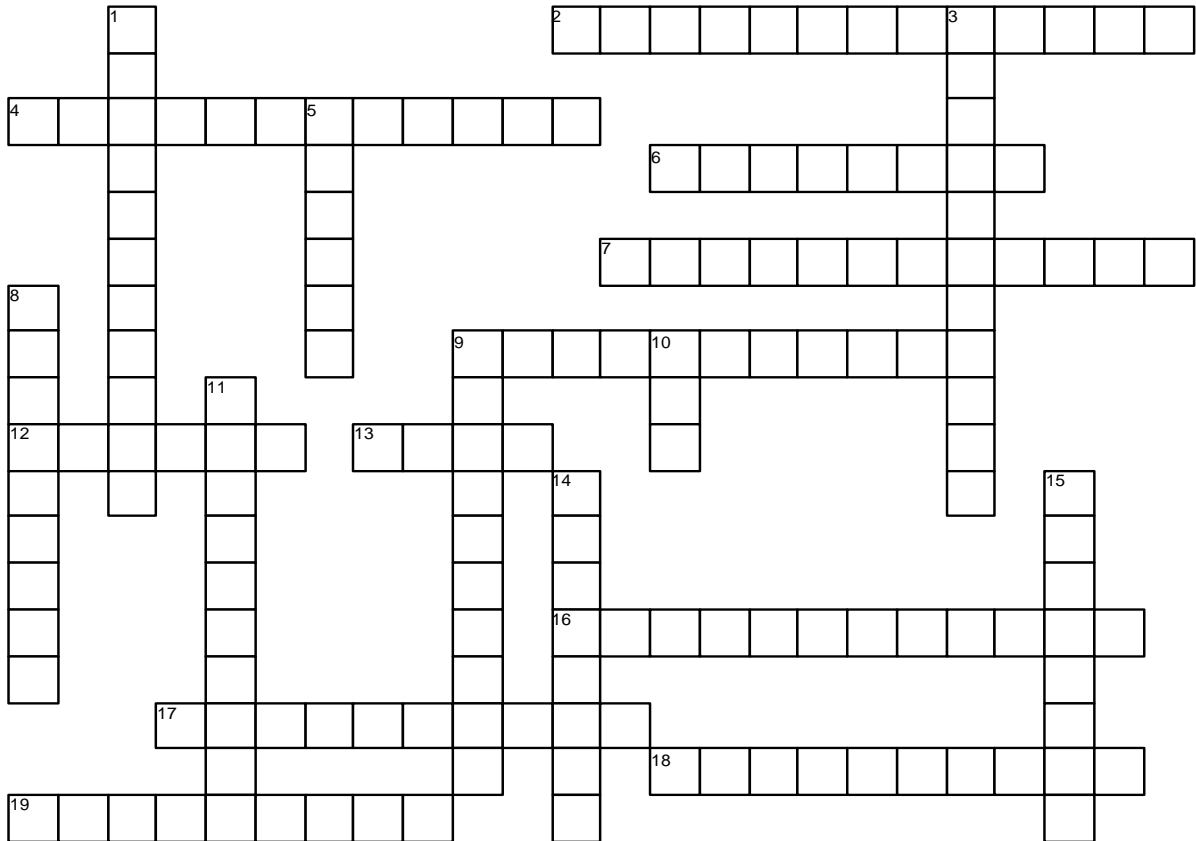


# Cranking System

## Chapter 20



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### ACROSS

- 2 One end of the field housing is called the \_\_\_\_\_-  
\_\_\_\_ housing.
- 4 \_\_\_\_\_ hold the three components of the starter  
together.
- 6 Inside the field coils is an \_\_\_\_\_ that is supported with  
either bushings or ball bearings at both ends, which permit  
it to rotate.
- 7 A starter consists of the main structural support of a  
starter called the main \_\_\_\_\_.
- 9 A mesh spring is also called a \_\_\_\_\_ spring,  
because the starter solenoid or starter yoke compresses  
the spring and the spring tension causes the starter pinion  
to engage the engine flywheel.
- 12 In solenoid windings, A heavier-gauge winding (called the  
\_\_\_\_\_-\_\_ winding) is needed to draw the plunger into the  
solenoid and is grounded through the starter motor.
- 13 Current that works against battery voltage is called \_\_\_\_\_.
- 16 The \_\_\_\_\_ uses a small pinion gear that  
contacts the engine flywheel gear teeth and transmits  
starter motor power to rotate the engine.
- 17 Another name for the pole shoes is \_\_\_\_\_.
- 18 The spring between the drive tang or pulley and the  
overrunning clutch and pinion is called a \_\_\_\_\_.
- 19 The soft-iron cores are called \_\_\_\_\_.

### DOWN

- 1 A \_\_\_\_\_ engaged starter delivers the quickest and  
quietest restart times of all starter motor-based systems.
- 3 In a starter drive mechanism, an \_\_\_\_\_ clutch,  
protects the starter motor from damage if the ignition  
switch is held in the start position after the engine starts.
- 5 In solenoid windings, A lighter-gauge winding (called the  
\_\_\_\_\_-\_\_ winding) which is grounded through the starter  
frame, produces enough magnetic force to keep the  
plunger in position.
- 8 \_\_\_\_\_ systems are designed to increase fuel  
economy and reduce exhaust emissions.
- 9 The ends of the copper armature windings are soldered to  
\_\_\_\_\_ segments.
- 10 \_\_\_\_\_ is a system that allows the driver to start the engine of  
the vehicle from inside the house or a building at a  
distance of about 200 ft.
- 11 These magnets, when energized, create strong magnetic  
fields inside the starter housing and, therefore, are called  
\_\_\_\_\_.
- 14 Another name for the commutator-end housing is the  
\_\_\_\_\_-\_\_ housing.
- 15 One end of the field housing is called the \_\_\_\_\_-  
\_\_\_\_\_ housing.