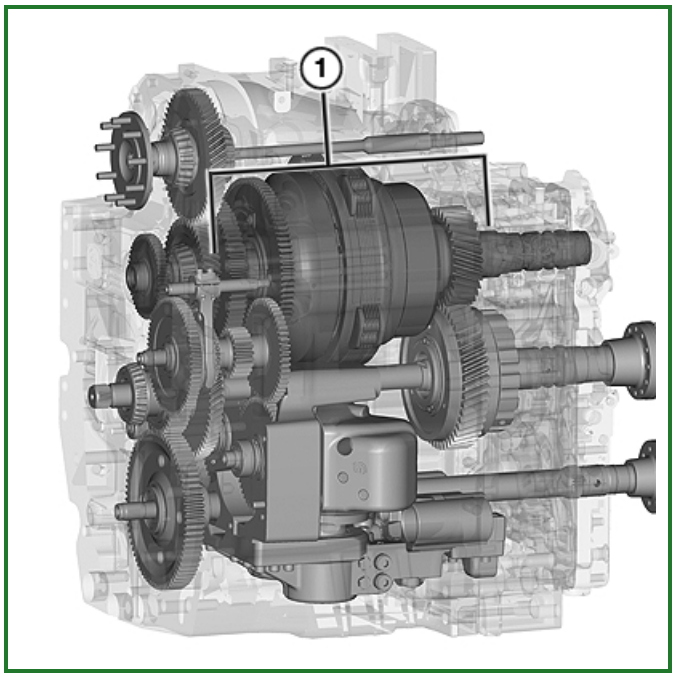
AutoPowr™ / IVT™—Planetary Unit Theory of Operation

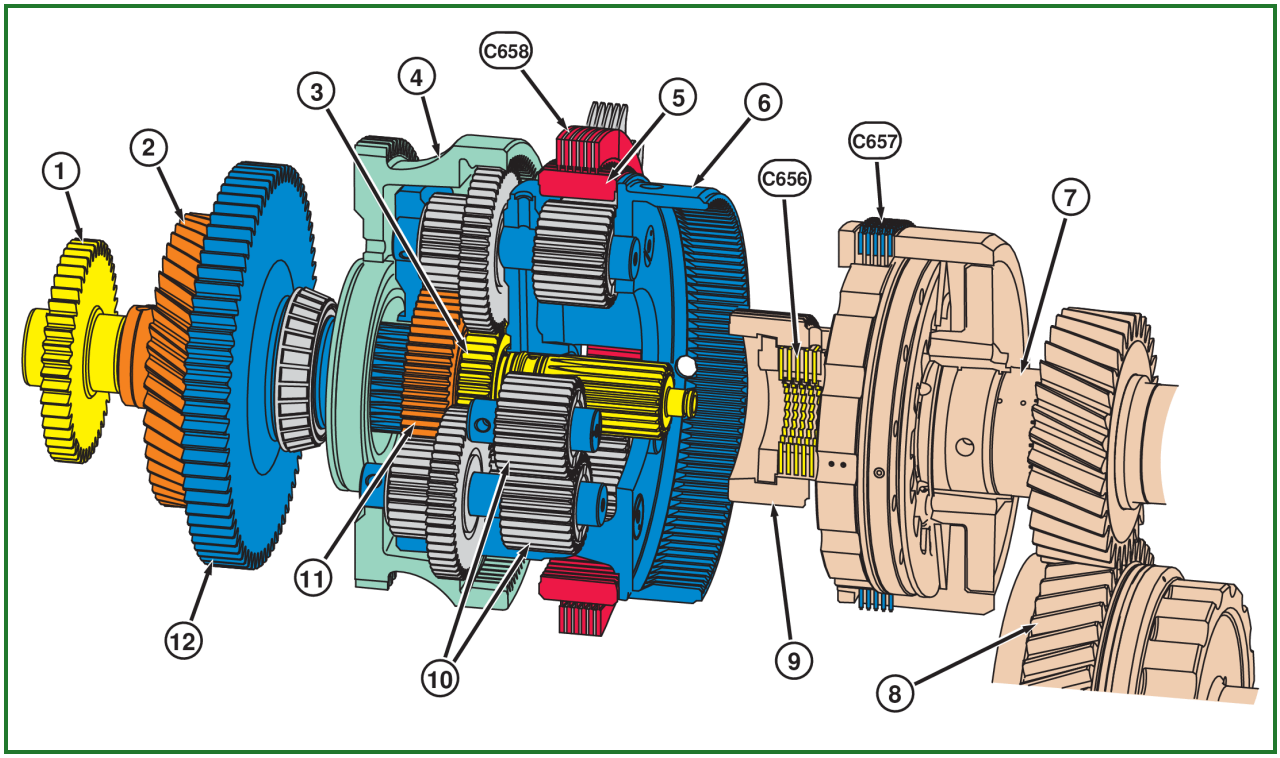
Planetary unit (1) is a compound planetary. Planetary unit also contains transmission low clutch, high clutch, and reverse brake.



RXA0132991-UN: AutoPowr™ / IVT™ planetary unit location

LEGEND:

1 - AutoPowr™ / IVT™ planetary unit (See AutoPowr™/IVT™ Transmission Mechanical Components)



RXA0132992-UN: AutoPowr™ / IVT™ planetary cutaway view

LEGEND:

C656 - High Clutch (See AutoPowr™/IVT™ Transmission Mechanical Components)

C657 - Low Clutch (See AutoPowr™/IVT™ Transmission Mechanical Components)

C658 - Reverse Brake (See AutoPowr™/IVT™ Transmission Mechanical Components)

1 - Sun gear 2 drive gear

2 - Sun gear 1 drive gear

3 - Sun gear 2

4 - Planetary ring gear

5 - Reverse ring gear

6 - Planetary carrier

7 - Planetary output shaft

8 - Transmission output gear

9 - Reverse sun gear

10 - Reverse pinion gears

11 - Sun gear 1

12 - Planetary carrier drive gear

Planetary unit input is always sun 1 gear (11), which is driven directly by the engine.

Planetary ring gear (4) is in constant mesh with RU hydro unit. Depending upon synchronizer engagement, the CU hydro unit can be connected to either sun gear 2 (3) or the planetary carrier (6) itself.

Depending on which element is engaged in transmission, output of planetary unit can be one of three different items:

- Low clutch (C657) engaged
    - Planetary carrier (6) is the output when low clutch disks (C657) lock carrier (6) to planetary output shaft (7).
- High clutch (C656) engaged
    - Sun gear 2 (3) is the output when high clutch disks (C656) lock sun 2 gear (3) to planetary output shaft (7).
- Reverse brake (C658) engaged
    - When reverse brake (C658) is engaged, reverse ring gear (5) is held stationary forcing reverse pinion gears (10) to walk around ring gear (5) and drive reverse sun gear (9) that is bolted to planetary output shaft (7).

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