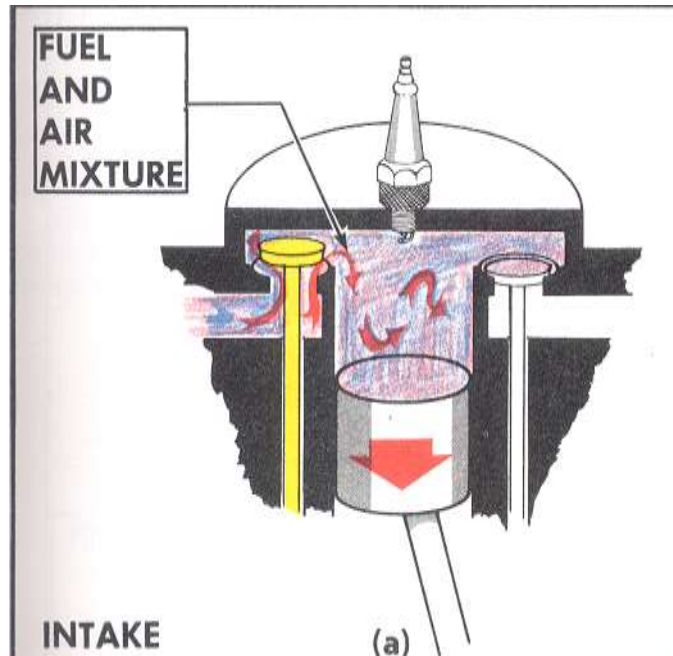


# Four Stroke Cycle Engine

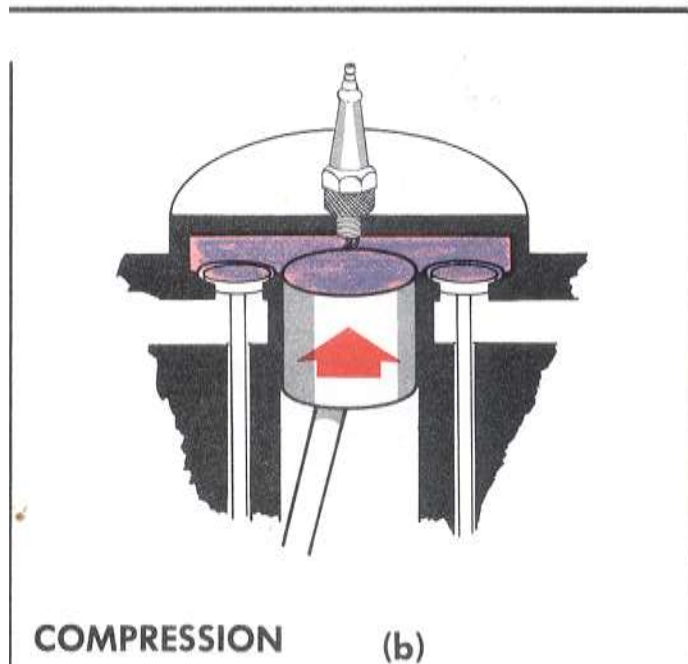
- The Four Stroke Cycle Engine is easier to understand so we will look at it first
- All the engines we will be working on this year will be four stroke engines

# Four Stroke Cycle Engine



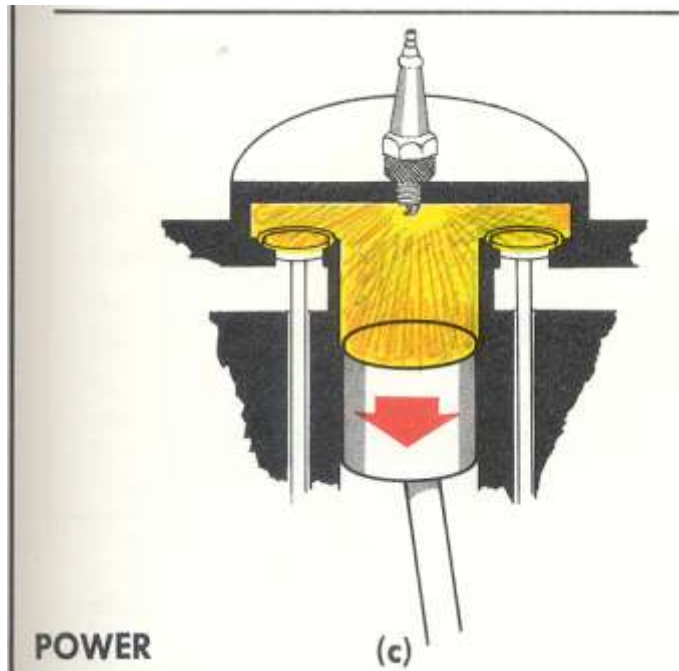
- **Stroke 1: Intake Stroke.**
- As the piston moves downward, away from the cylinder head it causes a partial vacuum in the cylinder
- The intake valve opens and allows a mixture of fuel & air to be forced into the cylinder. The exhaust valve remains closed

# Four Stroke Cycle Engine



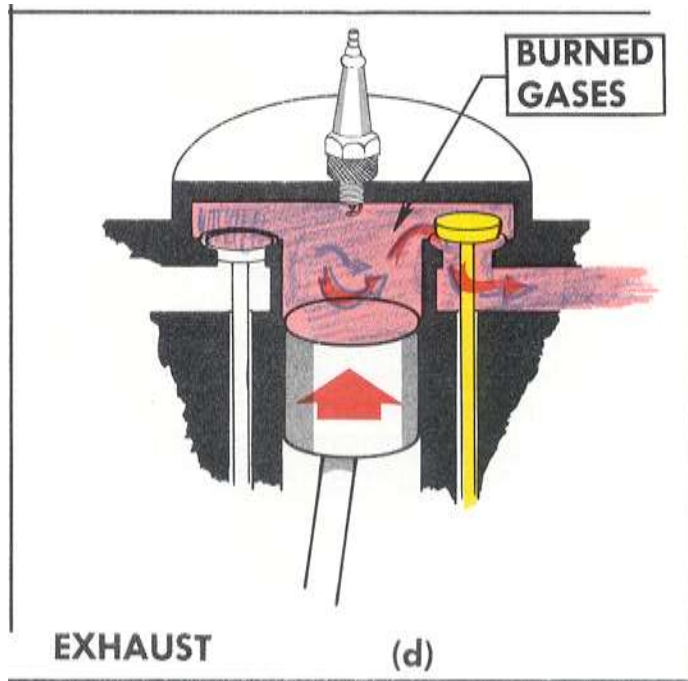
- **Stroke 2: Compression**
- The intake valve closes and the exhaust valve remains closed (B.D.C. to T.D.C.)
- Fuel air mixture is compressed to 1/6 of its volume (the actual amount depends on the engine's specific compression ratio)
- On average small four stroke engines compress the fuel-air-mixture to about 75lbs

# Four Stroke Cycle Engine



- **Stroke 3: Power Stroke**
- Both intake and exhaust valves remain closed
- Compressed fuel-air is ignited by an electric spark from spark plug (T.D.C – B.D.C)
- Fuel-air mix burns, pressure inside cylinder increases because of the heat from combustion of about 1980 degrees celsius
- Pressure drives the piston downward & exhaust valve begins to open

# Four Stroke Cycle Engine



- **Stroke 4: Exhaust**
- When piston has completed the power stroke and starts upward: exhaust valve opens
- The force of burning gas is gone. The piston movement forces out the remaining gases through the exhaust valve (intake valve is closed)

# Four Stroke Cycle Engine

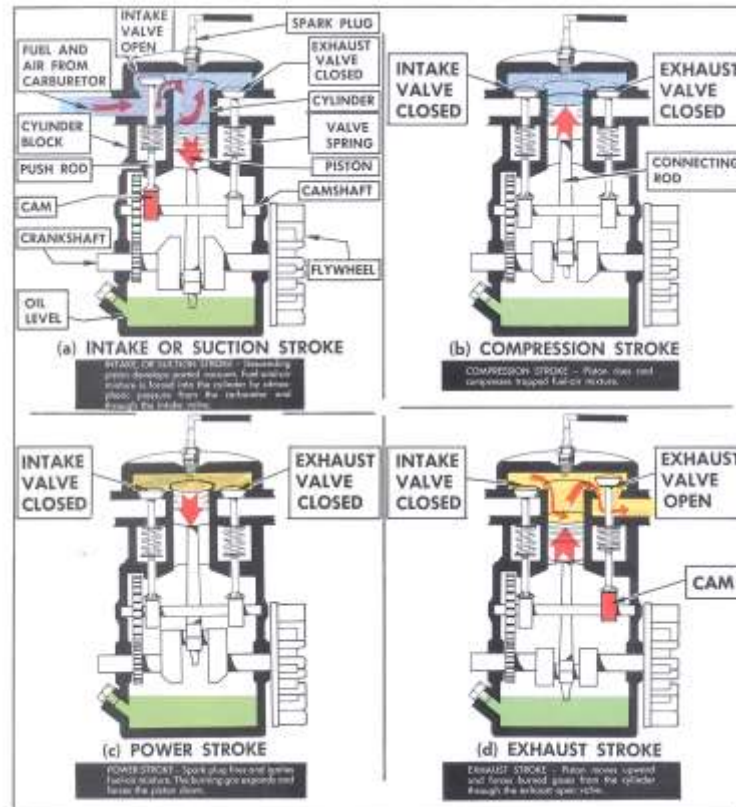


FIGURE 5. How a 4-stroke-cycle engine develops power.

**Up Next**

Two Stroke Cycle  
Engines

