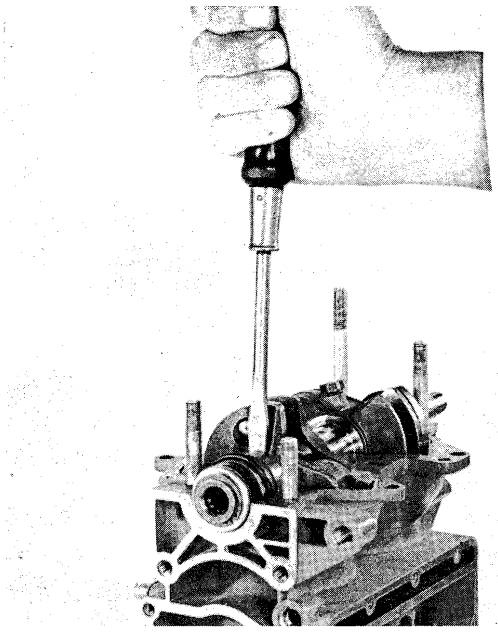
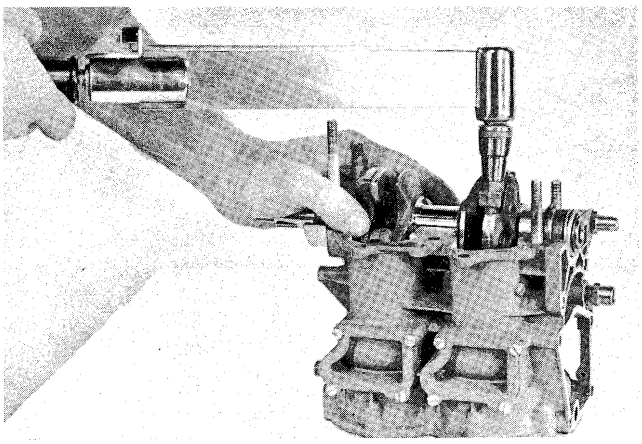


Prying Bearing Assembly Into Position in the Crankcase.

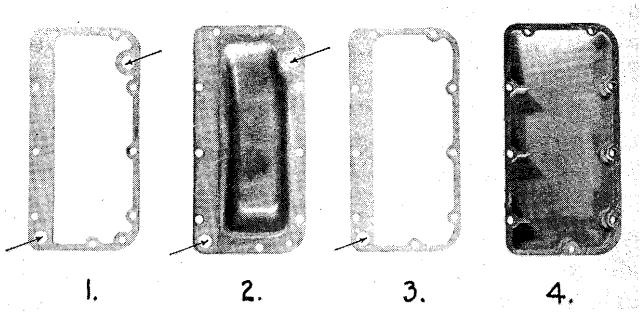
The connecting rod screws can now be finally adjusted with use of a torque wrench — see Torque Chart, page 362. No lock plates are used for this installation.



Drawing Up Connecting Rod Screws With Torque Wrench

After securing the connecting rod screws, apply a thin coat of hard drying cement, similar to Perma-Tex No. 1 to bottom crankcase faces—do not over cement; excess merely squeezes over to foul oil channels, etc. Place crankcase in position, replace tapered aligning pins. Replace nuts and screws—draw up tightly and evenly—be sure no foreign particles have been left on crankcase faces to cause seepage from the crankcase.

Install power head on lower unit—use new gaskets wherever required. Replace muffler, carburetor, magneto, starter, etc., and exhaust tube. Do not neglect spring, washers and carbon seal on top journal prior to installing the flywheel.

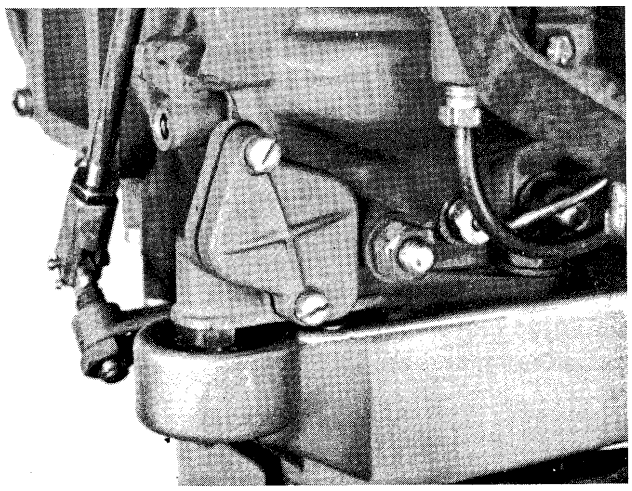


It is Extremely Important to Prevent Water Entering Cylinders, that the Exhaust Manifold (Muffler) Gaskets be Properly Installed when Attaching the Manifold. Gasket 1 Should be Placed Between Cylinder Block and Inner Shell (2) so that Water Openings (Indicated by Arrows) Align —Gasket 3, Between Inner Shell (2) and Outer Shell (4) Aligned in Like Manner with Respect to Water Openings.

Crankcase Bleeder

The crankcase in a two (stroke) cycle engine has a tendency towards loading up with unburned fuel (liquid) when operating for any length of time at slow speed with result that it is "flooded" when accelerated for higher speed performance. Flooding in this respect likewise affects slow speed operation. This is evidenced by profuse smoking of exhaust gases, faltering and erratic operation until accumulated fuel has been discharged. In extreme instances, stoppage occurs as result of spark plug fouling. It is the heavy ends of the fuel vapor which settle out during slow speed operation since velocity through the crankcase is not sufficient to hold them in suspension.

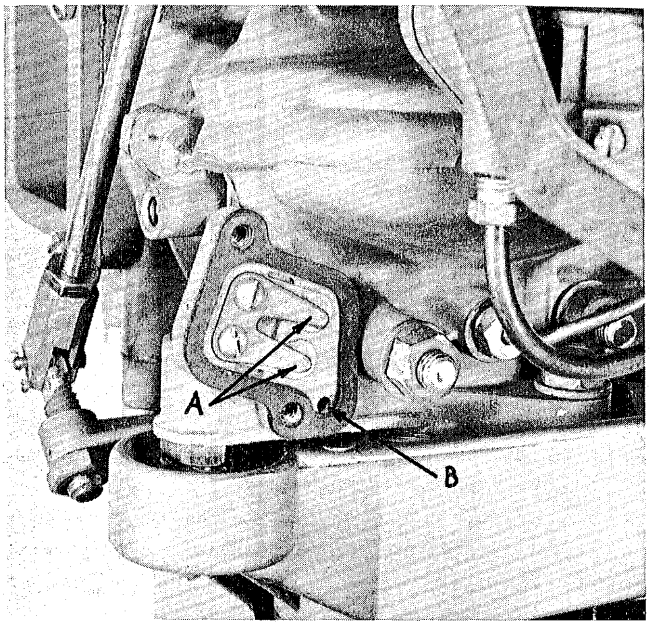
To overcome this condition in the Model QD, a bleeder arrangement is provided which functions automatically throughout entire speed range of the motor.



Showing Position of Crankcase Bleeder Valve.

The arrangement consists of a small hole or channel leading from a pocket in each crankcase chamber to an automatic check valve located at the bottom of the power head as shown above. In

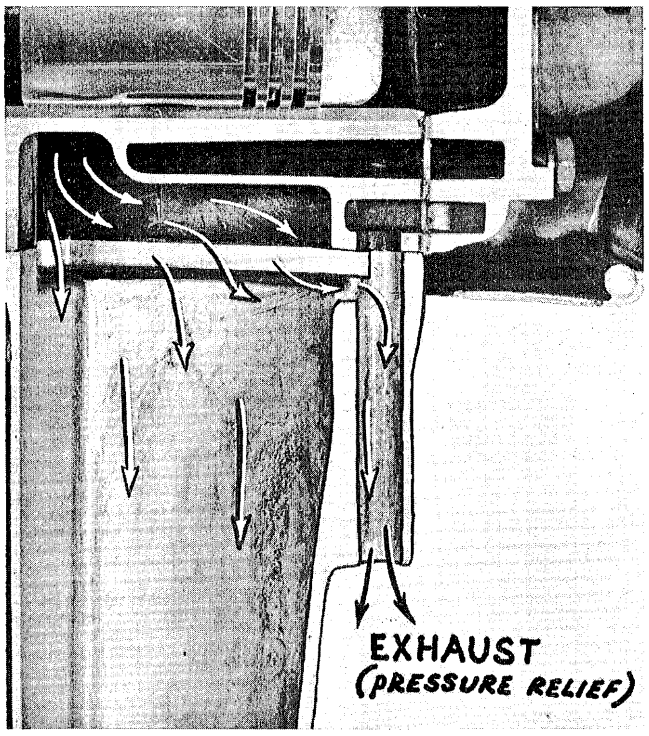
operation, the fuel which settles out of the fuel mixture during periods of slow speed running, accumulates in the pocket provided for this purpose, fills the channel down to the check valve and there remains until the piston travels on its downward stroke. Resultant crankcase compression (pressure) forces the check plate (a) off its seat to permit liquid fuel escaping through outlet (b) and on into the driveshaft casing where it is discharged with the exhaust gases. Note there are two check plates—one for each crankcase chamber. During upward stroke of the piston, there is no discharge since low pressure or suction exists in the crankcase—the check plate springs back on its seat to prevent air flow in opposite direction.



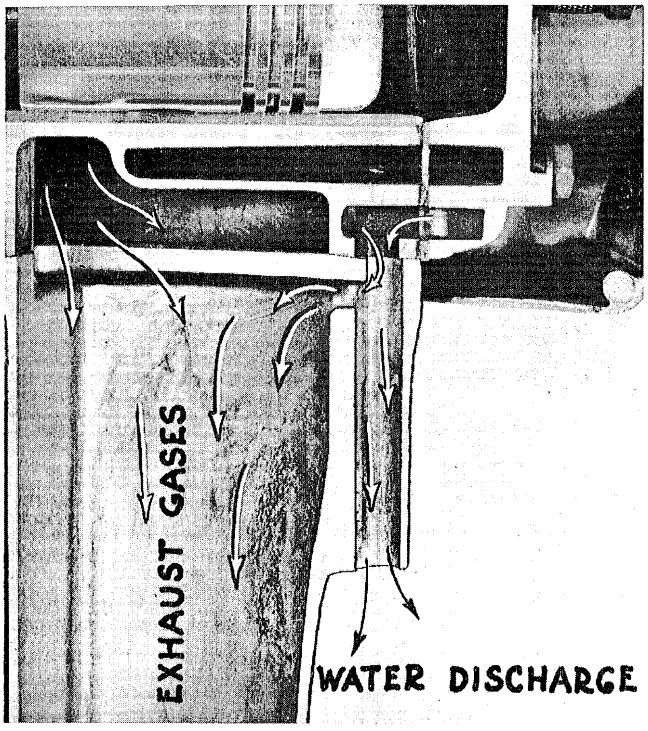
Bleeder Check Valve Showing Cover Removed.

Action described above continues during entire period of motor operation with maximum bleeding of liquid fuel at slow speed performance and proportionately decreasing with increase in motor r.p.m.'s. At top speed there is practically no discharge since velocity through the crankcase is sufficient to hold all particles (for practical purposes) of fuel in suspension to be burned later, on compression and ignition in the combustion chamber.

Do not be alarmed if an oil "slick" forms on the surface of the water when operating for any length of time at slow speed—it's the result of crankcase bleeding as described.



Illustrating Exhaust Relief for Starting Purposes. When Cranking to Start, Back Pressure Created by Underwater Exhaust is Relieved by Way of Opening into the Water Outlet as indicated by Arrows.



On Having Started the Motor, Water Starts Circulating Through the Cooling System Which Discharges Through the Water Outlet. This Action Results in Some of the Water Flowing Through the Exhaust Relief Opening and into the Exhaust Stream, Thus Obstructing or Closing the Relief Opening. Water Acts Also Towards Reducing Temperature of Exhaust Gases.