This press information accompanied the UK launch of the Supra Turbo, an extension of the third generation Supra range, in 1989. Details of the model's history can be tracked using the Timeline feature on the Supra archive web page. More information about the Supra range can be obtained from the Toyota press office.

TOYOTA

TOYOTA SUPRA TURBO

Toyota's newest and fastest sports car - the Supra Turbo - which made its first appearance at October's International Motor Show, went on sale in Toyota dealerships on January 11th, 1989.

Probably the fastest Japanese car available in Britain, it is based on the successful three litre, straight six, 24 valve normally aspirated Supra which was launched in Britain in July, 1986, but the Supra Turbo has an even more powerful 232 bhp turbocharged engine and several detail improvements for easier driving, greater comfort and even better handling. It will reach 153 mph and takes around six seconds to show 60 mph on the speedometer.

The Supra Turbo joins the Toyota range alongside the familiar fuel injected and normally aspirated car and will be available with manual or automatic transmission and leather trim only. The original Supra concept of a fast and luxurious muscle car combining comfort, high levels of equipment, plenty of luggage space and real grand touring capabilities has been taken a stage further with the Turbo version offering even more enjoyable motoring with enormous reserves of power. The manual version costs £22,060; the automatic, £22,961 inclusive of Car Tax and VAT.

Externally, the biggest changes are found at the front and rear. The one piece rear spoiler is replaced by a new three piece spoiler which blends perfectly with the lines of the body. The nose of the car looks more purposeful than ever with a redesigned front bumper and grille arrangement, a lower and bigger air intake area, a deep and more aerodynamic front spoiler and new fog lights. For better visibility, more rigid wiper arms at the front have been lengthened and the rear screen wiper has been modified so that it parks in the vertical position and can be defrosted by the action of the heated rear window.

PRESS INFORMATION

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Under the bonnet, the standard 201 bhp 7M-GE engine is fitted with a turbocharger with an air-cooled intercooler for a 15.3 per cent boost in power to 232 bhp at 5,600 rpm. Torque is increased by 35 per cent to 253.7 lb ft at 3,200 rpm. This turbocharged Supra engine is designated the 7M-GTE and uses an air cooled intercooler to cool the hot intake air for higher intake efficiency. Instead of a conventional vane-type air flow meter, an optical Karman-vortex air flow meter is incorporated. The pattern of the Karman vortex produced by the vortex generator in the air flow meter is measured and used to calculate the air flow volume. The advantages are: quick response and accurate measurement of the air flow to maintain the optimum air fuel ratio; a simpler air intake assembly for less intake resistance; and a unit which is compact and lightweight.

The Supra Turbo uses distributorless ignition and a heavier duty clutch to cope with the increased power and torque. The total spring load of the clutch is increased but to avoid a heavier clutch pedal, a pull-type clutch cover is fitted with a reversed (compared with the non-turbo Supra) diaphragm spring giving a greater release lever ratio. Clutch operation is therefore smooth and light.

Like the Celica GT-Four introduced last year, the Supra Turbo is fitted with a three-way catalytic converter to give "clean" exhaust emissions and will therefore run on unleaded fuel only. Braking is by ventilated discs and an anti-lock (ABS) system and suspension is by double wishbones with double acting, hydraulic dampers. A new electronic power steering system is used with a speed sensing hydraulic reaction mechanism giving an even lighter feel at very low speeds and a better and more responsive feel as speed increases.

The Supra has always been recognised as being comprehensively equipped and offering exceptional value for money - especially when compared with other high performance coupes on the market. This full specification is carried over to the Supra Turbo with air conditioning, cruise control, central locking, electric windows, mirrors and power seat adjustments and even heated door mirrors.

Background

The Toyota Supra introduced into Britain in July, 1986 was the first car to carry the name as a new model in its own right. It was not a derivative of any other Toyota model.

The sales target for the second half of 1986 was 800 units and by the end of December, 1029 new Supras had been registered.

Since then, registrations have been:

1987	1809 units
1988	2055 units (anticipated)

In 1989 Toyota (GB)'s Supra sales target will be 2,450 of which 1,715 will be the new Turbo model. It is expected that at least half of these will be automatic transmission models.

Exterior styling

The Supra was conceived as a sporting, high quality, luxury car which was to exude power and high performance, combining good looks with efficiency. The body of the Supra Turbo retains its high rigidity and was designed to work integrally with the all independent, double wishbone suspension. The result is very low noise and vibration levels at all speeds and on all road surfaces.

The Supra Turbo is identified by a discreet '3.Oi turbo' badge on the nearside rear, just beneath the rear light cluster. The new three-piece rear spoiler is an extension to the natural lines of the car and the revised front grille, bumper, fog lamps and air dam look even more purposeful and aggressive. The centre section of the front bumper extends upwards to blend smoothly with the bonnet while the revised grille improves the engine cooling performance.

The front screen wiper arms have been made more rigid to give a more efficient wiping action and the offside wiper is now 25 mm longer for a greater swept area. Even the screen washer jets have been modified to improve cleaning. The rear window wiper now parks in a vertical rather than horizontal position so that it can be defrosted by the rear window heating elements.

The Supra Turbo is available in a special "white pack" with the entire body, exterior trim and alloy wheels finished in brilliant white at no extra cost. Other colours available are silver metallic, black mica and red.

Interior

The development goals for the Supra interior were comfort, low noise, adequate space and feelings of luxury, quality and sportiness. In the Supra Turbo, several changes have been made to enhance these facets.

Leather upholstery is standard. The steering wheel, handbrake and gear lever are also trimmed in leather. The steering wheel has been redesigned with a thicker grip and the switches for the cruise control have been relocated within the two horizontal spokes so that the system can be operated without moving the hands from the wheel. Facia colouring has been improved and a cup or can holder is now incorporated within the lid of the centre console storage box between the front seats.

The interior door grips have been redesigned and so too have the electric window switches for easier operation. Coat hooks are fitted on each side, near the roofline in the back of the car. All instruments within the facia have been redesigned for even greater clarity. The Supra Turbo is fitted with a stero radio/cassette system with electronic tuning as standard, but the speakers (four of them) have been improved for better bass and treble response. Coaxial two-way speakers are fitted within the front doors, with punched metal grilles and bass reflex ports. Punched metal grilles have also been adopted for the rear speakers along with copper speaker caps.

The fully automatic air conditioning system maintains the chosen interior temperature regardless of conditions outside and has been improved by fitting a new high efficiency evaporator. A new progressive power steering system uses a hydraulic reaction mechanism to give much lighter steering at parking speeds with more response and feel as speed increases. This new system also improves linear steering effort.

The steering column is memory tilt and telescopic adjustable and the driver's sports seat adjusts eight ways. The rear seat can be tilted forward to enlarge the luggage space and will split 50:50.

Engine and transmission

The 7M-GE engine in the normally aspirated Supra is a straight six cylinder, with twin overhead camshafts and 24 valves, developing 201 bhp at 6,000 rpm and 187.4 lb ft torque at 4,800 rpm.

In the Supra Turbo, the engine is designated 7M-GTE and gains a turbocharger with air cooled intercooler to increase the power and torque figures substantially. The 7M-GTE uses the same basic layout with fuel injection and a compression ratio of 8.4:1. The turbocharged engine is very flexible with good mid-range torque and a flat torque curve.

The turbo intercooler (air-cooled) cools the hot intake air for higher intake efficiency. At the same time, it cools the combustion gases to help prevent knocking. Oil jets have been added to help cool the pistons and an oil cooler is fitted.

Rather than a conventional vane-type air flow meter, an optical-type Karman-vortex air flow meter has been adopted. The pattern of the Karman vortex produced by the vortex generator in the air flow meter is measured and used to calculate the air flow volume. As a result, the 7M-GTE has a very quick response with very accurate air flow metering at all speeds. An ideal air-fuel ratio is maintained. The simpler air intake arrangement reduces intake resistance and the system is compact and lightweight. The maximum turbo boost pressure is 7.25 lb/sq. in. (0.51 kg/sq. cm) and the maximum turbine speed is 110,000 rpm.

Distributorless ignition is used as well as a computer engine management system controlling fuel injection, ignition, idle speed, intake air, fuel pressure, fail safe systems, fault diagnosis and even the air-fuel mixture at high altitudes, where oxygen density is lower than at sea level.

The Supra Turbo is fitted with a three-way catalytic converter so that unleaded fuel only should be used. The catalyst converts harmful exhaust emissions such as hydrocarbons, nitrous oxides and carbon monoxide into harmless water, nitrogen and carbon dioxide.

The Supra Turbo is available with five speed manual or electronic automatic transmission and the rear wheel drive has a limited slip differential.

A heavy duty clutch is used for the turbo engine, with an increased spring load. But a pull-type clutch cover is employed to avoid a heavier clutch pedal. The clutch cover features a diaphragm spring operating in the opposite direction to the normally aspirated Supra giving greater release leverage. A damper is fitted to the clutch pedal assembly to reduce engine vibrations which might be transmitted to the clutch pedal.

The four speed transmission with electronic control adjusts up and down shifts and locking up time to match different driving conditions. It bases its decisions on speed, engine temperature, accelerator position, shift lever position and other engine conditions. 'Normal' and 'Power' modes are available with push button control.

Chassis and suspension

The Supra Turbo uses four-wheel double wishbone suspension to achieve excellent handling and stability and the chassis has been engineered for low noise, vibration and optimum handling and stability. Goodyear 225/50 VR 16 unidirectional tyres are fitted to 7JJ x 16 alloy wheels.

On the Turbo cornering performance and stability are further improved by adding two longitudinal performance rods to the rear suspension sub frame. Coil springs, shock absorbers and anti-roll bars have been strengthened. These modifications have increased suspension rigidity substantially.

Toe, track and camber changes during movement of the wheels are minimized and the suspension allows a quick and natural response to steering inputs. The front geometry consists of an upper A-arm, a lower L-arm and an anti-roll bar. Rubber bushes are used extensively.

At the rear, upper A-arms, four lower arms and two trailing arms also use rubber bushes.

Braking is by ventilated discs all round with an anti-lock (ABS) system.

Corrosion protection, which was always extensive, has been enhanced by the wider use of anti-corrosion galvannealed steel sheet particularly in floor side and crossmembers, and in the doors.

TOYOTA SUPRA TURBO

Dimensions

overall length	4630 mm
overall width	1745 mm
overall height	1300 mm
wheelbase	2595 mm
track - front	1485 mm
rear	1480 mm
ground clearance	145 mm
luggage capacity (VDA)	0.232 cu. m. (seat up)
kerb weight - manual	1605 kg
auto	1615 kg
max. towing weight - with brake	1700 kg
without brake	600 kg
fuel tank capacity	70 litres

Engine

type	7M - GTE
configuration	6 cylinder in-line
capacity	2954 cc
bore and stroke	83 x91 mm
compression ratio	8.4 : 1
valve train	DOHC 4 valves per cylinder, belt driven
fuel system	electronic fuel injection, turbocharger with air cooled intercooler
max. power	232 bhp at 5,600 rpm
max. torque	253.7 lb. ft. 3,200 rpm
fuel	95 (RON) unleaded

Transmission

clutch	single dry plate, diaphragm spring	
gear ratios	manual	auto
first	3.251	2.804
second	1.955	1.531
third	1.310	1.000
fourth	1.000	0.705
fifth	0.753	-
reverse	3.180	2.393
final drive	3.727	

Suspension

front	double wishbones, coil springs and double acting hydraulic shock absorbers
spring rate	8 kg/mm
anti-roll bar	27.2 mm dia.
rear	double wishbones, coil springs and double acting hydraulic shock absorbers
spring rate	3.5 kg/mm
anti-roll bar	21 mm dia.

Steering

speed proportional rack and pinion, hydraulic power assistance. 3.4 turns lock to lock, 5.8 m turning circle

Brakes

hydraulic ventilated discs with vaccuum assistance. Mechnical handbrake operating on rear wheels with 190 mm dia. integral drums

Performance

max. speed	153 mph	
0-60 mph	6.1 secs.	
0-¼ mile	14.5 secs.	
fuel consumption	manual	auto
urban	19.6 mpg	19.2 mpg
constant 56 mph	35.3 mpg	36.7 mpg
constant 75 mph	27.4 mpg	28.2 mpg

TOYOTA SUPRA TURBO

STANDARD EQUIPMENT

Electrically operated and heated door mirrors
Heated rear window with timer
Electric windows
Cruise control
Leather steering wheel
Tilt and telescopic column
Speed sensitive power steering
Central locking
Full instrumentation
Stereo radio cassette, 4 speakers
Electric seat adjustment
Leather upholstery and trim
Tonneau cover
Ajustable seat belt anchor points at sills
Rear seat belts
Alloy wheels
Anti-lock brakes
Electric aerial
Halogen fog lamps
Rear wash wipe
Headlamp cleaners
Remote fuel flap release
Automatic air conditioning
Tinted laminated windscreen
2 speed wipers with variable intermittent
Rear wash/wipe with intermittent