

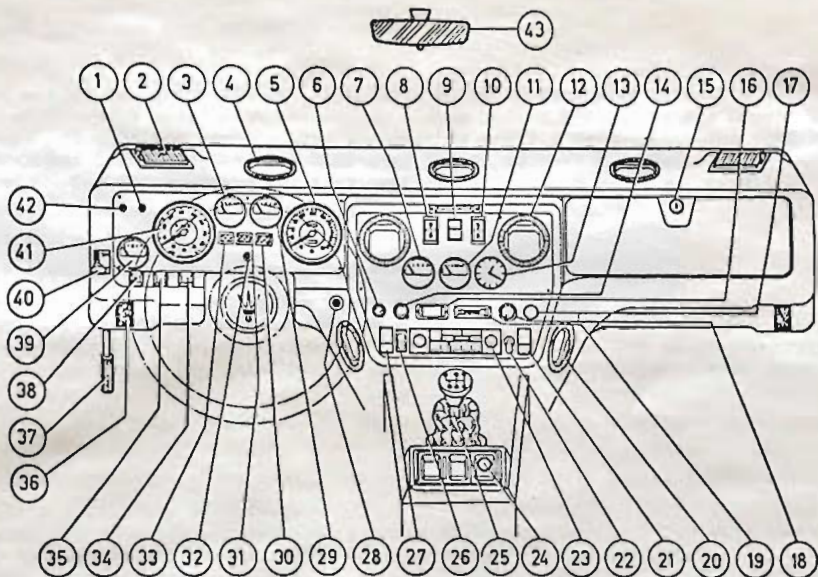
#201

Khamsin

Supplement to Owner's Manual

M a s e r a t i
KHAMSIN am 120 USA
1977 model year

**Modifications to the
european owner's manual**





1. Yellow warning light for rear defroster connection.
2. Side air duct to the windshield.
3. Oil pressure gauge: in Kg/cm² and in (lb/sq in), it is electrically connected with the bulb. When idling at 800-1000 revs. with hot engine and in summer season, it may happen that the indicator does not show any reading. The pressure is equally normal, provided that the red warning light does not light and that the indicator begins to show a reading as soon as the gas pedal is operated. The oil pressure may vary, between 2000 and 6000 revs., from 1,5 to 5 Kg/cm² (20-70 lb/sq in).
4. Central duct for windshield defrosting.
5. Odometer and speedometer with incorporated warning light:
 - Yellow warning light for heating fan (left side).
 - Green warning light for choke in operation.
 - Red warning light for alternator charge (right side) normally lits at speeds upto 1000 R.P.M., at higher engine speeds the light should go out. Should the light remain on this indicates a generator malfunction.
6. Switch for instrument light switching and adjustment. To adjust the light intensity, turn the switch clockwise.
7. Oil temperature indicator: electrically operated, it must never exceed (110°C-120°C) (230°-240°F).
8. Electric window switch for left door.
A thermoelectric disconnecter breaks the passage of current on the motor when the control is kept pressed, at the end of the stroke, or in excessive load conditions.
9. Emergency light push-button (optional).
10. Electric window switch for right door:
A thermoelectric disconnecter breaks the passage of current on the motor when the control is kept pressed, at the end of the stroke, or in excessive load conditions.



11. Voltmeter: it indicates the battery tension; an alternator regulator charges the battery and stabilizes a 14 volt tension. In normal running with any instrument continuously working, the voltmeter must always indicate 14 volts.
12. Adjustable air duct for passenger compartment.
13. Electric clock: it is always connected to the battery and has an external push-button to adjust the hands: Raise the button and rotate it.
14. Air conditioning system thermostat: this controls the connection and disconnection of the compressor by operating an electromagnetic clutch between compressor and engine.
15. Glove box with key.
16. Air conditioning unit switch:
Press the push-button towards the white point to control the vacuum operated opening of the throttle valve for air circulation in the passenger compartment. To open the external air throttle valve, press the button towards the blue point.
17. Wiper timer. The clockwise rotation of the knob operates the intermittent wiper action with intervals going from 3 to 30 seconds (Fig. 7).
18. Centrifugal fan switch for heating and conditioning system at three adjustable temperatures.
19. Control lever for heating water tap. This lever operates the warm water circulation from the engine to the radiator under the dashboard. It is connected when turned towards the A letter.
20. Adjustable air ducts for driver and passenger feet.
21. Inside roof lamp switch.
22. Emergency light switch.
23. Radio set.
24. Ash-tray with lighter.



25. Lever for five synchronized speeds plus reverse (position of gearbox lever at fig. 9).
26. Electric aerial switch.
27. Control switch for air throttle valve to the windshield.
28. Choke lever: to be only used when starting from cold in winter season and to be progressively cancelled during engine heating.
29. Water temperature indicator:
It must never exceed 105°C (220°F).
30. Warning light for disconnected safety belts.
31. Warning light for insufficient pressure in the hydraulic circuit. (when it flashes a buzzer goes on)
32. Knob for Km. counter (or mileometer) zero setting. Press and rotate the knob to the right.
33. Warning light for handbrake on
34. Push switch for checking that brake system failure warning system works correctly.
35. Switch for rear window defrosting:
it connects current to a defrosting resistance in the rear window .
36. Inside roof lamps: they normally light when the doors are opened, but they may also be lit by operating the switch.
37. Lever for engine bonnet opening.
38. Horn change-over switch: the two-position switch can operate, by means of the button at the middle of the steering wheel, the horn or the pneumatic horn.
39. Fuel gauge.
40. Lever for retractable headlight lifting.
41. Electrical revolution counter and incorporated warning lights:



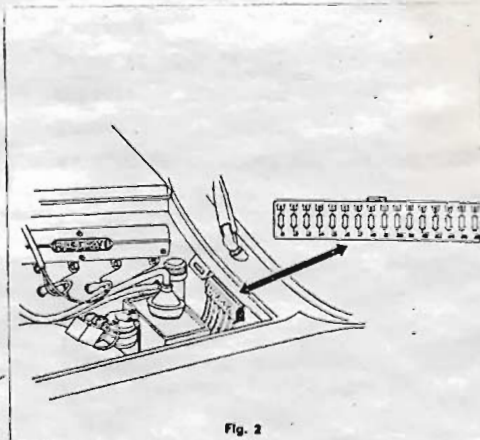
- Blue warning light for country beams (left side)
 - Blue warning light for cornering lights (central)
 - Green warning light for parking light (right side).
42. Red warning light for fuel reserve: it lights when the fuel quantity in the tank is lower than 10 lt. (2 imp. gall. 2,7 USA gall.).
43. Two-position rear view mirror.

ELECTRICAL FUSES (Fig. 2)

The fuse box is placed in the left rear panel of the engine compartment. And is readily accessible.

FUSE POSITIONS & RATINGSFUSE BOX

Pos.		Amp.
1	Fog lights	15
2	Country beams	15
3	Right traffic beam	8
4	Left traffic beam	8
5	Front right and rear left parking lights	8
6	Front left and rear right parking lights	8
7	Engine right fan	15
8	Engine left fan	15
9	Conditioning fan for passenger compartment	15
10	Rear defrosting window and window lifting device	15
11	Horns	15
12	Windscreen wiper and flashing	15
13	Radio, clock, voltmeter	8
14	Inside lamps and cigar lighter	8
15	Dashboard instrument intermittence, stop and reverse gear	8
16	Fuel pump	8



ENGINE

- NUMBER OF CYLINDERS		8 V. - 90°
- DISPLACEMENT		300,87 cu.in.
- BORE		3,6968 inches
- STROKE		3,5039 "
- COMPRESSION RATIO		8,5
- ADVERTISED HP		315 HP SAE AT 5000 R.P.M.
- ADVERTISED TORQUE		308 lbs.ft. SAE AT 3500 R.P.M.
- CARBURETORS		Number 4
- TYPE		Weber 42 DCNP 14
- IGNITION SYSTEM		Capacitive discharge
- ADVANCE MECHANISM		Vacuum
- BASIC IGNITION TIMING		4° ATDC (crankshaft degrees) at 1000 RPM
- SPARK PLUGS		Bosch W 230 T30
- GAP		0,025"
- DWELL		Distributor without points, magnetically triggered impulse.No dwell angle.
- CAMSHAFT TIMING	EXHAUST VALVE:	INTAKE VALVE:
	opens: 65° 30' BBDC	opens: 38° BTDC
	closes: 10° 30' ATDC	closes: 84° ABDC
	Valve clearance (cold) 0,019 in.	Valve clearance (cold) 0,011 in.


TRANSMISSION Ratios:
Mechanical

- 1st	-	2,99
- 2nd	-	1,90
- 3rd	-	1,33
- 4th	-	1,00
- 5th	-	0,89
Reverse		2,50
Axle Ratio		3,77
Tyresize = 215/70 VR15"		

R.P.M.	1st gear	2nd gear	3rd gear	4th gear	5th gear
	Ratio 2,99	Ratio 1,90	Ratio 1,33	Ratio 1	Ratio 0,89
	Mph	Mph	Mph	Mph	Mph
1000	6,5	10,1	15	21	23
1500	9,2	16	23	31	35
2000	12	21,6	31	41,5	46
2500	15,5	27	38,5	52	58
3000	18,6	32	46	62	69
3500	21,6	38	54	73	75
4000	25	43	62	83	92
4500	27	48	70	94	104
5000	31	51	77	104	115

Automatic

- 1st	-	2,4
- 2nd	-	1,47
- 3rd	-	1
Reverse		2
Axle Ratio		3,54
Tyresize = 215/70 VR15"		

R.P.M.	L POSITION	D ₁ POSITION	D ₂ POSITION
	Ratio 2,40 Mph	Ratio 1,47 Mph	Ratio 1 Mph
1000	8,7	14	21
1500	13	21	31
2000	17,4	27	41,5
2500	21,6	35,5	52
3000	26	42	62
3500	30,2	50	73
4000	34	56,5	83
4500	39	63	94
5000	43	71	104

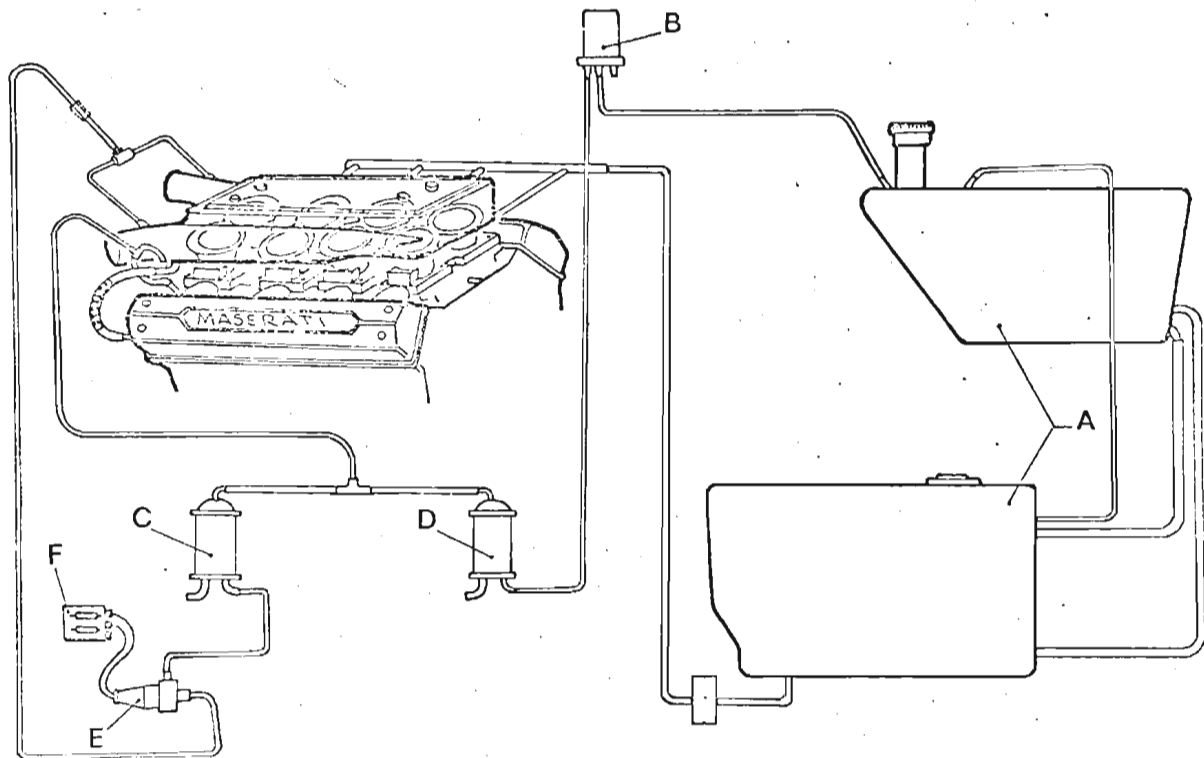
Use D₁ for city driving
Use D₂ has be used for highway

DESCRIPTION OF THE EMISSION CONTROLSYSTEM

- A) EXHAUST EMISSION CONTROL SYSTEM: the exhaust emission control is obtained by the injection of air into the exhaust manifold. The air pump is engine-driven by a V-belt and there are no clutches or disengaging devices. The pumped air is discharged to the atmosphere by a diverter valve when a high level of pressure exists inside the exhaust manifold. This diverter valve also works during engine decelerations (only at fully closed throttle) by discharging to the atmosphere. This is caused by a diaphragm in the valve which is regulated by intake manifold vacuum that enters through a fixed orifice. The diverter valve is manufactured by General Motors and the spring calibration is "GREENPRINT". The two exhaust manifolds, thermally insulated by asbestos, are equipped of a single volume for each one. This is to allow the reduction of exhaust flow speed and to induce good post-combustion in the exhaust line. No catalyst and no exhaust gas recirculation are present in the exhaust emission control system.



- B) EVAPORATIVE EMISSION CONTROL SYSTEM: A carbon canister (D) absorbs the evaporated gas from the tanks (A). Above the gas tanks there is a liquid separator box (B) which returns the condensed gas back to the tank. The non-condensed gas is absorbed by the carbon filter.
- When the engine rotates, the intake manifold vacuum purges the carbon filter (D). Another carbon canister (C) absorbs the evaporated gas from the air filter box.
- Even this filter is purged by the intake manifold vacuum.
- The gas absorption from the filter (C) is facilitated by an electrical fan (E) which is operated by a thermocouple fitted on water cooling hose.
- When the water temperature is above 120°F. and the starting key is turned off the thermocouple actuates the fan till the water temperature decreases under 120°F.
- C) CRANKCASE EMISSION CONTROL SYSTEM: A tube equipped with a flame arrester, connects the crankcase internal volume with the air filter volume.
- Another tube connects the engine internal volume with the intake manifold, below the throttles, to maintain the vacuum inside the crankcase when the throttles are closed.



CARBON MONOXIDE CONTROL

(see pictures n. 4)

It is possible to check the carbon monoxide level by means of special devices among these an advisable device is the Horiba analyzer model Mexa 400. Its specifications are reported in the anti-pollution special tools section. (See page 18).

The setting data pertinent to the model 122 USA 1975 concerning the emission at idling, are the following:

- CO percent = 0,1 + 1,1 at 1.000 R.P.M. with connected air pump and gear lever in neutral position and air conditioning disconnected.
- Cooling water temperature at 90°C degrees. (195°F).

Way of measuring:

- Drive the car on road, for an hour at least at a speed of 30 m.p.h.
- Wait until the water temperature does not reach 90°C (195°F).
- Insert the probe hose (for a depth of 10 inc.) into the exhaust tail pipe (first on the right side and then on the left side).
- Read then the data which must be kept withing the above mentioned limits.

Way of settings:

- Warm up the engine until the cooling water does not reach the temperature of 90°C (195°F)
- Read the data, then set each cylinder by acting for both mixture and idling screws, to obtain a CO level within 3,25 + 3,75%, with engine running at 1.000 R.P.M./1', lever in neutral gear, air pump and air conditioning disconnected.
- To disconnect the air pump it is enough to disconnect the rubber hoses from the diverter valve, plugging them not to have some air suction from the thermal reactors.
- All the anti-pollution devices, not mentioned here, must be working following the normal running conditions.

VACUUM RETARD MECHANISM

The vacuum retard mechanism is controlled by a vacuum diaphragm which rotates the block of the distributor by means of a lever. The vacuum comes from an area of the intake manifold beyond the throttle blades and travels through a volume and an electrovalve before reaching the retard mechanism on the distributor.

The electrovalve is controlled by a microswitch on the carburetor linkage. At any position above idle (i.e. when the carburetor linkage is beyond its dead-stop position) the electrovalve is shut and vacuum is excluded from the retard mechanism. Consequently, vacuum retard is only present when there is no physical application on the accelerator. The controlling mechanism of the electrovalve is completely electromechanical; there are no temperature or vacuum controlled AEC'd's which effect the system's operation.

ADDENDUM TO VEHICLE DATA SHEETStarting procedures for Maserati Vehicles:

1. Close the electrical circuit by the starting key, without activating the starting motor rotation. Wait 3 to 5 seconds to permit the filling of the carburetor chamber.
2. Place the gearbox lever in the neutral position and depress the clutch pedal completely. Start the engine while pumping by the gas pedal 3 or 4 times for one third of its total stroke.
3. As soon as the engine starts, release the key and hold the engine rotation at 3500 to 4000 R.P.M. for a period of 20 to 30 seconds.

NOTE: If the external temperature is lower than 10°C. (50°F), it is necessary to start the engine by means of the choke. In this case do not pump by the gas pedal. Release the choke after the engine has been running for a minute to a minute and a half.

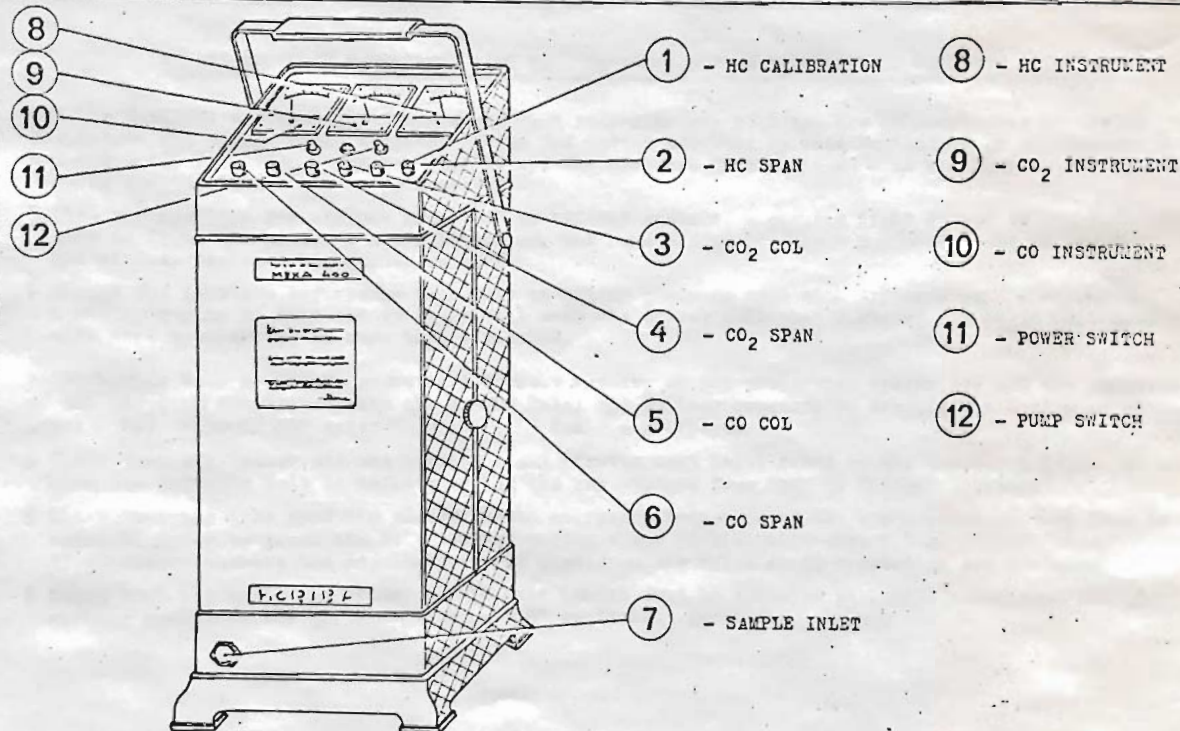


Fig 4

SAFETY BELTS IN COMPLIANCE WITH US GT VEHICLES MANUFACTURED FROM FEB. 25TH ON

All the Maserati vehicles manufactured in 1975 from February 25th on, are in compliance to the US Regulation 208 owing to the adoption of the 3rd option admitted by said Regulation as per paragraph S 4.1.2.3 (39 FR. 38380 - October 31st 1974). The cars are thus equipped with an acoustic and optical warning system which works as follows:

- § When the ignition key changes from "ON" to "START" position, a warning light fitted on the dashboard, just in front the driver's seat, lights up; the same blinks for about 6 seconds even if the driver has already fastened his safety belt.
- § Should the ignition key change from "ON" to "START" position even with driver's belt disconnected, a buzzer begins to work and it rings till when the driver will have fastened his belt; said buzzer will ring however for no more than 6 seconds.

MAINTENANCE: With a view to granting a correct running of the protection system for all the occupants of the car (in compliance with the ST 208 Rule) the Builder suggests to execute the following checkings: 1st - 3000/5000 miles 2nd - every year

- § Check that the buzzer and the warning light (fasten seat belt) fixed to the dashboard begin to work when the driver's belt is unfastened and the key changes from "ON" to "START" position.
- § Check that the tiny pendulum placed in the emergency retractor of the upper cross-belt is free to swing in order to grant the belt locking during a car deceleration over 0,7 g.
If necessary operate the adjustment screw placed on the nylon slide supporting the pendulum.
- § Check that the unrolling of the pelvic belt (which must be 4 inches at least) makes void the buzzer working just when the key changes from "ON" to "START" position.

SPECIAL TOOLS FOR ANTI POLLUTIONSYSTEM

- | | |
|---|--------------------------------------|
| 1. Spark plugs and valves clearance thickness gauges | 2. Micrometer gauge for TDC research |
| 3. Carburetors synchrotester | 4. Stroboscopic gun |
| 5. Electronic revolution counter for dwell angle measurements | 6. CO and HC tester |
| 7. Screwdriver for carburetor mixture control | 8. Tools kit for car disassembly |

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HORIBA CO, CO₂, HC ANALYZERMODEL MEXA 400Instrument specifications

<u>Measuring method</u>	: Infrared analyzer, non-dispersive method, positive filter, double light sources.
<u>Standard ranges</u>	: 0 to 2% CO, 0 to 250 ppm HC (n-hexane equivalent), and 0 to 16% CO ₂ .
<u>Repeatability</u>	: ± 5% of full scale.
<u>Response time</u>	: 90% of reading in 7 seconds (including built-in sampling lag time).
<u>Readout standard</u>	: Three meters, direct reading: one for carbon monoxide, one for hydrocarbons and one for carbon dioxide.
<u>Sampling system</u>	: The instrument houses a complete sampling system, including a flowmeter,



water separator, particulate filter, and pump. A tail pipe probe and flexible sample line (with pre-filter) are supplied with each analyzer. (Can be deleted on request)

Power requirements

: 115 VAC, 60 Hz, 2 amps or 230 VAC, 50 Hz, 1 amp.

Dimensions

: 25" high x 13 1/2" wide x 7 7/8" deep. (635 mm x 345 mm x 200 mm)

Weight

: Approximately 30 pounds (13,5 Kgs).

Preparation

- a. Connect the sampling tube to the SAMPLE INLET at the bottom of the front panel of the instrument.
- b. Make sure that unit is equipped with a clean filter element. (A supply of filter elements is provided with the instrument, additional elements can be obtained from Olson-Horiba.)
- c. Check to see that the POWER switch and the PUMP switch are in the OFF position and then connect the power cord to an AC source with the voltage and frequency designated on the nameplate of the instrument.

Warm-Up

- a. Place the POWER switch in the ON position. The power indicator light will go on, and the three meters will move erratically.
- b. For maximum accuracy allow 90 minutes for warm-up; usable readings can be made in five minutes. (The meter readings will gradually stabilize.)
- c. Place the PUMP switch in the ON position. Check to see that the flow meter indicator stays in the BLACK region.

Zero calibration

: While keeping the tip of the exhaust probe in clean air adjust the CO, HC and CO₂ ZERO controls so that each of the three meters indicates a zero reading. If a proper zero reading cannot be obtained, proceed with optical alignment described in para. 5.7.

Span calibration: Basic Span Calibration With Gas

- a. Basic span calibration is required before proceeding to the initial measurement, and should be repeated weekly thereafter.

NOTE: It is recommended that a CO-HC-CO₂ mixed span gas be used. The most economical way to purchase and use this gas is in disposable 7 and 14 cubic foot containers; a low pressure kit should be used with these containers. If the HC span gas container label shows n-hexane equivalent, use that value on the meter; if it shows ppm propane, the meter should be set at .52 of that value.

- b. Place the PUMP switch in the OFF position.
- c. Press the nozzle of the calibration gas can against the GAS CHECKER inlet at the bottom of the front panel of the instrument. (This automatically feeds the gas into the analyzer unit.)
- d. First the HC meter reading, then the CO and CO₂ meter reading will move up-scale. Continue to press the container of gas against the inlet, until the meter readings have stabilized then remove the gas container from the GAS CHECKER Inlet. Adjust the SPAN controls for the three meters to bring their readings to a point corresponding to the concentration printed on the label of the gas container.
- e. Turn on the pump and check to see that the meter readings return to zero.

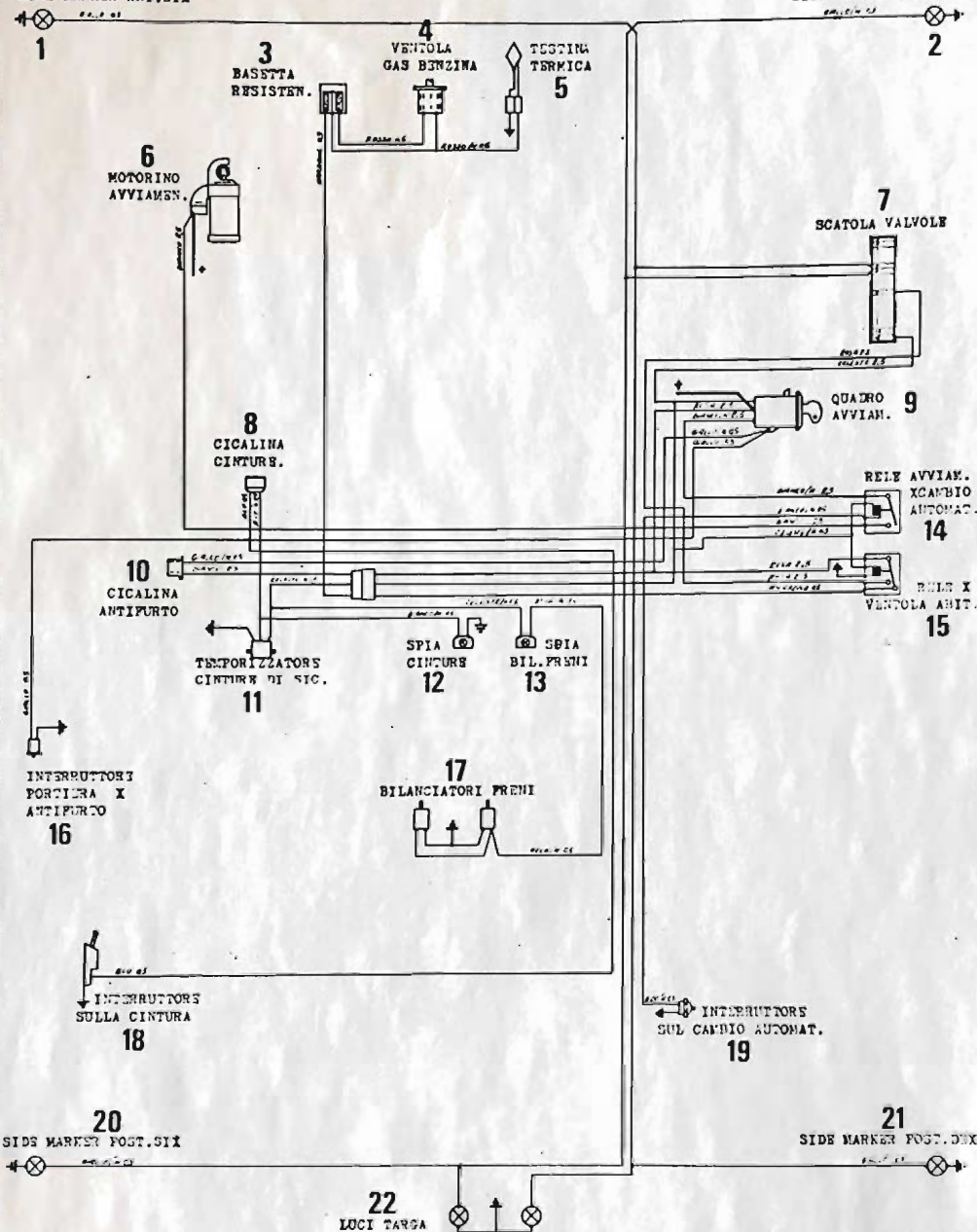
Measurement of sample

- a. After completing the above calibration procedure, the instrument is ready for sample measurement as follows:
- 1) Insert the exhaust probe into the tail pipe of the vehicle being tested.

NOTE: To prevent the exhaust probe from mixing ambient air along with the exhaust gas, be sure to insert the tip of the probe more than one foot into the tail pipe of the vehicle.

ELECTRICAL DIAGRAM FOR US MODIFICATIONS AS PER REGULATIONS IN FORCE FROM FEBRUARY 25th 1975

- | | |
|------------------------------|---|
| 1. Front left side marker | 12. Safety belt warning light |
| 2. Front right side marker | 13. Brake balancer warning light |
| 3. Resistance terminal board | 14. Starting relay for automatic transmission |
| 4. Fan for fuel gases | 15. Relay for passenger's compartment fan |
| 5. Thermal head | 16. Door switch for anti-theft |
| 6. Starter | 17. Brake balancer |
| 7. Fuse box | 18. Switch on safety belt |
| 8. Safety belt buzzer | 19. Switch on automatic transmission |
| 9. Ignition switch | 20. Rear left side marker |
| 10. Anti-theft buzzer | 21. Rear right side marker |
| 11. Safety belt timer | 22. Number plate lights |



Servizio Documentazione - Gennaio 1977