System Overview: Door, Lift & Pump Controller

The door opening is controlled independently from the lift operation. This is to allow someone to open and close the door without having to deploy the lift. It also enables a user to avoid having to open the door completely in the case where they may encounter an obstruction. However, to ensure the door is opened far enough to prevent the lift from hitting it on deployment, there is a tilt switch mounted on the door that insures it is opened far enough to prevent damage. To prevent injury and damage to the door, it will not open if the seat belt is plugged into its receptacle. A seat belt extension plugged in will also prevent the door from opening.

Once the door has moved far enough to satisfy the tilt switch, the user can hit the lift Out button.

The lift will then move outwards until it hits the Out limit switch. At this point the controller will automatically turn off the horizontal switch and start lowing the lift. The lift will continue to lower until either the user stops it, or it runs out of stroke. There is no Down limit switch to allow the unit to reach the ground on various terrain. When the unit runs out of stroke the pump will go into bypass mode, which is a valve the limits the amount up pressure the pump will generate. There is also a hold valve in the unit that will prevent cylinder movement whenever the control button is released.

With the door open and the system deployed, the user will hit the In button for the lift. The controller will turn on the pump and open the vertical up valve making the lift rise. This will continue until the unit hits the Up limit switch at which point the controller will stop the vertical cylinder and start the horizontal cylinder moving inward. The lift will continue to move inward until the user releases the button or the lift reaches the inner limit switch. Once the inner limit switch is activated, the controller will allow the door to close. The door will continue to close as long as the keyfob button is held and the door has not activated the door closed limit switch.

Once this switch is activated the controller will turn the pump off.