Starting System Diagnosis And Service
Chapter 50

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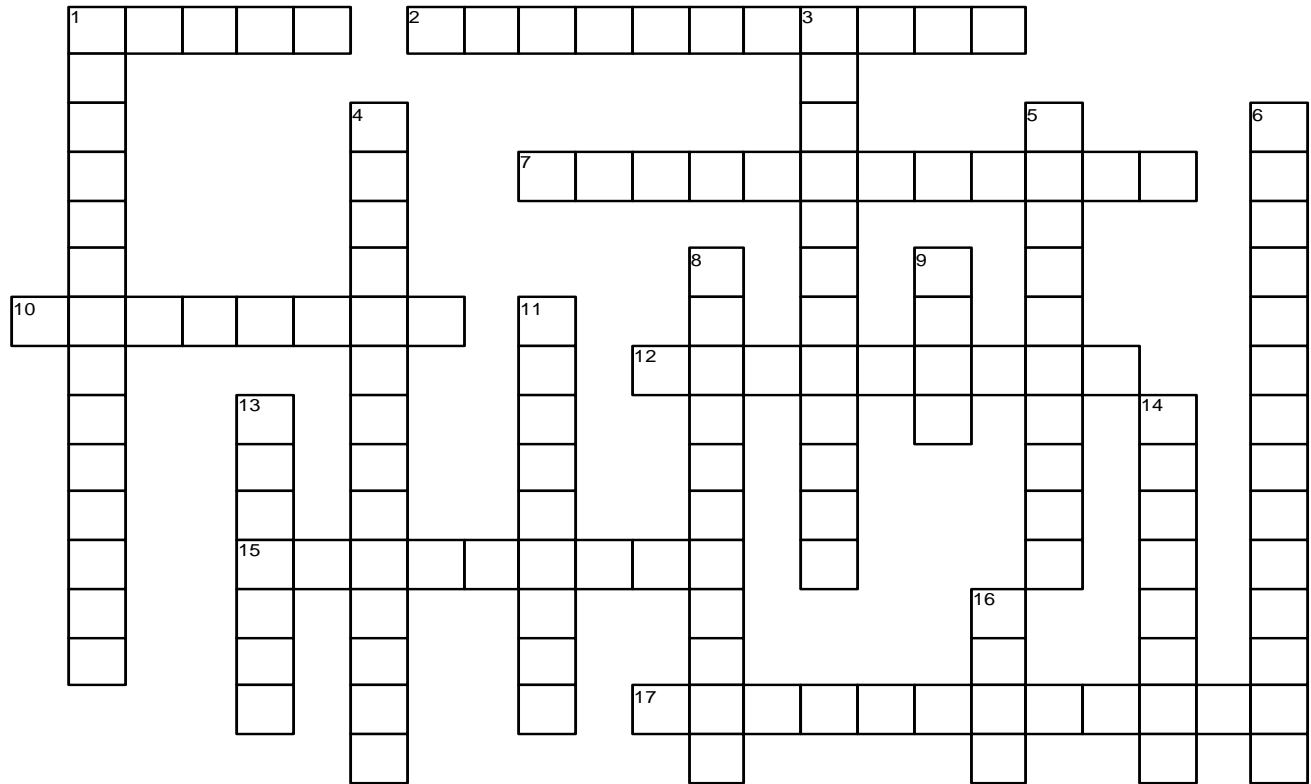
ACROSS

1 Many starters use _____, which are thin metal strips between the flywheel and the engine block mounting pad to provide the proper clearance.

2 The proper operation of the starting system depends on a good battery, good cables, and _____, and a good starter motor.

7 _____ _____ is the usual method and involves clamping the starter in a vise to prevent rotation during operation and connecting heavy-gauge jumper wires to both a batter known to be good and the starter.

10 Excessive starter current draw may indicate binding of the starter _____ as a result of worn bushings.

12 For the proper operation of the starter and absence of abnormal starter noise, there must be a slight _____ between the starter pinion and the engine flywheel ring gear.

15 A ____ _____ equals high resistance.

17 Most starters no longer require starter _____ _____ as they are just replaced as an assembly.

DOWN

1 Step 1 of _____ _____ is to disconnect the negative battery cable.

3 starter _____ should not begin until after verifying that the starter assembly is functioning correctly.

4 An open or high resistance anywhere in the _____ _____ can cause the starter motor to not engage.

5 Excessive current draw may indicate a shorted starter motor, usually caused by a fault with the _____ _____ or armature.

6 _____ _____ should be replaced if the brush length is less than half of its original length.

8 _____ ____ is the drop in voltage that occurs when current is flowing through a resistance.

9 The cranking circuit should be tested for proper amperage ____.

11 Many starters use _____ field coils. These coils must be rewound using the proper equipment and insulating materials. Usually, the cost involved in replacing defective field coils exceeds the cost of a replacement starter.

13 Because the loops of copper wire are interconnected in the armature of a starter, an armature can be accurately tested only by use of a _____.

14 One item to check when checking the control circuit is the "S" terminal of the starter _____.

16 An ____ in the control circuit can prevent starter motor operation.