



Operation & Maintenance

HORIZONTAL SLIDING DOOR FOR LINEAR ACCELERATOR

Note: This components in this manual are for reference only. From time-to-time components and parts are modified by their manufacturer.

Please reference the component/part you have on your door.

GENERAL

- This door is specifically designed for operation in facilities using a Linear Accelerator for Radiation Therapy.
- The door is simple to operate and requires very little maintenance.
- This document contains operation procedures, troubleshooting tips, recommended maintenance/schedules and specifications/illustrations of parts.

CAUTION

- The Pitts Little Corporation Horizontal Sliding Door System should be operated by **AUTHORIZED PERSONNEL ONLY**.
- All personnel should **read these instructions completely** and be trained to the safe operation of this door.
- The door is extremely heavy and improper operation could result in severe personal injury or death.
- No attempts should be made at adjusting door operating speed.
- No attempts should ever be made to disengage interlock switches or any safety feature as this could present serious health risk.
- Objects should be kept clear of door operation area.



- No objects should ever be placed to keep door in the open or closed position.

OPERATION

- Before operating, the door operating area should be visually inspected to be sure no person or other object is in the vicinity.
- The motion of the door is controlled by **push buttons** located both **inside** and **outside** of the **vault**.
- On the **outside** of the vault, near the door, there are three color-coded push buttons located on a 3-gang wall plate.
- The door will automatically **OPEN** to its full open position by pushing the **Green** open button located both **inside** and **outside** of the vault.
- Pressing the **Black** button will **CLOSE** the sliding door to its full closed position. NOTE: The door can only be closed from **outside** the vault.
- Pressing the **Red** button will **STOP** the door from any current position along its path of travel. **DO NOT USE STOP button for door positioning.** Constantly using the hard stop may cause problems in the future.
- On the **inside** of the vault, you will find two color-coded buttons located on a 2-gang wall plate.
- Press **Red** to **STOP** the sliding door from the inside of the vault.
- Press **Green** to **OPEN** the sliding door from the inside of the vault.
- Press **Red** to **STOP** the sliding door from the inside of the vault.
- Press **Green** to **OPEN** the sliding door from the inside of the vault.
- A **Black** closed button is **NEVER** allowed inside the vault.
- The **PARTIAL OPEN** button commands the door to **open only partially** to a preset position.
- The **PARTIAL OPEN** button is **Yellow**.
- The **PARTIAL OPEN** button will be located on a 1-gang wall plate either along with the three other push buttons on the **outside** of the vault or near the technician's station.

- The **PARTIAL OPEN** button allows for faster thru times when entering the vault and is only to be used by the staff for this purpose.
- Specifications and illustrations of these push buttons are in this manual.
- All these push buttons command the **Control Panel** (located near the end of the door) to perform the indicated functions.
- A wiring diagram is included with the **Control Panel**.

EMERGENCY OPERATION

- An included **UPS** (Uninterruptible Power Supply) battery back-up system will provide auxiliary power to the **Control Panel** in the case of a **power outage**.
- The **UPS** also provides **surge protection** for the **Control Panel** in the event of a power surge. Ex. Lightning Strike
- When power is interrupted the **UPS** will be activated and provide power.
- If the power goes out while the door is opening, closing or in a partial open state, you will need to press the OPEN button to open the door as the UPS will not know to be automatically activated.
- The **UPS** is not designed to open and close the door repeatedly.
- This system must be tested monthly.
- To test the **UPS**, make sure door is in fully closed position, unplug the UPS from the wall (not the control panel from the UPS) and the door should open to the **partial open position** to allow egress from the vault.
- Specifications and illustrations for the **UPS** are in this manual.
- A **Mechanical Winch** is provided for manually opening the door in the unlikely event that all other systems fail.
- The power switch on the **control panel must be turned off** prior hooking the winch to the door.
- Specifications and illustrations for the winch are provided in this manual.

SAFETY SYSTEMS

- The Door System has active safety features.
- A **Sensing Bumper** is located on the leading edge of the sliding door.
- The **Sensing Bumper** is a door mounted, padded, continuous safety cushion that utilizes a sensing system that will stop and reverse the door's motion if the closing path becomes obstructed.
- The **Sensing Bumper** will send a signal to the **Control Panel** to stop and reverse the door if pressure is applied. Bumper pad was tested with an 80mm disc and activation force was 15 lbs. **DO NOT USE** the safety bumper for door positioning.
- Specifications and illustration for the bumper are located in this manual.
- **STOP** buttons located both on the **inside** and **outside** of the vault, when pressed, will stop the closing motion of the door.
- **Presence Sensors** (optional) can be located inside and outside of the vault to detect motion.
- Specifications and illustrations of Presence Sensors are in this manual (if this option is included).
- Scheduled testing of the safety system is required in order to assure that these features are operational.

TROUBLESHOOTING

If the door is not **Opening** or **Closing** properly, **first** try to **Power Down** the door's **Control Panel** and then continue with the troubleshooting tips. **To Power Down Control Panel:**

- **Disconnect** the power to the door by unplugging the **Control Panel** from the **UPS**. **Be sure to note** which plug is connected to the Battery Backup side (left) and Surge Protection side (right) on the back of the **UPS**.
- Wait a moment.
- **Reconnect** the power making sure the plugs are reinserted into the correct sides on the back of the **UPS**.

Door Will Not Close

The door is in the **Opened position and will not Close.**

CHECK the Following:

- Is the **UPS** plugged in to the wall mounted receptacle?
- Is the wall mounted receptacle energized?
- Is the **UPS** "ON" (the green light on the front panel should be on)?
- Panel Mounted Disconnect should be "ON".
- Incoming power – around 120 VAC?

If Door Still Will Not Operate:

- Have qualified personnel turn the panel mounted switch off and open the panel door.
- Turn panel mounted disconnect "ON" and check the lights inside the panel. Requires two persons.
- The **24 VDC** power supply "**DC On**" light should be lit.
- The **DL06 PLC** "Power" and "Run" lights should be lit.
- The "**CPU**" light should NOT be lit.
- Input lights **X0, X4, X5** and **X10** should be lit.
- Three green lights should be lit on the bumper control relay.
- If they are not ON check the bumper to see if it is blocked or obstructed.
- Door will not close if these three lights are not lit.
- Pressing the green "Open" push button which is mounted outside the vault should light Input **X12**.
- Pressing the green "Open" push button which is mounted inside the vault should light Input **X13**.

- Pressing either red “Stop” push button should turn off input light **X10**.
- Pressing the black “Close” push button should light input light **X14**.
- Pressing the yellow “PARTIAL” push button should light **X2**.
- Please see the **Control Panel Light Chart** on page 10 for troubleshooting.

Door Will Not Open

The door is in the **Closed position and will not Open**.

- Unplug the *UPS* from the power source (wall receptacle).
- The door should open automatically using the battery power in the UPS.
- If the door still does not open, **turn the power switch off on the control panel**, attach the **Mechanical Winch** and manually crank open the door.

CHECK the Following:

- Is the **UPS** plugged into the wall mounted receptacle?
- Is the **UPS “ON”** (the green light on the front panel should be on)?
- Incoming power- around 120 VAC?
- Is the Panel Mounted Disconnect in the “**ON**” position?
- Circuit breakers? Check for open circuit.
- Press the “**Open**” push button.

If Door Still Will Not Operate:

- With the panel door open and the panel mounted disconnect turned “**ON**”, check the lights inside the panel. Requires two persons.
- The **24 VDC** power supply “**DC On**” light should be lit.

- The **DL06 PLC** “Power” and “Run” lights should be lit.
- The “CPU” light should NOT be lit.
- The Input lights **X0, X6, X7** and **X10** should be lit.
- Pressing the green “Open” push button, which is mounted outside the vault, should light (blink) **Input X12**.
- Pressing the green “Open” push button, which is mounted inside the vault, should light (blink) **Input X13**.
- Pressing either red “Stop” push button should turn off light **x10**.
- Pressing the black “Close” push button should light (blink) input light **X14**.
- Please see the **Control Panel Light Chart** on page 10 for troubleshooting.

MAINTENANCE SCHEDULE

Daily:

- Cycle the door twice before seeing patients.
- Verify that the **Mechanical Winch** is in place.
- Confirm the UPS has a green light.

Once per Month:

- The **Sensing Bumper** should be checked to verify proper operation.
- Inspect the **Raceway**.
- The **Raceway** is a polished steel shaft rail above the door beam.
- Check the **Raceway** for any old crystallized grease and debris.
- Clean **Raceway** if necessary.

- If necessary, lubricate the **Raceway** using DuPont Molykote Extreme Pressure Grease item#4328T26 from McMaster-Carr.
- The white polyurethane **Timing Belt** should be inspected.
- If necessary, to grease the cogs, lubricate **Timing Belt** with Lucas brand White Lithium Multi-Purpose Grease. Put a few beads about 18” long on the belt in front of each ends’ sprockets.
- The **Bearings** at the ends of the belt drive should be inspected.
- Check all fittings on bearings on both drive and idle end.
- Check for debris under the door (especially the 12” under the safety bumper end) by sliding a piece of cardboard under the door to remove any debris. **Do not**, under any circumstances, go behind the door without completely removing power from the door.
- Verify that the **UPS** is in good condition.
- The (**UPS**) system should be checked for proper operation.
- Specifications and illustrations for the bumper, timing belt, UPS and winch are provided in this manual.

Every Six (6) Months or if the Door Is Making Noises:

- Check all nuts, bolts and screws for tightness yearly and/or every 20,000 cycles.
- All lubrication points should be inspected.
- Visually inspect the rail above the doors and lubricate if necessary.
- Visually inspect bearings on the raceways and lubricate if necessary.
- Visually inspect the drive belt and lubricate if necessary.
- Visually inspect the bearings at the ends of the drive and lubricate if necessary.
- Visually inspect the cam follower.
- Check the UPS battery backup.



- Verify that the manual opening device is in place.
- All fasteners will be checked for tightness.
- All lubrication points will be inspected.



WARNING

MOVING DOOR CAN CAUSE SERIOUS
INJURY OR DEATH
DO NOT START DOOR MOVING UNLESS
DOORWAY IS CLEAR
DO NOT LET CHILDREN OPERATE THE DOOR OR PLAY IN THE DOOR
AREA
KEEP DOOR IN SIGHT AT ALL TIMES WHEN DOOR IS MOVING

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SAUF ENTRÉE EST CLAIR
TENIR À L'ÉCART! PORTE PEUT AGIR À TOUT MOMENT
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