Press Information Jan. 2003

LANCER
Evolution VIII

MITSUBISHI
MOTORS

Prologue

10 years of evolution underpin new levels of performance and driving pleasure

Mitsubishi Motors originally developed the Lancer Evolution from the production Lancer sedan as its Group-A homologation model in order to compete more effectively in the FIA World Rally Championship (WRC). Christened to indicate its role in the series lineage, the Lancer Evolution series debuted in October 1992. Known affectionately in Japan as "LanEvo" by a fast-growing number of enthusiasts, the series has gone from strength to strength with successive improvements and model changes in the 10 years since. Evolution VIII, the latest in the series, takes a further step up the evolutionary ladder with the introduction of Super AYC[1] , a 6-speed close ratio manual transmission and other cutting-edge automobile technology.

As the numeral suggests, Evolution VIII represents the eighth leap forward for the series, each generation of which has featured the latest know-how and technological advances fed back from MMC's participation in the most grueling and fiercely fought motorsport events around the world.

Through its highly successful works-team participation in the WRC, the Group-A Lancer Evolution provided the opportunity to develop advanced auto technology which MMC then fed back into the production model. Evolution has also proved its winning competitiveness as well as the outstanding reliability and durability of MMC mass production technology in Group N of the WRC, where regulations keep the rally machine much closer to the production model, as well as in the All-Japan Rally series, in gymkhanas, dirt trials, super-endurance races and other events in Japan. Evolution's ACD[2] traction-control system is now recognized as being vital to success in motorsport events in Japan. Debuting on Evolution VIII, Super-AYC also promises to establish itself as essential to success in the motorsport arena.

With its emphasis firmly on improving performance in actual competition, the incremental and on-going evolution achieved by the series has gained Evolution a wide-based following among motorsport enthusiasts. This popularity may be seen in the 85 WRC class victories chalked up by Group-N Evolutions over the last 10 years, and in the fact that Evolutions account for almost 80% of all privateer entries in the class.

Evolution VIII has been developed to bring quicker performance over a wider range of engine speeds and to raise levels of perceived driving quality over the full dynamic performance spectrum.

When MMC talks about raising levels of perceived driving quality in the Evolution series, it means ensuring the driver feels that his machine fits him like a favorite pair of driving gloves or like a bespoke racing suit. This will give him greater confidence and encourage him to drive faster with greater safety over all road surfaces. Super AYC and a 6-speed close ratio gearbox; extensive detail improvements to and tuning of engine, suspension and aerodynamics; a stiffer body and extensive reductions in weight. These all meld together in Evolution VIII to realize new dimensions of road performance and driving pleasure.

[1] *Active Yaw Control*

[2] *Active Center Differential*

Exterior

Evolution VIII's more aggressive and hi-quality exterior incorporates the defining elements of the new MMC design identity. It also features significant advances in aerodynamic and cooling performance reaped from extensive testing during development on the Nürburgring in Germany and in MMC's own advanced wind tunnel facility, as well as reflecting feedback garnered from Evolution's participation in the WRC and other grueling and exacting races. Reducing drag and lift, Evolution VIII's exterior lines give it better high-speed straight line stability and handling through corners than its predecessor. The design also achieves the increased cooling performance necessary to extract the full potential of the new model's uprated power plant and drivetrain.

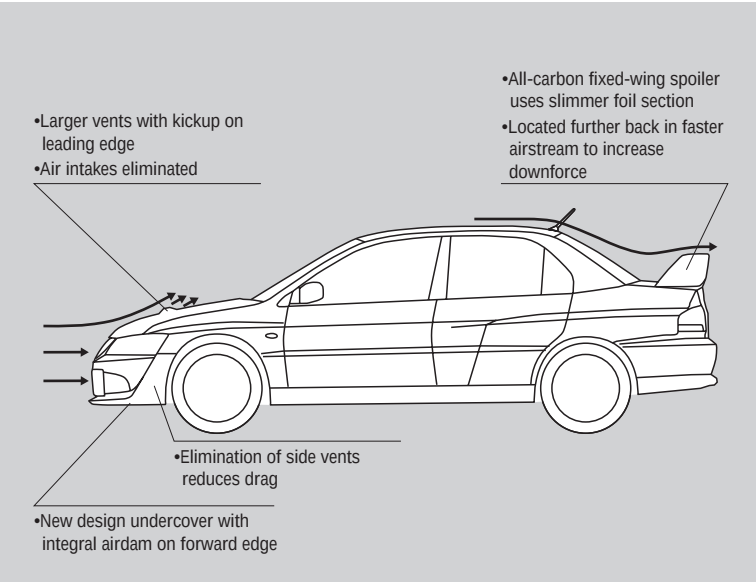
GSR

GSR

The front end is distinguished by the V-shaped nose extended 35mm at its center and with corners that have been daringly pared away. These design elements lower drag while retaining Evolution's outstanding maneuverability through corners. Stamping the new MMC design identity on the front visage is the pyramid-shape element in the center of the grill that locates the attention grabbing silver Mitsubishi 3-diamond logo and from the apex of which a ridge line appears to flow seamlessly into the engine hood.

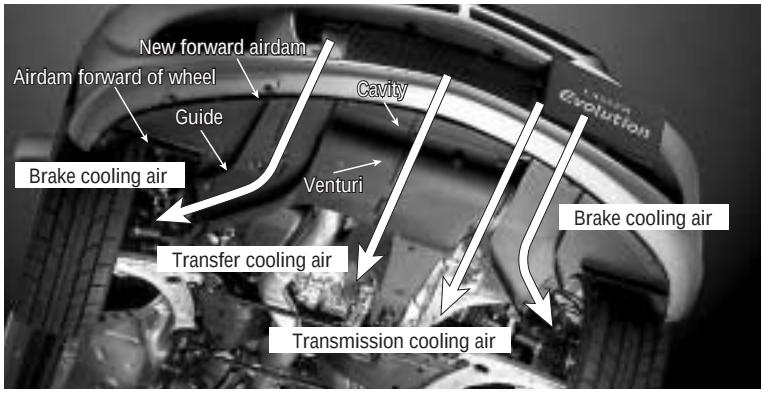
The radiator cooling air intakes in the integral grille bumper unit have been slightly reduced in size to lower drag. The hot air extraction vents in the engine hood, meanwhile, are 60% larger than on Evolution VII and with an improved heat protector design double the effective area. Extraction efficiency has also been improved by moving the vents 40mm forwards and by adding a kickup to the leading edge to generate more negative pressure. As well as reducing drag and front lift, these detail improvements also boost radiator cooling performance. The side air vents on Evolution VII have been eliminated to reduce drag and weight and to allow the hood vents to be increased to the maximum size permissible under WRC regulations.

Intercooler efficiency, which translates directly into engine performance, has been boosted with a 10% enlargement of the mid-bumper air intake. The engine oil cooler air intake located under the right end of the bumper has been redesigned as a duct to promote a smoother flow of air and improve oil cooler efficiency at higher driving speeds. This has enabled the oil cooler side air vent to be eliminated, further reducing drag. Not required for cooling purposes, the opening under the left end of the bumper has been closed off, resulting in a further reduction in drag and front lift.

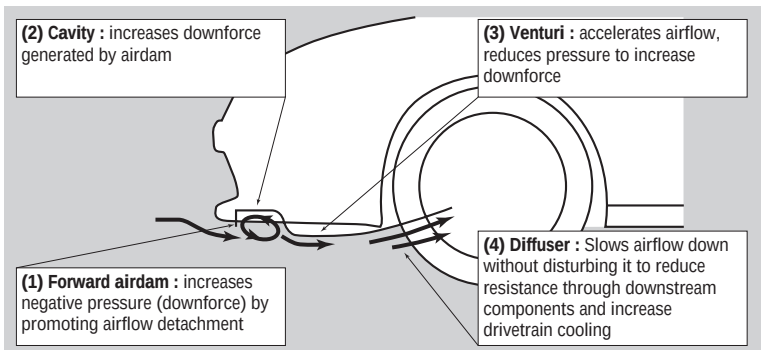


Improvements in aerodynamics and cooling performance

The engine undercover design has been optimized to realize a significant increase in downforce without impacting its drag reducing effectiveness. The addition of an airdam on the leading edge of the undercover, complementing the airdam already in place forward of the wheels, increases negative pressure. Downforce is further boosted by the provision of a cavity, in the undercover molding immediately behind the airdam, that serves to increase the negative pressure generated by the airdam. The addition of a venturi tunnel directly behind the cavity accelerates the flow of air under the car and boosts downforce further, particularly at higher vehicle speeds. Evolution VIII also features a new diffuser which, fitted downstream of the venturi tunnel, directs cooling air onto the drivetrain. The diffuser reduces air resistance in the components downstream of it by slowing down, without disrupting, the flow of air accelerated by the venturi tunnel, and improves brake cooling at the same time. The new model retains the brake cooling air ducts fitted on its predecessor. By optimally controlling air pressure and air flow in the very small area presented by the front overhang, Evolution VIII realizes significant advances in aerodynamic and cooling performance.



Undercover with venturi and diffuser



Section through middle of undercover (side view)

The rear spoiler uses carbon fiber-reinforced plastic for both horizontal and vertical components – a world-first on a 4-door production sedan. Suggestive of the vertical tail wing on a jet fighter and body color keyed on its outboard surfaces only, the spoiler's functional and zippy design identifies Evolution VIII at a glance. Exploiting to the full the low mass, high strength and rigidity of CFRP, the spoiler is stronger and stiffer than the aluminum spoiler fitted to Evolution V and VI and is lighter than the ABS plastic spoiler used on Evolution VII. With its optimized section, the horizontal aerofoil is some 60% slimmer than its predecessor and has been moved 58mm rearward into an area where the airstream is faster. On its own, the spoiler generates 1.7-times more downforce than its predecessor (with horizontal wing at the factory setting of 0-degree attack angle) but incurs no extra drag penalties.

To comply with WRC regulations and to reduce weight further, the spoiler uses a fixed-attack angle horizontal wing in place of the adjustable angle wing on its predecessor. This, and the use of CFRP, has reduced spoiler weight by some 2kg.

These advances in aerodynamics realize a significant reduction in overall lift and improvement in high speed handling stability as well as improving the balance between front and rear aero characteristics. Evolution VIII also boasts a coefficient of drag that is 0.01 slippier than VII.

The GSR trim level is available, as a factory-fitted option, with privacy glass for the rear doors and rear window. New on VIII, smoke-finish headlamp extensions add to Evolution's fearless and determined facial expression. GSR comes with high-intensity discharge (HID) Xenon head (low-beam) and fog lamps as standard. Serving to unify the front and rear designs and to add a classy touch to the rear view, the rear combination lamps also use clear lenses and smoke-finish extensions.

Interior

Evolution VIII uses an off-black color scheme and the strategic placement of dark titanium-finish panels to create a taut and spartan interior space that fully supports the new heights of sporty performance and driving pleasure to which it takes driver and occupants.

GSR (Audio system is dealer-fitted option)

GSR (Audio system is dealer-fitted option)

The flat dashboard ornamentation is finished in blue to coordinate with the seat upholstery. The dark titanium-finish center panel supports 2DIN and 1DIN audio systems on GSR and RS trim levels respectively.

The instrument panel locates the tachometer in the center and uses the same full-scale 270 km/h speedometer as the North America market Evolution VIII.

Evolution VIII retains VII's 3-spoke Momo steering wheel but uses black instead of blue stitching in the leather trim. The shifter, shifter boot and parking brake grip all use the same black-stitch leather trim.

The shifter features a smaller spherical design that enhances operability when the driver is wearing racing gloves. To reduce the possibility of hand injury in fast-action sports driving, the knob is made of a softer plastic and covered in genuine leather. On 6-speed close ratio gearbox models, the shift gate plate is embellished with the Evolution logo made from the same CFRP material as the rear spoiler.

Recaro bucket seats locate driver and front passenger securely while delivering fatigue-free comfort on longer trips. While retaining their basic shape, for Evolution VIII the seats use slim-line bolsters that improve fit

and comfort without compromising the superb location and support the seats provide. The bolsters are upholstered using the same Silkweave™ fabric as Evolution VII with its outstanding grip, moisture-absorption and other functional properties. The squab and back support, meanwhile, use a lustrous blue mesh-look knit fabric with a distinctive high-grip dimple-finish that performs as well and it looks.

270 km/h full-scale speedometer and other gauges

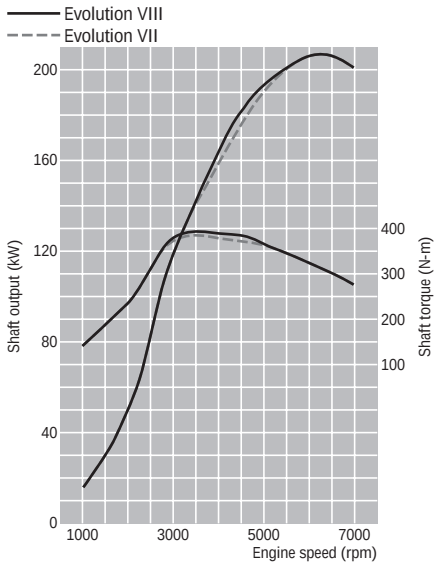
Leather trim shift knob with carbon logo plate

Engine

Evolution VIII is powered by an improved version of the 2-liter in-line 4-cylinder 16-valve DOHC intercooler-turbocharged 4G63 engine that boasts unmatched levels of maturity and refinement stemming from its impressive under-the-gun track record.

2.0-liter 16-valve DOHC intercooler-turbocharged 4G63 engine

Engine performance curves



Engine specifications

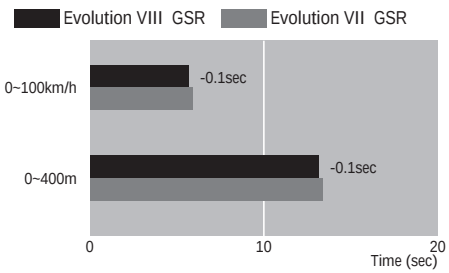
	Evolution VIII	Evolution VII
Type	4G63	←
Displacement (cc)	1997	←
Bore x stroke (mm)	85 x 88	←
Compression ratio	8.8	←
Type of fuel	Unleaded premium gasoline	←
Red zone (rpm)	7000	←
Max torque [Nm (kgfm) / rpm]	392 [40.0] / 3500	383 [39.0] / 3500
Max output [kw (PS) / rpm]	206 [280] / 6500	←
Emissions conformity	Japan Y2000 regulations	←

The powerplant now generates class-topping torque of 40.0kg-m/3500rpm, the result of optimizing the supercharging characteristics of the twin-scroll turbocharger to increase boost pressure to 40mm Hg around peak torque. The flat 3000rpm-to-5000rpm torque band that has always been the 4G63's trademark is now gutsier that ever. To cope with the higher torque, cooling performance has been improved by uprating the water pump capacity and by enlarging the water passages in the turbocharger. Engine durability and reliability have also been improved by uprating the aluminum pistons and forged steel con rods. These detail improvements realize an engine that combines competition-ready but street-friendly power with outstanding durability.

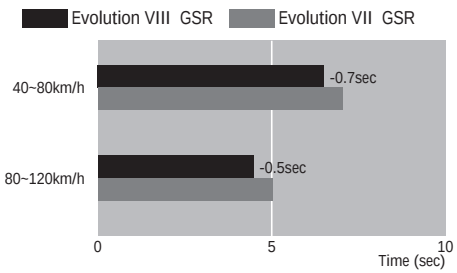
Measures taken to reduce weight in the engine include the use of a thinner wall gauge in the front-mounted exhaust manifold, cutting its weight by 1.2kg, and the use of aluminum for the air conditioner brackets, reducing their weight by 30%. The valve springs are almost 50% lighter after a change in shape, while the valve spring tensioners are almost 75% lighter after switching to aluminum and shape optimization. This weight reduction in the valvetrain has lowered moment of inertia and, with the reduced valve spring load, friction. The switch to an aluminum pulley hub has reduced rotational inertia in the crankshaft assembly. Totaling 2.5kg on models fitted with air conditioning, the reduction in powerplant weight contributes to better vehicle response by lessening the load at the front of the vehicle as well as by lowering the center of gravity and reducing engine roll inertia.

Evolution VIII models use the same fuel tanks as fitted to the North America market series. At 55 liters, the GSR gets a 7-liter increase to extend its cruising range; while at 50 liters, the RS gets just 2 liters more in view of weight and motorsport minimum range considerations.

Acceleration from standing start
(measured in-house)



Acceleration while overtaking
(measured in-house)



Transmission

Standard on the GSR, Evolution VIII uses a 6-speed close ratio gearbox to maximally utilize the extra torque generated by the uprated 2-liter 16-valve DOHC inter-cooler turbocharged 4G63 powerplant. With the motorsport competitor in mind, the RS comes with a 5-speed manual gearbox as standard and is available with 6-speed gearbox and 17-inch wheels as factory-fitted options.

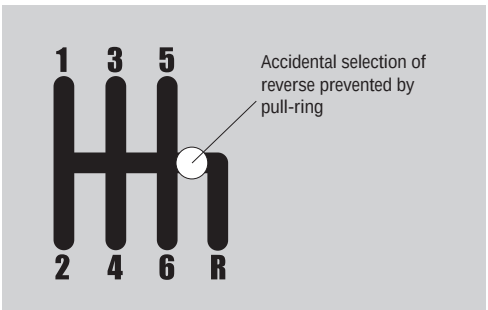
The gear ratios on the 6-speed gearbox have been carefully chosen to match power and torque characteristics and driver requirements. 1st gear is virtually the same as on Evolution VII GSR's 5-speed manual transmission with its bias on acceleration from rest. 2nd to 4th gears follow closely those on Evolution VII RS's race-proven super-close ratio box to give outstanding acceleration in the intermediate speed range and are carefully matched for seamless shifting and response. 5th gear is slightly lower than on the VII RS, which was chosen to provide the optimum match with gears 2 to 4. Higher than 5th on VII RS, Evolution VIII's 6th gear supports all-out race circuit performance.

Transmission specifications

		6M/T (GSR, RS)	5M/T (RS)
Type		W6MAA	W5M51
Gear ratios	1st	2.909 [13.332]	2.785 [12.613]
	2nd	1.944 [8.910]	1.950 [8.832]
	3rd	1.434 [6.572]	1.444 [6.540]
	4th	1.100 [5.041]	1.096 [4.964]
	5th	0.868 [3.978]	0.825 [3.736]
	6th	0.693 [3.176]	—
	Rev	2.707 [12.406]	3.416 [15.471]
Final reduction ratio		4.583	4.529
Front differential size		#4.2	←
Center differential size		#6.1	←

The 6-speed gearbox utilizes the 4G63 power unit's flat and gutsy 3000 rpm - 5000 rpm torque band to maximum effect to deliver better overtaking acceleration: bettering Evolution VII's 4th gear 40-80km/h time by 0.7 seconds (measured in-house). While the slick-shift close ratio gearbox boosts acceleration, 6th gear also stretches fuel consumption to see Evolution VIII returning 9.7 km/l in the Japanese 10-15 urban mileage test, an improvement of 0.1km/l over VII.

The 6-speed gearbox retains the same shift stroke as VII's well-proven 5-speed transmission. Other features contributing to the slick and positive shifting action include the addition of triple-cone synchronizers on 1st and 2nd gears, a shift stroke stopper and the use of stiffer cable bushes. A pull-ring mechanism prevents accidental selection of reverse gear.



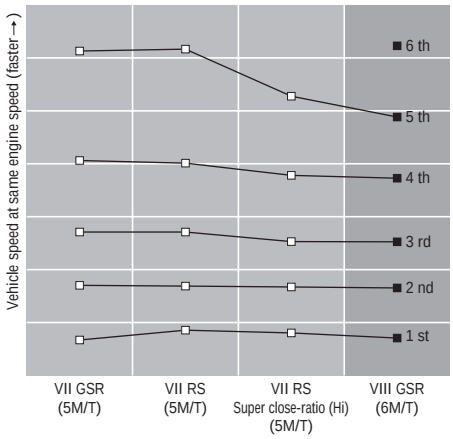
Shift pattern

Improvements to the clutch assembly include the use of a wide-angle clutch torsion damper to reduce rattle and noise, while optimization of the clutch cover leverage realizes better release at high engine speeds.

For Evolution VIII, the 5-speed manual transmission offered on some RS models now uses a super-close ratio gearbox as standard. To accommodate the higher torque loads, transmission assembly durability and stiffness have been uprated by switching to stronger materials for some of the gears and by reinforcing the casing.

As on the 6-speed transmission, the 5-speed gearbox uses triple-cone synchronizers on the 1st and 2nd gears for improved shifting feel. It also uses a double-cone synchronizer on reverse gear to lighten shifting effort.

Comparison of vehicle speed for same engine speed



All-wheel Control System

Since its introduction, Mitsubishi's all-wheel control system – comprising ACD, AYC and Sports ABS[3] – has helped elevate Evolution's road performance to new levels. Debuting on Evolution VIII, the new Super AYC now realizes significant improvements. Tuning of the ACD and other components in the system has been optimized on the basis of feedback garnered from Evolution VII's participation in the motorsport arena. As a result, this latest version of MMC's AWC system delivers enhanced traction and handling control in on-the-limit driving whether in gymkhana or race circuit competition, or in sporty driving on the open road.

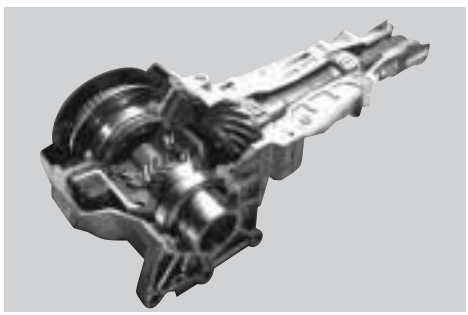
AYC operates to increase or decrease body yaw, without detracting from front tire traction, using a torque-transfer differential to create a differential in the right and left rear wheels. Used for the first time in the series on Evolution IV, AYC has undergone detail improvements over the years. Although successfully increasing cornering limits by reducing understeer, AYC has come under criticism in some quarters for not transferring enough torque to match the increased power outputs of the latest Evolution models when shod with high-grip tires and driven on race circuit or other high-friction surfaces.

Responding to this, MMC developed and now introduces Super AYC after carefully calculating torque transfer requirements under simulated race conditions. Switching from the use of a bevel gear to a planetary gear differential, the new unit is able to transfer twice the torque of the current AYC.

Super AYC's ability to transfer more torque between the rear wheels further reduces understeer while the larger yaw moments it can induce extend Evolution's cornering limits. In-house skid pad testing of constant radius cornering performance under gentle acceleration has shown that Super AYC extends Evolution's cornering limit by 10% over the current AYC system.

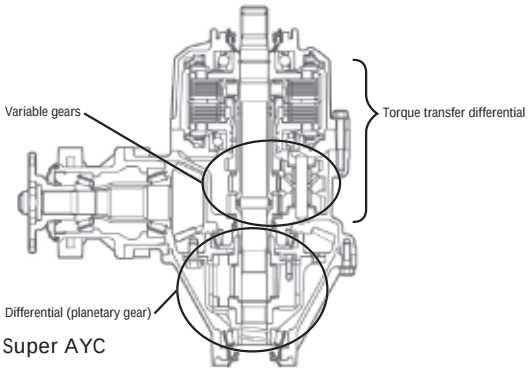
Super AYC also acts like a limited slip differential by increasing inside wheel traction in race circuit and other high speed cornering situations, thereby preventing the wheel slip that can occur with the current system due to its smaller torque transfer capacity.

[3] *Anti-lock Braking System*

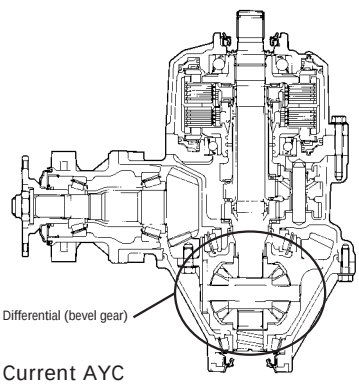


ACD

Super AYC

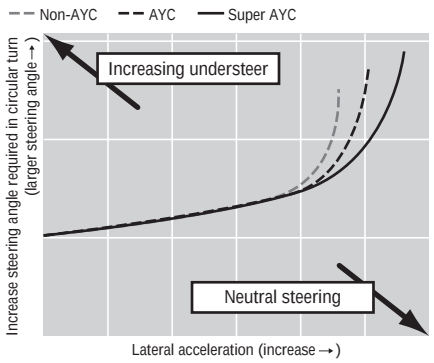


Super AYC

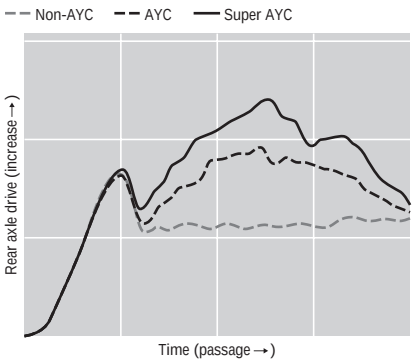


Current AYC

Cornering under gentle acceleration



Traction



To extract and realize its full potential, Super AYC underwent an extensive proving program on prototype vehicles at Nürburgring in Germany, as well as other testing to simulate competition driving. As a result, and accompanied by tuning optimization of the ACD and other system components, on Evolution VIII the AWC system is tuned with greater bias toward vehicle behavior (feed-back control) than to driver input (feed-forward control), thereby enabling higher cornering speeds in on the limit driving and better linearity under partial throttle.

Evolution VIII's AWC system now stretches the cornering envelope further while retaining the vehicle's natural, driver-friendly handling and behavior characteristics at all speeds and over all surfaces.

Since Evolution VII, AWC has featured automatic switching between three modes – Tarmac / Gravel / Snow – to enable quicker and optimum control response for changes in road surface. For Evolution VIII, each mode has been tuned as follows.

In Tarmac mode, the AWC system is tuned to extract Super AYC's potential to the full to make the vehicle more competitive on dry surfaces. Super AYC and ACD control is feed-forward compensated for driver inputs to realize better linearity and feed-back compensated for vehicle behavior, this optimized for different speed bands, to improve straight-line stability. The result is vehicle behavior that is more predictable and corresponds faithfully to the driver's intentions and expectations.

In Gravel mode, the system is tuned to deliver the optimum balance between drive and steering traction – so important on wet surfaces. Compared with Tarmac mode, Super AYC and ACD feed-back gain is increased to improve traction and stability, while Super AYC provides less turning assist to deliver cornering characteristics appropriate for wet surfaces.

In Snow mode, system bias is tuned for greater stability and thus make the vehicle more competitive over snow-covered surfaces. Super AYC and ACD control bias is tuned for greater stability than in the Gravel mode, while Super AYC delivers an appropriate degree of turning assist. As a result, the system promotes competition levels of sporty driving over snow.

Evolution VIII RS is fitted with ACD only, with each mode specifically tuned to make RS significantly more competitive in rally, dirt track, gymkhana and other events.

Tarmac mode targets gymkhana and dirt-surface rally competition. ACD control has a driver input bias to ensure high levels of steering and wheel traction and thereby improve controllability in on the limit driving.

Gravel mode targets rally driving over gravel surfaces and dirt trial competition. ACD control bias is tuned for better control in drift cornering and to deliver maximum drive traction with linear characteristics – the major edge offered by the system. In this mode, driver input control gain is increased to promote intended

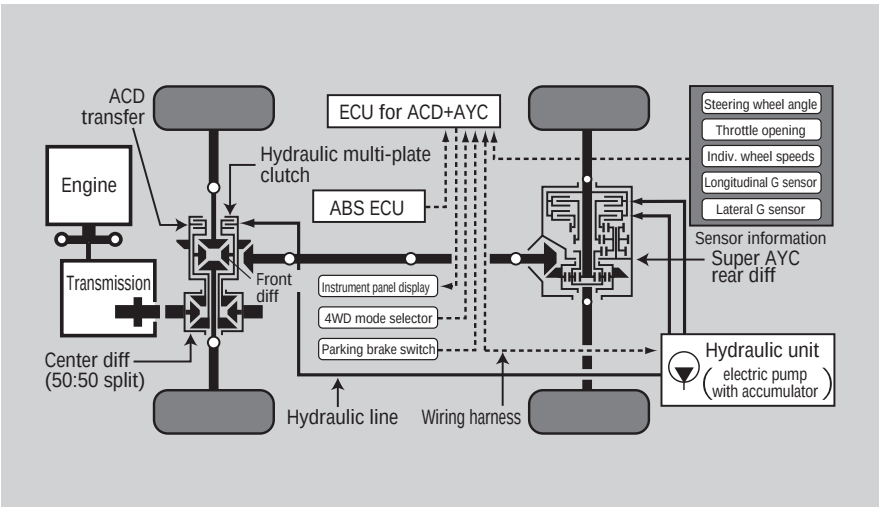
behavior and handling characteristics, making the vehicle more competitive.

Snow mode targets rally and trial competition over snow-covered surfaces. In view of the greater intensity of driver input under these conditions, ACD control bias is tuned for vehicle behavior to realize outstanding controllability no matter how tough the going gets.

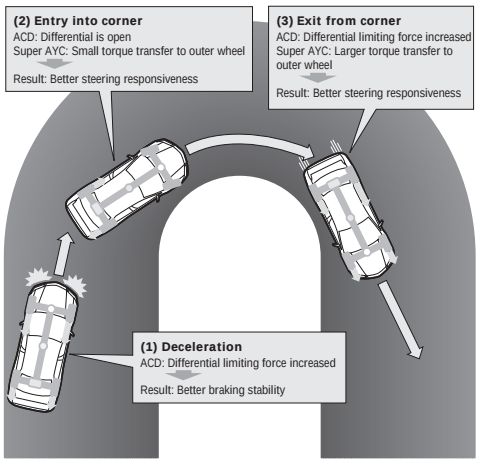
Main improvements to Super AYC & ACD control

To realize better linearity under partial throttle acceleration while raising on-the-limit speeds, system control tuning is biased more to vehicle behavior than driver inputs

	GSR, RS (with Super AYC)	RS
TARMAC	Bias is on linearity as AWC system extracts Super AYC's full potential to increase competitiveness on dry surfaces	Bias tuned for driver input, promoting vehicle control and competitiveness on tramac surfaces.
GRAVEL	Bias on optimum balance between drive and steering traction to realize improved stability on wet surfaces	Bias tuned for more linear drive traction, promoting control in drift cornering to make vehicle more competitive over loose surfaces.
SNOW	Bias on handling responsiveness with ACD improving stability while Super AYC provides appropriate degree of turning assistance to make vehicle more competitive on snow-covered surfaces	Bias tuned for vehicle behavior, promoting control to make vehicle more competitive over snow-covered surfaces.



All-wheel drive schematic

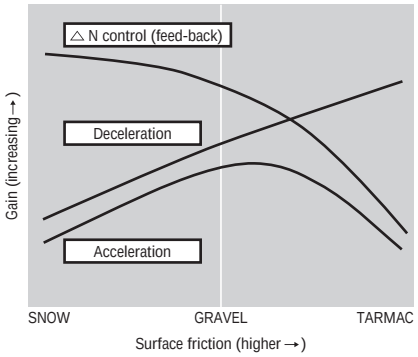


	ACD	Super AYC
(1) Deceleration (approaching corner)	Decreases clutch slippage in proportion to deceleration to improve stability	Transfers drive torque to inner wheel to reduce tuck-in when cornering under deceleration.
(2) Entering corner	Increases clutch slippage to improve steering response	Transfers drive torque, matched to angle and speed of steering inputs, to outer wheel to improve steering responsiveness.
(3) Exiting corner	Decreases clutch slippage in proportion to throttle opening to improve traction	Transfers drive torque, matched to throttle opening, to outer wheel to reduce throttle-induced understeer and improve cornering.

Integral management of ACD & Super AYC systems

ACD control mode strategies

- **△N control (feed-back)**
  Operates like a VCU
  More gain improves traction and stability
- **Under acceleration (feed-forward)**
  Increases differential limiting force in line with throttle opening
  More gain improves traction
- **Under deceleration (feed-forward)**
  Increases differential limiting force in line with rapidity of deceleration
  Increased gain improves stability



Optimized tuning of 3 modes for type of surface

As on its predecessor, stopping power on Evolution VIII is provided by Brembo 17-inch ventilated discs with 4-piston calipers at the front and 16-inch ventilated discs with 2-piston calipers at the rear.

Brembo 17-inch ventilated disc 4-piston caliper front brake

Brembo 16-inch ventilated disc 2-piston caliper rear brake

MMC's Sports ABS uses a steering wheel angle sensor to detect steering input. The computer uses this information to regulate braking force at each wheel independently and improve steering performance under braking. The system also incorporates MMC's EBD (Electronic Brake Force Distribution) system which apportions braking force optimally between front and rear wheels. Under hard braking, EBD operates to reduce the load on the front wheels by apportioning more braking force to the rear wheels, thereby reducing fade. Tailoring brake force distribution to road surface and vehicle load conditions, EBD delivers more stable and consistent braking performance under all conditions.

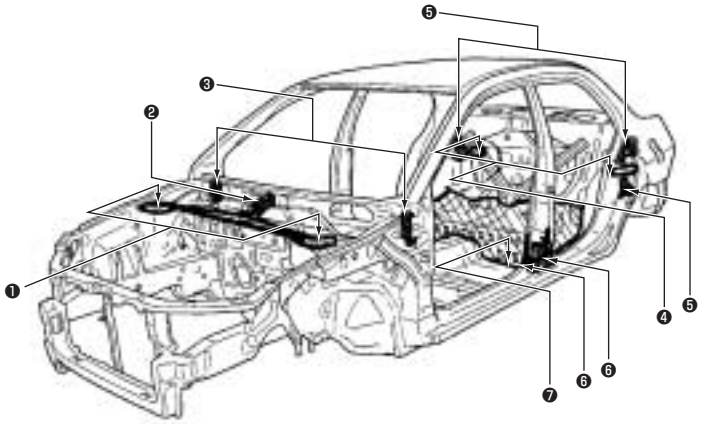
Body

To improve handling stability and perceived driving quality over its predecessor, Evolution VIII's body underwent an exhaustive program to increase structural strength and stiffness efficiently and effectively, pinpointing those areas giving the largest gain in strength for the smallest increase in weight.

The upper and lower body join, a major factor in overall torsional stiffness, has been strengthened with the addition of large reinforcements to inner and outer panels at the bottom of the center pillar. For Evolution VIII, the front deck crossmember attachment point reinforcement at the foot of the A-pillar on the driver's side is complemented by a similar reinforcement on the passenger side. Body panel joins have been strengthened with the addition of reinforcements at the top of the front strut tower and on the upper and side surfaces of the rear wheel house and by increasing the number of spot welding points. Suspension mounting stiffness has also been uprated by strengthening the middle of the strut tower bar and its point of attachment to the body.

Producing significant increases in body strength and stiffness, these reinforcements tangibly improve perceived driving quality. Specifically, Evolution VIII carves the intended line more precisely, feels more stable on the road right up to the fastest speeds and delivers more linear and consistent response to driver inputs. Overall, these improvements make vehicle behavior more predictable and closer to that intended. Perceived driving quality has also been enhanced by reducing distracting vibration in the floor and steering assembly, ensuring that the driver receives only the feedback he needs and helping to make him feel more at one with his car over the whole gamut of driving situations.

High rigidity body



Body structure

❶Front suspension attachment point strengthened

❷Strut tower attachment point strengthened

❸Front deck crossmember attachement point strengthened

❹Rear suspension attachment point strengthened

❺Area surrounding rear suspension attachment point strengthened

❻Stiffness at bottom of center pillar increased

❼Rear floor panel shape revised

Chassis

Complementing the stiffer body, detail optimization of Evolution VIII's MacPherson strut front and multi-link rear suspension results in better on the limit handling stability and perceived driving quality over the full performance range.

The use of thicker rods in the rear shock absorbers improves damping response and steering linearity. Damping rates in both front and rear shock absorbers have been optimized to improve responsiveness and damping and increase the tire footprint.

The rear axle fastening bolts have been redesigned to boost camber stiffness, thus improving responsiveness and making it easier to keep the vehicle on the intended travel path.

MacPherson strut front suspension

Multi-link rear suspension

GSR and 6-speed gearbox RS models ride on ADVAN A046 235/45ZR17 tires which use a high-grip compound and are built with a very stiff carcass.

The GSR trim level rides on ENKEI 6-spoke 17-inch spun-rim alloy wheels. After casting, the rims are subjected to a heating and spinning process that produces a flowing and fibrous metallic structure similar to that of a forged wheel. Enabling a thinner rim gauge while retaining the necessary strength and rigidity, use of this process cuts the weight of a set of wheels by 3.2kg. The reduction in unsprung weight contributes to improved dynamic performance.

The 5-speed manual gearbox RS retains the 205/65R15 94H tires and 15-inch steel road wheels of its predecessor. The wheels and tires fitted to the GSR are available as a factory-fitted option.

235/45ZR tires on 17-inch alloy wheels

205/16R tires on 15-inch steel wheels

Weight reduction

Evolution VIII achieves further advances in weight reduction over VII, particularly in the front end, upper body and the unsprung weight – areas that contribute most to handling stability. For similar equipment levels and fuel load, the new GSR comes in at virtually the same weight as its predecessor despite the 10kg increase ensuing from the introduction of the 6-speed transmission.

Serving as the base model for competition use, the 5-speed RS model also features significant reductions in weight as the result of eliminating the front passenger airbag and other rationalization of equipment, trim and sound insulation specifications. The seat belt pretensioners are configured to activate earlier to assure a similar level of crashworthiness as its predecessor. For a similar fuel load, the new RS weighs in 20kg lighter than the Evolution VII RS with ACD.

Weight reductions and changes over Evolution VII (kg)

	GSR	RS(5M/T)
Engine & drivetrain	−3.5	−3.5
Carbon rear spoiler	−2.0	−2.0
Alloy wheels	−3.2	–
Thinner gauge sheet (roof, trunk lid)	–	−1.0
Equipment rationalization	–	−13.0
Total weight reduction	−8.7	−19.5

Theft prevention

In response to the growing number of Lancer Evolution thefts in recent years, Evolution VIII features an uprated anti-theft specification. All models come standard with a vehicle immobilizer system that requires the use of a pre-coded key to start the engine. GSR models are also available with a dealer-fitted car alarm that goes off when the door locks are opened by any means other than the keyless entry system.

Engine immobilizer

Multi-mode keyless entry system

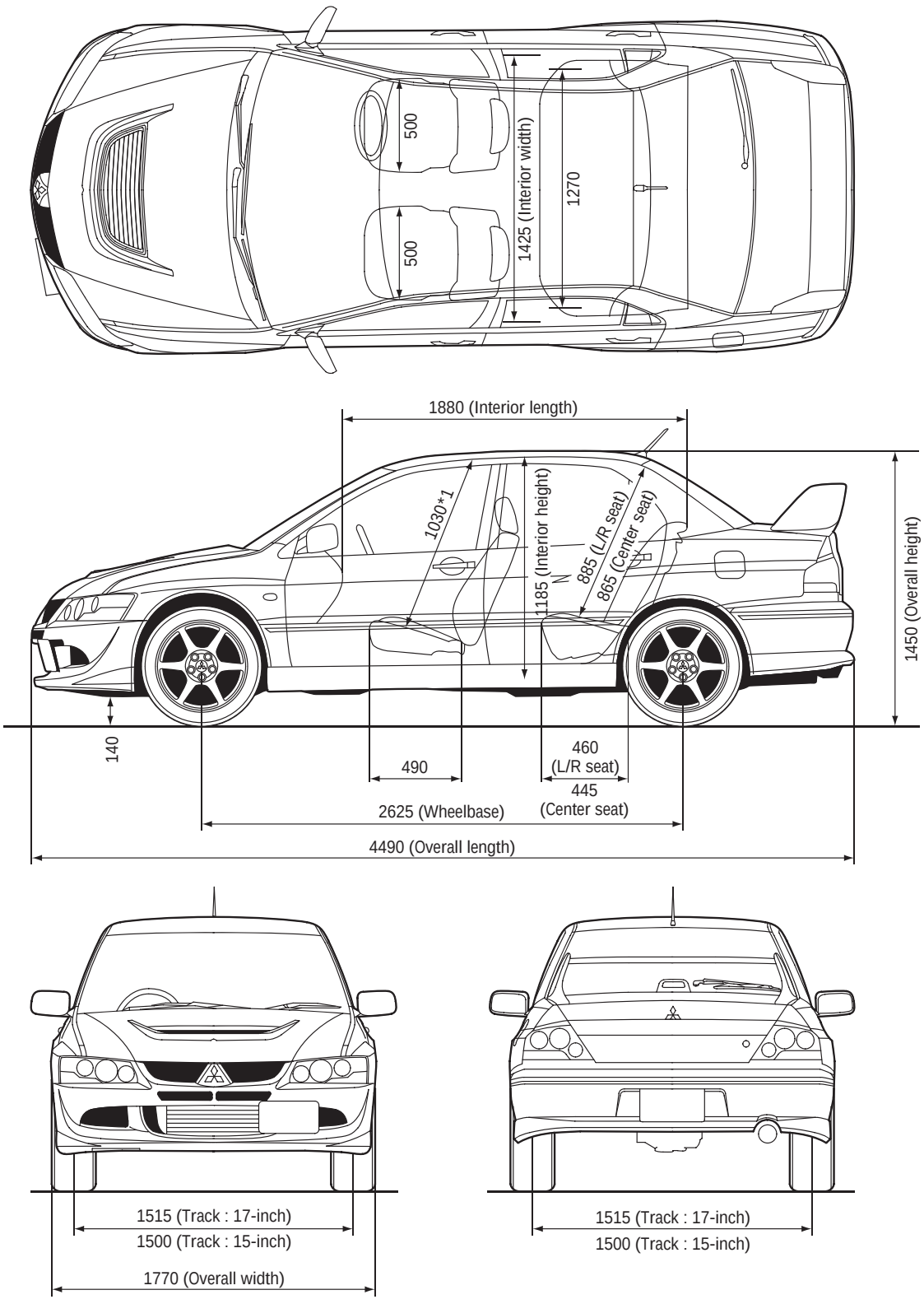
Principal Specifications

Drive mode		Full Time 4WD			
Model code / Designation		Mitsubishi GH-CT9A			
		SJGFZ	SJDFZ	SNDFZ	
Trim level		2000 DOHC 16-valve Intercooler Turbo			
		GSR	RS		
		6-speed manual		5-speed manual	
Dimensions & weights					
Overall length (mm)		4490			
Overall width (mm)		1770			
Overall height (mm)		1450			
Wheelbase (mm)		2625			
Track (mm):	Front	1515		1500	
	Rear	1515		1500	
Min ground clearance (mm)		140			
Interior length (mm)		1880			
Interior width (mm)		1425			
Interior height (mm)		1185			
Vehicle weight (kg)		1410	1350	1320	
Passengers		5			
Performance					
Minimum turning radius (m)		5.9			
Fuel consumption (km/l) 10-15 mode (Confirmed by Ministry of Land, Infrastructure & Transport)		9.7		9.6	
Fuel economy management		–			
Engine					
Type		4G63 Turbo			
No. of cylinders / valvetrain		In-line 4 / 16 valve DOHC			
Bore x stroke (mm)		85.0 x 88.0			
Displacement (cc)		1,997			
Compression ratio		8.8			
Max. output (net) [kW/rpm]		206[280PS]/6500			
Max. torque [Nm/rpm]		392[40.0kg-m]/3500			
Fuel delivery		ECI-MULTI electronic fuel injection			
Type of fuel		Unleaded premium gasoline			
Fuel tank capacity (liters)		55	50		
Transmission					
Type		6-speed manual		5-speed manual	
Gear ratios	1st	2.909		2.785	
	2nd	1.944		1.950	
	3rd	1.434		1.444	
	4th	1.100		1.096	
	5th	0.868		0.825	
	6th	0.693		–	
	Reverse	2.707		3.416	
Final reduction gear ratio		4.583		4.529	
Running gear					
Steering		Rack & pinion (with power assist)			
Suspension	Front	MacPherson strut			
	Rear	Multi-link			
Brakes	Front	Ventilated disc			
		17-inch		15-inch	
	Rear	Ventilated disc			
		16-inch		15-inch	
Tires		235/45ZR17		205/65R15 94H	

Environmental specification

Vehicle specification	Model code	Mitsubishi GH-CT9A		
	Engine	G4G63 Turbo		
	Transmission	6-speed manual		5-speed manual
	Drive mode	4WD		
Emissions	Conforming regulations	2000 Japanese Emissions Regulations		
	Regulated levels: (10-15 urban driving) NOx (g/km)	0.08		
	Regulated levels: (10-15 urban driving) HC (g/km)	0.08		
	Regulated levels: (10-15 urban driving) CO (g/km)	0.67		
	Regulated levels: (10-15 urban driving) Particulate matter (g/km)	–		
Greenhouse gases	CO_2 emissions:(10-15 urban driving; g/km)	243		246
	HFC134a refrigerant (g)	550		
Ozone layer destroyers	CFC	None used		
External noise	Noise under acceleration (dB-A)	76		
Environment loading substances	Lead (vs 1996 level)	< 1/3		
	Mercury	Minute amounts used in models fitted with HID headlamps, shift gate panel logo, LED display		None used
	Sodium azide	None used		
Recycling	Parts using easily recyclable materials	Hood weather strip, bumpers, dash panel, interior trim		
	Code-marking of plastics	Yes		
	Parts using recycled materials	Air-cleaner case, air ducts, sound proofing and exclusion materials		

4-aspect exterior dimensions (mm)



Overall height measured to roof antenna base *1 : Recaro bucket seat models = 1030. Sports seat models = 980