

# NEW CONCEPT FOR TOW PINS AND SHARK JAW 100 - 400 t BOLLARD PULL

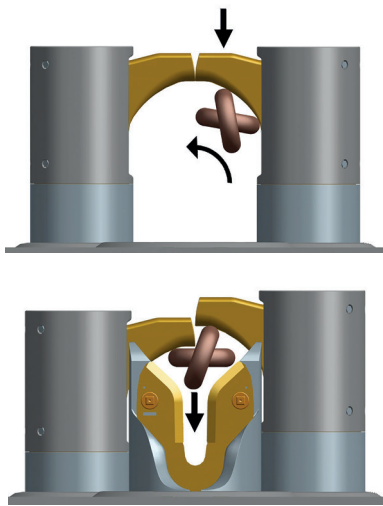


## DECK MACHINERY

### Offshore supply and service Safer deck operation New concept for tow pins and shark jaw, 100 - 400 t bollard pull

Unique advantages of the new Kongsberg Maritime tow pin combined with our well proven shark jaw

- Flush and smooth at deck: The top surfaces of the towing pins are smooth except for one plug for a lifting eye. The surrounding base at deck is slightly raised and gently tapered for smooth passage of mooring components while deflecting sand, mud and water.
- Since the locking arms disappear inside the pins when not in use, there is no recess in deck around the towing pins. This eliminates accumulation of debris and avoid sharp edges found around other brands of towing pins.
- The locking arms can be moved to in or out position at any time as long as the slot is above deck.
- The locking arms are dimensioned to resist the vertical load in compliance with the new rules for anchor handling tugs operating in the Norwegian Sector of the North Sea oil fields, now in force.
- Chain up to 6 inch as well as wire ropes and fibre can pass between the towing pins.
- The RRM towing pins are active tools compared to any other towing pin on the market. A vertical pull-down force of up to 50 tons, 25 tons per side, can be used to pull towlines down into the shark jaw without the presence of crew on the unsecured deck.
- This pull down force is individually controlled for each towing pin and can therefore be used to actually turn the chain until it fits easily into the shark jaw.



- The underside of the locking arms is curved so that the towline is centred into the shark jaw when pulled down. Therefore, only one shark jaw is required per set of towing pins.
- Deck crew has expressed their satisfaction about the fact that the arms can be folded into the towing pins any time, at any height, compared to the ever-present projecting plates on other TPs when in upper position. This eliminates the risk of snagging the pennant wire from the platforms crane when it delivers chaser rings to the ship.
- The towing pins can be used directly as towing eye. In such a case, it is an advantage if they are fitted well ahead of the rudder /propeller for effective steering of the tug.
- Size range: RRM towing pins are available in three dimensions rated as follows:
  - a. From 80 to 150 ton bollard pull
  - b. From 150 to 250 ton bollard pull
  - c. From 250 to 400 ton bollard pull
- New design Shark jaw with replaceable insert for chain and wire.

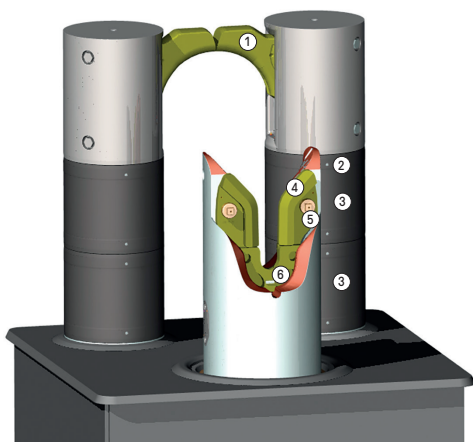
### New concept for tow pins and shark jaw, 100 - 400 t bollard pull

#### Tow pins

- Top securing satisfied NMD requirements
- Catch chain/wire 1400 mm above deck level
- Secure load in shark jaw with tow pins
- Rotating outer liners
- The new TP400 is equipped with two identical rollers each which are also symmetrical

#### Shark jaw

- Large catching range
- Tension reading
- 50-165 mm chain covered by 4 insert
- Replaceable insert for chain and wire



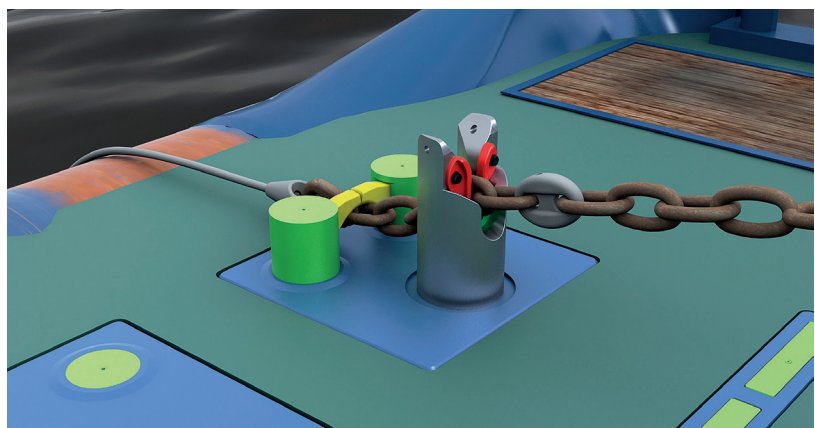
#### Tow pins

1. Locking arms
2. For M16 lifting eye bolts
3. Two identical and symmetrical rollers

#### Shark jaw

4. Chain insert
5. Bronze bolt
6. Wire insert

Code	Colour
C1 50-70	Orange
C2 76 - 95	Yellow
C3 100 - 120	Blue
C4 125 - 166	Green



Tow pins securing chain in shark jaw without personnel on deck.

