CVT Continuously Variable Transmission

This chapter covers the location and servicing of the CVT components for the KYMCO XCITING 400i.

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- CVT Removal ........................................................... 4-12~4-28
- CVT Installation ......................................................... 4-29

GENERAL INSTRUCTIONS

- The drive pulley, clutch and driven pulley can be serviced with the engine installed.

- Avoid getting grease and oil on the drive belt and pulley faces. Remove any oil or grease from them to minimize the slipping of drive belt and drive pulley.

TROUBLESHOOTING

Engine starts but motorcycle won’t move
- Worn drive belt
- Broken ramp plate
- Worn or damaged clutch lining
- Broken driven face spring

Engine stalls or motorcycle creeps
- Broken clutch weight spring

Lack of power
- Worn drive belt
- Weak driven face spring
- Worn weight roller
- Faulty driven face
Belt Case

SAFETY FIRST: Protective gloves and eyewear are recommended at this point.

Removal

Remove the following components -

- Seat
- Luggage Box
- Center Cover
- Rear Carrier
- Body Cover
- Front Cover
- Front Lower Cover
- Foot Skirt

Disconnect the drain hose from the air cleaner.
Remove 2 the air cleaner bolts with an 8 mm socket.

Remove 6 the belt case plastic cover bolts with an 8 mm socket.

Remove the belt case protector.
Remove 11 the belt case cover bolts with an 8 mm socket.

Remove 2 the air filter bolts with an 8 mm socket.
Remove the drive pulley nut with a 24mm socket.

Remove the driven pulley nut with a 24mm socket.

Remove the belt case cover and gasket.

Remove the two dowel pins.
Inspection

Inspect the drive belt for cracks or excessive wear.

Inspect the belt case bearing by turning it with a finger. Replace the bearing if it is rough or noisy.
Remove the bearing fixed plate with a 5 mm Allen.

Remove two bearing collar.

Remove the bearing with a suitable bearing puller.

Tool number: A12E00093
Drive in a new bearing with a suitable bearing driver that has the same outside diameter as the bearing.

Tool number: A12E00014

Install two bearing collar.

Install the bearing fixed plate with a 5 mm Allen
Installation

Install the two dowel pins into the belt case.

Install a new gasket with the belt case cover.

Install the driven pulley nut with a 24mm socket.

Install the drive pulley nut with a 24mm socket.
Install 2 the air filter bolts with an 8 mm socket.

Install the belt case cover bolts and tighten them securely with an 8 mm socket.

Install the belt case plastic cover.
Insert the plastic cover bolts and tighten them securely with an 8 mm socket.

Install the air cleaner bolts with an 8 mm socket.

Fit the drain hose to the plastic belt case cover as shown.
CVT Removal

SAFETY FIRST: Protective gloves and eyewear are recommended at this point.

Remove the belt case. See the Belt Case topic for more information.

Pulleys and Belt

Remove the left face of the drive pulley.

Remove the outer clutch.
Slide the driven pulley off of the shaft.

Remove the belt from the driven pulley.

Inspect the drive belt for cracks or excessive wear.
Remove the right (movable) face of the drive pulley from the crankshaft. Slide the bushing out of the movable drive face.

**Drive Pulley Disassembly**

Inspect the faces of the drive pulley. Clean away any grease from the faces. Inspect the oil seal of the drive pulley for broken or excessive wear.

Lift the ramp plate out of the back of the left drive pulley face.
There are 6 weight rollers in the back of the right face of the drive pulley.

Remove the rollers and check them for excessive or uneven wear. Measure the weight of the rollers. Replace the weight rollers as needed.

<table>
<thead>
<tr>
<th>Item</th>
<th>Standard (mm)</th>
<th>Service Limit (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight roller (Drive Pulley)</td>
<td>17±0.3g</td>
<td>–</td>
</tr>
</tbody>
</table>
Inspect the movable drive face and bushing for wear and damage. Replace the parts as needed.

**Clutch Disassembly**

Lift the clutch outer off of the centrifugal clutch.

Inspect the inside of the clutch outer for excessive wear and damage. Measure the inside diameter of the clutch outer and replace the part as needed.

<table>
<thead>
<tr>
<th>Item</th>
<th>Standard (mm)</th>
<th>Service Limit (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clutch outer I.D.</td>
<td>160 – 160.1</td>
<td>160.6</td>
</tr>
</tbody>
</table>
Inspect the clutch shoe lining thickness. Replace the shoes if the wear is below the service limit.

<table>
<thead>
<tr>
<th>Item</th>
<th>Standard (mm)</th>
<th>Service Limit (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clutch lining thickness</td>
<td>4.0</td>
<td>2.0</td>
</tr>
</tbody>
</table>

To disassemble the clutch and driven pulley set the clutch fitting tool onto the clutch.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>TOOL NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>#46 NUT AND FITTING TOOL</td>
<td>A120E00098</td>
<td>CLUTCH DISASSEMBLY</td>
</tr>
<tr>
<td>SPRING COMPRESSOR</td>
<td>A120E00053</td>
<td>CLUTCH SPRING COMPRESSOR</td>
</tr>
</tbody>
</table>

Fit the clutch and fitting tool into the clutch spring compressor tool.
Use the clutch spring compressor tool to compress the spring in the driven pulley assembly.

Loosen the clutch drive plate nut with the special socket that comes with the fitting tool.

Remove the clutch drive plate nut.
Inspect the left side bearing by turning it with a finger. If the bearing is rough turning or noisy it should be replaced.

Remove the clutch spring compressor tool. Lift off the centrifugal clutch.
Remove the collars and spring.

Measure the free length of the clutch spring. Replace the spring if the measurement fails to meet the service limit.
Remove the three circlips from the clutch pivot pins with a small flat blade screwdriver.

Lift off the plate.
4. CVT Transmission > CVT Removal

XCITING 400i

Slide the clutch shoes off of the pivots on the drive plate.

Inspect the clutch shoe bumpers and replace them as needed.
Driven Pulley Disassembly

Remove the clutch as shown above.

Remove the four guide rollers with guide roller pins.

Separate the left and right faces of the driven pulley.
Inspect the faces of the driven pulley. Clean away any grease from the faces where the belt rides.

Remove the seals from the left face of the driven pulley.
Drive in the new seals with a suitable driver with the same outside diameter as the seal.

Remove the O-rings on the left face.

Clean the left face and roller pins with a high flash point solvent and compressed air.

NOTE: Always wear safety glasses when using compressed air and never point it directly at yourself or anyone else.
Bearing Replacement

Inspect the bearings in the right face of the driven pulley.

Remove the needle bearing with a suitable puller.
Remove the collar, snap ring, and bearing from the right face of the driven pulley.

Clean the right face with a high flash point solvent and compressed air.

NOTE: Always wear safety glasses when using compressed air and never point it directly at yourself or anyone else.

Drive in the new bearing so the sealed side face out towards the clutch. Install the snap ring into the groove. Install the collar and drive in the new needle bearing so that its markings face out. Drive in the bearings with a suitable driver with the same outside diameter as the bearing.
Lubricate the bearings in the right face of the driven pulley with grease
CVT Installation

SAFETY FIRST: Protective gloves and eyewear are recommended at this point.

Driven Pulley

Lubricate the bearings in the right face of the driven pulley with grease.

Drive in the new seals with a suitable driver with the same outside diameter as the seal.