

8L90 HYDRA-MATIC 8-SPEED AUTOMATIC TRANSMISSION

REFINED TRANSFER OF POWER

Designed and built by GM, the 8L90 automatic transmission offers increased efficiency and lighter weight compared to the previous 6L90 Hydra-Matic six speed transmissions. With a wide 7.0 overall gear ratio, smaller steps between gears, and numerically higher 4.56 first gear, the 8L90 (AH2R) helps keep the engine within the sweet spot of the rpm band for a greater feeling of immediate performance while making the most of its horsepower and torque to optimize performance and efficiency. Vehicle control features including Grade Braking and Driver Shift Control (TAP Shift) are available based on application needs.

STATE-OF-THE-ART TECHNOLOGIES

Efficient Design

- Up to 5% more efficient than the previous 6L90 Hydra-Matic transmission while capable of handling torque capacity up to 665 lb-ft (900Nm).
- Features four gear sets and five clutches which allows the 8L90 (AH2R) to fit the same space as the previous 6L80/6L90 family of six-speed automatics.

Adaptive Controls

- Performance Algorithm Shifting (PAS) monitors how assertively the driver is using engine output to determine at what engine speed to upshift or downshift.
- Available Driver Shift Control allows the driver to shift the transmission like a clutch-less manual gearbox.
- Available Automatic Grade Braking assists with braking on long downhill grades by initiating transmission downshifts.

Control System

- 32-bit transmission control module (TCM) monitors transmission performance and compensates for normal wear in components such as clutch plates.
- Variable Force Solenoid (VFS) control components monitor clutch pressures with optimum accuracy for quick and more precise shifts.
- Electronic controlled capacity clutch (ECCC) technology employs a small, regulated amount of slip to dampen engine pulses for a smooth-running drivetrain, especially during shifting.

Low Maintenance

- The 8L45 uses DEXRON™ High Performance Automatic Transmission fluid, which was developed to have a more consistent viscosity profile, a more consistent shift performance in extreme conditions and less degradation over time vs DEXRON™ III transmission fluid.



8L90 Hydra-Matic
Eight Speed RWD Automatic Transmission

ADDITIONAL FEATURES

- Multiple shift patterns (Selectable)
- Enhanced Performance Algorithm Shifting (PAS)
- Driver shift control (TAP Shift)
- Engine rev matching on tap downshifts
- Selectable tow/haul mode
- Engine torque management on all shifts
- Altitude and temperature compensation
- Adaptive shift time
- Reverse lockout

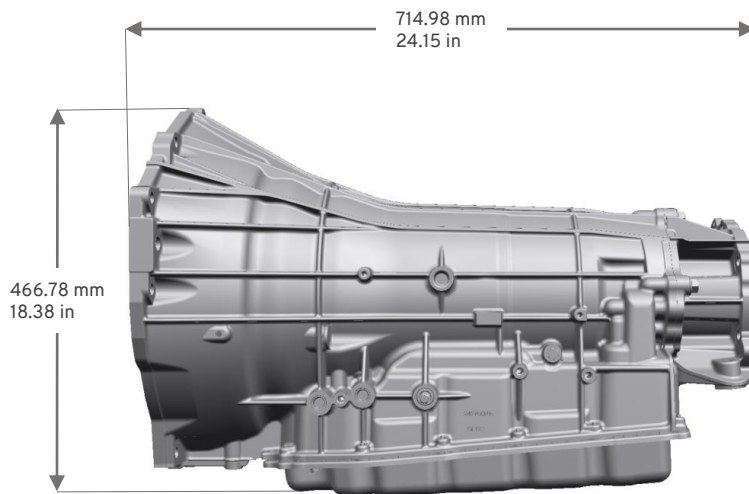
8L90 8-SPEED TRANSMISSION*

SPECIFICATIONS

Maximum engine power:	420 Hp (313 kW)*
Maximum engine torque:	460 lb-ft (624 Nm)*
Maximum gearbox torque:	665 lb-ft (900 Nm)*
Gear ratios:	N8X
First:	4.56
Second:	2.97
Third:	2.08
Fourth:	1.69
Fifth:	1.27
Sixth:	1.00
Seventh:	0.85
Eighth:	0.65
Reverse:	-3.82
Maximum shift speed	6,000 rpm
Maximum Vehicle Weights:	Up to GCVW 22,500 lbs. (10,227 kg)*

* GM Estimate

Range selector quadrants:	5 position (P,R,N,D,M) Protected for 6 position (P,R,N,D,M,L)
Case description:	2-piece main, bell integrated with main case
Case material:	Die-cast aluminum
Shift pattern:	2 on-off solenoids
Shift quality:	6 variable force solenoids. One for each clutch and one for TCC
Torque converter clutch:	Variable Force Solenoid ECCC, 2 path, turbine damper
Converter size:	258mm
Fluid type:	DEXRON™ High Performance ATF
Fluid capacity:	10.3 L (Excluding Cooler Volume)
Transmission weight:	218 lbs. (98.9 kg)
Pressure taps available:	C12345R Clutch
Assembly Site:	Toledo, OH and Silao, Mexico



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