

Electric Parking Brake

An electric parking brake is fitted as standard to the S-TYPE, providing the following benefits over the conventional parking brake:

- ‘Space’ the deletion of conventional parking brake lever provides more vehicle interior space.
- ‘Ease of use’ the electric parking brake does not depend on the strength of the driver to achieve full parking brake application.
- ‘Safety’ the electric parking brake automatically applies when the ignition key is removed.

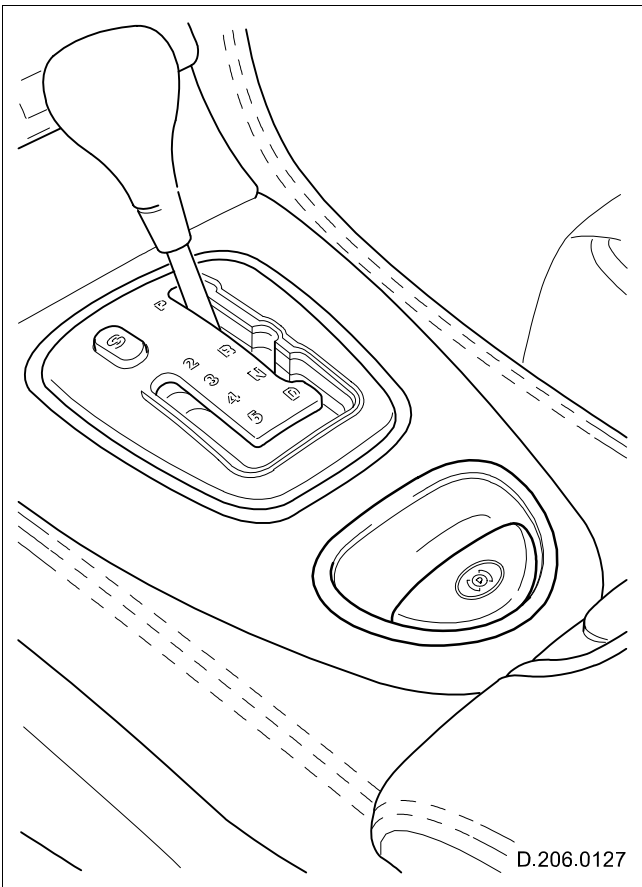


Fig. 12 Parking brake — operating switch

Driver Operation

The parking brake switch is mounted on the center console to the rear of the gear selector.

‘Applying the parking brake’

- To apply the parking brake, ‘pull and release’ the switch. The switch will return to the neutral position. The ‘Brake’ warning light on the instrument cluster will illuminate.
- The parking brake automatically applies when the ignition key is removed. In circumstances when the parking brake needs to be disengaged when the ignition key is removed, hold the parking brake switch down and at the same time remove the key.
- When the ignition key is turned to position ‘0’ or the key is removed, and parking brake has been applied, the ‘Brake’ warning light on the instrument cluster will illuminate for a short time.

‘Releasing the parking brake (vehicle’s with automatic transmission)’

- With the ignition switch in position ‘II’ or with the engine running, apply the foot brake and push the parking brake switch down.
- The parking brake will disengage if the vehicle is driven forward or reversed.
- The parking brake will automatically release when the gear selector is moved from the park ‘P’ position.

‘Releasing the parking brake (vehicle’s with manual transmission)’

- With the ignition switch in position ‘II’ or with the engine running, push the parking brake switch down.

Safety Functions

- If the parking brake is applied while the vehicle is moving, the message ‘PARK BRAKE ON’ will be displayed on the message center and a warning chime will sound.
- If the parking brake is applied while the vehicle is moving, push the parking switch down to release the parking brake. If the switch is in the neutral position after parking brake application, depressing the accelerator pedal will release the parking brake.

Components

The electric parking brake comprises the following components:

- Operating switch - center console.
- Parking brake module - located in the luggage compartment behind the right-hand-side wheel-arch liner.
- Motorized actuator unit and cables - mounted on the rear subframe.
 - The actuator mounting and cable routing is different on N/A and SC vehicles to correspond with the positioning of the calipers.
 - On N/A vehicles the brake and parking brake caliper are a combined unit.
 - On SC vehicles the brake caliper and parking brake caliper are separate units.

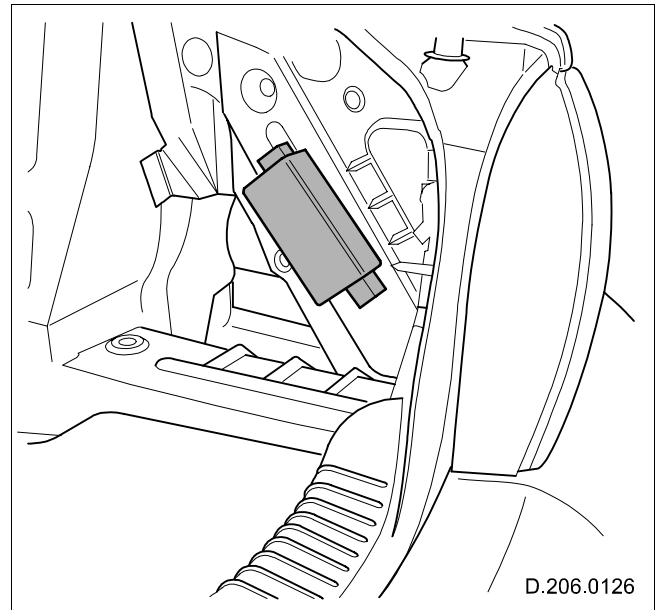
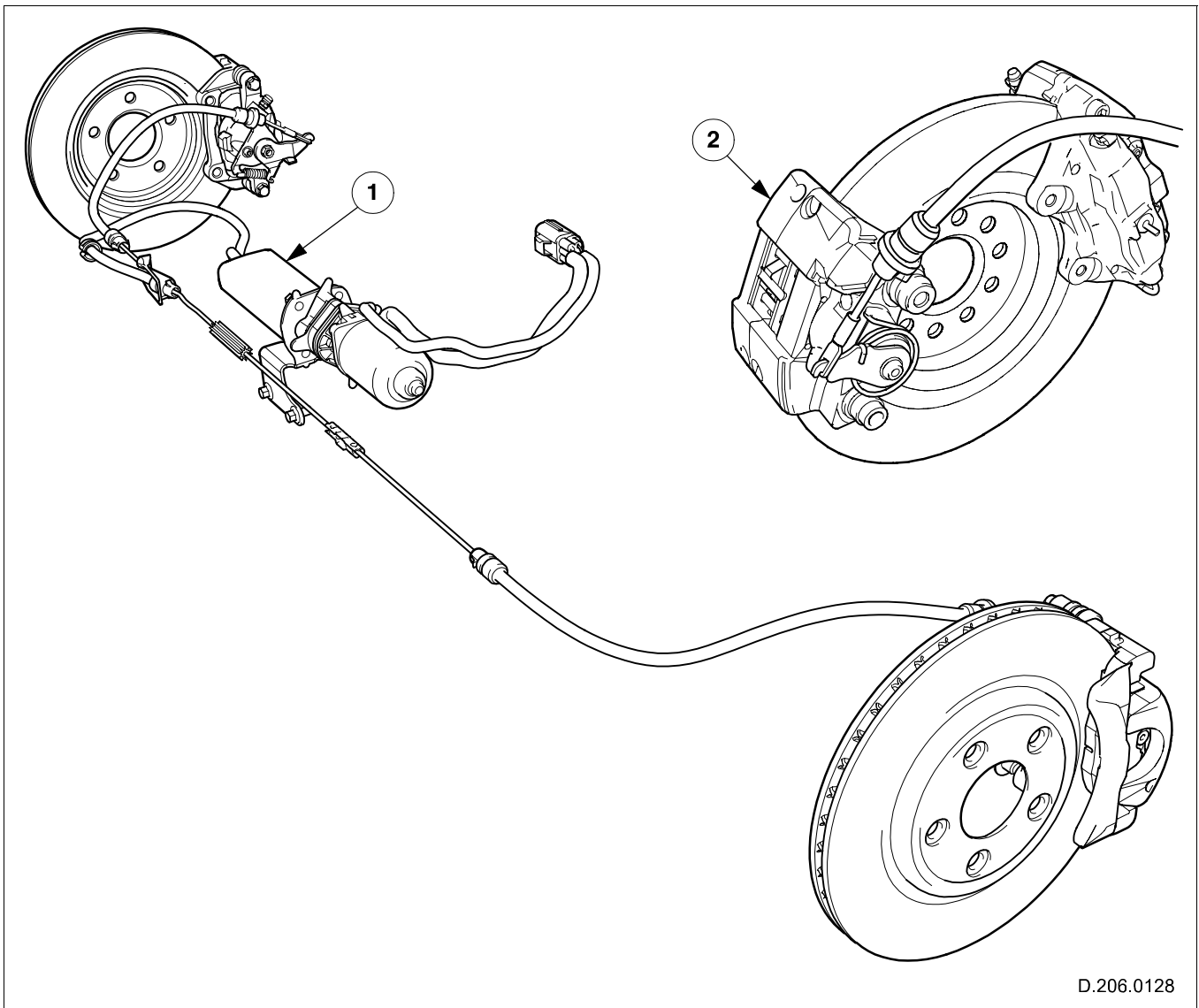


Fig. 13 Parking brake module



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Fig. 14 Actuator unit and cables

1. Actuator unit and cables — N/A vehicle arrangement
2. Parking brake caliper — SC vehicle arrangement

Mechanism and Activation

CAUTION: With the exception of emergency conditions, the electric parking brake should not be applied while the vehicle is moving.

There are three modes of parking brake operation dependant on vehicle speed:

- ‘Static’ speeds up to 3 km/h (2 mile/h), in this mode:
 - Application of the switch results in the parking brake being applied at full force.
- ‘Low Speed Dynamic’ speeds between 3 and 32 km/h (2 and 20 mile/h), in this mode:
 - The Parking brake will apply at full force to the corresponding time the switch is ‘pulled and held’ therefore, the parking brake will apply until the switch is released or the vehicle comes to a halt.
- ‘High Speed Dynamic’ speeds above 32 km/h (20 mile/h), in this mode:
 - One ‘pull and release’ of the switch will apply the parking brake for 500 ms to gently apply the parking brake. Each subsequent ‘pull and release’ of the switch will apply the parking brake for 250 ms. Full parking brake force will be met at between 3 and 4 ‘pull and releases’ of the switch.
 - If the switch is ‘pulled and held’ the parking brake will be automatically applied in a ramp-up sequence as follows:
 - ‘APPLY’ for 500 ms,
 - ‘HOLD’ for 500 ms,
 - ‘APPLY’ for 250 ms,
 - ‘HOLD’ for 500 ms,
 - ‘APPLY’ for 250 ms.

This sequence is repeated until full parking brake load is registered at the control module.

Drive-away Release (vehicle’s with automatic transmission only)

The parking brake will disengage if the vehicle is driven forward or reversed.

Activation of the drive-away release is functioned when the gear selector is in either ‘Drive’ or ‘Reverse’ and a positive throttle angle is detected.

Resetting the Parking Brake

If the electrical supply is disconnected from the electric parking-brake module, for example battery disconnection, the actuator will lose its actuator position memory. On battery connection a message ‘APPLY PARK BRAKE’ will be displayed when the ignition is next switched on. To reset the parking brake, depress the foot brake and pull the parking brake switch up.

Service

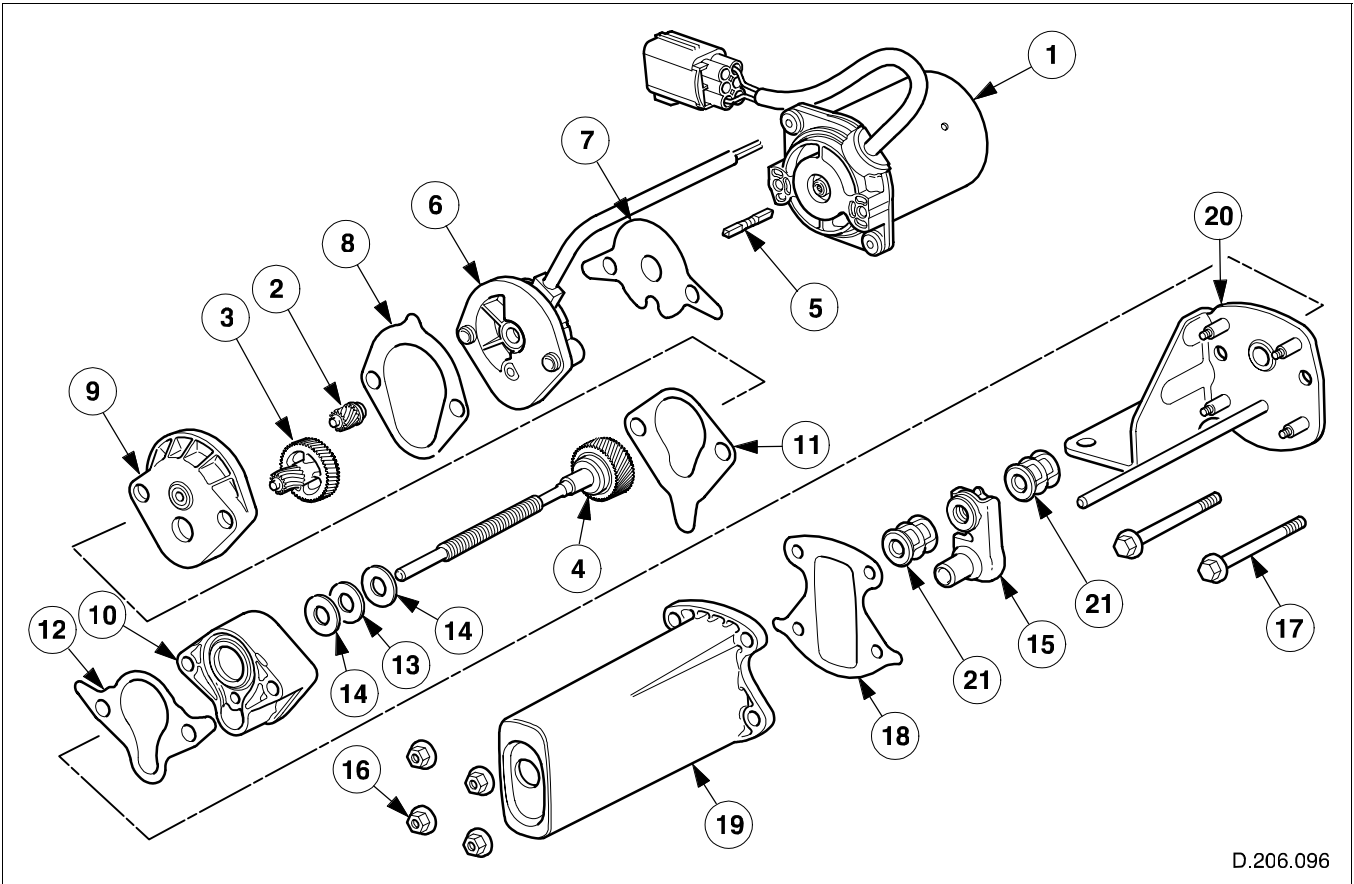
A service release is provided to de-couple the parking brake to allow work to be performed on the rear calipers. Refer to ‘JTIS’.

Diagnostics

Electric parking brake diagnosis is achieved using WDS.

Chassis

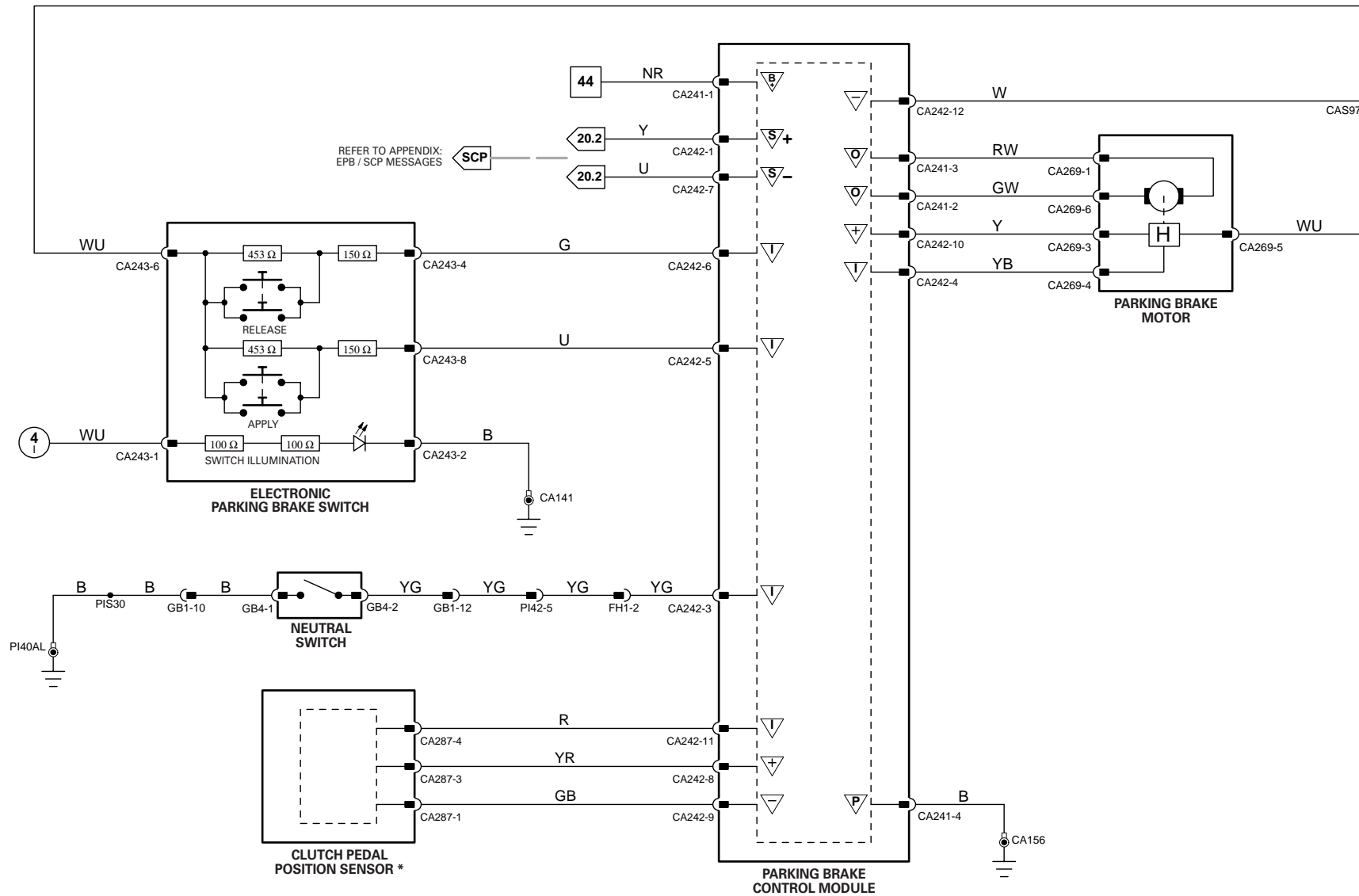
Actuator Internals



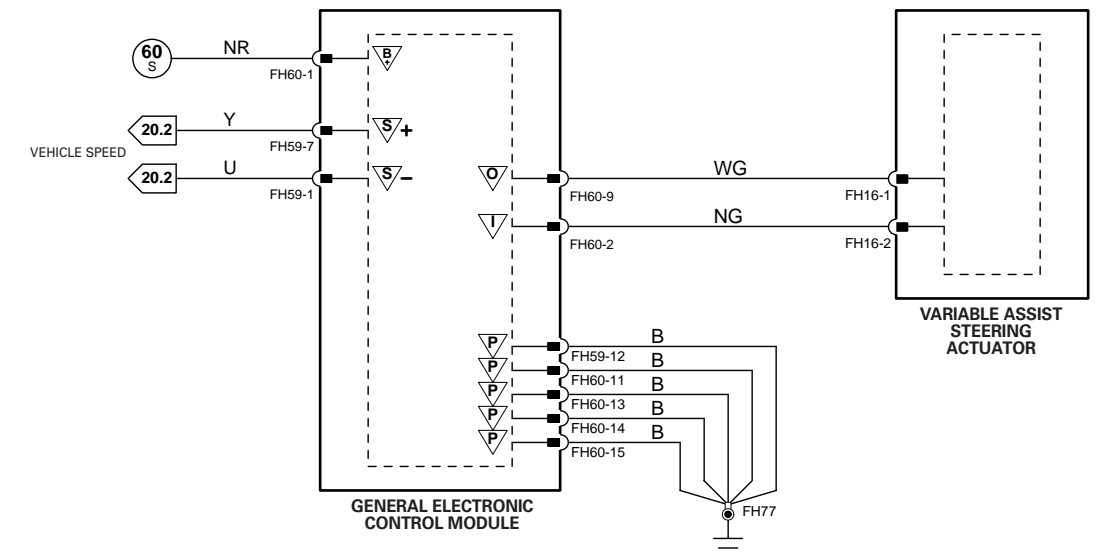
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Fig. 15 Motorized actuator unit — internals

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|-----------------------------------|----------------------------|
| 1. Motor | 12. Gasket end-cap bracket |
| 2. Gear pinion | 13. Thrust bearing |
| 3. Idler gear | 14. Thrust washer |
| 4. Gear-lead screw | 15. Drive nut |
| 5. Flex shaft | 16. Nut - cover |
| 6. End-plate transmission housing | 17. Bolt |
| 7. Gasket end-plate motor | 18. Gasket - cover |
| 8. Gasket end-plate housing | 19. Cover |
| 9. Transmission housing | 20. Bracket |
| 10. End-cap transmission housing | 21. Bumper |
| 11. Gasket end-cap housing | |



ELECTRONIC PARKING BRAKE



VARIABLE ASSIST POWER STEERING