

VOLVO

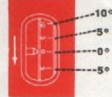
1959-68 122S; 1961-68 P1800

TUNE-UP AND WHEEL ALIGNMENT

VOI-2 CYLINDER NUMBERING SEQUENCE



B16B eng. B18 eng.
FIRING ORDER: 1 3 4 2



B16B eng.

TIMING MARK



B18 eng. without Air Cond. B18 eng. with Air Cond.

ENGINE IDENTIFICATION

Code Location: Left side of engine block. First four digits are cast into block (No. 4953 or 4968); fifth and sixth digits are stamped and identify engine. 1968 engines with emission control system have codes 64, 66, 68 or 69.

| Engine Code | Engine | Horsepower |
|---------------------------|---------------|------------|
| B16B 85,87,96 | 4 1580cc 2/1V | 85 |
| B18B 00 | 4 1780cc 2/1V | 100 |
| B18B 12,17 | 4 1780cc 2/1V | 108 |
| B18B 19,42,60,64,66,68,69 | 4 1780cc 2/1V | 115 |
| B18D 02,15,16,18 | 4 1780cc 2/1V | 90 |
| B18D 20,21,22 | 4 1780cc 2/1V | 95 |

BATTERY

| Negative ground | AABM Group No. | Ampere Hours |
|-----------------|----------------|--------------|
| B16B eng. | 19 (6 volt) | 84 |
| B18 eng. | 24 (12 volt) | 60 |

COMPRESSION PRESSURE

| | psi | Maximum Variation |
|------------------------------|---------|-------------------|
| B16B (85-hp) eng. | 142-156 | — |
| B18B (90-95-hp) eng. | 170-200 | — |
| B18B (100, 108, 115-hp) eng. | 184-200 | — |

IGNITION SYSTEM

| SPARK PLUGS | Bosch |
|-------------------|----------|
| B16B eng. | W175T3 |
| 1962-67 B18B eng. | W225T1 * |
| 1968 B18B eng. | W200T35 |
| B18D eng. | W175T1 * |

* W200T35 may be used
Gap: .028"
Torque: With copper gasket, 25 ft. lb.; with steel gasket, 29 ft. lb.

IGNITION POINTS

| | Gap (inches) | Dwell (degrees) | Max. Dwell Varies (degrees @ rpm) | Spring Tension (ounces) |
|-----------|--------------|-----------------|-----------------------------------|-------------------------|
| B16B eng. | .016-.020 | 50 | 3 @ 1500 | 14-18 |
| B18 eng. | .016-.020 | 50 | 3 @ 1500 | 14-18 |

CONDENSER

Bosch Capacity: .20-.25 mfd

COIL

| Bosch | Current Draw (amperes) |
|-------------------------------|------------------------|
| Engine stopped, points closed | 3.0 |
| Engine idling | — |

TIMING PROCEDURE

- Timing Light Method
1. Connect tachometer.
 2. Connect timing light to No. 1 spark plug or distributor cap tower.
 3. Disconnect distributor vacuum line, if so equipped.
 4. All except 1968, set engine speed at 1500 rpm; 1968, set at 850 rpm.
 5. Observe timing marks at flywheel opening or pulley and turn distributor to recommended setting.
 6. Reconnect vacuum line, if so equipped, and reset engine to proper idle speed.

Static Setting Method:
If timing light is not available, set with engine stopped using this procedure. Reset with timing light as soon as possible.

1. Connect test lamp (check system voltage) to distributor primary terminal and ground.
2. No. 1 cylinder must be in firing position.
3. Turn eng. flywheel until timing pointer aligns with setting recommended.
4. Move distributor housing until lamp just lights. Make certain rotor is pointing to No. 1 lower contact in cap.
5. Tighten distributor.

TIMING SETTING

| Engine | 1959-62 | 1962-67 | 1962-65 | 1966-67 | 1968 |
|-----------------------|---------|---------|---------|---------|---------|
| B16B | B16B | B18B | B18D | B18B | B18B |
| Timing light method | 23°-25° | 17°-19° | 22°-24° | 17°-19° | 3°-5° * |
| Static setting method | 6° | 5° | 5° | 5° | 4° |

* 4° preferred
Note: B18B and B18D engines require 100 octane (min.) or ignition must be retarded.

WHEEL ALIGNMENT

| | Caster (degrees) | Camber (degrees) | Toe-In (inches) | Toe-Out-on Turns (degrees) | | Steering Axis Inclination (degrees @ degree camber) |
|-------|------------------|------------------|-----------------|----------------------------|---------------|---|
| | | | | Outside Wheel | Inside Wheel | |
| Low | 0 | 0 | 1/2 | 20 | 21 1/2-23 1/2 | 8 @ 0 |
| Ideal | 0 | 0 | 1/2 | 20 | 21 1/2-23 1/2 | 8 @ 0 |
| High | +1 | + 1/2 | 1/2 | 20 | 21 1/2-23 1/2 | 8 @ 0 |

FUEL SYSTEM

FUEL PUMP

AC type UG, YD or Pierburg type APG
Pressure: B16B eng. 2-3 1/2 lb. B18 eng. 1 1/2-2 1/2 lb. All @ idle rpm
Volume: 16 ounces in 1 minute @ idle rpm

CARBURETOR ADJUSTMENT

| S.U. | Idle Mixture (Initial turns) |
|-------------------|------------------------------|
| Twin 1V H-4 | 1 |
| Twin 1V HS-6 | 1 1/2 |
| 1968 Twin 1V HS-6 | 2 1/4 * |

* Due to emission control system requirements, only trained personnel permitted to make adjustments.

ENGINE IDLE SPEED

| | Man. Trans. | Auto. Trans. |
|-----------------------|-------------|--------------|
| B16B eng. | 500-700 | 650 D |
| 1962-67 B18B, -D eng. | 600-800 | 700-750 D |
| 1968 B18B eng. | 600-850 | — |

CHARGING SYSTEM

BELT TENSION

Deflection method: Fractions of an inch of deflection at midpoint of belt segment under normal thumb pressure.

| Generator | Regulator |
|--------------|-----------|
| Used and New | 1/4 |

GENERATOR

| Output (amperes @ rpm) | Field Current Draw (amperes @ 8, 12 volts) | Cutout Relay Closing (volts) | Cutout Relay Opening (reverse amperes) | Current Regulator (amperes) |
|------------------------|--|------------------------------|--|-----------------------------|
| Bosch 40 2750-2850 | — | 6.3-6.7 | 4-9 | 47-51 |
| 12-volt: | — | — | — | — |
| 1962-65 30 2400-2500 | — | 12.1-12.6 | 2.0-7.5 | 30 |
| 1966-68 30 2400-2500 | — | 12.4-13.1 | 2.0-7.5 | 30 |

REGULATOR

| Bosch | Voltage Limiter Setting (volts) |
|-----------------------------|---------------------------------|
| Ambient Air Temperature °F. | 70° |
| Voltage: 8-volt | 7.0-7.5 |
| 12-volt | 13.9-14.9 * |

* 1968 transistorized regulator: 14.1-14.8 volts. Observe Mfr's cautions.

VALVE CLEARANCES

| (engine hot) | Intake (inches) | Exhaust (inches) |
|-------------------|-----------------|------------------|
| 1959-62 B16B eng. | .020 | .020 |
| 1962-68 B18B eng. | .020 | .020 |
| 1962-65 B18D eng. | .016-.018 | .016-.018 |
| 1966-68 B18D eng. | .020 | .020 |

TIRE PRESSURE

| | NORMAL | | FULL LOAD HIGH SPEEDS | |
|--------------------------------|--------|------|-----------------------|------|
| | Front | Rear | Front | Rear |
| 1959-66 Sedan 5.90-15, 6.00-15 | 20 | 23 | 23 | 26 |
| 1967-68 Sedan 165S-15 | 20 | 23 | 23 | 26 |
| 1959-68 Station wagon 6.40-15 | 20 | 24 | 23 | 30 |
| 1961-68 P1800 165-15 (radial) | 26 | 29 | 26 | 29 |