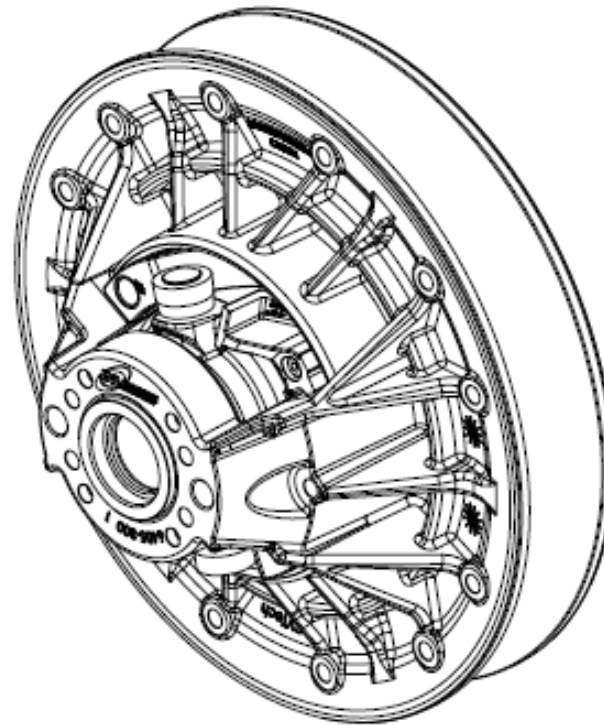




INSTALLATION AND MAINTENANCE GUIDE FOR A CONTINUOUSLY VARIABLE DRIVEN PULLEY INVANCE LV (64)



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IMPORTANT NOTICE

Only qualified personnel should perform maintenance and repair operations on this continuously variable pulley.



Means there is a risk of serious injuries if the instructions are not followed as described.



Means that, when performing this step, there is a risk of damaging a part or may cause components malfunction.

CVTech shall not be liable for any damage or injury resulting from misunderstanding of the text, improper use of the transmission system or improper use of the recommended tools.

It is very important to always use the indicated tightening torque.

MAINTENANCE FREQUENCY



This continuous variable pulley do not require any lubrication. It is designed to work without any lubricant. Given this, certain rules of cleanliness must be applied when handling the system to avoid having any lubricants come into contact with its components.



To increase the life of the continuously variable pulley, it is strongly recommended that you respect the following recommendations:

- Perform maintenance according to the table below
- Replace the worn parts. This ensures correct operation and will prevent any warranty from being excluded from the continuously variable pulley.

Description	Maintenance interval	
	Every 5 000 Km or 250 h	Every 10 000 Km or 500 h
Driven pulley	Visual inspection	Disassemble and Clean
Fixed sheave	Visual inspection	Clean
Sliding sheave	Visual inspection	Clean
Roller	Dimension / Visual	Dimension / Visual
Drive belt	Dimension / Visual	Dimension / Visual

NECESSARY HANDLING TOOLS

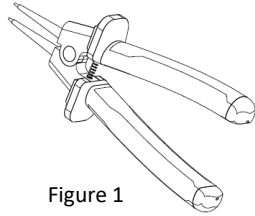


Figure 1
Snap ring pliers

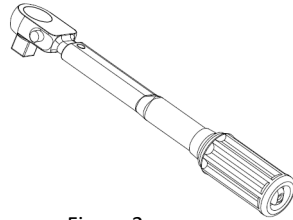


Figure 2
Torque wrench

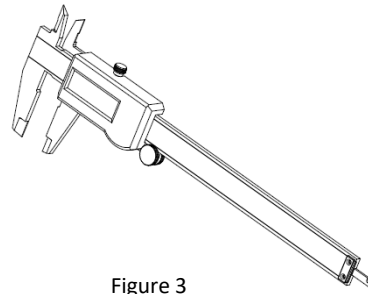


Figure 3
Caliper

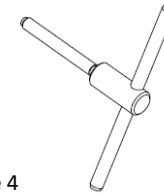


Figure 4
***Flange spreader**

*Refer to owner's manual
for part number*

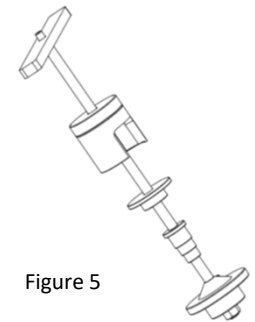


Figure 5
***Pulley disassembly tool
(5055-0002)**

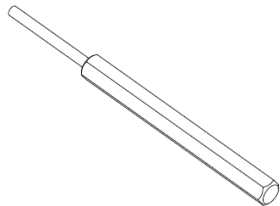


Figure 6
3mm Punch

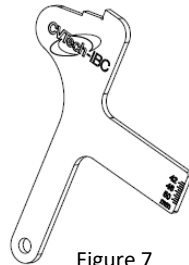


Figure 7
*** Alignment tool**

*Refer to owner's manual
for part number*

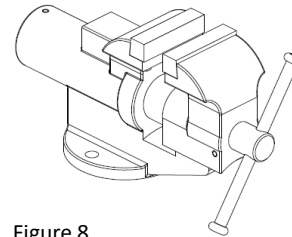


Figure 8
Vice

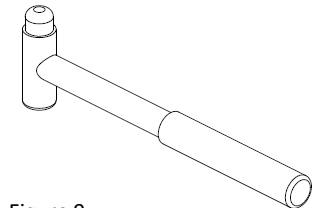


Figure 9
Hammer

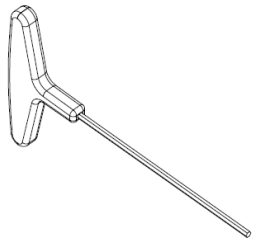


Figure 10
**3mm hexagonal
key**

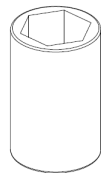


Figure 11
**Appropriate sockets for
removing pulley fixation
bolt**



***Important: Using impact tools
is not recommended.***

*** Tool available from CVTech**

PULLEY INSTALLATION AND TIGHTENING ON THE VEHICLE

Driven pulley installation

- Assemble the driven pulley onto the gearbox shaft

Recommended torque: Refer to owner's manual

- To tighten the driven pulley, engage the transmission on a gear and prevent the vehicle from moving using the vehicle brakes.

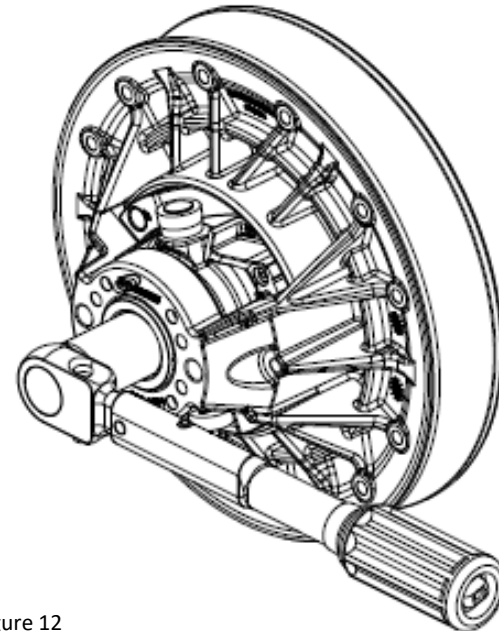


Figure 12



Do not forget to remove the tools from the driven pulley once the installation is completed.



Before you start the engine :

- Make sure all the components are clean, without any trace of oil, dust or contaminant.
- Do not use any lubricant.

PULLEYS GEOMETRICAL SPECIFICATIONS

Alignment between pulleys

- After completing the installation, check the alignment between the pulleys with the alignment tool. Make sure to obtain dimension A (figure 13) and the proper alignment tool part number (refer to owner's manual for both).
- If dimension A is out of tolerance, you can add or remove shims from the gearbox shaft to help reach it.

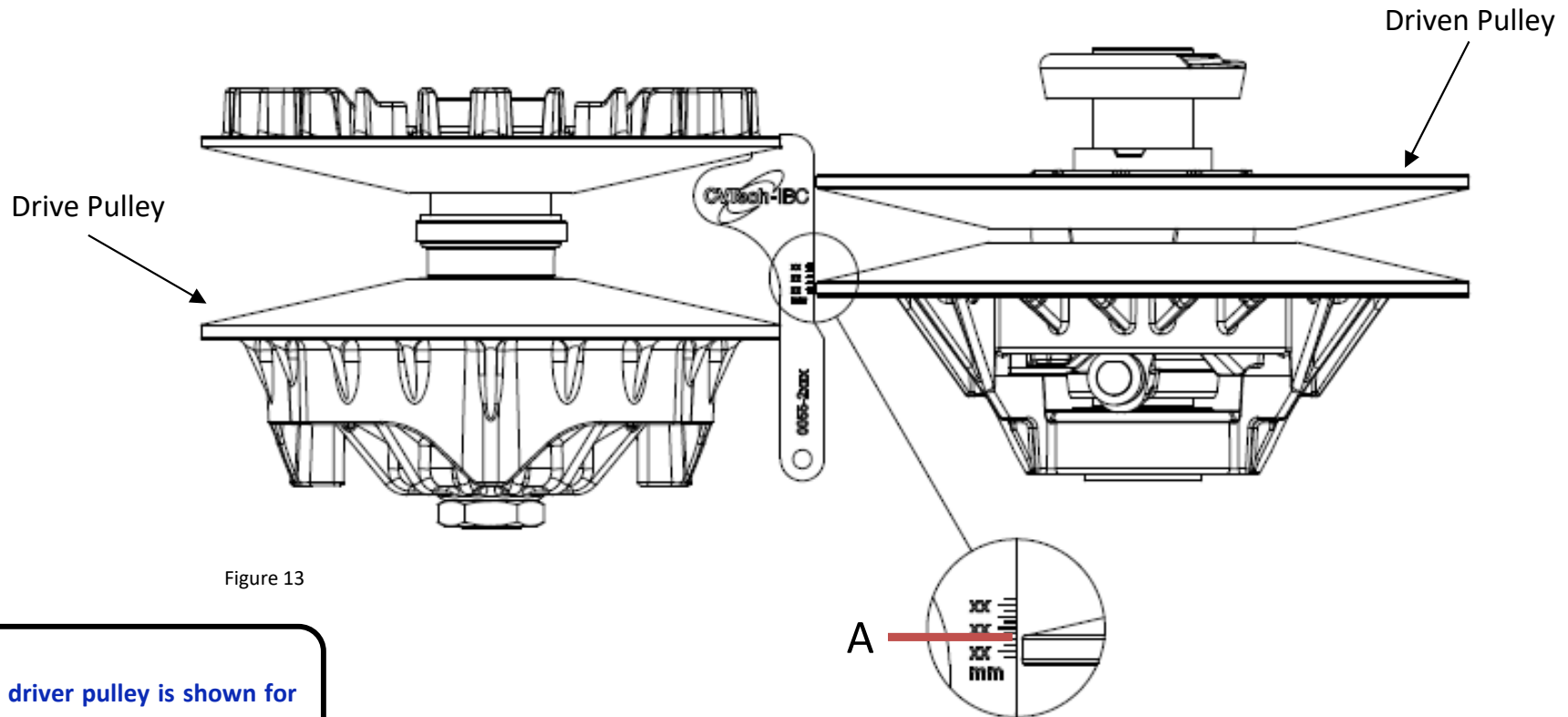


Figure 13



The driver pulley is shown for illustration purposes only

PULLEY REMOVAL FROM THE VEHICLE

Removing the driven pulley:

- If the drive belt is installed, screw the flange spreader "A" in the threaded holes, as shown in figure 14, to remove the drive belt.
- Lock the pulley rotation by engaging in gear and apply the vehicle brakes.
- Remove the bolt or nut from the driven pulley.

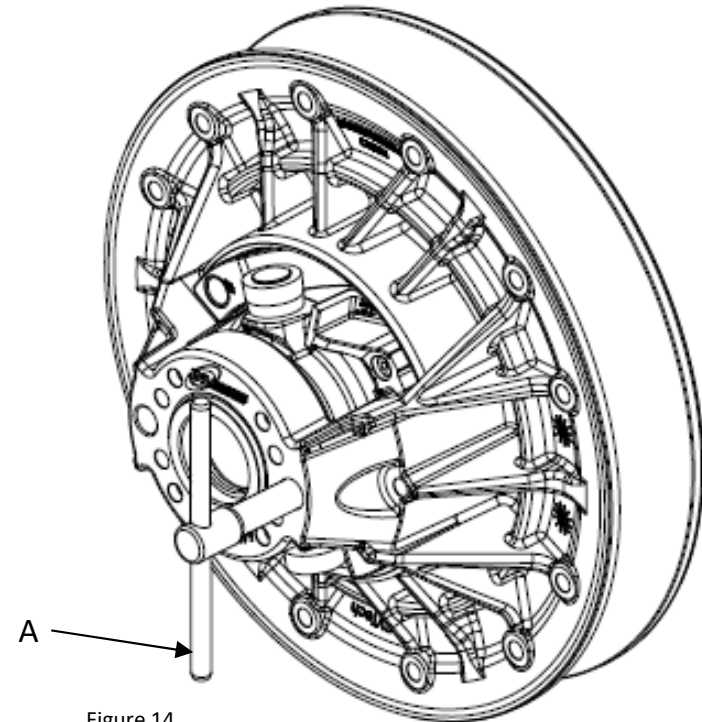


Figure 14



Before disassembling the CVT belt, identify drive belt rotation direction so that it will be the same when reassembling.

DRIVE BELT INSPECTION



The drive belt must be inspected in order to avoid any risk of personal injury and/or material damage.

- The drive belt must be replaced if cracks are seen when turning it inside out.

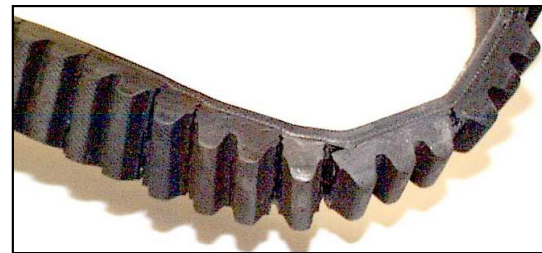


Figure 15

- The drive belt must be replaced when the width at the cord level is approximately 2 mm less than it is on a new belt (refer to owner's manual).

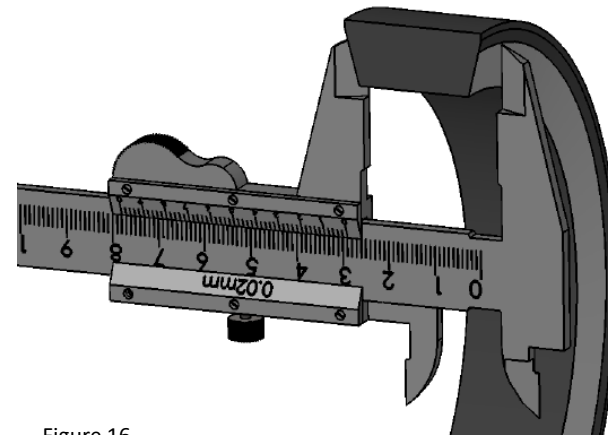


Figure 16

- Make sure to take the measurement at the cord level of the belt.

PULLEY DISASSEMBLY

- 1 Fixed sheave
- 2 Washer (if applicable)
- 3 Sliding sheave
- 4 Spring pin
- 5 Roller
- 6 Roller pin
- 7 Spring
- 8 Spring seat
- 9 External retaining ring
- 10 Forward ramp
- 11 Helix
- 12 Washer (if applicable)
- 13 Screw
- 14 Washer (if applicable)
- 15 Screw (if applicable)

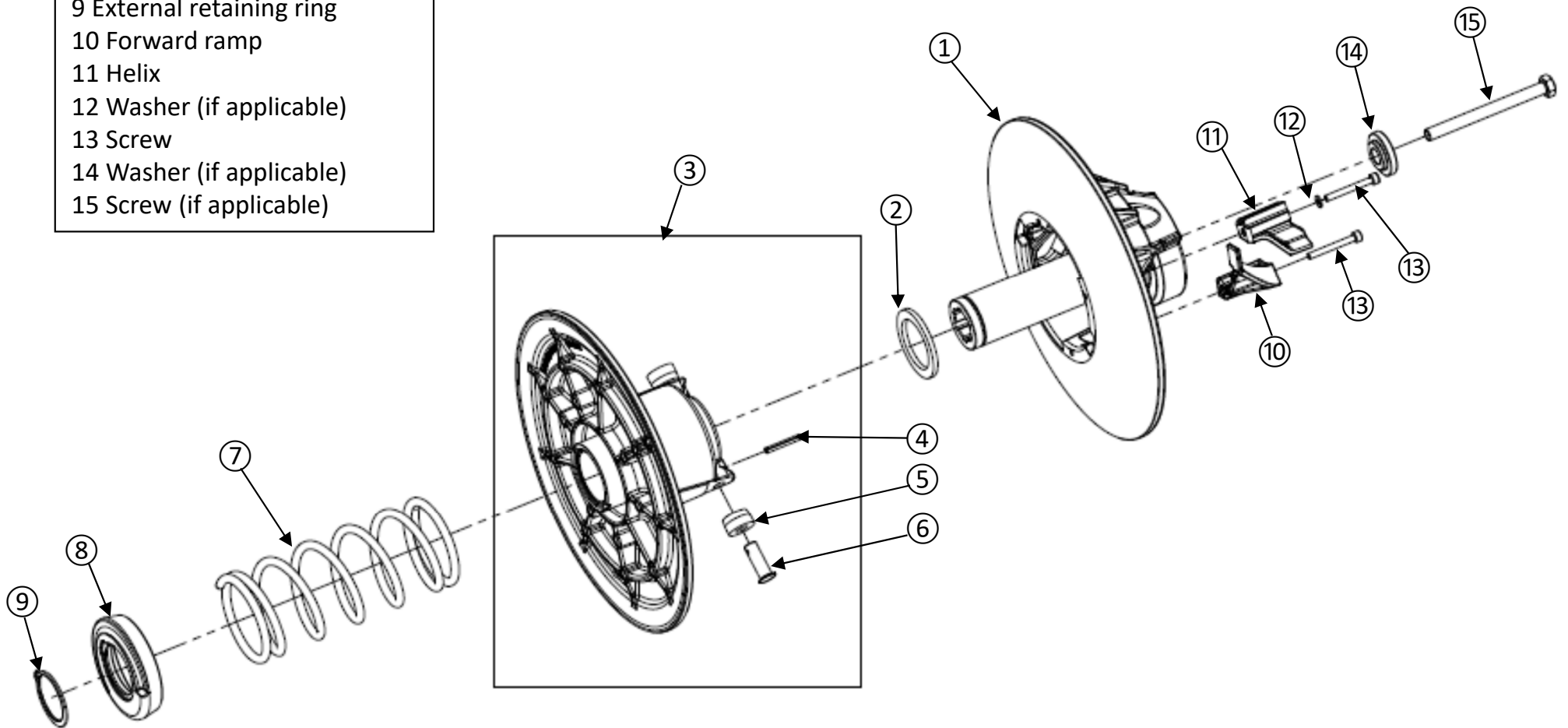


Figure 17

PULLEY DISASSEMBLY

Spring disassembly

- Using a vice, mount the disassembly tool as shown in figure 18.
- Install the pulley on the disassembly tool as shown in figure 19.
- By screwing the bar on the threaded rod, press down the spring seat ⑧ (3 to 4 mm max.) in order to free up the retaining ring ⑨.
- Remove the retaining ring ⑨ using the snap ring pliers (figure 20).
- Slowly unscrew the bar on the threaded rod to release the spring ⑦ tension (figure 21).

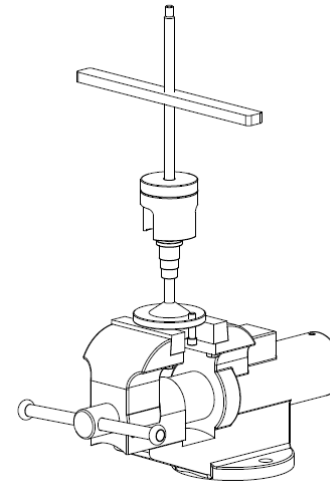


Figure 18

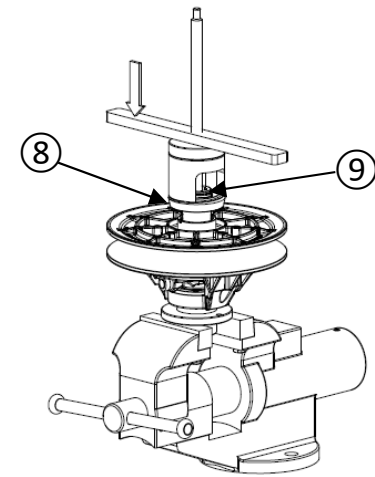


Figure 19

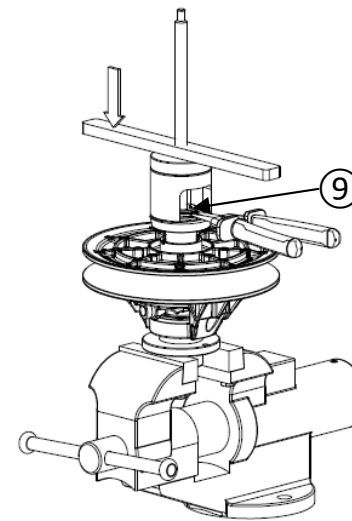


Figure 20

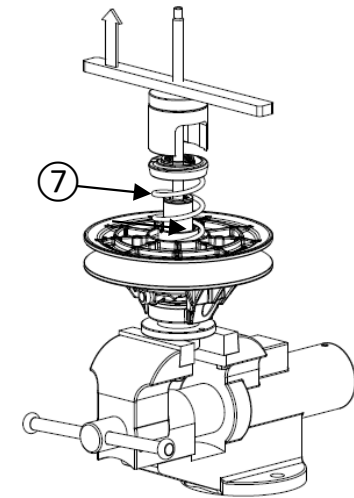


Figure 21

i Use the disassembly tool to disassemble the spring seat ⑧. The pulley is spring loaded with significant amount of force; the use of the disassembly tool will keep the pulley compressed.

i Slowly lift the spring seat ⑧ to free it from the shaft by unscrewing the disassembly tool once the retaining ring ⑨ is removed.

PULLEY DISASSEMBLY

Forward ramps ⑩ and helix ⑪ disassembly

- Remove the 4 retaining screws ⑬ (and washers ⑫ if applicable) of the 2 forward ramps ⑩ and the 2 helix ⑪ from the fixed sheave ① (figure 22).
- Remove the 2 forward ramps ⑩ and the 2 helix ⑪.

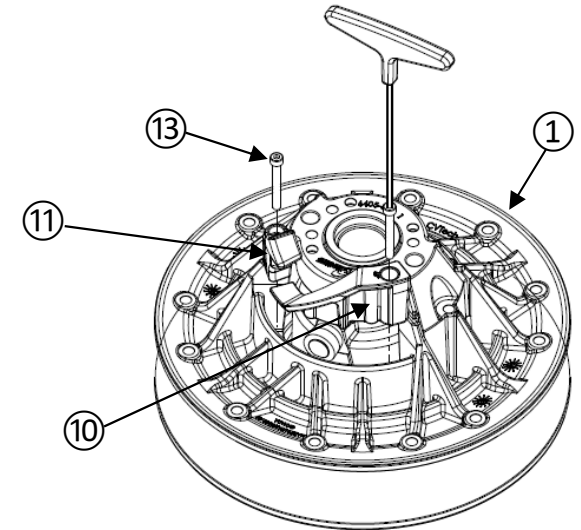


Figure 22

Rollers ⑤ disassembly

- Remove the 2 spring pins ④ using a 3mm punch and a hammer (figure 23).
- Remove the 2 rollers ⑤ and the 2 roller pins ⑥ from the sliding sheave ③ (figure 24).

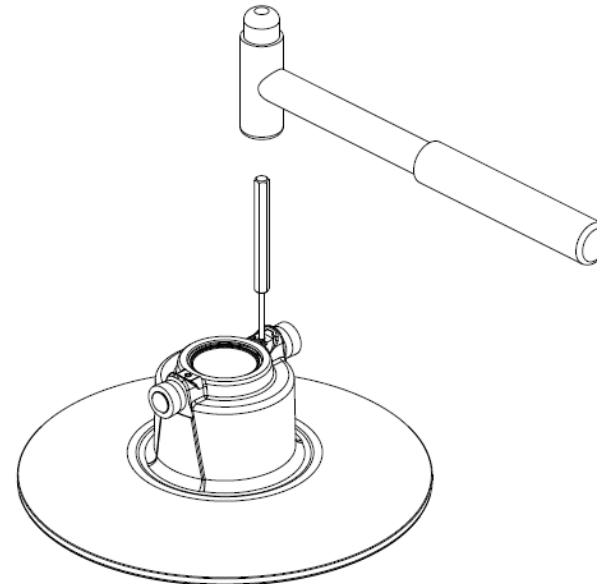


Figure 23

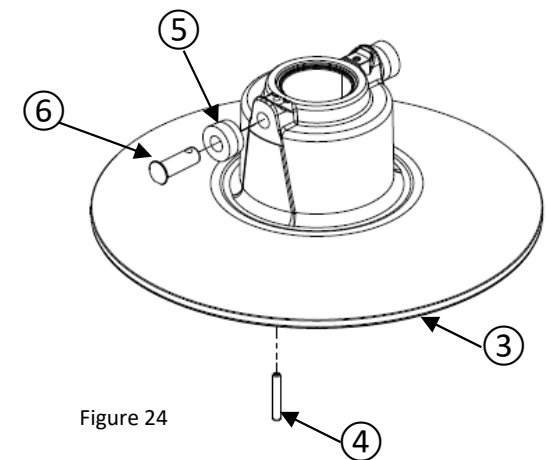


Figure 24

SLIDING FLANGE MAINTENANCE

Recommended inspection

- Check for wear marks on the forward ramps ⑩ and helix ⑪.
- Check for wear marks on the spring ⑦.
- Perform a visual inspection on the components.
- Check the wear of the sliding sheave ③ bushings (visual inspection only, figure 25). If there is excessive wear, you must replace the whole sheave assembly ③.

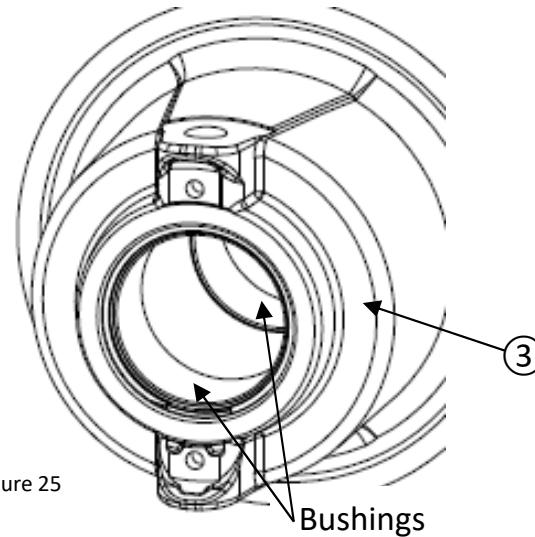


Figure 25



The bushings cannot be removed from the sliding sheave ③ (figure 25).



The shaft cannot be disassembled from the fixed sheave ① (figure 26).



To maintain the performance of the pulley, make sure the sheave bushings are cleaned with a microfiber towel or dry cloth. CAUTION: do not use acetone to clean bushing.

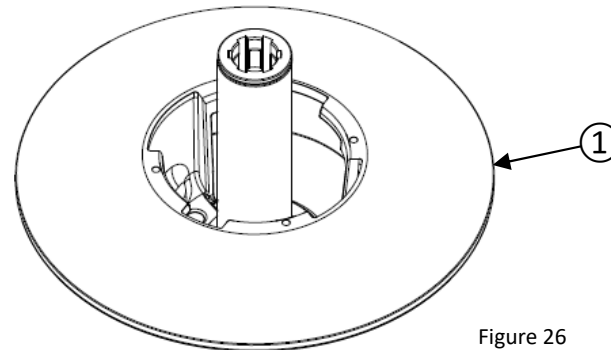


Figure 26

SLIDING FLANGE MAINTENANCE

Check for wear on the outside surface of the rollers ⑤

- No flat spot on the outside surface
- The external diameter must be bigger than 16.5 mm (see figure 28)

Check for wear on the inside surface of the rollers ⑤

- The internal diameter must be smaller than 9 mm (see figure 28)

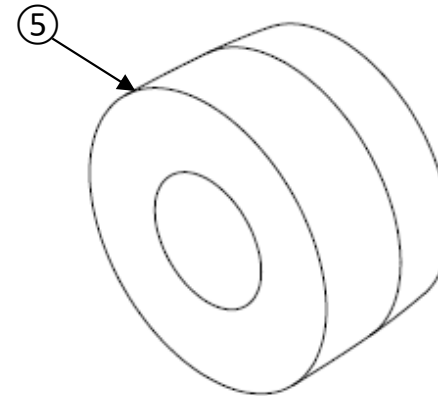


Figure 27

Internal diameter measure

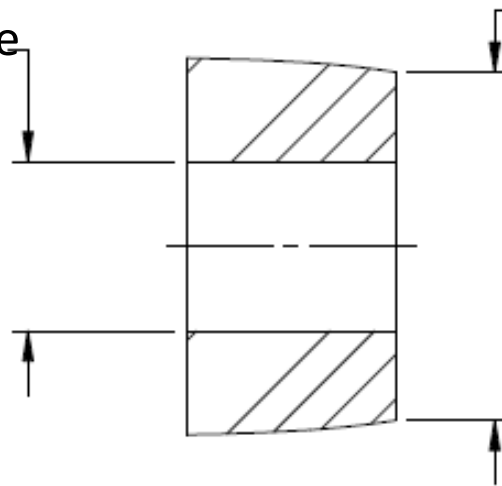


Figure 28

External diameter measure

PULLEY RE-ASSEMBLY

Rollers ⑤ re-assembly

- Insert the 2 roller pins ⑥ in the 2 rollers ⑤.
- Insert the 2 roller pins ⑥ and the 2 rollers ⑤ in the sliding sheave ③; the holes of the roller pins ⑥ must be aligned with the holes of the sliding sheave ③.
- Using a 3mm punch and a hammer, insert the 2 spring pins ④ in the sliding sheave ③, making sure that the spring pins ④ are inserted in the roller pins ⑥ (see figures 29 and 30).

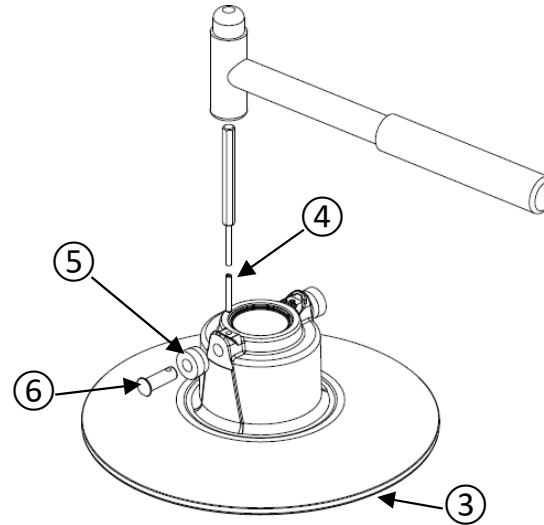


Figure 29

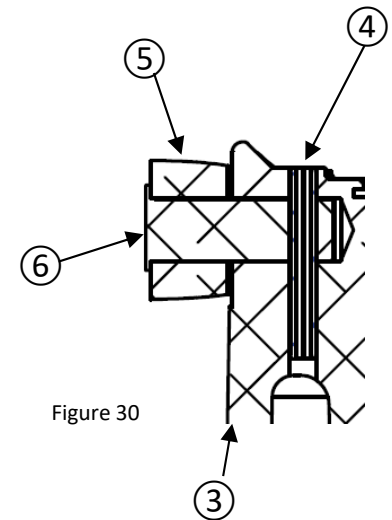


Figure 30

Forward ramps ⑩ and helix ⑪ re-assembly

- Insert the sliding sheave ③ on the fixed sheave ① and make sure that the alignment notches are aligned (see figure 31).
- Insert the 2 forward ramps ⑩ and the 2 helix ⑪ in the fixed sheave ①.
- Torque the 4 screws ⑬ to 3,5 Nm (see figure 32).

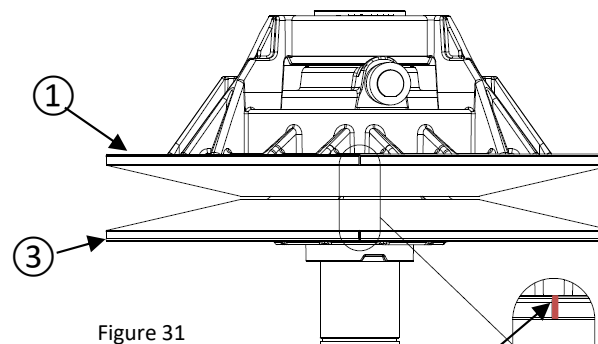


Figure 31

Alignment notches

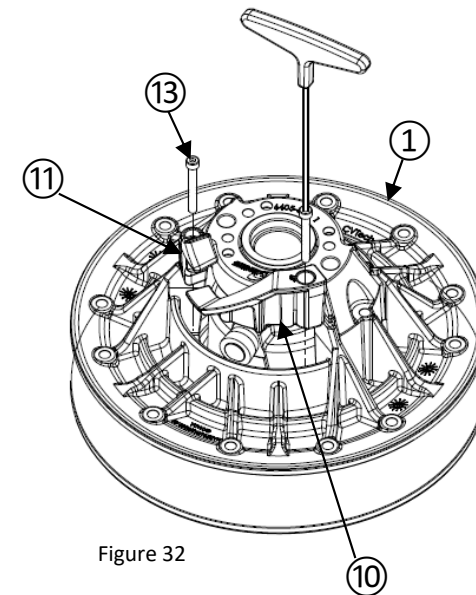


Figure 32

PULLEY RE-ASSEMBLY

Pulley re-assembly

- Install the pulley on the disassembly tool as shown in figure 33.
- Insert the spring ⑦ in the sliding sheave ③.
- Put the spring seat ⑧ on the spring ⑦ and turn it clockwise until it comes to a stop in rotation; maintain the spring ⑦ by hand during the operation.
- Put the retaining ring ⑨ on the spring seat ⑧.
- Make sure that the retaining ring ⑨ is in the notch made for that purpose (see figure 34).
- With the compression tool, lower the spring ⑦ and spring seat ⑧ until they clear the retaining ring groove in the shaft.
- Install the retaining ring ⑨.

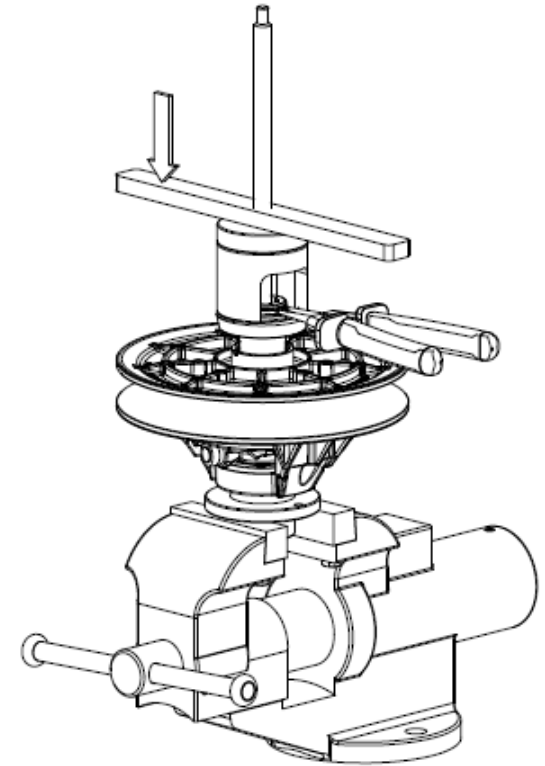


Figure 33

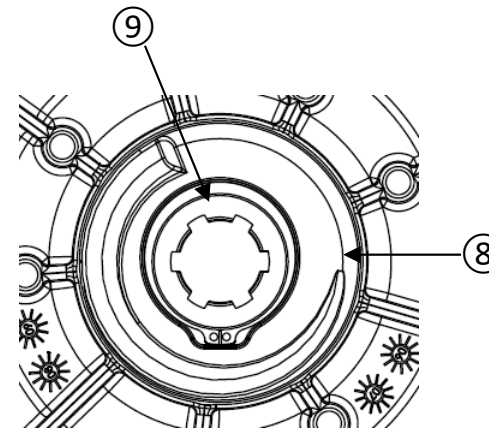


Figure 34

i Slowly lift the spring seat ⑧ to free it from the shaft by unscrewing the disassembly tool.

i The use of the disassembly tool is required in order to assemble the sliding sheave ③.