

Drive Pulley

SERVICE TOOLS

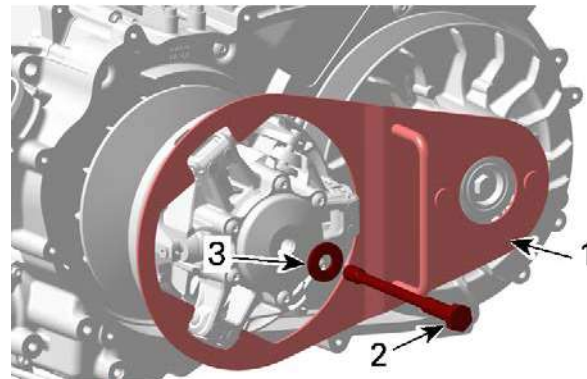
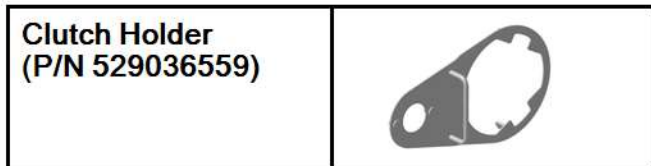
Description	Part Number	Page
CIRCLIP TOOL	(P/N 529036542)	111
CLUTCH HOLDER	(P/N 529036559)	108–109, 125, 131
DDS DISASSEMBLY KIT	(P/N 529036548)	127, 129
DRIVE PULLEY OPENING TOOL	(P/N 529036378)	113
DRIVE PULLEY PULLER	(P/N 529000064)	108–109
DRIVE PULLEY SUPPORT	(P/N 529036371)	109, 113
GOVERNOR CUP REMOVER	(P/N 529036546)	110
GREASE INJECTOR	(P/N 529036376)	117
PULLER/LOCKING TOOL	(P/N 529036098)	106, 125
PULLEY SPRING COMPRESSOR TOOL	(P/N 529036545)	110, 113
REMOVING AXLE TOOL	(P/N 529036372)	112–114
ROLLER AXLE PULLER	(P/N 529036557)	115

SERVICE PRODUCTS

Description	Part Number	Page
CLUTCH AND PULLEY FLANGE CLEANER PRO S1		115, 120, 128
ISOFLEX GREASE TOPAS NB 5051		120
LOCTITE 243 (BLUE)		121–122, 127
LOCTITE 648 (GREEN)		123
TRIPLE-GUARD GREASE		117
XPS BRAKES AND PARTS CLEANER		131

Removing the Drive Pulley

1. Remove drive belt. Refer to *Drive Belt* subsection.
2. Lock the drive pulley.
3. Remove the drive pulley bolt with spring washer.



1. Clutch holder
2. Drive pulley bolt
3. Conical spring washer

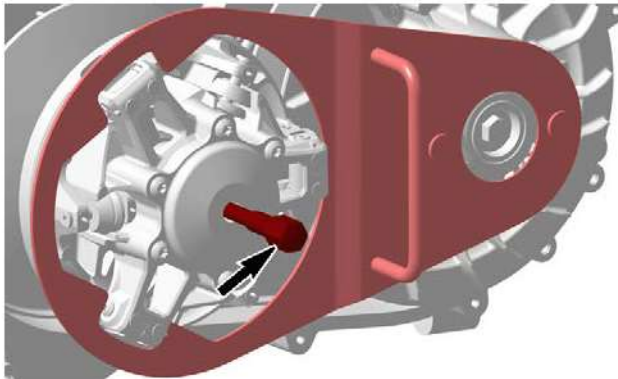
NOTICE

Never use any type of impact wrench for drive pulley removal.

4. Remove the drive pulley from engine.



NOTICE
Use only recommended tool.



1. Make sure the clutches holder is properly installed.
2. Screw the puller in place of the drive pulley bolt.
3. Tighten the puller until the pulley is disengaged from the crankshaft end.

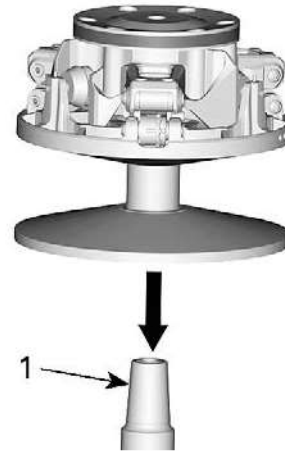
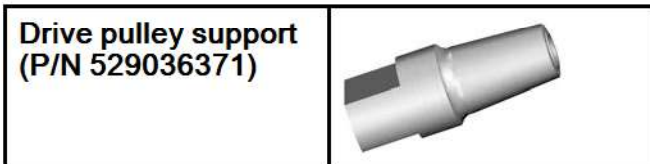
Disassembling the Drive Pulley
Separating Fixed and Sliding Sheaves

NOTICE
To avoid damaging the thrust rollers, NEVER knock directly on the drive pulley puller. Always use all of the following recommended tools.

NOTE: No component marking is required before disassembly. This drive pulley features factory apposed index marks as references.

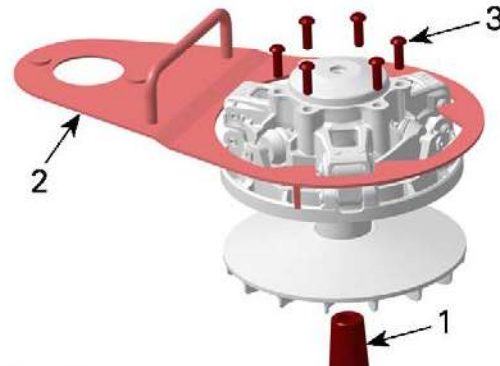
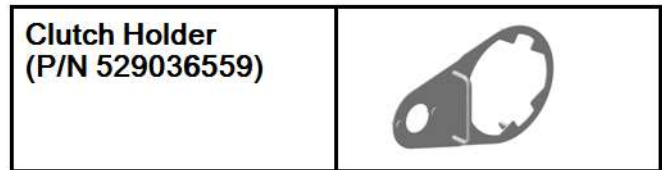
NOTICE
Never use any type of torch to heat governor cup. Never tap on governor cup.

1. Fix drive pulley support in a vice and install the drive pulley on it.



TYPICAL
1. Drive pulley support

2. Install clutch holder to the drive pulley and remove the torque flange retaining screws.



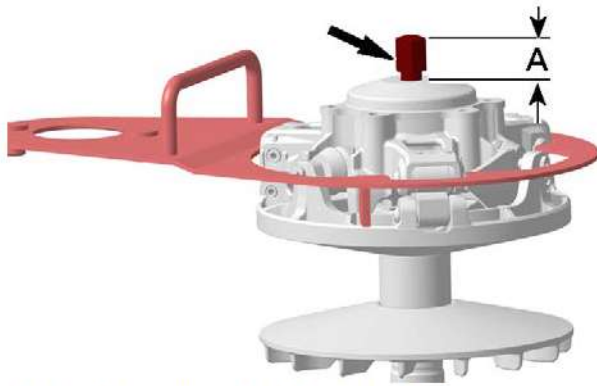
1. Drive pulley support
2. Clutch holder
3. Torque flange retaining screws

3. Screw the puller into governor cup until the puller head protrusion is 33 mm (1-5/16 in).




Continuously Variable Transmission (CVT)

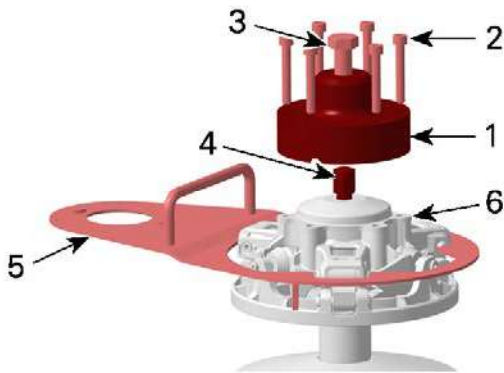
Drive Pulley



A. Puller head protrusion of 33 mm (1-5/16 in)

4. Place governor cup remover on governor cup.

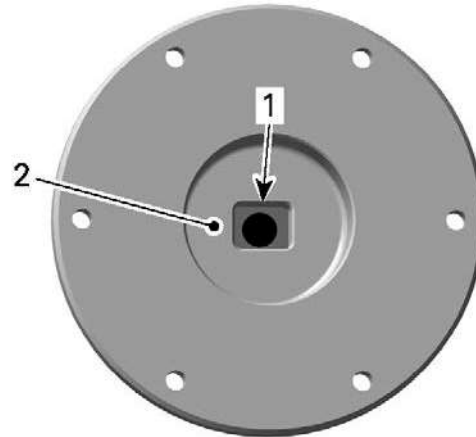
<p>Governor cup remover (P/N 529036546)</p>	
--	---



1. Governor cup remover
2. M8x55 puller retaining screws
3. M16x60 puller screw
4. Drive pulley puller
5. Clutch holder
6. Governor cup

NOTICE

Ensure that the hexagonal head of the drive pulley puller engages in the slot of the governor cup remover.



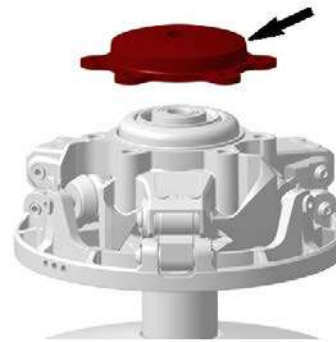
TYPICAL

1. Slot
2. Inner side of remover

5. Tighten M8 x 55 puller retaining screws.


Tightening Torque	
M8 x 55 remover retaining screws	20 ± 2 Nm (15 ± 1 lbf-ft)

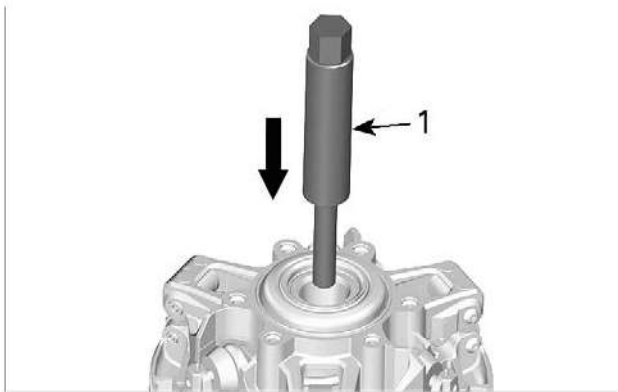
6. Screw in the M16 x 60 puller screw to separate fixed and sliding sheaves.
7. Remove governor cup remover, clutch holder and drive pulley puller.
8. Remove torque flange.



Removing the Spring and Governor Cup

1. Screw in the bolt of the pulley spring compressor tool.

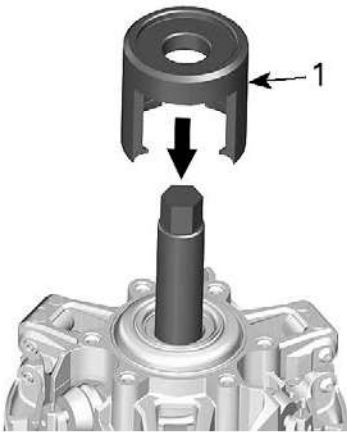
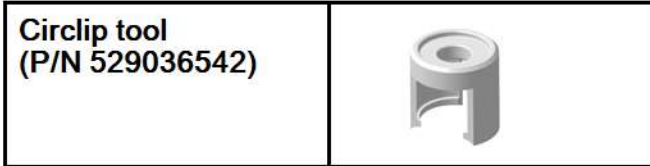
<p>Pulley spring compressor tool (P/N 529036545)</p>	
---	---



TYPICAL

1. Bolt

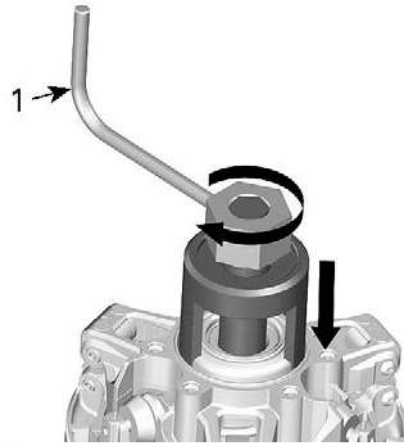
- Place circlip installer/remover onto governor cup.



TYPICAL

1. Circlip installer/remover

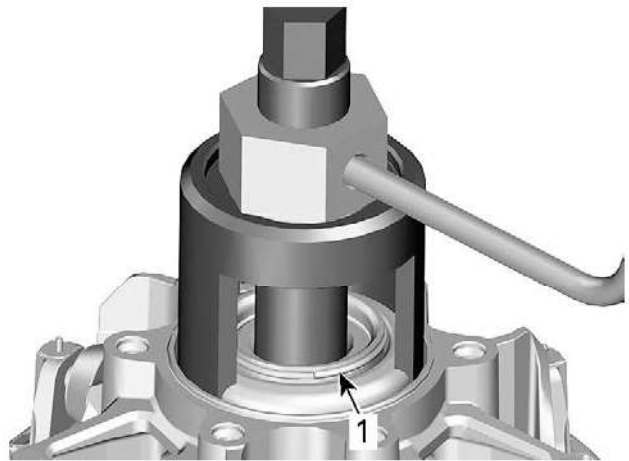
- Turn handle of pulley spring compressor tool clockwise to compress the spring.



TYPICAL

1. Handle

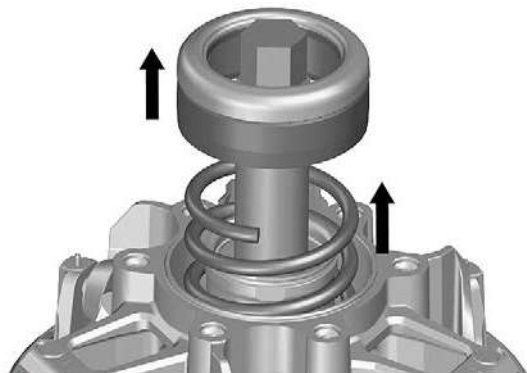
- Remove circlip.



TYPICAL

1. Circlip

- Remove handle of pulley spring compressor tool and circlip installer/remover.
- Remove spring seat, spring support and spring.



TYPICAL

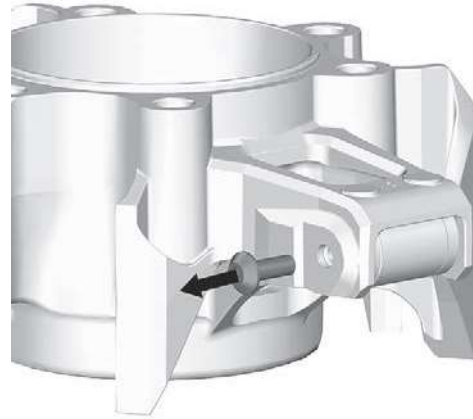
Continuously Variable Transmission (CVT)

Drive Pulley

7. Remove bolt of pulley spring compressor tool.

NOTICE

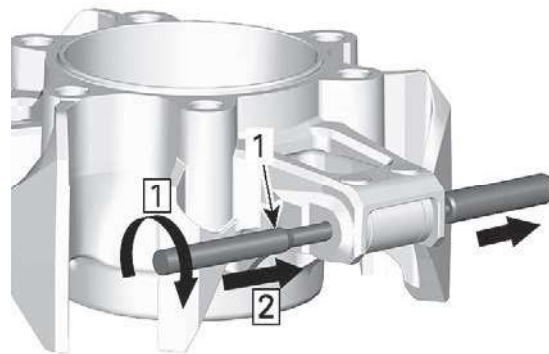
Remove bolt of pulley spring compressor tool to avoid damaging the bushings inside the governor cup.



TYPICAL

2. Remove bearing sleeve.

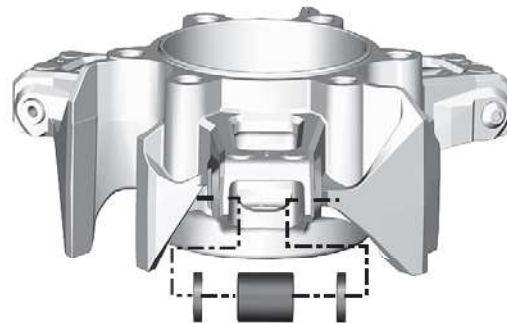
Removing axle tool
(P/N 529036372)



TYPICAL

1. Removing axle tool
Step 1. Screw the tool into the axle
Step 2. Push axle to the right side

3. Remove thrust roller and its thrust washers.



TYPICAL



If you bought this manual from any other seller please leave them NEGATIVE feedback and notify us at bestshopmanuals@gmail.com

TYPICAL

8. Remove governor cup.



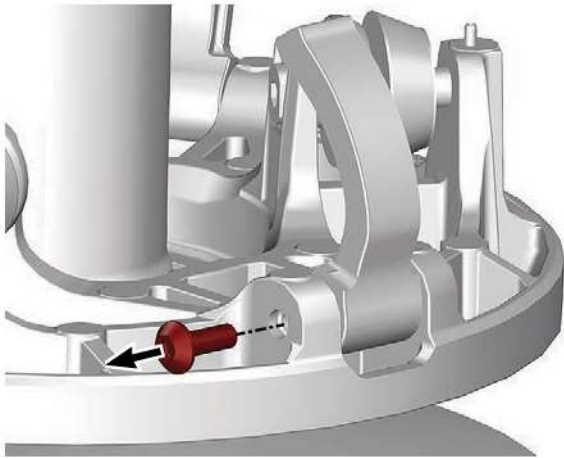
TYPICAL

Removing the Roller

1. Remove bearing sleeve retaining screw.

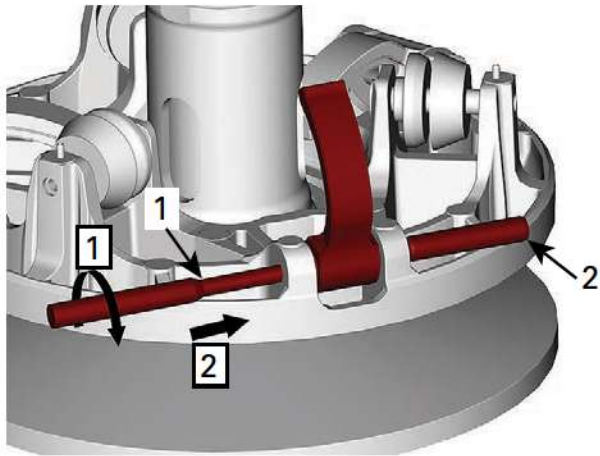
Removing the Roller Lever (without Governor Cup)

1. Remove bearing sleeve retaining screw.



TYPICAL

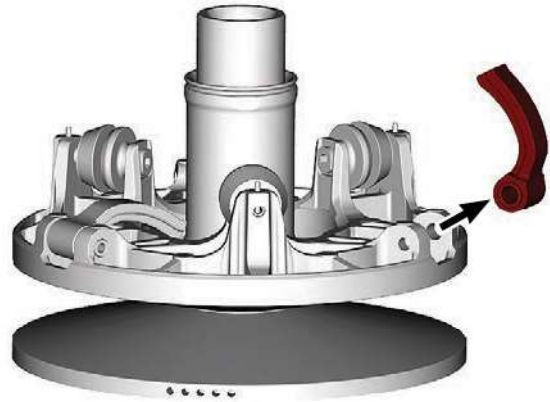
2. Remove bearing sleeve.



TYPICAL

1. Removing axle tool
 2. Axle
- Step 1. Screw the tool into the axle
Step 2. Push axle to the right side

3. Remove roller lever assembly.

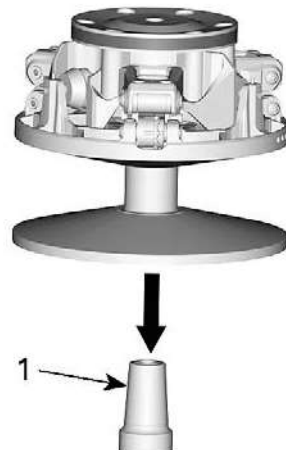


TYPICAL

Removing the Roller Lever (Governor Cup installed)

1. Lower the sliding sheave.

<p>Drive pulley support (P/N 529036371)</p>	
<p>Pulley spring compressor tool (P/N 529036545)</p>	
<p>Drive pulley opening tool (P/N 529036378)</p>	

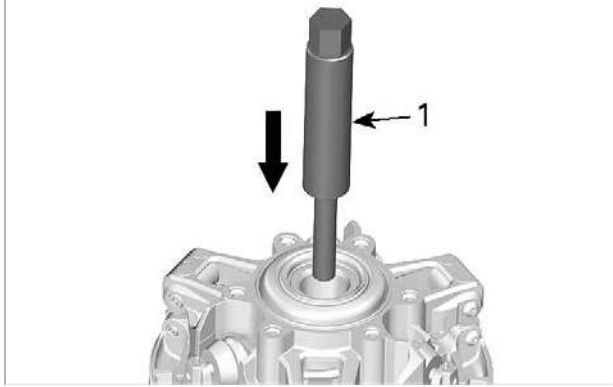


TYPICAL

1. Drive pulley support

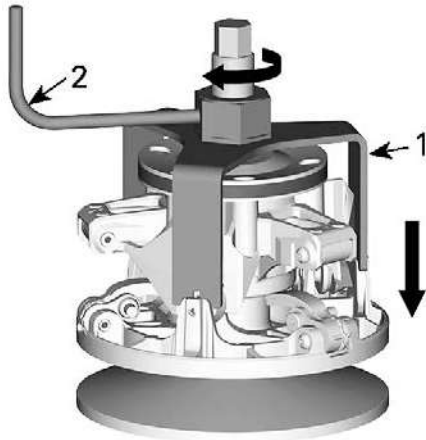
Continuously Variable Transmission (CVT)

Drive Pulley



TYPICAL

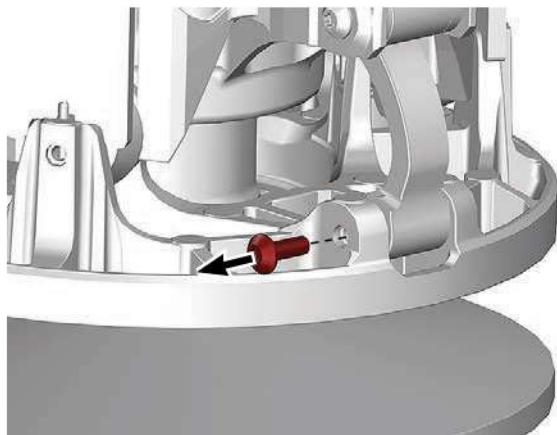
1. Threaded shaft of the pulley spring compressor



TYPICAL

1. Drive pulley opening tool
2. Handle of the pulley spring compressor

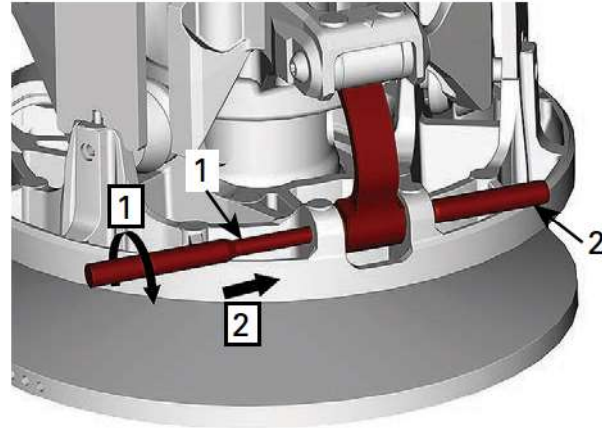
1. Secure the drive pulley support in a vice.
 2. Install the drive pulley over the support.
 3. Install the drive pulley opening tool and spring compressor tool.
2. Remove bearing sleeve retaining screw.



TYPICAL

3. Remove bearing sleeve.

**Removing axle tool
(P/N 529036372)**

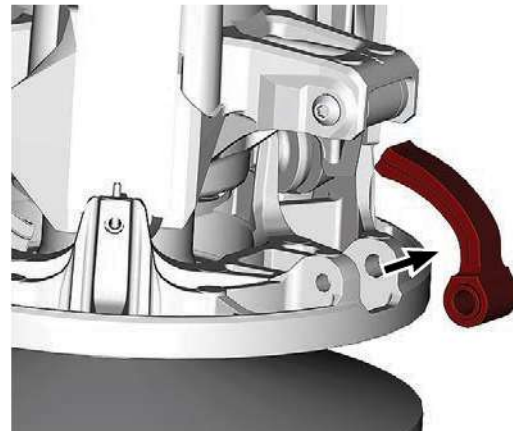


TYPICAL

1. Removing axle tool
2. Axle

Step 1. Screw the tool into the axle
Step 2. Push axle to the right side

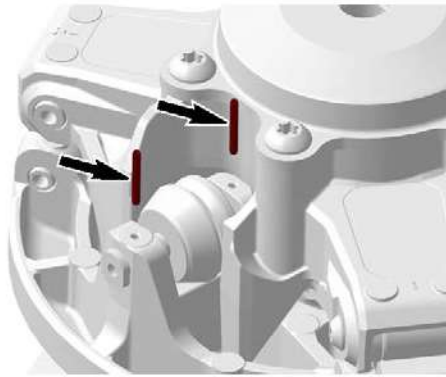
4. Remove roller lever assembly.



TYPICAL

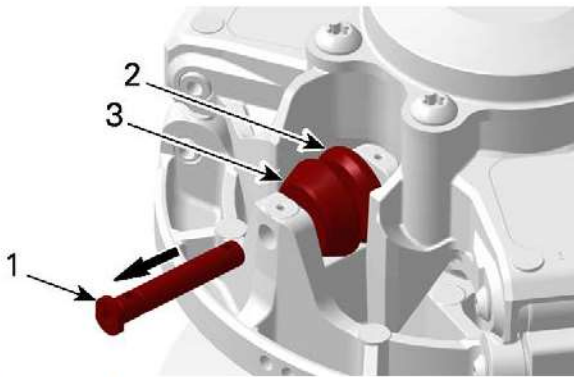
Removing the Inner Roller and Outer Roller

1. Carefully pull out dowels by using a pliers, discard them.



2. Screw in the roller axle puller and remove bearing sleeve, then remove inner and outer rollers.

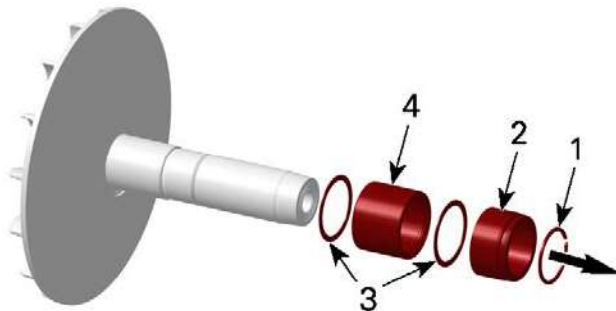
Roller axle puller
(P/N 529036557)



1. Bearing sleeve
2. Inner roller
3. Outer roller

Fixed Sheave

1. Remove following components from the fixed sheave.



1. Snap ring
2. Stop sleeve
3. Washer
4. Hub bearing

Cleaning the Drive Pulley

NOTE: Parts must be at room temperature before cleaning.

1. Clean pulley sheaves and shaft with fine steel wool and dry cloth.
2. Using a paper towel and cleaner, clean the following components.

Clutch and pulley flange cleaner PRO S1

- Crankshaft tapered end
- Taper inside fixed sheave of drive pulley
- Crankshaft threads
- Retaining screw threads.

NOTICE

Avoid contact between cleaner and crankshaft seal because damage may occur.

3. Remove all hardened oil deposits that are baked on crankshaft and pulley tapered surfaces with coarse or medium steel wool and/or sand paper no. 600.

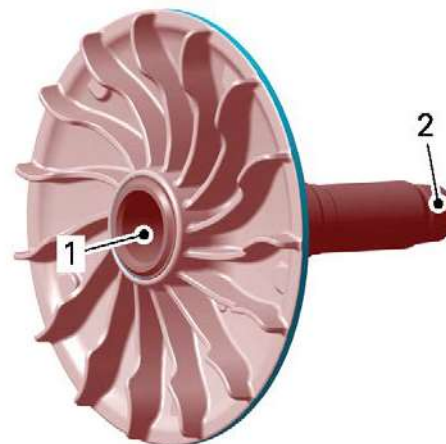
NOTICE

Do not use any other type of abrasive.

4. Reclean mounting surfaces with paper towel and cleaning solvent.
5. Wipe off the mounting surfaces with a clean, dry paper towel.

NOTICE

Mounting surfaces must be free of any oil, cleaner or towel residue.



TYPICAL

1. Taper of fixed sheave, crankshaft side
2. Tapered end of fixed sheave shaft

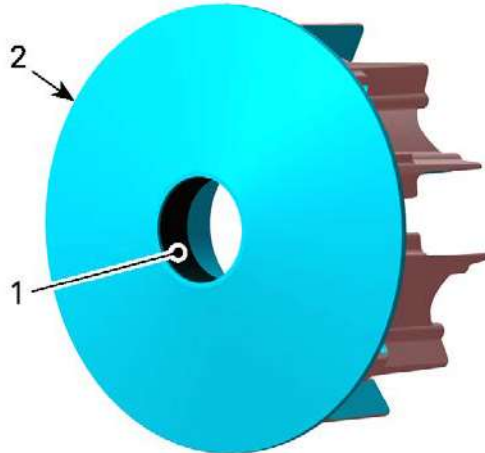
Continuously Variable Transmission (CVT)

Drive Pulley

6. Only use petrol base cleaner when cleaning bushings of sliding sheave.

NOTICE

Do not use acetone to clean bushings.

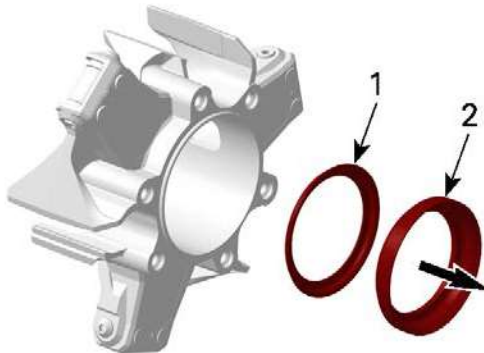


TYPICAL

1. Bushing
2. Sliding sheave

Inspecting the Drive Pulley Governor Cup

1. Check governor cup for cracks or other visible damage. Replace if necessary.
2. Push out spring seat and spring support by hand.

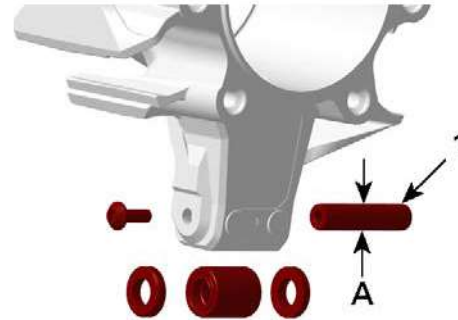


1. Spring seat
2. Spring support

3. Check spring seat and spring support for wear, cracks or other visible damage. Replace if necessary.
4. Reinstall spring seat and spring support by hand.

Thrust Roller Bearing Sleeve

1. Measure diameter of bearing sleeve in the area of the thrust roller running surface, replace if it is out of specification.



1. Thrust roller bearing sleeve
- A. Measure diameter here

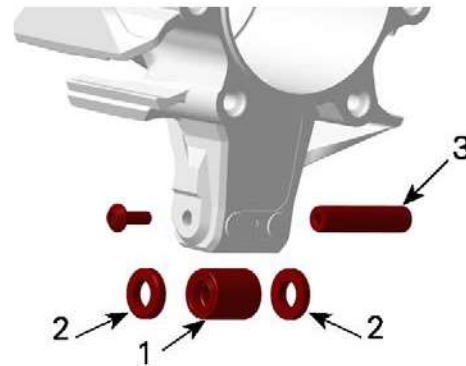
Thrust Roller Bearing Sleeve Diameter

New	9.978 to 10.000 mm (.3928 to .3937 in)
Service limit	9.900 mm (.3898 in)

Thrust Roller

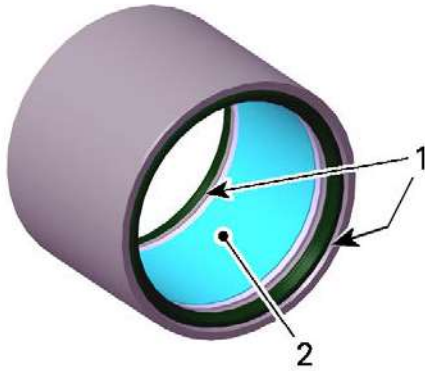
NOTICE

Whenever replacing thrust rollers, always replace all thrust rollers, thrust washers and bearing sleeves at the same time.



1. Thrust roller assy.
2. Thrust washers
3. Bearing sleeve

1. Check for:
 - Brittle, hard, worn or damaged oil seals
 - Wear or damages on the thrust roller
 - Flat spots or pittings on the needles.
2. If any of these damages appear, replace the thrust roller assy. as set if necessary.



TYPICAL

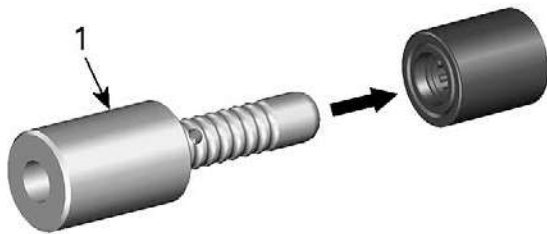
- 1. Oil seals
- 2. Needle bearing

3. If necessary clean needle bearing, remove all the grease with a pulley cleaner or a brake cleaner and then renew lubrication.

Triple-guard grease

Grease injector (P/N 529036376)	
--	---

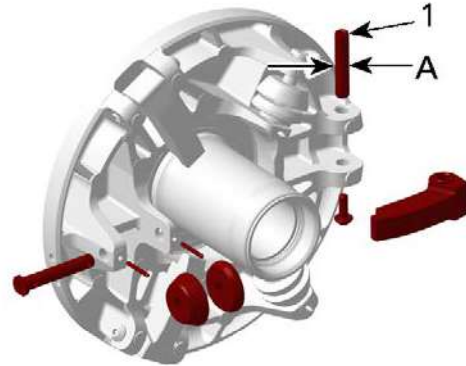
NOTE: A threaded end is required on the grease gun for using the grease injector.



- 1. Grease injector

Roller Lever Bearing Sleeve

1. Measure diameter of bearing sleeve in the area of the roller lever running surface, replace if it is out of specification.

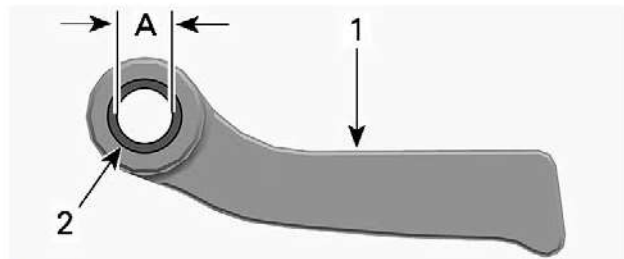


- 1. Roller lever bearing sleeve
- A. Measure diameter here

Roller Lever Bearing Sleeve Diameter	
New	7.978 to 8.000 mm (.3141 to .315 in)
Service limit	7.900 mm (.311 in)

Roller Lever

1. Check bushing diameter in the centrifugal lever for wear. Replace centrifugal lever if necessary.



TYPICAL

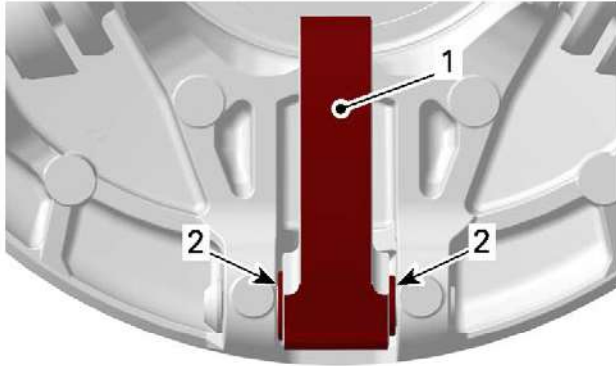
- 1. Roller lever
- 2. Bushing
- A. Bushing inner diameter

Roller Lever Bore Diameter	
New	8.02 to 8.08 mm (.3157 to .3181 in)
Service limit	8.20 mm (.323 in)

2. Replace roller levers together with bearing sleeves if the contact surfaces to thrust rollers and thrust surfaces to sliding sheave show heavy visible wear.

Continuously Variable Transmission (CVT)

Drive Pulley



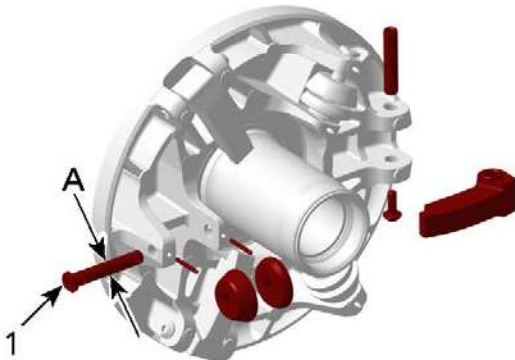
1. Contact surface to thrust roller
2. Thrust surface to sliding sheave

NOTICE

Whenever replacing roller levers, always replace all lever at the same time. Otherwise, unbalanced drive pulley will occur because of levers difference.

Roller Bearing Sleeve

1. Measure diameter of bearing sleeve in the area of the inner and outer roller running surface, replace if it is out of specification.



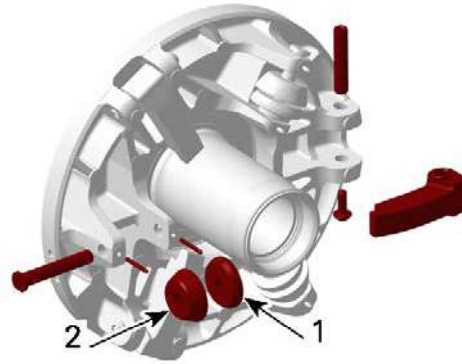
1. Roller bearing sleeve
- A. Measure diameter here

Roller Bearing Sleeve Diameter

New	7.978 to 8.000 mm (.3141 to .315 in)
Service limit	7.900 mm (.311 in)

Inner and Outer Roller

1. Check inner and outer rollers for cracks and excessive wear.



1. Inner roller
2. Outer roller

2. Check bore diameter of inner and outer roller for wear. Replace centrifugal lever if necessary.

NOTE: Worn bores are conical, measure for maximum bore diameter.

Inner Roller Bore Diameter

New	8.01 to 8.03 mm (.3154 to .3161 in)
Service limit	8.15 mm (.3209 in)

Outer Roller Bore Diameter

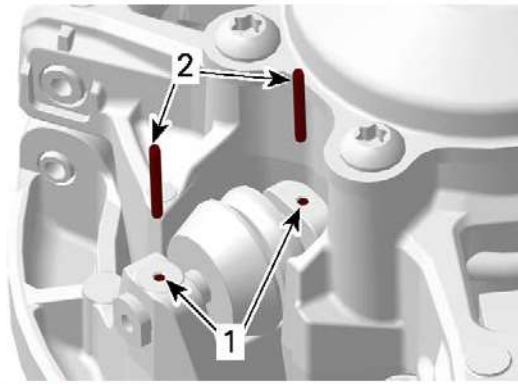
New	8.01 to 8.09 mm (.3154 to .3185 in)
Service limit	8.15 mm (.3209 in)

Sliding Sheave

1. Check sliding sheave for cracks and excessive wear. Replace sliding sheave if necessary.
2. Check dowel bores for wear. Replace sliding sheave if necessary.

NOTICE

The dowels must have a tight press fit in their bores in the sliding sheave, loosen dowels due to worn bores may cause severe CVT damage. Always replace dowels by new ones.

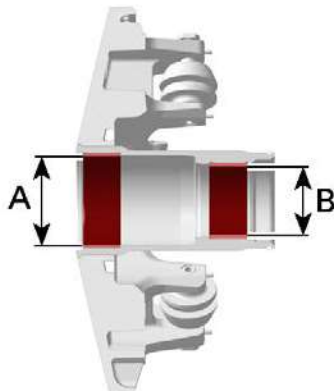


1. Dowel bores
2. Dowels

Dowel Bore Diameter	
New	2.38 to 2.46 mm (.0937 to .0969 in)
Service limit	2.50 mm (.0984 in)

3. Measure bushing diameters of sliding sheave.

Measuring Point
At least 5 mm (1/4 in) from bushing edge



A. Sliding sheave large bushing
B. Sliding sheave small bushing

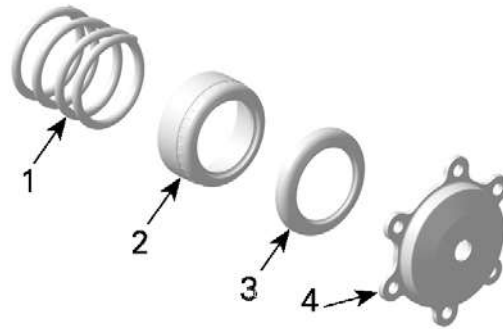
Sliding Sheave Large Bushing	
New	46.98 to 47.06 mm (1.8496 to 1.8528 in)
Service limit	47.09 mm (1.8539 in)

Sliding Sheave Small Bushing	
New	35.94 to 36.095 mm (1.415 to 1.4211 in)
Service limit	36.125 mm (1.4222 in)

4. Replace sliding sheave if one of the bushings is out of specification.

Spring, Spring Support, Spring Seat and Torque Flange

1. Check spring, spring support, spring seat and torque flange for wear, cracks or other visible damage. Replace if necessary.



1. Spring
2. Spring support
3. Spring seat
4. Torque flange

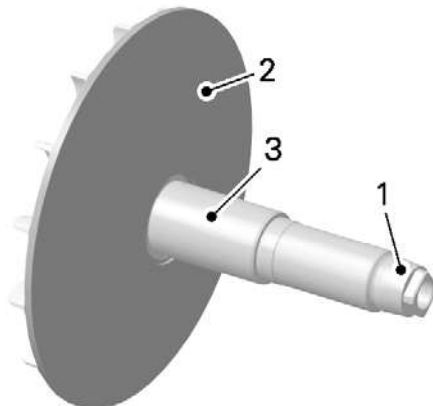
Fixed Sheave

1. Check:

- Fixed sheave contact surface to the torque flange for scratches or other damages
- Fixed sheave plate for marks or scratches.

2. Replace fixed sheave if required.

3. Check fixed sheave contact surface with the hub for discoloration, polished area or pitting. If so, the hub needs to be replaced.



TYPICAL

1. Contact surface to torque flange
2. Sheave plate
3. Contact surface with hub bearing.

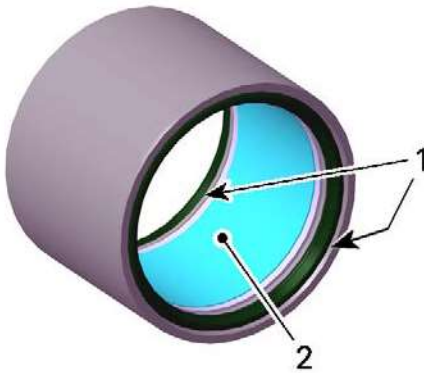
Continuously Variable Transmission (CVT)

Drive Pulley

Hub Bearing

Physical Hub Bearing Inspection

1. Check for:
 - Brittle, hard or damaged seals
 - Discoloration on the edges of the bearing
 - Corrosion on the needles and/or the outer ring
 - Flat spots on the needles.
2. If any of these damages appear, replace the hub bearing.



1. Oil seals
2. Needle bearing

Checking the Hub Bearing Operation

1. Bring engine to operating temperature.
2. Switch to 2WD.
3. Shift lever to "H".
4. Stop engine.
5. Remove CVT cover.
6. Lift and support rear end of the vehicle so the wheels clear the ground.
7. Start engine and let run at idle speed.
8. Look at the driven pulley if it is turning or not.
 1. If turning, inspect drive pulley hub bearing. Refer to *Inspecting the Drive Pulley* in this subsection.
 2. If not turning, the hub bearing is ok.

Assembling the Drive Pulley

The assembly is the reverse of the disassembly procedure. However, pay attention to following.

Hub Bearing

1. Thoroughly clean the bearing. Remove all the grease with a pulley cleaner or a brake cleaner.

Clutch and pulley flange cleaner PRO S1

2. Dry the inside of the bearing with compressed air.

3. Apply grease in the middle of needles (1 g (.035 oz)).

Isoflex Grease Topas NB 5051

NOTICE

Do not use any other type of grease.

NOTE: All the content of the pouch is required.

Keep seals free of grease.



4. Spin the needles until grease is spread evenly.
5. Put the bearing back on the shaft.
6. Spray cleaner on a clean rag to wipe grease excess on the shaft and the pulley sheaves.

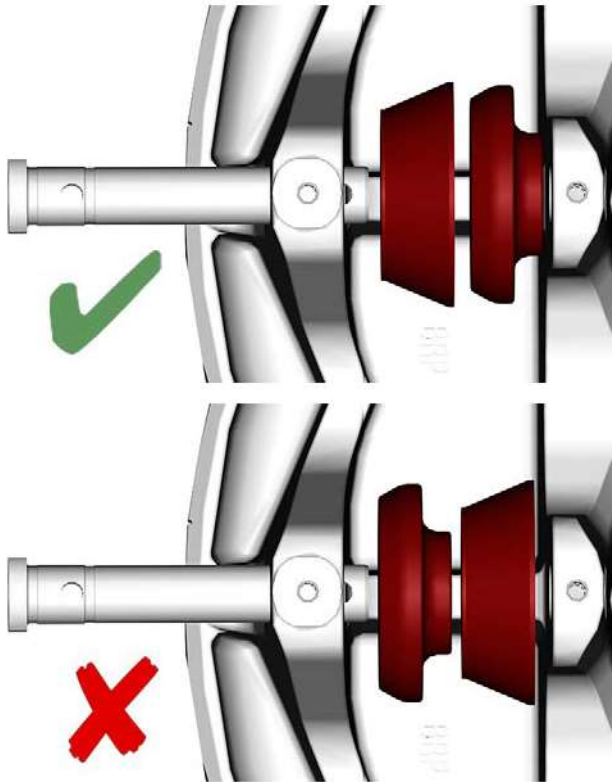
NOTE: New hub bearing comes with appropriate grease and quantity of grease.

When CVT is reassemble repeat step 1 to 7 from *Checking the Hub Bearing Operation* in *Maintenance* in this subsection.

1. If the driven pulley is turning, **replace** the hub bearing.
2. If the driven pulley is not turning, the hub bearing is ok.

Inner and Outer Rollers

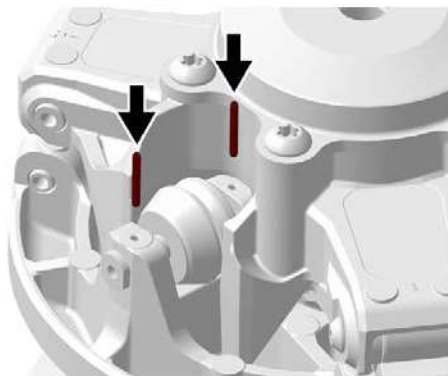
1. Position rollers as illustrated.



2. Position the flat sides of the bearing sleeve head vertically.
3. Use a C vise clamp to push the bearing sleeve back in place.
4. Install new dowels.

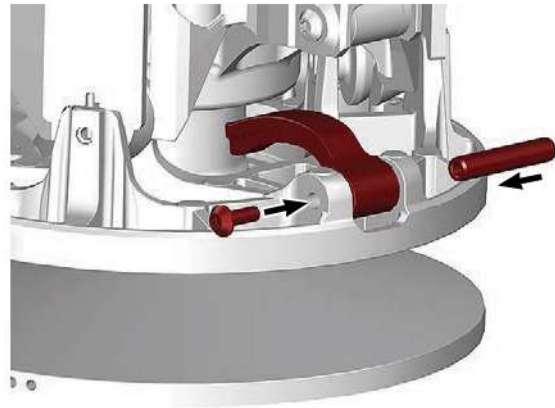
NOTICE

The dowels must have a tight press fit in their bores in the sliding sheave, loosen dowels due to worn bores may cause severe CVT damage. Always replace dowels by new ones.



Roller Lever

1. Install the roller lever on the sliding sheave.



TYPICAL

2. Apply a drop of threadlocker on the threads of the bearing sleeve retaining screw.

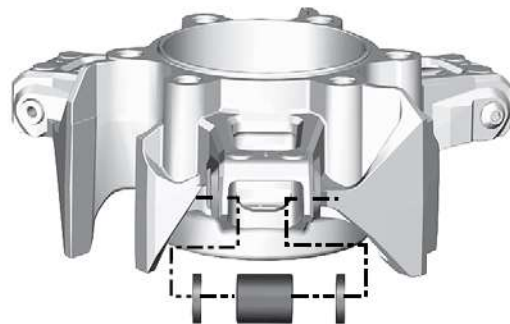
Loctite 243 (blue)

3. Tighten the bearing sleeve retaining screw.

Tightening Torque	
Bearing sleeve retaining screw	5 ± 0.5 Nm (44 ± 4 lbf-in)

Thrust Roller

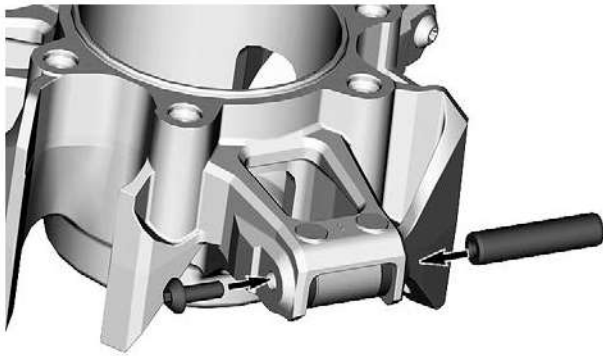
1. Lubricate the needle bearing if necessary, refer to *Thrust Roller* in this subsection.
2. Install thrust roller.



TYPICAL

Continuously Variable Transmission (CVT)

Drive Pulley



TYPICAL

3. Apply a drop of threadlocker on threads of the bearing sleeve retaining screw.

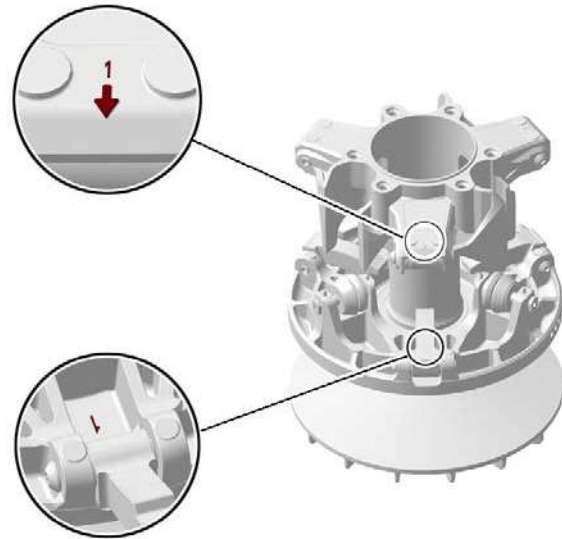
Loctite 243 (blue)

4. Tighten the bearing sleeve retaining screw to specification.

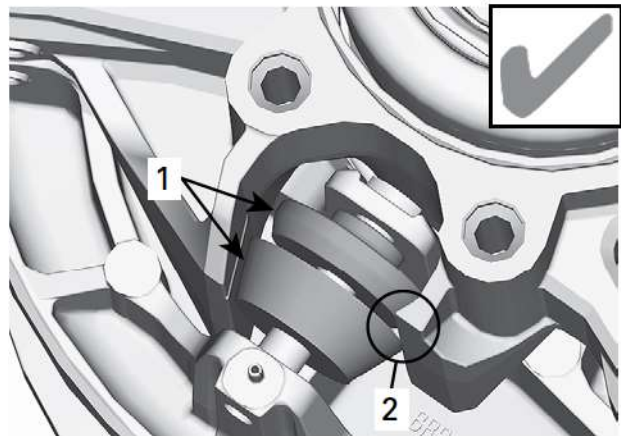
Tightening Torque	
Bearing sleeve retaining screw	$5 \pm 0.5 \text{ Nm}$ ($44 \pm 4 \text{ lbf-in}$)

Governor Cup

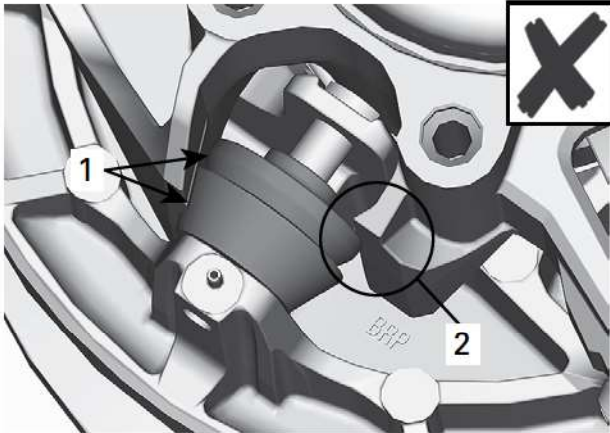
1. Install the governor cup on the sliding sheave by aligning the indexing marks.
 - Governor cup- the arrow on the arms #1, just above the thrust roller.
 - Sliding sheave - the #1 below the roller lever.



NOTICE
During installation of the governor cup, make sure to correctly position all inner and outer thrust rollers. Ensure the inner thrust rollers are positioned inside the sliding tracks of the governor cup.



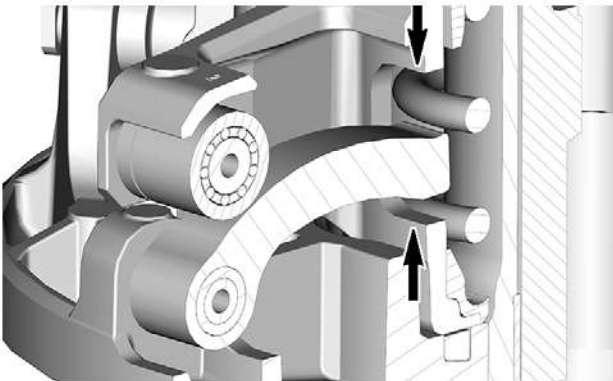
THRUST ROLLER - GOOD INSTALLATION
1. Thrust rollers
2. Inner thrust roller inside sliding track

**THRUST ROLLER - WRONG INSTALLATION**

1. Thrust rollers
2. Inner thrust roller outside sliding track

NOTICE

Ensure the roller levers are correctly positioned inside the openings of the governor cup.

**ROLLER LEVER POSITIONING****Torque Flange**

1. Install torque flange and tighten retaining screws to following sequence and specification.



TYPICAL

2. Apply a drop of threadlocker on threads of the torque flange retaining screws.

Loctite 648 (green)

3. Tighten the torque flange retaining screws to specification.

Tightening Torque

Torque flange retaining screws	32 ± 3 Nm (24 ± 2 lbf-ft)
--------------------------------	------------------------------

Installing the Drive Pulley

The installation is the reverse of the removal procedure. However, pay attention to following.

1. Clean mounting surfaces, refer to *cleaning the drive pulley* above.

NOTICE

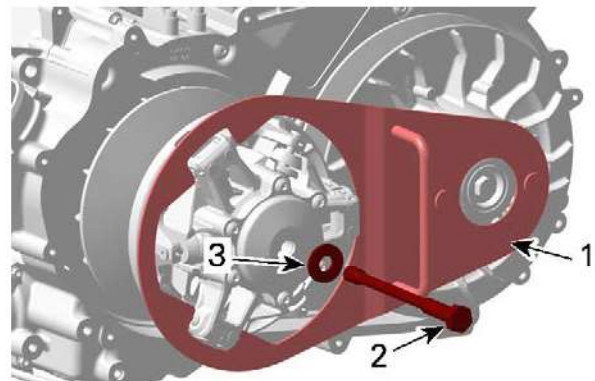
Do not apply antiseize or any lubricant on crankshaft and drive pulley tapers.

2. Install drive pulley on crankshaft end.
3. Install a **NEW** conical spring washer with its concave side towards drive pulley.
4. Install drive pulley bolt.

NOTICE

Always use BRP genuine parts for conical spring washer and bolt.

5. Secure the drive pulley with the clutch holder.



1. Clutch holder
2. Drive pulley bolt
3. Conical spring washer

6. Using a torque wrench, tighten the drive pulley bolt to specified torque.

Continuously Variable Transmission (CVT)

Drive Pulley

Tightening Torque	
Drive pulley bolt	120 ± 8 Nm (89 ± 6 lbf-ft)

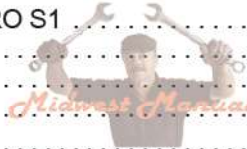

Driven Pulley

SERVICE TOOLS

Description	Part Number	Page
CIRCLIP TOOL	(P/N 529036542)	111
CLUTCH HOLDER	(P/N 529036559)	108–109, 125, 131
DDS DISASSEMBLY KIT	(P/N 529036548)	127, 129
DRIVE PULLEY OPENING TOOL	(P/N 529036378)	113
DRIVE PULLEY PULLER	(P/N 529000064)	108–109
DRIVE PULLEY SUPPORT	(P/N 529036371)	109, 113
GOVERNOR CUP REMOVER	(P/N 529036546)	110
GREASE INJECTOR	(P/N 529036376)	117
PULLER/LOCKING TOOL	(P/N 529036098)	106, 125
PULLEY SPRING COMPRESSOR TOOL	(P/N 529036545)	110, 113
REMOVING AXLE TOOL	(P/N 529036372)	112–114
ROLLER AXLE PULLER	(P/N 529036557)	115

SERVICE PRODUCTS

Description	Part Number	Page
CLUTCH AND PULLEY FLANGE CLEANER PRO S1		115, 120, 128
ISOFLEX GREASE TOPAS NB 5051		120
LOCTITE 243 (BLUE)		121–122, 127
LOCTITE 648 (GREEN)		123
TRIPLE-GUARD GREASE		117
XPS BRAKES AND PARTS CLEANER		131

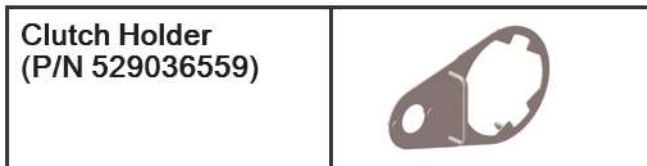



 Paperless Manuals
 For a Better Tomorrow
 www.green-manuals.com

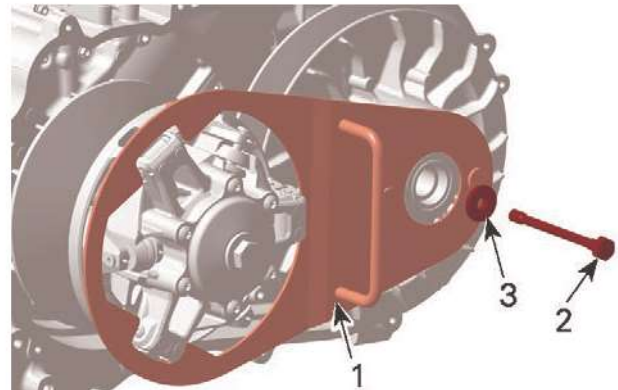
If you bought this manual from any other seller please leave them
 NEGATIVE feedback and notify us at bestshopmanuals@gmail.com

Removing the Driven Pulley

- Remove:
 - CVT cover
 - Drive belt.
- Install the clutch holder.



- Remove:
 - Driven pulley screw (discard it)
 - Collar washer.



1. Clutch holder
2. Driven pulley screw (discard)
3. Collar washer

4. Install the puller/locking tool instead of the driven pulley screw.



5. Tighten the puller to disengage the driven pulley.
6. Remove the clutch holder.