

10. AWD Transfer System

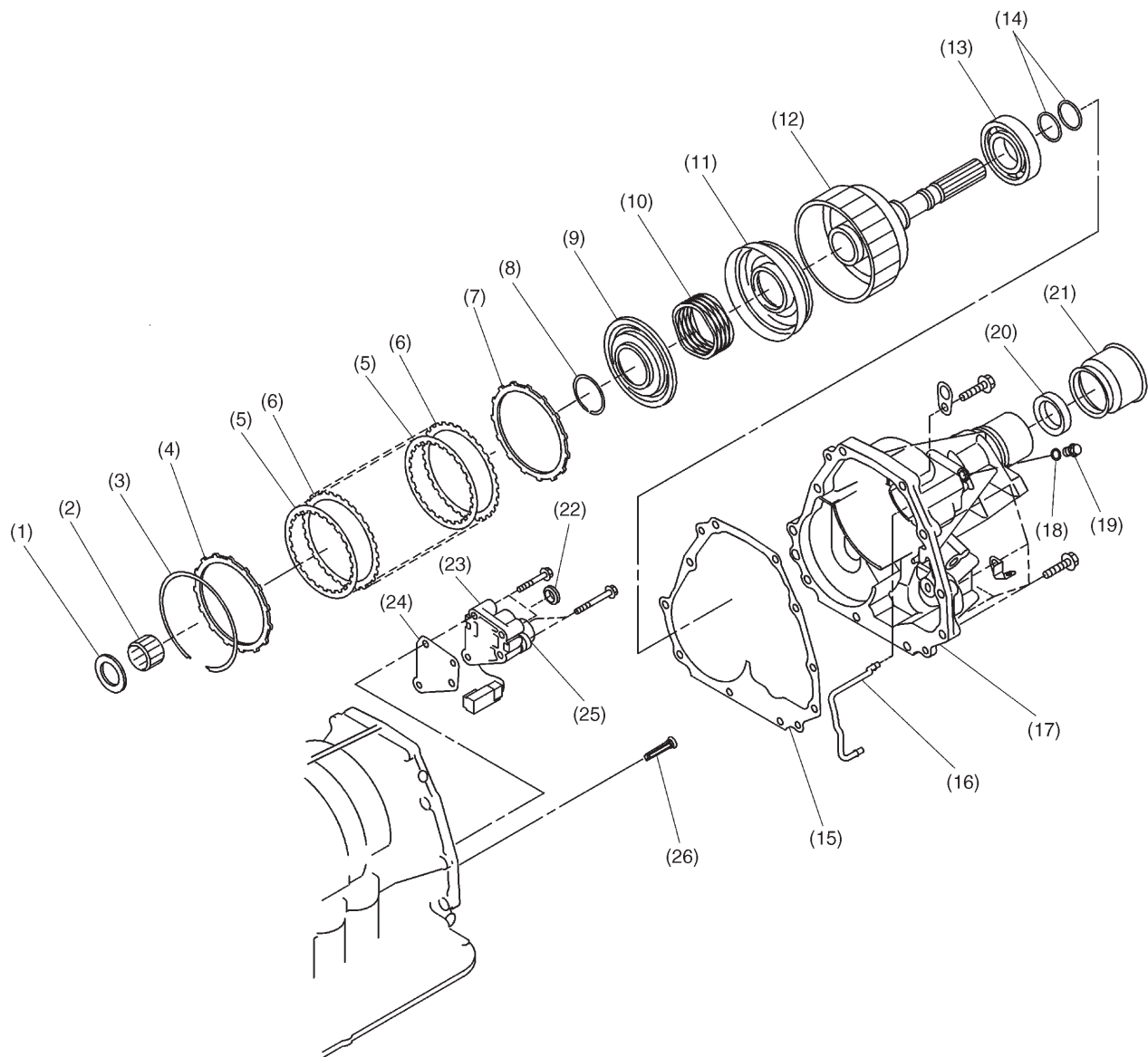
A: OUTLINE

This is the electronically controlled MP-T (multi-plate transfer) type AWD transfer system, originally designed for SUBARU, consisting of a transfer hydraulic pressure control unit incorporating a vehicle speed sensor, control unit, and duty solenoid and a transfer clutch (hydraulic multi-plate clutch).

The control unit stores optimum transfer clutch torque data for a variety of driving conditions. When actual driving conditions (vehicle speed, throttle opening, gear range, wheel slip, etc.) are detected by various sensors, the control unit selects a duty ratio most suitable to the given condition from the memory. It then controls the operation of the transfer clutch by means of the hydraulic pressure which controls the duty solenoid and provides optimum rear torque distribution.

Various sensors and the control unit also serve as gear shift control, lock-up control and hydraulic pressure control.

MECHANISM AND FUNCTION

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10. AWD Transfer System

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|--------------------------|-----------------------------|-----------------------------|
| (1) Thrust bearing | (10) Return spring | (19) Plug |
| (2) Needle bearing | (11) Transfer clutch piston | (20) Oil seal |
| (3) Snap ring | (12) Rear drive shaft | (21) Dust cover |
| (4) Pressure plate | (13) Ball bearing | (22) Transfer clutch seal |
| (5) Drive plate | (14) Seal ring | (23) Transfer clutch valve |
| (6) Driven plate | (15) Gasket | (24) Transfer valve plate |
| (7) Pressure plate | (16) Transfer clutch pipe | (25) Transfer duty solenoid |
| (8) Snap ring | (17) Extension case | (26) Inlet filter |
| (9) Transfer piston seal | (18) O-ring | |

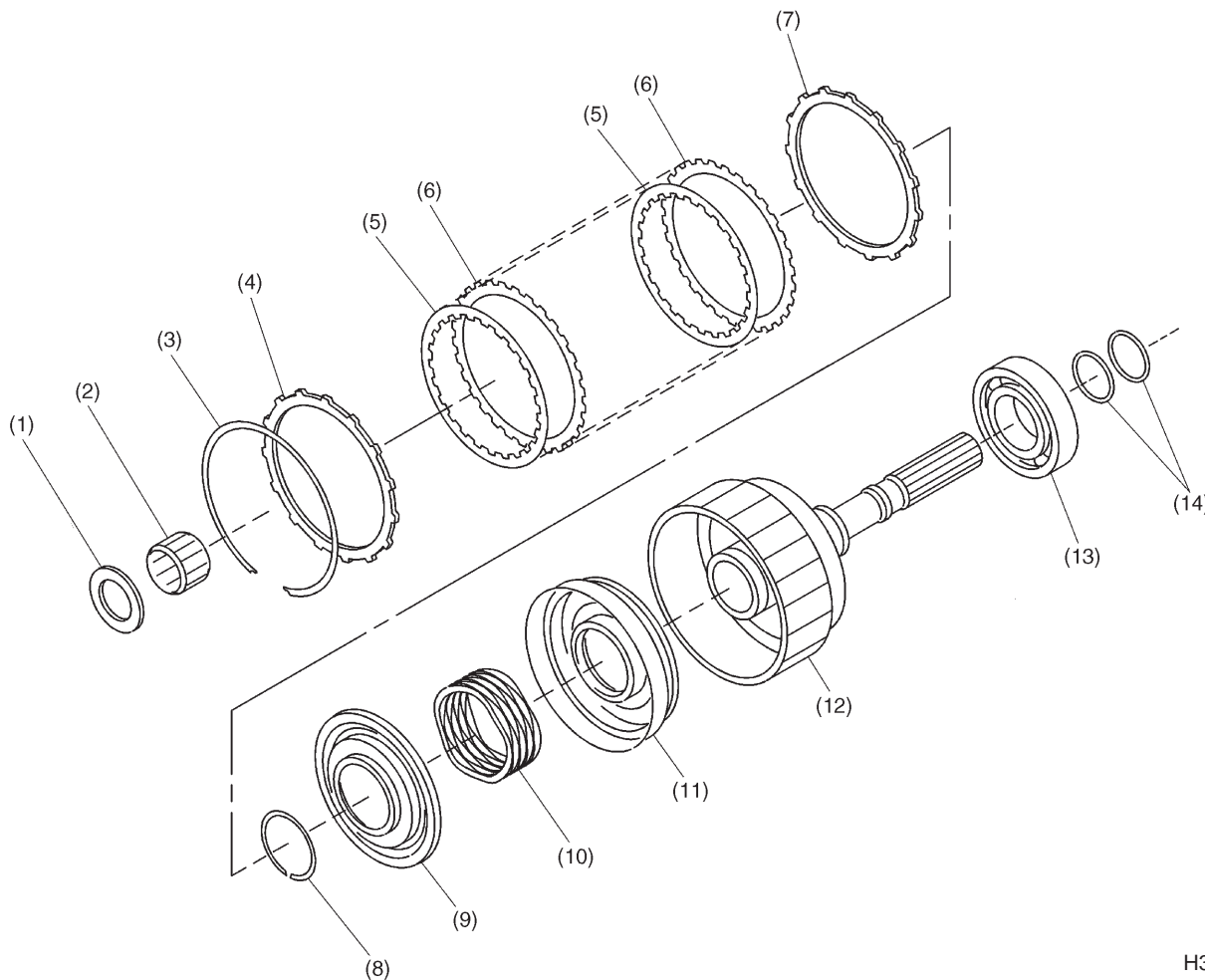
MECHANISM AND FUNCTION

B: TRANSFER CLUTCH (MULTI-PLATE CLUTCH)

The transfer unit consists of a hydraulic multi-plate clutch and a transfer hydraulic control system incorporating a transfer duty solenoid, rear drive shaft, etc.

The transmission control unit has duty ratios memorized in advance according to running conditions. In order to obtain the optimum transfer torque for the running condition, the oil pressure that is applied to the drive plates and driven plates is controlled by applying oil pressure to the transfer piston from the transfer oil pressure control device including the duty solenoid.

Also, the transfer clutch drum and rear drive shaft are joined to each other by welding. The rear drive shaft has drilled oil passages for transfer clutch control and also for lubrication of extension bushing and ball bearing in it.



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|--------------------|--------------------------|-----------------------------|
| (1) Thrust bearing | (6) Driven plate | (11) Transfer clutch piston |
| (2) Needle bearing | (7) Pressure plate | (12) Rear drive shaft |
| (3) Snap ring | (8) Snap ring | (13) Ball bearing |
| (4) Pressure plate | (9) Transfer piston seal | (14) Seal ring |
| (5) Drive plate | (10) Return spring | |

