PORSCHE

924
924 turbo

Service Information

MODEL 80

PORSCHE 924 – 924 TURBO / 1980 Models

These are the most important changes for the Porsche 924 in the new model year:

New 5-speed manual transmission as standard equipment
Large volume brake booster and brake master cylinder

And for the Porsche 924 and 924 Turbo:

Fuel filler neck with flap in side body panel
Outside mirror with mechanical adjustment from inside
Modified equipment
Power windows as standard equipment

Note: As of model year 1980 all USA 924 and 924 Turbo models will have engines with the oxygen sensor system, i. e. the fuel/air mixture will be regulated by a special oxygen sensor in the exhaust system and an electronic control unit. Further information on this system will be published in a separate service publication.

The cylinder head bolts of 924 naturally aspirated engines have been changed. There are also new tightening specifications.

This change makes it unnecessary to retorque cylinder head bolts.

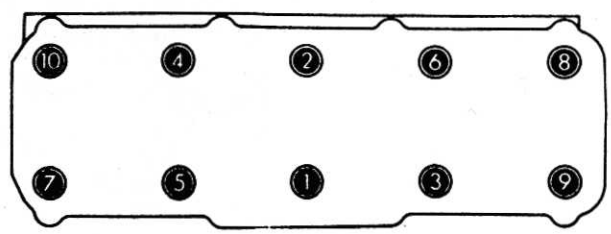
Identification: Old bolts with hexagon socket
New bolts with polygon socket

Cylinder Head Bolt Tightening Instructions:

1. Engine cold.

2. Apply a light coat of oil to threads of cylinder head bolts and tighten bolts in specified tightening sequence to 65 Nm (47 ft./lbs.).

Order for tightening: see figure.
Order for loosening: opposite.



3. Mark position of cylinder head bolts.

4. Turn cylinder head bolts further by 180° (1/2 turn) in specified tightening sequence.

Note: The first engines for 1980 models still have hexagon socket head bolts. The cylinder head bolts of these engines will have to be tightened after 1 000 miles and 30 000 miles (old tightening instructions).

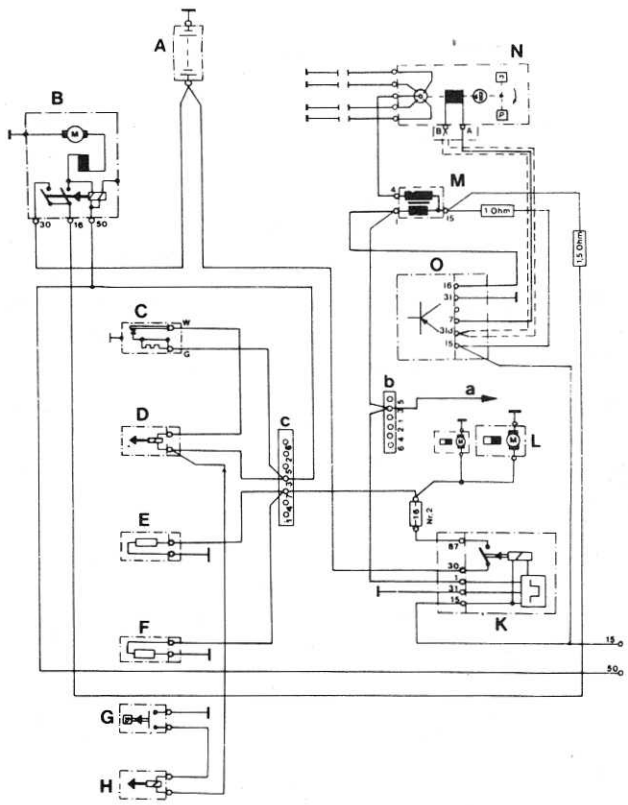
These engines are identified by two green labels on the toothed belt cover and air cleaner cover.

Electric Circuit of Fuel Pump and Ignition System – 924 Naturally Aspirated Engine

All models have two fuel pumps, one in the fuel tank and the other on the right rear wheel well.

A – Battery
B – Starter
C – Thermo-time switch
D – Cold start valve
E – Auxiliary air regulator
F – Control pressure regulator
G – Temperature switch
H – Hot start valve
K – Fuel pump relay
L – Fuel pumps
M – Ignition coil
N – Distributor
O – Ignition control unit

a – To tachometer term. 1
b – Plug, 6-pin
c – Plug, 7-pin



Adjustment Values:

Ignition timing:

	manual transm.	automatic transm.
0° ± 1°	at 950 ± 50 rpm	at 1000 ± 50 rpm

vacuum hoses connected

Spark plugs: Bosch WR 6 DS
Beru RS 37
Electrode gap 0.7 mm
Ignition timing mark on flywheel

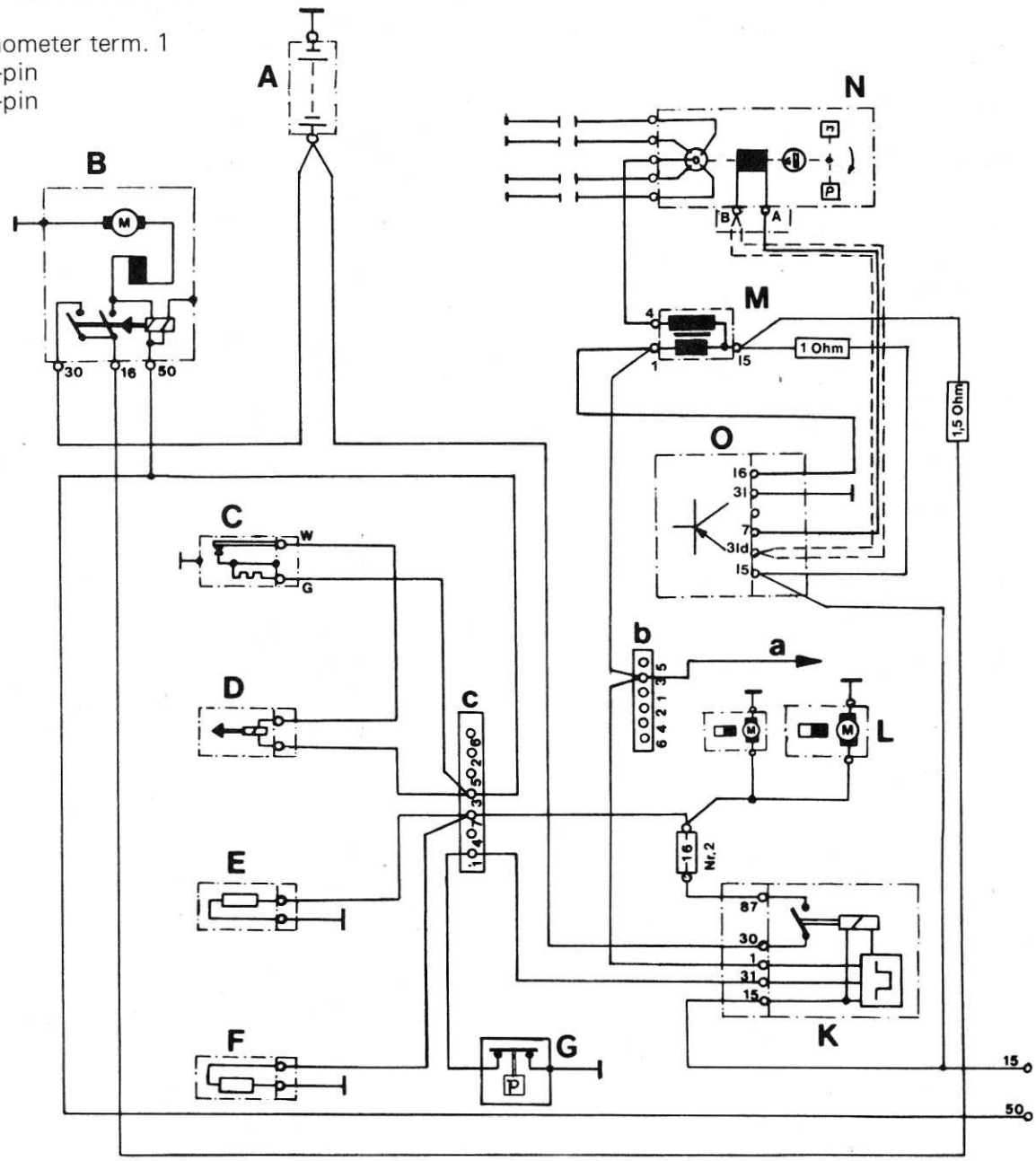
Electric Circuit of Fuel Pump and Ignition System – 924 Turbo

A – Battery
B – Starter
C – Thermo-time switch
D – Cold start valve
E – Auxiliary air regulator
F – Control pressure regulator
G – Boost pressure limiting switch
K – Fuel pump relay
L – Fuel pumps
M – Ignition coil
N – Distributor
O – Ignition control unit

a – To tachometer term. 1
b – Plug, 6-pin
c – Plug, 7-pin

Adjustment Values:

Ignition timing:	20° before TDC at 2000 rpm ± 50 rpm vacuum hoses
Spark plugs:	Bosch WR 7 DS Champion N 8 GY Electrode gap: 0,6 mm 0.024") Ignition timing mark on flywheel



The brake system of 1980 924 models has a larger brake booster (9" instead of 7") and also a larger brake master cylinder having a piston diameter of 23.81 mm (instead of 20.64 mm).
All other parts of the brake system are the same, except for different line connections on the brake master cylinder.

The following optional tires are available in addition to the standard tires.

	Turbo	924
Rim, front and rear	6 J x 16	6 J x 15
Tire, front and rear	205/55 VR 16	205/60 HR 15

Adjustment Values	Turbo / 924
Front Axle:	
Toe (15 kp pressure)	0° + 5′ – 15′
Camber	–20′ ± 10′
Max. difference, left to right	10′
Caster	2° 45′ ± 30′
Max. difference, left ro right	30′
Toe difference angle at 20° lock	–1° ± 20′
Rear Axle:	
Toe	0° ± 10′
Max. difference, left to right	10′
Camber	–1° ± 30′
Max. difference, left to right	30′

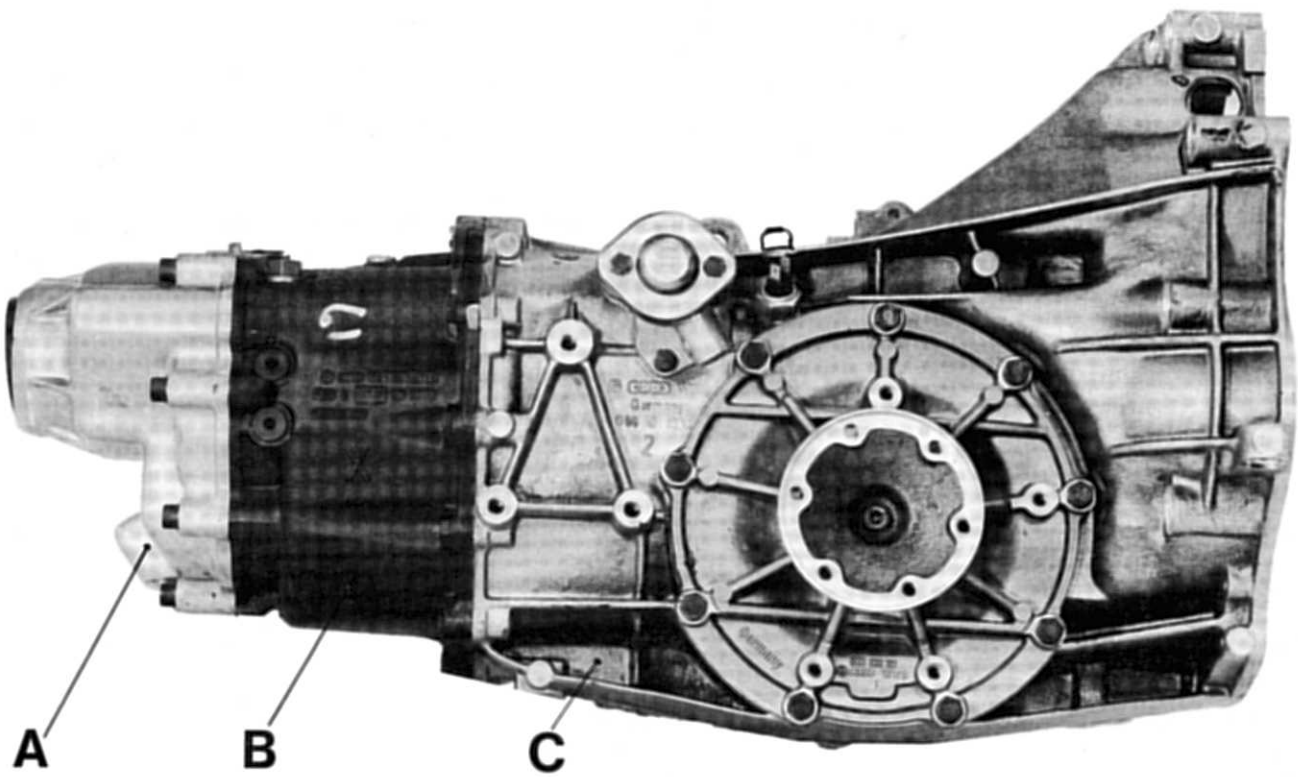
As of 1980 model year only two different transmission versions will be available for the 924:

1. A completely new five speed manual transmission, having code 016/9 (code letter VR).

2. The proven three speed automatic transmission RL (optional equipment).

The five speed manual transmission 016Z, used in 1979 models is no longer built.

A modified version of the 1979 five speed manual transmission is still used in the 924 Turbo.



The new 016/9 five speed manual transmission has a three-piece case:

Transmission case	C	(aluminum alloy)
Gear Carrier	B	(gray cast iron)
Cover	A	(aluminum alloy)

The final drive with 12 mm hypoid offset is housed in the transmission case C.

Drive Train

The front-mounted engine and rear-mounted transmission are bolted on a connecting tube to become one solid drive unit.

Power flows from the engine's crankshaft (1) via the flywheel (2) to the single dry plate, clutch (3).

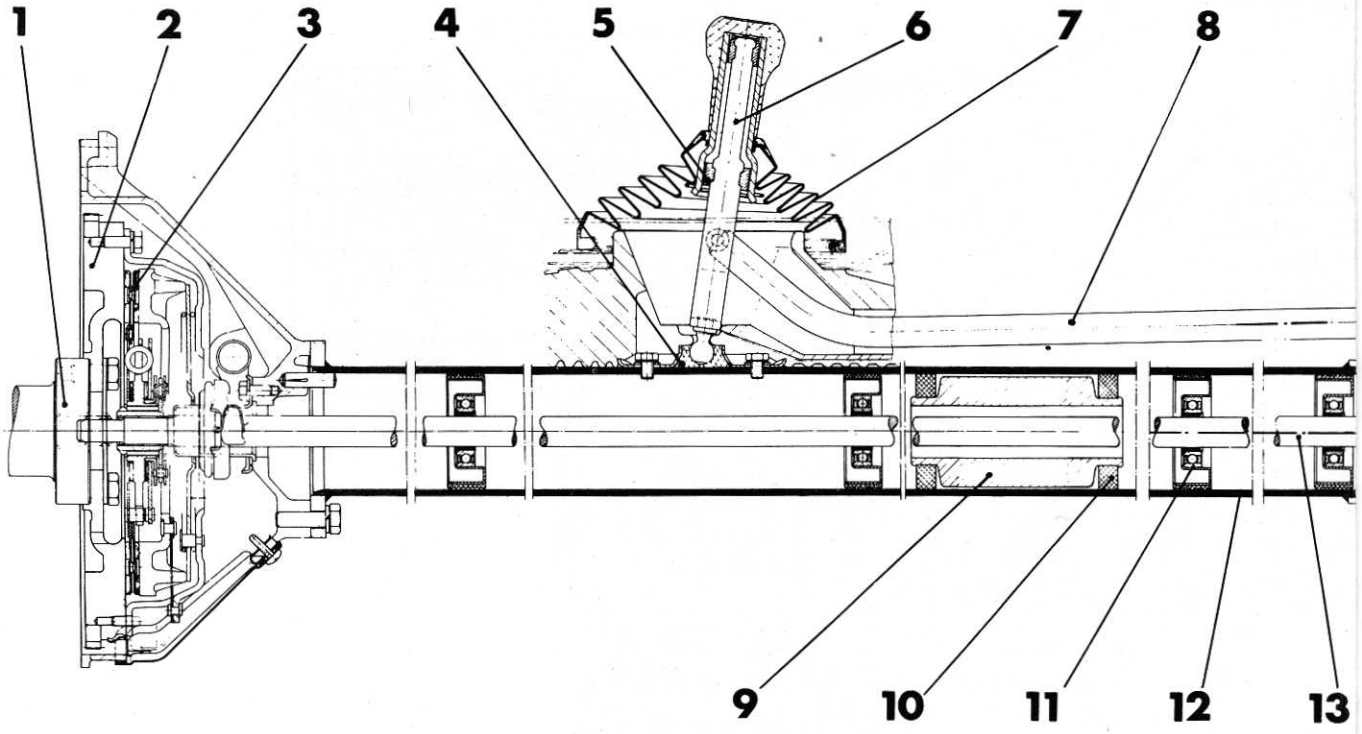
A connecting sleeve (14) joins the drive shaft (13) with the input shaft of transmission (15). The single-piece drive shaft (13) runs on four guide bearings (11) in central tube (12).

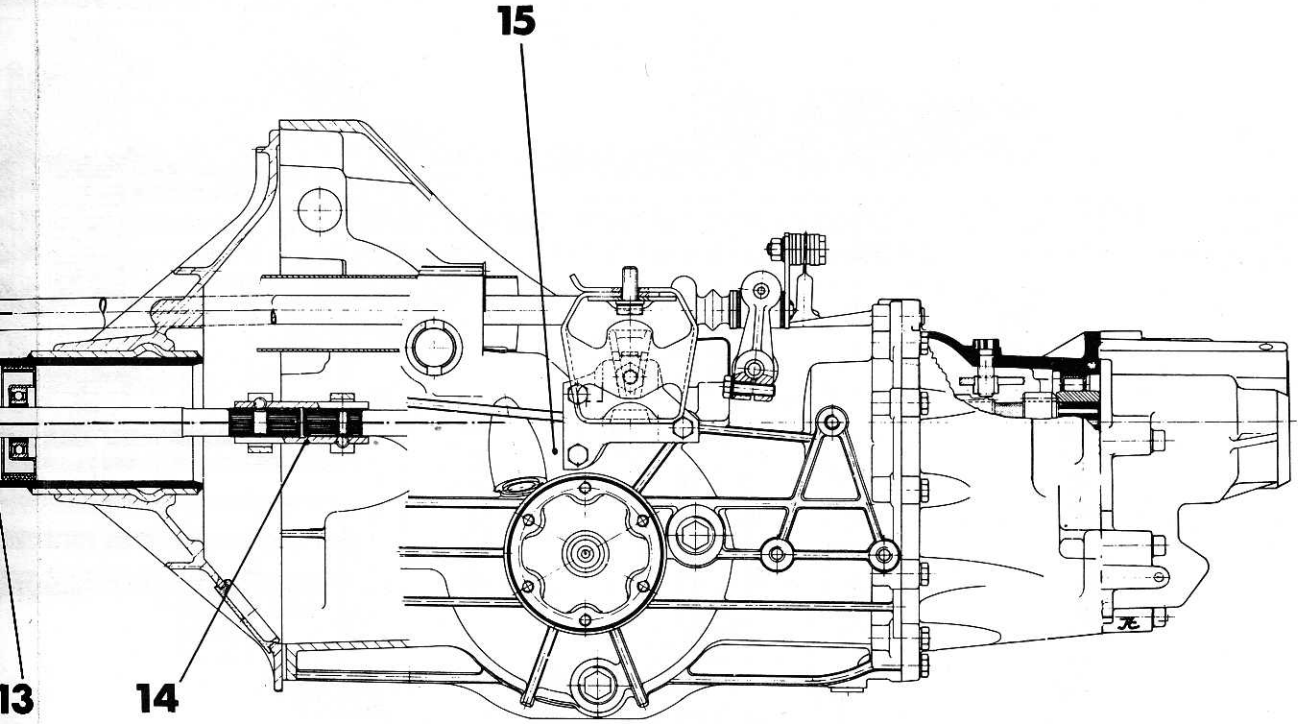
Between the 2nd and 3rd guide bearing there is a vibration damper (9), which is mounted with soft rubber rings (10) to absorb vibration caused by the entire central tube system.

Technical Data

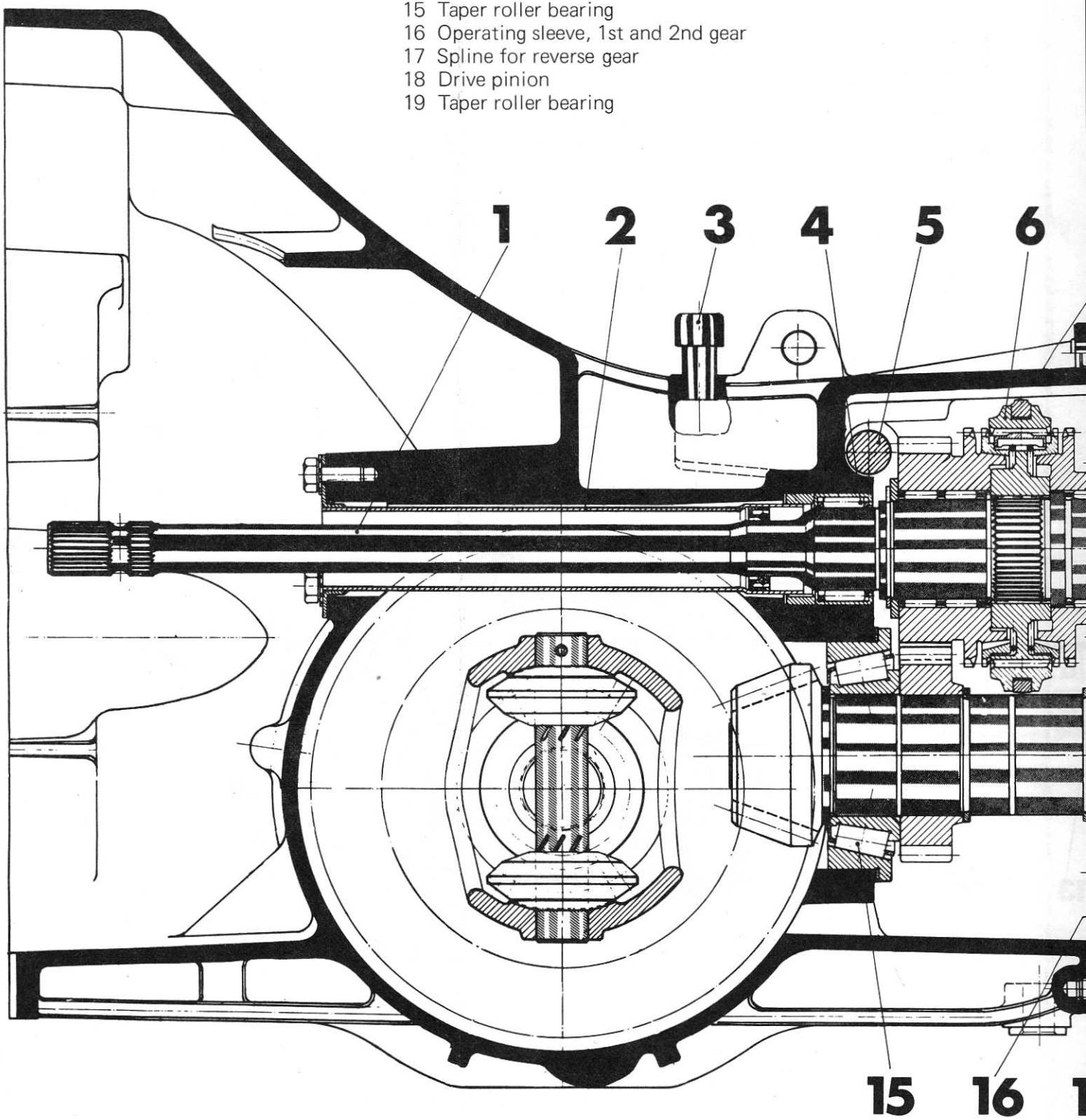
Clutch:	Single plate, dry clutch with diaphragm springs. Push-release version. Connected to flywheel. Pressure plate MF 215 K (Fichtel & Sachs). Clutch disc 215 PSD (Fichtel & Sachs)
Manual transmission:	5 bevel tooth forward gears 1 reverse gear
Ratios	USA
1st gear	10:36 (i = 3.6000)
2nd gear	16:34 (i = 2.1250)
3rd gear	25:34 (i = 1.3600)
4th gear	30:29 (i = 0.9666)
5th gear	37:27 (i = 0.7297)
Reverse gear	12:42 (i = 3.5000)
Final drive	9:37 (i = 4.1111)
Transmission weight without oil	55 kg
Oil volume	2.6 liters
Oil grade	SAE 80 gear lube according to Specification GL 4 (MIL-L 2105)
Remarks	Highly alloyed gear lubes (GL 5) would damage the synchronizers and are not suitable for this manual transmission.

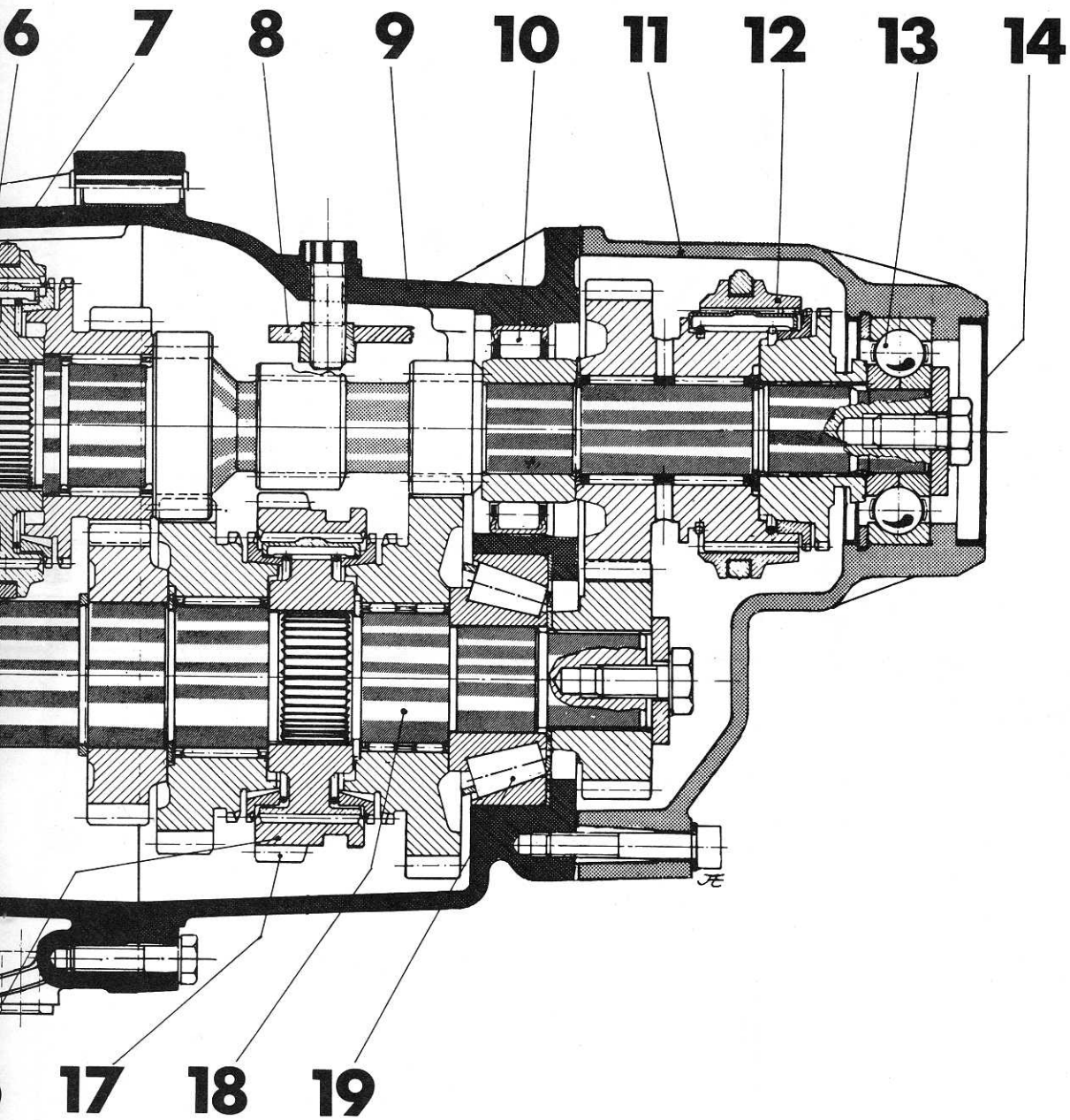
1 Crankshaft
2 Flywheel
3 Single dry plate clutch
4 Shift lever base
5 Noise and vibration damper
6 Shift lever
7 Shift boot
8 Shift rod
9 Vibration damper
10 Flexible mount
11 Guide bearing in central tube
12 Central tube
13 Drive shaft
14 Connecting sleeve
15 Five speed transmission




15
13
14

1 Input shaft
2 Seal tube
3 Vent
4 Needle bearing
5 Selector shaft
6 Operating sleeve, 3rd and 4th gear
7 Transmission case
8 Reverse gear operating lever
9 Gear carrier
10 Cylindrical roller bearing
11 Cover
12 Operating sleeve, 5th gear
13 Four point bearing
14 Cap
15 Taper roller bearing
16 Operating sleeve, 1st and 2nd gear
17 Spline for reverse gear
18 Drive pinion
19 Taper roller bearing

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19

The input shaft (1) runs on three bearings. A needle bearing (4) is located in the transmission case (7). The center bearing in gear carrier (9) is a cylindrical roller bearing (10). The four point grooved ball bearing (13) in the end cover (11) is designed as a guide bearing.

The chief load for this bearing is the

> axial force, which occurs when the teeth of the gears engage while accelerating or coasting.

This bearing also absorbs any axial forces of the drive shaft.

The drive pinion (18) runs on two taper roller bearings (15 and 19), which take the axial forces of the drive pinion.

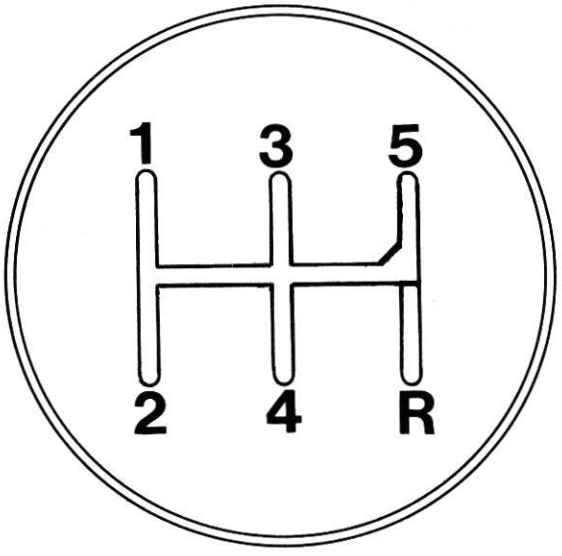
The drive pinion is adjusted with shims, which are installed behind the outer races of both taper roller bearings.

The 3rd and 4th fixed gears are not joined on the drive pinion by keys. The torque is transmitted by the press-fit between gear and shaft.

924

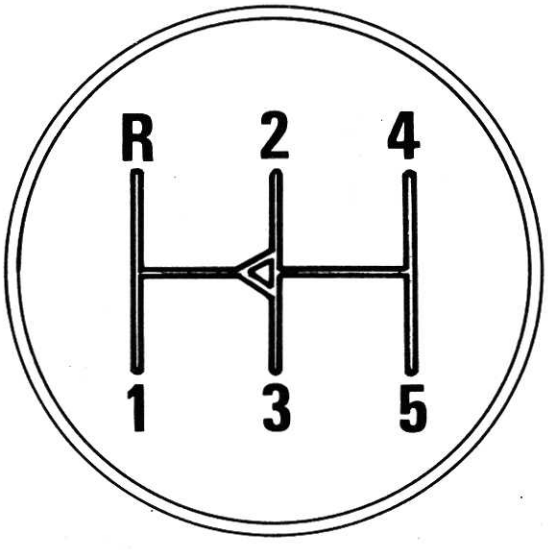
Shifting of the five forward gears and requires three shift gates.

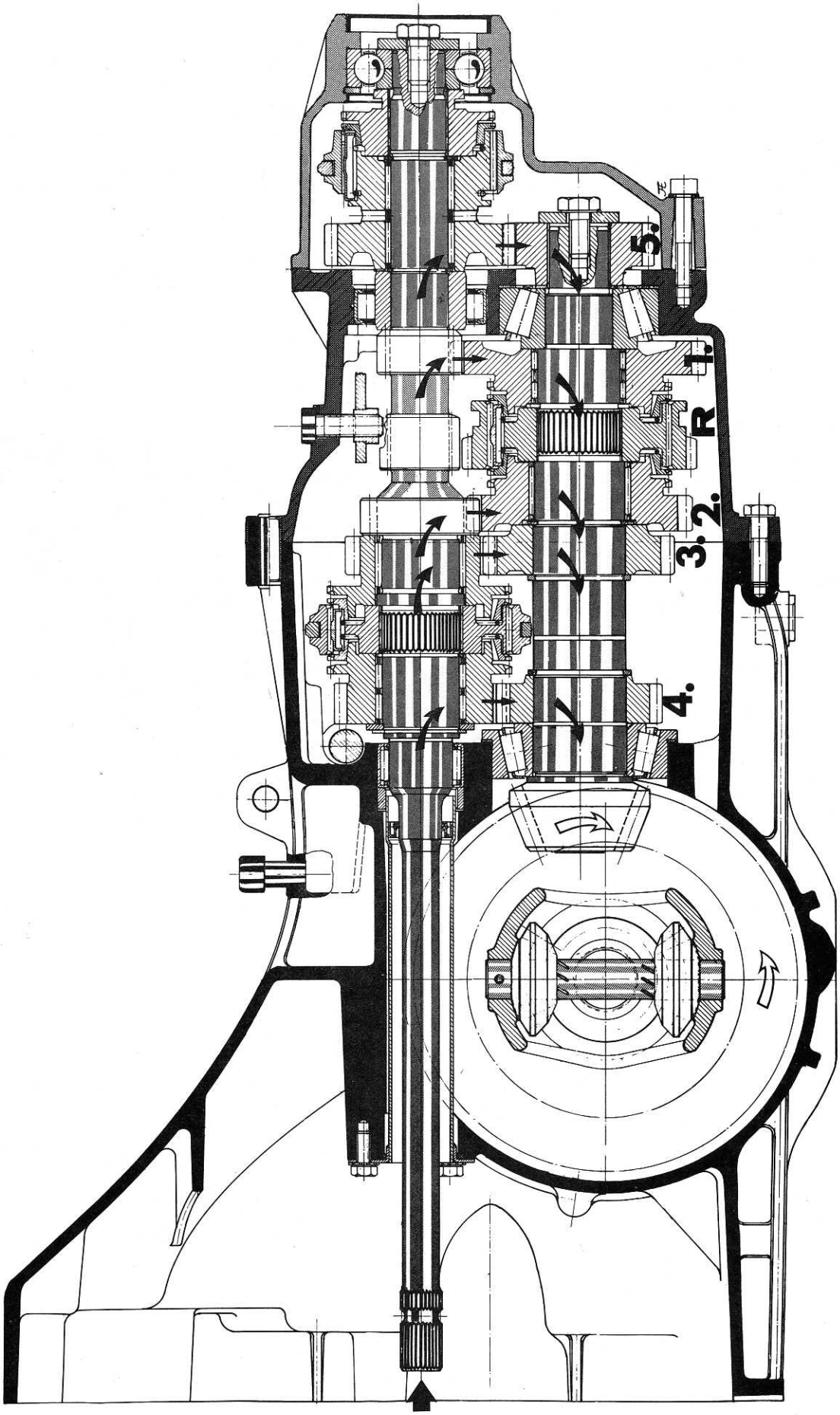
The first shift gate is for 1st and 2nd gear. 3rd and 4th as well as 5th and reverse gears are in the other shift gates.



924 Turbo

The shift pattern of the 924 Turbo differs from that of the 924. The 924 Turbo has the first gear and reverse gear on one shift gate so that the shift pattern is the same as the 928.

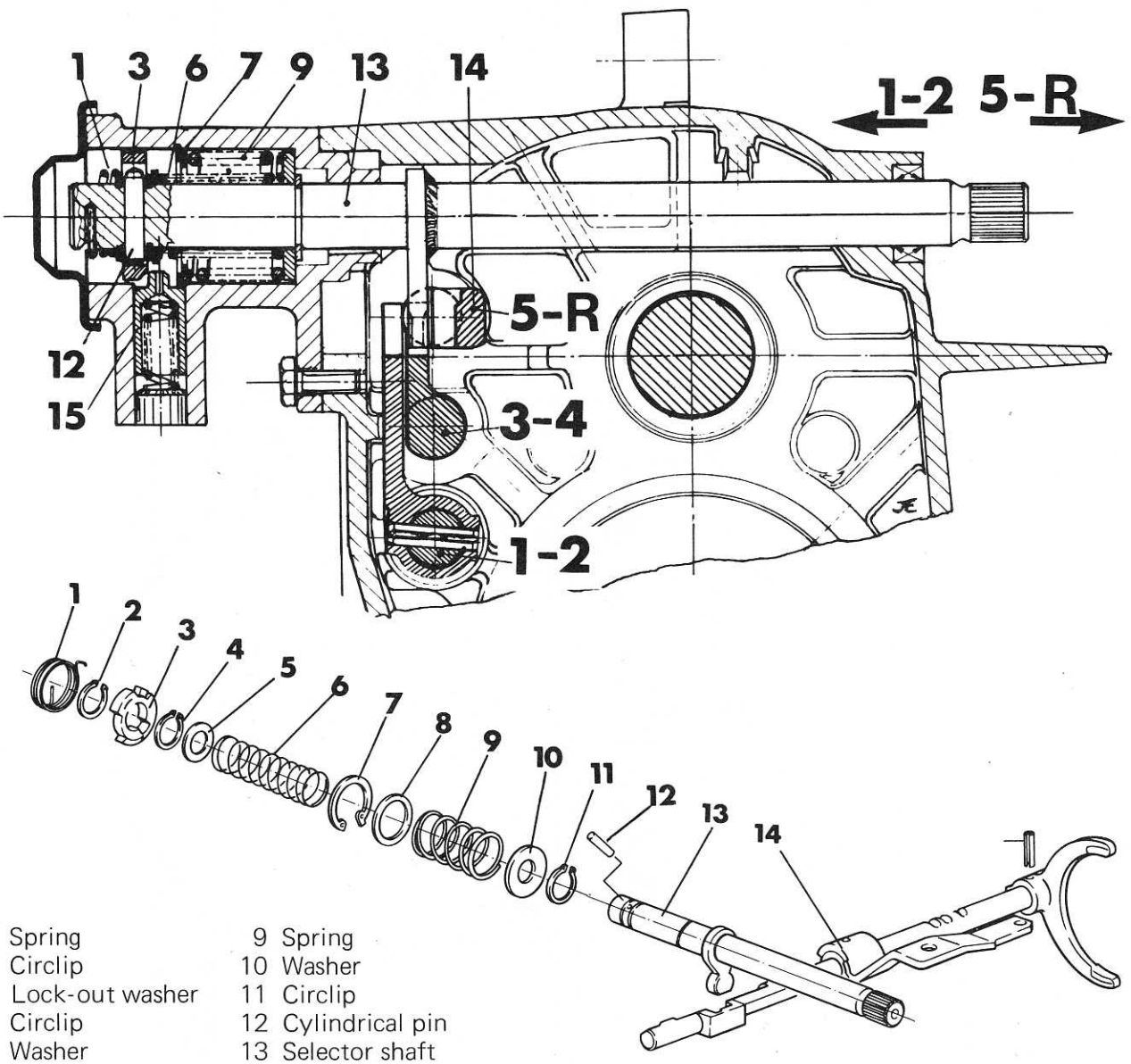



5.
1.
R
3.
2.
4.

Spring (9) continuously holds the selector shaft (13) in the center shift gate (3rd and 4th gear).

For example, to engage 1st gear, spring (9) will have to be compressed in order to get into 1st – 2nd gear gate. This spring force is also important when shifting from 1st to 2nd gear, so that the selector lever has to be "pulled to the left". When shifting up from 2nd to 3rd gear (a change in shift gates occurs!), spring (9) will automatically push the shift mechanism into the center shift gate.

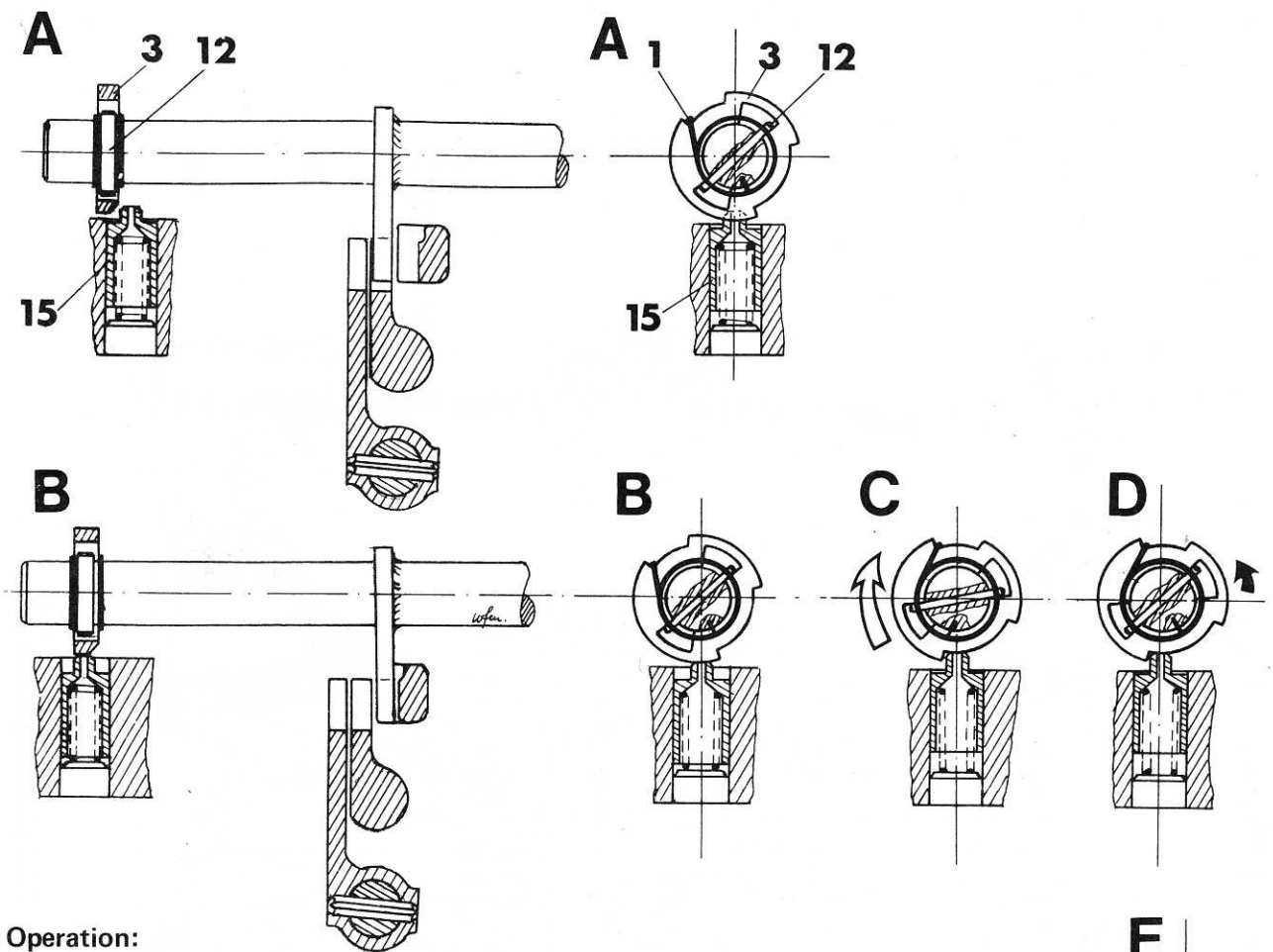
A further spring (6) must be overcome, when shifting from the center gate (3rd and 4th gear) to the 5th and reverse gear shift gate. When downshifting from 5th to 4th gear this spring force will automatically provide the change in shift gate.



1 Spring
2 Circlip
3 Lock-out washer
4 Circlip
5 Washer
6 Spring
7 Circlip
8 Washer
9 Spring
10 Washer
11 Circlip
12 Cylindrical pin
13 Selector shaft
14 Selector rod, 5th + reverse gear
15 Reverse gear lockpin

Reverse Gear Lock-Out

Since 5th gear and reverse gear are in the same shift gate, there must be a lock-out to prevent unintentional engagement of reverse gear when downshifting from 5th gear to 4th gear while moving forward. Washer (3) performs this function.



Operation:

A – **Neutral Position, 3rd – 4th Gear Shift Gate**
Spring (1) presses the washer (3) against cylindrical pin (12) constantly. The reverse gear lockpin (15) is free.

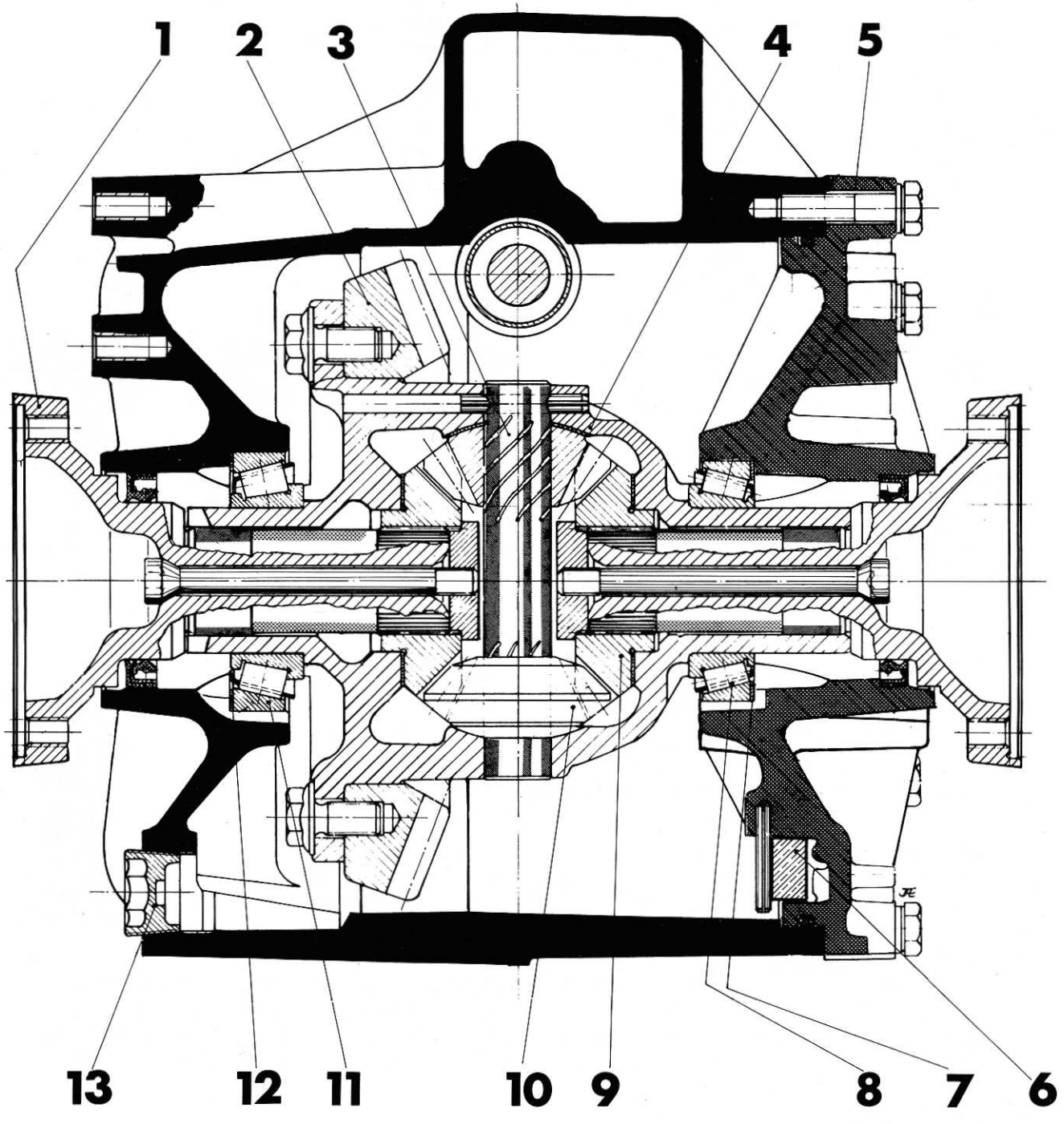
B – **Preselection, 5th Gear – Reverse Gear Shift Gate**
The selector shaft is moved and the reverse gear lockpin pressed down.

C – **Shift into 5th Gear**
The selector shaft is turned to the right, whereby the cylindrical pin turns the lock-out washer the reverse gear lockpin engages in an opening of the washer. Fifth gear is engaged.

D – **Shift out of 5th Gear**
The lockwasher remains in the position described in "C", i. e. the lockpin is engaged. When taking out 5th gear the selector shaft will turn to the left until the cylindrical pin rests on the drive surfaces of the lockwasher. It is not possible to shift into reverse gear, because the lockpin prevents any further turning. The preloaded spring (6) automatically presses the selector shaft into the 3rd – 4th gear gate.

E – **Shift into Reverse Gear**
The shift gate is selected as described in "B". Reverse gear is engaged by turning the selector shaft to the left, whereby the lockpin remains pressed down.

1 Drive flange
2 Ring gear
3 Spider gear shaft
4 Differential carrier
5 Side cover
6 Permanent magnet
7 Shims S_2
8 Taper roller bearing
9 Differential side gears
10 Differential spider gears
11 Taper roller bearing
12 Shims S_1
13 Drain plug



The torque is transmitted from the drive pinion to the ring gear (2). Since the ring gear is bolted to the differential carrier (4), the differential will turn at ring gear speed. Two different size taper roller bearings are used for the differential. The large taper roller bearing (11) is located in the housing, while the small bearing (8) is used in the side cover (5).

Taper roller bearings are adjusted by installing shims S_1 (12) and S_2 (7) underneath the outer races of both bearings. The backlash between the drive pinion and ring gear can be adjusted by changing the thickness of shims S_1 and S_2.

The differential spider gears (10) are turned by the spider gear shaft (3). These gears rest on the differential side gears (9) and transmit the torque to the drive flanges (1).

There is no rolling contact of the differential gears when driving straight ahead. However, when driving in curves or on uneven road surfaces they will start to provide "compensation" for the different travel of the driven wheels.

A limited slip differential is not available at the present time for this transmission.

Transmission 016/9

	Z1	Z2	iZ Z2:Z1	iA 37:9	iges	V1000 km/h	V600 km/h	V1000 mph	V6000 mph
1st gear	10	36	3,6000	4,1111	14,7999	7,6419	45,852	4,748	28,491
2nd gear	16	34	2,1250	4,1111	8,7361	12,946	77,677	8,044	48,265
3rd gear	25	34	1,3600	4,1111	5,5911	20,228	121,371	12,569	75,416
4th gear	30	29	0,9666	4,1111	3,9738	28,461	170,768	17,685	106,110
5th gear	37	27	0,7297	4,1111	2,9998	37,702	226,215	23,427	140,563
Reverse	12 14	24 42	3,5000	4,1111	14,3888	7,861	47,162	4,884	29,307

Z_1 = No of teeth on drive gear of the gear set.

Z_2 = No of teeth on driven gear of the gearset.

i_Z = Gear ratio

i_A = Final drive ratio ($Z_1 = 9$, $Z_2 = 37$)

V_{1000} = Road speed at 1000 rpm engine speed*

V_{6000} = Road speed at 6000 rpm engine speed*

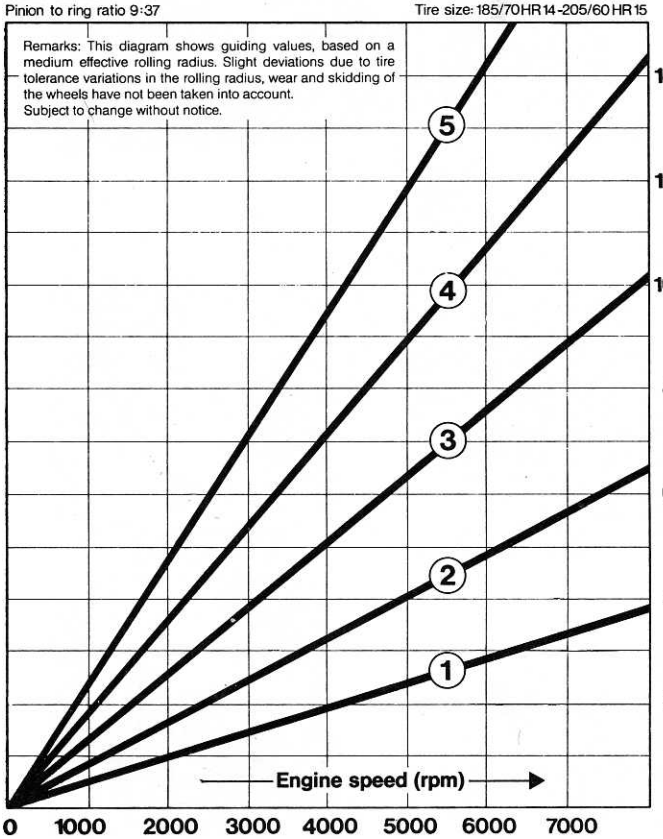
* with 185/70 HR 14 tires (rolling circumference 1885 mm ± 2 %)

Transmission Diagram 924

5-speed-transmission **USA**

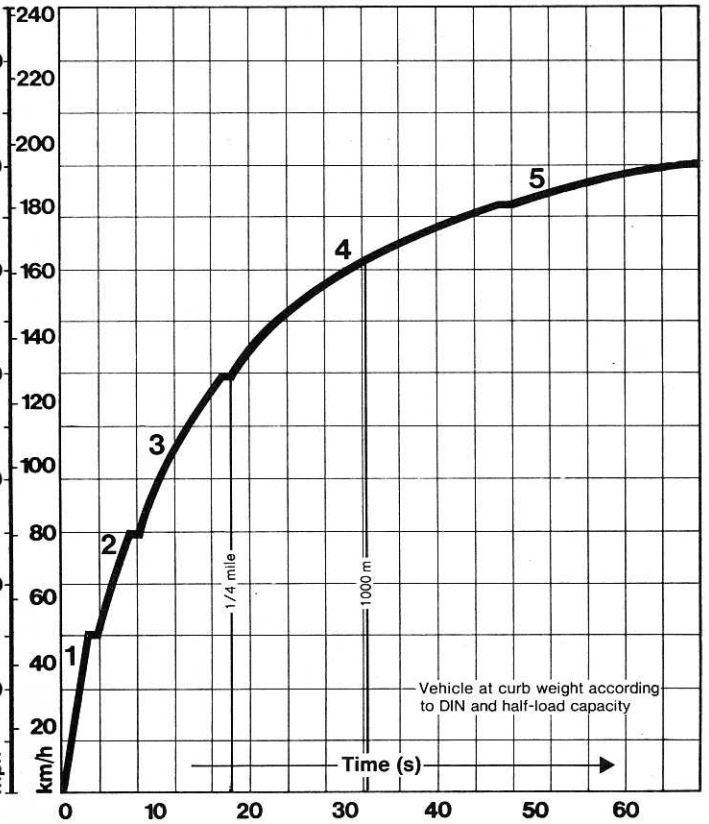
Pinion to ring ratio 9:37 Tire size: 185/70HR14-205/60HR15

Remarks: This diagram shows guiding values, based on a medium effective rolling radius. Slight deviations due to tire tolerance variations in the rolling radius, wear and skidding of the wheels have not been taken into account.
Subject to change without notice.



Acceleration Curve 924

5-speed-transmission **USA**

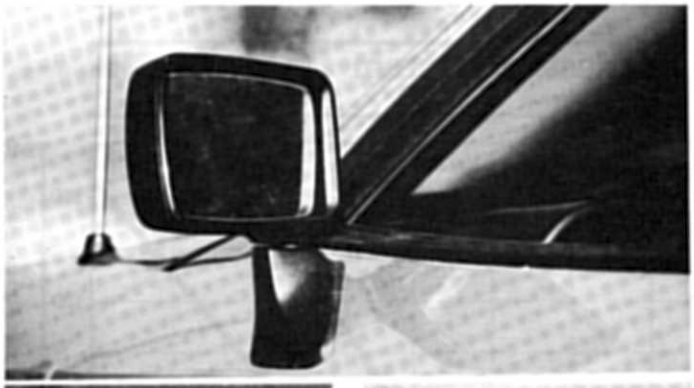


Modifications to the automatic transmission:

On the US-models the torque converter was modified.
In order to improve acceleration performance, the stall speed has been raised from 2100 rpm to 2450 ± 200 rpm, by modifying the blades of impeller, turbine and stator.

The identification letter "A" (formerly J) can be found on a driving tab of the converter.

All models have an outside mirror on the driver's side, which can be adjusted mechanically from the inside (mirror on passenger's side is optional).



The mirror is moved with a small adjusting lever in the door trim panel, which is connected with the moving part of the outside mirror by three cables.

The door locks (lock outer and inner parts as well as striker) are from the 928. The door lock cylinder incorporated in the door handle has been maintained.

An alarm system is available as optional equipment. The alarm lock is located in the left rear side panel next to the driver's door.

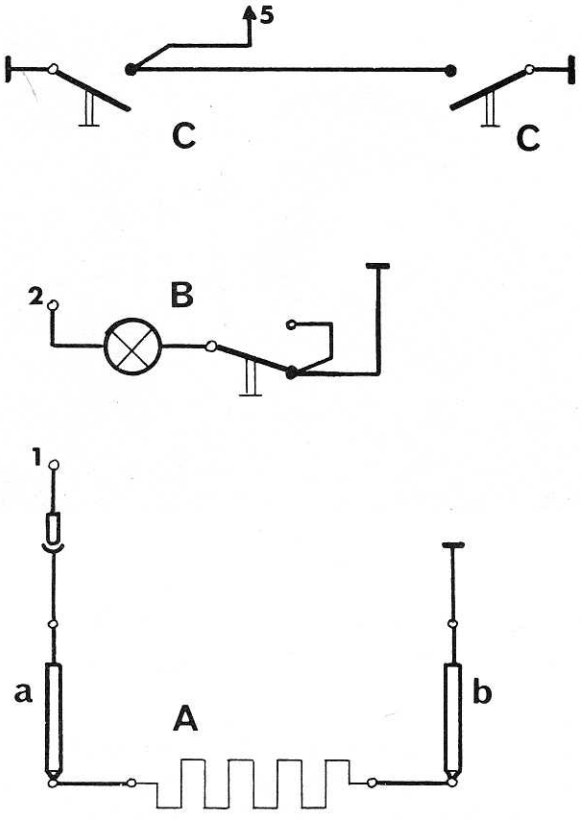
All Porsche models (924 – 911 – 928) have a standard seat belt system (belt buckles and mechanism identical on all cars).

All models now have a PORSCHE sign on the rear panel, between the license plate and bumper.

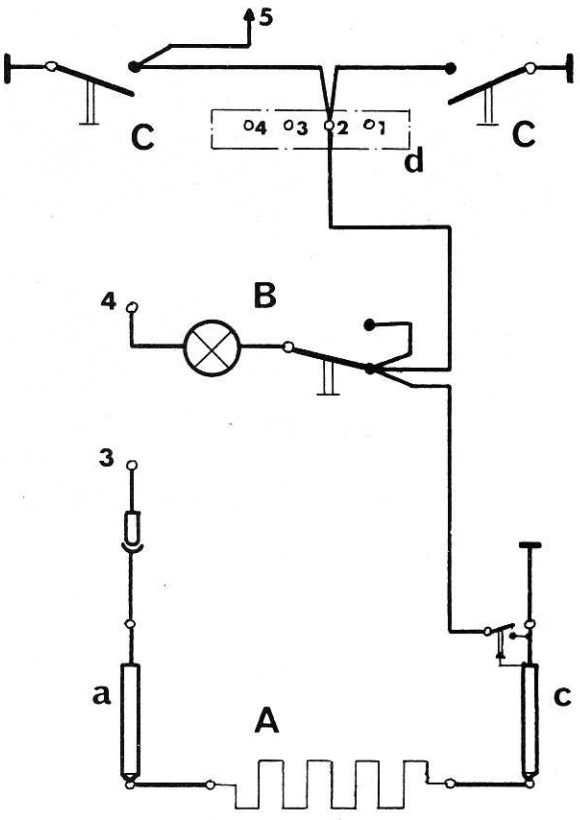
When the upholstery is selected in brown or beige, the window winders and inside door handles will also be brown.

Inside Light – Luggage Compartment Light

Wiring: 1979 Models



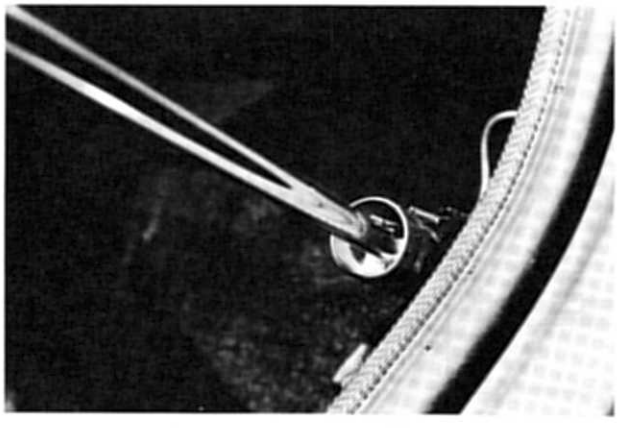
1980 Models

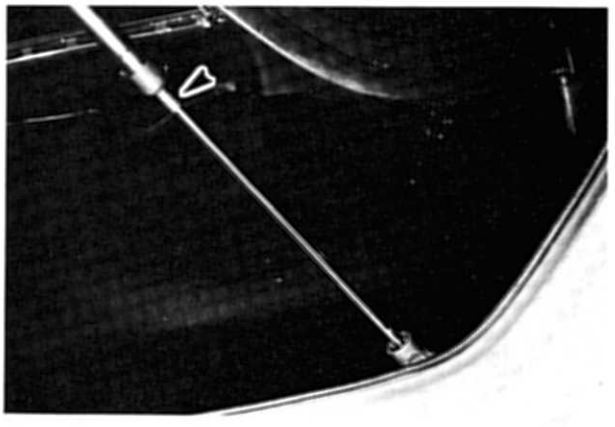


A – Rear window defogger
B – Luggage compartment light
C – Door contacts
a – Gas pressure spring, left
b – Gas pressure spring, right
c – Gas pressure spring with contact, right
d – Plug connector, 4-pin

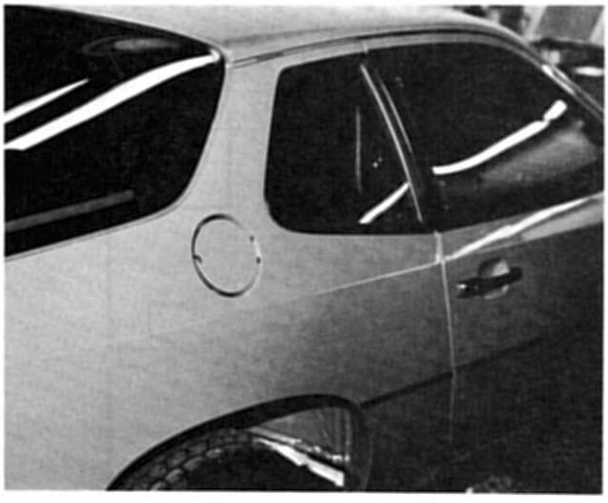
1 – To rear window defogger relay term. 87
2 – To CEL F 13 (light switch term. 58a)
3 – To rear window defogger relay term. 87
4 – To CEL F 14 (term. 30)
5 – To inside light (roof)

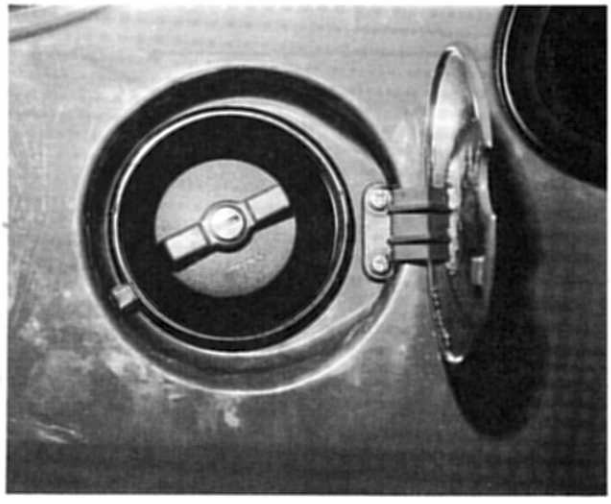
The wiring of the inside light and luggage compartment light has been changed, so that when opening the doors **or** the luggage compartment lid the inside light **and** the luggage compartment light will be switched on. In addition to a change in wiring, the rear right gas pressure spring is now fitted with a contact switch. When closing the lid, the contact will be broken by an insulating sleeve (arrow) mounted on the absorber tube.





The entire fuel tank system has been revised and redesigned. All models have a tank flap in the right rear side panel, which covers a modified screw-on cap on the tank filler neck. The fuel tank is new (Part No. ends in C), as well as an expansion tank located between the fuel tank and floor pan.

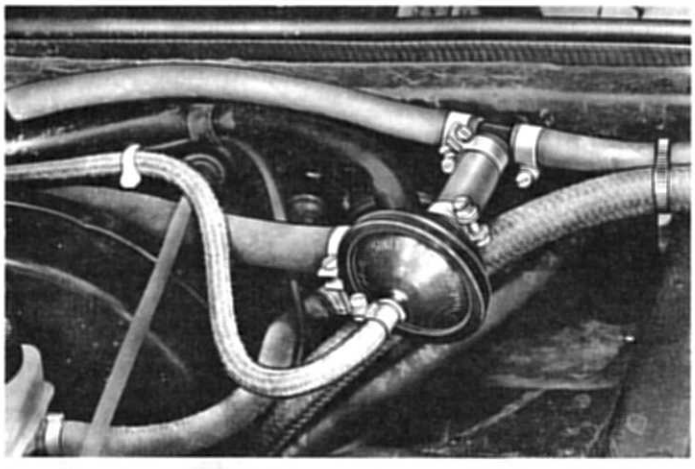


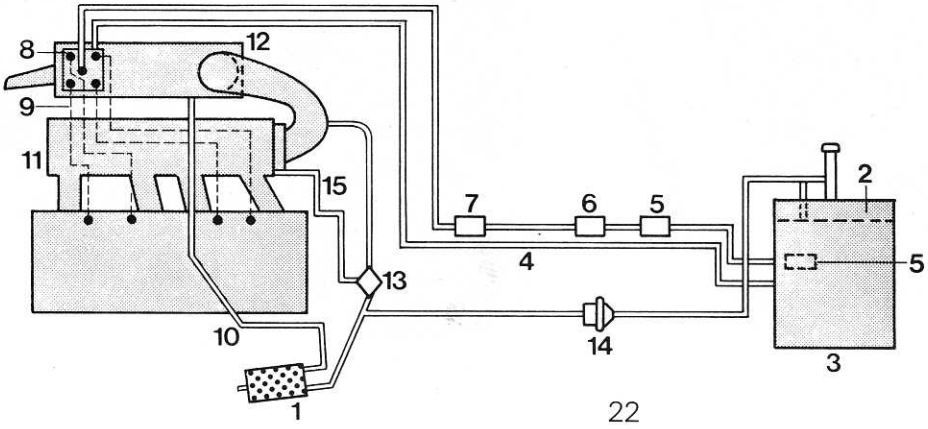


Fuel Evaporation Control/System

The control valve is closed when the engine is stopped, idling, or at full throttle. Fumes containing evaporated fuel from the tank flow to the charcoal filter where the vaporated fuel is trapped by the activated charcoal.

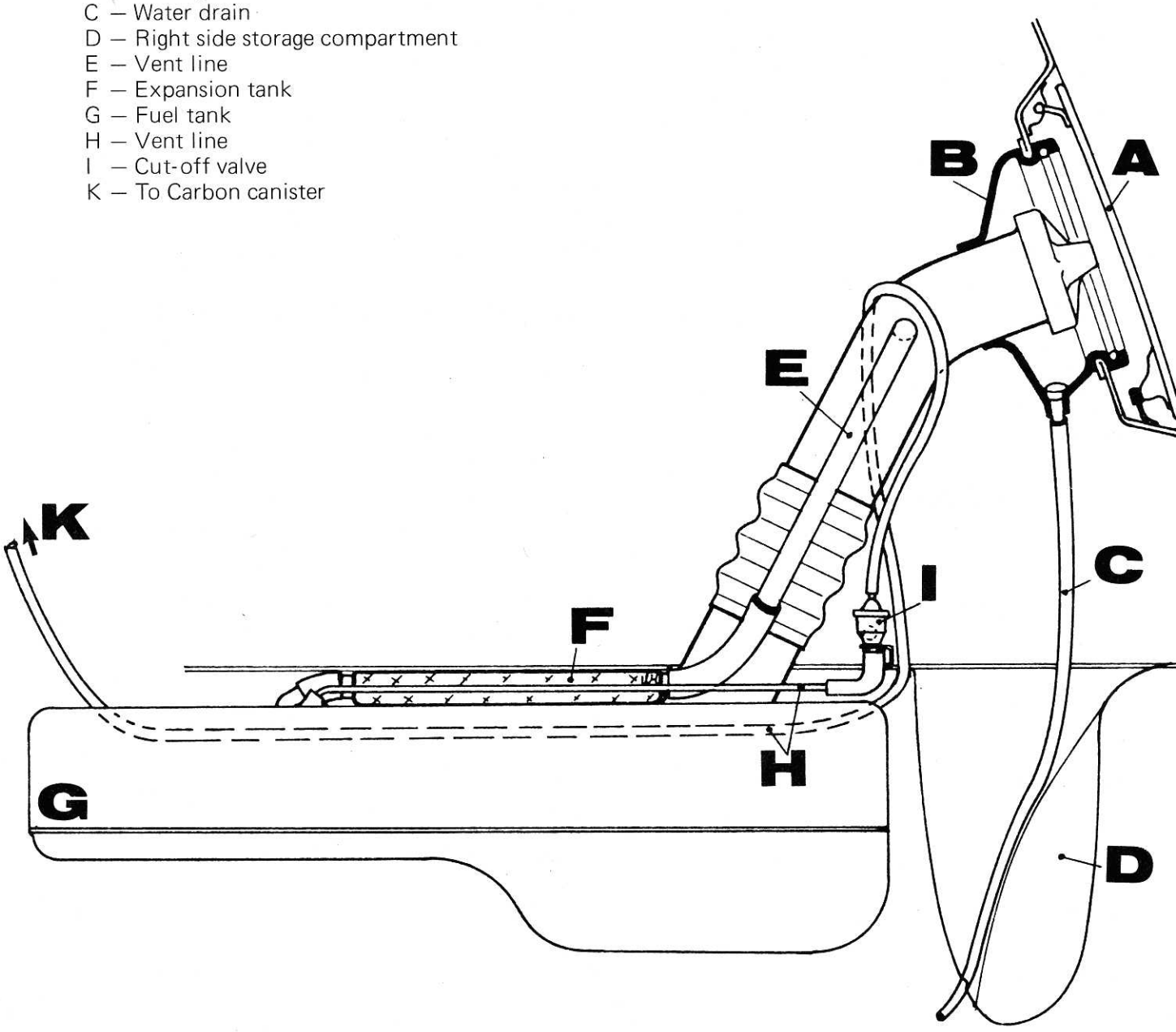
With the engine running at part throttle, the control valve is open. Fresh air is drawn from the air cleaner through the charcoal filter and into the intake duct at the air-sensor housing. The evaporated fuel is drawn out of the activated charcoal and burnt up in the engine along with the normal air/fuel mixture.





1 Carbon canister
2 Expansion chamber
3 Fuel tank
4 Fuel return line
5 Fuel pump
6 Accumulator
7 Filter
8 Fuel distributor
9 Fuel injection lines
10 Vent line
11 Intake manifold
12 Air cleaner
13 Control valve
14 Safety valve
15 Vacuum control line

A – Tank flap (shown offset 90°)
B – Sealing neck
C – Water drain
D – Right side storage compartment
E – Vent line
F – Expansion tank
G – Fuel tank
H – Vent line
I – Cut-off valve
K – To Carbon canister



ENGINE		Turbo	924
Type		M 31/02	924 VC
No. of cylinders		4	=
Bore	mm/in	86.50/3.41	=
Stroke	mm/in	84.40/3.32	=
Eff. displacement	cm^3/cu in	1984/121.06	=
Compression ratio		7.5 : 1	9.0 : 1
Net Power, DIN	kW/HP	110/150	85/115
at crankshaft speed	rpm	5500	5750
Net Torque DIN	Nm/kpm	206/21	156/15.9
at crankshaft speed	rpm	3500	3500
Max. speed	rpm	6500	=
Battery		12 V 63 Ah	=
Alternator		AC 1050 W/75 A	=
Ignition		Transistor breakerless	=
Firing order		1–3–4–2	=
Basic ignition timing		20° BTDC on crksh. at 2000 rpm	0° ± 1° at 950 ± 50 rpm – Manual at 1000 ± 50 rpm – Autom. transm.
Spark plugs		Bosch WR 7 DS Champion N 8 GY	Bosch WR 6 DS Beru RS 37
Electrode gap	mm	0.6	0.7
Drive belt		9.5 x 1050 mm	9.5 x 888 mm
Valve clearance, cold		Intake 0.10 mm Exhaust 0.40 mm	Intake 0.10 mm Exhaust 0.40 mm
operating temp.		Intake 0.20 mm Exhaust 0.45 mm	Intake 0.20 mm Exhaust 0.45 mm
Engine weight (dry)	kg/lbs	165/364	142/313
Engine lubrication		Forced circulation with pump, full flow oil filter and oil cooler	Forced circulation with pump, full flow oil filter
Oil pressure		n = 5000 rpm, up to approx. 6 bar, at 80 – 100° C	=
Exhaust system		Exhaust gas turbo-charger, 3-way catalytic converter, oxygen sensor, waste gate for boost pressure control	3-way Catalytic converter, oxygen sensor

	Turbo	924
DRIVE TRAIN		
Drive shaft	25 mm dia., three bearings	20 mm dia., four bearings
Manual transmission	5 speed (G 31/02)	5 speed (016/9)
Gear ratio: 1st gear	(12/38) = 3.166 : 1	(10/36) = 3.6000 : 1
2nd gear	(18/32) = 1.777 : 1	(16/34) = 2.1250 : 1
3rd gear	(23/28) = 1.217 : 1	(25/34) = 1.3600 : 1
4th gear	(29/27) = 0.931 : 1	(30/29) = 0.9667 : 1
5th gear	(35/21) = 0.600 : 1	(37/27) = 0.7297 : 1
Reverse gear	(22/48) / (12/16) = 2.909 : 1	(12/42) = 3.5000 : 1
Final drive ratio	(7/33) = 4.7143 : 1	(9/37) = 4.1111 : 1
Clutch	Single dry plate, clutch, hydraulic, pull-release version	Single dry plate, clutch with diaphragm springs, mechanical by cable, push-release version
Pressure plate/clutch disc	MFZ 225/GUD 225	MF 215 K/215 PSD

The turbo can be fitted with a limited slip differential (locking factor 40 %) as optional equipment.

AUTOMATIC TRANSMISSION (RK)	
No. of gears	3 forward, 1 reverse and parking lock
Gear ratio: Range 1	2.552 : 1
Range 2	1.448 : 1
Range 3	1.000 : 1
Reverse	2.461 : 1
Final drive ratio	3.7272 : 1 (11/41)
Clutch	Hydrodynamic torque converter, 244 mm diameter
Stall speed	2450 ± 200 rpm

PERFORMANCE *

				Manual Transm.	Automatic Transm.
Max. speed		km/h (mph)	212 (132)	192 (120)	185 (116)
Acceleration	0 – 100 km/h			11.2	13.0
	0 – 62 mph			11.2	13.0
	0 – 1 km			32.3	33.6
	0 – 1/4 mile			17.8	18.4

* DIN curb weight + half payload

	Turbo	924	
CLIMBING ABILITY		Manual Transm.	Automatic Transm.
1st gear	approx. 77 %	57 %	36 %
2nd gear	approx. 37 %	30 %	18 %
3rd gear	approx. 23 %	18 %	11 %
4th gear	approx. 16 %	11.5 %	–
5th gear	approx. 7 %	7 %	–

CHASSIS

Front axle	Independently suspended wheels on control arms and spring struts (Mc Phearson design), negative roll radius	
Stabilizer	21 mm dia.	=
Steering wheel	380 mm dia., 3 spokes	383 mm dia., 2 spokes
Steering wheel ratio at center	19.15 :	=
No. of steering wheel turns from lock to lock	4.02	=
Rear axle	Independently suspended wheels on trailing arms	
Torsion bar	23.5 mm dia.	=
Stabilizer	–	–
Brakes		Hydraulic dual circuit, diagonal brake system with brake booster, floating caliper disc brake on front wheels and simplex drums on rear wheels
Brake booster	9"	=
Brake master cylinder	23.81 mm dia.	=
Brake disc diameter	257 mm	=
Brake disc thickness	13 mm	=
Parking brake	Mechanical action on both rear wheels (drum brakes)	
Rear brake drum dia.	230 mm	=
Brake shoe width	38.6 mm	=

	Turbo	924
Wheel rims and tires	6 J x 15 (aluminum) with 185/70 VR 15 tire	6 J x 14 (aluminum) with 185/70 HR 14 tire
Winter tires	165 SR 15 M + S or 185/70 SR 15 M + S on rim 5 1/2 J x 15	165 SR 14 M + S or 185/70 SR 14 M + S on rim 5 1/2 J x 14
	185/70 SR 15 M + S on rim 6 J x 15	185/70 SR 14 M + S on rim 6 J x 14
	205/55 SR 16 M + S on rim 6 J x 16	185/65 SR 15 M + S on rim 6 J x 15
Tire pressure (for cold tire)	Front 2.0 bar Rear 2.5 bar	Front 2.0 bar Rear 2.0 bar
	Inflatable spare wheel, front and rear 2.2 bar	

WEIGHTS

DIN curbweight	kb/lbs	1280/2822	1245/2745
Max. total weight	kg/lbs	1500/3308	1400/3086
Max. axle load, front*	kg/lbs	720/1588	650/1433
Max. axle load, rear*	kg/lbs	880/1940	840/1852
Max. roof load**	kg/lbs	35/77	35/77

* The maximum total weight must not be exceeded.

** Only applicable when using original Porsche parts.

Note: The payload will be reduced accordingly when extra equipment (air conditioner, etc.) is installed.

FILLING CAPACITIES

	Turbo	924
Engine	Total oil volume approx. 5.5 ltr.	approx. 5 ltr.
	(actual amount depends on measurement with the oil dipstick)	
	Difference in quantity betw. min. and max. on dipstick approx. 1.2 ltr.	approx. 1.6 ltr.
	Only use brand name heavy duty oils for internal combustion engines of API classification SE or SD.	
	Viscosity: 20 W/50 (not below –15° C) (+5° F) 15 W/15 10 W/40	
Cooling system, incl. heater	Approx. 7 liters of coolant; with antifreeze for –25° C (artic countries –35° C)	
Manual transmission and differential	Approx. 2.5 liters of hypoid gear lube SAE 90, API classification GL 5 (or MIL-L 2105 B)	Approx. 2.6 liters of hypoid gear lube SAE 80, MIL-L 2105, API classification GL 4
Automatic transmission		Total valume 6 ltr. of ATF DEXRON B, converter volume approx. 2.5 ltr., oil change volume approx. 3.5 ltr., watch mark on oil filler final drive approx. 1 ltr. of SAE 90, GL 5 (MIL-L 2105 B) (lifetime filling)

	Turbo	924
Fuel tank	Approx. 66 liters, of which 6 liters in reserve	(17.4 gals.) (1.6 gals.)
Brake fluid tank	Approx. 0.2 liters. Only use brake fluid acc. to SAE J 1703 or DOT 3	(.4 pts.)
Windshield washer and headlight cleaner tank	Approx. 6.5 liters	(6.9 qts.)

DIMENSIONS

Wheelbase	2400 mm (94.488 in.)	=
Front track width (at DIN curbweight)	1418 mm (55.886 in.)	=
Rear track width (at DIN curbweight)	1392 mm (54.803 in.)	1372 mm (54.015 in.)
Length	4320 mm (170.078 in.)	=
Width	1685 mm (66.338 in.)	=
Height (at DIN curbweight)	127 mm (55 in.)	=
Level/curved ground clearance	120/48 mm (4.7/1.9 in.)	125 mm (4.9/1.9 in.)
Turning circle dia.	Approx. 10 meters	(3.2.8 ft.)

EC and USA legislation has made it necessary to change the chassis numbers.

The objective of this standard is to give cars numbers, with which they can be identified on a worldwide basis for a period of 30 years. A **seventeen digit chassis number** has been selected for this purpose, which shows the make, country/city of origin, vehicle type, vehicle specification and model year.

Until this standard can be adapted on a worldwide basis there will be a preliminary **ten digit chassis number** for the 1980 model year.

The following changes become effective in the chassis numbers as from 1980:

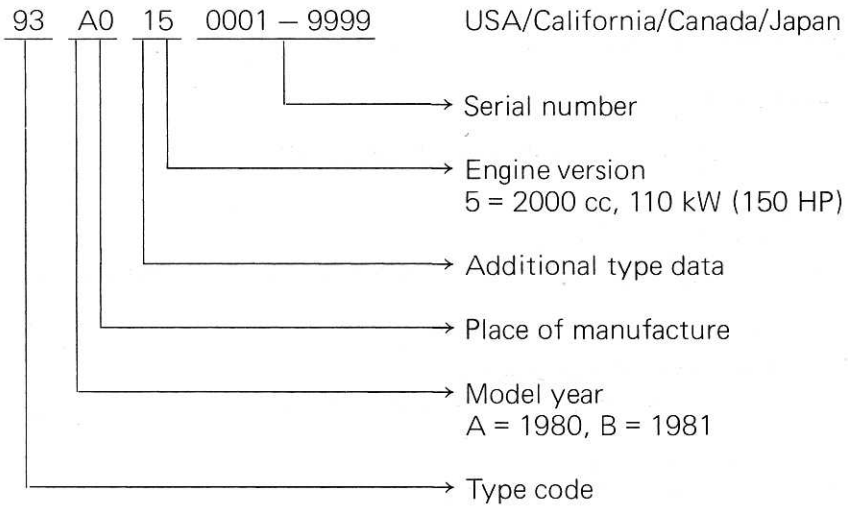
1. The 1st and 2nd digits indicate the basic type.
2. The 3rd digit indicates the model year, which will be A for 1980 internationally.
3. The 4th digit is the plant code and will be 0 for the 1980 model year.
4. The 5th and 6th digits are used together with the 1st and 2nd digits for further identification of the vehicle. The 6th digit indicates the engine version.
5. The remaining four digits make up the consecutive serial number.

The following example will demonstrate the changes:

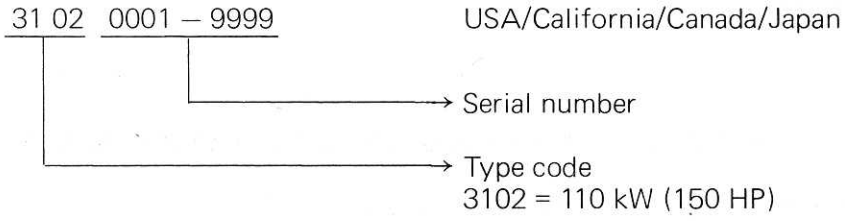
	Digits	**123 456 78910**
924	Model year 1979	924 910 0001
	Model year 1980	92A043 0001
924 Turbo	Model year 1979	924 940 0001
	Model year 1980	93A015 0001

The Turbo 924 is given the internal code 931.

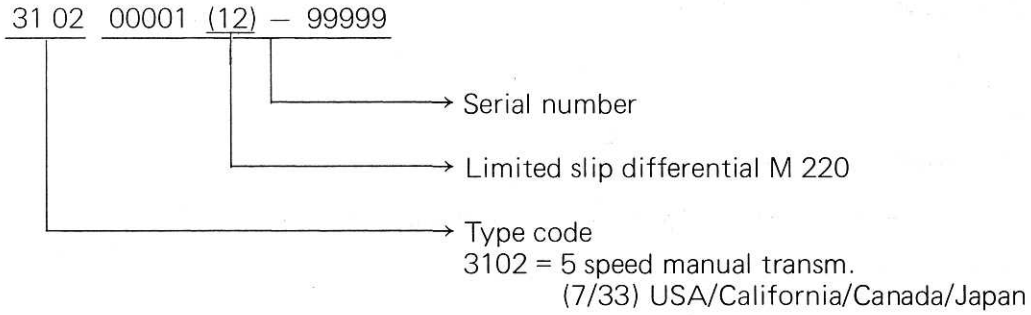
I. **Chassis Number Series** (10 Digits)



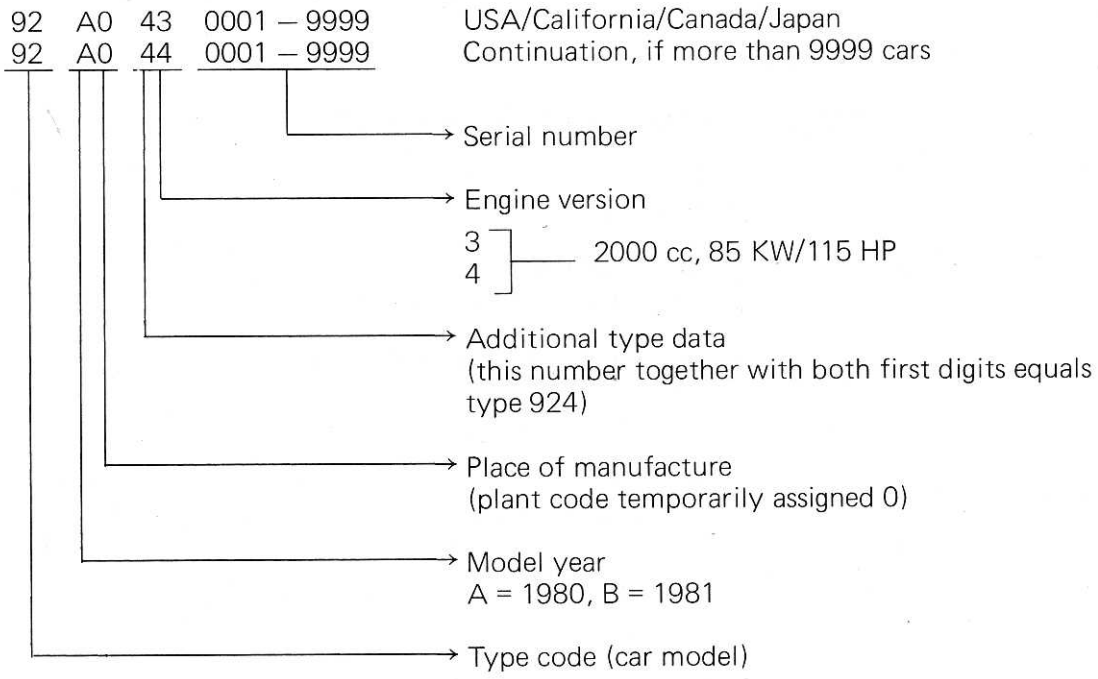
II. **Engine Number Series** (8 Digits)



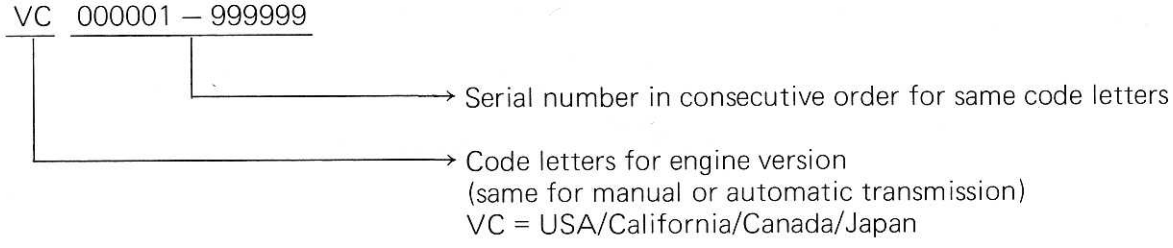
III. **Transmission Number Series** (9 or 11 Digits)



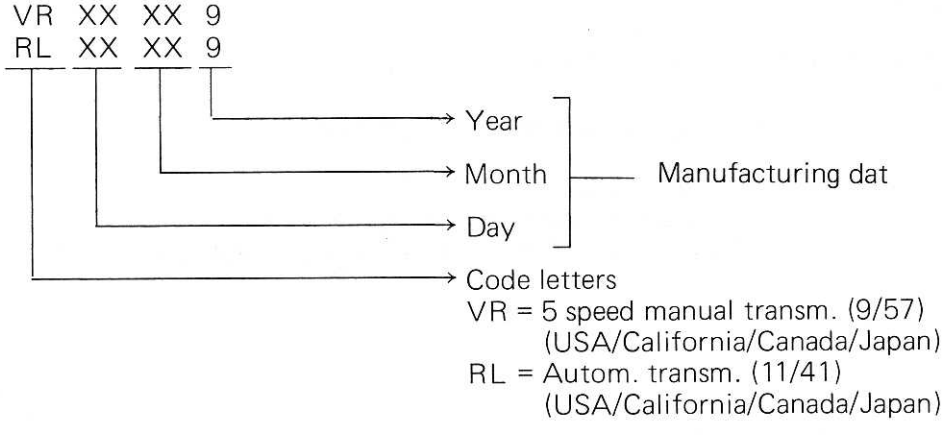
I. Chassis Number Series



II. Engine Number Series (8 Digits)



III. Transmission Number Series (7 Digits)



EQUIPMENT TABLES FOR 1980 MODELS

Ignition Coil

Type/Model	Version	Remarks
924	046 905 105	With resistor wire

Distributor

Type/Model	Version	Remarks
924 USA	477 905 205 A	Centrifugal and vacuum advance and retard control, breakerless

Spark Plugs

Type/Model	Version	Remarks
924 USA	Bosch WR 6 DS Beru RS 37	Torque 30 Nm (3.0 kpm)

Control Unit

Type/Model	Version	Remarks
924	046 905 351	Transistor ignition Bosch

Spark Plug Connectors

Type/Model	Version	Remarks
924		Without air gap

ADJUSTING IGNITION TIMING FOR 1980 MODELS

Note

The 924 is equipped with a breakerless transistor ignition system.

The ignition must be turned off when connecting a tester to the ignition coil.

Measurement of the dwell angle is not required

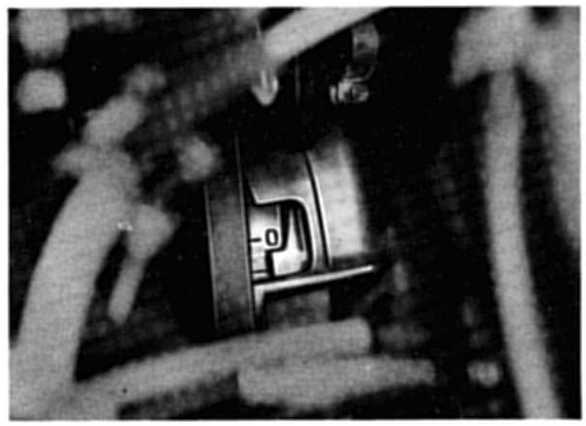
1. Run engine to operating temperature (oil temperature about 80 to 90° C).

2. Connect engine tester.

   Adjusting Values: USA
   0° = TDC at 950 ± 50 rpm with vacuum hoses connected

3. Vacuum hoses of USA version remain connected.

4. Connect stroboscope lamp.
   At idle speed the pertinent mark on flywheel must align with reference edge.



USA Version

To adjust the ignition timing, loosen and turn the distributor.

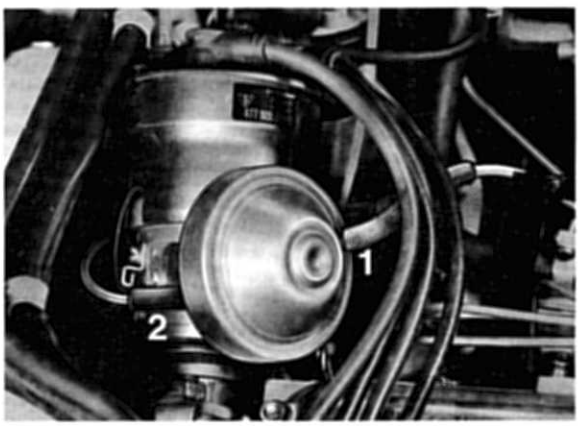
CHECKING IGNITION TIMING CONTROL FOR 1980 MODELS

Requirement:
Ignition timing adjusted to specifications.

1. **Centrifugal Control**
(vacuum hoses detached)

USA:
At engine speed of about 2500 rpm ignition timing must be between 19 and 25° before TDC or 29 and 35° before TDC at about 4500 rpm.

2. **Vacuum Checks**
(measured at idle speed)



Checking Vacuum Retard

1 – Advance
2 – Retard

Pull off vacuum hoses.
Adjust speed to 950 ± 50 rpm. Ignition timing must be between 8 and 10° before TDC.

Checking Vacuum Advance

Connect vacuum hose from connection 2 of vacuum unit to connection 1.
Adjust speed to 950 ± 50 rpm. Ignition timing must be between 16 and 22°.

Adjust idle speed after reconnecting vacuum hoses.

If specified test values are not reached, remove and check distributor on test bench.