

PUMP CAVITATION SIMULATOR



DESCRIPTION

Most people have “heard” about the phenomenon called “cavitation” – *very few have actually witnessed it!* Turn on this exceptional training simulator and let students actually “see” cavitation occur right before their eyes!

There is simply no easier way to teach, or learn, cavitation than with this stunning, one-of-a-kind simulator.

The term “cavitation” is generally used to explain why a hydraulic pump may be making a noise. However, is “cavitation” caused by “oil starvation” or “air contamination?” Only one of these is correct. Students **MUST** know which one it is in order to stop it from occurring.

Cavitation is a systemic problem, which means it causes severe damage to the entire hydraulic system. It is arguably one of the most difficult subjects to teach, and learn, because it is usually “heard and not seen!”

The MF200-CAV is the most advanced trainer in the world for teaching students everything they need to know about cavitation, its common causes, and its devastating effect on a hydraulic system.

Much thought went into the design of this training masterpiece. The transparent reservoir, transparent pump suction line, and transparent pump outlet port transmission line are backlit to enhance the stunning visual impact this simulator offers.

LEARNING OBJECTIVES:

The MF200-CAV Pump Cavitation Simulator will teach students the following:

1. Physics associated with the operation of a hydraulic pump.
2. How the inlet side of a hydraulic pump works.
3. How design influences the amount of restriction at the inlet side of a pump.
4. Common design “oversights” when designing hydraulic pump intakes.
5. Why it is critical to know what a particular pump’s normal inlet restriction is.
6. What role altitude plays in the operation at the inlet side of a pump.
7. What causes pump inlet restriction to increase to a level that can cause cavitation, the most common cause of abnormally high inlet restriction.
8. What causes pump inlet restriction to decrease to a level that can cause pseudo-cavitation.
9. The most common cause of abnormally low pump inlet restriction.
10. What occurs when flow discharges above the oil level in a hydraulic reservoir.
11. What causes a “vortex” to occur in a hydraulic system.
12. Why it is critical to “trend” pump inlet restriction.

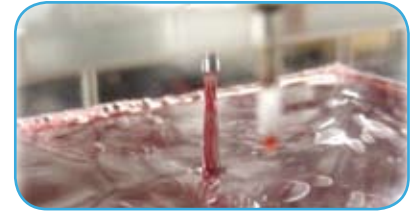




DEMONSTRATE VORTEX - OCCURS WHEN OIL LEVELS ARE NEGLECTED OR BECAUSE OF POOR DESIGN



DEMONSTRATE CAVITATION AND PSEUDO-CAVITATION - OCCURS WHEN INLET IS RESTRICTED OR WHEN THERE IS AN AIR LEAK PRESENT



DEMONSTRATE TURBULENCE - CAUSED BY OIL DISCHARGING ABOVE SURFACE

The MF200-CAV Pump Cavitation Simulator is designed to demonstrate the following:

1. Normal pump inlet restriction.
2. Abnormally high pump inlet restriction.
3. Abnormally low pump inlet restriction.
4. What occurs when oil is discharged above the oil level in a hydraulic reservoir.
5. What occurs when the pump inlet is too close to the surface of the oil – vortex.

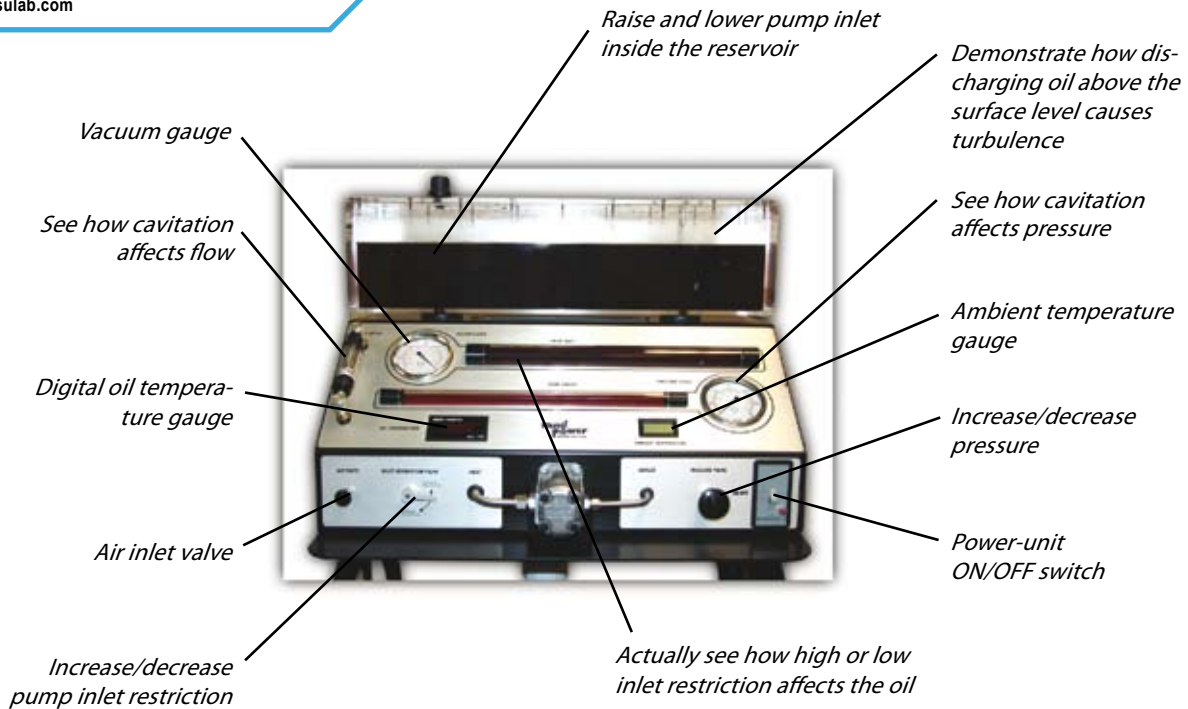


TRANSPARENT, BACK-LIT SUCTION AND PRESSURE LINES

MF200-CAV Pump Cavitation Simulator consists of:

- Steel cart finished in durable, powder-coat.
- Four wheel casters with brakes.
- Fixed-displacement gear pump (2.0 GPM [7.57 Lpm]).
- 1-HP, 115V single-phase, C-face electric motor.
- Pre-set safety pressure relief valve.
- Adjustable inlet restrictor valve.
- Adjustable resistance valve.
- Adjustable air inlet valve.
- Panel-mounted, in-line flow meter (0.2–2.0 GPM/0.76-7.57 Lpm).
- Panel-mounted, digital oil temperature gauge.
- Panel-mounted, digital ambient temperature gauge.
- Panel-mounted, 4 inch, Bourdon tube-type, glycerine-filled 0-30" (0-762mm) Hg vacuum gauge.
- Panel-mounted, four inch, Bourdon tube-type, glycerine-filled 0–600 PSI (41.4 bar) pressure gauge.
- Top-mounted, transparent reservoir with baffles - 5.3 gallon (20 Lpm) capacity.
- Removable filler/breather cap.
- Transparent pump suction line.
- Transparent pump outlet port transmission line.
- ON/OFF switch with thermal overload protection.
- Stainless-steel tubing with Swage-Lok®-type stainless-steel connectors.
- Face-plates finished with anodized, brushed aluminum.
- Rugged, welded, powder-coat finished frame with storage shelf.
- Adjustable height inlet tube inside tank.
- Discharge tube above the oil level.

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The following items are also included with the MF200-CAV Cavitation Simulator:

1. Full-color PowerPoint® presentation in CD format.
2. Student workbook featuring simulator activities.
3. Instructor's manual.

Shipping Specifications:

Shipping weight: 185 lbs (83.9 kg)
 Shipping dimensions: 57" tall x 30" wide x 20" deep
 (144.8 cm x 76.2 cm x 50.8 cm)

Warranty:

FPTI™ warrants its products against defect in materials or workmanship for a period of two years from date of delivery.

