

# Manual Starting System

## Precautions

### Precaution for Manual Starting System

CENDK1111A00001

#### ▲ CAUTION

Failure to take proper precautions when servicing the recoil starter can cause personal injury.

Wear safety glasses and hand protection when winding or unwinding this component.

## General Description

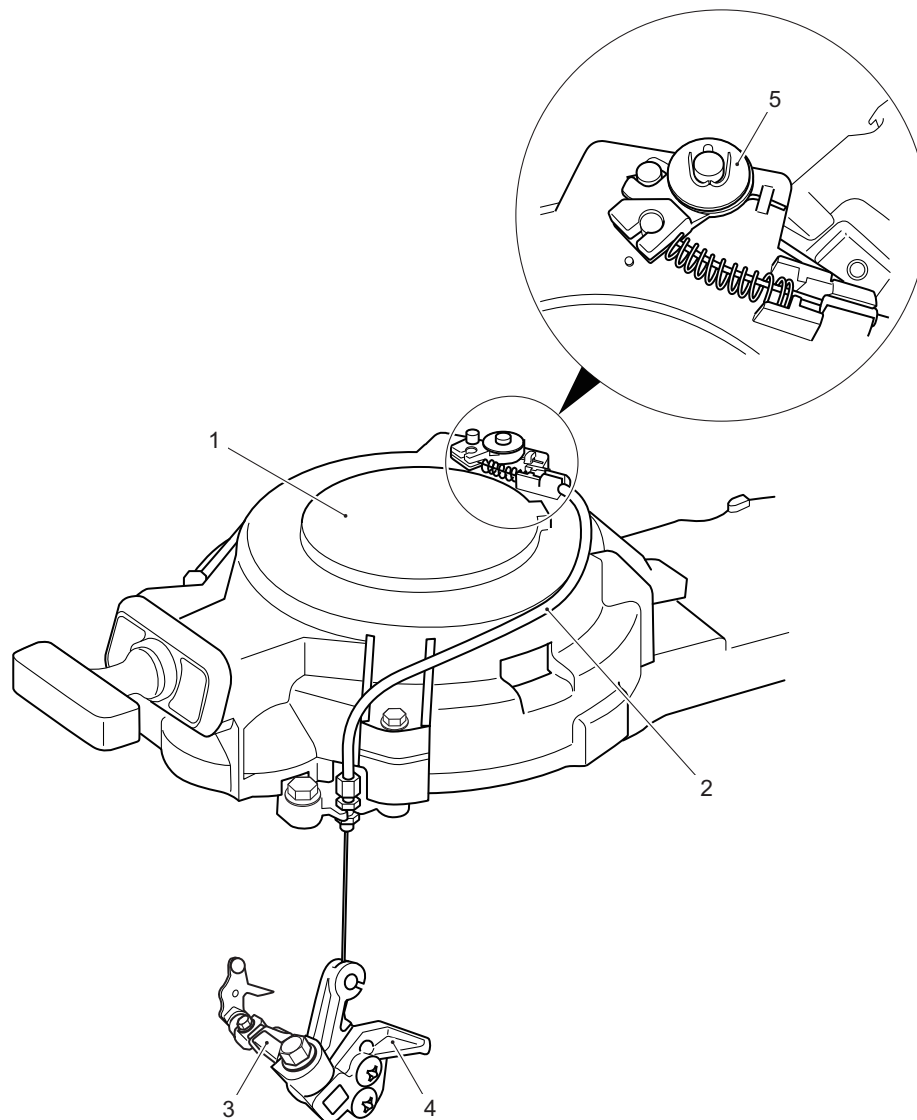
### Manual Starting System

CENDK1111A01001

The manual starter engages the flywheel ratchet with one pawl when the starter grip is pulled.

A recoil spring is wound as the starter rope pulls and rewinds as the starter grip is returned to the case.

The NSI set linked to the clutch notch lever prevents accidental manual starter engagement while the motor is in gear.



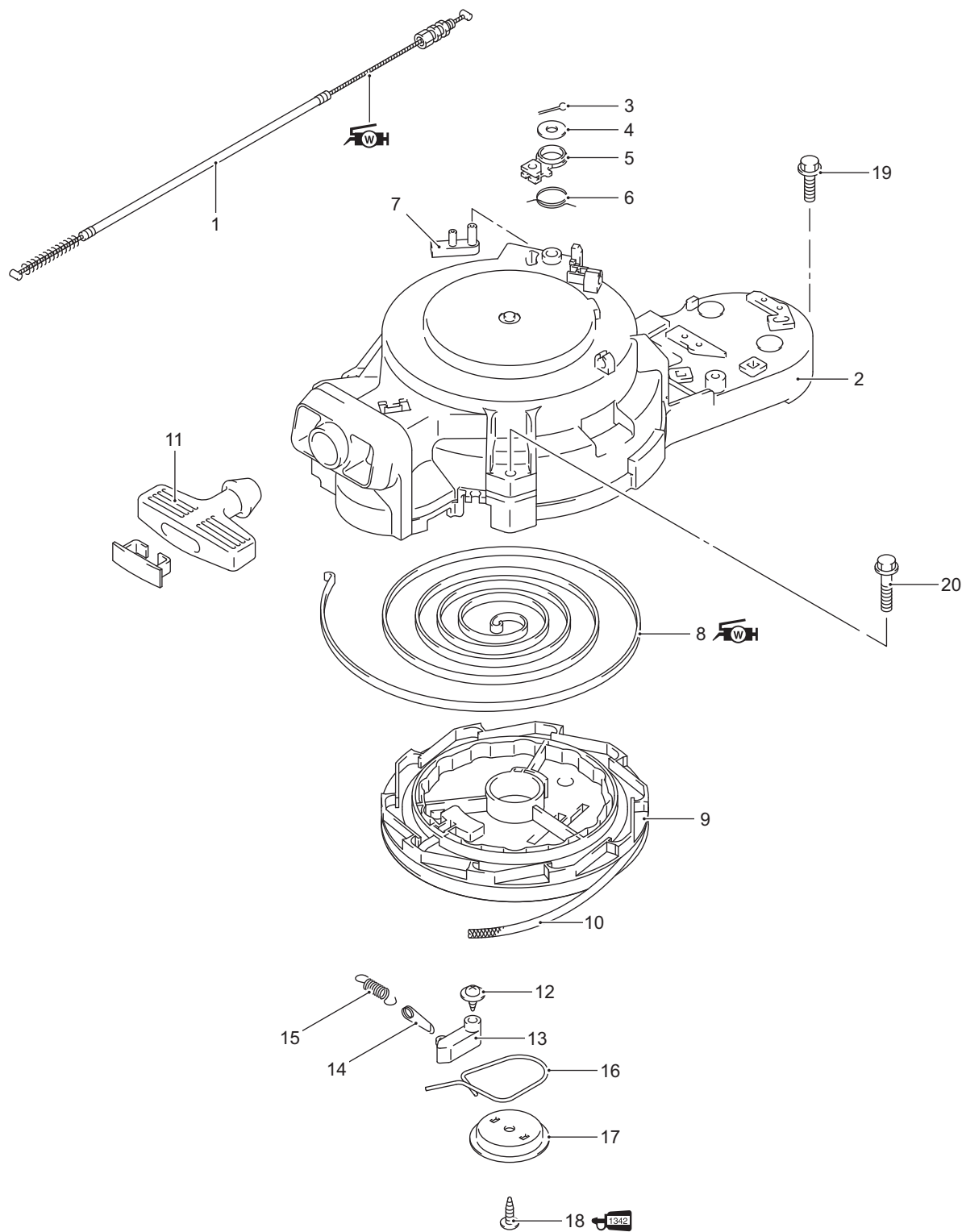
1. Recoil starter	3. Clutch shaft	5. NSI set
2. NSI cable	4. Clutch notch lever	

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Service Instructions

Recoil Starter Components

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1. NSI cable	7. Reel stopper	13. Ratchet	19. Bolt
2. Recoil starter case	8. Recoil spring	14. Ratchet guide	20. Bolt
3. Cotter pin	9. Reel	15. Return spring	1342 : Apply thread lock 1342.
4. Washer	10. Rope	16. Friction spring	WH : Apply water resistant grease.
5. Stopper arm	11. Grip	17. Friction plate	
6. Spring	12. Screw	18. Screw	

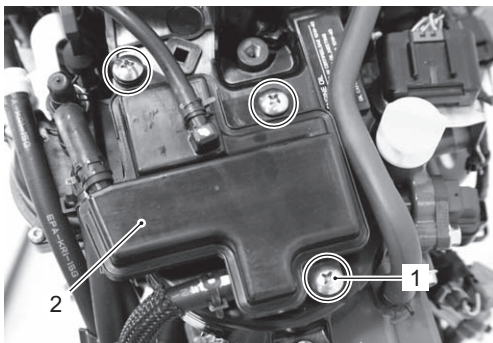
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**Recoil Starter Removal and Installation**

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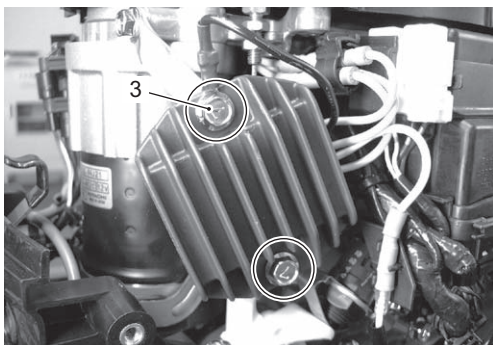
**Removal**

- 1) Remove both lower side covers.  
Refer to "Lower Side Cover Removal and Installation" in Section 2A (Page 2A-2).
- 2) Remove the three screws (1) securing the evaporation chamber (2), then slide the chamber (2) with hoses away from the recoil starter case.



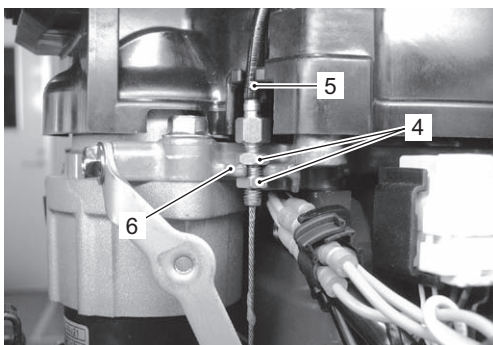
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- 3) Remove the two bolts (3) securing rectifier / regulator.



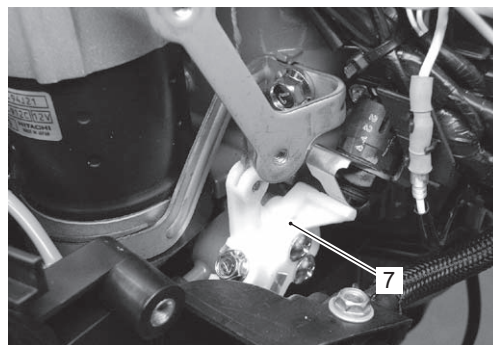
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- 4) Loosen the lock nuts (4) and remove NSI cable (5) from cable bracket (6).



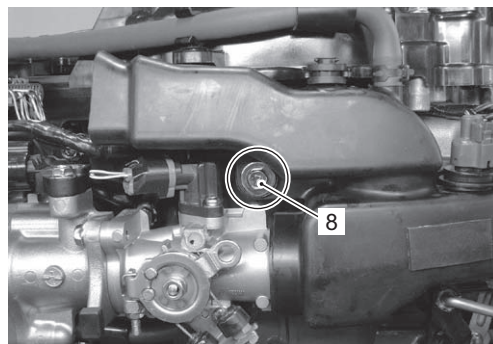
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- 5) Remove the NSI cable from clutch notch lever (7).



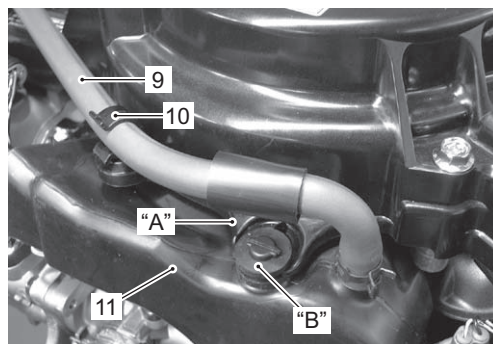
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- 6) Loosen the bolt (8) securing air intake silencer case.



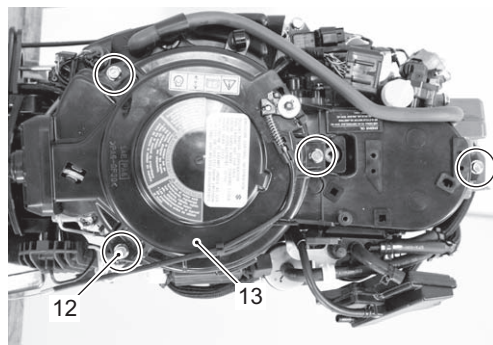
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- 7) Pull off the breather hose (9) from hose clamp (10). Slightly pull the intake silencer case (11) horizontally, then the grommet "B" on silencer case is away from recoil starter base "A" as shown below.



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- 8) Loosen the four bolts (12) securing recoil starter (13).  
Remove the recoil starter.



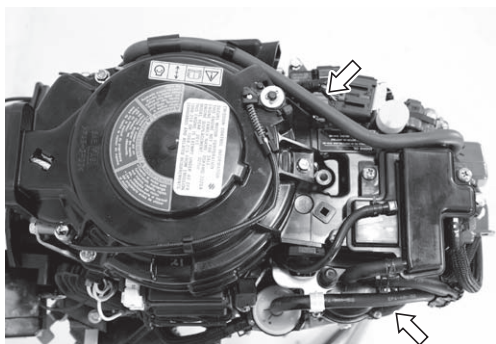
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## 1J-4 Manual Starting System:

### Installation

Installation is in the reverse order of removal with special attention to the following.

- Tighten the silencer case bolt securely.
- Install the evaporation chamber, then tighten three screws securely.
- Check to ensure that all removed parts are back in place.
- Check the neutral start interlock function. Refer to "NSI Cable Installation and Adjustment" (Page 1J-8).
- Wire and hose routing matches service manual illustration. Refer to "Wiring Harness Routing Diagram" in Section 4A (Page 4A-3) and "Fuel Hose Routing" in Section 4B (Page 4B-2).



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### Recoil Starter Disassembly and Assembly

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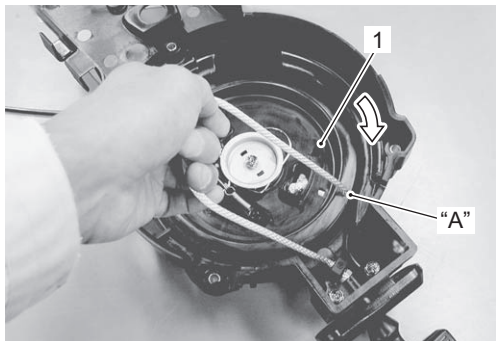
#### ▲ CAUTION

Failure to take proper precautions when servicing the recoil starter can cause personal injury.

Wear safety glasses and hand protection when winding or unwinding this component.

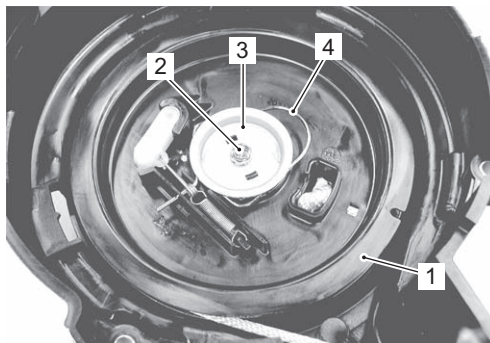
#### Disassembly

- 1) Pull the rope out of recoil case and guide the rope into notch "A" in the reel (1), then turn the reel clockwise to release the coiled tension in the recoil spring.



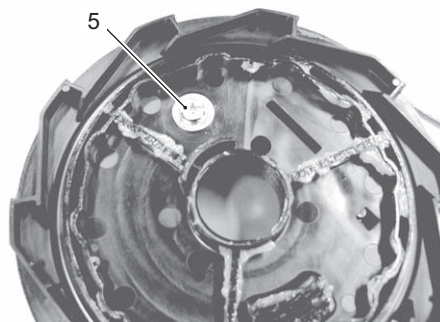
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- 2) Remove the screw (2), then remove the friction plate (3) with the friction spring (4).
- 3) Remove the reel (1).

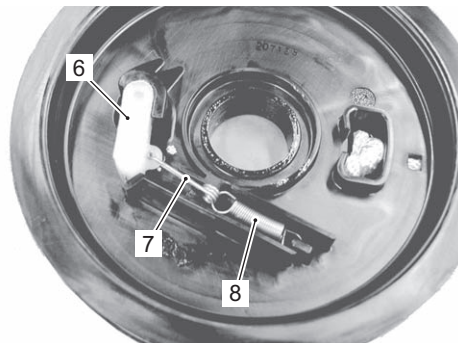


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- 4) Remove the screw (5) first, and then take off the ratchet (pawl) (6), ratchet guide (7) and return spring (8).



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- 5) Remove the recoil rope (9).

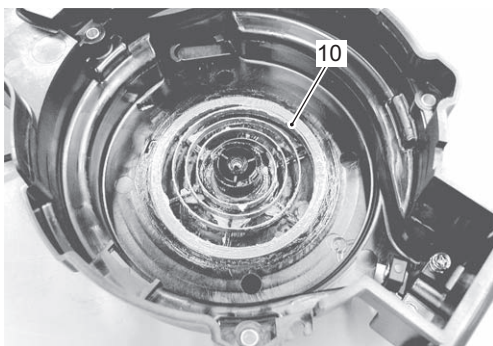


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#### NOTE

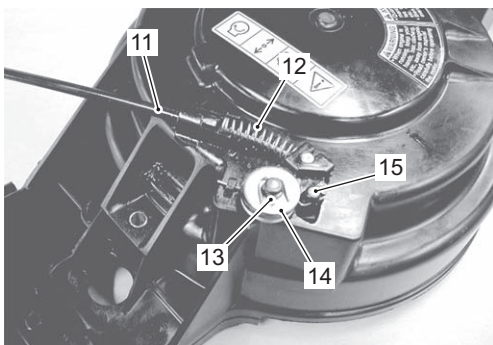
**Do not remove the recoil spring unless replacement is necessary. It should be visually inspected in its assembled position.**

- 6) Remove the recoil spring (10).



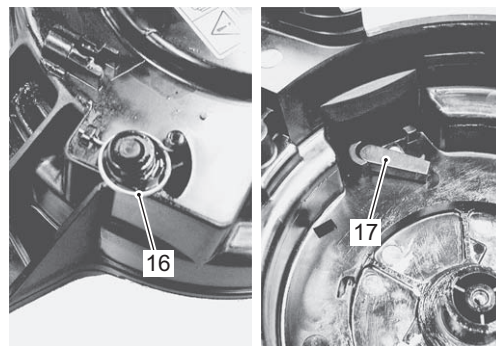
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- 7) Remove the NSI cable (11) with spring (12). Remove the cotter pin (13), washer (14) and stopper arm (15).



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- 8) Remove the reel stopper spring (16) and reel stopper (17).

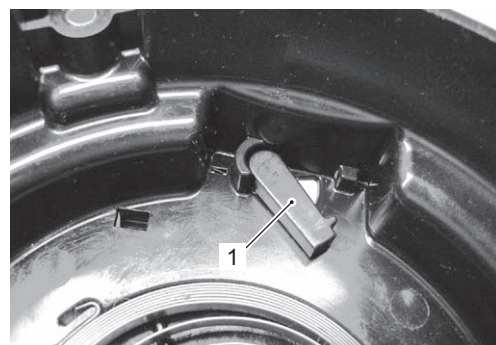


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#### Assembly

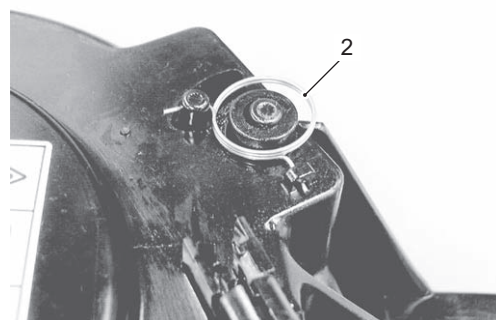
Reassembly is in the reverse order of disassembly with special attention to the following reassembling step.

- Install the reel stopper (1).



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- Install the stopper spring (2) as shown in figure.

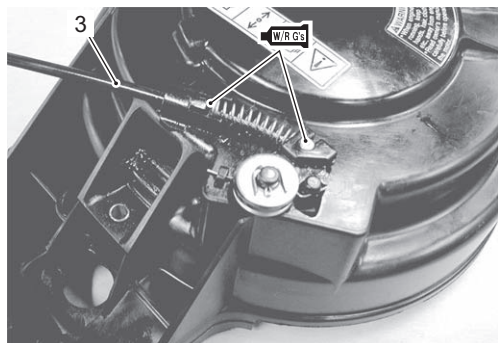


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## 1J-6 Manual Starting System:

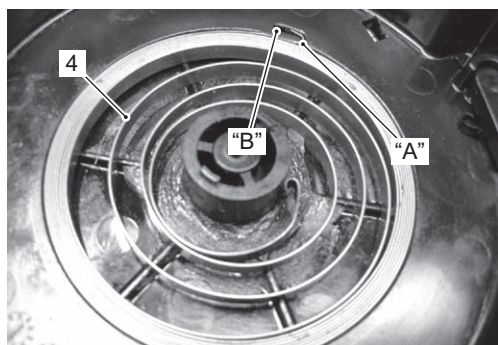
- Install NSI set and NSI cable (3).  
Apply grease to NSI cable.

 : Grease 99000-25350 (SUZUKI Water Resistant Grease EP2 (250 g))



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- Secure the outer end "A" of recoil spring (4) on groove "B" in recoil case and wind spring inward towards center of case in a counterclockwise direction.



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- Install the recoil rope (5).

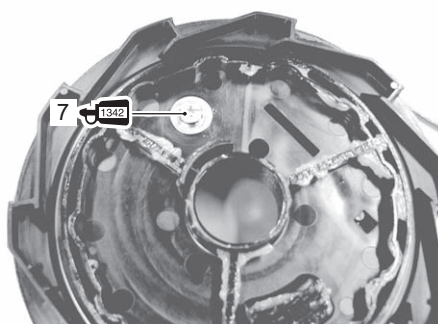


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- Install the ratchet set (6), then tighten ratchet with screw (7).  
Apply thread lock 1342 to screw (7) before threading.



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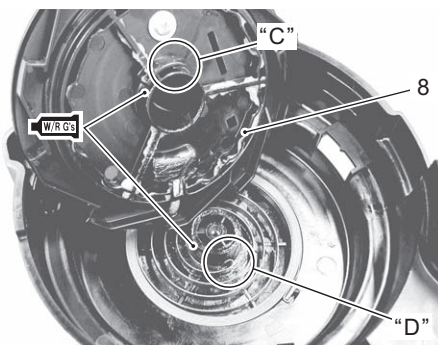
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- Install the reel (8) on the recoil case.

### NOTE

- Apply grease to reel as shown figure.
- Align groove "C" in the reel with bent end "D" of recoil spring.

 : Grease 99000-25350 (SUZUKI Water Resistant Grease EP2 (250 g))



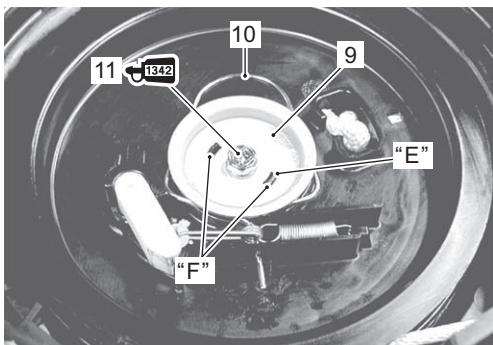
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- Install the friction plate (9) (with friction spring (10)) and secure it with screw (11). Apply thread lock 1342 to screw (11) before threading.

**1342 : Thread lock cement 99000-32050 (SUZUKI Thread Lock 1342 (50 g))**

#### NOTE

**Twist friction plate slightly to align holes "E" in plate with square lugs "F" on center boss.**



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- After assembling, guide the rope into notch in the reel and rotate the reel approximately 5 turns counterclockwise until the spring is tensioned.



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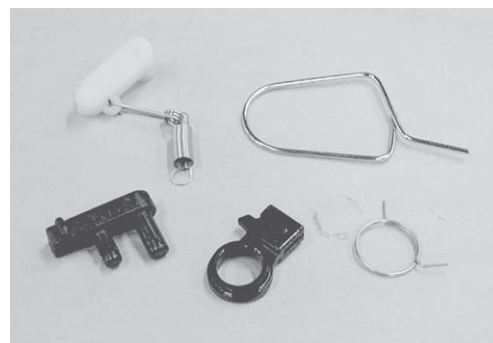
### Recoil Starter Components Cleaning and Inspection

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#### NOTE

**If any parts is worn excessively, cracked, defective or damaged in any way, it must be replaced.**

- Wash metal components in cleaning solvent and dry with compressed air before inspection.
- Inspect the ratchet (pawl), stopper arm and all springs. If there is any defect such as excessive wear or damage, replace it.



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- Inspect the reel and recoil case. If any cracks or damage is found on them, replace it.



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- Inspect the recoil rope. If the recoil rope is worn or damaged, replace it.



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- Inspect the recoil spring. If there is any cracks, deformation or excessive curve on the recoil spring, replace it.

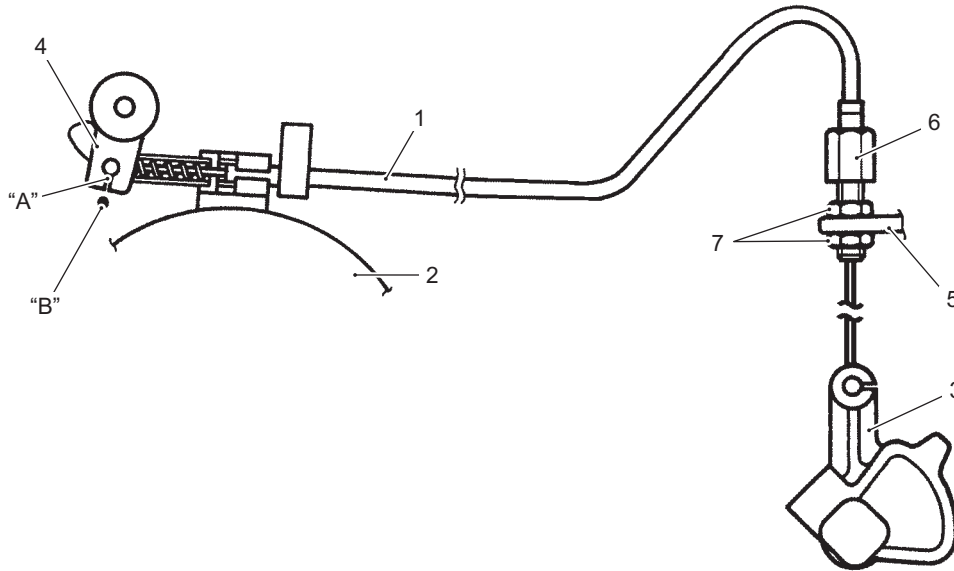


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## NSI Cable Installation and Adjustment

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- 1) Shift into "Neutral" position.
- 2) Install the NSI cable (1) in the recoil starter (2), the clutch notch lever (3), the stopper arm (4) and the cable bracket (5).
- 3) Turn the adjustment nut (6) to align the slot "A" on the stopper arm (4) with the punch mark "B" on the recoil starter case.
- 4) Pull the recoil starter grip and make sure that the starter does not work when the shift lever is in "Forward" and "Reverse" position.
- 5) Tighten the lock nuts (7).
- 6) Apply water resistant grease to inner cable, the cable end and cable holding area.

 : Grease 99000-25350 (SUZUKI Water Resistant Grease EP2 (250 g))

### **⚠ WARNING**

If the NSI cable is removed or left without correct adjustment, there is a high risk of losing one's balance and/or being thrown overboard if the motor starts in gear.

Do not operate the motor when the NSI cable is detached or the adjustment is not correctly done.