

TUNE-UP

Brava
Spider 2000
Spider 2000 Turbo
Strada
X1/9

Spark Plug Type

| Application | Champion No. | Torque Ft. Lbs. (N·m) |
|-------------|--------------|--------------------------|
| All Models | RN9Y | 25 (33) |

ENGINE IDENTIFICATION

Brava & Spider Models – Engine code and identification numbers are stamped on crankcase near oil filter mount.

Strada & X1/9 Models – Engine code and identification numbers are stamped on crankcase (flywheel end).

Engine Code

| Application | Code |
|----------------|-----------|
| Brava & Spider | 132C3.031 |
| Strada | 138B2.031 |
| X1/9 | 138BS.031 |

VALVE CLEARANCE

| Application | ⊙Intake In. (mm) | ⊙Exhaust In. (mm) |
|----------------|---------------------|----------------------|
| Brava & Spider | .019 (.48) | .021 (.53) |
| Strada & X1/9 | .014 (.35) | .018 (.45) |

⊙ – Set valves with engine cold.

VALVE ARRANGEMENT

Brava & Spider Models
Right Side - All Exhaust
Left Side - All Intake
Strada & X1/9 – E-I-I-E-E-I-I-E

SPARK PLUGS

| Application | Gap In. (mm) | Torque Ft. Lbs. (mkg) |
|-------------|-----------------|--------------------------|
| All Models | .029 (.73) | 25 (3.5) |

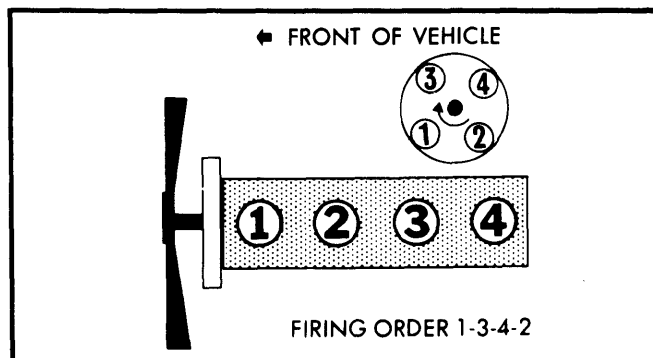


Fig. 1 Firing Order and Distributor Rotation (Brava & Spider – 2000 cc)

HIGH TENSION WIRE RESISTANCE

Resistance (Ohms) Per Wire

| Application | Resistance |
|-------------|---------------|
| All Models | 25,000-30,000 |

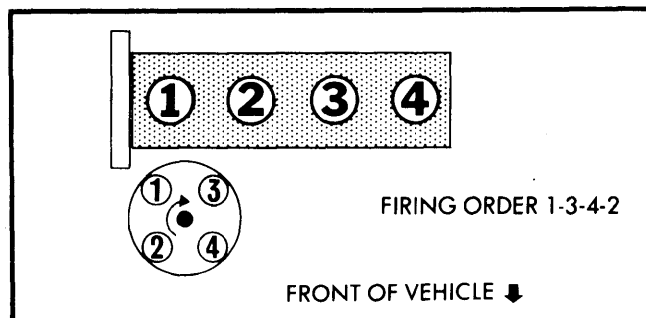


Fig. 2 Firing Order and Distributor Rotation (Strada & X1/9 – 1500 cc)

DISTRIBUTOR

All models are equipped with breakerless, electronic ignition systems. Brava and Spider use a Marelli system, and Strada and X1/9 use a Bosch unit.

IGNITION TIMING

Check or adjust ignition timing with engine at normal operating temperature, Man. Trans. in neutral or Auto. Trans. in "D" and idle speed set to specifications. To adjust timing, align mark on drive pulley or flywheel with specified pointer by turning distributor.

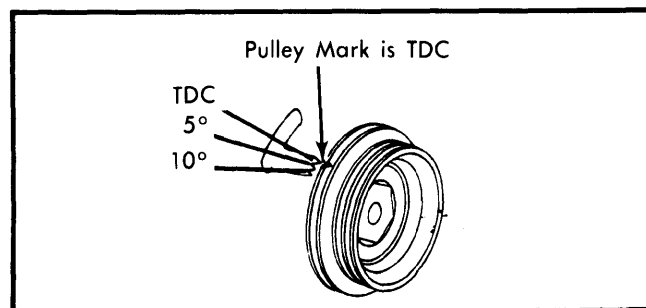


Fig. 3 Ignition Timing Mark Location

Ignition Timing Specifications
(Degrees BTDC@RPM)

| Application | Man. Trans. | ⊙Auto. Trans. |
|-------------|-------------|---------------|
| All Models | 10@825 | 10@725 |

⊙ – Transmission in "D".

TUNE-UP (Cont.)

IDLE SPEED & MIXTURE

NOTE — Mixture adjustment is NOT a part of normal tune-up procedure and should not be performed unless injection system components are being replaced or vehicle fails emissions testing.

1) Warm engine to operating temperature (electric fan has cycled twice). Place manual transmission in neutral or automatic in "D". Wait until electric fan is off to adjust idle.

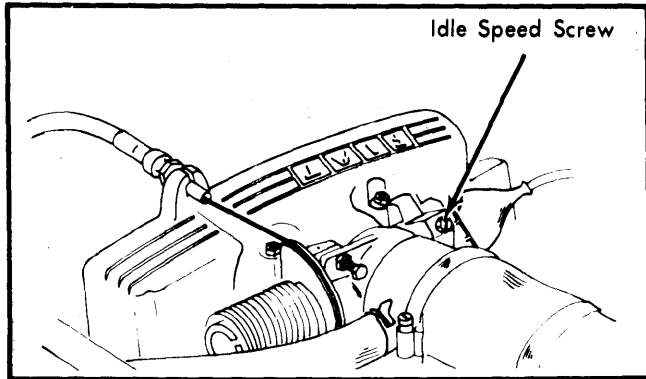


Fig. 4 Fuel Injection Idle Speed Adjustment

2) Turn air bypass screw on top of intake manifold to adjust idle speed to specifications. See Fig. 4.

3) Connect CO meter to pipe tap in front of catalytic converter. Disconnect plug from oxygen sensor and ensure that neither side is grounded. Remove plug from airflow meter and adjust CO to 0.5-0.9%. See Fig. 5.

4) Ground control unit side of oxygen sensor connector. CO level should rise to at least 1.5%. Reconnect oxygen sensor and check for CO level of 0.3-0.6%. Remove test equipment and plug air flow meter screw. See Fig. 5.

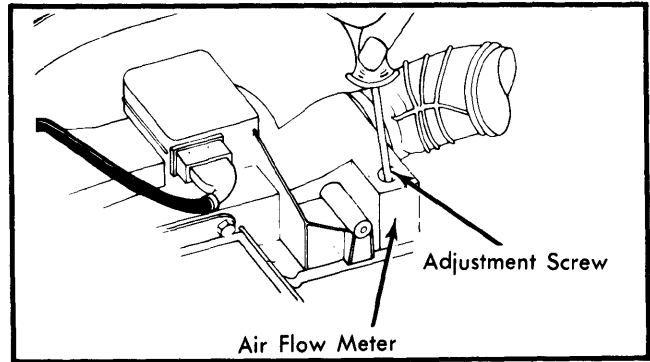


Fig. 5 Fuel Injection Mixture Adjustment

Idle Speed & CO Level

| Application | Idle RPM | CO% |
|---------------------|----------|---------|
| All Models | | |
| Man. Trans. | 800-900 | 0.5-0.9 |
| Auto. Trans. ① | 700-800 | 0.5-0.9 |

① — With transmission in "D".

FUEL PUMP PRESSURE

All Models ① 39-45 psi (2.8-3.2 kg/cm²)

① — Disconnect hose to pressure regulator.

EXHAUST EMISSION SYSTEMS

See EXHAUST EMISSION SYSTEMS section.

GENERAL SERVICING

IGNITION

DISTRIBUTOR

All models are equipped with breakerless, electronic ignition systems. Brava and Spider use a Marelli system, and Strada and X1/9 use a Bosch unit.

IGNITION COIL

Resistance Specifications (Ohms@68°F)

| Application | Primary | Secondary |
|--------------------|---------|---------------|
| Bosch Coil | 1.1-1.7 | 6,000-10,000 |
| Marelli Coil | .75-.81 | 10,000-11,000 |

FUEL SYSTEMS

FUEL INJECTION

| Application | Model |
|------------------|-----------|
| All Models | Bosch AFC |

ELECTRICAL

BATTERY

| Application | Amp Hr. Rating |
|------------------|----------------|
| All Models | 60 |

Battery Location — Battery is located in engine compartment on all except Spider 2000 models. On these models, battery is located in trunk.

GENERAL SERVICING (Cont.)

STARTER

Brava and Spider 2000 models are equipped with Fiat starters. Strada and X1/9 models use Bosch starters on Man. Trans. models and Marelli starters on Auto. Trans. models.

Starter Specifications

| Application | Volts | Amps | Test RPM |
|----------------|-------|-------|-----------|
| Brava & Spider | 12 | 12 | 4700-5700 |
| Strada & X1/9 | | | |
| Man. Trans. | 11.5 | 35-55 | 6000-8000 |
| Auto. Trans. | 11.5 | 30-40 | 5500-6500 |

ALTERNATOR

All models are equipped with Bosch alternators.

| Application | Rated Amp. Output |
|-------------|-------------------|
| All models | 65 |

ALTERNATOR REGULATOR

All models have alternators with internal regulators. With headlights on and heater fan on high speed, operating voltage should be 12.5-14.5 volts at 2500 RPM.

BELT ADJUSTMENT

| Application | Deflection |
|-----------------|-------------------|
| All Drive Belts | .4-.6" (10-15 mm) |

① — Deflection is with 22 lbs. (10 kg) pressure applied midway on longest belt run.

FILTERS

| Filter | Service Interval (Miles) |
|-------------|--------------------------|
| Oil Filter | Replace every 7,500 |
| Air Cleaner | Replace every 15,000 |
| Fuel Filter | Replace every 15,000 |

CAPACITIES

| Application | Quantity |
|-----------------------------|------------|
| Crankcase (Includes Filter) | |
| Brava, Spider & X1/9 | 4.3 qts. |
| Strada | 4.6 qts. |
| Cooling System | |
| Brava & Spider | 8.5 qts. |
| Strada | 7.5 qts. |
| X1/9 | 12.2 qts. |
| Man. Trans. (SAE 90) | |
| All Models | 3.5 pts. |
| Auto. Trans. (Dexron) | |
| Brava, Spider & Strada | 6.0 pts. |
| Rear Axle (SAE 90) | |
| Brava & Spider | 1.4 qts. |
| Man. Transaxle (SAE 90) | |
| X1/9 | 3.2 qts. |
| Strada | 3.5 qts. |
| Auto. Transaxle | |
| Transmission (Dexron) | 3.2 qts. |
| Differential (SAE 90) | 1.5 pts. |
| Fuel Tank | |
| Brava | 12.2 gals. |
| Spider | 11.4 gals. |
| Strada & X1/9 | 12.1 gals. |