SIL
SERVICE INFORMATION LETTER

Allison Transmission

SUBJECT: New Governed Speed Uprate Design

MODELS AFFECTED: 3000 Series™

SERIAL NUMBERS AFFECTED: Beginning with S/N 6512022321

Introduction:

Allison Transmission is pleased to announce the release of its 3000 Series transmission with capabilities of higher governed speed revolutions per minute (rpm) input, known as Governed Speed Uprate (GSU). Until now, the maximum input speed for 3000 Series production has been limited to 2800 rpm. This new design aligns 3000 Series transmission ratings with new engine updates, driven by regulatory changes.

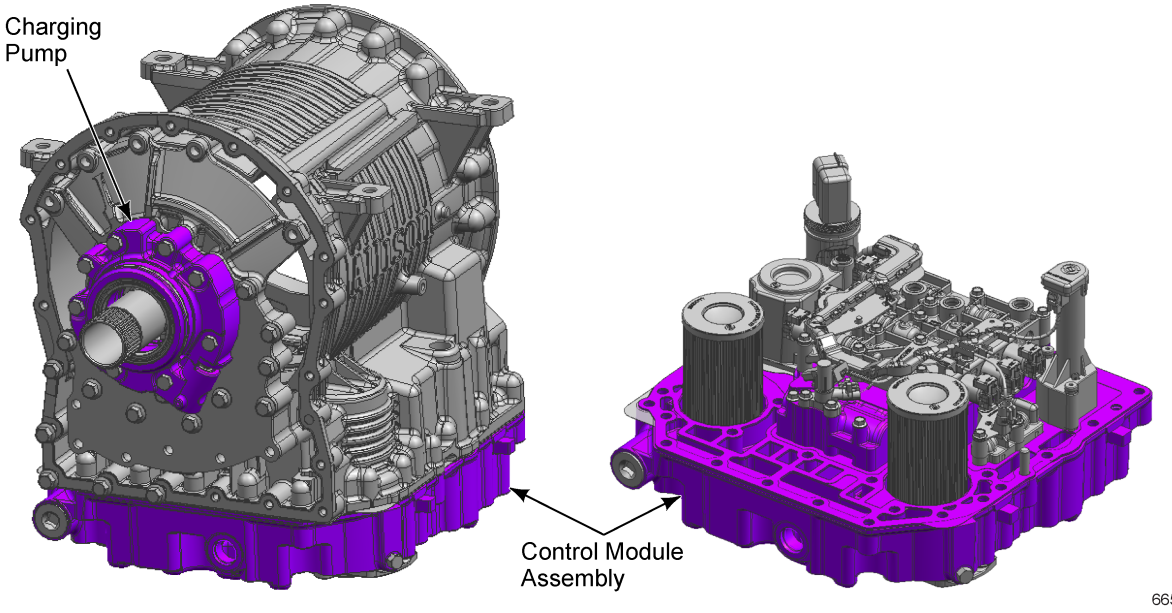

Figure 1. Areas of Change for GSU Implementation

NOTE: GSU transmission operation can accept engine output up to 3200 rpm in **1** (First Range) through **4** (Fourth Range) and will be controlled by transmission-to-engine communication by the Transmission Control Module (TCM). The rpm increase is not needed in **5** (Fifth Range) or **6** (Sixth Range).

The new 3000 Series GSU design required changes to the Channel Plate, Channel Plate Gasket, Channel Separator Plate, Solenoid Separator Plate, Main Valve Body, Main Regulator Valve and Spring, Springs for the Converter Flow and Control Main and the Charging Oil Pump, making the Main Valve Body Assembly for the 3000 Series 6-speed unique compared to the 4000 Series 6-speed.

There are now three Main Valve Body designs for current production:

- 3000 Series 6-speed products, GSU
- 4000 Series 6-speed products (also used to service pre-GSU 3000 Series 6-speed products)
- 3000 and 4000 Series 7-speed products

Changes to 3000 Series Hardware:

The following figures show the changes that were made to the 3000 Series 6-speed transmission hardware to create the new Governed Speed Uprate design.

The Main Valve Body casting tool was changed to remove the slot shown in Figure 2. Some cast features were removed so that the valve body can be machined to satisfy both standard and GSU designs.

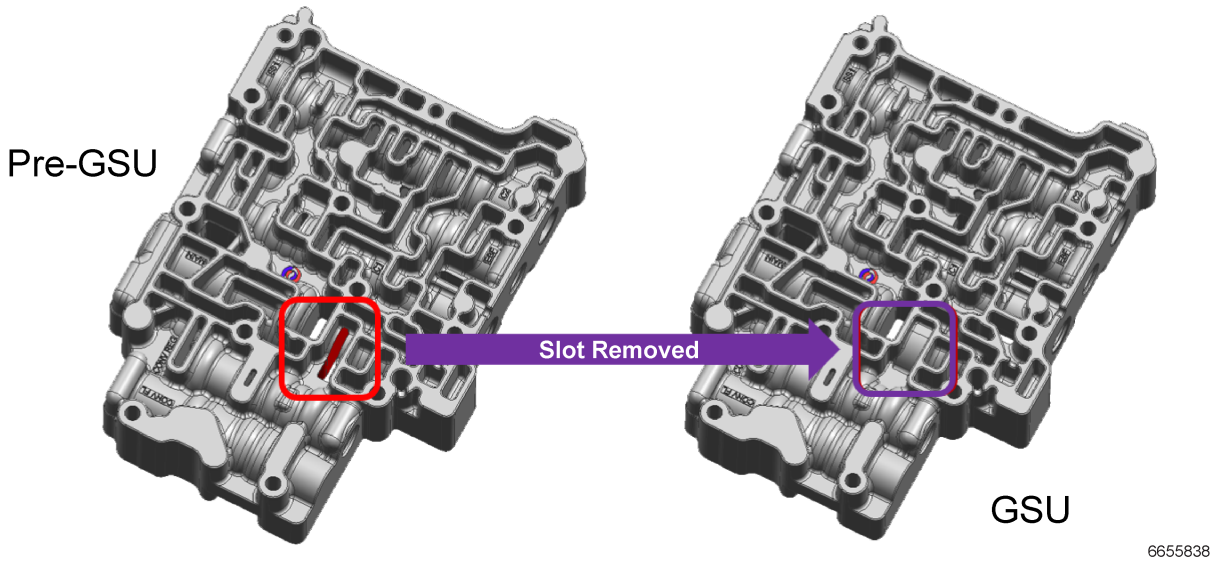

Figure 2. Slot Removed from 3000 Series 6-Speed Main Valve Body

Figure 3 shows the Channel Plate comparison. Each design is shown with a layered cross-section in order to see the full extent of the revised passages. The pink passage has been added to the GSU Channel Plate.

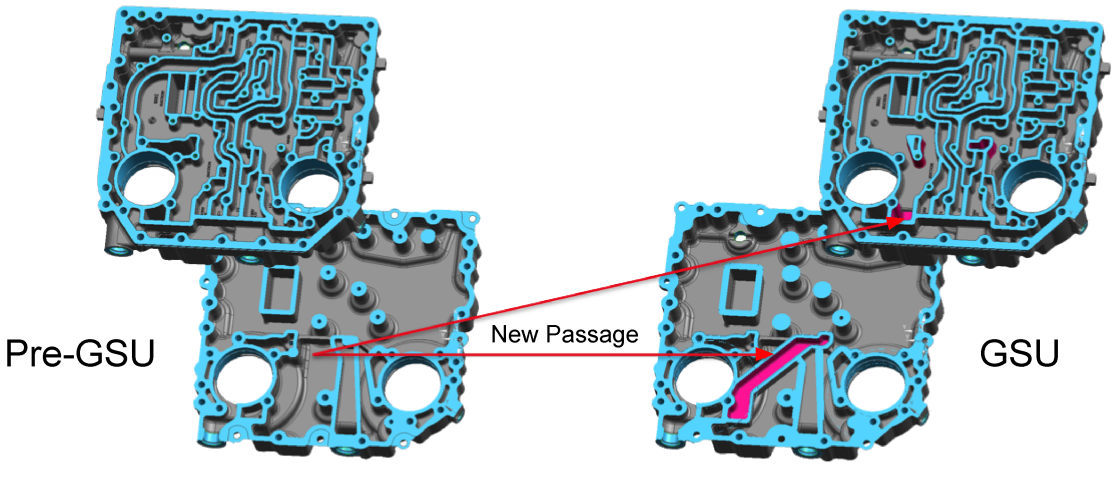

Figure 3. Modifications for 3000 Series 6-Speed GSU Channel Plate

Although the last four digits of the Channel Plate Gasket part number ('9709') can positively identify the GSU design, there is also an additional identification tab that can be seen while the Control Valve Module is assembled. Refer to Figure 4 for a 6-speed, Channel Plate Gasket comparison and the location of the external tab. The blue lines identify the GSU gasket changes from the pre-GSU gasket design.

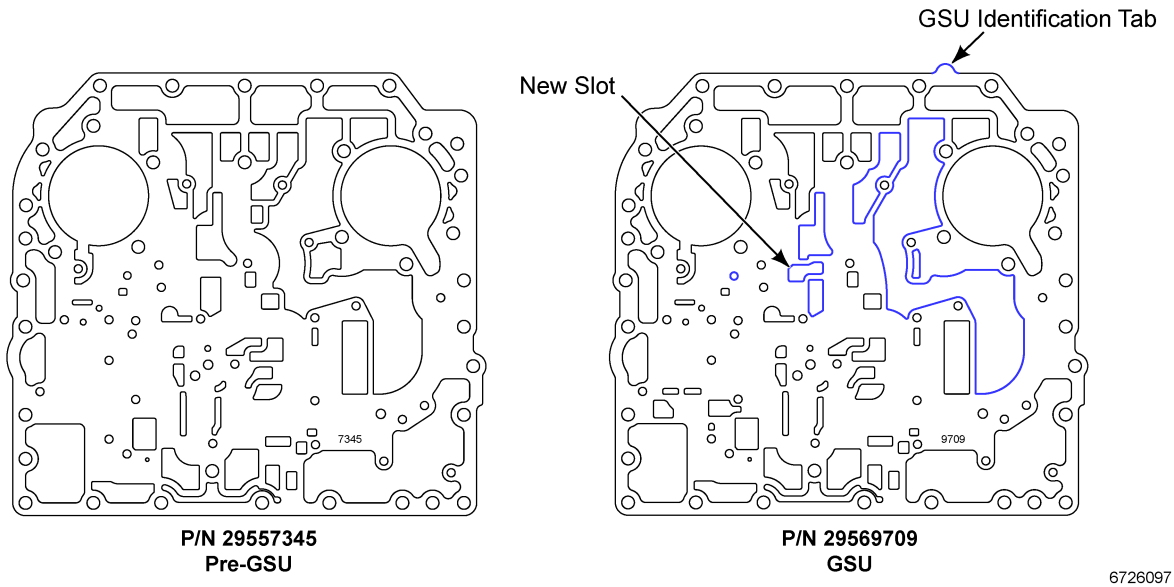

Figure 4. Comparison of 3000 Series 6-Speed Channel Plate Gaskets

Former Solenoid Separator Plate (P/N 29557350) has been completely canceled. The new GSU Solenoid Separator Plate (P/N 29569710) contains the same cutout features as the former plate except it includes a modified hole to close off opening to an exhaust passage and shifted the locating Spring Pin hole location to serve as an anti-misassembly feature (refer to Figure 5). New GSU Solenoid Separator Plate (P/N 29569710) is backward compatible and can be used where the former plate (P/N 29557350) was used.

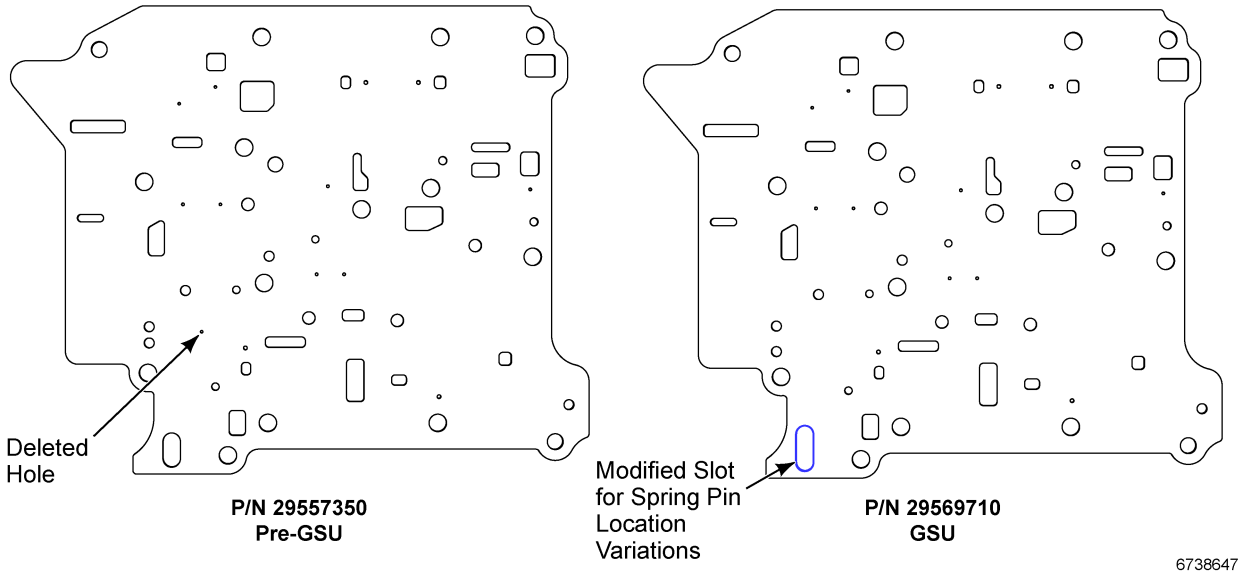

Figure 5. Comparison of 3000 Series 6-Speed Separator Plates

Based on the change in fluid dynamics of the GSU design, the charging pump housing was modified as shown in Figure 6. Oil pump housing changes include an inlet channel modification, where the feed finger moved radially inward and the feed cavity changed to stabilize flow. Additionally, optimization of the pump's metering groove was changed by moving it radially inward and improving the step profile. All 3000 Series 6-speed products now contain the new charging pump design.

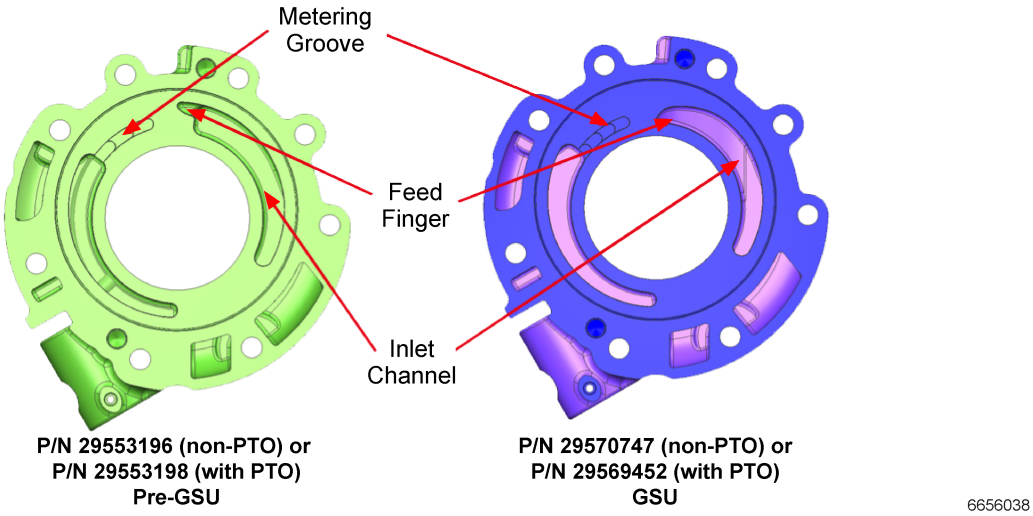

Figure 6. Comparing the 3000 Series 6-Speed Oil Charging Pumps

New Groups and Parts:

Service strategy required the release of five new 3000 Series 6-speed GSU groups: 10-678, 10-679, 16-1938, 16-1939 and 16-1940. Unique GSU parts with new part numbers were released for the Channel Plates, Main Valve Body, revised Separator Plates and Gasket and Charging Pumps.

With the production release of the new GSU groups, Allison has revised for service the 3000 Series 6-speed engineering groups 16-1908, 16-1909 and 16-1911, and revised 3000 Series 7-speed group 16-1910.

For GSU parts that are backward compatible, engineering groups within the Parts Catalog will show part number supersession for parts that are being discontinued, such as the Main Valve Body Assembly, Main Valve Body, Solenoid Separator Plate, Main Regulator Valve, three Springs and Charging Pumps.

CAUTION: While the Spring Pin installation locations help prevent mis-assembling the hardware, failure to use the appropriate GSU parts in 3000 Series 6-speed Governed Speed Uprate applications can lead to noise complaints and potential premature failure of the transmission.

Compatibility and Interchangeability:

To help prevent installation of parts that are not compatible, anti-misassembly features have been designed into overlapping designs. Allison has designed features between the revised Channel Plate parts and the Main Valve Body. Similarly, anti-misassembly features have been included between the Main Valve Body and the Solenoid Separator Plate. As depicted in Figure 7 and Figure 8, only compatible parts can be assembled without Spring Pin interference.

The following acronyms are used in (and around) Figure 7, Figure 8, Table 1 and Table 2.

3K = 3000 Series 6- and 7-speed drop box

4K = 4000 Series 6- and 7-speed straight

GSU = Governed Speed Uprate

3K6 = 3000 Series 6-speed

4K6 = 4000 Series 6-speed

3K7 = 3000 Series 7-speed drop box

4K7 = 4000 Series 7-speed straight

FLI = Filter Life Indicator

TIDA = Transmission Identification A

TIDB = Transmission Identification B

Figure 7 shows Spring Pin (P/N 11513011) location variation with differing Main Valve Body and Channel Plate parts (Channel Plate, Channel Plate Gasket and Channel Separator Plate). While there are combinations of compatible parts that will assemble when the Spring Pin is utilized, there are six combinations of parts that can be mis-assembled if you do not utilize the Spring Pin.

NOTE: Valve bodies from Parts Distribution Centers do not contain Spring Pins. As such, for anti-misassembly feature to work, technicians must install Spring Pins prior to assembly process.

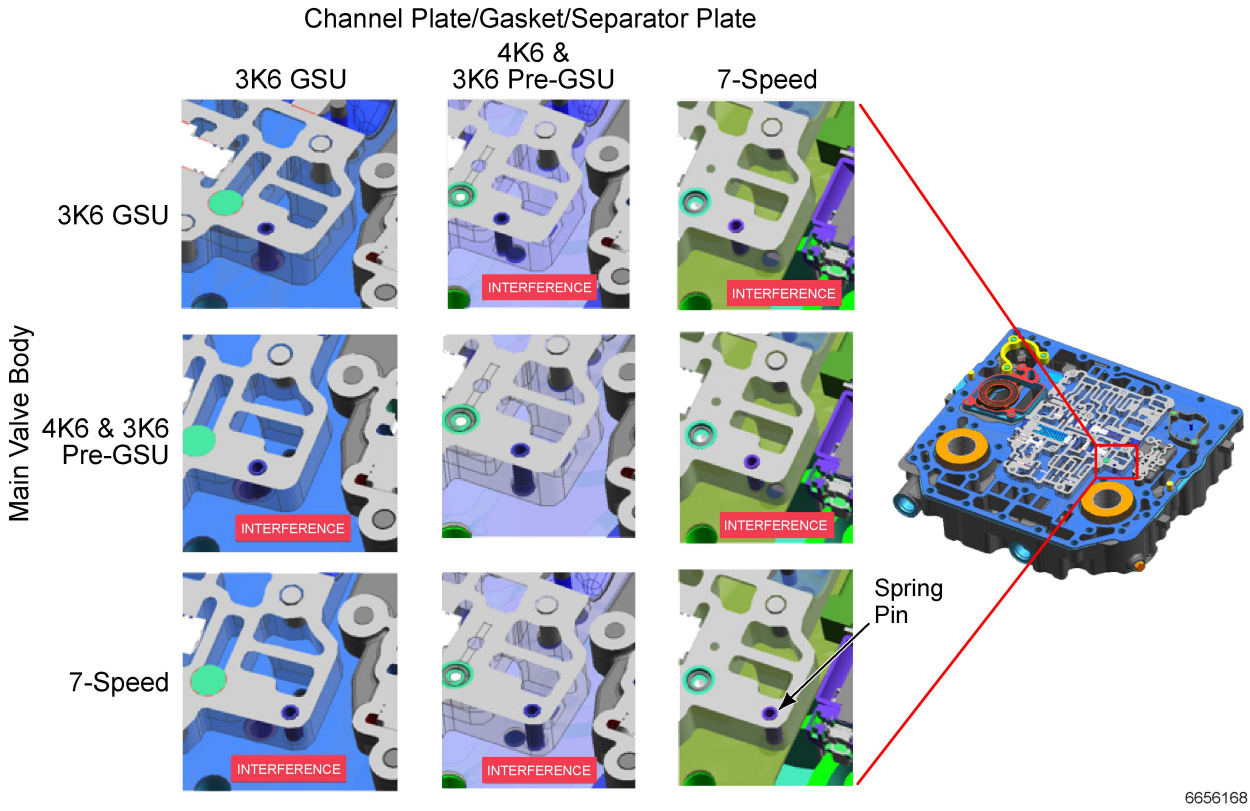

Figure 7. Spring Pin Anti-Misassembly Features In Lower Valve Body

Figure 8 shows Spring Pin (P/N 11513011) location variations with different Main Valve Bodies and Solenoid Separator Plates. There will only be one combination that will have “Interference” (the 4000 Series Solenoid Separator Plate with the GSU Main Valve Body). It is important to follow the Parts Catalog bill of material, paying close attention to the Separator Plate part number etched into the plate for proper use.

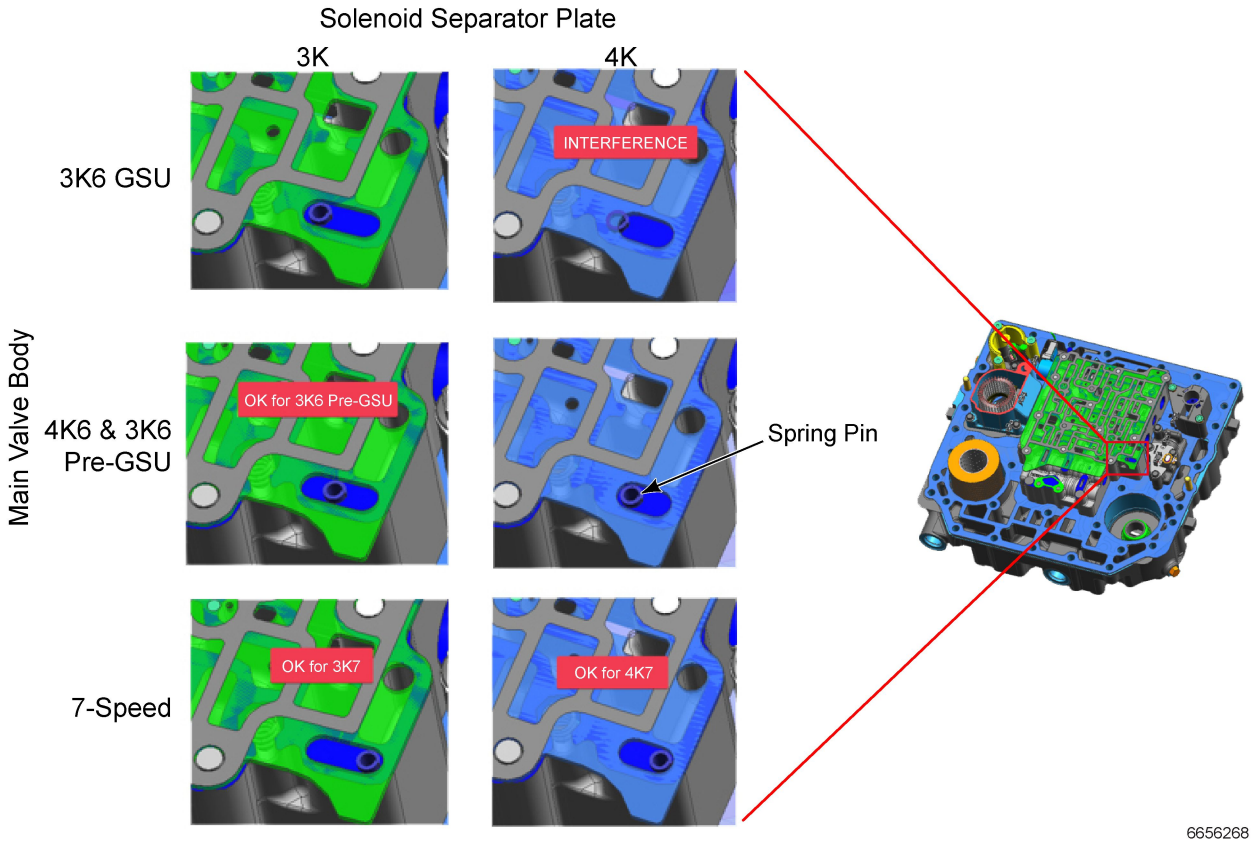

Figure 8. Spring Pin Anti-Misassembly Features in Upper Valve Body

Service Kits:

Running changes to Field Action kits (6-speed Kit P/N 29567617 and 7-speed Kit P/N 29567618 for Field Actions 2019FA07 and 2019FA08, respectively) have been made by removing the former 6-speed Main Valve Body P/N 29563951 or 7-speed Main Valve Body P/N 29563952, adding the new 6-speed Main Valve Body P/N 29569716 or 7-speed Main Valve Body P/N 29569783, and replacing the former Main Regulator Valve P/N 29563501 with the new Main Regulator Valve P/N 29570338. Refer to Table 1 for part changes within these Field Action kits.

Table 1. Field Action Kits Content Changes

Former Part Name	Former P/N	eBOM Qty	New Part Name	New P/N
KIT-BODY VALVE, MAIN VALVE BODY FIELD ACTION, 6-SPEED	29567617		KIT, MAIN VALVE BODY FIELD ACTION, 6-SPEED	29567617
VALVE-REGULATOR MAIN	29563501	1	VALVE REGULATOR MAIN	29570338
BODY-VALVE, MAIN, 6-SPEED	29563951	1	BODY VALVE MAIN, 6-SPEED 4K6 & 3K6 PRE-GSU	29569716
KIT-BODY VALVE, MAIN VALVE BODY FIELD ACTION, 7-SPEED	29567618		KIT, MAIN VALVE BODY FIELD ACTION, 7-SPEED	29567618
BODY VALVE MAIN, 7-SPEED	29563952	1	BODY-VALVE, MAIN, 7-SPEED	29569783

Table 1. Field Action Kits Content Changes *(cont'd)*

Former Part Name	Former P/N	eBOM Qty	New Part Name	New P/N
VALVE REGULATOR MAIN	29563501	1	VALVE REGULATOR MAIN	29570338

Since the new parts being introduced to these Field Action kits are backward compatible, the existing kit part numbers remain the same. Once kits with former hardware are exhausted from the Parts Distribution Center (PDC), kits will be assembled using the new part design. Field Action letters will be updated with the new bill of material part numbers when PDC assembles the new kit content.

Additionally, Control Module Seal and Gasket Kit (P/N 29559768) for 3000 Series 6-speed with Prognostics and FLI (TIDA or TIDB) will undergo a bill of material revision to include the new Channel Plate Gasket (P/N 29569709). Since the new Channel Plate Gasket (P/N 29569709) is not backward compatible, it is augmenting this seal and gasket kit. Likewise, since the former Channel Plate Gasket (P/N 29557345) is not forward compatible, it will remain serviceable as a detail part and remain in the kit. Kit users will need to determine which gasket to use for the application being repaired (refer to Instruction Sheet 360). Refer to the Parts Catalog to see revised kit content.

Former part numbers that have a new part number replacement (where the new part is backward compatible) have been completely cancelled and will not be available for service after stock is depleted. Refer to Table 2 for part number supersession.

NOTE: Allison is maintaining for service any former parts that do not have a backward compatible, direct replacement, including the former 3000 Series medium Channel Plate P/N 29558683, former 3000 Series shallow Channel Plate P/N 29558685, former Separator Plate P/N 29557334 and former Channel Plate Gasket P/N 29557345. All GSU parts (P/N 29569716, P/N 29569783, P/N 29569710, P/N 29570810, P/N 29570338, P/N 29569805, and P/N 29569806) that are backward compatible, their preceding part numbers have been completely cancelled.

Table 2. Part Number Supersession and Compatibility

Pre-GSU Description	Pre-GSU Service P/N	GSU Service P/N	GSU Description	GSU P/N Backward Compatible?
Solenoid Separator Plate, 3K6 3K7	29557350	29569710^	Solenoid Separator Plate, 3K6 GSU, 3K7	Yes
Solenoid Separator Plate, 4K6 4K7	29557351	29570810^	Solenoid Separator Plate, 4K6 4K7	Yes
N/A	N/A	29569706^	Main Valve Body, 3K6 GSU	N/A
Main Valve Body, 6 Speed, 3K6 4K6	29563951	29569716^	Main Valve Body, 6 Speed, 4K6 & 3K6 pre-GSU	Yes
Main Valve Body, 7 Speed, 3K7 4K7	29563952	29569783^	Main Valve Body, 7 Speed, 3K7 4K7	Yes
Valve, Main Regulator	29563501	29570338^	Valve, Main Regulator, GSU	Yes
Spring, Control Main	29557291	29569805^	Spring, Control Main, GSU	Yes
Spring, Converter Flow	29557291	29569805^	Spring, Converter Flow, GSU	Yes

Table 2. Part Number Supersession and Compatibility *(cont'd)*

Pre-GSU Description	Pre-GSU Service P/N	GSU Service P/N	GSU Description	GSU P/N Backward Compatible?
Spring, Main Regulator	29557292	29569806^	Spring, Main Regulator, GSU	Yes
Separator Plate, Channel, 3K6	29557334^	29569708^	Separator Plate, Channel, 3K6 GSU	No
Gasket, Channel Plate, 3K6	29557345^	29569709^	Gasket, Channel Plate, 3K6 GSU	No
Channel Plate, Medium 3K6	29558683^	29569703^	Channel Plate, Medium 3K6 GSU	No
Channel Plate, Shallow 3K6	29558685^	29569713^	Channel Plate, Shallow 3K6 GSU	No
Front Support (non-PTO)	29515911	29570762	Front Support (non-PTO), GSU	Yes
Pump Housing Assembly (non-PTO)	29553196	29570747^	Pump Housing Assembly (non-PTO), GSU	Yes
Pump Housing (non-PTO)	29553197	29569451	Pump Housing (non-PTO), GSU	Yes
Front Support (PTO)	29516008	29570763	Front Support (PTO), GSU	Yes
Pump Housing (PTO)	29553198	29569452^	Pump Housing (PTO), GSU	Yes

^ P/N will be maintained for service