



What Stroke 1

The spark plug fires shortly before the stroke.

Expansion

The answer might be a bit counter-intuitive, but if you try to find a movie on the internet with the cycle you will understand why. During the compression, the piston is going up and the crankshaft is rotating in a specific direction. After the piston reaches the maximum point upwards (Top-Dead-Center), it will go down due to the rotation of the crankshaft. If the explosion is before the piston reaches that point, then the explosion will literally revert the direction of the rotation. That is why the ignition happens a fraction after the piston starts to go down into the expansion phase.