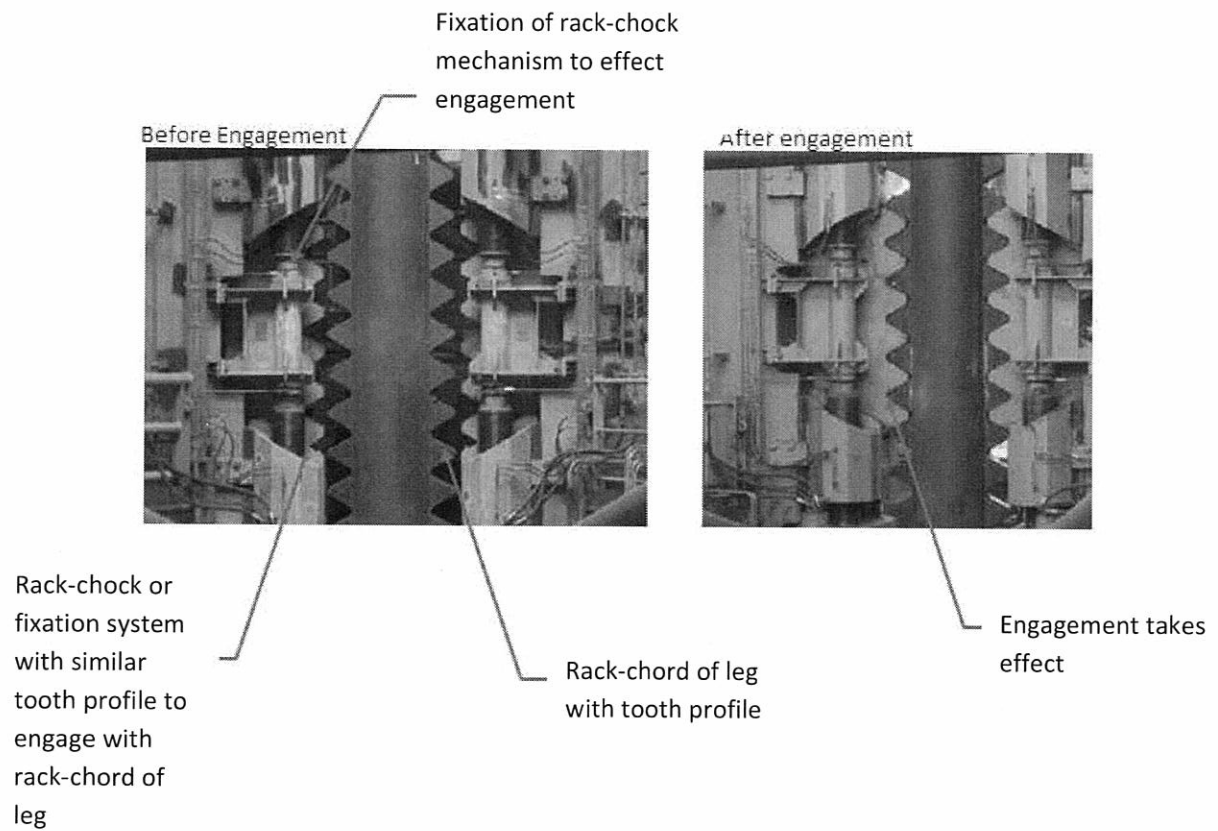


**Figure 1.0**

**Typical fixation or rack-chock sytem**



**Figure 2.0**

***A Fixation or Rack-Chock system requires full leg rack-rack chock engagement and the engagement mechanism is complicated as it must also cater for the relative vertical displacement between leg rack and hull, and each engagement must require accurate vertical positioning and alignment to do so.***

Typical illustration of one leg-chord of leg of a jack up rig passing through a jacking structure affixed with a jacking system

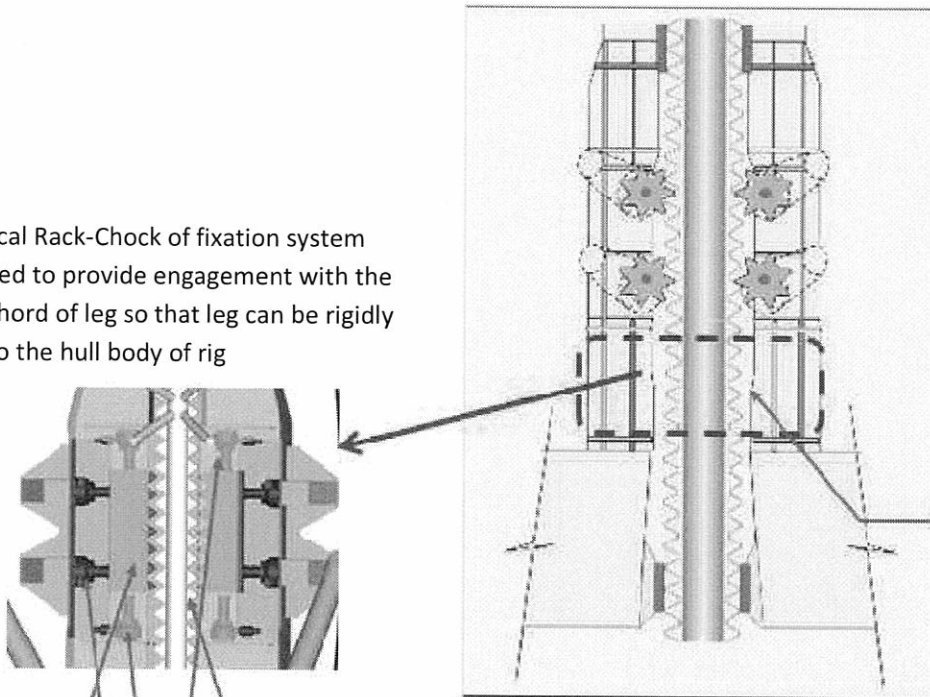
A typical Rack-Chock of fixation system installed to provide engagement with the rack chord of leg so that leg can be rigidly held to the hull body of rig

Location where rack chock or fixation system is normally installed near the deck level of jack up rig

Rack chock or fixation system with similar tooth profile to engage with rack chord of leg

Rack chord of leg with tooth profile

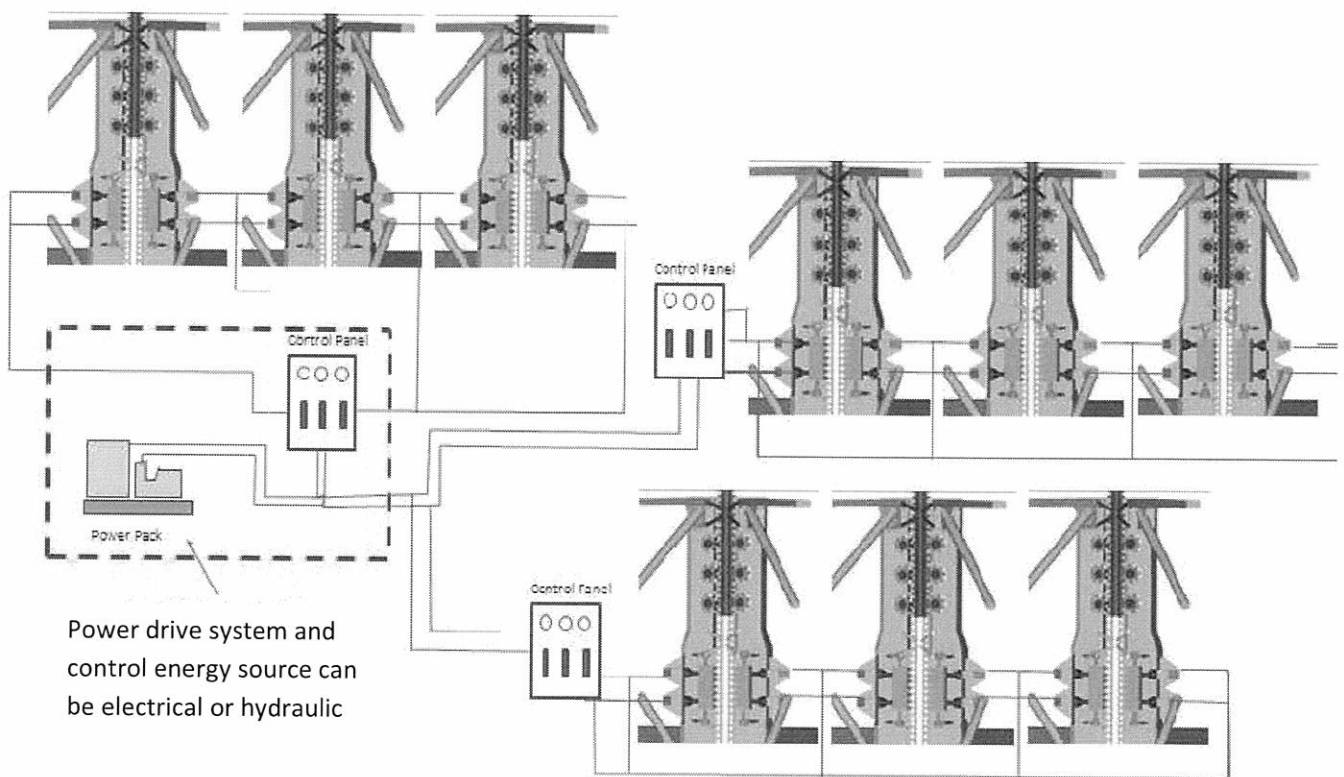
Fixation or rack-chock mechanism to effect and align engagement

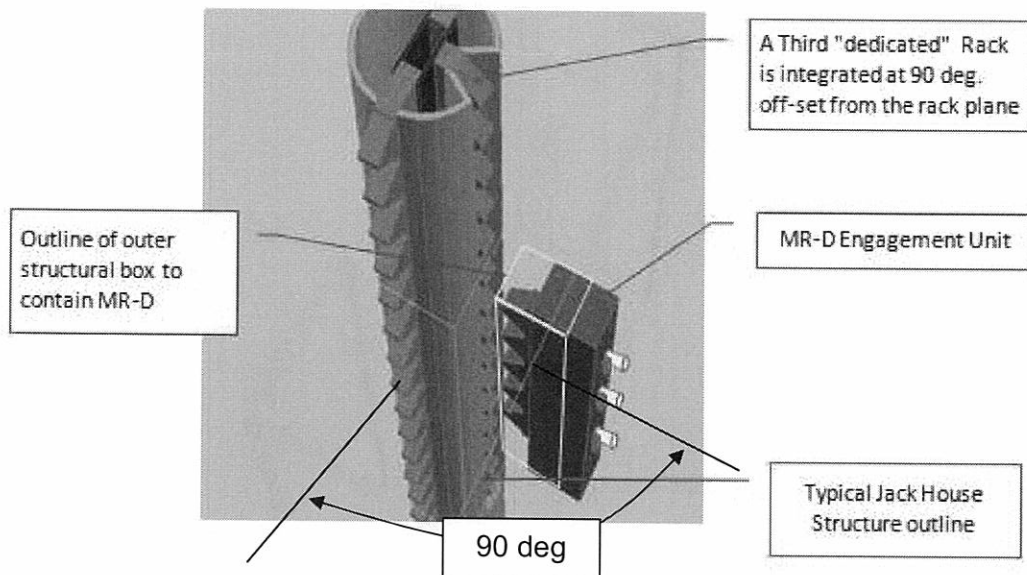


**Figure 3.0**

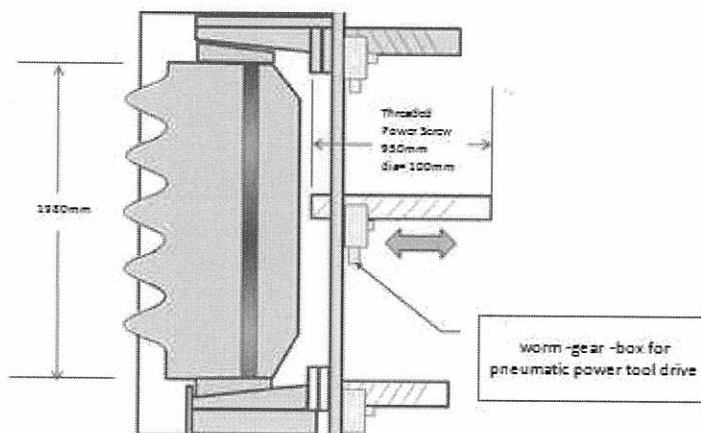
***A Fixation or Rack-Chock system uses a centralized power pack system which requires a network of distributed piping and/or electrical outfits to effect actuation and control of the Fixation or Rack-Chock system***

**A diagrammatic representation of Fixation or Rack-Chock system for three legs (one set for each leg chord)**

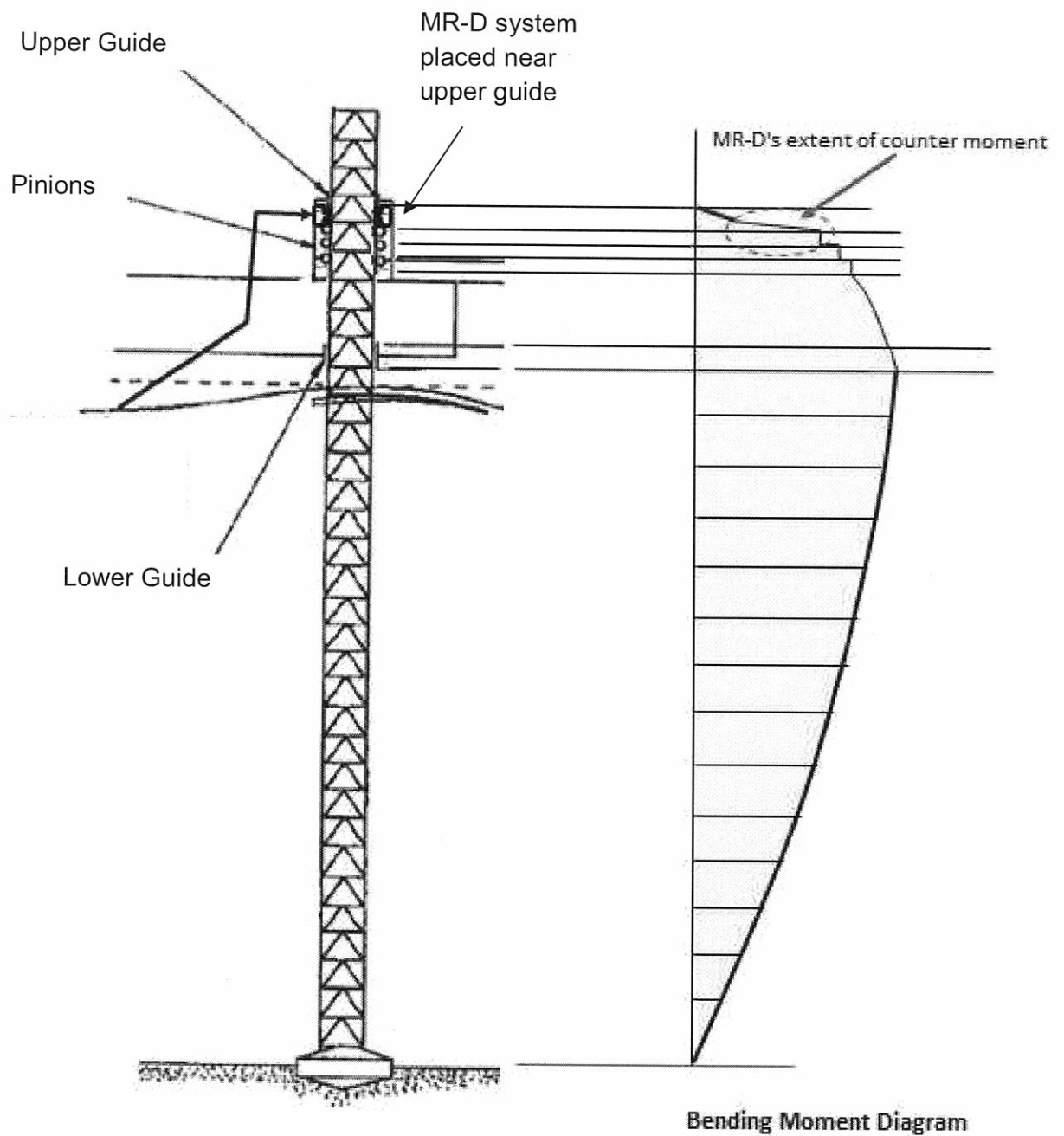




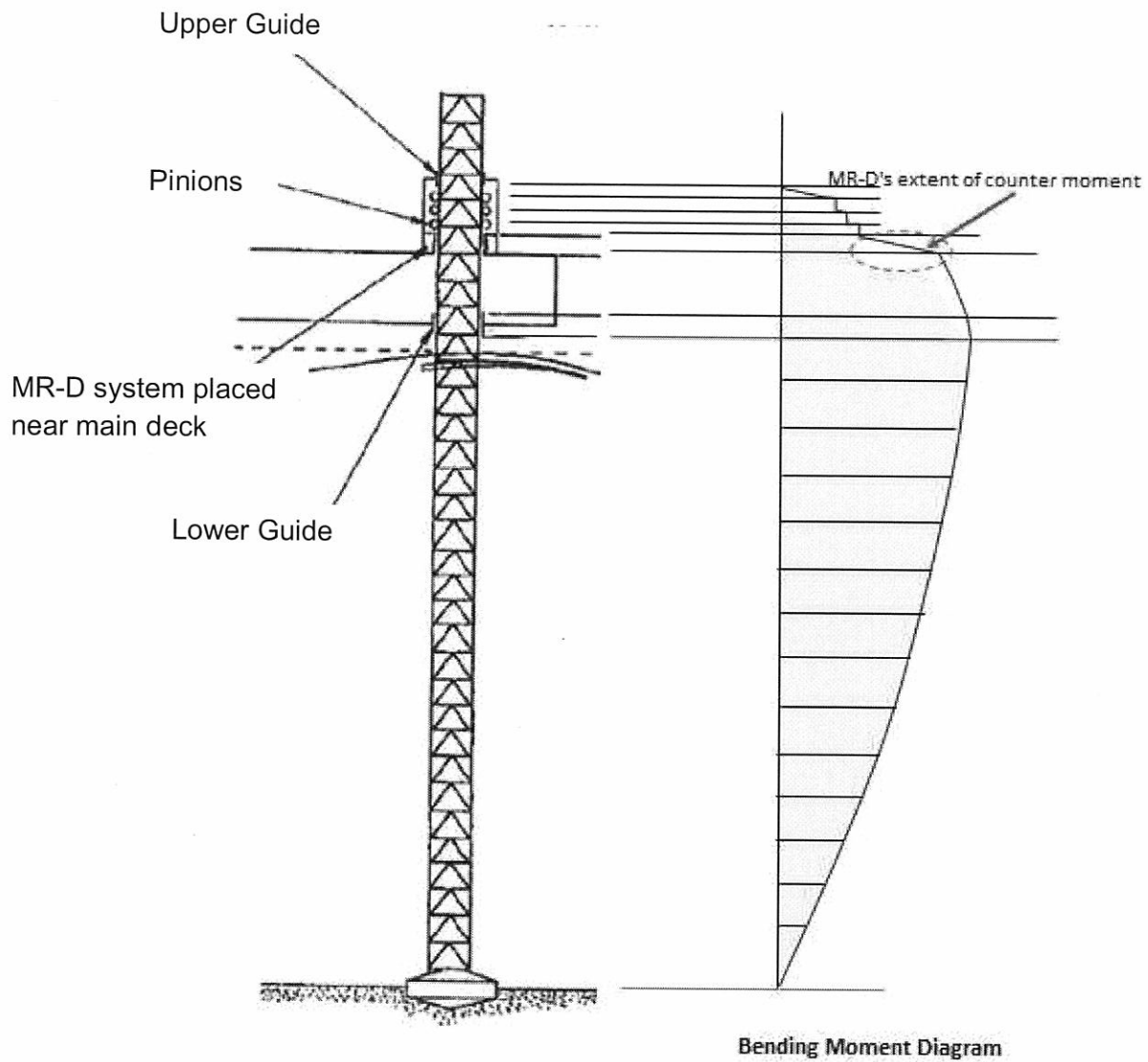
**Figure 4.0** - MR-D engagement unit is located at 90 deg away from the leg chord rack plane and engages with a dedicated rack



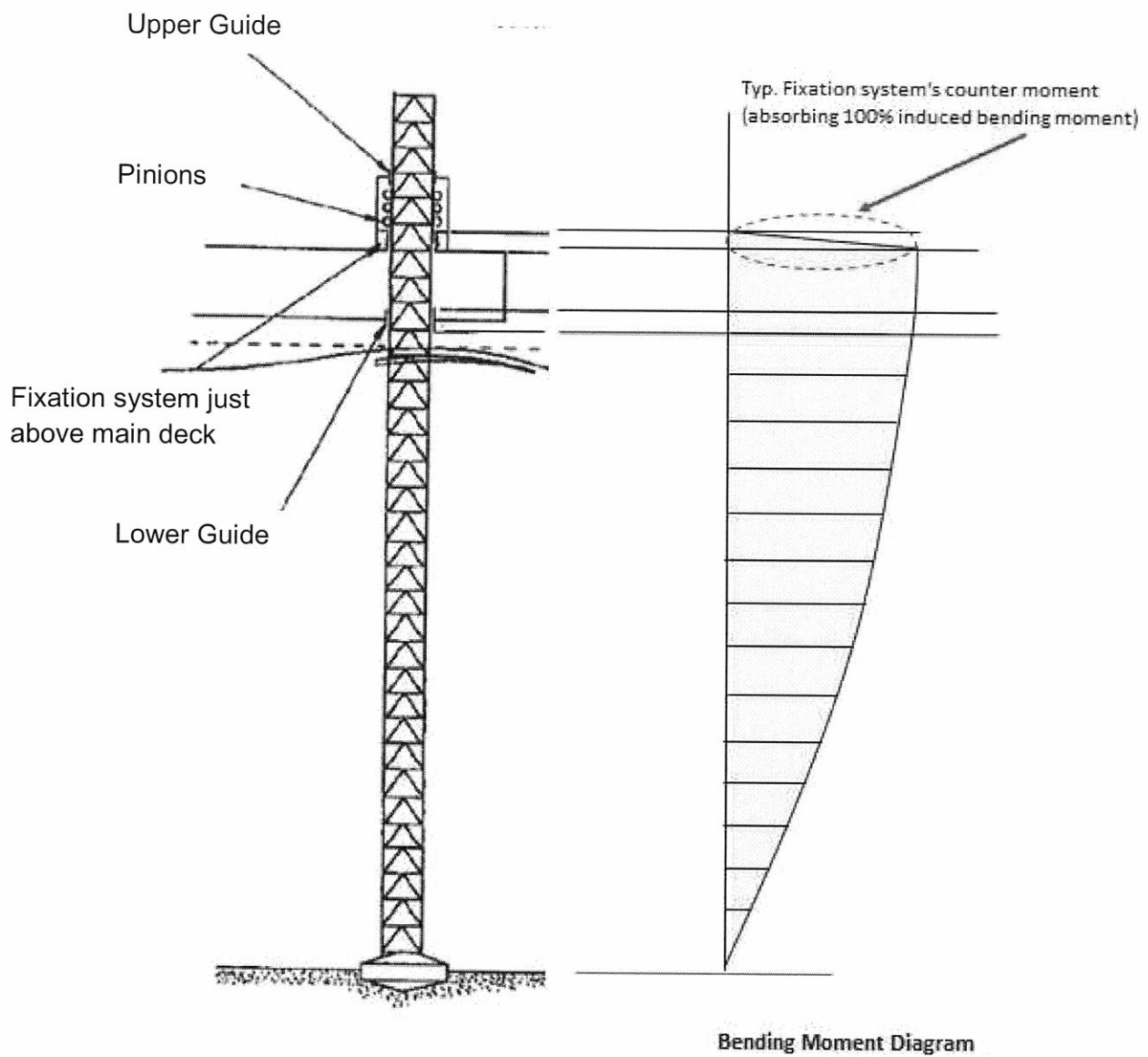
**Figure 5.0** - MR-D engagement unit is equipped with power screws that can be operated by pneumatic means supplied by the compressed air system onboard the rig.



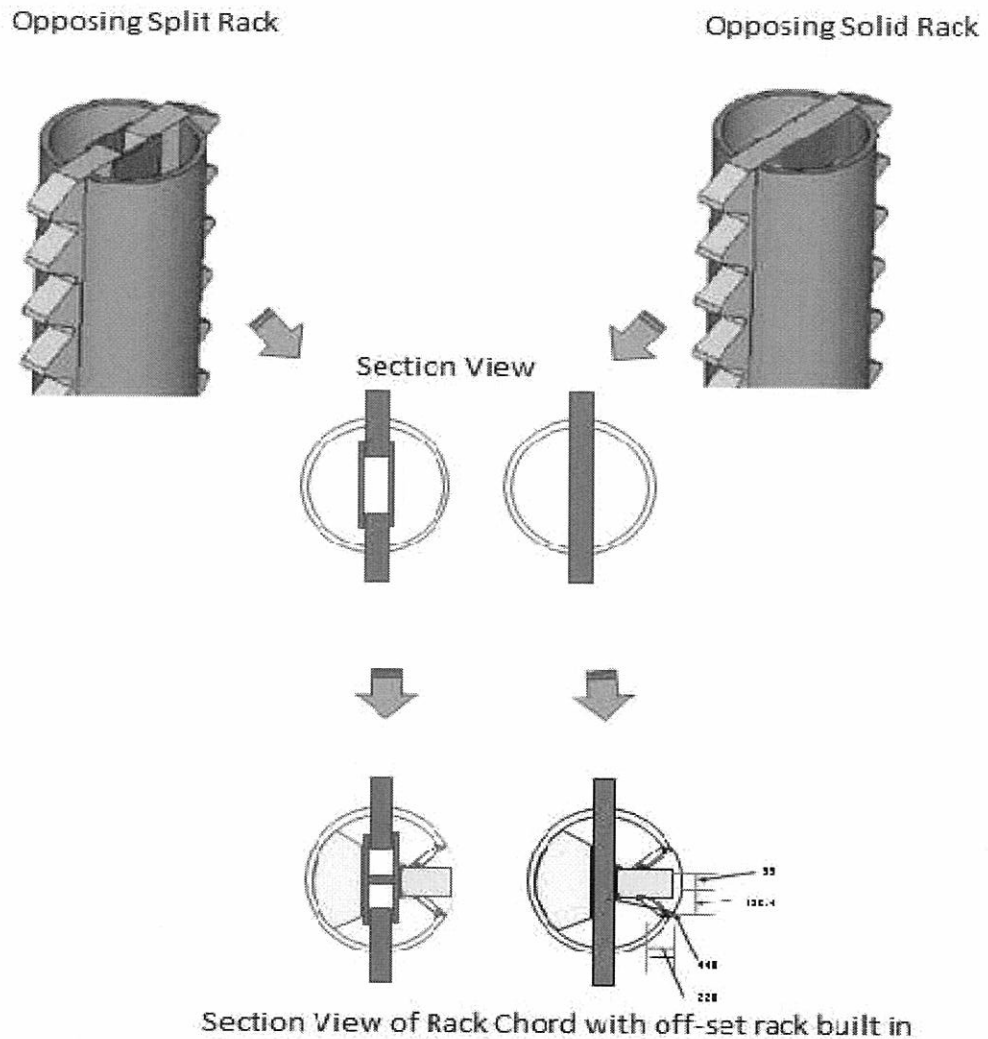
**Figure 6.0** - Jack Up Rig with MR-D system (fixed at upper guide level) - With MR-D system applied, the base shear bending moment is counter-acted and shared with guides, pinions and MR-D. MR-D counteracts the larger portion of bending moment.



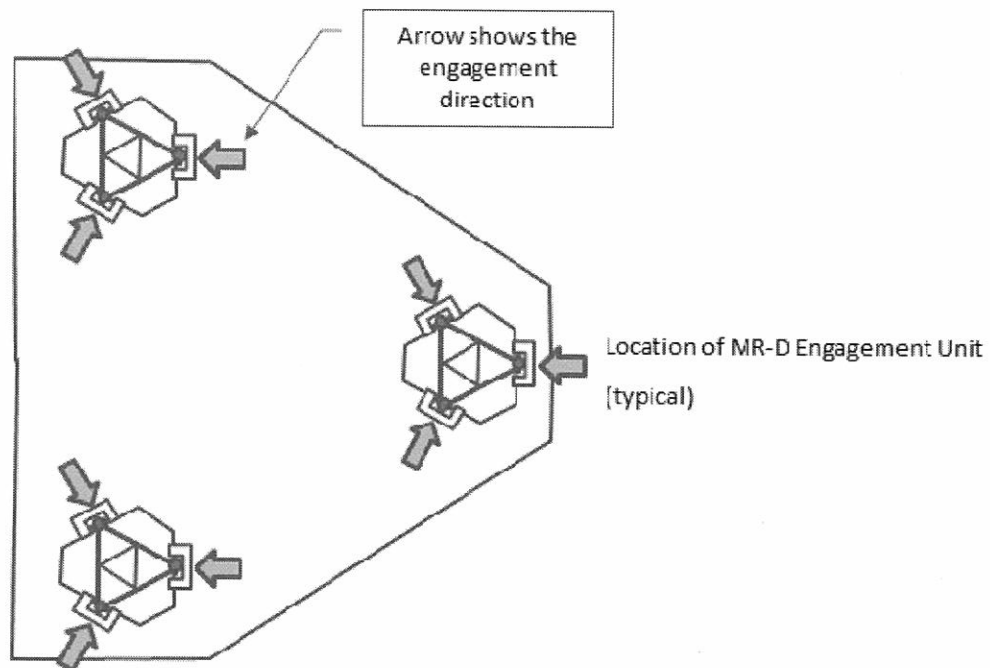
**Figure 7.0** - Jack Up Rig with MR-D system (fixed at main deck level) - With MR-D system applied, the base shear bending moment is counter-acted and shared with guides, pinions and MR-D



**Figure 8.0** - Jack Up Rig with typ. fixation system - With fixation system rigidly applied, pinions unloaded and no reactions are experienced at upper or lower guides. The whole base shear bending moment is counter-acted by the fixation system.



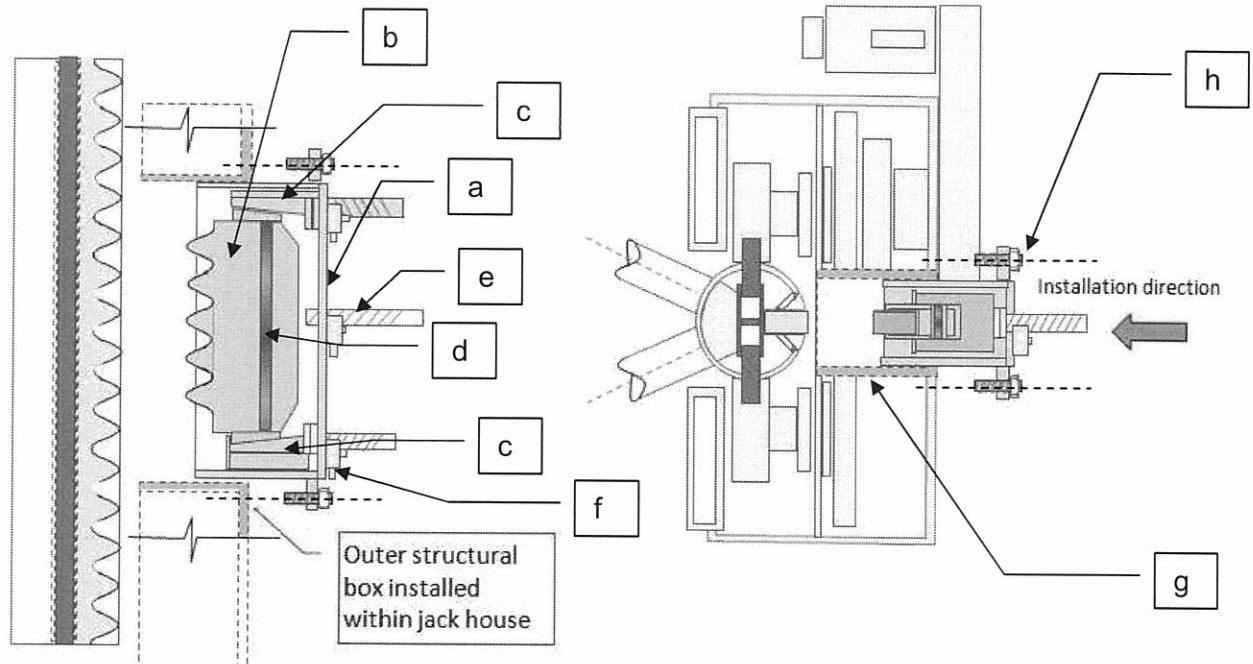
**Figure 9.0** - The third rack for engaging MR-D is placed 90 deg away from the rack plane. Such a construction design is only applicable at upper portion of leg when the operating water depth is deeper and the environment forces are greater requiring the MR-D to be put in action.



**Figure 10** - MR-D engagement unit is placed 90 deg away from the rack plane and installed at nine (9) locations. Unlike typical fixation system where two engagement chocks are required per corner, MR-D system reduces the number of units by half.

Elevation View

Plan View



**Figure 11** - Parts description,

- a. Engagement unit structural modular box
- b. Sliding Chock piece or element
- c. Wedge sets for vertical positioning
- d. Compressible layer for horizontal movement (option)
- e. Screw-set for locating the chock
- f. Power drive motors using a suitable gear box. Driving means can be compressed air, hydraulics or electric
- g. Jack case slot-in structural box to allow modular engagement unit to slot-in in place.
- h. Stud/nut arrangement or similar for securing the modular box in jack house structure