

1750 Berlina
1750 GT Veloce
1750 Spider Veloce



Alfa Romeo

technical characteristics
and
principal inspection specifications

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C O N T E N T S

T E C H N I C A L C H A R A C T E R I S T I C S

<u>PRINCIPAL CHARACTERISTIC DATA</u>	Page	2
Performance	"	2
Tires	"	3
Refillings	"	3
Prescribed oils and lubricants	"	3
Carburetion	"	4
Idling adjustment	"	4
Float level adjustment	"	5
Valve timing	"	6
Ignition	"	6
Spark plugs	"	6
Cooling system	"	7
Electrical equipment	"	10
Bulb's wattage	"	10
Tightening torque specifications	"	10

M A J O R I N S P E C T I O N S P E C I F I C A T I O N S

Camshafts	Page	12
Valves and valve guides	"	12
Valve seats	"	12
Valve cups	"	13
Valve springs	"	13
Connecting rods	"	13
Piston pins	"	13
Piston pin holes	"	13
Pistons and piston rings	"	14
Cylinder barrels	"	14
Crankshaft	"	15
Clutch	"	16
Gearbox	"	17
Rear axle and suspension	"	18
Front suspension	"	19
Brakes	"	20

WHEEL ALIGNMENT

Checking of wheel angles and car "trim" under static load	Page	22
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<u>1750 GT VELOCE and 1750 SPIDER VELOCE VARIANTS</u>	Page	25
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TECHNICAL CHARACTERISTICS

PRINCIPAL CHARACTERISTIC DATA

Number of cylinders		4
Bore	80 mm. (3.15")	
Stroke	88.5 mm. (3.48")	
Total cylinder capacity	1779 cc.	
Max. power at 5,500 rpm	SAE 132 HP	
Front track	1324 mm. (52.1")	
Rear track	1274 mm. (50.1")	
Wheelbase	2570 mm. (101")	
Min. turning circle	11100 mm. (437")	
Overall length	4390 mm. (173")	
Overall width	1565 mm. (61.7")	
Overall height (unladen)	1430 mm. (56.3")	
Dry weight with tools and jack	1110 Kg. (2447 lbs)	
Number of seats		5
Tires 165 x 14	} PIRELLI cinturato SR KLEBER COLOMBES V 10 MICHELIN X	
Fuel consumption per 100 Km (CUNA standard)	11.6 lt. (25 mpg G.B. - 20.8 mpg U.S.)	
(For best engine performance, the use of premium-grade fuel is advised)		

With 43 : 10 final drive

Gear	M a x. S p e e d s					
	R u n n i n g i n				A f t e r r u n n i n g i n	
	u p t o 1 0 0 0 K m (600 mi.)		1 0 0 0 t o 3 0 0 0 K m (600 to 1900 mi)			
	Km/h	mph	Km/h	mph	Km/h	mph
1st	27	17	34	21	44.5	28
2nd	46	29	56	35	74	46
3rd	67	42	82	51	109	68
4th	91	57	111	69	146	91
5th	115	71	141	88	180	112
Rev.	-	-	-	-	48	30

Oil pressures with hot engine	}	min. pressure at idling speed . . . . .	.5 - 1 Kg/cm ² (7 - 14 psi)
		min. pressure at top speed	3.5 Kg/cm ² (50 psi)
		max. pressure at top speed	4.5 - 5 Kg/cm ² (65 - 70 psi)

W A R N I N G : Check that alternator warning light goes off as soon as the engine exceeds idling speed.

Tires

Inflation pressure (with tire cold)

	Front wheels		Rear wheels		
	Kg/cm ²	psi	Kg/cm ²	psi	
PIRELLI cinturato SR - 165 x 14 (all conditions)	1.5	21.3	1.6	22.7	
KLEBER COLOBES V 10 - 165 x 14 {	With reduced load & occasional bursts of max. speed	1.7	24	2	28.5
		With full load and continuous max. speed	1.9	27	2.2	31
MICHELIN X - 165 x 14 {	With reduced load & occasional bursts of max. speed		1.8	25.6	1.8	25.6
		With full load and continuous max. speed	1.95	27.7	2.2	31

Refillings

		G. B.		U. S.	
ALFA ROMEO coolant mixture	9.7 lts	2.1 gals	2,5 gals		
Fuel reserve 6 to 7 lts (1.3 - 1.5 gals G.B.) (1.6 - 1.8 gals U.S.)	46 lts	10.1 gals	12.1 gals		
Oil {	Engine (sump & filter)* {	to max. level (regular changing)	6.00 Kgs	5.95 qts	7.1 qts
			to min. level	4.00 Kgs	3.95 qts	4.75 qts
	Gearbox	1.65 Kgs	3.2 pts	3.8 pts	
	Differential	1.25 Kgs	2.5 pts	3.0 pts	
	Steering box . . . . .	.25 Kgs	.5 pts	.6 pts	

- The total amount of oil in the circuit (sump, filter, passages) is 6.500 Kg. (6.5 qts G.B. - 7.8 qts U.S.)

* It is recommended to top up with the same type of oil as that in the engine.

Prescribed oils and lubricants

	Classification API - SAE - NLGI	Recommended commercial equivalent	
		A G I P	S H E L L
Engine	SAE 20 W/40 API MS	** F.1 Supermotoroil Multigrade 20 W/40	Super Motor Oil
Gearbox - Differential - Steering box	SAE 90 EP	F.1 Rotra Hypoid SAE 90	Spirax 90 EP
Propeller shaft universal joints and sliding yoke	NLGI 1	F.1 Grease 15	Retinax G
Front wheel bearings	NLGI 2/3	F.1 Grease 33 FD	Retinax AX
Brake & clutch fluid		ATE "Blau H"	

** For steady temperatures below 0°C (32°F) we advise the use of F.1 Supermotoroil Multigrade 10 W/40.

- SAE - Society of Automotive Engineers
- API - American Petroleum Institute
- NLGI - National Lubricating Grease Institute

In countries where the recommended lubricants are not available it is possible to replace them with products of other leading Companies provided that in accordance with the prescribed specifications,

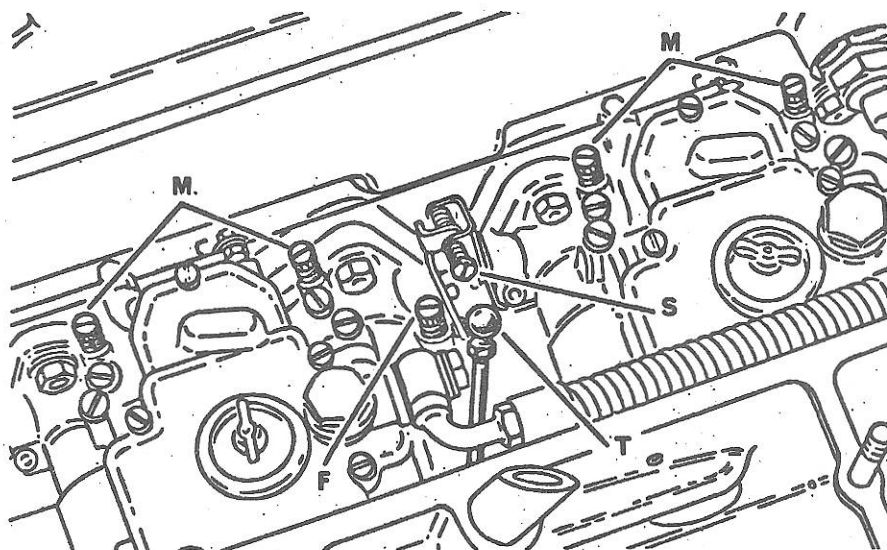
Carburetion

2 Carburetors WEBER 40 DCOE 32

Venturi	32 mm (1 3/16")
Main jet	125
Main mixture tube	F 9
Main air metering jet	200
Idling jet (axial passage 170)	50 F 14
Idling air metering jet	120
Choke jet	65 F 5
Choke air passage	200
Choke mixture passage	100
Acceleration pump jet	35
Acceleration pump inlet valve	80
Travel of acceleration pump control rod	14 mm (.55")
Delivery of acceleration pump every 20 strokes (for each barrel)	4 ± 1 cc.
Needle valve seat dia.	150
Float weight	26 grs
Distance of fuel level from float chamber flange (with a pressure of 2 mts (6'6") H ₂ O upstream the needle valve)	29 ± .5 mm (1.12 to 1.16")

Idling adjustment

- F Adjusting screw for minimum opening of throttle
- M Idling mixture adjusting screw.
- S Screw for synchronizing throttles of the two carburetors
- T Joint for control linkage (to pedal)



PREPARATORY STEPS

- Check the ignition timing and inspect the electric system (spark plugs, distributor, coil, etc.) for proper operation.
- Remove the air filter element and clean it thoroughly.
- Check the flexible mounts between carburetors and intake manifold for tightness.

ALIGNING THE THROTTLE VALVES

- Detach the control linkage "T" from carburetors.
- Slacken the screws "F" and "S" almost fully.
- Operate the throttles a few times to make sure there is no binding.
- Fully depress the throttle control lever of rear carburetor so that the throttles are fully closed; then screw in the screw "S" until contact is made.

IDLING

- Back up the screw "M" of half a turn.
- Tighten the screw "F" to contact, then screw it in one more turn to ensure feeding of engine.
- Connect the accelerator control linkage "T" to carburetors.
- Start the engine and warm it up.
- If necessary, back up the screw "F" very slowly until the engine runs at about 600 to 700 rpms.

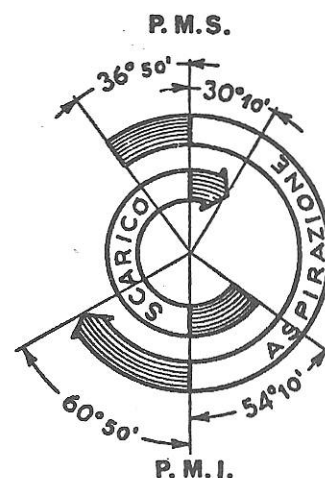
CHECKING OF VALVE OPENING AND CLOSING ANGLES

Clearance (with cold engine) between the unlobed profile of cams and the valve cup ceiling	{ intake exhaust . . . . .	.475 to .500 mm (.0187 to .0197")	.525 to .550 mm (.0206 to .0216")
Opening of intake valve	{ lift of cup corresponding to an angle (before TDC) . . . . .	.20 mm (.008")	18° 30' ± 1° 30'
Closing of intake valve	{ lift of cup corresponding to an angle (after BDC) . . . . .	.20 mm (.008")	42° 30' ± 1° 30'
Opening of exhaust valve	{ lift of cup corresponding to an angle (before BDC) . . . . .	.15 mm (.006")	42° 30' ± 1° 30'
Closing of exhaust valve	{ lift of cup corresponding to an angle (after TDC) . . . . .	.15 mm (.006")	18° 30' ± 1° 30'

ANGLE VALUES OF THE ACTUAL DIAGRAM OF VALVE TIMING SYSTEM WITH COLD ENGINE

(clockwise rotation direction of the crankshaft seen from the front side)

opening of intake valve (before TDC)	36° 50'
closing of intake valve (after BDC)	60° 50'
opening of exhaust valve (before BDC)	54° 10'
closing of exhaust valve (after TDC)	30° 10'
induction stroke	277° 40'
exhaust stroke	264° 20'



IGNITION

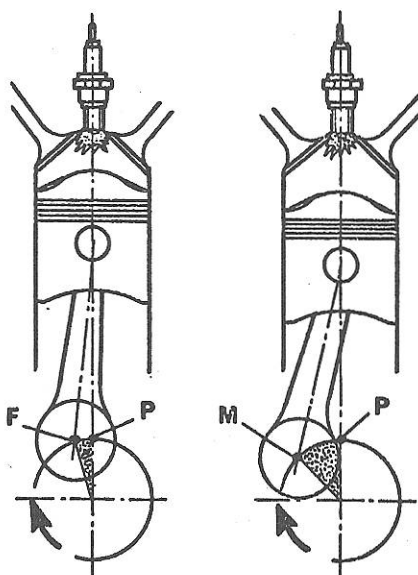
Firing order: 1 - 3 - 4 - 2 (no. 1 cylinder is that at the fan side)

VALUES OF ADVANCE OF IGNITION DISTRIBUTOR

Opening of contact points of ignition distributor S = .35 to .40 mm (.014 to .016")

The distributor is correctly fitted when the oiler is toward the engine.

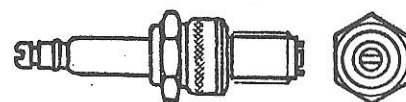
Fixed advance F Before T D C	Maximum advance M Before T D C
3° ± 1°	43° + 0° - 3° at 5300 rpm



P = T.D.C.
 F = Fixed advance
 M = Maximum advance

SPARK PLUGS

Lodge 2HL



COOLING SYSTEM

The cooling circuit is provided with a compensating reservoir containing a special ALFA ROMEO Coolant Mixture which gives full protection against freezing down to -20°C (-5°F).

TO ENSURE THE EFFICIENT OPERATION OF THE COOLING SYSTEM, THE FOLLOWING PROCEDURE SHOULD BE OBSERVED.

Occasionally, check level of coolant in the reservoir: this should be done exclusively with a cold engine as with a hot engine the level may increase remarkably, even after stopping the engine.

The level of mixture in the reservoir should never fall below the "Min" or exceed the "Max".

To top up the reservoir use the specified Coolant Mixture.

If too frequent a topping up is required, check the cooling system for damage.

Should sudden and excessive leaks be experienced from the system, the use of fresh water is provisionally allowed. To replenish the circuit follow the directions given on next page.

IMPORTANT NOTE

Never remove radiator plug unless absolutely necessary; in any case, to avoid severe injuries, wait that the liquid is cooled down to ambient temperature.

Changing the coolant mixture

Every 18,750 mi - 30,000 Kms (or once a year whichever comes first) flush the circuit and renew the coolant mixture. (See page 8).

WARNING

In places where the temperature falls below -20°C (-5°F) the antifreeze mixture can be made stronger by varying its concentration.

To this end, a certain amount of mixture shall be drained off the circuit and replaced by the same quantity of "ALFA ROMEO Antifreeze" drawn from suitable containers.

The quantities of antifreeze to be added to radiator and reservoir depending on the lowest anticipated temperature are the following:

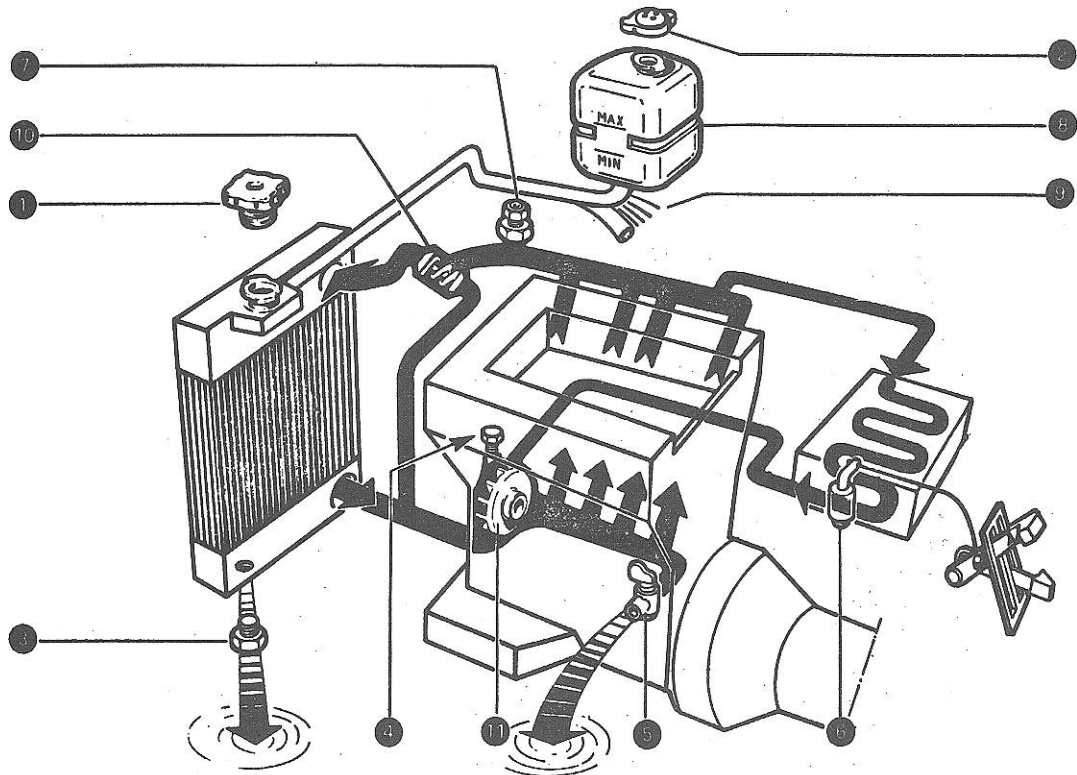
Temperature	Quantity of ALFA ROMEO coolant Mixture to be replaced with an equal quantity of "ALFA ROMEO Antifreeze"		
	Radiator	Reservoir	Total
-26°C - -16°F	800 cc	200 cc	1 lt.
-35°C - -30°F	1,600 cc	400 cc	2 lts
-44°C - -48°F	2,400 cc	600 cc	3 lts

Draining and replenishing the system

Proceed as follows:

Draining

- Remove radiator filler plug "1".
- Unscrew the drain plug "3" and the bleed screw "7" on manifold.
- Turn on the heater cock "6".
- Turn on the bleed cock "5" on crankcase; let liquid drain off and empty the reservoir "8" by detaching pipe "9". Then turn off the cock "5", reconnect pipe "9" to reservoir and retighten drain plug "3".



- | | |
|---------------------------|------------------------------|
| 1 Radiator plug | 7 Bleed screw on manifold |
| 2 Reservoir filler plug | 8 Reservoir |
| 3 Radiator drain plug | 9 Supply line from reservoir |
| 4 Bleed screw on pump | 10 Thermostat |
| 5 Bleed cock on crankcase | 11 Centrifugal pump |
| 6 Heater cock | |

Replenishing

- Remove radiator and reservoir filler plug and turn on the heater cock.
- Open the bleed screw "7" on manifold and "4" on pump.
- Pour coolant mixture through radiator filler port until coolant escapes from bleed screw "4"; then screw in the latter. Go on in adding mixture until it appears at the bleed screw "7" on manifold.
- With the bleed screw on manifold opened and no plug on filler port of radiator, start the engine and keep it running for a few seconds in order to bleed air completely.
- Close the bleed screw on manifold.
- Add mixture to radiator filler port until full.
- Add mixture also to reservoir until "Max" level is reached.
- Put plugs on reservoir and radiator.

Checking cooling system for proper operation after topping up

After the system has been fully replenished or even topped up owing to drainings for mixture change or for repair, it is advisable to check the system for proper operation as follows:

- a) with the circuit closed and the heater cock opened, run the engine until the coolant mixture has reached a temperature of about 80-85°C and keep on idling the engine; in this condition the thermostat opens thus allowing possible air bubbles trapped in the circuit to pass in the radiator and then in the reservoir.
- b) let the engine cool down to room temperature in order to allow the mixture in the reservoir to compensate for the air bled off as said above.
- c) remove the filler plug and check that radiator is full.
- d) fill the reservoir up to "Max" mark.

N.B. - If, when opening the filler plug as in c) above, the radiator is not full, repeat the procedure, keeping the engine running for a longer time at operating temperature (thermostat opened) to bleed all the air from the circuit. Should the trouble persist, air instead of coolant from reservoir is likely to enter the circuit through some leaking component (radiator filler plug included) in this case, inspect the circuit accordingly, then again repeat the checking procedure.

Electrical equipment

Voltage 12 Volts
 Battery 60 Amp.h

	B O S C H
Alternator	K1 (R,L) 14 V 35 A 20
Voltage regulator	AD 1/14 V
Starting motor	EF (R) 12 V 0,7 PS
Coil	K 12 V
Ignition distributor	JF 4 (R)
Windshield wiper (2-speed)	WS 13/11 S 1 A

Bulb's wattage

Inner headlights (high beams) 40/45 asymmetric
 Outer headlights (high & low beams) 40/45 asymmetric
 Tail lights - parking & stop 5/20
 Front direction indicators 20
 Tail direction indicators 20
 Back-up light 20
 Front parking lights 5 globular
 License plate light 5 globular
 Engine compartment light 5 cylindrical
 Courtesy light 5 cylindrical
 Light in luggage compartment 5 cylindrical
 Lighting on instruments 3 tubular
 Tell-tale for blower 3 tubular
 Tell-tale for alternator 3 tubular
 Tell-tale for parking lights 3 tubular
 Tell-tale for high beams 3 tubular
 Tell-tale for fuel reserve 3 tubular
 Tell-tale for choke 1.2 tubular
 Tell-tales for direction indicators 1.2 tubular
 Tell-tale for low oil pressure 1.2 tubular

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 Back-up light 20
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 Light in luggage compartment 5 cylindrical
 Lighting on instruments 3 tubular
 Tell-tale for blower 3 tubular
 Tell-tale for alternator 3 tubular
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 Tell-tales for direction indicators 1.2 tubular
 Tell-tale for low oil pressure 1.2 tubular

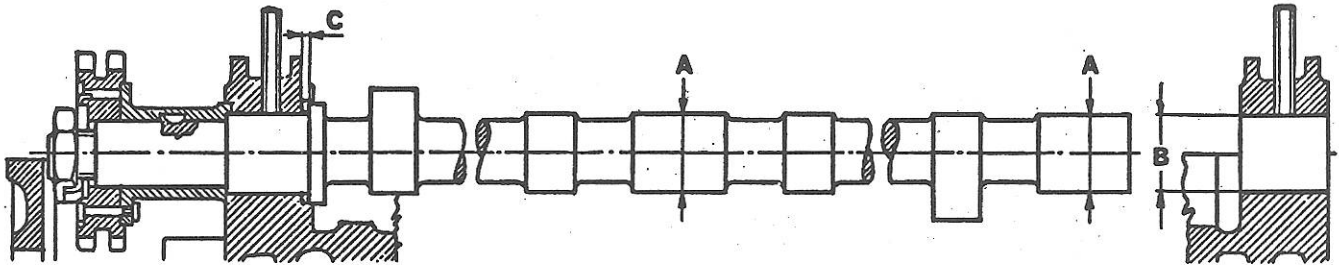
Tightening torque specifications

ENGINE - GEARBOX UNIT	Kgm.	lb. ft	Manner of tightening	
Cylinder head nuts	Inspection { when cold when hot	7.2 to 7.4	52.1 to 53.5	Slacken without lubricating Tighten without slackening the nut Retighten with lube Lock without slackening Slacken by a quarter turn and retighten when cold With graphite grease, when cold i n o i l " " " " " " d r y " " " " " "
		7.6 to 7.7	55.0 to 55.7	
	after repairing { when cold when hot	7.2 to 7.4	52.1 to 53.5	
		7.6 to 7.7	55.0 to 55.7	
	If the cylinder head gasket has been replaced retighten after the first 300 mi. (500 Km.)	7.2 to 7.4	52.1 to 53.5	
Spark plugs	2.5 to 3.5	18.1 to 25.3		
Nuts of the camshaft caps	2 to 2.25	14.5 to 16.3		
Nuts of the connecting rod caps	5 to 5.3	36.2 to 38.3		
Nuts of main bearing caps	4.7 to 5	33.9 to 36.1		
Screws of flywheel on crankshaft	4.2 to 4.5	30.4 to 32.5		
Nut of alternator pulley	3 to 3.5	21.7 to 25.3		
Nut of gearbox main shaft yoke	11.9 to 12	86 to 86.8		
Nut of gearbox layshaft	4.5 to 5.5	32.6 to 39.7		
Nut of gearbox half-casing	1.8	13		
Bolts joining gearbox output shaft yoke to prop. shaft yoke	4 to 4.5	29 to 32.5		
Nut of gearbox inner swivel	3.25 to 3.65	23.6 to 26.4		
<u>R E A R F R A M E</u>				
Screws securing ring gear to differential case	4.5 to 5	32.6 to 36.1	"	
Ringnut securing yoke on final drive pinion shaft	8 to 14	50 to 101.2	"	
Nuts securing bearing housing to rear axle tubes	4.8 to 5.5	34.8 to 39.7	"	
Nuts securing radius rods to body	10 to 11.5	72.4 to 83	"	
Nuts securing radius rods to rear axle tubes	11.5 to 13	83 to 94	"	
Nut securing reaction triangle to body	4.8 to 5.5	34.8 to 39.7	"	
Nut securing reaction triangle to rear axle	11 to 15	79.6 to 108.5	"	
Nut securing link to radius rod bolt	5.2 to 5.9	37.6 to 42.6	"	
Screws securing rear brake caliper to support (ATE brakes)	2.3 to 2.8	16.7 to 20.2	"	
Nuts securing wheels	6 to 8	43.4 to 57.8	"	
Bolts joining differential yoke to prop. shaft yoke	3.5 to 4	25.3 to 28.9	"	
Bolts for rebound strap butt joints . . . . .	.5	3.6	"
Nuts securing rear axle tubes to differential carrier	2.4	17.4	"	
<u>F R O N T F R A M E</u>				
Nut securing steering wheel to column	5 to 5.5	36.1 to 39.7	"	
Screws securing Burman steering box cover	2.3 to 2.5	16.7 to 18	"	
Screws securing steering box & bellcrank bracket to body	4.8 to 5.5	34.8 to 39.7	"	
Nuts of steering linkage ball joints	4.8 to 5.5	34.8 to 39.7	"	
Nut securing steering arm to box	12.5 to 14	90.5 to 101.2	"	
Nut securing shock absorber to suspension arms	8.2 to 9.2	59.3 to 66.5	"	
Screws securing upper wishbone front arm to body	2.3 to 2.8	16.7 to 20.2	"	
Nut securing upper wishbone front arm to rear arm	4 to 4.5	29 to 32.5	"	
Nut securing upper wishbone rear arm to body	12.5 to 14	83 to 94	"	
Nuts securing lower wishbone shaft to cross-member	5.6 to 5.9	94 to 130	"	
(To tighten these nuts use tool A.5.0161 and torque to 5.2 to 5.5 (37.6 to 39.7))				
Nuts securing steering arm to steering knuckle	4 to 4.5	29 to 32.5	"	
Nut securing upper wishbone rear arm to steering knuckle.	7.5 to 8.5	54.3 to 61.4	"	
Nut securing lower ball joint to wishbone	8.2 to 9.2	59.3 to 66.5	"	
Nut securing lower ball joint to steering knuckle	7.5 to 8.5	54.3 to 61.4	"	
Nuts securing caliper to steering knuckle	7.5 to 8.5	54.3 to 61.4	"	
Screws securing brake splash shields . . . . .	.8 to 1	5.8 to 7.2	"
Nuts securing wheels & brake discs	6 to 8	43.4 to 57.8	"	
<u>A T E B R A K E S</u>				
Bleed screw . . . . .	.2 to .35	1.5 to 2.5	"
Caliper joining bolt	2.9 to 3.4	21 to 24.6	"	
Inlet fitting to caliper	with gasket8 to 1.1	6 to 8	"
	without gasket	1 to 1.5	7.2 to 10.8	"

MAJOR INSPECTION SPECIFICATIONS

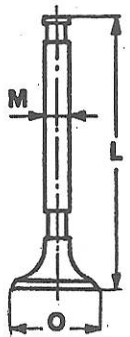
Camshafts

Diameter of journals	A =	26.959 to 26.980 mm (1.0614 to 1.0622")
Diameter of journal bearings	B =	27.000 to 27.033 mm (1.0630 to 1.0642")
Clearance between journals and bearings	B-A =	.020 to .074 mm (.0008 to .0028")
End play of camshaft in thrust bearing	C =	.065 to .182 mm (.0026 to .0071")



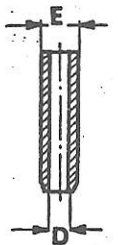
Valves and valve guides

		I N T A K E			EXHAUST (sodium cooled)
		LIVIA H	ATE	GARRONE	LIVIA C
Valves	Diameter of valve poppet O	41.000 to 41.150 mm (1.614 to 1.620")	41.000 to 41.200 mm (1.614 to 1.622")	41.000 to 41.150 mm (1.614 to 1.620")	37.000 to 37.150 mm (1.4567 to 1.4625")
	Diameter of valve stem M		8.972 to 8.987 mm (.3532 to .3538")		8.935 to 8.960 mm (.3518 to .3527")
	Total length L	106.900 to 107.150 mm (4.2087 to 4.2186")	106.800 mm (4.2047")	107.000 mm (4.2126")	106.300 mm (4.1850")



N.B.: ATE - LIVIA - GARRONE intake valves are alternate supply.

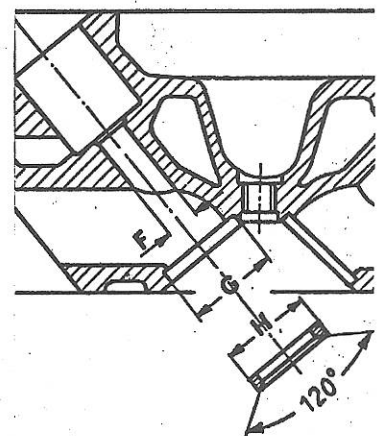
Valve guide	Outside diameter with guide removed E =	14.033 to 14.044 mm (.5528 to .5529")
	Inside diameter with guide assembled in cylinder head D =	9.000 to 9.015 mm (.3544 to .3549")
Projection of intake valve guides from their recesses in cylinder head .		13.800 to 14.000 mm (.543 to .551")
Projection of exhaust valve guides from their recesses in cylinder head .		16.800 to 17.000 mm (.662 to .669")
Clearance between guide assembled in cylinder head and valve stem	intake . . . . .	.013 to .043 mm (.0005 to .0031")
	exhaust . . . . .	.040 to .080 mm (.0016 to .0031")



Valve seats

Diameter of valve guide seat in cylinder head F = 13.990 to 14.018 mm (.5508 to .5519")
 Interference between seat and valve guide E-F = .015 to .054 mm (.0006 to .0021")

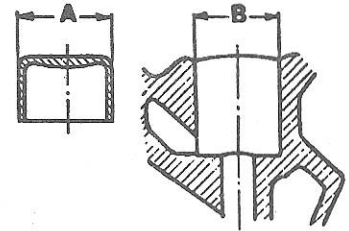
		Intake	Exhaust
Outer diameter of the valve seat insert H	standard .	42.597 to 42.632 mm (1.6771 to 1.6784")	38.597 to 38.632 mm (1.5196 to 1.5209")
	oversized .	42.897 to 42.932 mm (1.6889 to 1.6902")	38.897 to 38.932 mm (1.5314 to 1.5327")
Diameter of recess in the cylinder head for valve seat insert G	standard .	42.532 to 42.557 mm (1.6744 to 1.6754")	38.532 to 38.557 mm (1.5169 to 1.5179")
	oversized .	42.832 to 42.857 mm (1.6862 to 1.6872")	38.832 to 38.857 mm (1.5288 to 1.5298")



Interference between valve seat insert and recess in cylinder head H-G .100 to .040 mm (.0039 to .0010")

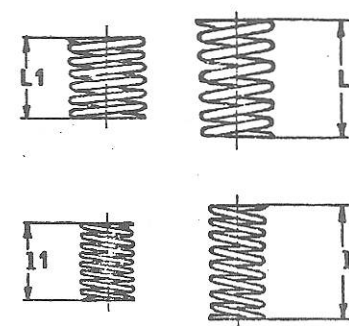
Valve cups

Diameter of cup A	{ standard . . 34.973 to 34.989 mm (1.3769 to 1.3775") oversized . . 35.173 to 35.189 mm (1.3848 to 1.3854")
Diameter of cup seat in cylinder head B	
	{ standard . . 35.000 to 35.025 mm (1.3780 to 1.3789") oversized . . 35.200 to 35.225 mm (1.3859 to 1.3868")
Clearance between seat and cup	



Valve springs

	Free length	Length under test load	Test load
Inner spring I	46.50 mm (1.83")	11 - 26 mm (1.02")	22.3 to 23.1 Kg. 49.9 to 51.1 lbs
	47.35 mm (1.88")		
	47.00 mm (1.85")		
Outer spring L	51.30 mm (2.02")	L1 - 27.5 mm (1.08")	35.67 to 37.13 Kg. 78.6 to 81.8 lbs 35.87 to 37.33 Kg. 79.1 to 82.3 lbs
	52.80 mm (2.08")		
	52.00 mm (2.05")		



Connecting rods

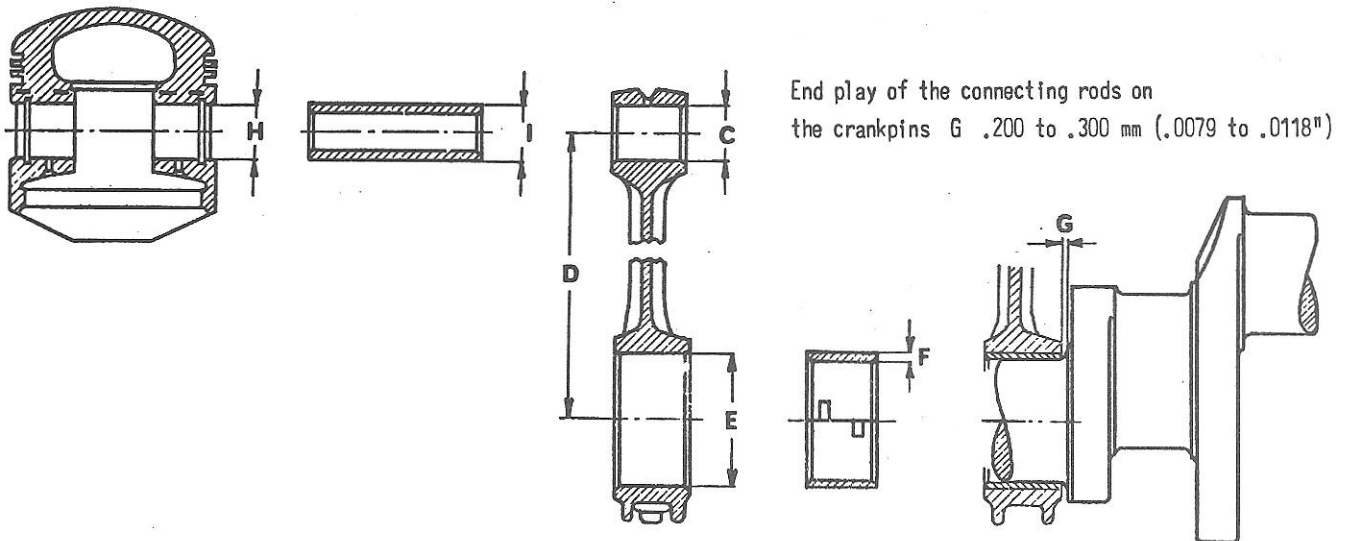
Length between ϕ of big end and ϕ of small end of connecting rod D =	156.950 to 157.050 mm (6.1792 to 6.1830")
Inner diameter of the big end of connecting rod E =	53.695 to 53.708 mm (2.1140 to 2.1144")
Inner diameter of bushing in the small end of rod C =	22.005 to 22.015 mm (.8664 to .8667")
Thickness of connecting rod bearings F	{ standard 1.829 to 1.835 mm (.0720 to .0722")
	{ 1st oversize 1.956 to 1.962 mm (.0770 to .0772")
	{ 2nd oversize 2.083 to 2.089 mm (.0820 to .0824")
Radial clearance between crankpins and bearings for big end of connecting rod . .	.025 to .063 mm (.0010 to .0024")
Maximum out of parallelism between ϕ of big end hole and ϕ of small end hole . .	.078 mm (.0031")

Piston pins

O.D. of pin I	{ black	21.994 to 21.997 mm (.86590 to .86602")
	{ white	21.997 to 22.000 mm (.86605 to .86614")
Clearance between con. rod small end bore and piston pin	{ black . . . . .	.008 to .021 mm (.0003 to .0008")
	{ white . . . . .	.005 to .018 mm (.0002 to .0007")

Piston pin hole

BORGO piston H	{ black	22.000 to 22.002 mm (.86614 to .86621")
	{ white	22.003 to 22.005 mm (.86626 to .86633")

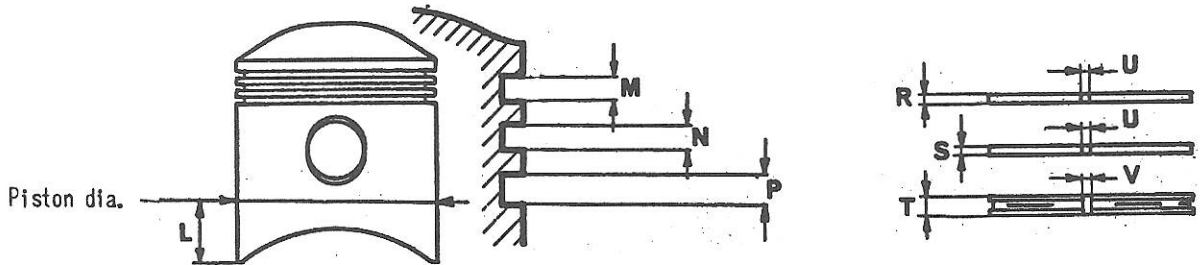


End play of the connecting rods on the crankpins G .200 to .300 mm (.0079 to .0118")

Pistons and piston rings

Diameter of pistons to be measured to square with the hole for piston pin and at a distance of L = 15 mm (.591") from the lower border of skirt.

	Class A (Blue)	Class B (Pink)	Class C (Green)
BORGH piston diameter	79.945 to 79.955 mm (3.1475 to 3.1479")	79.955 to 79.965 mm (3.1479 to 3.1483")	79.965 to 79.975 mm (3.1483 to 3.1487")

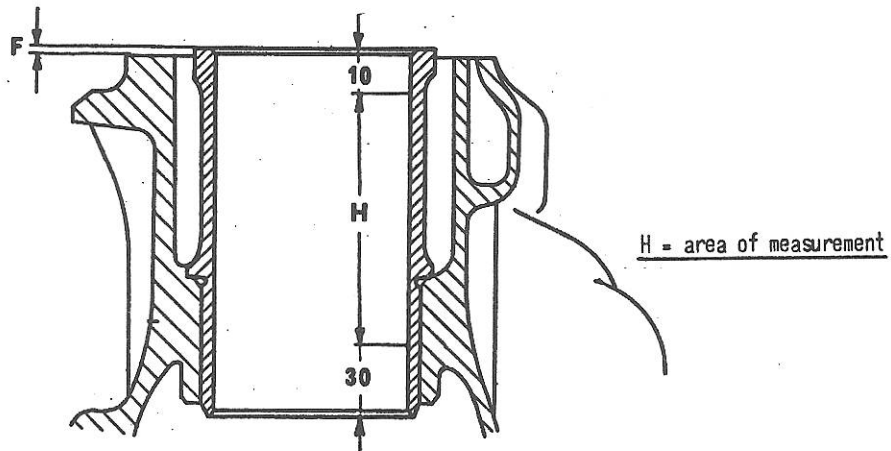


Height of grooves in piston for compression rings	{ chromium-plated M = 1.525 to 1.545 mm (.0601 to .0609") normal N = 1.775 to 1.795 mm (.0699 to .0706")
Height of groove in piston for oil scraper ring . . . . .		P = 4.015 to 4.035 mm (.1581 to .1588")
Thickness of compression rings	{ chromium-plated R = 1.478 to 1.490 mm (.0582 to .0586") normal S = 1.728 to 1.740 mm (.0681 to .0685")
Thickness of oil scraper ring . . . . .		T = 3.978 to 3.990 mm (.1567 to .1571")
End play of rings in grooves	{ compression rings { chromium-plated035 to .067 mm (.0014 to .0026") normal035 to .067 mm (.0014 to .0026") oil scraper ring025 to .057 mm (.0010 to .0022")
Gap of compression rings to be inspected in ring gauge or in cylinder barrels . . . . .		U = .300 to .450 mm (.0118 to .0177")
Gap of oil scraper rings to be inspected in ring gauge or in cylinder barrels	V = .250 to .400 mm (.0100 to .0157")

Cylinder barrels

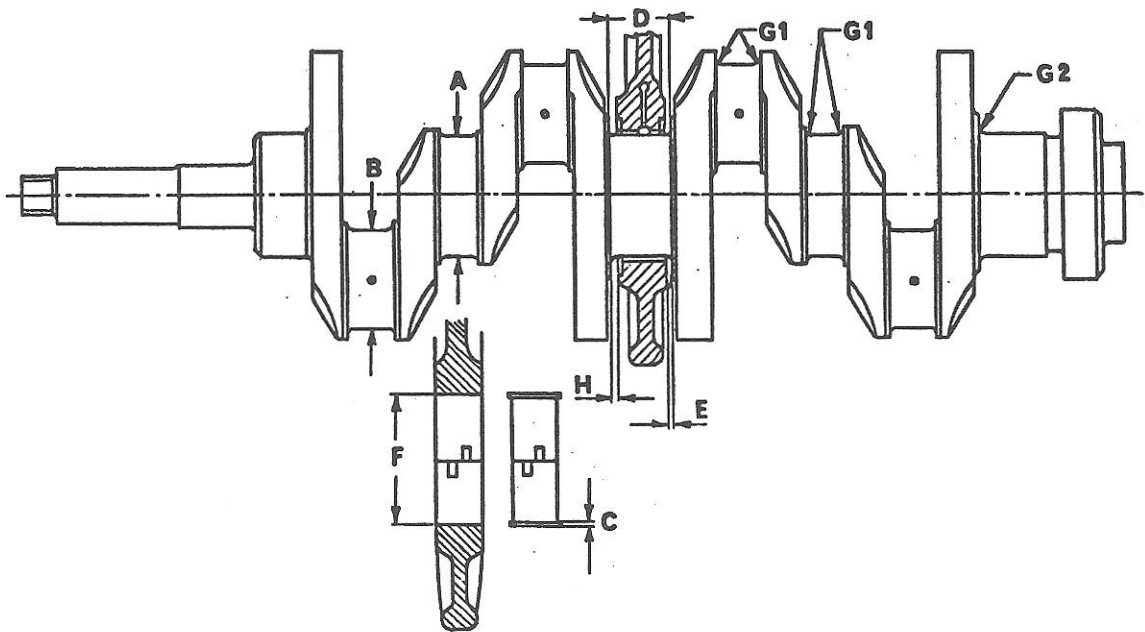
	Blue	Pink	Green
Cylinder barrel bore	79.985 to 79.994 mm (3.1490 to 3.1493")	79.995 to 80.004 mm (3.1494 to 3.1497")	80.005 to 80.014 mm (3.1498 to 3.1501")

Clearance between cylinder barrel and piston030 to .049 mm (.0012 to .0019")



Projection of barrels from cylinder block	F = .000 to .060 mm (.0000 to .0024")
Surface roughness of barrel bore	20 to 40 microinches RMS

Crankshaft



Diameter of main journals A	<table border="0"> <tr> <td>standard</td> <td>59.960 to 59.973 mm (2.3606 to 2.3611")</td> </tr> <tr> <td>1st undersize</td> <td>59.706 to 59.719 mm (2.3506 to 2.3511")</td> </tr> <tr> <td>2nd undersize</td> <td>59.452 to 59.465 mm (2.3407 to 2.3411")</td> </tr> </table>	standard	59.960 to 59.973 mm (2.3606 to 2.3611")	1st undersize	59.706 to 59.719 mm (2.3506 to 2.3511")	2nd undersize	59.452 to 59.465 mm (2.3407 to 2.3411")
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1st undersize	59.706 to 59.719 mm (2.3506 to 2.3511")						
2nd undersize	59.452 to 59.465 mm (2.3407 to 2.3411")						
Diameter of crankpins B	<table border="0"> <tr> <td>standard</td> <td>49.987 to 50.000 mm (1.9680 to 1.9685")</td> </tr> <tr> <td>1st undersize</td> <td>49.733 to 49.746 mm (1.9581 to 1.9585")</td> </tr> <tr> <td>2nd undersize</td> <td>49.479 to 49.492 mm (1.9480 to 1.9485")</td> </tr> </table>	standard	49.987 to 50.000 mm (1.9680 to 1.9685")	1st undersize	49.733 to 49.746 mm (1.9581 to 1.9585")	2nd undersize	49.479 to 49.492 mm (1.9480 to 1.9485")
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1st undersize	49.733 to 49.746 mm (1.9581 to 1.9585")						
2nd undersize	49.479 to 49.492 mm (1.9480 to 1.9485")						
Thickness of main bearings C	<table border="0"> <tr> <td>standard</td> <td>1.829 to 1.835 mm (.0720 to .0722")</td> </tr> <tr> <td>1st oversize</td> <td>1.956 to 1.962 mm (.0770 to .0772")</td> </tr> <tr> <td>2nd oversize</td> <td>2.083 to 2.089 mm (.0820 to .0822")</td> </tr> </table>	standard	1.829 to 1.835 mm (.0720 to .0722")	1st oversize	1.956 to 1.962 mm (.0770 to .0772")	2nd oversize	2.083 to 2.089 mm (.0820 to .0822")
standard	1.829 to 1.835 mm (.0720 to .0722")						
1st oversize	1.956 to 1.962 mm (.0770 to .0772")						
2nd oversize	2.083 to 2.089 mm (.0820 to .0822")						
Diameter of seat for main bearings in crankcase	F = 63.657 to 63.676 mm (2.5062 to 2.5069")						
Length of central journal D	<table border="0"> <tr> <td>standard</td> <td>30.000 to 30.035 mm (1.1811 to 1.1824")</td> </tr> <tr> <td>1st oversize</td> <td>30.127 to 30.162 mm (1.1861 to 1.1874")</td> </tr> <tr> <td>2nd oversize</td> <td>30.254 to 30.289 mm (1.1911 to 1.1924")</td> </tr> </table>	standard	30.000 to 30.035 mm (1.1811 to 1.1824")	1st oversize	30.127 to 30.162 mm (1.1861 to 1.1874")	2nd oversize	30.254 to 30.289 mm (1.1911 to 1.1924")
standard	30.000 to 30.035 mm (1.1811 to 1.1824")						
1st oversize	30.127 to 30.162 mm (1.1861 to 1.1874")						
2nd oversize	30.254 to 30.289 mm (1.1911 to 1.1924")						
Thickness of thrust rings for central journal E	<table border="0"> <tr> <td>standard</td> <td>2.311 to 2.362 mm (.0910 to .0929")</td> </tr> <tr> <td>1st oversize</td> <td>2.374 to 2.425 mm (.0935 to .0954")</td> </tr> <tr> <td>2nd oversize</td> <td>2.438 to 2.489 mm (.0960 to .0980")</td> </tr> </table>	standard	2.311 to 2.362 mm (.0910 to .0929")	1st oversize	2.374 to 2.425 mm (.0935 to .0954")	2nd oversize	2.438 to 2.489 mm (.0960 to .0980")
standard	2.311 to 2.362 mm (.0910 to .0929")						
1st oversize	2.374 to 2.425 mm (.0935 to .0954")						
2nd oversize	2.438 to 2.489 mm (.0960 to .0980")						
End play of crankshaft	H = .076 to .263 mm (.003 to .010")						
Radial clearance between journals and main bearings	.014 to .058 mm (.0005 to .0022")						
Note - Radial clearance = main bearing ID - (twice bearing thickness + journal OD)							
Fillet radii	<table border="0"> <tr> <td>main journals & crankpins</td> <td>G1</td> <td>1.7 to 2.1 mm (.07 to .08")</td> </tr> <tr> <td>pin on flywheel side</td> <td>G2</td> <td>3.7 to 4.1 mm (.15 to .16")</td> </tr> </table>	main journals & crankpins	G1	1.7 to 2.1 mm (.07 to .08")	pin on flywheel side	G2	3.7 to 4.1 mm (.15 to .16")
main journals & crankpins	G1	1.7 to 2.1 mm (.07 to .08")					
pin on flywheel side	G2	3.7 to 4.1 mm (.15 to .16")					
Main journals & crankpins surface roughness	63 microinches RMS						
Maximum elongation of main journals and crankpins	.007 mm (.00027")						
Maximum taper of main journals and crankpins measured on their full length	.01 mm (.00039")						
Maximum error of parallelism of main journals and crankpins measured on their full length	.015 mm (.00059")						
Maximum misalignment allowed between main journals	.01 mm (.00039")						
Maximum misalignment allowed between ϕ of the two pairs of crankpins and ϕ of main journals	.300 mm (.0118")						

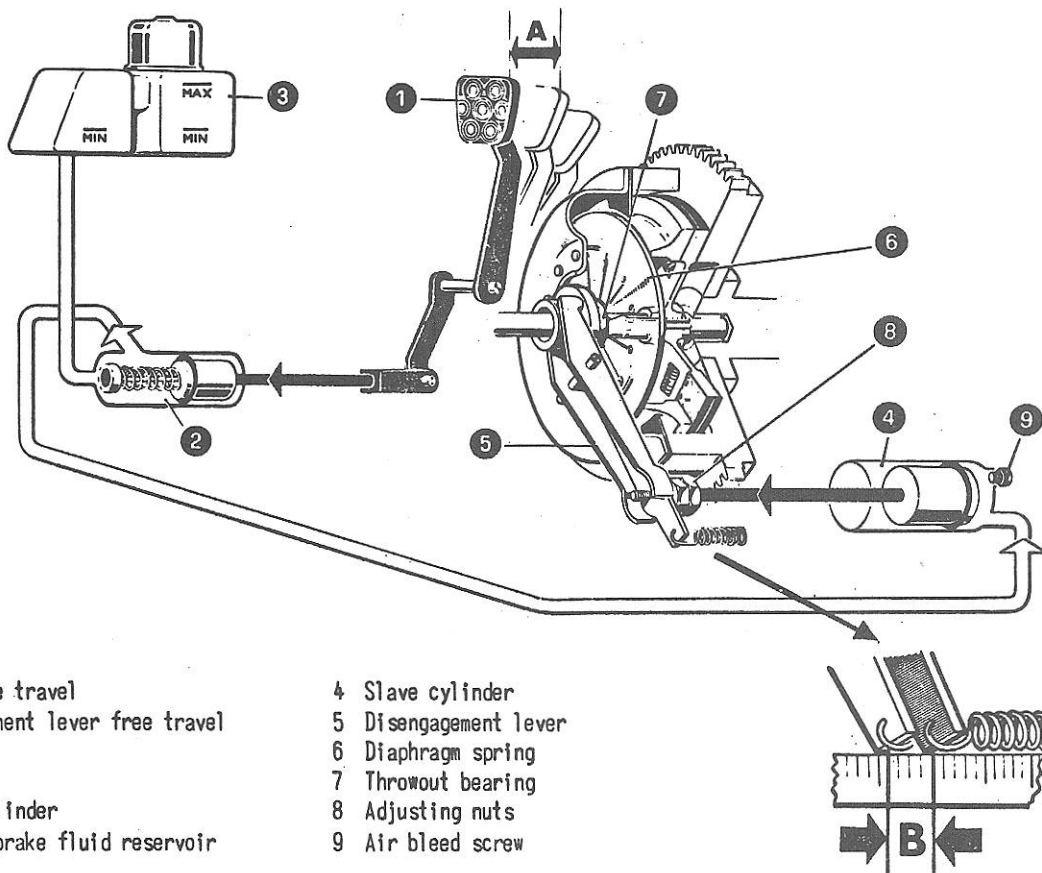
CLUTCH

The clutch is of the hydraulically-operated single plate dry type. The clutch pedal acts on a master cylinder supplied with the same type of fluid as the brake system.

When the clutch pedal is depressed, the fluid under pressure actuates the piston in the cylinder "4" connected to the clutch disengagement lever "5".

The pressure plate is controlled by means of diaphragm spring "6".

The clutch pedal free travel "A" should be about 1 1/4" (30-32mm). When owing to wear on the clutch disc facing, the pedal free travel is reduced to 3/4" (17-19 mm) the free travel must be restored.



- | | |
|-----------------------------------|-----------------------|
| A Pedal free travel | 4 Slave cylinder |
| B Disengagement lever free travel | 5 Disengagement lever |
| 1 Pedal | 6 Diaphragm spring |
| 2 Master cylinder | 7 Throwout bearing |
| 3 Clutch & brake fluid reservoir | 8 Adjusting nuts |
| | 9 Air bleed screw |

Adjustment

Measure with a rule the free travel "B" at the end of lever "5" pushing the lever by hand until the throwout bearing "7" contacts the spring "6"; the travel "B" should be about .08" (2 mm) corresponding to a clearance of .04" (1 mm) between bearing "7" and diaphragm spring "6". If the travel is shorter, act on the adjusting nut "8".

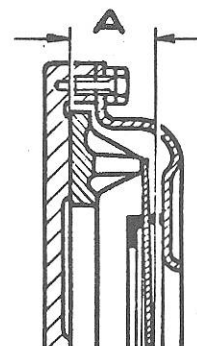
At the same time make sure that, by pressing the pedal as far as it will go, the actuating rod can move through a total travel of 3/4" (18-19 mm). If any component of the system has been removed, thoroughly bleed the circuit.

Inspection specifications

Thickness of driven plate when new under a load of 480 Kg (1058 lbs)	8.9 mm (.35")
Wear limit of driven plate thickness under a load of 480 Kg (1058 lbs)	7 mm (.27")

$$A = 33.1 \text{ to } 35.1 \text{ mm (1.30 to 1.38")}$$

To check dimension "A" use the special tool C.6.0139.



GEARBOX

Transmission ratios	{	1st gear	3.30 : 1
		2nd gear	1.99 : 1
		3rd gear	1.35 : 1
		4th gear	1.00 : 1
		5th gear . . . . .	.79 : 1
		Rev.	3.01 : 1
Maximum eccentricity of main shaft . . . . .			.050 mm (.020")
End play between forks and sleeves	{	assembly . . . . .	.150 to .340 mm (.006 to .013")
		wear limit . . . . .	.850 mm (.033")
Calibration of striking rod ball spring	{	free length	35.8 mm (1.41")
		length under test load	17.2 mm (.69")
		test load	7.680 to 8.320 mm (16.97 to 18.3 lbs)
Maximum end play of mainshaft gears	{	1st speed gear . . . . .	.170 to .245 mm (.0067 to .0096")
		2nd & 3rd speed gears . . . . .	.130 to .205 mm (.0052 to .0081")
		5th speed gear & Rev. . . . .	.160 to .220 mm (.0063 to .0087")
Radial clearance between gear bushings and mainshaft	{	1st speed gear . . . . .	.125 to .170 mm (.0049 to .0067")
		2nd & 3rd speed gears . . . . .	.095 to .140 mm (.0038 to .0055")
		5th speed gear . . . . .	.065 to .107 mm (.0026 to .0041")
Distance between outer planes of the engaging teeth of 3rd and 4th gears			42.000 to 42.200 mm (1.65 to 1.66")
Distance, in neutral, of the rear band (propeller shaft side) of 5th speed sleeve from the <u>r e a r</u> edge of gear engaging teeth			12.9 mm (.508")

REAR AXLE AND SUSPENSION

Transmission-axle overall ratios-with 43 : 10 final drive	}	1st gear	14.20 : 1
		2nd gear	8.55 : 1
		3rd gear	5.82 : 1
		4th gear	4.30 : 1
		5th gear	3.40 : 1
		Rev.	12.94 : 1
Maximum eccentricity of axle shafts . . . . .		.10 mm (.004")
Play between teeth of planetary gears . . . . .		.05 mm (.002")
Play between teeth of final drive . . . . .		.05 to .10 mm (.002 to .004")
Reference dimension on tool C.6.0101 for pinion-to-ring gear fitting		70 ± .0025 mm (2.7559 ± .0001")	
Maximum end play between reaction trunnion and attachment to body		1 mm (.04")	
Pre-load on pinion bearing	11.5 to 15.5 Kgcm (10 to 13.5 in. lbs)		
Total preload on final drive bearings	16.5 to 24.5 Kgcm (14.4 to 21.3 in. lbs)		

Checking of shock absorbers on test bench - Calibration data (when cold)

	B I A N C H I	
	Extension	Compression
High speed	135 to 190 Kgs (298 to 418 lbs)	50 to 80 Kgs (111 to 176 lbs)
Low speed	19 to 55 Kgs (42 to 121 lbs)	9 to 22 Kgs (20 to 48 lbs)

Checking of suspension springs

Free length	467 mm (18.4")
Length under test load	252 mm (10")
Test load	349 to 371 Kgs (770 to 815 lbs)

FRONT SUSPENSION

Adjustment of clearance in wheel bearings

When performing regular servicing or whenever the removal of wheel hubs is required, adjust the bearing clearance as follows:

- 1) Screw in the castellated nut and lock it to a torque of 2.5 Kgm (18 ft-lbs) while at the same time revolving the wheel hub to set the bearings properly in their seats;
- 2) Unscrew the nut half a turn or more;
- 3) Lightly tap on the stub axle end with a mallet in order to return the outboard bearing in its proper position even in the case a slight interference between bearing cone and stub axle exists;
- 4) Lock the nut in place to 1.5 Kgm (10.8 ft-lbs);
- 5) Unscrew the nut of a quarter turn;
- 6) If the hole in the axle is aligned with a slot in the castellated nut insert the cotter pin; if not, screw in the nut by the minimum angle needed to line up the hole and the next slot;
- 7) Again tap lightly on stub axle end to restore the same condition as under step 3;
- 8) The end play so obtained on stub axle should fall between .02 - .12 mm (.0008 - .0047").

Wheel bearing lubricating instructions

The quantity of lubricating grease should be about 65 grammes (2½ ozs) for each hub; do not exceed such a quantity to avoid bearing overheating, grease leakage, etc.

The grease should be well distributed inside the bearings and into side recesses.

Subsequently, at the regular schedule, remove the hub cover and pack the outboard bearing.

Ball joints

End play of lower ball joint in its socket 1 mm (.04")

Note - Ball joints require no regular lubrication being provided with special grease seals which retain the grease packed in by factory on assembly - Only if strictly needed (joints squealing) grease with SHELL Retinax A or AGIP F.1 Grease 30 (See I.S. 1.05.097/1).

Checking of suspension springs

	R.H. side	L.H. side
Free length	345 mm (13.6")	355 mm (14")
Length under test load	214 mm (7.9")	214 mm (7.9")
Test load	902 to 958 Kgs (1986 to 2110 lbs)	970 to 1030 Kgs (2138 to 2271 lbs)

Checking of shock absorbers on test bench

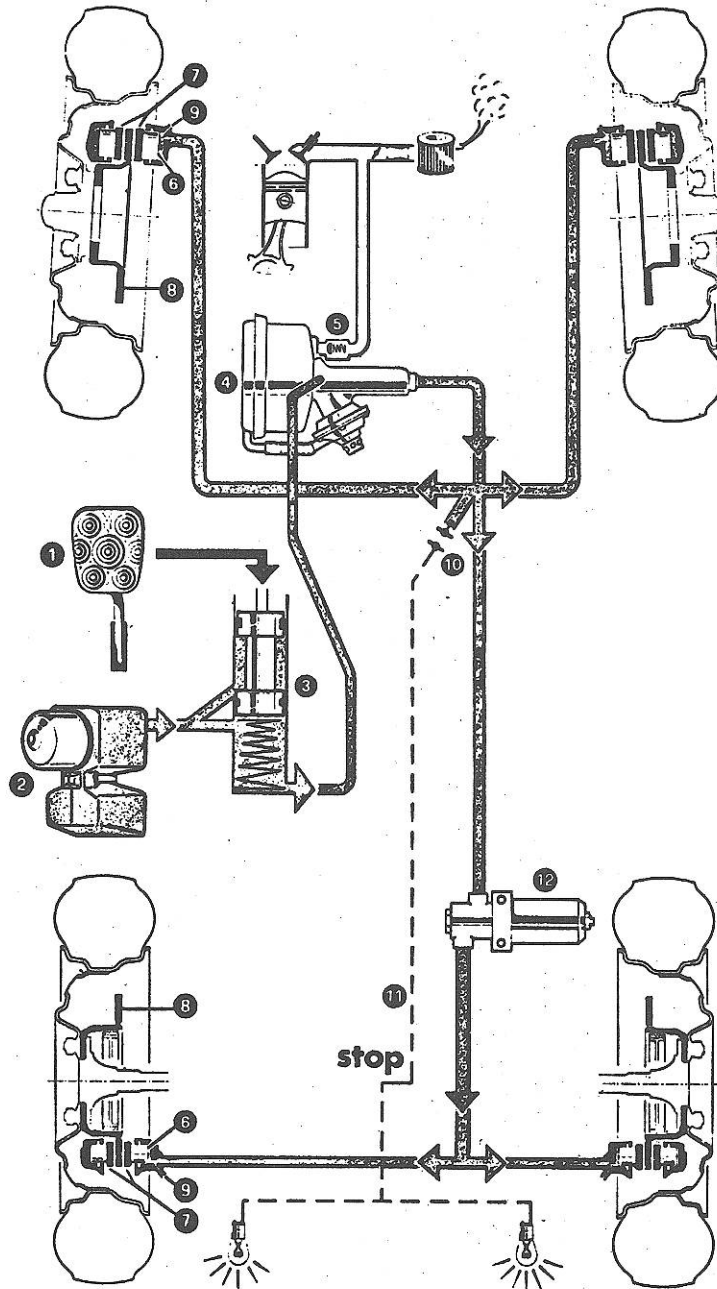
Calibration data (when cold)

	ALL IN QUANT	
	Extension	Compression
High speed	150 to 190 Kgs (331 to 418 lbs)	55 to 80 Kgs (121 to 176 lbs)
Low speed	25 to 55 Kgs (56 to 121 lbs)	9 to 22 Kgs (20 to 48 lbs)

B R A K E S Y S T E M

The ATE brake system consists of four caliper type disc brakes operated by an assisted master cylinder. The brakes are self-adjusting.

A pressure regulator controls the braking power to rear brakes. Such a regulator shall not be tampered with; specifically do not attempt to act on the adjusting nut as it is factory sealed.



- | | |
|---------------------|-----------------------|
| 1 Brake pedal | 7 Friction pads |
| 2 Reservoir | 8 Discs |
| 3 Master cylinder | 9 Bleed screws |
| 4 Vacuum servo | 10 Stop light switch |
| 5 Vacuum connection | 11 Stop light cable |
| 6 Pistons | 12 Pressure regulator |

ATE BRAKES

D i s c

When a brake disc is replaced it is necessary to check it for run-out after installation:

- use a dial indicator and the special tool A.2.0151 which is mounted to the caliper by means of the pad retaining pins.

Maximum permissible run out as measured at the swept surface should not exceed .22 mm (.0086").

N o t e - run-out readings can be misleading if bearing clearance is not as specified; therefore, check and adjust if necessary, according to factory instructions.

If the disc is scored, see I.S. 0.00.055/3; the grinding of the surfaces is allowed providing not to exceed an undersize of 1 mm (.0394"), equalized on both faces, i.e. .5 mm (.0197") each face; disc wear limit: front 11.5 mm (.452") rear 8.5 mm (.335") thick.

Inspection specifications after regrinding of disc surfaces:

- Max. out of parallelism with disc mounting plane: .05 mm (.0020");
- Max. out of flat: .025 mm (.0010") and max. difference in thickness: .038 mm (.0015") as measured along any radial line;
- Max. out of flat: .025 mm (.0010") and max. difference in thickness: .015 mm (.0006") as measured along any circular line;
- The surface should show no sign of scoring or porosity.

The surface roughness should be:

- 26 microinches as measured circularly;
- 36 microinches as measured radially.

F r i c t i o n p a d s

	Front	Rear
Thickness when new	15 mm (.590")	
Wear limit	7 mm (.275")	

C a l i p e r s

On replacement of disc or caliper, measure the running clearance between caliper and disc on each side; the difference should not exceed .5 mm (.0197").

To centralize the caliper about the disc, insert shims between caliper and mounting flange as required.

H a n d b r a k e

It is mechanically operated and acts on the rear wheels through suitable shoes which spread apart against a drum machined in the disc casting.

For a brief description and repair and maintenance instructions refer to:

ATE DISC BRAKES (Publication no. 1202)

N o t e - When reassembling the operating levers, a slight quantity of grease AGIP F1 Gr SM or SHELL Retinax AM is to be applied to the pivot points and rubbing surfaces of levers.

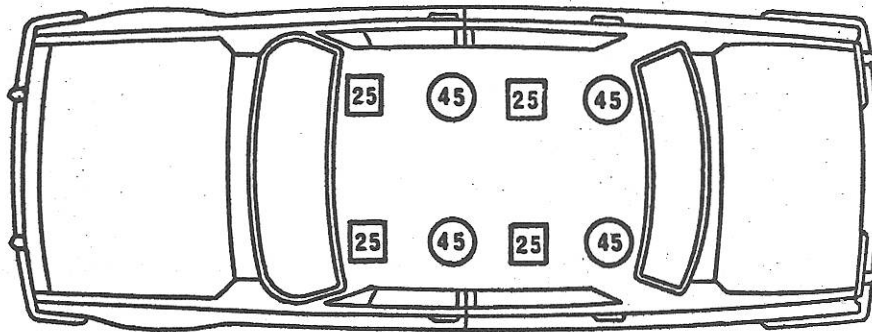
WHEEL ALIGNMENT

Checking of wheel angles and car "trim" under static load

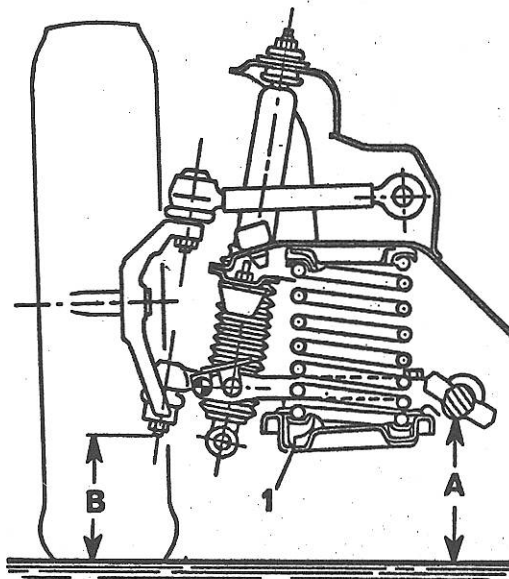
Put the car under static load, with shock absorbers and stabilizer rods disconnected, with full tank or equivalent with spare wheel, tool kit and the tires inflated as specified.

Before checking, slightly move the car up and down so as to settle the suspensions.

- | | | |
|-------------|---|---|
| Front seats | { | 1 weight of 45 Kgs on each seat |
| | | 2 weights of 25 Kgs on flooring where feet rest |
| Rear seats | { | 2 weights of 45 Kgs on seat |
| | | 2 weights of 25 Kgs on flooring where feet rest |



Distance of lower wishbone of front suspension from a reference level



$$A - B = 34 \pm 5 \text{ mm } (1.34 \pm .20\text{'})$$

Dimension "A" must be measured in correspondence of the lower line of wishbone shaft as shown.

To adjust add shims in "1".

Shims are available in the following thicknesses:

3.5 mm (.14") - 7 mm (.28") - 10.5 mm (.42")

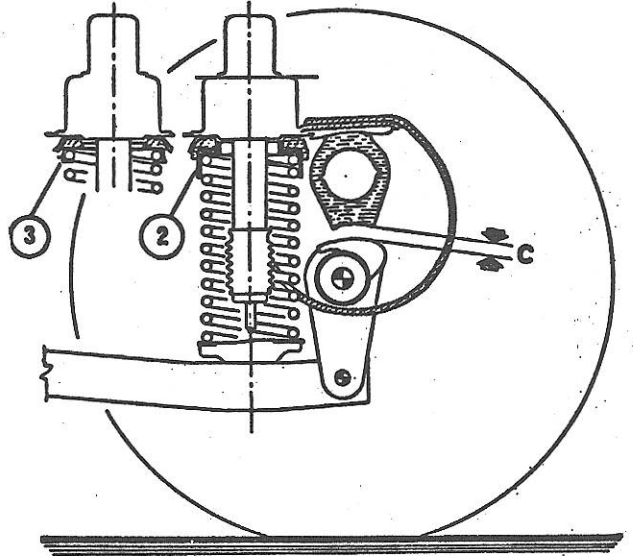
Distance of rear axle from rubber buffers

$$C = 36 \pm 5 \text{ mm } (1.42 \pm .20'')$$

Note - To adjust, remove the seat 3 and add shims in 2 as shown.

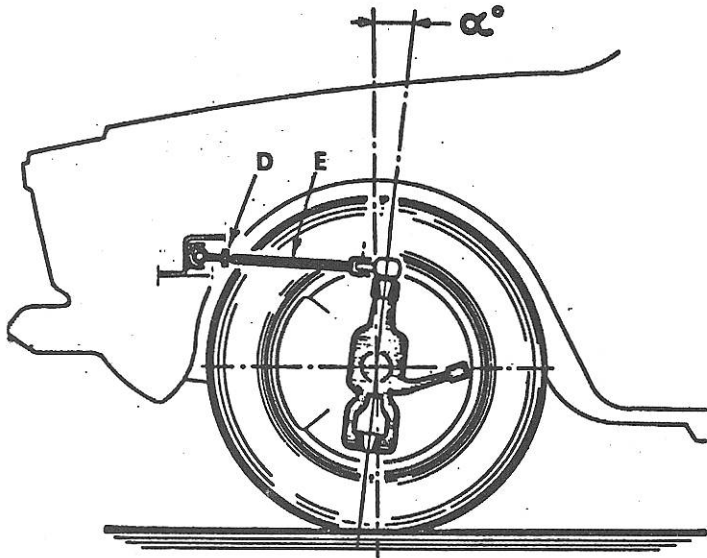
Shims are available in the following thicknesses:

- 6.5 mm (.26")
- 11.5 mm (.45")
- 16.5 mm (.65")
- 21.5 mm (.85")



In the conditions as specified check the wheel angles.

Caster angle: $\alpha = 1^\circ \pm 30'$



The difference in caster angle between R.H. and L.H. wheel must not exceed $0^\circ 20'$.

To adjust, loosen jam nut "D" and rotate rod "E".

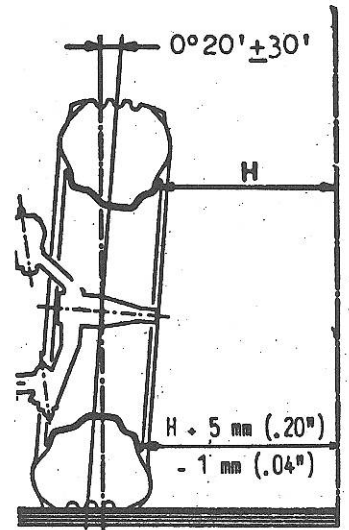
Note - Small adjustments of the caster angle allow to correct slight drift tendency of the car.

The caster angle should be checked under static load and alignment conditions as specified and with shock absorbers disconnected at an end.

N.B. - Before checking the caster angle shake the front end of car in order to allow the rubber bushing on the front slanting arm to set properly.

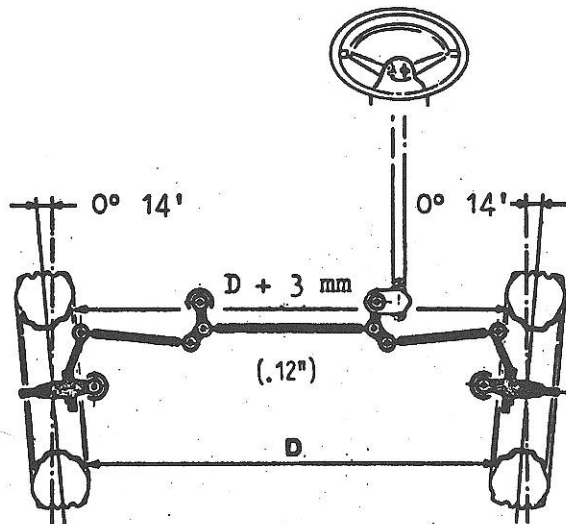
Front wheel camber

Difference in camber angle between R.H. and L.H. wheel = $0^{\circ} 40'$



Note - Not adjustable. Check the chassis and suspension arms if necessary.

Front wheel toe-in



Rod length:

side	264 to 280 mm (10.4 to 11")
track	530 to 550 mm (20.86 to 21.65")

With the toe-in as specified, the length of rods as measured between ball joint centers should fall within the limits shown. If these values cannot be restored, the cause will probably be attributable to distortion of the body resulting from a collision.

"1750 GT Veloce and 1750 Spider Veloce" VARIANTS

PRINCIPAL CHARACTERISTIC DATA

Number of cylinders	4
Bore	80 mm. (3.15")
Stroke	88.5 mm. (3.48")
Total cylinder capacity	1779 cc
Max. power at 5,500 giri/min.	SAE 132 HP
Front track	1324 mm. (52.1")
Rear track	1274 mm. (50.1")
Wheel base { GT Veloce	2350 mm. (92.7")
{ Spider Veloce	2250 mm. (88.6")
Min. turning circle { GT Veloce	10700 mm. (420.1")
{ Spider Veloce	10500 mm. (413.4")
Overall length { GT Veloce	4080 mm. (161")
{ Spider Veloce	4250 mm. (167.3")
Overall with { GT Veloce	1580 mm. (62.2")
{ Spider Veloce	1630 mm. (64.2")
Overall height (unladen) { GT Veloce	1315 mm. (51.8")
{ Spider Veloce (with top)	1290 mm. (50.8")
Curb weight (full tank)	1040 Kg. (2293 lbs)
Number of seats { GT Veloce	2 + 2
{ Spider Veloce	2
Tires 165 x 14	PIRELLI cinturato HR KLEBER COLOMBES V 10 GT MICHELIN X A S
Fuel consumption per 100 Km. (CUNA standard)	11.4 lt. (24.6 mpg. GB) (20.6 mpg. US)
(For best engine performance, the use of premium-grade fuel is advised)	

With 41 : 10 final drive

Gear	Max. Speeds					
	Running in				After running in	
	up to 1000 Km (600 mi.)		1000 to 3000 Km (600 to 1900 mi)			
Km/h	mph	Km/h	mph	Km/h	mph	
1st	27	17	34	21	47	29
2nd	46	29	56	35	77	48
3rd	67	42	82	51	114	71
4th	91	57	111	69	154	96
5th	115	71	141	88	190	118
Rev.	-	-	-	-	51	32

Tires

Inflation pressures (with tire cold)

	Front wheels		Rear wheels	
	Kg/cm ²	psi	Kg/cm ²	psi
PIRELLI cinturato HR - 165 x 14	1.7	24.1	1.8	25.6
KLEBER COLOMBES V 10 GT - 165 x 14	1.7	24.1	1.8	25.6
MICHELIN X A S - 165 x 14	1.4	19.9	1.7	24.1

Note - The pressures given apply to all conditions.

Electrical equipment

	B O S C H	
	1750 GT Veloce	1750 Spider Veloce
	Two-speed windshield wiper	WS 13/11 T 1 A

Bulb's wattage

1750 GT Veloce

Inner headlights (high beams)	45/40 asymmetric
Outer headlights (low beams)	45/40 asymmetric
Tail lights - parking & stop	5/20
Front direction indicators	20
Tail direction indicators	20
Back-up light	20
Front parking lights	5 globular
License plate light	5 globular
Engine compartment light	5 cylindrical
Courtesy light	5 cylindrical
Lighting on instruments	3 tubular
Tell-tale for blower	3 tubular
Tell-tale for alternator	3 tubular
Tell-tale for fuel reserve	3 tubular
Tell-tale for low oil pressure	3 tubular
Tell-tale for direction indicators	1.2 tubular
Tell-tale for parking lights	1.2 tubular
Tell-tale for high beams	1.2 tubular

1750 Spider Veloce

Headlamps (high & low beams)	45/40 asymmetric
Tail lights - parking & stop	5/20
Front direction indicators	20
Tail direction indicators	20
Back-up light	20
Front parking light	5 globular
Side direction indicator	5 globular
License plate light	5 globular
Engine compartment light	5 cylindrical
Courtesy light (in rearview mirror)	5 cylindrical
Glove box light	5 cylindrical
Ash tray light	5 cylindrical
Lighting on instruments	3 tubular
Tell-tale for alternator	3 tubular
Tell-tale for blower	3 tubular
Tell-tale for fuel reserve	3 tubular
Tell-tale for direction indicators	1.2 tubular
Tell-tale for low oil pressure	1.2 tubular
Tell-tale for parking lights	1.2 tubular
Tell-tale for high beams	1.2 tubular

REAR AXLE AND SUSPENSION

Transmission-axle overall ratios-with 41 : 10 final drive	}	1st gear	13.54 : 1
		2nd gear	8.15 : 1
		3rd gear	5.55 : 1
		4th gear	4.10 : 1
		5th gear	3.24 : 1
		Reverse	12.34 : 1

Checking of shock absorbers on test bench - Calibration data (when cold)

B I A N C H I		
	Extension	Compression
High speed	135 to 190 Kgs (298 to 418 lbs)	50 to 80 Kgs (111 to 176 lbs)
Low speed	19 to 55 Kgs (42 to 121 lbs)	9 to 22 Kgs (20 to 48 lbs)

Checking of suspension springs

	1750 GT Veloce	1750 Spider Veloce
Free length	437 mm (17.2")	429 mm (16.9")
Length under test load	252 mm (10")	252 mm (10")
Test load	268.7 to 285.3 Kgs (592.5 to 635 lbs)	265 Kgs (584 lbs)
Colored marks	Blue-Blue Blue - White	White-White White - Blue

FRONT SUSPENSION

Checking of shock absorbers on test bench

Calibration data (when cold)

A L L I N Q U A N T		
	Extension	Compression
High speed	150 to 190 Kgs (330 to 420 lbs)	55 to 80 Kgs (121 to 175 lbs)
Low speed	25 to 55 Kgs (55 to 121 lbs)	9 to 22 Kgs (20 to 48 lbs)

Checking of suspension springs

	1750 GT Veloce	1750 Spider Veloce
Free length	303 mm (11.9")	317 mm (12.5")
Length under test load	200 mm (7.8")	200 mm (7.8")
Test load	778 to 828 Kgs (1715 to 1826 lbs)	820.6 to 871.4 Kgs (1809.4 to 1920.5 lbs)
Colored marks	White-White Blue	White - Blue Blue-Blue

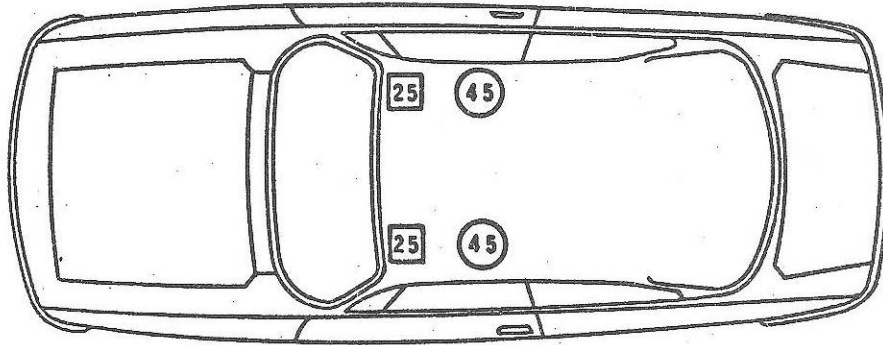
WHEEL ALIGNMENT

Checking of wheel angles and car "trim" under static load

Put the car under static load, with shock absorbers and stabilizer rods disconnected, with full tank or equivalent, with spare wheel, tool kit and the tires inflated as specified.

Before checking, slightly move the car up and down so as to settle the suspensions.

Static load { 2 weights of 45 Kgs (100 lbs) on front seats
2 weights of 25 Kgs (55 lbs) on flooring where feet rest



Distance of lower wishbone of front suspension from a reference level

$A - B = 24 \pm 5 \text{ mm } (.94 \pm .2")$ (See figure on page 22)

Distance of rear axle from rubber buffers

$C = 41 \pm 5 \text{ mm } (1.62 \pm .2")$ for 1750 GT Veloce

$C = 33 \pm 5 \text{ mm } (1.30 \pm .2")$ for 1750 Spider Veloce

(See figure on page 23)

S.p.A. ALFA ROMEO - Milano, via Gattamelata 45

DIASS - Pubblic. N° 1321 - 2/1968 (2500)

