

Revisions to this document are noted
by a stripe in the left-hand margin

SIL 10-1K2K-09, Rev. D
November, 2015
Product Code(s):
Page 1 of 62

SUBJECT: 2010 Uprate Hardware Modifications

MODELS AFFECTED: 1000 and 2000 Product Families Transmissions

SERIAL NUMBERS AFFECTED: S/N 6310972823 (First 2010 Uprate S/N)
S/N 6310988346 (Final Pre 2010 Uprate S/N)

Introduction

Hardware modifications occurred for the 2010 Uprate at the start of production (12/09) for the 1000 and 2000 Product Families Transmissions equipped with Allison 4th Generation Controls. Changes have been implemented in the Torque Converter, Planetary Gear, Rear Cover, Oil Pan, Oil Pump and Control Valve groups.

Some of the parts detailed in this SIL were early released into production starting in July of 2009. These parts were previously described in the 2010 1K2K Hardware Early Release SIL 16-1K2K-09.

This former design, Pre 2010 Uprate with the early release 2010 Uprate parts will be produced until the second quarter of 2010.

Additional information detailing 2010 Uprate changes and Allison 4th Generation Controls are available in the following publications:

- WATCH 396
- SIL 13-1K2K-09
- www.allisontransmission.com

SD / SL5805EN

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Please Note: Allison Transmission Service Information Letters are intended for use by professional, trained technicians, not for the "do-it-yourselfer." They are written to inform those technicians of conditions that may occur on some transmission models (or serial number ranges) or to provide information that could assist in the proper servicing of a specific Allison transmission. Properly trained technicians have the equipment, tools, safety instructions, and know-how to do a job properly and safely. If a condition is described, do not assume that the Service Information Letter applies to your transmission, or that your transmission has the condition described. Product evolution and information updates are inevitable. Please see your authorized Allison Transmission service leader or distributor to understand if your particular transmission may benefit from the information contained within the Service Information Letter.

Torque Converter (21 Group)

Table 1. Torque Converter

Part Name	Pre 2010 Uprate P/N	2010 Uprate P/N	Description of Change
Torque Converter TC 211	29549522	29546573	New TCC design. Is not interchangeable backwards
Torque Converter TC 210	29549521	29546574	New TCC design. Is not interchangeable backwards
Torque Converter TC 221	29549519	29546576	New TCC design. Is not interchangeable backwards
Torque Converter TC 222	29549520	29546575	New TCC design. Is not interchangeable backwards

Interchangeability:

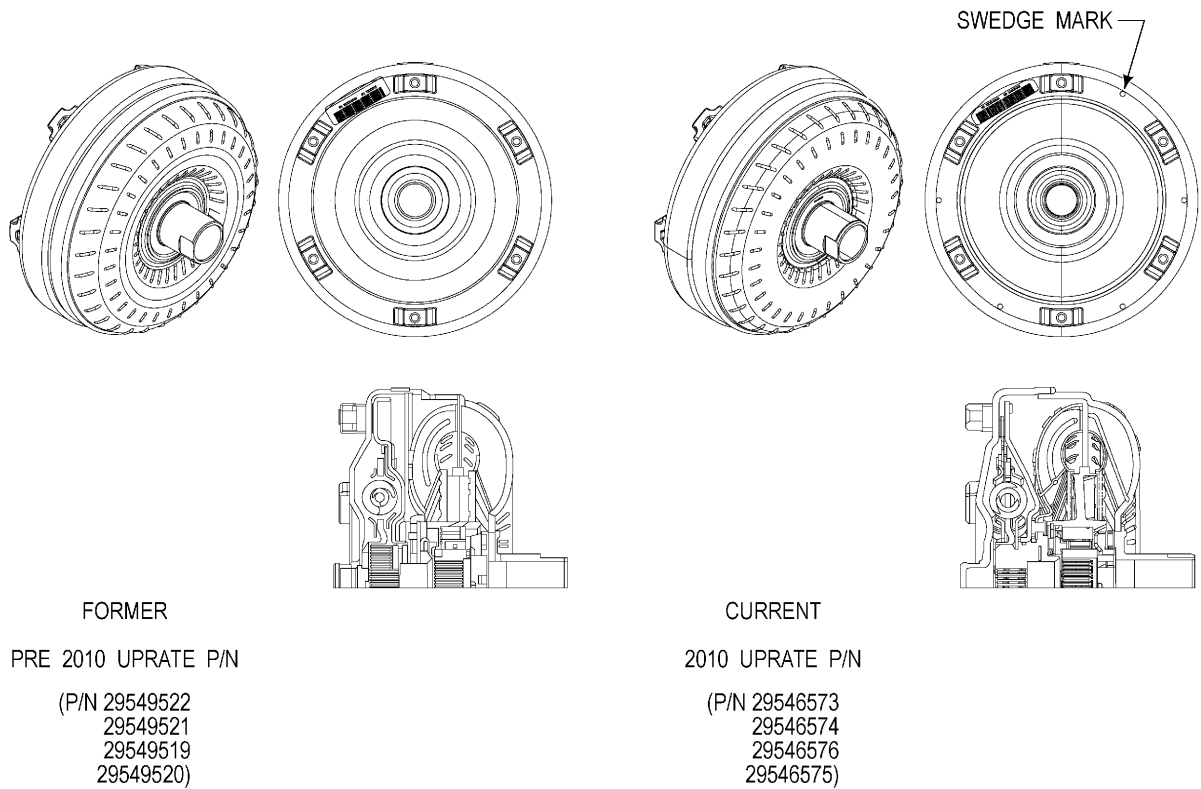
All models of the current 2010 Uprate Torque Converters listed in [Table 1](#) are **not** interchangeable with the former Pre 2010 Uprate design.

Parts Modifications:

The 2010 Uprate Torque Converters include a dual friction lockup clutch and are distinguished from the Pre-2010 Uprate Torque Converter by the Swedge Marks on the Torque Converter front cover as seen in [Figure 1](#).

Service Parts Information:

The former Pre 2010 have been cancelled for production and maintained for service. The former Pre 2010 Uprate Torque Converters and the current 2010 Uprate Torque Converters will be available for order from the Allison PDC.



88743

Figure 1. Torque Converter

Main Case (01 Group)

Table 2. Main Case

Part Name	Pre 2010 Uprate P/N	2010 Uprate P/N	Description of Change
C3/C4 Piston	29543321	29546697	Orifice size change and new design
C3/C4 Spring/ Plate Assembly	29542192 / 29542191	29546698	Integral spring assembly
C3/C4 Friction Plates	29531049 (C3 requires 4) (C4 requires 5)	29546270 (C3 requires 4) (C4 requires 6)	Friction plates are a wave plate design of narrower thickness. Increased number of friction plates are required for C4.
C3/C4 Reaction Plates	29531048 (C3 requires 3) (C4 requires 4)	29546701 (C3 requires 4) (C4 requires 6)	Quantity change required for C3/C4 Clearance for integral spring assembly
C3 Backing Plate Assembly	29535648	29546702	Thicker
C4 Backing Plate	29535640	29546271	Thinner

Interchangeability:

Current 2010 Uprate parts listed in [Table 2](#) are **not** interchangeable backwards with the Pre 2010 Uprate parts with the exception of the C3/C4 Reaction Plates P/N 29546701.

Parts Modifications:

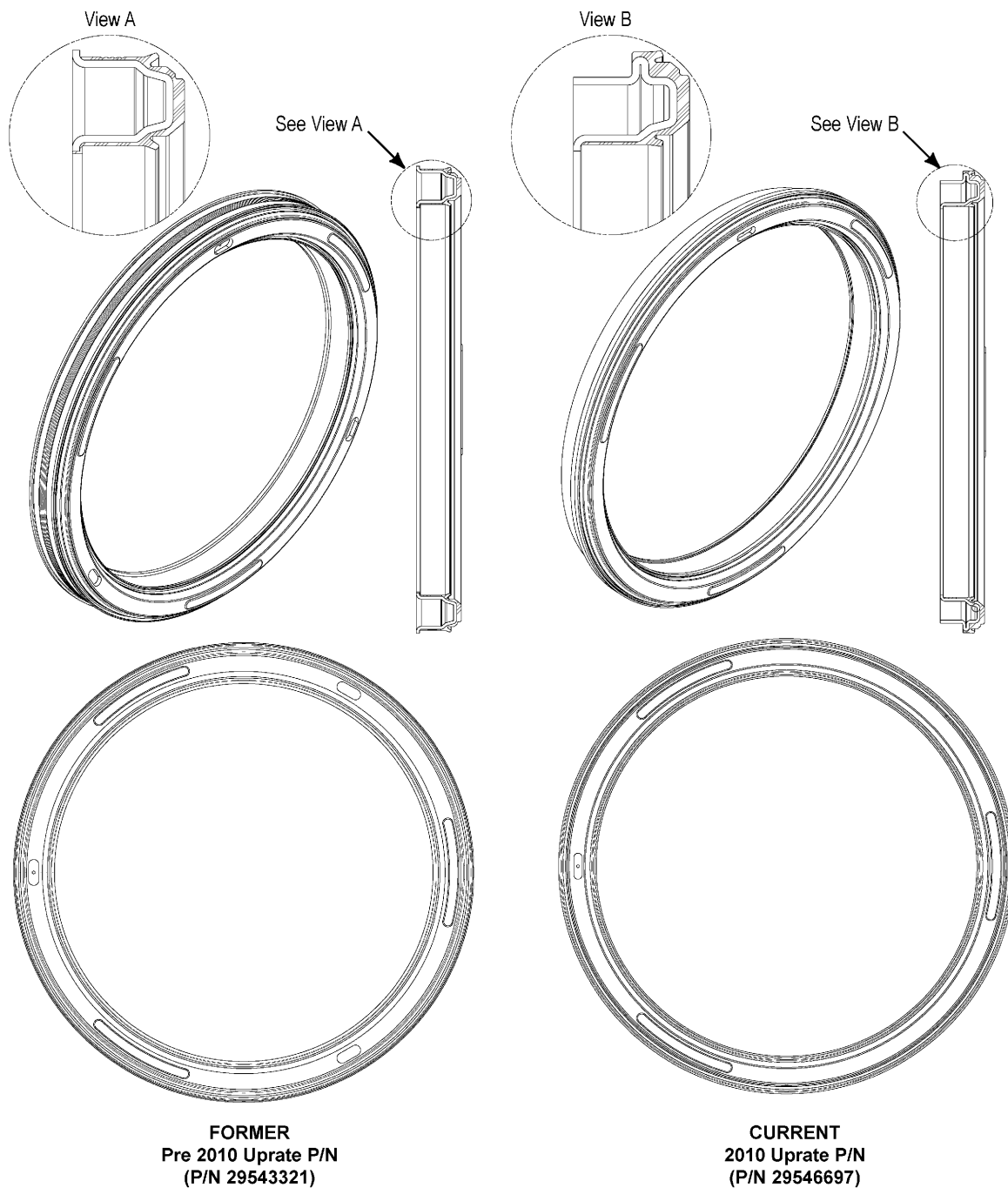
The C3/C4 Clutch Reaction Plate, Friction Plate, Backing Plates and spring assembly modifications have been made to increase clutch capacity for the 2010 Uprate transmission increased torque ratings. These changes are also calibration sensitive.

Service Parts Information:

The former Pre 2010 Uprate parts have been cancelled for production and maintained for service, except for C3/C4 Reaction Plates P/N 29531048, which will be completely cancelled but can be replaced by the current 2010 Uprate C3/C4 Reaction Plates P/N 29546701. All other former Pre 2010 Uprate parts will be available for order from the Allison PDC,

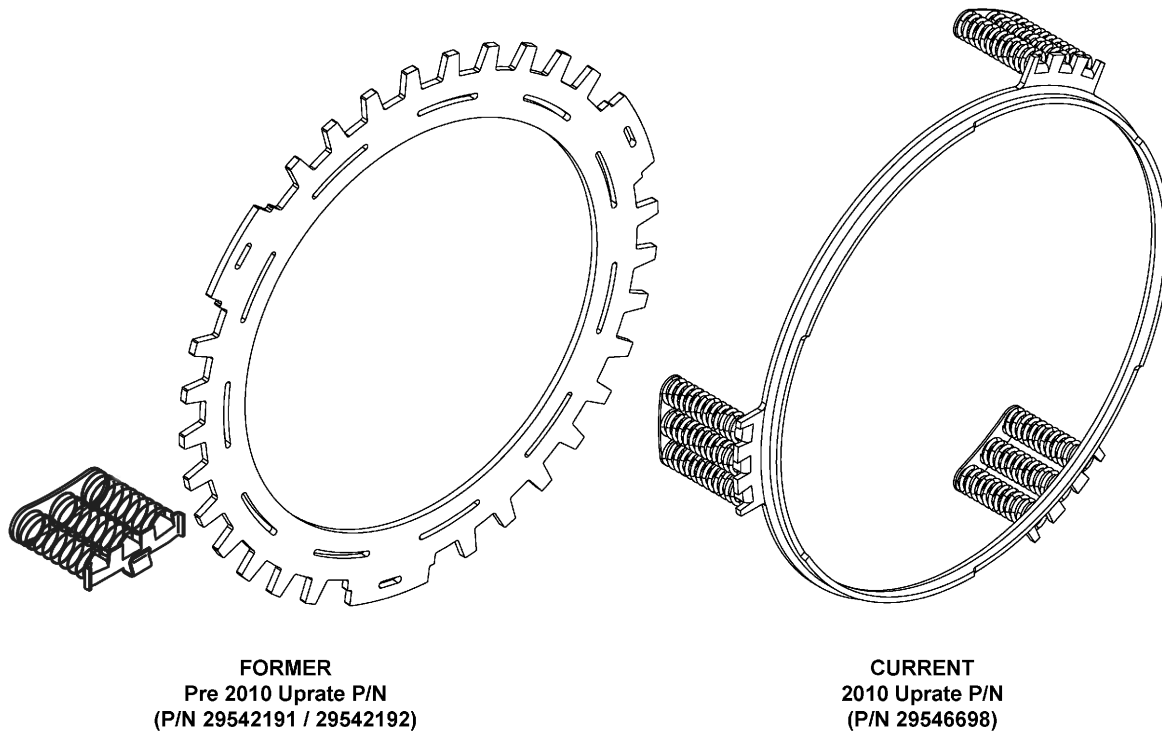


CAUTION: The current 2010 Uprate parts listed in Table 2 (Main Case) **can** be physically installed in Pre 2010 Uprate transmissions. However, a mix of pre-2010 Uprate and 2010 Uprate parts **will cause transmission damage**.



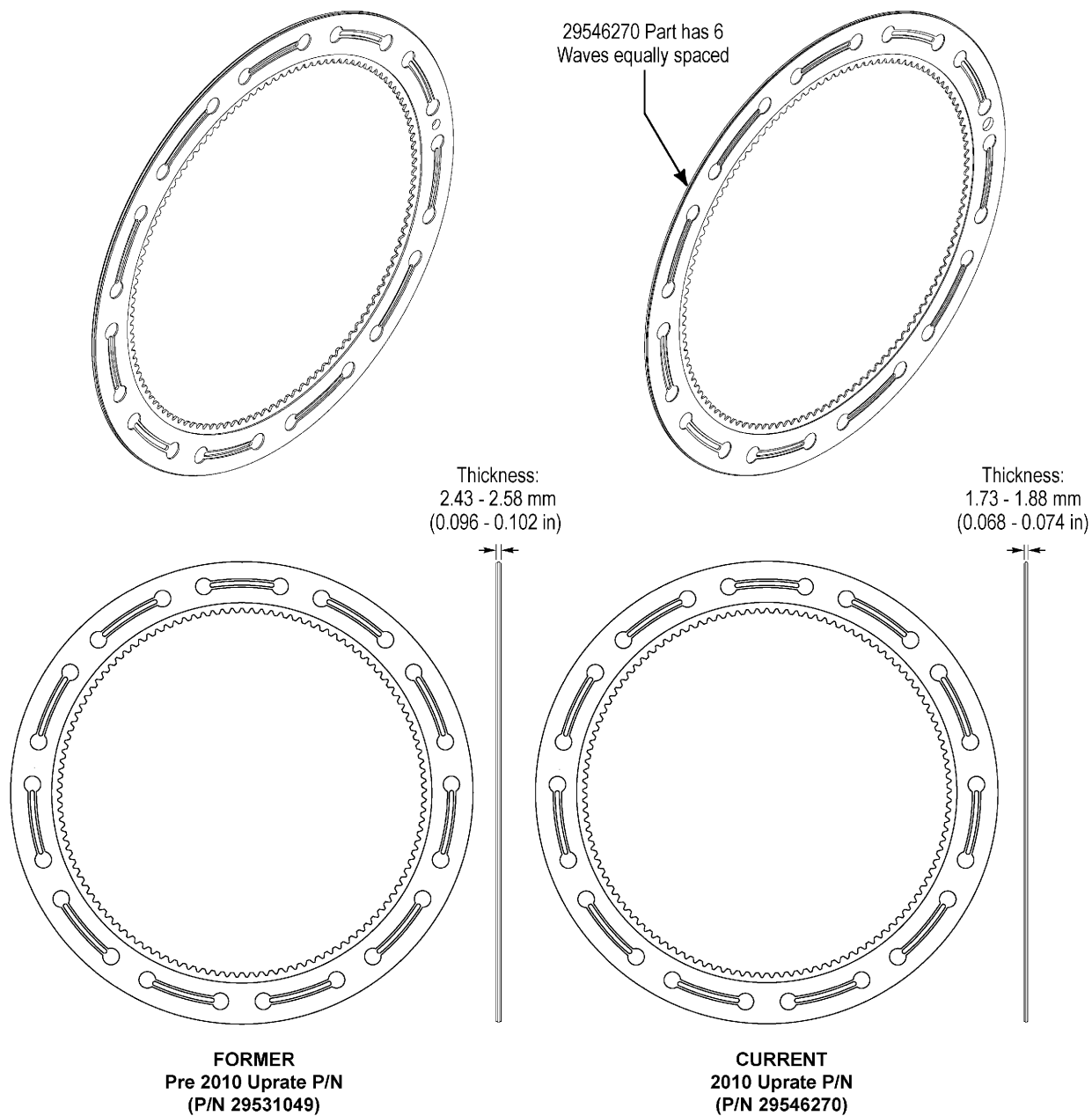
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Figure 2. C3/C4 Piston



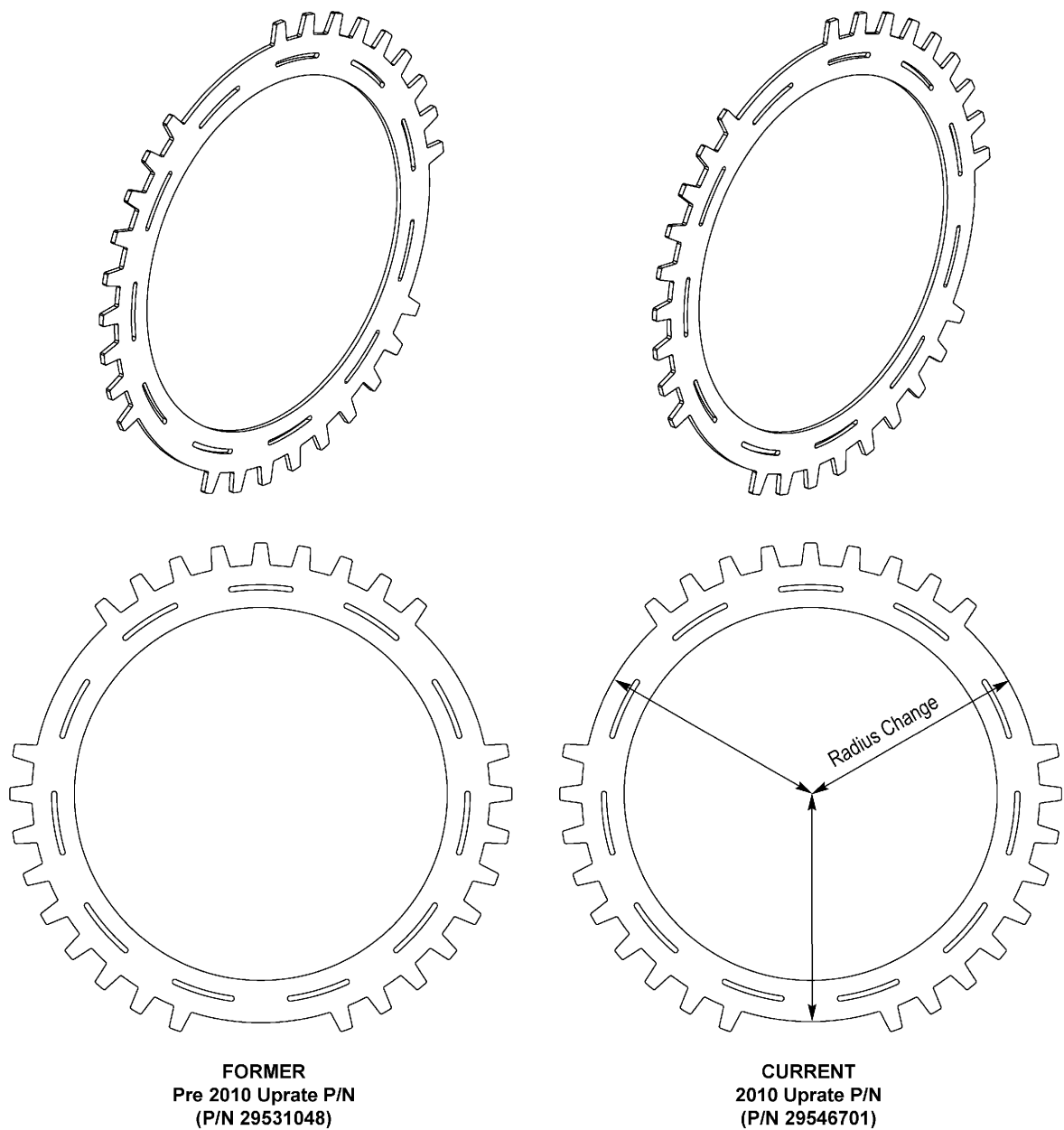
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Figure 3. C3/C4 Spring Plate Assembly



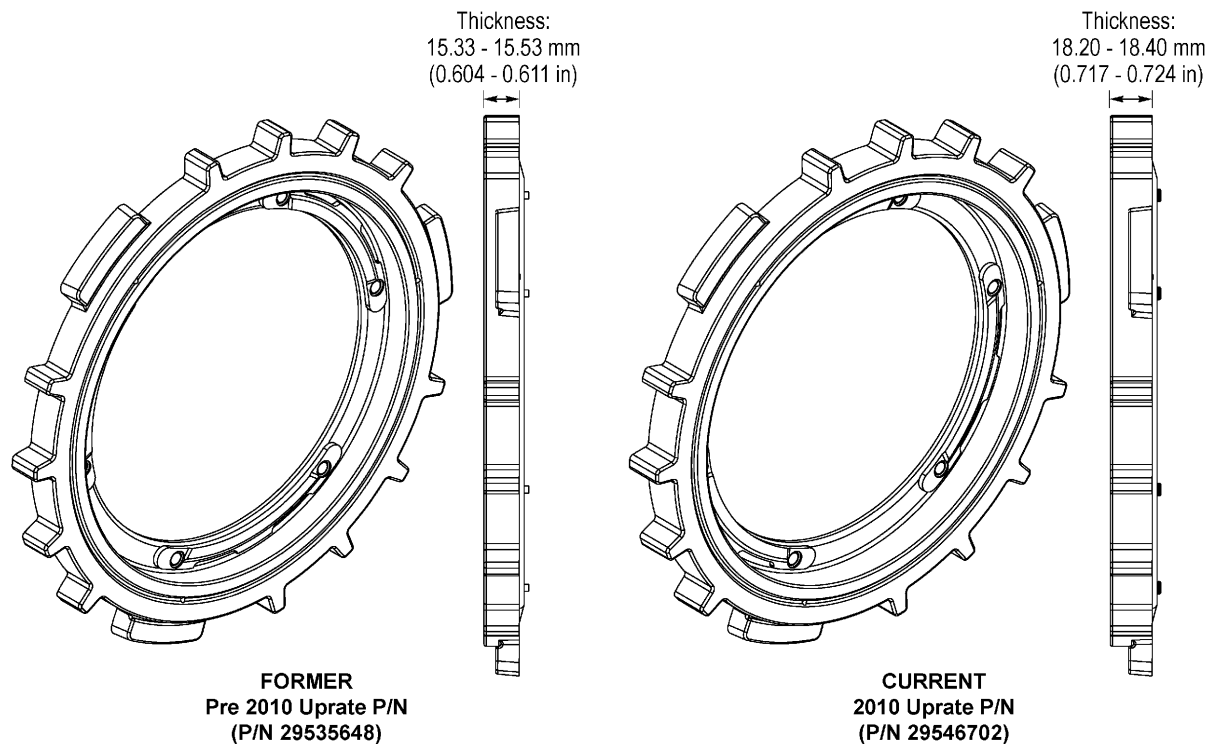
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Figure 4. C3/C4 Friction Plate



80953

Figure 5. C3/C4 Reaction Plate



80965

Figure 6. C3 Backing Plate Assembly

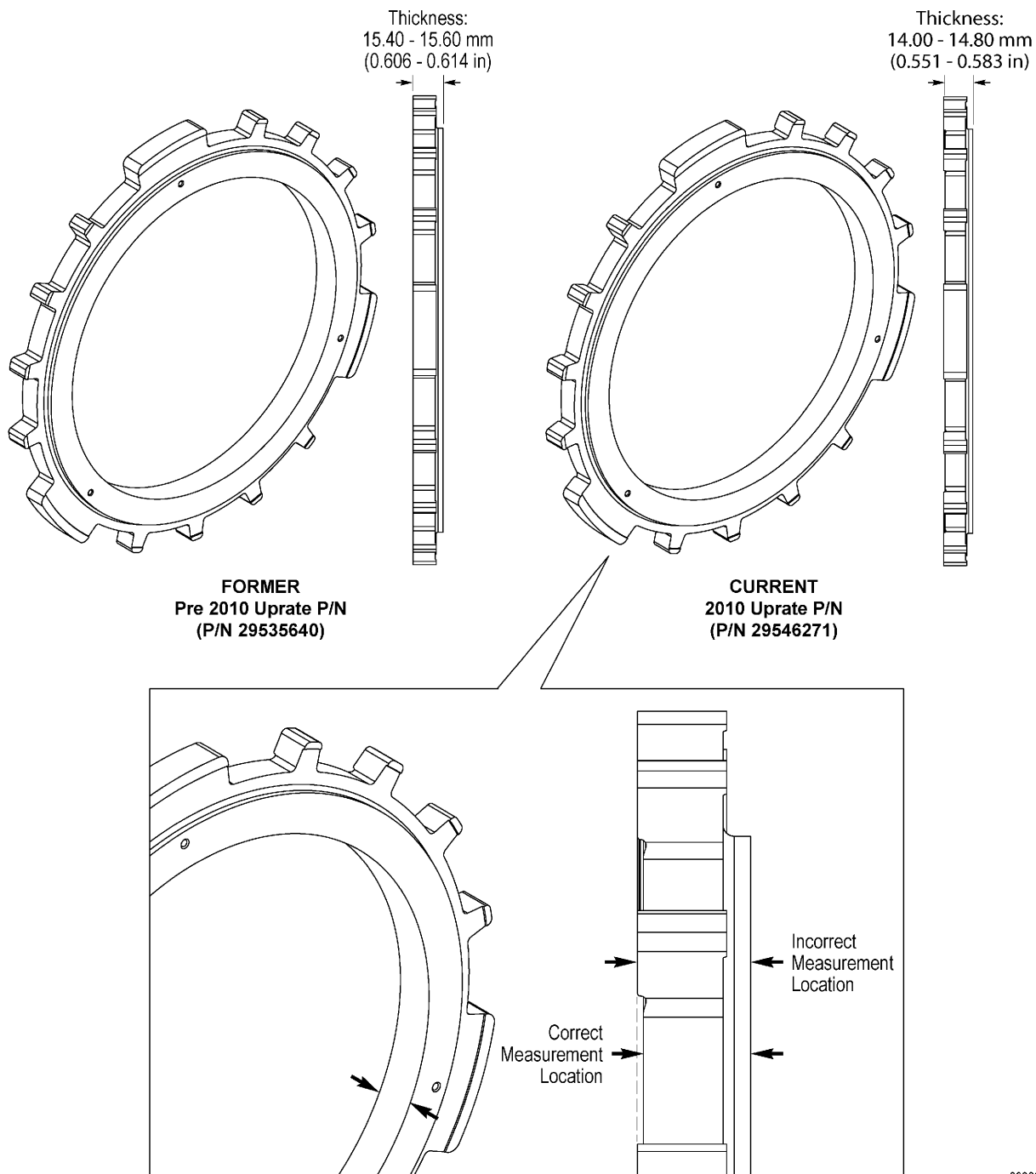


Figure 7. C4 Backing Plate

Converter Housing (34 Group)

Table 3. Converter Housing

Part Name	Pre Jan 2010 P/N	Jan 2010 P/N	Description of Change
Converter Housing SAE #3 (#12)	29536810	29547463	SAE #12 Integral Cooler Ports
Converter Housing SAE #3 (#8)	29538610	29547463	SAE #12 Integral Cooler Ports
Converter Housing SAE #2	29536710	29547462	SAE #12 Integral Cooler Ports
Cooler Manifold	29536297	N/A	No longer part of integral converter housing
Cooler Manifold Gasket	29531189	N/A	No longer part of integral converter housing
Cooler Manifold Channel Plate	29531190	N/A	No longer part of integral converter housing

Interchangeability:

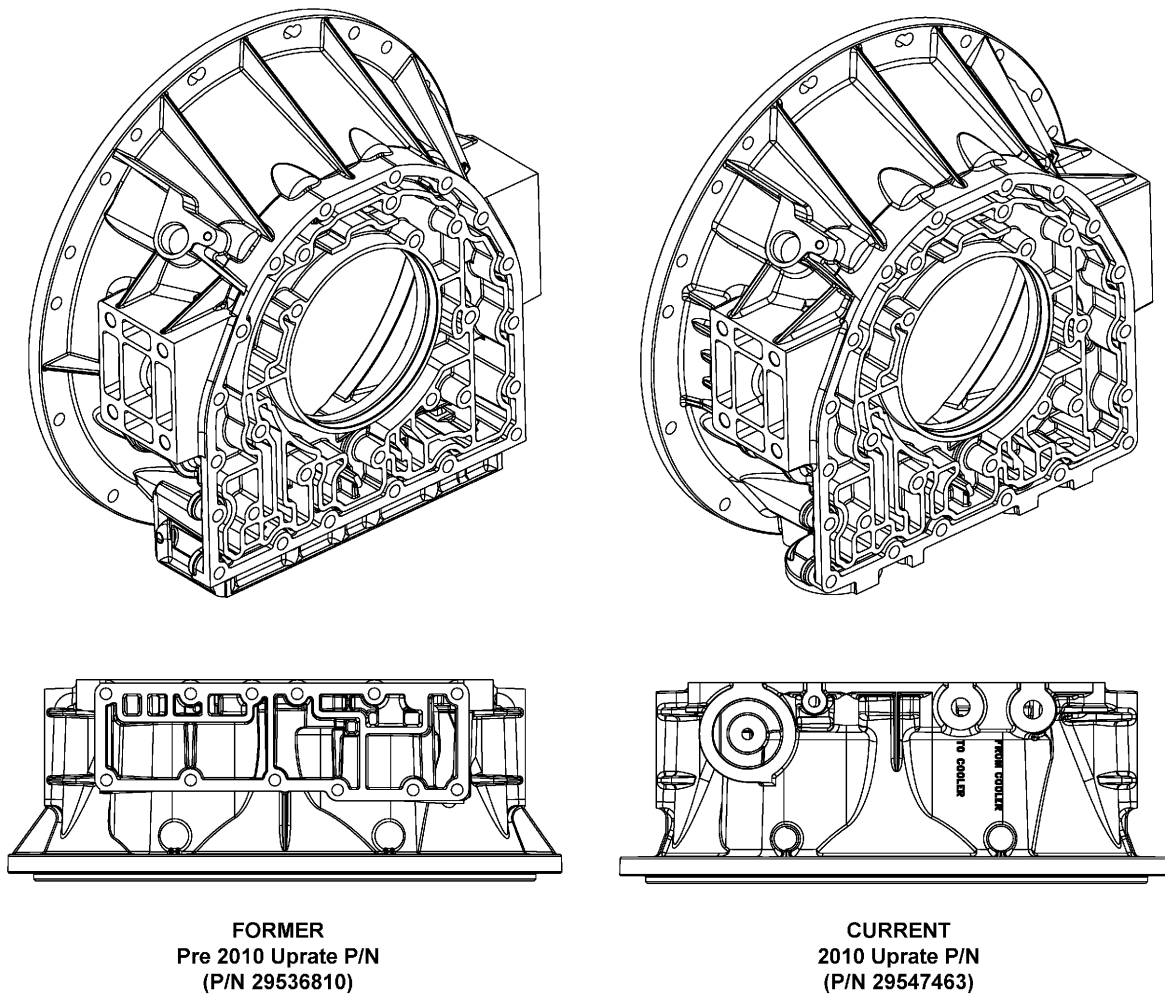
All models of the current 2010 Uprate Converter Housings listed in [Table 3](#) are interchangeable backwards providing the, "to and from", transmission cooler lines can be adapted to fit (if required).

Parts Modifications:

The Converter Housing Cooler Manifold has been removed from the 2010 Uprate design making transmission cooler ports integral to the Converter Housing.

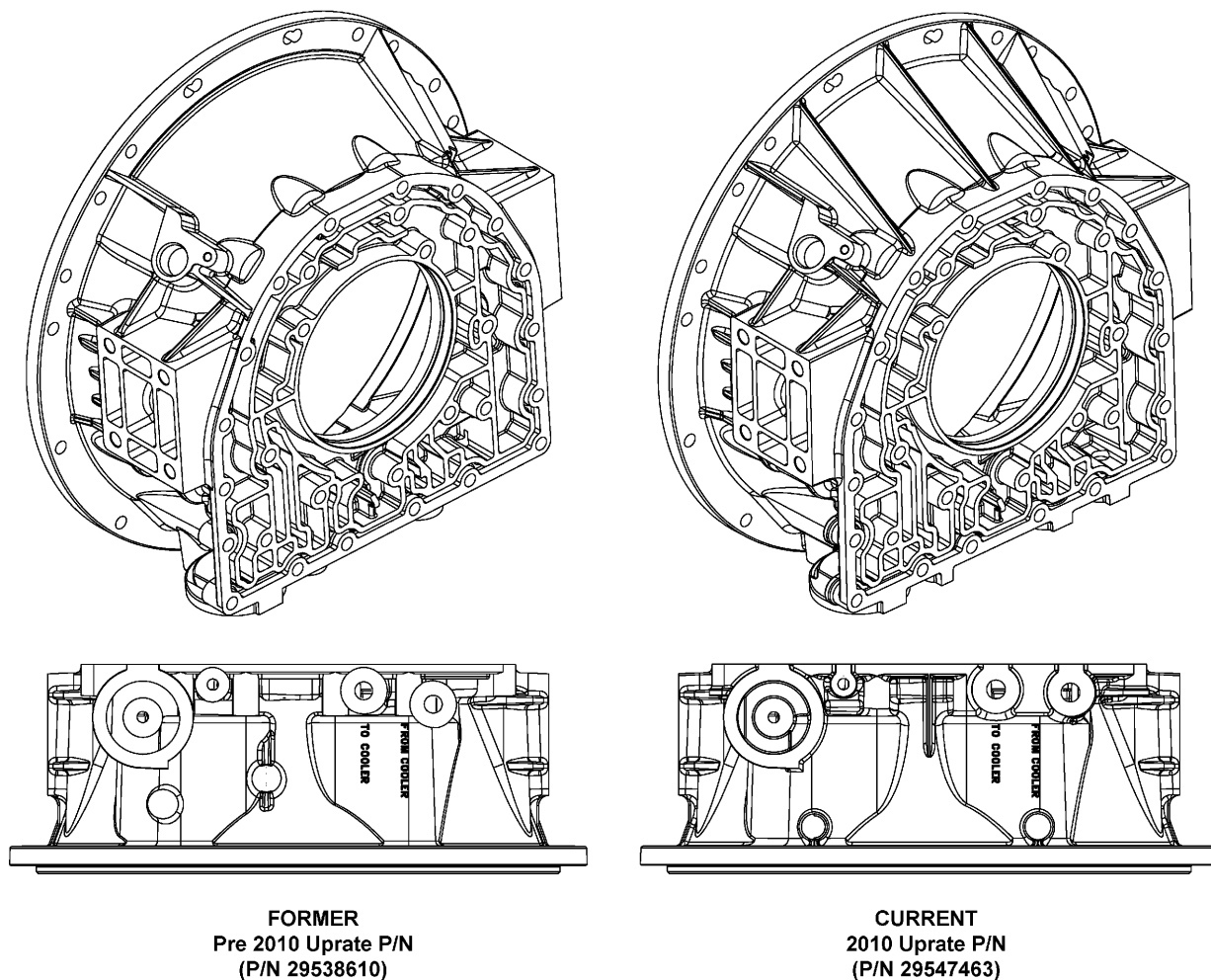
Service Parts Information:

The Converter Housing is a use stock change. Once stock is depleted the 2010 Uprate parts will be available for order from the Allison PDC. The Cooler Manifold, Cooler Manifold Gasket and Cooler Manifold Channel Plate have been cancelled from production, maintained for service, and are available for purchase from the Allison PDC.



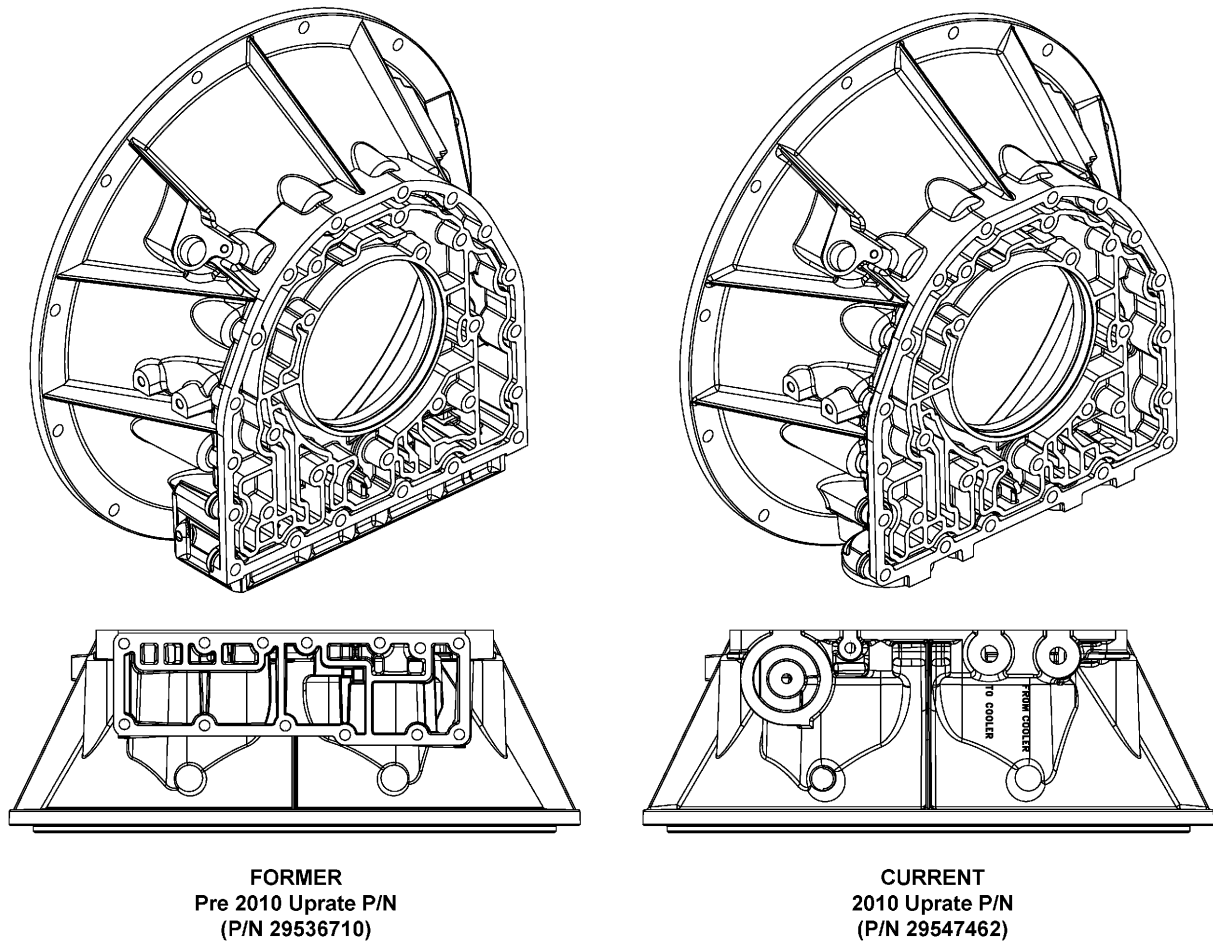
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Figure 8. Converter Housing SAE #3 (#12 Cooler Ports)



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Figure 9. Converter Housing SAE #3 (#8 Cooler Ports – Former and #12 Cooler Ports – Current)



81251

Figure 10. Converter Housing SAE #2

Output Shaft Assembly (39 Group)

Table 4. Output Shaft Assembly

Part Name	Pre 2010 Uprate P/N	2010 Uprate P/N	Description of Change
Output Shaft Assembly	29536845	29546744 *	Lube orifice size change
*This part was early released into production in July 2009. See SIL 16-1K2K-09			

Interchangeability:



CAUTION: 2010 Uprate shaft parts **must** be used as a set. Replacing individual shafts with 2010 Uprate shaft parts to service Pre 2010 Uprate transmissions, so that a mix of Pre 2010 Uprate and 2010 Uprate shafts are operating together, **may cause transmission damage**.

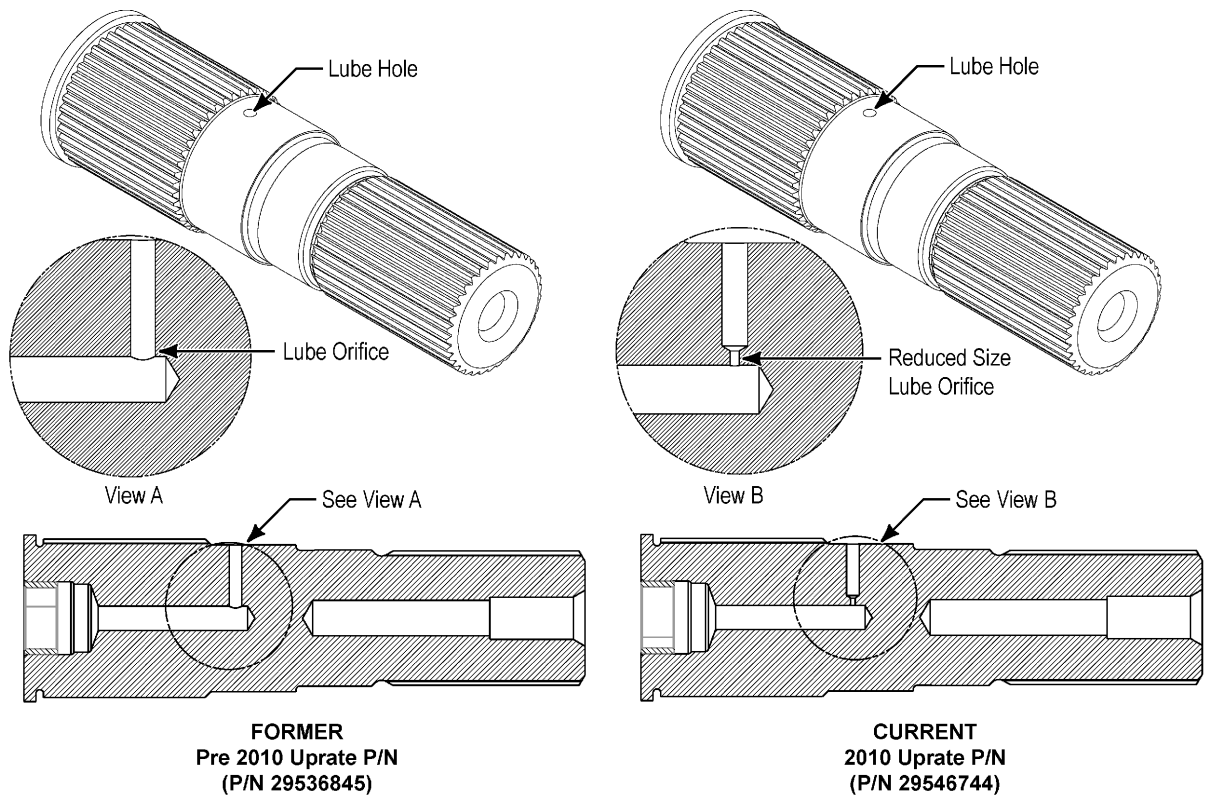
2010 Uprate shafts must be operated in sets to achieve reduced spin losses and maintain balanced lube pressure. The set includes Ground Sleeve, Turbine Shaft Assembly, Main Shaft, and Output Shaft Assembly.

Parts Modifications:

The lube hole is step drilled to reduce the diameter of the lube orifice.

Service Parts Information:

All Pre 2010 Uprate shafts will be completely cancelled from production and maintained for service. The Pre 2010 Uprate shafts will be available for purchase from the Allison PDC.



81265

Figure 11. Output Shaft Assembly

Main Suction Filter (37 Group)

Table 5. Main Suction Filter

Part Name	Pre 2010 Uprate P/N	2010 Uprate P/N	Description of Change
Suction Filter – Shallow Pan	29537965	29542833 *	Increased filtration capacity and lower flow restriction
Suction Filter – Standard Pan	29537966	29542824 *	Increased filtration capacity and lower flow restriction
*This part was early released into production in July 2009. See SIL 16-1K2K-09			

Interchangeability:

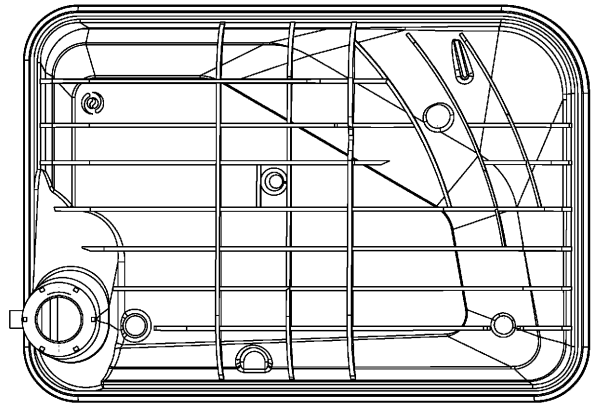
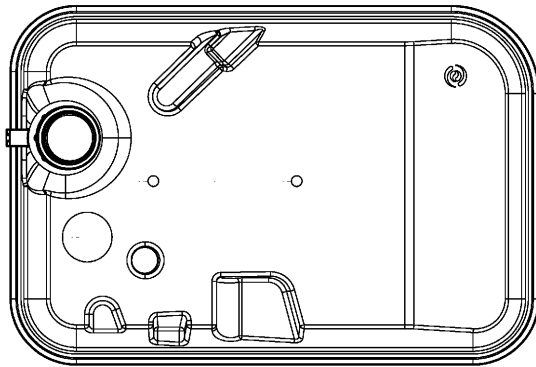
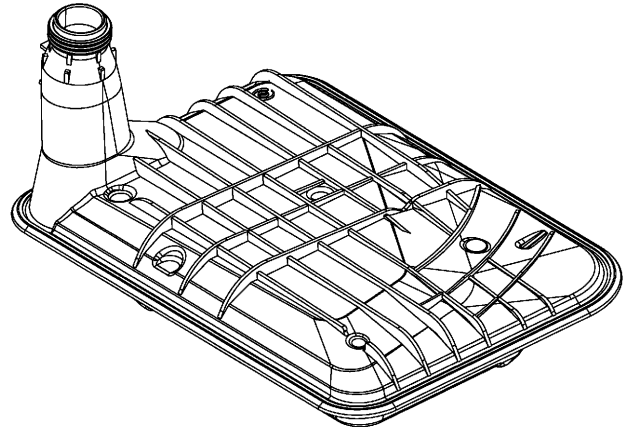
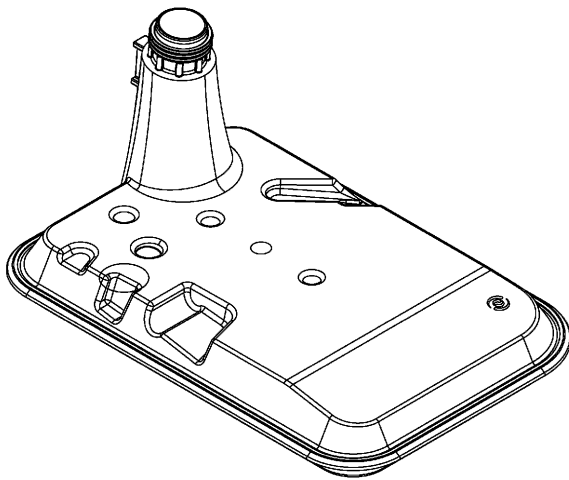
The 2010 Uprate Standard Pan Suction Filter P/N 29542824 listed in [Table 5](#) is completely interchangeable backwards. The current Shallow Pan Suction Filter P/N 29542833 listed in [Table 5](#) is only interchangeable backwards to MY06 Gen-IV Controls. For more information please reference SIL 12-1K2K-10.

Parts Modifications:

The 2010 Uprate suction filters have been redesigned to accommodate the 2010 Uprate valve body configuration. Refer to [Figure 12](#) and [Figure 13](#).

Service Parts Information:

The former Standard Pan Suction Filter, P/N 29537966, has been completely cancelled. The current Standard Pan Suction Filter, P/N 29542824, is available for purchase from the Allison PDC. Both the former Shallow Pan Suction Filter, P/N 29537965, and the current Shallow Pan Suction Filter, P/N 29542833, will be available for purchase from the Allison PDC.

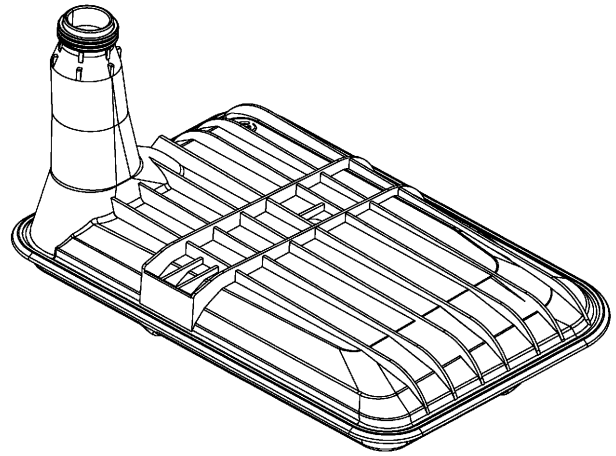
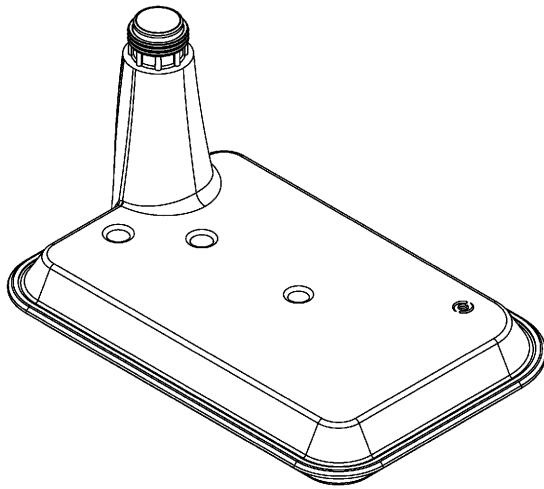


FORMER
Pre 2010 Uprate P/N
(P/N 29537965)

CURRENT
2010 Uprate P/N
(P/N 29542833)

Figure 12. Suction Filter Shallow Pan

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FORMER
Pre 2010 Uprate P/N
(P/N 29537966)

CURRENT
2010 Uprate P/N
(P/N 29542824)

Figure 13. Suction Filter Standard Pan

81557

Rotating Clutch - With and Without PTO (14 group)

Table 6. Rotating Clutch with and without PTO

Part Name	Pre 2010 Uprate P/N	2010 Uprate P/N	Description of Change
Clutch and Shaft Assy — Rotating, PTO	29545811 29549726*	29546281	Changes to accommodate increased horsepower and torque ratings
Housing and PTO Gear Assembly	29542802	29547424 *	Reduced size lube orifice
Clutch and Shaft Assy — Rotating non-PTO	29545812 29549727*	29546282	Changes to accommodate increased horsepower and torque ratings
Housing and Tone Wheel Assembly	29542804	29547425 *	Reduced size lube orifice
Housing Assembly and Bushing	29542699	29546704 *	Reduced size lube orifice
Rotating Clutch Housing	29542700	29546585 *	Reduced size lube orifice
C1 Friction Plate	29538468 (6)	29546276 (7)	Changes to accommodate increased horsepower and torque ratings (thinner friction plate thickness)
C1 Reaction Plate	29530314 (6)	29530314 (7)	Changes to accommodate increased horsepower and torque ratings
Housing C1	29542811	29546277	Bleed hole relocated from C1 piston
Piston C1	29543239	29549579	Bleed hole removed
C2 Hub	29536962	29546705 *	Vent holes added
P1 Drive Flange	29531094	29546706 *	Vent holes added
Turbine Shaft Assembly	29539506	29548947 *	Reduced size lube orifice
Main Shaft	29536984	29546284 *	Reduced size lube orifice
*This part was early released into production in July 2009. See SIL 16-1K2K-09			

Interchangeability:

The current 2010 Uprate Rotating Clutch Housing P/N 29546585, included in part numbers P/N 29546704, P/N 29547425, P/N 29546282, P/N 29547424, and P/N 29546281, is backwards compatible to the S/N breakpoints of the MY06 hardware design change (see SIL [13-1K2K-05](#)).

The current 2010 Uprate P2 Drive Hub P/N 29546705 and P1 Drive Flange P/N 29546706 are backwards compatible to the S/N breakpoints of the MY06 hardware design change (see SIL [13-1K2K-05](#)).

The current 2010 Uprate C1 Friction Plates P/N 29546276 , C1 Housing P/N 29546277, and C1 Piston P/N 29546278 are **not** interchangeable backward with the former Pre 2010 Uprate design.

The C1 Reaction Plates P/N 29530314 are the same design. The quantity has been increased from six (6) to seven (7) in the 2010 Uprate design.

The current 2010 Uprate Turbine Shaft Assembly P/N 29548947 and the Main Shaft P/N 29546284 are backwards compatible as long as all the Pre 2010 Uprate shafts are replaced with a set of current 2010 Uprate shafts. All of the former Pre 2010 Uprate shafts will be available for purchase so that all four 2010 Uprate shafts will not have to be purchased to replace any one Pre 2010 Uprate shaft.

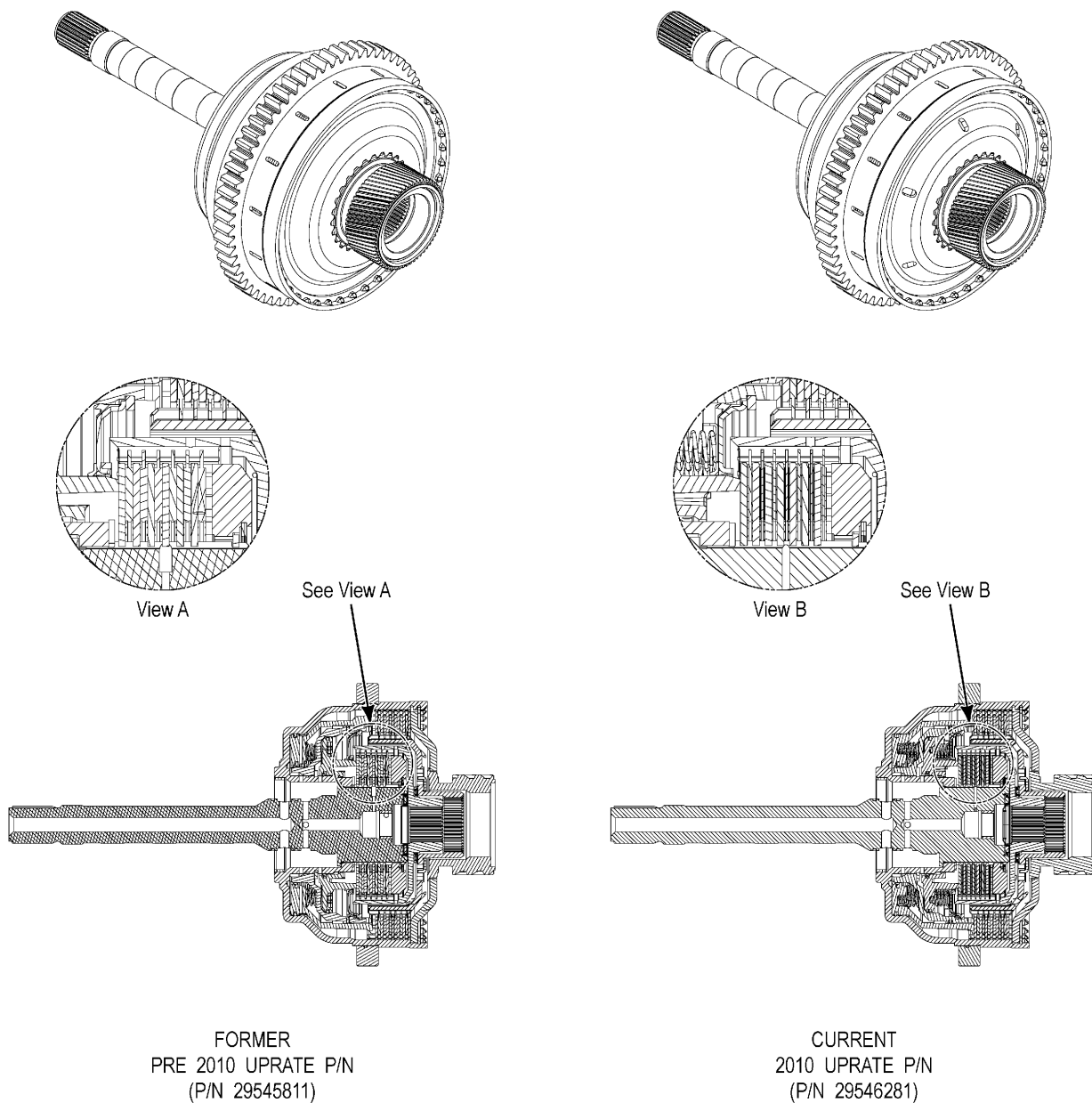
Parts Modifications:

Changes have taken place in the physical appearance of the parts found in [Table 6](#). Refer to Figures 13–22.

Service Parts Information:

The following former Pre 2010 Uprate parts will be available from the Allison PDC: C1 Friction Plates P/N 29538468, C1 Housing P/N 29542811, Turbine Shaft Assembly P/N 29539506, Main Shaft P/N 29536984, and C1 Piston P/N 29543239. All current 2010 Uprate parts will be available for purchase from the AllisonPDC except the Housing Assembly and Bushing P/N 29546704 and Rotating Clutch Housing P/N 29546585. These will be serviced with either the Rotating Clutch Housing and Tone Wheel Assembly P/N 29547425 or Rotating Clutch Housing and PTO Gear Assembly P/N 29547424.

All of the former Pre 2010 Uprate Shafts will be available for purchase so that all four 2010 Uprate shafts will not have to be purchased to replace any one Pre 2010 Uprate shaft.



83987

Figure 14. Clutch and Shaft Assembly Rotating with PTO *

*Part number 29549726 is the early release Clutch and Shaft Assembly-Rotating, PTO

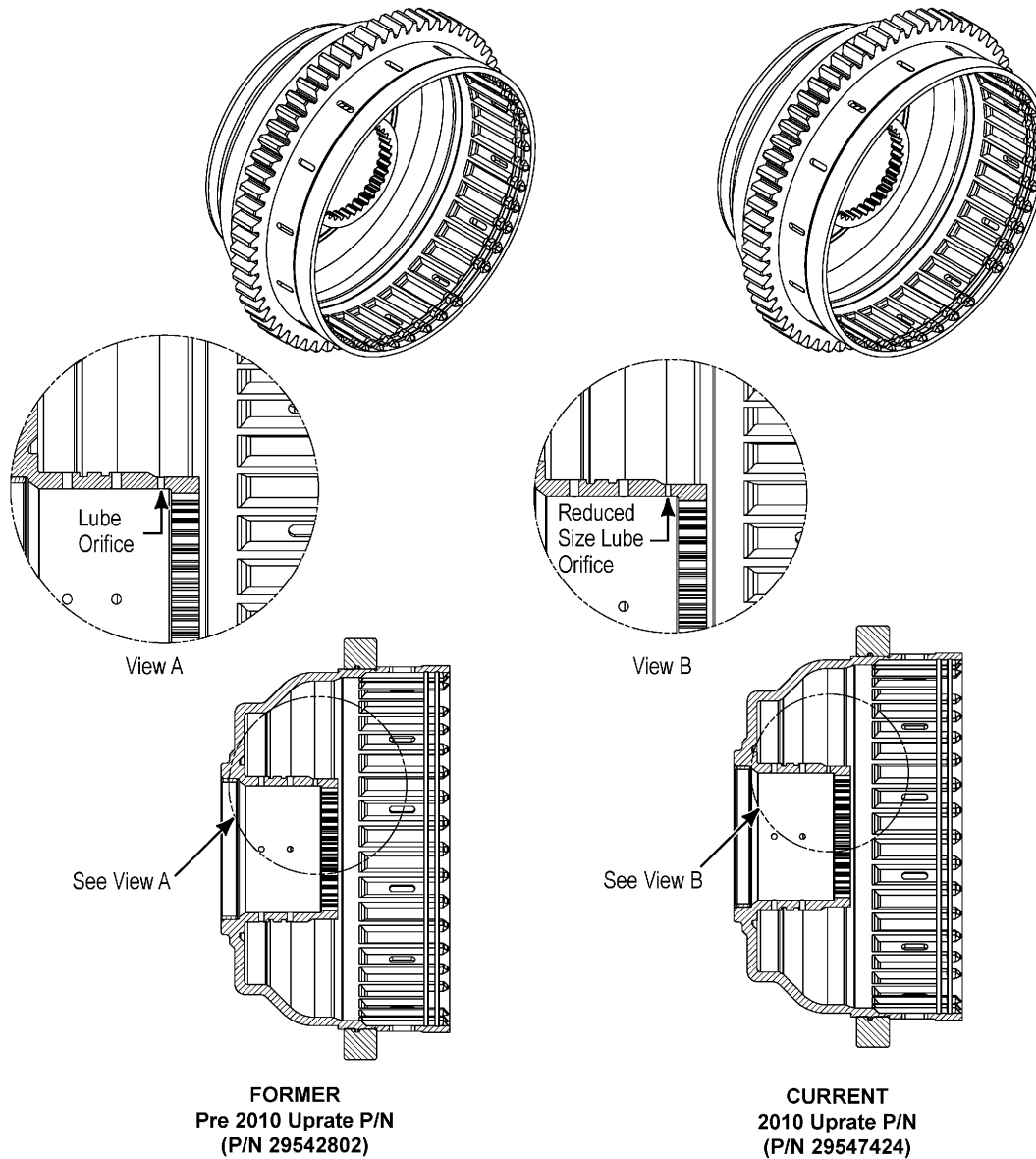
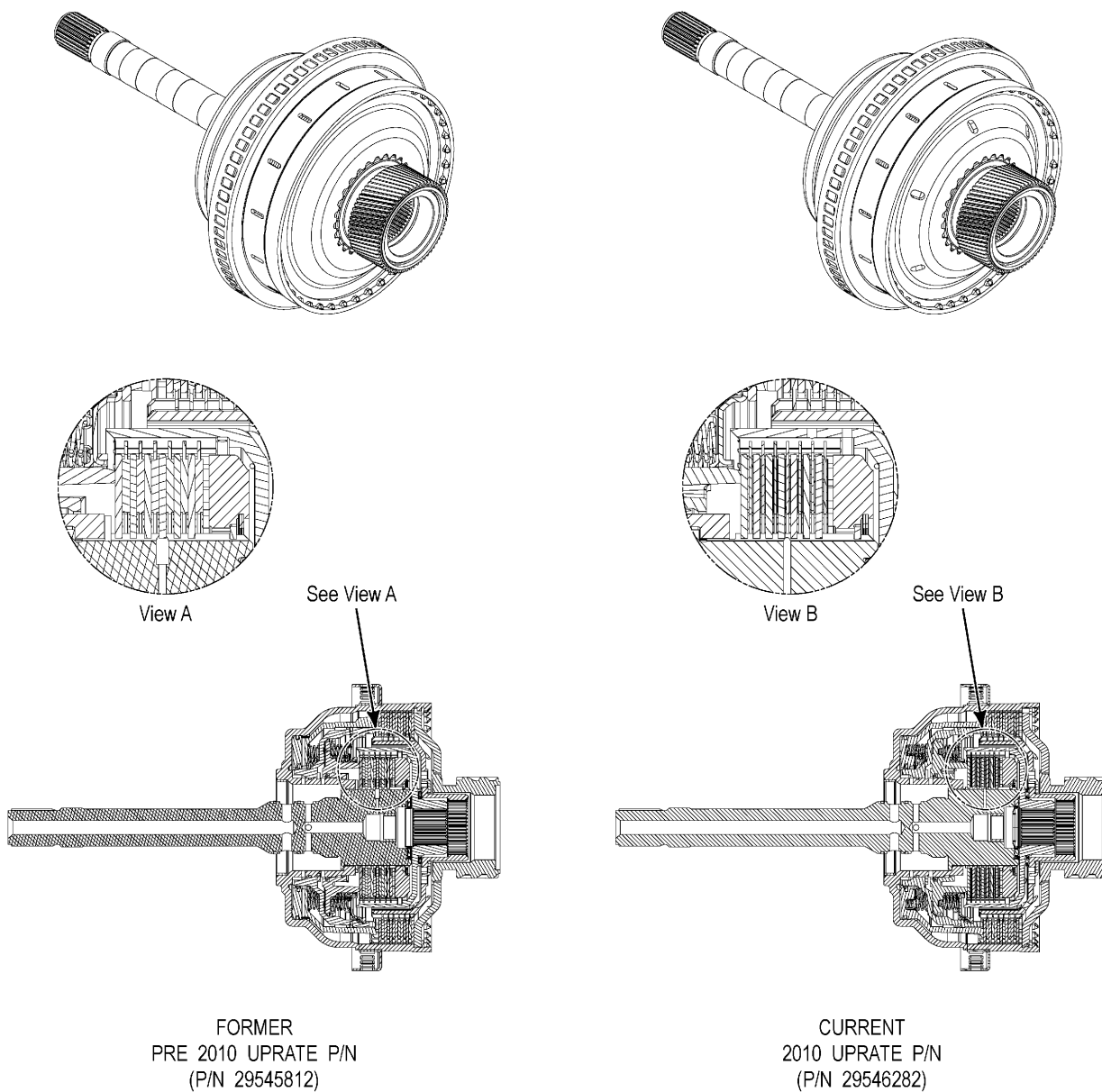


Figure 15. Housing and PTO Gear Assembly

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83979

Figure 16. Clutch and Shaft Assembly Rotating without PTO *

*Part number 29549727 is the early release Clutch and Shaft Assembly-Rotating, PTO

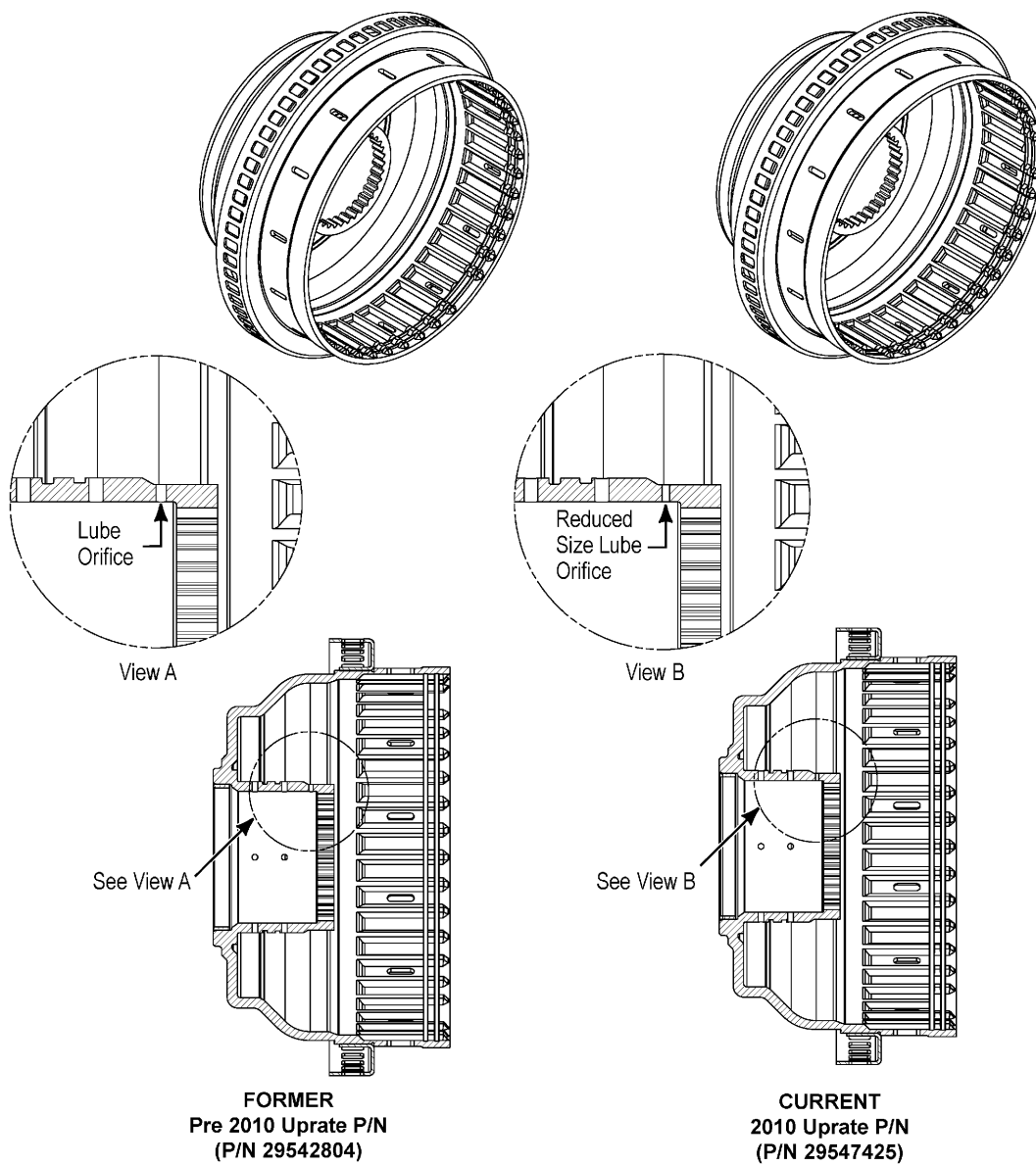
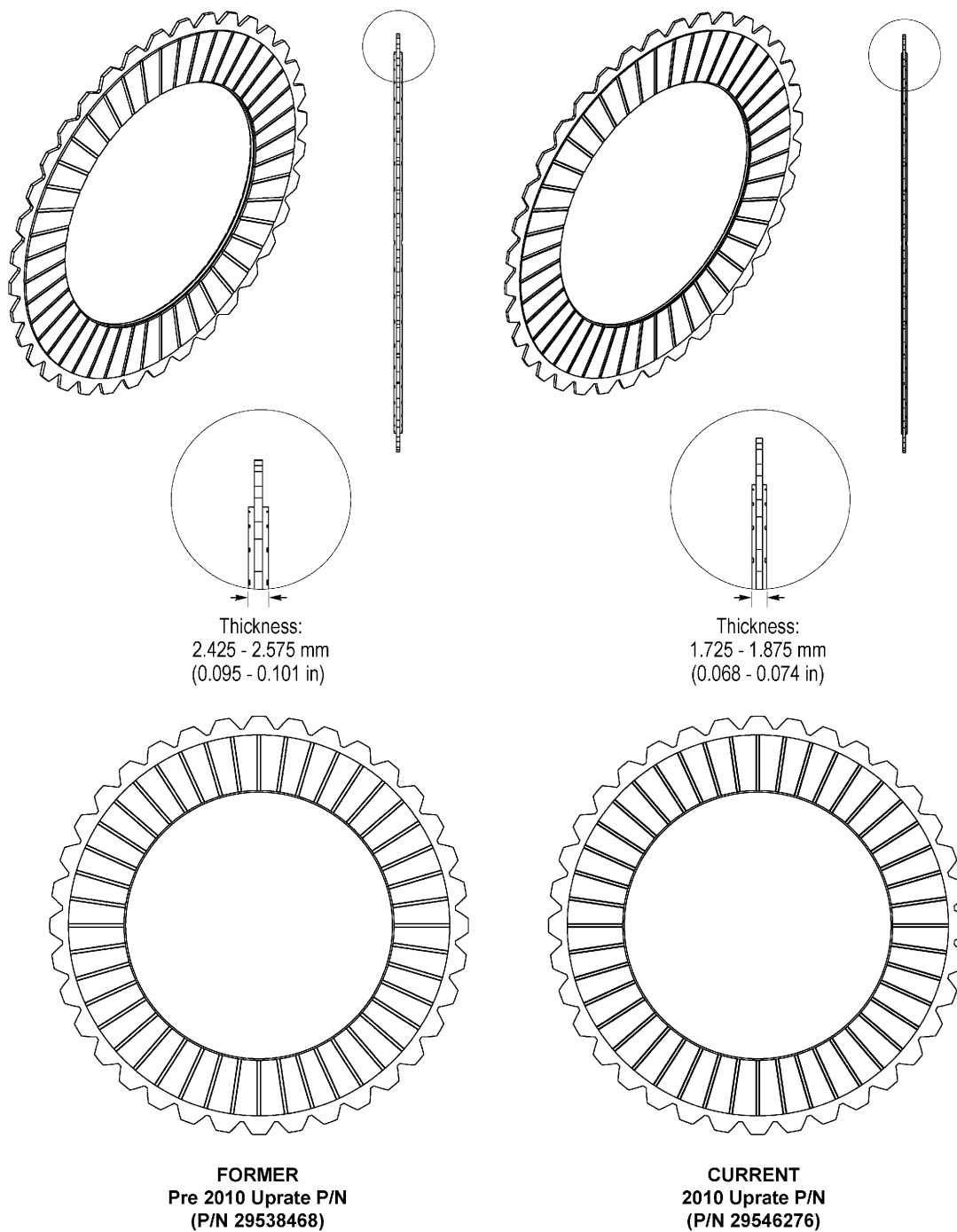


Figure 17. Housing and Tone Wheel Assembly

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Figure 18. C1 Clutch Friction Plate

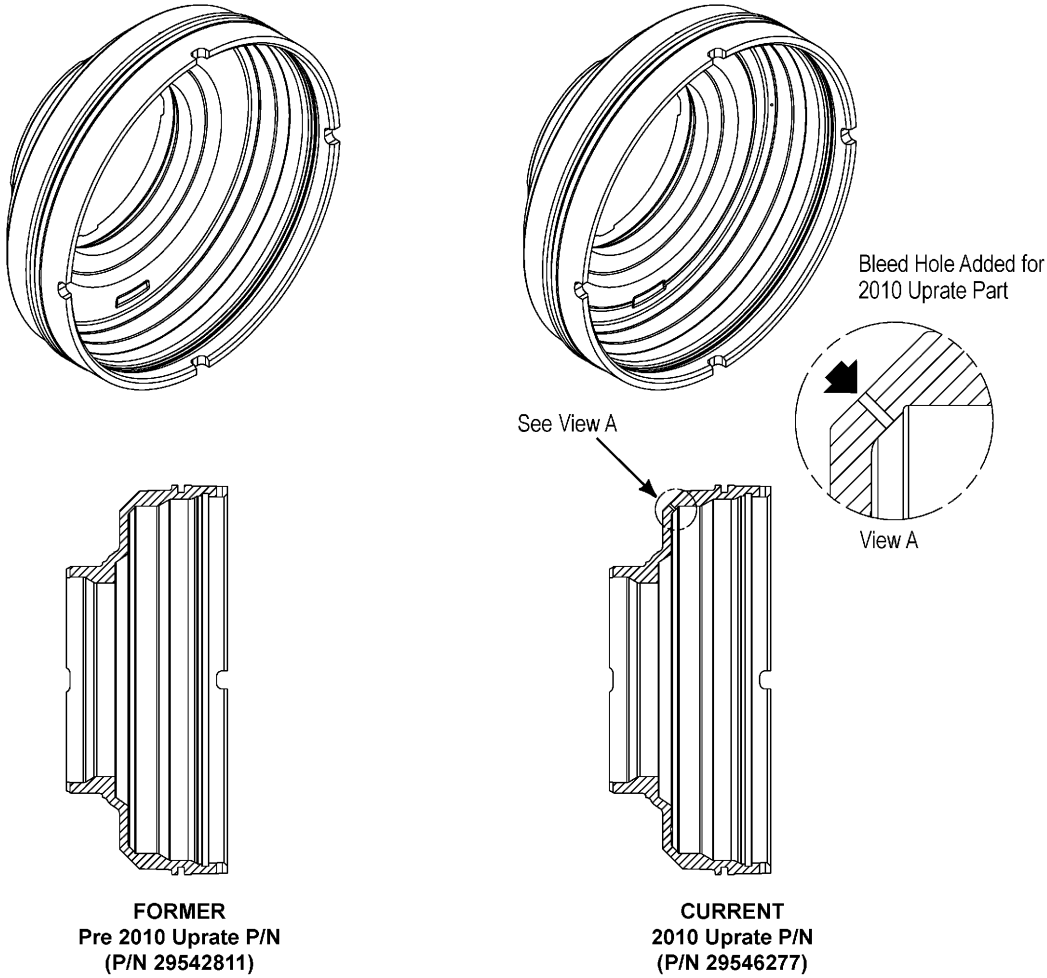
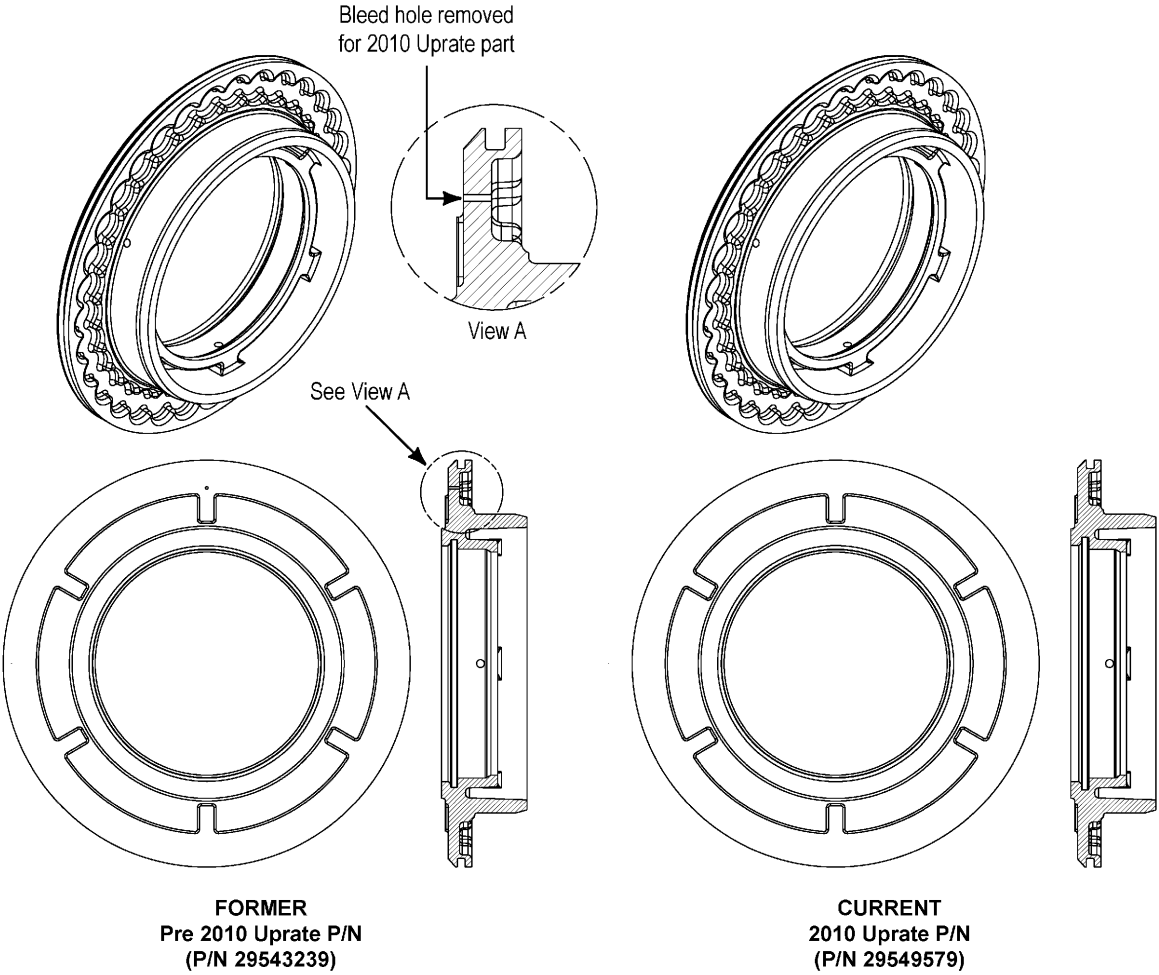


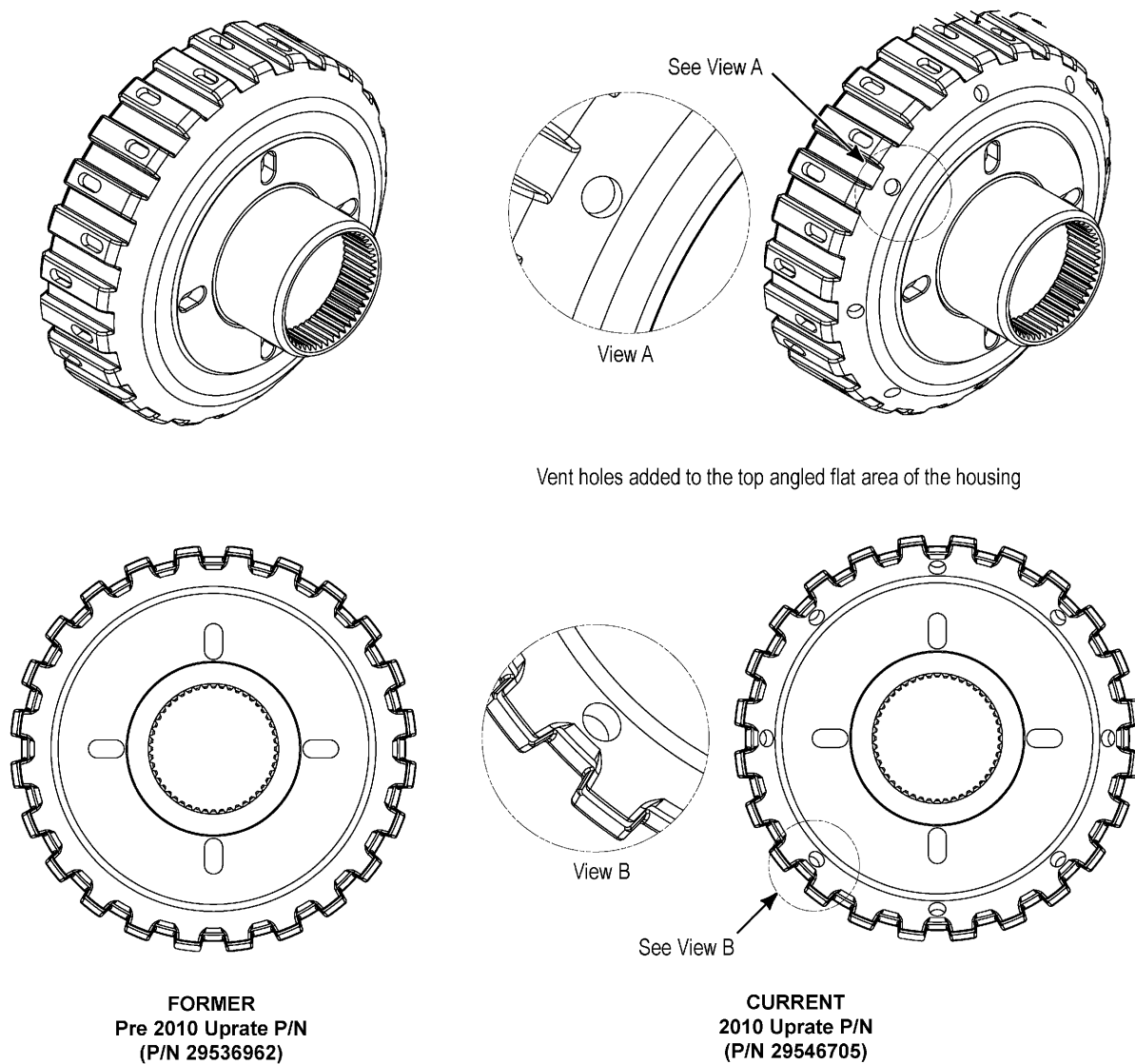
Figure 19. Housing C1

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84397

Figure 20. Piston C1



84399

Figure 21. C2 Hub

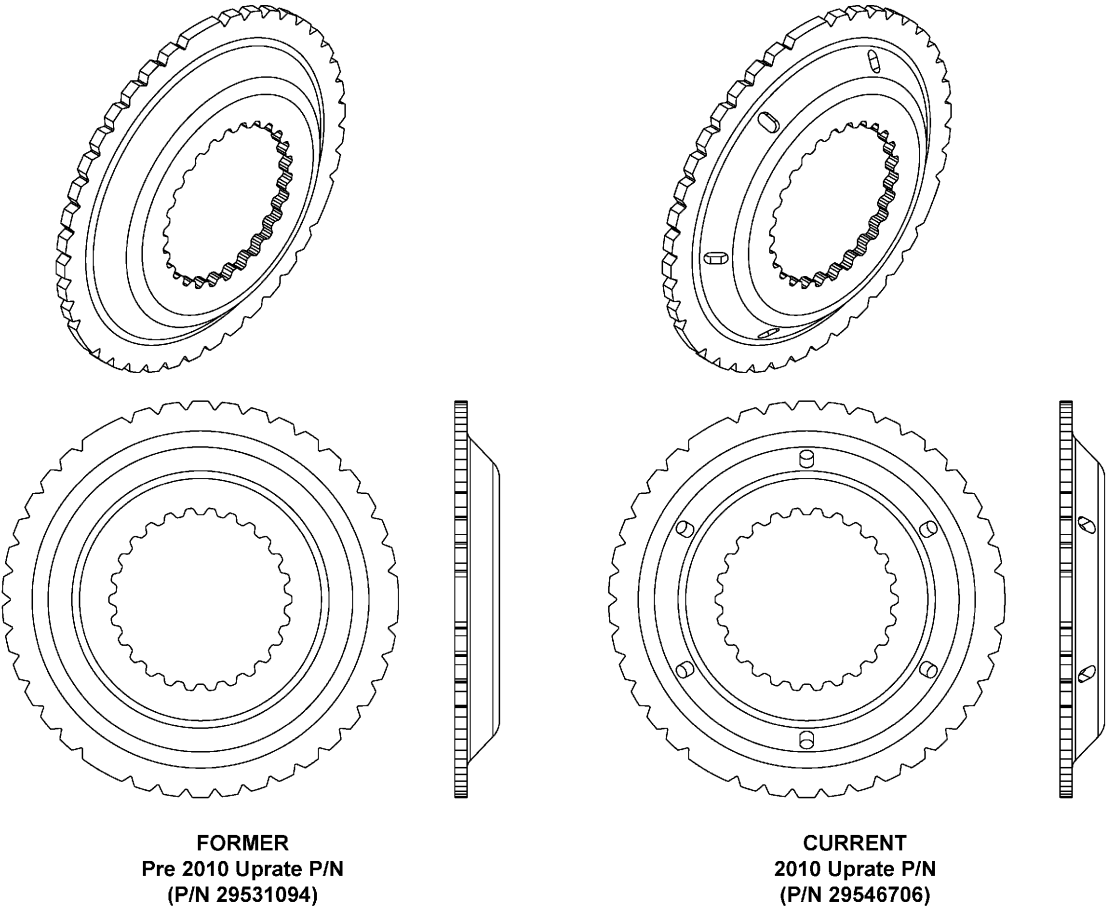
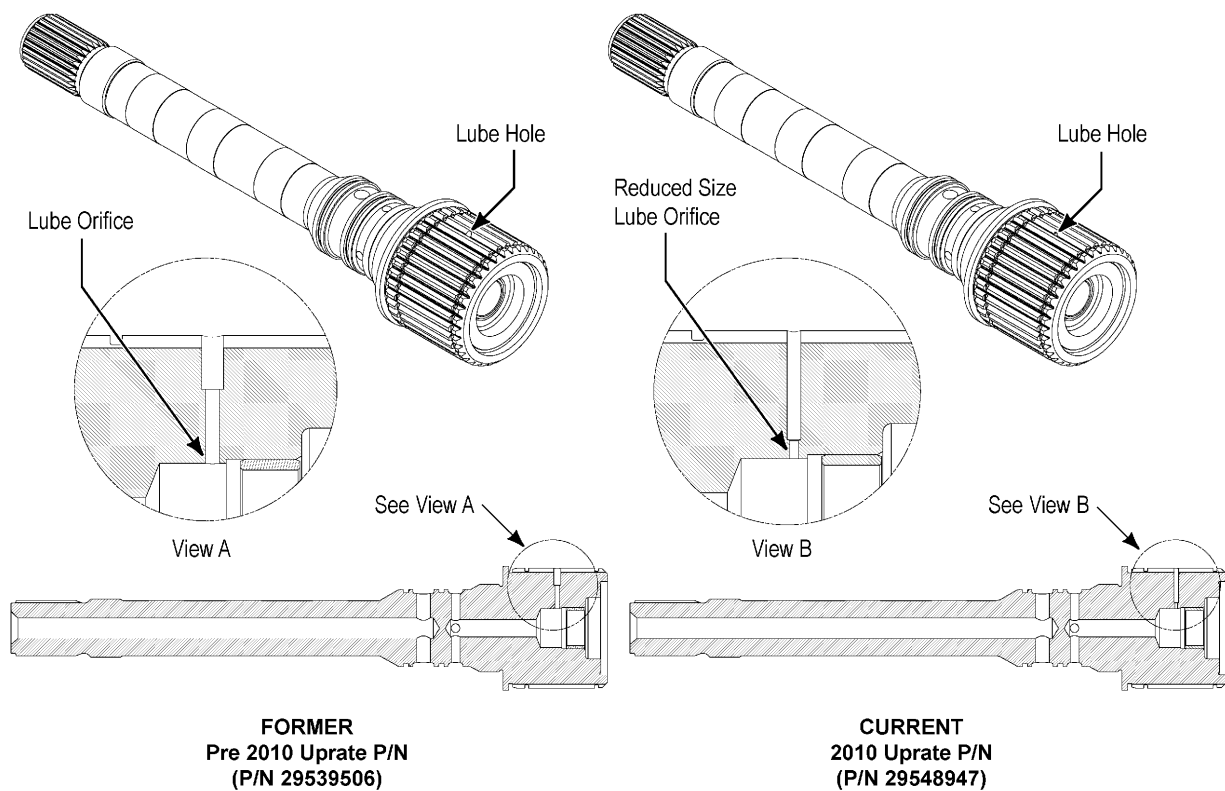


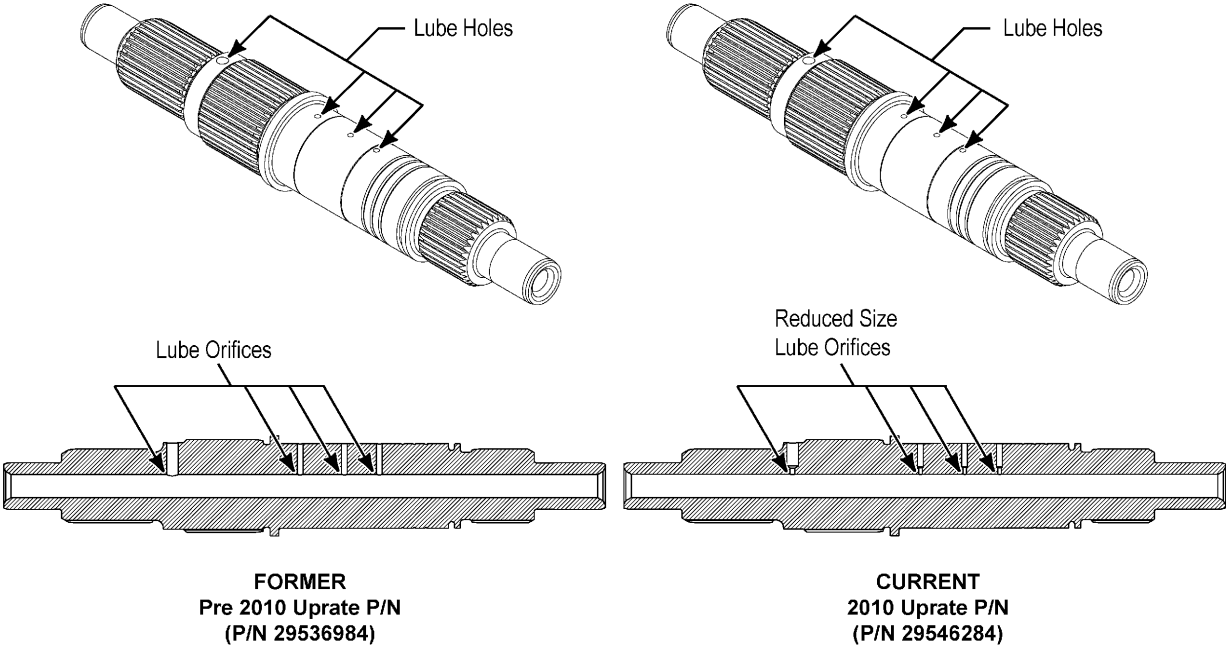
Figure 22. P1 Drive Flange

84401



84403

Figure 23. Turbine Shaft Assembly



84406

Figure 24. Main Shaft

Oil Pump Group (10 group)

Table 7. Oil Pump

Part Name	Pre 2010 Uprate P/N	2010 Uprate P/N	Description of Change
Support Assembly - Front	29547605 29549723 *	29547715	Not available, must buy detailed parts
Support Assembly - Front, Ground Sleeve and Bearing	29542793 29549724 *	29546323	Part of the 2010 Uprate front support design
Support Assembly and Ground Sleeve	29542794 29549725 *	29546324	Part of the 2010 Uprate front support design
Support - Front	29542795	29549325	Not available, must buy 29546323 assembly
Ground Sleeve and Bushing	29531309	29546302 *	Lube orifice size change
Ground Sleeve	29531015	29546283 *	Lube orifice size change
Main Pressure Regulator Valve	29541138 29547600	29547716	Part of the modified valve design
Spring - Main Pressure Regulator	29544465	29546317	Part of the modified valve design
Stop and O-ring assembly	N/A	29546314	Part of the modified valve design
Main Regulator Stop	29531018	29546318	Part of the modified valve design
O-ring	N/A	29546762	Part of the modified valve design
Converter Flow Valve	29541144 29547604	29547719	Part of the modified valve design
Converter Flow Valve Spring	29531024	29546320	Part of the modified valve design
Converter Flow Valve Stop	29531028	29546321	Part of the modified valve design
Seal Ring (3)	29538940	29546763	New seal ring design
Separator Plate	29541148	29546315*	Hole and slot change
Ball	N/A	453614	New Pop-Off Valve design
Plug Cap	N/A	8661701	New Pop-Off Valve design
Spring	29541228	29541228	New Pop-Off Valve design, same as Lube Regulator Spring
Retaining Pin	N/A	23049372	New Pop-Off Valve design
*This part was early released into production in July 2009. See SIL 16-1K2K-09			

Interchangeability:

The current 2010 Uprate Separator Plate P/N 29546315 is interchangeable back to the 04i Front Support SOP (SIL 13-1K2K-03). The Ground Sleeve and Bushing Assembly P/N 29546302 is interchangeable backwards, but **must** be used with all 2010 Uprate Turbine, Main, and Output shafts and **not** mixed with Pre 2010 Uprate Turbine, Main, and Output shafts. The remaining current 2010 Uprate parts included in [Table 7](#) are **not** interchangeable backwards with the Pre 2010 Uprate content.

Parts Modifications:

Many changes have taken place in the physical appearance of the parts found in [Table 7](#). Refer to Figures 23–27.

Spare Parts Information.

The former Pre 2010 Uprate parts that will be available for purchase from the Allison PDC are the Main Pressure Regulator Valve P/N 29541138, Main Pressure Regulator Spring P/N 29544465, Main Regulator Stop P/N 29531018, Converter Flow Valve P/N 29541144, Converter Flow Valve Spring P/N 29531024, Converter Flow Valve Stop P/N 29531028, Seal Ring P/N 29538940, Ground Sleeve and Bushing Assembly P/N 29531309, Ground Sleeve P/N 29531015, and the Front Support Assembly and Ground Sleeve and Bearing P/N 29549724 which will also service the Front Support Assembly and Ground Sleeve P/N 29549725 and the Front Support P/N 29542795.

All current 2010 Uprate parts listed in [Table 7](#) will be available for purchase from the Allison PDC except for the Front Support Assembly P/N 29547715 which is **not serviced as an assembly**.

The Front Support Assembly and Ground Sleeve P/N 29546324 and the Front Support P/N 29549325 will be serviced with the Front Support Assembly Ground Sleeve and Bearing P/N 29546323.



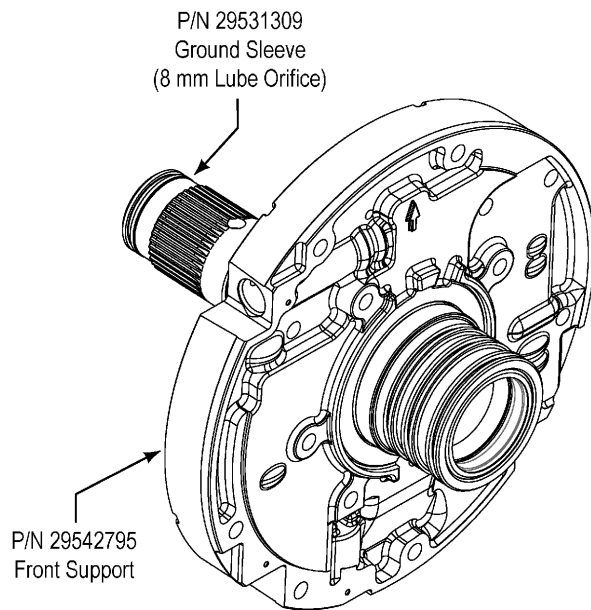
CAUTION: 2010 Uprate Shaft parts must be used as a complete set. Ground Sleeve and Bushing P/N 29546302 used in the Pre 2010 Uprate Front Support Assembly P/N 29549725, P/N 29549724, P/N 29549723 and also used in the 2010 Uprate Front Support Assemblies P/N 29546324, P/N 29546323, P/N 29547715 must be used with 2010 Uprate shafts, Turbine Shaft Assembly P/N 29548947, Main Shaft P/N 29546284, and Output Shaft Assembly P/N 29546744.

New Service Procedures:

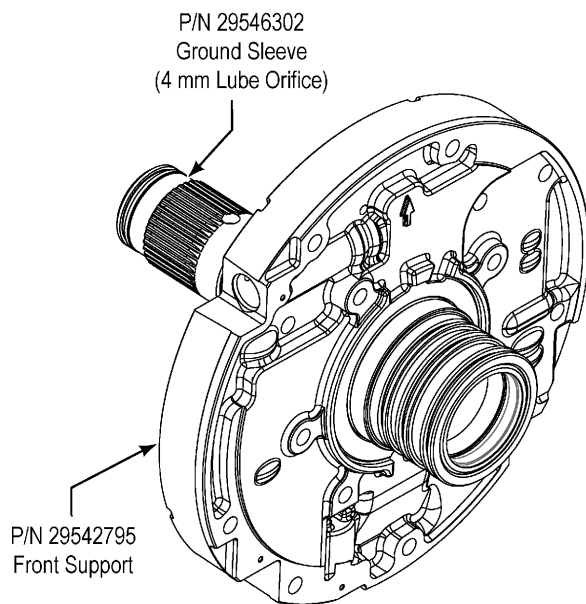
One of the new features included in the 2010 Uprate Front Support Assembly is the Pop-Off Valve system that regulates main pressure spikes during cold start up. Disassembly of the Pop-Off Valve system is not necessary unless visible debris is discovered during transmission overhaul or the front support is observed to be significantly contaminated with debris. No special tools are required to complete disassembly of the pop of valve system. A tap can be used to remove the plug cap and 90 degree needle nose pliers can be used to remove the retaining pin. The spring used in the Pop-Off Valve system is not a high force spring and does not exert a significant force on the retaining pin or ball and can be removed without difficulty. During the re-assembly process, after the ball, spring, and retaining pin have been installed, a new cup plug needs to be pressed into the retaining pin bore to hold the retaining pin in place.



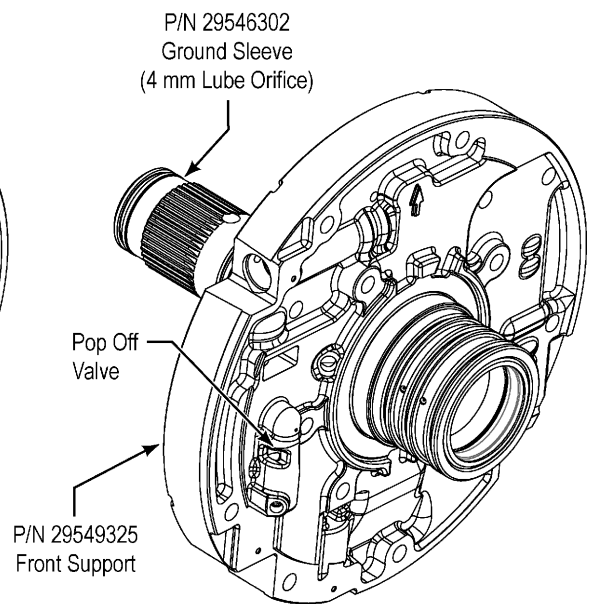
NOTE: New 2010 Uprate Spring data, see [Table 9](#).



**FORMER
MY06
(P/N 29542793)**



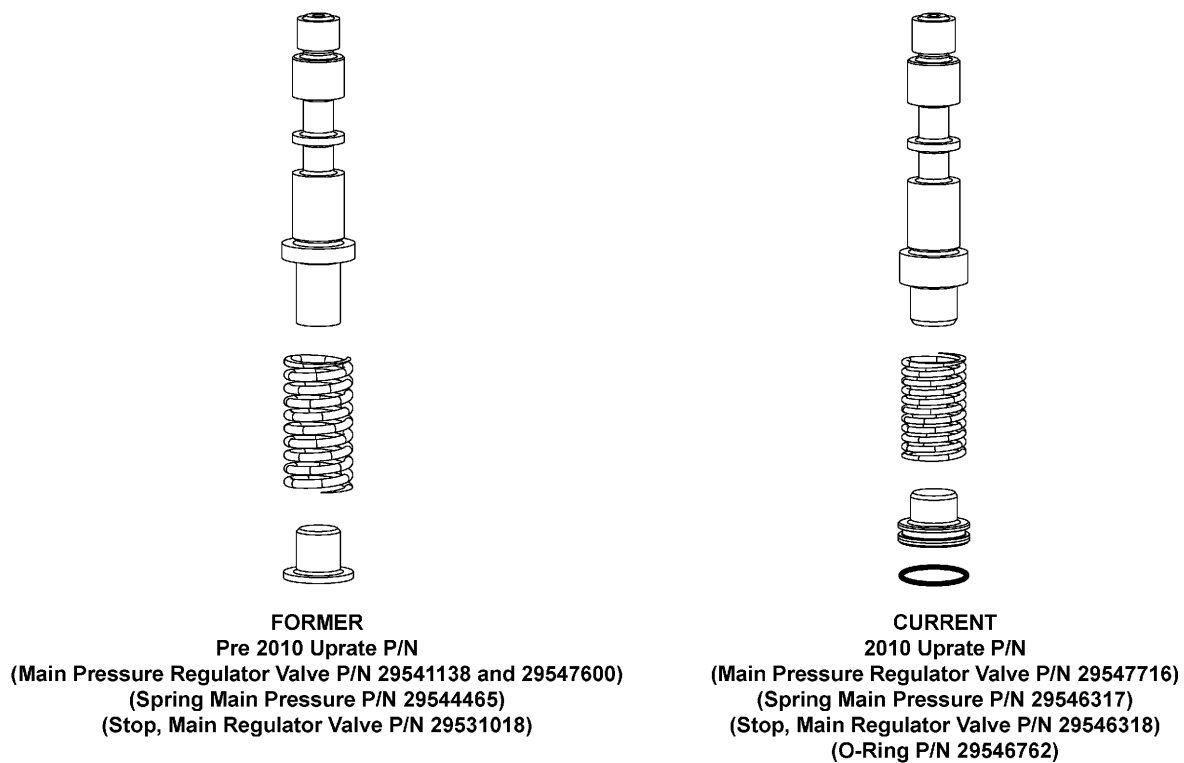
**FORMER
Pre 2010 Uprate P/N
(P/N 29549724)**



**CURRENT
2010 Uprate P/N
(P/N 29546323)**

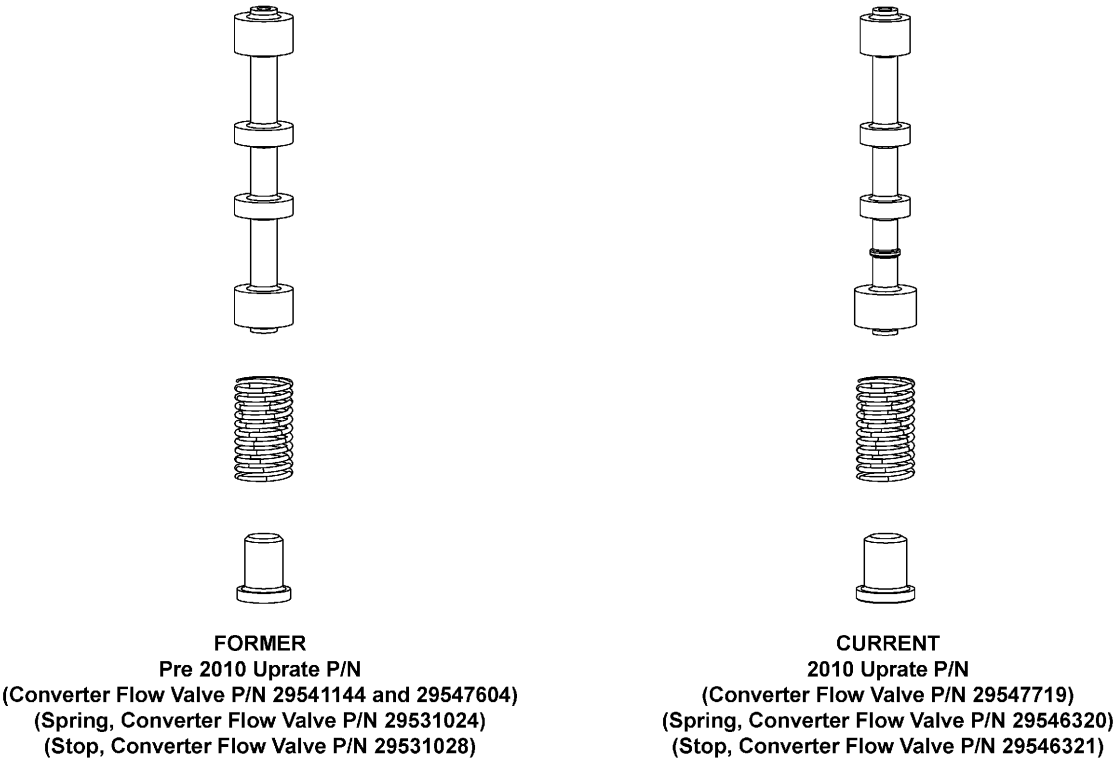
Figure 25. Front Support, Ground Sleeve and Bearing

89711



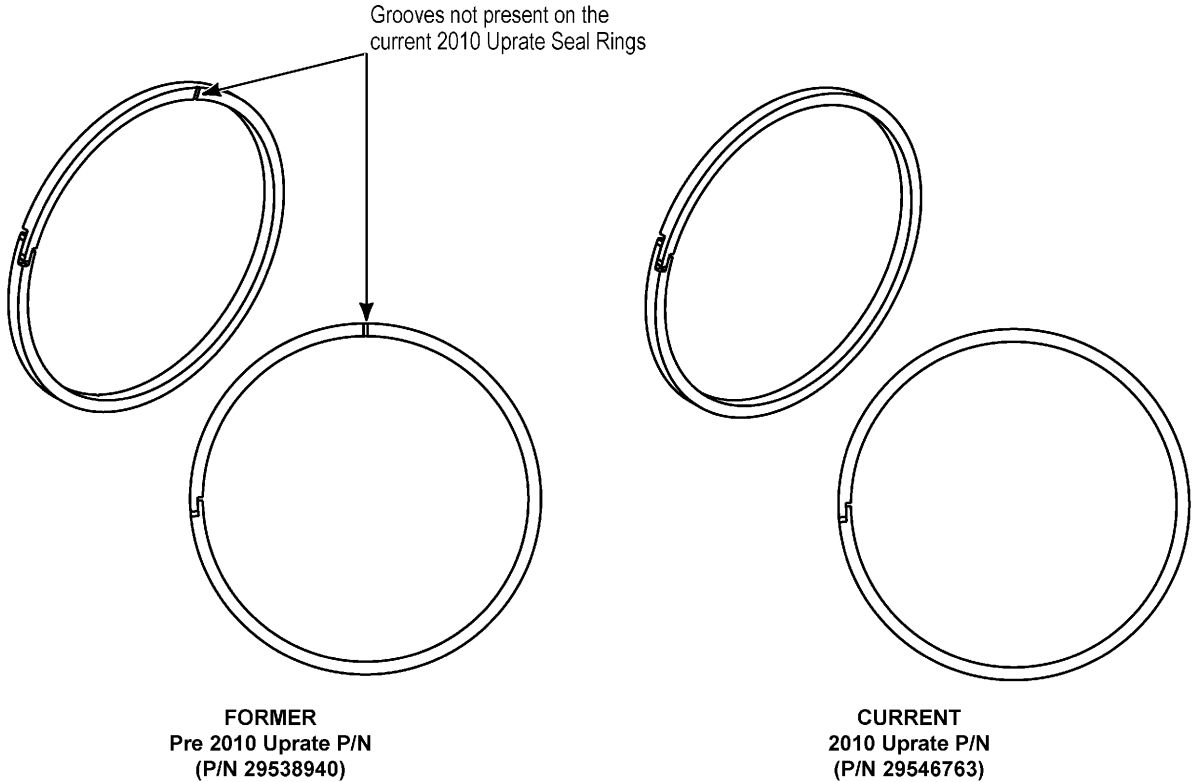
86179

Figure 26. Main Pressure Regulator Valve, Spring and Stop



86188

Figure 27. Converter Flow Valve, Spring and Stop



86203

Figure 28. Seal Ring

The 2010 Uprate Separator Plate and the former Pre 2010 Uprate Separator Plate are the same except one hole location and the size of the slot above the hole.

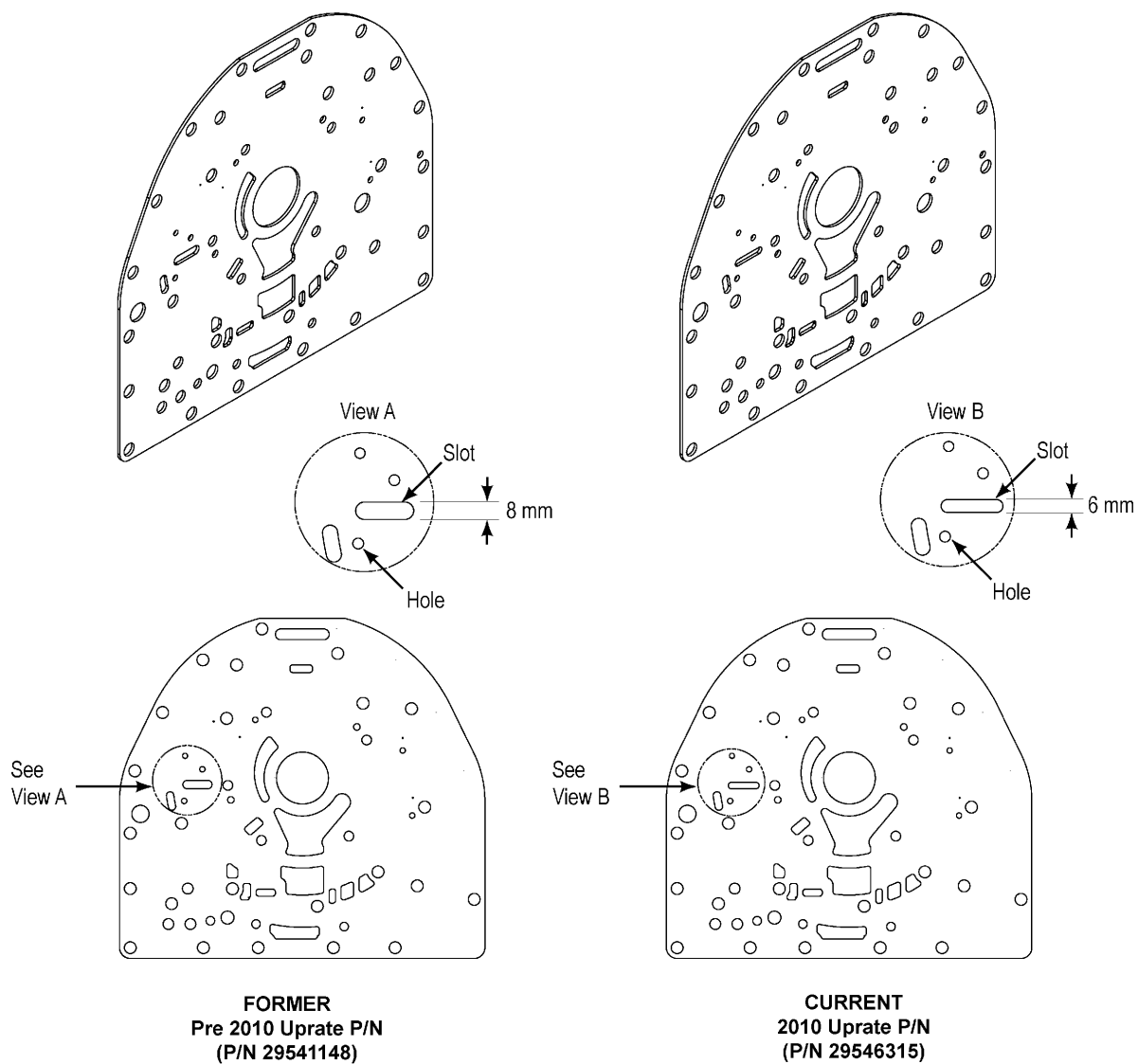


Figure 29. Separator Plate

86213

Control Valve Group (18 group)

Table 8. Control Valve Group

Part Name	Pre 2010 Uprate P/N	2010 Uprate P/N	Description of Change
Control Module Complete Assembly 24 Way Connector	29543335	29545979	Control module redesign - to the PCS1 and PCS2 trim systems and Variable Modulated Main system. Removal of the Main Modulation Body and reverse and 6 th Speed Tube.
Main Valve Body Assembly	29543342	29545997	Module redesign
Main Valve Body Assembly with Dowels Pressed	29543341	29545996	Module redesign
Main Valve Body	29543340	29550271	Module redesign
Check Ball Capsule	N/A	29549893 (2)	
TCC Valve	29542979	29545994	Valve redesign
PCV1 Valve	29537260	N/A	
PCV2 Valve	29537261	N/A	
PCV1, PCV2 Valves	N/A	29550069 (2)	Valve redesign
Spring - PCV1, PCV2, TCC	29536313	29550070	Common spring
Spring Gain Valve	29537230	N/A	Delete for Jan 2010
Gain Valve (PCV)	29537229	N/A	Delete for Jan 2010
PCS1, PCS2 Solenoid Retainer	29542974	29545991	Add hole for new accumulator
TCC Solenoid Retainer	29542973	29545990*	
Shift Valve Body Assembly	29542972	29545989	Module redesign
Shift Valve Body	29542971	29545983	Module redesign
Shift Valve SV1	29531173	29545988	Valve redesign
Shift Valve SV2	29536398	29545987	Valve redesign
Shift Valve SV3	29536944	29545986	Valve redesign
Spring – SV1, SV2, SV3	29531176	29545966	New Spring
Control Main Valve	29541152	29545965	Valve design
Solenoid - Variable Modulated Main (Same as Gen IV PCS1) OENH	N/A	29541895	Uses PCS1 solenoid for the Variable Modulated Main
Solenoid O-Ring Modulated Main (Same as Gen IV PCS1) OENH	N/A	29535518	
Modulated Main Solenoid Retainer	N/A	29545982	New part
Bolt – M6x1	N/A	29537509	
Valve Body Separator Plate	29542962	29545980	Redesign

Table 8. Control Valve Group (cont'd)

Part Name	Pre 2010 Uprate P/N	2010 Uprate P/N	Description of Change
24 Way Internal Harness	29543334	29545308	Relocate wires and connectors to match new solenoid and component positioning
Spring Control Main/Relief	29541153	29546994 (2)	New spring
Clip – Valve Stop, Converter Relief/Lube Regulation	29531022 (2)	29531022 (5)	The numbers of clips increases from 2 to 5 in the Main Valve Body but the total number in the Complete Valve Body Assembly is 9
Modulated Main Body	29543338	N/A	
Solenoid On/Off	29536833	N/A	
O-ring	29503381	N/A	
O-ring	29503382	N/A	
Solenoid Retainer	29534518	N/A	
Reverse Signal Tube	29542964	N/A	
Six Speed Feed Tube	29543337	N/A	All former modulated Main Valve Body parts, including the Reverse Signal and six (6) Speed Pressure Tubes are deleted for the 2010 Uprate configuration. These have been cancelled for production, maintained for service and are available for purchase through the Allison PDC.
* This part was early released into production in July 2009. See SIL 16-1K2K-09			

Hydraulic Control Module Components:

The 2010 Uprate Hydraulic Control Module contains many new features and shift quality improvements that make the new hydraulic Control Module Assembly incompatible with the former Pre 2010 Uprate Hydraulic Control Module. The former Pre 2010 Uprate Hydraulic Control Module components that have been modified for the 2010 Uprate Hydraulic Control Module Assembly are listed in [Table 8](#).

The PCS1 and PCS2 trim circuits have been redesigned with the addition of Check Ball Capsules and commonizing of new PCV1 and PCV2 valves and Springs. Retaining clips have been added to retain the PCV1 and PCV2 valves in the bore. The PCS1 and PCS2 solenoids remain the same, but the PCS1 and PCS2 Solenoid Retainers were redesigned to allow for the new Variable Modulated Main Accumulator and Spring.

Fully Variable Modulated Main pressure is a new feature for the 2010 Uprate. The Mod Main Valve Body Assembly has been removed from the Control Module Assembly. The passages and new Variable Modulated Main VBS was added to the Shift Valve Body Assembly. This VBS is the same solenoid type as used in PCS1. A new Modulated Main Solenoid Retainer holds the solenoid in its bore. The Shift Valve Body Assembly also includes redesigned SV1, SV2, SV3, and Control Main valves. The SS1 remains the same.

The Main Valve Body was redesigned and includes new passages. Pockets were added so that all of the valves are now retained in the bore using retaining clips and a new bore was added for the Variable Modulated Main Accumulator. The new passages have allowed the removal of the six (6) Speed Feed Tube and the Reverse Signal Tube. The SS2 and SS3 solenoids remain the same.

The internal Wiring Harness was redesigned to accommodate the new location for the Variable Modulated Main Solenoid and SS1. The Separator Plate has also been redesigned.

The Pressure Switch Manifold, Selector Valve, Control Main Relief Valve, Exhaust Backfill Valve, Exhaust Backfill Spring, accumulators and accumulator Springs remain the same.

Parts Modifications:

Many changes have taken place in the physical appearance of the parts found in [Table 8](#). Refer to Figures 28–43.

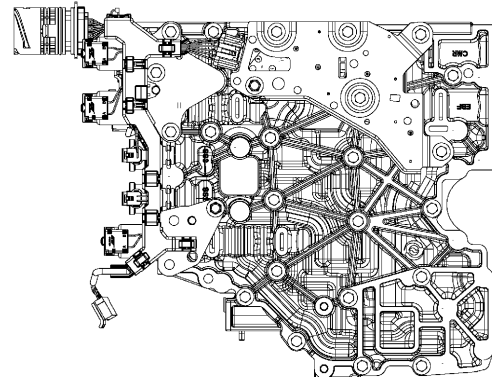
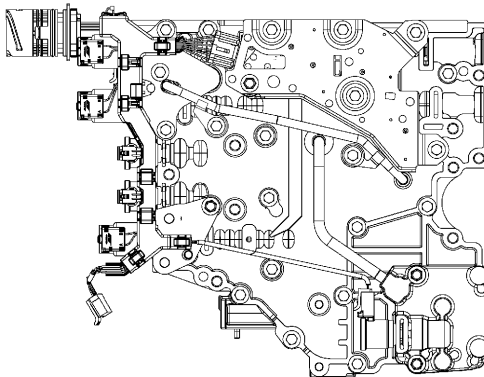
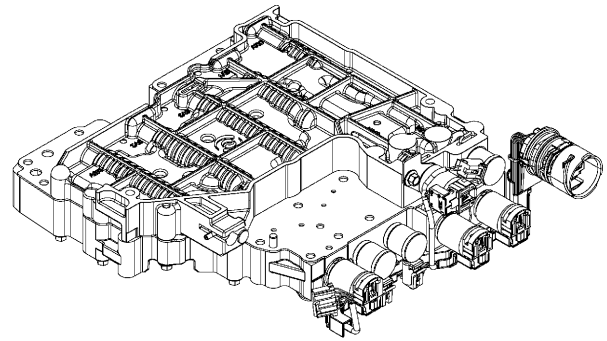
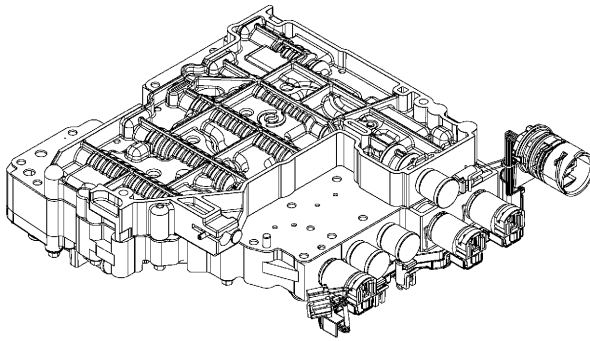
Service Part Information:

All former Pre 2010 Uprate parts will be available for purchase from Allison PDC except Main Valve Body Assembly P/N 29543342, Shift Valve Body Assembly P/N 29542972 and the Mod Main Valve Body Assembly P/N 29543339. These will be available as detail parts or included in the Control Module Assembly P/N 29543335.

All current 2010 Uprate parts will be available for purchase from Allison PDC except for Main Body Assembly P/N 29545997 and the Shift Valve Body Assembly P/N 29545989 . These will be available as detail parts or included in the Control Module Assembly P/N 29545979. Also, the Check Ball Capsule P/N 29549893 will not be available for purchase because it is not a serviceable item. The Check Ball Capsule will need to be purchased as an assembly using the Main Valve Body Assembly with Dowels Pressed P/N 29545996.



NOTE: New 2010 Uprate Spring data, see [Table 9](#).

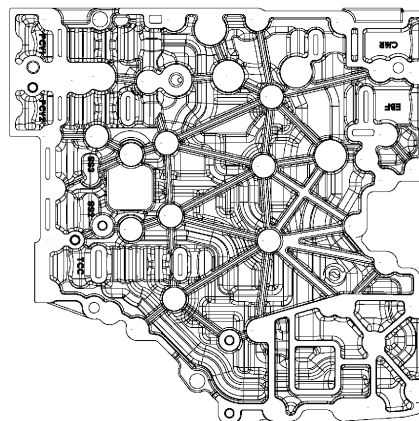
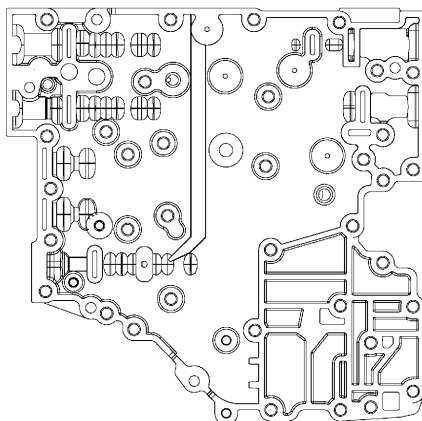
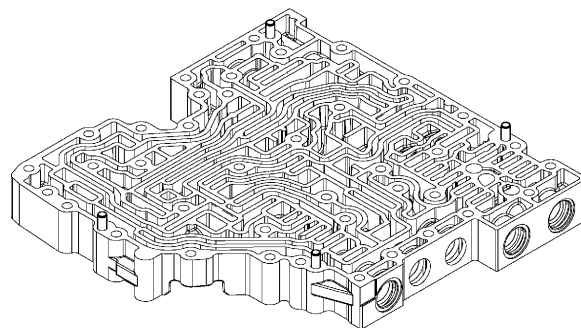
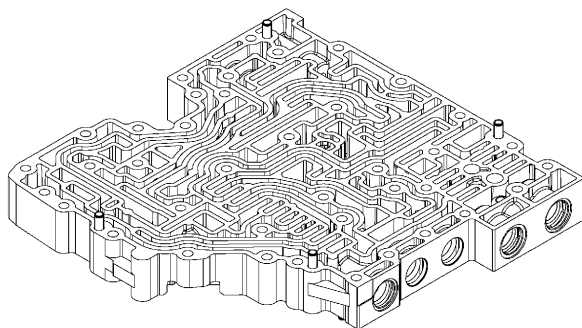


FORMER
Pre 2010 Uprate P/N
(P/N 29543335)

CURRENT
2010 Uprate P/N
(P/N 29545979)

86261

Figure 30. Control Module Assembly and 24 Way Connector

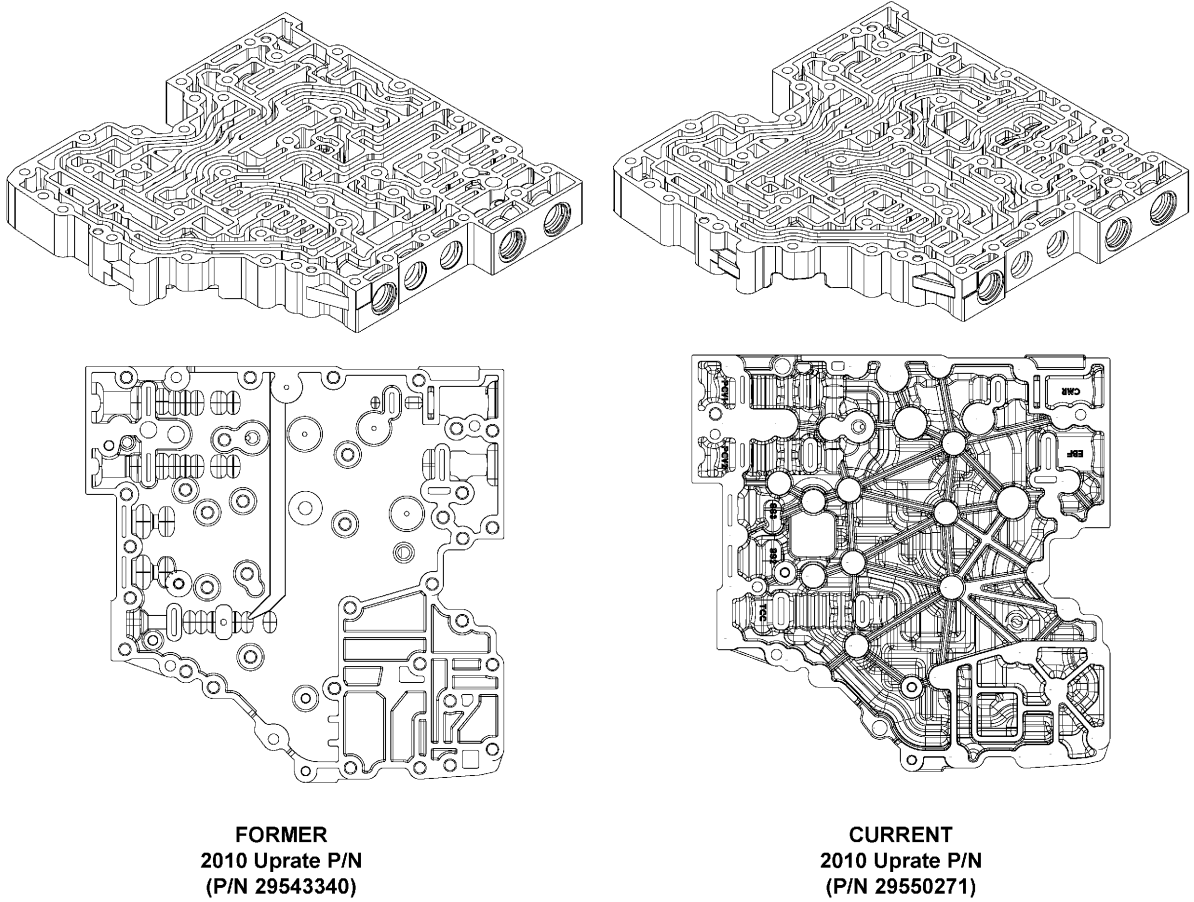


FORMER
Pre 2010 Uprate P/N
(P/N 29543341)

CURRENT
2010 Uprate P/N
(P/N 29545996)

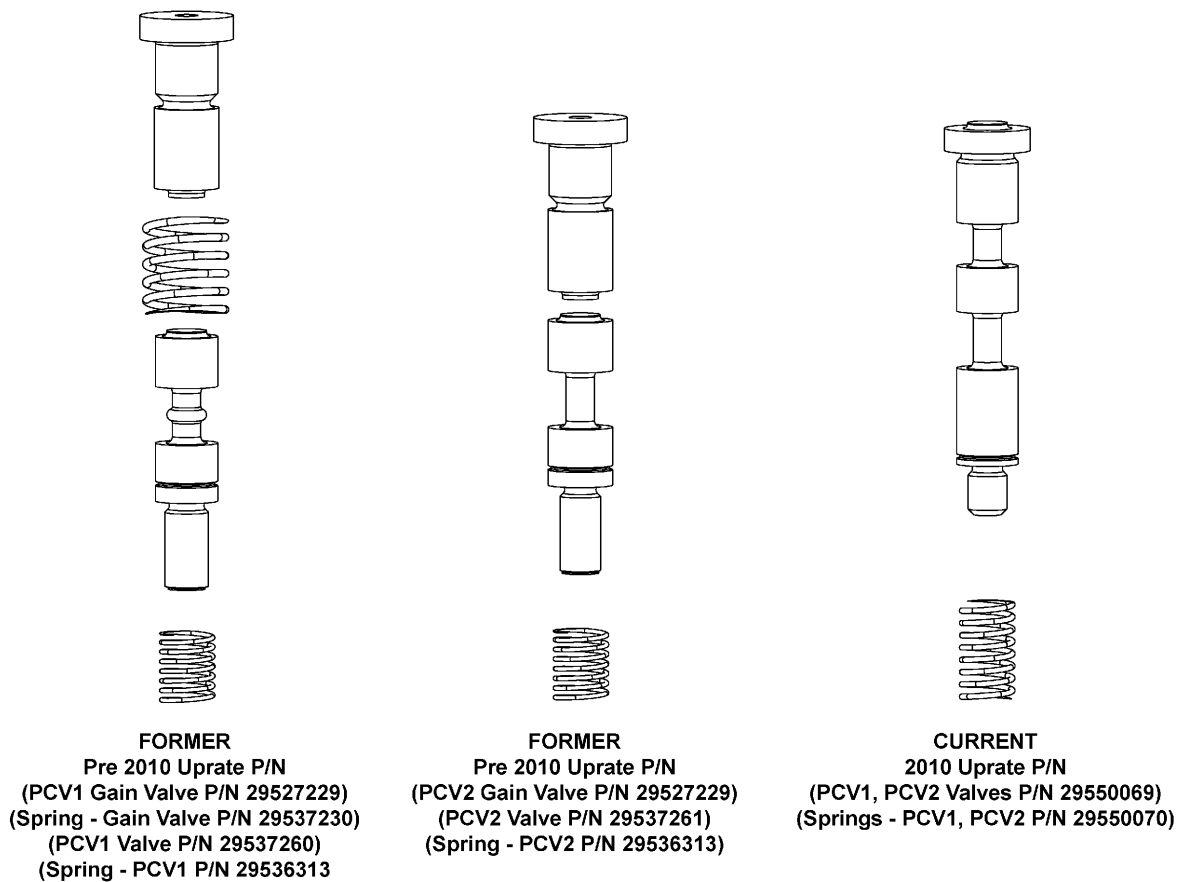
Figure 31. Main Body Assembly Dowels Pressed

86693



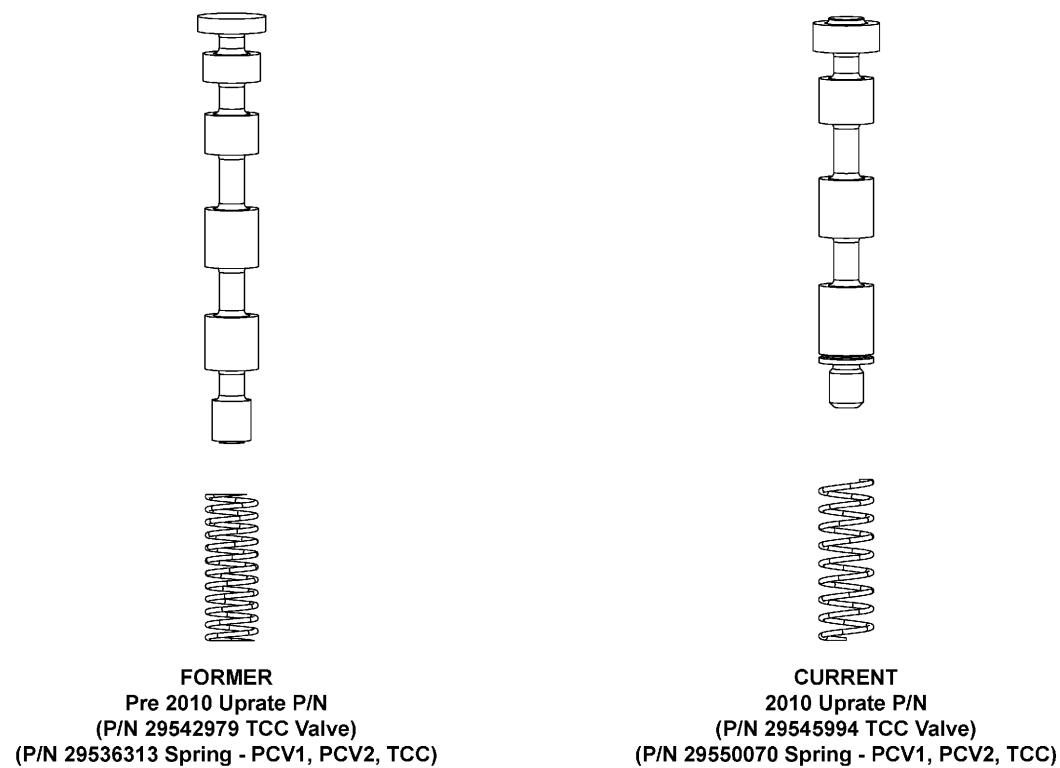
86703

Figure 32. Main Valve Body



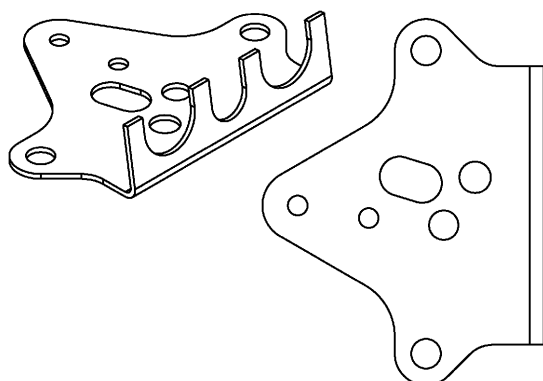
92224

Figure 33. PCV1 and PCV2 Valves

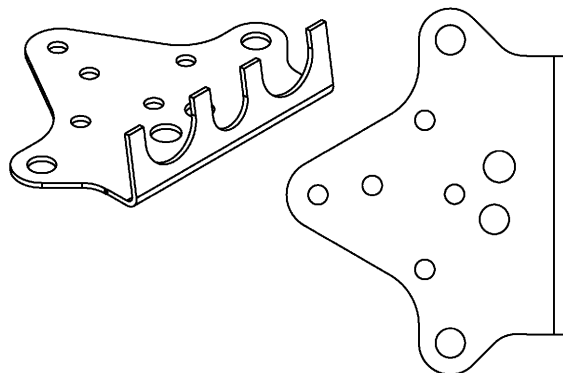


86712

Figure 34. TCC Valve and Spring



FORMER
Pre 2010 Uprate P/N
(P/N 29542974)



CURRENT
2010 Uprate P/N
(P/N 29545991)

87143

Figure 35. PCS1, PCS2 Solenoid Retainer

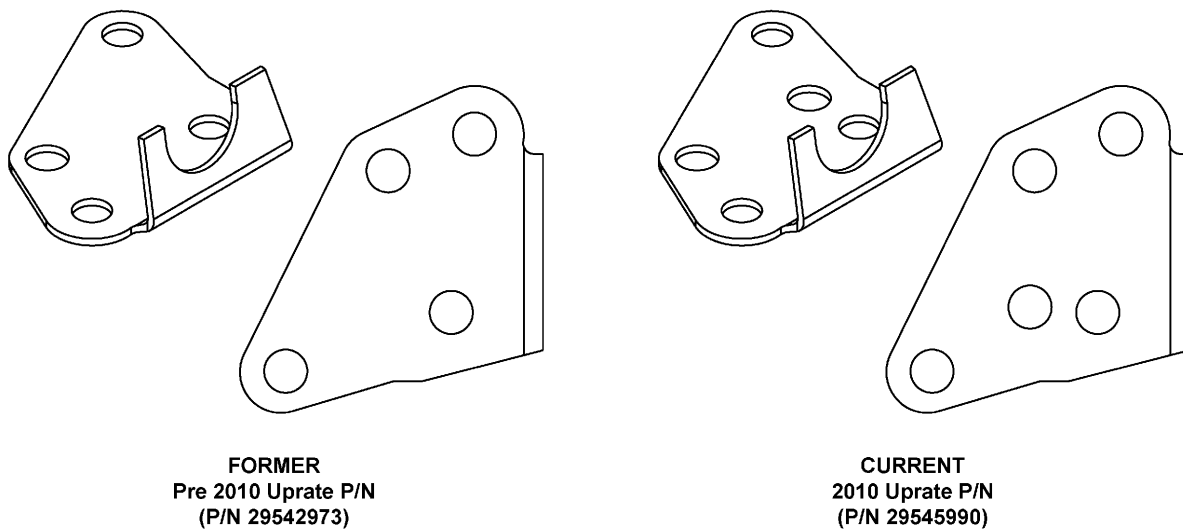
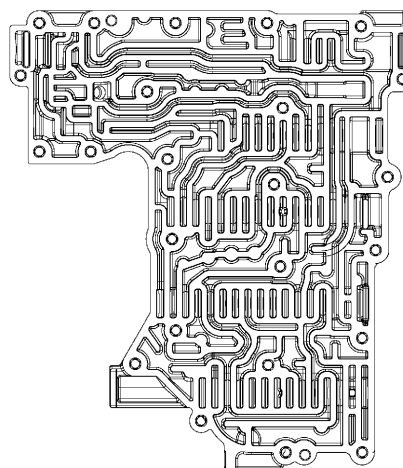
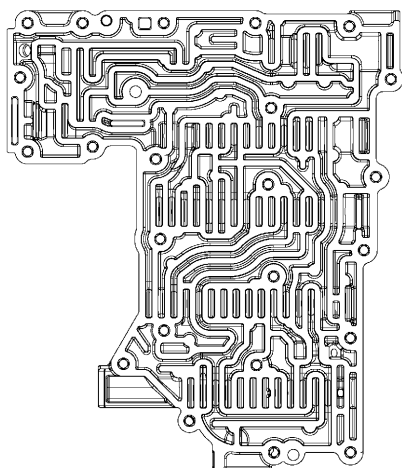
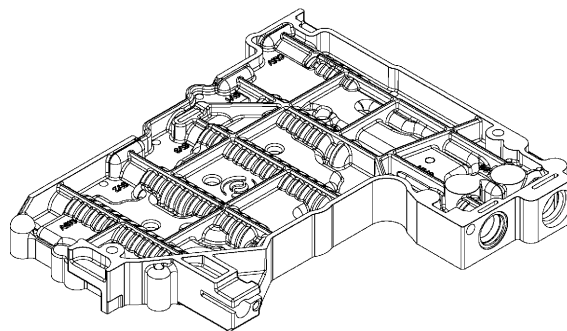
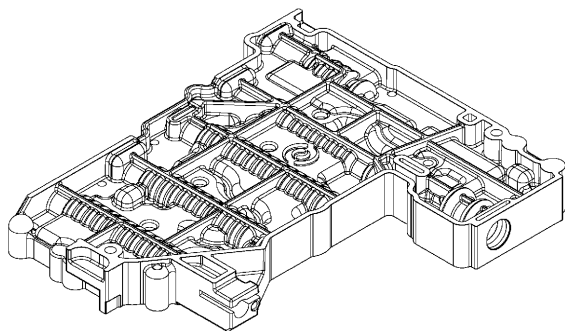


Figure 36. TCC Solenoid Retainer

87152

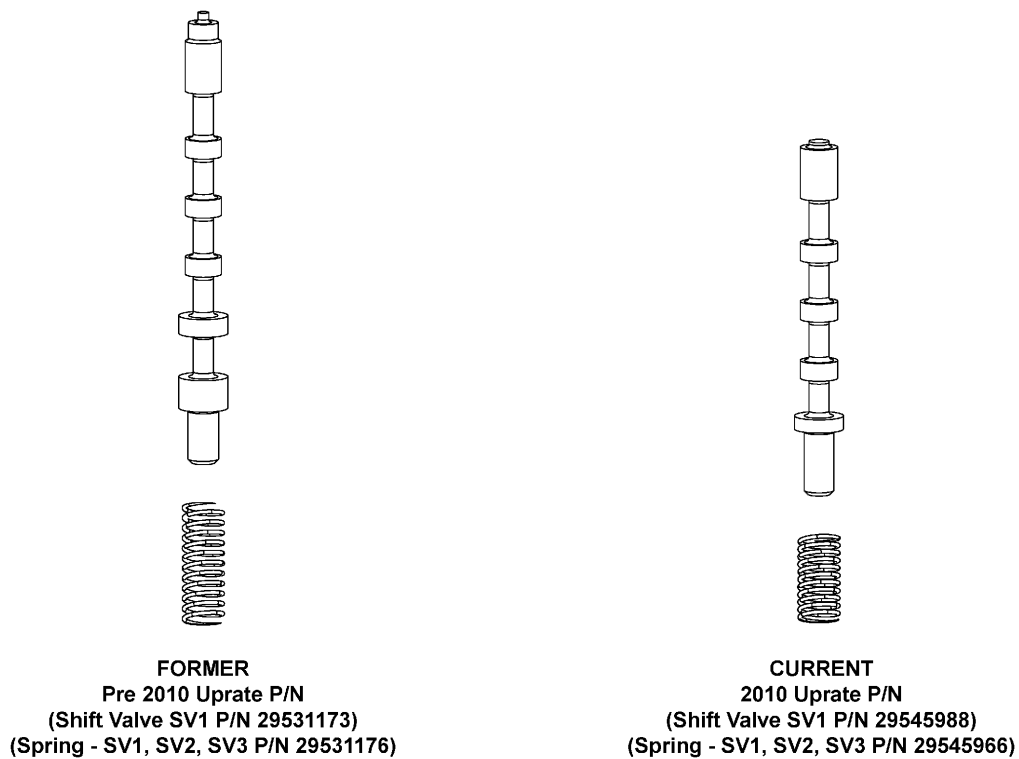


FORMER
Pre 2010 Uprate P/N
(P/N 29542971)

CURRENT
2010 Uprate P/N
(P/N 29545983)

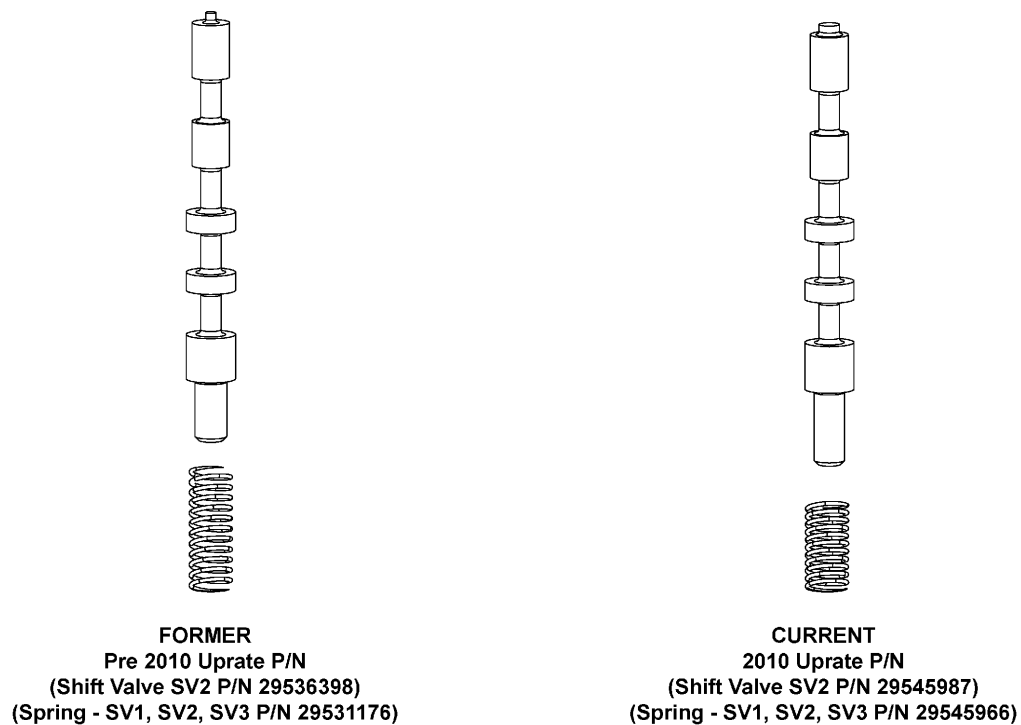
86799

Figure 37. Shift Valve Body



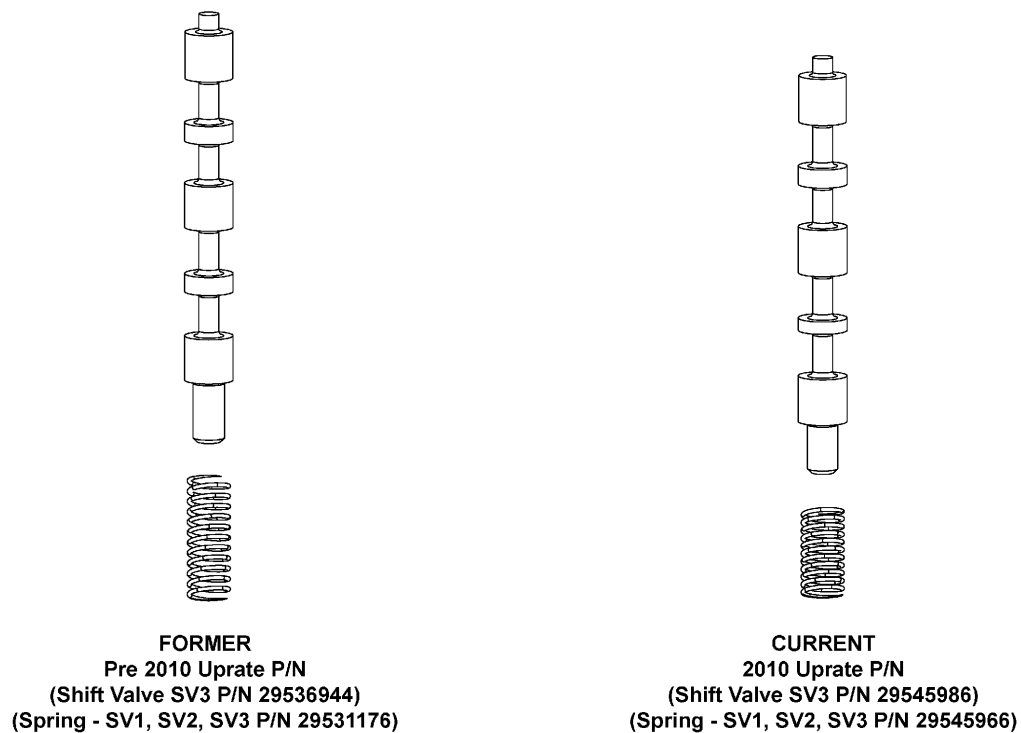
86809

Figure 38. Shift Valve SV1 and Spring



86818

Figure 39. Shift Valve SV2 and Spring



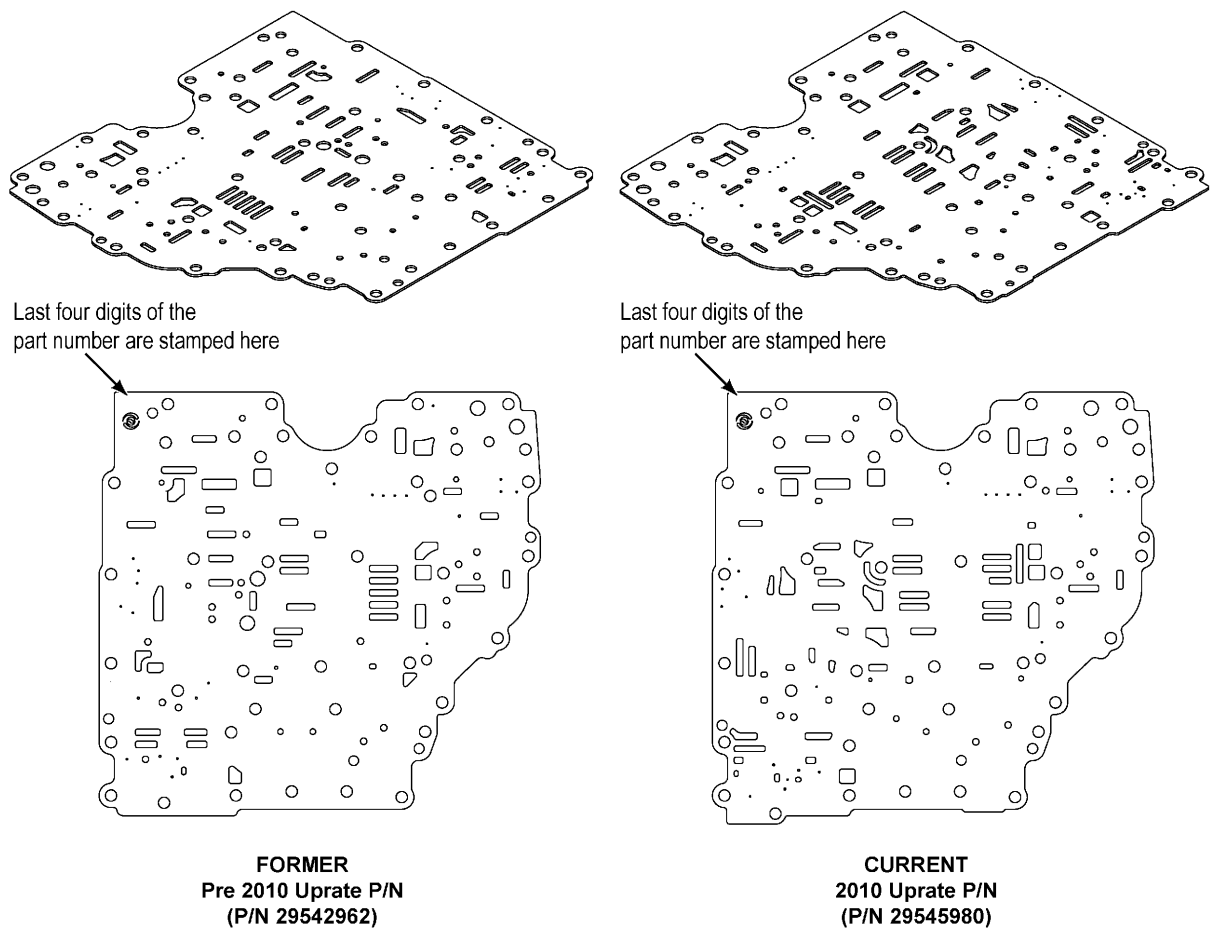
86829

Figure 40. Shift Valve SV3 and Spring



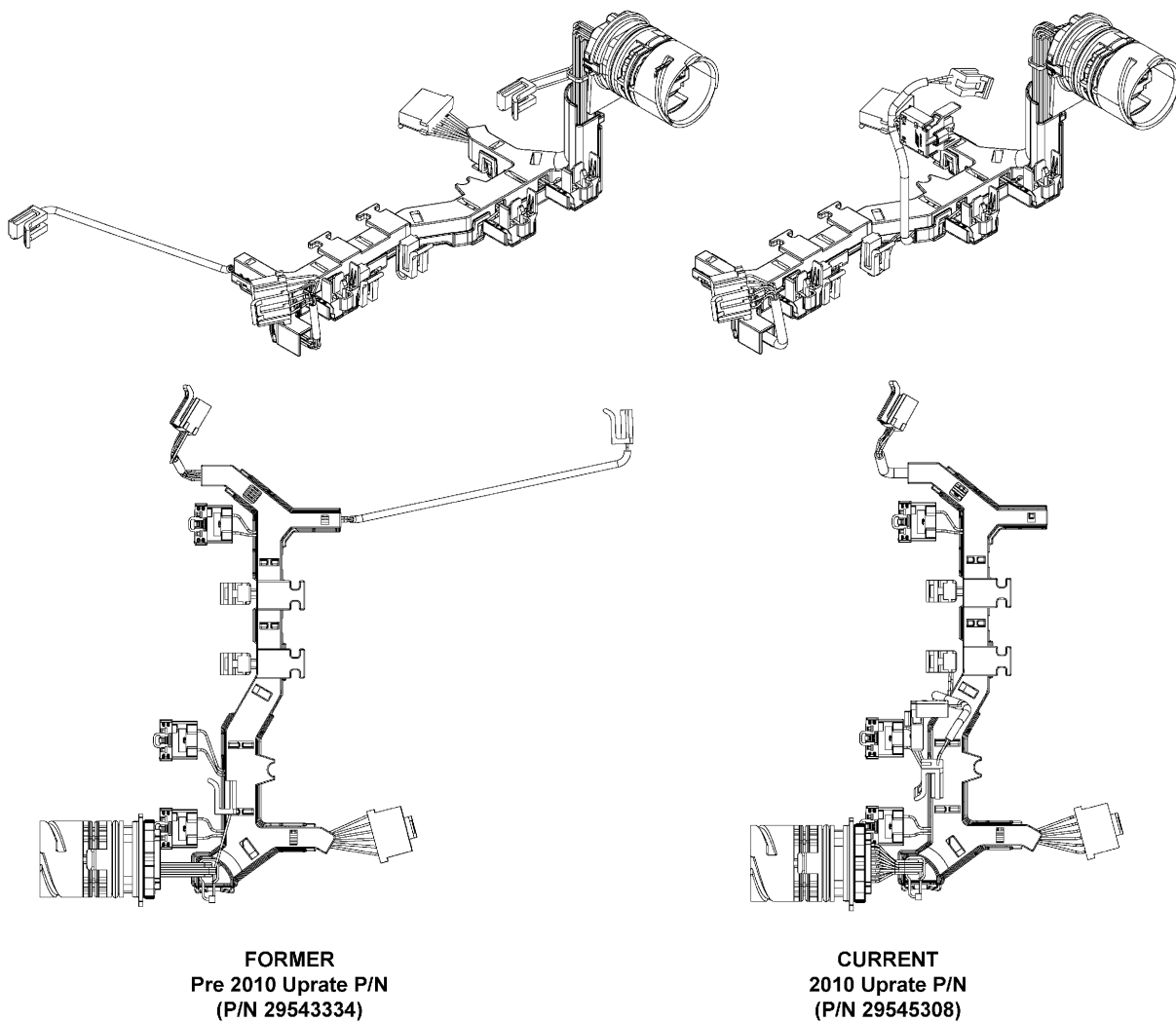
86840

Figure 41. Control Main Valve



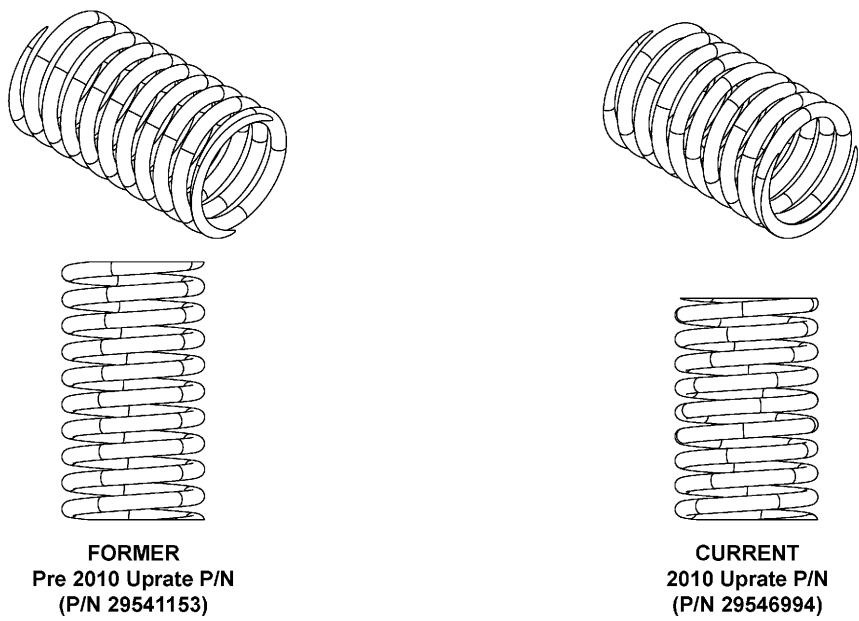
86849

Figure 42. Valve Body Separator Plate



86859

Figure 43. 24 Way Internal Harness



86869

Figure 44. Spring, Control Main Relief

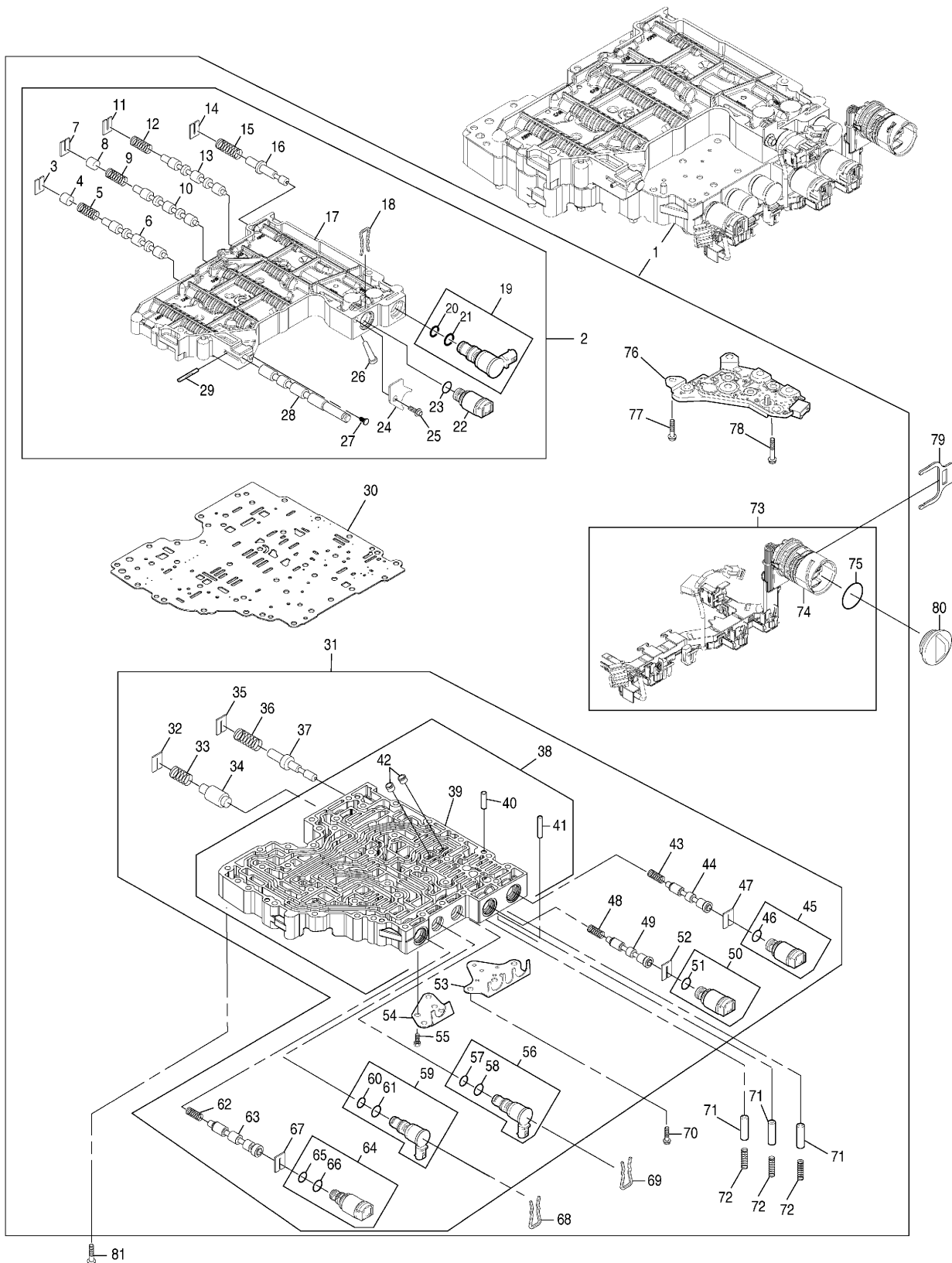


Figure 45. 4th Generation Controls, 2010 Uprate, Valve Body Illustration and 24-Way Connector
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SERVICE LEVEL	REF NO.	NOMENCLATURE	PART NO.	REQ	RECOMMENDED SPARES FOR UNITS			
					1-25	26-50	51-200	
M	1	Valve Assembly, Control	29545979	1	1	2	4	
	2	Body Assembly, Shift Valve	29545989 **	1				
OH	3	Clip, Spring And Valve Retaining	29531022	1	1	2	4	
OH	4	Plug, SV 2	29531177	1	1	2	4	
OH	5	Spring, Shift	29545966	1	1	2	4	
OH	6	Valve, SV 2	29545987	1	1	2	4	
OH	7	Clip, Spring And Valve Retaining	29531022	1	1	2	4	
OH	8	Plug, SV 3	29531177	1	1	2	4	
OH	9	Spring, Shift	29545966	1	1	2	4	
OH	10	Valve, SV 3	29545986	1	1	2	4	
OH	11	Clip, Spring And Valve Retaining	29531022	1	1	2	4	
OH	12	Spring, Shift	29545966	1	1	2	4	
OH	13	Valve, SV 1	29545988	1	1	2	4	
OH	14	Clip, Spring And Valve Retaining	29531022	1	1	2	4	
OH	15	Spring, Control Main /Relief	29546994	1	1	2	4	
OH	16	Valve, Control Main	29545965	1	1	2	4	
OH	17	Body, Shift Valve	29545983	1	1	2	4	
M	18	Retainer, Solenoid, On/Off Shift	29534518	1	1	2	4	
M	19	Solenoid, On/Off Shift	29536833	1	2	4	8	
M	20	O-ring, Solenoid, 10.82 mm ID	29503381	1	3	6	12	
M	21	O-ring, Solenoid, 14 mm ID	29503382	1	3	6	12	
M	22	Solenoid, Pressure Control, Main Mod. Connector Body Color Coded Black.	29541895	1	1	2	4	
M	23	O-ring, Solenoid	29535518	1	1	2	4	
M	24	Retainer, Solenoid	29545982	1	1	2	4	
OH	25	Bolt, x Flange Hd, M6 x 1 x 17.5	29537509	1	1	2	4	
OH	26	Screen, Solenoid	8661834	1	1	2	4	
	27	Pin, Push, Retaining	29542970	1	1	2	4	
OH	28	Valve, Manual Selector	29531315	1	1	2	4	
M	29	Pin, Selector Valve	29536593	1	1	2	4	
OH	30	Plate, Separator	29545980	1	1	2	4	
	31	Body Assembly, Main Valve	29545997 **	1				
OH	32	Clip, Spring And Valve Retaining	29531022	1	1	2	4	
OH	33	Spring, Exhaust Backfill. Color Coded Solid Light Green	29531161	1	1	2	4	
OH	34	Valve, Exhaust Backfill	29531160	1	1	2	4	
OH	35	Clip, Spring And Valve Retaining	29531022	1	1	2	4	
OH	36	Spring, Control Relief	29546994	1	1	2	4	
OH	37	Valve, Control Relief	29531157	1	1	2	4	
OH	38	Body Assembly, Pin And Main Valve	29545996	1	1	2	4	
	39	Body, Main Valve	29550271 *	1				
OH	40	Pin, Dowel	29539574	4	4	8	16	
OH	41	Pin, Dowel	29539574	2	2	4	8	
OH	42	Retainer Assembly, Check Ball Capsule	29549893 **	2				
OH	43	Spring, PCV 1	29550070	1	1	2	4	
OH	44	Valve, PCV 1	29550069	1	1	2	4	

(continued on next page)

* Serviced Only As An Assembly—Not Available As A Detail Part.

** Not Serviced As An Assembly—Order Detail Parts.

93425

Figure 46. Allison 4th Generation Controls, 2010 Uprate, Valve Body and 24-Way Connector

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SERVICE LEVEL	REF NO.	NOMENCLATURE	PART NO.	REQ	RECOMMENDED SPARES FOR UNITS			
					1-25	26-50	51-200	
M	45	Solenoid, PCS 1, OENH. Connector Body Color Coded Black.	29541895	1	2	4	8	
M	46	O-ring, Solenoid, 13 mm ID	29535518	1	6	12	24	
OH	47	Clip, Spring And Valve Retaining	29531022	1	1	2	4	
OH	48	Spring, PCV 2	29550070	1	1	2	4	
OH	49	Valve, PCV 2	29550069	1	1	2	4	
M	50	Solenoid, PCS 2, OENL. Connector Body Color Coded Natural Brown.	29541896	1	2	4	8	
M	51	O-ring, Solenoid, 13 mm ID	29535518	1	6	12	24	
OH	52	Clip, Spring And Valve Retaining	29531022	1	1	2	4	
M	53	Retainer, Solenoid, PCS 1 and PCS 2	29545991	1	1	2	4	
M	54	Retainer, Solenoid, TCC	29545990	1	1	2	4	
M	55	Bolt, Hx Flange Hd, M6 x 1 x 17.5	29537509	1	1	2	4	
M	56	Solenoid, On/Off Shift	29536833	1	2	4	8	
M	57	O-ring, Solenoid, 10.82 mm ID	29503381	1	3	6	12	
M	58	O-ring, Solenoid, 14 mm ID	29503382	1	3	6	12	
M	59	Solenoid, On/Off Shift	29536833	1	2	4	8	
M	60	O-ring, Solenoid, 10.82 mm ID	29503381	1	3	6	12	
M	61	O-ring, Solenoid, 14 mm ID	29503382	1	3	6	12	
OH	62	Spring, TCC	29550070	1	1	2	4	
OH	63	Valve, TCC	29545994	1	1	2	4	
M	64	Solenoid, TCC, CENL. Connector Body Color Coded Red.	29541898	1	2	4	8	
M	65	O-ring, Solenoid, 10.5 mm ID	29542976	1	3	6	12	
M	66	O-ring, Solenoid, 13 mm ID	29535518	1	3	6	12	
OH	67	Clip, Spring And Valve Retaining	29531022	1	1	2	4	
M	68	Retainer, Solenoid	29534518	1	1	2	4	
M	69	Retainer, Solenoid	29534518	1	1	2	4	
M	70	Bolt, M6 x 1.0 x 50 Flange Hd	24573779	4	4	8	16	
M	71	Plug, Accumulator	29536230	3	3	6	12	
M	72	Spring, Accumulator	29536231	3	3	6	12	
M	73	Wiring Harness Assembly, Internal, 24-Way	29545308	1	3	6	12	
	74	Connector, 24-Way	29546931 *	1				
M	75	O-ring, 31.35 mm ID	29543059	1	3	6	12	
M	76	Pressure Switch Assembly	29546972	1	3	6	12	
M	77	Bolt, M6 x 1.0 x 65 Flange Hd	29537508	1	1	2	4	
M	78	Bolt, M6 x 1.0 x 50 Flange Hd	24573779	4	4	8	16	
M	79	Clip, 24M Connector	29546593	1	1	2	4	
M	80	Cover, Shipping, Connector	29546571	1	1	2	4	
M	81	Bolt, M6 x 1.0 x 50 Flange Hd	24573779	15	15	30	60	

* Serviced Only As An Assembly—Not Available As A Detail Part.

** Not Serviced As An Assembly—Order Detail Parts.

Seal and Gasket Kit Information

A 2010 Uprate Overhaul seal and gasket has been released, P/N 29547606 , and will be available for purchase from the Allison PDC.

2010 Uprate New Spring Data

Table 9. 2010 Uprate New Spring Data

2010 Uprate New Spring Data					
Spring	Part No.	No. of Coils	Wire Dia. mm (in.)	Spring OD mm (in.)	Approximate Free length mm (in.)
Main Regulator Spring	29546317	10.42	1.93 (0.076)	21.25 (0.837)	47.70 (1.878)
Converter Flow Spring	29546320	10.75	1.47 (0.058)	17.25 (0.679)	37.48 (1.476)
Pop-off Spring (Lube Regulator Spring)	29541228	12.38	1.47 (0.058)	11.68 (0.460)	39.22 (1.544)
PCV1, PCV2, TCC Spring (3)	29550070	7.93	0.94 (0.037)	9.80 (0.386)	20.64 (0.813)
SV1, SV2, SV3 Spring (3)	29545966	10.79	0.97 (0.038)	10.60 (0.417)	32.28 (1.271)
Control Main/Relief Spring (2)	29546994	11.12	1.47 (0.058)	14.00 (0.551)	41.28 (1.625)