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General Description

The Hydraulics Simulation Software (LVSIM®-HYD) from LabVolt was replaced by FluidSIM, the world's leading circuit diagram design and simulation program for pneumatics, hydraulics, and electrical engineering.

- FluidSIM

Click on the link for more information about FluidSIM (topic coverage, license options, etc.) and download a demo version.

Please note that the license option listed below are shown for information purposes only:

Features

LVSIM®-HYD enables students to perform the following tasks using a computer:

- Install, move, and remove hydraulic components and electrical control devices.
- Modify or remove connections at any time.
- Zoom in or out to adjust the view.
- Perform flow, pressure, force, velocity and rotation speed measurements.
- Observe motor rotation, as well as the extension and retraction of cylinder rods.
- Observe fluid flow inside hydraulic components.
- Save and restore equipment setups (including the virtual classroom laboratory environment).
Hydraulics Equipment

The following components from the actual Hydraulics Training System are simulated in LVSIM®-HYD:

- Work Surface
- Power Unit
- Directional Valve, Lever-Operated
- Flow Control Valve
- Relief Valve
- Pressure-Reducing Valve
- Directional Valve, Double-Solenoid Operated
- Directional Valve, Single-Solenoid Operated
- Sequence Valve
- Flow Control Valve, Pressure Compensated
- Check Valve
- Double-Acting Cylinder, 2.5 cm Bore
- Double-Acting Cylinder, 3.8 cm Bore
- Bidirectional Motor and Flywheel
- Pressure Gauge
- Flowmeter
- DC Power Supply
- Push-Button Station
- Limit-Switch Assembly
- Relay
- Time-Delay Relay / Counter
- Pilot-Lamp Station
- Pressure Switch
- Magnetic Proximity Switch
- Diffuse Reflective Photoelectric Switch
- Loading Device
- Manifold

Computer Requirements

A currently available personal computer running under one of the following operating systems: Windows® XP, Windows® Vista, Windows® 7, and Windows® 8.

List of Available Training Systems

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<tr>
<th>Qty</th>
<th>Description</th>
<th>Model number</th>
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<tr>
<td>1</td>
<td>Hydraulics Simulation Software (LVSIM®-HYD) - 1 User</td>
<td>587988 (6385-00)</td>
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**List of Manuals**

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<tr>
<th>Description</th>
<th>Manual number</th>
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<tr>
<td>Hydraulics Fundamentals (Student Manual)</td>
<td>584154 (30794-00)</td>
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<td>Hydraulics Fundamentals (Instructor Guide)</td>
<td>584161 (30794-10)</td>
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<td>Industrial Hydraulic Technology (Student Manual)</td>
<td>584164 (30794-80)</td>
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<td>Electrical Control of Hydraulic Systems (Student Manual)</td>
<td>584188 (31228-00)</td>
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<td>Virtual Laboratory and Equipment (User Guide)</td>
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<td>Virtual Laboratory and Equipment (User Guide)</td>
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**Table of Contents of the Manual(s)**

**Hydraulics Fundamentals (Student Manual) (584154 (30794-00))**

- 1-1 Familiarization with the Hydraulics Trainer
- 1-2 Demonstration of Hydraulic Power
- 2-1 Pressure Limitation
- 2-2 Pressure and Force
- 2-3 Flow Rate and Velocity
- 2-4 Work and Power
- 3-1 Cylinder Control
- 3-2 Cylinders in Series
- 3-3 Cylinders in Parallel
- 3-4 Regenerative Circuits
- 4-1 Accumulators
- 4-2 Hydraulic Motor Circuits
- 4-3 Pressure Reducing Valves
- 4-4 Remotely Controlled Pressure Relief Valves
• 5-1 Hydraulic Pumps
• 5-2 Directional Valve Testing
• 5-3 Flowmeter Accuracy
• 5-4 Effects of Temperature on System Operation

**Electrical Control of Hydraulic Systems (Student Manual) (584188 (31228-00))**

• 1-1 Familiarization with the Equipment
• 2-1 Basic Electricity
• 2-2 Ladder Diagrams
• 2-3 Basic Electrically Controlled Hydraulic System
• 3-1 Hydraulic Sequencing of Cylinders
• 3-2 Electrical Sequencing of Cylinders
• 3-3 Speed Regulation and Braking of Hydraulic Motors
• 3-4 Continuous Reciprocation with Dwell Period
• 4-1 Drilling System
• 4-2 Safety Circuits
• 4-3 Counting of Actuator Cycles
• 4-4 Multi-Pressure System
• 4-5 Rapid Traverse-Slow Feed System
• 5-1 Troubleshooting Electrical Control Circuits
• 5-2 Troubleshooting Electrically Controlled Hydraulic Systems
Reflecting the commitment of Festo Didactic to high quality standards in product, design, development, production, installation, and service, our manufacturing and distribution facility has received the ISO 9001 certification.

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