# 11. General Diagnostics Table

## A: SYMPTOMS AND PROBABLE CAUSES

| Symptom | | Probable faulty units/parts |
|---|---|---|
| Vehicle instability during braking | Vehicle pulls to either side. | ● Hydraulic unit (solenoid valve)<br>● ABS sensor<br>● Brake (caliper & piston, pads)<br>● Wheel alignment<br>● Tire specifications, tire wear and air pressures<br>● Incorrect wiring or piping connections<br>● Road surface (uneven, camber) |
| | Vehicle spins. | ● Hydraulic unit (solenoid valve)<br>● ABS sensor<br>● Brake (pads)<br>● Tire specifications, tire wear and air pressures<br>● Incorrect wiring or piping connections |
| Poor braking | Long braking/stopping distance | ● Hydraulic unit (solenoid valve)<br>● Brake (pads)<br>● Air in brake line<br>● Tire specifications, tire wear and air pressures<br>● Incorrect wiring or piping connections |
| | Wheel locks. | ● Hydraulic unit (solenoid valve, motor)<br>● ABS sensor<br>● Incorrect wiring or piping connections |
| | Brake dragging | ● Hydraulic unit (solenoid valve)<br>● ABS sensor<br>● Master cylinder<br>● Brake (caliper & piston)<br>● Parking brake<br>● Axle & wheels<br>● Brake pedal play |
| | Long brake pedal stroke | ● Air in brake line<br>● Brake pedal play |
| | Vehicle pitching | ● Suspension play or fatigue (reduced damping)<br>● Incorrect wiring or piping connections<br>● Road surface (uneven) |
| | Unstable or uneven braking | ● Hydraulic unit (solenoid valve)<br>● ABS sensor<br>● Brake (caliper & piston, pads)<br>● Tire specifications, tire wear and air pressures<br>● Incorrect wiring or piping connections<br>● Road surface (uneven) |
| Vibration and/or noise (while driving on slippery roads) | Excessive pedal vibration | ● Incorrect wiring or piping connections<br>● Road surface (uneven) |
| | Noise from hydraulic unit | ● Hydraulic unit (mount bushing)<br>● ABS sensor<br>● Brake piping |
| | Noise from front of vehicle | ● Hydraulic unit (mount bushing)<br>● ABS sensor<br>● Master cylinder<br>● Brake (caliper & piston, pads, rotor)<br>● Brake piping<br>● Brake booster & check valve<br>● Suspension play or fatigue |
| | Noise from rear of vehicle | ● ABS sensor<br>● Brake (caliper & piston, pads, rotor)<br>● Parking brake<br>● Brake piping<br>● Suspension play or fatigue |

## B: CHECKING THE HYDRAULIC UNIT OPERATION

<Ref. to 4-4 [W22C1] or [W22C2].>
1) Do ABS sequence control patterns take place in correct order?
If not, check wiring and piping for incorrect connections.
2) Are oil pressure or braking force variations within specifications?
If not, check master cylinder, brake piping, hydraulic unit, proportioning valve and wheel cylinder for improper operation.
3) Does pedal hardness change before and after ABS sequence control?
If so, bleed air from brake line.