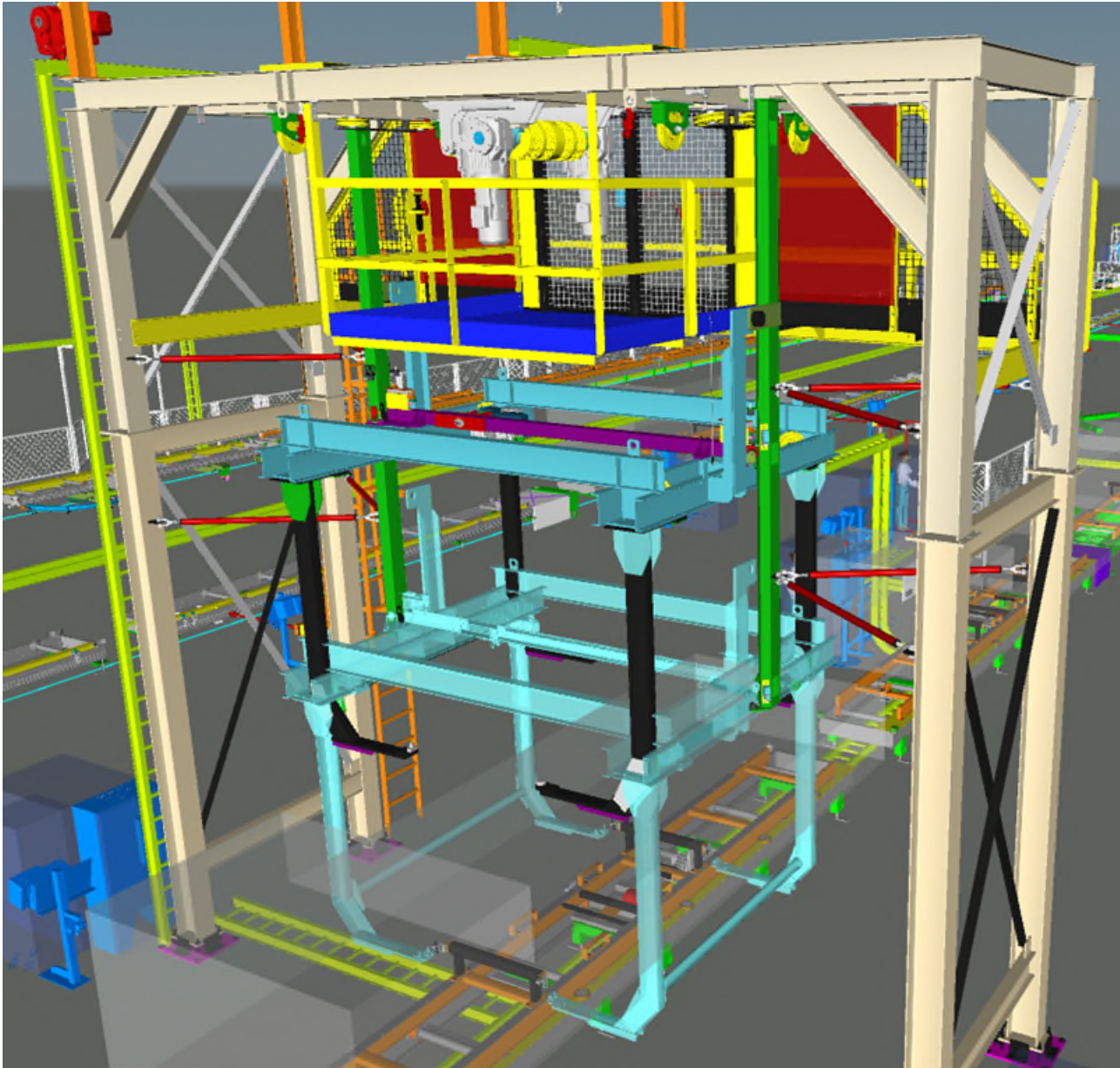


## 4-Post Lift Components

Your 4-post lift contains the following major components:

- 4-Post Lift Drive Unit
- 4-Post Carriage Assembly



## 4-Post Lift Drive Unit



- |             |                        |             |
|-------------|------------------------|-------------|
| 1 Gearmotor | 4 Fixing Pin           | 7 Encoder   |
| 2 Drum      | 5 Tension/Slack Switch | 8 Wire Rope |
| 3 Pulley    | 6 Safety Locking Pin   |             |

### 4-Post Lift Drive Unit Overview

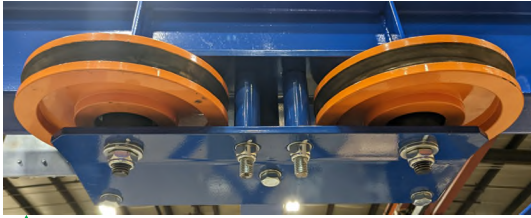
The 4-Post Lifts are installed as part of the Underbody Sealer (UBS) robot cells and work to lift the vehicle off the skid to give clearance for the robot arms to complete their cycle. The upper portion of the lifts have two gearmotors installed with one acting as a main and the other as a standby. The motor shafts are connected to the center drum, where the wire rope is wound and unwound when the system is in operation.

The wire rope extends from the drum to pulleys mounted at the width of the carrier. Both sides have different mounted pulleys: one wide and one narrow. The narrow pulleys are angled and feed the inner two wire ropes as they extend from the base of the drum while the wide pulleys are leveled and feed the outer two wire ropes as they extend from the top of the drum.



Fixing pin attached to a tension/slack switch

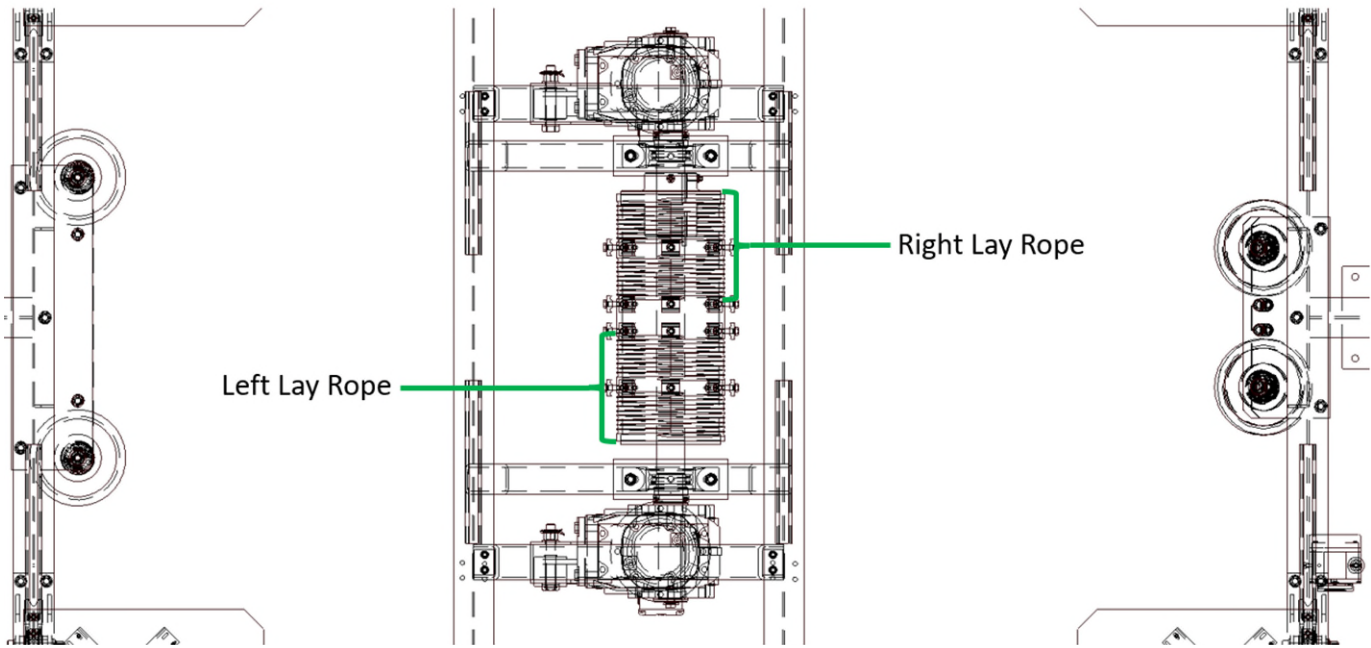
The wire ropes descend through drop pulleys toward the carriage assembly and ultimately end at the fixing pin. Each rope is anchored at a mounted fixing pin located above the four corners of the carriage assembly. Each fixing pin has a spring and tension/slack switch. These switches monitor the tension and slack of the wire ropes, so they do not exceed recommended values. Should one of these switches be triggered, the system will stop.



▲ *Narrow wire rope pulleys*

On the drive unit platform there is a safety locking pin that will trigger a switch when removed. These safety locking pins are necessary for properly locking the system before performing any maintenance or service. An encoder is installed to accurately read the position and travel distance of the carrier unit.

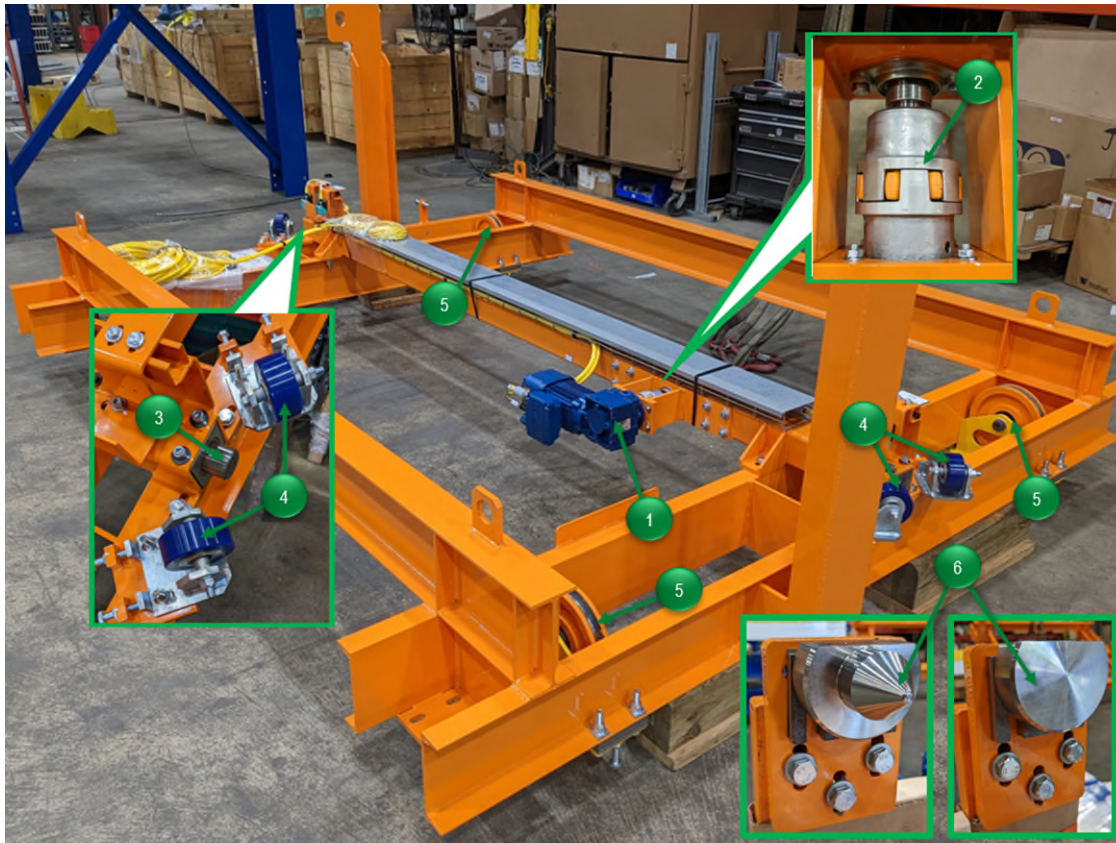




### 4-Post Lift Drive Unit Rope Lay

Within the 4-Post Lift, there are four wire ropes: two left lay ropes and two right lay ropes. Each drum groove has a specific rope that it utilizes. Both rope types are fabricated to be used at their designated drum groove locations and are **not interchangeable**.

## 4-Post Lift Carriage Assembly



-  Gearmotor
-  Shot Pin
-  Pulley
-  Coupler
-  Guide Wheel
-  Part Touching Detail

### 4-Post Lift Carriage Assembly Overview

The carriage assembly is responsible for holding the vehicle as it is lifted off the skid. A gearmotor is mounted in the middle of the frame and has a coupler extended from the motor shaft. The coupler can engage/disengage the motor if necessary during maintenance and service. The motor drives the position of the shot pins located on both sides of the carriage. The shot pins are extended when the carriage is in position at the top and bottom of the stroke. Two prox sensors are positioned to detect the position of the shot pins for when they are extended or retracted.

A set of guide wheels are located adjacent to the shot pins and run along the vertical column of the lift frame as the carriage moves. Both sets of wheels assist in guiding the carriage and maintain alignment so that it doesn't stray from the desired path. The wire rope from the drive unit feeds through pulleys mounted at each of the carriage corners, the carriage is lifted from these pulleys.



▲ Shot pin prox switches

At the end of the carriage arms are two sets of part touching details: pins and pads. Each of these are shimmed and can be adjusted if needed. These parts are the location at which the vehicle body connects with the 4-post lift.