

## 4-7 Slide-Out Operation

### 4-7.1 Introduction

The 450 LXi Slide-out Control System controls the extend/retract operation of the multiple slide-out rooms on the 450 LXi motor home platforms - 450LXi & 400LXi models. The control system is capable of operating one to three slide-out rooms with one or two electric motor actuators.

The 450 LXi structure can accommodate three slide-out rooms: two living room - left & right; one bedroom - left. The Slide-out Control System is capable of controlling three slide-out rooms, each with two electric motor actuators. The present configuration is setup for three slide-out rooms: two living room - left & right, each with two electric motor actuators; one bedroom - left, with one electric motor actuator.

Each slide-out room has two air cylinder locks which are sequenced by the Slide-out Control System. These air locks are retracted when the slide-out rooms are in any position other than fully extended or fully retracted; i.e. the air locks are only extended when the slide-out rooms are fully extended or fully retracted.



450 LXi shown here with two slide-out rooms.

#### CAUTION!!

If the locks are manually extended with the slide-out room in an intermediate position, the locks will cause severe damage to the slide-out room sides.

### 4-7.2 Overview

The Slide-out Control System applies power to the electric motor actuator(s) to move the slide-out room In or Out when the respective Room Motion switch is pressed. The Slide-out PLC Controller examines the state of five parameters: Ignition switch in the Accessory position, parking brake, system air pressure, lock state, & IN/OUT limit switches before processing the IN/OUT command from the respective Room Motion switches. When all parameters are in the correct states, the Slide-out PLC Controller sequences the air locks and executes a IN/OUT command.

The Power Supply Assembly operates from panel #2, circuit breaker 4B of the 120VAC load center. This converts 120VAC to 27VDC which provides power to the Slide-out PLC Controller, the Dual Motor Synchronizer, and the slide-out room motor actuators.

**NOTE:** Circuit Breaker 4B must be ON to operate slide-out room. If the locks are manually extended with the slide-out room in an intermediate position, the locks will cause severe damage to the slide-out room sides.

#### 4-7.2.1 Room Motion Switch Assembly

The Room Motion Switch Assembly provides the slide-out room IN & OUT control switches along with eight status LED indicators. The IN switch moves the room inward as long as the switch is depressed. The IN switch should remain pressed until the LOCKED LED lights indicating that the Room In sequence has completed. The Room In motion can be stopped at an intermediate state by releasing the IN switch. The room in motion can resume by pressing & holding the IN switch or the Room Out motion can proceed by pressing the OUT switch. The OUT switch moves the room outward as long as the switch is depressed. The OUT switch should remain pressed until the LOCKED LED lights indicating the Room Out sequence has completed.

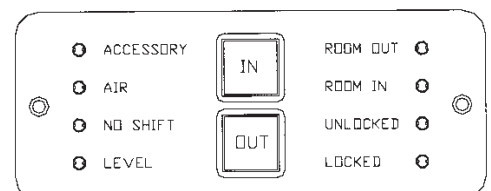


Figure 1 - Room Motion Switch Panel

**Table 1 - Room Motion Switch Status LEDs - Normal Operation**

LED	Type	Description
Accessory	Common	Air
Air	Common	Indicates the System AIR pressure is greater than 90 psi. The air pressure is required to operate the slide-out room locks.
No Shift	Common	Indicates the transmission cannot be shifted from its present state. The NO SHIFT state occurs whenever any slide-out room IN limit switch is not closed.
Level	Common	Indicates when the coach is LEVEL. This is not a necessary condition for slide-out operation and is only for status purposes.
Room Out	Specific	Indicates that the OUT limit switches are closed. <i>Note: the living room slide-out rooms have two OUT limit switches; the bedroom slide-out room has one OUT limit switch.</i>
Room In	Specific	Indicates that the IN limit switches are closed. <i>Note: the living room slide-out rooms have two IN limit switches; the bedroom slide-out room has one IN limit switch.</i>
Unlocked	Specific	Indicates the UNLOCKED limit switches are closed. Each slide-out room has two locks & two UNLOCKED limit switches.
Locked	Specific	Indicates the LOCKED limit switches are closed. Each slide-out room has two locks & two LOCKED limit switches.

## 4-7.3 Slide-Out Room Operation

### 4-7.3.1 Normal Mode

- Accessory State:** Ignition in Accessory position, Parking brake ON.
- Level State:** Level condition not required for slide-out operation. Level LED indicates Level state only.
- Locked State:** Both slide-out room locks are in the LOCKED state.
- Unlocked State:** Both slide-out room locks are in the UNLOCKED state.
- No Shift State:** Transmission inhibited from shifting gears. The Shift Inhibit relay closes when any Room IN limit switch is not closed which indicates the respective slide-out room is in the IN state. The NO SHIFT LED indicates the transmission cannot be shifted.

**Note:** The Shift Inhibit relay opens (disengages) when the 12V power to the Slide-out PLC Controller is not present which can occur when the 120VAC/27VDC power supply is unplugged or the 120VAC circuit breaker in respective load center is OFF, there is no utility power (shore or generator), or Inverter-1 is not ON.

- Air State:** System air pressure greater than 90 psi.
- In State:** Both slide-out room IN limit switches are closed.
- Out State:** Both slide-out room OUT limit switches are closed.

### 4-7.3.2 Service Mode

When the Service switch is in the "ON" position, the "Shift Inhibit" relay engages and prevents the coach transmission from shifting gears. The Service Mode overrides the "Accessory" and the "Air System" interlock conditions required for Normal Slide-out operation; i.e. the "Accessory LED" and "Air LED" on the Room Motion Switch Panel do not have to be lighted for Slide-out operation. The "No Shift LED" on the Room Motion Switch Panel is lighted.

## 4-7 Slide-Out Operation

### 4-7.1 Introduction

The 450 LXi Slide-out Control System controls the extend/retract operation of the multiple slide-out rooms on the 450 LXi motor home platforms - 450LXi & 400LXi models. The control system is capable of operating one to three slide-out rooms with one or two electric motor actuators.

The 450 LXi structure can accommodate three slide-out rooms: two living room - left & right; one bedroom - left. The Slide-out Control System is capable of controlling three slide-out rooms, each with two electric motor actuators. The present configuration is setup for three slide-out rooms: two living room - left & right, each with two electric motor actuators; one bedroom - left, with one electric motor actuator.

Each slide-out room has two air cylinder locks which are sequenced by the Slide-out Control System. These air locks are retracted when the slide-out rooms are in any position other than fully extended or fully retracted; i.e. the air locks are only extended when the slide-out rooms are fully extended or fully retracted.



450 LXi shown here with two slide-out rooms.

#### CAUTION!!

If the locks are manually extended with the slide-out room in an intermediate position, the locks will cause severe damage to the slide-out room sides.

### 4-7.2 Overview

The Slide-out Control System applies power to the electric motor actuator(s) to move the slide-out room In or Out when the respective Room Motion switch is pressed. The Slide-out PLC Controller examines the state of five parameters: Ignition switch in the Accessory position, parking brake, system air pressure, lock state, & IN/OUT limit switches before processing the IN/OUT command from the respective Room Motion switches. When all parameters are in the correct states, the Slide-out PLC Controller sequences the air locks and executes a IN/OUT command.

The Power Supply Assembly operates from panel #2, circuit breaker 4B of the 120VAC load center. This converts 120VAC to 27VDC which provides power to the Slide-out PLC Controller, the Dual Motor Synchronizer, and the slide-out room motor actuators.

**NOTE:** Circuit Breaker 4B must be ON to operate slide-out room. If the locks are manually extended with the slide-out room in an intermediate position, the locks will cause severe damage to the slide-out room sides.

#### 4-7.2.1 Room Motion Switch Assembly

The Room Motion Switch Assembly provides the slide-out room IN & OUT control switches along with eight status LED indicators. The IN switch moves the room inward as long as the switch is depressed. The IN switch should remain pressed until the LOCKED LED lights indicating that the Room In sequence has completed. The Room In motion can be stopped at an intermediate state by releasing the IN switch. The room in motion can resume by pressing & holding the IN switch or the Room Out motion can proceed by pressing the OUT switch. The OUT switch moves the room outward as long as the switch is depressed. The OUT switch should remain pressed until the LOCKED LED lights indicating the Room Out sequence has completed.

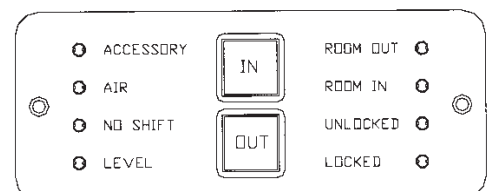


Figure 1 - Room Motion Switch Panel

**Table 1 - Room Motion Switch Status LEDs - Normal Operation**

LED	Type	Description
Accessory	Common	Air
Air	Common	Indicates the System AIR pressure is greater than 90 psi. The air pressure is required to operate the slide-out room locks.
No Shift	Common	Indicates the transmission cannot be shifted from its present state. The NO SHIFT state occurs whenever any slide-out room IN limit switch is not closed.
Level	Common	Indicates when the coach is LEVEL. This is not a necessary condition for slide-out operation and is only for status purposes.
Room Out	Specific	Indicates that the OUT limit switches are closed. <i>Note: the living room slide-out rooms have two OUT limit switches; the bedroom slide-out room has one OUT limit switch.</i>
Room In	Specific	Indicates that the IN limit switches are closed. <i>Note: the living room slide-out rooms have two IN limit switches; the bedroom slide-out room has one IN limit switch.</i>
Unlocked	Specific	Indicates the UNLOCKED limit switches are closed. Each slide-out room has two locks & two UNLOCKED limit switches.
Locked	Specific	Indicates the LOCKED limit switches are closed. Each slide-out room has two locks & two LOCKED limit switches.

## 4-7.3 Slide-Out Room Operation

### 4-7.3.1 Normal Mode

- Accessory State:** Ignition in Accessory position, Parking brake ON.
- Level State:** Level condition not required for slide-out operation. Level LED indicates Level state only.
- Locked State:** Both slide-out room locks are in the LOCKED state.
- Unlocked State:** Both slide-out room locks are in the UNLOCKED state.
- No Shift State:** Transmission inhibited from shifting gears. The Shift Inhibit relay closes when any Room IN limit switch is not closed which indicates the respective slide-out room is in the IN state. The NO SHIFT LED indicates the transmission cannot be shifted.

**Note:** The Shift Inhibit relay opens (disengages) when the 12V power to the Slide-out PLC Controller is not present which can occur when the 120VAC/27VDC power supply is unplugged or the 120VAC circuit breaker in respective load center is OFF, there is no utility power (shore or generator), or Inverter-1 is not ON.

- Air State:** System air pressure greater than 90 psi.
- In State:** Both slide-out room IN limit switches are closed.
- Out State:** Both slide-out room OUT limit switches are closed.

### 4-7.3.2 Service Mode

When the Service switch is in the “ON” position, the “Shift Inhibit” relay engages and prevents the coach transmission from shifting gears. The Service Mode overrides the “Accessory” and the “Air System” interlock conditions required for Normal Slide-out operation; i.e. the “Accessory LED” and “Air LED” on the Room Motion Switch Panel do not have to be lighted for Slide-out operation. The “No Shift LED” on the Room Motion Switch Panel is lighted.

### 4-7.3.3 Emergency Mode

When the Emergency switch is in the "ON" position, the "Shift Inhibit" relay disengages and allows the coach transmission to shift gears. The Emergency Mode overrides the "Accessory" and the "Air System" interlock conditions required for Normal Slide-out operation; i.e. the "Accessory LED" and "Air LED" on the Room Motion Switch Panel do not have to be lighted for Slide-out operation. The "No Shift LED" on the Room Motion Switch Panel is not lighted. This mode is used in an emergency situation and allows the coach to move when all interlock conditions are not satisfied. One such situation would be when slide-out rooms are not retracted.

**IMPORTANT NOTE!! The Slide-Room Controller is located in Bay 2 - left.**

## 4-7.4 Accessory Air System Moisture Purge Procedure

During humid weather or high air-use conditions, it is necessary to purge moisture (liquid) from the accessory air system frequently. This purging should be performed weekly or more often to ensure moisture-free air is supplied to the accessory components.

Please refer to the diagram below for location of drain valves. These valves are located in the front accessory compartment directly below the driver. Slowly open each valve to expel accumulated liquid and close tightly after clear air is observed.

**CAUTION!!** Point loose end of drain valve tube away from you - liquid is expelled at a high velocity!

