1974-79 TUNE-UP PROCEDURES
Volkswagen 4-Cylinder

Type 1, Type 2, Type 4, Dasher, Rabbit, Scirocco

ENGINE IDENTIFICATION

On Type 1, engine serial number is stamped on alternator support flange. On Type 2 and Type 4, engine serial number is stamped on crankcase, below breather and near ignition coil. On all other models, engine serial number is stamped on left side of engine, near distributor.

1974 ENGINE CODES

Application	Code
Type 1	
Federal	AK
Calif.	AH
Type 2	
Carbureted	AW
Fuel Injected	ED
Type 4	
1700 cc	EA
1800 cc	EC
Dasher	
Federal	XW, XV
Calif.	XZ, XY
THE THING	AM

1975 ENGINE CODES

Application	Code
Type 1	AJ
Type 2	ED
Dasher	
Man. Trans.	XS
Auto. Trans.	XR
Rabbit & Scirocco	
Man. Trans.	FC
Auto. Trans.	FG

1976 ENGINE CODES

Application	Code
Type 1	AJ
Type 2	GD
Dasher	YH
Rabbit & Scirocco	
Man. Trans.	EE
Auto. Trans.	EF

1977-78 ENGINE CODES

Application	Code
Type 1	AJ
Type 2	GD
Dasher	
Federal	
Man. Trans.	YG
Auto. Trans.	YH
California	YK
Rabbit	EE
Scirocco	EF

1979 ENGINE CODES

Application	Code
Type 1	AJ
Type 2	GE
Dasher	
Federal	
Man. Trans.	YK
Auto. Trans.	YH
California	YG
Rabbit	EH
Scirocco	EJ

MODEL IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER

On Dasher and Scirocco, Vehicle Identification Number is stamped on a plate attached to left windshield pillar. On Dasher, number also appears at rear of engine compartment, above windshield washer reservoir. On Rabbit and Scirocco, number also appears atop the suspension strut mounting of the right-hand front wheel housing. Type 1, Type 2, Type 4 and Rabbit have number stamped on instrument panel.

ENGINE COMPRESSION

COMPRESSION PRESSURE SPECIFICATIONS

Application	Standard Pressure psi (kg/cm²)	Minimum Pressure psi (kg/cm²)
Type 1	107-135 (7.5-9.5)	85 (6.0)
Type 2 & 4	85-135 (6.0-9.5)	71 (5.0)
All Others	142-185 (10-13)	107 (7.5)

VALVE CLEARANCE

NOTE: Some Type 2 engines use hydraulic lifters. No adjustment is necessary.

Dasher, Rabbit & Scirocco – 1) With engine cold, turn crankshaft until piston in cylinder No. 1 is at TDC of compression stroke. Distributor rotor should point to cylinder No. 1 mark on distributor body. **2)** Adjust valves following VALVE CLEARANCE ADJUSTMENT SEQUENCE table. Turn crankshaft by hand after adjusting each cylinder. Adjust clearance to specifications by changing disc thickness. **3)** Discs are available in thicknesses from .119" (3.00 mm) to .167" (4.25 mm) in increments of .002" (.05 mm). Remove adjusting discs using Disc Remover (10-208) while holding cam follower down with Valve Depressor (VW 546).

VALVE CLEARANCE ADJUSTMENT SEQUENCE [1]

When Valves Overlap In Cylinder No.	Adjust Valves In Cylinder No.
1	4
3	2
4	1
2	3

[1] – Turn crankshaft 180 degrees in normal direction of rotation after adjusting valves in each cylinder.

Type 1, Type 2 & Type 4 – 1) Perform adjustment with engine cold. Turn crankshaft until piston in cylinder No. 1 is at TDC of compression stroke. Distributor rotor should point to No. 1 cylinder position. Check clearance between adjusting screw and valve stem of both valves. **2)** If necessary, loosen lock nut and adjust rocker arm adjusting screw until valve clearance is correct. Tighten lock nut. Turn crankshaft 90 degrees, while observing distributor rotor travel. Adjust valves of cylinders No. 2, 3, and 4 in turn.

VALVE CLEARANCE SPECIFICATIONS

Application	Clearance In. (mm)
Type 1, 2 & 4	.006 (.15)
All Others	
Intake	.006-.010 (.15-.25)
Exhaust	.014-.018" (.36-.46)

VALVE ARRANGEMENT

Type 1, Type 2 & Type 4

E-I-I-E – Both banks, front-to-rear.

All Others

E-I-E-I-I-E-I-E – Front-to-rear.

1974-79 TUNE-UP PROCEDURES
Volkswagen 4-Cylinder (Cont.)

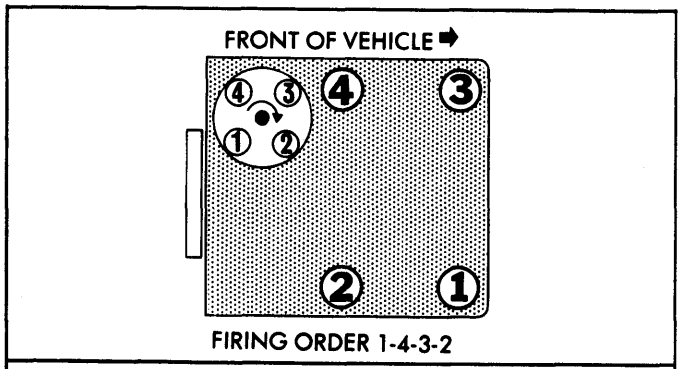

Fig. 1: Type 1 & Type 2 Firing Order & Distributor Rotation

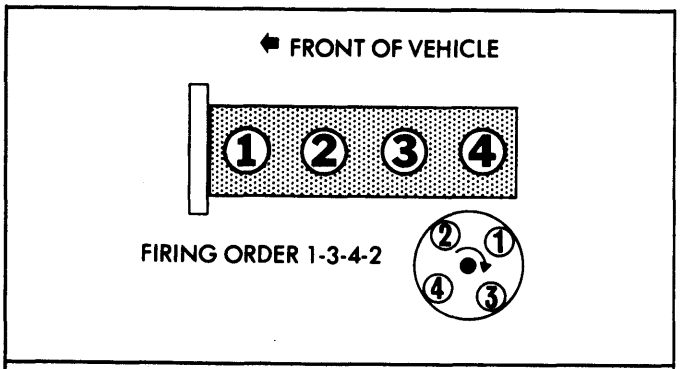

Fig. 2: Dasher Firing Order & Distributor Rotation

DISTRIBUTOR

Models are equipped with Bosch single-point distributors or Bosch electronic ignition systems.

DISTRIBUTOR SPECIFICATIONS

Application	Specification
Point Gap	.016" (.40 mm)
Dwell Angle	44-50°
Breaker Arm Spring Tension	14-21 ozs. (450-600 g)
Condenser Capacity	.20 mfd.

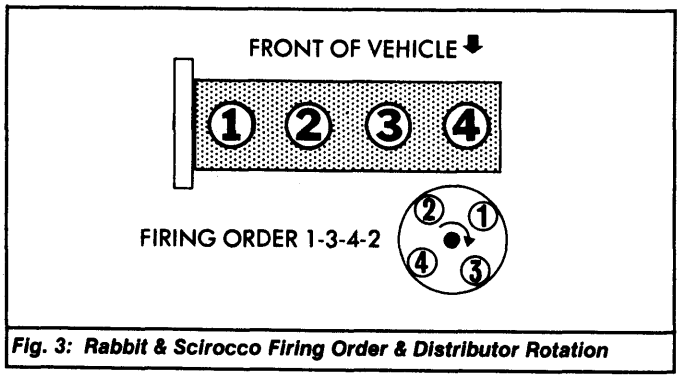

Fig. 3: Rabbit & Scirocco Firing Order & Distributor Rotation

SPARK PLUGS

SPARK PLUGS

Application	Specification
Gap	.028" (.70 mm)
Torque	22 ft. lbs. (30 N.m)

SPARK PLUG TYPE

Application	Champion No.
Type 1	L-288
Type 2	N-288
Type 4	N-5
Dasher	N8Y
Rabbit & Scirocco	N8Y

HIGH TENSION WIRE RESISTANCE

Carefully remove high tension wires from spark plugs and distributor cap. Using an ohmmeter, check high tension wire resistance while gently twisting wires. If resistance is not to specifications, or fluctuates from infinity to any value, replace high tension wire(s).

HIGH TENSION WIRE RESISTANCE

Application	Resistance (Ohms)
All Models	25,000-30,000

IGNITION TIMING

Connect timing light and tachometer to vehicle. Check ignition timing with engine at normal operating temperature and distributor vacuum hoses disconnected. Adjust timing with engine at specified RPM. To correct timing, loosen distributor hold-down bolt, turn distributor, and tighten hold-down bolt.

1974 IGNITION TIMING SPECIFICATIONS

Application	RPM	Timing
Type 1	800-900	7.5°BTDC
Type 2 & 4		
Man. Trans.	800-900	10°ATDC
Auto. Trans.	900-1000	[1] 5°ATDC
Dasher	850-1000	3°ATDC

[1] - Set to 7.5°BTDC on fuel injected models.

1975-77 IGNITION TIMING SPECIFICATIONS

Application	RPM	Timing
Type 1		
Man. Trans.	800-950	5°ATDC
Auto. Trans.	850-1000	TDC
Type 2		
Man. Trans.	850-950	[1] 7.5°BTDC
Auto. Trans.	900-1000	[1] 7.5°BTDC
All Others	850-1000	3°ATDC

[1] - Set to 5°ATDC on 1975 models.

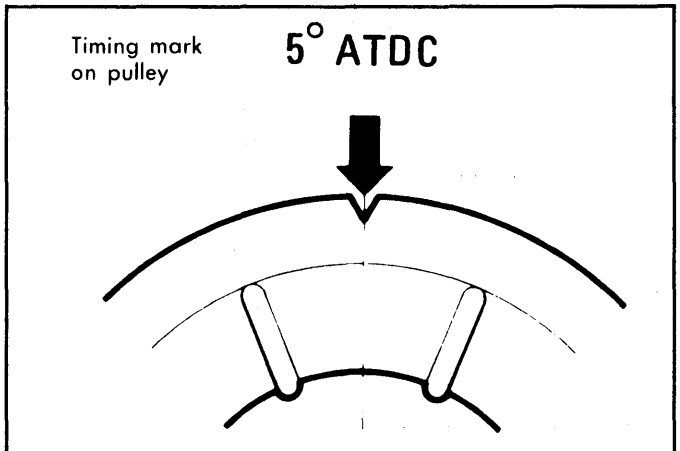

Fig. 4: Typical Type 1 Ignition Timing Mark

1974-79 TUNE-UP PROCEDURES
Volkswagen 4-Cylinder (Cont.)

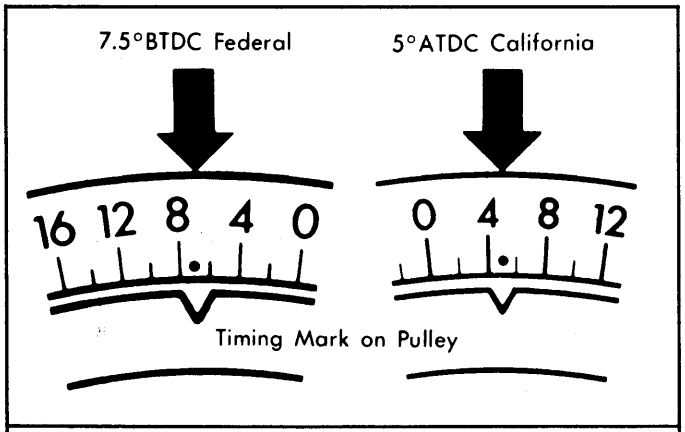

Fig. 5: Typical Type 2 Ignition Timing Marks

1978-79 IGNITION TIMING SPECIFICATIONS

Application	RPM	Timing
Type 1	800-950	5°ATDC
Type 2		
Federal		
Man. Trans.	800-950	7.5°BTDC
Auto. Trans.	850-1000	7.5°BTDC
California		
Man. Trans.	800-950	5°ATDC
Auto. Trans.	850-1000	5°ATDC
All Others	850-1000	3°ATDC

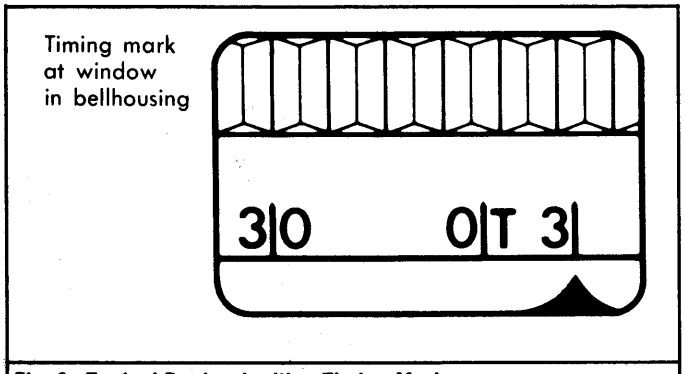

Fig. 6: Typical Dasher Ignition Timing Marks

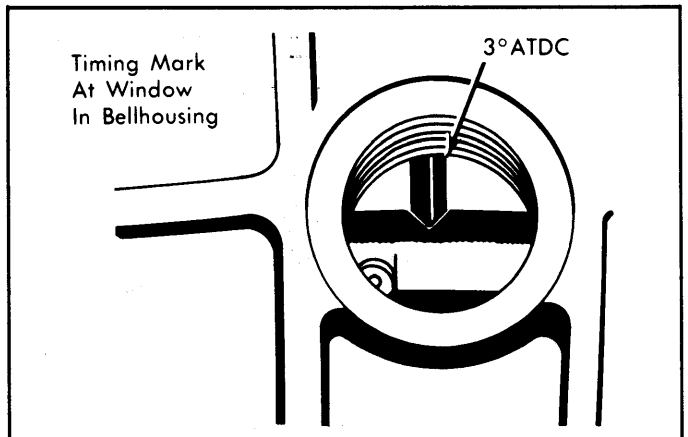

Fig. 7: Typical Rabbit & Scirocco Ignition Timing Marks

IDLE SPEED & MIXTURE

NOTE: Idle mixture test port is provided in exhaust system, ahead of catalytic converter. Type 4 adjustment procedures not available at time of publication.

1974 Type 1 - 1) Warm engine to normal operating temperature. Connect tachometer and exhaust gas analyzer to vehicle. Adjust idle screw until it just touches fast idle cam, then turn screw an additional 1/4 turn.
2) Seat idle mixture screw and back out screw 2 1/2 to 3 turns. Start engine and adjust idle speed to 900 RPM using air by-pass screw. Adjust idle mixture screw until highest RPM is obtained, then lean out mixture until speed drops 20-30 RPM. Check idle speed and CO% level. Readjust both if necessary.
1974 Carbureted Type 2 - 1) Warm engine to normal operating temperature. Connect tachometer and exhaust gas analyzer to vehicle. Disconnect rod for throttle valve shaft on right carburetor.
2) Disconnect and plug distributor vacuum retard hose and left hose on air pump. Disconnect central solenoid wire from idling system. Lightly seat idle mixture control screws on both carburetors, then back out screws 2 1/2 turns.
3) Set idle speed to 500-700 RPM and CO% level to 3-5 percent. Disconnect one carburetor solenoid wire and note decrease in engine RPM. Both carburetors must experience an equal RPM drop when solenoid on other carburetor is disconnected.
4) Without changing position of throttle valve, connect rod for throttle valve shaft. Connect wire to central solenoid and attach distributor and air pump hoses.
5) Allow engine speed to stabilize and set idle speed with central adjusting screws. With idle correctly set, check CO% level. If CO% level is incorrect, readjust idle mixture screws. Readjust idle speed if necessary.

1974 IDLE SPEED & CO% LEVEL SPECIFICATIONS

Application	Idle RPM	CO%
Type 1		
Man. Trans.	800-950	2.0-4.0
Auto. Trans.	850-1000	2.0-4.0
Type 2 & 4		
Man. Trans.	850-950	0.5-1.5
Auto. Trans.	900-1000	[1] 0.5-1.5
Dasher	900-1000	0.5-2.0

[1] - Set to 4.5 percent (maximum) on Type 2 fuel injected models.

1974 Fuel Injected Type 2, Dasher & All 1975 Models - 1) Warm engine to normal operating temperature. Connect tachometer and exhaust gas analyzer to vehicle. Remove hose from charcoal canister at air cleaner. Adjust idle speed to specifications by turning throttle stop screw.

1975 IDLE SPEED & CO% LEVEL SPECIFICATIONS

Application	Idle RPM	CO%
Type 1		
Man. Trans.	800-950	2.0
Auto. Trans.	850-1000	2.0
Type 2		
Man. Trans.	800-950	2.0
Auto. Trans.	900-1000	2.0
Dasher	850-1000	2.0
Rabbit & Scirocco	900-1000	2.0

2) Adjust CO% level to specifications by turning idle mixture screw on carbureted models. On fuel injected models, turn idle air by-pass screw (idle air by-pass screw is located on airflow meter). Readjust idle speed if necessary.
1976-79 Type 1 & 2 - 1) Warm engine to normal operating temperature. Connect tachometer and exhaust gas analyzer to vehicle. Remove hose from charcoal canister at air cleaner.

1974-79 TUNE-UP PROCEDURES
Volkswagen 4-Cylinder (Cont.)

2) Turn idle speed adjusting screw (by-pass screw) on throttle valve housing until speed is to specification. With idle properly adjusted, check CO% level. If adjustment is required, remove rubber plug from airflow sensor housing.
3) Turn mixture adjusting screw until CO% level is correct. Turn screw clockwise to increase CO% level, counterclockwise to decrease CO% level. Recheck idle speed and adjust if necessary.

1976-79 Dasher, Rabbit & Scirocco - 1) Warm engine to normal operating temperature. Connect tachometer and exhaust gas analyzer to vehicle. Set parking brake and turn A/C and high beams on.
2) Check auxiliary air regulator to ensure it is fully closed. Turn by-pass screw on throttle valve housing to adjust idle speed. Remove hose from charcoal canister at air cleaner. Check CO% level.
3) If CO% level is incorrect, remove rubber plug from top of mixture control unit. Use Wrench (P 377) to turn idle mixture screw to correct CO% level. Recheck idle speed and adjust if necessary. Disconnect all test equipment and reconnect purge hose.

1976-77 IDLE SPEED & CO% LEVEL SPECIFICATIONS

Application	Idle RPM	CO%
Type 1		
Man. Trans.	800-950	2.0
Auto. Trans.	850-1000	2.0
Type 2		
Man. Trans.	800-950	2.0
Auto. Trans.	900-1000	2.0
Dasher		
Federal		
Man. Trans.	850-1000	1.5
Auto. Trans.	850-1000	1.0
California	850-1000	0.5
Rabbit & Scirocco		
Federal	850-1000	1.5
California	900-1000	0.5

1978-79 IDLE SPEED & CO% LEVEL SPECIFICATIONS

Application	Idle RPM	CO%
Type 1		
Federal	800-950	1.0
California	800-950	1.5
Type 2		
Federal		
Man. Trans.	800-950	0.5-1.5
Auto. Trans.	850-1000	0.5-1.5
California [1]		
Man. Trans.	800-950	0.2-1.2
Auto. Trans.	850-1000	0.2-1.2
Dasher		
Federal		
Man. Trans.	850-1000	1.5
Auto. Trans.	850-1000	1.0
California	850-1000	0.5
Rabbit & Scirocco		
Federal	850-1000	0.6-1.0
California	850-1000	0.5-0.9

[1] - With oxygen sensor disconnected.

COLD (FAST) IDLE RPM

1974 Type 1 - Pull back throttle valve positioner lever against adjusting screw, then turn adjusting screw to obtain 1450-1650 RPM.

AUTOMATIC CHOKE SETTING

1974-75 Type 1, 2, Dasher, Rabbit & Scirocco - Mark on carburetor choke cover should align with mark on choke housing.

FUEL PUMP

1974 FUEL PUMP SPECIFICATIONS

Application	Specification
Pressure	
Type 1	[1] 3.0-5.0 psi (.21-.35 kg/cm²)
Type 2	[2] 5.0 psi (.35 kg/cm²)
Type 4	28-44 psi (2.0-3.0 kg/cm²)
Volume	
Type 1	[1] .85 pts. in 60 seconds
Type 2	[2] .85 pts. in 60 seconds
Type 4	[3]

[1] - With engine running at 4000 RPM.
[2] - Carbureted models, with engine running at 3800 RPM.
[3] - Information not available from manufacturer.

EXHAUST EMISSION SYSTEMS

See appropriate articles in EXHAUST EMISSION SYSTEMS section.

IGNITION SYSTEM

DISTRIBUTOR

Models are equipped with Bosch single-point distributors or Bosch electronic ignition systems.
Other Data & Specifications - See appropriate Bosch Ignition System article in DISTRIBUTORS & IGNITION SYSTEMS section.

FUEL SYSTEMS

CARBURETORS

CARBURETORS

Application	Model
1974-75 Models	Solex 1 & 2-Bbl.

Other Data & Specifications - See appropriate Solex Carburetor article in FUEL SYSTEMS section.

FUEL INJECTION

Type 1 and Type 2 models use Bosch AFC fuel injection. The 1976-79 Dasher, Rabbit and Scirocco use Bosch CIS fuel injection.
Other Data & Specifications - See Bosch AFC or CIS Fuel Injection articles in FUEL SYSTEMS section.