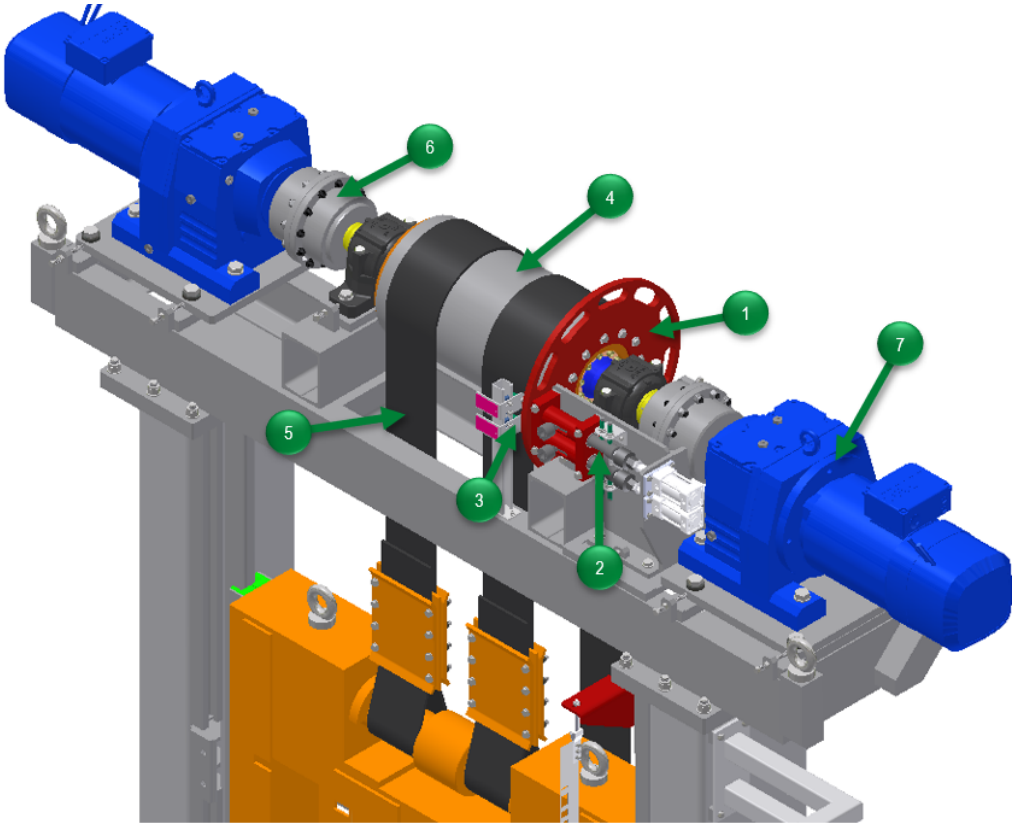
EMS VDL Components

Your Asset system contains the following major components:

- ***EMS VDL Upper Drive Unit***
- ***EMS VDL Carriage Assembly***
- ***EMS VDL Counterweight***

EMS VDL Upper Drive Unit



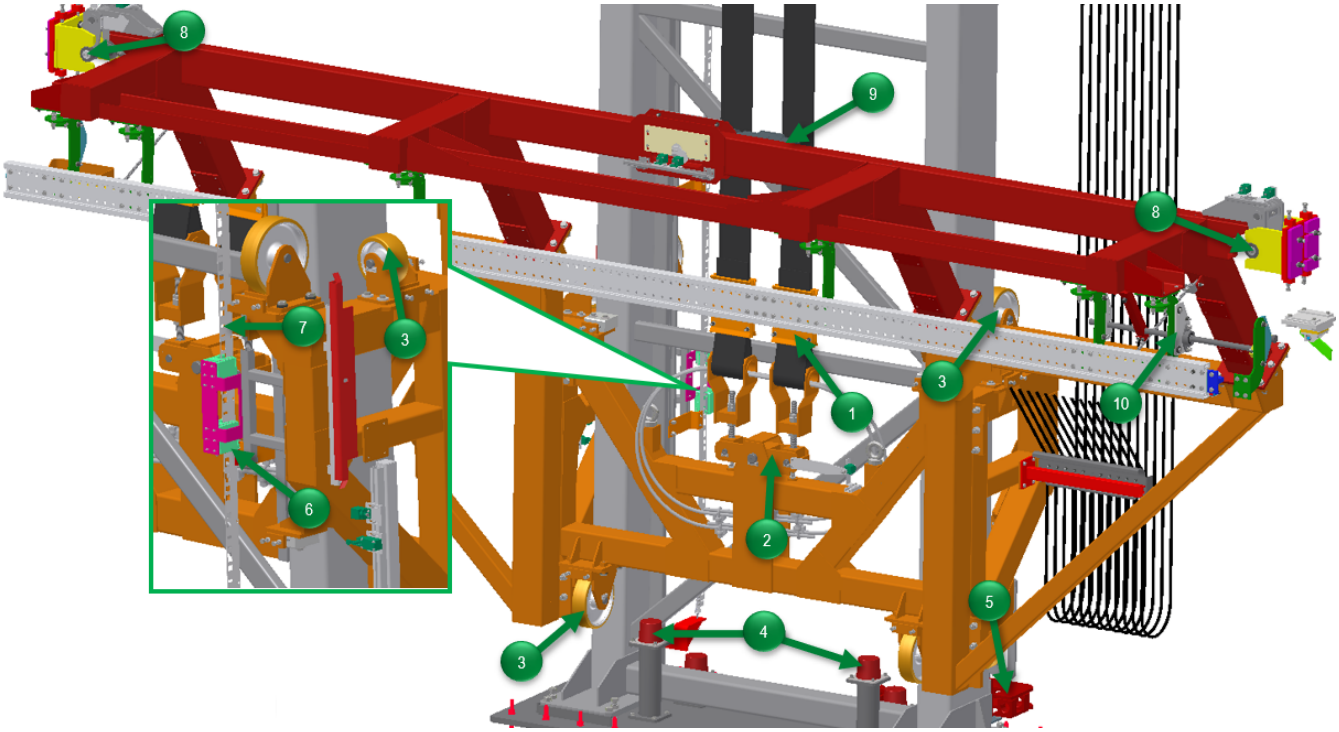
1	Starwheel	4	Drum	7	Gearmotor
2	Pneumatic Lockout Device	5	Lifting Belts		
3	Proximity Sensors	6	Coupling		

Upper Drive Unit Overview

An MPS pneumatic lockout device mechanically locks the upper drive unit during an emergency stop, when power is cut to the EMS VDL, or when it is placed in maintenance mode. The drive assembly is supported by a pillow block bearing set consisting of the drive shaft and couplings on either side. A pair of smooth cable-reinforced lift belts rides on the belt drum and carries the combined weight of the lift carriage and counterweight.

The cylinders on the safety pin assembly will fire the two safety pins upon which at least one will pass through the star wheel. This will mechanically lock the belt drum preventing any travel by the lift carriage and counterweight. Switches on the safety pin assembly will inform the system if the pins are in the retracted or extended position.

EMS VDL Carriage Assembly



1	Carriage Belt Connection Plates	5	Manual Safety Pin	9	Alignment Gearmotor
2	Pivot Assembly	6	Code Rail Reader Head	10	Safety Device
3	Guide Wheels	7	Code Rail		
4	Rubber Bumpers	8	Alignment Device		

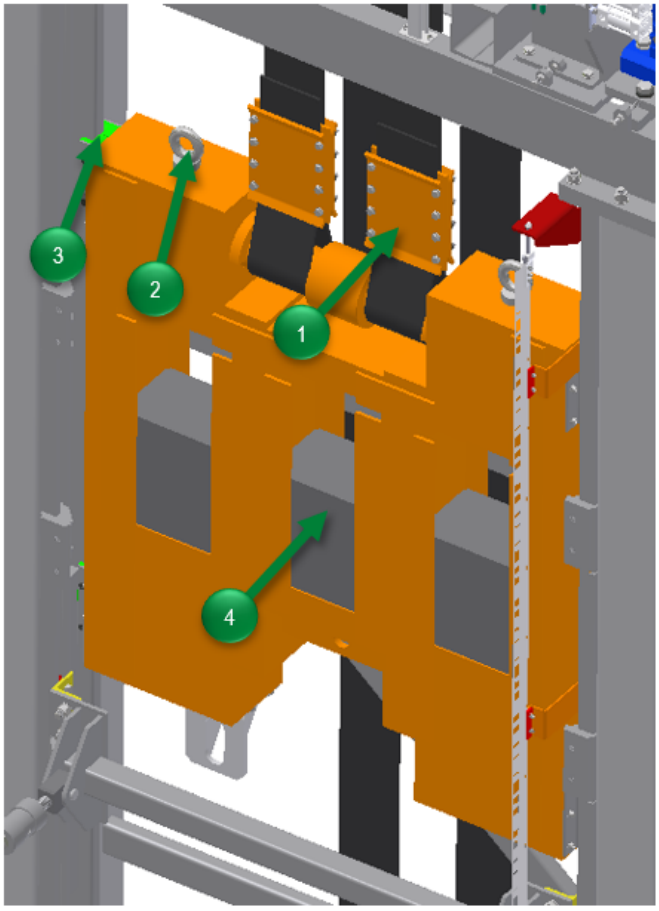
EMS VDL Carriage Assembly Overview

The EMS VDL Carriage Assembly is specifically designed to house EMS Carriers. There are dual belt supports that anchor the Carriage to the top of a counterweight assembly. These lift belts attach to a pivot assembly within the Carriage to detect a loose or broken belt condition. To provide lateral and transverse stability, guide wheels are mounted to the outer portion of the H-Beam posts and guide the EMS VDL Carriage Assembly.

Several rubber bumpers are installed via floor mounting to act as a resting location should the Carriage need to be set down during maintenance. Along the backside, manual safety pins are in holders to be used for lockout procedures during maintenance.

The VDL uses a code rail mounted on a vertical rail between the beams and a code rail reader mounted on the Carriage to provide accurate positioning while traveling. An electric motor driven alignment device extends levers at each side into an external reference assembly that mounts to the floor and positions the Carriage. Safety devices are installed at entrance and exit points that act on cam followers to activate a paddle that prevents EMS Carriers from entering or exiting the carriage during travel.

EMS VDL Counterweight



1 Counterwight Belt Connection Plates

2 Eyebolts

3 Counterweight Guides

4 Weight Plates

Counterweight Overview

The counterweight is the second belt termination point and acts as a counterbalance to the carriage and product payload. Both belts are anchored at the top of the counterweight by connection plates along with a pair of eyebolts to be used during lockout procedures or manual lifting. Along the sides of the counterweight, four guide assemblies are mounted to aid in positioning during travel. A stack of weight plates are housed internally and can be adjusted if necessary.