

#### DESCRIPTION

The ideal setting for teaching and learning hydraulics would be to set up a classroom in a manufacturing facility for a few weeks where students study industrial hydraulics, and then move the classroom to a construction site for a few weeks where they could study mobile hydraulics.

For a student to gain maximum comprehension of hydraulics, he/she **MUST** learn in an environment wherein the theory is well presented, and the lab activities are executed on a variety of hydraulic systems, which are capable of operating through complete “load-cycles.”

FPTI™ created this exemplary learning environment - the MF101S-PH hydraulic training simulator!

What sets the MF101S-PH hydraulic training simulator apart from all other simulators, is its unique ability to replicate a fully functional industrial or mobile hydraulic system, which is capable of operating with or without load.

The model MF101S-PH has six (6) directional control valves – four (4) are handlelever-operated, and two (2) are solenoid-operated, and one (1) loadable hydraulic motor. Students can construct systems with complexity equal to, and in many cases greater than, those found in typical industrial and mobile machinery.

In addition, the MF101S-PH simulator achieves yet another remarkable milestone in simulator design; a single simulator has the onboard capability to operate in fixed or variable displacement, pressure-compensated, and pressure and flow (load-sensing\*) pump environments (*\*optional*).

Add the numerous additional unique features, and you’ll quickly discover that the MF101S-PH simulator is the most advanced in the world for both teaching and learning hydraulics.



MF100D-PH w/ PLUG-N-PLAY  
MF100-PDCV OPTIONAL MODULE

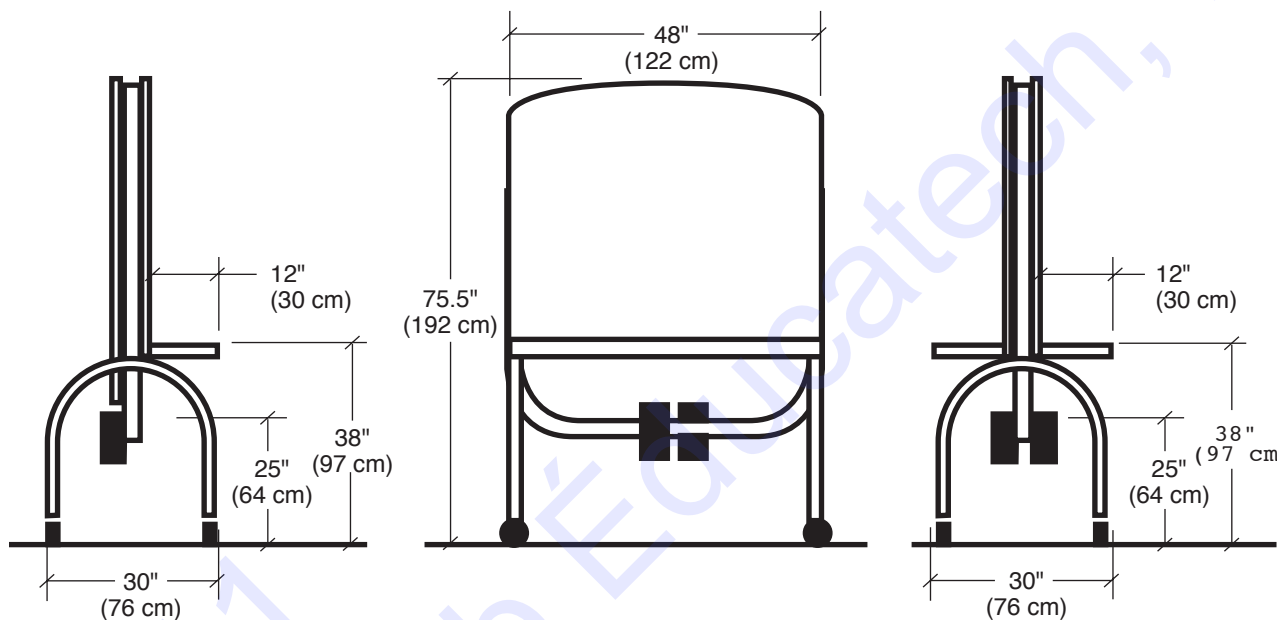
The MF101S-PH simulator is equipped with the following standard components:

- All-steel, uniframe design with tubular construction;
- All non-flexible transmission lines made from stainless steel tubing with Swageloktype connections;
- All steel parts finished in high-quality powder coating;
- Four-wheel, heavy-duty casters with wheel locks;
- 2.5 Gallon (9.5 L) hydraulic reservoir integrated in frame;
- 1HP, 120V, single-phase, electric motor – operates on a single 20-amp circuit;
- Variable-displacement pressure-compensated, axial piston-type pump — adjustable from 1 GPM to 3.0 GPM (3.79 - 11.36 Lpm), and adjustable pressure from 200 PSI to 1000 PSI (13.8 - 69 bar). Fixed displacement pump;
- Pressure Control Valves:
  - a) Direct-operated pressure relief valve,
  - b) Pilot-operated pressure relief valve with remote option,
  - c) Sequence valve,
  - d) Counterbalance valve,
  - e) Pressure reducing valve;
- Directional Control Valves (6):
  - a) 3-position, 4-way, open-center, handlever-operated directional control valves (2),
  - b) 3-position, 4-way, tandem-center, solenoid-operated directional control valve (1),
  - d) 3-position, 4-way, closed-center, solenoid-operated directional control valve (1),
  - e) 3-position, 4-way, float-center, handlever-operated directional control valves (2);
- Flow Control Valves and Flow Dividers:
  - a) Needle valve,
  - b) Flow control valve,
  - c) Restrictor-type pressure-compensated flow control valve;
- Check valves:
  - a) Conventional in-line,
  - b) Pilot-operated (pilot-to-open),
  - c) Shuttle valve (with load-sense option only);
- Actuators:
  - a) Bi-directional hydraulic motor w/loadable hydraulic motor,
  - b) Double-acting, single-rod cylinder,
  - c) Double-acting, double-rod cylinder;
- Hydraulic hoses with quick-disconnect fittings:
  - a) Six (6) 24” hoses - Twelve (12) 40” hoses,
  - b) Two (2) hose connectors - to extend hose length;

- Six (6) “T” assemblies
- Two (2) in-line flow meters
- Three (3) Glycerine-filled, Bourdon tube pressure gauges (0 – 1000 PSI)
- Digital tachometer;
- Digital oil temperature gauge;
- Digital ambient temperature gauge;
- Electronic stopwatch with auto retract;
- Ammeter;
- Return-line, spin-on/off filter with by-pass indicator;
- Oil level sight glass;
- Oil reservoir filler/breather located in drip tray to prevent spilling;
- Integrated load with hand-lock load engagement mechanism;
- Illuminated load select and de-select switch;
- Motor on/off switch with thermal protection;
- Two (2) joystick controllers for solenoid-operated directional control valves;
- All moveable parts are covered with transparent protective covers;
- Two (2) lined work trays are located on motor housing to hold diagnostic instruments and tools for pump set-up, adjust, and test (if applicable);
- Integrated, swing-out paper towel holder;
- Swing-out/stow-away hose caddy, which holds all hydraulic hoses and “T’s” neatly. Quick-disconnects are conveniently held in upright position to prevent oil leakage;
- Front panel is fabricated out of 3/16” brushed aluminum. All components are clearly marked with their respective symbols silk-screened onto the aluminum panel for a lifetime finish; and,
- Valve Docking Plate (VDP) allows the addition of numerous optional valves to be used on the simulator.

The following items are also included with the model MF101S-PH Practical Hydraulics Simulator:

1. Full-color PowerPoint® presentations in CD format;
2. Student workbooks featuring simulator activities; and,
3. Instructor's manual.



#### SHIPPING SPECIFICATIONS

Weight: 750 lbs (338 kg)

Dimensions: 75.5" tall x 48" wide x 30" deep (192 cm x 122 cm x 76 cm)

#### WARRANTY

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