

APPENDIX C: LIST OF MODELS AND SOFTWARE

Sign as a Member at (www.compudraulic.com) and you should be able to download sample models of the following list. Full library of the is purchased separately at (<https://www.compudraulic.com/software>)

These Matlab-Simulink Models are built with Release 2013b

- **HSV7CH02Model01:** First-Order System Normalized Transfer Function (NTF)
- **HSV7CH02Model02:** Simulation Model for 1st Order System Based on Differential Eq.
- **HSV7CH02Model03:** Simulation Model for 1st System Based on Transfer Function
- **HSV7CH02Model04:** Comparison of Simulation Models for 1st Order System
- **HSV7CH02Model05:** Step Response Analysis for 1st Order Systems
- **HSV7CH02Model06:** Effect of Time Constant on 1st Order System Step Response
- **HSV7CH02Model07:** Effect of Damping Coefficient on 1st Order System Step Response
- **HSV7CH02Model08:** Effect of Time Constant on 1st Order System Harmonic Response
- **HSV7CH02Model09:** Effect of Exciting Frequency on 1st Order System Harmonic System
- **HSV7CH03Model01:** Normalized Transfer Functions for 1st versus 2nd Order Systems
- **HSV7CH03Model02:** Simulation Model for 2nd Order System Based on Differential Eq.
- **HSV7CH03Model03:** Simulation Model for 2nd Order System Based on Transfer Function
- **HSV7CH03Model04:** Comparison of Simulation Models for 2nd Order System
- **HSV7CH03Model05:** Verification of a Step Response of a Second Order System
- **HSV7CH03Model06:** Effect of Design Parameters on Step Response of a 2nd Order System
- **HSV7CH03Model07:** Critically Damped 2nd Order System versus 1st Order System
- **HSV7CH03Model08:** Response of 2nd Order System Based on NTF
- **HSV7CH03Model09:** Response of 2nd Order System Based on Transfer Function
- **HSV7CH03Model10:** Response of 2nd Order System Based on Differential Equation
- **HSV7CH03Model11:** Simulated Step Response of a Hydraulic Actuator based on NTF
- **HSV7CH03Model12:** Simulated Step Response of a Hydraulic Act. based on TF
- **HSV7CH03Model13:** Simulated Step Response of a Hydraulic Actuator based on DE
- **HSV7CH05Model01:** Modeling Hydraulic Fluid Bulk Modulus
- **HSV7CH05Model02:** Modeling Hydraulic Fluid Density as Function of Temp. and Pressure
- **HSV7CH05Model03:** Modeling Specific Gravity as Function of Temp. and Pressure

- **HSV7CH05Model04:** Modeling Fluid Viscosity as Function of Temperature and Pressure
- **HSV7CH05Model05:** Lumped Model for Hydraulic Fluid Properties
- **HSV7CH06Model01:** Simulation Model for Hydraulic Transmission Line
- **HSV7CH06Model02:** Simulation Model for Hydraulic Fitting
- **HSV7CH06Model03:** Simulation Model for Hydraulic Orifice
- **HSV7CH06Model04:** Example of Modeling a Transmission Line Assembly
- **HSV7CH07Model01:** Model for Ideal Fixed Displacement Unidirectional Pump
- **HSV7CH07Model02A:** Model for a Fixed Displacement Pump Running at Constant Operating Conditions Based on Given Test Values
- **HSV7CH07Model02B:** Model for a Fixed Displacement Pump Running at Constant Operating Conditions Based on Given Efficiency Values
- **HSV7CH07Model03A:** Model for a Fixed Displacement Pump Running at Variable Operating Conditions Based on Given Test Data
- **HSV7CH07Model03B:** Model for a Fixed Displacement Pump Running at Variable Operating Conditions Based on Given Efficiency Curves
- **HSV7CH07Model04A:** Model for Pressure-Compensated Pumps Based on Given Test Data
- **HSV7CH07Model04B:** Model for Pressure-Comp. Pumps Based on Given Efficiency Curves
- **HSV7CH07Model04C:** Simplified Model for Pressure-Compensated Pumps
- **HSV7CH07Model05A:** Simplified Model for Displacement-Controlled Pumps
- **HSV7CH07Model05B:** Model for Disp.-Controlled Pumps Based on Given Efficiency Curves
- **HSV7CH07Model06A:** Simplified Model for Torque-Limited Pumps
- **HSV7CH07Model06B:** Model for Torque-Limited Pumps Based on Given Efficiency Curves
- **HSV7CH08Model01:** Model for an Ideal Fixed Displacement Motor
- **HSV7CH08Model02A:** Model for a Fixed Displacement Motor Running at Constant Operating Conditions Based on Given Test Data
- **HSV7CH08Model02B:** Model for a Fixed Displacement Motor Running at Constant Operating Conditions Based on Given Efficiency Values
- **HSV7CH08Model03A:** Model for a Fixed Displacement Motor Running at Variable Operating Conditions Based on Given Test Data

- **HSV7CH08Model03B:** Model for a Fixed Displacement Motor Running at Variable Operating Conditions Based on Given Efficiency Curves
- **HSV7CH08Model04:** Model for Variable Displacement Motors
- **HSV7CH08Model05:** Simplified Model for Valve-Controlled Fixed-Displacement Bidirectional Hydraulic Motor
- **HSV7CH09Model01:** Model for Hydraulic Cylinder
- **HSV7CH10Model01:** Model for Pressure Relief Valve Based on Linear Characteristics
- **HSV7CH10Model02:** Model for Pressure Relief Valve Based on Nonlinear Characteristics
- **HSV7CH10Model03:** Model for Flow Control Valves
- **HSV7CH10Model04:** Model for Check Valves
- **HSV7CH10Model05:** Validating the Models for Check Valve and PRV together
- **HSV7CH10Model06:** Model for Continuous Directional Control Valves

These Matlab-Simulink Models are built with Release 2020a

- **HSV7CH11Model01R2020:** Model for EH Cylinder Position Control System
- **HSV7CH11Model02R2020:** Hydraulic Loading System using a Fixed Disp. Pump
- **HSV7CH11Model03R2020:** Hyd. Loading System using a Pressure Compensated Pump
- **HSV7CH11Model04R2020:** Modeling Electro-Hydraulic Motor Speed Control System

Sample Pictures of the Library







