

# *Service Instruction Manual*

Fourth Issue



SERIES I AND II  
and  
TRIUMPH "RENOVN" MODELS

**GENERAL DATA**  
**SECTION A**

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# GENERAL DATA

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# GENERAL DATA

Summaries of useful dimensions and tolerances, relative to various components are given at the commencement of each of the respective sections to which they refer. Whilst data given, in some instances, in this section appears elsewhere in the body of the manual, such information being fairly frequently required, it is considered desirable that it should be summarized in this section for easy reference.

For the convenience of overseas readers, a table of metric equivalents is included in this section.

## VEHICLE DATA

The following data refers specifically to the Saloon, but as indicated with the Van, Estate and "Pick up" cars, details are largely applicable to these models.

### CHASSIS SPECIFICATION

#### Engine dimensions and details.

Bore of cylinder .. ..	3.347 in. (85 mm.)
Stroke of crank .. ..	3.622 in. (92 mm.)
Capacity .. ..	127.6 cu. ins. (2,088 cu. cms.)
Compression ratio .. ..	6.7 (7 after Eng. No. V.135000E) and TDB.50940)
Firing order .. ..	1-3-4-2
Spark plug make and type .. ..	Champion L.10 ½" reach
Spark plug gap .. ..	.030 — .032"
Distributor make and break gap .. ..	.010—.012 in. (.014 in.— .016 in. after Eng. No. V.153371E and TDC.8E)

* Ignition setting full retard	4° B.T.D.C.
Inlet rocker clearance (cold) .. ..	.010 in.
Exhaust rocker clearance (cold) .. ..	.012 in.
Rocker clearance for valve timing .. ..	.014 in.
Oil pressure at normal speeds .. ..	40-60 lbs. per sq. in.
Carburettor, make and type .. ..	Solex Type 32 BIO
* Earlier Timing Permissible fuel.	with high value octane

#### Carburettor settings.

	<i>Type 32BIO</i>
Choke .. ..	25
Main jet .. ..	135*
Pilot jet .. ..	55
Air bleed to pilot .. ..	1.2
Air correction .. ..	190
Needle valve .. ..	2 mm.
Starter air jet .. ..	6(2)
Starter petrol jet .. ..	130
Starter well .. ..	3 mm.
Vent plug .. ..	

\* 130 with high octane fuel.

<b>Valve timing</b> (valve rocker clearance set at .014 in.)	
Inlet valve opens	10° B.T.D.C. (.035" on stroke).
Inlet valve closes	50° A.B.D.C.
Exhaust valve opens	50° B.B.D.C.
Exhaust valve closes	10° A.T.D.C. (.035" on stroke).

Radiator water temperature (normal running)	60°—70° Centigrade.
Water capacity for cooling system	18 pints

### FROST PRECAUTIONS WITH "BLUECOL" ANTI-FREEZE MIXTURE (other brands as recom- mended by the manufacturers)

Degrees of frost (Fahrenheit)	15	25	35
Proportion (per-cent)	10	15	20
Amount of Bluecol (pints)	2	3	4

### PERFORMANCE FIGURES

B.H.P. (road setting)	68 at 4,200 r.p.m.
Maximum torque	1,300 inch lbs. at 2,000 r.p.m.

#### Maximum speeds.

Top gear (with overdrive)	80 m.p.h.
Second gear	50 m.p.h.
First gear	20 m.p.h.

#### Engine r.p.m. at 10 m.p.h.

Top gear (normal)	600 r.p.m.
Second gear	1,000 r.p.m.
First gear	2,120 r.p.m.
Reverse gear	2,470 r.p.m.

#### Acceleration (two up).

Top gear (normal)	10—30 m.p.h.	10 seconds
	30—50 m.p.h.	11 seconds
Through gears	0—50 m.p.h.	16 seconds

#### Consumption

Petrol	23/24 m.p.g.
Oil	2,000 m.p.g.

#### Brakes.

From 30 m.p.h.	Stopping distance 30 ft.
From 40 m.p.h.	Stopping distance 60 ft.

### CAR DIMENSIONS

Wheel base	7 ft. 10 in.
Track: Front	4 ft. 3 in.
Rear	4 ft. 6 in.
Front wheel alignment	Parallel to ¼ in. "Toe in".
Ground clearance (under axle)	8 in.
Turning circle (between kerbs)	35 ft. 0 in.
Overall length (locker closed)	13 ft. 10 in.
Overall width	5 ft. 9 in.
Overall height	5 ft. 4 in.

### CAR WEIGHT

Complete with tools, fuel, oil and water	24 cwt. 1 qr.
Shipping weight (dry) (excluding extra equipment)	22 cwt. 3 qr.

### ROAD SPEED DATA

	<i>Top</i>	<i>Second</i>	<i>First</i>	<i>Reverse</i>
Gearbox ratios	1	1.67	3.54	4.11
Overall ratios	4.625	7.71	16.35	18.99
Back axle reduction	4.625 (37T×8T)			
Ratio where overdrive is engaged				3.598

## GENERAL DATA

### TYRE SIZES AND PRESSURES

Tyre size ... ..	...	...	...	5.50-16, 5.75-16
Tyre pressure (cold)		Front	Rear	
		Lbs./sq. in.	Lbs./sq. in.	
Four up ... ..	24		28 (26 for	
Six up or five up with luggage ... ..	24		28 (26 for	
			5.75 section tyre)	
			5.75 section tyre)	

### OIL AND PETROL CAPACITY

Engine oil capacity (including filter) ..	12 pints
Gearbox ... ..	1½ pints
Rear axle ... ..	2 pints
Fuel capacity ... ..	15 gallons

### CLUTCH ADJUSTMENT

Clutch toggle clearance measured at pedal pad ... ..	½ in. approx.
Clearance between toggle levers and release bearing ... ..	⅛ in.

### BODY SPECIFICATION

Type.  
4 door, 6 light.  
5-6 seater.  
Triplex toughened glass.

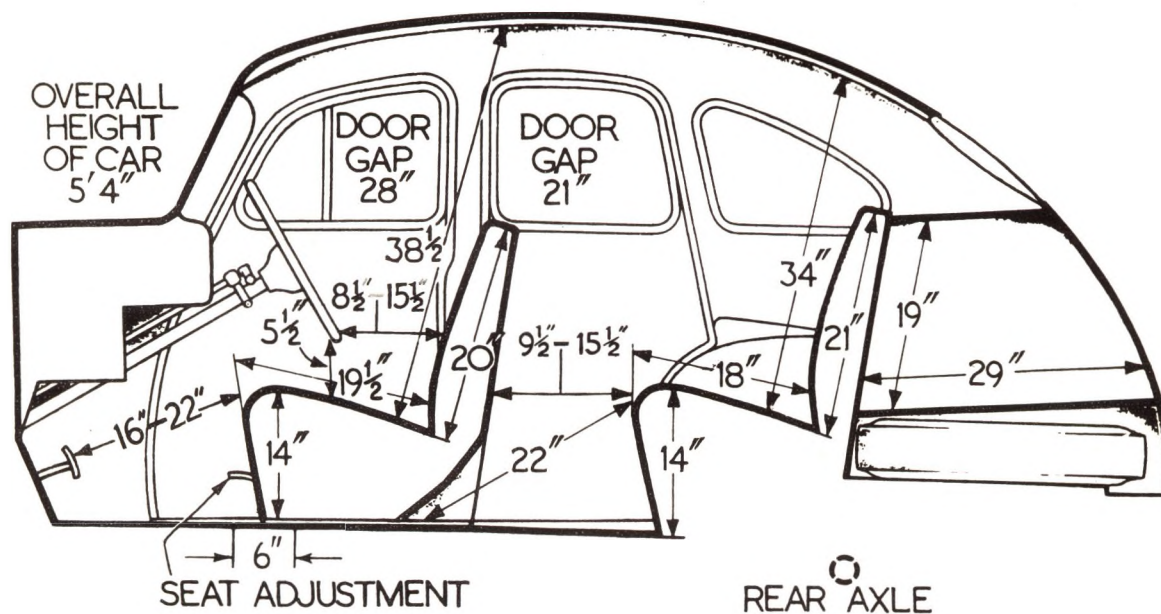


Fig. 1. Internal body dimensions in elevation. (By courtesy of "The Autocar".)

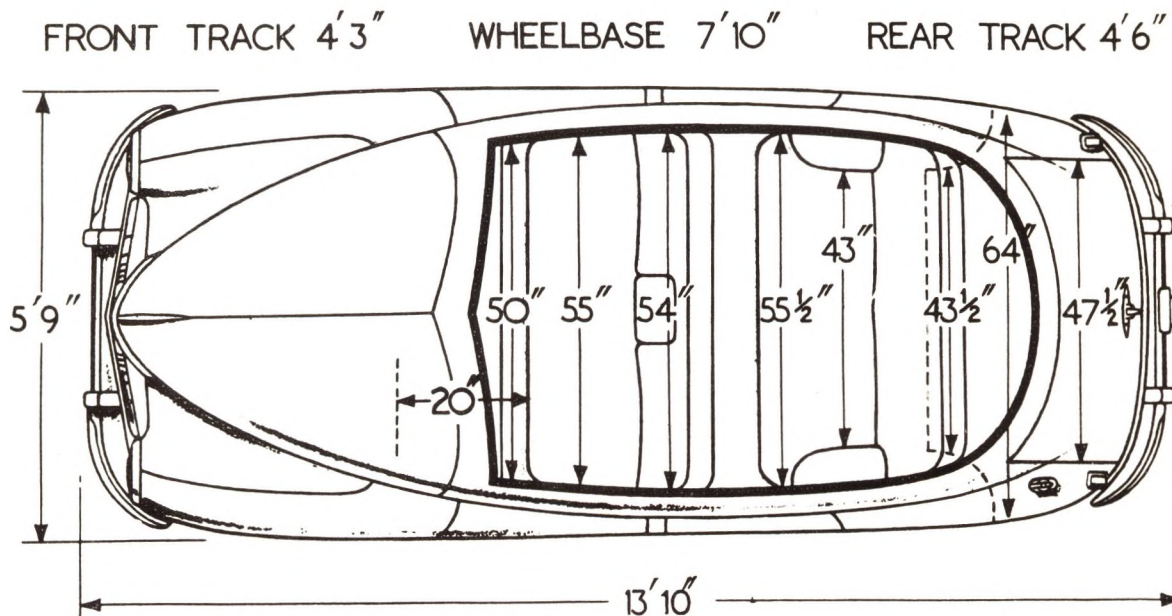


Fig. 2. Internal body dimensions in plan. (By courtesy of "The Autocar".)

## GENERAL DATA

### GENERAL DATA FOR OTHER 2-LITRE MODELS

The specification already given applies to the Saloon model, but as far as the chassis specification is concerned, applies also to the Estate car.

#### ESTATE CAR

The data for the Estate model differs in certain other respects and a summary of these variations are given below.

#### CAR WEIGHT

Shipping weight, dry (excluding extra equipment) ... ..	24 cwt.
Complete with tools, fuel, oil and water ... ..	25½ cwt.

#### PERFORMANCE FIGURES

**Acceleration** (two up).

Top gear ... ..	10—30 m.p.h.	11 seconds
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**Gradient** (fully laden).

Max. climbable gradient ... ..		1 in 3
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#### BODY SPECIFICATION

**Payload capacity.**

With three persons on front seat, pay load capacity is 5 cwt.	
With three persons on front seat and two at rear, reduces pay load capacity to 2 cwt.	

### THE STANDARD 12 CWT. DELIVERY VAN

As with the Estate model, this vehicle agrees largely with the details already given for the Saloon model. Such differences as exist are given below.

#### WEIGHT

Excluding extra equipment, dry ... ..	23 cwt.
Complete with fuel, tools, oil and water ... ..	24½ cwt.

#### TYRE SIZES AND PRESSURES

Tyre size ... ..		6.00-16 in.
Pressure (fully laden): Front ... ..		24 lbs. per sq. in.
Rear ... ..		30 lbs. per sq. in.

#### PERFORMANCE FIGURES

**Engine r.p.m. at 10 m.p.h.**

Top gear ... ..		570 r.p.m.
Second gear ... ..		960 r.p.m.
First gear ... ..		2,030 r.p.m.
Reverse gear ... ..		2,360 r.p.m.

**Acceleration** (fully laden).

Top gear ... ..	10—30 m.p.h.	15 seconds
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**Gradient.**

Max. climbable gradient (fully laden) ... ..		1 in 3½
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**Consumption.**

Petrol ... ..		22/23 m.p.g.
Oil ... ..		3,000 m.p.g.

### THE STANDARD PICK-UP UTILITY

The details given for the Saloon Model largely apply to this vehicle. The following difference should, however, be noted:—

#### WEIGHT

Excluding extra equipment dry ... ..	21½ cwt.
Complete with fuel, tools, oil and water ... ..	23½ cwt.

#### TYRE SIZES AND PRESSURES

Tyre Size ... ..		6.00-16 in.
Pressure ... ..		as for 12 cwt. Van

#### PERFORMANCE FIGURES

**Engine r.p.m. at 10 m.p.h.** as for 12 cwt. Delivery Van

**Acceleration** (fully laden)

Top Gear ... ..	10—30 m.p.h.	30 seconds
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#### BODY SPECIFICATION

**Carrying Capacity**

Full Passenger Complement	9 persons (3 in cab)
Alternatively 3 in cab and 8 cwt. payload	

## GENERAL DATA

### STANDARD MEASURE AND METRIC EQUIVALENTS

#### English to Metric (linear)

1 inch	=	2.54 centimetres
1 foot	=	30.4799 centimetres
1 yard	=	0.914399 metres
1 mile	=	1.6093 kilometres

#### Metric to English (linear).

1 centimetre	=	.3937 inches
1 metre	=	39.3702 inches
	=	1.0936 yards
1 kilometre	=	.62137 mile

#### English to Metric (square measure).

1 square inch	=	6.4516 square centimetres
1 square foot	=	9.2903 square decimetres
1 square yard	=	.836126 square metres

#### Metric to English (square measure).

1 square centimetre	=	.155 square inch
	=	1550.01 square inches
1 square metre	=	10.7639 square feet
	=	1.196 square yards

#### English to Metric (cubic measure).

1 cubic inch	=	16.387 cu. cms.
1 cubic foot	=	0.02832 cu. metres
	=	28.317 litres
1 gall. (0.1605 cu. ft.)	=	4.546 litres

#### Metric to English (cubic measure).

1 litre (1,000 cu.cms.)	=	.22 gallons = 1.7598 pints
1 cu. cm.	=	.061 cubic inches

#### English to Metric (weight).

1 pound (Avoirdupois)	=	.45359 kilogrammes
1 cwt. (112 pounds)	=	50.8 kilogrammes
1 ton (2,240 pounds)	=	1,016 kilogrammes

#### Metric to English (weight).

1 kilogramme	=	2.20462 pounds
100 kilogrammes	=	1.968 cwt.
1,000 kilogrammes	=	.9842 tons

### RELATIVE VALUES OF MILLIMETRES AND INCHES

<i>mm.</i>	<i>Inches</i>	<i>mm.</i>	<i>Inches</i>	<i>mm.</i>	<i>Inches</i>	<i>mm.</i>	<i>Inches</i>
1	0.0394	26	1.0236	51	2.0079	76	2.9922
2	0.0787	27	1.0630	52	2.0473	77	3.0315
3	0.1181	28	1.1024	53	2.0866	78	3.0709
4	0.1575	29	1.1417	54	2.1260	79	3.1103
5	0.1968	30	1.1811	55	2.1654	80	3.1496
6	0.2362	31	1.2205	56	2.2047	81	3.1890
7	0.2756	32	1.2598	57	2.2441	82	3.2284
8	0.3150	33	1.2992	58	2.2835	83	3.2677
9	0.3543	34	1.3386	59	2.3228	84	3.3071
10	0.3937	35	1.3780	60	2.3622	85	3.3465
11	0.4331	36	1.4173	61	2.4016	86	3.3859
12	0.4724	37	1.4567	62	2.4410	87	3.4252
13	0.5118	38	1.4961	63	2.4803	88	3.4646
14	0.5512	39	1.5354	64	2.5197	89	3.5040
15	0.5906	40	1.5748	65	2.5591	90	3.5433
16	0.6299	41	1.6142	66	2.5984	91	3.5827
17	0.6693	42	1.6536	67	2.6378	92	3.6221
18	0.7087	43	1.6929	68	2.6772	93	3.6614
19	0.7480	44	1.7323	69	2.7166	94	3.7008
20	0.7874	45	1.7717	70	2.7559	95	3.7402
21	0.8268	46	1.8110	71	2.7953	96	3.7796
22	0.8661	47	1.8504	72	2.8347	97	3.8189
23	0.9055	48	1.8898	73	2.8740	98	3.8583
24	0.9449	49	1.9291	74	2.9134	99	3.8977
25	0.9843	50	1.9685	75	2.9528	100	3.9370

## GENERAL DATA

### RELATIVE VALUE OF INCHES AND MILLIMETRES

<i>Inches</i>	0	1/16	1/8	3/16	1/4	5/16	3/8	7/16
0	0.0	1.6	3.2	4.8	6.4	7.9	9.5	11.1
1	25.4	27.0	28.6	30.2	31.7	33.3	34.9	36.5
2	50.8	52.4	54.0	55.6	57.1	58.7	60.3	61.9
3	76.2	77.8	79.4	81.0	82.5	84.1	85.7	87.3
4	101.6	103.2	104.8	106.4	108.0	109.5	111.1	112.7
5	127.0	128.6	130.2	131.8	133.4	134.9	136.5	138.1
6	152.4	154.0	155.6	157.2	158.8	160.3	161.9	163.5
<i>Inches</i>	1/2	9/16	5/8	11/16	3/4	13/16	7/8	15/16
0	12.7	14.3	15.9	17.5	19.1	20.6	22.2	23.8
1	38.1	39.7	41.3	42.9	44.4	46.0	47.6	49.2
2	63.5	65.1	66.7	68.3	69.8	71.4	73.0	74.6
3	88.9	90.5	92.1	93.7	95.2	96.8	98.4	100.0
4	114.3	115.9	117.5	119.1	120.7	122.2	123.8	125.4
5	139.7	141.3	142.9	144.5	146.1	147.6	149.2	150.8
6	165.1	166.7	168.3	169.9	171.5	173.0	174.6	176.2

### CONVERSION OF MILES INTO KILOMETRES

<i>Kilo</i>	<i>Miles</i>	<i>Kilo</i>	<i>Miles</i>	<i>Kilo</i>	<i>Miles</i>	<i>Kilo</i>	<i>Miles</i>	<i>Kilo</i>	<i>Miles</i>
1	5/8	16	10	31	19 1/2	46	28 5/8	60	37 1/2
2	1 1/4	17	10 5/8	32	19 7/8	47	29 1/2	70	43 1/2
3	1 7/8	18	11 1/4	33	20 1/2	48	29 7/8	80	49 3/4
4	2 1/2	19	11 3/4	34	21 1/8	49	30 1/2	90	55 7/8
5	3 1/8	20	12 1/8	35	21 3/4	50	31 1/8	100	62 1/2
6	3 3/4	21	13	36	22 3/8	51	31 3/4	200	124 1/4
7	4 1/8	22	13 5/8	37	23	52	32 1/4	300	186 3/8
8	5	23	14 1/4	38	23 5/8	53	32 7/8	400	248 1/2
9	5 5/8	24	14 7/8	39	24 1/4	54	33 1/2	500	310 3/4
10	6 1/4	25	15 1/2	40	24 7/8	55	34 1/8	600	372 7/8
11	6 7/8	26	16 1/4	41	25 1/2	56	34 3/4	700	435
12	7 1/2	27	16 3/4	42	26 1/8	57	35 3/8	800	497 1/8
13	8 1/8	28	17 1/8	43	26 3/4	58	36	900	559 1/2
14	8 3/4	29	18	44	27 3/8	59	36 5/8	1,000	621 3/8
15	9 1/8	30	18 5/8	45	28				

### FRACTIONS OF INCHES WITH DECIMAL AND METRIC EQUIVALENTS

<i>Fractions of Inches</i>	<i>Decimals</i>	<i>Millimetres</i>	<i>Fractions of Inches</i>	<i>Decimals</i>	<i>Millimetres</i>
1	1.0	25.4	1/26	0.038462	0.976923
1/2	0.5	12.7	1/27	0.037037	0.940741
1/3	0.333333	8.466667	1/28	0.035714	0.907142
1/4	0.25	6.35	1/29	0.034483	0.875862
1/5	0.2	5.08	1/30	0.033333	0.846667
1/6	0.166666	4.233333	1/31	0.032258	0.819355
1/7	0.142857	3.628571	1/32	0.03125	0.79325
1/8	0.125	3.175	1/33	0.030303	0.769697
1/9	0.111111	2.822222	1/34	0.029411	0.747058
1/10	0.1	2.54	1/35	0.028571	0.725714
1/11	0.090909	2.309091	1/36	0.027777	0.705556
1/12	0.083333	2.116667	1/37	0.027027	0.686476
1/13	0.076923	1.953846	1/38	0.026316	0.667631
1/14	0.071429	1.814286	1/39	0.025641	0.651282
1/15	0.066666	1.693333	1/40	0.025	0.635
1/16	0.0625	1.5875	1/41	0.02439	0.619512
1/17	0.058824	1.494118	1/42	0.023809	0.604761
1/18	0.055555	1.411111	1/43	0.023256	0.590598
1/19	0.052632	1.336842	1/44	0.022727	0.577272
1/20	0.05	1.27	1/45	0.022222	0.564444
1/21	0.047619	1.209524	1/46	0.021739	0.552174
1/22	0.045455	1.154545	1/47	0.021277	0.540426
1/23	0.043478	1.104348	1/48	0.020833	0.529166
1/24	0.041666	1.058333	1/49	0.020408	0.518367
1/25	0.04	1.016	1/50	0.02	0.508

# VANGUARD

## RECOMMENDED LUBRICANTS

### GENERAL DATA

#### BRITISH ISLES

<i>Component</i>	<i>Vacuum</i>	<i>Shell</i>	<i>Esso</i>	<i>Price's</i>	<i>Wakefield</i>	<i>Duckham's</i>
<b>ENGINE</b> Summer .. ..	Mobiloil A	Shell X-100 30	Essolube 30	Energol SAE 30	Castrol XL	Duckham's N.O.L. "Thirty"
Winter .. ..	Mobiloil Arctic	Shell X-100 20/20W	Essolube 20	Energol SAE 20	Castrolite	Duckham's N.O.L. "Twenty"
<b>Upper Cylinder Lubricant</b> .. ..	Mobil Upperlube	Shell Donax U	Essomix	Energol UCL	Castrollo	Duckham's Adcoids
<b>Flushing Oils</b> .. ..	Mobil Engine Flushing Oil	Shell Flushing Oil	Esso Flushing Oil	Energol Flushing Oil	Wakefield Flushing Oil	Duckham's N.O.L. "Ten"
<b>GEARBOX</b> .. ..	Mobiloil A	Shell X-100 30	Essolube 30	Energol SAE 30	Castrol XL	Duckham's N.O.L. "Thirty"
<b>REAR AXLE &amp; STEERING BOX</b> .. ..	Mobilube GX 90	Shell Spirax 90 EP	Esso Expee Compound 90	Energol EP SAE 90	Castrol Hypoy	Duckham's Hypoid 90
<b>PROPELLOR SHAFT</b>	Mobilube GX.140	Shell Spirax 140 EP	Esso Expee Compound 140	Energol EP SAE 140	Castrol Hi-Press	Duckham's N.O.L. EPT.140
<b>WHEEL HUBS and WATER PUMP</b> .. .. (Hand Gun)	Mobil Hub Grease	Shell Retinax A	Esso Grease	Energol C <sub>3</sub>	Castrolase Heavy	Duckham's HBB
<b>CHASSIS Grease Nipples</b> .. .. (Hand or pressure gun)	Mobilgrease No. 4	Shell Retinax A	Esso Grease	Energol C <sub>3</sub>	Castrolase C.L.	Duckham's Laminoid Soft
<b>Oil Points (Oil can)</b> Body and Chassis .. ..	Mobil Handy Oil	Shell X100 20/20W	Essolube 20	Energol SAE 20	Castrolite	Duckham's N.O.L. "Twenty"
<b>REAR ROAD SPRINGS</b> .. ..	Mobil Spring Oil	Shell Donax P	Esso Penetrating Oil	Energol Penetrating Oil	Castrol Penetrating Oil	Duckham's Laminoid Liquid
ALTERNATIVELY USE REAR AXLE OR ENGINE OIL						
<b>BRAKE CABLES</b> .. ..	Mobil Graphited Grease	Shell Retinax A	Esso Graphite Grease	Energol C <sub>3</sub> G	Castrolase Brake Cable Grease	Duckham's Keenol KG 16
<b>BRAKE RESERVOIR</b>	LOCKHEED ORANGE BRAKE FLUID					
<b>HYDRAULIC DAMPERS</b> Girling .. ..	WAKEFIELD GIRLING DAMPER OIL (THIN)					
Armstrong	ARMSTRONG SHOCK ABSORBER OIL No. 549 (SAE 30)					



## GENERAL DATA

### OVERSEAS COUNTRIES

<i>Component</i>	<i>Vacuum</i>	<i>Shell</i>	<i>Esso</i>	<i>Energol</i>	<i>Wakefield</i>	<i>Duckham's</i>
<b>ENGINE</b> Air Temp. °F Over 70° .. ..	Mobiloil AF	Shell X-100 SAE 40	Essolube 40	Energol Motor Oil SAE 40	Castrol XXL	Duckham's N.O.L. "Forty"
40° to 70° .. ..	Mobiloil A	Shell X-100 SAE 30	Essolube 30	Energol Motor Oil SAE 30	Castrol XL	Duckham's N.O.L. "Thirty"
10° to 40° .. ..	Mobiloil Arctic	Shell X-100 SAE 20/20W	Essolube 20	Energol Motor Oil SAE 20W	Castrolite	Duckham's N.O.L. "Twenty"
-10° to 10° .. ..	Mobiloil Arctic Special	Shell X-100 SAE 10 or Silver Shell	Essolube 10	Energol Motor Oil SAE 10W	Castrol Z	Duckham's N.O.L. "Ten"
<b>Upper Cylinder Lubricant</b> .. ..	Mobil Upperlube	Shell Donax U	Esso Upper Motor Lubricant	Energol Upper Cylinder Lubricant	Castrollo	Duckham's Adcoids
<b>Flushing Oils</b> .. ..	Mobiloil Artic Special	Shell Donax F	Ensay Flushing Oil	Energol Flushing Oil	Wakefield Flushing Oil	Duckham's N.O.L. "Ten"
<b>GEARBOX</b> Over 70° .. ..	Mobiloil GX90 or Mobiloil BB	Shell Spirax 90 EP or Shell X100 SAE 50	Esso XP Compound 90 or Essolube 50	Energol Motor Oil SAE 50 or EP SAE 90	Castrol Hypoy or Castrol XXL	Duckham's Hypoid 90 or Duckham's N.O.L. "Fifty"
10°—70° .. ..	Mobiloil GX 80 or Mobiloil A	Shell Spirax 80 EP or Shell X100 SAE 30	Esso XP Compound 80 or Essolube 30	Energol Motor Oil SAE 30 or EP SAE 80	Castrol Hypoy 80 or Castrol XL	Duckham's Hypoid 80 or Duckham's N.O.L. "Thirty"
Below 10° .. ..	Mobiloil Arctic	Shell X-100 SAE 20/20W	Essolube 20	Energol Motor Oil SAE 20W	Castrolite	Duckham's N.O.L. "Twenty"
<b>STEERING BOX AND REAR AXLE</b> Over 10° .. ..	Mobilube GX90	Shell Spirax 90 EP	Esso XP Compound 90	Energol EP SAE 90	Castrol Hypoy Gear Oil	Duckham's Hypoid 90
Below 10° .. ..	Mobilube GX80	Shell Spirax 80 EP	Esso XP Compound 80	Energol E.P SAE 80	Castrol Hypoy 80	Duckham's Hypoid 80
<b>PROPELLER SHAFT JOINTS</b>	Mobilube GX140	Shell Spirax 140 EP	Esso XP Compound 140	Energol SAE 140	Castrol Hi-Press	Duckham's N.O.L. EPT 140
<b>WHEEL HUBS and WATER PUMP</b> .. (Hand Gun)	Mobilgrease No. 5	Shell Retinax A	Esso Bearing Grease	Energrease C3	Castrolase Heavy	Duckham's H.B.B.
<b>CHASSIS Grease Nipples</b> .. (Hand or pressure gun)	Mobilgrease No. 4 or Mobilgrease No. 2	Shell Retinax A	Esso Chassis Grease	Energrease C3	Castrolase C.L.	Duckham's Laminoid Soft
<b>Oil Points (Oil can)</b> Body and Chassis ..	Mobiloil Arctic	Shell X-100 SAE 20/20W	Esso Handy Oil	Energol Motor Oil SAE 20W	Castrolite	Duckham's N.O.L. "Twenty"
<b>REAR ROAD SPRINGS</b> .. ..	Mobilgrease No. 2	Shell Donax P	Esso Penetrating Oil	Energol Penetrating Oil	Castrol Penetrating Oil	Duckham's Laminoid Liquid
ALTERNATIVELY USE REAR AXLE OR ENGINE OIL						
<b>BRAKE CABLES</b> ..	Mobilgrease No. 4	Shell Retinax A	Esso Spring Grease C.3G	Energrease Graphited No. 1	Castrolase Brake Cable Grease	Duckham's Keenol KG 16
<b>BRAKE RESERVOIR</b>	LOCKHEED ORANGE BRAKE FLUID or LOCKHEED No. 5 BRAKE FLUID LOCKHEED AMERICAN BRAKE FLUID No. 21					
<b>HYDRAULIC</b> <i>Girling</i>	WAKEFIELD GIRLING DAMPER OIL (THIN)					
<b>DAMPERS</b> <i>Armstrong</i>	ARMSTRONG SUPER (THIN) SHOCK ABSORBER OIL					
<i>Girling</i>	Mobil Shock Absorber Oil, Light	Shell Donax A1	Esso Shock Absorber Oil	Energol Shock Absorber Oil	Castrol Shockol	Duckham's S.A.P.
<b>Alternative Oils</b>	Mobiloil Arctic	Shell Donax A2	Esso Hydraulic Oil, Medium	Energol Auto 80	Castrolite	
<i>Armstrong</i>						

## GENERAL DATA

### TIGHTENING TORQUE FOR BOLTS, NUTS AND SHACKLES ON "VANGUARD" CHASSIS AND REAR AXLE

<i>Operation</i>	<i>Description</i>	<i>Part No.</i>	<i>Torque Recommended lb./ft.</i>	<i>Remarks</i>
Attachment of Rear Spring to Axle.	U Clip threaded $\frac{3}{8}$ " $\times$ 24NF with Simmonds Nuts.	NP.2607 or NN.2908	28—30	Pulled up to Spring Clamp Plate.
Attachment of Rear Spring to Shackle and Frame.	Shouldered Shackle Pin with $\frac{3}{8}$ " $\times$ 24NF thread.	57286	28—30	
Attachment of Rear Shackle to Frame.	Shouldered Shackle Pin with $\frac{1}{2}$ " $\times$ 20NF thread.	57281	60—65	Crushing of M/S Shackle Plate against narrow shoulder of pin with excessive tightening.
Attachment of Front and Rear Shock Absorbers, Stabilizer Bar, Link Arms, etc.	$\frac{7}{16}$ " $\times$ 20NF Bolts and Nuts, or Setscrews.	BH.1011 NH.2010	37—40	
Cotter Pins for Front Suspension Outer Fulcrums, Swivel Pins, etc.	Taper Pin with $\frac{5}{16}$ " B.S.F. thread.	101146	14—16	
Attachment of Lower Inner Wishbone Fulcrum, Spring Abutment Plate, etc.	$\frac{3}{8}$ " $\times$ 24NF Bolts and Nuts, or Setscrews.	59071	26—28	
Road Wheels.	$\frac{1}{2}$ " $\times$ 20NF.	57305	50—60	
Rear Axle Bearing Caps. Rear Axle Hypoid Pinion Flange Attachment.	$\frac{7}{16}$ " NF and NC Stud. $\frac{3}{4}$ " $\times$ 16NF.	58775 57868	60—65 140—160	
Rear Axle Cover.	$\frac{5}{16}$ " $\times$ 18NC Setscrews.	UH.0855	16—18	
Rear Hub to Axle Shaft.	$\frac{3}{4}$ " $\times$ 16NF.	58784	125—140	
Steering and Idler Bracket Attachment Bolt.	$\frac{1}{2}$ " $\times$ 20NF.	NL.2211	70—80	
	$\frac{3}{8}$ " $\times$ 24NF.	NH.2008	26—28	

## GENERAL DATA

### OVERSEAS COUNTRIES

Component	Vacuum	Shell	Esso	Energol	Wakefield	Duckham's	
<b>ENGINE</b> Air Temp. °F Over 70° .. ..	Mobiloil AF	Shell X-100 SAE 40	Essolube 40	Energol Motor Oil SAE 40	Castrol XXL	Duckham's N.O.L. "Forty"	
40° to 70° .. ..	Mobiloil A	Shell X-100 SAE 30	Essolube 30	Energol Motor Oil SAE 30	Castrol XL	Duckham's N.O.L. "Thirty"	
10° to 40° .. ..	Mobiloil Arctic	Shell X-100 SAE 20/20W	Essolube 20	Energol Motor Oil SAE 20W	Castrolite	Duckham's N.O.L. "Twenty"	
-10° to 10° .. ..	Mobiloil Arctic Special	Shell X-100 SAE 10 or Silver Shell	Essolube 10	Energol Motor Oil SAE 10W	Castrol Z	Duckham's N.O.L. "Ten"	
<b>Upper Cylinder Lubricant</b> .. ..	Mobil Upperlube	Shell Donax U	Esso Upper Motor Lubricant	Energol Upper Cylinder Lubricant	Castrollo	Duckham's Adcoids	
<b>Flushing Oils</b> .. ..	Mobiloil Arctic Special	Shell Donax F	Esso Flushing Oil	Energol Flushing Oil	Wakefield Flushing Oil	Duckham's N.O.L. "Ten"	
<b>GEARBOX</b> Over 70° .. ..	Mobiloil GX90 or Mobiloil BB	Shell Spirax 90 EP or Shell X100 SAE 50	Esso XP Compound 90 or Essolube 50	Energol Motor Oil SAE 50 or EP SAE 90	Castrol Hypoy or Castrol XXL	Duckham's Hypoid 90 or Duckham's N.O.L. "Fifty"	
10°-70° .. ..	Mobiloil GX 80 or Mobiloil A	Shell Spirax 80 EP or Shell X100 SAE 30	Esso XP Compound 80 or Essolube 30	Energol Motor Oil SAE 30 or EP SAE 80	Castrol Hypoy 80 or Castrol XL	Duckham's Hypoid 80 or Duckham's N.O.L. "Thirty"	
Below 10° .. ..	Mobiloil Arctic	Shell X-100 SAE 20/20W	Essolube 20	Energol Motor Oil SAE 20W	Castrolite	Duckham's N.O.L. "Twenty"	
<b>STEERING BOX AND REAR AXLE</b> Over 10° .. ..	Mobilube GX90	Shell Spirax 90 EP	Esso XP Compound 90	Energol EP SAE 90	Castrol Hypoy Gear Oil	Duckham's Hypoid 90	
Below 10° .. ..	Mobilube GX80	Shell Spirax 80 EP	Esso XP Compound 80	Energol E.P SAE 80	Castrol Hypoy 80	Duckham's Hypoid 80	
<b>PROPELLER SHAFT JOINTS</b>	Mobilube GX140	Shell Spirax 140 EP	Esso XP Compound 140	Energol SAE 140	Castrol Hi-Press	Duckham's N.O.L. EPT 140	
<b>WHEEL HUBS and WATER PUMP</b> .. (Hand Gun)	Mobilgrease No. 5	Shell Retinax A	Esso Bearing Grease	Energol C <sub>3</sub>	Castrol Heavy	Duckham's H.B.B.	
<b>CHASSIS Grease Nipples</b> .. (Hand or pressure gun)	Mobilgrease No. 4 or Mobilgrease No. 2	Shell Retinax A	Esso Chassis Grease	Energol C <sub>3</sub>	Castrol C.L.	Duckham's Laminoid Soft	
<b>Oil Points (Oil can)</b> Body and Chassis ..	Mobiloil Arctic	Shell X-100 SAE 20/20W	Esso Handy Oil	Energol Motor Oil SAE 20W	Castrolite	Duckham's N.O.L. "Twenty"	
<b>REAR ROAD SPRINGS</b> .. ..	Mobilgrease No. 2	Shell Donax P	Esso Penetrating Oil	Energol Penetrating Oil	Castrol Penetrating Oil	Duckham's Laminoid Liquid	
ALTERNATIVELY USE REAR AXLE OR ENGINE OIL							
<b>BRAKE CABLES</b> ..	Mobilgrease No. 4	Shell Retinax A	Esso Spring Grease C.3G	Energol Graphited No. 1	Castrol Brake Cable Grease	Duckham's Keenol KG 46	
<b>BRAKE RESERVOIR</b>	LOCKHEED ORANGE BRAKE FLUID or LOCKHEED No. 5 BRAKE FLUID LOCKHEED AMERICAN BRAKE FLUID No. 21						
<b>HYDRAULIC</b> Girling	WAKEFIELD GIRLING DAMPER OIL (THIN)						
<b>DAMPERS</b> Armstrong	ARMSTRONG SUPER (THIN) SHOCK ABSORBER OIL						
<b>Alternative Oils</b>	Girling	Mobil Shock Absorber Oil, Light	Shell Donax A1	Esso Shock Absorber Oil	Energol Shock Absorber Oil	Castrol Shockol	Duckham's S.A.P.
	Armstrong	Mobiloil Arctic	Shell Donax A2	Esso Hydraulic Oil, Medium	Energol Auto 80	Castrolite	

## GENERAL DATA

### TIGHTENING TORQUE FOR BOLTS, NUTS AND SHACKLES ON "VANGUARD" CHASSIS AND REAR AXLE

<i>Operation</i>	<i>Description</i>	<i>Part No.</i>	<i>Torque Recommended lb.   ft.</i>	<i>Remarks</i>
Attachment of Rear Spring to Axle.	U Clip threaded $\frac{3}{8}$ " $\times$ 24NF with Simmonds Nuts.	NP.2607 or NN.2908	28—30	Pulled up to Spring Clamp Plate.
Attachment of Rear Spring to Shackle and Frame.	Shouldered Shackle Pin with $\frac{3}{8}$ " $\times$ 24NF thread.	57286	28—30	
Attachment of Rear Shackle to Frame.	Shouldered Shackle Pin with $\frac{1}{2}$ " $\times$ 20NF thread.	57281	60—65	Crushing of M/S Shackle Plate against narrow shoulder of pin with excessive tightening.
Attachment of Front and Rear Shock Absorbers, Stabilizer Bar, Link Arms, etc.	$\frac{7}{16}$ " $\times$ 20NF Bolts and Nuts, or Setscrews.	BH.1011 NH.2010	37—40	
Cotter Pins for Front Suspension Outer Fulcrums, Swivel Pins, etc.	Taper Pin with $\frac{5}{16}$ " B.S.F. thread.	101146	14—16	
Attachment of Lower Inner Wishbone Fulcrum, Spring Abutment Plate, etc.	$\frac{3}{8}$ " $\times$ 24NF Bolts and Nuts, or Setscrews.	59071	26—28	
Road Wheels.	$\frac{1}{2}$ " $\times$ 20NF.	57305	50—60	
Rear Axle Bearing Caps. Rear Axle Hypoid Pinion Flange Attachment.	$\frac{7}{16}$ " NF and NC Stud. $\frac{3}{4}$ " $\times$ 16NF.	58775 57868	60—65 140—160	
Rear Axle Cover.	$\frac{5}{16}$ " $\times$ 18NC Setscrews.	UH.0855	16—18	
Rear Hub to Axle Shaft.	$\frac{3}{4}$ " $\times$ 16NF.	58784	125—140	
Steering and Idler Bracket Attachment Bolt.	$\frac{1}{2}$ " $\times$ 20NF.	NL.2211	70—80	
	$\frac{3}{8}$ " $\times$ 24NF.	NH.2008	26—28	

## GENERAL DATA

### TIGHTENING TORQUE FOR BOLTS, NUTS AND SETSCREWS ON "VANGUARD" ENGINE AND GEARBOX

<i>Operation</i>	<i>Description</i>	<i>Part No.</i>	<i>Torque Recommended lb./ft.</i>	<i>Remarks</i>
Main Bearing Caps.	$\frac{1}{2}$ " $\times$ 13NC Bolts to Block.	57121	90—100	
Cylinder Head.	$\frac{7}{16}$ " $\times$ 14NC and 20NF Stud.	60400 60260	60—65	
Flywheel Attachment to Crankshaft.	$\frac{3}{8}$ " $\times$ 24NF Bolts into Flywheel Flange.	102065	42—46	
Connecting Rod Caps.	$\frac{3}{8}$ " $\times$ 24NF Bolts into Rod.	101408	42—46	
Timing Chain Wheel Attachment to Camshaft.	$\frac{5}{16}$ " $\times$ 18NC Bolts into Camshaft.	56370	24—26	
Manifold Attachment.	$\frac{3}{8}$ " $\times$ 16NC and 24NF Stud.	58682	22—24	
Oil Pump Attachment, etc.	$\frac{5}{16}$ " $\times$ 18NC and 24NF Stud.	NH.2008	12—14	
Rear Oil Seal Attachment, etc.	$\frac{1}{4}$ " $\times$ 20NC Setscrew.	UH.0755	8—10	
Attachment Clutch.	$\frac{5}{16}$ " $\times$ 18NC Bolts or Setscrews.	BH.0856	20—22	
Attachment of Oil Filter, etc.	$\frac{5}{16}$ " $\times$ 18NC Bolts or Setscrews.	BH.0705	18—20	
Attachment of End Plates, Timing Cover, Clutch Housing, and Sump, etc.	$\frac{5}{16}$ " $\times$ 18NC and 24NF Studs. $\frac{5}{16}$ " $\times$ 14NF Bolts and Setscrews.	BH.0805 BH.0857 100749 BH.0855	12—14 16—18 18—20	Tapped into Aluminium sealing block.
Attachment of Starter Motor, etc.	$\frac{3}{8}$ " $\times$ 24NF Bolts.	BH.0915	26—28	
Dynamo Pulley Attachment.	$\frac{7}{16}$ " $\times$ 20NF Nut.	—	30—35	
Oil Gallery Plugs.	$\frac{7}{16}$ " $\times$ 14NC.	102785	32—36	Tighten on to copper washer.
Attachment of Gearbox Rear Extension, Front and Top Cover.	$\frac{5}{16}$ " $\times$ 18NC Setscrews.	BH.0858	14—16	Tapped holes in Aluminium case.
Attachment of Gearbox Selector Bush and Interlock.	$\frac{1}{4}$ " $\times$ 20NC Setscrews.	BH.0756	6—8	Tapped holes in Aluminium case.

- Notes :*
1. All Nuts are Mild Steel U.T.S. 30 tons/sq. in. minimum, except Simmonds Nuts which are Medium Tensile.
  2. NC—American National Coarse Thread.
  3. NF—American National Fine Thread.
  4. U.T.S.—Ultimate tensile strength of material.
  5. To convert lbs./ft. to lbs./inches—multiply by 12.

GENERAL DATA  
VANGUARD ENGINE POWER CURVES

CURVE NO 141B

CARBURETTOR ROAD SETTINGS  
SPECIFIED CURVE

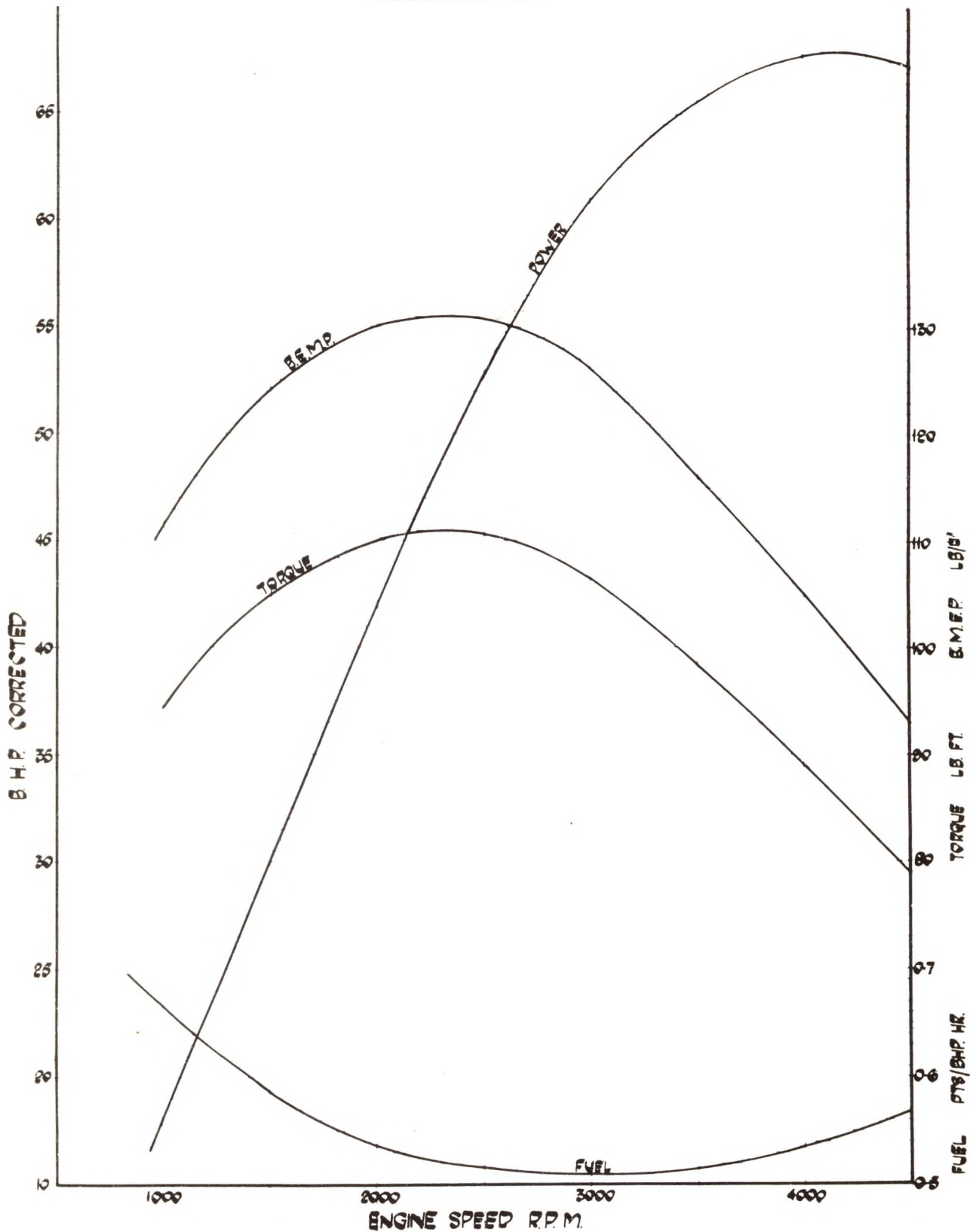


Fig. 3.

## GENERAL DATA

### IDENTIFICATION OF CHASSIS AND MAIN COMPONENTS

Details of the commission (chassis) numbers for the various 2-litre Standard and Triumph vehicles, with the prefix and suffix as appropriate to the models concerned, are given below.

The location of the commission and main component numbers for the Standard models are illustrated in Fig. 4.

With the Triumph "Renown," the main component numbers are located as for the Standard range, but the commission number is stamped on a plate affixed to the right-hand side of the bulkhead and the body number on the brass plate placed on the opposite side of the car.

The gearbox and rear axle numbers bear the same prefix letters as does the commission number of the vehicle concerned, but where a component's number is identical with the commission number, it is a pure coincidence.

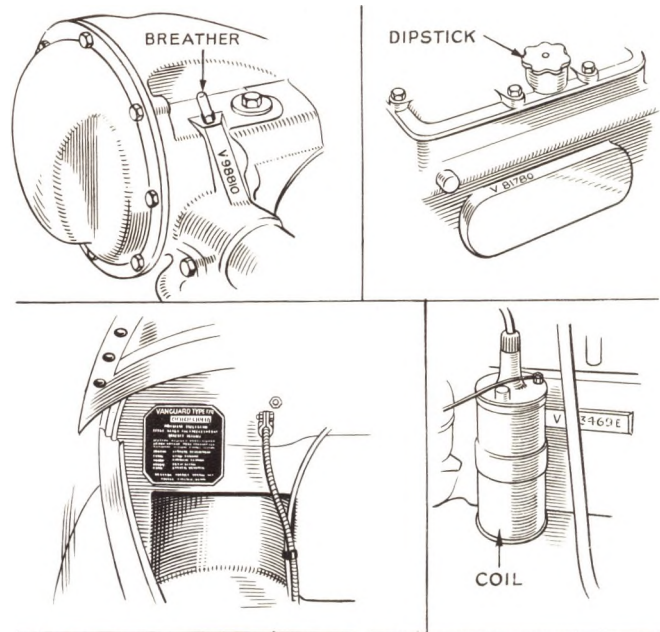
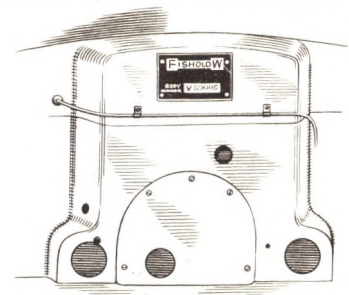


Fig. 4. Showing the location of numbers for Commission (Chassis), Engine, Body, Gearbox, and Rear Axle on the Standard range of cars.



## COMMISSION NUMBERS

### Standard Models

Chassis Type	Comm. No. Suffix	Comm. No. Prefix	Remarks
R.H.S. Saloon .. .. .	D.L.		
L.H.S. Saloon .. .. .	L.D.L.		
R.H.S. Van .. .. .	V.	V.I	
L.H.S. Van .. .. .	L.V.		
R.H.S. Estate Car .. .. .	S.C.	to	
L.H.S. Estate Car .. .. .	L.S.C.		
R.H.S. Pick-up Truck .. .. .	P.U.	V.I84800	
L.H.S. Pick-up Truck .. .. .	L.P.U.		
R.H.S. Coupe Utility .. .. .	C.U.		

### Triumph "Renown"

Saloon (9' W.B.) .. .. .	D.L.	TDB.1—TDB.6500
Saloon (9' 3" W.B.) .. .. .	D.L.	TDC.1—TDC.2000 & TDC.2501—TDC.3310
Limousine (9' 3" W.B.) .. .. .	D.L.	TDC.2001—TDC.2190

# "VANGUARD" SERIES II

## GENERAL DATA

### SUPPLEMENT

Water capacity for cooling system (15½ pints with heater) .. .. .	14½ pints
<b>Engine r.p.m. at 10 m.p.h.</b>	
Top gear (normal) .. .. .	580 r.p.m.
Top gear (overdrive) .. .. .	450 r.p.m.
Second gear (normal) .. .. .	960 r.p.m.
First gear (normal) .. .. .	2,040 r.p.m.
Reverse gear .. .. .	2360 r.p.m.

<b>Tyre sizes</b>	
Tyre size .. .. .	6.00—16

<b>Tyre pressure (cold)—lbs. per sq. inch.</b>		
Model	Front	Rear
Saloon	22	24
Estate Car	22	26
Pick-Up Utility	24	30
Van	24	30

### CAR WEIGHT

<b>Saloon.</b> ..	
Complete with tools, fuel, oil and water .. .. .	25 cwt. 2 qrs.
Shipping weight (dry) (excluding extra equipment) .. .. .	24 cwt. 1 qr.

**Clutch adjustment.**  
 Clutch toggle clearance at pedal pad  $\frac{7}{8}$ " (approx.)  
 Clearance between toggle levers and release bearing  $\frac{1}{16}$ "  
*Note.*—The clearance given at release bearing is equivalent to 0.075" lost movement in slave cylinder push rod.  
 (See Clutch Section.)

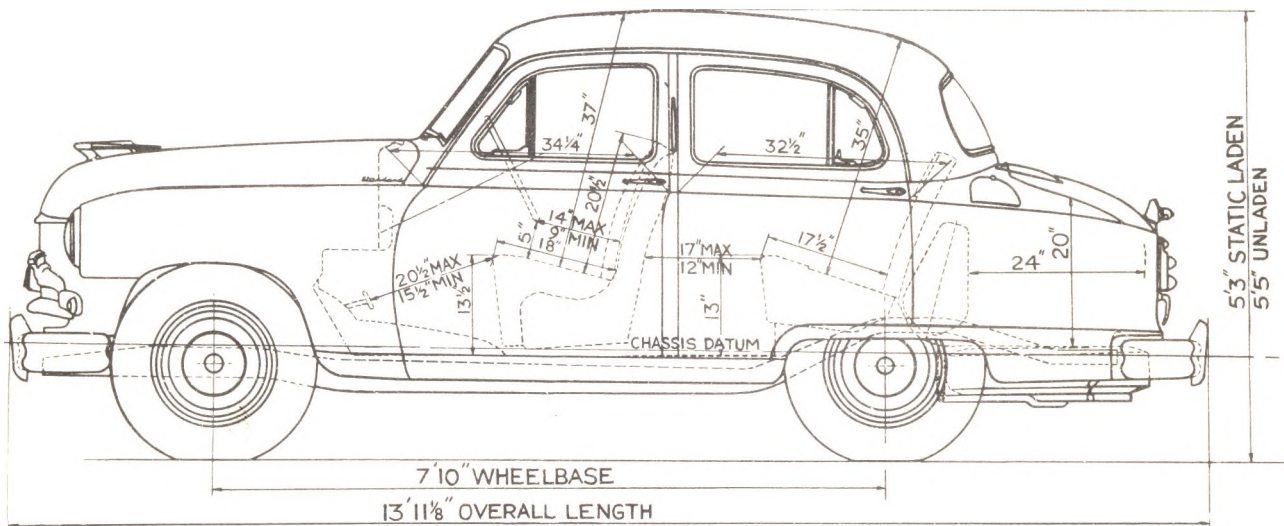


Fig. 1. Series II Saloon Body Dimensions (side elevation).



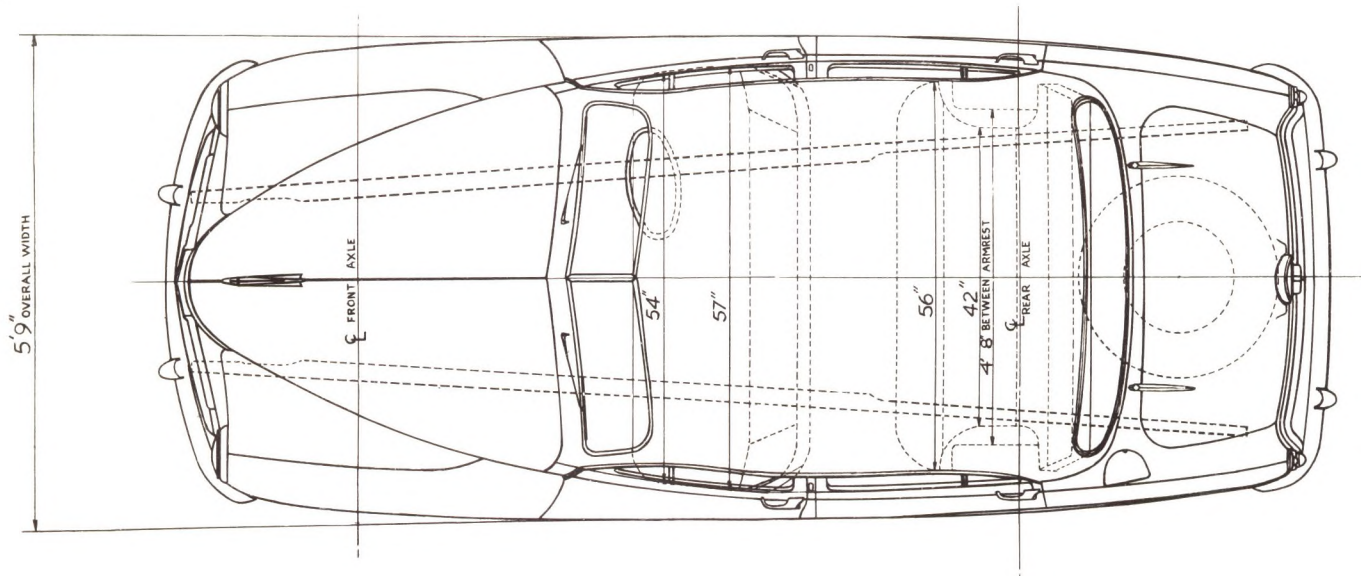


Fig. 2. Series II Saloon Body Dimensions (plan).

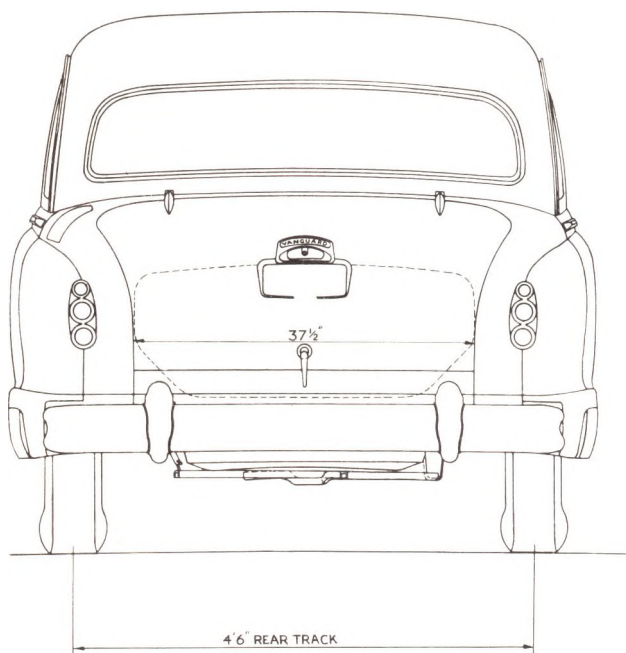


Fig. 3. Rear view of Series II Saloon