

## 12. General Diagnostic Table

### A: INSPECTION

#### 1. CLUTCH

Symptoms	Possible cause	Corrective action
<p>1. Clutch slippage. It is hard to perceive clutch slippage in the early stage, but pay attention to the following symptoms.</p> <ul style="list-style-type: none"> <li>• Engine speeds up when shifting.</li> <li>• High-speed driving is not possible; especially rapid acceleration is not possible and vehicle speed does not increase in proportion to the increase in engine speed.</li> <li>• Power drops particularly when ascending a slope, and there is a burning smell of the clutch plate.</li> <li>• Method of testing: Park the vehicle and fully apply the parking brake. Disengage the clutch and shift the transmission gear into the 1st. Gradually increase the engine speed while gradually allowing the clutch to engage. The clutch function is satisfactory if the engine stalls. However, the clutch is slipping if the vehicle does not move forward and the engine does not stall.</li> </ul>	<p>(a) Oil on the clutch face</p> <p>(b) Worn clutch face</p> <p>(c) Deteriorated diaphragm spring</p> <p>(d) Warped pressure plate or flywheel</p> <p>(e) Defective release bearing holder</p>	<p>Replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Repair or replace.</p> <p>Repair or replace.</p>
<p>2. Clutch drags.</p> <p>As a symptom of this trouble, a harsh scratching noise occurs and control becomes difficult when shifting gears. The symptom becomes more apparent when shifting into the 1st gear. However, because most trouble of this sort is due to a defective synchronization mechanism, perform the following tests.</p> <ul style="list-style-type: none"> <li>• Method of testing:&lt;Ref. to CL-34, DIAGNOSTIC DIAGRAM OF CLUTCH DRAG, INSPECTION, General Diagnostic Table.&gt;</li> </ul> <p>The problem is caused by insufficient disengagement of the clutch if an abnormal noise occurs during this test.</p>	<p>(a) Worn or rusty clutch disc hub spline</p> <p>(b) Excessive deflection of clutch disc face</p> <p>(c) Crankshaft pilot needle bearing sticking</p> <p>(d) Cracked clutch disc face</p> <p>(e) Stuck clutch disc (smeared by oil or water)</p>	<p>Replace the clutch disc.</p> <p>Repair or replace.</p> <p>Replace.</p> <p>Replace.</p> <p>Replace.</p>
<p>3. Clutch chatters.</p> <p>Clutch chattering is an unpleasant vibration to the whole vehicle when the vehicle is just started with clutch partially engaged.</p>	<p>(a) Adhesion of oil on the clutch face</p> <p>(b) Weak or broken damper spring</p> <p>(c) Poor contact of the disc surface or excessively worn disc</p> <p>(d) Warped pressure plate or flywheel</p> <p>(e) Loose disc rivets</p> <p>(f) Loose engine mounting</p>	<p>Replace the clutch disc.</p> <p>Replace the clutch disc.</p> <p>Replace the faulty clutch disc.</p> <p>Repair or replace.</p> <p>Replace the clutch disc.</p> <p>Retighten or replace mounting.</p>
<p>4. Noisy clutch</p> <p>Examine whether the noise is generated when the clutch is disengaged, engaged, or partially engaged.</p>	<p>(a) Broken, worn or insufficiently lubricated release bearing</p> <p>(b) Insufficient lubrication of the pilot bearing</p> <p>(c) Loose clutch disc hub</p> <p>(d) Loose damper spring retainer</p> <p>(e) Deteriorated or broken damper spring</p>	<p>Replace the release bearing.</p> <p>Replace the pilot bearing.</p> <p>Replace the clutch disc.</p> <p>Replace the clutch disc.</p> <p>Replace the clutch disc.</p>

# General Diagnostic Table

## CLUTCH SYSTEM

Symptoms	Possible cause	Corrective action
5. Clutch grabs suddenly. When starting the vehicle with the clutch partially engaged, the clutch engages suddenly and the vehicle jumps instead of making a smooth start.	(a) Grease or oil on facing (b) Deteriorated cushioning spring (c) Worn or rusted spline of clutch disc or main shaft (d) Deteriorated or broken damper spring (e) Loose engine mounting (f) Deteriorated diaphragm spring	Replace the clutch disc. Replace the clutch disc. Take off rust, apply grease or replace clutch disc or main shaft. Replace the clutch disc. Retighten or replace mounting. Replace.

## 2. CLUTCH PEDAL

Symptoms	Corrective action
Insufficient clutch pedal play	Adjust the pedal play.
Excessive wear and damage of pedal shaft or busing	Replace the busing or shaft with a new part.

## 3. DIAGNOSTIC DIAGRAM OF CLUTCH DRAG

Step	Check	Yes	No
<b>1</b> <b>CHECK GEAR NOISE.</b> 1) Start the engine. 2) While idling the engine, step on the clutch pedal and quickly shift from neutral to reverse.	Is there any abnormal noise from the transmission gear?	Go to step <b>2</b> .	Clutch is normal.
<b>2</b> <b>CHECK GEAR NOISE.</b> Step on the clutch pedal at idle and shift from neutral to reverse within 0.5 — 1.0 second.	Is there any abnormal noise from the transmission gear?	Go to step <b>3</b> .	Defective transmission or excessive clutch drag torque. Inspect pilot bearing, clutch disc, transmission and clutch disc hub spline.
<b>3</b> <b>CHECK GEAR NOISE.</b> 1) Step on the clutch pedal at idle and shift from neutral to reverse within 0.5 — 1.0 second. 2) While stepping on the clutch pedal, shift from neutral to reverse, reverse to neutral several times.	Is there any abnormal noise from the transmission gear?	Inadequate clutch disengage. Inspect the clutch disc, clutch cover, clutch release, and clutch pedal free play.	Clutch and fly-wheel seizure. Inspect the clutch disc and the spline of the clutch disc hub.