

FCCY
\$5.00

Fiat X1/9
1978 - Australia Version

FIAT

Settore Automobili
Gruppo Veicoli Fiat
Assistenza Tecnica

GENERAL INFORMATION

IDENTIFICATION DATA

Engine type	128AS.023	Chassis type	128AS
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ENGINE

Location	Amidships
Position	Transverse
Type	4-stroke, gasoline
No. of cylinders	4
Bore	86 mm
Stroke	55.5 mm
Displacement	1290 mm
Compression ratio	9.2 to 1
Maximum output (DIN)	51.5 kw (70 hp)
at	6000 rpm
Maximum torque (DIN)	94.1 Nm (9.6 kgm)
at	4000 rpm

Valve gear

Intake opens	10° BTDC
Intake closes	54° ABDC
Exhaust opens	54° BBDC
Exhaust closes	10° ATDC
Tappet clearance	
- For timing check	.50 mm
- Normal, cold	
- Intake	.30 mm
- Exhaust	.40 mm

Valve lift

- Intake	9.1 mm
- Exhaust	9.1 mm

Fuel system

Fuel pump	Mechanical
Carbureter	
- Type	Twin choke, downdraft
- Make	Weber
- Type	32 DATRA 19/100
- Auxiliary throttle	Differential opening
Cold start device	Automatic

Accelerator pump	Integral with carbureter
Idle inhibitor	Integral with carbureter
Fast idle device	Integral with carbureter
Manifold heating	Water
Fuel filter	Pump outlet
Air cleaner	Cartridge
Cleaner silencer	Integral

Emission control system

Evaporative emission	Closed circuit
Crankcase emission	Closed circuit
Exhaust emission	Separate

Lubrication system

Type	Forced feed
Oil pump	Gear
Relief valve	Integral
Oil filter	Full flow
Oil pressure at 100°C	3.43 - 4.9 bar (3.5 - 5 kg/cm ²)

Cooling system

Type	Water
Expansion tank	Standard
Water pump	Centrifugal
Thermostat	
- Type	Bypass
- Location	Cylinder head water outlet
Fan	Electromagnetic
- Control switch	Thermostatic, radiator mounted
Cut-in temperature	90°C approx.

CHASSIS

Clutch

Type	Single dry plate
Spring	Diaphragm
Operation	Hydraulic
Pedal free travel	26.5 mm

Transmission

Type	Manual
Speeds	Four
Synchromesh	All forward
Gear lever	Floor mounted
Transmission ratios	
- First	3.583 to 1
- Second	2.235 to 1
- Third	1.454 to 1
- Fourth	.959 to 1
- Reverse	3.714 to 1

Axle

Location	Integral with transmission
Axle reduction	Helical drive
Reduction ratio	12/53
Drive shafts	Unequal length
Joints	
- Inner	3-lobe, constant velocity
- Outer	Ball, constant velocity

BrakesService

Type	Disc all round, single cylinder sliding calipers, self-adjusting
Brake circuit	Divided
Operation	Hydraulic

Parking

Type	Mechanical, acting on rear wheels
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Steering

Type	Rack and pinion
Lock to lock	Three turns
Rack stroke	117 mm
Turning circle	10,000 mm
Column	Collapsible
- Universal joints	Two
Linkage	Twin track rods
Joints	Sealed - for - life

Front suspension

Type	Independent, strut-and-link, tie-rods, coil springs
Joints	Sealed-for-life
Dampers	Hydraulic, double-acting
Bump blocks	In line with coil springs and dampers
Laden caster *	7° ± 30'
Laden camber *	- 1° ± 20'
Laden toe-in *	2 - 4 mm

Rear suspension

Type	Independent, strut-and-link, lower wishbones, coil springs
Dampers	Hydraulic, double-acting
Bump blocks	In line with springs and dampers
Transverse links	Adjustable
Laden camber (*)	- 2° ± 20'
Laden toe-in (*)	4 - 6 mm

Wheels and tyres

Wheel type	Disc
Rim size	4½ J x 13 in
Tyre type	Radial ply
Tyre size	145 NR-13 in
Inflation pressure	
- Front	1.76 bar (1.8 kg/cm ²)
- Rear	1.96 bar (2 kg/cm ²)

(*) Laden vehicle = 2 occupants + 20 kg of luggage with tyres correctly inflated.

ELECTRICAL

System voltage 12V

Alternator

Type FIMM-A-124-12X-44A

Voltage regulator FIMM RC2/12D

Battery

Capacity 45 Ah (at 20 hour rate)

Heavy discharge 185 A at -18°C

StarterType MARELLI E84 - .8/12
Var. 1

Rated output .8 kw

Coil

Type

MARELLI BE200B or
MARTINETTI G52SSpark plugs

Type

- MARELLI
- CHAMPION
- BOSCH

CW78LPR

RN7Y

W200TR30

Thread size

M 14 x 1.25

Electrode gap

7 - 8 mm

WEIGHTS AND PERFORMANCE DATA

Curb 890 kg
Capacity Two + 60 kg
Laden 1080 kg
Towing capacity 750 kgSpeed

Laden, run in, on level road

- 1st 45 kph
- 2nd 70 kph
- 3rd 105 kph
- 4th 165 kph (approx.)Gradeability

Laden, run in, on level road

- 1st 45%
- 2nd 25%
- 3rd 15%
- 4th 8%

CAPACITIES

Description	Capacity		Type of FIAT recommended fluid
	dm ³	kg	
Fuel Reserve	48 5 - 7.5	- -	Premium gasoline (98 to 100 octane rating) with a lead content of .82 to .84 grams/liter (in conformity with A.D.R. 27(A)).
Coolant (including heater)	11	-	Water (2)
Engine oil (including filter)(1)	4.250	3.825	olioFiat (see table below)
Transaxle oil	3.150	2.85	olioFiat ZC90
Steering oil	0.140	1.127	olioFiat X 90/M
C.V. joint and boot grease (each)	-	0.095	grassoFiat MRM 2
Brake fluid - Front - Rear Clutch fluid	0.160 0.160 0.180	0.160 0.160 0.180	Liquido FIAT Etichetta Azzurra DOT 3
Windshield washer liquid	2	-	Water and alcohol-base solution

(1) Total lubricating system capacity is 5 dm³ (4.5 kg).

(2) At the beginning of the cold season use an approved anti-freeze. FIAT recommend a half-and-half mixture of water and PARAFU 11 incorporating oxidation, corrosion, foam and scale inhibiting properties and effective down to -35°C for a period of two years or 60,000 km.

ENGINE OIL GRADE DESIGNATIONS

Atmospheric temperature		oliofiat VS+	oliofiat MULTIGRADO
		Above CCMS specification	
Below	-15°C	VS+10W (SAE 10 W)	-
	-15°C to 0°C	VS+20W (SAE 20 W)	15 W/40
Up to	35°C	VS+30 (SAE 30)	
Above	35°C	VS+40 (SAE 40)	

Do not mix different brands or grades.

ENGINE
TIGHTENING TORQUE DATA

Description	Part No.	Thread size	Material	Torque	
				Nm	kgm
Capscrew, cap to crank case	4263780	M 10 x 1.25	R 100	80	8.2
Capscrew, engine vent to crank case	1/60454/21	M 8	R 80 ZNT	23	2.3
Capscrew, cylinder head to block	4223901	M 12 x 1.25	R 100 washer Sint-M8FE 40CMT3	93	9.5
Nut, cylinder head to block	1/61015/21	M 12 x 1.25	R 80 ZNT washer Sint-M8FE 40CLT3 (stud R 100)	93	9.5
Capscrew, cam box to cylinder head	1/60448/21 1/11011/21 1/60467/21	M 8	R 80 ZNT	20	2
Nut, tappet cover	1/58962/11	M 6	R 50 ZNT (stud R 80 ZNT)	10	1
Nut, manifold to cylinder head	1/61008/11	M 8	R 50 ZNT (stud R 80 ZNT)	27	2.8
Nut, connecting rod to cap	1/25550/20	M 9 x 1	R 80 (rod bolt R 100)	51	5.2
Capscrew, flywheel to crankshaft	1/43486/70	M 10 x 1.25	R 120	83	8.5
Capscrew, camshaft driven gear	1/12279/70	M 10 x 1.25	R 120	83	8.5
Capscrew, oil and fuel pump driven gear to shaft	1/12279/70	M 10 x 1.25	R 120	83	8.5
Nut, bearing to tensioner support	1/21647/11	M 10 x 1.25	R 50 ZNT (stud R100)	44	4.5
Nut, water pump and alternator pulley	4179194	M 20 x 1.25	R 50 ZNT CERATO or OLT (crank shaft GH 90-52-05)	137	14
Nut, self locking, alternator to upper bracket	1/25745/11	M 10 x 1.25	R 50 ZNT (screw R 80 ZNT)	49	5
Capscrew, alternator lower support to engine block	1/59708/21	M 10 x 1.25	R 80 ZNT	49	5
Nut, alternator to lower support	1/21647/11	M 10 x 1.25	R 50 ZNT (screw R 80 ZNT)	49	5

CHASSIS

Description	Part No.	Thread size	Material	Torque	
				Nm	kgm
<u>CLUTCH</u>					
Capscrew, clutch support to flywheel	1/09022/31	M 6	R 100 CDT	16	1.6
Capscrew, withdrawal fork	4200713	M 8	R 80 ZNT	26	2.7
Nut, pusher head to fork	1/61023/11	M 8	R 50 ZNT (rod R 50 IND ZNT)	26	2.7
Capscrew, slave cylinder	1/60441/21	M 8	R 80 ZNT	26	2.7
Capscrew, slave cylinder support to transmission case	1/61359/21	M 8	R 80 ZNT	26	2.7
Nut, slave cylinder support to transmission case	1/61008/11	M 8	R 50 ZNT (stud R 80 ZNT)	26	2.7
<u>TRANSAXLE</u>					
Capscrew, selector shaft detent cover	4212140	M 8	R 80 ZNT	25	2.5
Capscrew, transmission case to support	1/60423/21	M 8	R 80 ZNT	25	2.5
Capscrew, support to transmission case and exhaust piping	4313005	M 8	R 80 ZNT	25	2.5
Capscrew, transmission case front cover	1/38243/11	M 6	R 50 CDT [±]	7.8	0.8
Capscrew, transmission case support	1/55411/21	M 12 x 1.25	R 80 ZNT	78	8
Capscrew, transmission case cover	1/09026/21	M 6	R 80 ZNT	10	1
Nut, transmission case support to engine	1/61015/11	M 12 x 1.25	R 50 ZNT (stud R 80 ZNT)	78	8
Capscrew, reverse shaft retainer	1/09023/21	M 6	R 80 ZNT	10	1
Capscrew, selector fork and sector	813149	M 6	R 100	18	1.8
Capscrew, lever to selector fork	4170541	M 6	R 100	18	1.8
Capscrew, selector support	1/09029/21 1/60505/21	M 6	R 80 ZNT	10	1
Capscrew, remote control link to tube	1/38260/21	M 8	R 80 CDT [±]	25	2.5
Capscrew, helical gear wheel	4250995	M 10 x 1.25	R 100	69	7
Capscrew, differential case flange cover	1/38240/21	M 6	R 80 CDT [±]	7.8	0.8

* See note page-11.

Description	Part No.	Thread size	Material	Torque	
				Nm	kgm
(TRANSAKLE - continued)					
Nut, transmission support cover	1/58962/11	M 6	R 50 ZNT (stud R 80 ZNT)	7.8	0.8
Capscrew, differential flange to transmission case	1/60437/21	M 8	R 80 ZNT	25	2.5
<u>FRONT SUSPENSION</u>					
Lockring, front wheel bearing	4354049	M 62 x 1.5	R 50 ZNT	59	6
Nut, bearing to front hub (to be peened)	4307325	M 20 x 1.5	C40 norm CDT (hub 38CD4 BON)	216	22
Bolt, wheel	4288432	M 12 x 1.25	C 35 R BON ZNT NERA	86	8.8
Nut, tie rod bracket to lower link	1/61008/11	M 8	R 50 ZNT (screw R 50 ZNT)	15	1.5
Capscrew, tie rod support	1/09232/21	M 10 x 1.25	R 80 ZNT	39	4
Nut, self locking, lower link to strut (iron)	1/61051/11	M 12 x 1.25	R 50 ZNT (pin 40 NI CR 402BON R90 - 105	54	5.5
Nut, self locking, tie rod to support	1/61050/11	M 12 x 1.25	R 50 ZNT (rod C30 BON R ≥ 70)	69	7
Nut, self locking, tie rod to lower link	1/61050/11	M 12 x 1.25	R 50 ZNT (screw R 80 ZNT)	69	1
Nut, self locking, lower link to body	1/25745/21	M 10 x 1.25	R 80 ZNT (screw R 100 CDT)	39	4
Nut, self locking, upper damper attachment	1/61050/11	M 12 x 1.25	R 50 ZNT	59	6
Nut, self locking, damper to strut	1/25745/21	M 10 x 1.25	R 80 ZNT (screw R100 CDT)	59	6
Nut, top damper pad to body	1/58962/21	M 6	R 80 ZNT (screw R100 CDT)	12	1.2
Capscrew, caliper to strut	4369039	M 10 x 1.25	R80FOSENERA	47	4.8
Screw, front caliper bleed	4230797	M 8	R50INDDCY/BR	16.4	0.65
Adapter, wheel cylinder inlet	4207393	M 10 x 1.25	C4MPTFRFBON CDT/BR	27	2.8
<u>REAR SUSPENSION</u>					
Lockring, rear wheel bearing	4354049	M 62 x 1.5	R 50 ZNT	59	6
Nut, bearing to rear hub (to be peened)	4307325	M 20 x 1.25	C40NORMCDT (hub 38CD4 STP BON NITR MORB)	216	22

Description	Part No.	Thread size	Materials	Torque	
				Nm	kgm
(REAR SUSPENSION - continued)					
Bolt, wheel	4288432	M 12 x 1.25	C 35 R BON ZNT NERA	86	8.8
Nut, self locking, link pin	1/25748/21	M 14 x 1.5	R 80 ZNT (pin R 80 ZNT)	98	10
Nut, self locking, ball joint to strut	1/25748/21	M 14 x 1.5	R 80 ZNT (pin 40 NI CR M02 BON R90 - 105	83	8.5
Nut, self locking, top damper attachment	1/61050/21	M 12 x 1.25	R 80 ZNT	59	6
Nut, self locking, damper to strut	1/25745/21	M 10 x 1.25	R 80 ZNT (screw R 100 CDT)	59	6
Nut, top damper pad to body	1/58962/21	M 6	R 80 ZNT (screw R 100 ZNT)	12	1.2
Nut, transverse link	4290114	M 14 x 1.5	-	59	6
Nut, transverse link clamp	1/61008/11	M 8	R 50 ZNT (screw R 80 ZNT)	20	2
Nut, self-locking, transverse link	1/25748/21	M 14 x 1.5	R 80 ZNT (screw R 80 ZNT)	69	7
Capscrew, caliper to strut	4369039	M 10 x 1.25	R80FOST NERA	47	4.8
Screw, bleed	4230797	M 8	R 50 IND CDT/BR	6.4	0.65
Adaptor, hose	4161631	3/8-24UNF-3A	AB40PRDCDT or00CR CDT	18	1.8
<u>POWER PLANT SUSPENSION</u>					
Nut, pad, power plant to body, engine side	1/21647/11	M 10 x 1.25	R 50 ZNT (screw R 100 CDT)	34	3.5
Capscrew, pad power plant	1/38260/11	M 8	R 50 CDT*	15	1.5
Capscrew, side member, power plant to body, transmission side	1/60436/31	M 8	R 100 CDT	20	2
Capscrew, lower, pad, engine to transmission support	1/60427/31	M 8	R 100 CDT	25	2.5
Nut, lower, pad, engine to transmission support	1/61008/11	M 8	R 50 ZNT (screw R 80 ZNT)	25	2.5
Capscrew, power plant tie rod	1/61365/21	M 8	R 80 ZNT	25	2.5
<u>STEERING</u>					
Nut, steering wheel	1/07914/11	M 16 x 1.5	R 50 ZNT (shaft C30 NORM)	49	5

* See note page 11.

Description	Part No.	Thread size	Materials	Torque	
				Nm	kgm
(STEERING - continued)					
Nut, support, top steering shaft	1/61008/11	M 8	R 50 ZNT (screw R 50 SD STAB)	15	1.5
Nut, self locking, steering shaft U-joint	1/61044/21	M 8	R 80 ZNT (screw R 100 CDT)	26	2.7
Nut, steering case to body	1/61008/11	M 8	R 50 ZNT (screw R 80 ZNT)	25	2.5
Nut, steering tie rod ball pin	4191151	M 14 x 1	R 50 ZNT (pin 40NI CRM02 BON 90 - 105 or 40 CRM04 BON)	49	5
Nut, self locking, ball joint to steering arm	1/25756/11	M 10 x 1.25	R 50 ZNT (pin 12NC 3 CARBU)	34	3.5
<u>PARKING BRAKE</u>					
Capscrew, support	1/38258/11	M 8	R 50 CDT*	15	1.5
<u>CONTROL PEDAL ASSEMBLY</u>					
Nut, clutch pedal	1/61008/11	M 8	R 50 ZNT (shaft R 50 TRF 2NT)	15	1.5
Nut, brake pedal, clutch pedal and steering column support	1/61008/11	M 8	R 50 ZNT (screw R 50 SD STAB)	15	1.5
Nut, master cylinder to pedal and column support	1/61008/11	M 8	R 50 ZNT (screw R 80 ZNT)	25	2.5

ZNT/EC COATED PARTS

*Except for a few cases, change over from CDT to ZNT/EC coating involves a change in tightening torque. Torque figures for ZNT/EC coated parts, which are identifiable through their olive green colour, are given hereunder.

<u>TRANSAXLE</u>					
Capscrew, transmission case front cover	1/38243/11	M 6	ZNT/EC	10	1
Capscrew, link to tube	1/38260/21	M 8	ZNT/EC	29	3
Capscrew, differential flange cover	1/38240/21	M 6	ZNT/EC	10	1
<u>POWER PLANT SUSPENSION</u>					
Capscrew, engine pad	1/38260/11	M 8	ZNT/EC	15	1.5
<u>PARKING BRAKE</u>					
Capscrew, parking brake support	1/38258/11	M 8	ZNT/EC	15	1.5

EMISSION CONTROL SYSTEMS

Crankcase emission control system

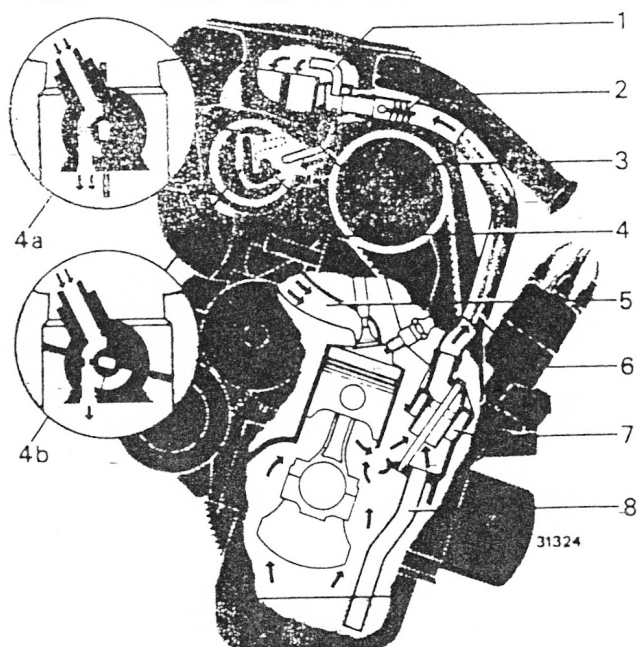
The recirculation system includes a liquid-vapour separator piped to the air cleaner and to a suction valve controlled by primary throttle shaft in carbureter.

The separator uses centrifugal force to remove vapour from oil through vortex generated by forcing the fumes into circular passages.

Thus, gasses and fumes are drawn through the centre of the separator, whereas liquid oil which has settled on the walls drips to the engine sump through a pipe whose lower end lies below normal oil level.

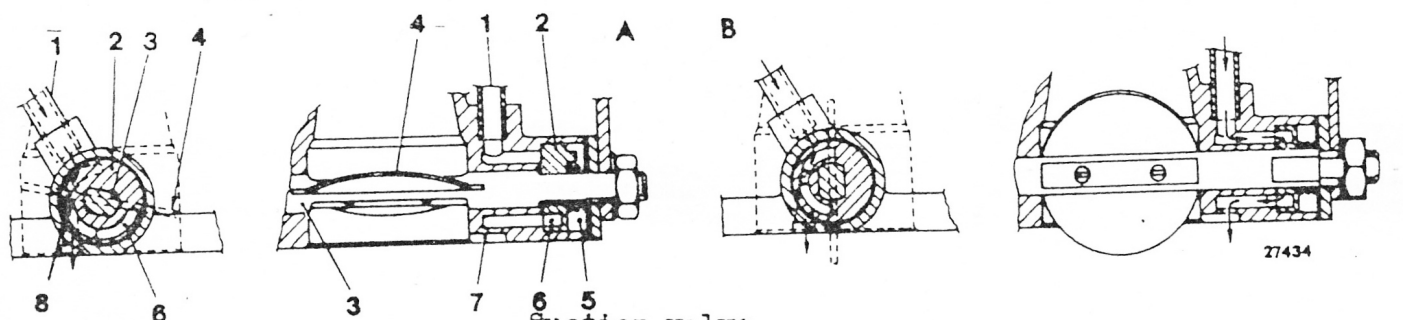
Suction valve consists of a grooved ring fitted to primary throttle shaft and flush with base of carbureter; the ring controls communication between crankcase emission gas inlet port and suction ports relative to extent of primary throttle opening.

With throttle closed, a small volume of gas is allowed through a calibrated orifice for introduction in the intake manifold. With throttle open, part of the gasses is directed through the open valve port and drawn into the intake manifold, whereas the balance is drawn directly through the air cleaner.



Crankcase emission control system diagram

1. Emission piping to air cleaner
2. Flame trap
3. Piping between air cleaner and suction valve.
4. Suction valve
- 4.a. Suction valve position - full engine speed
- 4.b. Suction valve position - idling speed
5. Intake manifold
6. Piping from separator to air cleaner
7. Centrifugal separator
8. Oil pipe to sump



Suction valve

- | | | |
|-------------------------|---------------------------|------------------------|
| A. Engine idling | 3. Primary throttle shaft | 6. Control ring groove |
| B. Engine at full speed | 4. Primary throttle | 7. Suction port |
| 1. Inlet line | 5. Control ring spring | 8. Calibrated orifice |
| 2. Control ring | | |

FUEL EVAPORATIVE EMISSION CONTROL SYSTEM

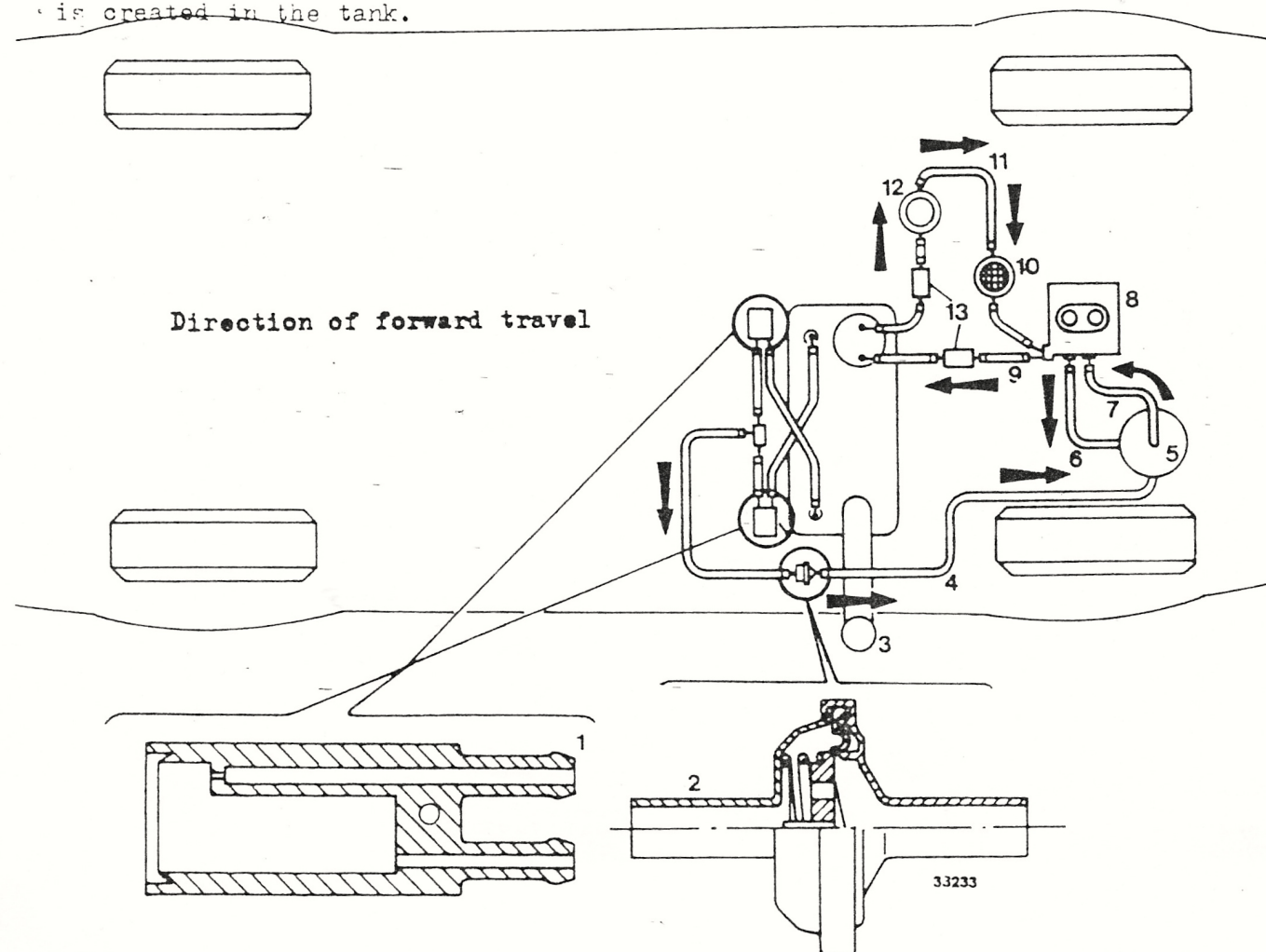
To prevent fuel evaporative emission generated in the tank and in the carburetor float chamber with changing temperature from being released into the atmosphere a system has been developed to draw fuel emissions for subsequent admission to the intake manifold.

Fuel tank fumes are directed through a vapour-liquid separator connected to a two-way valve whose function is to:

- Direct fuel fumes to activated carbon filter where they are absorbed.
- Draw ambient air in case a vacuum is created in the tank.

During engine operation, a stream of warm air regenerates the activated carbon and the fumes are drawn into the intake manifold. Fumes generated in the carburetor float chamber are directed to the carbon filter through a valve integral with carburetor body.

Owing to the vertical structure of the fuel tank as imposed by space limitations, two small size separators have been adopted featuring a collector bowl with a calibrated orifice at the top for transfer of fumes to the system.



1. Vapour-liquid separator
2. Two-way valve
3. Sealed fuel filler cap
4. Vent piping

5. Activated carbon filter
6. Piping from carburetor float chamber to activated carbon filter
7. Warm air piping for activated filter
8. Carburetor

9. Fuel return piping
10. Fuel filter
11. Fuel line to carburetor
12. Fuel pump
13. Check valve

EXHAUST EMISSION CONTROL SYSTEM

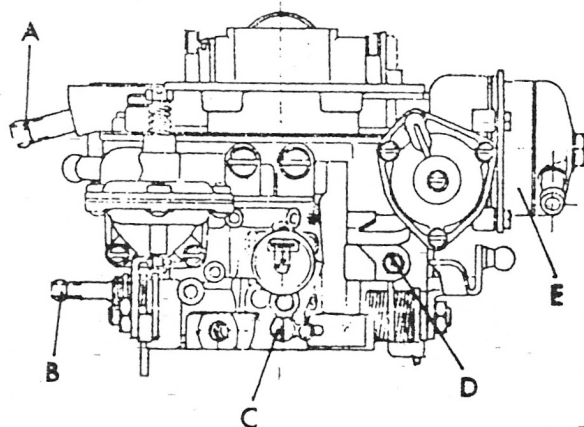
The FIAT exhaust emission system consists mainly of the following:

- a) Suitably tuned carbureter.
- b) Ignition distributor featuring a particular centrifugal advance curve.
- c) Fast idle control.

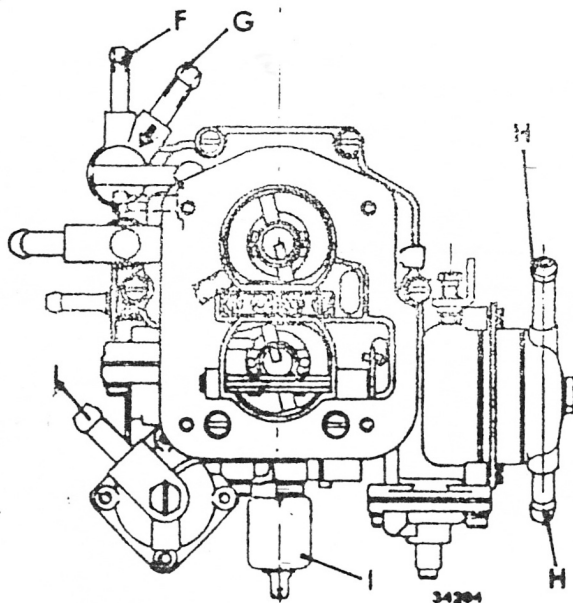
Carbureter

The specially tuned carbureter incorporates a fast idle device which partially opens the primary throttle from the idle position. Vacuum for fast idle device operation is drawn from intake manifold.

This carbureter is also provided with an electromagnetic idle inhibitor to discontinue idle fuel supply when ignition switch is in the OFF position.



Twin choke Weber
carbureter 32 DATRA 19/100



- A. Float chamber emission vent line
- B. Blow by line
- C. Idle volume adjusting screw
- D. Idle speed adjusting screw
- E. Automatic choke device
- F. Fuel recirculation connection
- G. Fuel inlet connection
- H. Automatic choke water heating connections
- I. Electromagnetic idle inhibitor
- L. Fast idle connection

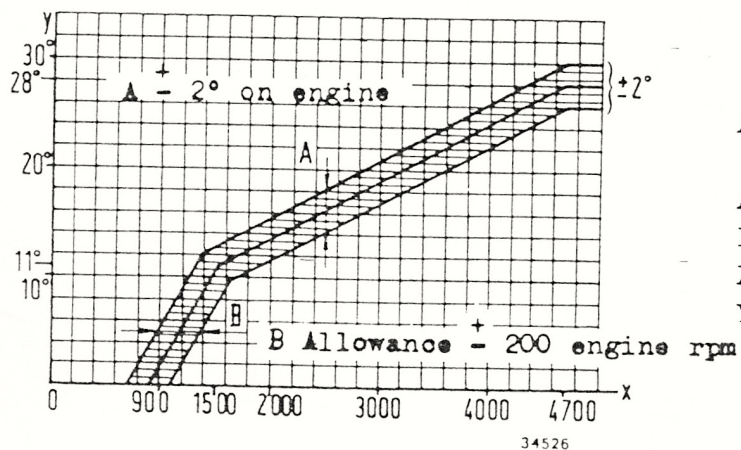
Carburetor data - Weber 32 DAFRA 19/100

DESCRIPTION	Primary	Auxiliary
Venturi	22 mm	22 mm
Main jet	1.05 mm	1.05 mm
Main air jet	1.95 mm	1.95 mm
Idling jet	0.55 mm	0.60 mm
Idle air jet	1.10 mm	0.70 mm
Pump jet		0.45 mm
Needle valve		1.50 mm
Accelerator valve output (10 strokes)		$5 \pm 0.5 \text{ mm}^3$
Choke device		Automatic
Float level		$7 \pm 0.25 \text{ mm}$

Ignition distributor

Type MARELLI S 135F or
DUGELLIER 4526A
Advance 5° at 850 rpm
Dwell angle $55 \pm 3^\circ$
Contact gap 0.35 - 0.50 mm

Centrifugal advance curve of distributor is such as to bring about a reduction in advance during idling and at low speed without adversely effecting engine performance



Automatic advance variation on engine.

- A. Allowance on advance: $\pm 2^\circ$ on engine
- B. Allowance on speed: $\pm 200 \text{ rpm}$
- X. Engine rpm
- Y. Degrees of advance

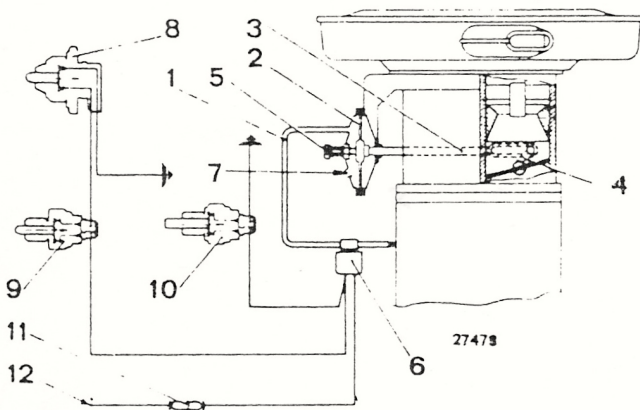
Ignition timing procedure.

Remove ignition distributor from engine and proceed as follows:

1. Select 4th gear and roll the car to bring cylinder no. 1 on compression stroke and crankshaft pulley reference mark in register with the associated fixed reference, indicating 5° of static ignition advance.
2. Remove distributor cap and turn sharp left by hand so that the rotor faces toward cylinder no. 1 contact.
3. Ensure that brake point gap is .35 - .50 mm.
4. Fit distributor to engine block and fasten without moving distributor shaft. Connect coil conductors, install distributor cap and check that H.T. leads are correctly connected to the spark plugs.
5. Connect revolution counter/dwell angle tester and stroboscopic lamp to engine using spark plug no. 1 lead.
6. Start engine, warm up and ensure that dwell angle is $55^\circ \pm 3^\circ$. To adjust, position contact breaker cam so that the breaker points are fully open; slacken fixed contact screw and adjust contact gap until the specified dwell angle is obtained. Fully retighten fixed contact screw.
7. Recheck timing using the stroboscopic lamp. Correct timing should be 5° at 850 rpm.
8. To adjust, slacken distributor and turn until the correct timing is obtained.

Note: If the distributor was not removed from engine, start timing procedure from operation 5.

Fast idle.



Fast idle operation diagram

- | | |
|---------------------------------------|-----------------------------|
| 1. Vacuum pipe | 11. Fuse |
| 2. Diaphragm | 12. To ignition distributor |
| 3. Link | |
| 4. Throttle lever | |
| 5. Fast idle adjusting screw | |
| 6. Solenoid valve | |
| 7. Bypass orifice | |
| 8. Transmission switch | |
| 9. Clutch pedal switch | |
| 10. Fast idle speed adjustment switch | |

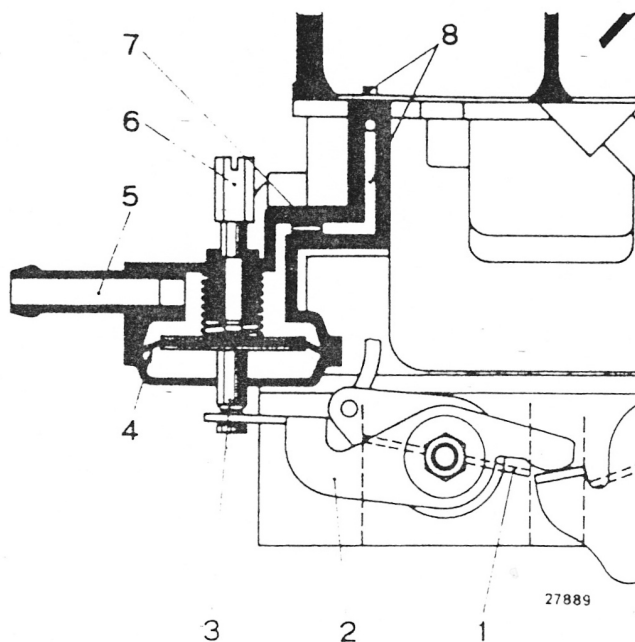
Vacuum from the intake manifold is directed through a vacuum pipe to act on diaphragm which actuates a link and lever to further open throttles in order to sustain engine idling.

A solenoid valve is energized when two series connected switches close the circuit; the transmission mounted switch closes when third or fourth is selected, whereas the clutch pedal mounted switch is closed with the pedal at rest. Solenoid energization opens vacuum pipe port, thereby causing diaphragm to partially open carburetor throttle which results in the supply of leaner mixture with the attendant reduction in the percentage of carbon monoxide emission. A third hand-operated switch situated in the engine compartment permits solenoid valve energization for fast idle adjustment.

Fast idle adjustment.

To adjust fast idle, move gear lever to neutral, depress solenoid valve push button in engine compartment and accelerate once.

Turn adjusting screw on carbureter until idling speed is 600 ± 50 rpm. Whilst the push button is still depressed, accelerate several times to recheck whether the engine rpm rate is as specified for fast idle. To adjust, turn the screw as directed above.



Section through carbureter mounted diaphragm type fast idle device.

- | | |
|---------------------|------------------|
| 1. Primary throttle | 5. Vacuum pipe |
| 2. Neutral lever | 6. Fast idle ad- |
| 3. Link | justing screw |
| 4. Primary throttle | 7. Calibrated |
| diaphragm | bushing |
| | 8. Air suction |
| | passage |

Idle CO emission adjustment.

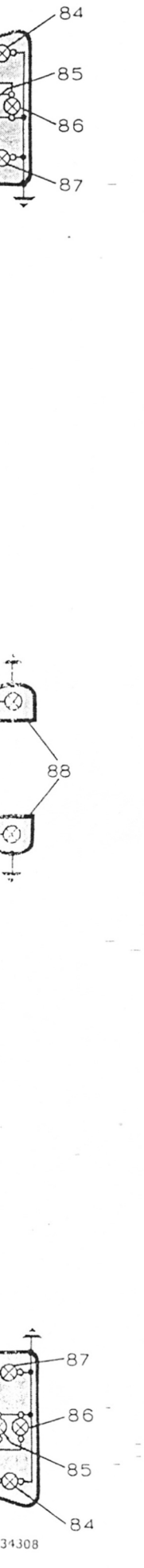
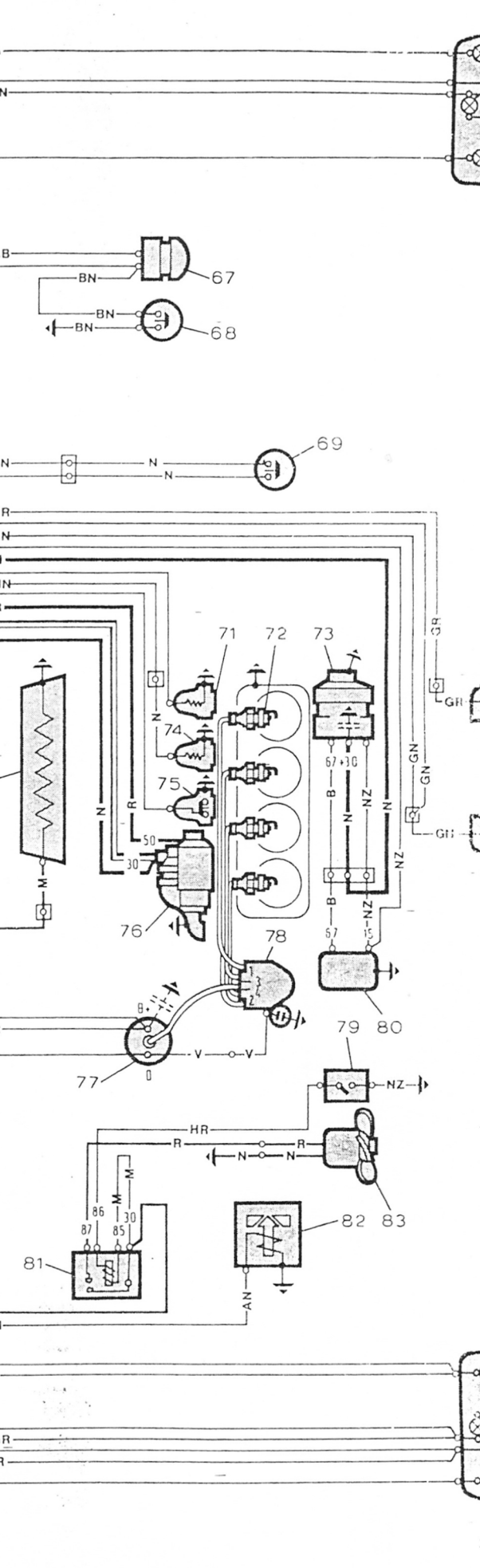
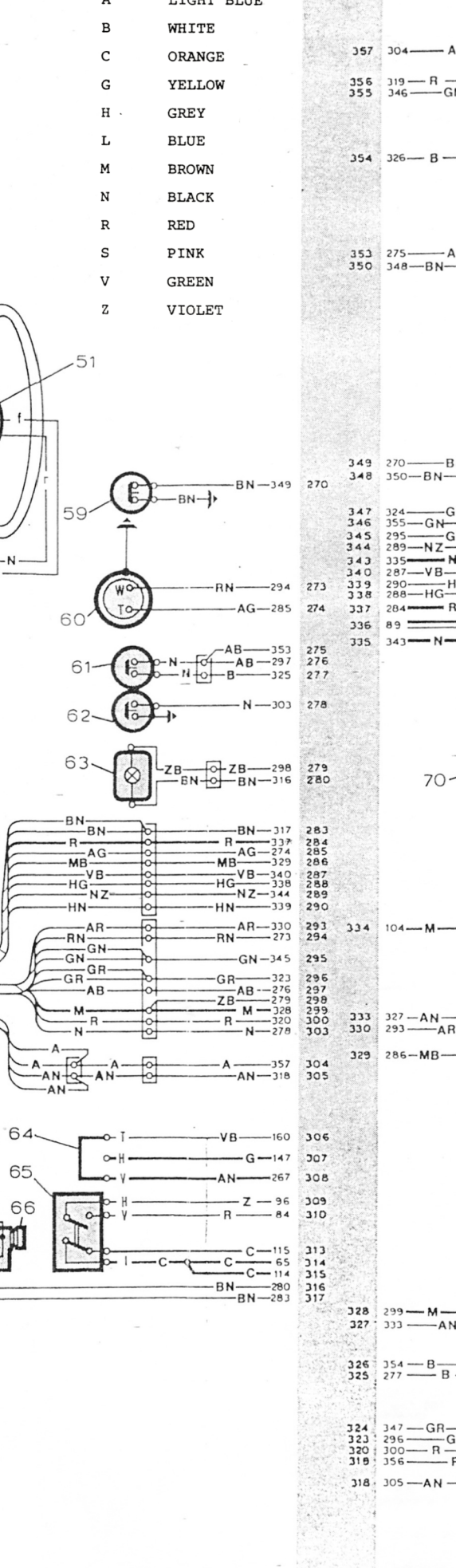
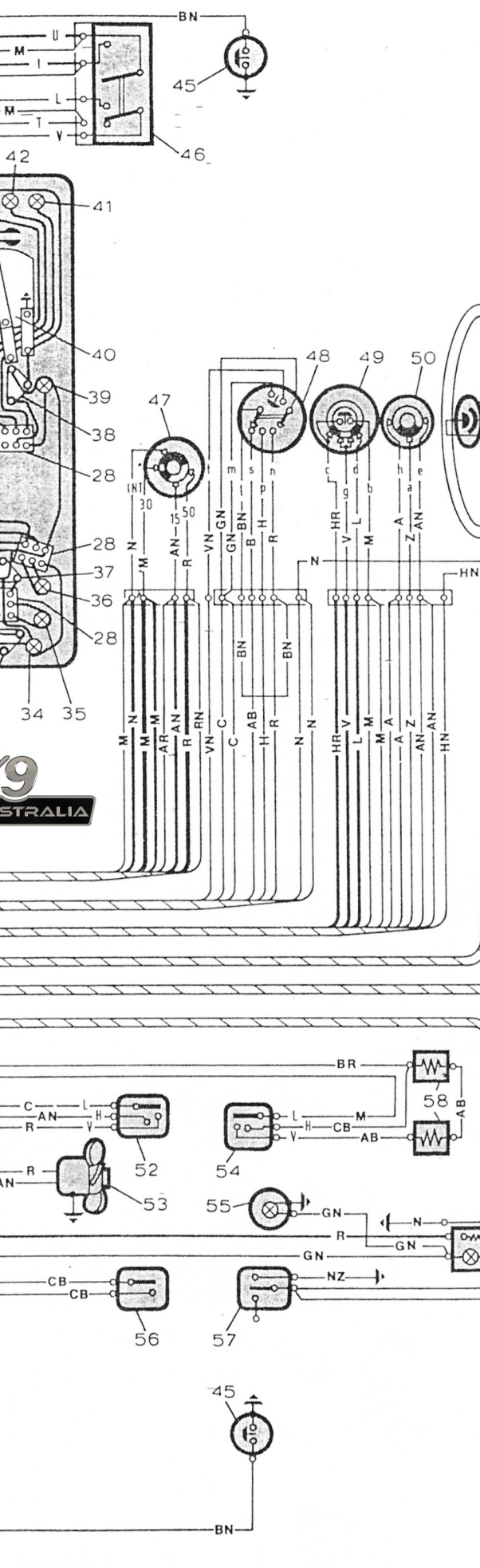
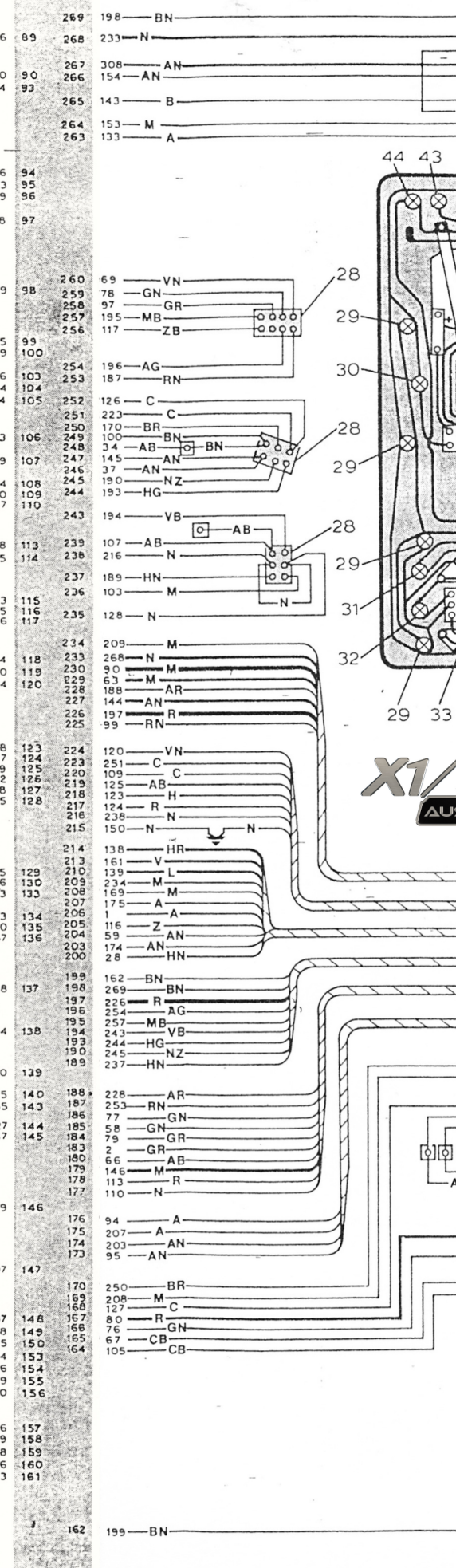
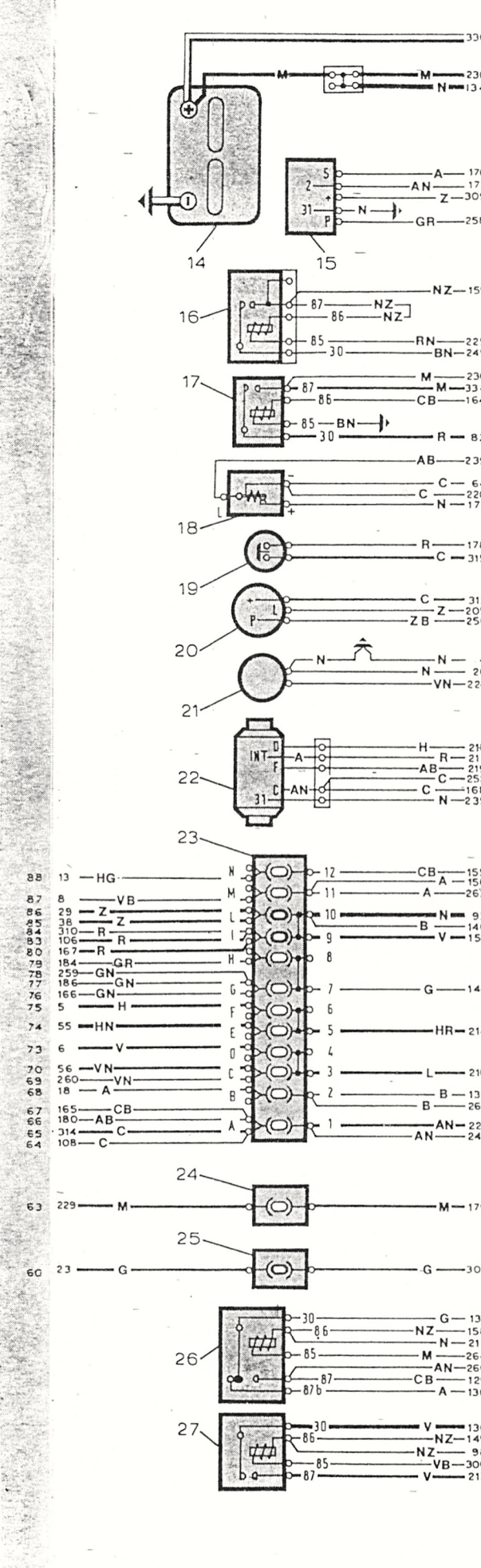
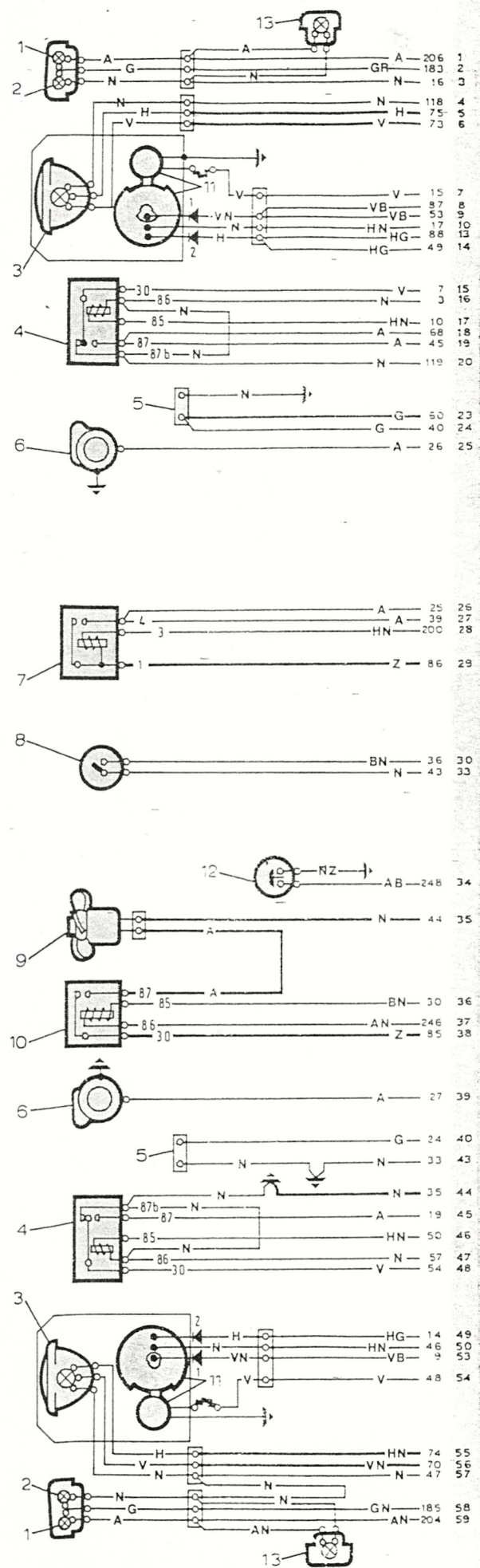
- A. Start engine and warm up.
- B. Connect rev counter.
- C. Connect CO tester pick-up bag to end of exhaust pipe and ensure that the analyzer is correctly set.
- D. If CO emission level is not as specified on plate in engine compartment, adjust as follows:
 - D.1. Adjust rpm rate to the value indicated on the plate acting on primary throttle screw, namely clockwise to increase and counterclockwise to reduce speed.

- D.2. Adjust idle CO emission level to the value indicated on the plate through volume adjustment screw in the lower part of carbureter, turning clockwise to reduce and counter clockwise to increase CO emission level.
- D.3. Recheck rpm rate and, if necessary, readjust as directed under D.1. and D.2.

ELECTRIC SYSTEM

Fuses

FUSE	PROTECTED CIRCUITS
	Fast idle solenoid valve (12 V).
	Low brake fluid level indicator handbrake indicator and sending unit.
	Turn signal light and indicator.
	Stop light.
A(8A)	Fuel level indicator and sending unit.
	Back-up light.
	Windshield washer pump.
	Windshield wiper.
	Heater fan motor.
	Oil pressure gauge and indicator.
	Water temperature gauge.
	Electronic tachometer.
B(8A)	Pop-up headlamp geared motors.
C(8A)	Left headlamp and indicator.
D(8A)	Right headlamp.
E(8A)	Left low beam.
F(8A)	Right low beam.
	Cigar lighter light.
	Panel light.
G(8A)	Front left and rear right parking lights.
	Parking light indicator.
	Left number plate light.
H(8A)	Front right and rear left parking lights.
	Right number plate light.
I(16A)	Cigar lighter.
	Hazard warning system.
L(16A)	Engine fan motor.
	Horns and relay.
M(3A)	Pop-up headlamp closing control switches.
N(3A)	Pop-up headlamp raising control switches.
In-line (8A)	Carburetor fan motor and relay.
	Interior light.
In-line fuse (16A)	Fog lights.
Unprotected circuits	Alternator - ignition - starter - battery charge indicator - engine fan motor relay - instrument lights - beam changeover switch relay - parking light and pop-up headlamp closing switch - idle inhibitor.



- A LIGHT BLUE
- B WHITE
- C ORANGE
- G YELLOW
- H GREY
- L BLUE
- M BROWN
- N BLACK
- R RED
- S PINK
- V GREEN
- Z VIOLET

X1/9
AUSTRALIA

FIAT X 1/9 AUSTRALIA

Wiring Diagram - 12 V System

1. Front turn signal lamps (spherical, 21 W)
2. Front parking lights (spherical, 5 W)
3. Pop-up headlamps, low/high beam (spherical bulb, 45/40 W)
4. Pop-up headlamp relay
5. Fog light terminal clamps
6. Horns
7. Horn relay
8. Temperature switch
9. Cooling fan motor
10. Relay
11. Pop-up headlamp geared motor
12. Low brake fluid level indicator
13. Side repeaters (tubular bulb, 4 W)
14. Ba-tery
15. Hazard warning flasher
16. Low brake fluid level indicator sending unit
17. Relay (optional)
18. Handbrake on flasher
19. Stop light switch
20. Turn signal flasher
21. Windshield washer pump
22. Windshield wiper motor
23. Fuse unit
24. Carburetter cooling fan motor and interior lamp fuse
25. Fog lamp fuse
26. Pop-up headlamp shut-down and parking light diverter relay

27. Turn signal relay
28. Instrument panel connections
29. Bulbs (w/b ^{bulb} 1.2 W) on instrument panel
30. Turn signal flashing indicator (w/b bulb, 1.2 W)
31. Spare indicator
32. Handbrake on flashing indicator (w/b bulb, 1.2 W)
33. Engine oil pressure gauge
34. Low engine lube oil pressure indicator (w/b bulb, 1.2 W)
35. Indicator (optional)
36. Battery charge indicator (w/b bulb, 3 W)
37. Engine water temperature gauge
38. Fuel level gauge
39. Fuel reserve indicator (w/b bulb, 1.2 W)
40. Electronic tachometer
41. High beam indicator (w/b bulb, 1.2 W)
42. Parking light indicator (w/b bulb, 1.2 W)
43. Hazard warning indicator (w/b bulb, 1.2 W)
44. Low brake fluid level indicator (w/b bulb, 1.2 W)
45. Door switches
46. Outer lighting switch and pop-up headlamp control
47. Ignition switch
48. Windshield wiper/washer switch
49. Headlamp and low beam flashing switch
50. Turn signal switch
51. Horn push
52. Fan motor switch
53. Heater fan motor
54. Panel light switch
55. Symbol lighting lamp (w/b bulb, 5 W)
56. Switch (optional)

57. Interior light switch
58. Instrument panel ^{dimmer} ~~dimmer~~ ballast resistors
59. Clutch pedal switch
60. Fuel level tank unit
61. Back-up light switch
62. Handbrake on indicator sending unit
63. Center interior lamp (festoon bulb, 5 W)
64. Provision for fog lamp switch
65. Hazard warning switch
66. Cigar lighter with lamp (tubular bulb, 5 W)
67. Pollution control high idle solenoid valve
68. High idle solenoid valve switch
69. Third and fourth gear push switch
70. Heated rear window (optional)
71. Engine water temperature sending unit
72. Spark plugs
73. Alternator
74. Engine oil pressure ~~gauge~~ sending unit
75. Pressure switch
76. Starter
77. Coil
78. Ignition distributor
79. Carburetter cooling fan temperature switch
80. Voltage regulator
81. Carburetter cooling motor relay
82. Idle shut-off
83. Carburetter cooling motor
84. Tail lamp units (spherical bulbs, 21 W)
85. Rear parking lights (spherical bulb, 5 W)
86. Rear stop lights (spherical bulb, 21 W)
87. Back-up lights (spherical bulb, 21 W)
88. Number plate light (spherical bulb, 5W)

A	LIGHT BLUE
B	WHITE
C	ORANGE
G	YELLOW
H	GREY
L	BLUE
M	BROWN
N	BLACK
R	RED
S	PINK
V	GREEN
Z	VIOLET