

ALLISON HYBRID

DRIVE UNIT POWER FLOWS

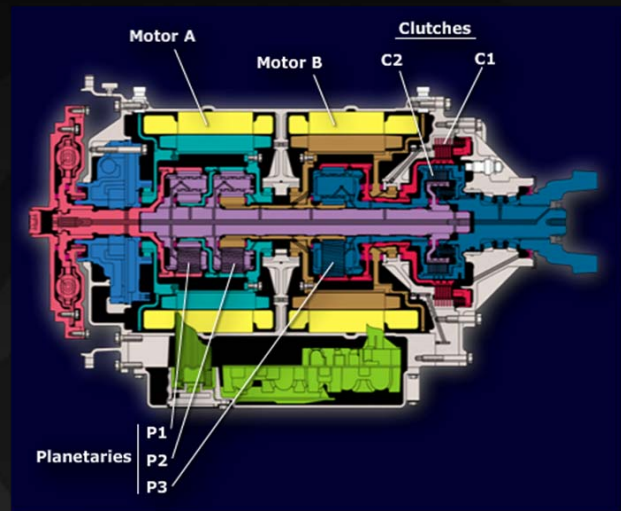


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Power Flows

Gear Pack Configuration

- The Input Damper connects to the input shaft which rotates with the engine and drives the P1 ring gear.
- P1 sun gear connects to Motor A and the P1 carrier connects to the main shaft.
- P2 sun gear connects to Motor B, the P2 carrier connects to Motor A.



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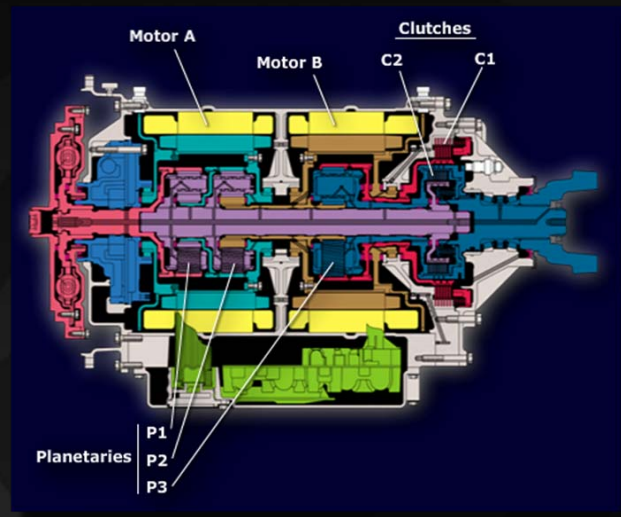


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Power Flows

Gear Pack Configuration (cont'd)

- P3 sun gear connects to Motor B, the P3 carrier connects to the output shaft and the P3 ring gear connects to the C1 clutch.
- When applied, the C1 clutch holds the P3 ring gear.
- When applied, the C2 clutch connects the main shaft and output shaft.



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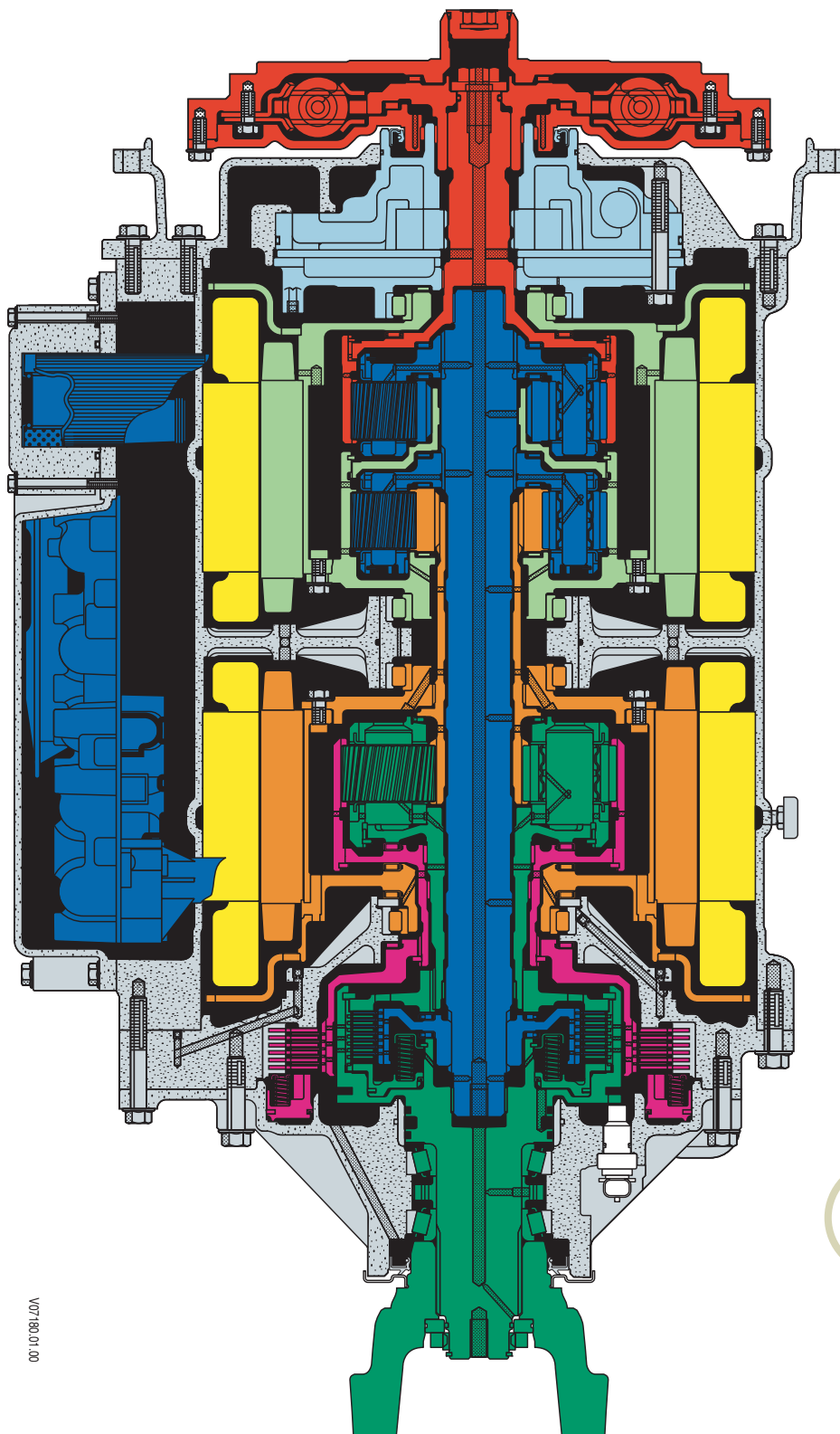
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RESOURCES: Drive Unit Cross Section



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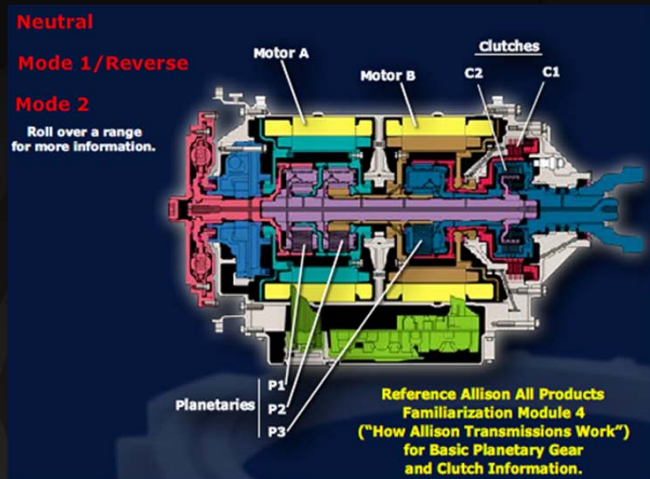


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Power Flows

Power Flows

- The drive unit creates two propulsion Modes and only one clutch is required to create a moving range.
 - Motor B output is responsible for initial vehicle take off up to 10 mph.
 - Between 10 and 25 mph torque blending occurs between Motors A and B and the engine to create optimum torque relationship between the three components.
 - Above 25 mph, most of the output torque is being created by the engine to maximize efficiency and fuel economy.
 - Motors A and B work together as variable speed clutches to continually optimize drive unit torque blending.



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