

"WITH THE HARBOR TUG OPERATION IN MIND WE SAW THE NEED FOR A SOLUTION THAT WAS EASY TO INSTALL, EASY TO SERVICE, AND EASY TO OPERATE. IT HAD TO BE ROBUST YET COMPACT AND DELIVER THE DEMANDED BOLLARD PULL WITHOUT SACRIFICING THE ENERGY EFFICIENCY OR MANEUVERABILITY."



Magnus Pettersson
Product Manager

Ingela Nordström
Project Leader

WE'VE BEEN ON IT FOR 90 YEARS



With a combined experience of 193 years building propellers and engines for the marine market, Caterpillar holds the position as world leaders on the harbor tug market.

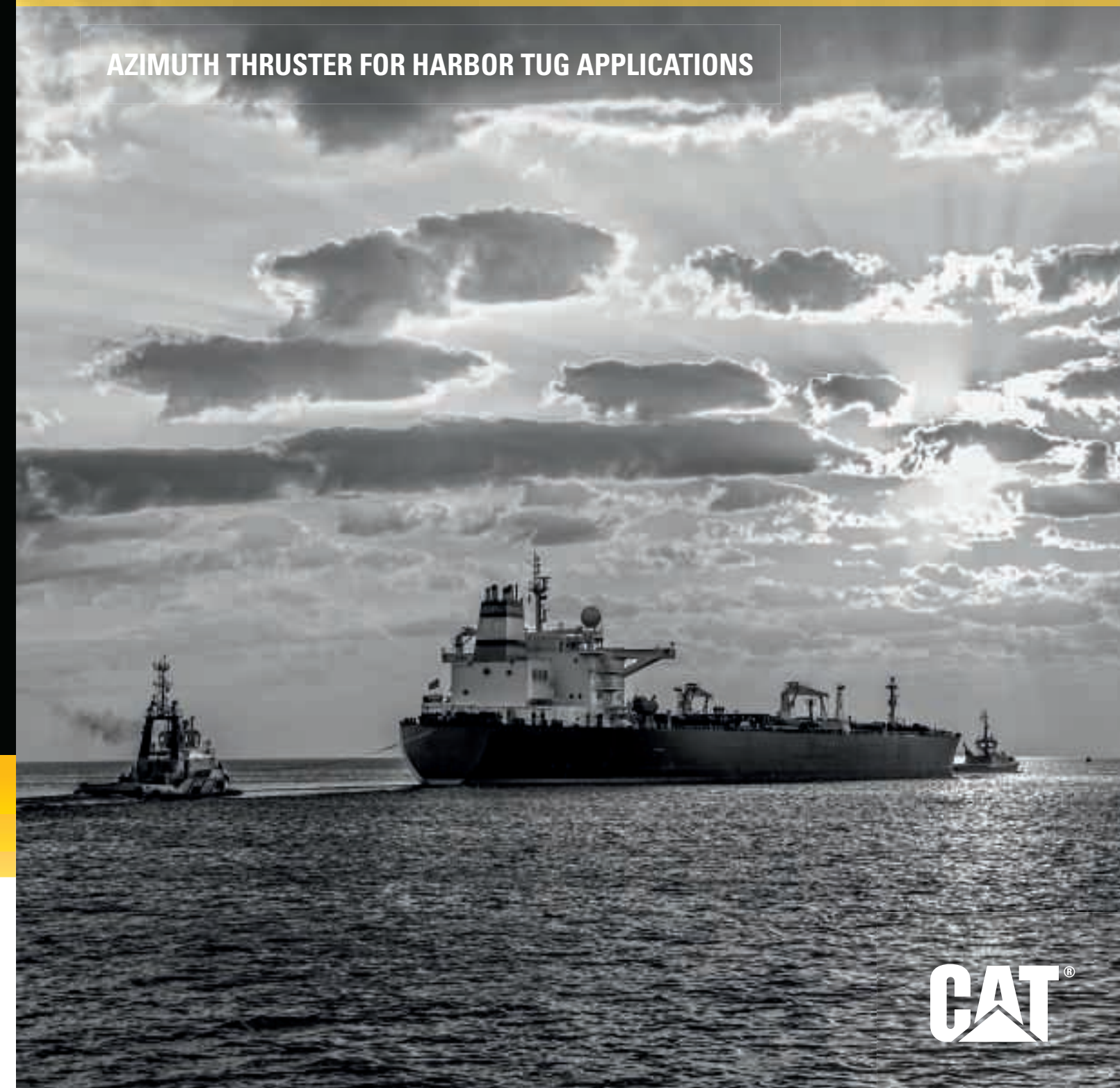
It is only natural for us to take the next step.

So let's talk. We want to look at your operational challenges in closer detail to identify the specific configuration of propellers, azimuth units, shaft design, and engines that give you the best and most cost-effective performance. If you expect the highest standards of quality and need the greatest long-term value, choose Caterpillar Marine's high-performance, customized solutions and dedicated services. You deserve nothing less.



BIGGEST NEWS IN 103 YEARS

AZIMUTH THRUSTER FOR HARBOR TUG APPLICATIONS



BUILT FOR IT.™

marine.cat.com
catpropulsion.com

© 2015 Caterpillar. All Rights Reserved. CAT, CATERPILLAR, BUILT FOR IT, their respective logos, "Caterpillar Yellow," the "Power Edge" trade dress as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.



TORQUE, THRUST, AND CONTROL IN ONE

Caterpillar Marine has a century of experience designing engines and propellers. And we've spent much of that time getting to know the challenges tug operators face on a daily basis. Now we've put all that together to create an optimized solution – the Cat® MTA tug propulsion package.

High bollard pull and high maneuverability

First things first, the torque, thrust, and control have to be up to the job giving you the bollard pull and maneuverability you need. And, at the same time, optimal fuel efficiency. With a thrust range between 35-100 tons depending on the configuration of propeller and engine size, plus high-performance azimuths controlled from a user-friendly interface, we've got you covered.

High reliability and low maintenance

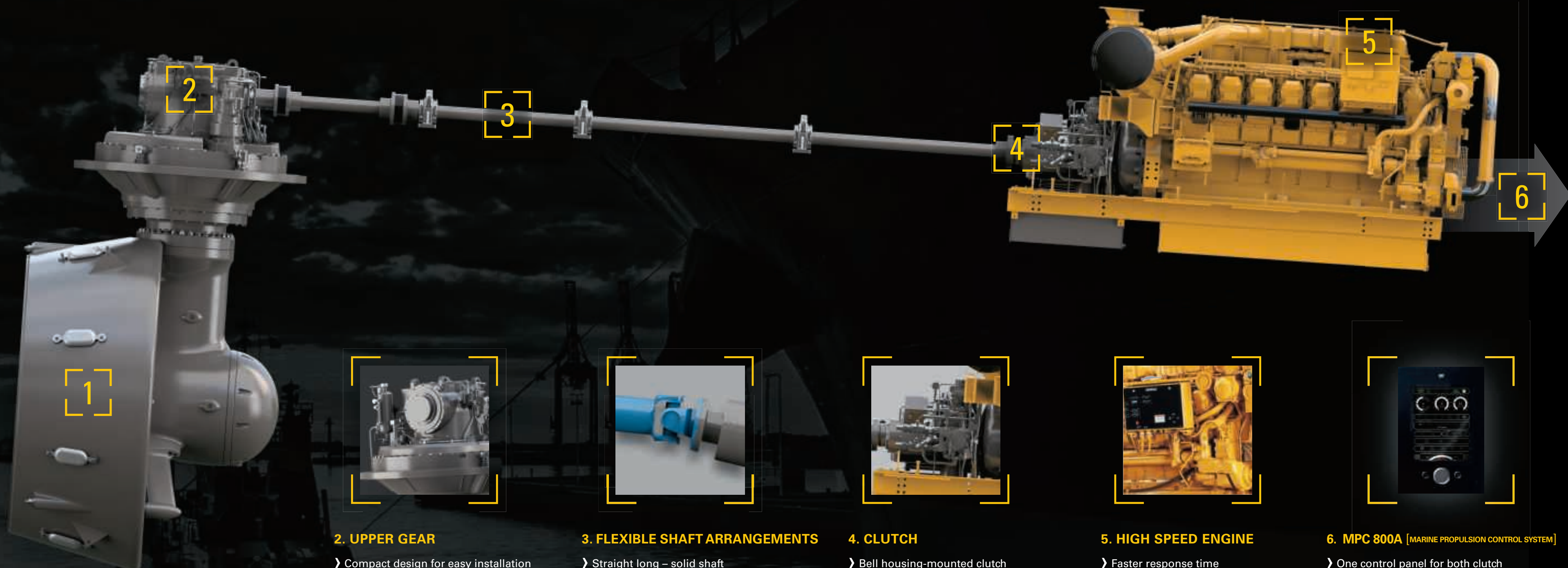
Life for a harbor tug and its crew is busy and relentless. So the solution also needs to be hassle-free and trustworthy. Putting all of our experience into the design, we've been able to optimize throughout – from the robust propeller design to the bell housing-mounted clutch. Ensuring a highly reliable and easily maintained operation.

Easy installation

Suitable for new builds or retrofits, the MTA package is also optimized for fast and straightforward installation. Smart features like built-on seal tanks and coolers in the azimuth unit, plus the complete clutch unit, mean that the project runs smoothly and the tug is quickly out on the water, ready to go.

Local service and support

Over the tug's operational life, you can be assured of dependable support and high-quality planned maintenance via our worldwide network. If the unimaginable happens, your local Cat Dealer is there for you to minimize and even avoid costly downtime.



1. THRUSTER

- › Tug-optimized nozzle design for high performance
- › Quick and simple 3-point bolt attachment and controlled chain of breakage
- › Minimized oil volume gives lower installation and running costs
- › Conservative dimensioning gives less downtime, low warranty and maintenance cost

2. UPPER GEAR

- › Compact design for easy installation
- › Hydraulic or electric steering
- › Spray-lubricated upper gear for high performance
- › Hybrid interface

3. FLEXIBLE SHAFT ARRANGEMENTS

- › Straight long – solid shaft
- › Straight short – tube shaft
- › Cardan type – solid and cardan shafts
- › Custom designed for your tug

4. CLUTCH

- › Bell housing-mounted clutch
- › Easy installation/reduced maintenance
- › Increased reliability
- › Improved lubrication functionality

5. HIGH SPEED ENGINE

- › Faster response time
- › Low emissions levels
- › Efficient fuel economy
- › Longer maintenance intervals, reduced parts and services costs

6. MPC 800A [MARINE PROPULSION CONTROL SYSTEM]

- › One control panel for both clutch and thruster
- › Engine start/stop
- › Display of engine parameters
- › Interface to Autopilot, DP and Joystick