EB002000

HOW TO USE THIS MANUAL

MANUAL ORGANIZATION

This manual consists of chapters for the main categories of subjects. (See “Illustrated symbols”)

1st title ①: This is the title of the chapter with its symbol in the upper right corner of each page.

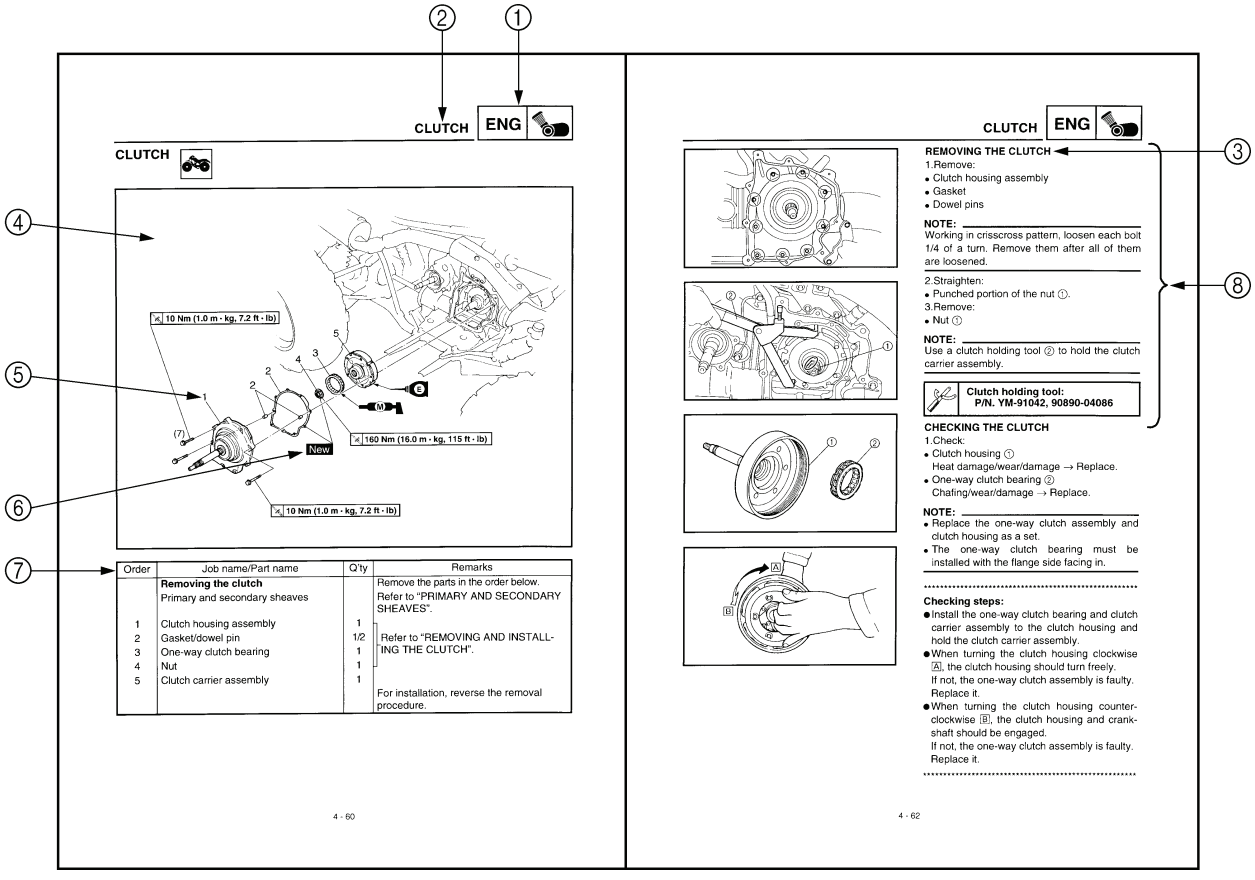
2nd title ②: This title indicates the section of the chapter and only appears on the first page of each section. It is located in the upper left corner of the page.

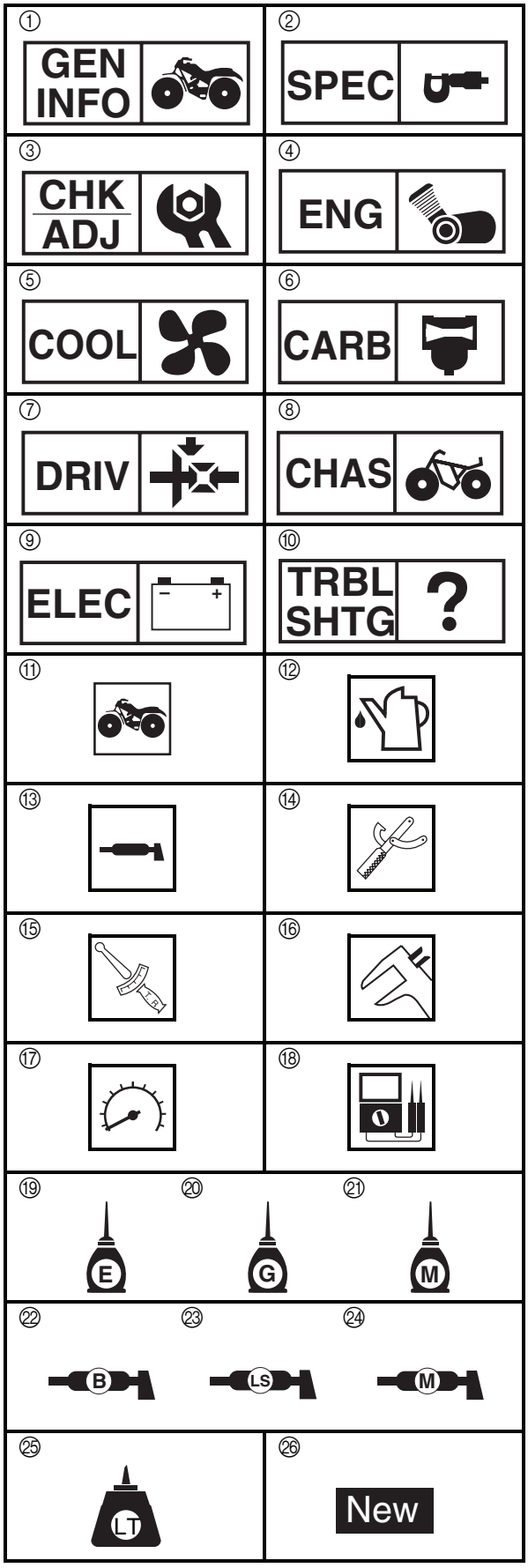
3rd title ③: This title indicates a sub-section that is followed by step-by-step procedures accompanied by corresponding illustrations.

EXPLODED DIAGRAMS

To help identify parts and clarify procedure steps, there are exploded diagrams at the start of each removal and disassembly section.

1. An easy-to-see exploded diagram ④ is provided for removal and disassembly jobs.
2. Numbers ⑤ are given in the order of the jobs in the exploded diagram. A number that is enclosed by a circle indicates a disassembly step.
3. An explanation of jobs and notes is presented in an easy-to-read way by the use of symbol marks ⑥. The meanings of the symbol marks are given on the next page.
4. A job instruction chart ⑦ accompanies the exploded diagram, providing the order of jobs, names of parts, notes in jobs, etc.
5. For jobs requiring more information, the step-by-step format supplements ⑧ are given in addition to the exploded diagram and the job instruction chart.





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ILLUSTRATED SYMBOLS

Illustrated symbols ① to ⑩ are printed on the top right of each page and indicate the subject of each chapter.

① General information
② Specifications
③ Periodic checks and adjustments
④ Engine
⑤ Cooling system
⑥ Carburetion
⑦ Drive train
⑧ Chassis
⑨ Electrical
⑩ Troubleshooting

Illustrated symbols ⑪ to ⑱ are used to identify the specifications appearing in the text.

⑪ Can be serviced with engine mounted
⑫ Filling fluid
⑬ Lubricant
⑭ Special tool
⑮ Torque
⑯ Wear limit, clearance
⑰ Engine speed
⑱ Ω, V, A

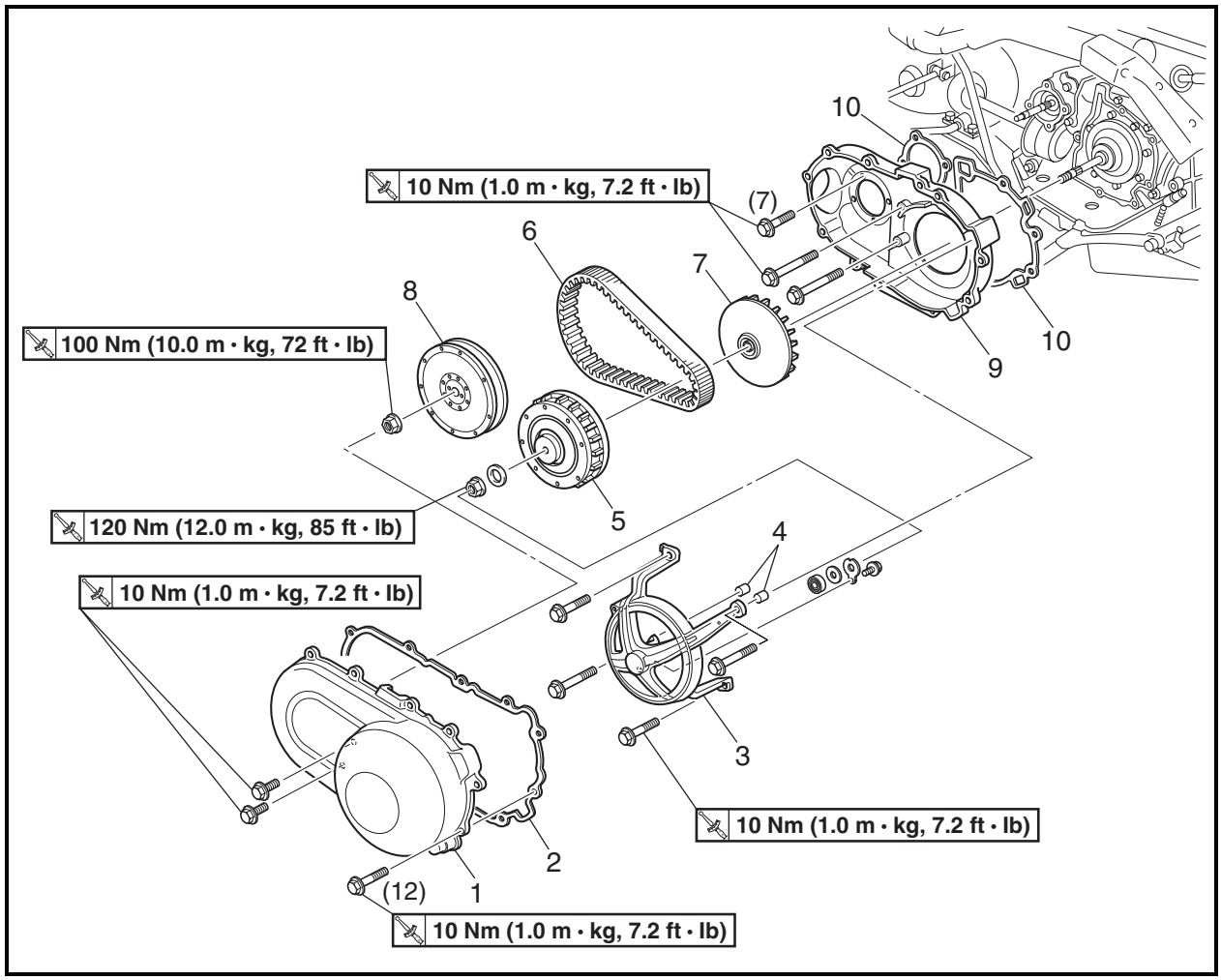
Illustrated symbols ⑲ to ㉔ in the exploded diagrams indicate the types of lubricants and lubrication points.

⑲ Apply engine oil
⑳ Apply gear oil
㉑ Apply molybdenum disulfide oil
㉒ Apply wheel bearing grease
㉓ Apply lightweight lithium-soap-based grease
㉔ Apply molybdenum disulfide grease

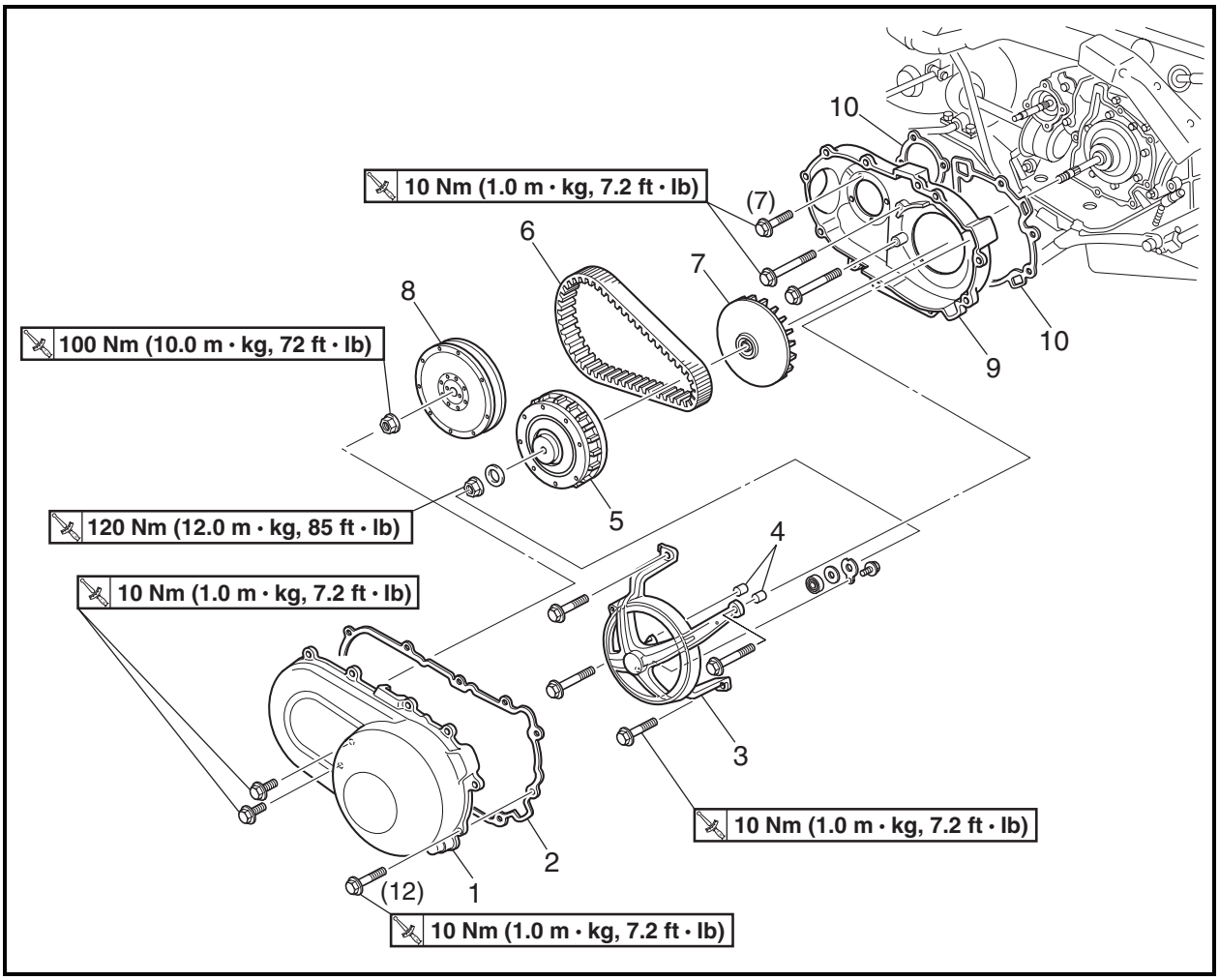
Illustrated symbols ㉕ to ㉖ in the exploded diagrams indicate where to apply a locking agent ㉕ and when to install a new part ㉖.

㉕ Apply the locking agent (LOCTITE®)
㉖ Replace

PRIMARY AND SECONDARY SHEAVES

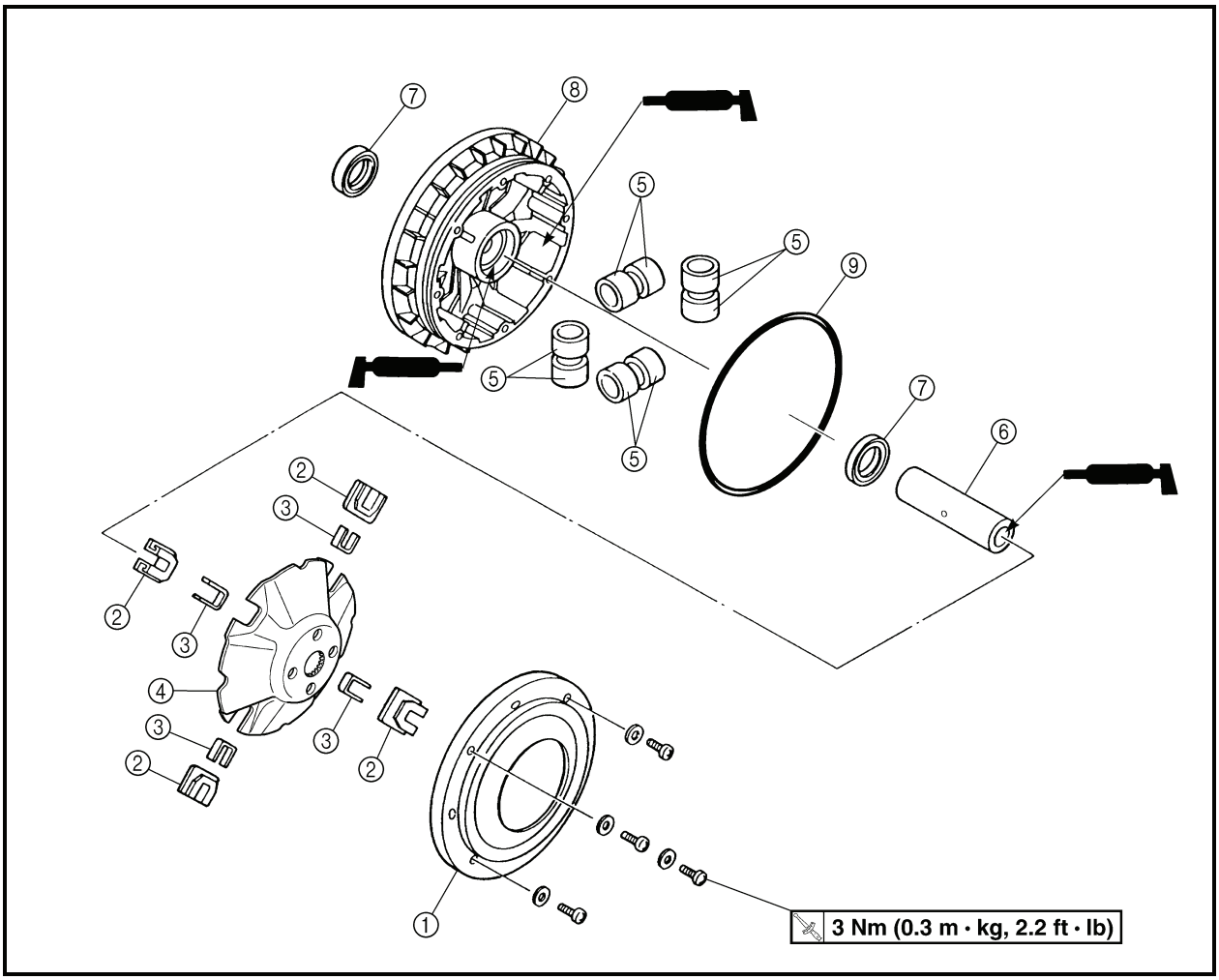


Order	Job name/Part name	Q'ty	Remarks
	Removing the primary and secondary sheave		Remove the parts in the order below.
	Front fender		Refer to "SEAT, CARRIERS, FENDERS AND FUEL TANK" in CHAPTER 3.
	Rear fender		
	Right footrest boards		
	Air duct assembly		Refer to "ENGINE REMOVAL".
1	Drive belt cover	1	
2	Rubber gasket	1	
3	Bearing housing	1	
4	Dowel pin	2	
5	Primary sheave assembly	1	Refer to "REMOVING/INSTALLING THE PRIMARY AND SECONDARY SHEAVES".
6	V-belt	1	



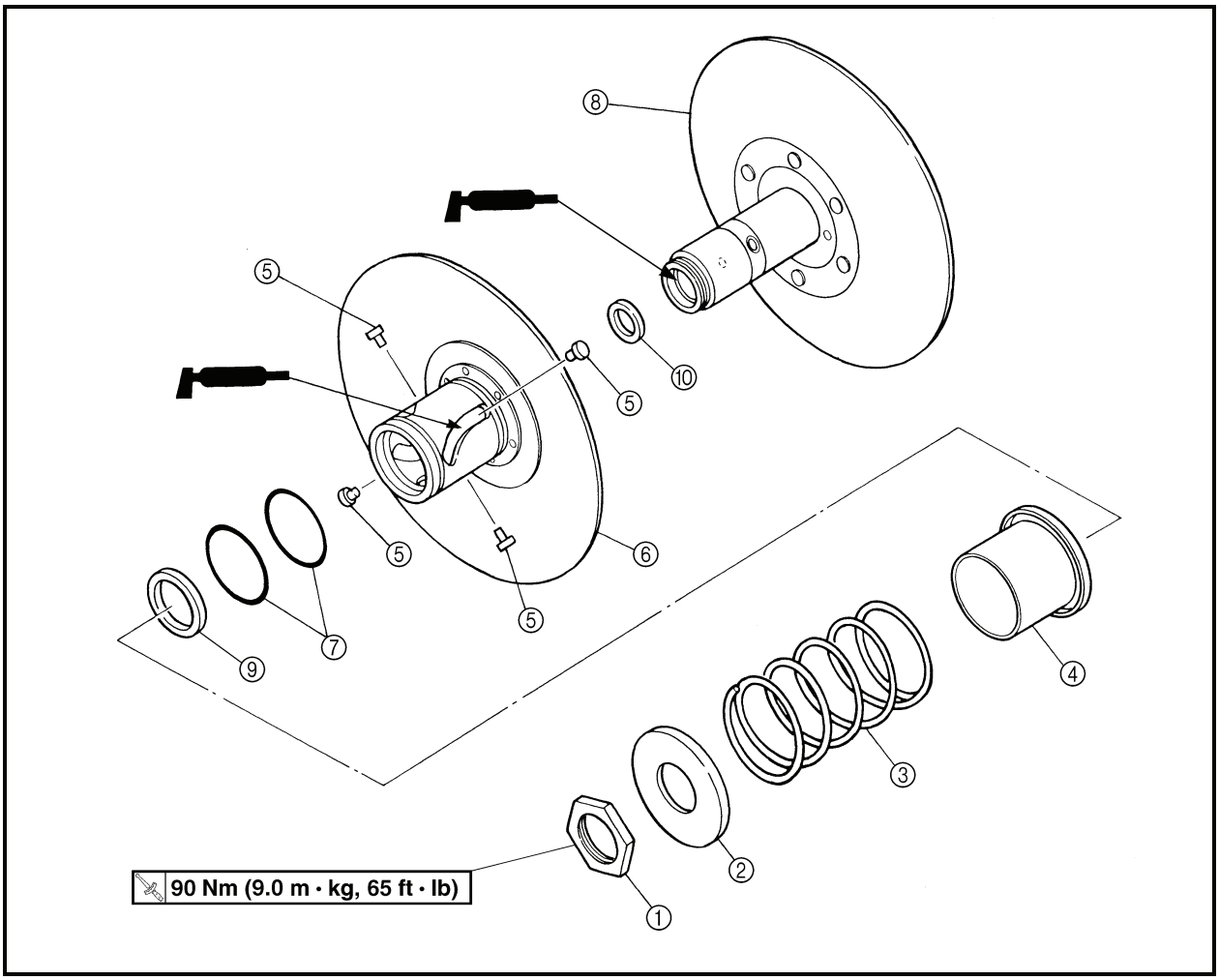
Order	Job name/Part name	Q'ty	Remarks
7	Primary fixed sheave	1	Refer to "REMOVING/INSTALLING THE PRIMARY AND SECONDARY SHEAVES".
8	Secondary sheave assembly	1	
9	Drive belt case	1	
10	Rubber gasket	2	
			For installation, reverse the removal procedure.

PRIMARY SHEAVE

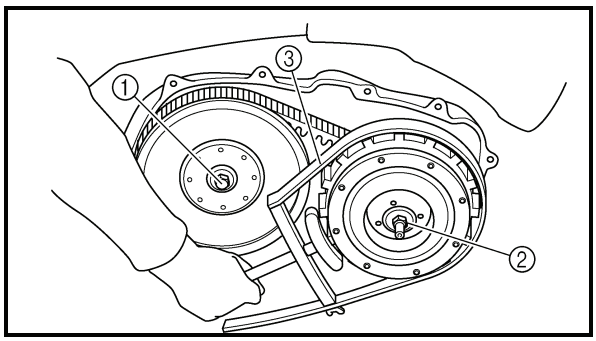


Order	Job name/Part name	Q'ty	Remarks
	Disassembling the primary sheave		Remove the parts in the order below.
①	Primary pulley sheave cap	1	
②	Primary pulley slider	4	
③	Spacer	4	
④	Primary pulley cam	1	
⑤	Primary pulley weight	8	Refer to "ASSEMBLING THE PRIMARY SHEAVE".
⑥	Collar	1	
⑦	Oil seal	2	
⑧	Primary sliding sheave	1	
⑨	O-ring	1	
			For assembly, reverse the disassembly procedure.

SECONDARY SHEAVE



Order	Job name/Part name	Q'ty	Remarks
	Disassembly the secondary sheave		Remove the parts in the order below.
①	Nut	1	Refer to "DISASSEMBLING/ASSEMBLING SECONDARY SHEAVE".
②	Spring seat	1	
③	Compression spring	1	
④	Spring seat	1	
⑤	Guide pin	4	
⑥	Secondary sliding sheave	1	
⑦	O-ring	2	
⑧	Secondary fixed sheave	1	
⑨	Oil seal	1	
⑩	Oil seal	1	
			For assembly, reverse the disassembly procedure.

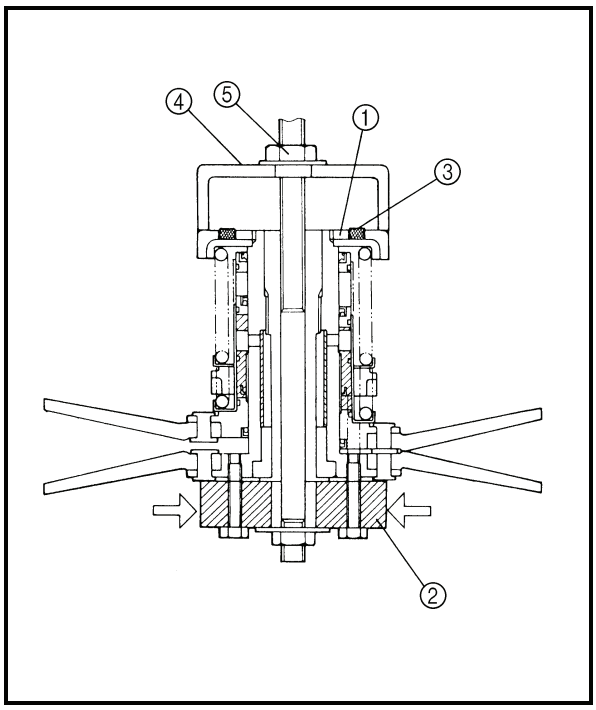


REMOVING THE PRIMARY AND SECONDARY SHEAVES

1.Loosen:
- Nut (secondary sheave) ①
- Nut (primary sheave) ②

NOTE:
- Use the sheave holder ③ to hold the primary sheave.
- First, loosen the nut (secondary sheave) ②, then loosen the nut (primary sheave) ①.

	**Sheave holder:** **P/N. YU-01880, 90890-01701**



DISASSEMBLING THE SECONDARY SHEAVE

1.Remove:
- Nut ①

****

Removing steps:

- Attach the sheave fixed block ②, locknut wrench ③ and sheave spring compressor ④ to the secondary sheave assembly.

	**Sheave fixed block:** **P/N. YM-04135, 90890-04135** **Locknut wrench:** **P/N. 90890-01348** **Sheave spring compressor:** **P/N. YM-04134, 90890-04134**

- Place the sheave fixed block in a vise and secure it.
- Tighten the sheave spring compressor nut ⑤ and compress the spring.
- Loosen the nut ① with the locknut wrench ③.
- Remove the nut ①.
- Remove the sheave spring compressor and locknut wrench.

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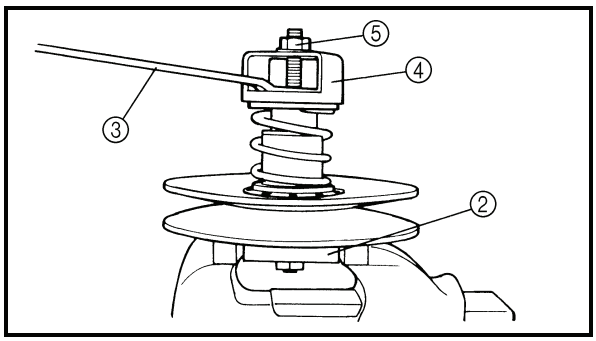
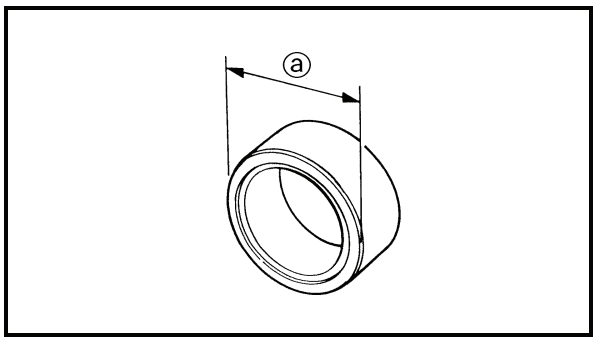
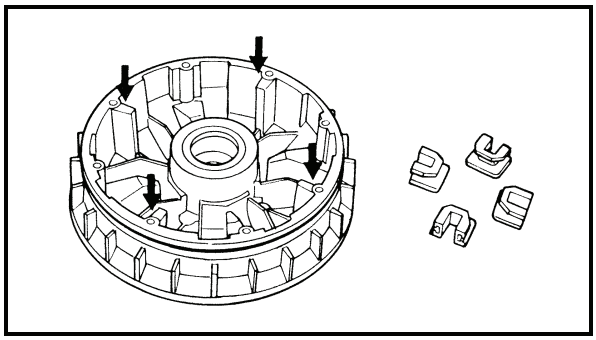




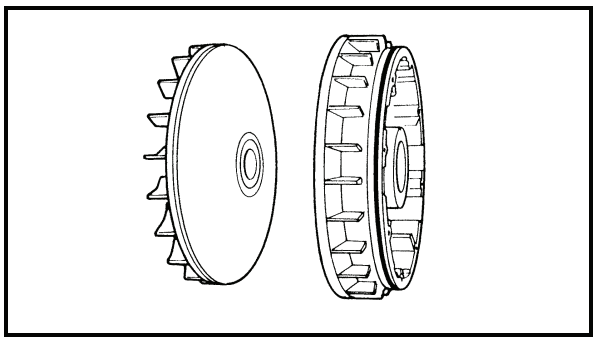
CHEKING THE PRIMARY SHEAVE

1.Check:
- Weight outside diameter ⓐ
  Out of specification → Replace the weight.

Weight outside diameter:
30 mm (1.18 in)
<Limit>: 29.5 mm (1.16 in)



2.Check:
- Primary puller slider
- Primary sliding sheave splines
  Wear/cracks/damage → Replace.
- Spacer
- Primary puller cam
  Cracks/damage → Replace.



3.Check:
- Primary sliding sheave
- Primary fixed sheave
  Cracks/damage → Replace.

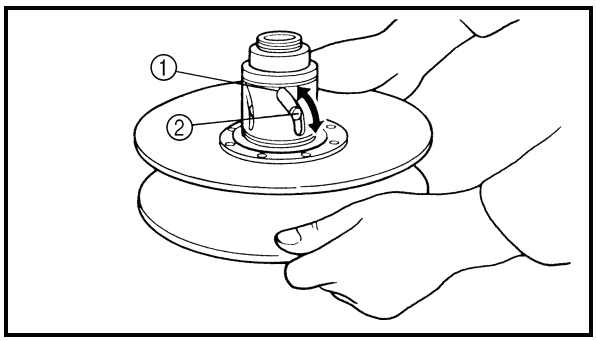
CHECKING THE SECONDARY SHEAVE

1.Check:
- Secondary fixed sheave smooth operation
- Secondary sliding sheave smooth operation
  Scratches/damage → Replace as a set.

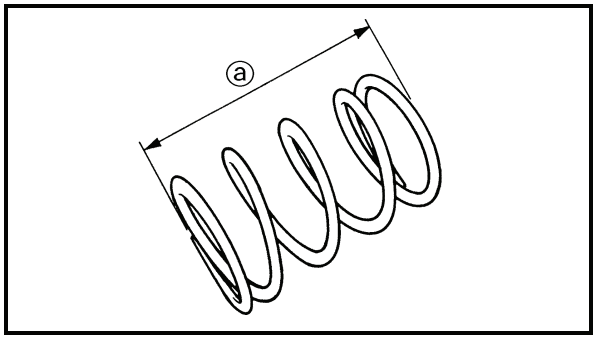
2.Check:
- Torque cam groove ①
  Wear/damage → Replace.

3.Check:
- Guide pin ②
  Wear/damage → Replace.

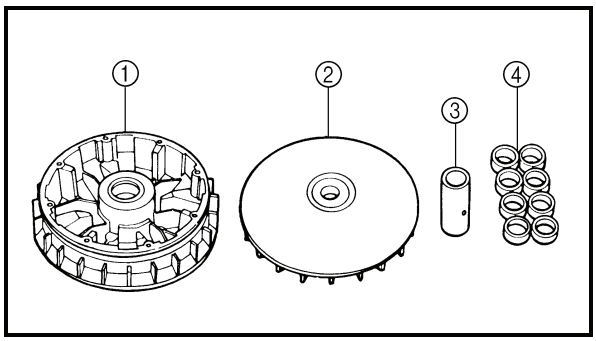
4.Check:
- Secondary sheave spring
  Damage → Replace.

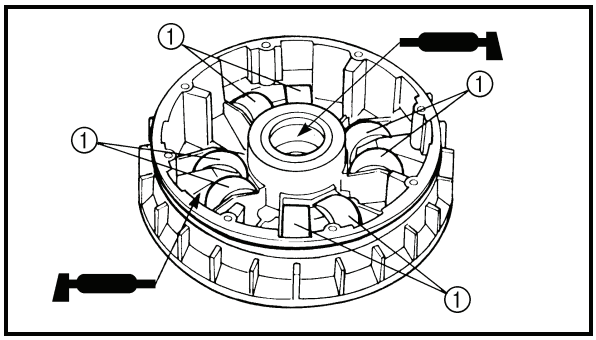


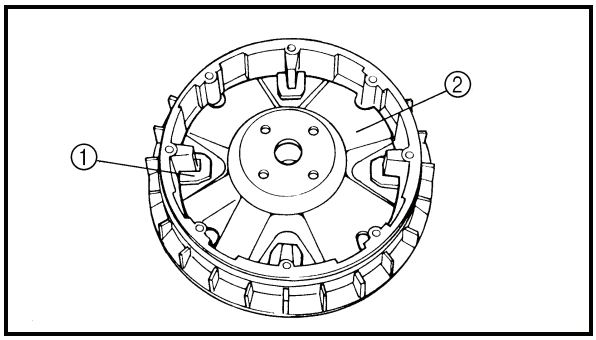
5.Measure:
- Secondary sheave spring free length ⓐ
  Out of specification → Replace the secondary sheave spring.

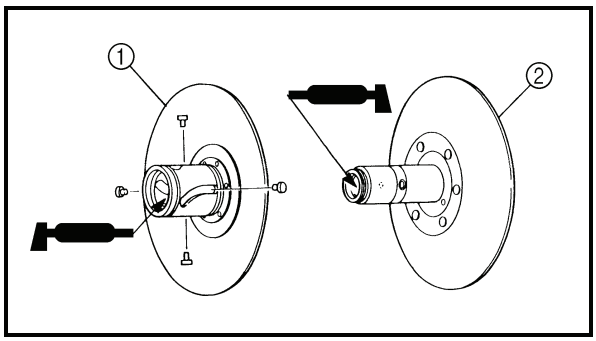


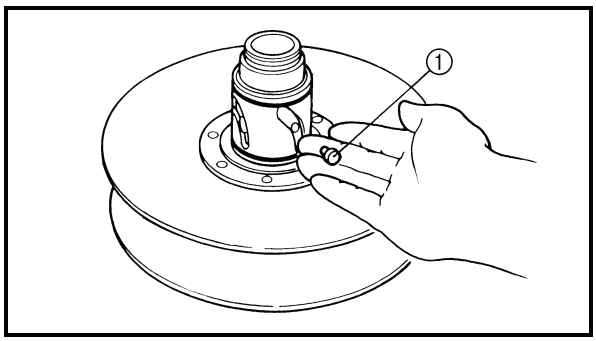
Free length:
124.2 mm (4.89 in)
<Limit>: 121.2 mm (4.77 in)











ASSEMBLING THE PRIMARY SHEAVE

1.Clean:
- Primary sliding sheave face ①
- Primary fixed sheave face ②
- Collar ③
- Weight ④
- Primary sliding sheave cam face

NOTE:
Remove any excess grease.

2.Install:
- Weight ①

NOTE:
- Apply Yamaha Grizzly grease (90 g) to the whole outer surface of the weight and install.
- Apply Yamaha Grizzly grease to the inner surface of the collar.
- Apply Yamaha Grizzly grease to the inner surface of the primary sliding sheave.

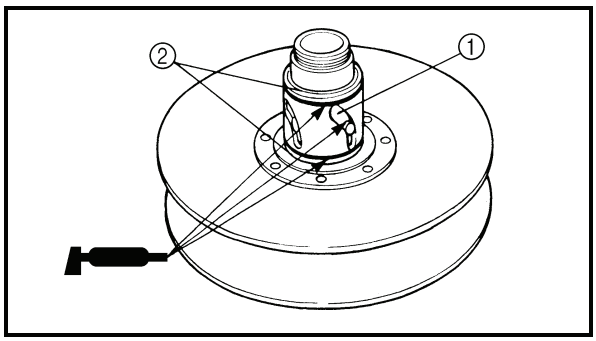
3.Install:
- Spacer
- Slider ①
- Cam ②
- Primary sliding sheave cap

3 Nm (0.3 m • kg, 2.2 ft • lb)

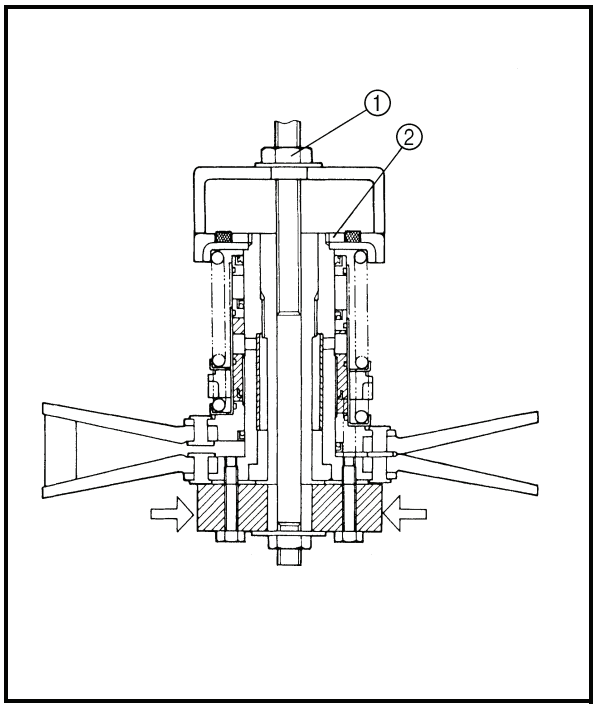
ASSEMBLING THE SECONDARY SHEAVE

1.Apply:
- BEL-RAY assembly lube®
  (to the secondary sliding sheave ① inner surface and oil seals)
- BEL-RAY assembly lube®
  (to the bearings, oil seals and inner surface of the secondary fixed sheave ②)

2.Install:
- Guide pin ①



3.Apply:
- BEL-RAY assembly lube®
  (to the guide pin sliding groove ①, and O-ring ② New)



4.Install:
- Spring seat
- Compression spring
- Spring seat
- Nut

****

Installing steps:

- Attach the sheave fixed block, locknut wrench and sheave spring compressor to the secondary sheave assembly.

Sheave fixed block:
P/N. YM-04135, 90890-04135
Locknut wrench:
P/N. 90890-01348
Sheave spring compressor:
P/N. YM-04134, 90890-04134

- Place the sheave fixed block in a vise and secure it.
- Tighten the sheave spring compressor nut ① and compress the spring.
- Install the nut ② and tighten it to the specified torque using the locknut wrench.

Nut:
90 Nm (9.0 m • kg, 65 ft • lb)

- Remove the sheave spring compressor, locknut wrench, and sheave fixed block.

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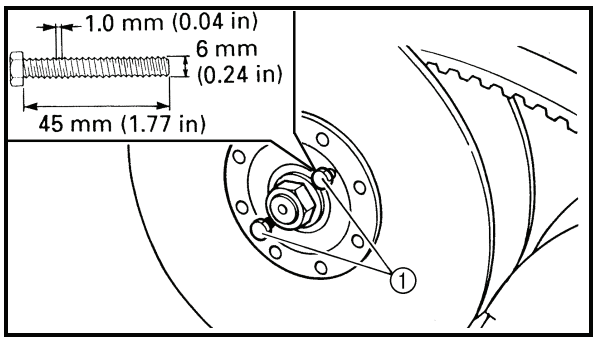
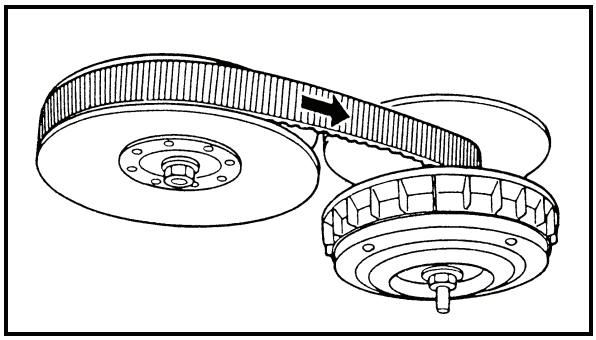
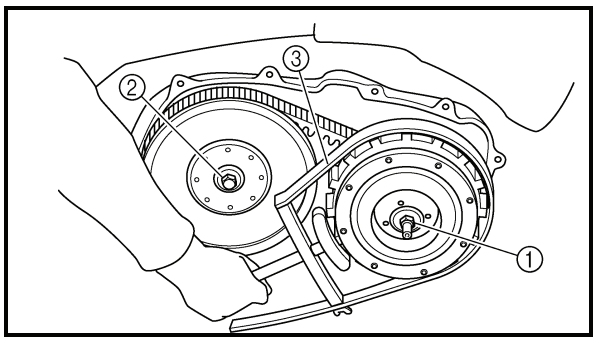






INSTALLING THE PRIMARY AND SECONDARY SHEAVES

1.Install:
- Secondary sheave assembly
- V-belt
- Primary sheave assembly

NOTE:
- Tightening the bolts ① will push the secondary sliding sheave away, causing the gap between the secondary fixed and sliding sheaves to widen.
- Install the V-belt so that its arrow faces the direction show in the illustration.

2.Tighten:
- Nut (primary sheave) ①

100 Nm (10.0 m • kg, 72 ft • lb)

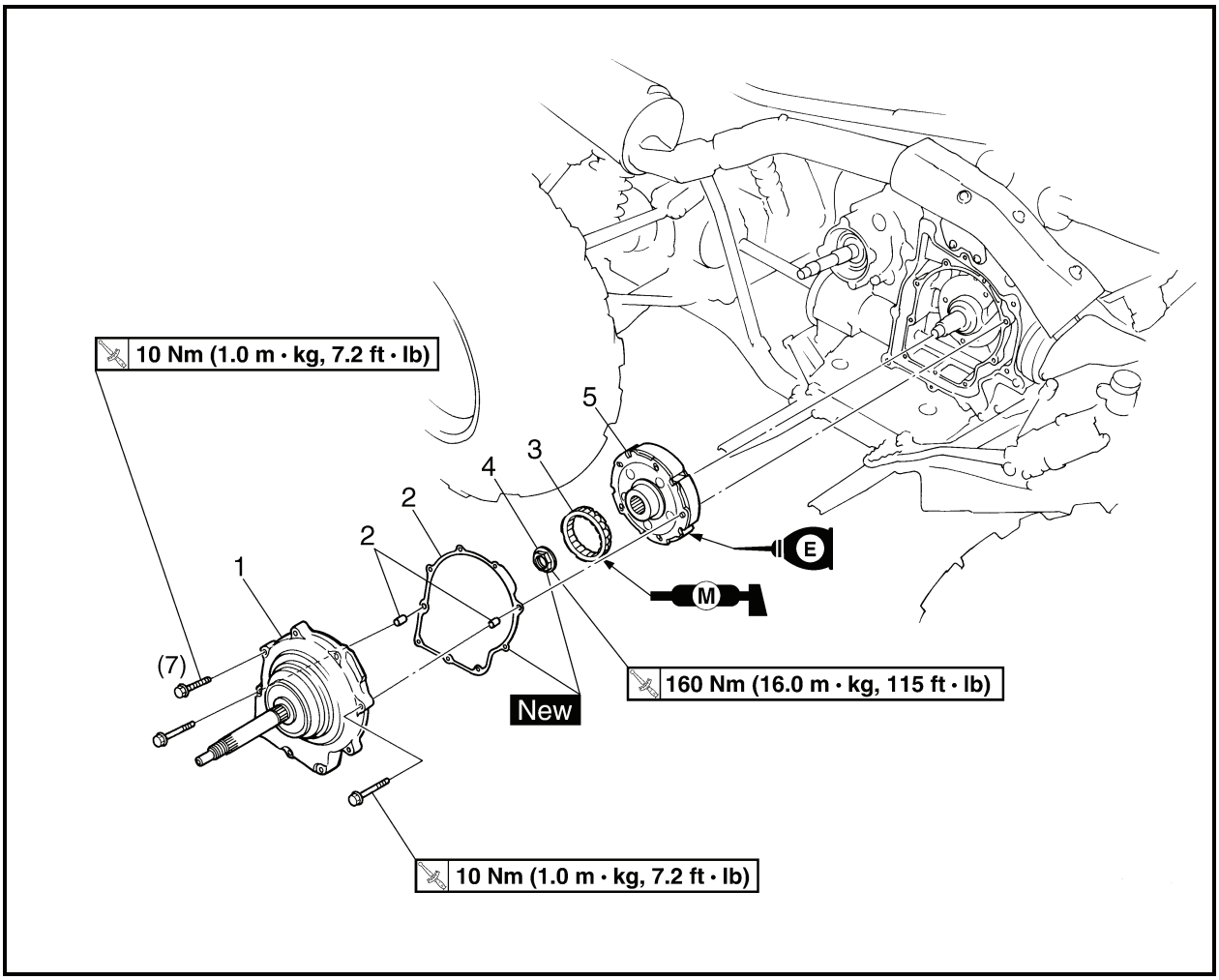
- Nut (secondary sheave) ②

120 Nm (12.0 m • kg, 85 ft • lb)

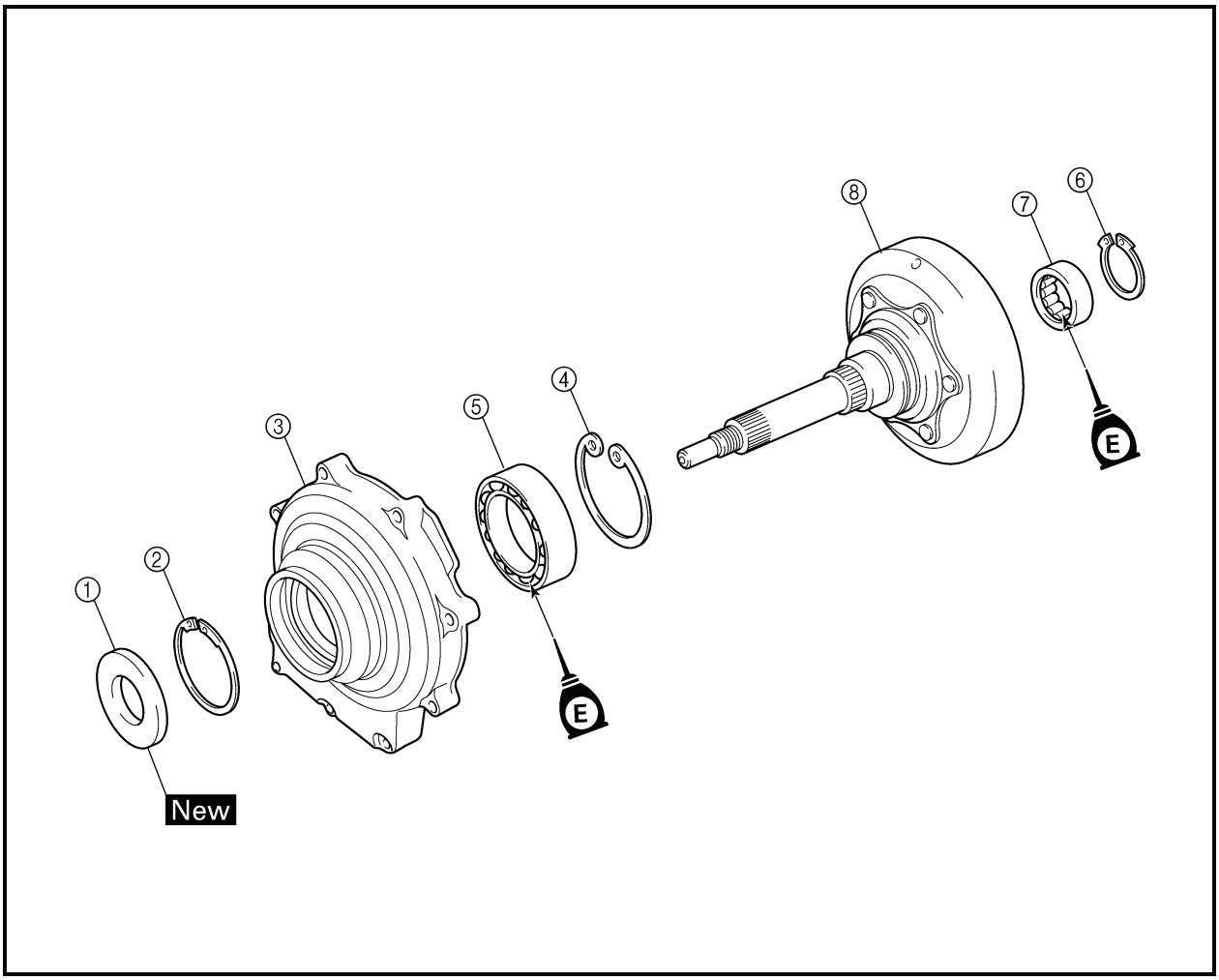
NOTE:
- Use the sheave holder ③ to hold the primary sheave.
- First, tighten the nut (primary sheave) ①, then tighten the nut (secondary sheave) ②.

Sheave holder:
P/N. YU-01880, 90890-01701

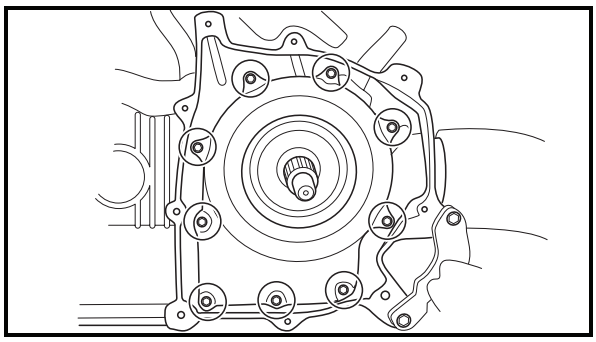
CLUTCH

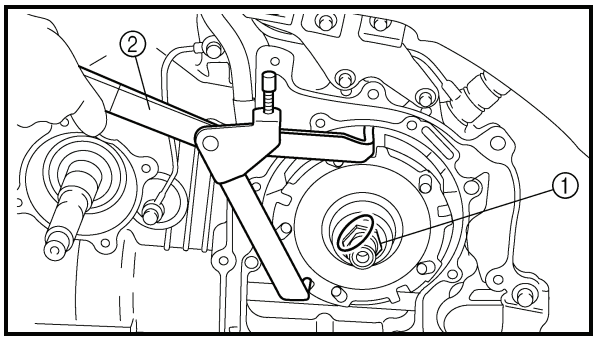


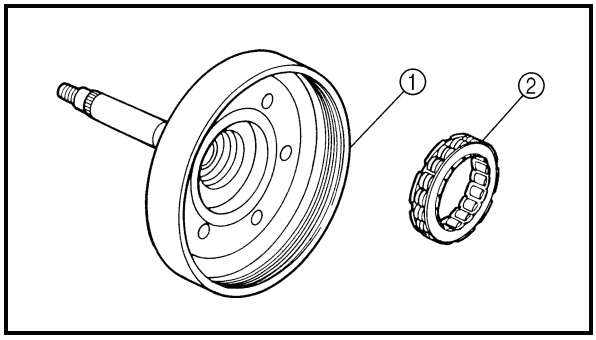
Order	Job name/Part name	Q'ty	Remarks
	Removing the clutch		Remove the parts in the order below.
	Primary and secondary sheaves		Refer to "PRIMARY AND SECONDARY SHEAVES".
1	Clutch housing assembly	1	
2	Gasket/dowel pin	1/2	Refer to "REMOVING AND INSTALLING THE CLUTCH".
3	One-way clutch bearing	1	
4	Nut	1	
5	Clutch carrier assembly	1	
			For installation, reverse the removal procedure.

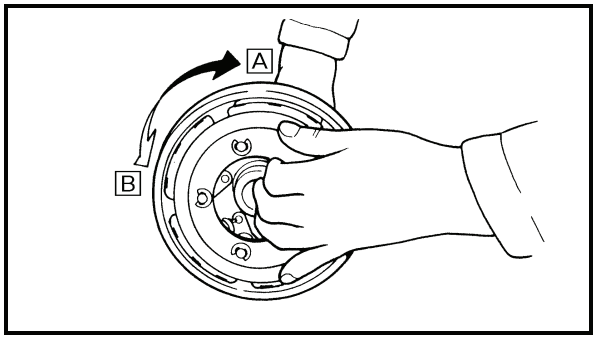


Order	Job name/Part name	Q'ty	Remarks
	Disassembling the clutch housing		Remove the parts in the order below.
①	Oil seal	1	
②	Circlip	1	
③	Bearing housing	1	
④	Circlip	1	
⑤	Bearing	1	
⑥	Circlip	1	
⑦	Bearing	1	
⑧	Clutch housing	1	
			For assembly, reverse the disassembly procedure.









REMOVING THE CLUTCH

1.Remove:
- Clutch housing assembly
- Gasket
- Dowel pins

NOTE:

Working in crisscross pattern, loosen each bolt 1/4 of a turn. Remove them after all of them are loosened.

2.Straighten:
- Punched portion of the nut ①.

3.Remove:
- Nut ①

NOTE:

Use a clutch holding tool ② to hold the clutch carrier assembly.

	**Clutch holding tool:** **P/N. YM-91042, 90890-04086**

CHECKING THE CLUTCH

1.Check:
- Clutch housing ①
  Heat damage/wear/damage → Replace.
- One-way clutch bearing ②
  Chafing/wear/damage → Replace.

NOTE:
- Replace the one-way clutch assembly and clutch housing as a set.
- The one-way clutch bearing must be installed with the flange side facing in.

****

Checking steps:
- Install the one-way clutch bearing and clutch carrier assembly to the clutch housing and hold the clutch carrier assembly.
- When turning the clutch housing clockwise [A], the clutch housing should turn freely.
  If not, the one-way clutch assembly is faulty. Replace it.
- When turning the clutch housing counter-clockwise [B], the clutch housing and crankshaft should be engaged.
  If not, the one-way clutch assembly is faulty. Replace it.

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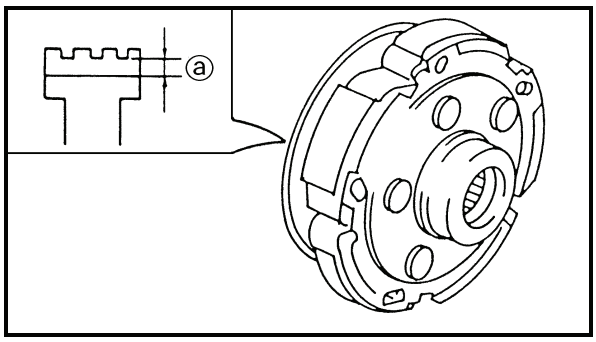
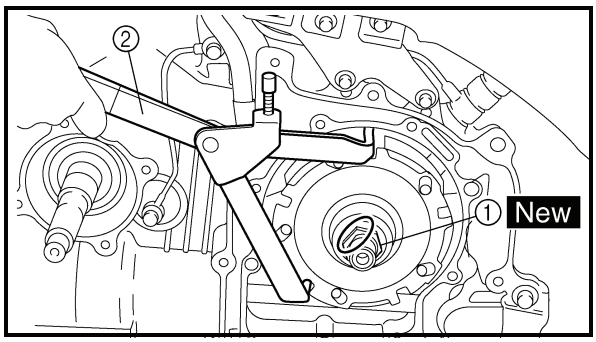


2.Check:
- Clutch shoe
  Heat damage → Replace.

3.Measure:
- Clutch shoe thickness
  Out of specification → Replace.

Clutch shoe thickness:
1.5 mm (0.06 in)
Clutch shoe wear limit ⓐ:
1.0 mm (0.04 in)



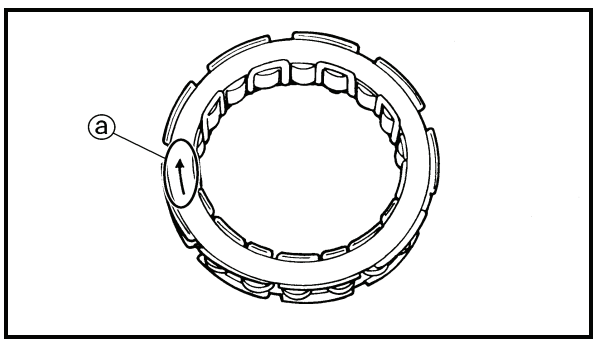
INSTALLING THE CLUTCH

1.Install:
- Collar
- Clutch carrier assembly
- Nut ① New **160 Nm (16.0 m • kg, 115 ft • lb)**

NOTE:
Use a clutch holding tool ② to hold the clutch carrier assembly.

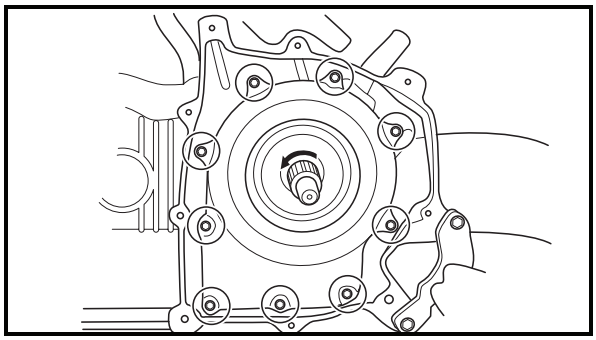
Clutch holding tool:
P/N. YM-91042, 90890-04086

2.Lock the threads with a drift punch.



3.Install:
- One-way clutch bearing

NOTE:
The one-way clutch bearing should be installed in the clutch carrier assembly with the arrow mark ⓐ facing toward the clutch housing.



4.Install:
- Dowel pins
- Gasket New
- Clutch housing assembly

10 Nm (1.0 m • kg, 7.2 ft • lb)

NOTE:
- Tighten the bolts in stages, using a criss-cross pattern.
- After tightening the bolts, check that the clutch housing assembly to counterclockwise rotates smoothly.