



# A bend limiting device

## Njord BR (Bend Restrictor)

Where any flexible tubular connects to a structure, normal movement during operation (dynamic loading) or forces incurred during installation and retrieval (static loading) can cause catastrophic failure of the tubular at the termination point. The failure mode can be through collapse, rupture of internal lines or even rupture of the external layers leading to escape of the contents to the environment. This can happen as a result of a single event or be caused through fatigue damage over time.

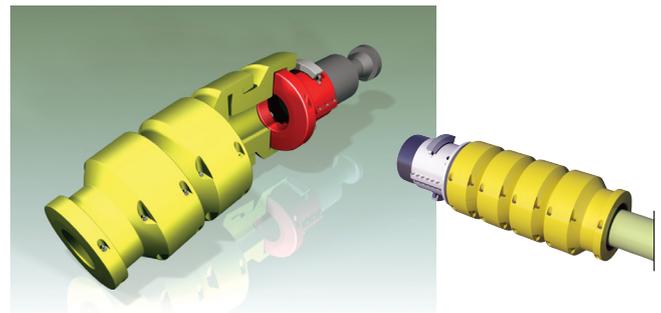
Bend limiting devices are provided to protect the tubular from these situations and perform the following functions:

- Maintain the manufacturers recommended minimum bend radius (MBR) during the life of the project
- Provide a suitable load path from tubular to fixed structure
- Reduce point loading at the termination to an acceptable level

### Njord BR (Bend Restrictor)

Njord BR is used to protect flexible pipelines from overbending and buckling during their installation or operation phase where static loads are generated.

The system comprises a number of interlocking elements that articulate in 3 dimensions when subjected to external loads. At a designed radius the elements mechanically lock to form a semi rigid curved structure that will not move further.

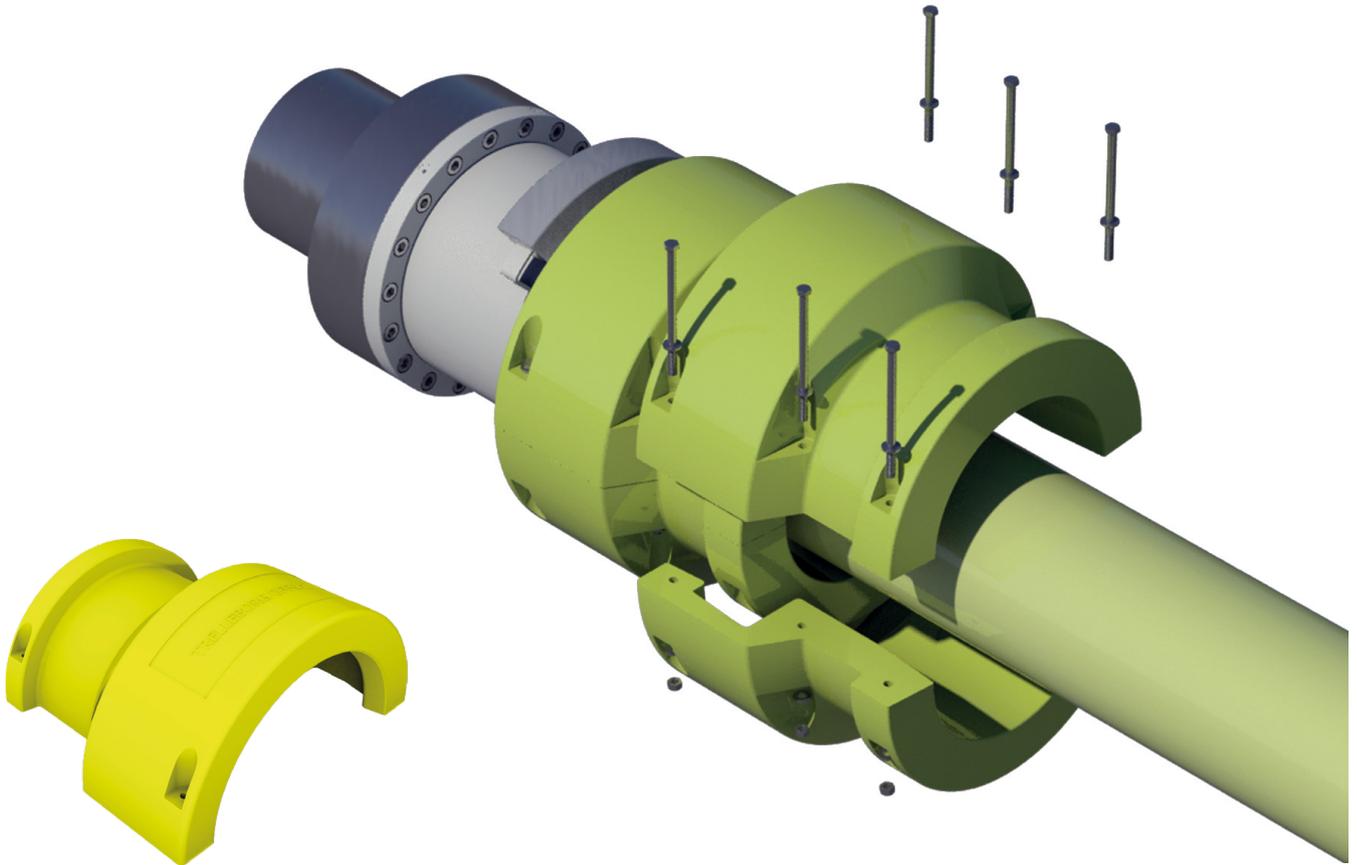


Once the elements lock together the bending moment present is transferred through the elements to a specially designed steel interface structure then into the adjacent rigid connection. To provide the performance at every level, Trelleborg Offshore will design the Njord BR elements based on supplied information and configure the termination steelwork to suit the project needs.



## Benefits :

- A split design allows installation of the restrictor after pipe termination
- Ease of installation onshore and offshore
- Light weight in water, reducing the loading on the pipe
- Increased durability



## Contact Us

Trelleborg Offshore delivers innovative and reliable offshore solutions that maximize business performance to meet your needs. Our dedicated and highly skilled staff are always on hand to provide seamless process support from initial idea, through to delivery and beyond.



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