

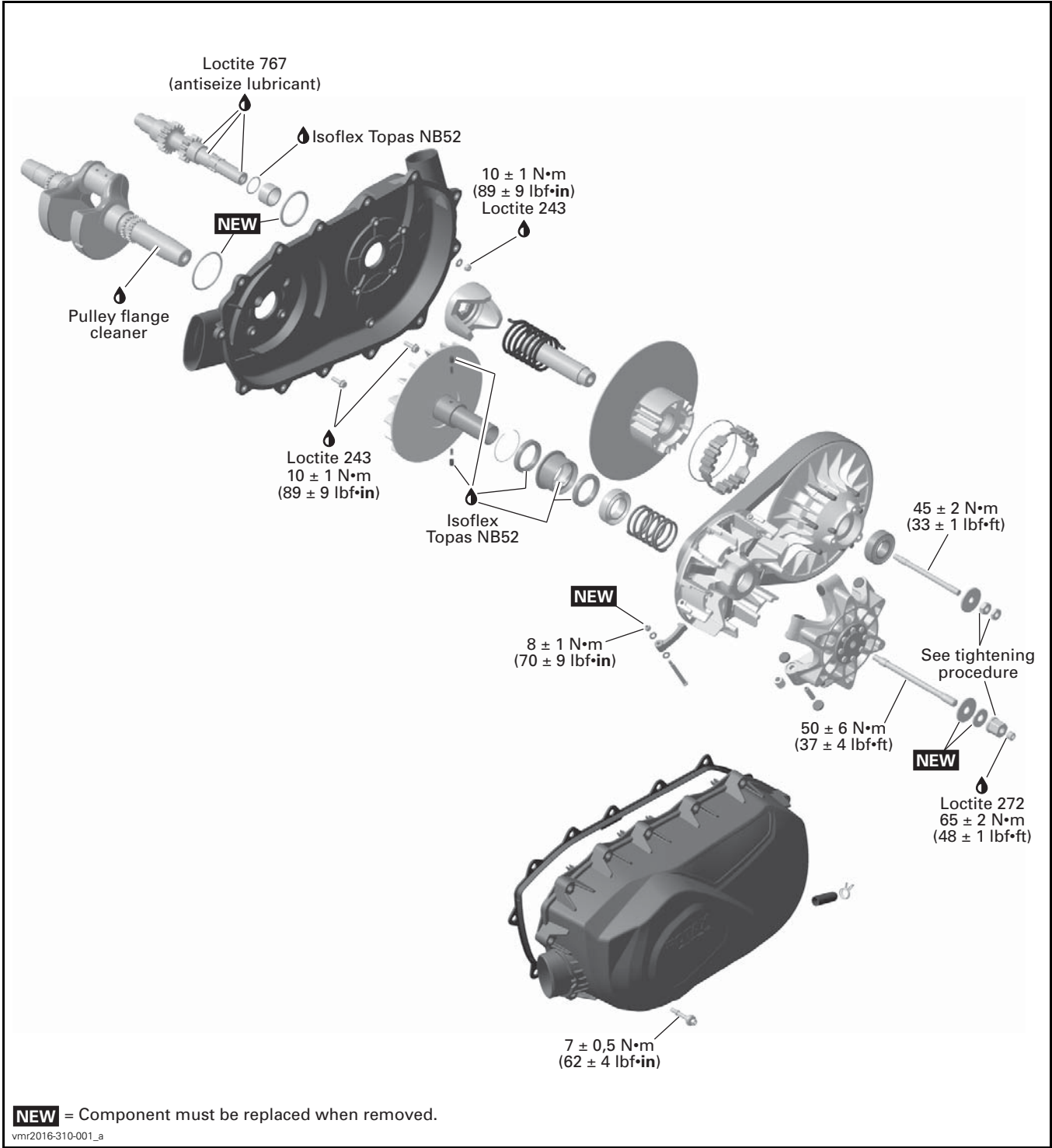
CONTINUOUSLY VARIABLE TRANSMISSION (CVT - 1000R XMR)

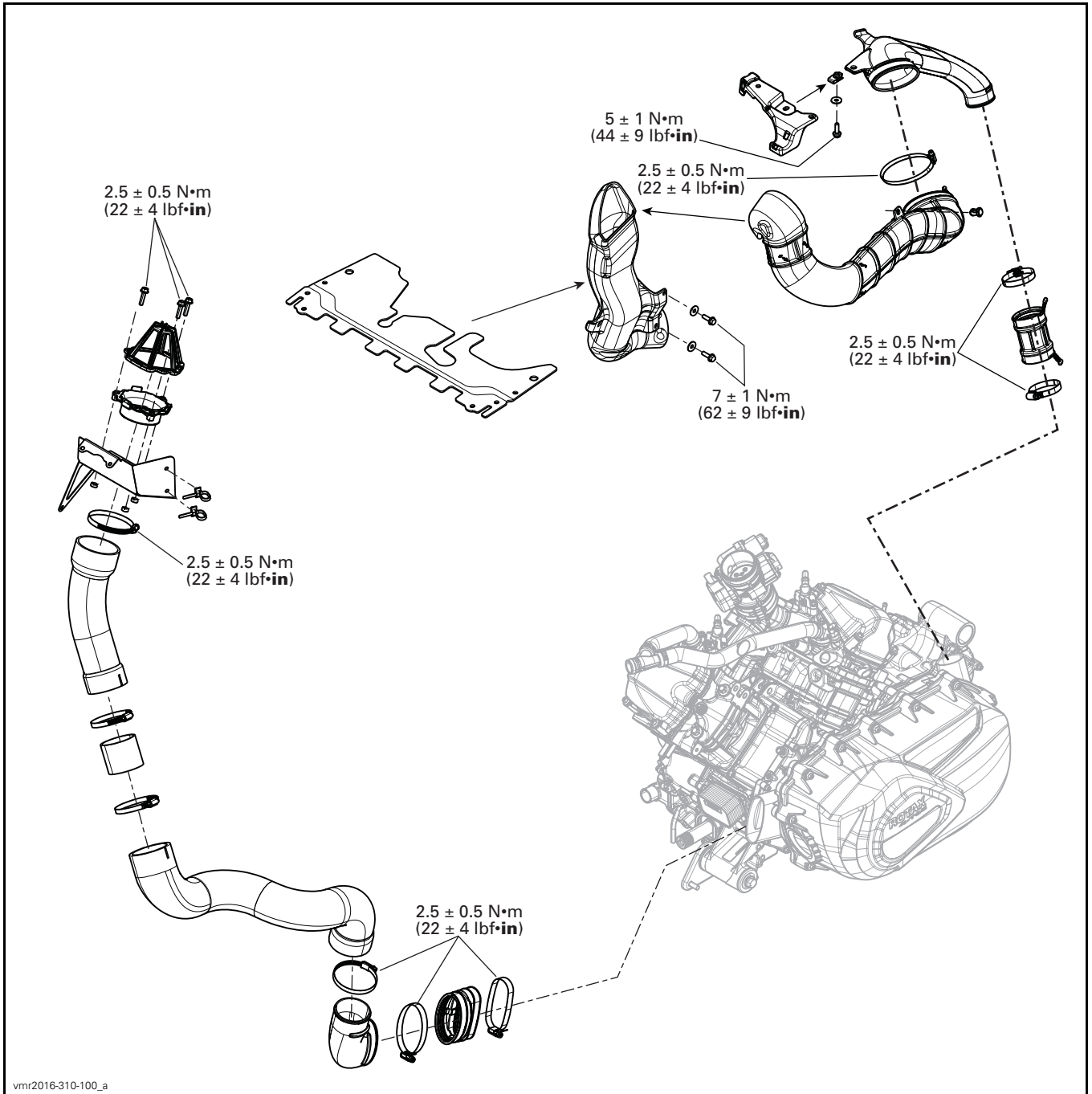
SERVICE TOOLS

Description	Part Number	Page
CLUTCH HOLDER.....	529 036 238	6, 17, 25
CLUTCH PULLER	529 035 746	7
COUNTERSHAFT RETAINER TOOL.....	529 036 312	18, 23
DRIVEN PULLEY STUD TOOL	529 036 360	18, 23
PULLER/LOCKING TOOL.....	529 036 098	5, 26

SERVICE PRODUCTS

Description	Part Number	Page
ISOFLEX GREASE TOPAS NB 52	293 550 021	14
LOCTITE 272	420 899 526	16
LOCTITE 767 (ANTISEIZE LUBRICANT)	293 800 070	24
XPS BRAKES AND PARTS CLEANER (USA)	219 701 705	9, 19
XPS BRAKES AND PARTS CLEANER	219 701 776	9, 19





vmr2016-310-100_a

GENERAL

NOTE: For a better understanding, the following illustrations are taken with engine out of vehicle. To perform the following instructions, it is not necessary to remove engine.

This CVT is lubrication free. Never lubricate any components except drive pulley one-way clutch.

WARNING

Never touch CVT while engine is running.
Never drive vehicle when CVT cover is removed.

WARNING

Any drive pulley repairs must be performed by an authorized Can-Am dealer. Subcomponent installation and assembly tolerances require strict adherence to procedures detailed.

WARNING

The clutch assembly is a precisely balanced unit. Never replace parts with used parts from another clutch assembly.

PROCEDURES

CVT COVER

CVT Cover Access

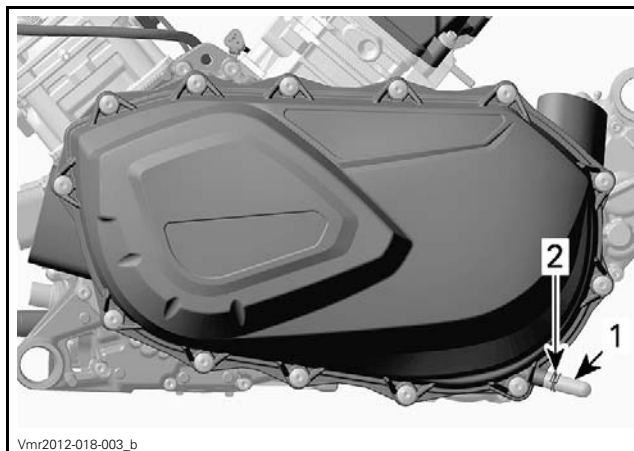
Refer to *BODY* and remove:

- LH side and extension panels
- LH footboard panel.

Draining the CVT Cover

If water is present in CVT cover, it can be drained as follows:

Remove drain reservoir from CVT cover.



1. Drain reservoir
2. Spring clip

Let water drain from CVT cover.

Reinstall drain reservoir.

NOTICE If any debris entered the CVT cover, CVT must be cleaned and inspected.

Removing the CVT Cover

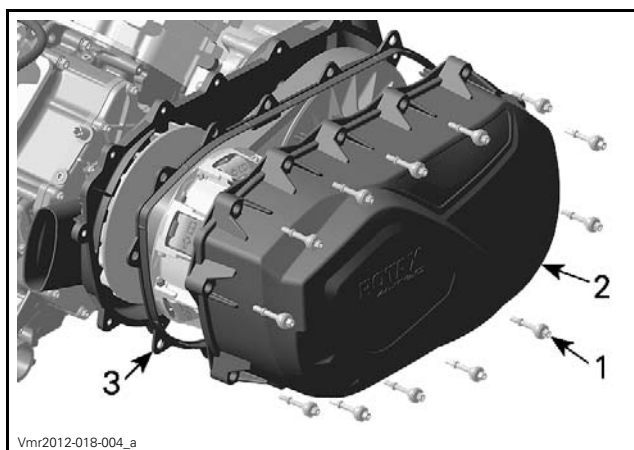
Loosen CVT inlet and outlet hose clamps.

Remove CVT cover screws.

NOTE: Remove the center top screw last to support the cover during removal.

NOTICE Do not use and impact tool to remove CVT cover screws.

Remove the CVT cover and its gasket.

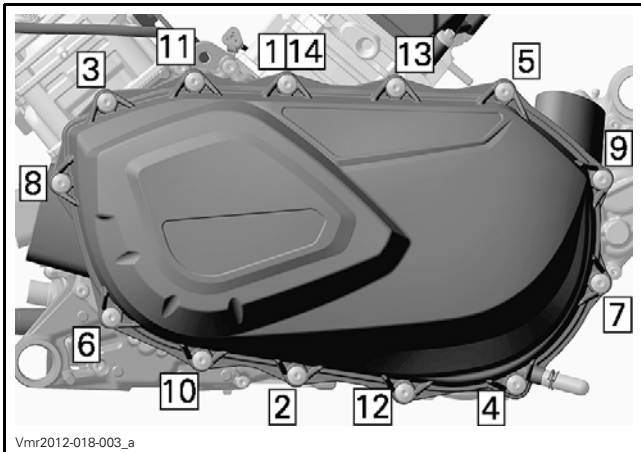


1. CVT cover screws
2. CVT cover
3. Gasket

Installing the CVT Cover

Install the center top screw of first.

Tighten the CVT cover screws as per following sequence.



CVT COVER TIGHTENING SEQUENCE

TIGHTENING TORQUE	
CVT cover screws	7 N•m ± 1 N•m (62 lbf•in ± 9 lbf•in)

Reinstall CVT inlet and outlet hoses.

TIGHTENING TORQUE	
CVT hose clamps	2.5 N•m ± 0.5 N•m (22 lbf•in ± 4 lbf•in)

DRIVE BELT

Removing the Drive Belt

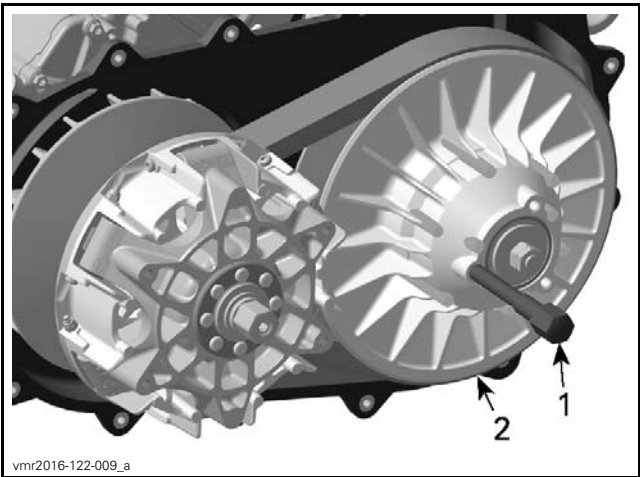
NOTICE In case of a drive belt failure, the CVT, cover and air outlet must be cleaned.

Remove *CVT COVER*.

Open driven pulley.

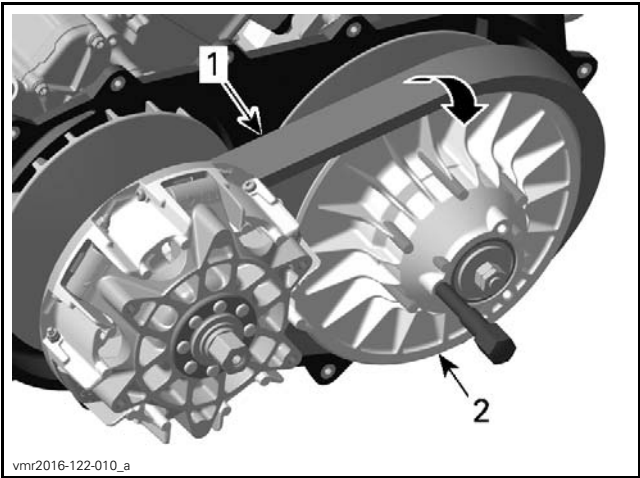
REQUIRED TOOL	
PULLER/LOCKING TOOL (P/N 529 036 098)	

Screw tool in the threaded hole of driven pulley and tighten to open the pulley.



1. Puller/locking tool
2. Fixed sheave of driven pulley

To remove belt, slip the belt over the top edge of fixed sheave, as shown.



1. Belt
2. Fixed sheave of driven pulley

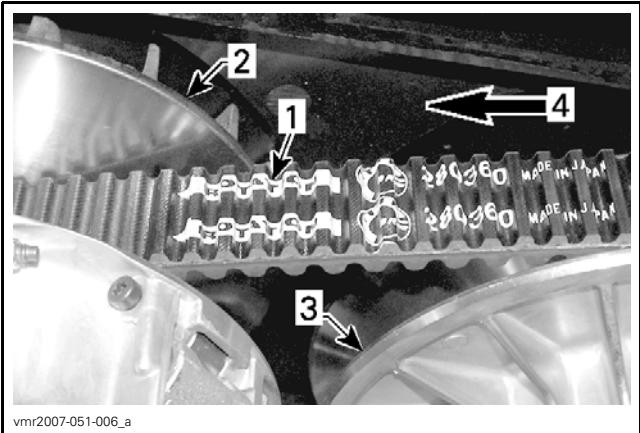
Inspecting the Drive Belt

For drive belt inspection refer to *DRIVE BELT INSPECTION* in the *PERIODIC MAINTENANCE PROCEDURES* subsection.

Installing the Drive Belt

For installation, reverse the removal procedure. Pay attention to following details.

The maximum drive belt life span is obtained when the drive belt has the proper rotation direction. Install it so that the arrow printed on belt is pointing towards front of the vehicle, viewed from top.



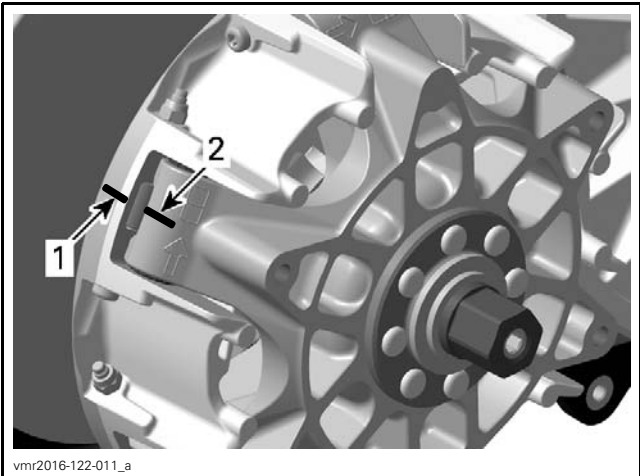
- 1. Arrow printed on belt
- 2. Drive pulley (front)
- 3. Driven pulley (rear)
- 4. Rotation direction

DRIVE PULLEY

Removing the Drive Pulley

Remove *DRIVE BELT*, see procedure in this subsection.

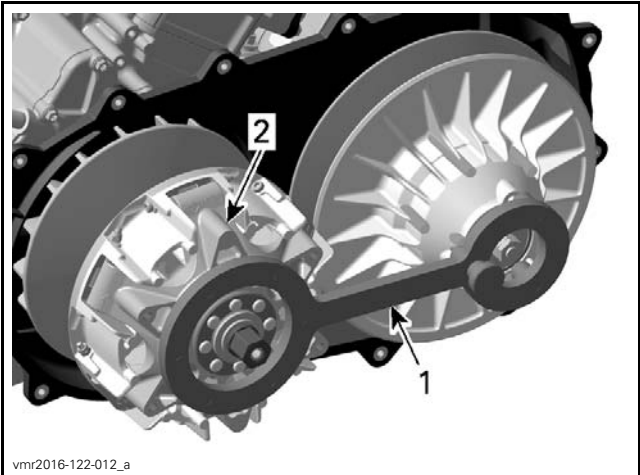
Prior to removing the drive pulley, mark sliding sheave and governor cup to ensure correct indexation at reinstallation.



- 1. Mark on drive pulley sliding sheave
- 2. Mark on governor cup

Lock the drive pulley.

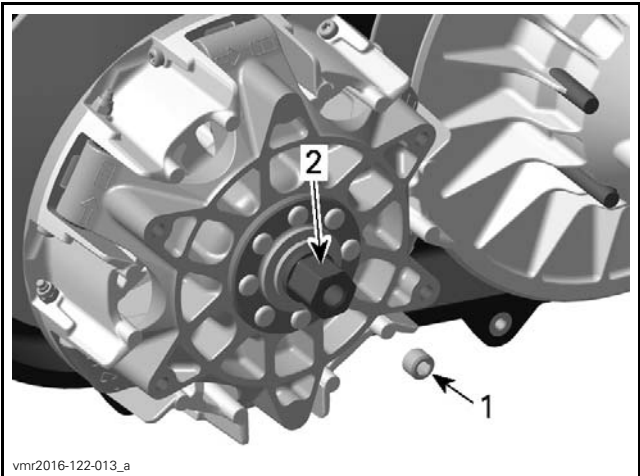
REQUIRED TOOL	
CLUTCH HOLDER (P/N 529 036 238)	



- 1. Clutch holder
- 2. Drive pulley sliding sheave
- 3. Governor cup

Remove set screw.

NOTE: Heat set screw to break the threadlocker bond prior to removal.



- 1. Set screw
- 2. Drive pulley nut

Loosen the drive pulley nut.

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

NOTE: Do not unscrew the drive pulley nut completely. If governor cup is stuck, hit it using a soft hammer.

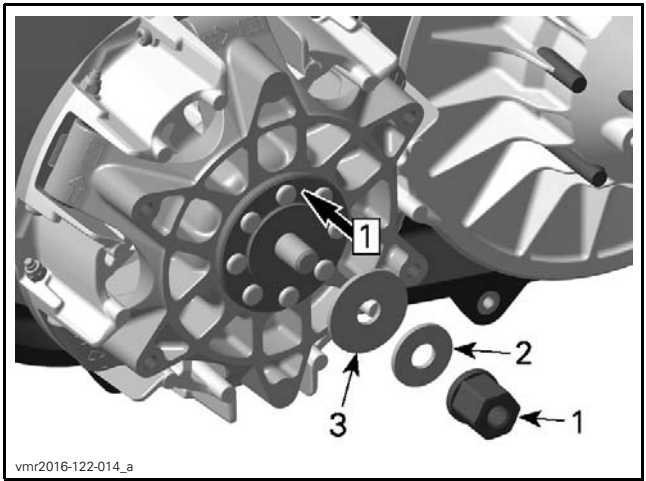
Remove service tool.

Apply axial pressure with your hand on the sliding sheave and governor cup.

Remove:

- Drive pulley nut
- Small thrust washer (discard it)
- Large thrust washer (discard it)

⚠ CAUTION Sliding sheave of drive pulley is spring loaded.

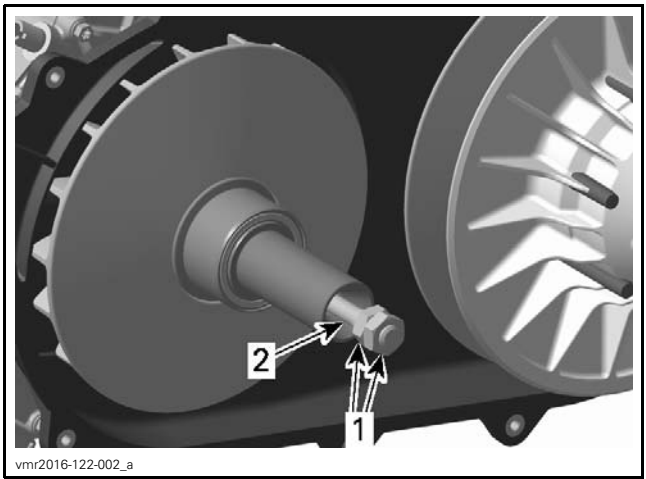


Step 1: Push governor cup

1. Drive pulley nut
2. Small thrust washer (discard it)
3. Large thrust washer (discard it)

Slowly release and remove sliding sheave.
Counter two M12 x 1.75 nuts for removing the stud.

NOTICE Do not use original installed nuts.



1. Counter nuts
2. Stud

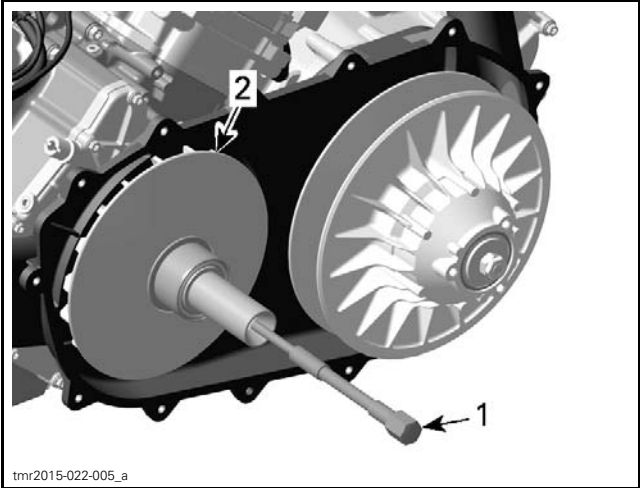
Lock crankshaft, refer to *CRANKSHAFT LOCKING PROCEDURE* in the *BOTTOM END* subsection.

Remove stud from PTO.

Remove fixed pulley.

NOTICE Use only recommended tool.

REQUIRED TOOL	
CLUTCH PULLER (P/N 529 035 746)	

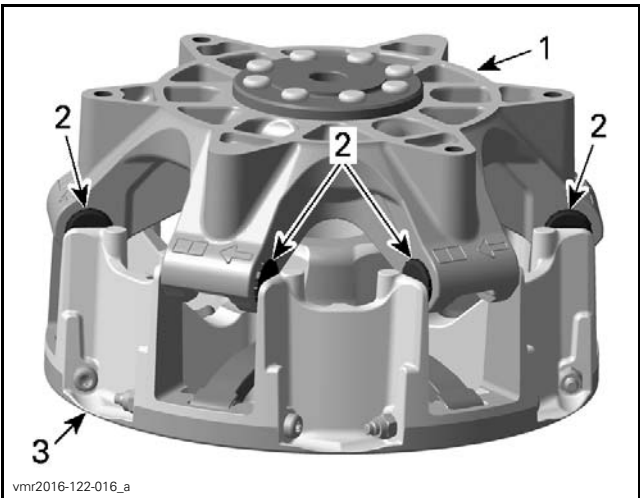


1. Drive pulley puller
2. Fixed sheave

Disassembling the Drive Pulley

Governor Cup

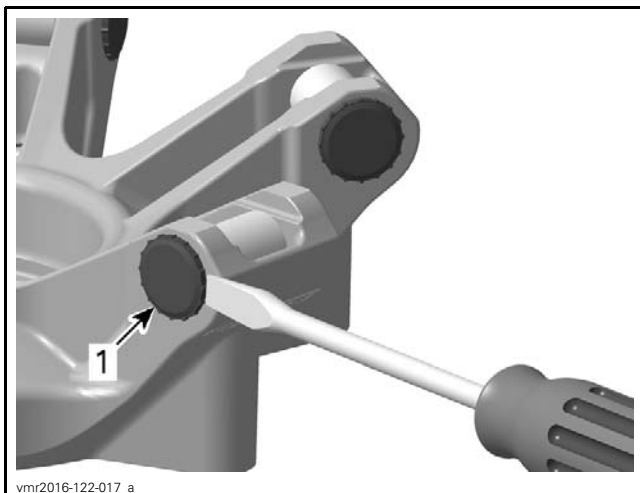
Carefully lift governor cup until slider shoes come at their highest position into guides.



1. Governor cup
2. Slider shoes
3. Sliding sheave

NOTE: The following procedure is not necessary except if slider shoe and/or roller must be removed. Refer to *INSPECTION* before proceeding.

Remove slider shoes.



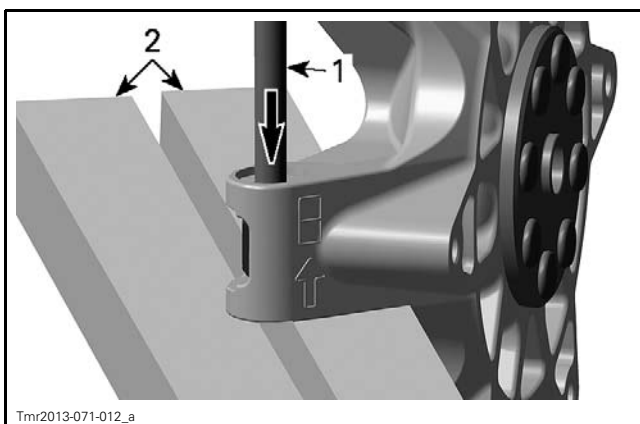
1. Slider shoe

Put governor cup on a vice to push out bearing sleeve of roller in the foreseen direction (against arrow).

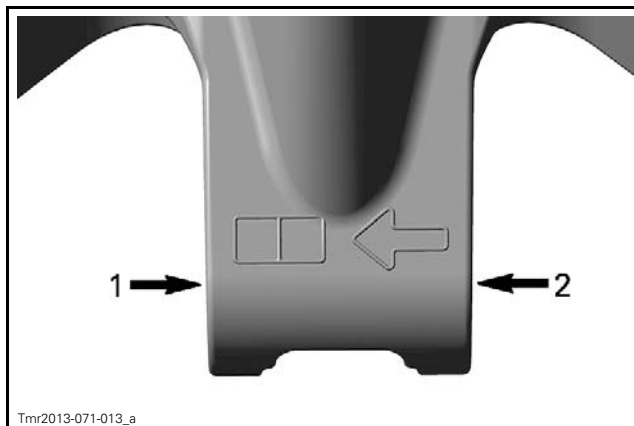
NOTICE Do not clamp the governor cup in the vice to push out bearing sleeve. Governor cup will be damaged.

NOTE: Use protection plates to avoid marks and/or damages to the governor cup.

NOTICE Always replace all rollers at the same time. Partly worn rollers may cause damage to the CVT system.

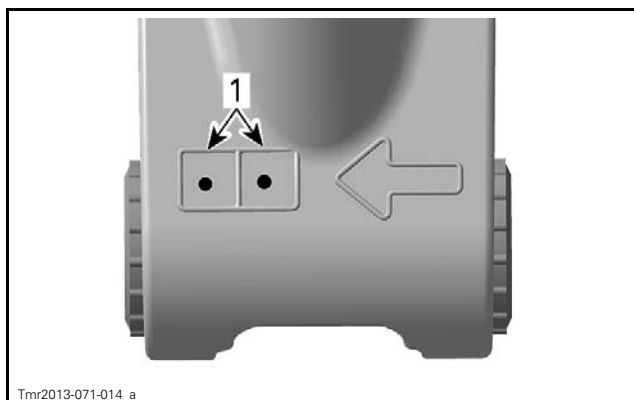


1. Punch
2. Vice



1. Removal direction
2. Assembly direction

NOTE: Whenever removing a governor cup with already two marked boxes replace it by a new one.



1. Marked boxes

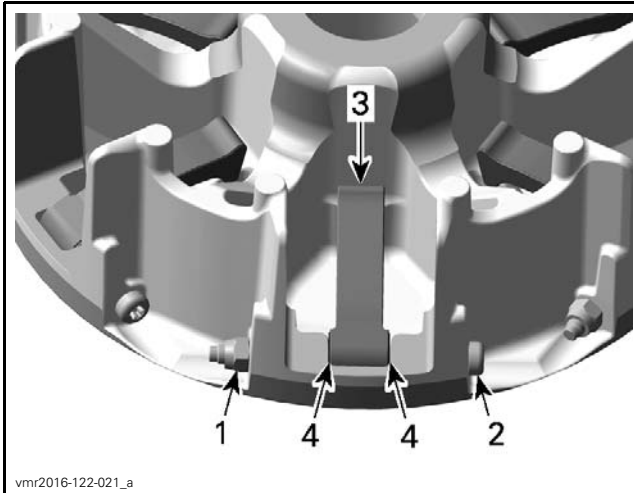
Sliding Sheave

This drive pulley is equipped with 6 levers.

NOTE: The following procedure is not necessary except if centrifugal lever must be removed. Refer to *INSPECTION* before proceeding.

To remove centrifugal levers remove:

- Lock nut
- Centrifugal lever pivot bolt
- Centrifugal lever
- Thrust washers.



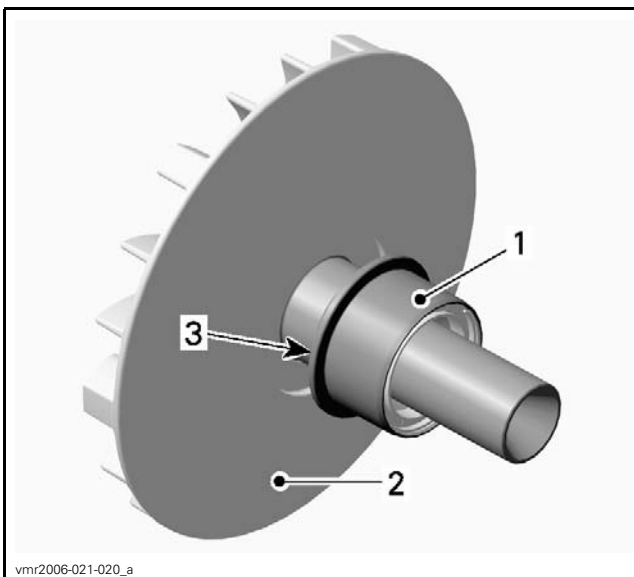
- vmr2016-122-021_a
1. Lock nut
 2. Centrifugal lever pivot bolt
 3. Centrifugal lever
 4. Thrust washers

Fixed Sheave

⚠ WARNING

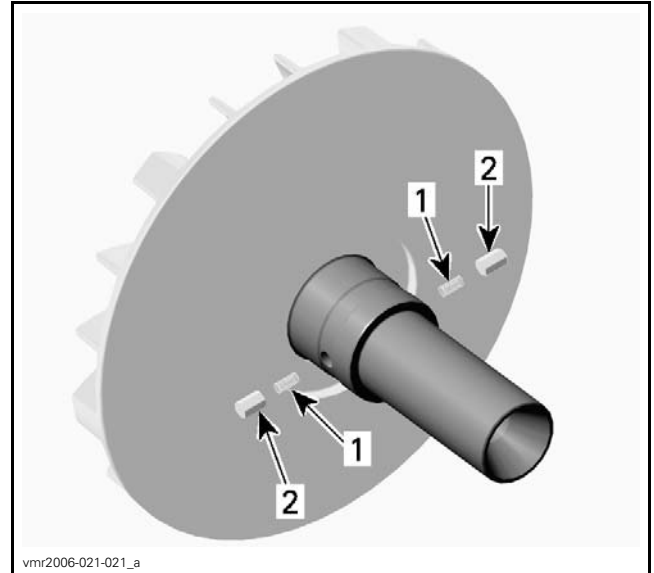
Always wear safety glasses to remove spring sleeves.

Pull and rotate one-way clutch slowly until the sheave of spring sleeves are visible.



- vmr2006-021-020_a
1. One-way clutch
 2. Fixed sheave
 3. Spring sleeve area

Hold both spring sleeves with fingers and release when one-way clutch is disengaged.



- vmr2006-021-021_a
1. Springs
 2. Spring sleeves

Cleaning the Drive Pulley

Using a small brush, paper towel and parts cleaner, clean all the mounting surfaces and threads as shown.

REQUIRED PRODUCT

XPS BRAKES AND PARTS
CLEANER (P/N 219 701 776)
or XPS BRAKES AND PARTS CLEANER
(USA) (P/N 219 701 705)

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

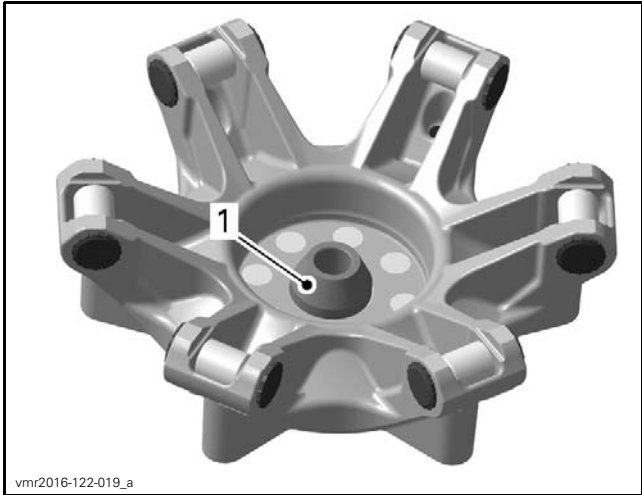
Remove all deposits that have baked on pulley tapered surfaces with medium steel wool and/or sand paper no. 600.

NOTICE Do not use any other type of abrasive.

Reclean surfaces after steel wool and/or sand paper use.

Blow compressed air on all cleaned parts and surfaces to remove any residue.

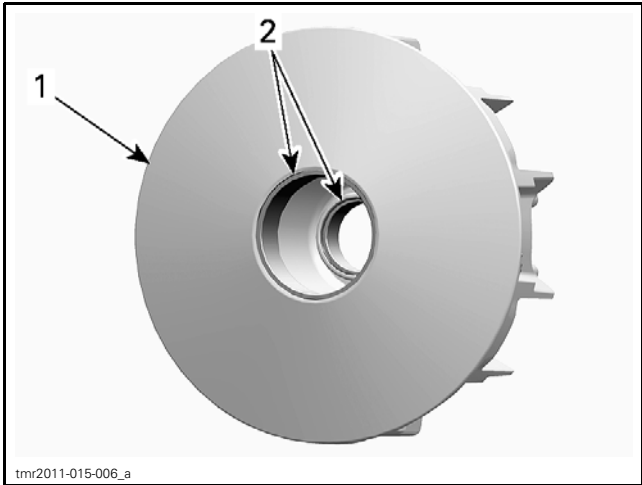
NOTICE Mounting surfaces and threads must be free of any oil, cleaner or towel residue.



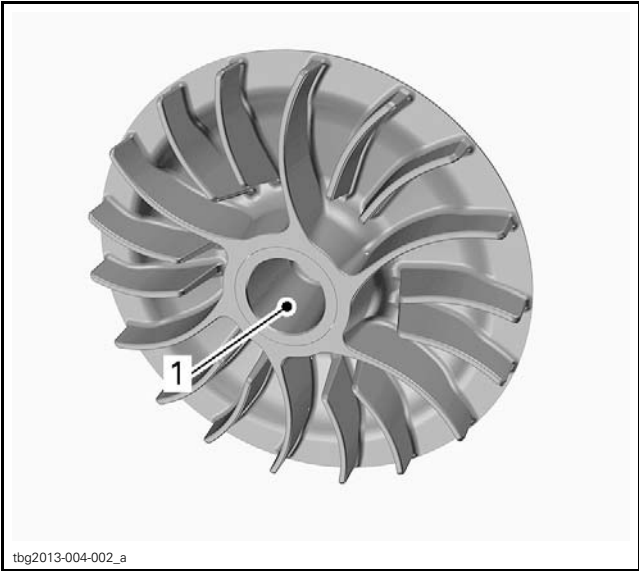
BACK OF GOVERNOR CUP
1. Tapered contact surface

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

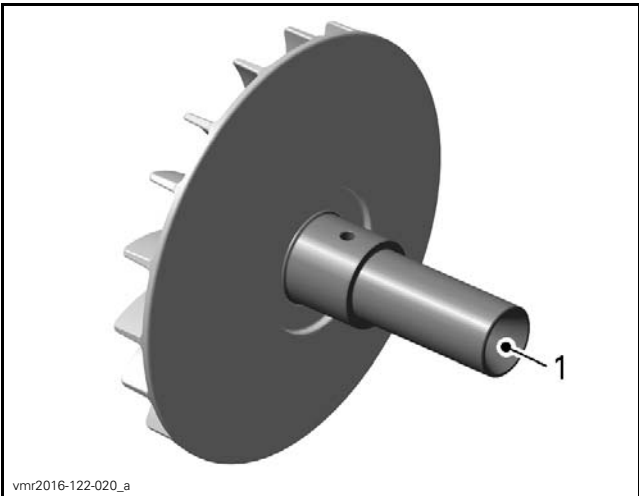
NOTICE Do not use acetone to clean bushing.



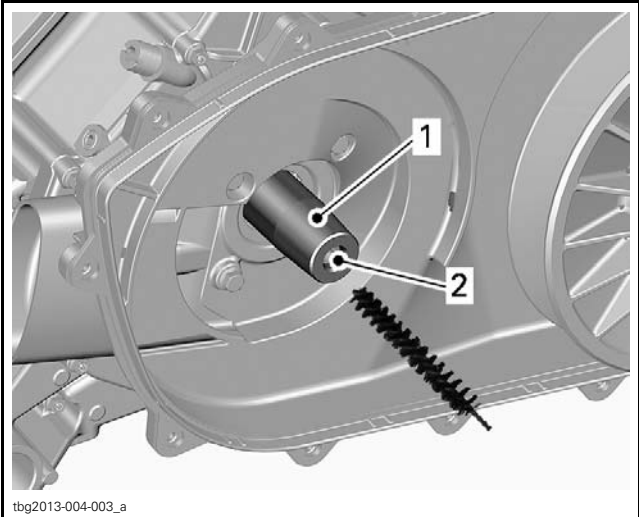
1. Sliding sheave
2. Bushings



BACK OF FIXED SHEAVE
1. Tapered end of the Crankshaft side fixed sheave



1. Tapered end of fixed sheave shaft



PTO
1. Tapered contact surface
2. PTO inner threads



PTO END OF STUD



STUD END RECEIVING NUT



M12 NUT



M12 SET SCREW

Inspecting the Drive Pulley

Bushings

For bushing inspection, refer to *SLIDING SHEAVE* in this subsection.

Governor Cup

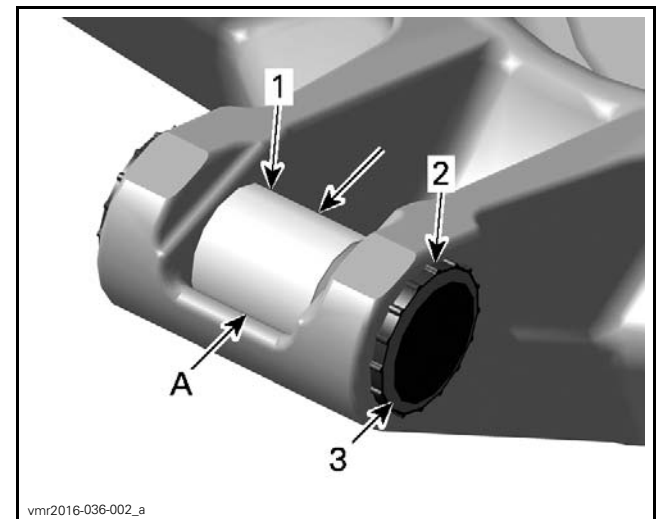
Check governor cup for cracks or other visible damage. Replace if necessary.

Roller and Slider Shoe

NOTICE Always replace all rollers and slider shoes at the same time.

Check if rollers move freely.

Check slider shoes for visible wear. If chamfer is not present anymore, replace **ALL** slider shoes.



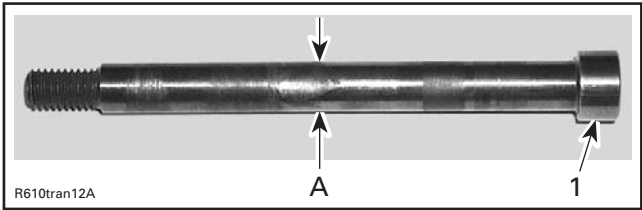
1. Roller
2. Slider shoe
3. Slider shoe chamfer
- A. Roller outer diameter

Check roller outer and inner diameter, replace if it is out of specification.

ROLLER OUTER DIAMETER	
NEW	13.80 mm to 14.00 mm (.543 in to .551 in)
SERVICE LIMIT	13.20 mm (.519 in)
ROLLER INNER DIAMETER	
NEW	8.025 mm to 8.175 mm (.316 in to .322 in)
SERVICE LIMIT	9.000 mm (.354 in)

Centrifugal Lever Pivot Bolt

Measure diameter of centrifugal lever pivot bolt, replace if it is out of specification.

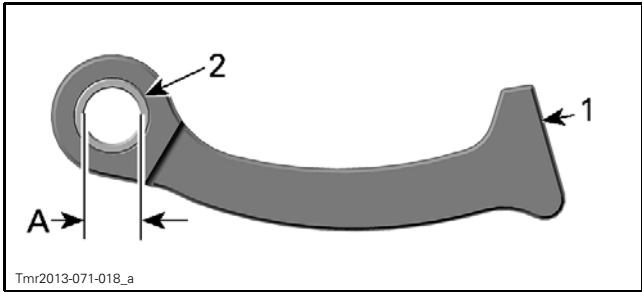


1. Centrifugal lever pivot bolt
A. Measure diameter here

CENTRIFUGAL LEVER PIVOT BOLT DIAMETER	
NEW	6.063 mm to 6.091 mm (.239 in to .24 in)
SERVICE LIMIT	6.00 mm (.236 in)

Centrifugal Lever

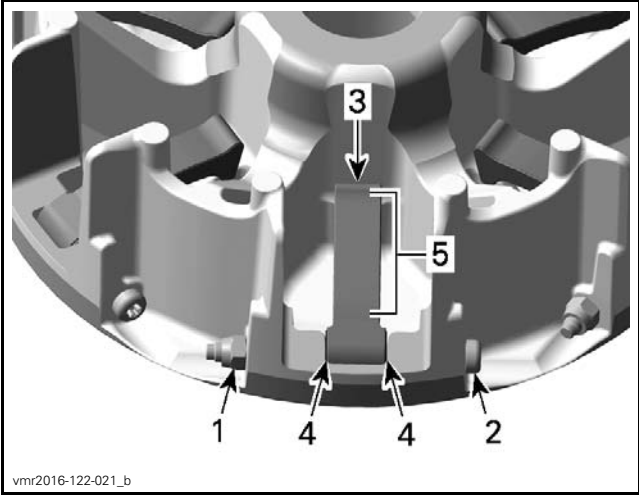
Check bushing diameter in the centrifugal lever for wear. Replace centrifugal lever if necessary.



1. Centrifugal lever
2. Bushing
A. Bushing inner diameter

CENTRIFUGAL LEVER BORE DIAMETER	
NEW	6.107 mm to 6.218 mm (.24 in to .245 in)
SERVICE LIMIT	6.300 mm (.248 in)

Replace centrifugal lever, thrust washers, centrifugal lever pivot bolts and lock nuts if the contact surfaces show heavy visible wear.



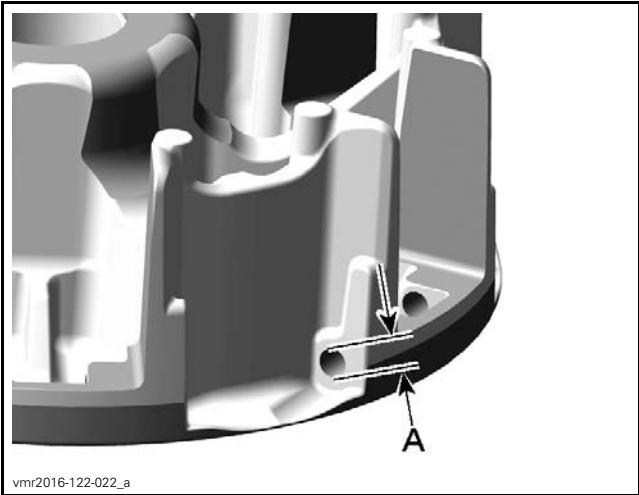
1. Lock nut
2. Centrifugal lever pivot bolt
3. Centrifugal lever
4. Thrust washers
5. Contact surface to the roller

**WARNING**
Always replace ALL levers at the same time. Otherwise, unbalanced drive pulley will occur because of levers difference.

Sliding Sheave

Check sliding sheave for cracks and sliding contact surface for excessive wear. Replace sliding sheave if necessary.

Measure centrifugal lever pivot bolt bores. Replace sliding sheave if bores are out of specification or otherwise damaged.

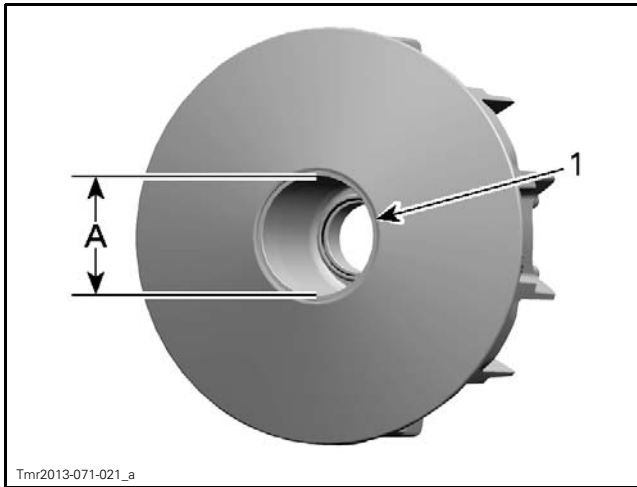


A. Centrifugal lever pivot bolt bore diameter

CENTRIFUGAL LEVER PIVOT BOLT BORE DIAMETER	
NEW	6.113 mm to 6.171 mm (.241 in to .243 in)
SERVICE LIMIT	6.300 mm (.248 in)

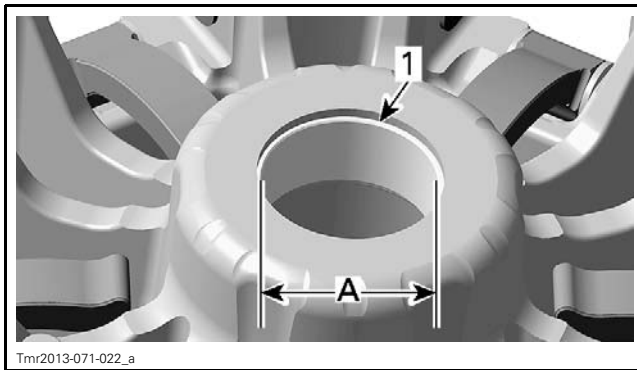
Measure bushing diameters of sliding sheave.

REQUIRED TOOL
Dial bore gauge
MEASURING POINT
At least 5 mm (1/4 in) from bushing edge



1. Bushing on fixed sheave side
A. Bore diameter of bushing

SLIDING SHEAVE LARGE BUSHING	
NEW	55.000 mm to 55.040 mm (2.165 in to 2.167 in)
SERVICE LIMIT	55.200 mm (2.173 in)



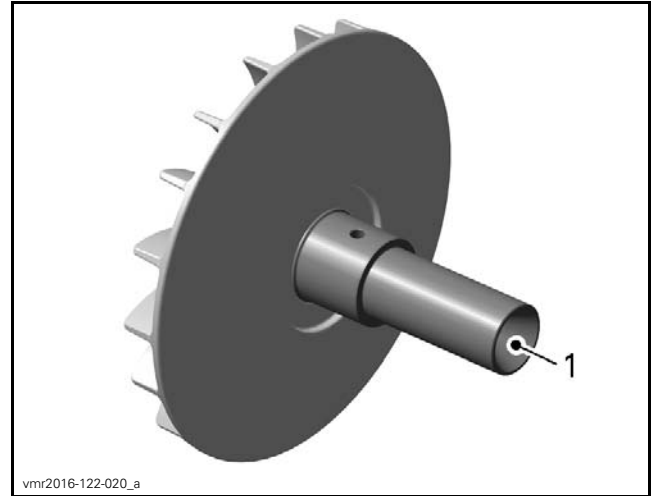
1. Bushing on governor cup side
A. Bore diameter of bushing

SLIDING SHEAVE SMALL BUSHING	
NEW	32.000 mm to 32.040 mm (1.26 in to 1.261 in)
SERVICE LIMIT	32.200 mm (1.268 in)

Replace sliding sheave if one of the bushings is out of specification. Visually inspect coatings.

Fixed Sheave

Check fixed sheave contact surface to the governor cup for scratches or other damages. If so, replace fixed sheave.



1. Visually check here

Check for any marks on fixed sheave plate. Replace if necessary.

Spring

Measure spring free length and squareness. If spring is out of specification, replace by a new one.

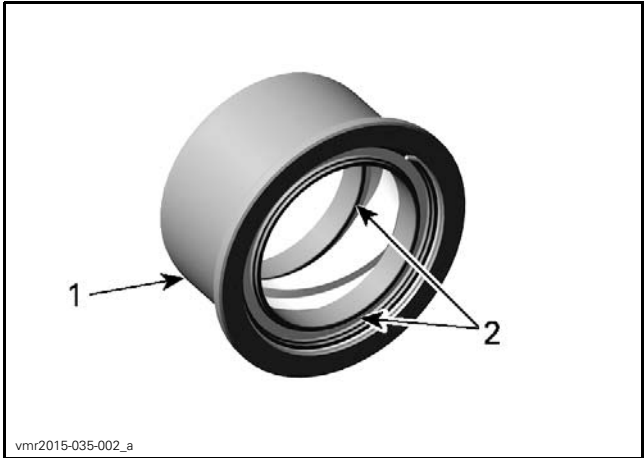
CLUTCH SPRING FREE LENGTH	
SERVICE LIMIT	95 mm (3.74 in)

CLUTCH SPRING SQUARENESS	
SERVICE LIMIT	4 mm (.157 in)

One-Way Clutch

Check bearings for excessive play and smooth operation. Replace one-way clutch bearings if necessary.

NOTICE Be careful not to damage the inside of one-way clutch during bearing removal.



1. One-way clutch
2. Bearings

Measure length of spring sleeves and check if edges on top of the spring sleeve are excessively worn. If they out of specifications, replace both spring sleeves at the same time.

SPRING SLEEVE LENGTH	
NEW	9.2 mm to 9.4 mm (.362 in to .37 in)
SERVICE LIMIT	9.0 mm (.354 in)

Assembling the Drive Pulley

For assembly, reverse the disassembly procedure. Pay attention to following details.

One-Way Clutch

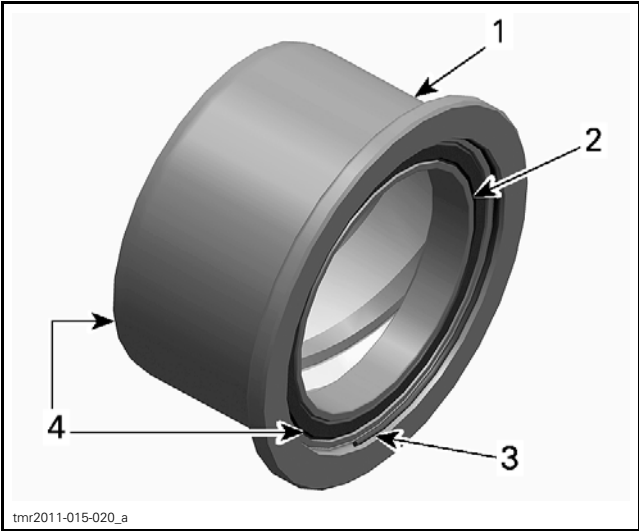
Clean parts.

Lubricate:

- Springs
- Spring sleeves
- Room between one-way clutch bearings
- Inside ball bearings to ensure adequate lubrication.

ONE-WAY CLUTCH LUBRICATION	
Service product	ISOFLEX GREASE TOPAS NB 52 (P/N 293 550 021)

NOTE: Ball bearings have a seal on one side only. Install bearings with the seal towards the outside of the one-way clutch.

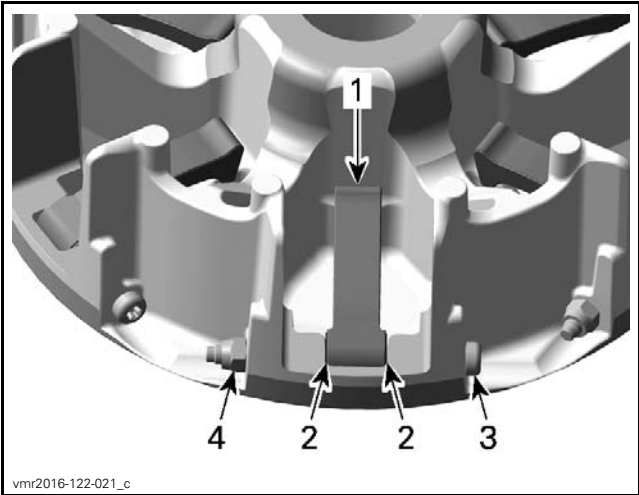


1. One-way clutch
2. Bearing
3. Retaining ring
4. Seal

Sliding Sheave

Install centrifugal levers with their thrust washers. Install **NEW** lock nuts and tighten them to specification.

TIGHTENING TORQUE	
Lock nuts	8 N•m ± 1 N•m (71 lbf•in ± 9 lbf•in)



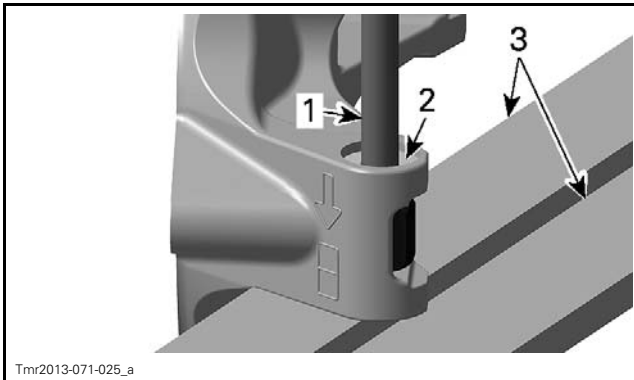
1. Centrifugal lever
2. Thrust washers
3. Centrifugal lever pivot bolt
4. Lock nut

NOTICE Centrifugal levers must move easily after installation.

Governor Cup

Rebuild governor cup with new bearing sleeves, thrust washers, rollers and slider shoes.

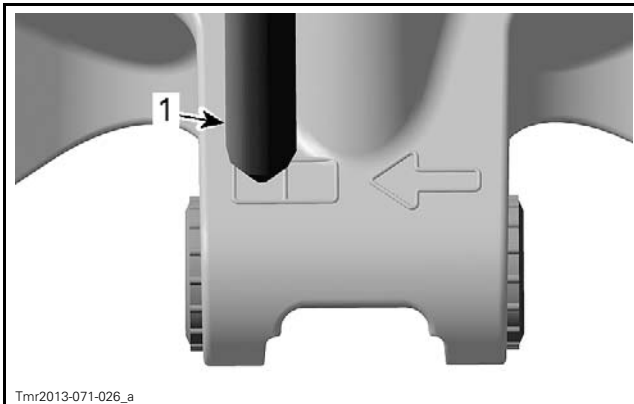
NOTICE Final position has to be aligned with the contact surface of the slider shoes (no protrusion).



1. Punch
2. Mating surface of slider shoes
3. Vice

Each time when replacing the bearing sleeves sign the foreseen box with a punch.

NOTICE Do not tap too hard. Violent damage of the governor cup may appear.



1. Punch

NOTICE Rollers must move easily after installation.

Insert slider shoes into governor cup to properly slide in guides.

Installing the Drive Pulley

For installation, reverse the removal procedure. Pay attention to the following details.

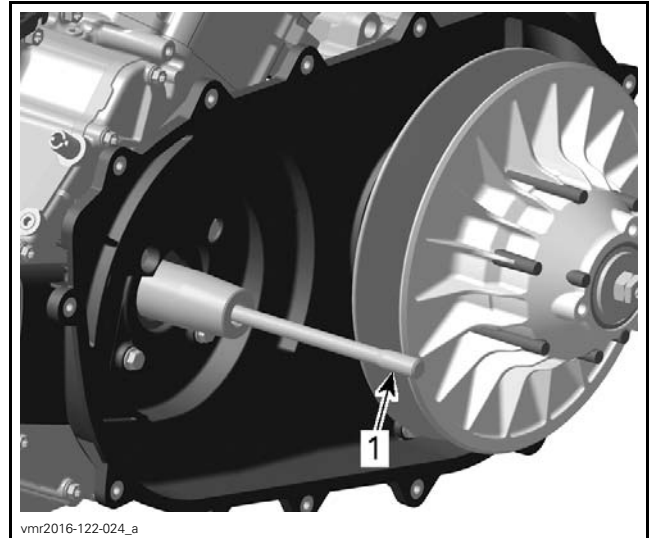
WARNING

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

NOTICE Never use any type of impact wrench at drive pulley removal and installation.

Clean mounting surfaces and parts as described in *CLEANING THE DRIVE PULLEY* in this subsection.

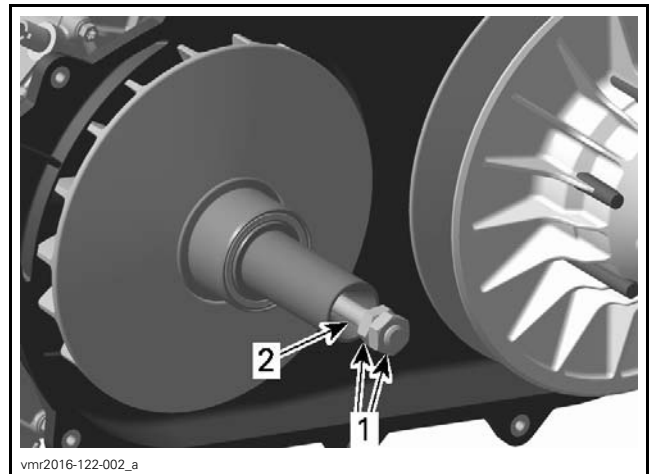
Hand tighten the threaded stud in the PTO.



1. Stud

Counter two M12 X 1.75 nuts for tightening the threaded stud.

NOTICE Do not use original installed nuts.



1. Counter nuts
2. Stud

Lock crankshaft, refer to *CRANKSHAFT LOCKING PROCEDURE* in the *BOTTOM END* subsection.

Tighten the threaded stud to specification.

Subsection 08 (CONTINUOUSLY VARIABLE TRANSMISSION (CVT - 1000R XMR))

TIGHTENING TORQUE	
Threaded stud	50 N•m ± 2 N•m (37 lbf•ft ± 1 lbf•ft)

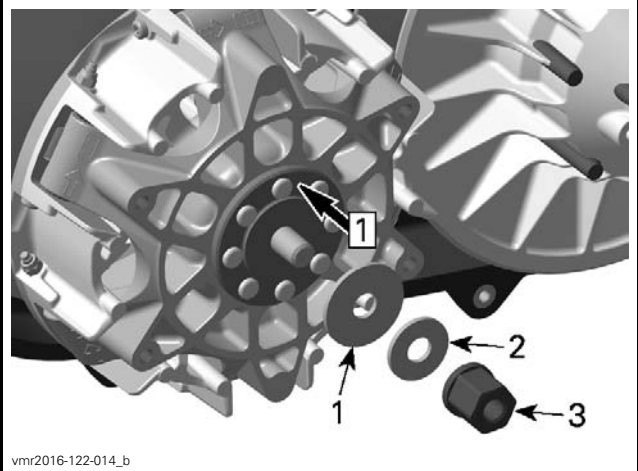
Remove both M12 counter nuts from the stud.

Remove tool from magneto side. Install plug and O-ring on magneto cover.

Install fixed sheave on PTO.

Install sliding sheave and governor cup.

NOTE: Make sure that sliding sheave and governor cup are properly aligned as marked before removal.

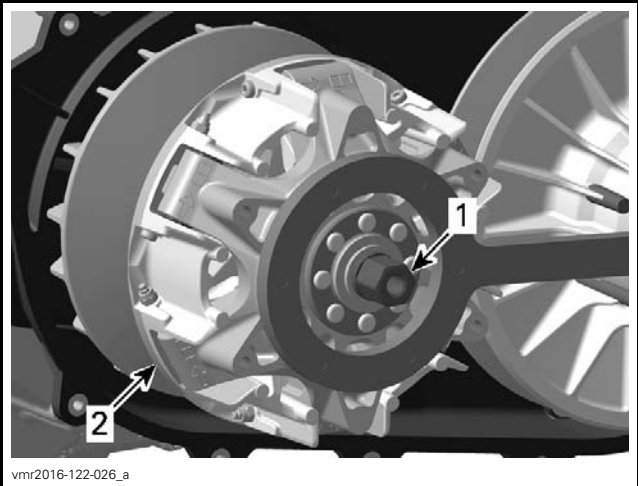


- Step 1: Push
- 1. Large thrust washer (NEW)
 - 2. Small thrust washer (NEW)
 - 3. Drive pulley nut

Lock the drive pulley with clutch holder tool.

Tighten drive pulley nut to specification.

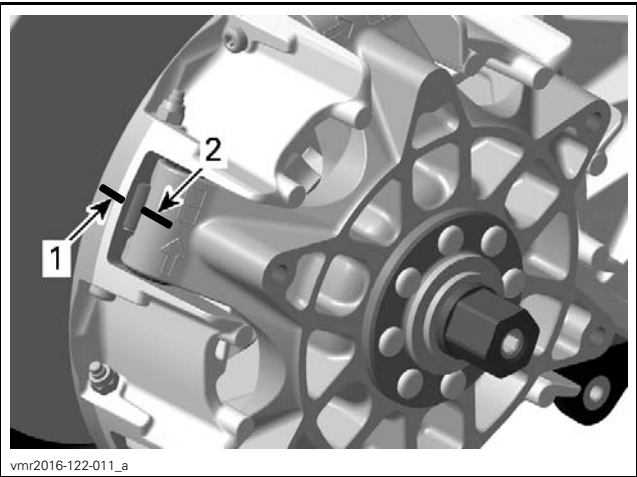
DRIVE PULLEY M12 FLANGE NUT		
Tightening procedure	STEP 1	80 N•m ± 1 N•m (59 lbf•ft ± 1 lbf•ft)
	STEP 2	90° ± 5°



- 1. Nut
- 2. Drive pulley

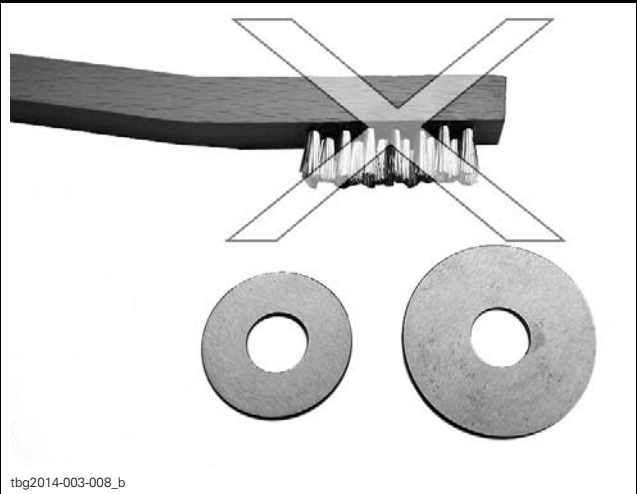
Install M12 X 10 set screw in M12 nut and tighten the set screw to specification.

TIGHTENING TORQUE	
Service product	LOCTITE 272 (P/N 420 899 526)
M12 X 10 set screw	65 N•m ± 2 N•m (48 lbf•ft ± 1 lbf•ft)



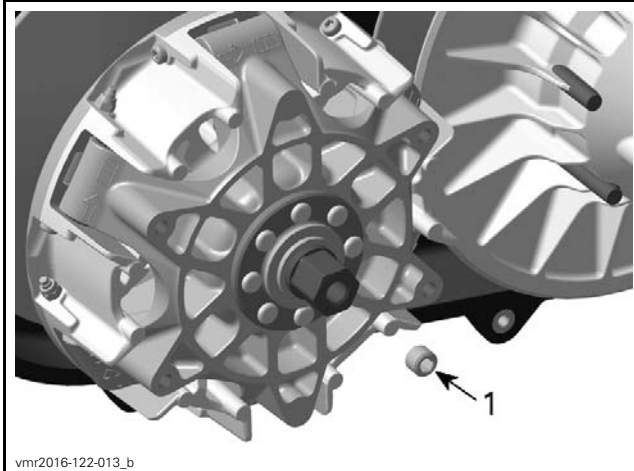
- 1. Mark on drive pulley sliding sheave
- 2. Mark on governor cup

NOTICE The washers are shipped with special coating. Do not clean washers using degreaser, abrasive products, etc; this could damage the special coating washers comes with.



Install **NEW** larger washer first, then **NEW** smaller washer and nut.

NOTE: It is important to use the specified thread-locker: High temperatures are involved and this product is specifically designed for these temperatures. No other product should be used.



1. Set screw

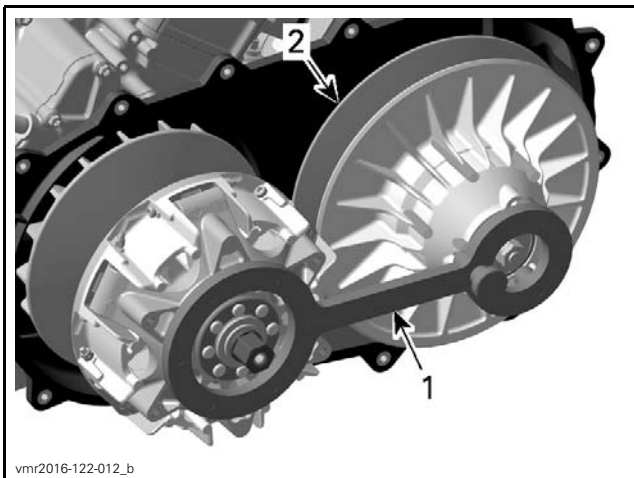
DRIVEN PULLEY

Removing the Driven Pulley

Remove *DRIVE BELT*.

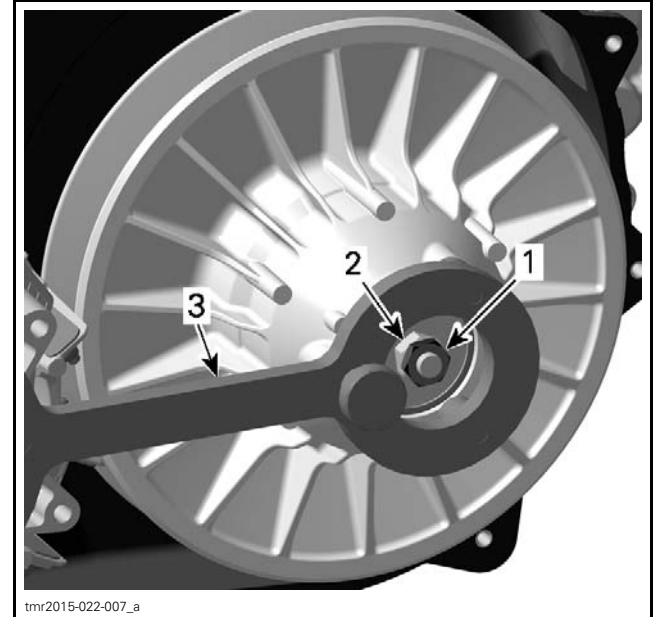
Lock the driven pulley.

REQUIRED TOOL	
CLUTCH HOLDER (P/N 529 036 238)	



1. Clutch holder
2. Driven pulley

Remove the counter nut and discard it.



1. Counter nut
2. Driven pulley nut
3. Clutch holder

Loosen the driven pulley nut.

NOTE: Do not unscrew the driven pulley nut completely.



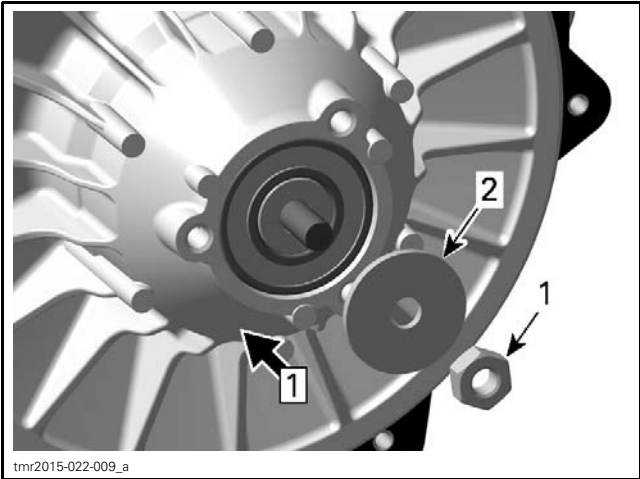
1. Driven pulley nut

Remove service tool.

Apply axial pressure with your hand on driven pulley and maintain during nut removal.

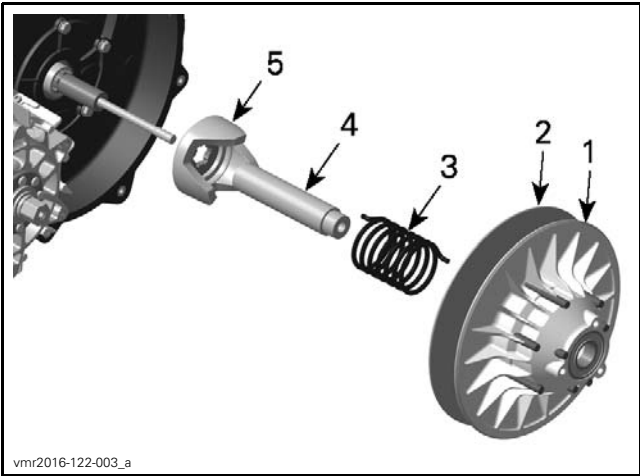
Remove driven pulley nut (discard) and washer.

⚠ CAUTION Driven pulley is spring loaded. Hold driven pulley tight and slowly remove the driven pulley nut to release spring tension.



Step 1: Push
1. Driven pulley nut (discard)
2. Thrust washer

- Remove:
- Driven pulley
 - Spring
 - Shaft
 - Cam.



1. Fixed sheave of driven pulley
2. Sliding sheave of driven pulley
3. Spring
4. Shaft
5. Cam

Install the tightening tool on the stud.

REQUIRED TOOL	
DRIVEN PULLEY STUD TOOL (P/N 529 036 360)	



Block countershaft.

REQUIRED TOOL	
COUNTERSHAFT RETAINER TOOL (P/N 529 036 312)	

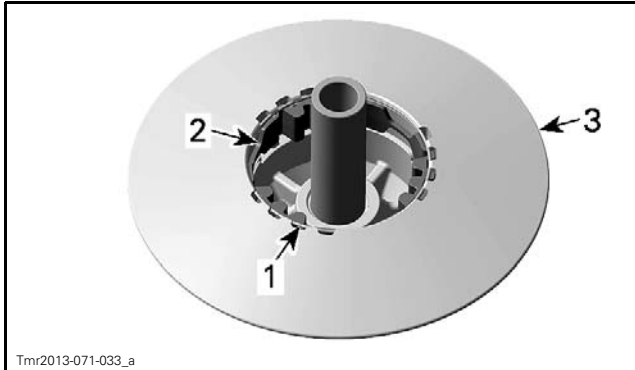


Remove stud.

Disassembling the Driven Pulley

Fixed Sheave

Remove retaining ring and lift torque gear.

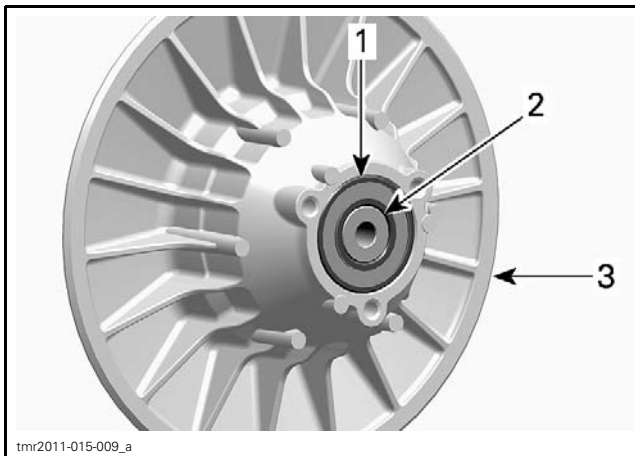


Tmr2013-071-033_a

1. Retaining ring
2. Torque gear
3. Fixed sheave of driven pulley

NOTE: The following procedure is not necessary except if ball bearing or shaft must be removed. Refer to *INSPECTION* before proceeding.

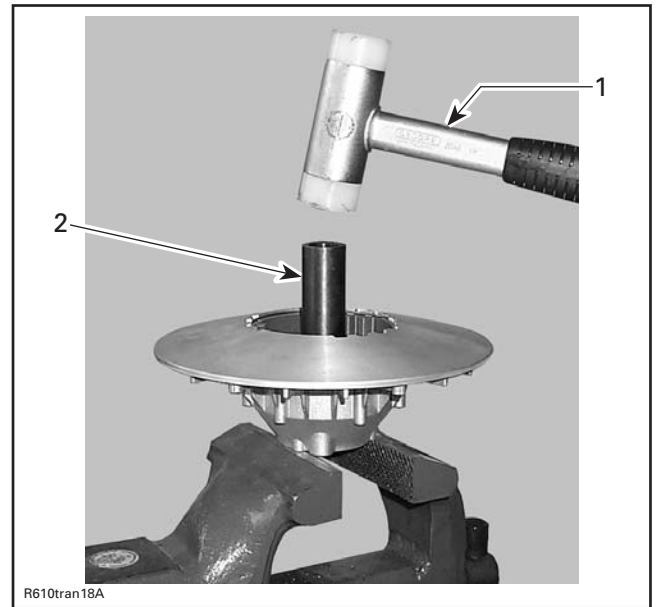
Heat ball bearing area up to 100°C (212°F) before removing ball bearing.



tmr2011-015-009_a

1. Ball bearing
2. Shaft
3. Fixed sheave of driven pulley

Use a soft hammer to push shaft with bearing out of fixed sheave.



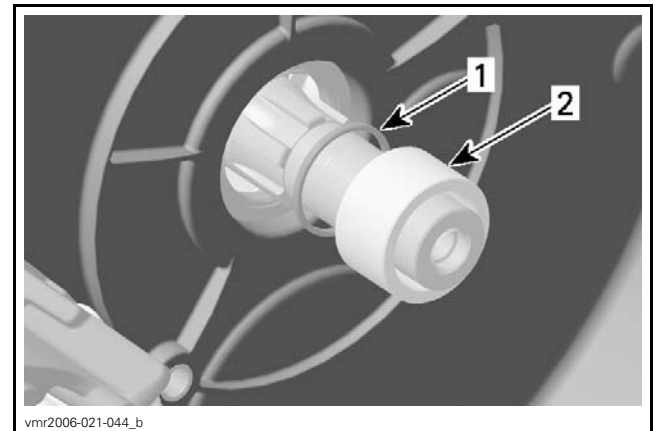
R610tran18A

1. Soft hammer
2. Shaft

Remove shaft from ball bearing.

Remove distance sleeve and O-ring from counter-shaft.

Replace O-ring if brittle, hard or damaged.



vmr2006-021-044_b

1. O-ring
2. Distance sleeve

Cleaning the Driven Pulley

Clean the CVT air guide area from contamination.

Using a small brush, paper towel and parts cleaner, clean all the mounting surfaces and threads as shown.

REQUIRED PRODUCT

XPS BRAKES AND PARTS
CLEANER (P/N 219 701 776)
or XPS BRAKES AND PARTS CLEANER
(USA) (P/N 219 701 705)

NOTICE Avoid contact between cleaner and countershaft oil seal or damage may occur.

Remove all deposits that have baked on pulley tapered surfaces with medium steel wool and/or sand paper no. 600.

NOTICE Do not use any other type of abrasive.

Reclean surfaces after steel wool use.

Blow compressed air on all cleaned parts and surfaces to remove any residue.

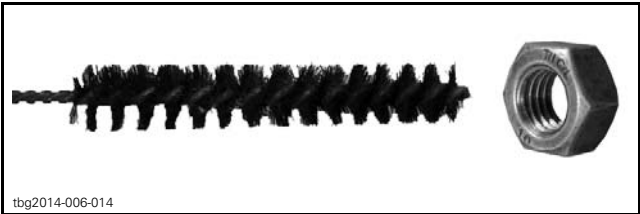
NOTICE Mounting surfaces and threads must be free of any oil, cleaner or towel residue.



COUNTERSHAFT END OF STUD



STUD END RECEIVING COUNTER NUTS



THREADS OF DRIVEN PULLEY NUT

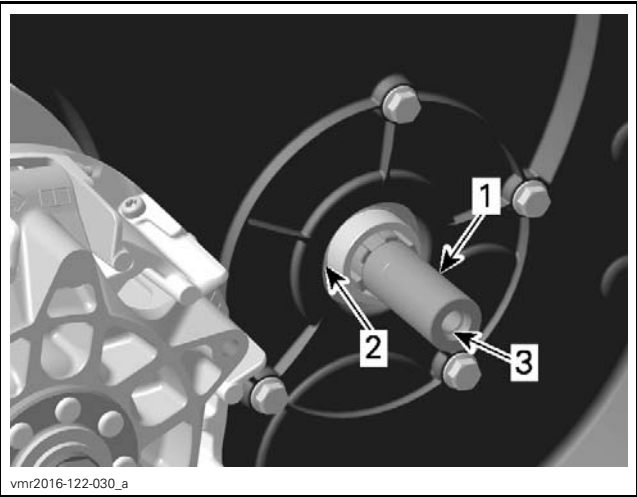


THREADS OF COUNTER NUT

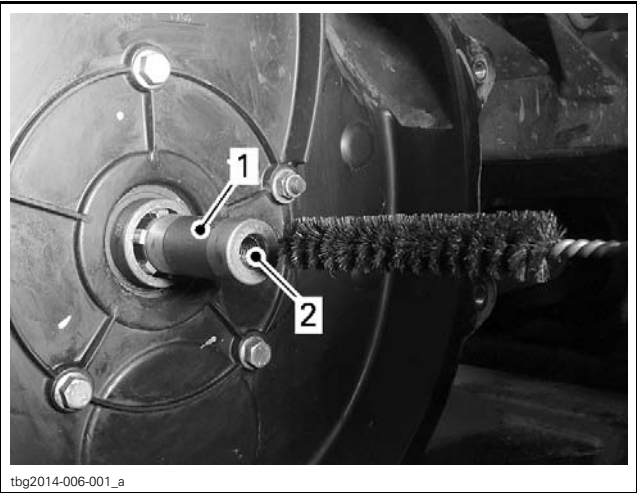
Inspecting the Driven Pulley

Sliding Sheave

Check sliding sheave for cracks and sliding contact surface for excessive wear. Replace sliding sheave if necessary.



1. Countershaft end
2. Countershaft oil seal
3. Countershaft inner threads



GEARBOX COUNTERSHAFT

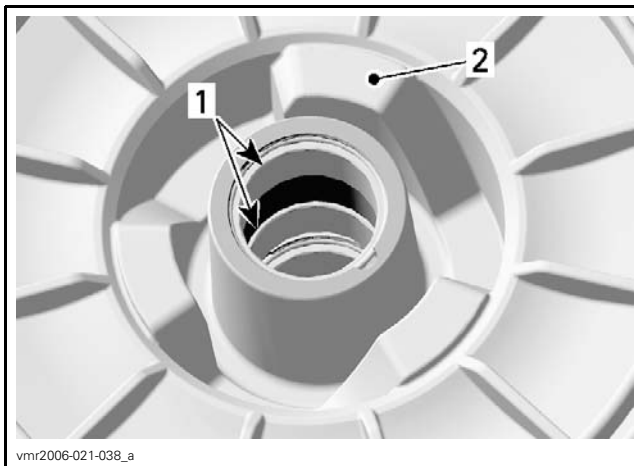
1. Countershaft outer surface
2. Countershaft inner threads

Check bushings for cracks, scratch and for free movement when assembled to sliding sheave.

Measure bushing diameter.

REQUIRED TOOL
Dial bore gauge
MEASURING POINT
At least 5 mm (1/4 in) from bushing edge

This bushing can not be replaced. Replace sliding sheave if bushings are out of specification. Visually inspect coatings.



1. Bushings
2. Backside of sliding sheave of driven pulley

BUSHINGS BORE DIAMETER	
NEW	30.060 mm to 30.100 mm (1.183 in to 1.185 in)
SERVICE LIMIT	30.200 mm (1.189 in)

Fixed Sheave

Check fixed sheave for cracks and excessive wear. Replace fixed sheave if necessary.

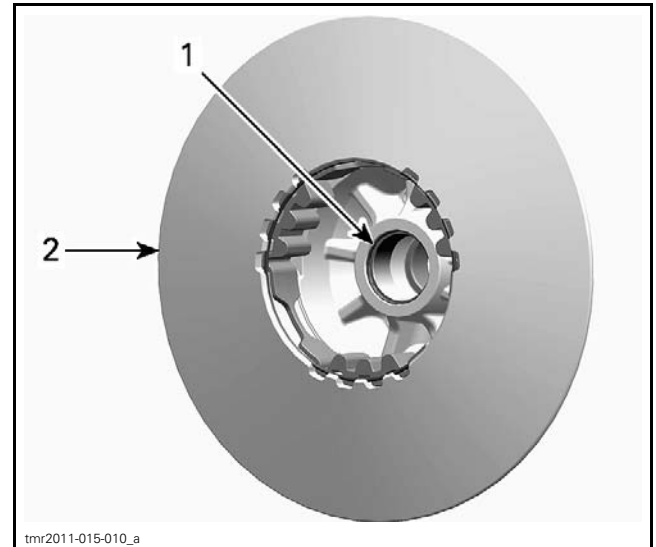
Check ball bearing for free play and smooth operation. Replace if necessary.

Check shaft for heavy wear or visible damage. Replace if necessary.

If the shaft is removed measure bushing diameter.

REQUIRED TOOL
Dial bore gauge
MEASURING POINT
At least 5 mm (1/4 in) from bushing edge

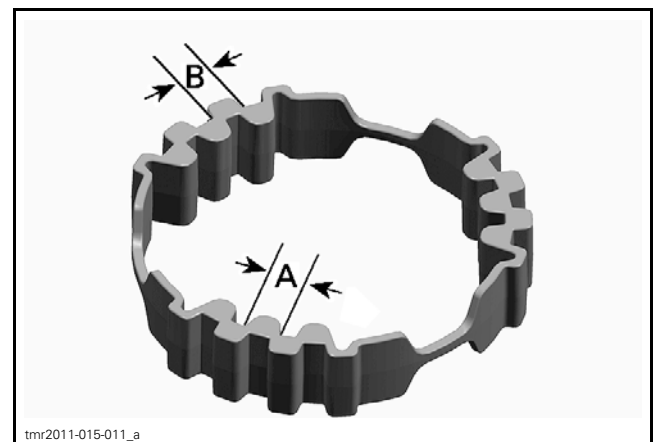
This bushing can not be replaced. Replace fixed sheave if bushing is out of specification. Visually inspect coatings.



1. Bushing
2. Fixed sheave of driven pulley

BUSHING BORE DIAMETER	
NEW	30.060 mm to 30.100 mm (1.183 in to 1.185 in)
SERVICE LIMIT	30.200 mm (1.189 in)

Check torque gear for visible damage and cracks. Measure wear limit with a caliper.

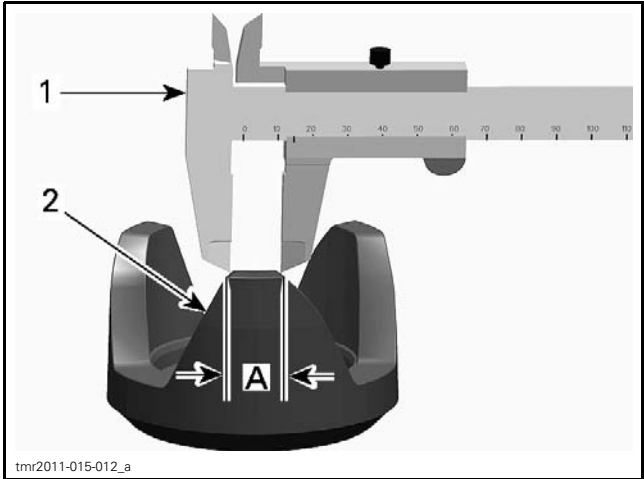


- A. Measurement inside
- B. Measurement outside

WEAR ON TEETH BOTH SIDES	
SERVICE LIMIT	7.500 mm (.295 in)

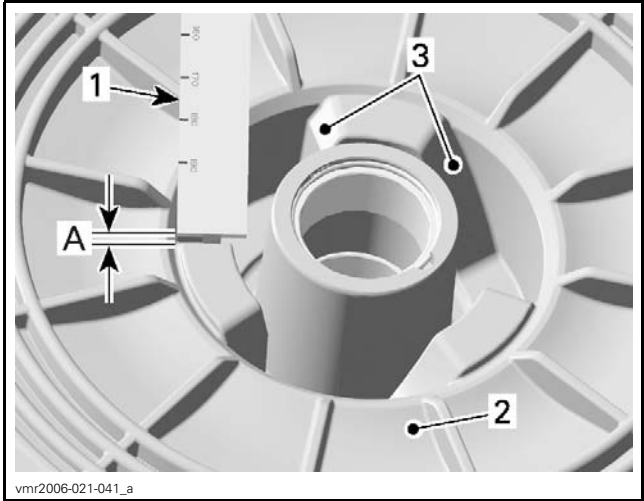
Cam

Check cam for visible damage and wear limit with a caliper.



- 1. Caliper
- 2. Contact surface
- A. Width to be measured due to wear on contact surface

WIDTH ON TOP SURFACE	
SERVICE LIMIT	16.0 mm (.63 in)

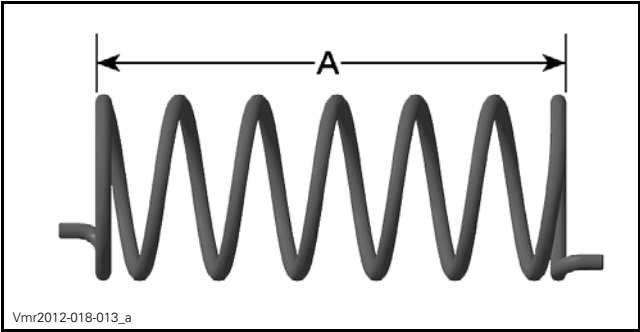


- 1. Caliper
- 2. Sliding sheave
- 3. Contact surface
- A. Wear to be measured

WEAR ON CONTACT SURFACE	
SERVICE LIMIT	1.00 mm (.039 in)

Spring

Measure spring free length and squareness. If spring is out of specification, replace by a new.



CVT DRIVEN SPRING
A. Spring free length

SPRING FREE LENGTH	
SERVICE LIMIT	125 mm (4.921 in)
CLUTCH SPRING SQUARENESS	
SERVICE LIMIT	3.8 mm (.15 in)

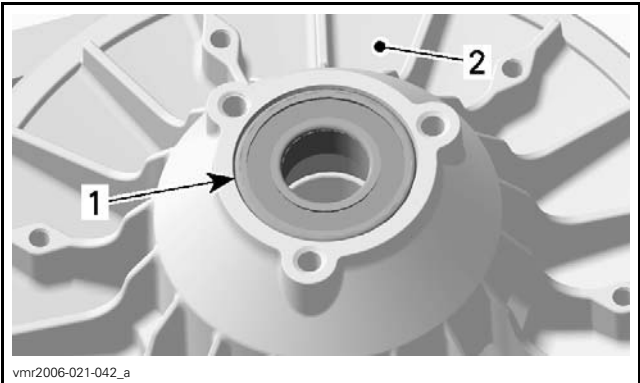
Assembling the Driven Pulley

For installation, reverse the removal procedure. Pay attention to following details.

Heat ball bearing area up to 100°C (212°F) before ball bearing installation.

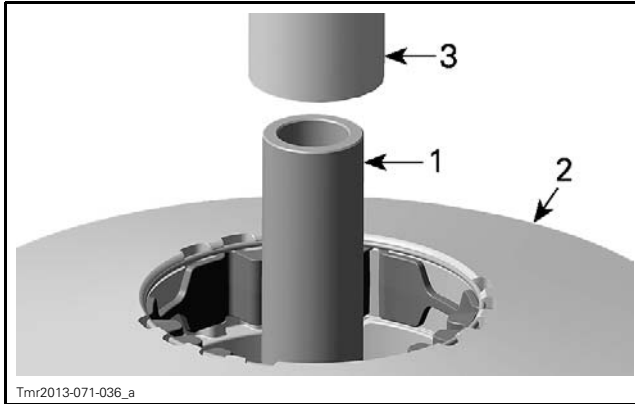
NOTE: Place new ball bearing in a freezer for 10 minutes before installation.

Install ball bearing with the writing on top and press in only on the outer ring.



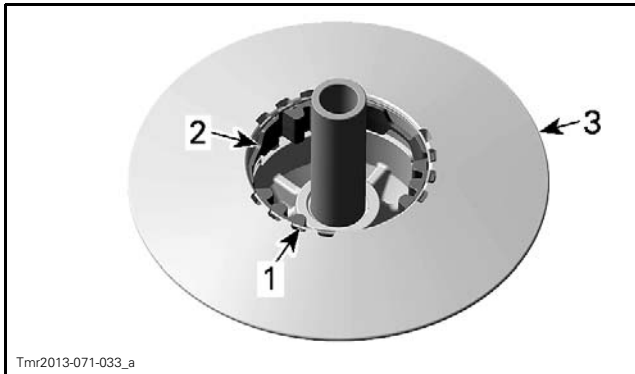
- 1. Ball bearing
- 2. Fixed sheave of driven pulley

NOTICE Do not use hammer, use press machine only.



1. Shaft
2. Fixed sheave
3. Press machine

Install torque gear then secure it with retaining ring.



1. Retaining ring
2. Torque gear
3. Fixed sheave of driven pulley

Installing the Driven Pulley

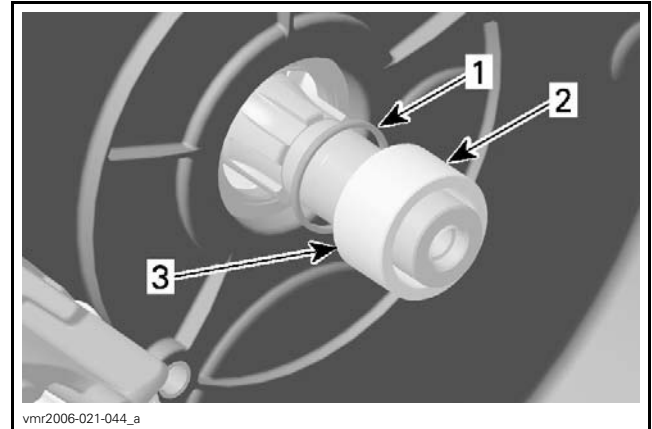
For installation, reverse the removal procedure. Pay attention to the following details.

NOTICE Never use any type of impact wrench at drive pulley removal and installation.

Clean mounting surfaces and parts as described in *CLEANING THE DRIVEN PULLEY* in this subsection.

Place O-ring on countershaft splines and move it with distance sleeve in end position.

NOTICE Chamfer on inside diameter of the distance sleeve must face to gearbox side.



1. O-ring
2. Distance sleeve
3. Chamfered area of distance sleeve

Hand tighten the stud in the countershaft. Install the tightening tool on the stud.

REQUIRED TOOL	
DRIVEN PULLEY STUD TOOL (P/N 529 036 360)	



Block countershaft.

REQUIRED TOOL	
COUNTERSHAFT RETAINER TOOL (P/N 529 036 312)	



Tighten the stud to specification.

TIGHTENING TORQUE	
Stud	45 N•m ± 2 N•m (33 lbf•ft ± 1 lbf•ft)

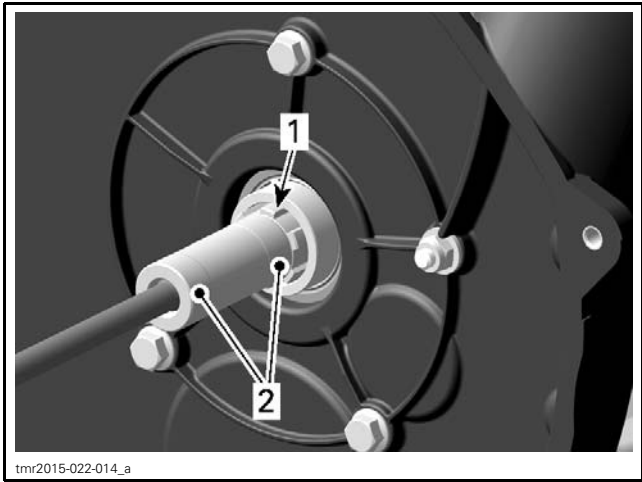
Remove the tightening tool from the stud.

Remove countershaft retainer tool.

Lubricate:

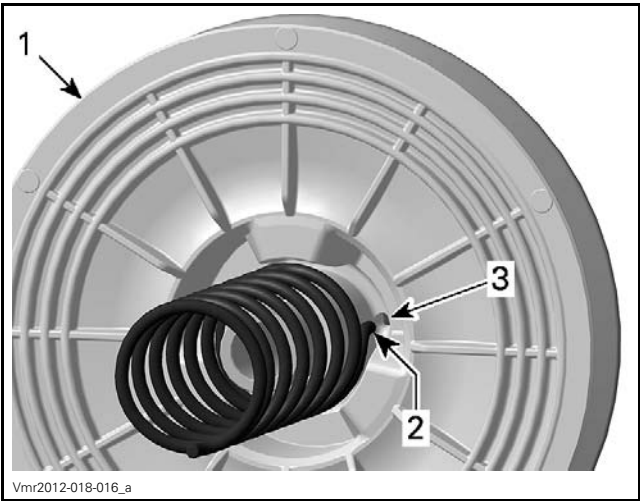
- Countershaft splines
- Countershaft outer surface.

SERVICE PRODUCT	
Countershaft splines and countershaft outer surface	LOCTITE 767 (ANTISEIZE LUBRICANT) (P/N 293 800 070)



1. Countershaft splines
2. Countershaft outer surface

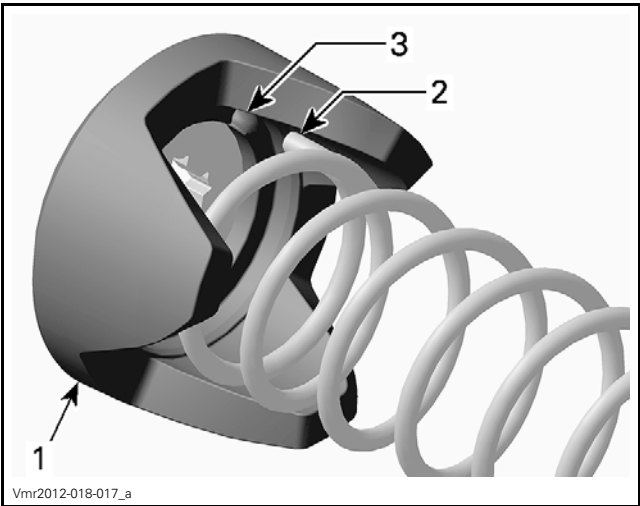
Place spring behind sliding sheave and engage spring end in the sliding sheave spring bore.



850 AND 1000 ENGINES

1. Sliding sheave
2. Spring end
3. Spring bore

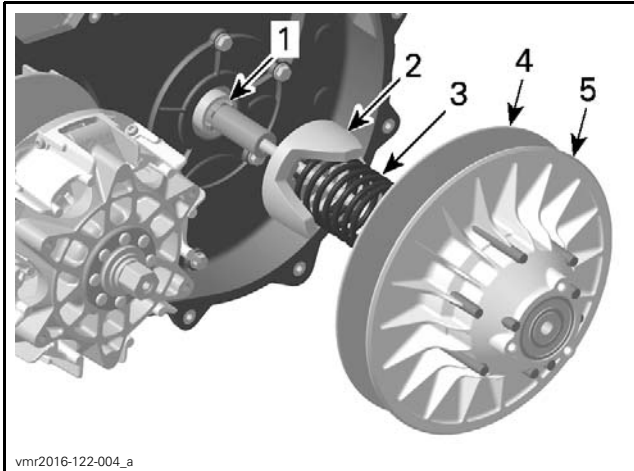
Place cam on the opposite end of the spring and engage the other spring end in the cam spring bore.



1. Cam
2. Spring end
3. Spring bore

Install pre-assembled cam with spring and driven pulley on countershaft end.

NOTICE Cam must engage on countershaft splines.



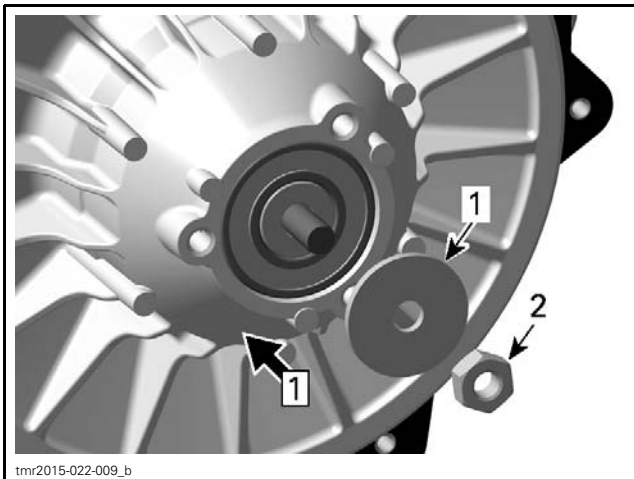
- vmr2016-122-004_a
1. Countershaft splines
 2. Cam
 3. Spring
 4. Sliding sheave
 5. Fixed sheave

With your hand, push the driven pulley onto the shaft to compress the spring.

NOTICE A cam not correctly engaged will cause damage to the driven pulley and cam.

As you hold the pulley in, install thrust washer and a **NEW** driven pulley nut.

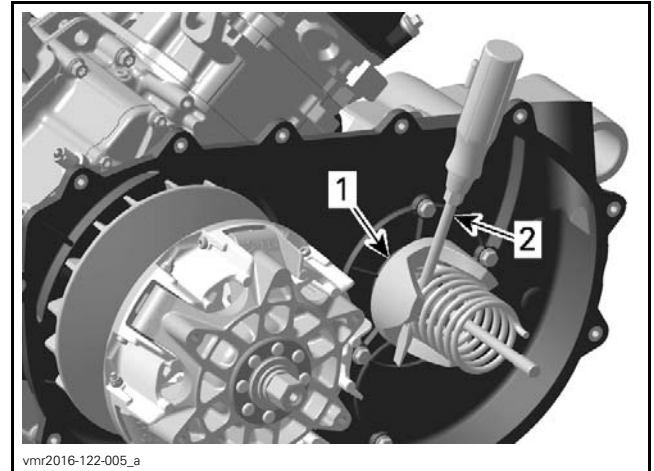
NOTE: Finger tighten the driven pulley nut sufficiently so that the cam remains engaged.



Step 1: Push

1. Thrust washer
2. Driven pulley nut (NEW)

Insert a screwdriver of approximately 5 mm (.197 in) diameter in the cam.

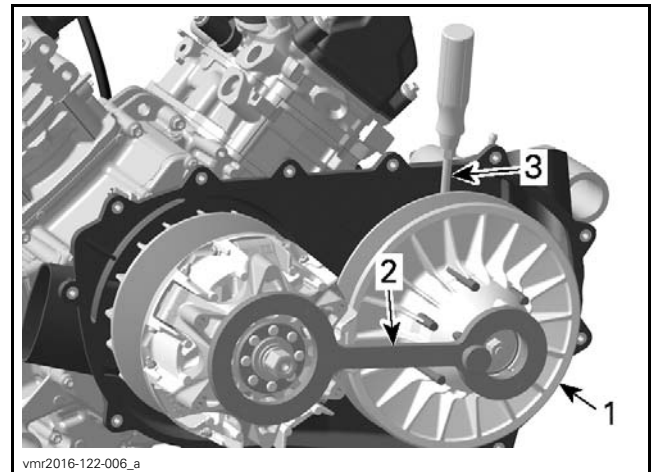


FOR CLARITY OF UNDERSTANDING, SOME PARTS ARE NOT SHOWN

1. Cam
2. Screwdriver, diameter 5 mm (.197 in)

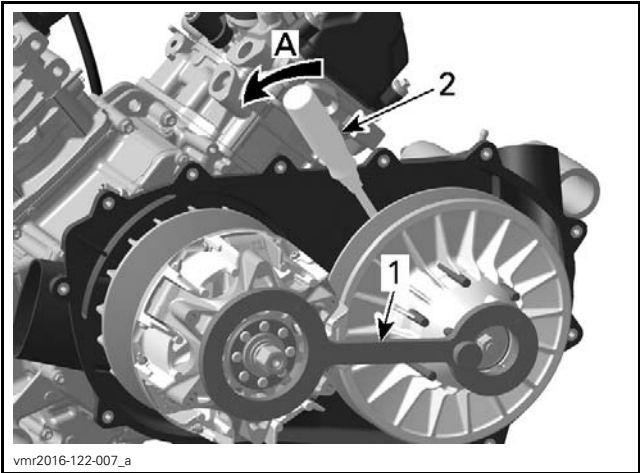
Hold the driven pulley in a fix position.

REQUIRED TOOL	
CLUTCH HOLDER (P/N 529 036 238)	



1. Fixed sheave
2. Clutch holder
3. Screwdriver

Turn the screwdriver approximately 20° counter-clockwise until cam engages in the driven pulley sliding sheave and hold it in this position (spring preload).



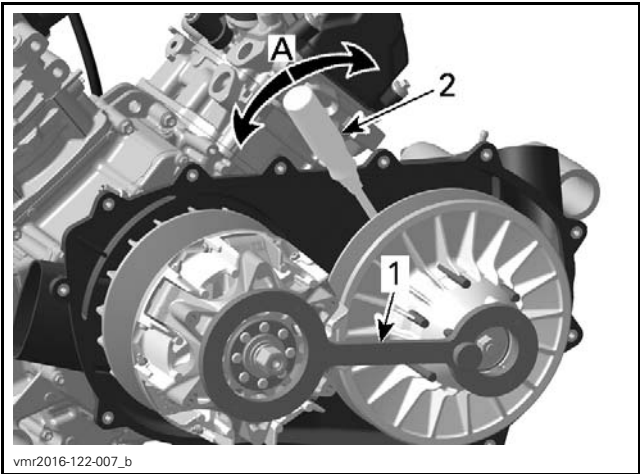
1. Clutch holder
2. Screwdriver
A. Turn counterclockwise

Tighten driven pulley nut as specified.

Using a socket and extension, hand tighten the driven pulley nut.

NOTE: Do not apply specified torque at this time. Move the screwdriver back and forth to check cam for free movement.

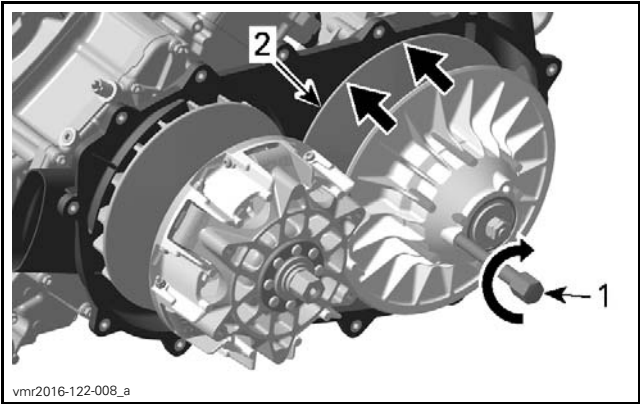
NOTICE A cam not correctly engaged will cause damage to the driven pulley and cam.



1. Clutch holder
2. Screwdriver
A. Cam freedom of movement

Install drive belt. Refer to *DRIVE BELT* in this subsection.

REQUIRED TOOL	
PULLER/LOCKING TOOL (P/N 529 036 098)	



1. Puller/locking tool
2. Sliding sheave

NOTE: If driven pulley sheaves can to be opened when the service tool is screwed in, the cam is not correctly engaged in the sliding sheave.

TIGHTENING TORQUE		
Driven pulley nut	STEP 1	20 N•m ± 1 N•m (15 lbf•ft ± 1 lbf•ft)
	STEP 2	180° ± 5°

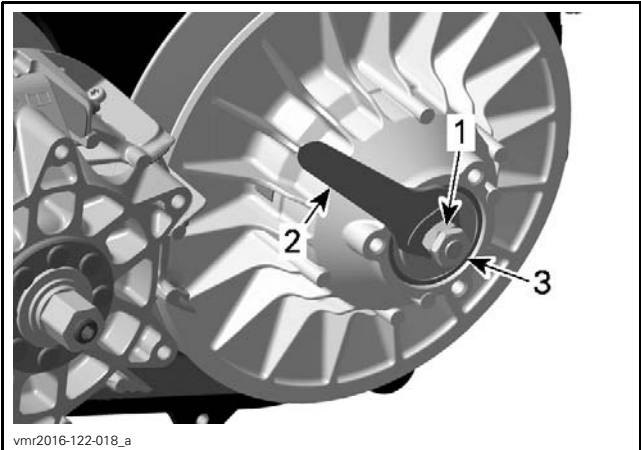


1. Driven pulley nut

Remove service tool.

Hold driven pulley nut using a spanner and tighten the **NEW** counter nut to specification.

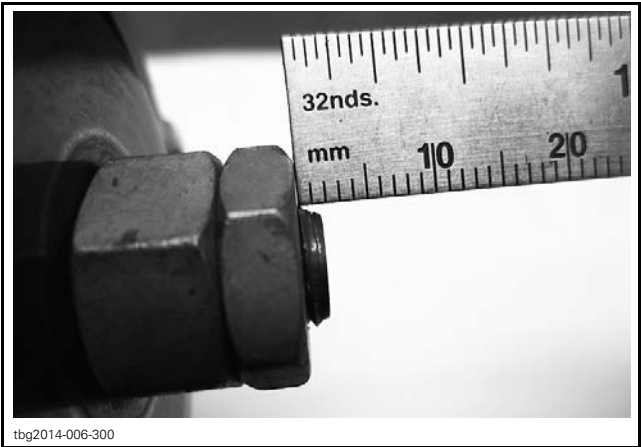
TIGHTENING TORQUE	
Counter nut	35 N•m ± 1 N•m (26 lbf•ft ± 1 lbf•ft)



1. Driven pulley nut
2. Spanner
3. Counter nut

In order to confirm the cam is in the right position, measure the length of the stud out of the counter nut.

- If the distance between counter nut and the end of the stud is within specification, the pulley and cam are properly installed.
- Otherwise the cam might not correctly engaged. Remove the clutch except stud, and reinstall.
- If distance is still out of specification, please consult the *TST # 81274* on Knowledge Center for instructions.



MEASUREMENT	ACTION
Less than flush with the counter nut	Refer to TST # 81274 on Knowledge Center
0 to 3.6 mm	Installation is good. Install the drive belt to complete the procedure
3.7 mm and more	Refer to TST # 81274 on Knowledge Center

Check driven pulley end play.

SPECIFICATION	
Driven pulley end play	0 mm (0 in)

CVT AIR GUIDE

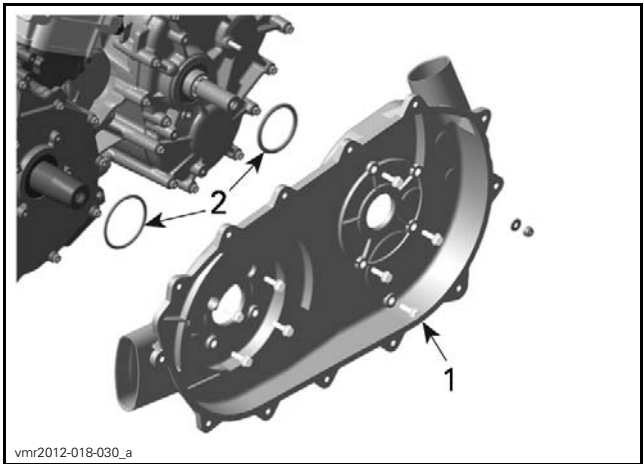
Removing the CVT Air Guide

Remove the *DRIVE PULLEY* and the *DRIVEN PULLEY*.

Unscrew the clamps retaining the CVT air hoses.

Remove CVT air guide.

Remove and discard O-rings.



1. CVT air guide
2. O-rings

Inspecting the CVT Air Guide

Clean CVT air guide from contamination

Installing the CVT Air Guide

For installation reverse the removal procedure.

Always install new O-rings before installing the CVT air guide.