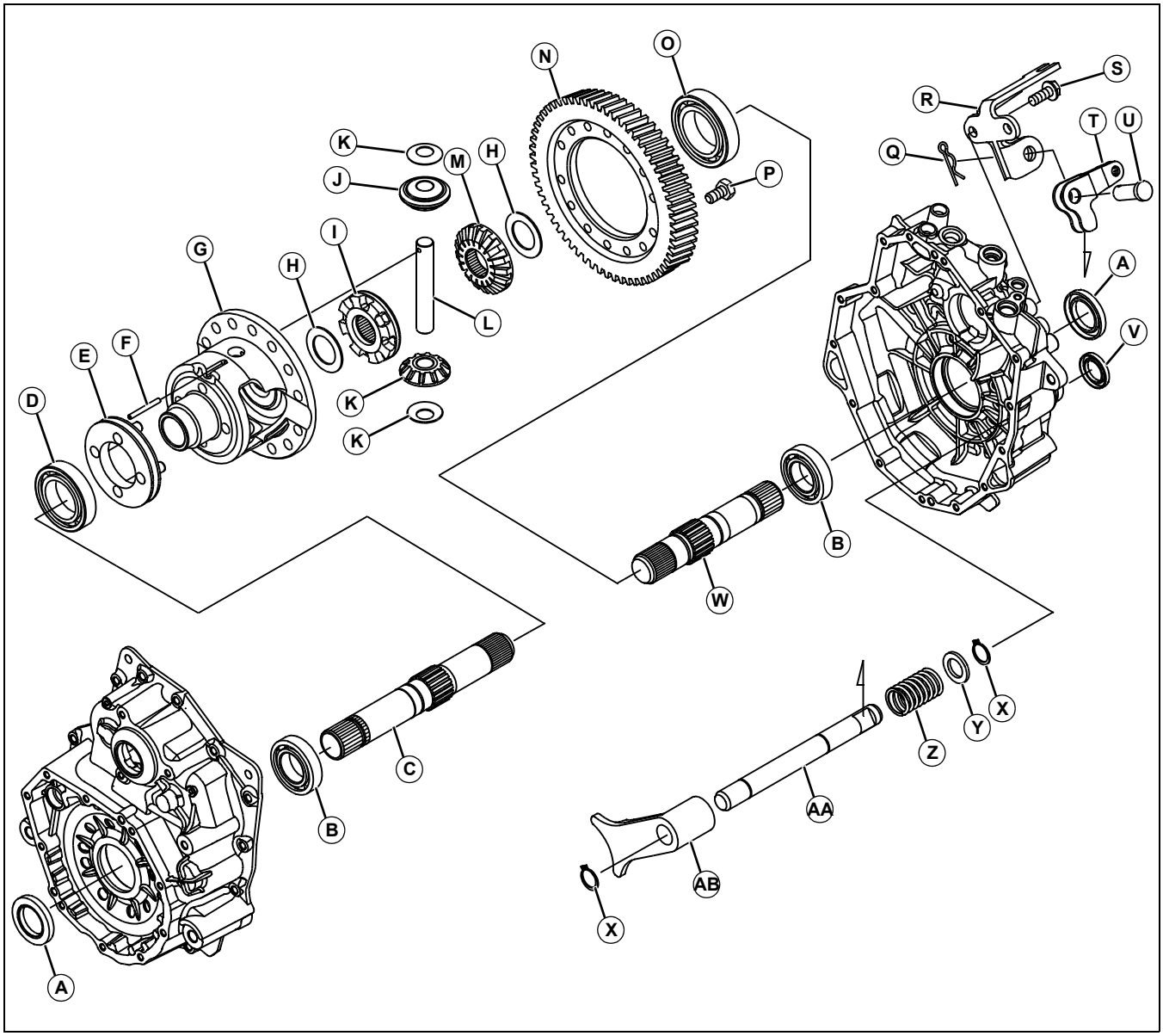
Differential Components



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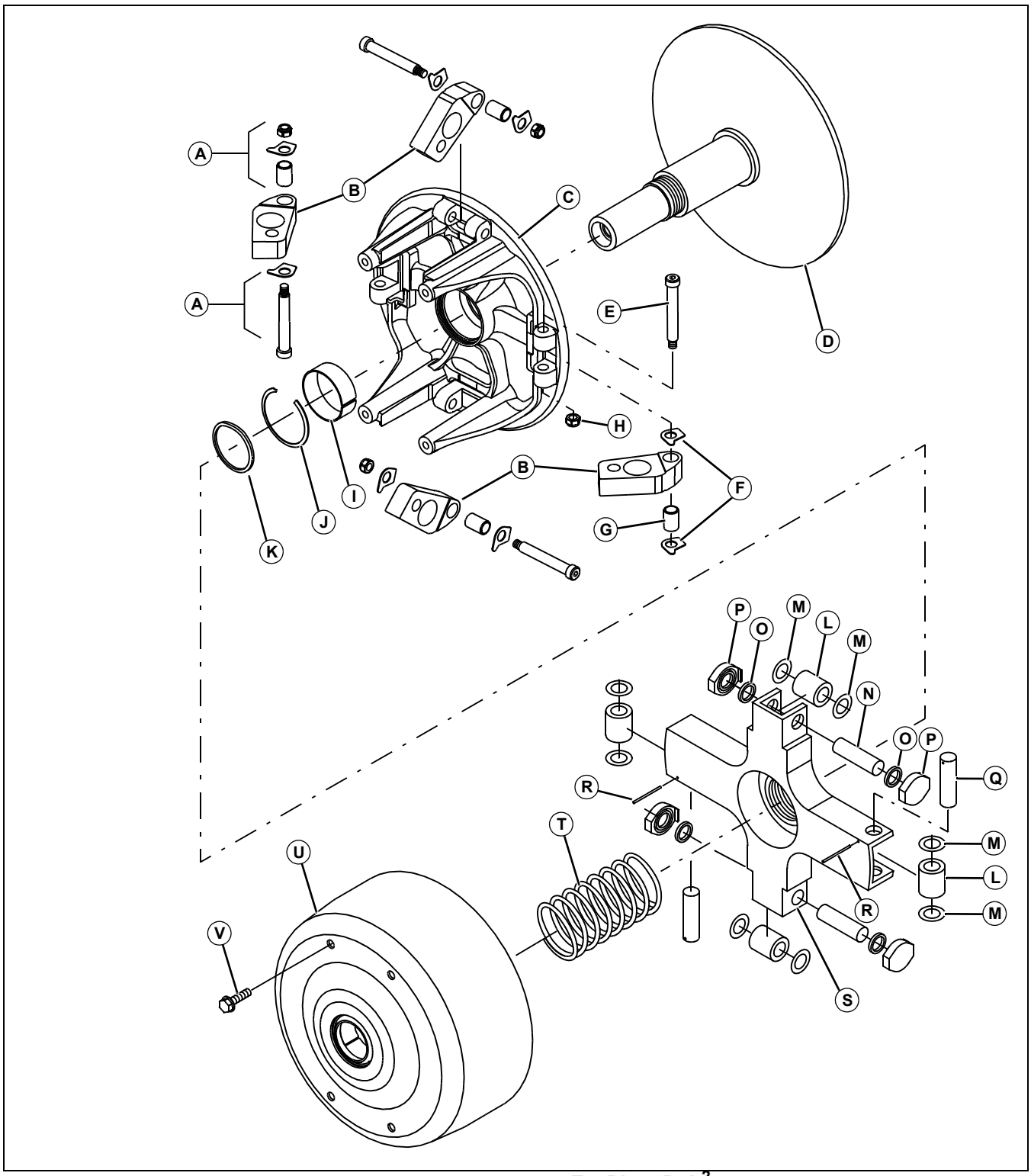
A - Seal (2 used)
B - Bearing
C - Left Drive Shaft
D - Bearing
E - Differential Lock Slider
F - Spring Pin
G - Differential Carrier
H - Thrust Washer (2 used)
I - Side Gear (Differential Lock)
J - Pinion Gear (2 used)
K - Washer (2 used)
L - Pinion Shaft
M - Side Gear
N - Ring Gear
O - Bearing
P - Bolt (14 used)
Q - Spring Pin
R - Differential Lock Cable Bracket
S - Bolt (2 used)
T - Differential Lock Lever
U - Drilled Pin
V - Seal
W - Right Drive Shaft
X - Snap Ring (2 used)
Y - Washer
Z - Spring
AA- Differential Lock Shaft
AB- Differential Lock Shift Fork

Drive Clutch



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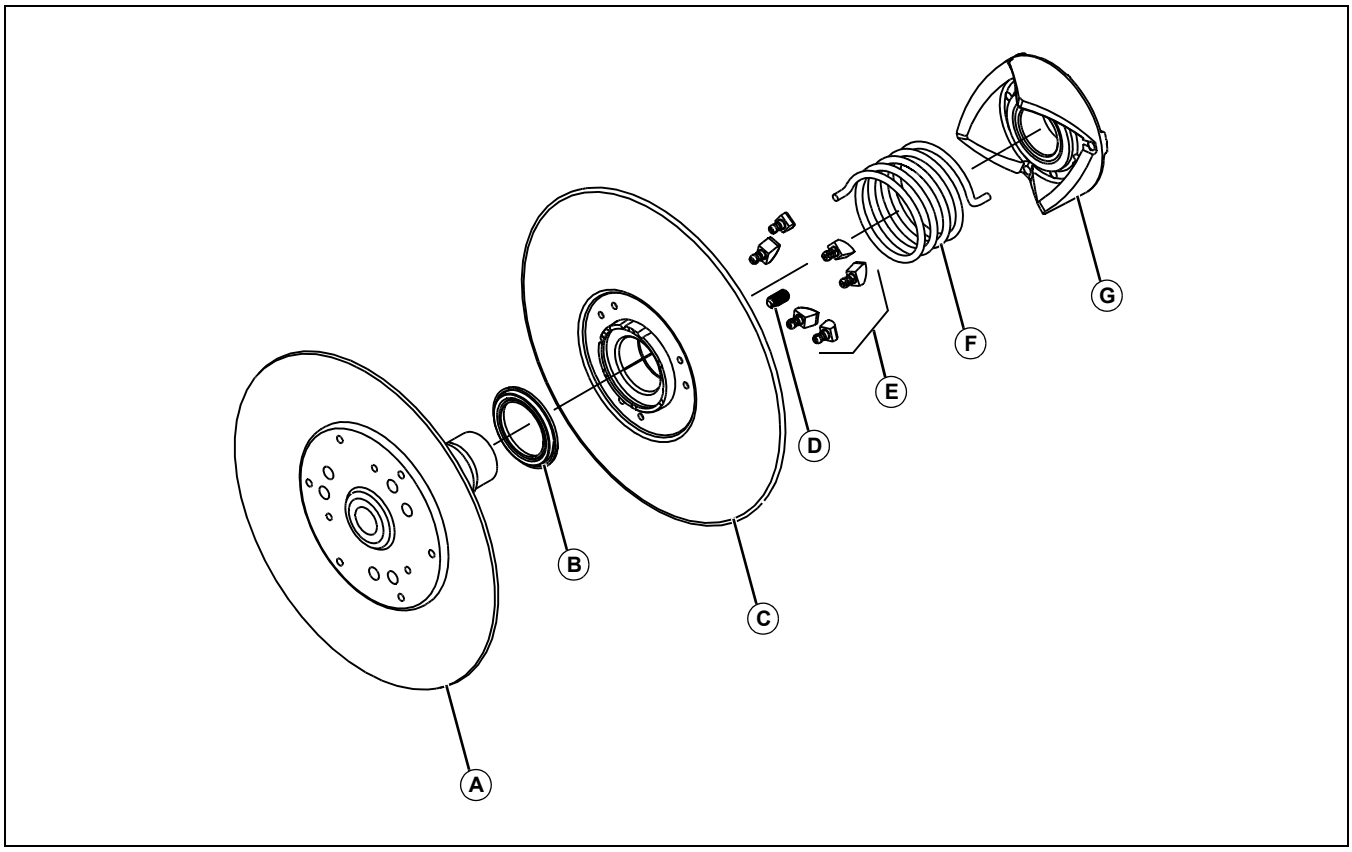
A - Pivot Bolt Kit
B - Flyweight (4 in kit)
C - Clutch Plate, Moveable
D - Clutch Plate, Stationary
E - Pivot Bolt[2]
F - Bushing (2 used per weight)[2]
G - Bushing[2]

2. Parts in Pivot Bolt Kit

H - Lock Nut[2]
I - Bushing
J - C-Clip
K - Washer
L - Bushing (4 used)
M - Washer (8 used)
N - Pin (2 used)
O - O-Ring (4 used)
P - Cap (4 used)
Q - Pin, Drilled (2 used)
R - Spring Pin (2 used)
S - Clutch Spider
T - Spring
U - Clutch Cover
V - Bolt (4 used)

Driven Clutch



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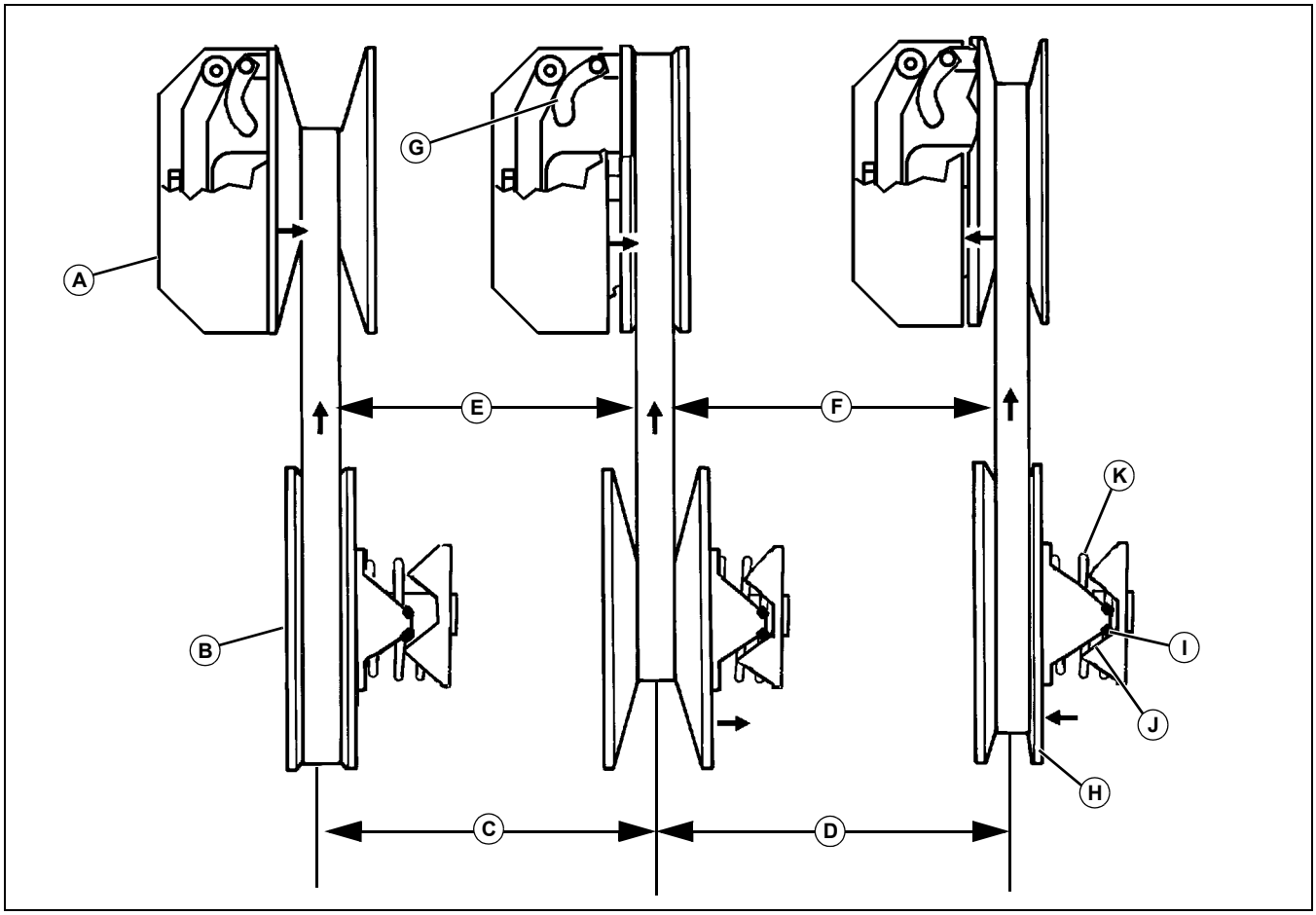
A - Clutch Plate, Stationary
B - Wiper Seal
C - Clutch Plate, Moveable
D - Set Screw
E - Wear Buttons (6 used)
F - Spring
G - Clutch Ramp

Theory of Operation

Clutch Operation



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Theory of Operation:

The variable clutch system is speed and load sensitive. The drive (A) and driven (B) clutches work together, automatically up-shifting (C) and back-shifting (D). This shifting changes the ratio between the clutches, allowing the engine to operate at optimum efficiency, at the peak of its power curve.

The drive clutch is engine speed sensitive, and is mounted on the engine crankshaft. It operates on the principle of centrifugal force. The driven clutch, mounted on the transaxle input shaft, is load sensitive to the rear drive wheels.

Engagement RPM, Minimum Load, Low Output Speed (E):

Drive clutch sheaves are moving closer together, just starting to move drive belt. Drive belt is running at the top of driven clutch. A high ratio between the clutches exist, similar to a low gear, as long as there is a minimum load.

High Engine RPM, Light Load, High Output Speed (F):

As engine speed increases, centrifugal forces of the flyweights (G) force the drive clutch to up-shift, moving the drive belt to outer pulley diameter, overcoming driven clutch spring. Drive belt then is pulled deep in driven clutch giving a low ratio, similar to a high gear.

High Engine RPM, Increasing Load, Lower Output Speed:

Back-shifting occurs as a load is encountered, such as a hill or soft terrain. The stationary side of the driven clutch resists forward movement of the wheels, at the same time, torque from the drive belt moves the moveable sheave (H) up the ramp. The ramp buttons (I), ramp (J), and spring (K) force the belt to the outside diameter of the driven clutch, and overcomes centrifugal forces of the drive clutch causing the back-shifting.

Diagnostics

Diagnostic Check Points

Test Conditions:

- Engine off
- Rear wheels supported off floor
- Air pressure equal in driving tires. Driving tires close to same radius.

System: Drive Train

(1) Drive belt is in good condition?

Yes - Go to next step.

No - Replace drive belt.

(2) Shift linkage shifts in to forward, neutral and reverse and stays in gear during operation?

Yes - Go to next step.

No - Adjust shift linkage. See “Transaxle Shift Adjustment” on page 294.

(3) Axles rotate smoothly and quietly; no free play in axles, bearings or housings?

Yes - Go to next step.

No - Check axles and housings.

(4) Brakes not dragging?

Yes - Go to next step.

No - Adjust brakes. See “Brake Adjustment” on page 348 in the Brakes section.

(5) Differential lock engages and disengages

Yes - Go to next step.

No - Adjust differential lock. See “Differential Lock Cable Adjustment” on page 294.

(6) Differential lock produces no ratcheting sound in transaxle?

Yes - Go to next step.

No - Check internal components.

Test Conditions:

- Engine running at operating temperature and brakes set
- Transmission in neutral position
- Ensure engine is at correct slow idle speed. See appropriate engine specifications.

System: Engine Primary Clutch

(1) Primary clutch disengaged (drive belt not moving)?

Yes - Go to next check.

No - Repair or replace primary clutch.

Test Conditions:

- Engine running at operating temperature and brakes set
- Transmission in neutral position
- Accelerate engine

System: Engine Primary Clutch

(1) Primary clutch engages drive belt at 1350 - 1600 rpm?

Yes - Go to next check.

No - Replace drive belt. Repair or replace primary clutch.

Test Conditions:

- Engine running at operating temperature and brakes set
- Transmission in neutral position
- Ensure engine is at correct fast idle speed. See appropriate engine specifications.

System: Primary and Secondary Clutch

(1) Primary clutch sheave (movable clutch sheave) moves toward stationary sheave?

Yes - Go to next step.

No - Repair or replace primary clutch.

(2) Secondary clutch sheaves separate?

Yes - Go to next step.

No - Repair or replace secondary clutch.

(3) Secondary clutch fully up-shifted, primary clutch sheaves completely close?

Yes - Checks complete.

No - Repair or replace drive and/or secondary clutches.

Tests and Adjustments

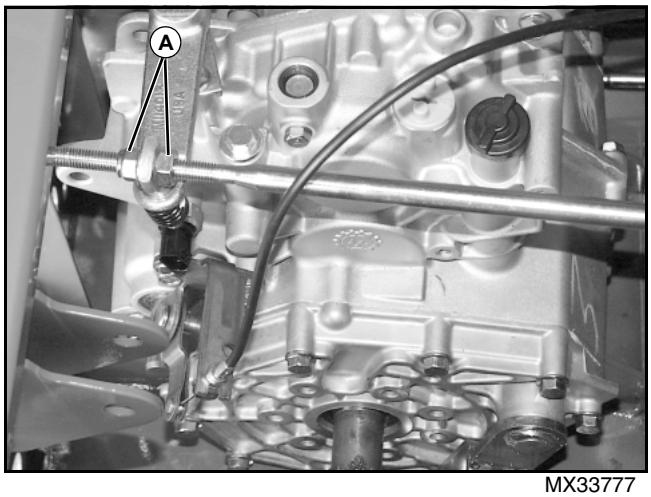
Transaxle Shift Adjustment

Reason:

- To insure gear shift lever is centered in neutral when transaxle is in neutral.
- To insure both forward and reverse gears will be completely engaged.
- To help prevent shifter from disengaging from gear during operation.

Procedure:

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
2. Raise and secure cargo box.
3. Move shift lever until detent inside transaxle clicks firmly into the center neutral position.



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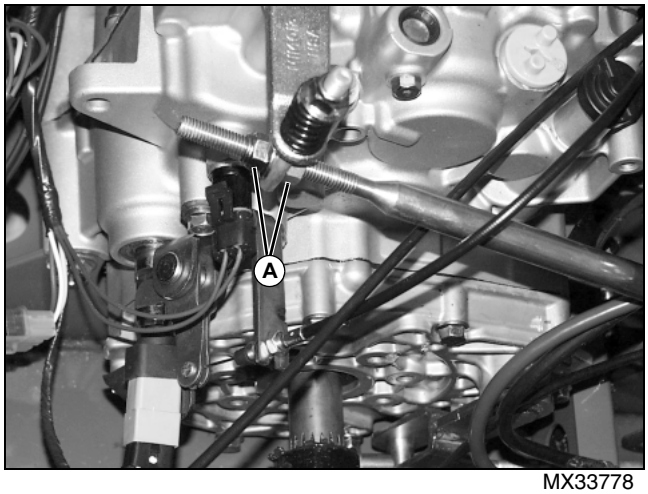
Picture Note: TS Gator Shown



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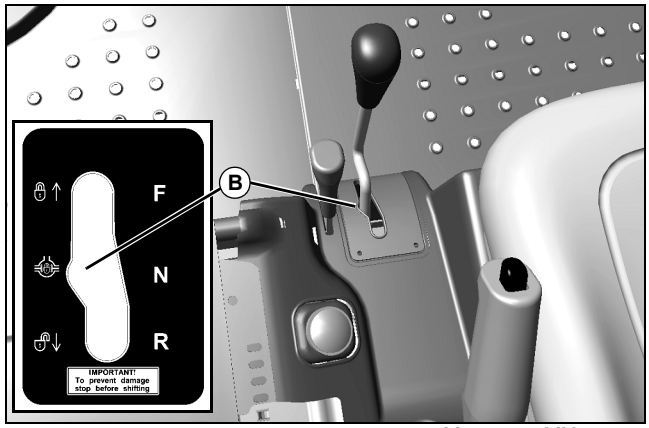
Picture Note: TH Gator Shown



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4. Loosen shift rod nuts (A) as necessary. Adjust the shift rod nuts so the shift lever is centered in the shifter quadrant in the neutral position (B).
5. Tighten the shift rod nuts.
6. Shift into neutral and check neutral start.

Differential Lock Cable Adjustment

Reason:

To insure complete disengagement and engagement of differential lock.

Procedure:

1. Park the vehicle safely. (See Parking Safely in the SAFETY section.)
2. Raise and secure cargo box.
3. Chock the left side wheels.
4. Unlock the park brake.
5. Place the differential lock lever in DISENGAGED position.
6. Safely jack-up and support the right rear side wheel(s) just enough to allow the wheel(s) to rotate while the left side wheels remain firmly on the ground.
7. By hand, rotate right side drive wheel(s). Wheel should rotate freely with no clicking sound in transaxle. Differential should be disengaged.

Suggest:

If the above button click is invalid.

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first, and then click the above link

to download the complete manual.

Thank you so much for reading