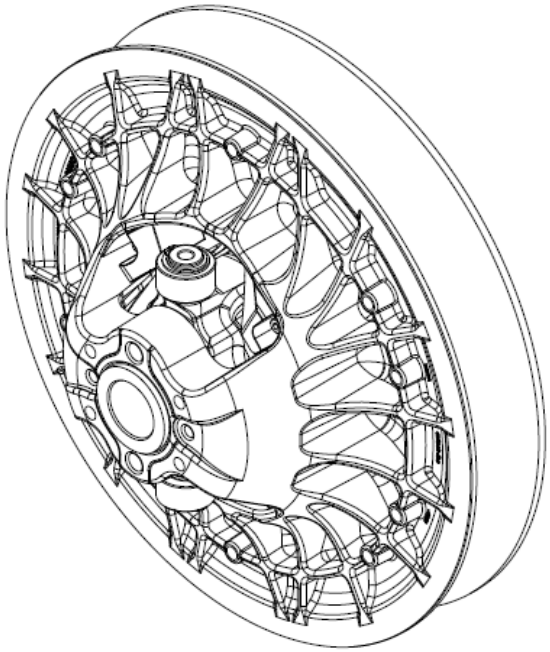
INSTALLATION AND MAINTENANCE GUIDE FOR A CONTINUOUSLY VARIABLE DRIVEN PULLEY INVANCE HP (63)



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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 does 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

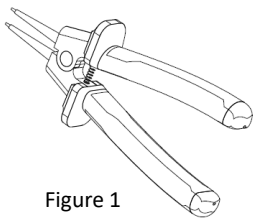

Figure 1

Snap ring pliers

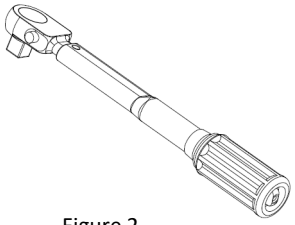

Figure 2

Torque wrench

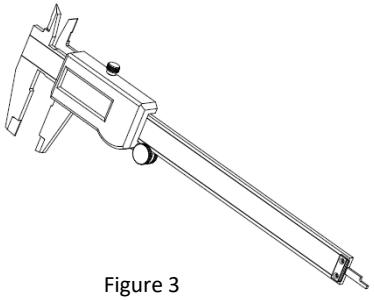

Figure 3

Caliper

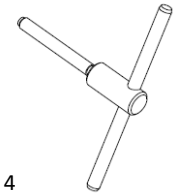

Figure 4

**Flange spreader*

Refer to owner's manual for part number

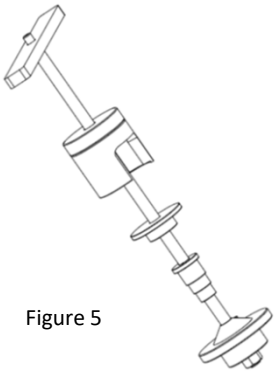

Figure 5

**Pulley disassembly tool*

(5055-0002)

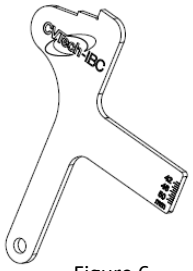

Figure 6

** Alignment tool*

Refer to owner's manual for part number

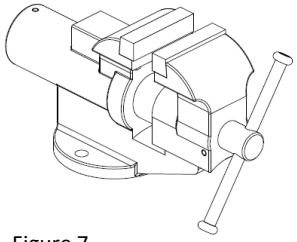

Figure 7

Vice

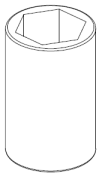

Figure 8

Appropriate sockets for removing pulley fixation bolt

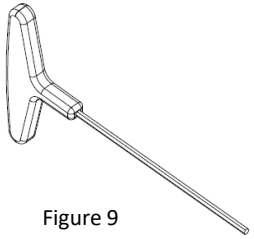

Figure 9

3mm hex. key

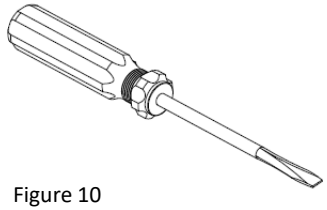

Figure 10

Flat head screwdriver

***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.

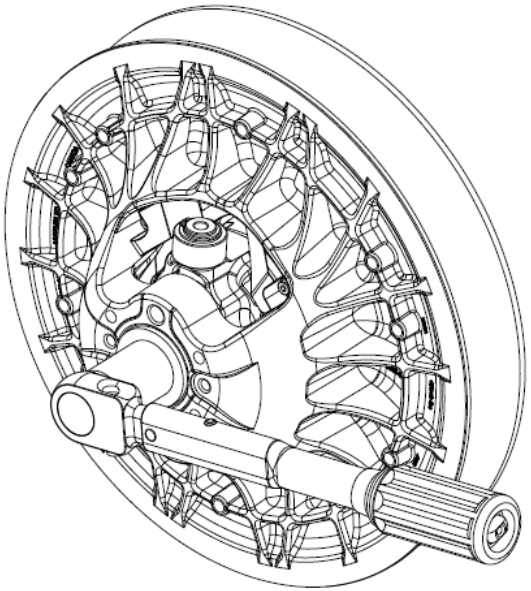

Figure 11

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 12) 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.

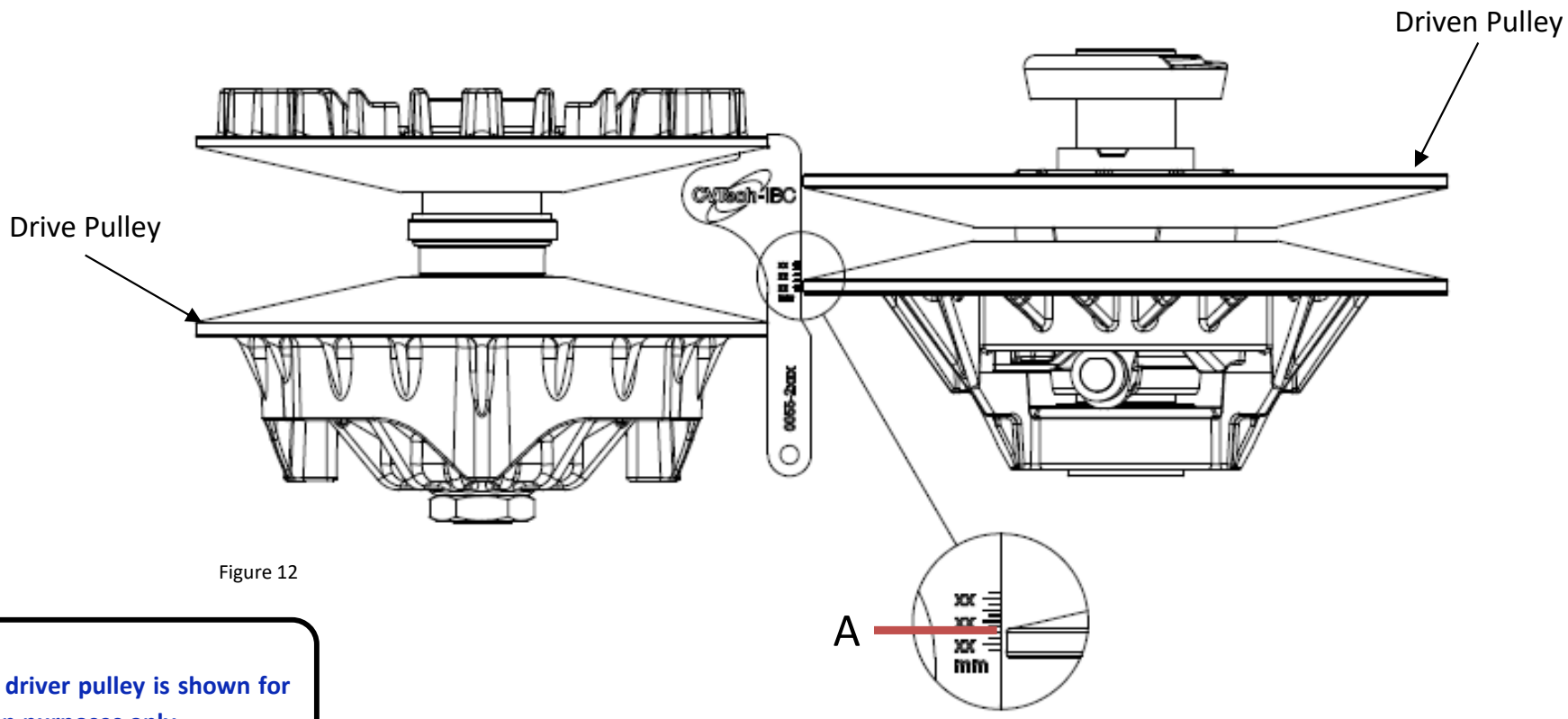

Figure 12

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 one of threaded holes, as shown in figure 13, 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.

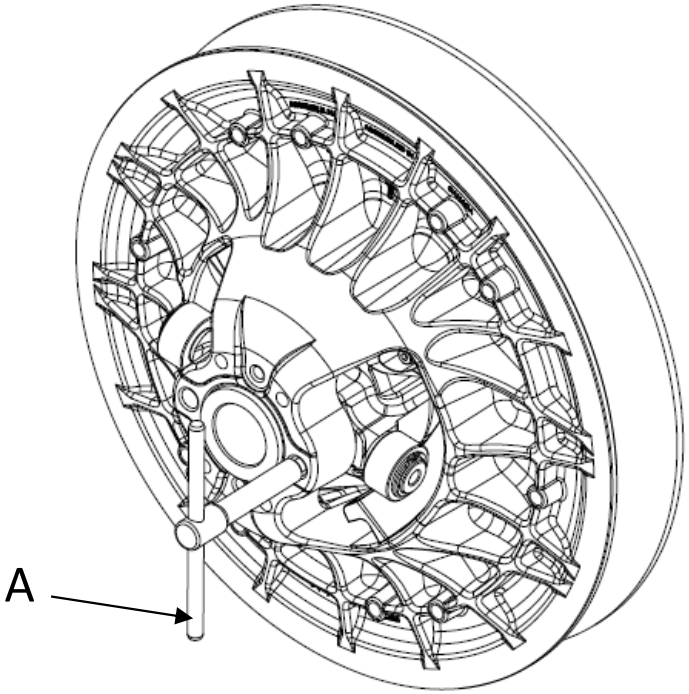

Figure 13

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.

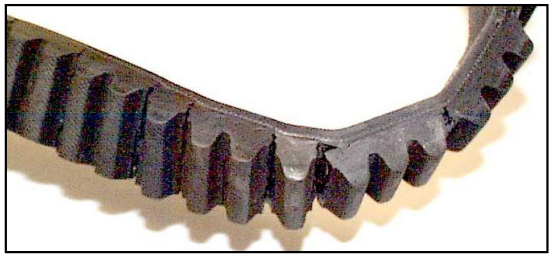

Figure 14

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

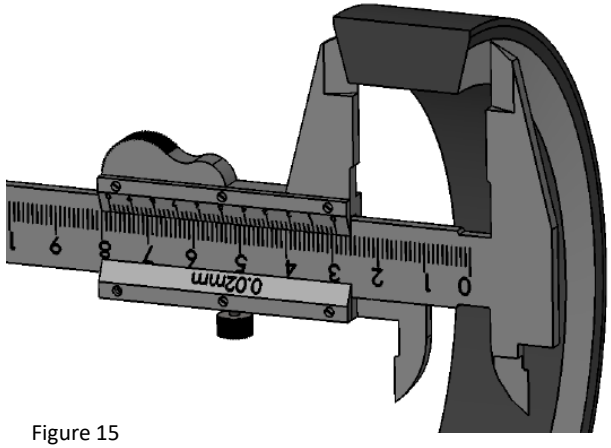

Figure 15

PULLEY DISASSEMBLY

1	Fixed Sheave
2	Sliding Sheave
3	Roller
4	Washer
5	External Retaining Ring
6	Spring
7	Spring Seat
8	Spring Abutment
9	Snap Ring
10	Forward Ramp
11	Rear Ramp
12	Screw
13	Washer (If Applicable)
14	Screw (If Applicable)

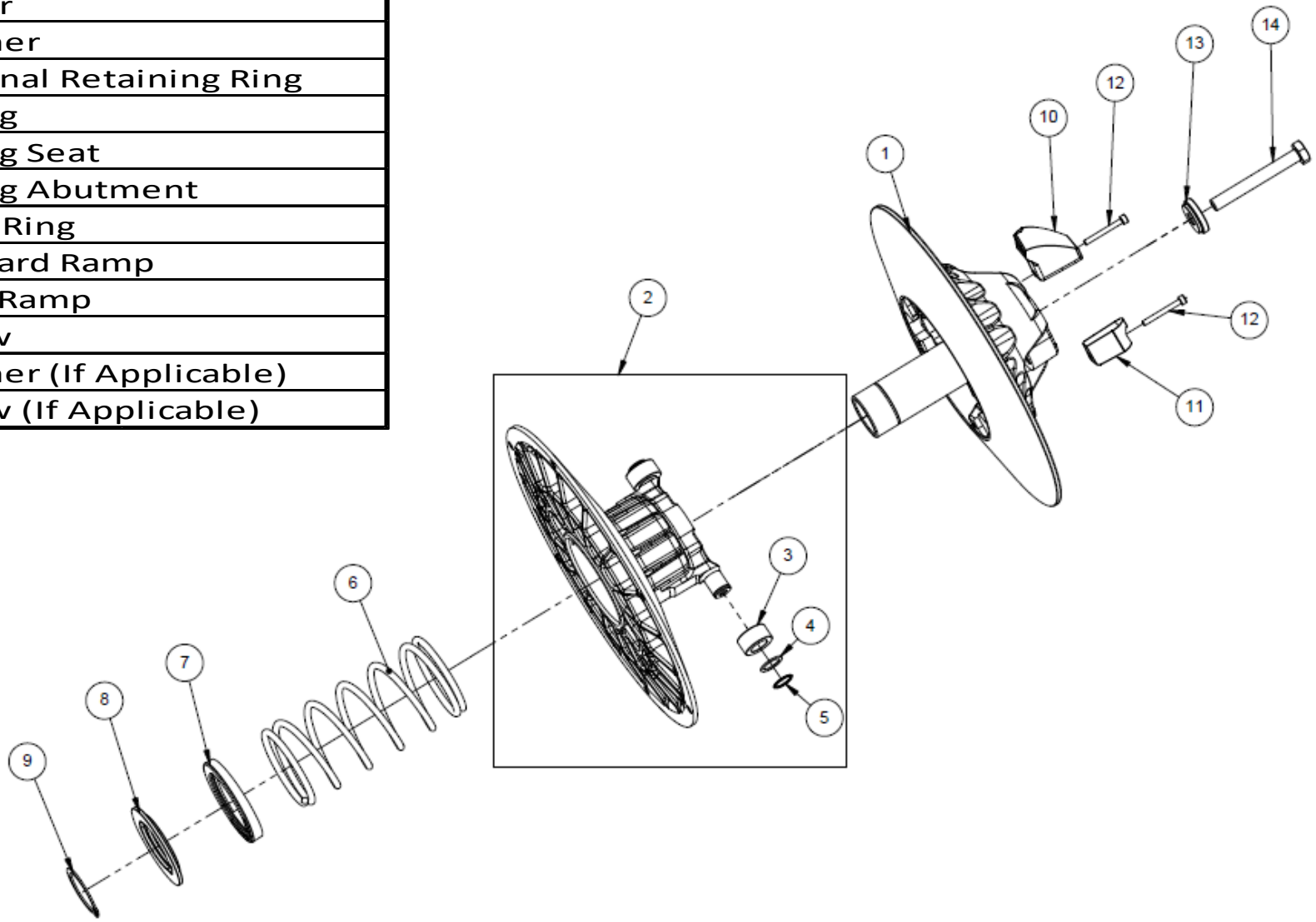

Figure 16

PULLEY DISASSEMBLY

Spring disassembly

- Using a vice, mount the disassembly tool as shown in figure 17.
- Install the pulley on the disassembly tool as shown in figure 18.
- By screwing the bar on the threaded rod, press down the spring abutment ⑧ (3 to 4 mm max.) in order to free up the snap ring ⑨.
- Remove the snap ring ⑨ using the snap ring pliers (figure 19).
- Slowly unscrew the bar on the threaded rod to release the spring ⑥ tension (figure 20).
- Remove the snap ring ⑨, the spring abutment ⑧, the spring seat ⑦ and the spring ⑥.

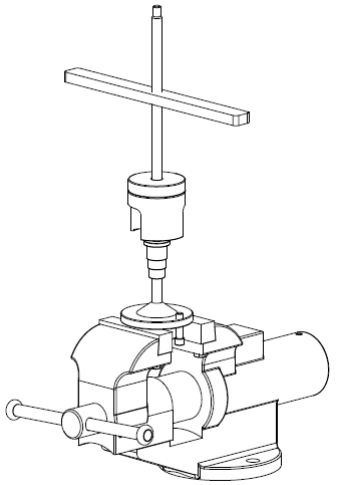

Figure 17

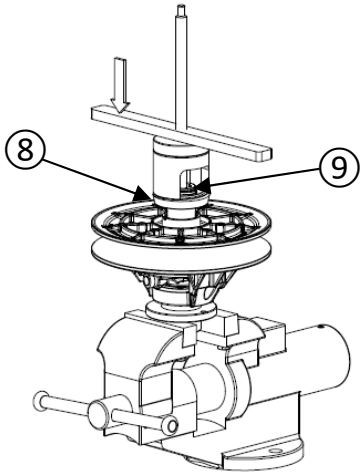

Figure 18

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

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

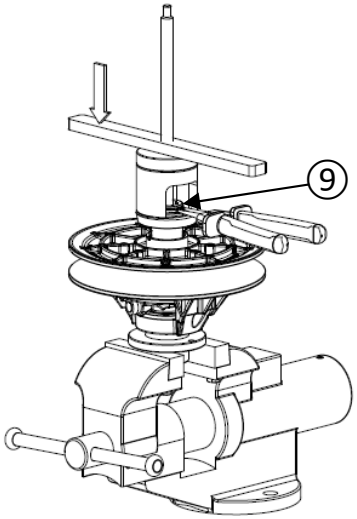

Figure 19

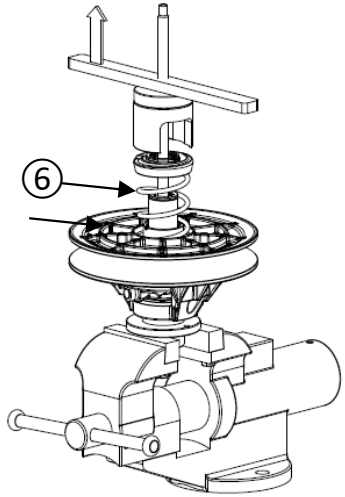

Figure 20

PULLEY DISASSEMBLY

Forward ramps ⑩ and rear ramps ⑪ disassembly

- Using the 3mm hexagonal key, remove the 4 screws ⑫ of the 2 forward ramps ⑩ and the 2 rear ramps ⑪ from the fixed sheave ① (figure 21).
- Remove the 2 forward ramps ⑩ and the 2 rear ramps ⑪.
- Disassemble the 2 sheaves ① and ②.

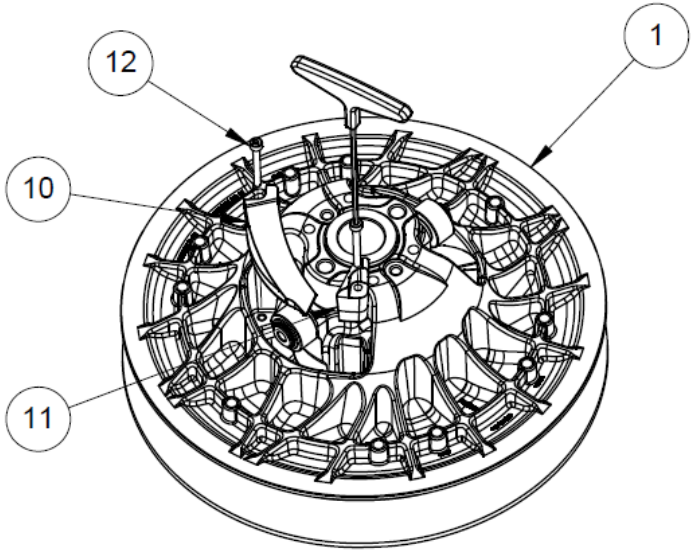

Figure 21

Rollers ③ disassembly

- With a flat head screwdriver, remove the external retaining ring ⑤ from the sliding sheave ② (figure 22).
- Remove the 2 washers ④ and the 2 rollers ③ from the sliding sheave ② (figure 23).

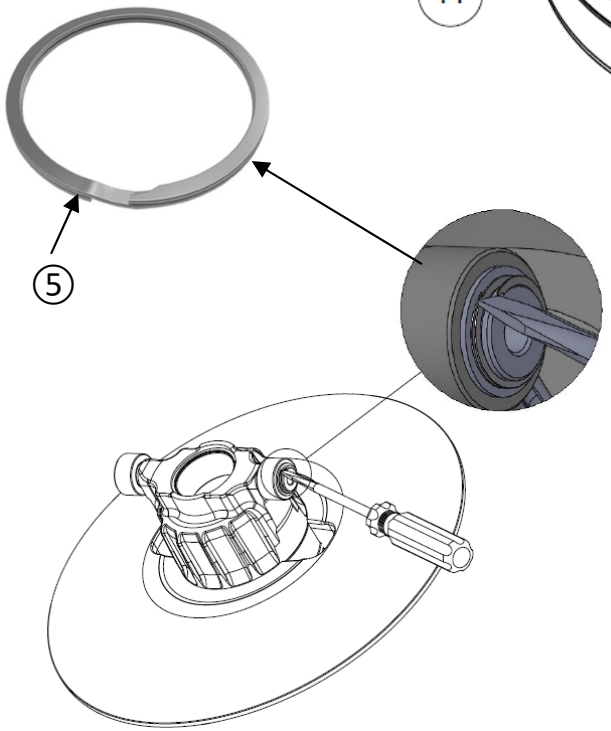

Figure 22

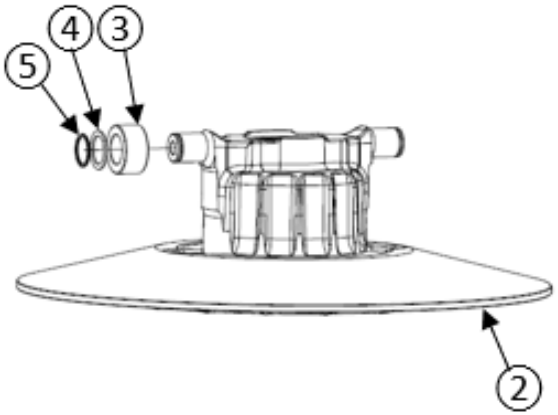

Figure 23

SLIDING FLANGE MAINTENANCE

Recommended inspection

- Check for wear marks on the forward ramps ⑩ and rear ramps ⑪.
- Check for wear marks on the spring ⑥.
- Perform a visual inspection of the components.
- Check the wear of the sliding sheave ② bushings (visual inspection only, figure 24). If there is excessive wear, you must replace the whole sheave assembly ②.

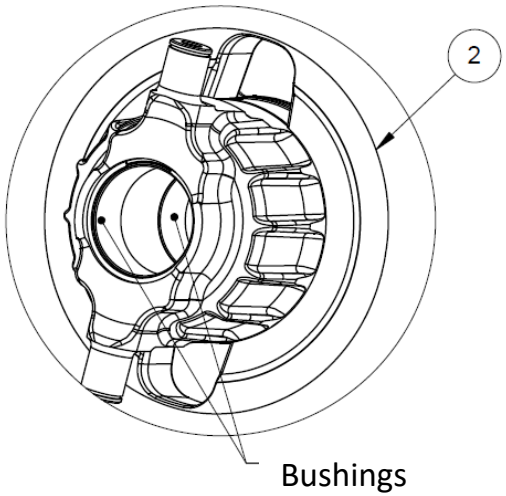

Figure 24

The bushings cannot be removed from the sliding sheave ② (figure 24).

The shaft cannot be disassembled from the fixed sheave ① (figure 25).

To maintain the performance of the pulley, make sure the sliding sheave ② bushings are cleaned with a microfiber towel or dry cloth. CAUTION: do not use acetone to clean the bushings.

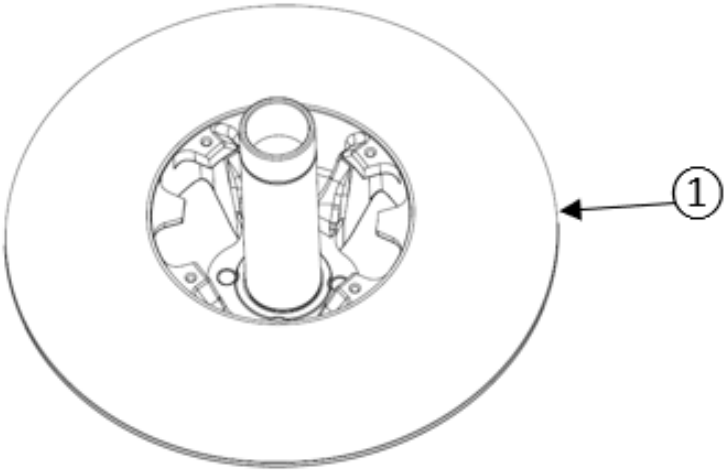

Figure 25

SLIDING FLANGE MAINTENANCE

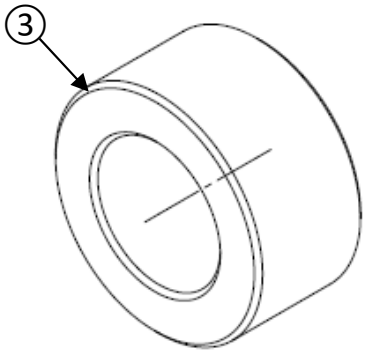

Figure 26

Check for wear on the outside surface of the rollers ③

- No flat spot on the outside surface.
- The external diameter must by larger than 24 mm (see figure 27).

Check for wear on the inside surface of the rollers ③

- The internal diameter must be smaller than 15.5 mm(see figure 27).

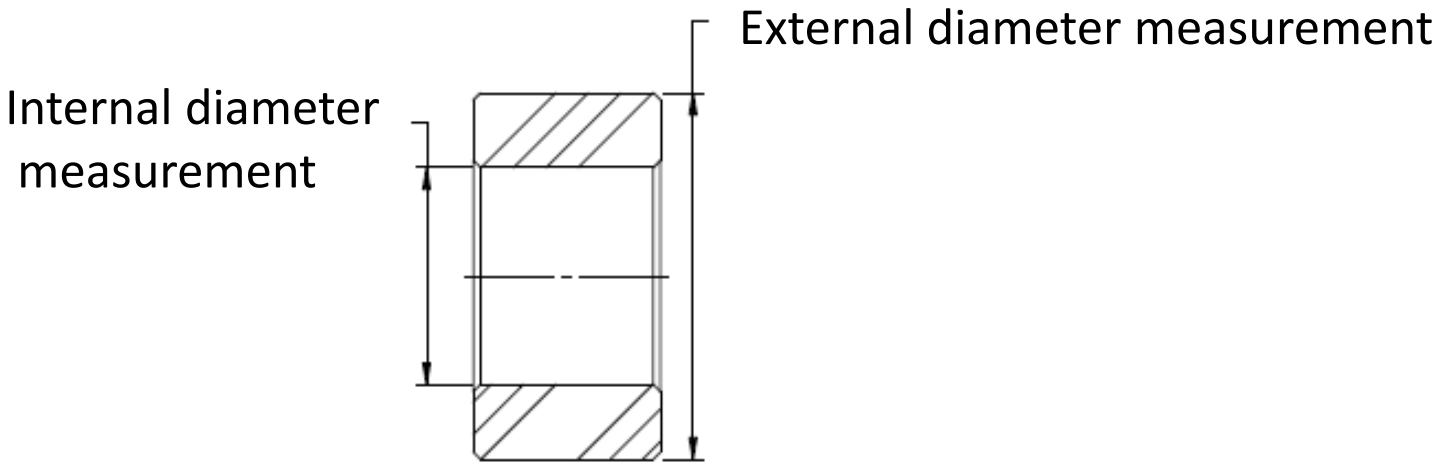

Figure 27

PULLEY RE-ASSEMBLY

Rollers ③ re-assembly

- Insert the 2 rollers ③, the 2 washers ④ and the 2 external retaining rings ⑤ on the roller pins of the sliding sheave ② (see figures 28 and 29).

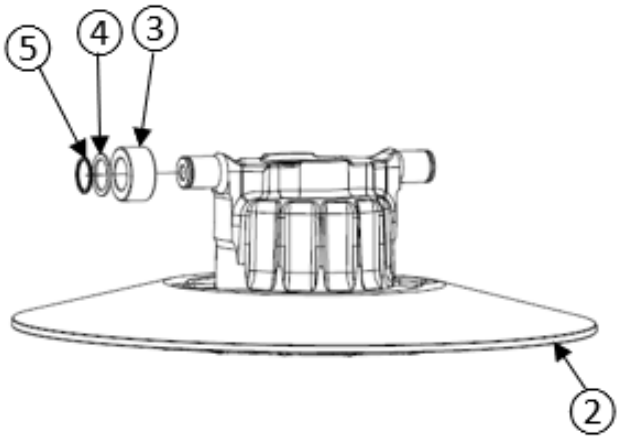

Figure 28

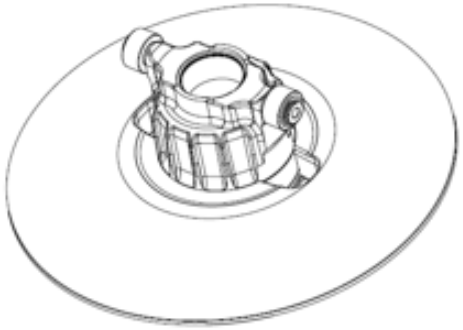

Figure 29

Foward ramps ⑩ and rear ramps ⑪ re-assembly

- Insert the sliding sheave ② on the fixed sheave ① and make sure that the alignment notches are aligned (see figure 30).
- Insert the 2 forward ramps ⑩ and the 2 rear ramps ⑪ in the fixed sheave ①.
- Torque the 4 screws ⑫ to 3,5 Nm (see figure 31).

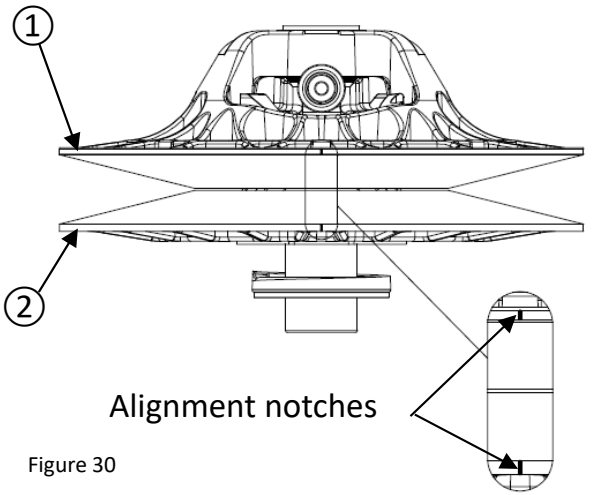

Figure 30

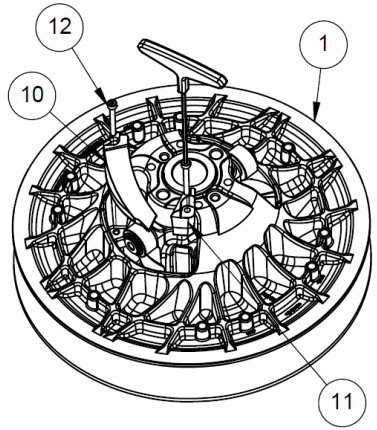

Figure 31

PULLEY RE-ASSEMBLY

Pulley re-assembly

- Install the pulley on the disassembly tool as shown in figure 32.
- Insert the spring ⑥ in the sliding sheave ②.
- Put the spring seat ⑦ on the spring ⑥ and turn it clockwise until it comes to a stop in rotation; maintain the spring ⑥ by hand during the operation.
- Put the spring abutment ⑧ and the snap ring ⑨ on the spring seat ⑦.
- Make sure that the snap ring ⑨ is in the notch made for that purpose (figure 33).
- With the compression tool, lower the spring ⑥, the spring seat ⑦ and the spring abutment ⑧ until they clear the snap ring groove in the shaft.
- Install the snap ring ⑨.

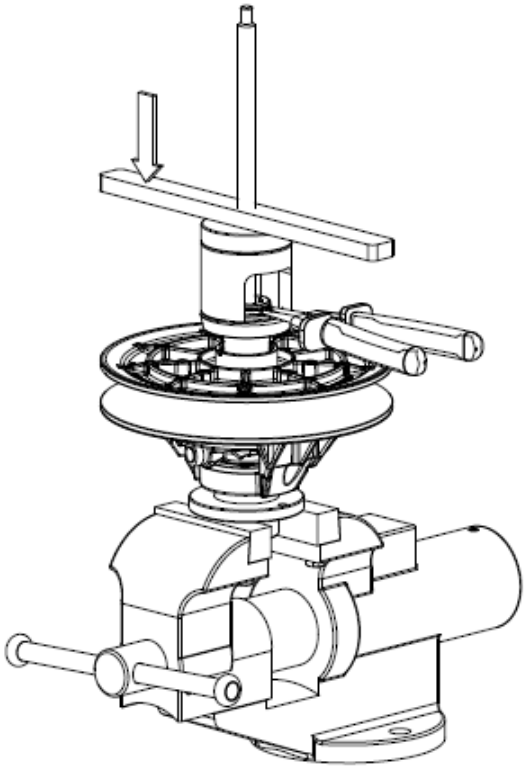

Figure 32

ⓘ Slowly unscrew the disassembly tool to make sure the snap ring is properly secured.

ⓘ The use of the disassembly tool is required in order to assemble the sliding sheave ② to the fixed sheave ①.

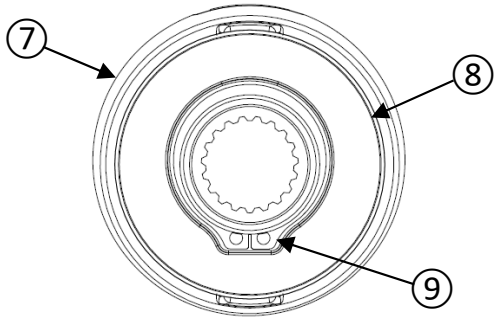

Figure 33