

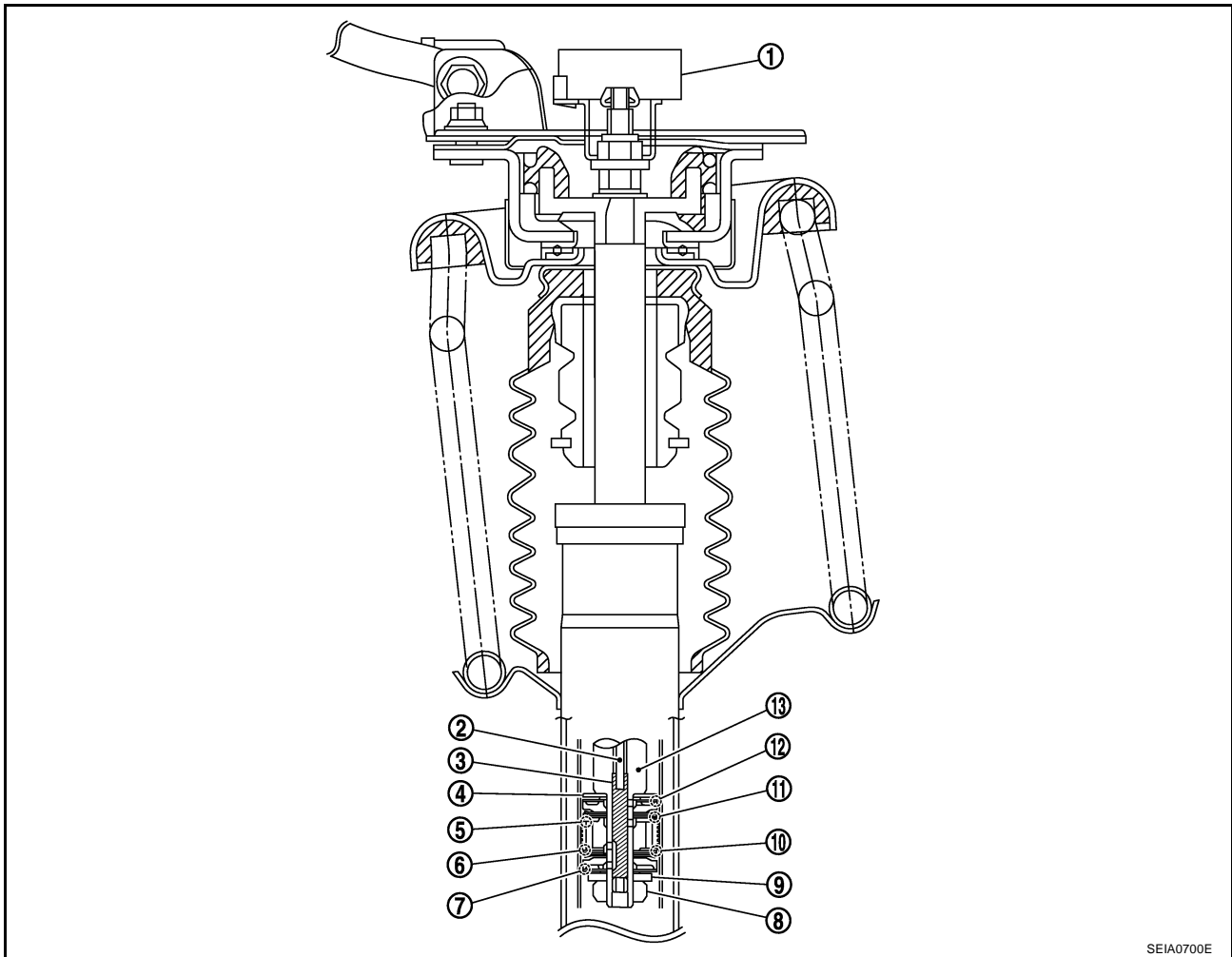
ACTIVE DAMPER SUSPENSION SYSTEM

ACTIVE DAMPER SUSPENSION SYSTEM

PFP:28500

Cross-Section View

NES000B0



- | | | |
|---------------------------------------|------------------------------------|------------------------------------|
| 1. Shock absorber actuator | 2. Control rod | 3. Spool |
| 4. Retainer | 5. Oil flow inlet (extension side) | 6. Main valve (extension side) |
| 7. Check valve (extension side) | 8. Nut | 9. Collar |
| 10. Oil flow inlet (compression side) | 11. Main valve (compression side) | 12. Check valve (compression side) |
| 13. Stud | | |

System Description

DESCRIPTION

NES000I5

- It controls the damping force of shock absorber in real time according to the driving conditions.
- Skyhook control is used to active damper suspension.

Skyhook Control

- Method of controlling the damping force of shock absorber on the actual vehicle just like the shock absorber supported at an aerial point that has an effect on the vehicle body.

NOTE:

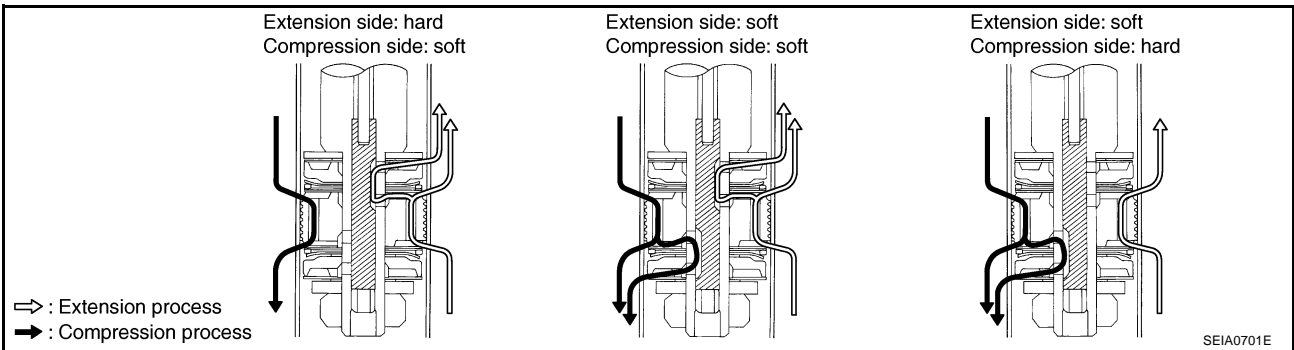
As the damping force of shock absorber does not have an effect on the wheel side movement, the force from the road is not transmitted to the vehicle body.

- Only when the vehicle body itself is moved up/down with the roll caused by the starting/brake/steering operations will the damping force of shock absorber certainly act to control the vehicle body.

ACTIVE DAMPER SUSPENSION SYSTEM

ACTIVE DAMPER SUSPENSION

Operation Principle



Extension side: hard

- The oil groove of spool is closed.
- The oil flowed from the extension side oil flow inlet via the extension side main valve. The oil flow amount is minimized, and the damping force of shock absorber rises.

Compression side: hard

- The oil groove of spool is closed.
- The oil flowed from the compression side oil flow inlet via the compression side main valve. The oil flow amount is minimized, and the damping force of shock absorber rises.

Extension side: soft

- The oil grooves of spool and stud are open.
- The oil flowed through 2 passages (one passage is from the extension side oil flow inlet via the extension side main valve and another passes the oil groove of spool via the extension side check valve). Therefore, the oil flow amount is maximized, and the damping force of shock absorber will weaken.

Compression side: soft

- The oil grooves of spool and stud are open
- The oil flowed through 2 passages (one passage is from the compression side oil flow inlet via the compression side main valve and another passes the oil groove of spool via the compression side check valve). Therefore, the oil flow amount is maximized, and the damping force of shock absorber will weaken.

VERTICAL G SENSOR

It detects the upper/lower acceleration applied to the vehicle body (front/rear).

STEERING ANGLE SENSOR

It detects the steering wheel angle.

SHOCK ABSORBER ACTUATOR

It rotates the spool, opens/closes the oil passage of stud (changes the flow amount), and then controls the damping force of shock absorber.

SHOCK ABSORBER

It continuously switches the damping force at the wide range in a short time and can control the damping forces of extension side and compression side individually.

ACTIVE DAMPER SUSPENSION SELECT SWITCH

AUTO (normal driving) mode and SPORT (sports driving) mode can be changed. When selecting the SPORT mode, SPORT indicator in combination meter illuminates.

SPORT INDICATOR LAMP

- SPORT indicator lamp in combination meter is illuminated (SPORT mode) or turned off (AUTO mode) by switching the active damper suspension select switch, and it indicates the modes.
- It indicates a system malfunction (when the fail-safe function is activated) and the self-diagnostic results by turning on or blinking.