



Description of system:

The Jeep Cherokee XJ is a "sport utility vehicle" used for general transportation and recreation off roads. It uses many mechanical parts including the combustion engine, a/c compressor, and the power steering pump to name a few. This system also makes use of hydraulics within the braking system. It is also composed of many electrical subsystems and parts such as the lighting, gauge cluster, ignition, etc. And then there's the control system which uses several sensors to control valves and pumps throughout the entire system to keep the vehicle running efficiently via the ECM (Electronic Control Module). There are many more parts and subsystems not mentioned above.

Control System:

Chemical energy is converted to mechanical energy and finally to electrical energy.

Mechanical System:

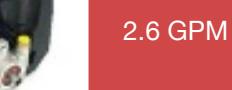
AND Logic - Microcontroller

Input:
O₂ Sensor
Flow Sensor

Output:
Spark Plugs
Injector

Electrical System:

Alternator



2.6 GPM

Power Steering Pump

Hoses

Rack and Pinion

Logical Continuity

Injector valves spray fuel into cylinders and spark plugs give spark for fuel/air combustion (Engine continues running) when O₂ sensor readings are within range AND Flow sensor senses air flow.



3Ph AC is converted to 12 Vdc with a max of 150 Amps
1800 Watts - 2.4 HP

Wires

Battery



12 Vdc
~150 Amps

Temp Switch

Radiator Fan



12 Vdc
60 Amps

ECU - Main Controller



12 Vdc
~16 Amps

Brake Pedal



2nd Class Lever

Engine



Transmission

Gear Ratio
3.55:1

190 HP

Wheels

Torque:
225 ft-lbs