

Date	Expiration	Release	Page
04.2016	04.2018	1	1(3)

VOLVO D13 ENGINE – DOUBLE IDLER GEAR PINNING

Prevost vehicles

DESCRIPTION

On certain vehicles equipped with VOLVO D13 engines, the pinning of the double idler gear is necessary. Before proceeding, verify vehicle eligibility by checking SP (Service Program) status in **SAP** or **Vehicle Warranty Information** tool on Prevost-System tab of the Volvo Trucks Dealer portal or use the **Online Warranty System** tool on Prevost web site www.prevostcar.com. Once on Prevost web site, select WARRANTY on SERVICE tab.

Note: Check SAP or Vehicle Warranty Information tool for any open software bulletin and perform update before releasing the vehicle.

PROCEDURE

Please refer to Impact service procedure “SP215-017 DOUBLE IDLER GEAR PINNING MODIFICATION”, found under Function Group 215.

MODEL YEAR(S) AND VEHICLES INVOLVED

NOTICE TO SERVICE CENTERS		
Verify vehicle eligibility by checking bulletin status with SAP or Vehicle Warranty Information tool found on Prevost–Systems tab of the Volvo Trucks Dealer Portal		
Models affected	vehicles affected	
X3-45 Coaches equipped with Volvo engine Model Year : 2012	2PCG33491CC73 <u>5115</u>	2PCG33499CC73 <u>5122</u>
	2PCG33493CC73 <u>5116</u>	2PCG33496CC73 <u>5126</u>
	2PCG33495CC73 <u>5117</u>	2PCG33498CC73 <u>5127</u>
	2PCG33497CC73 <u>5118</u>	2PCG3349XCC73 <u>5128</u>
	2PCG33499CC73 <u>5119</u>	2PCG33491CC73 <u>5129</u>
	2PCG33495CC73 <u>5120</u>	2PCG33498CC73 <u>5130</u>
	2PCG33497CC73 <u>5121</u>	2PCG33491CC73 <u>5132</u>
This bulletin does not necessarily apply to all the above-mentioned vehicles, some vehicles may have been modified before delivery. Please refer to SAP or Vehicle Warranty Information tool found on Prevost–Systems tab of the Volvo Trucks Dealer Portal for exact status.		

The above list of VIN was valid at the time of publishing this document. Please refer to SAP for most recent information about outstanding vehicles

Date	Expiration	Release	Page
04.2016	04.2018	1	2(3)

MATERIAL NEEDED

Part description	Deleted part No	New part No	Quantity
Consumable Kit	NA	21934132	1
Fixture Kit		21925072	1

Note: One Consumable Kit 21934132 contains the parts required to perform 5 pinning modifications.

<i>NOTE</i>
<i>When doing this replacement, if you encounter any signs of damages caused by idler gear failure, replace damaged parts and repair as required. Many parts not included in the replacement kit might be needed such as oil filters, flywheel housing etc.</i>
<i>Material can be obtained through regular channels.</i>

To order parts, contact:

Prevost Parts US Customer Service Illinois
2200 Point Blvd, Suite 100
Elgin, Illinois 60123
Toll free phone: 1-800-621-5519 Coach
Tel.: 1-847-844-7680

Prevost Parts Canada Customer Service
Quebec City
2955-A, avenue Watt
Quebec, Quebec G1X 3W1
Toll free phone: 1-800-463-8876
Phone: 1-418-653-0948 Parts

To gain access to Parts Online Ordering or to contact a Regional Sales Manager, go to the Prevost section of the trucks dealer portal at WWW.TRUCKSDEALERPORTAL.COM.

PARTS / WASTE DISPOSAL

Return the double idler gear to Prevost.

WARRANTY

This modification is covered by Prevost's normal warranty.

Date	Expiration	Release	Page
04.2016	04.2018	1	3(3)

The estimated time required to perform **this Special Bulletin SP16-19** is approximately 7 hrs.

Please use the standard text SP16-19 with system condition letter "B".

OTHER

VBC Bulletin	tbc
Fail Code	01.00-2
Defect Code	09
System Condition	B
Causal Part	21760930

This service program replaces program 215-017 dated 5.2012.

Date	Group	No.	Release	Page
8.2012	215	017	02	1(23)

Double Idler Gear Pinning Modification

D13

SP 215-017, Double Idler Gear Pinning Modification

(August 2012)

Volvo Bus Corporation has authorized a pinning modification of the double idler gear on certain US07 and EPA2010 emission level vehicles equipped with VOLVO D13F and D13H engines. The double idler gear must be pinned on all vehicles involved in this campaign.

Before performing this procedure, you must view the Double Idler Gear Pinning Modification animation. Go to Trucks Dealer Portal, click on SERVICE tab, select "tech support" in list on left side of page and select "technical videos" to view animation.

Note: When performing this procedure if you encounter any signs of idler gear failure or the idler bearing nut loose, stop the repair and open an E-Service case. Assign it to Technical Support and in the Descr./Compl. field put "Idler Gear Campaign Failure". Describe the details of the failure and attach pictures of the failure to the case.

You must make an appointment as soon as possible at one of Prevost Service Centers or Prevost Certified Service Providers. Please, contact your Prevost Regional Service Manager to find out the nearest service center location.

Required Parts

- 1 — 21934132 - Consumable Kit
- 1 — 21925072 - Fixture Kit

One Fixture Kit 21925072 was pre-shipped to each Dealer through the essential tool program.

One Consumable Kit 21934132 was also pre-shipped to each Dealer through the essential tool program and contains the parts required to perform 5 pinning modifications. The Consumable Kit can only be shipped Class 3 (ground freight).

To order parts, contact:

Prevost Parts US Customer Service Illinois
2200 Point Blvd., Suite 100
Elgin, Illinois 60123
Toll free phone: 1-800-621-5519 Coach
Tel.: 1-847-844-7680

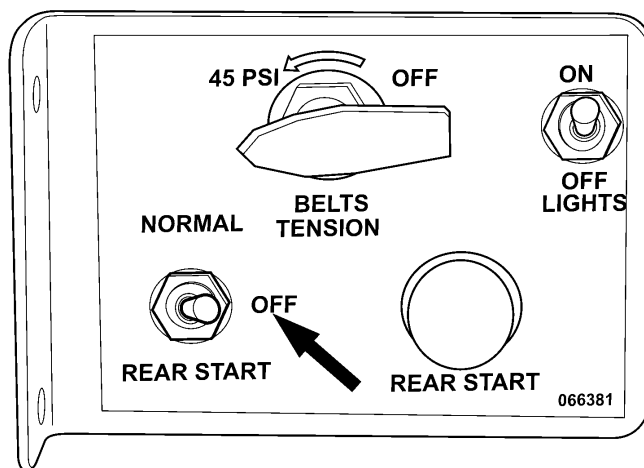
Prevost Parts Canada Customer Service Quebec City
2955-A, avenue Watt
Quebec, Quebec G1X 3W1
Toll free phone: 1-800-463-8876
Phone: 1-418-653-0948 Parts

To gain access to Parts Online Ordering or to contact a Regional Sales Manager, go to the Prevost section of the Trucks Dealer Portal at WWW.TRUCKSDEALERPORTAL.COM.

Procedure

You must read and understand the precautions and guidelines in Service Information, Function Group 20, "Engine Safety Practices" before performing this procedure. If you are not properly trained and certified in this procedure, ask your supervisor for training before you perform it.

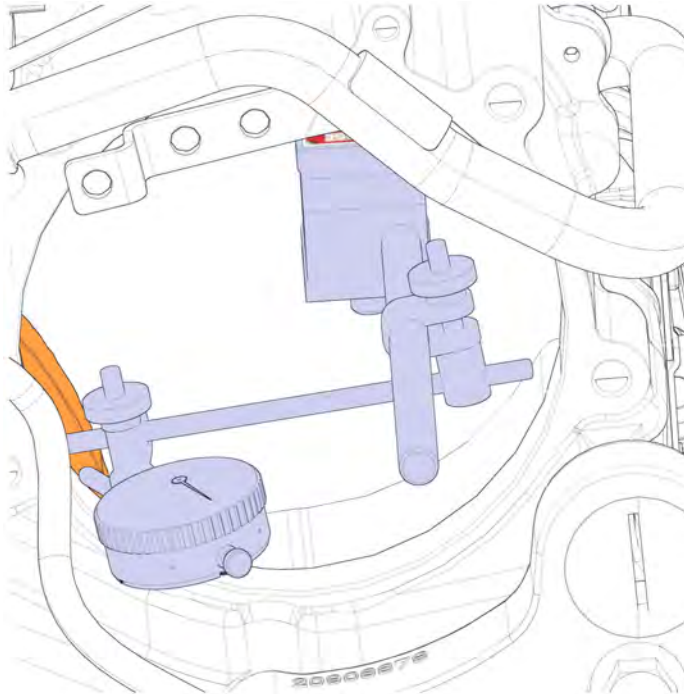
- 1 Apply parking brake and place shift lever in neutral.
- 2 Open the engine compartment. Move the starter select switch to the OFF position to disable the engine.



W2006494

- 3 Remove all cables from ground (negative) battery terminals to prevent personal injury from electrical shock.
- 4 Drain coolant from radiator and engine using coolant extractor (85112740). Save coolant.
Note: An alternate method is to connect drain hose (9990649) to drain fitting and drain coolant. Save the coolant in an appropriate container and cover container to prevent contaminates from getting in the coolant.
- 5 On 9700 and PrevX vehicles, remove transmission. Refer to Function Group 43.
- 6 Remove rear engine coolant pipe mounts.
- 7 Uncouple coolant lines at rear of engine. Clean rear of engine with shop towels and cleaner adjacent to the crankshaft speed sensor and PTO cover. Remove PTO cover and discard O-ring.
- 8 On 9700 vehicles, remove hydraulic pump.

- 9 Set up a magnetic stand (9999696) and dial indicator (9999683) on timing gear plate. Position indicator perpendicular to rear face of double idler gear. Zero indicator.



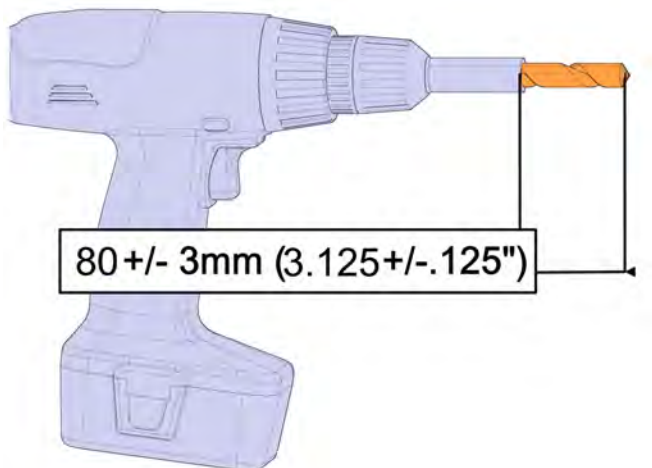
- 10 By hand, with moderate force, attempt to move gear back and forth in direction of measurement. **DO NOT USE A PRY BAR.** Measure gear movement in three evenly spaced locations on gear by turning engine with flywheel turning tool (88800014). If gear movement is greater than 0.05 mm (0.002 in) in any position, a possible nut/gear failure has occurred. Stop the repair and open an E-Service case. Assign it to Technical Support and in the Descr./Compl. field put "Idler Gear Campaign Failure". Describe the details of the failure and attach pictures of the failure to the case. If gear movement is less than or equal to 0.05 mm (0.002 in) in each position, continue to next step.
- 11 Remove flywheel turning tool.
- 12 Reinstall PTO cover with new O-ring (part number 976068) provided in Consumable kit.

- 13 Loosely chuck 5/8 x 6 inch drill bit provided in Fixture kit into high speed drill. Slide 5/8 inch drill stop provided in Fixture kit over drill bit and allow it to rest against chuck. Set drill protrusion beyond drill stop to 80 ± 3 mm (3.125 ± 0.125 in) to drill bit shoulder and tighten chuck securely.

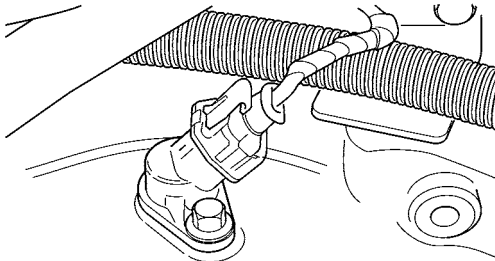


CAUTION

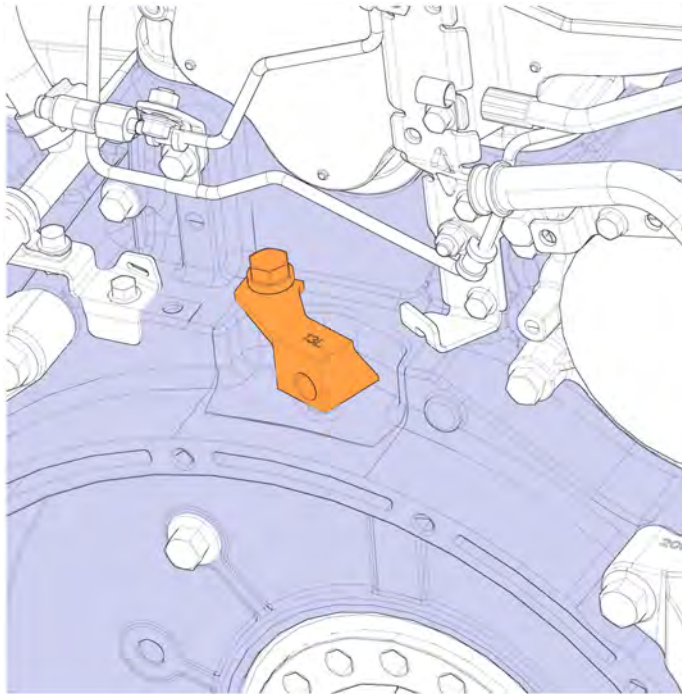
The drill stop must be positioned correctly. If drill stop is not positioned correctly, severe damage to engine can result.



- 14 If necessary, remove clamp and bracket securing air compressor discharge line.
- 15 Disconnect crankshaft speed sensor and clip ties securing harness. Remove crankshaft speed sensor and discard sensor O-ring. Disconnect EGR valve oil drain hose from flywheel housing and cover hose opening to prevent contamination.



- 16 Install 5/8 inch flywheel housing drill fixture provided in Fixture kit into crankshaft speed sensor hole. Use M18 hold down bolt provided in Fixture kit in EGR valve oil drain port to secure drill fixture to flywheel housing. Tighten bolt to 24 ± 4 Nm (18 ± 3 ft-lb).



5/8 inch Flywheel Drill Fixture and M18 Hold Down Bolt

- 17 Use chip vacuum (PT2900) or put a crevice tool attachment on a shop vacuum and position crevice tool over top of drill fixture. Start vacuum.

- 18 Use light pressure to drill an access hole in flywheel housing. Clean drill flutes repeatedly by pulling drill back until bit is clear of fixture and then continue into flywheel housing. Chips should clear freely out of rotating flutes. If chips are becoming packed in flutes, perform flute cleaning process more often. Position vacuum crevice tool over drill area, between flywheel housing and fixture, during entire drilling process. Once the drilling is complete, remove drill and continue to use vacuum to collect any chips that may not have been picked up previously.



WARNING

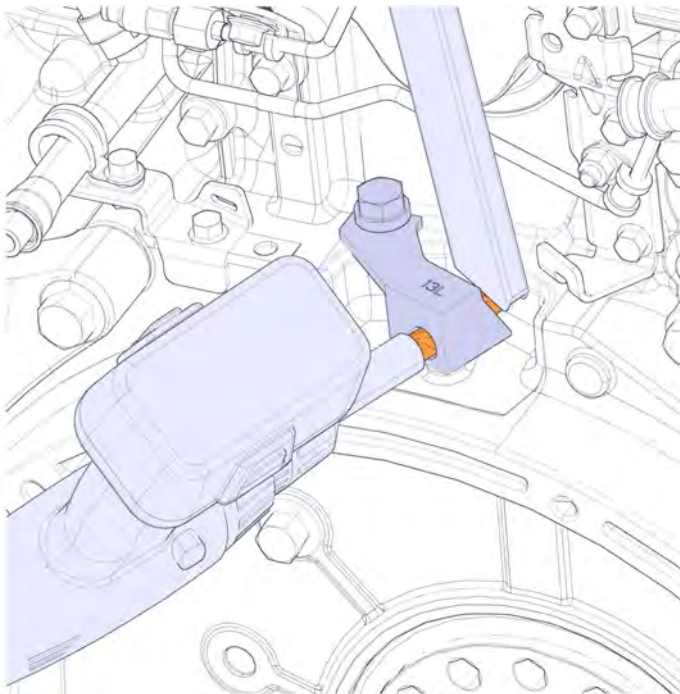
When drilling always wear proper eye protection. Failure to wear proper eye protection can result in serious personal injury.



CAUTION

Do not use shop air to blow debris as it could introduce foreign matter into engine and cause serious engine damage.

Note: The flywheel housing is only approximately 6 mm (0.25 in) thick in the drilling area, so the drill will penetrate the housing relatively quickly.



- 19 Make sure all visible debris is cleared away from crankshaft speed sensor hole before removing drill fixture to prevent anything from dropping into flywheel/clutch area. Remove drill fixture and install EGR valve oil drain hose.



CAUTION

Carefully follow drilling procedure. Failure to properly follow procedure can result in significant metal debris entry into engine and potential damage including engine failure.

- 20 Visually inspect gear through access hole to ensure nut is not loose. If nut is loose, stop the repair and open an E-Service case. Assign it to Technical Support and in the Descr./ Compl. field put "Idler Gear Campaign Failure". Describe the details of the failure and attach pictures of the failure to the case.

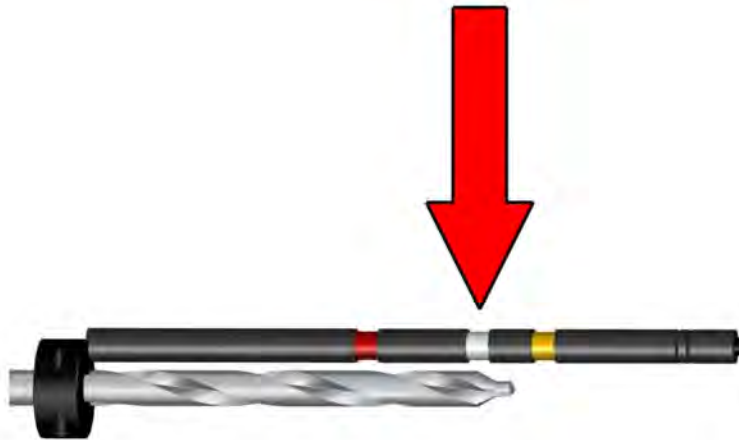
- 21 Chuck 1/4 inch center drill bit provided in Consumable kit into high speed drill. Use Go/No Go depth gauge provided in Fixture kit to confirm drill protrusion is 69 mm (2.7 in) from collar to drill bit shoulder (white mark on depth gauge). Make sure drill stop screws are tightened securely.

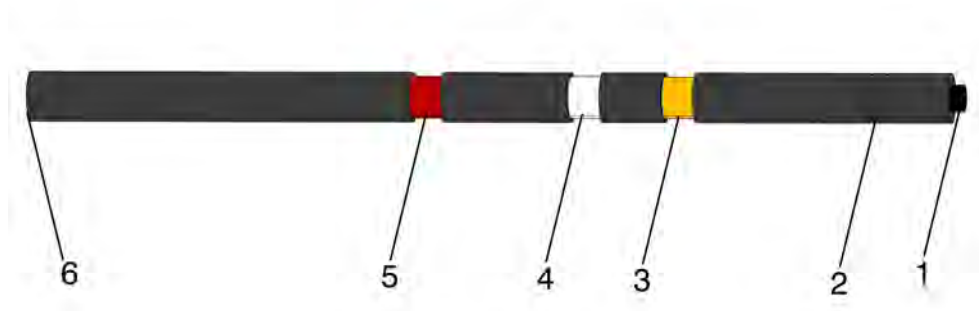


CAUTION

The drill stop must be positioned correctly. If drill stop is not positioned correctly, severe damage to engine can result.

Note: The drill stops are pre-assembled with Loctite® to 1/4 inch drill bits. If the drill stop is not positioned correctly, use heat to break Loctite® loose and reinstall drill stop to correct depth.





Go/No Go Depth Gauge

1. Magnet	4. 1/4 inch Center Drill Pilot Hole Depth
2. Two Marks Indicate 13L Gauge	5. Installed Pin Depth
3. 1/4 inch Letter-C Drill Depth	6. Bottom

- 22 Check that barrel slides freely in 1/4 inch dowel pin hole drill fixture provided in Fixture kit. Install fixture into crankshaft speed sensor hole and fasten using speed sensor bolt. Tighten to 8 ± 2 Nm (72 ± 12 in-lb). Adjust drill fixture barrel until contact with hub is felt. Tighten screw to lock barrel in place, do not overtighten. Use a shop towel to cover gap between drill guide tube and flywheel housing access hole to prevent any debris from entering engine.



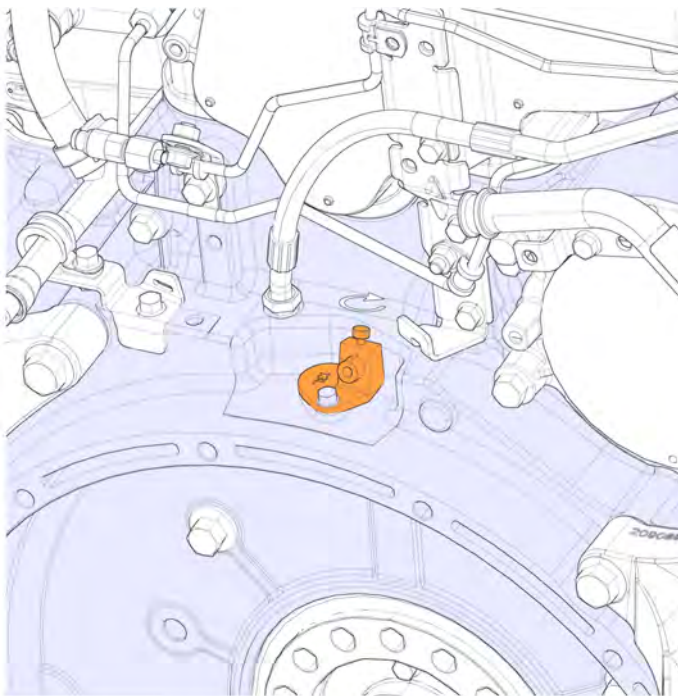
CAUTION

The drill fixture must be properly adjusted for contact against hub. This is critical to drilling operation. If fixture is not properly adjusted, significant metal debris can enter engine and cause potential damage including engine failure.



CAUTION

The magnet at the end of the drill fixture barrel is brittle and can break or shatter if tool is dropped or impacted.



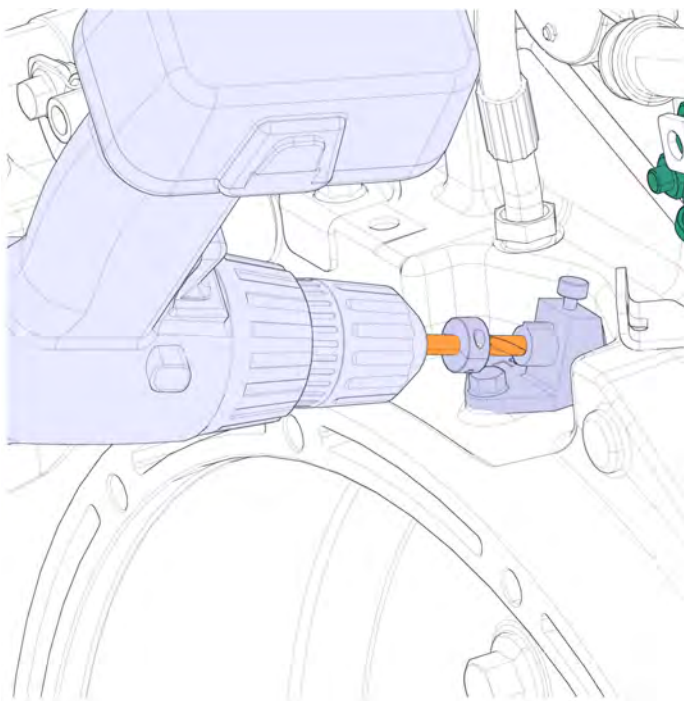
1/4 inch Dowel Pin Drill Fixture

23 Lubricate drill bit tip with oil. Use light pressure to drill pilot hole until contact with drill stop is made. It is critical to use light drilling pressure to allow bit to cut and not be forced. Otherwise, drill will walk and result in an inaccurate hole position. Clean drill flutes frequently by pulling drill back until bit is clear of fixture and then continue cutting. Repeat as required. Chips should clear freely out of rotating flutes. If chips are becoming packed in flutes, perform cleaning procedure more frequently.



WARNING

When drilling always wear proper eye protection. Failure to wear proper eye protection can result in serious personal injury.



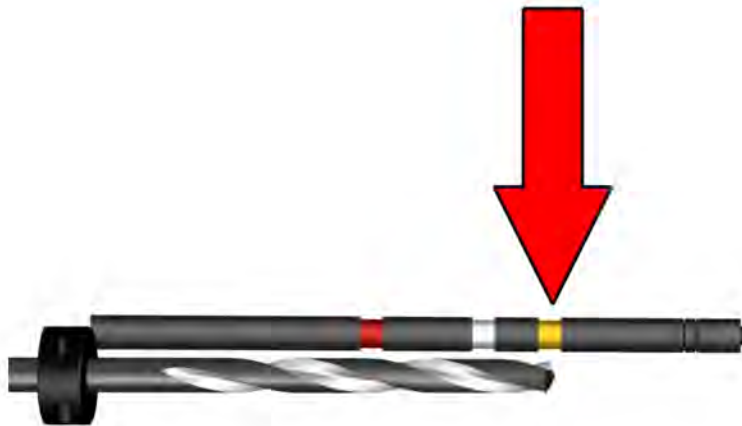
- 24 Remove debris with magnetic end of Go/No Go depth gauge. Use opposite end of Go/No Go depth gauge (double marks outward) to check hole depth (white mark on depth gauge). Repeat drilling if not within minimum depth.
- 25 Chuck 1/4 inch Letter-C drill bit provided in Consumable kit into high speed drill. Use Go/No Go depth gauge to confirm drill protrusion is 81 mm (3.19 in) from collar to drill shoulder (yellow mark on depth gauge). Make sure drill stop screws are tightened securely.



CAUTION

The drill stop must be positioned correctly. If drill stop is not positioned correctly, severe damage to engine can result.

Note: The drill stops are pre-assembled with Loctite® to 1/4 inch drill bits. If the drill stop is not positioned correctly, use heat to break the Loctite® loose and reinstall drill stop to correct depth.

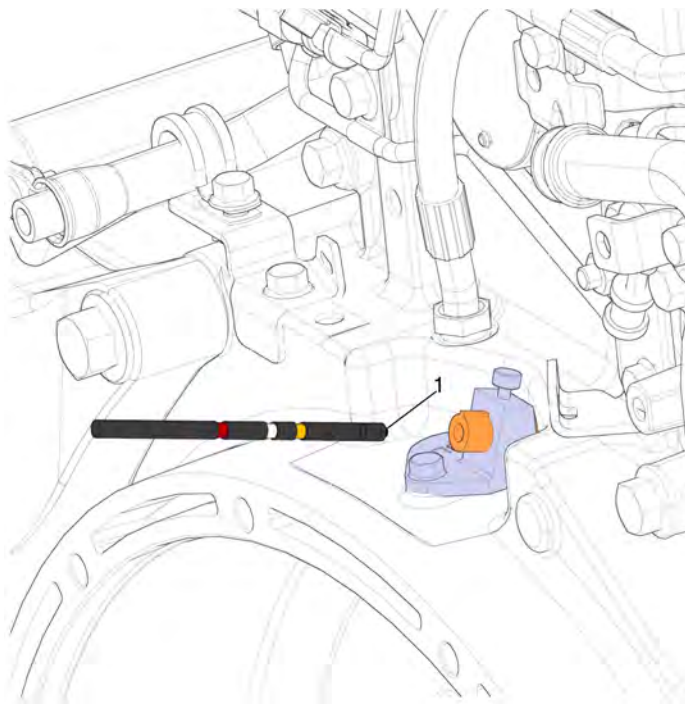


- 26 Lubricate drill bit tip with oil. Use light pressure to drill dowel pin hole until contact with drill stop is made. It is critical to use light drilling pressure to allow bit to cut and not be forced. Otherwise, drill will walk and result in an inaccurate hole position. Clean drill flutes frequently by pulling drill back until bit is clear of fixture and then continue cutting. Repeat as required. Chips should clear freely out of rotating flutes. If chips are becoming packed in flutes, perform cleaning procedure more frequently.



WARNING

When drilling always wear proper eye protection. Failure to wear proper eye protection can result in serious personal injury.



1. Magnetic End of Go/No Go Depth Gauge

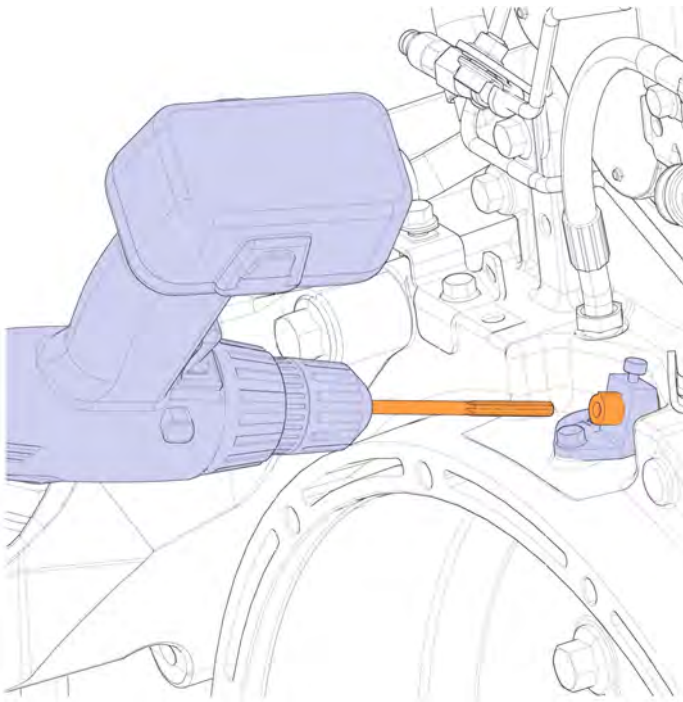
- 27 Remove debris from hole with magnetic end of Go/No Go depth gauge. Use opposite end of Go/No Go depth gauge (double marks outward) to check hole depth (yellow mark on depth gauge). Repeat drilling if not within minimum depth.

28 Chuck 0.248 x 6 inch straight flute reamer provided in Fixture kit in drill. Ream hole with very light pressure as one continuous pass until reamer reaches bottom of hole. Stop reaming after reaching bottom of hole.



WARNING

When drilling always wear proper eye protection. Failure to wear proper eye protection can result in serious personal injury.



Straight Flute Reamer

29 Remove debris from hole with magnetic end of Go/No Go depth gauge. Use opposite end of Go/No Go depth gauge (double marks outward) to check hole depth (yellow mark on depth gauge).

30 Use chip vacuum to clean area around 1/4 inch dowel pin hole drill fixture. Remove fixture and remove all particles from fixture and barrel. Use brake clean to clean barrel bore. Check that barrel slides freely in fixture. Use magnetic end of Go/No Go depth gauge and clean any metal chips or fuzz from nut and hub. Use Letter-C drill bit to line up barrel and reinstall dowel pin hole drill fixture and fasten using speed sensor bolt. Tighten to 8 ± 2 Nm (72 ± 12 in-lb). Adjust drill fixture barrel until contact with hub is felt. Tighten screw to lock barrel in place, do not overtighten. Use a shop towel to cover gap between drill guide tube and flywheel housing access hole to prevent any debris from entering engine.



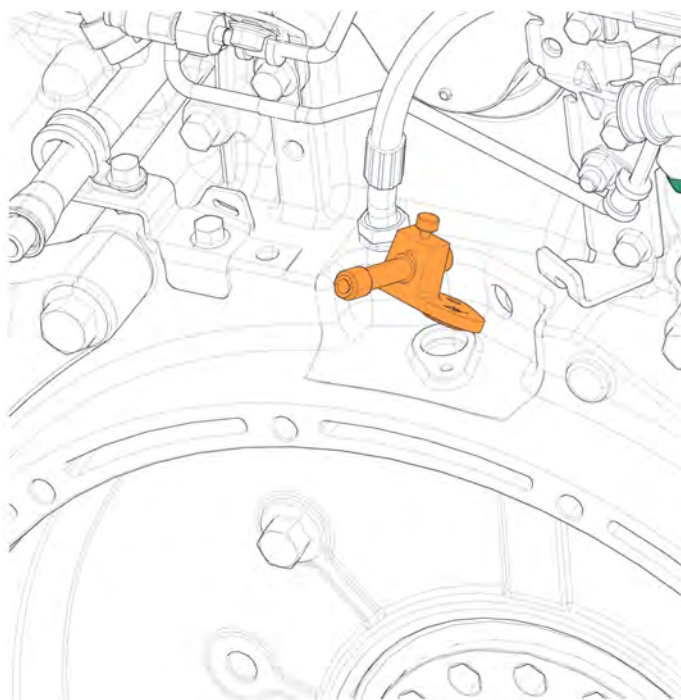
CAUTION

The drill fixture must be properly adjusted for contact against hub. This is critical to drilling operation. If fixture is not properly adjusted, significant metal debris can enter engine and cause potential damage including engine failure.



CAUTION

The magnet at the end of the drill fixture barrel is brittle and can break or shatter if tool is dropped or impacted.



- 31 Use straw to spray brake cleaner into bottom of dowel pin hole. Use light shop air to remove excess fluid in dowel pin hole. Vacuum away any remaining debris from flywheel housing.



WARNING

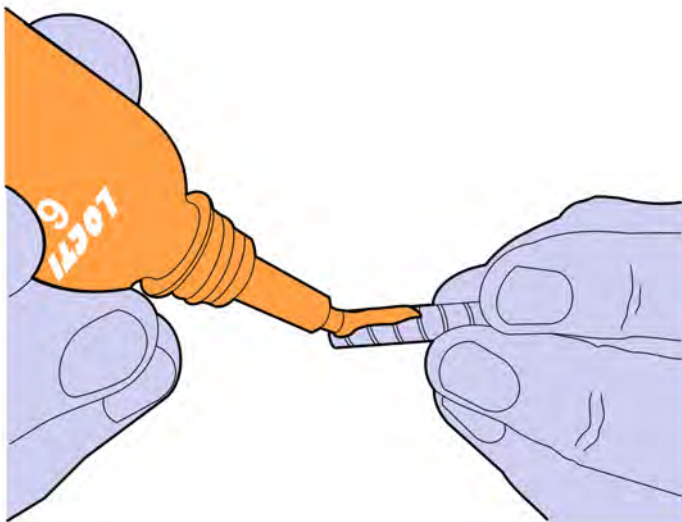
When spraying brake cleaner into dowel pin hole, be wary of blow-back. Always wear proper eye protection to prevent serious injury.



CAUTION

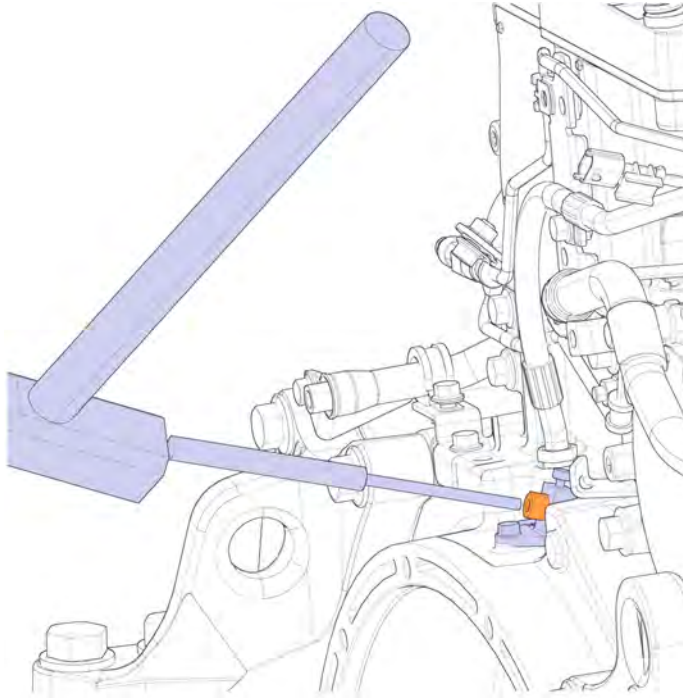
Only use shop air to remove excess fluid. Do not use shop air to blow debris as it could introduce foreign matter into engine and cause serious engine damage.

- 32 Liberally apply Loctite® retaining compound RC638 provided in Consumable kit to 0.25 x 1.25 inch steel dowel pin provided in Consumable kit. Do NOT apply primer to pin at any point.



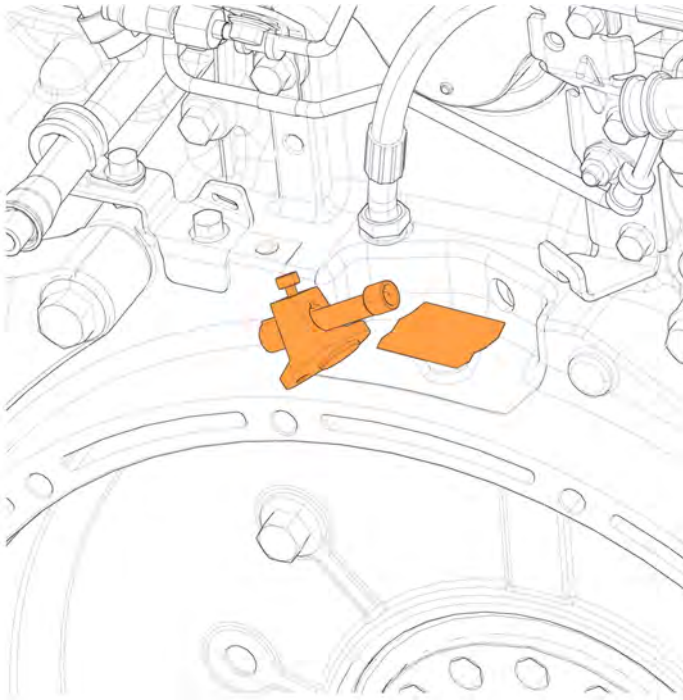
- 33 Slide dowel pin into drill guide and immediately set pin with dowel pin driver provided in Fixture kit. Drive dowel pin until it bottoms in hole, detectable by a noted change in the “feel” and “sound” as pin is driven. Use Go/No Go depth gauge to check pin depth (red mark on depth gauge).

Note: Dowel pin protrusion from hub is normal.



Dowel Pin and Driver

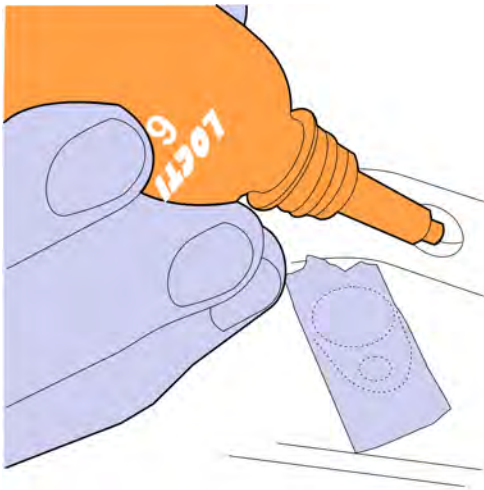
- 34 Loosen screw and move drill fixture barrel outward as far as possible. Remove drill fixture quickly and cover crankshaft speed sensor hole. Use brake cleaner to thoroughly clean flywheel housing drill hole. Use light shop air to remove excess fluid in flywheel housing hole. Clean drill fixture to remove any retaining compound residue.



- 35 Apply Loctite® 7649 primer provided in Consumable kit 360° around outer diameter of 5/8 inch stainless steel cup plug provided in Consumable kit and 360° around inner diameter of flywheel access hole and let rest for 5 minutes.



36 Apply Loctite® RC638 retaining compound provided in Consumable kit 360° around outer diameter of cup plug and 360° around inner diameter of flywheel access hole.

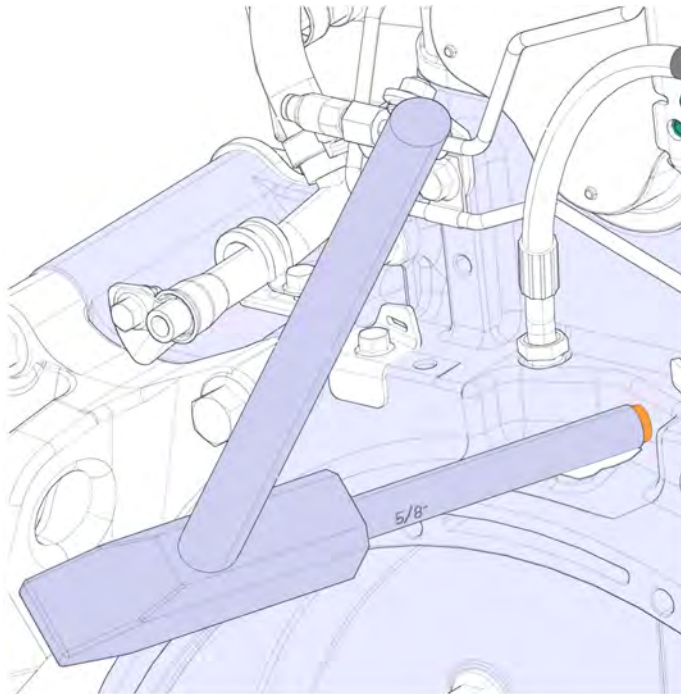


- 37 Use 5/8 inch cup plug driver provided in Fixture kit to drive cup plug into access hole until driver is flush with flywheel housing.

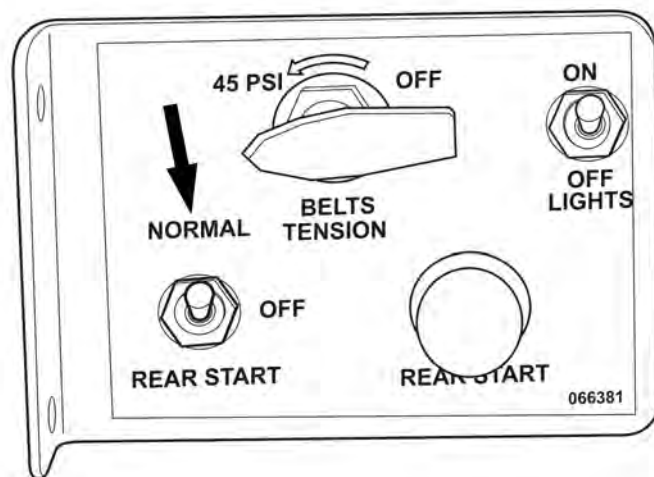


CAUTION

Wait 30 minutes before starting engine to allow Loctite® retaining compound to dry. If the Loctite® retaining compound does not dry properly, the cup plug may not remain in the flywheel housing.



- 38 Use new sensor O-ring (part number 20966752) provided in Consumable kit to install the crankshaft speed sensor. Install retainer screw and tighten to 8 ± 2 Nm (72 ± 12 in-lb). Connect the crankshaft speed sensor harness to the sensor.
- 39 Use new O-ring (part number 1547252) provided in Consumable kit and connect coolant lines at rear of engine. Cable tie applicable harnesses. If necessary, tie up battery cables and applicable harnesses to prevent interference during transmission reinstallation.
- 40 Install clamp and bracket securing air compressor discharge line.
- 41 On 9700 vehicles, install hydraulic pump.
- 42 On 9700 and PrevX vehicles, install transmission. Refer to Function Group 43.
- 43 Use coolant extractor (85112740) to fill the system with saved coolant.
- 44 Connect the battery cables.
- 45 Turn the ignition switch to the ON position. Move the starter selector switch to the REAR START position.
- 46 After 30 minutes to allow Loctite® to dry, run engine for 10 minutes at 1000 rpm and check for leaks around the cup plug. After shutdown, replenish fluids as necessary.
- 47 Set the starter selector switch to the NORMAL position.



Reimbursement

This repair is covered by an authorized Service Program. Reimbursement is obtained via the normal claim handling process.	
Claim Type (used only when uploading from the Dealer Bus. Sys.)	B
Recall Status	
Vehicle inspected, repair not required	1- Inspected OK
Vehicle repaired per instruction	2- Modified per instruction
Labor Time	
Primary Labor Time	20 hrs for PrevX and 9700 10 hrs for PrevH
Time to take charge and determine campaign status	0.3 hrs.
Causal Part	21760930
Parts Disposition	
Authorization Number	SP215017
Expiration Date	31-Dec-12

Note: Take Charge Time is not included in the Labor Code for this operation. Take charge may be eligible but can only be used once per repair visit. If vehicle is having other warranty repairs performed, take charge should be charged to the warranty repair, otherwise take charge can be charged to this service program.