



PERIODIC TEST PROCEDURE FOR VIRGINIA CONTROLS MH-3000 HYDRAULIC CONTROLLERS – ASME A17.1 - '19 / CSA B44 - '19 - Safety Code for Elevators

Testing Reverse Phase Relay (when equipped...)

- 1) Remove any one of the 3 power feeds connected to the Phase Monitor.
- 2) The controller will go into Low Oil Shutdown and run to bottom landing.
- 3) Replace power feed to reset the fault condition.

Testing of the Low Oil Timer

- 1) Check for an empty car at a lower landing then place a call at an upper landing.
- 2) After the car travels several feet but before the car reaches the destination landing, remove the field wire from terminal 14 at the controller.
- 3) The pump motor and car will stop, but the controller will still attempt to run in the up direction.
- 4) Allow the car to sit for about 30 seconds. The exact time depends on the setting of the Low Oil Timer. When the Low Oil Timer trips, the controller will go into LOW OIL shutdown and return to the bottom floor.
- 5) Replace the wire on terminal 14 and cycle power, or energize the Reset input RST, to reset the controller.

Testing of Leveling/Anti-Creep Device

- 1) On Normal operation and level at a floor, open the pressure relief valve and allow the car to sink below the floor.
- 2) When the pump motor starts running, close the pressure relief valve.
- 3) The car should level back into the floor indicating that the Anti-Creep / Leveling Device is working properly.
- 4) This test can be performed with the In-Car Stop Switch thrown as well.

Running the Car onto the Stop Ring

- 1) On Normal operation, run the car to the top landing.
- 2) When the doors cycle open, verify no passengers are in the car and that it is safe to proceed.
- 3) After the doors cycle closed, place the car on Inspection operation from the controller.
- 4) Jump out the Up Normal Limit Switch at the controller by placing a temporary jumper across terminals 6 & 14.
- 5) At this point, verify the low-speed setting for running on Inspection.
- 6) Using the Inspection push buttons in the controller, run the car up onto the stop ring.
- 7) Run the car down via the Inspection buttons in the controller.
- 8) Remove the temporary jumper installed across terminals 6 & 14.

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Hydraulic Pressure Tests

- 1) The pressure test may be performed with or without test weights as desired. If weights are used, run the car on Normal to the most convenient landing to load the weights on the car.
- 2) On Normal operation, run the car to the top landing.
- 3) When the doors cycle open, verify no passengers are in the car and that it is safe to proceed.
- 4) After the doors cycle closed, place the car on Inspection operation from the controller.
- 5) Jump out the Up Normal Limit Switch at the controller by placing a temporary jumper across terminals 6 & 14.
- 6) Using the Inspection push buttons in the controller, run the car up onto the stop ring and allow the pressure to build.
- 7) Observe pressure gauge on valve set to check and adjust overpressure valve per requirements.
- 8) Run car down by the Inspection buttons in the controller to relieve overpressure in the system.
- 9) Remove the temporary jumper installed across terminals 6 & 14.
- 10) Perform leak test(s) as required by code.

Testing the Oil Pressure Switch (when equipped...)

- 1) Run car to an intermediate landing (or to top landing of a 2 Ldg. elevator) on Normal operation.
- 2) Remove the wire from the Pressure Switch at controller terminal 16P.
- 3) Place a call at the bottom landing.
- 4) The car should remain at the floor and not attempt to run down.
- 5) The car should also respond to the door open button in the car, but not to a hall call at the same landing.
- 6) The car is allowed to run up on Normal operation from a car or hall call.
- 7) Replace the wire on terminal 16P and put the car back into service.

Testing Auxiliary Battery Lowering – BORIS (when equipped...)

- 1) Jump out the Auxiliary Contact (4th Pole) of mainline disconnect(s) by placing a jumper in the controller across terminals L5 to B1. (Verify exact terminals from schematic as they may vary.)
- 2) Run the car to an upper landing on automatic operation.
- 3) When the car stops open the mainline disconnect.
- 4) The car will return to the lowest landing and cycle the door.
- 5) Remove the jumper installed in step 1. The controller will completely shut down due to no power, but the battery unit will remain active.
- 6) Restore power at the mainline disconnect.

Normal Terminal Stopping Device

Up Normal Limit Switch

- 1) Disconnect the Up Normal at controller terminal 14.
- 2) See that the car cannot run up on Normal nor Inspection operation.
- 3) Replace the wire at terminal 14.
- 4) Run the car up on Inspection operation and have someone on top of the car to physically open the Up Normal Limit Switch. The car will stop.

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Upper Landing Slowdown Switch(es) Test

- 1) Place the car at the next landing from the top.
- 2) Remove the Up Car Top Selector Slowdown signal by disconnecting the field wire at terminal UHS. Tag field wire so it may be easily reconnected after the test.
- 3) Place a car call to the top landing by touching terminal 1 to the appropriate car call terminal – 3C, 4C or otherwise.
- 4) The car will run to the top terminal landing and slow down and stop. It may overshoot the floor slightly and re-level.
- 5) Replace the field wire at terminal UHS.

Down Normal Limit Switch

- 1) Disconnect the Down Normal at controller terminal 16.
- 2) See that the car cannot run down on Normal nor Inspection operation.
- 3) Replace the wire at terminal 16.
- 4) With the car well above the pit, run the car down on Inspection and have someone in the pit physically open the down normal limit switch. The car will stop.

Bottom Landing (Down) Slowdown Switch(es) Test

- 1) Place the car at the next landing from the bottom.
- 2) Remove the Down Car Top Selector Slowdown signal by disconnecting the field wire at terminal DHS. Tag field wire so it may be easily reconnected after the test.
- 3) Place a car call to the bottom landing by touching terminal 1 to car call terminal – 1C. (Enter a 1C car call via Keypad on Vision controller.)
- 4) The car will run to the bottom terminal landing and slow down and stop. It may overshoot the floor slightly and re-level.
- 5) Replace the field wire at terminal DHS.

Emergency Terminal Safety Device Switch

- 1) Disconnect the Emergency Terminal Speed Limit Switch from the controller at terminal 18.
- 2) Run the car up on Normal operation and see that the car cannot run fast speed. It will not leave the floor and will relevel.
- 3) Replace the wire at terminal 18.
- 4) Run the car on Normal operation up to the top landing and have someone on top of the car to physically open the Emergency Terminal Speed Limit Switch. The car will slow down from fast speed to leveling speed.
- 5) If a fault is triggered, jump the Reset Input, RST, or cycle power to reset.

Testing Car Safety Switch & Governor Switch – if Roped Hydro

- 1) Remove the field wire at controller terminal 3. See that the car cannot run up or down on Inspection or Normal operation.
- 2) Replace the wire on terminal 3 in the controller.
- 3) Mechanically open the Governor Switch and see that the car cannot run. Reset the switch when done.
- 4) Mechanically open the Car Safety Switch and see that the car cannot run. Reset the switch when done.

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Testing of Jack Re-Synchronization (when equipped...)

- 1) Check Sheet P in the controller drawings of the controller you are testing and find a Bit Feature labeled as: "Do Jack Re-Synch When Insp Sw Is Cycled".
- 2) Turn this Bit Feature on by adding the appropriate value of the bit to the value of the existing Bit Feature register presently set or as originally indicated on Sheet P.
- 3) With the car on Normal and no calls registered, cycle the inspection Switch in the controller to Inspection and then back to Normal.
- 4) The car will run below the bottom floor onto the springs to complete the Jack Resync feature.
- 5) Return the Bit Feature (determined in Step 1) back to its initial value.

Testing Firefighter's Operation

Phase I Test

- 1) With the car on Normal operation and running, set off the Main Floor Fire Sensor, or remove wire 82M at the controller. See that the car runs to the Alternate Fire Floor. Reconnect 82M and reset the controller by turning the Hall ("Fire Recall"/Phase I) key switch to the RESET position then back to OFF, or by momentarily jumping across controller terminals S2 & 82B.
- 2) With the car on Normal operation and running, set off a non-Main Floor Fire Sensor, or remove wire 82 at the controller. See that the car runs to the Main Fire Floor. Reconnect 82 and reset the controller by turning the Hall ("Fire Recall"/Phase I) key switch to the RESET position then back to OFF, or by momentarily jumping across controller terminals S2 & 82B.
- 3) With the car on Normal operation and running, set off a Shaftway or Machine Room fire sensor, or jump across S2-82F in the controller for about 2 seconds. See that the car runs to the Main or Alternate Fire Floor (depending on how the sensors are wired) and that the Fire Hat in the car (and perhaps the hall...) flashes on & off. Reset by turning the Hall ("Fire Recall"/Phase I) key switch to the RESET position then back to OFF, or by momentarily jumping across controller terminals S2 & 82B.

Phase II Test

- 1) With the car at the Main Fire Floor, turn the Hall ("Fire Recall"/Phase I) key switch to the ON position to initiate Fire Recall / Phase 1 Hall Fire Service.
- 2) Place the car on fire service from the COP by turning the In-Car ("Fire Operation"/ Phase II) key switch to the ON position. Run the car to various floors and verify proper door operation as outlined in local and national codes.
- 3) When tests are done, return the car to the Main fire landing while on "Fire Operation"/ Phase II fire service and then place the In-Car ("Fire Operation"/Phase II) key switch back to the OFF position.
- 4) Put the car back into Normal / Automatic operation from "Fire Recall" / Phase I Fire Service by cycling the Hall key switch to the RESET position then back to OFF once the doors have fully opened.