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

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<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>
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<td>Hydraulics Simulation Software (LVSIM®-HYD) (Manuals on CD-ROM)</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
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