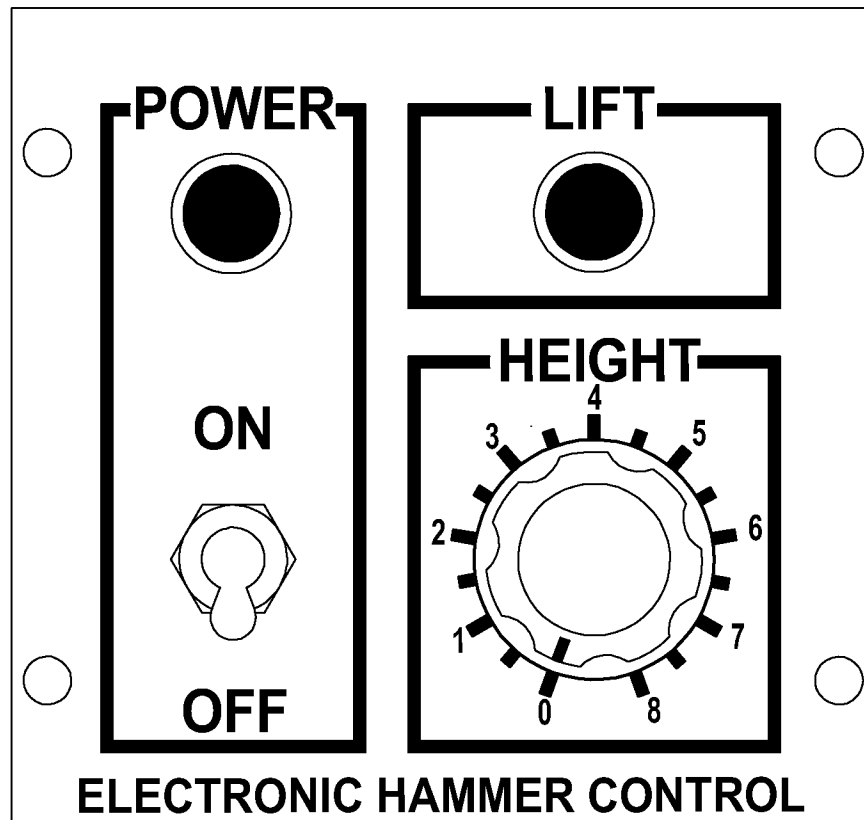


Automatic Stroke control



The control station is located to the left of the steering column, directly to the left of the side shift control valve. The Electronic Control Station allows the operator to adjust the upper limit of hammer weight travel when the unit is operating. The electronic control senses the point of impact of the tool on the work surface and automatically compensates for changes in cable length and undulations in the work surface. Thus, there is no need to provide the operator with a means of adjusting the lower travel limit. The electronic control actuates a solenoid-operated directional control valve, which alternately reverses the direction of hydraulic fluid flow through the pilot system for the hammer cylinder lift control valve. The Electronic Control Station contains a power (on-off) toggle switch and control knob having graduations from low to hi in a clockwise orientation. The position of the adjustment knob determines the height that the unit will lift the weight on each cycle. With the knob turned clockwise, corresponding to greater lift height. The graduations on the control knob are relative, and do not correspond directly to any given amount of lift height. **The correct setting must be determined by the operator.** The Electronic Control Station contains two indicator lamps. The red lamp indicates that power to the unit has been switched on. The Amber lamp lights only during the time lift portion of the operating cycle, or a fault blink code if not working properly. If the cable length is too short, or improperly set, it may be possible to adjust the lift height so that the weight strikes the upper

travel limit stop blocks on the lead. **Striking the travel limit stop blocks can cause severe structural damage to the machine.** Make sure that the lift height and cable length are properly set to prevent damage to the machine.

AUTOMATIC OPERATION

The Electronic Stroke Control allows the operator to set and maintain constant lift height by timing the lift portion of the hammer cycle. The control unit will allow the hammer to follow uneven terrain by sensing the impact of each successive blow. Therefore, the control "knows" where it is with respect to the ground at all times. The Electronic Stroke Control minimizes dwell time, cable slacking, and "snatching" of the hammer weight. It is not necessary to adjust the cable length to accommodate small differences in tool height.

1. Push the auto-manual valve control lever forward to the manual/start position. (If the engine is not running, the auto-manual valve control lever must be set to manual/start in order to start the engine.)
2. If necessary, start the engine according to the instructions given in the STARTING THE ENGINE section of this chapter.
3. Allow the engine and hydraulic system to warm up. It may be necessary to actuate the lift cylinder manually to warm the hydraulic fluid in cold weather.
4. Using the manual control lever on the hammer valve, unlock the weight from stored position.
5. It is **Not** necessary to establish a ground reference for the electronic stroke control to operate correctly during start-up. Starting in the middle or even top of stroke **is** acceptable.
6. Adjust the engine speed control **hand** throttle to the "fast" position. (The unit will work at various engine speeds. However, the system and pumps is engineered to run at full throttle.)
7. Pull the auto-manual control valve lever back (toward the operator) to place the control in "auto" (automatic stroke) position.
8. Set the on-off switch on the Electronic Control Station to the "on" position. The red lamp on the control unit should be lit, indicating that the unit is receiving power. If the weight is on the ground there will be a 2 sec pause. If the weight is off the ground it will fall to locate the material to be hammered. After that time the controller goes into its cycle mode. The controller will automatically correct itself to regain the correct cycle. If any abnormalities just turn controller off and back on again and controller will regain its cycle.

9. Adjust the lift control knob on the Electronic Control Station by turning the knob slowly clockwise until the desired stroke length is obtained. The amber lamp on the control station should flash on and off indicating the lift cycle . Stroke is adjustable up to 8-ft. **Do not** turn the lift control knob further clockwise than is necessary to obtain the desired lift height. **Turning the control knob too far can cause the lift cylinder to reach its stroke limit before the timed portion of the lift cycle has been completed.** This condition will cause the unit to **hesitate** at the top of the stroke. If the cable length is **too short**, or **improperly set**, it may be possible to adjust the lift height so that the weight strikes the upper travel limit stop blocks on the lead. **Striking the travel limit stop blocks can cause severe structural damage to the machine.** Make sure that the lift height and cable length are properly set to prevent damage to the machine.

10. To turn **off** auto mode simply adjust the switch on the controller to the off position. This can be done any time in the cycle and the weight will fall to the ground. Then place the Auto/Manual valve to the manual position.

Fault checking:

- **PPU Fault: (SENSOR RELATED)** blink code is **2-2**.

This fault goes true if the hammer drop should be in motion but no frequency input is true from the pulse pick up sensor. The fault is canceled when a frequency is detected. When the fault initially goes true the pilot valve is turned on; this is used when the number of lift pulses is not achieved during the lift cycle. Then after a 1 second timer times out the pilot valve de-energizes and lift begins; this allows resumption of the hammer lift cycle if the number of drop pulses are not achieved. If either of these scenarios occurs and the pulse input goes true after the hammer drop or lift is initiated then the fault will be canceled. If after the lift has occurred and no pulse input has been detected than the system will now be hung up in PPU fault status.

- **Pilot valve fault: (Solenoid)** Blink code **2-3**. Fault goes true if the output is open or in short state. When the fault goes true it will maintain the fault status until repower of controller and system enable will be false.

- **Sensor power fault: Blink code 2-1**. Fault goes true when sensor power is shorted to ground.

- **Height Adjust Potentiometer Fault: Blink code 2-4**. Fault is true if input voltage at C1-P10 is less than .25V or greater than 4.75V.