

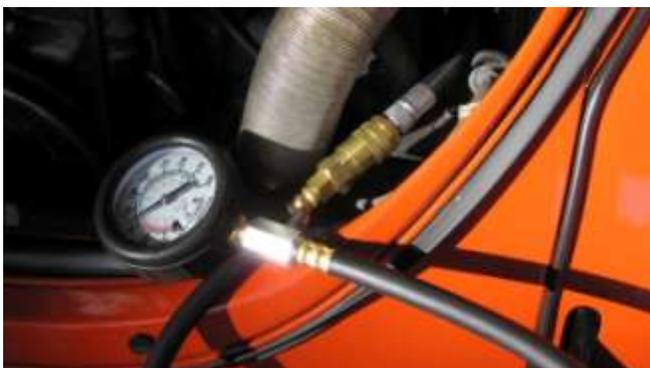
## Chapter 39 (Video Clip 39) - Engine Work



1628. Last but not least, the engine.



1629. The spark plugs were removed and kept in order. By inspection they did not look very clean even though they were in good condition.



1630. A compression check was made and the results were not very good. One cylinder was reading 60. With this low reading I pondered about it for a few days and then I took the car to German Car Service in west Mobile. Tommy Humes who installed the brakes last August, said they needed adjusting after a few miles.



1631. Tommy checked the brakes and adjusted the valves and performed a full compression check. The compression reading was 105 lbs. for cylinder #1; 130lbs for cylinder #2; 125lbs. for cylinder #3 and 40lbs. for cylinder #4. We knew something was wrong with cylinder #4. Tommy rechecked the compression for the #4 cylinder and found that the valve sleeve was gone and was very loose. If broken it could take out the entire engine.



1632. A screwdriver could easily move the valve around. Tommy called to get prices and no single port heads could be found so we decided to go ahead and replace both heads with new duel port heads. The manifold and some of the tin would need to be replace to match the duel port head, but Tommy had some used pieces. Tommy advised that he could start on replacing the heads after lunch. I called Wilma to bring me my cameras since I would stay and take pictures and help clean up and paint the tin.



1633. Wilma and I walked across the street for lunch and when we returned Tommy had started on the car and had the engine out, therefore no pictures of this effort. Tommy is very fast.



1634. When I arrived, Tommy had the engine on a hoist and was putting it in his engine rack.



1635. A view of the front of engine mounted on the engine rack.



1636. A view of the rear of engine mounted on the engine rack.



1637. Tommy started taking the engine apart as I cleaned the removed pieces.



1638. Engine shroud and generator shown removed. Since the thermostat was not working, the adjustment flaps were removed.



1639. Engine shroud cleaned up and ready to be painted. Tommy was so fast, I did not get to clean them up and sand them like I would have if I had been at home working on it for days and days.



1640. The front of engine shroud cleaned up.



1641. The engine tin after painting with rust-Oleum black paint.



1642. View of the engine tin painted.



1643. The engine intake manifold painted with Rust-Oleum grey paint.



1644. View of the new muffler painted with rust-Oleum grey.



1645. The dual port heads arrived and Tommy set them in place, now this piece is no longer stock.



1646. Close up view of the dual port heads.

Work effort:

*Tommy - 2 hours for diagnostic*

*Tommy - 4 hours for Engine dis-assembly*

*Malcolm - 4 Hours cleaning & Painting*

*Total - 10 Hours*



1647. When I arrived the next morning, Tommy had already starting putting the engine back together.



1648. As he added parts, I would say it beginning to take shape.



1649. A couple of views of the engine that I have not seen before.



1650. View of the front of the engine.



1651. Close-up view of the flywheel and clutch.



1652. While Tommy was putting the engine back together I thought it would be a good time to raise the car and get some pictures from a viewpoint not often seen, the underneath.



1653. A view of pans from underneath. I went ahead and sprayed the pan with a couple of cans of spray on truck bed liner material, since the car bottom was accessible.



1654. A view of the trans-axle and the yoke area.



1655. A view of the front end (passenger side).



1656. A view of the front end (driver's side).



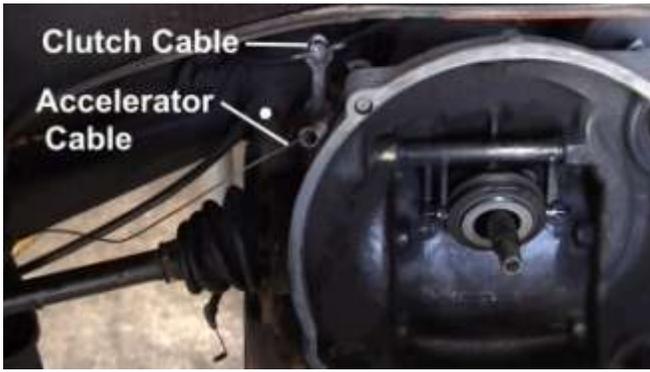
1657. View of the transmission bell housing.



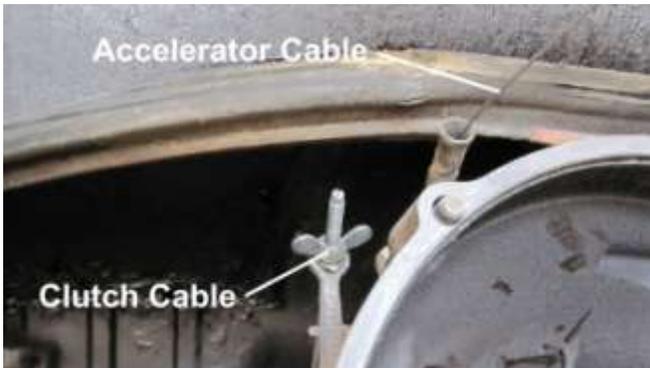
1658. View of the transmission support brackets.



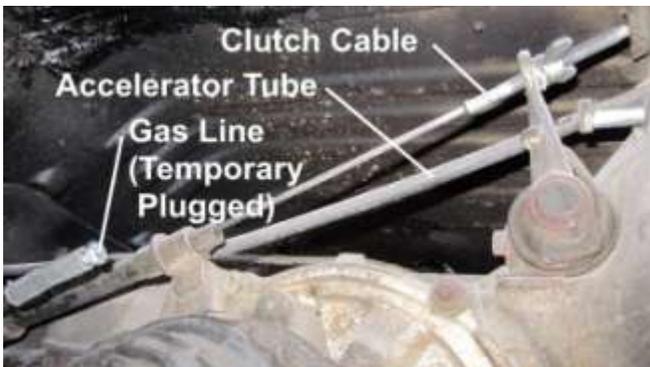
1659. View of the starter gear on the bell housing.



1660. A view of the clutch cable and the accelerator cable in the accelerator tube.



1661. Close up view of the clutch cable and the accelerator cable.



1662. Another view of the clutch cable and the accelerator cable in the accelerator tube. The gas line is also shown but temporary plugged since the engine is out.



1663. A close up view of the gas line shown temporary plugged.



1664. The heater cable that connects to the heater box. Note there is one on each side of the car.



1665. View of the solenoid and starter.



1666. The heater duct hole that is under the rear seat that I covered up with insulation (Quick Roof). In Mobile there is not much need for a heater when I would be driving this car. Note: Later, I sprayed this area with undercoating.



1667. The rear engine seal. Tommy replaced it with a new one.



1668. Later, Tommy removed the carburetor emission control valve since it was no longer being used.



1669. Tommy removing the engine bench stand on the engine, then he removed the engine from the floor stand.



1670. The completed engine ready for installation.



1671. Tommy sliding the engine into place and checking the alignment.



1672. Lowering the car body, into place over the engine.



1673. Jacking the engine up into alignment.



1674. Tommy checking the engine seal to make sure the engine slips by.



1675. Tommy checking the engine alignment.



1676. Tommy rocking the engine back and forth to seat on the flywheel and the bolts studs.



1677. Tommy sliding the generator wires through hole in real engine tin.



1678. Tommy pushing the engine into position.



1679. The engine is almost in place.



1680. The engine slid into position.



1681. Engine shown slid into position. Note the difference from photo 1679.



1682. Tommy connecting the two bottom bolts, gas line, and heater cables.



1683. Tommy connecting the two top bolts.



1684. Connecting the coil wires and accelerator cable.



1685. Connecting the generator wires.



1686. Generator wires shown connected.



1687. Tommy adding 30 weight Oil, we are nearly finished...



1688. Finally cranking the engine! She purred like a kitten, once the gas got into the engine.



1689. Set the Timing 0 degrees top dead center. Tommy asked that I bring the car back in after 500 miles to have valves adjusted and the head bolts re-torque.



1690. Tommy going for a test ride. Upon return, Tommy let the engine cool and then re-adjusted the valves, gave me the bill, and I drove home happy as a lark.

Work effort:

*Tommy - 8 hours for Head Job  
Malcolm - 2 Hours cleaning & Painting  
Work on this Chapter -20 Hours  
Total Hours to Date -682*

1691. Before



1692. After



***VW Restore #2 is Now Complete***  
*(All other Work will be considered as normal maintenance)*