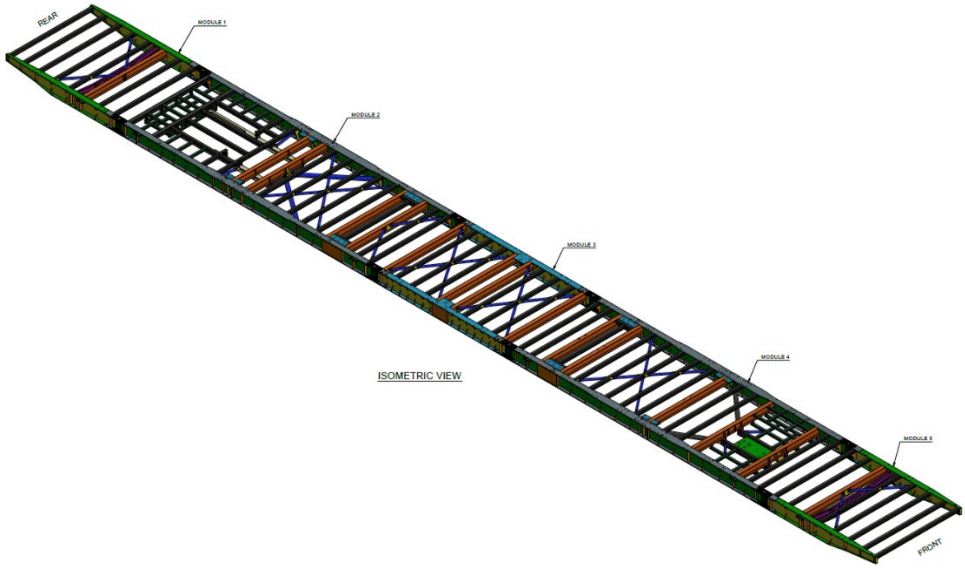
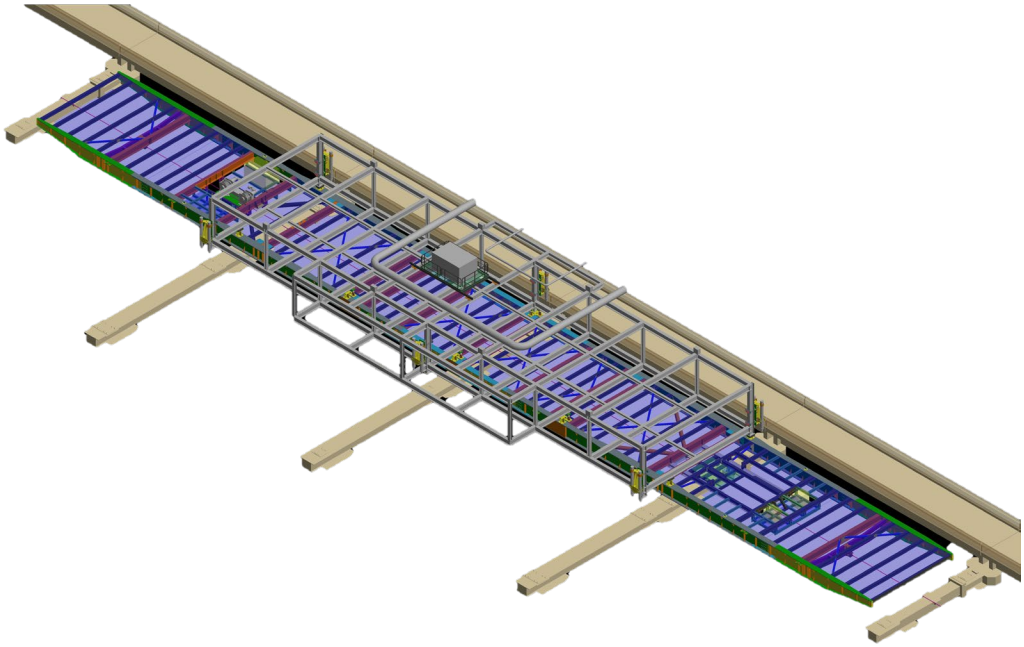
Launching Girder

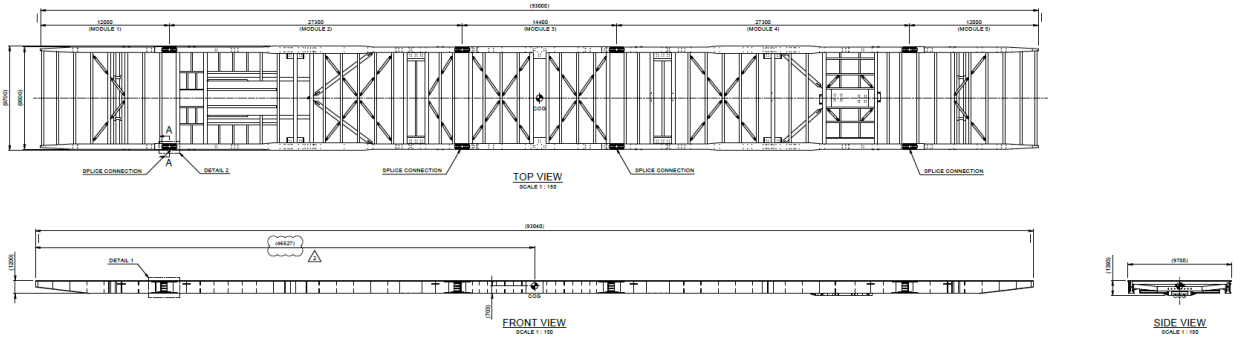
- The Launching Girder (LG) is a purpose-built steel frame, 93m long x 9.9m wide x 1.2m high, designed for moving the pipe rack or preassembled rack (PAR) modules along the trestle from their initial position to the required installation location.



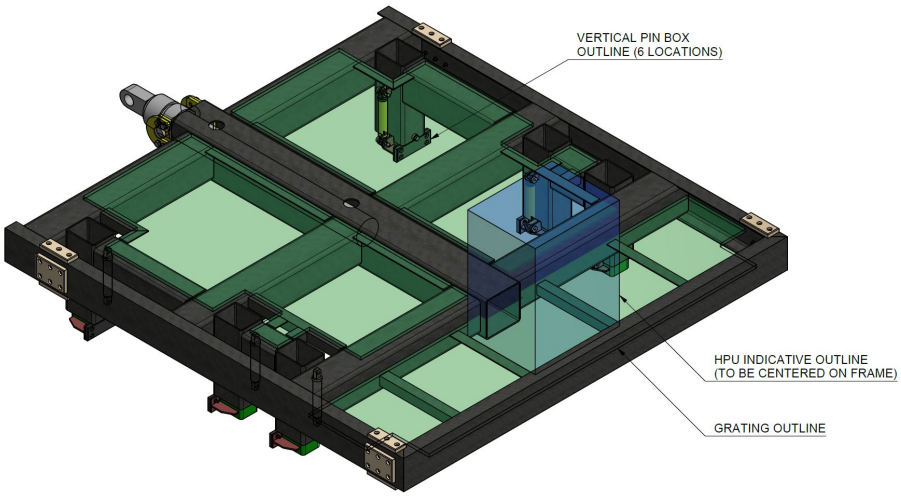
- The LG weighs approximately 275MT and requires support over three bents spaced 24m apart when picking up or transporting a PAR Module. It is capable of transporting modules weighing upto 240MT.



- The main structure consists of five modules which are bolted together by splice connections. Each module is built from two custom beams on either side of 1.20m deep and has a flange width of 500mm. The main frame beams are set at 9m center to center and are interconnected by smaller-sized beams and bracing. The deck, top of beam level, is covered with hot dipped galvanized (HDG) grating to provide work access.



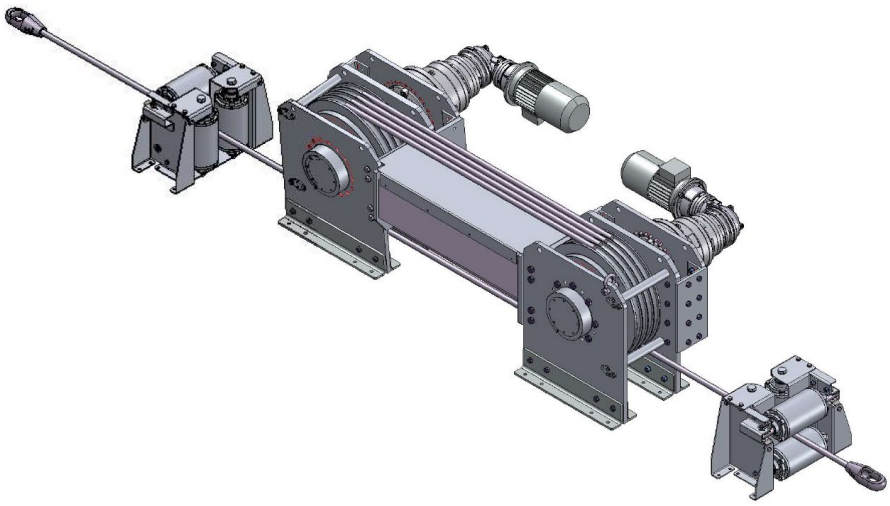
- The LG is equipped with a longitudinal positioning frame known as Hook-On-Jack (HOJ), which stops the LG at the destined location and acts as a high precision tool in the final longitudinal positioning of the LG.



- The skidding of the launching girder is done using a traction and tension winch. The traction winch is located at the rear of the LG and is used for transporting the LG via a tensioned wire rope Ø38.1mm.
    - **Specifications of the traction winch**
        - Working load : 45000 kg
        - Hauling speed : Approx. 2.2m/min
        - Drum : ø754 x 233mm
        - Wire rope diameter : ø38.1 mm
        - Motor power : 11kW S1(2x)
        - Voltage : 400V 50Hz
        - Protection class : IP 56

- Weight : Approx. 5750 kg
- Brake : With fail-safe brake
- Painting : 3-layer marine coating RAL5010
- Oil type and quantity drive : 15L Q8 oil Goya ISO VG 150(min)
- Options : Standstill heating
  : Forced cooling
  : Encoder
  : CT-function
  : Grooved drum(2x)

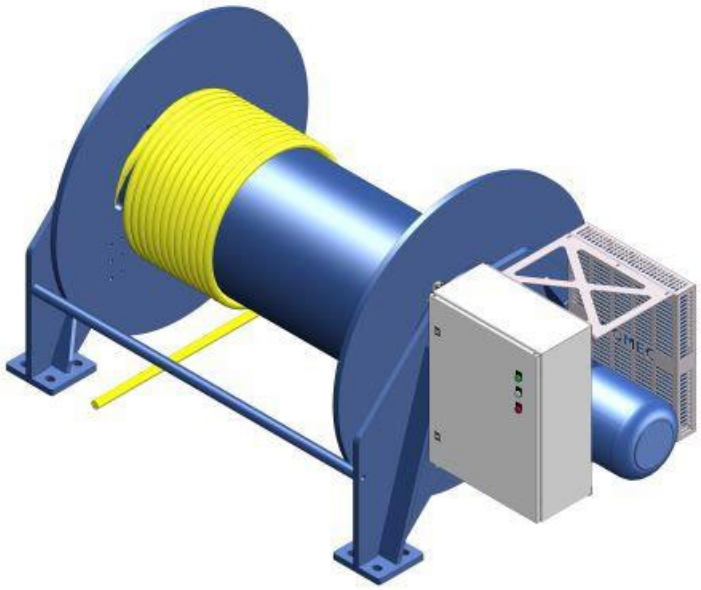
- **Specifications control box**
  - Control panel type : AISI 316 control box
  - Power supply : 400V 50Hz 3-ph with 0
  - Operation : Local control box with push buttons and emergency stop
  - Options : Standstill heating
    : Main switch
    : CT-function
    : Encoder
    : Overload protection
    : Brake resistance
    : Brake control



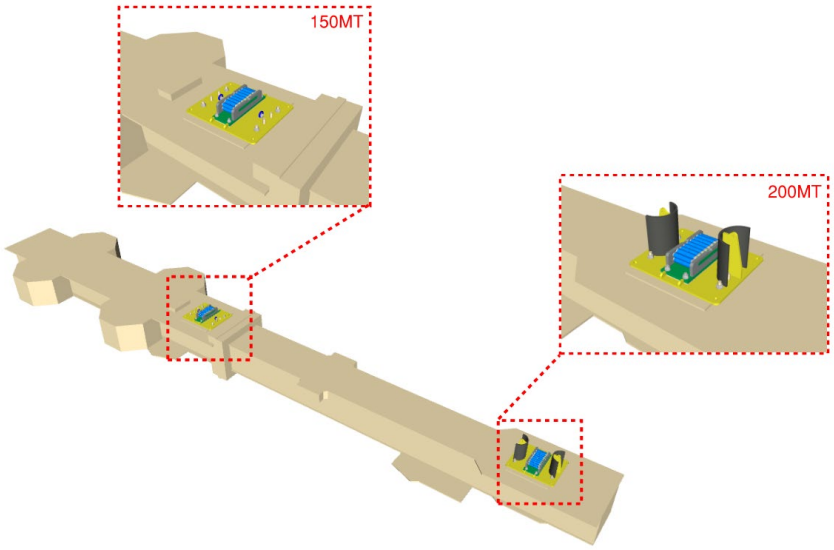
- The tension winch acts as an anchor point and is located at the starting position of the LG. The tension winch has a spooling capacity for 1000 m of ø38.1 mm wire and a pulling capacity of 45MT at the first layer with a hauling speed of 2 m/min.
  - **Specifications of the tension winch**
    - Working load : 45000 kg on layer 1
      : 40500 kg on layer 2
      : 5000 kg on layer 3-9
    - Hauling speed : Approx. 3 m/min on layer 1
    - Drum : Smooth ø660 x 1525mm
    - Wire rope diameter : ø38.1 mm

- Wire rope storage : 1057meter in 9 layers
- Motor power : 22kW S1
- Voltage : 400Vac
- Protection class : IP 56
- Weight : Approx. 3500 kg
- Brake : With fail-safe brake
- Painting : 3-layer marine coating RAL5010
- Oil type and quantity drive : 15L Q8 oil Goya ISO VG150(min)
- Options : Standstill heating
  : Encoder
  : Tension

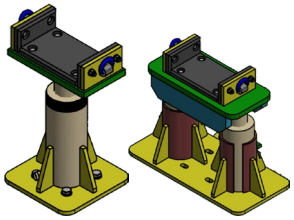
- **Specifications of the tension winch control box**
  - Control panel type : AISI 316 control box
  - Power supply : 400V 50Hz 3ph with 0
  - Operation : Local control
  - Options : Standstill heating
    : Main switch
    : CT-function
    : Encoder
    : Overload protection
    : Brake resistance
    : Brake control



- The LG is supported by a minimum of 6 Hillman roller boxes at all times. There are 36 x 150-XNTW and 36 x 200-XNTW roller boxes available. The 200MT roller boxes have transverse restraints to keep the LG aligned while in motion.

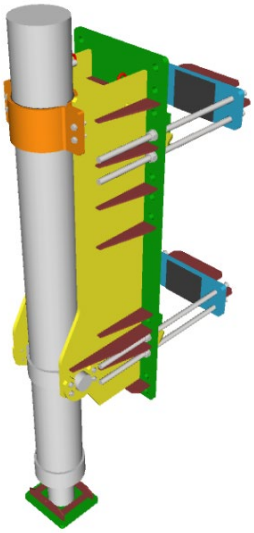


- The LG comes with hydraulics to support the installation of PAR Modules.
    - The equalizing jacks are used for compensating the deflection in the PAR Modules experienced by LG during its motion.
        - Quantity: 10
        - 100 Ton, Double Acting, 70MPA
        - Stroke: 250mm

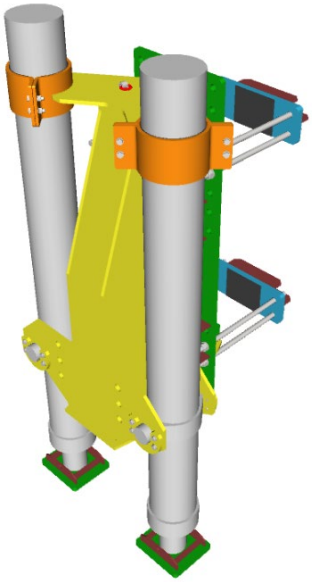


    - The PAR jacking cylinders are used for raising and lowering the PAR Module off from the LG.
        - Quantity: 30
        - Bore 203mm x Rod 165” x 2100mm stroke
        - Push: 623 kN @ 192 Bar
        - Pull: 75 kN @ 68 Bar
        - Integral mounted counterbalance valve
        - Internal Linear Variable Displacement Transducer (LVDT)

SINGLE ASSEMBLY



DOUBLE ASSEMBLY



- There are a total of three electrically driven hydraulic power units (HPUs) that power the hydraulics for both equalizing jacks and PAR Jacking cylinders.
  - Quantity: 3
  - Operates 12 PAR jacking cylinders and 6 equalizing jacks
  - Hoses: 8 R2T hose with quick disconnect fittings (24 total per HPU, PAR Main Cylinders)
  - Hoses: 6 R2T hose with quick disconnect fittings (12 total per HPU, Equalizing Jacks)
  - HPU control system
    - Touch screen control panels accessible from roadway
    - PLC controlled – Jack force equalizing and PAR cylinder levelling
    - PAR main cylinders position displacement synchronized using LVDT
    - Equalizing jacks pressure controlled