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**SPECIFICATIONS, SERVICING
AND REPAIR DATA**

ESCORT TWIN CAM

The specification included in this section of the manual applies to the standard version of the Escort Twin Cam as supplied ex-works.

However, since this is essentially a specialist model, the standard factory-fitted equipment may well be unsuitable for the vehicle's intended usage.

To overcome this problem, a large number of options and accessories are available from the Ford Performance Centre which enable the car to be modified to the owner's requirements.

These options are detailed in the Ford book of Plus Performance, which is available from:—

Ford Motor Company Ltd.
Performance Centre
Boreham Airfield
Nr. Chelmsford, Essex
Telephone: Boreham 661

WEIGHTS AND DIMENSIONS

Wheelbase	94.5 in. (240.0 cm.)
Overall length	156.6 in. (397.8 cm.)
Overall width	61.8 in. (157.0 cm.)
Overall height	53.0 in. (134.6 cm.)
Kerb weight	1730 lb. (785.4 kg.)
Ground clearance	5.8 in. (14.7 cm.)
Turning circle	29.7 ft. (9.05 m.)
Track—Front	51.0 in. (129.5 cm.)
—Rear	52.0 in. (132.1 cm.)

General Recommended Tightening Torques, lb. ft. (kg.m.)

$\frac{1}{4}$ in. — 20 UNC	5 to 7 (0.69 to 0.97)
$\frac{5}{16}$ in. — 18 UNC	12 to 15 (1.66 to 2.07)
$\frac{5}{16}$ in. — 24 UNF	12 to 15 (1.66 to 2.07)
$\frac{3}{8}$ in. — 16 UNC	17 to 22 (2.35 to 3.04)
$\frac{3}{8}$ in. — 24 UNF	22 to 27 (3.04 to 3.73)
$\frac{7}{16}$ in. — 14 UNC	30 to 35 (4.15 to 4.84)
$\frac{7}{16}$ in. — 20 UNF	40 to 45 (5.53 to 6.22)
$\frac{1}{2}$ in. — 13 UNC	45 to 50 (6.22 to 6.91)
$\frac{1}{2}$ in. — 20 UNF	50 to 60 (6.91 to 8.29)
$\frac{9}{16}$ in. — 12 UNC	60 to 70 (8.29 to 9.67)
$\frac{9}{16}$ in. — 18 UNF	65 to 75 (8.98 to 10.37)
$\frac{5}{8}$ in. — 11 UNC	75 to 85 (10.37 to 11.75)
$\frac{5}{8}$ in. — 18 UNF	100 to 110 (13.82 to 15.20)

1 WHEELS AND TYRES

Pressed steel disc type wheels, size $5\frac{1}{2}J \times 13$, with radial ply tubeless tyres, size 165SR $\times 13$, are fitted to this model. Tyre pressures should be maintained at 24 p.s.i. (1.69 kg./sq. cm.) front and rear under normal conditions and the pressures increased to 28 p.s.i. (2.00 kg./sq. cm.) when motoring at high speed. The spare wheel is mounted on the floor of the luggage compartment and is retained by a bolt.

The front wheel hubs are each mounted on two taper roller bearings which thus permit free rotation under side loads (such as occur when cornering) as well as normal vertical loads.

The rear hub bearings consist of ball races pressed onto the outer ends of the axle shafts. These bearings incorporate built-in oil seals.

It is suggested that when fitting a new tubeless tyre, a new snap-in valve is also fitted. The valve is made to last the life of the tyre, but beyond that time fatigue of the valve rubber body is likely to impair the air seal at the rim hole.

When tyres are being fitted to flat-ledged wheels, they should be fitted from the side of the rim with the narrowest ledge to avoid damage to the tyre bead.

DATA

Wheel size	$5\frac{1}{2}J \times 13$
Tyre size	165SR $\times 13$
Tyre pressures—normal speed conditions	24 p.s.i. (1.69 kg./sq. cm.)
—high speed conditions	28 p.s.i. (2.00 kg./sq. cm.)

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Tightening Torques, lb. ft. (kg.m.)

Wheel nuts	50 to 55 (6.91 to 7.60)
Brake calliper to front suspension unit	45 to 50 (6.22 to 6.94)
Front brake disc to hub	30 to 34 (4.15 to 4.70)
Front wheel bearing adjusting nut	27 (3.73) whilst rotating wheel, and then slacken nut back 90°
Axle shaft bearing retainer bolts	15 to 18 (2.08 to 2.48)

2 BRAKING SYSTEM

Hydraulically operated servo assisted-brakes, discs on the front, drums on the rear, are fitted to all four wheels.

The front disc brakes utilise rear mounted callipers, and the rear drum brakes are of leading and trailing shoe design.

A "self-adjust" mechanism is incorporated in the braking system, and this automatically compensates for wear of the brake lining material.

The hydraulic system is conventional single line operating through a suspended vacuum-type servo, which is mounted in the front left-hand corner of the engine compartment.

The handbrake, which operates on the rear wheels only, is applied by means of a floor-mounted lever. The handbrake lever operates through an open cable system, incorporating a relay lever on the rear axle, and its operation causes the "self-adjust" mechanism in the rear brakes to function as and when necessary.

DATA

Front Brakes

Callipers	16P
Disc diameter	9.625 in. (24.45 cm.)
Disc run-out (maximum)	0.0035 in. (0.089 mm.) T.I.R.
Pad material	M33
Pad effective radius	3.78 in. (96.0 cm.)
Pad swept area (total)	20.64 sq. in. (133.2 sq. cm.)

Rear Brakes

Type	HL3A
Drum diameter and width	9×1.75 in. (22.9×4.45 cm.)
Shoe material	DON 242
Shoe swept area (total)	99.0 sq. in. (639 sq. cm.)
Wheel cylinder diameter	0.70 in. (1.78 cm.)

General

Master cylinder type	CV
Master cylinder diameter	0.75 in. (1.91 cm.)
Master cylinder stroke	1.43 in. (3.61 cm.)
Pedal ratio	4.6 : 1
Braking ratio	67.9% front – 32.1% rear
Brake fluid type	ESEA-M6C-1001-A

Servo

Type	Remote hydraulic
Size	AHV 550 Mk. 2A
Boost ratio	2.04 : 1

Tightening Torques, lb. ft. (kg.m.)

Brake calliper to front suspension unit	...	...	...	...	...	...	...	...	...	45 to 50 (6.22 to 6.91)
Brake disc to hub	...	...	...	...	...	...	...	...	...	30 to 34 (4.15 to 4.70)
Rear brake plate to axle housing	...	...	...	...	...	...	...	...	...	15 to 18 (2.07 to 2.49)
Hydraulic unions	...	...	...	...	...	...	...	...	...	7 to 8 (1.0 to 1.1)
Bleed valves...	...	...	...	...	...	...	...	...	...	5 to 7 (0.7 to 1.0)

3 STEERING GEAR AND LINKAGE

GENERAL DESCRIPTION

The rack and pinion steering gear is mounted in rubber insulators on brackets attached to the front crossmember.

Movement of the steering wheel is transmitted by the steering shaft through a flexible coupling to the helically-toothed pinion. Rotation of the pinion causes the rack to move laterally and the track rods, attached to the ends of the rack, transmit this movement to the steering arms and thus cause the road wheels to turn onto lock.

The steering mechanism provides for 3½ turns of the steering wheel from lock to lock, which represents 5¼ inches (13.3 cms.) linear travel of the rack. The overall ratio of steering wheel to road wheel movement is 17.8 : 1.

The track rod inner ball joints, attached to the rack, are protected by convoluted rubber bellows and the track rod outer ball joints, attached to the steering arms, are protected by conventional gaiters.

A quarter pint (0.3 U.S. pint, 0.15 litre) of oil, S.A.E. 90 Hypoid, is put into the steering gear during manufacture and normally no further lubrication is required. On no account should the gear be completely filled with oil, this will result in a pressure build-up which could burst or blow off the bellows.

The design and construction of the steering gear provides for two adjustments:—

- (a) Rack slipper bearing adjustment.
- (b) Pinion bearing pre-load adjustment.

Both these adjustments are obtained by varying the thickness of a shim pack under a cover plate. It is necessary to remove the gear assembly from the car to carry out any adjustment.

The track rods are adjustable for length to permit toe-in setting and to ensure that the wheel lock angles are correct. The castor, camber and king pin inclination angles are set in production, and no provision is made for altering them. Also, the lock stops are "built in" to the steering gear and no adjustment is possible.

WARNING - When the car is jacked up so that the front wheels are clear of the ground do NOT move the road wheels quickly from lock to lock. This will cause hydraulic pressure to build up within the steering gear and may burst or blow off the bellows.

DATA

Wheel Alignment (unladen)

Castor	...	...	...	...	...	...	...	...	...	...	...	2° 18'
Camber	...	...	...	...	...	...	...	...	...	...	...	-0° 50'
King pin inclination	...	...	...	...	...	...	...	...	...	...	...	8° 50'
Toe-in—Production	0.14 to 0.08 in. (0.36 to 0.20 cm.)
—Service	0.14 to 0.02 in. (0.36 to 0.05 cm.)
Turning circle	29.7 ft. (9.05 m.)

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Steering Gear

Cam Gears

Type	Rack and pinion
Rack travel (lock to lock)	5.27 in. (13.5 cm.)
Teeth on pinion (helical)	5
Lubricant capacity	0.25 Imp. pint (0.3 U.S. pint, 0.15 litre)
Lubricant type	S.A.E. 90 E.P.
Lock stops	Integral within steering gear

Rack slipper bearing adjustment is by means of shims. Shim details are as follows:—

3024E-3K544-N	Steel	0.020 in. (0.508 mm.)
3024E-3K544-M	Steel	0.015 in. (0.381 mm.)
3024E-3K544-L	Steel	0.010 in. (0.254 mm.)
3024E-3K544-K	Steel	0.005 in. (0.127 mm.)
3024E-3K544-J	Steel	0.002 in. (0.051 mm.)
3024E-3581-C	Paper	0.005 in. (0.127 mm.)

Pinion bearing pre-load is also by means of shims. Shim details are as follows:—

3024E-3K544-H	Steel	0.020 in. (0.508 mm.)
3024E-3K544-G	Steel	0.015 in. (0.381 mm.)
3024E-3K544-F	Steel	0.010 in. (0.254 mm.)
3024E-3K544-E	Steel	0.005 in. (0.127 mm.)
3024E-3K544-D	Steel	0.002 in. (0.051 mm.)
3024E-3581-B	Paper	0.005 in. (0.127 mm.)

Tightening Torques, lb. ft. (kg.m.)

Steering arm to suspension unit	30 to 50 (4.2 to 6.9)
Steering gear to crossmember	15 to 18 (2.0 to 2.5)
Track rod end to steering arm	18 to 22 (2.5 to 3.0)
Coupling to pinion spline	5 to 7 (0.7 to 1.0)
Coupling to steering shaft spline	5 to 7 (0.7 to 1.0)
Steering wheel to steering shaft	20 to 25 (2.8 to 3.4)
Track rod end to steering gear tie rod	30 to 35 (4.2 to 4.8)

4 REAR AXLE

GENERAL DESCRIPTION

The rear axle is of the semi-floating type with a hypoid crown wheel and pinion and a two pinion differential.

The crown wheel and pinion are mounted in the differential carrier which is bolted to the front of the axle housing. The pinion is mounted on two taper roller bearings which are pre-loaded after collapsing a tubular spacer set between them. The crown wheel is bolted to the differential case which also runs on two taper roller bearings. These bearings are pre-loaded by spreading the differential carrier. In addition to the above pre-load settings the only other adjustments are the pinion depth of mesh in the crown wheel, controlled by a selective spacer between the pinion head and the rear taper roller bearing; and the setting of the crown wheel to pinion backlash.

The axle shafts are splined to the differential side gears and run in ball races in the axle casing at their outer ends. The ball races have a built-in seal and no separate seal is fitted in the axle casing, as has been previous practice.

The tubular driveshaft is splined to the gearbox output shaft and bolted to a flange fitted to the pinion shaft. The universal joint at each end is pre-lubricated, sealed and non-serviceable.

DATA

Axle ratio—standard	...	...	...	...	...	...	...	...	...	...	...	3.777 : 1
—optional	...	...	...	...	...	...	...	...	...	...	...	3.900 : 1
												4.125 : 1
												4.444 : 1

A number of alternative ratios can be obtained from the Ford Performance Centre (address at the front of this section).

Number of teeth on crown wheel:

3.777 : 1 ratio	...	...	...	...	...	...	...	...	...	...	...	34
3.900 : 1 ratio	...	...	...	...	...	...	...	...	...	...	...	39
4.125 : 1 ratio	...	...	...	...	...	...	...	...	...	...	...	33
4.444 : 1 ratio	...	...	...	...	...	...	...	...	...	...	...	34

Number of teeth on pinion:

3.777 : 1 ratio	...	...	...	...	...	...	...	...	...	...	...	9
3.900 : 1 ratio	...	...	...	...	...	...	...	...	...	...	...	10
4.125 : 1 ratio	...	...	...	...	...	...	...	...	...	...	...	8
4.444 : 1 ratio	...	...	...	...	...	...	...	...	...	...	...	9

Crown wheel and pinion backlash	...	...	...	...	...	...	...	...	...	...	...	0.005 to 0.007 in. (0.13 to 0.17 mm.)
*Pinion bearing pre-load	...	...	...	...	...	...	...	...	...	...	...	20 to 26 lb. in. (0.23 to 0.29 kg.m.) including oil seal drag 13 to 19 lb. in. (0.15 to 0.21 kg.m.) excluding oil seal drag
*Differential carrier spread	...	...	...	...	...	...	...	...	...	...	...	0.008 to 0.010 in. (0.20 to 0.25 mm.)
Differential pinion thrust washer thickness	...	...	...	...	...	...	...	...	...	...	...	0.030 to 0.032 in. (0.762 to 0.813 mm.)
Differential pinion inside diameter	...	...	...	...	...	...	...	...	...	...	...	0.628 to 0.630 in. (15.953 to 16.004 mm.)
Oil capacity	...	...	...	...	...	...	...	...	...	...	...	2 Imp. pints (2.4 U.S. pints, 1.1 litres)
Grade of oil (Summer and Winter)	...	...	...	...	...	...	...	...	...	...	...	S.A.E. 90 Hypoid
"Initial fill" lubricant	...	...	...	...	...	...	...	...	...	...	...	EM-2C-29
Grade of (topping-up) lubricant	...	...	...	...	...	...	...	...	...	...	...	S.A.E. 90 hypoid gear oil

*These specifications apply when fitting new bearings. When rebuilding differential assemblies with the original bearings the pre-loads should be set to half the above figures.

Pinion Bearing Shims

105E-4672-A	...	...	...	...	...	...	...	...	...	...	...	0.1304 to 0.1308 in. (3.312 to 3.322 mm.)
2925E-4672-AA	...	...	...	...	...	...	...	...	...	...	...	0.1309 to 0.1313 in. (3.325 to 3.335 mm.)
105E-4672-B	...	...	...	...	...	...	...	...	...	...	...	0.1314 to 0.1318 in. (3.338 to 3.348 mm.)
2925E-4672-AB	...	...	...	...	...	...	...	...	...	...	...	0.1319 to 0.1323 in. (3.350 to 3.360 mm.)
105E-4672-C	...	...	...	...	...	...	...	...	...	...	...	0.1324 to 0.1328 in. (3.363 to 3.373 mm.)
2925E-4672-AC	...	...	...	...	...	...	...	...	...	...	...	0.1329 to 0.1333 in. (3.376 to 3.386 mm.)
105E-4672-D	...	...	...	...	...	...	...	...	...	...	...	0.1334 to 0.1338 in. (3.388 to 3.399 mm.)
2925E-4672-AD	...	...	...	...	...	...	...	...	...	...	...	0.1339 to 0.1343 in. (3.401 to 3.411 mm.)
105E-4672-E	...	...	...	...	...	...	...	...	...	...	...	0.1344 to 0.1348 in. (3.414 to 3.424 mm.)
2925E-4672-AE	...	...	...	...	...	...	...	...	...	...	...	0.1349 to 0.1353 in. (3.426 to 3.437 mm.)
105E-4672-F	...	...	...	...	...	...	...	...	...	...	...	0.1354 to 0.1358 in. (3.439 to 3.449 mm.)
2925E-4672-AF	...	...	...	...	...	...	...	...	...	...	...	0.1359 to 0.1363 in. (3.452 to 3.462 mm.)
105E-4672-G	...	...	...	...	...	...	...	...	...	...	...	0.1364 to 0.1368 in. (3.465 to 3.475 mm.)
2925E-4672-AG	...	...	...	...	...	...	...	...	...	...	...	0.1369 to 0.1373 in. (3.477 to 3.487 mm.)
105E-4672-H	...	...	...	...	...	...	...	...	...	...	...	0.1374 to 0.1378 in. (3.490 to 3.501 mm.)
2925E-4672-AH	...	...	...	...	...	...	...	...	...	...	...	0.1379 to 0.1383 in. (3.503 to 3.513 mm.)
105E-4672-J	...	...	...	...	...	...	...	...	...	...	...	0.1384 to 0.1388 in. (3.515 to 3.526 mm.)
2925E-4672-AJ	...	...	...	...	...	...	...	...	...	...	...	0.1389 to 0.1393 in. (3.528 to 3.538 mm.)
105E-4672-K	0.1394 to 0.1398 in. (3.541 to 3.551 mm.)
2925E-4672-AK	0.1399 to 0.1403 in. (3.553 to 3.564 mm.)

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105E-4672-L	0.1404 to 0.1408 in. (3.566 to 3.576 mm.)
2925E-4672-AL	0.1409 to 0.1413 in. (3.579 to 3.589 mm.)
105E-4672-M	...	...	...	...	...	...	0.1414 to 0.1418 in. (3.592 to 3.602 mm.)
2925E-4672-AM	...	...	...	...	...	...	0.1419 to 0.1423 in. (3.604 to 3.614 mm.)
105E-4672-N	...	...	...	...	...	...	0.1424 to 0.1428 in. (3.617 to 3.627 mm.)
2925E-4672-AN	...	...	...	...	...	...	0.1429 to 0.1433 in. (3.630 to 3.640 mm.)
105E-4672-R	...	...	...	...	...	...	0.1434 to 0.1438 in. (3.642 to 3.653 mm.)
2925E-4672-AR	...	...	...	...	...	...	0.1439 to 0.1443 in. (3.655 to 3.665 mm.)
105E-4672-T	...	...	...	...	...	...	0.1444 to 0.1448 in. (3.668 to 3.678 mm.)
2925E-4672-AT	...	...	...	...	...	...	0.1449 to 0.1453 in. (3.680 to 3.691 mm.)

Tightening Torques, lb. ft. (kg.m.)

Crown wheel to differential case bolts	...	...	...	...	...	50 to 55 (6.91 to 7.60)
Differential carrier to axle housing nuts	...	...	...	...	...	25 to 30 (3.46 to 4.15)
Differential bearing locking plate bolts	...	...	...	...	...	12 to 15 (1.65 to 2.07)
Differential bearing cap bolts	...	...	...	...	...	45 to 50 (6.22 to 6.93)
Axle shaft bearing retainer bolts	...	...	...	...	...	15 to 18 (2.07 to 2.49)
Universal joint flange to pinion flange	...	...	...	...	...	15 to 18 (2.07 to 2.49)
Rear axle filler plug	...	...	...	...	...	25 to 30 (3.46 to 4.15)
Axle shaft bearing assembly pressure (minimum)	...	...	...	...	...	1,200 lb. (544 kg.)
Axle shaft bearing retainer pressure (minimum)	...	...	...	...	...	800 lb. (363 kg.)

5/1 FRONT SUSPENSION

GENERAL DESCRIPTION

The front suspension utilises vertically mounted shock absorbers surrounded by large coil springs. Lateral movement of each front wheel is controlled by the track control arm and fore and aft movement is controlled by the stabiliser bar.

Downward movement of the wheel is limited by a rebound stop inside the suspension unit (or shock absorber) and upward movement by the spring reaching its limit of compression. In addition, on all models, a rubber bump stop is fitted around the suspension unit piston rod. This comes into operation before the spring is fully compressed.

The suspension mounting points are all rubber insulated to minimise the transmission of road noise and vibration to the body and interior. A "compliance device" is incorporated in the stabiliser bar to track control arm mounting. Its function is to permit the wheel a small amount of fore and aft movement and thus reduce the shock loading on the steering linkage when the wheel hits a sudden irregularity in the road surface.

Front suspension geometry figures, i.e. camber, castor and king-pin inclination angles, are all set in manufacture and are not adjustable.

Front Suspension Data

Type	...	...	...	...	...	...	Independent, Macpherson Strut
Lateral control	...	...	...	...	...	...	Track control arms
Longitudinal control	...	...	...	...	...	...	Stabiliser bar
Shock absorbers	...	...	...	...	...	...	Telescopic, Hydraulic, Double-Acting
Fluid type	...	...	...	...	...	...	S-M6C-1003-A
Fluid capacity	...	...	...	...	...	...	326 c.c.

Springs

Type ...	...	...	...	...	...	...	...	...	...	...	...	...	...	Coil
Identification	...	...	...	...	...	...	...	...	...	...	...	...	...	Green
Part number...	...	...	...	...	...	...	...	...	...	...	...	...	...	3038E-5310-E
Load (mean)	...	...	...	...	...	...	...	...	...	...	...	...	...	570 lb. (258.7 kg.)
Rate (mean)	...	...	...	...	...	...	...	...	...	...	...	...	...	100 lb./in. (17.86 kg./cm.)
Diameter of coils (mean)	...	...	...	...	...	...	...	...	...	...	...	...	...	5.31 in. (134.9 mm.)
Wire diameter	...	...	...	...	...	...	...	...	...	...	...	...	...	0.426 in. (10.8 mm.)
Wheel travel—Jounce	...	...	...	...	...	...	...	...	...	...	...	...	...	3.0 in. (76.2 mm.)
—Rebound	...	...	...	...	...	...	...	...	...	...	...	...	...	3.25 in. (82.6 mm.)

Front Suspension Units

Part number—Right-Hand	...	...	...	...	...	...	...	...	...	...	...	...	...	69EB-3K033-A-B
—Left-Hand	...	...	...	...	...	...	...	...	...	...	...	...	...	69EB-3K034-A-B
Identification	...	...	...	...	...	...	...	...	...	...	...	...	...	Green

Bump Rubbers

Part number—Single piece old type	...	...	...	...	...	...	...	...	...	...	...	...	...	69EB-3025-AA
—Two-piece new type—Assembly	...	...	...	...	...	...	...	...	...	...	...	...	...	69EB-3A012-AA
—Bump stop	...	...	...	...	...	...	...	...	...	...	...	...	...	69EB-3025-CA
—Piston rod shroud	...	...	...	...	...	...	...	...	...	...	...	...	...	69EB-3K019-BA

Tightening Torques, lb. ft. (kg.m.)

Suspension unit upper mounting bolts	...	...	...	...	...	...	...	...	...	...	...	...	...	15 to 18 (2.07 to 2.49)
**Spindle to top mount assembly	...	...	...	...	...	...	...	...	...	...	...	...	...	28 to 32 (3.90 to 4.40)
Track control arm ball stud nut	...	...	...	...	...	...	...	...	...	...	...	...	...	30 to 35 (4.15 to 4.85)
*Stabiliser bar attachment clamps	...	...	...	...	...	...	...	...	...	...	...	...	...	15 to 18 (2.07 to 2.49)
*Stabiliser bar to track control arm nut	...	...	...	...	...	...	...	...	...	...	...	...	...	25 to 30 (3.46 to 4.15)
*Track control arm inner bushing	...	...	...	...	...	...	...	...	...	...	...	...	...	22 to 27 (3.04 to 3.73)
Front suspension crossmember to body sidemember	...	...	...	...	...	...	...	...	...	...	...	...	...	25 to 30 (3.46 to 4.15)

*These to be tightened with the weight of the car resting on its wheels.
 **These to be tightened with wheels in straight-ahead position, and weight of car on wheels.

5/2 REAR SUSPENSION

GENERAL DESCRIPTION

Rear suspension is by conventional longitudinal semi-elliptic three leaf springs. The rear axle is located asymmetrically on the rear springs, i.e. it is closer to the front of the spring than it is to the rear.

Two radius arms are fitted as an integral part of the rear suspension. They are angled inwards from their mounting on the body giving greater control over lateral movement of the axle than the springs alone provide.

Telescopic, hydraulic, double-acting shock absorbers are fitted between the rear spring mounting and a reinforced mounting on the floor pan. The dampers are sealed and no periodic topping up is required.

The asymmetric mounting of the axle on the springs coupled with the use of angled radius arms provides a very refined axle control system. Axle tramp on acceleration and hop on braking are virtually eliminated and wheel movement, especially on rough ground, is well controlled so giving exceptional ride and handling characteristics.



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Rear Suspension and Axle Assembly

To minimise the transmission of road noise and vibration special attention has been given to the mounting of the rear springs at the body and axle casing mounting points. The springs, shock absorbers and radius arms are mounted on rubber and in addition at the point where the spring is secured to the axle by the "U" bolts, the spring is encased in a rubber envelope to provide further insulation from noise.

Rear Suspension Data

Type	Semi-elliptic leaf spring
Spring length (between eye centres)	47 in. (1144 mm.)
Width of leaves	2 in. (51 mm.)
Rate	97 lb./in. (17.3 kg./cm.)
Wheel travel—Jounce	2.70 in. (68.6 mm.)
—Rebound	5.00 in. (127.0 mm.)

Springs

<i>Number of leaves</i>	<i>Part Number</i>	<i>Identification</i>
3	69AB-5560-EA	Blue and Red

Shock Absorbers

<i>Part Number</i>	<i>Identification</i>
70AB-18080-AB	Yellow and White

Tightening Torques, lb. ft. (kg.m.)

	<i>Early</i>	<i>Later</i>
*Radius arm to axle	25 to 30 (3.46 to 4.15)	
*Radius arm to body	45 to 50 (6.22 to 6.93)	24 to 30 (3.40 to 4.20)
Shock absorber upper mounting bracket to body	15 to 18 (2.07 to 2.49)	
*Shock absorber to mounting bracket	25 to 30 (3.46 to 4.15)	
Shock absorber to spring plate	25 to 30 (3.46 to 4.15)	
*Rear spring "U" bolts	20 to 25 (2.76 to 3.46)	18 to 26 (2.50 to 3.60)
*Rear spring front hanger	22 to 27 (3.04 to 3.73)	
*Rear spring rear shackle nuts	8 to 10 (1.15 to 1.45)	
Spring centre bolt	15 to 18 (2.07 to 2.49)	

*These items to be tightened with components in the kerb weight position, i.e. the car must be resting on its wheels.

6/1 ENGINE

DATA

General

Type	4 cylinder in-line twin O.H.C.
Bore	3.2505 in. (82.566 mm.)
Stroke	2.867 in. (72.746 mm.)
Cubic capacity	95.2 cu. in. (1,560 c.c.)
Compression ratio	9.5 : 1
Compression pressure (hot)	180 to 200 lb./sq. in. (12.66 to 14.06 kg./sq. cm.) at cranking speed 800 to 1,000 rev./min.
Maximum brake horsepower (nett)	109.5 at 6,000 rev./min.
Maximum torque (nett)	106.5 lb. ft. at 4,500 rev./min.
Firing order	1, 3, 4, 2
Location of No. 1 cylinder	Next to radiator
Idling speed	800 to 1,000 rev./min.
Engine mounting	3-point suspension on shear type bonded rubber mounting

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Dimensions:

Weight (dry—less clutch and mountings)	264.4 lb. (120 kg.)
Length (fan to clutch face)	20.41 in. (51.84 cm.)
Width—overall	...	...	...	...	...	26.22 in. (66.80 cm.)
—without exhaust manifold	...	...	...	...	...	21.54 in. (54.71 cm.)
Height (crank $\text{\textcircled{C}}$ to top of engine less air cleaner)	...	...	...	...	...	18.27 in. (46.41 cm.)

Camshafts

Material	...	...	...	...	...	Cast Alloy Iron
Drive	...	...	...	...	...	Chain
Thrust	...	...	...	...	...	Taken by integral disc in groove in cylinder head
End-Float	...	...	...	...	...	0.003 to 0.010 in. (0.076 to 0.254 mm.)
Number of bearings	...	...	...	...	...	5
Journal diameter	...	...	...	...	...	1.0000 to 1.0005 in. (2.540 to 2.541 cm.)
Total effective bearing length	...	...	...	...	...	3.181 in. (80.80 cm.)
Bearing clearance	...	...	...	...	...	0.0005 to 0.0020 in. (0.013 to 0.051 mm.)
Bearing—type	...	...	...	...	...	Steel-backed, white metal liners
Cam lift—exhaust and inlet	...	...	...	...	...	0.350 in. (8.890 mm.)
Cam heel to toe dimension	...	...	...	...	...	1.549 to 1.551 in. (3.934 to 3.939 cm.)

Connecting Rods and Big End Bearings

Type	...	...	...	...	...	"H" section steel forging
Material	...	...	...	...	...	EN15B Steel
Length (centre to centre)	...	...	...	...	...	4.799 to 4.801 in. (12.189 to 12.194 cm.)
Piston pin fit in rod	...	...	...	...	...	0.0005 to 0.002 in. (0.013 to 0.051 mm.)
End-float on piston pin	...	...	...	...	...	0.004 to 0.010 in. (0.102 to 0.254 mm.)
Big end bearings	...	...	...	...	...	Steel-backed copper/lead with lead indium overlay
Big end bore	...	...	...	...	...	2.0825 to 2.0830 in. (52.896 to 52.980 mm.)
Bearing liner wall thickness	...	...	...	...	...	0.0719 to 0.07225 in. (1.8262 to 1.8351 mm.)
Crankpin to bearing clearance	...	...	...	...	...	0.005 to 0.0022 in. (0.0127 to 0.0559 mm.)
Undersize bearings available	...	...	...	...	...	0.010 in. (0.25 mm.) 0.020 in. (0.51 mm.)
End-float on crankpin	...	...	...	...	...	0.004 to 0.010 in. (0.102 to 0.254 mm.)
Effective bearing length	...	...	...	...	...	0.83 to 0.87 in. (21.08 to 22.10 mm.)
Small end bush	...	...	...	...	...	Steel-backed lead/bronze
Small end bush inside diameter—Grade A (silver)	...	...	...	...	...	0.8125 to 0.8126 in. (20.637 to 20.640 mm.)
—Grade B (green)	...	...	...	...	...	0.8126 to 0.8127 in. (20.640 to 20.643 mm.)

Crankshaft and Main Bearings

Material	...	...	...	...	...	Nodular graphite cast iron
Number of main bearings	...	...	...	...	...	5
Main journal diameter	...	...	...	...	...	2.1253 to 2.1261 in. (53.983 to 54.003 mm.)
Regrind diameters	...	...	...	...	...	0.010 in. (0.25 mm.) u/s, 0.020 in. (0.51 mm.) u/s
Journal length—No. 1	...	...	...	...	...	1.219 to 1.239 in. (30.963 to 31.471 mm.)
—No. 2	...	...	...	...	...	1.273 to 1.283 in. (32.334 to 32.588 mm.)
—No. 3	...	...	...	...	...	1.247 to 1.249 in. (31.674 to 31.725 mm.)
—No. 4	...	...	...	...	...	1.273 to 1.283 in. (32.334 to 32.588 mm.)
—No. 5	...	...	...	...	...	1.300 to 1.330 in. (33.020 to 33.782 mm.)
Crankpin diameter	...	...	...	...	...	1.9370 to 1.9375 in. (49.200 to 49.213 mm.)
Centre journal fillet radius	...	...	...	...	...	0.70 in. (17.78 mm.)
Rear journal fillet radius	...	...	...	...	...	0.100 to 0.110 in. (2.54 to 2.794 mm.)
Intermediate and front journal fillet radius	...	...	...	...	...	0.096 to 0.110 in. (2.438 to 2.794 mm.)
Main bearings	...	...	...	...	...	Steel-backed copper/lead with lead/indium overlay
Main bearing clearance	...	...	...	...	...	0.0015 to 0.003 in. (0.038 to 0.076 mm.)

Bearing bore in cylinder block	...	...	...	...	2.2710 to 2.715 in. (57.683 to 57.696 mm.)
Crankpin journal diameter	...	...	...	...	1.9370 to 1.9375 in. (49.200 to 49.213 mm.)
Crankpin journal length	...	...	...	...	1.062 to 1.066 in. (26.975 to 27.076 mm.)
Crankshaft end-float	...	...	...	...	0.003 to 0.008 in. (0.076 to 0.203 mm.)
Crankshaft overall length	...	...	...	...	19.505 in. (49.54 cm.)
End-float thrust washer thickness	...	...	...	...	0.091 to 0.093 in. (2.311 to 2.362 mm.)

Cylinder Block

Type	...	...	...	...	Cylinder block cast integral with top half of crankcase
Material	...	...	...	...	Cast alloy iron
Water jackets	...	...	...	...	Full length
Cylinder bore diameter—Grade 1	...	...	...	...	3.2500 to 3.2503 in. (82.550 to 82.557 mm.)
—Grade 2	...	...	...	...	3.2503 to 3.2506 in. (82.557 to 82.563 mm.)
—Grade 3	...	...	...	...	3.2506 to 3.2509 in. (82.563 to 82.570 mm.)
—Grade 4	...	...	...	...	3.2509 to 3.2512 in. (82.570 to 82.577 mm.)

Cylinder Head and Valves

Type	...	...	Die cast aluminium alloy with inclined valves.	Separate inlet and exhaust ports
Combustion chambers	...	...	...	Fully machined, hemispherical
Valve guides	...	...	...	Cast iron bushes

Size	Outside diameter	Bore diameter in cylinder head
Standard	0.5000 to 0.5005 in. (12.700 to 12.713 mm.)	0.4990 to 0.4995 in. (12.675 to 12.687 mm.)
0.001 in. o/s (0.025 mm.)	0.5010 to 0.5015 in. (12.725 to 12.738 mm.)	0.5000 to 0.5005 in. (12.700 to 12.713 mm.)
0.005 in. o/s (0.127 mm.)	0.5050 to 0.5055 in. (12.827 to 12.840 mm.)	0.5040 to 0.5045 in. (12.802 to 12.814 mm.)
0.006 in. o/s (0.152 mm.)	0.5060 to 0.5065 in. (12.852 to 12.865 mm.)	0.5050 to 0.5055 in. (12.827 to 12.840 mm.)

Valve guide inside diameter	...	...	...	...	0.3113 to 0.3125 in. (7.907 to 7.938 mm.)
Valve stem diameter	...	...	...	...	0.310 to 0.311 in. (7.874 to 7.899 mm.)
Valve stem to guide clearance	...	...	...	...	0.0025 to 0.003 in. (0.640 to 0.076 mm.)
Valve head diameter—Inlet	...	...	...	...	1.526 to 1.530 in. (38.760 to 38.862 mm.)
—Exhaust	...	...	...	...	1.321 to 1.325 in. (33.553 to 33.655 mm.)
Valve seat angle	...	...	...	...	45
Valve seat inserts	...	...	...	...	Cast iron

ESCORT TWIN CAM

INLET

<i>Size</i>	<i>Outside diameter</i>	<i>Cylinder head recess diameter</i>
Standard	1.6235 to 1.6245 in. (41.237 to 41.262 mm.)	1.620 to 1.621 in. (41.148 to 41.173 mm.)
0.005 in. o/s (0.127 mm.)	1.6285 to 1.6295 in. (41.364 to 41.389 mm.)	1.625 to 1.626 in. (41.275 to 41.300 mm.)
0.010 in. o/s (0.254 mm.)	1.6335 to 1.6345 (41.491 to 41.516 mm.)	1.630 to 1.631 in. (41.402 to 41.427 mm.)
0.015 in. o/s (0.381 mm.)	1.6385 to 1.6395 in. (41.618 to 41.643 mm.)	1.635 to 1.636 in. (41.529 to 41.554 mm.)

EXHAUST

<i>Size</i>	<i>Outside diameter</i>	<i>Cylinder head recess diameter</i>
Standard	1.4985 to 1.4995 in. (38.062 to 38.087 mm.)	1.495 to 1.496 in. (37.973 to 37.998 mm.)
0.005 in. o/s (0.127 mm.)	1.5035 to 1.5045 in. (38.214 to 38.240 mm.)	1.500 to 1.501 in. (38.100 to 38.125 mm.)
0.010 in. o/s (0.254 mm.)	1.5085 to 1.5095 in. (38.367 to 38.392 mm.)	1.505 to 1.506 in. (38.227 to 28.252 mm.)
0.015 in. o/s (0.381 mm.)	1.5135 to 1.5145 in. (38.519 to 38.545 mm.)	1.510 to 1.511 in. (38.354 to 38.379 mm.)

Bore for tappets 1.3750 to 1.3755 in. (34.925 to 34.946 mm.)

Flywheel and Ring Gear

Type	Cast iron with ring gear shrunk on
Number of teeth on ring gear	110
Maximum run-out	0.004 in. (0.1016 mm.)
Number of flywheel retaining bolts	6
Size	$\frac{3}{8}$ in. — 24 U.N.F.
Clutch pilot spigot bearing—Pre-engine No. 18500	Sintered bronze bush
—From engine No. 18500	Needle roller bearing
Auxiliary jack shaft—material	Special Ford Cast Iron Alloy
—bearings	Steel-backed white metal
—journal diameter	1.5600 to 1.5605 in. (39.624 to 39.637 mm.)

Bearing—inside diameter...	...	...	...	...	...	1.5615 to 1.5620 in. (39.662 to 39.675 mm.)
Bearing length—front	...	...	...	...	...	0.79 in. (20.066 mm.)
—centre	...	...	...	...	...	0.68 in. (17.272 mm.)
—rear	...	...	...	...	...	0.79 in. (20.066 mm.)
Bearing bore—cylinder block	...	...	...	...	...	1.6885 to 1.6895 in. (42.888 to 42.913 mm.)
End-float	...	...	...	...	...	0.002 to 0.007 in. (0.051 to 0.178 mm.)
Thrust plate thickness	...	...	...	...	...	0.176 to 0.178 in. (4.470 to 4.496 mm.)
Drive	...	...	...	...	...	Single roller chain with tensioner

Lubrication System

Type Wet sump, pressure feed system with full-flow filter. Main, camshaft auxiliary shaft and connecting rod big end bearings pressure fed. Piston pin and cylinder wall lubrication by splash and oil mist from squirt holes in connecting rods. Timing chain lubrication by metered jet of oil

Oil pressure	...	...	...	...	...	35 to 40 lb./sq. in.
Oil filter type	...	...	...	...	...	Full flow with replaceable element
Sump capacity (less oil filter and cooler)	...	...	...	...	...	8 Imp. pints
Oil filter capacity	...	...	...	...	...	$\frac{1}{2}$ Imp. pint
Oil cooler capacity	...	...	...	...	...	$1\frac{1}{4}$ Imp. pint
Grade of oil— <i>Temperature Range</i>						<i>S.A.E. Viscosity No.</i>
Under—10°F (—23°C)	...	...	...	...	...	5W/20
—10°F to +20°F (—23°C to —7°C)	...	...	...	...	...	10W/30
+20°F to +90°F (—7°C to 32°C)	...	...	...	...	...	20W/20 and 10W/30
Over +90°F (32°C)	...	...	...	...	...	20W/40 and 30

Piston Pins

Type	...	...	...	...	...	Fully floating, retained by end circlips
Material	...	...	...	...	...	Machined seamless steel tubing
Length	...	...	...	...	...	2.80 to 2.81 in. (71.120 to 71.145 mm.)
Outside diameter	...	...	...	...	...	0.8121 to 0.8123 in. (20.627 to 20.632 mm.)
Clearance in piston	...	...	...	...	...	0 to 0.0002 in. (0 to 0.005 mm.) selective
Clearance in small end bush	...	...	...	...	...	0.003 to 0.005 in. (0.076 to 0.127 mm.) selective

Piston Rings

Upper Compression Ring:

Material	...	...	Cast iron and chrome plated on periphery, carchrom plated (red) for identification and initial "bedding in"			
Type	...	...	...	...	...	Tapered
Radial thickness	...	...	...	...	...	0.122 to 0.130 in. (3.099 to 3.302 mm.)
Width	...	...	...	...	...	0.077 to 0.078 in. (1.956 to 1.981 mm.)
Ring to groove clearance	...	...	...	...	...	0.0016 to 0.0031 in. (0.041 to 0.091 mm.)
Ring gap	...	...	...	...	...	0.009 to 0.014 in. (0.229 to 0.356 mm.)

Lower Compression Ring:

Material	...	...	...	...	...	Cast iron, copper plated for identification
Type	...	...	...	...	...	Externally stepped on lower face
Radial thickness	...	...	...	...	...	0.146 to 0.156 in. (3.708 to 3.962 mm.)
Width	...	...	...	...	...	0.077 to 0.078 in. (1.956 to 1.981 mm.)
Ring to groove clearance	...	...	...	...	...	0.0016 to 0.0036 in. (0.041 to 0.097 mm.)
Ring gap	...	...	...	...	...	0.009 to 0.014 in. (0.229 to 0.356 mm.)

ESCORT TWIN CAM

Oil Control Ring:

Material	...	...	...	...	...	...	...	...	Cast iron, copper plated for identification
Type	...	...	...	...	...	...	...	...	"Micro land" scraper with slotted channel
Radial thickness	...	...	...	...	...	...	...	...	0.122 to 0.130 in. (3.099 to 3.302 mm.)
Width	...	...	...	...	...	...	...	...	0.186 to 0.1865 in. (4.724 to 4.737 mm.)
Ring to groove clearance	...	...	...	...	...	...	...	...	0.0015 to 0.0030 in. (0.038 to 0.076 mm.)
Ring gap	...	...	...	...	...	...	...	...	0.010 to 0.020 in. (0.254 to 0.508 mm.)
Oil pump	...	...	...	...	...	...	...	...	Eccentric bi-rotor driven by skew gear on auxiliary jack shaft
Oil pump capacity	...	...	...	...	...	...	...	...	2 Imp. galls./min. at 2,000 rev./min.
Pump body bore diameter	...	...	...	...	...	...	...	...	0.500 to 0.501 in. (12.700 to 12.725 mm.)
Driveshaft diameter	...	...	...	...	...	...	...	...	0.4980 to 0.4985 in. (12.649 to 12.662 mm.)
Driveshaft to body clearance	...	...	...	...	...	...	...	...	0.0015 to 0.0030 in. (0.038 to 0.076 mm.)
Inner and outer rotor clearance	...	...	...	...	...	...	...	...	0.006 in. (0.152 mm.) maximum
Outer rotor and housing clearance	...	...	...	...	...	...	...	...	0.010 in. (0.254 mm.) maximum
Inner and outer rotor end-float	...	...	...	...	...	...	...	...	0.005 in. (0.127 mm.) maximum

Pistons

Type	...	...	...	...	...	...	...	...	Solid skirt, valve recesses in crown
Material	...	...	...	...	...	...	...	...	Aluminium alloy
Piston diameter—Grade 1	...	...	...	...	...	...	...	...	3.2500 to 3.2503 in. (82.550 to 82.558 mm.)
—Grade 2	...	...	...	...	...	...	...	...	3.2503 to 3.2506 in. (82.558 to 82.565 mm.)
—Grade 3	...	...	...	...	...	...	...	...	3.2506 to 3.2509 in. (82.565 to 82.573 mm.)
—Grade 4	...	...	...	...	...	...	...	...	3.2509 to 3.2512 in. (82.573 to 82.580 mm.)
Number of rings	...	...	...	...	...	...	...	...	Two compression, one oil control
Width of ring grooves—compression rings	...	...	...	...	...	...	...	...	0.0796 to 0.0806 in. (2.022 to 2.047 mm.)
—oil control ring	...	...	...	...	...	...	...	...	0.1880 to 0.1890 in. (4.775 to 4.801 mm.)
Piston pin bore diameter	...	...	...	...	...	...	...	...	Graded
Grade—silver	...	...	...	...	...	...	...	...	0.8121 to 0.8122 in. (20.627 to 20.630 mm.)
—green	...	...	...	...	...	...	...	...	0.8122 to 0.8123 in. (20.630 to 20.632 mm.)
Piston pin bore offset	...	...	...	...	...	...	...	...	0.040 in. (1.016 mm.) towards thrust face

Tappets

Type	...	...	...	...	...	...	...	...	Piston
Outside diameter	...	...	...	...	...	...	...	...	1.3742 to 1.3745 in. (34.905 to 34.912 mm.)
Tappet to cylinder head bore clearance	...	...	...	...	...	...	...	...	0.0005 to 0.0014 in. (0.013 to 0.036 mm.)

Timing Chain

Type	...	...	...	...	...	...	...	...	Single roller
Pitch	...	...	...	...	...	...	...	...	0.375 in. (9.525 mm.)
Roller width	...	...	...	...	...	...	...	...	0.225 in. (5.715 mm.)
Roller diameter	...	...	...	...	...	...	...	...	0.25 in. (6.35 mm.)
Chain free movement	...	...	...	...	...	...	...	...	$\frac{1}{2}$ in. mid-way between camshaft sprockets

Valve Springs

Type	...	...	...	...	...	...	...	...	Coil, two per valve
Outer valve spring load at 1.17 in. (29.718 mm.)	...	...	...	...	...	...	...	...	45 lb. (20.412 kg.)
Outer valve spring load at 0.83 in. (21.082 mm.)	...	...	...	...	...	...	...	...	109 lb. (49.442 kg.)
Inner valve spring load at 0.92 in. (23.386 mm.)	...	...	...	...	...	...	...	...	12.4 lb. (5.625 kg.)
Inner valve spring load at 0.58 in. (14.732 mm.)	...	...	...	...	...	...	...	...	33.5 lb. (15.195 kg.)
Outer valve spring fitted length (valve closed)	...	...	...	...	...	...	...	...	1.130 to 1.185 in. (28.702 to 30.099 mm.)

Valve Timing and Clearances

Theoretical valve timing—Inlet opens	...	...	...	...	...	...	...	...	22° B.T.D.C.
—Inlet closes	...	...	...	...	...	...	...	...	62° A.B.D.C.
—Exhaust opens	...	...	...	...	...	...	...	...	62° B.B.D.C.
—Exhaust closes	...	...	...	...	...	...	...	...	22° A.T.D.C.

Valve lift—Inlet	...	...	...	...	...	...	...	...	0.35 in. (8.89 mm.)
—Exhaust	...	...	...	...	...	...	...	...	0.35 in. (8.89 mm.)
Valve clearance (cold)—Inlet	...	...	...	...	...	...	...	0.005 to 0.007 in. (0.127 to 0.178 mm.)	
—Exhaust	...	...	...	...	...	...	...	0.006 to 0.008 in. (0.152 to 0.203 mm.)	
—Exhaust from engine No. LP9952	...	...	...	...	...	...	...	0.009 to 0.011 in. (0.229 to 0.279 mm.)	
Method of adjustment	...	...	...	...	...	...	...	...	Shims under tappets

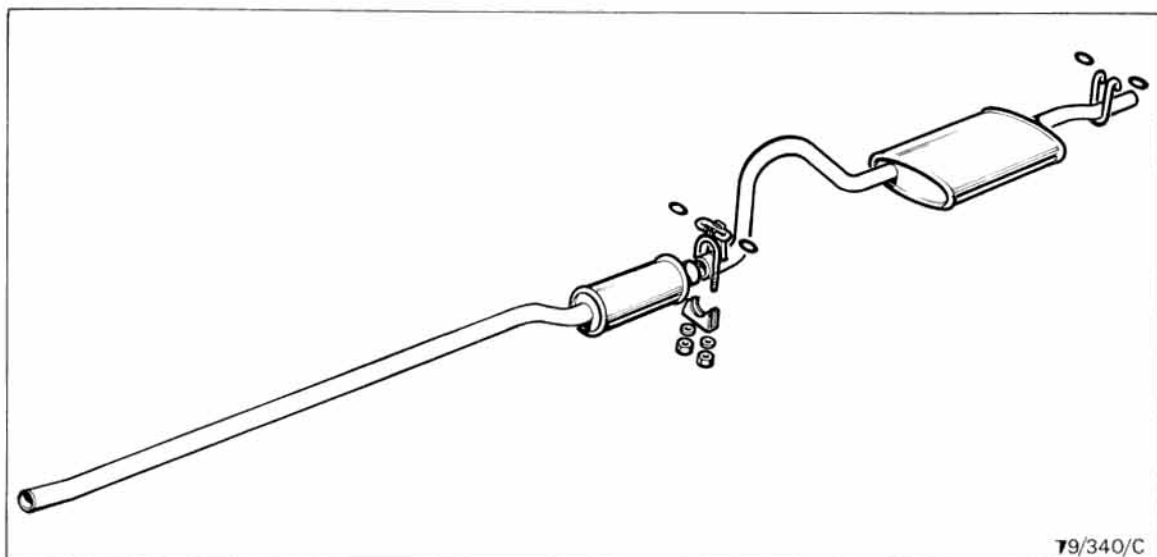
Tightening Torques, lb. ft. (kg.m.)

Cylinder head bolts	...	...	...	...	...	...	...	60 to 65 (8.29 to 8.98)
Main bearing cap	...	...	...	...	...	...	...	55 to 70 (7.60 to 8.29)
Connecting rod big end	...	...	...	...	...	...	...	44 to 46 (6.08 to 6.36)
Flywheel	...	...	...	...	...	...	...	45 to 50 (6.22 to 6.91)
Oil filter centre bolt	...	...	...	...	...	...	...	12 to 15 (1.66 to 2.07)
Manifold nuts	...	...	...	...	...	...	...	12 to 15 (1.66 to 2.07)
Front cover— $\frac{1}{4}$ in. dia. bolts	...	...	...	...	...	...	...	5 to 7 (0.69 to 0.97)
— $\frac{5}{16}$ in. dia. bolts	...	...	...	...	...	...	...	10 to 15 (1.38 to 2.07)
Sump	...	...	...	...	...	...	...	6 to 8 (0.83 to 1.11)
Rear oil seal retainer	...	...	...	...	...	...	...	12 to 15 (1.66 to 2.07)
Crankshaft pulley	...	...	...	...	...	...	...	24 to 28 (3.32 to 3.87)
Oil pump	...	...	...	...	...	...	...	12 to 15 (1.66 to 2.07)
Auxiliary shaft thrust plate	...	...	...	...	...	...	...	5 to 7 (0.69 to 0.97)
Auxiliary shaft sprocket	...	...	...	...	...	...	...	12 to 15 (1.66 to 2.07)
Sump drain plug	...	...	...	...	...	...	...	20 to 25 (2.76 to 3.46)
Camshaft bearing cap nuts	...	...	...	...	...	...	...	9 (1.24)
Camshaft sprocket bolts	...	...	...	...	...	...	...	25 to 30 (3.46 to 4.15)
Chain tensioner sprocket pin	...	...	...	...	...	...	...	40 to 50 (5.53 to 6.91)
Chain tensioner retaining bolt	...	...	...	...	...	...	...	45 to 50 (6.22 to 6.91)
Chain tensioner pivot pin	...	...	...	...	...	...	...	40 to 45 (5.53 to 6.22)

6/2 EXHAUST SYSTEM

Tightening Torques, lb. ft. (kg.m.)

Exhaust manifold bolts	...	...	...	...	...	...	...	12 to 15 (1.66 to 2.07)
Clamp nuts—Manifold to inlet pipe	...	...	...	...	...	...	...	12 to 15 (1.66 to 2.07)
—Front muffler to rear inlet pipe	...	...	...	...	...	...	...	12 to 15 (1.66 to 2.07)
Tail pipe support strap—bracket to body—bolts	...	...	...	...	...	...	...	12 to 15 (1.66 to 2.07)



Exhaust Pipe Assembly

T9/340/C

7 CLUTCH AND GEARBOX

Clutch

Type Single dry plate, diaphragm spring
 Actuation Hydraulic

Master Cylinder

Bore diameter 0.70 in. (1.77 cm.)

Slave Cylinder

Bore diameter 0.875 in. (2.22 cm)

Clutch Disc

Lining outside diameter 8.09 in. (20.5 cm.)
 Lining inside diameter 5.75 in. (14.6 cm.)
 Total friction area 47.36 sq. in. (304.1 sq. cm.)

Pressure Plate

Diameter 8.5 in. (22.35 cm.)

Gearbox

Ratios:		Gearbox
First		2.972
Second		2.010
Third		1.397
Top		1.000
Reverse		3.324

Main Drive Gear

Number of teeth 19
 Inside diameter gear end 0.9725 to 0.9732 in. (2.4702 to 2.4719 cm.)
 Mainshaft pilot end diameter 0.5895 to 0.5901 in. (1.492 to 1.498 cm.)

Countershaft:

Number of teeth	}	30 26 22 Reverse 19 17
------------------------	---	------------------------------------

End-float 0.008 to 0.020 in. (0.203 to 0.508 mm.)
 Bore diameter 0.933 to 0.934 in. (2.370 to 2.372 cm.)
 Thrust washer thickness 0.061 to 0.063 in. (0.155 to 0.160 cm.)
 Number of rollers 40
 Countershaft diameter 0.6818 to 0.6823 in. (1.732 to 1.733 cm.)

First Gear:

End-float 0.005 to 0.017 in. (0.127 to 0.432 mm.)
 Internal diameter 1.192 to 1.193 in. (3.028 to 3.030 cm.)
 Number of teeth 32

Second Gear:

End-float 0.005 to 0.017 in. (0.127 to 0.432 mm.)
 Internal diameter 1.457 to 1.458 in. (3.701 to 3.703 cm.)
 Number of teeth 28

Third Gear:

End-float	...	...	...	...	...	...	...	0.005 to 0.017 in. (0.127 to 0.432 mm.)
Internal diameter	...	...	...	...	...	...	...	1.376 to 1.377 in. (3.495 to 3.498 cm.)
Number of teeth	...	...	...	...	...	...	...	23

Reverse Idler Gear:

Internal diameter	...	...	...	...	...	...	...	0.7500 to 0.7508 in. (1.905 to 1.907 cm.)
Shaft diameter	0.7465 to 0.7470 in. (1.896 to 1.898 cm.)
Number of teeth	22

Speedometer:

Number of teeth	23
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Speedometer Driving Gear: ...

Number of teeth	7
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Lubrication:

Oil capacity	2.13 Imp. pints (2.56 U.S. pints, 1.21 litres)
Grade of oil	S.A.E. 80 E.P.

Tightening Torques, lb. ft. (kg.m.)

Clutch pressure plate to flywheel	...	...	...	...	...	12 to 15 (1.66 to 2.07)
Clutch housing to transmission case	...	...	...	...	...	40 to 45 (5.53 to 6.22)
Transmission case drain and filler plugs	...	...	...	...	...	25 to 30 (3.46 to 4.15)
Transmission extension to transmission case	...	...	...	...	...	30 to 35 (4.15 to 4.84)

8 COOLING SYSTEM

Capacity:

Complete system—with heater	...	...	...	12.5 Imp. pints (7.10 litres, 15.2 U.S. pints)
—without heater	...	...	...	10.5 Imp. pints (5.96 litres, 12.6 U.S. pints)
Anti-freeze	...	...	...	Ford Anti-freeze Plus, Part No. M97B18C in 50% solution of anti-freeze and water

Specific Gravity Readings at Constant Temperature 16°C (60°F)

Specific Gravity (providing no other additive is in the coolant)	Proportion of Anti-freeze (by volume)	Remains Fluid to		Solidifies at	
		°C	°F	°C	°F
1.080	50%	-37°	-34°	-58°	-72°
1.065	40%	-26°	-13°	-48°	-54°
1.050	30%	-16°	+ 3°	-39°	-38°
1.042	25%	-13°	+ 9°	-29°	-20°
1.034	20%	- 9°	+15°	-19°	- 3°
1.026	15%	- 7°	+20°	-14°	+ 7°
1.016	10%	- 4°	+25°	- 8°	+17°

Radiator

Type	...	...	...	...	...	Modine high efficiency fin
Core width	...	...	...	...	...	17.25 in. (43.82 cm.)
Core height	...	...	...	...	...	14.12 in. (35.87 cm.)
Core depth	...	...	...	...	...	1.27 in. (3.23 cm.)
Frontal area	...	...	...	...	...	244 sq. in. (1574.3 sq. cm.)
Number of tubes	...	...	...	...	...	56
Cap release pressure	...	...	...	...	...	13 p.s.i. (0.914 kg./sq. cm.)

ESCORT TWIN CAM

Fan

Number of blades—metal	...	...	...	...	...	...	...	...	...	...	...	2
—plastic	...	...	...	...	...	...	...	...	...	...	...	8
Diameter—metal	...	...	...	...	...	...	...	...	...	...	...	11.0 in. (27.94 cm.)
—plastic	...	...	...	...	...	...	...	...	...	...	...	12.0 in. (30.48 cm.)
Ratio—fan to engine	...	...	...	...	...	...	...	...	...	...	...	1 : 1

Thermostat

Type	...	...	...	...	...	...	...	...	...	...	...	Wax
Location	...	...	...	...	...	...	...	...	...	...	...	Cylinder head
Starts to open	...	...	...	...	...	...	...	...	...	...	...	85° to 89°C (185° to 192°F)
Fully open	...	...	...	...	...	...	...	...	...	...	...	99° to 102°C (210° to 216°F)

Fan Belt

Width	...	...	...	...	...	...	...	...	...	...	...	0.38 in. (9.7 mm.)
Outside length	...	...	...	...	...	...	...	...	...	...	...	32 in. (812.8 mm.)
Free play	...	...	...	...	...	...	...	...	...	...	...	0.5 in. (13 mm.)
Tension	...	...	...	...	...	...	...	...	...	...	...	45 to 55 lb. (20.43 to 24.97 kg.)

Tightening Torques, lb. ft. (kg.m.)

Thermostat housing	...	...	...	...	...	...	...	...	...	...	...	12 to 15 (1.66 to 2.07)
Fan blade—metal	...	...	...	...	...	...	...	...	...	...	...	5 to 7 (0.69 to 0.97)
—plastic	...	...	...	...	...	...	...	...	...	...	...	7 to 9 (0.97 to 1.24)

9 FUEL SYSTEM

Fuel Tank

Capacity	9.0 Imp. gallons (10.8 U.S. gallons, 40.9 litres)
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Carburettor

Type	Dual barrel, two venturis per barrel, horizontal Weber 40DCOE31
Identification	...	...	...	...	...	...	...	...	...	...	...	Green, blue, green paint spots on float chamber cover

Jet sizes:

Main venturi	...	...	...	...	...	...	...	...	...	...	...	30
Auxiliary venturi	...	...	...	...	...	...	...	...	...	...	...	4.5
Main jet	...	...	...	...	...	...	...	...	...	...	...	110
Idling jet	...	...	...	...	...	...	...	...	...	...	...	45/F8
Accelerator pump jet	...	...	...	...	...	...	...	...	...	...	...	35
Accelerator pump inlet valve bleed	...	...	...	...	...	...	...	...	...	...	...	40
Accelerator pump spring length	...	...	...	...	...	...	...	...	...	...	...	1.00 in. with 10.75 oz. lead load
Progression holes	...	...	...	...	...	...	...	...	...	...	...	1 × 120, 2 × 100
Starting jet	...	...	...	...	...	...	...	...	...	...	...	100/F5
Emulsion tube	...	...	...	...	...	...	...	...	...	...	...	F11
Air corrector jet	...	...	...	...	...	...	...	...	...	...	...	155
Needle valve	...	...	...	...	...	...	...	...	...	...	...	1.75
Starting air jet	...	...	...	...	...	...	...	...	...	...	...	100
Float weight	...	...	...	...	...	...	...	...	...	...	...	26 gms.
Float level	...	...	...	...	...	...	...	...	...	...	...	8.5 mm.(including gasket)
Float stroke	...	...	...	...	...	...	...	...	...	...	...	16.5 mm.
Petrol level	...	...	...	...	...	...	...	...	...	...	...	29 mm.
Carburettor to inlet stub double coil spring gap (between coils)	...	...	...	...	...	...	...	...	...	...	...	0.040 in. (1.12 mm.)

Fuel Pump

Type	Mechanical
Inlet depression	8.5 in. Hg. (21.59 cm.)
Delivery pressure	3.5 to 5 lb./sq. in. (0.25 to 0.35 kg./sq. cm.)
Diaphragm spring test length	0.641 in. (16.27 mm.)
Diaphragm spring test pressure	9.25 to 10 lb. (4.31 to 4.54 kg.)
Rocker arm spring test length	0.44 in. (11.18 mm.)
Rocker arm spring test pressure	5 to 5.5 lb. (2.268 to 2.495 kg.)

Tightening Torques, lb. ft. (kg.m.)

Fuel pump retaining bolts	12 to 15 (1.66 to 2.07)
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10 ELECTRICAL EQUIPMENT

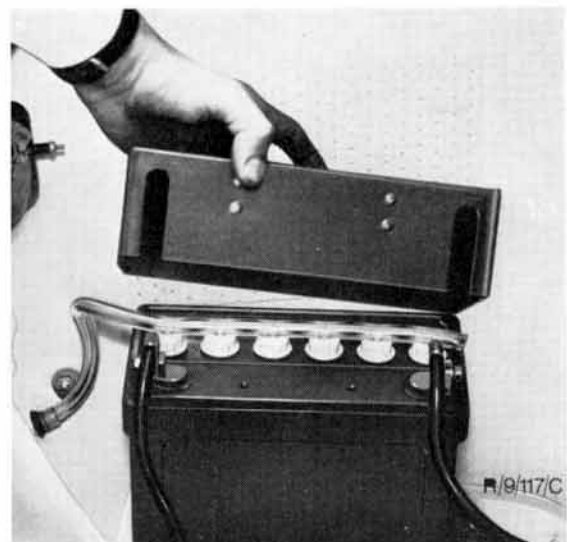
Battery

Type	Lead acid
Voltage	12
Capacity (amp. hr.)	38 at 29 hr. rate
Plates per cell	9
Specific gravity (charged)	1.275 to 1.285
Low limit while discharging at 20 hr. rate	1.105
Electrolyte capacity	4.5 Imp. pints (5.4 U.S. pints, 2.5 litres)

The battery in some twin cam Escorts has a length of tube fitted to the filler caps to allow any toxic gases emitted from the battery to escape into the atmosphere.

It is important to ensure that the vent tube does not become disconnected from the filler caps or the rear body panel, otherwise a dangerous build-up of battery fumes can occur. When topping up the battery the filler caps must be unscrewed without removing the vent tube. Starting with the filler cap at the sealed end of the tube, unscrew, allowing the cap to turn whilst still in the tube. When all the caps are unscrewed lift the complete assembly upwards to give access to the cells. Top-up the level to 0.25" (6.35 mm.) above the plate — 0.125" (3.18 mm.) below the filler neck. **Do Not Overfill.** The filler caps must be replaced in the reverse order to the order in which they were removed, i.e. starting with the cap nearest the rear of the car.

Battery Vent Pipe



ESCORT TWIN CAM

If the vent tube has to be removed at any time, it is important that it is carefully disconnected from the filler caps by supporting the underneath of the tube at one side of a cap, and at the same time lifting the tube on the other side. In the event of a filler cap nipple breaking off, the whole cap should be replaced immediately.

A cover is fitted over the top of the battery and held in place by a retaining strap. This cover protects the battery terminals and vent tube from accidental damage, and it is essential that it is always replaced after topping up.

Coil

Type	...	...	...	...	...	12 volt, oil filled type for use with ballast resistor
Resistance at 18°C (65°F)—Primary	...	...	...	...	...	0.95 to 1.2 ohms
					—Secondary	5,900 to 6,900 ohms
Output	...	...	...	...	...	... 30 kV

Generator

Type	...	...	...	...	...	...	...	...	...	...	...	...	C-40
Speed (ratio to engine)	...	...	...	...	...	...	...	...	...	...	...	...	1.25 to 1
Brush length	...	...	...	...	...	...	...	...	...	...	...	...	0.718 in. (18.23 mm.)
Maximum charge	...	...	...	...	...	...	...	...	...	...	...	...	22 amps
Maximum output	...	...	...	...	...	...	...	...	...	...	...	...	264 watts
Fan belt tension (total free movement)	...	...	...	...	...	...	...	...	...	...	...	...	$\frac{1}{2}$ in. (13 mm.)

Regulator

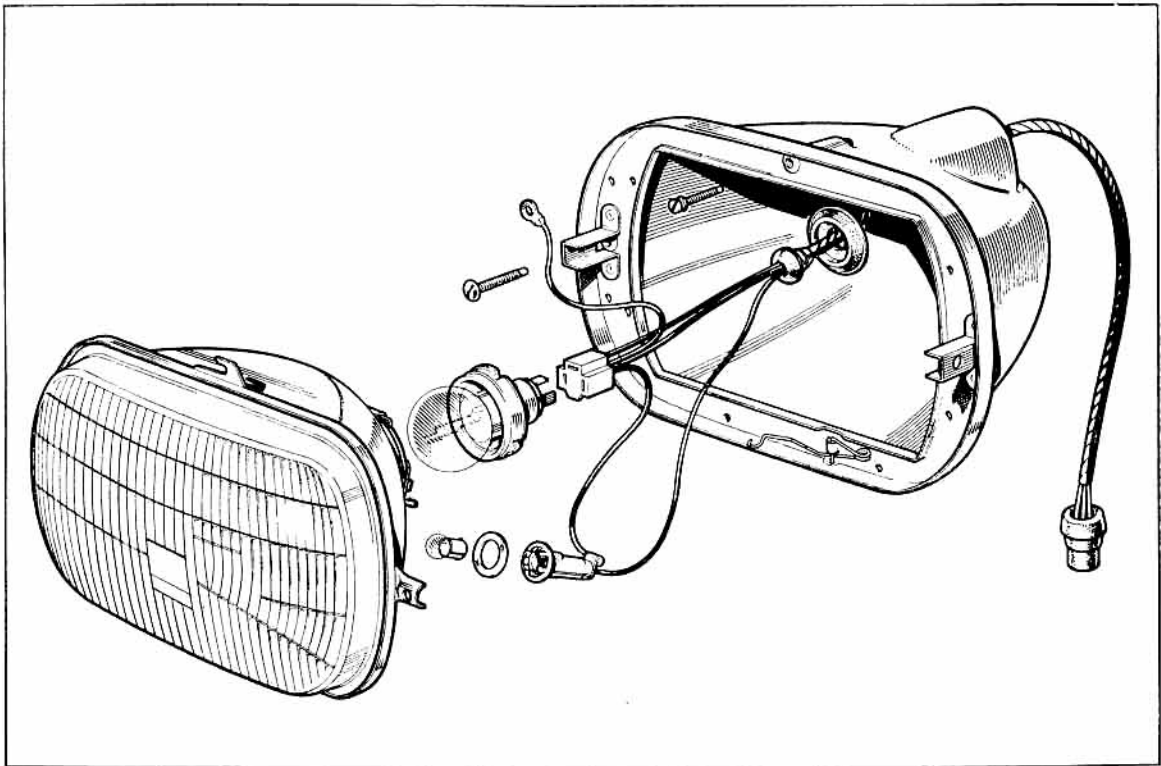
				Lucas	Autolite
Cut-out—Cut-in voltage	...	...	...	12.6 to 13.4 volts	
—Drop-off voltage	...	...	...	9.25 to 11.25 volts	
—Armature to core air gap	...	...	...	0.035 to 0.045 in. (0.9 to 1.1 mm.)	0.025 to 0.037 in. (0.64 to 0.94 mm.)
—“Follow-through” of moving contact	...	...	...	0.010 to 0.020 in. (0.3 to 0.5 mm.)	0.015 to 0.025 in. (0.38 to 0.64 mm.)
Current regulator on-load setting	...	...	...	Maximum rated generator output $\pm 1\frac{1}{2}$ amps.	
Armature to core air gap	...	...	...	0.045 to 0.049 in. (1.14 to 1.24 mm.)	0.014 to 0.019 in. (0.36 to 0.48 mm.)
Voltage regulator open circuit setting	...	...	...	14.4 to 15.6 volts at 20°C (68°F)	
Armature to core air gap	...	...	...	0.045 to 0.049 in. (1.14 to 1.24 mm.)	0.024 to 0.028 in. (0.61 to 0.71 mm.)
Resistance of shunt windings	...	...	...	{ Cut-out ...	8.8 to 9.6 ohms
“Swamp” resistor	...	{ resistance measured between centre tag and base		{ Voltage Regulator ...	10.8 to 12.0 ohms
	...	{ resistance measured between tag ends before fitting			53 to 57 ohms
Field resistor	...	...	...	{ either 55 to 65 ohms (identification colour—Red)	
	...	...	...	{ or 37 to 43 ohms (identification colour—Yellow)	

Table Showing Relationship Between Regulator, Generator and Battery

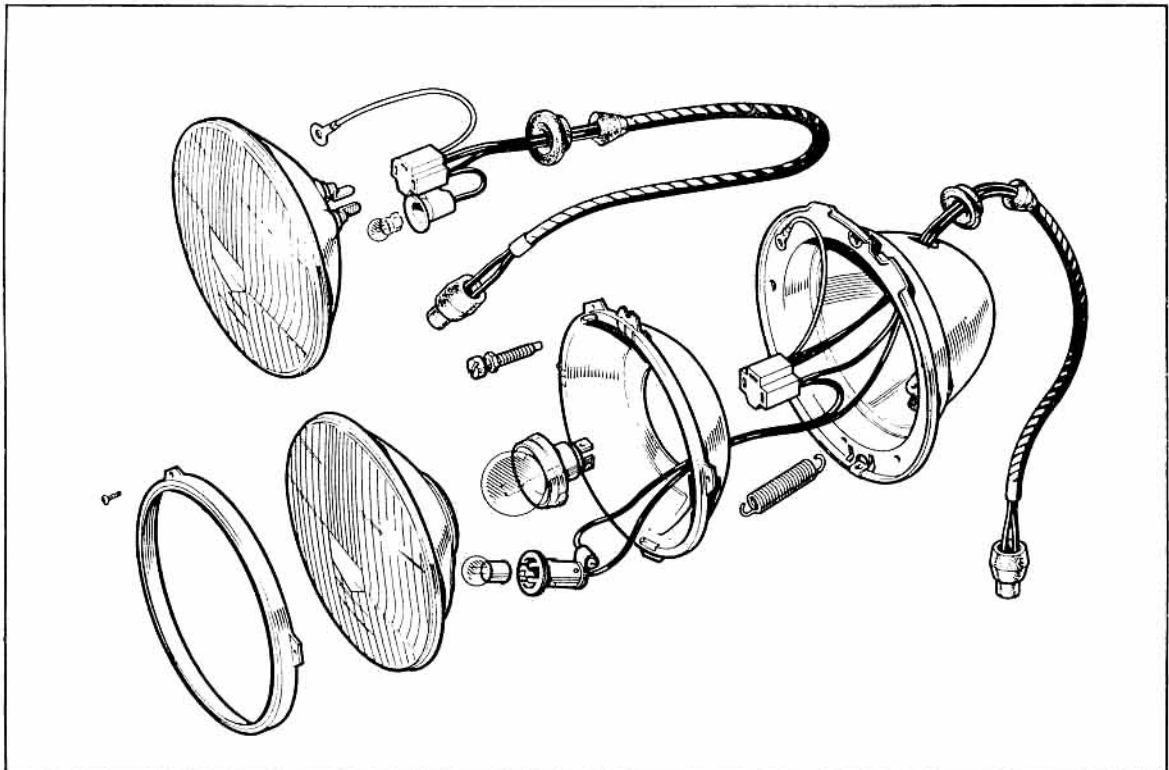
Equipment	Regulator			Generator			Battery	
	Part No.	Make	Identification No.	Part No.	Identification No.	Rated Output	Part No.	Capacity
Standard	{ 3004E-10505-A 3004E-10505-C }	Autolite Lucas	{ †GR5000 *37344 }	2701E-10002-A	C.40	22 amp	113E-10658-A	38 A/H

† On Regulator Cover
* Stamped on Regulator Base

See text for the procedure to follow when checking the regulator.



Headlamp Assembly — Early Models



Headlamp Assembly — Later Models

ESCORT TWIN CAM

Distributor

Type	Single pair contact breaker point
Automatic advance ... ..	... .. Mechanical
Drive	Skew gear from auxiliary shaft
Rotation ... ..	... .. Anti-clockwise
Initial advance ... ..	... .. 12° B.T.D.C.
Condenser capacity ... ..	... .. 0.21 to 0.25 microfarad
Contact breaker points gap	0.014 to 0.016 in. (0.36 to 0.41 mm.)
Dwell angle ... ..	... .. 57° to 63°
Firing order ... ..	... .. 1, 3, 4, 2
Dynamic advance ... ..	... .. 26° B.T.D.C. at 3,500 rev./min.
Breaker arm spring tension	17 to 21 ozs. (481.9 to 567.0 gms.)
High tension lead resistance	5000 to 9000 ohms/ft. (164 to 295 ohms/cm.)

Sparking Plugs

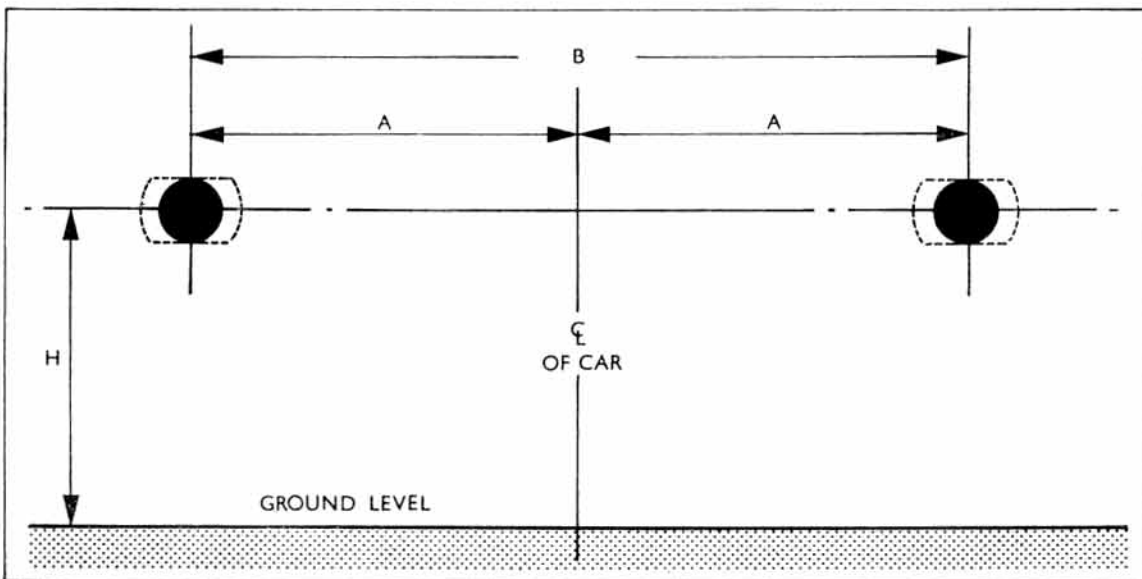
Size	14 mm.
Type	Autolite AG22
Gap	0.023 in. (0.59 mm.)

Inertia Starter Motor

Ampere draw (zero r.p.m.)	340 at 7.4 volts
Ampere draw (1,000 starter r.p.m.)	245 at 7.8 volts
Gear ratio	12.22 : 1
Teeth on pinion	9
Teeth on ring gear	110
Lock torque	6.4 lb. ft. (0.884 kg.m.)

Horn

Type	4 in. (101.6 mm.) "beep"
Current draw	4½ amp



A = 21.1 in. (536.2 mm.)
 B = 42.2 in. (1072.4 mm.)
 H = 23.3 in. (591.7 mm.)

Headlamp Alignment Diagram

Light Bulbs and Flasher Unit	Quantity	Wattage
Headlamp	2	60/75W sealed beam
Side light	2	6W wedge base
Front and Rear direction indicator	4	24W
Flasher unit	1	56W
Tail and Stop light	2	6/24W
Licence plate	1	6W wedge base
Interior light	1	3W festoon
Warning lights	4	2.2W wedge base
Instrument panel light	6	2.2W wedge base

Tightening Torques, lb. ft. (kg.m.)

Generator—mounting bolts	15 to 18 (2.08 to 2.49)
—adjusting strap	12 to 15 (1.66 to 2.08)
Spark plug	24 to 28 (3.32 to 3.87)

13 LUBRICATION AND MAINTENANCE

Schedule

Daily and Weekly attention

- Check engine oil level and top-up – Daily
- Check engine coolant level and top-up – Daily
- Check battery electrolyte level and check connections – Weekly
- Check brake and clutch fluid reservoir level – Weekly
- Check tyre pressures and inspect tyres – Weekly or before high speed motoring
- Check washer bottle – Weekly
- Check operation of all lights – Weekly

At first 600 miles (1,000 km.)

- Top-up brake and clutch fluid reservoirs
- Tighten cylinder head bolts to the correct torque (when cold)
- Tighten manifold and sump bolts to correct torque
- Check and adjust valve clearances
- Check timing chain tension
- Check fan belt for tension and wear
- Tighten generator mounting bolts to correct torque
- Check torque of rear spring "U" bolts
- Check door operation, adjust striker where necessary
- Inspect brake hoses and lines for signs of leaks or chafing
- Road or roller test, adjust carburettor idling and ignition timing

At first 3,000 miles (5,000 km.) or three months (whichever occurs first)

- Change engine oil and renew filter element
- Top-up brake and clutch fluid reservoirs
- Clean sparking plugs and set gaps
- Check and adjust valve clearances
- Check timing chain tension
- Check fan belt for tension and wear
- Tighten generator mounting bolts to correct torque
- Inspect radiator and heater hoses for leaks and deterioration
- Top-up radiator and windshield washer reservoir
- Correct tyre pressures and inspect tyres
- Check engine for water and/or oil leaks
- Check exhaust system for damage or leaks

ESCORT TWIN CAM

- Change gearbox oil
- Check front brake pads for wear
- Examine rear brake shoes and self-adjusting mechanism and blow clean
- Check operation of all lights, instruments and controls
- Inspect brake hoses and lines for signs of leaks or chafing
- Road or roller test, adjust carburettor idling and ignition timing

Every 3,000 miles (5,000 km.) or three months (whichever occurs first)

- Check and top-up engine oil level
- Top-up brake and clutch fluid reservoirs
- Clean sparking plugs and set gaps
- Check and adjust valve clearances
- Check timing chain tension
- Check fan belt for tension and wear
- Tighten generator mounting bolts to correct torque
- Inspect radiator and heater hoses for leaks and deterioration
- Top-up radiator and windshield washer reservoir
- Correct tyre pressures and inspect tyres
- Check engine for water and/or oil leaks
- Check exhaust system for damage or leaks
- Check front brake pads for wear
- Examine rear brake shoes and self-adjusting mechanism and blow clean
- Check operation of all lights, instruments and controls
- Road or roller test, adjust carburettor and ignition timing

Every 6,000 miles (10,000 km.) or six months (whichever occurs first)

- Change engine oil and renew filter element
- Lubricate distributor and generator rear bearing
- Top-up brake and clutch fluid reservoirs
- Clean sparking plugs and set gaps
- Examine and adjust distributor points, clean distributor cap and coil
- Grease distributor cam and governor
- Check and adjust valve clearances
- Check timing chain tension
- Check fan belt for tension and wear
- Tighten generator mounting bolts to correct torque
- Tighten manifold bolts to correct torque
- Inspect heater and radiator hoses for leaks and deterioration
- Check battery condition, check connections and top-up
- Top-up radiator and windshield washer reservoir
- Check tyre pressures and inspect tyres
- Check engine for water and/or oil leaks
- Check exhaust system for damage or leaks
- Top-up gearbox oil
- Top-up rear axle oil
- Check torque of rear spring "U" bolts
- Check steering and suspension linkages for wear
- Remove road wheels, check front brake pads for wear, examine rear brake shoes and self-adjusting mechanism and blow clean
- Inspect brake hoses and lines for signs of leaks or chafing
- Lubricate handbrake linkage
- Lubricate door locks, lock cylinders, bonnet safety catch pivot, door hinges, check straps, around door striker wedge and all oil can points
- Check operation of all controls, instruments and lights
- Road or roller test, adjust carburettor idling and ignition timing

Every 12,000 miles (20,000 km.) or twelve months (whichever occurs first)

As for 6,000 mile service plus the following items:—
Clean sediment from fuel pump filter and bowl
Clean crankcase emission flame trap
Check seat belts for security and wear

Every 18,000 miles (30,000 km.) or eighteen months (whichever occurs first)

As for 6,000 mile service plus the following items:—
Renew air cleaner element
Renew fuel line filter element (where fitted)

Every 24,000 miles (40,000 km.) or two years (whichever occurs first)

As for 6,000 mile service plus the following items:—
Renew brake fluid
Renew brake servo filter
Clean sediment from fuel pump filter and bowl
Clean crankcase emission flame trap
Repack and adjust front wheel bearings
Check seat belts for security and wear

Every 36,000 miles (60,000 km.) or three years (whichever occurs first)

Discuss with your Authorised Dealer the advisability of renewing all clutch and brake cylinder seals, brake flexible hoses and brake fluid.
