An Ocean of Possibility

SPM Offloading Buoy
Orwell Offshore’s Catenary Anchor Leg Mooring (CALM) Buoy offers a reliable state-of-the-art solution for loading and offloading crude oil, refined petroleum products and other fluids while providing for a safe on-board working environment.

The turret buoy design facilitates the provision of a deckhouse structure that allows protection of all mechanical parts and easy access for operation and maintenance.
Key features include:

- 25-year design life (based on continuous service) reducing overall cost of ownership
- Hexagonal buoy body approximates a cylinder while providing the advantages of flat-plate construction
- Hexagonal deckhouse structure ties in to the framing of the buoy hull
- Turret-based SPM design allows vessels to weathervane freely
- Deckhouse provides easy and safe maintenance access and protects critical mechanical equipment
- Flat, unobstructed deck surrounded with hand railings for personnel safety
- Single and double product swivels available
- 6 watertight compartments
- Circular skirt protects buoy and deflects vessels in the event of tanker ‘kissing’
- Articulated and self-locking chain stops prevent chain wear and reduce installation time
- Davit on boat landing platform for material handling
- Meets all Classification Societies requirements and applicable international guidelines such as OCIMF
FEATURES

Swivel with Expansion Joint

Chain Table configuration
**FEATURES**

**Technical Features:**

1. Deckhouse roof provides ample space for navigation aids such as light, radar reflector, foghorn, as well as solar panels and battery box.
2. Expansion joints in the product piping compensate for pipe expansion and minor concentric misalignment.
3. Deckhouse protects all mechanical parts from the environment and provides for a secure, dry and accessible turret interior.
4. Large-diameter three-race roller bearing connects the turret to the buoy body and allows the tanker to weathervane.
5. Machined bearing supports enable steel-to-steel fitting of the bearing.
6. Available with single or double path product swivel.
7. Double seal arrangement protects the main bearing. A hollow centre can be provided for connections of hydraulic and electrical paths to a subsea control umbilical via slip ring assembly and hydraulic swivel if required.
8. Chain table configurable for different mooring arrangements.
9. Articulated self-locking chain stoppers absorb angular motion and protect chain links from wear due to buoy excursion.

**Operation and Maintenance Features:**

10. Davit on the boat landing platform provides for transfer of items to and from support vessels.
11. Manhole (one per compartment) allows for inspection.
12. Sounding Pipe (one per compartment).
13. Trolley beam in the deckhouse enables easy equipment transfer between deck and deckhouse.
14. Multiple lugs in the deckhouse facilitate installation and maintenance activities.

**Safety Features:**

15. Hand railings provide three points of contact.
16. Unobstructed deck eliminates hazards.
17. Life rings (two).
18. Long boat landing grants easy and safe access to the buoy and features vertical rubber fenders for protection.
19. Two louvers in opposite deckhouse walls allow for natural ventilation.
20. Deck house access doors (2 doors).
21. Framing protects overboard product piping in case of collision.
22. Circular skirt protects buoy from tanker “kissing”.

**Installation Features:**

23. Removable installation sheaves.
24. Winch in the deckhouse facilitates installation activities including chain pull-in, installation of submarine and floating hose strings and hawser (winch not shown).
25. Diver platform facilitates installation of the floating hose strings.
26. Chain pull-in tubes (two) used for chain installation.
27. Guides inside chain fairlead to prevent twisting of the anchor chain during installation.

Articulated and self-locking chain stoppers

Mooring lug and uni-joint with optional load monitoring pin.
United Kingdom
Orwell Offshore Ltd
6 Quay Point
Woodbridge
Suffolk, IP12 4AL
UK
T: +44 (0) 1394 337000
E: enquiries@orwelloffshore.com

Singapore
Orwell Offshore Pte Ltd
10 Anson Road
#16-10 International Plaza
Singapore
079903
T: +65 6821 8000
E: enquiries@orwelloffshore.com

Malaysia
Orwell Offshore
Menara UOA Bangsar
Unit A-12-1, Block A
No.5, Jalan Bangsar Utama 1
59000 Kuala Lumpur, Malaysia
T: +603 2302 1515
E: enquiries@orwelloffshore.com

For more information, visit: www.orwelloffshore.com