



# DELLNER BUBENZER

## Is your crane safe enough?

Innovation, Safety, and Smart Technology

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TOC Singapore 26 and 27 November 2024

[www.dellnerbubenzner.com](http://www.dellnerbubenzner.com)

# EVOLUTION STARTS WITH A PIONEER

INTRODUCING THE BOSS SYSTEM



IS YOUR CRANE SAFE ENOUGH?

# ENSURE YOUR CRANE SAFETY SNAG PREVENTION



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# BOSS® BRAKE ONLY SNAG SYSTEM



IS YOUR CRANE SAFE ENOUGH?

# INITIAL SITUATION



INCREASED FREQUENCY OF SNAGS  
DUE TO

LARGER SHIPS

BIGGER CRANES

HIGHER VOLUME OF DISCHARGES

PORT AUTOMATION

REMOTE CONTROL



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BUBENZER**

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# CONVENTIONAL HYDRAULIC SNAG PROTECTION SYSTEMS

▶ Long-stroke hydraulic cylinders for controlled relief of the main hoist ropes

▶ Delayed reaction time

▶ Personal reset of hydraulic cylinders, inspection of system for leaks, and assessment of any damage

▶ Possible that the reaction time exceeds the actual time of snag event, which could not completely exclude damage and high maintenance effort



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# DELLNER BUBENZER BRAKE ONLY SNAG SYSTEM ®

▶ Two-channel load pins are detecting an overload on each corner individually

▶ BOSS® PLC will activate BOSS function for BUEL® H thrusters, service brakes and BUEL® G for emergency brakes and hoist motors

▶ The electrical reaction time is only 20ms until the brakes are switched off

▶ The load on the crane is prevented in advance

▶ The total stopping time from snag detection to stand still is between 100 and 267ms

▶ Maintenance free

▶ Reduced stand still time

# EVOLUTION STARTS WITH A PIONEER

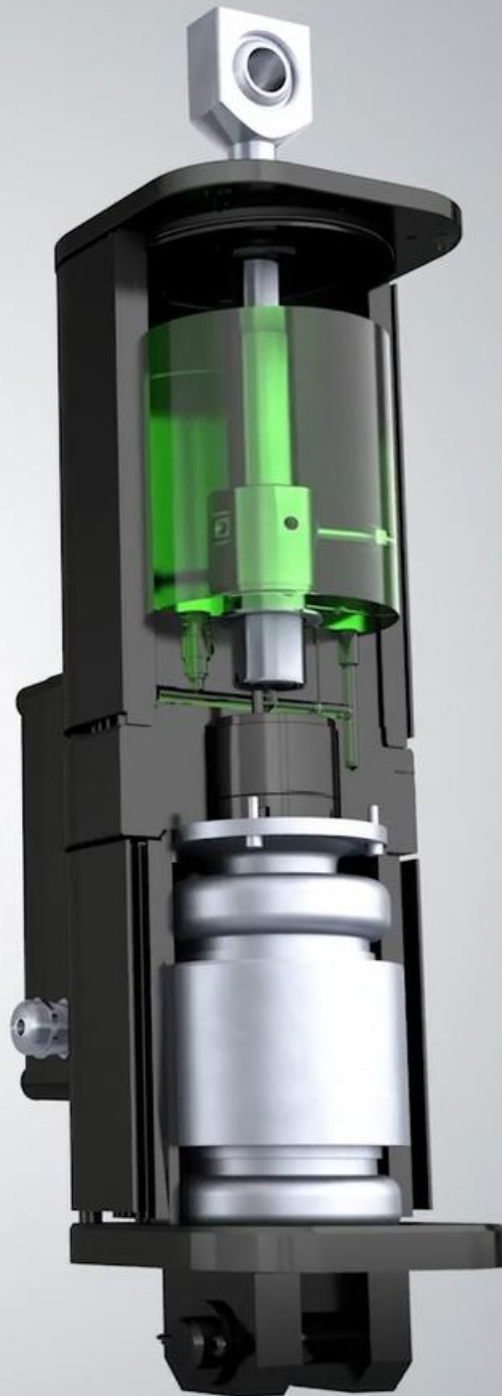
INTRODUCING THE BUEL



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## MAIN FEATURES



# Sustainability

▶ BUDEL® Thruster & Reduced Energy Costs

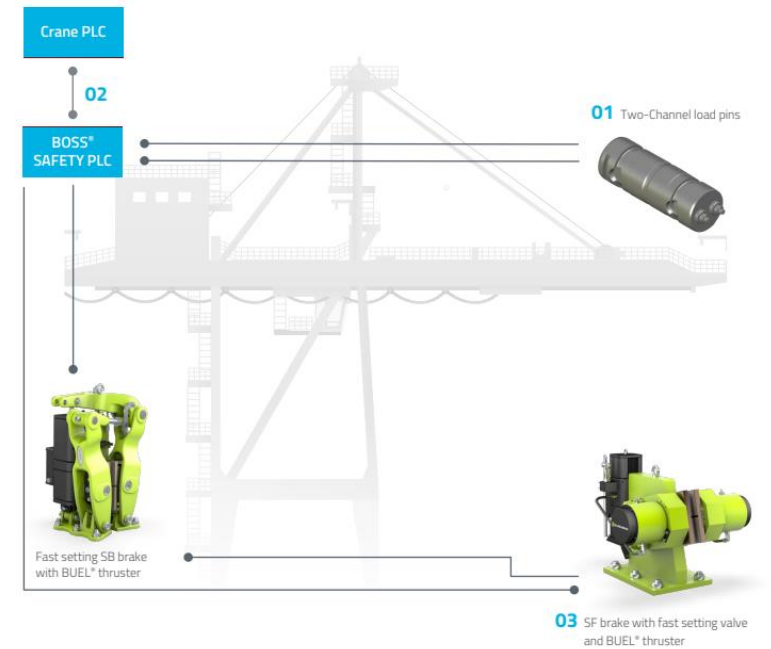
▶ Reduced Fluid Volume

▶ Eco-friendly  
Biodegradable Oil



# B BRAKE ONLY SNAG SYSTEM<sup>®</sup>

## How the BOSS system works:



### LOAD PINS

Load pins are detecting an overload on one or more corners.

### BOSS<sup>®</sup> PLC

BOSS<sup>®</sup> PLC will cut off power for BUDEL<sup>®</sup> H thrusters, service brakes and BUDEL<sup>®</sup> G for emergency brakes and hoist motors. The electrical reaction time is only 20ms until the brakes are switched off.

### SERVICE BRAKE

Service brakes apply full braking torque within **36ms** after power off.

### EMERGENCY BRAKE

Emergency brakes apply full braking torque within **70ms** after power off.

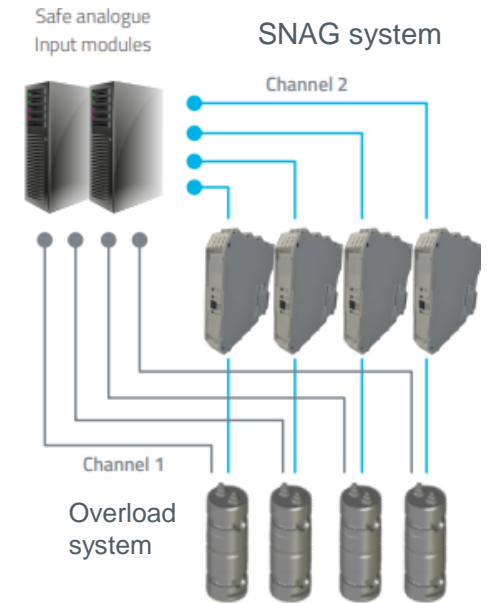
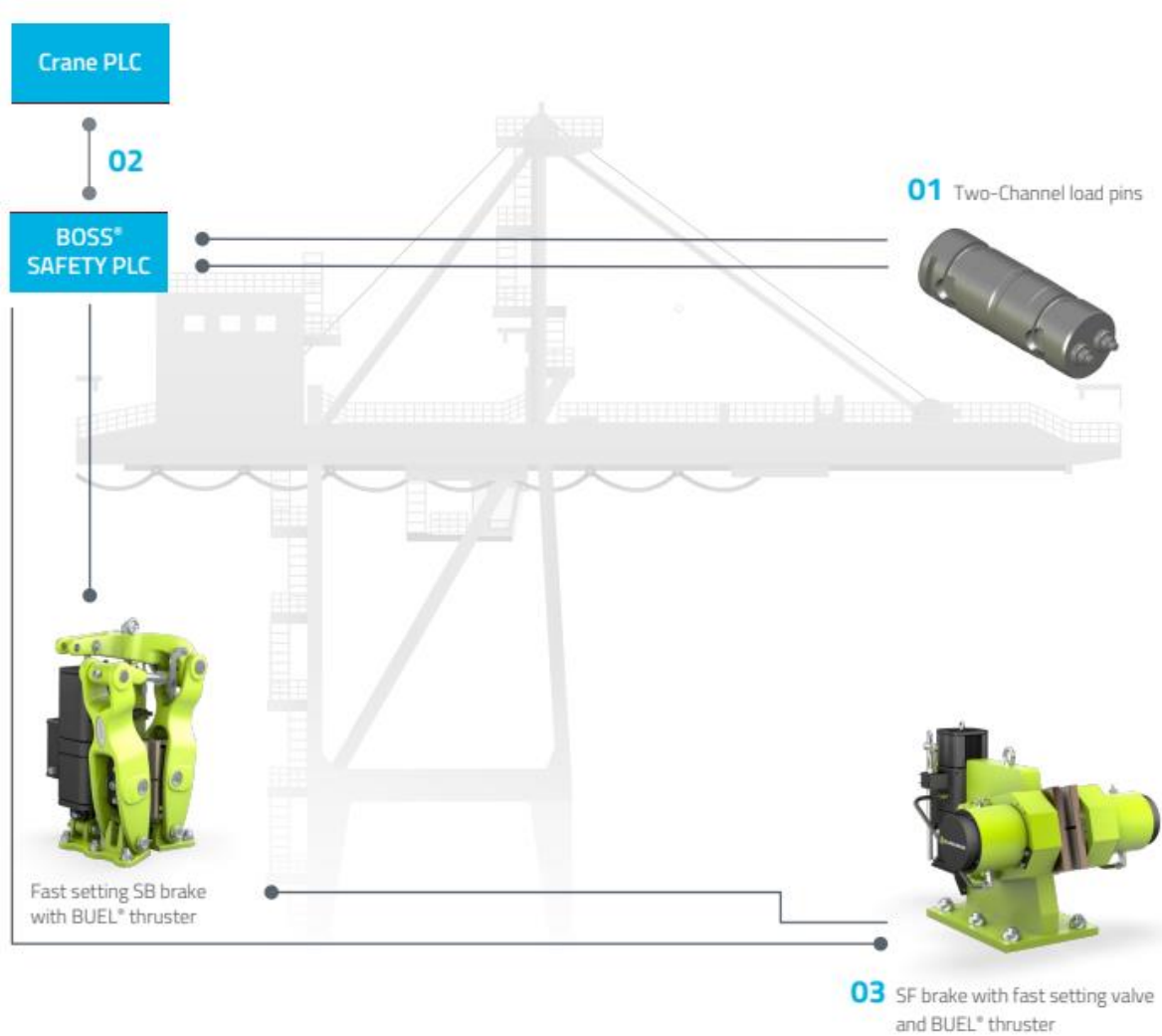
### HOIST MOTION

Hoist motion will be stopped after **up to 110ms**. The total stopping time from snag detection to stand still is between 100 and 276ms\*.

\*Can vary per system.

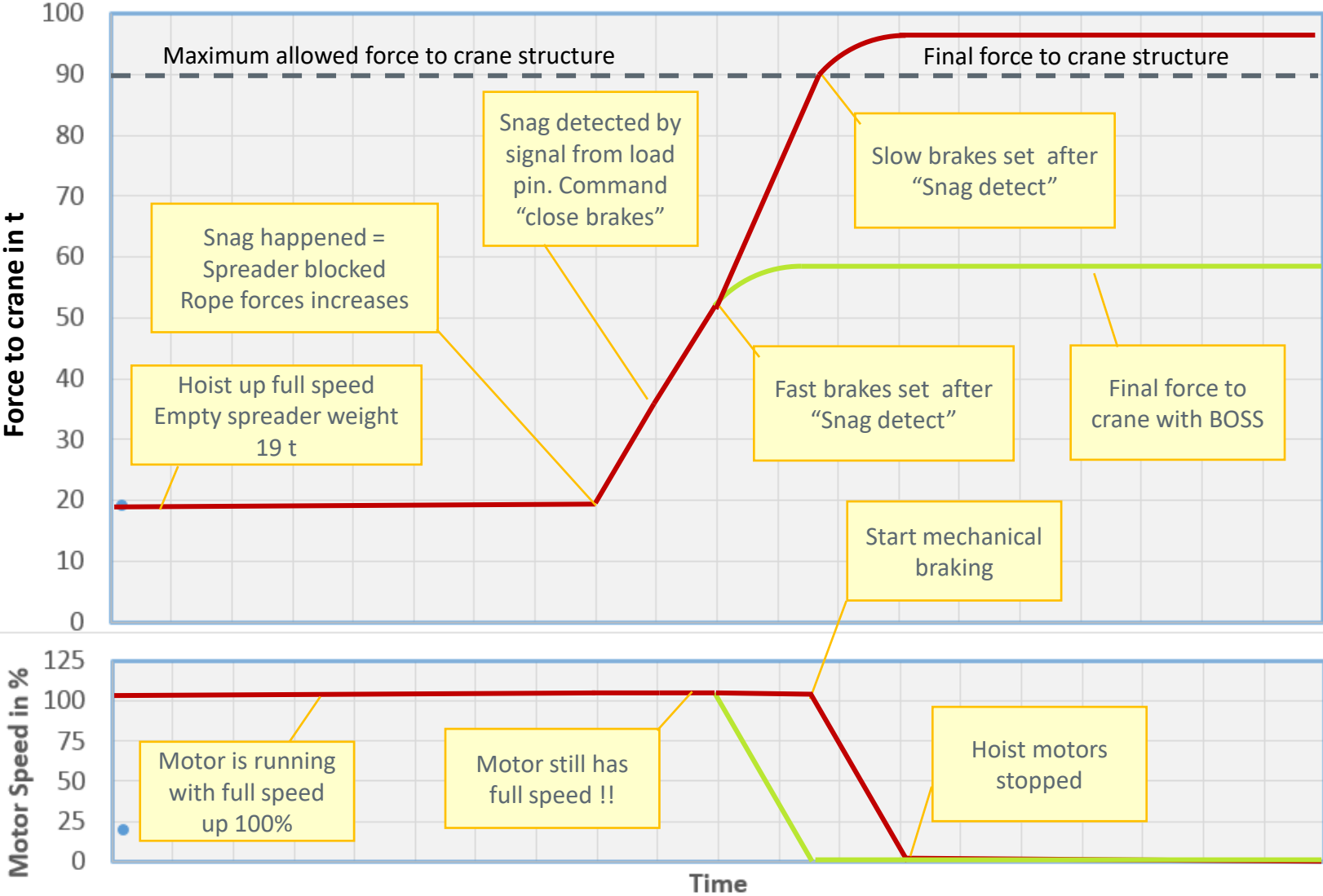


# B BRAKE ONLY SNAG SYSTEM<sup>®</sup>





# BOSS® timing comparison



Legend:  
— Other Snag Systems  
— BOSS



# **BRAKE ONLY SNAG SYSTEM<sup>®</sup>**

## **YOUR ADVANTAGES**

- ✓ Profisafe Interface
- ✓ Fastest reaction time
- ✓ Precise control
- ✓ TÜV certified
- ✓ Cross-check of both channels
- ✓ Simple calibration and set-up
- ✓ Fully integrated
- ✓ Closed wired system
- ✓ Dynamic snag trip point setting depending on corner load and speed
- ✓ Advantaged protection:
  - ✓ SNAG
  - ✓ OVERLOAD
  - ✓ SINGLE ROPE
- ✓ No maintenance time required
- ✓ Easy retrofittable



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**DELLNER  
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**Thank You For Your Attention!**

