feature of this improvement is a redesigned turbine shaft and turbine assembly that provide improved durability. The component changes have no impact to form, fit, or function of the transmission. All external features and dimensions remain the same. This redesign consists of six new parts and eliminates two parts that were used in the former design. All other transmission components, including the damper assembly, remain common with the former 6630 ORS design.

PARTS INFORMATION:

New Components:

The new components of the 6630 ORS torque converter and turbine shaft are described in Table 1. New components are fully interchangeable backwards when used together. New components and former components cannot be mixed.

Table 1. 6630 ORS Redesigned Torque Converter Components

Item	Color Code (Refer to Figure 4)	Description	Current P/N	Former P/N	Qty
1	N/A	Turbine and Damper Assembly	29563621	29557432	1
2	Purple	Turbine Assembly	29563209*	29557428*	1
3	Green	Bolt, Damper	29565357**	29557445***	18
4	Red	Flywheel Assembly	29563212	29558384	1
5	Blue	Roller Bearing	29563433	23041452	1

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Table 1. 6630 ORS Redesigned Torque Converter Components (cont'd)

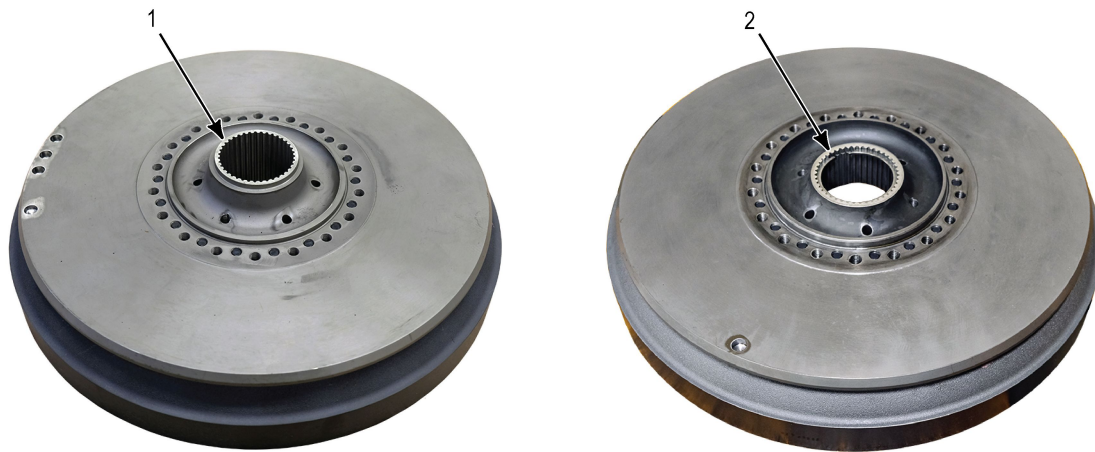
Item	Color Code (Refer to Figure 4)	Description	Current P/N	Former P/N	Qty
6	Orange	Retaining Ring, Roller Bearing, Turbine Shaft	29563432	6838403	1
7	N/A	Turbine Shaft Assembly	29563609	29547653	1
8	Yellow	Turbine Shaft	29563120****	29544531****	1
9	N/A	Spacer	Not Used	29544559	1
10	N/A	Retaining Ring, Turbine Assembly	Not Used	29544524	1
<p>*29563209 Turbine Assembly is included in 29563621 Turbine and Damper Assembly. 29557428 Turbine Assembly is included in 29557432 Turbine and Damper Assembly. **29565357 Bolts are included in 29563621 and 29557432 Turbine and Damper Assemblies. ***29557445 Bolts have been completely cancelled and are replaced by 29565357 for all production and service needs. ****Serviced only as an assembly -- Not available as a detail part.</p>					

Former Components:

Former Damper Bolt P/N 29557445 will remain available for service needs until stock is exhausted. When stock of P/N 29557445 is depleted, service using P/N 29565357. All other former 6630 ORS parts will continue to be available from the Parts Distribution Center (PDC) for service needs.

Turbine Assembly: P/N 29563209

The current turbine assembly does not require a retaining ring to be installed to the splined inner diameter of the turbine hub. The current turbine assembly can be identified by the absence of a retaining ring groove in the splined section of the hub. The redesigned turbine hub also features a self-locking internal thread form for the damper bolts that provides increased thread locking capacity. Refer to [Figure 1](#).



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Figure 1. Current Turbine Assembly and Former Turbine Assembly.

Table 2. Figure 1 Legend

Item	Description
1—Current Turbine Assembly 29563209	No retaining ring or groove
2—Former Turbine Assembly 29557428	Retaining ring and groove

Turbine Shaft: P/N 29563120

The current turbine shaft includes a shoulder that is integral to the shaft. This shoulder functions as the locating feature for the installation of the turbine assembly. Refer to [Figure 2](#).



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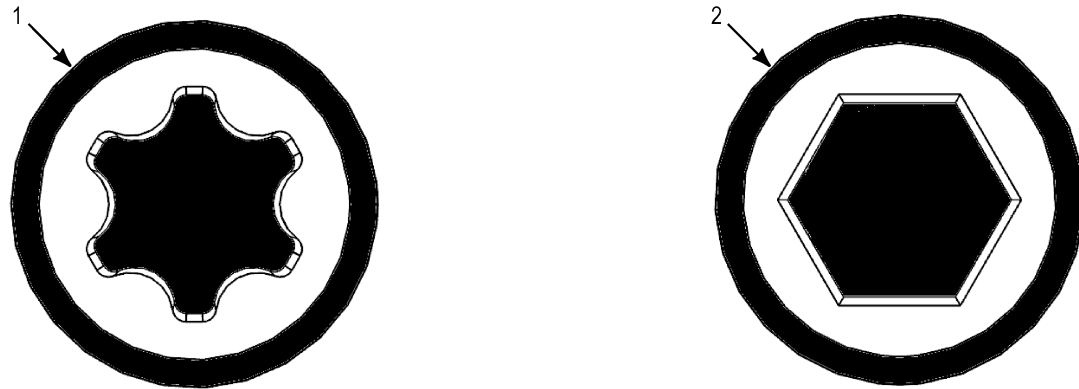
Figure 2. Current Turbine Shaft P/N 29563120

Table 3. Figure 2 Legend

Item	Description
1	Integral shoulder

Damper Bolt: P/N 29565357

The geometry of the current damper bolt head has changed. The current damper bolt requires a size 50 IP Torx Plus® driver to be used when removing and fastening. The former damper bolt utilized a 5/16-inch internal hex driver. The revised geometry of the damper bolt head enables the bolt to be more robust to the higher bolt torque requirement when installed to the current Turbine and Damper Assembly P/N 29563621. **The size of the bolt shank and thread pitch have not changed. The current Damper Bolt P/N 29565357 is fully interchangeable backwards with the former 6630 ORS turbine.** Refer to [Figure 3](#).



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Figure 3. Torx Plus® and Internal Hex Bolt Head Geometry Differences

Table 4. [Figure 3](#) Legend

Item	Description
1	Current Bolt 29565357
2	Former Bolt 29557445



NOTE: The torque requirement for the damper bolts in the current turbine assembly has been increased compared to the former turbine assembly. When servicing the current turbine assembly, the bolts must be torqued to **58-70 lb ft (79-95 N·m)**.

SERVICEABILITY:

With the elimination of the spacer and turbine hub retaining ring used in the former 6630 ORS design, there are slight differences to the service procedures when servicing transmissions with the current torque converter turbine assembly. Service procedures for the turbine shaft are not affected. Use the following procedures for disassembly and assembly of the current 6630 ORS torque converter components. For any service procedures not covered in this SIL, refer to 5000/6000 Series Service Manual (SM7463EN).

Removal of Torque Converter Turbine Assembly:



NOTE: All disassembly procedures prior to this point are common with the former 6630 ORS. Refer to 5000/6000 Series Service Manual (SM7463EN).

1. Remove the sealing from the turbine shaft. Remove the lockup clutch friction plate. Install two lifting bolts into the lockup clutch backing plate and remove the lockup clutch backing plate from the torque converter pump.
2. Remove the retaining ring from the turbine shaft.
3. Install a suitable puller to the two threaded holes in the turbine hub. Heat the flywheel roller bearing inner race and remove the converter turbine assembly and the bearing inner race from the turbine shaft.



NOTE: All disassembly procedures from this point forward are common with the former 6630 ORS. Refer to 5000/6000 Series Service Manual (SM7463EN).

Installation of Torque Converter Turbine Assembly:



NOTE: All assembly procedures prior to this point are common with the former 6630 ORS. Refer to 5000/6000 Series Service Manual (SM7463EN).

1. If removed, install the damper assembly to the torque converter turbine using eighteen damper bolts. Torque the bolts to 58-70 lb ft (79-95 N·m). Install the torque converter turbine and damper assembly onto the turbine shaft.
2. Heat and install the flywheel roller bearing inner race. Install the retaining ring to retain the race. Install the sealing onto the turbine shaft.
3. Install two lifting bolts into the lockup clutch backing plate. Install the backing plate, smaller diameter facing up, onto the torque converter pump while aligning the holes in the backing plate with the holes in the torque converter pump.
4. Install the lockup clutch friction plate to the turbine assembly.



NOTE: All assembly procedures from this point forward are common with the former 6630 ORS. Refer to 5000/6000 Series Service Manual (SM7463EN).

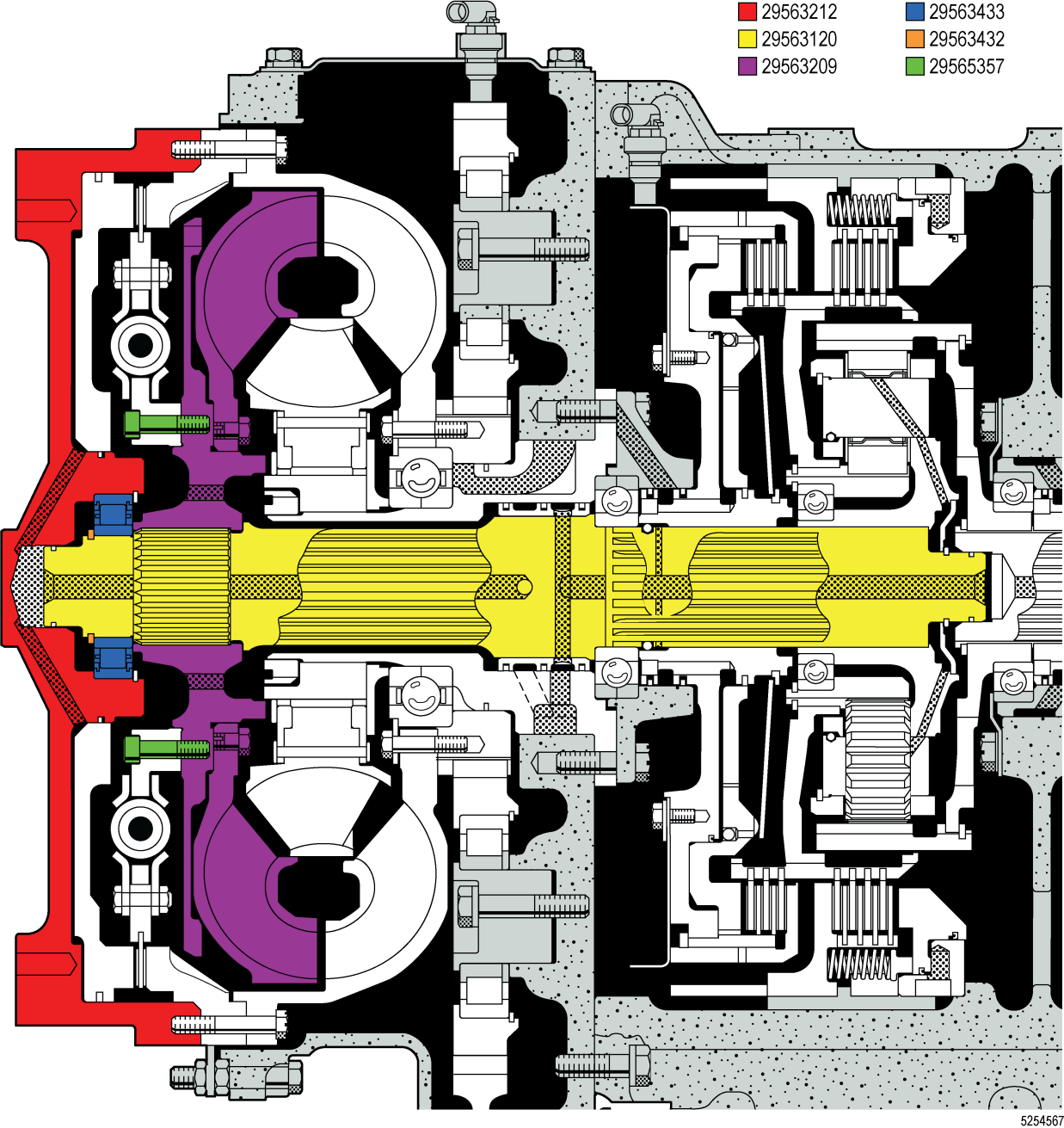


Figure 4. 6630 ORS Color Cross Section