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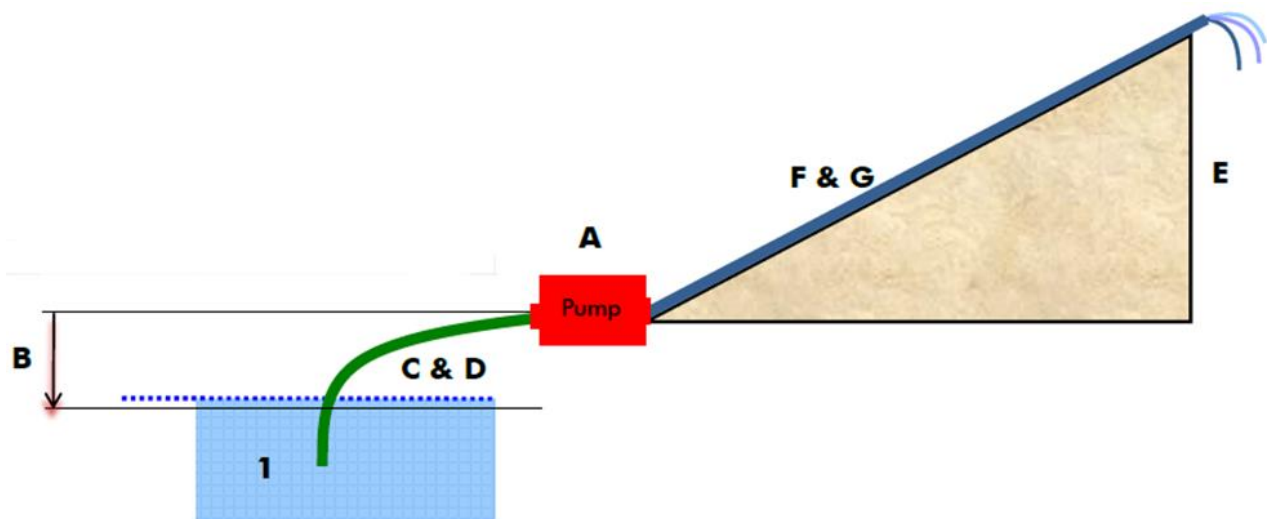
## TROUBLE SHOOTING STEPS – PUMP WILL NOT PRIME AND/OR DISCHARGE WATER

*Note: Most reasons that an engine-driven TRASH pump will not discharge water can be found on the suction side of the pump or the application variables that are extreme enough that the physics will not permit water priming and/or discharge.*

### FIRST ~ Check the pump application set-up [Figure 1.]

- If "A" **operating elevation** is greater than 5,000' AGL, there can be considerable challenges that will affect the pump to prime & discharge water.
- If "B" **vertical suction lift** is greater than 20'-25', there can be considerable challenges that will affect the pump to prime & discharge water (greater issues with higher operating elevations).
- If "C & D" **suction hose has operational** issue [not a true suction hose, incorrect diameter, missing O-Ring seals, cracks/holes in the hose, suction hose not operating with strainer, suction hose not operating with strainer and thru suction has suck itself onto the bottom of the water source] - there can be considerable challenges that will affect the pump to prime & discharge water.
- If "F, G & E" **rise/run and hose/pipe diameter** is greater than what the pump is capable of handling - there can be considerable challenges that will affect the pump to prime & discharge water.
- If the **water source "1"** is greater than @ 20% debris to water ration - there can be considerable challenges that will affect the pump to prime & discharge water.

Figure 1.



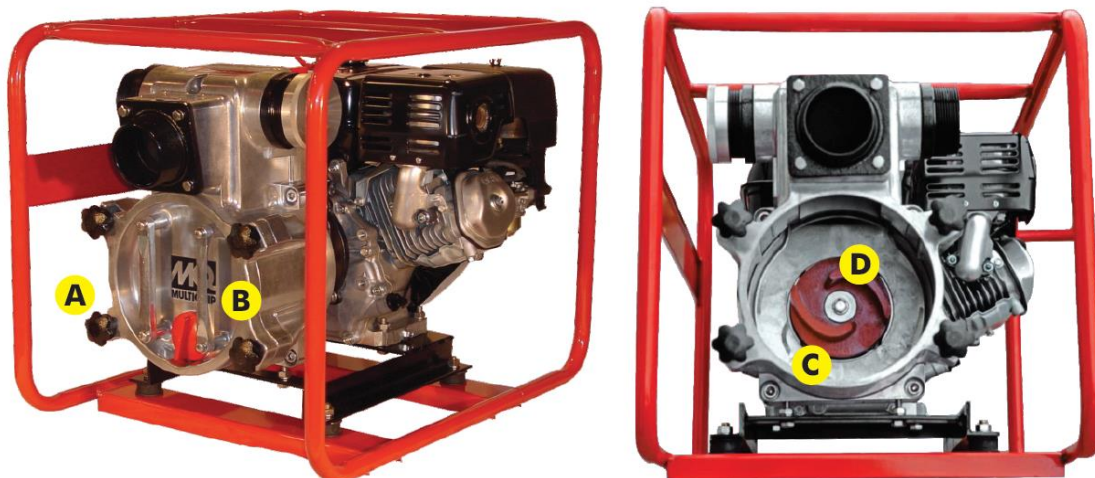
### KEY TROUBLE SHOOTING STEPS (after checking the application set-up – above)

1. Ensure Pump Casing is full of water prior to engine start.
2. Ensure that both casing caps (Fill Cap & Drain Cap) are secured before engine start.
3. Ensure the pump is set up on a level surface.
4. Ensure the proper suction hose type & diameter are connected to the suction side of the pump.
5. Ensure the strainer is connected to the end of the suction hose.
6. Ensure of the total integrity of the suction hose [no cracks/holes, all O-Rings are in place, coupler connection is tight].
7. Ensure that the suction hose cannot be buried into the water source bottom.
8. Ensure the suction hose is totally submersed during dewatering operations.
9. Ensure that the Pump Clean Out Cover is secure to the casing and is fully tight.
10. Once the engine is started, ensure the pump is operated at its full & recommended RPM.

### FURTHER TROUBLE SHOOTING STEPS AFTER START-UP AND NO WATER FLOW 2", 3" & 4" Models

1. Turn the engine to OFF. & let the unit cool down.
2. Remove the 'red' Casing Drain Plug and let the water out [Figure 2.].
3. Open the front cover:
  - Loosen (4) Casing Knobs "A".
  - Grab the Casing Handles "B" and twist and pull to remove outer inspection casing.
4. Check & clean out any debris that has been left in the Casing Clean-Out Chamber "C".
5. Check that that there are no large pieces of debris that interfere with the vanes of the impeller "D" and that the impeller vanes have not been chipped, damaged or are excessively worn.

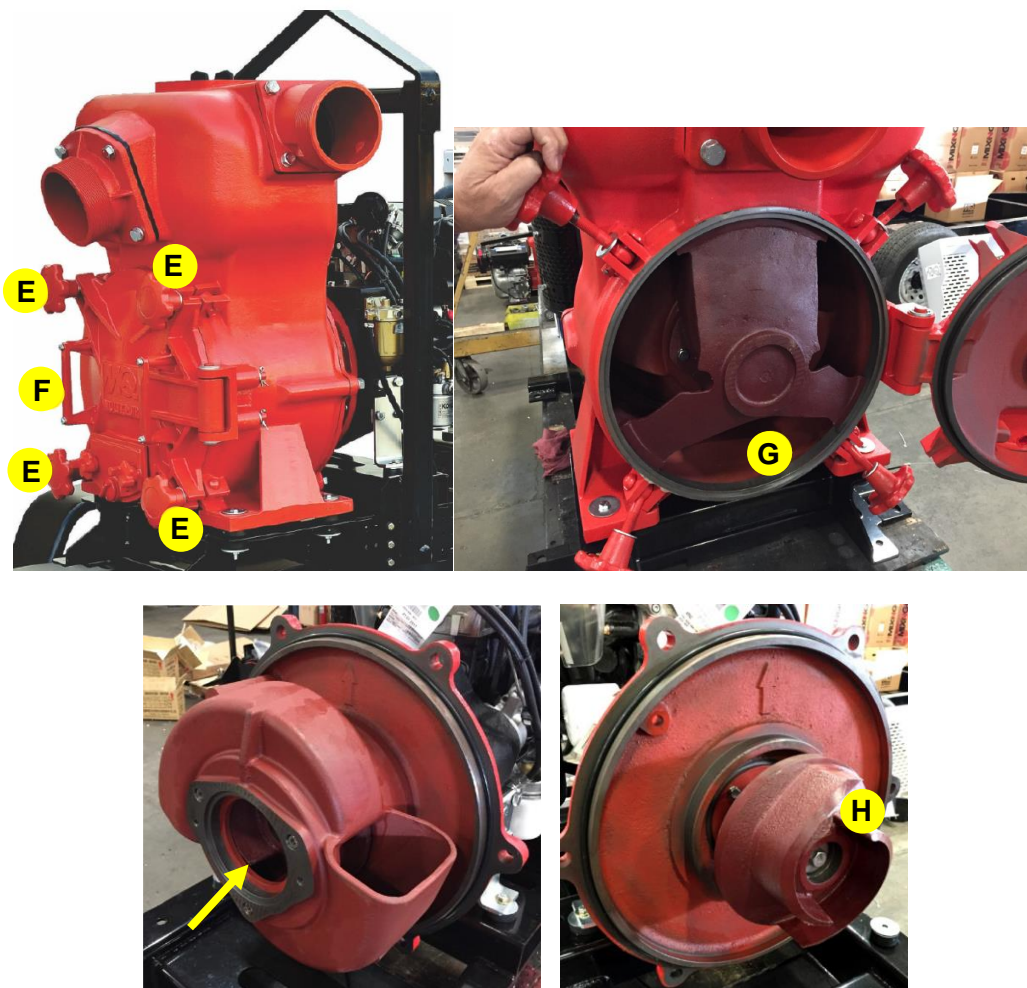
Figure 2.



## FURTHER KEY TROUBLE SHOOTING STEPS AFTER START-UP AND NO WATER FLOW – 6" Trash Pump Models

1. Turn the engine to OFF. & let the unit cool down.
2. Remove the 'red' Casing Drain Plug and let the water out [Figure 3.].
3. Open the front cover:
4. Loosen (4) Casing Knobs "E".
5. Pull the Casing Handle "F" to expose the inside of the pump casing.
6. Check & clean out any debris that has been left in the Casing Clean-Out Chamber "G".
7. Check that there is minimal 'free' clearance between the edges of the impeller and the volute (see arrow).
8. Check that there are no large pieces of debris that interfere with the vanes of the impeller "H" and that the impeller vanes have not been chipped, damaged or are excessively worn [recommended clearance = .005" to .010"]

Figure 3.





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### OTHER TROUBLE SHOOTING STEPS AFTER START-UP AND NO WATER FLOW

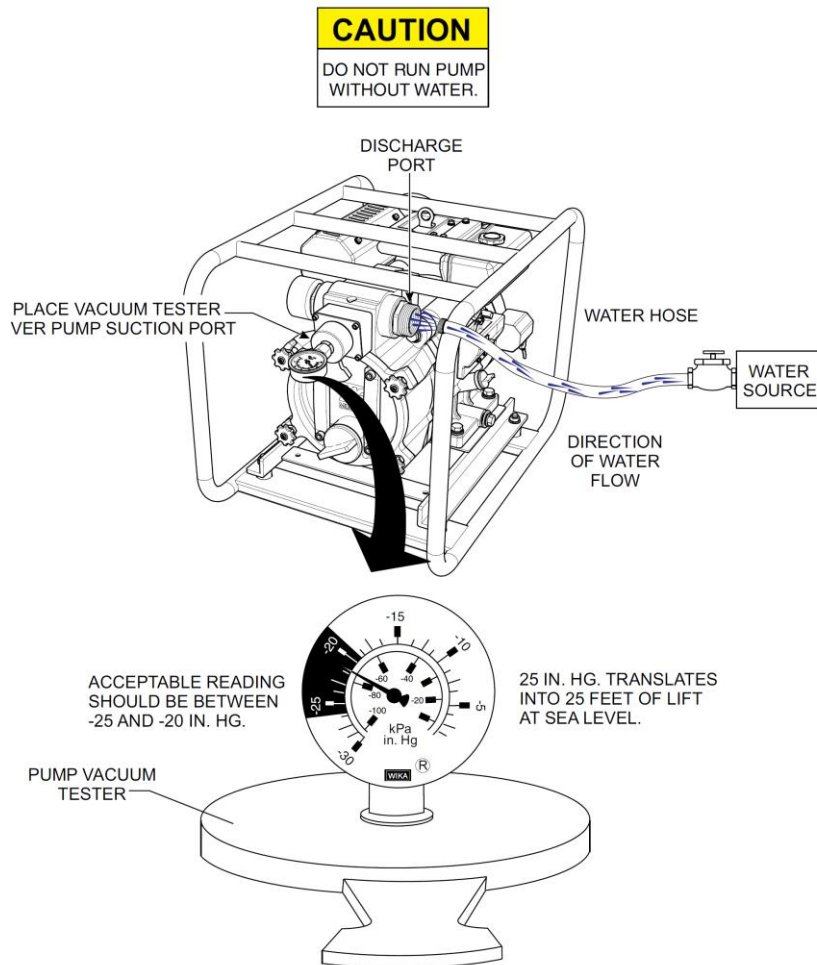
If the pump has had extensive use or is several years old, it is best to check the integrity of the pump to create and keep proper operational vacuum.

As the pump ages, the impeller vanes will begin to wear (this is normal). One can normally tell because the pump will take much longer to prime, and/or the Vertical Suction Lift ability starts to decrease.

### CHECK THE VACUUM

1. Multiquip offers a Pump Vacuum Tester (Part#: 7100031) – see Figure 4.
2. If the Pump Test Readings are not acceptable, replacing or re-shimming the impeller may be required.

Figure 4.



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