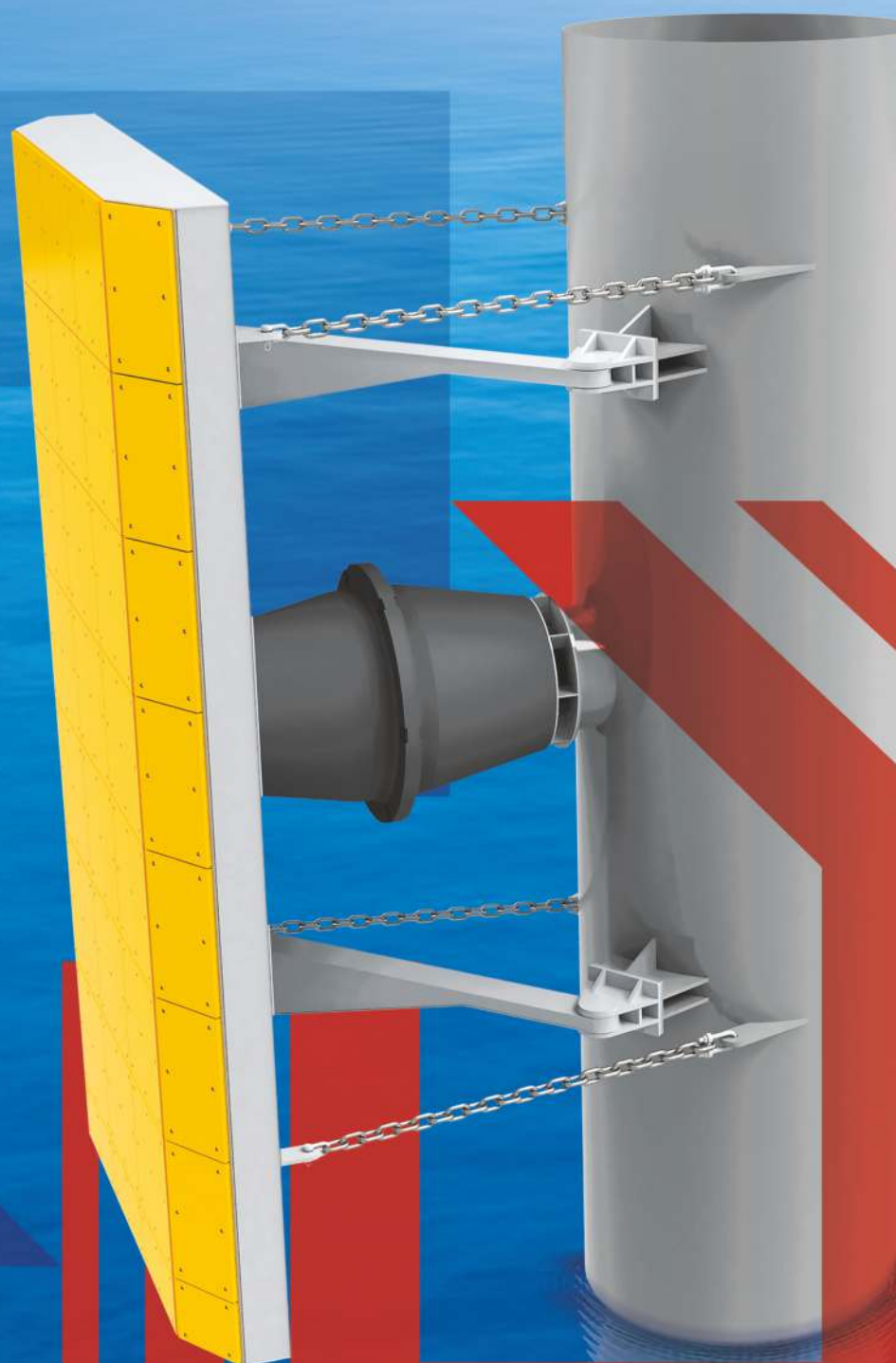


# *High-Performance Fenders*

*PARALLEL MOTION FENDER (HPMF)*

Where  
**Innovation**  
is Tradition





## PARALLEL MOTION FENDER (HPMF)

**Parallel Motion technology can reduce reaction forces by up to 60% compared with traditional designs.**

The panel always remains vertical but can cope with large berthing angles – even at 20° there is usually no loss in energy absorption. Parallel Motion is a specialist fender system and its selection can only be used in consultation with Hi-Tech office.

### FEATURES

- Ultra-low Reaction
- Non-tilt Frontal Panel
- No Performance Loss at Large Berthing Angles
- Easy and Fast to Install
- Minimal Maintenance

### APPLICATIONS

- RoRo and Fast Ferry Berths
- LNG and Tanker Terminals
- Naval Facilities
- High Tidal Zones
- Monopile or 'Soft' Structures

## PARALLEL MOTION FENDER (HPMF)

The Parallel Motion Fender is a self-contained, fully engineered fender system. Reaction forces can be reduced to around half that of conventional fender systems. Even at high berthing angles and varying impact levels the panel remains vertical, and there is little or no loss of energy absorption.

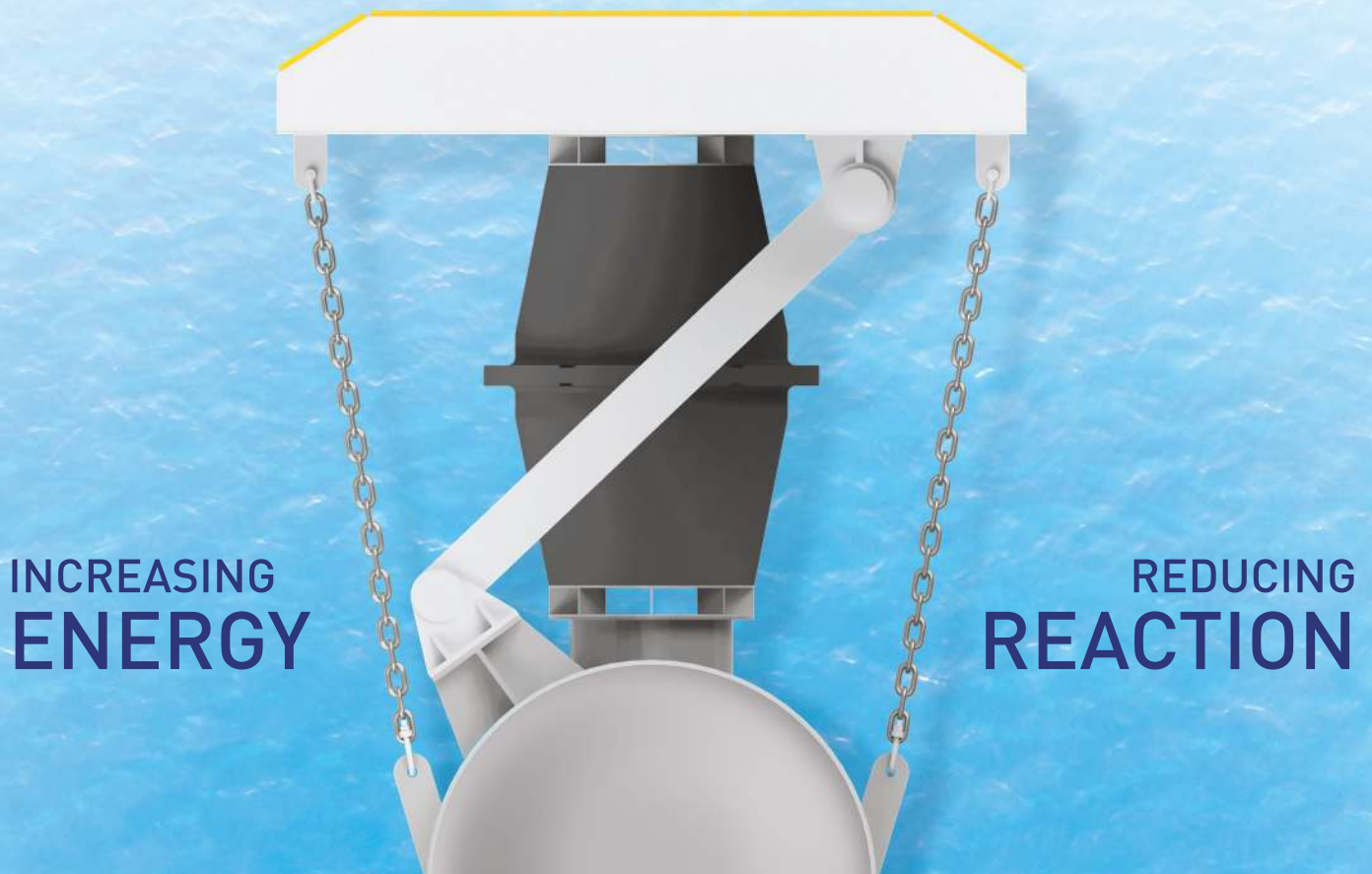
Parallel Motion Fenders are popular choices for belted vessels such as RoRo and ferries, for soft-hulled ships such as tankers and LNG carriers, and for sites with high tidal ranges or load-sensitive berthing structures.

A typical design uses twin Cone Fenders installed flange-to-flange. This absorbs double the energy of a single cone for the same reaction. Loads on the structure are reduced, which saves build costs and vessel turnaround times.

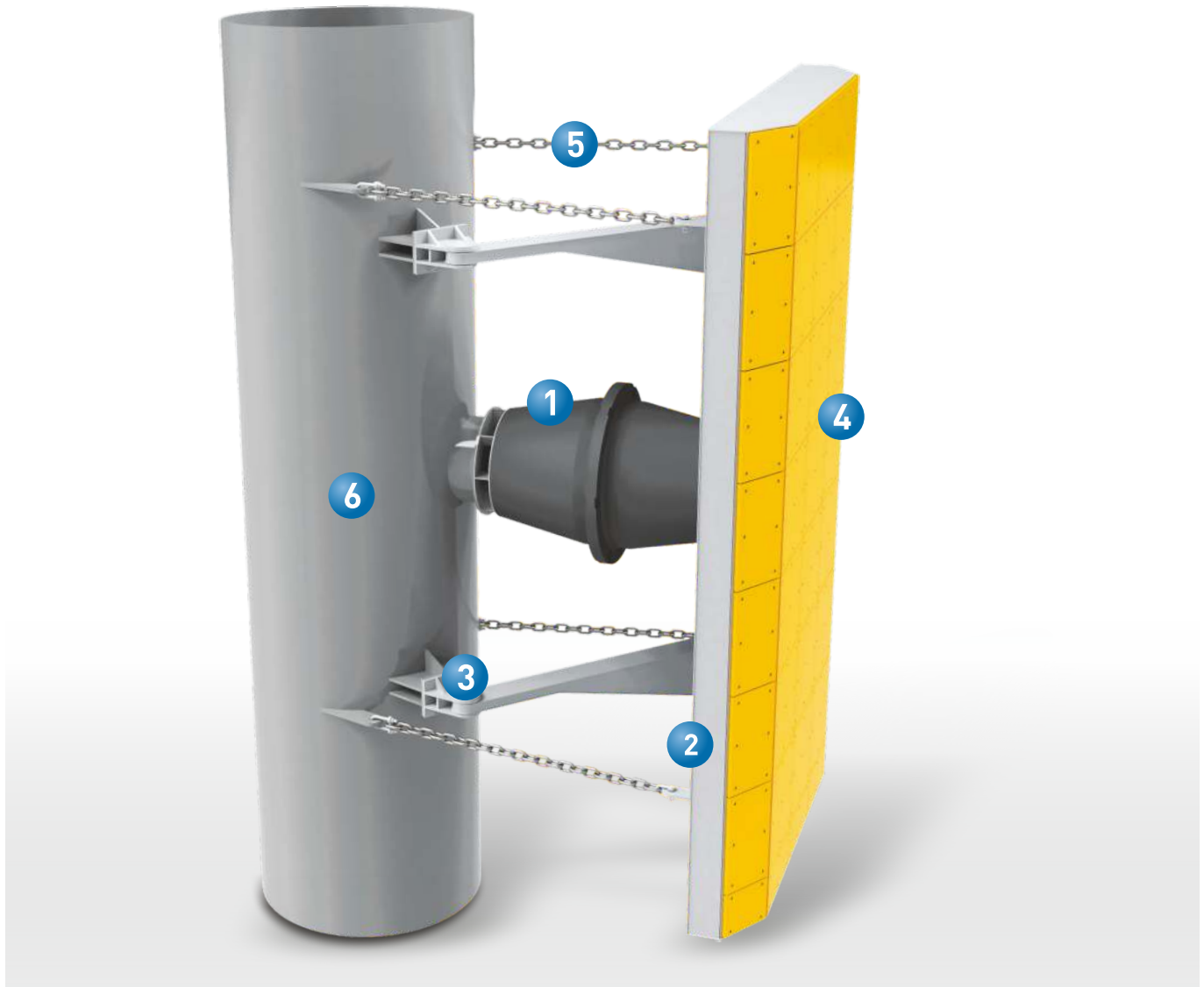
The fully sealed hinge mechanism, arm and box panel will perform for years with little maintenance, making for low running costs and a very long working life.

Because Parallel Motion Fenders are pre-built in the factory, they are easy to install: either to an anchor system on a concrete structure, or lowered into place around a tubular pile.

Every system is custom designed, so please discuss your exact requirements with Hi-Tech.



# PARALLEL MOTION FENDER (HPMF)



## 1 RUBBER FENDER UNITS

Shown here are two Super Cones mounted in a back-to-back 'Twin-Series' configuration.

## 2 CLOSED BOX PANEL (FRAME)

Fully sealed, pressure tested design. Shown with optional lead-in bevels which are designed to suit each case.

## 3 HINGE UNITS

The maintenance-free stainless steel pins and bearings allow free rotation to accommodate berthing angles, also eliminating moments in the hinge pin.

## 4 UHMW-PE FACE PADS

Hi-Tech 'Double Sintered' UHMW-PE face pads are standard to minimize friction and maximize service intervals.

## 5 CHECK CHAINS (OPTIONAL)

Check chains act as rope defectors to stop ropes from snagging, and to help with some large angle berthings.

## 6 PILE JACKETS (OPTIONAL)

Purpose designed for every project, pile jackets are factory built for a perfect fit to the fender onsite. They can strengthen the structure and double as a corrosion barrier in the vulnerable splash zone. Jackets are also available for monopile systems.



# PARALLEL MOTION FENDER (HPMF)

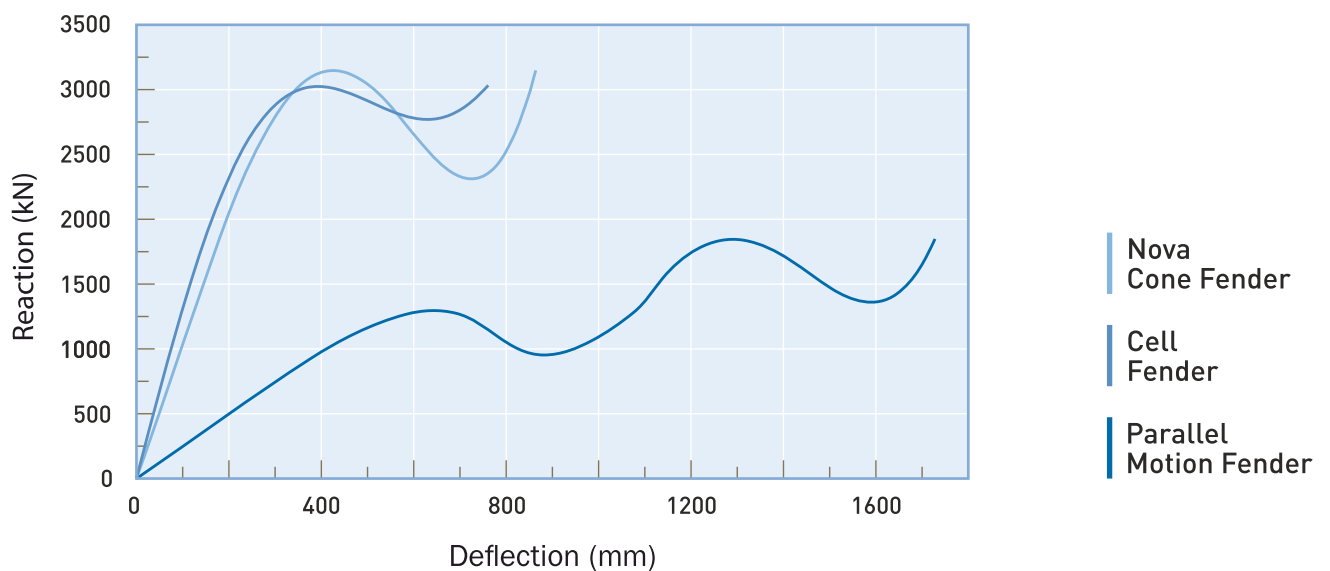
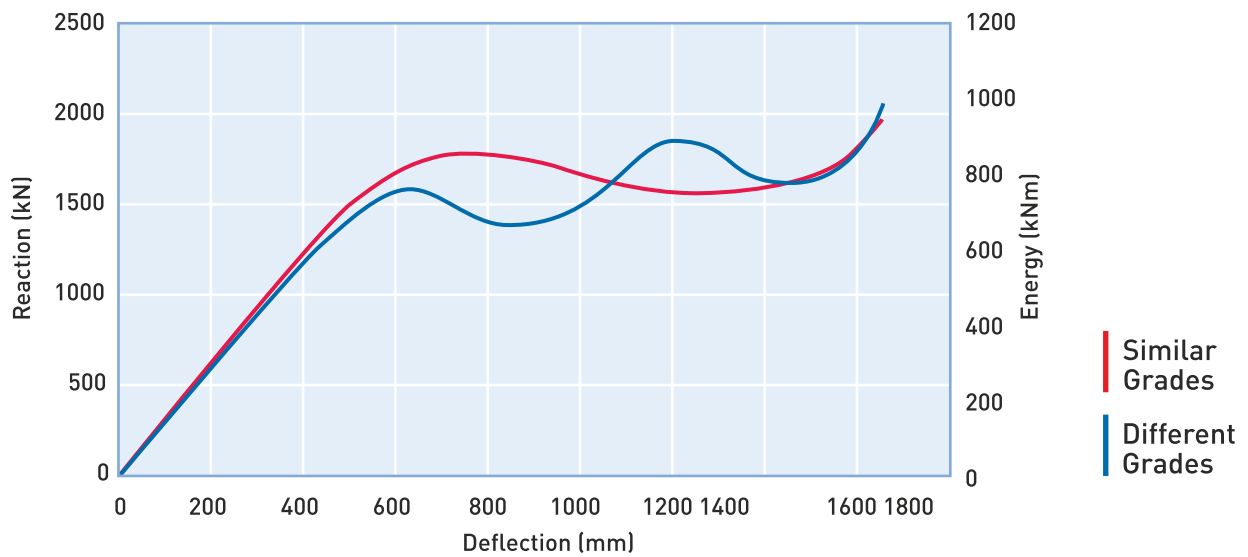
## PERFORMANCE

MODEL	Single Cone PMF				Dual Cone PMF			
	ENERGY		REACTION		ENERGY		REACTION	
	kNm	ft.kips	kN	kips	kNm	ft.kips	kN	kips
HPMF 300	9-18	6-13	52-110	12-25	18-36	12-26	52-110	12-25
HPMF 400	21-42	15-31	93-196	21-44	42-84	30-62	93-196	21-44
HPMF 500	41-81	30-60	145-307	33-69	82-162	60-120	145-307	33-69
HPMF 600	71-140	52-103	209-441	47-99	142-280	104-206	209-441	47-99
HPMF 700	111-223	82-165	285-601	64-135	222-446	164-330	285-601	64-135
HPMF 800	166-333	122-246	372-785	84-177	332-666	244-492	372-785	84-177
HPMF 900	236-474	174-350	470-993	106-223	472-948	348-700	470-993	106-223
HPMF 1000	324-650	239-479	581-1226	131-276	648-1300	478-958	581-1226	131-276
HPMF 1100	431-865	318-638	703-1483	158-333	862-1730	636-1276	703-1483	158-333
HPMF 1150	492-989	363-730	768-1621	173-364	984-1978	726-1460	768-1621	173-364
HPMF 1200	560-1124	413-829	836-1765	188-397	1120-2248	826-1658	836-1765	188-397
HPMF 1300	711-1428	524-1053	982-2072	221-466	1422-2856	1048-2106	982-2072	221-466
HPMF 1400	889-1784	656-1316	1138-2403	256-540	1778-3568	1312-2632	1138-2403	256-540
HPMF 1600	1327-2663	979-1964	1486-3139	334-706	2654-5326	1958-3928	1486-3139	334-706
HPMF 1800	1889-3791	1393-2796	1882-3972	423-893	3778-7582	2786-5592	1882-3972	423-893
HPMF 2000	2591-5200	1911-3836	2324-4904	523-1103	5182-10400	3822-7672	2324-4904	523-1103

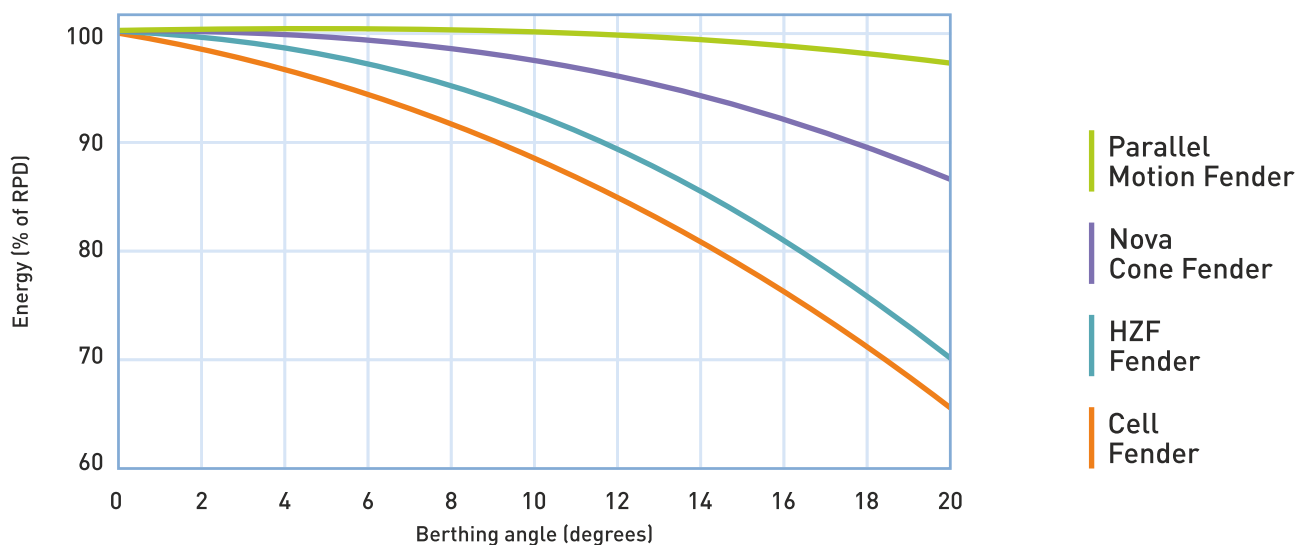


# PARALLEL MOTION FENDER (HPMF)

## PERFORMANCE



## Energy and berthing angle





# PRODUCT INSTALLATION PICTURES





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***WHERE INNOVATION IS A TRADITION***

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