

# AUTOTEST

## JENSEN FF II (6,276 c.c.)

**AT-A-GLANCE:** Luxury GT capable of carrying four adults. Chrysler vee-eight an impressive and refined performer. Exceptionally effortless high-speed cruising. Ferguson all-wheel-control gives remarkable traction and excellent handling. Anti-lock braking still controversial, but ensures control during panic stopping. Very good power steering. Air-conditioning leaves scope for improvement.

### MANUFACTURER

Jensen Motors Ltd., Kelvin Way, West Bromwich, Staffordshire

### PRICES

Basic .....	£5,900	0s	0d
Purchase Tax .....	£1,805	1s	5d
Front seat belts .....	standard equipment		
Total (in G.B.) .....	£7,705	1s	5d

### EXTRAS (inc. P.T.)

*Air conditioning .....	£220	6s	3d
*Air horns .....	£16	12s	11d
Fog or spot light (Cibié) ....	£8	15s	7d
White wall tyres .....	£19	3s	6d
*Sun-dym glass .....	£50	6s	11d
Static safety belts in rear ..	£10	19s	4d
Special upholstery .....	£48	6s	2d
Special paint .....	£65	5s	6d
Duo-tone paint .....	£26	2s	2d
*Voxson radio and stereo tape player .....	£71	16s	2d

\*Fitted to test car

**PRICE AS TESTED** ..... £8,064 3s 8d

### PERFORMANCE SUMMARY

Mean maximum speed .....	137	mph
Standing start $\frac{1}{4}$ -mile .....	15.8	sec
0-60 mph .....	8.1	sec
30-70 mph through gears .....	7.1	sec
Typical fuel consumption .....	12	mpg
Miles per tankful .....	240	

**W**ITH its sophisticated four-wheel-drive transmission and anti-lock braking, the Jensen FF II is undoubtedly one of the most technically advanced cars in current production. Although the FF has remained unchanged fundamentally since its debut in October 1966, numerous detail improvements have been made since then. The appearance of the FF II in October 1969 marked a significant step in the model's development. New features included extensive interior restyling, improved seating, low-profile radial-ply tyres on wider rims, higher overall gearing, greater fuel capacity, a larger radiator, improved heating, full air-conditioning as an optional extra, plus a host of lesser items. The rear suspension was also modified slightly and the Selectaride dampers dropped in favour of conventional fixed-setting ones.

As described in the 24 September issue of *Autocar*, there are still more improvements for 1971. Among them are improved refrigeration, with a larger evaporator and a pair of additional fascia outlets. The seats have been further improved and the instruments made easier to read. There are also a number of new safety features, primarily to satisfy American GFA

requirements. Our test car, now some seven months and 9,000 miles old, was built before the introduction of these latest changes, and is to be the subject of a long-term report in next week's issue.

### Performance

The big vee-8, aided by its automatic-choke Carter carburettor, starts instantly from cold, but sometimes stalls almost immediately afterwards. It subsequently restarts without trouble to settle down to a reliable and consistent idle. Hot-starting, on the other hand, is sometimes embarrassingly difficult. A 10 minute stop in hot weather can mean anything up to 20 sec "cranking" before the engine fires. There is, however, no trace of fuel vaporization, something we have often experienced with large American-engined cars during performance testing at MIRA. The provision of a pair of electric cooling fans helps a great deal in this connection. Controlled by a thermostatic switch, they are unusual in not being wired through the ignition. This arrangement undoubtedly helps to keep down under-bonnet temperatures during the heat-soak period immediately following switching off, but the considerable noise from the fans (they frequently operate under these circumstances) often excites comment from bystanders. From inside the car, however, the noise is modest unless a window is lowered.

Air-conditioning (an optional extra, as previously mentioned), wider rims and tyres, and slightly more fuel all contribute to an increase of just over 2 cwt in kerb weight compared with the FF tested by *Autocar* in 1968 (Mk I model—report published 28 March 1968). In the form tested, the FF II scales 37.8 cwt, 51.6 per cent of it on the front wheels, 48.4 per cent on the rears. Despite the additional mechanism associated with the drive to the FF's front wheels, this compares favourably with the 50.7—49.3 distribution of the Interceptor tested last year (*Autocar*, 4 September 1969) largely because of the FF's 4 in. longer wheelbase and slightly more rearward engine-gearbox disposition.

Minor engine changes have raised the peak of the power curve some 5 bhp and 400rpm, but the FF II as tested has a slightly less favourable power-weight ratio than the earlier car. This, together with marginally higher gearing, may well account for a slightly less brisk step-off. However, the 0-50 mph time (6.2 sec) is the same for both, and the FF II has a slight advantage at higher speeds. Its top speed, too, is better (137 mph mean, 141 mph best, compared with the earlier car's 130 mph). To a considerable extent, this is due to the Dunlop SP radials having appreciably less rolling resistance than the RS5 cross-plyes formerly used.

As our comparison tables show, there are cars capable of out-performing the FF II, but they are few and far between. We must also point out that it may well be possible to better our through-the-gears times by holding low and intermediate gears to 5,500 rpm or so. Although revs of this order are within the engine's capacity (the FF can exceed 5,400 rpm in top), we chose to observe the tachometer red-line (5,100 rpm) during the acceleration runs. Leaving the transmission to its own devices, with the selector lever in D, results in earlier changes (at 4,500 rpm indicated). The acceleration suffers slightly as a result, an additional 1.3 sec being taken to reach 100 mph. There is usually such a splendid reserve of power that holding in this way is quite unnecessary.

A spectacular performance on paper is one thing—using it under give-and-take conditions on public roads is an entirely different matter.

This is where the FF II really excels. Even on a damp and greasy surface, the odds are that it will achieve *exactly* the same times as in the dry, and with absolutely no fuss or drama. Its superb traction really has to be experienced to be believed. Even on loose gravel, stalling the convertor on full throttle before releasing the brakes, there is rarely a trace of wheelspin. Damp and greasy London streets even fail to catch it out. We can think of no other production car, let alone one with 330 bhp under its bonnet, that can remotely compare with the FF II in this respect.

Even by luxury car standards, it is an astonishingly effortless car. When cruising at around 120 mph (122 mph on the clock), the power train is remarkably unobtrusive. Wind noise, too, is modest. Allied to excellent straight-line stability and first-class brakes, these qualities make for a quite exceptional journey car. Yet it is just as much at home on winding country roads or crowded city traffic.

Inevitably, one has to pay for performance of this order from a car weighing more than 2 tons (41.1 cwt, laden as tested). Overall petrol consumption during the 1,400 mile test period (entirely divorced from the long-term appraisal) was 11.9 mpg. Moderate driving on a journey to North Wales returned 12.2 mpg, but we could not approach the calculated (DIN) figure of 14.8 mpg. Consumption, in fact, seems little affected by the way the car is driven and around 12 mpg would seem a typical figure. With a 20 gallon tank, this gives an absolute range of 240 miles, not a lot for a car of this calibre. On the credit side, the fuel gauge and low-level warning light (3 gallons remaining) are both exceptionally accurate, enabling most of the tank's contents to be used with safety. Reference to the comparison tables shows that the fuel consumption, in fact, is similar to that of other cars in this class. Oil consumption during the test was negligible.

### Automatic Gearbox

Chrysler's Torqueflite transmission is a particularly smooth unit. Our only criticism concerns its reluctance to kick-down on part-throttle. One can, of course, change down manually, but some of our testers thought the selector lever a little too high and too far back. Full-throttle kick-down into intermediate is possible at speeds below 66 mph and into low at 28 mph. Unlike some automatic gearboxes, holding intermediate does not interfere with kick-down operation into low (and subsequent changing back into intermediate).

### All-wheel-control

A great deal of the FF II's magic stems from the Ferguson system of all-wheel-control, now handled by GKN. Briefly, what it does is divide engine torque between front and rear wheels in a 37:63 ratio (in this particular instance). Furthermore, it allows the front wheels to overrun the rears by a maximum of 16 per cent, and the rears to overrun the fronts by a maximum of 5 per cent. This arrangement allows the degree of freedom between front and rear wheels necessary to prevent transmission wind-up, rapid tyre wear and handling peculiarities, but ensures that optimum traction is available at all times.

The system is only partly effective in reverse; torque is still divided between front and rear in the same proportions, but the one-way clutches which control the permissible speed differentials are inoperative. This means that one should avoid situations where the car has to be reversed up a particularly slippery gradient. Apart from the Ferguson control unit, a Salisbury Pow-Lok limited-slip differential is used at the rear. Steering and handling



considerations render the use of such a unit undesirable at the front.

Also forming part of the Ferguson Formula is the Dunlop Maxaret anti-lock braking system. This, in principle, consists of a small flywheel geared to the output side of the car's transmission. As the car (and therefore the transmission) decelerates, the flywheel is forced to follow suit. In doing so, it tries to overrun its driving spindle. If the deceleration should exceed a pre-determined rate (as would happen if incipient locking of any one wheel took place), this overrun action causes a cam mechanism to actuate a micro-switch. This, in turn, controls a solenoid-operated valve which modulates the vacuum applied to the brake servo unit.

**Handling and steering**

Mention had already been made of the FF II's remarkable traction, but we make no apologies for stressing the point. A great deal more power can be used in any given circumstances than would be possible with conventional drive. Even when deliberately provoked, the FF II rarely puts a foot wrong. Indeed, we found the limiting factor on a right-handed airfield circuit to be lack of engine power, caused by fuel starvation—a good indication of the cornering forces involved. We hasten to add that such cornering rates are well in excess of what is likely to be indulged in on normal roads. For all practical purposes, the Jensen can be relied on to go exactly where it's pointed.

Despite the unorthodox layout, there are no handling peculiarities. When cornered sufficiently hard, the FF adopts a slightly tail-out attitude, feel being much the same as that of a well-balanced rear-drive car. Lifting-off in such circumstances does not upset the balance in any way. Pushed to the limit, front and rear break away together, usually without any detectable change in attitude. On those occasions when slight correction is required, response to steering movements is extraordinarily rapid. Just about the only criticism we can level at the handling concerns a very occasional tendency for the live rear axle to bump-skid on rough corners, but this almost amounts to being hyper-critical.

The excellent Adwest power-assisted rack-and-pinion steering adds greatly to the enjoyment of driving the FF II. Although not particularly light at town speeds (for a power system), it is beautifully quick and precise on the open road. There is just a trace of kick-back on rough surfaces, again at low speeds, but this is a small price to pay for the excellent feel the system affords. Steering wheel diameter, at 16 in., seems just right and telescopic adjustment for reach is provided. Drive to the front wheels,

plus a lengthy wheelbase, result in a mean turning circle diameter of just over 40 ft between kerbs. This we consider to be approaching the limit of acceptability.

**Ride**

Considerable bump-thumping at low speeds tends to create an impression of harshness. This disappears as the speed rises and the suspension, in fact, is ideally tailored for high-speed cruising. The Armstrong Selectaride rear dampers of the Mk I have been replaced by conventional fixed-setting ones (also of Armstrong manufacture). Damper-settings, inevitably, are a matter of compromise, and we feel that those chosen for the FF II are well suited to its character. It is undoubtedly at its best during high-speed cruising on open roads. Seldom have we experienced such rock-steady stability.

**Brakes**

The Maxaret anti-lock braking system still excites considerable controversy. In the main, this concerns its response time—in other words, the frequency with which the pedal pulsates when too much effort is applied. In the case of our test car, the cycling frequency certainly did not exceed 2 cps. This, of course, means that braking torque is appreciably below optimum for much of a panic stop. While we acknowledge that a skilful and alert driver can equal or better the Maxaret system, the latter does ensure that a measure of steering control is maintained no matter how clumsily the brake is applied.

Our test car achieved an excellent 1.05 g from 30 mph, this with a modest 60lb pedal effort. All four wheels appeared to be on the point of locking and the pedal, in fact, kicked just as the car came to rest. To satisfy ourselves that this was not a freak result, the performance was repeated without trouble.

There was relatively little increase in pedal effort during our 70 mph fade test (from 35 to 45lb), but there was slight judder, accompanied by an increase in pedal travel, during the last two stops. Judder was also experienced when braking from 110 mph at the end of the through-the-gears acceleration runs. On the road, however, braking behaviour was impeccable.

The firmest possible pull on the hand-brake produced a deceleration of 0.3g, but its performance on the test hills was poor. With the transmission selector in 'D', it would just hold the car when facing up a 1 in 4 gradient. In neutral, the best it could achieve was 1 in 5. In sharp contrast, a 1 in 3 restart was achieved

with contemptuous ease, again, of course, without a trace of wheelspin.

**Fittings and furniture**

With its Connolly-hide upholstery and Wilton carpeting, the Jensen is the epitome of luxury. Seat backrests, of course, are adjustable for rake and there is separate provision (with levers both sides of each seat) for tilting them forward. Head restraints (detachable) are standard, with Velcro-fastened pads for maximum comfort. The seats, both front and rear, are shaped to provide ample sideways support, a particularly important point in a car capable of generating high lateral forces. Although not particularly soft, the seats proved very comfortable on long journeys. Making room for adults in the rear, however, involves some sacrifice on the part of the front seat occupants, particularly the driver.

Smiths air-conditioning, integrated with the heating system, was fitted to the test car. It proved a real boon during the warm weather that prevailed during the test but it suffered limitations which subsequent changes may well have overcome. There were, in fact, occasions when warm air was fed through the refrigeration outlets at traffic speeds, this with the control knob at its minimum-temperature setting. Normally, however, it coped quite adequately. An irritating detail is the need (according to the instruction book) to switch off the three-speed blower, thus declutching the compressor, before operating the starter. A better scheme would be to arrange for the compressor to be declutched automatically when the key is turned to the start position.

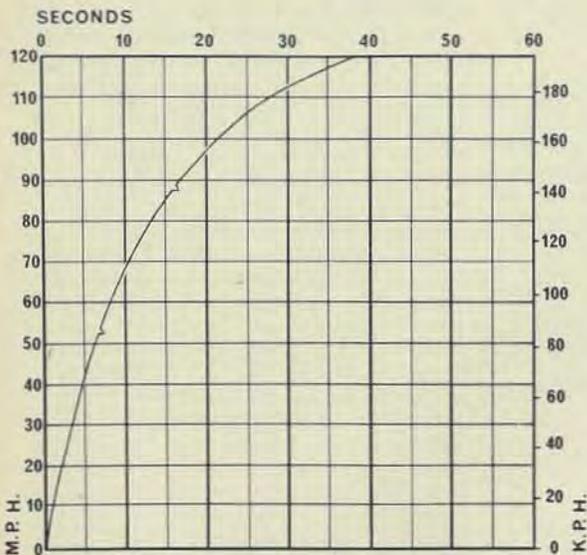
The Jensen FF II is well constructed and beautifully finished. However, nothing is perfect, and we noted some minor shortcomings while the car was in our hands. For instance, the left-hand private-lock button is difficult to reach from the driver's side. A central locking system would be nice to have in such a luxury machine. Another fault, and an irritating one, is the difficulty experienced in raising the bonnet. A pair of hairpin-type springs are intended to raise it enough to enable one's fingers to be inserted below the edge, but these are hopelessly inadequate. The compression struts, designed to provide a measure of counterbalancing, are also too weak. Another grouse is that the oil pressure and fuel-flap warning lamps are partly obscured by the steering wheel spokes. One last point; we feel that an ammeter is a more informative instrument than a voltmeter (or "battery condition meter"). An ignition warning lamp should also be provided—by the time one has noticed a low-reading voltmeter, the battery may well be flat.

52

Top left: The big Chrysler vee-8 is mounted well back in the frame. Note the refrigeration compressor ahead of the air cleaner. The Maxaret vacuum-control unit is to the rear of the battery  
Bottom left: Luxury interior, upholstered in Connolly hide. A large console separates driver and passenger. Beneath glove locker is non-standard Air Call radio-telephone  
Below: Squatter tyres and restyled bumpers have improved the looks. Wheel rims now have enamelled finish. Stout electric-aerial does not wilt at speed



## ACCELERATION



SPEED MPH TRUE INDICATED	TIME IN SECS
30	3.5
40	4.8
50	6.2
60	8.1
70	10.6
80	13.4
90	16.7
100	21.5
110	27.5
112	

### SPEED RANGE, GEAR RATIOS AND TIME IN SECONDS

mph	Top (2.88-6.34)	Inter (4.18-9.20)	Low (7.06-15.53)
0-20	—	—	2.4
10-30	—	—	2.6
20-40	—	3.5	2.4
30-50	—	3.8	2.8
40-60	5.4	4.2	—
50-70	6.0	4.8	—
60-80	7.0	5.3	—
70-90	7.9	—	—
80-100	9.0	—	—
90-110	10.7	—	—

**Standing 1/4-mile**  
15.8 sec 88 mph

**Standing kilometre**  
28.9 sec 112 mph

Test distance  
1,400 miles

Mileage recorder  
2.6 per cent over-reading

## PERFORMANCE

### MAXIMUM SPEEDS

Gear	mph	kph	Theoretical rpm
Top (mean)	137	221	5,200
(best)	141	227	5,350
Inter	93	150	5,100
Low	55	89	5,100

## BRAKES

(from 70 mph in neutral)

**Pedal load for 0.5g stops in lb**

Gear	Load	Distance
1	35	6 40
2	35	7 40
3	35	8 40
4	35	9 40
5	40	10 45

### RESPONSE (from 30 mph in neutral)

Load	g	Distance
20lb	0.28	107ft
40lb	0.65	46ft
60lb	1.05	29ft
Handbrake	0.30	
Max. Gradient	1 in 5 (see text)	

### MOTORWAY CRUISING

Indicated speed at 70 mph	71 mph
Engine (rpm at 70 mph)	2,650 rpm
(mean piston speed)	1,500 ft/min.
Fuel (mpg at 70 mph)	16.3 mpg
Passing (50-70 mph)	4.4 sec

## COMPARISONS

### MAXIMUM SPEED MPH

Monteverdi 375 L	(£10,450)	152
*Ferrari 365 GTC	(£7,901)	151
*Aston Martin DBS	(£6,210)	140
<b>Jensen FF</b>	<b>(£7,705)</b>	<b>137</b>
Mercedes-Benz 300 SEL 6.3	(£6,210)	134

### 0-60 MPH, SEC

*Ferrari 365 GTC	6.3
Monteverdi 375 L	6.3
Mercedes-Benz 300 SEL 6.3	7.1
<b>Jensen FF</b>	<b>8.1</b>
*Aston Martin DBS	8.6

### STANDING 1/4-MILE, SEC

*Ferrari 365 GTC	14.5
Monteverdi 375 L	14.6
Mercedes-Benz 300 SEL 6.3	15.5
<b>Jensen FF</b>	<b>15.8</b>
*Aston Martin DBS	16.3

### OVERALL MPG

Mercedes-Benz 300 SEL 6.3	15.1
*Aston Martin DBS	12.7
<b>Jensen FF</b>	<b>11.9</b>
*Ferrari 365 GTC	11.9
Monteverdi 375 L	11.6

\* Manual transmission

### Theoretical GEARING

(with ER70VR 15in. tyres)

Top	26.4 mph per 1,000 rpm
Inter	18.2 mph per 1,000 rpm
Low	10.8 mph per 1,000 rpm

### TEST CONDITIONS:

Weather: Fine and sunny. Wind: 7-15 mph. Temperature: 20 deg. C. (68 deg. F).  
Barometer 29.7 in. hg. Humidity: 44 per cent. Surfaces: Dry concrete and asphalt.

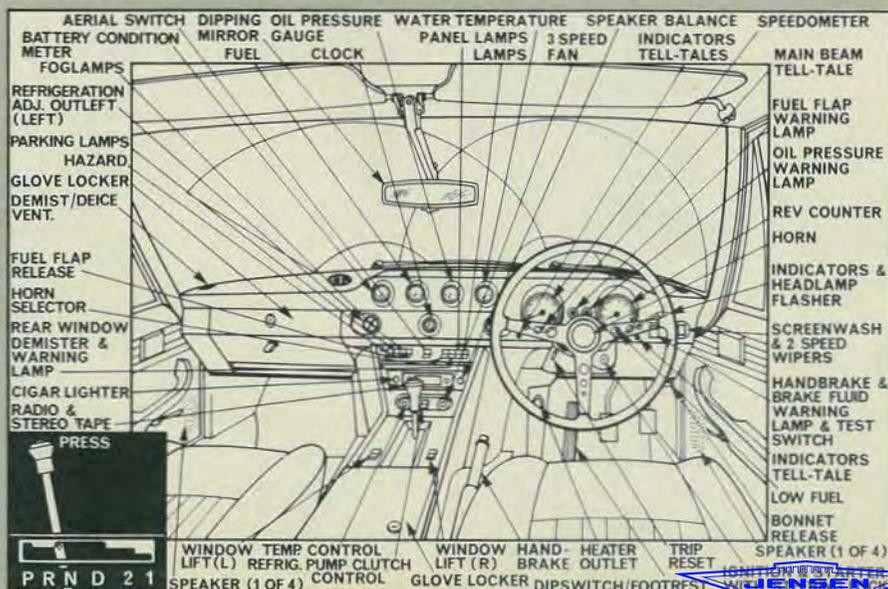
### WEIGHT:

Kerb weight 37.8 cwt (4,230lb—1,920kg) (with oil, water and half full fuel tank).  
Distribution, per cent F, 51.6; R, 48.4. Laden as tested: 41.1 cwt (4,608lb—2,092kg).

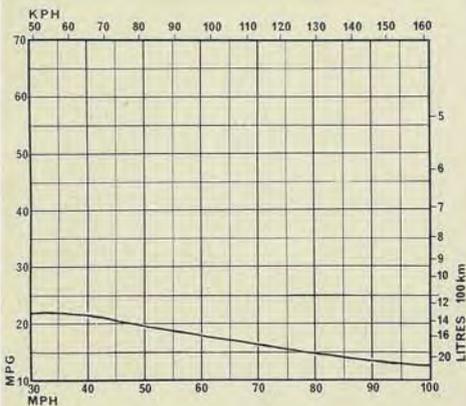
### TURNING CIRCLES:

Between kerbs, L, 40ft 10in.; R, 39ft 6in. Between walls L, 42ft 9in.; R, 41ft 5in.,  
steering wheel turns, lock to lock 3.6.

Figures taken at 7,500 miles by our own staff at the Motor Industry Research Association proving ground at Nuneaton and on the Continent.



## CONSUMPTION



### FUEL

(At constant speeds—mpg)

30 mph	21.8
40 mph	21.4
50 mph	19.6
60 mph	17.8
70 mph	16.3
80 mph	14.8
90 mph	13.7
100 mph	12.6

**Typical mpg** . . . . . 12 (23.5 litres/100km)  
**Calculated (DIN) mpg** 14.8 (19.1 litres/100km)  
**Overall mpg** . . . . . 11.9 (23.8 litres/100km)  
**Grade of fuel**  
 Super Premium, 5-star (min. 100 RM)

### OIL

Miles per pint (SAE 20W/40)  
 Negligible consumption

## SPECIFICATION FRONT ENGINE, FOUR-WHEEL DRIVE

### ENGINE

Cylinders . . . . . 8, in 90-deg vee  
 Main bearings . . . . . 5  
 Cooling system . . . . . Water; pump, thermostat and two electric fans  
 Bore . . . . . 108mm (4.25 in.)  
 Stroke . . . . . 86mm (3.38 in.)  
 Displacement . . . . . 6,276 c.c. (383 cu.in.)  
 Valve gear . . . . . Overhead, pushrods and hydraulic tappets  
 Compression ratio . . . . . 10-to-1 Min. octane rating: 100 RM  
 Carburettor . . . . . Carter 4-barrel progressive  
 Fuel pump . . . . . Carter mechanical  
 Oil filter . . . . . Mopar full-flow, renewable element  
 Max. power . . . . . 330 bhp (SAE) at 5,000 rpm  
 Max. torque . . . . . 425 lb.ft (SAE) at 2,800 rpm

### TRANSMISSION

Gearbox . . . . . Chrysler Torqueflite 3-speed automatic with torque converter  
 Gear ratios . . . . . Top 1.0-2.20  
 Inter 1.45-3.19  
 Low 2.45-5.39  
 Reverse 2.20-4.84  
 Final drive . . . . . Hypoid bevel, 2.88-to-1. Powr-Lok limited-slip differential at rear only

### CHASSIS and BODY

Construction . . . . . Steel body welded to tubular steel frame

### SUSPENSION

Front . . . . . Independent, double wishbones, with twin coil springs and telescopic dampers each side. Anti-roll bar  
 Rear . . . . . Live axle, semi-elliptic leaf springs. Panhard rod

### STEERING

Type . . . . . Adwest power-assisted rack-and-pinion  
 Wheel dia. . . . . 16in.

### BRAKES

Make and type . . . . . Girling discs front and rear. Divided hydraulic circuits. Dunlop Maxaret anti-lock system  
 Servo . . . . . Girling vacuum  
 Dimensions . . . . . F 11.38 in. dia. R 10.75 in. dia.  
 Swept area . . . . . F 237.2 sq.in., R 197.4 sq.in. Total 434.6 sq.in. (212 sq.in./ton laden)

### WHEELS

Type . . . . . Pressed-steel "Rostyle", 5-stud fixing, 6in. wide rim.  
 Tyres—make . . . . . Dunlop  
 —type . . . . . SP radial-ply tubeless  
 —size . . . . . ER70VR 15 in.

### EQUIPMENT

Battery . . . . . 12 Volt 69 Ah  
 Alternator . . . . . 60 amp  
 Headlamps . . . . . Lucas 4-lamp quartz-halogen 110/220 watt (total)  
 Reversing lamps . . . . . 2 standard  
 Electric fuses . . . . . 12  
 Screen wipers . . . . . 2-speed, self-parking  
 Screen washer . . . . . Standard, electric  
 Interior heater . . . . . Standard, water-valve type  
 Refrigeration . . . . . Optional extra  
 Heated backlight . . . . . Standard  
 Safety belts . . . . . Standard front, extra rear  
 Interior trim . . . . . Leather seats, pvc headlining  
 Floor covering . . . . . Carpet  
 Jack . . . . . Bevelift  
 Jacking points . . . . . 2 each side, in sills  
 Windscreen . . . . . Laminated  
 Underbody protection . . . . . Bitumastic compound on all surfaces exposed to road

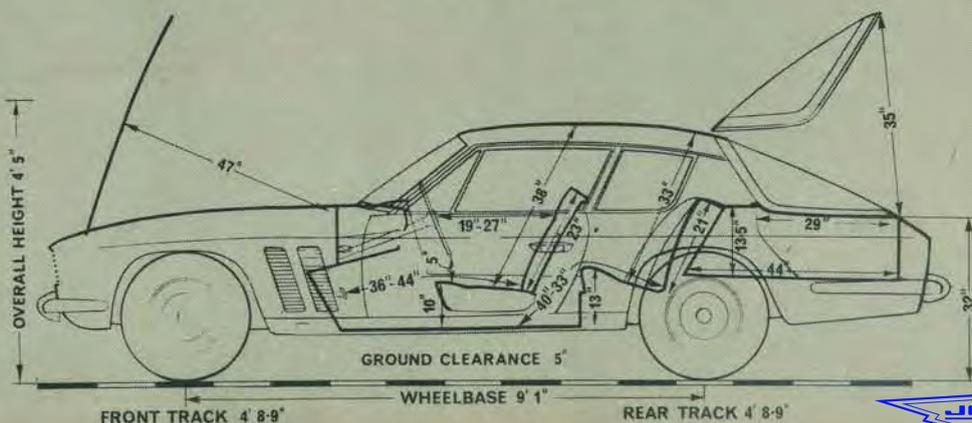
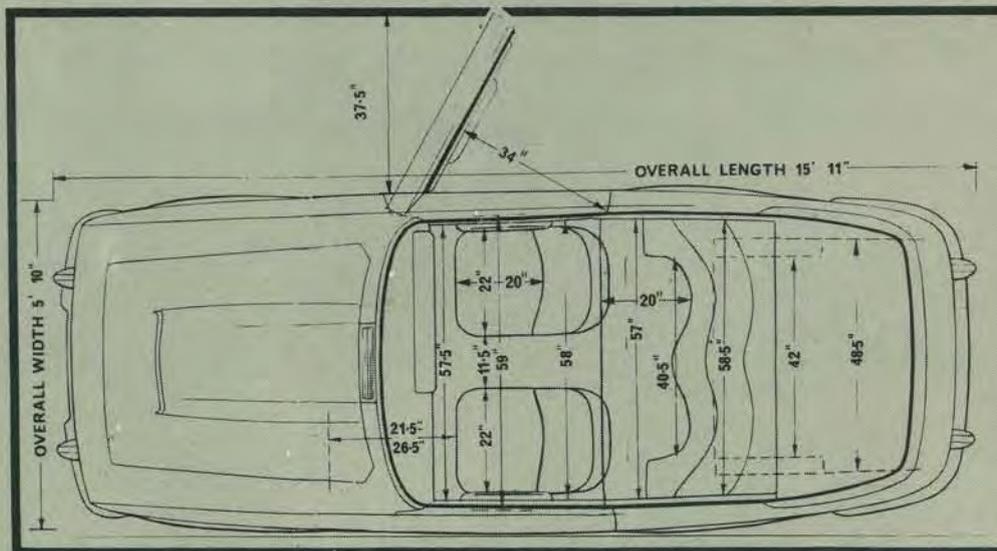
### MAINTENANCE

Fuel tank . . . . . 20 Imp. gallons (no reserve) (91 litres)  
 Cooling system . . . . . 28 pints (including heater)  
 Engine sump . . . . . 8.5 pints (4.7 litres) SAE 20W/40. Change oil every 4,000 miles. Change filter element every 8,000 miles  
 Gearbox . . . . . 15.5 pints ATF type A. Change oil every 36,000 miles if operating under severe conditions. Otherwise, no change needed  
 Final drive . . . . . 3 pints SAE 90EP in front unit, limited-slip lubricant in rear. Change oil every 12,000 miles  
 Grease . . . . . 4 points every 4,000 miles  
 Tyre pressures . . . . . F 28; R 32 psi (normal driving) F 36; R 40 psi (fast driving or full load)  
 Max. payload . . . . . 750 lb (341 kg)

### PERFORMANCE DATA

Top gear mph per 1,000 rpm . . . . . 26.4  
 Mean piston speed at max. power . . . . . 2,820 ft/min  
 Bhp per ton laden . . . . . 160.6 (gross)

### STANDARD GARAGE 16ft x 8ft 6in.



SCALE 0.3in. to 1ft  
 Cushions uncompressed

