SERVICE MANUAL
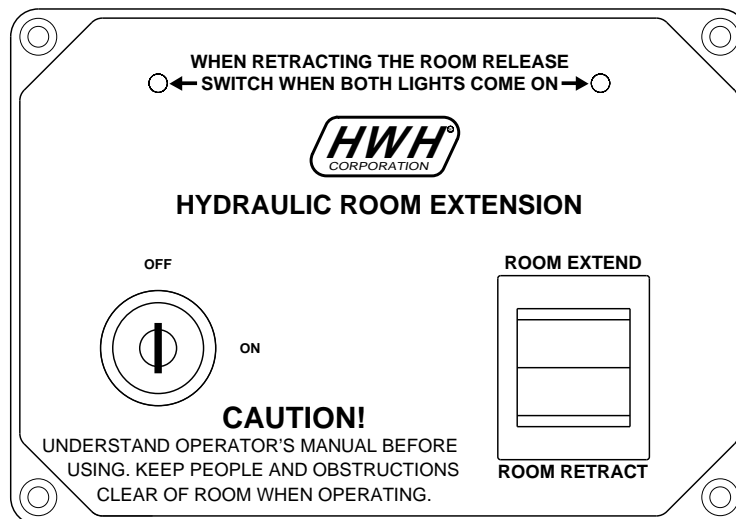
HWH® KEY PANEL-CONTROLLED AUTOMATIC TRAVEL CLAMPS

FEATURING:

Key Panel Room Control
(With Automatic Travel Clamps)

WHEN RETRACTING THE ROOM RELEASE
SWITCH WHEN BOTH LIGHTS COME ON

HWH
CORPORATION

HYDRAULIC ROOM EXTENSION

OFF

ON

ROOM EXTEND

ROOM RETRACT

CAUTION!
UNDERSTAND OPERATOR'S MANUAL BEFORE
USING. KEEP PEOPLE AND OBSTRUCTIONS
CLEAR OF ROOM WHEN OPERATING.

OPERATOR'S MANUAL

CAUTION !

READ THE ENTIRE OPERATOR'S MANUAL BEFORE OPERATING.

KEEP PEOPLE AND OBSTRUCTIONS CLEAR OF SLIDE WHEN OPERATING. ANY OBJECT OBSTRUCTING SLIDE MOVEMENT MAY BE CRUSHED CAUSING INJURY OR DEATH AND VEHICLE DAMAGE.

NEVER PLACE HANDS OR OTHER PARTS OF THE BODY NEAR HYDRAULIC LEAKS. OIL MAY PENETRATE SKIN CAUSING INJURY OR DEATH.

WEAR SAFETY GLASSES WHEN INSPECTING OR SERVICING THE SYSTEM TO PROTECT EYES FROM DIRT, METAL CHIPS, OIL LEAKS, ETC. FOLLOW ALL OTHER APPLICABLE SHOP SAFETY PRACTICES.

HOW TO OBTAIN WARRANTY SERVICE

THIS IS NOT TO BE INTERPRETED AS A STATEMENT OF WARRANTY
HWH CORPORATION strives to maintain the highest level of
customer satisfaction. Therefore, if you discover a defect or
problem, please do the following:

FIRST: Notify the dealership where you purchased the vehicle or had the leveling system installed. Dealership management people are in the best position to resolve the problem quickly. If the dealer has difficulty solving the problem, he should immediately contact the Customer Service Department, at HWH CORPORATION.

SECOND: If your dealer cannot or will not solve the problem, notify the Customer Service Department:
HWH CORPORATION 2096 Moscow Rd. Moscow IA. 52760 (563) 724-3396 OR (800) 321-3494. Give your name and address, coach manufacturer and model year, date the coach was purchased, or the date of system installation,

description of the problem, and where you can be reached during business hours (8:00 a.m. till 5:00 p.m. c.s.t.). HWH CORPORATION personnel will contact you to determine whether or not your claim is valid. If it is, HWH CORPORATION will authorize repair or replacement of the defective part, either by appointment at the factory or by the authorization of an independent service facility, to be determined by HWH CORPORATION. All warranty repairs must be performed by an independent service facility authorized by HWH CORPORATION, or at the HWH CORPORATION factory, unless prior written approval has been obtained from proper HWH CORPORATION personnel.

AUTOMATIC TRAVEL CLAMPS

OPERATION AND SYSTEM INFORMATION

The automatic travel clamp system consists of two electrically actuated clamps, a control panel, a control box along with the connecting harnesses and a room in limit switch. The clamps are mounted in the front and the rear upper corners of the room toward the outer edge of the room. The clamps are extended and retracted by reversing the polarity of the clamp motors. This is done through the clamp control box. The panel has a key switch and a rocker switch. The key switch is a safety switch. With the key off, the room and travel clamps will not operate. The key can be removed to prevent unwanted operation of the room. The rocker switch is a three position momentary switch, ON-OFF-ON. The switch must be held in position to extend or retract the room. The panel is also equipped with two red LEDs. These LEDs turn on after the room is retracted and the Travel Clamps are fully extended. The room in switch is installed so the contacts of the switch are closed when the room is fully retracted.

The room cannot be extended until both clamps are fully retracted. Each clamp is equipped with one limit switch. When the clamp is fully retracted, the contacts of the switch will open. When the contacts of the switch are open the clamp motor will shut off and the room will start to extend.

The room must be fully retracted before the clamps will extend. When the room is fully retracted, the contacts of the room in limit switch will close. This allows the travel clamps to extend. There will be power on the retract output from the control box for five (5) seconds after the room in limit switch closes. In the control box there is a poly fuse for each clamp. When the clamp is fully extended, the poly fuse opens. This turns the clamp motor off and turns on the red LED on the touch panel for that clamp.

NOTE: THE CLAMPS ARE DESIGNATED AS LEFT AND RIGHT. THIS IS AS VIEWED FROM THE OUTSIDE OF THE VEHICLE LOOKING AT THE ROOM. FOR A ROOM THAT IS ON THE DRIVERS SIDE OF THE VEHICLE, THE LEFT CLAMP IS THE FRONT CLAMP AND THE RIGHT CLAMP IS THE REAR CLAMP. FOR A ROOM THAT IS ON THE PASSENGER SIDE OF THE VEHICLE, THE LEFT CLAMP IS THE REAR CLAMP AND THE RIGHT CLAMP IS THE FRONT CLAMP. THIS WILL BE IMPORTANT TO REMEMBER WHEN DIAGNOSING PROBLEMS.

CONTROL BOX INPUTS AND OUTPUTS

CN1 --- 9PIN UML CONNECTOR --- POWER AND CONTROL HARNESS TO ROOM MECHANISM

Pin 1 ----- Ground supply to Travle Clamp control box.
Pin 2 ----- +12 supply to Travel Clamp control box.
Pin 3 ----- Room extend output +12.
Pin 4 ----- Ground supply to Travel Clamp control box.
Pin 5 ----- +12 supply to Travel Clamp control box.
Pin 6 ----- Room retract output +12.
Pin 7 ----- Ground supply to Travel Clamp control box.
Pin 8 ----- +12 supply to Travel Clamp control box.
Pin 9 ----- Pump control output +12 (Not used with all systems)

CN2 --- 6PIN UML CONNECTOR --- HARNESS FROM ROOM CONTROL PANEL

Pin 1 ----- +12 when room control switch is pushed to EXTEND.
          Ground when room control switch is pushed to RETRACT.
Pin 2 ----- +12 to room control panel.
Pin 3 ----- +12 from control panel to control box when room control switch is pushed to EXTEND.
          Ground when room control switch is pushed to RETRACT.
Pin 4 ----- +12 when room control switch is pushed to EXTEND.
          Ground when room control switch is pushed to RETRACT until right clamp is fully extended.
          +12 to turn red LED on when the right clamp is extended and the motor turns off.
Pin 5 ----- +12 from control panel to control box when room control switch is pushed to RETRACT.
          Ground at all other times.
Pin 6 ----- +12 when room control switch is pushed to EXTEND.
          Ground when room control switch is pushed to RETRACT until left clamp is fully extended.
          +12 to turn red LED on when the left clamp is extended and the motor turns off.

AUTOMATIC TRAVEL CLAMPS

CONTROL BOX INPUTS AND OUTPUTS

CN3 --- 6PIN UML CONNECTOR --- HARNESS TO ROOM CLAMPS

Pin 1 ----- No connection
Pin 2 ----- +12 if either travel clamp limit switch is closed (clamp not fully retracted) when the switch is pushed to EXTEND.
Ground when the room control switch is pushed to RETRACT until the travel clamp motor turns off.
+12 after the clamp motor turns off.
Pin 3 ----- +12 to both travel clamps when the room control switch is pushed to RETRACT and the room in switch is closed (The clamp will be extending).
This pin will be ground at any other time.
Pin 4 ----- +12 to the right travel clamp when the room control switch is pushed to EXTEND (The clamp will retract).
Ground at all other times **EXCEPT** when the room control switch is pushed to RETRACT, the room in switch is closed, the lock is completely extended and the clamp motor has shut off.
The red LED on the touch panel for the right clamp should be on.
Pin 5 ----- +12 to the left travel clamp when the room control switch is pushed to EXTEND (The clamp will retract).
Ground at all other times **EXCEPT** when the room control switch is pushed to RETRACT, the room in switch is closed, the lock is completely extended and the clamp motor has shut off.
The red LED on the touch panel for the left clamp should be on.
Pin 6 ----- This pin is the same as Pin 3.

CN4 --- 3PIN UML CONNECTOR --- HARNESS TO ROOM IN LIMIT SWITCH

Pin 1 ----- No connection
Pin 2 ----- +12 to the room in limit switch, when room control switch is pushed to retract.
Ground at all other times.
Pin 3 ----- +12 from the room in limit switch to the control box when the room is retracted and the room in switch is closed.
Ground at all other times.

CN5 --- 2PIN UML CONNECTOR --- POWER HARNESS TO CONTROL BOX

Pin 1 & 2 ----- +12 to the control box for the room extend and room retract outputs.

TOUCH PANEL CONNECTIONS

CN1 --- 6PIN UML CONNECTOR --- HARNESS TO CONTROL BOX

Pin 1 ----- Ground at all times except +12 when the room control switch is pushed to EXTEND.
Pin 2 ----- +12 from the room control box to the key switch on the room control panel.
Pin 3 ----- +12 for room extend to the room control box when the room control switch is pushed to EXTEND.
Ground at all other times.
Pin 4 ----- +12 when the room control switch is pushed to RETRACT, the right clamp is fully retracted and the clamp motor has shut off (this turns the red LED for the right clamp on).
+12 when the room control switch is pushed to EXTEND.
Ground at all other times.
Pin 5 ----- +12 when room control switch is pushed to retract.
Ground at all other times.
Pin 6 ----- Same as Pin 4 exept for left clamp.

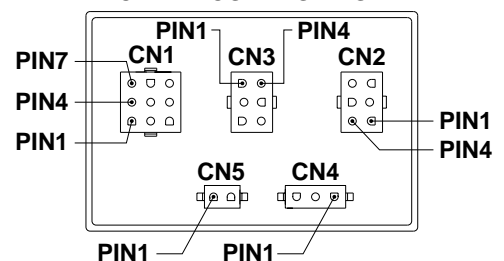**ROOM CONTROL PANEL**
ROOMS WITH TRAVEL CLAMPS
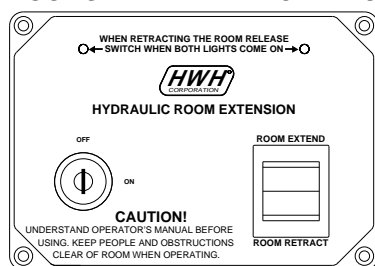
(REVERSE)
ROOM CONTROL PANEL
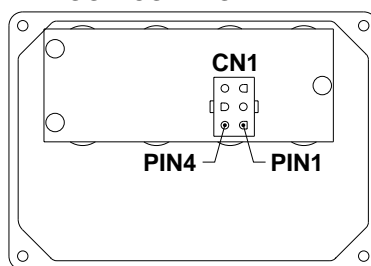
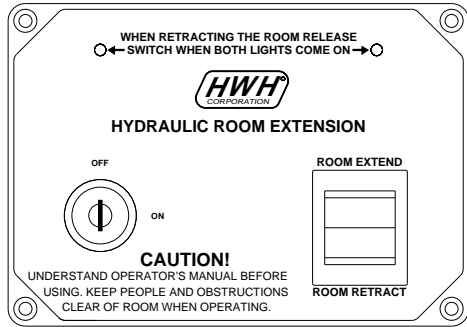**CLAMP CONTROL BOX**
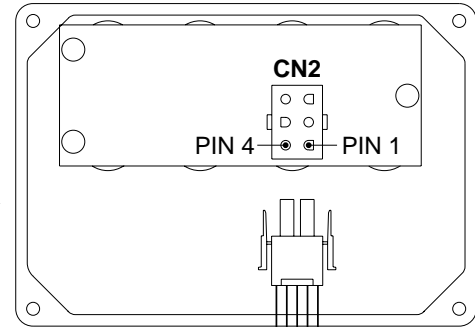
MP55.3105
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ELECTRICAL CONNECTION DIAGRAM
ROOM CLAMP CONNECTIONS
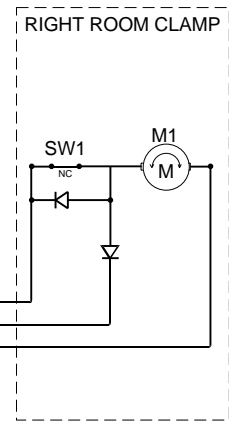
ROOM CONTROL PANEL
ROOMS WITH TRAVEL CLAMPS

WHEN RETRACTING THE ROOM RELEASE
SWITCH WHEN BOTH LIGHTS COME ON→

HWH CORPORATION

HYDRAULIC ROOM EXTENSION

OFF
ON

ROOM EXTEND

CAUTION!
UNDERSTAND OPERATOR'S MANUAL BEFORE
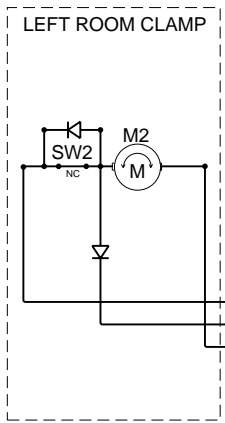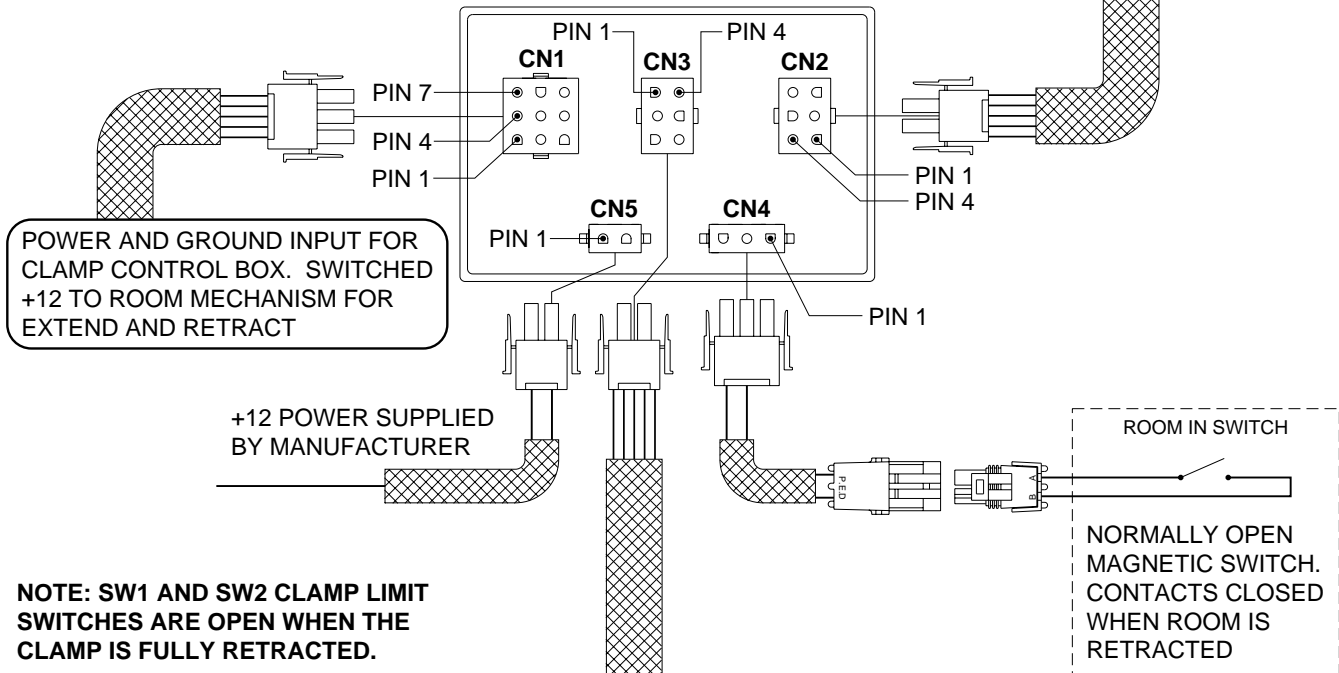USING. KEEP PEOPLE AND OBSTRUCTIONS
CLEAR OF ROOM WHEN OPERATING.

ROOM RETRACT

**NOTE: CONNECTIONS ARE
THE SAME FOR ALL ROOMS
WITH TRAVEL CLAMPS
HARNESSES ARE SUPPLIED
BY VEHICLE MANUFACTURER**

(REVERSE) ROOM CONTROL PANEL

CN2
PIN 4 — PIN 1

CLAMP CONTROL BOX

PIN 1 — PIN 4

CN1 **CN3** **CN2**

PIN 7
PIN 4
PIN 1

PIN 1
PIN 4

POWER AND GROUND INPUT FOR
CLAMP CONTROL BOX. SWITCHED
+12 TO ROOM MECHANISM FOR
EXTEND AND RETRACT

CN5 **CN4**
PIN 1

PIN 1

+12 POWER SUPPLIED
BY MANUFACTURER

ROOM IN SWITCH

NORMALLY OPEN
MAGNETIC SWITCH.
CONTACTS CLOSED
WHEN ROOM IS
RETRACTED

**NOTE: SW1 AND SW2 CLAMP LIMIT
SWITCHES ARE OPEN WHEN THE
CLAMP IS FULLY RETRACTED.**

LEFT ROOM CLAMP

SW2
NC
M2
M

RIGHT ROOM CLAMP

SW1
NC
M1
M

PED

MP85.0311
27JUL07

ELECTRICAL CONNECTION DIAGRAM
SYSTEM SCHEMATIC

MP85.1608
16JUN05