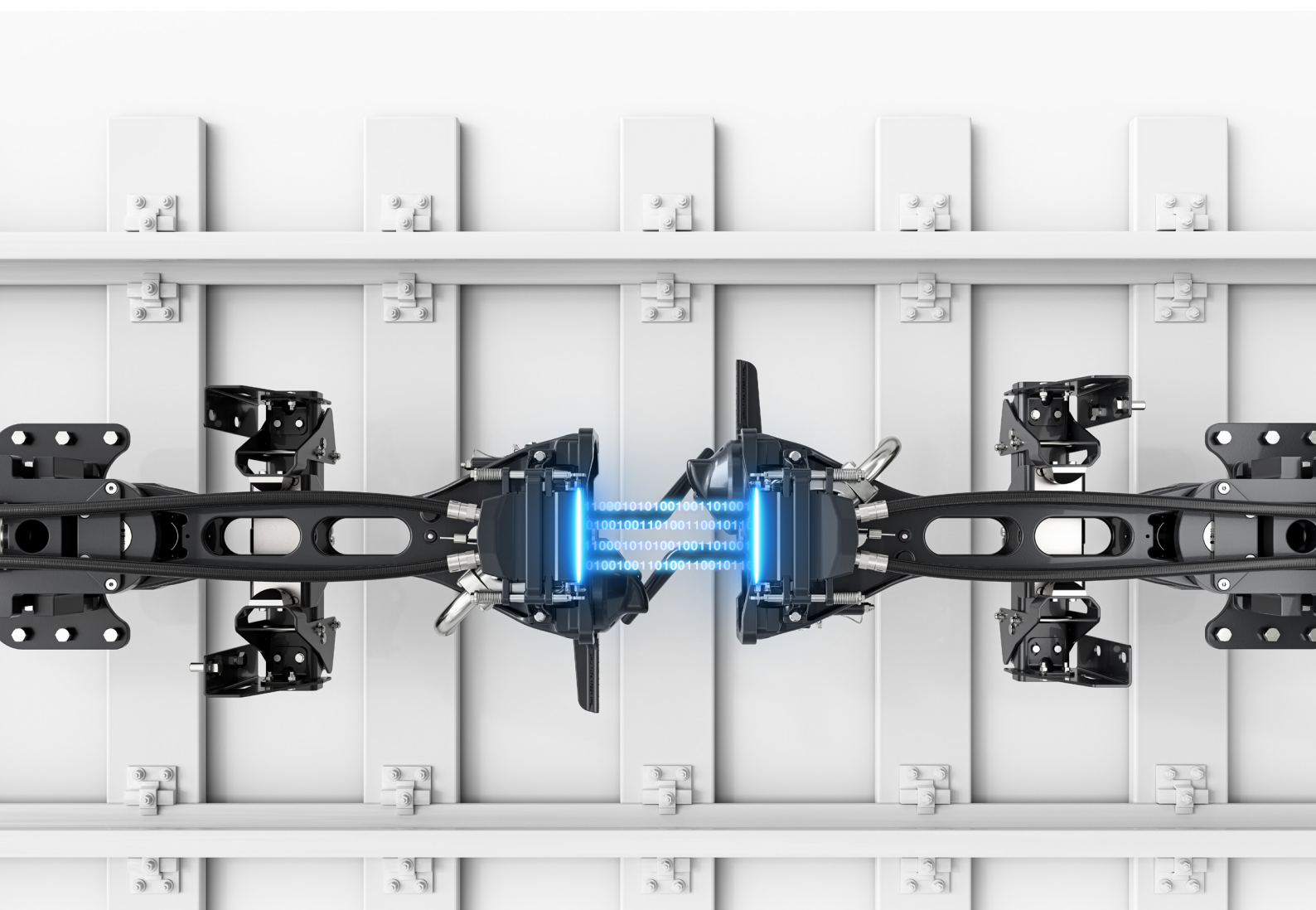


Connect to digital freight The CargoFlex from Voith



Train functions

In order to provide truly digital and automated coupling that meets the latest requirements, the DAC must offer a wide variety of new and enhanced functions.

From coupling and uncoupling to testing and continuous monitoring, Voith is leading the way. See below for an overview of our DAC innovations to date.

Mechanical coupling

Fully mechanical coupling, plus many new digital functions via automated coupling of brake lines and e-couplers.

- Standardized interface
- Fast and safe data transfer
- Continuous energy supply

Train composition

Computes order of all wagons to indicate exact train setup and length, with information sent to train control system.

- Prerequisite for key DAC functions
- ETCS Level 3 train integrity
- Enables one-person operation

Automatic brake test

Safety and efficiency via automation: train ready to leave in minutes, results visualized on display, no inspection walks.

- Optimized train preparation
- Faster round trips
- Reduced standstill and staffing

Uncoupling: DAC manual / 4.5 / 5

Mechanical uncoupling via dedicated device on wagon. Electrical uncoupling using button on wagon or in driver's cab.

- Easy separation of couplers
- Upgrade on manual approach
- Boosts on-site staff safety

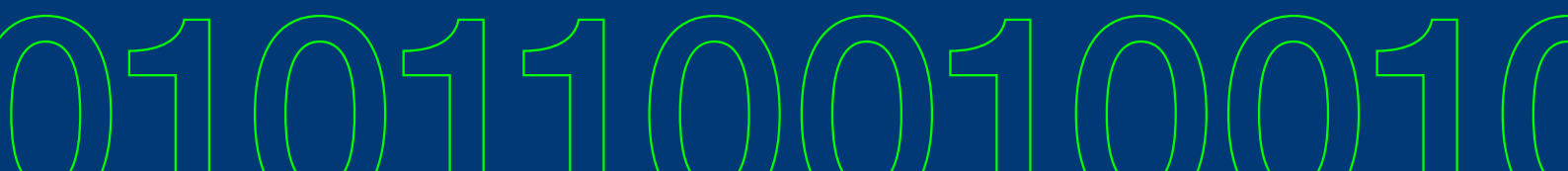
Prevent coupling mode

Only front plate profiles connected when shunting on hump. Coupling process is prevented, e-coupler remains retracted.

- Contacts are safe from environment
- Less wear on contacts
- Less wear on e-coupler mechanism



Discover the key
new DAC functions
in our video.



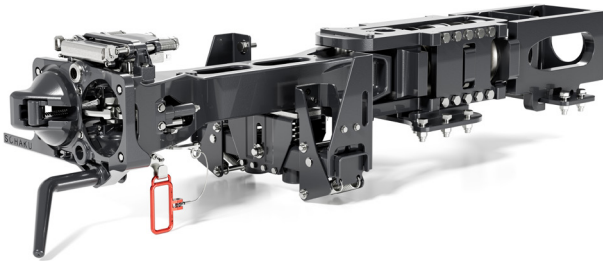
Digital automatic coupler (DAC)

The DAC brings automatic coupling to European rail freight. Voith's CargoFlex provides all-new digital functions plus automatic (dis)connection of freight wagons, air pipes, data lines, and power lines.

- Technological benchmark
- Voith offers DAC experience in operation
- Fitted on 200+ wagons since 2019



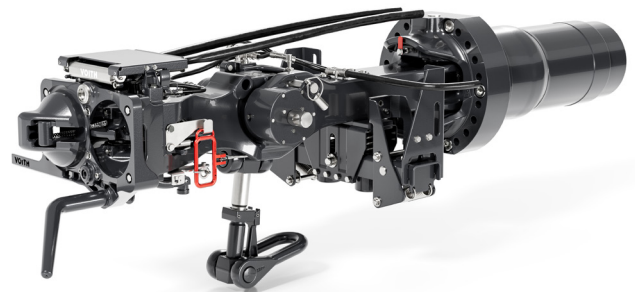
Explore the
benefits of the
DAC in our video.



CargoFlex

More goods need to be transported faster and on time. Based on proven Scharfenberg® technology, Voith's CargoFlex is the key to digital, smart, and connected rail freight. Its integrated e-coupler supports new automated and remote functions for added efficiency.

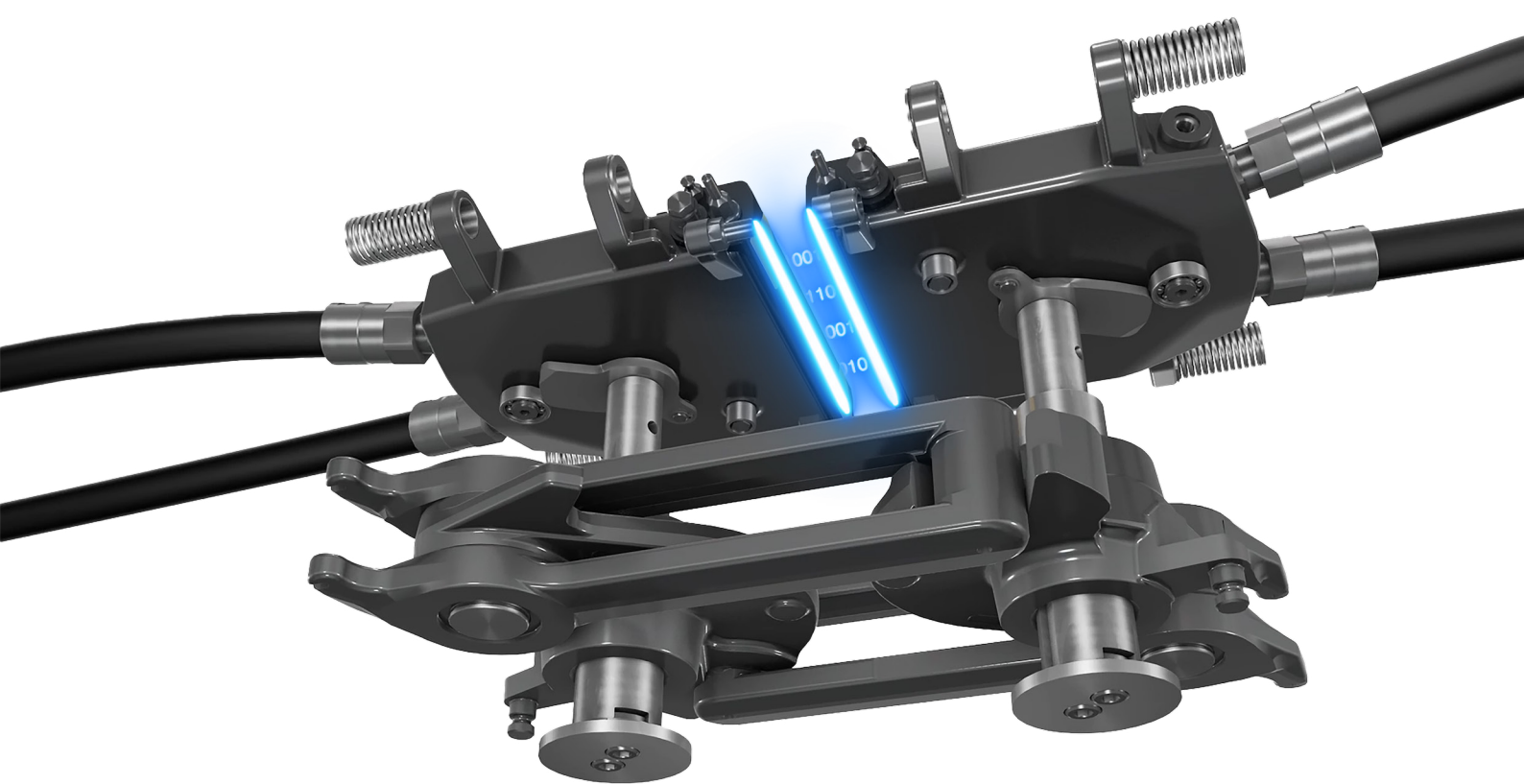
- ✓ European standard
- ✓ Enabler for future technology
- ✓ Full-scale rail freight digitalization



CargoFlex Hybrid

Upgrade to the DAC at your own pace with CargoFlex Hybrid for locomotives. Its coupler head can be moved to the automatic and manual position in line with requirements, ensuring full compatibility with all freight wagons during the migration phase.

- ✓ Combined solution for locomotives
- ✓ Enables gradual transition to DAC
- ✓ Continuous performance and compatibility



E-coupler

The e-coupler promotes full automation and permanent communication from the front to the rear of the train. It is key to reducing staff levels and costs while ensuring the safety of personnel and data. Not only does it enable constant train monitoring in line with the ETCS Level 3 standard, it also supports automatic coupling according to the DAC5 concept.



Scan this QR code
to see the
e-coupler in action.

How it works

Located on top of the coupler head, our e-coupler forms the digital connection throughout the train. To keep its contacts safe, it is only extended once mechanical coupling is complete.

There is zero risk of damage because the coupler front plates absorb the impact and the e-coupler moves at a consistent speed.

- Cam controls e-coupler movement
- Cover stops unauthorized opening
- Improved safety, reduced wear

Robust performance

Since the Voith e-coupler remains retracted during mechanical coupling, it is perfectly equipped for the operational demands of the DAC:

12 km/h 100+ G

coupling speed

accelerating force

Migration analysis with Voith experts

Some 500,000 freight wagons and 23,000 locomotives across Europe are in line for a DAC retrofit by 2030. This comprehensive process begins with the mandatory pre-installation compatibility check known as migration analysis. Voith provides expert support ranging from 3D data to on-site inspection.

Migration analysis

All freight wagons undergo compatibility checks prior to DAC installation. Voith performs the necessary design adjustments if the available space does not meet the UIC 530-1 standard.

Each locomotive requires a customized feasibility check – and this takes place at our dedicated Center of Competence or at the customer's site. Our individual solutions prepare all locomotives for the approval process.



Check out
our animated
guide.



DAC success with Voith

Need on-site support during migration analysis?
Want to explore the new possibilities of digital
coupling? Our experienced experts ensure a
smooth transition to the DAC.

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