

Tested and validated solutions for construction cranes

Improving your machine and business performance

Your partner in hoisting



Increasing productivity
for hoisting equipment



"Tested and validated"
Schneider Electric
solutions



Up to 30% savings
in handling time

Innovation in automation meets standards and productivity for hoisting equipment. Our tested and validated solutions increase the reliability and the safety of your machines, extending their service life and performance, while reducing your costs.

Discover a selection of solutions used in the most frequent construction crane applications

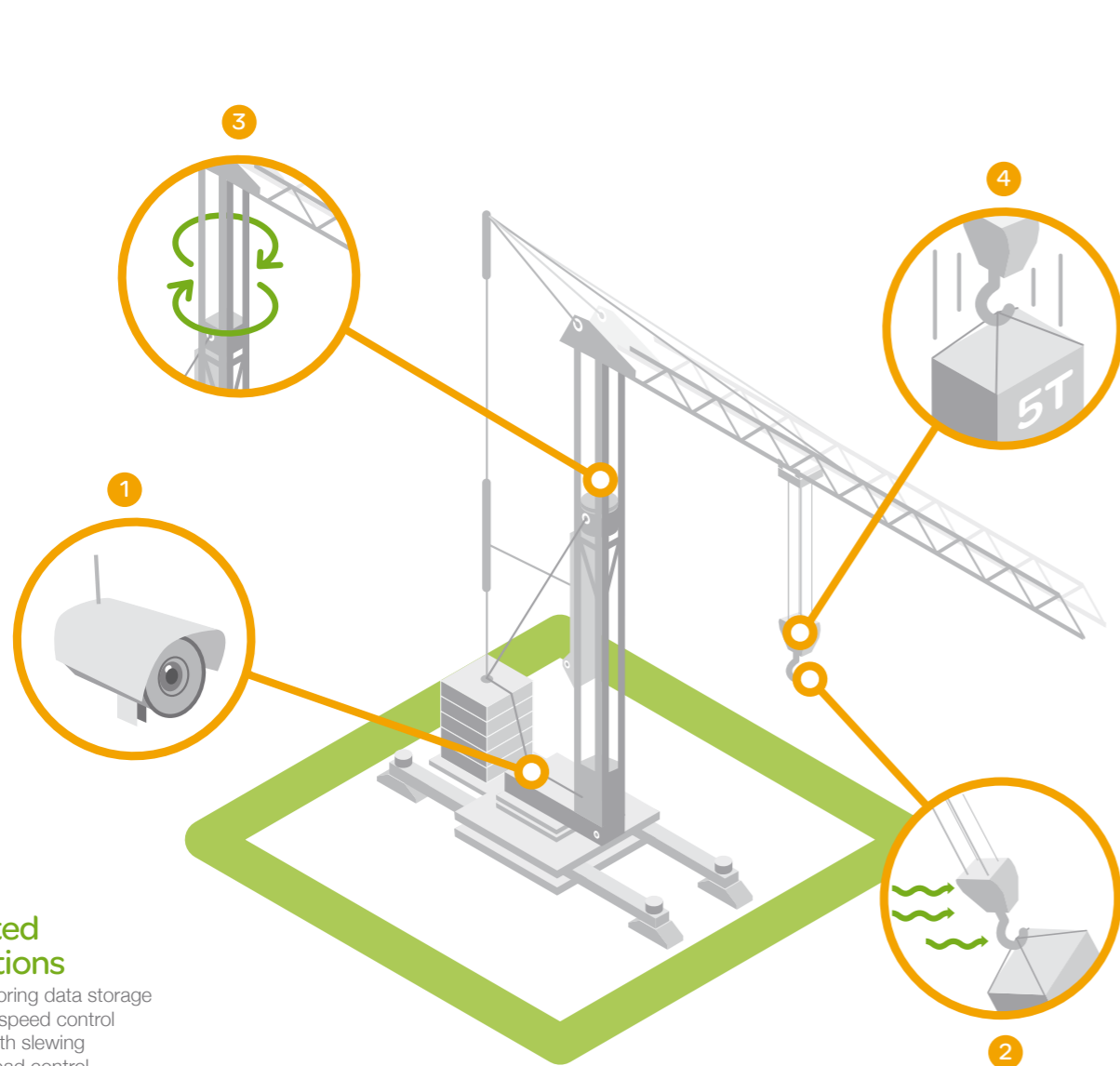
Tested and validated solutions for construction cranes



- Self-erecting cranes
- Tower cranes



- Tower cranes with cabin



Related functions

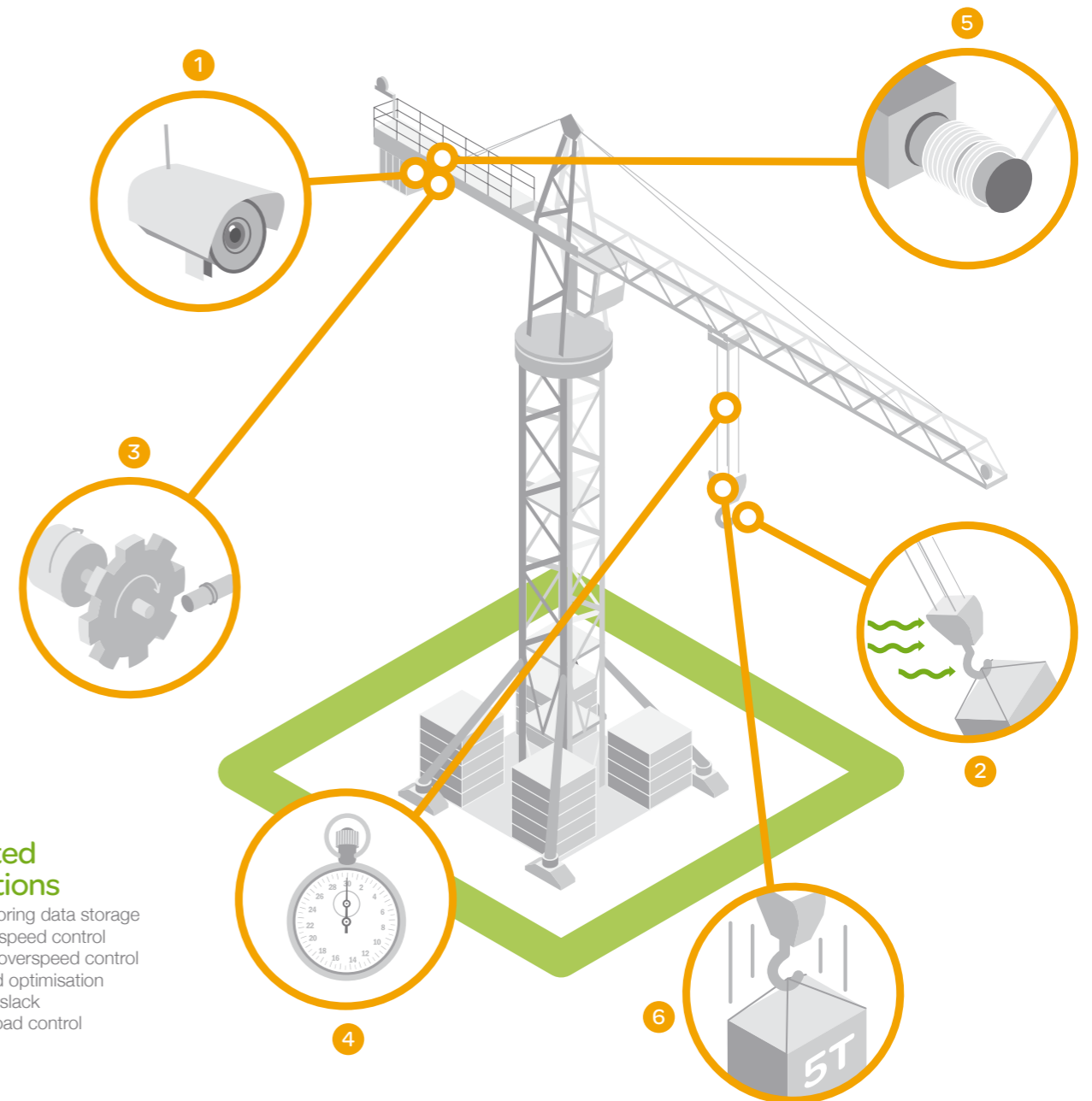
- 1 Monitoring data storage
- 2 Wind speed control
- 3 Smooth slewing
- 4 Overload control

Architecture

Simple hoisting

Compact / Hardwired / Logic controller / Zelio Logic

Make installation and maintenance easy while increasing competitiveness



Related functions

- 1 Monitoring data storage
- 2 Wind speed control
- 3 Load overspeed control
- 4 Speed optimisation
- 5 Rope slack
- 6 Overload control

Architecture

Optimized hoisting

Compact / CANopen / Drive controller / ATV-IMC

Maximise system performance while optimising automation & control

Simple hoisting

Compact / Hardwired / Logic controller / Zelio Logic

Make installation and maintenance easy whilst increasing competitiveness

Dedicated to simple and standard hoisting machines, this is the first step towards automation from traditional relay architectures. High-level expertise is not required thanks to simple and predefined adjustments which allows for quick setup of smart relay. At the same time, this architecture provides a highly compact and simple installation, thus reducing your commissioning and maintenance times.

Advantages

Optimized costs

This architecture provides a highly competitive performance/cost ratio.

Extended equipment service life

Reduce mechanical shocks and stress on the crane mechanism, motors and structures thanks to variable speed drives on crane movements.

Easy to use

Smart relay setup simplifies and improves your crane control compared to traditional relays.

Simple diagnostic access

Smart relay display integrated to display information, warning or error messages in the event of maintenance issues.

Characteristics

- **Controller:** Zelio Logic Smart Relay.
- **Motor control:** Hoisting and slewing movement: Altivar ATV312 variable speed drive; trolley travelling movement: TeSys direct motor starter.
- **HMI:** Pushbuttons and screen integrated on smart relay to set it up and to inform maintenance operators.
- **Command:** Belly box remote control device (partnership offer).
- **Signalling:** Red and orange beacons with flash lamp.
- **Safety:** Switch disconnecter at the base of the crane.
- **Cabling:** Hard-wired.
- **Software:** Smart relay programmable via built-in user interface or ZelioSoft.
- **Options:** Altivar ATV312 Variable speed drive for trolley travelling movement; Altivar ATV71 variable speed drive for hoisting and/or slewing movement.



100
Applications engineers

Optimise machine design by leveraging the collective knowledge of our industry specialists.

Save 50 %
in design time

Minimise design time and improve system consistency through predefined CAD panel designs & wiring diagrams.

Save
installation time

Speed up and be autonomous in installing, programming and commissioning your machinery with a complete system user guide.

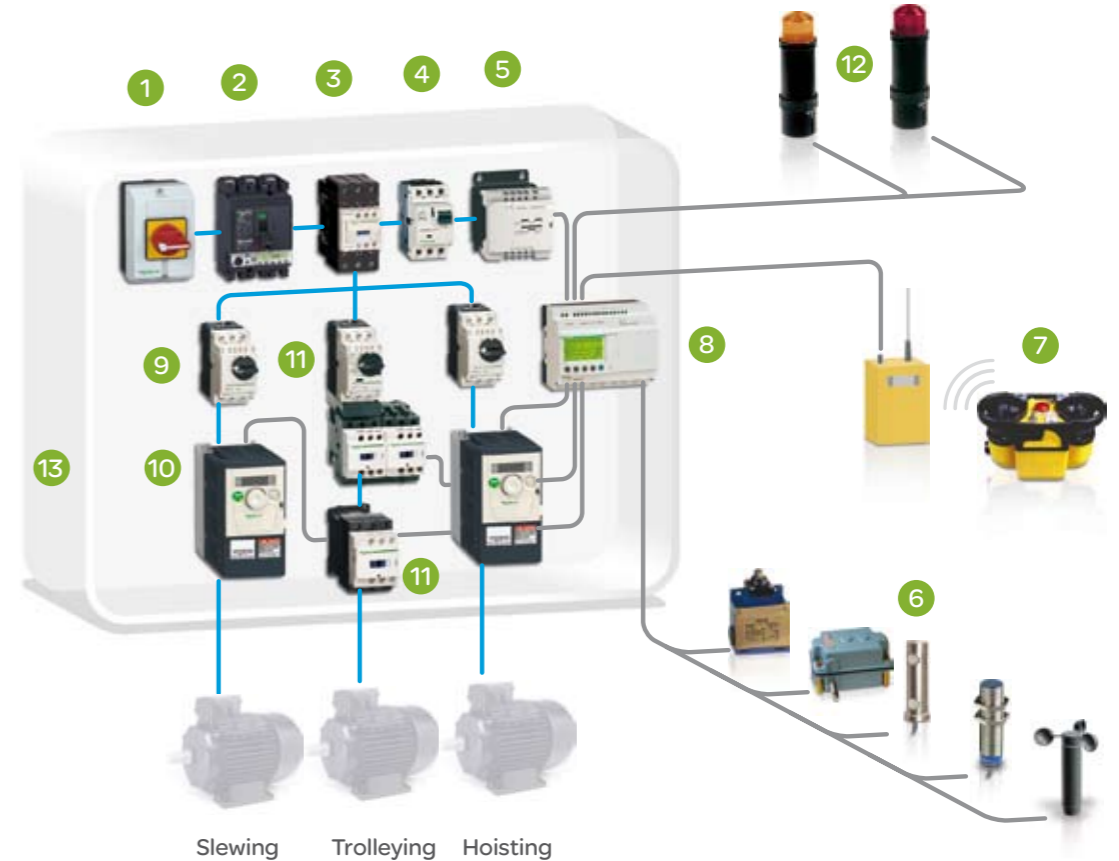
24/7
support

Keep customer machinery in working order wherever they are thanks to our international service organisation.



- Self-erecting cranes
- Tower cranes

Tested and validated solutions for construction cranes



Functions:



Monitoring data storage



Wind speed control



Smooth slewing*



Overload control

* Smooth slewing: only use with Altivar 71

Products:

- | | | |
|----|---|-----------------------|
| 1 | Switch disconnecter | TeSys Vario |
| 2 | Circuit breaker | Compact NSX |
| 3 | Contactor | TeSys D |
| 4 | Circuit breaker | TeSys GV2R |
| 5 | Transformer | Phaseo |
| 6 | Proximity sensor, screw selector, limit switch, load cell, anemometer (1) | OsiSense |
| 7 | Remote control device (1) | |
| 8 | Logic controller | Zelio Logic |
| 9 | Circuit breaker | TeSys GV2L |
| 10 | Variable speed drive | ATV312 |
| 11 | Direct motor starter + contactor 2 nd speed | TeSys GV2 + TeSys K/D |
| 12 | Signalling unit | Harmony XVB/C/M |
| 13 | Enclosure | Spacial S3D |

(1) Partner offers

Optimized hoisting

Compact / CANopen / Drive controller / ATV-IMC

Maximise system performance whilst optimising automation and control

This architecture suits complex installations using accurate hoisting machines that require variable speed drives in all movement (hoisting, trolley and slewing). Using devices with the embedded CANopen field bus facilitates installation, thus improving performance and simplicity. At the same time, you can integrate a controller-inside card on the drive to provide dedicated hoisting functions to increase the productivity of your crane and reduce risks.

Advantages

Compactness

Crane control and safety functions can be included on your drive with a single ATV-IMC drive controller.

Fast commissioning phase

- A single software environment.
- Transparency: access to the CANopen device with FDT/ DTM.
- Pre-defined hoisting library.

Tested, validated and documented

A complete system user guide gives all the details for installing and building your application with confidence.

Simple diagnostic access

Variable speed drive keypad display can be used to show information, warning or error messages in the event of maintenance issues.

Machine openness

- Ethernet Modbus TCP connection embedded.
- Web pages in the ATV-IMC drive controller.

Characteristics

• Controller:

ATV 71 + Integrated Machine Control (ATV-IMC).

• Motor control:

Slewing and trolley travelling movement: Altivar ATV71 variable speed drive; hoisting movement: Altivar ATV71 variable speed drive + encoder (closed loop).

• HMI:

Magelis touch screen to inform crane operator. Keypad integrated on Altivar ATV71 to set up drive and controller and to inform maintenance operators.

• Command:

XK controller station joystick.

• Signalling:

Red and orange beacons with flash lamp.

• Safety:

Emergency stop on cabin

• Cabling:

Hard-wired (I/O), variable speed drive communication via CANopen.

• Software:

SoMachine for ATV-IMC controller. Variable speed drive.

• Options:

Preventa XPS safety relay module to achieve the category 4 safety / PL e / SIL 3.



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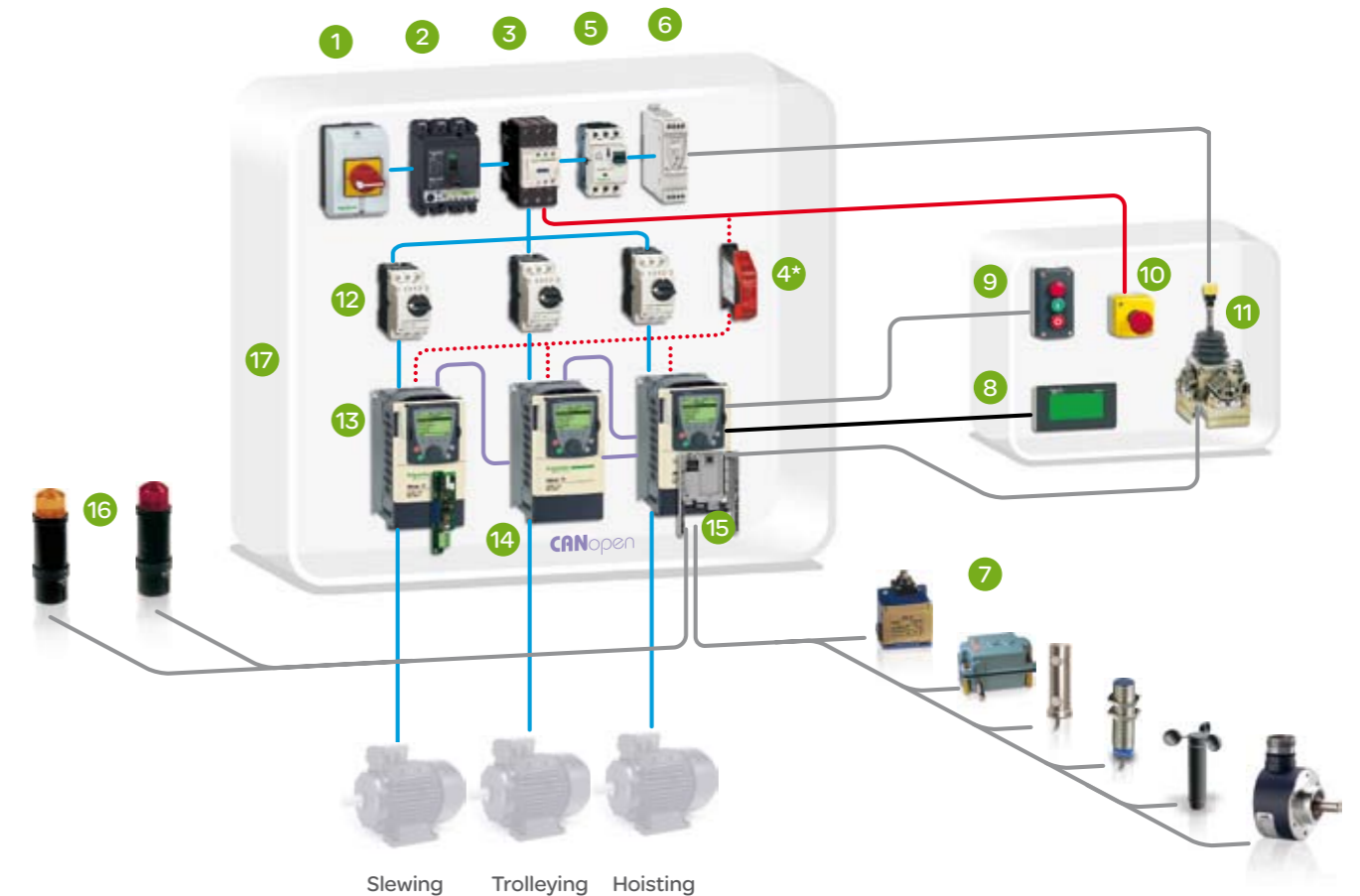
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• Tower cranes with cabin

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Functions:



Monitoring data storage



Speed optimization



Wind speed control



Rope slack



Load overspeed control



Overload control

Products:

1	Switch disconnectors	TeSys Vario
2	Circuit breaker	Compact NSX
3	Contactors	TeSys D
4	Safety module*	Preventa XPS
5	Circuit breaker	TeSys GV2R
6	Switch mode power supply	Phaseo
7	Proximity sensor, screw selector, limit switch, encoder, load cell, anemometer ⁽¹⁾	OsiSense
8	Display HMI	Magelis STO, STU
9	Start stop / Buzzer-alarm enclosure	Harmony XALD
10	Emergency stop	Harmony XALK
11	Joystick	XK
12	Circuit Breaker	TeSys GV2L
13	Encoder Interface card	VW
14	Variable Speed Drive	Altivar ATV71
15	Motion controller	Integrated Machine Control ATV-IMC
16	Signalling unit	XVB/C/M...
17	Enclosure	Spacial S3D

⁽¹⁾ Partner offers

*Optional / recommended

Why our solutions?

Our new MachineStruxure™ solution is designed to help you achieve faster, lower risk, and more energy-efficient and cost-effective designs and installations through the use of proven and innovative architectures that shorten time to market. MachineStruxure incorporates flexible and scalable hardware platforms and a comprehensive software suite with application function libraries.

Increase machine performance & innovation

- Focusing on new machine challenges, speed up machine concept to design and open up new markets with our industry experts.
- Adapting to your precise needs using the broadest best in class product offer, pre-defined machine architectures and application function blocks.

Reduce total cost of ownership

- Reducing risk in selling machines throughout the world using our international offers, experience and presence
- Minimising training and maintenance costs worldwide with International After-Sales Support.

Shorten time to market

- Save up to 50% in control system design and installation time with **tested, validated & documented** architectures, ready to use function blocks, predefined CAD panel designs & wiring diagrams.
- Saving installation time with fully documented system user guides.
- Selecting the most optimised control solution to meet your machine requirements with our **Flexible and Scalable Machine Control platform**:
 - Choose the appropriate controller with embedded intelligence in drives, HMI displays, motion & logic control products
 - Simplify and speed up control system programming and commissioning with an easy to use, single software suite, providing one tool, one connection, one project file and one download in complete openness and transparency.

Technical leaflet



Make the most of your energy



Your partner in hoisting

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