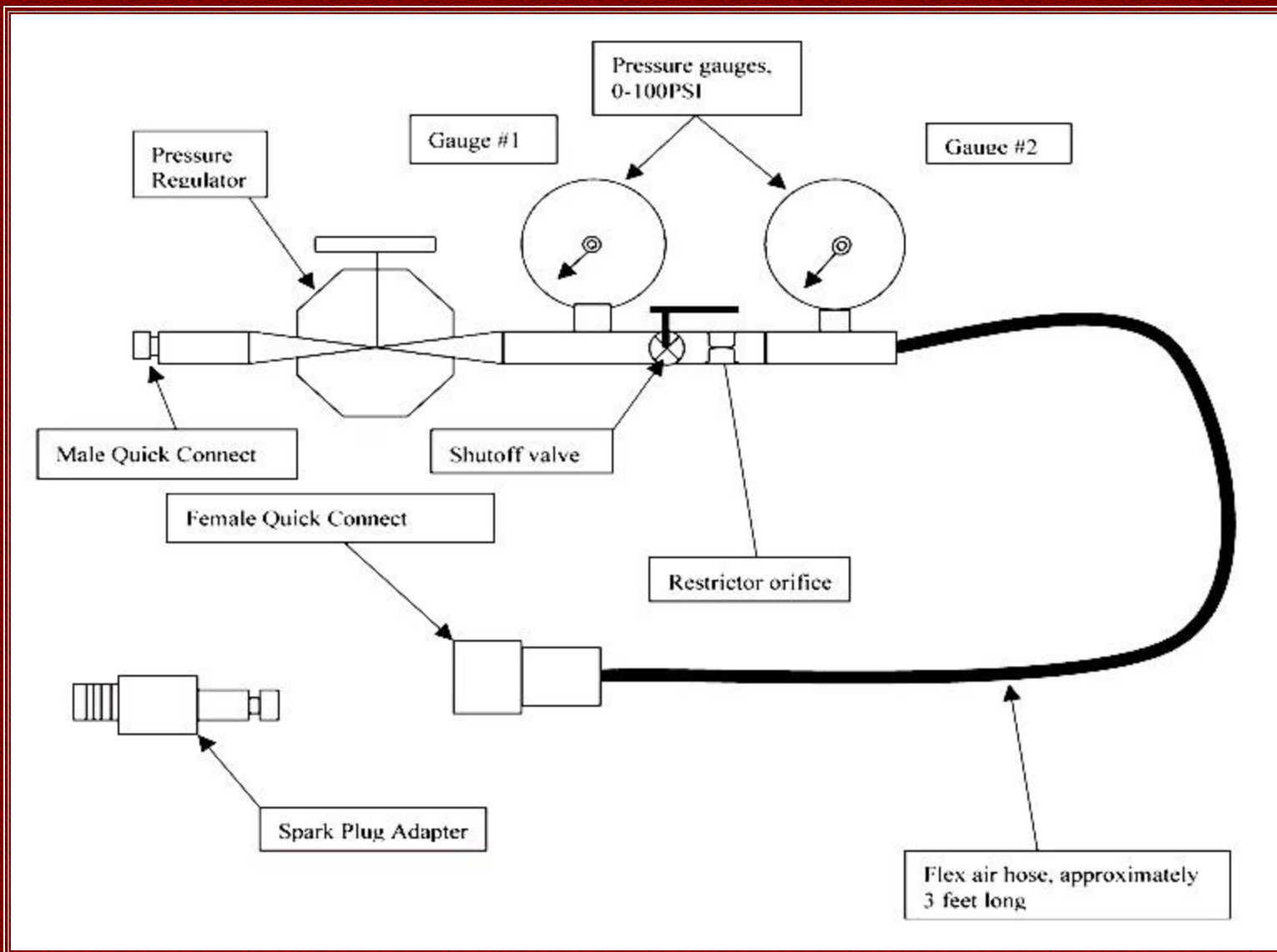


## **Blow down compression tester:**

It uses regulated compressed air to determine leakage in engine cylinder. Input air pressure of 100 PSI or more is reduced to 80PSI by the regulator. The key item after the regulator is the restrictor orifice, which limits the airflow. The typical orifice is nothing more than a 10/32 machine screw, 3/8" long with a 1/16" hole drilled in it from top to bottom. It fits in a brass fitting between the two pressure gauges that is tapped to take the 10/32 screw. The threads are coated with sealant and it is screwed into the brass fitting that connects the pressure gauges together. Depending on what sort of fittings you can find, the restrictor orifice may need to be a larger size screw, 1/4"-28 (fine thread) or a set screw.

### **Bill of materials:**

- 1 each air pressure regulator
- 2 each male air quick connect
- 2 each 0-100 PSI or 0-120 PSI gauges
- 2 brass tee's to match gauge pipe size
- 3 brass couplings to connect tee's to regulator & each other
- 3'-5' rubber air hose.
- 1 each spark plug adapter (spark plug shell with male quick connect welded or brazed to it)
- 1 fine thread machine screw for orifice
- 1 shutoff valve



### How to use:

Connect to suitable air source with at least 120 PSI output. Turn shutoff valve to OFF. Set regulated pressure (gauge #1) to 80 PSI: higher pressures may cause the engine to turn. Remove the coil wire and ground it. Remove spark plug, put your finger in the spark plug hole, crank engine until it blows air past your finger. Then use a soda straw or similar item that is stiff but will not damage the piston head or cylinder walls, and insert it into the spark plug hole. Continue to turn the engine until the straw indicates TDC by how much of it sticks out of the hole. At TDC, the maximum amount of straw will be showing. With V8 engines, you can use a machinist square to mark the harmonic balancer at 90° intervals from the TDC mark for #1 cylinder. The piston must be at TDC on the compression stroke to get accurate readings. If you go past TDC, turn the crank backwards, and start turning forwards until you reach TDC. Install the spark plug adapter in the cylinder under test, and connect the female quick connect to the spark plug adapter. Turn the shutoff valve to the on position, and adjust the regulated pressure (gauge #1) to 80PSI if necessary. Watch gauge #2, it should read 64PSI

or higher: the idea is that you should have no more that 25% leak down. The math is as follows:  $80\text{PSI} \times 25\% = 16\text{PSI}$ , which is the maximum drop:  $80\text{PSI} - 16\text{PSI} = 64\text{PSI}$  minimum. Anything less than 64PSI indicates a weak cylinder.