

The  
product programme



**INTORQ**

setting the standard

[www.intorq.de](http://www.intorq.de)



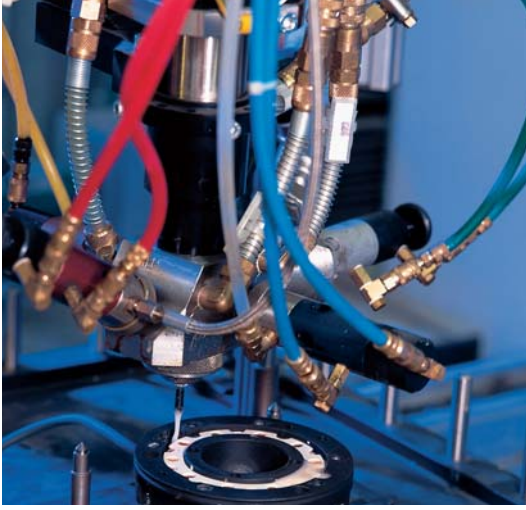
## INTORQ – A new name with tradition

INTORQ is a young company that has been spun off from Lenze Bremsen GmbH to take over the production of brakes and clutches. Lenze no longer manufactures these products.

You can now obtain identical products with the same designations and order numbers from INTORQ.

The background of INTORQ demands that it continues to set the international standard for brakes and clutches – after all, our motto is: “Setting the standard”. The INTORQ name also stands for innovation and performance and, as before, for quality, reliability and mature technology.

INTORQ puts the customer first. As an independent company we now want to concentrate more on our customers in the drives sector and pass on our know-how in the development, manufacture and application of brakes and clutches. As far as our international activities are concerned, we shall continue to work closely with the worldwide sales organisation and service teams of Lenze.



FROM LEFT TO RIGHT: CNC CASTING SYSTEM, ROBOT-CONTROLLED MACHINING OF FRICTION LININGS, AUTOMATIC SMALL PARTS STORE.

INTORQ's offering to its increasingly globally focussed customers consists of the following components:

- Brakes and clutches for all major electrical drive applications
- Powerful, configurable standard products for a wide range of applications
- Customer-specific solutions for applications that demand a lot in terms of technology (and price)
- Expert advice and delivery via a global sales network
- Global procurement of components and modules
- Short, dependable delivery times.

To put all this into practice INTORQ currently employs 100 staff. The factory in Aerzen, with its modern manufacturing and warehousing systems, provides the ideal foundations for the quick assembly of different types of brake and their speedy delivery.

Our development team makes full use of the latest field results, both in the development of standard products and for customer-specific applications. All INTORQ products undergo trials on sophisticated test stands, where their reliability and service life are put to the test under realistic conditions.

INTORQ understands quality to be the precise matching of our products and services to the requirements of our customers. Systematic deviations are not tolerated and are permanently eliminated through a process of continuous improvement. Quality is not an added extra, but an integral part of everything we do.

#### **INTORQ – a brief overview**

- Manufacturing and development in Aerzen
- 4200 m<sup>2</sup> production area
- Approx. 100 employees
- Products: electromagnetic brakes and clutches
- 450,000 units annually
- Turnover 26 m. Euro
- Market leader in Europe
- Accredited to DIN ISO 9001 and DIN ISO 14001



LEFT: FLEXIBLE ASSEMBLY SYSTEM, CAPACITY 1000 MIXED BRAKES PER SHIFT.



INTORQ BRAKES ENSURE SAFE DECELERATION AND AN EXACT STANDSTILL IN MANY AREAS. IF CRANES ARE MOVING, OUR BRAKES WILL BE READY. THEY WILL ALSO BE UNOBTRUSIVELY AT WORK IN THEATRE MACHINERY AND ESCALATORS.

## INTORQ – Exact and safe standstill

### Spring-operated brakes for every application

Our brakes fit snugly into their drives and can be used for practically any application. The INTORQ BFK458 provides an off-the-shelf solution. The INTORQ BFK457 is a low-cost basic solution.

The new multipole spring-operated brakes from INTORQ are designed for applications in the upper power range – the INTORQ BFK468 as a powerful standard brake, and the INTORQ BFK466 as a caliper for disc brakes.

The INTORQ programme also caters for sector-specific solutions. This product segment contains specific solutions that have been carefully extended and developed to address a wide range of applications. Some examples:

- In the case of fork-lift trucks with variable loads, electronically controlled spring-operated brakes have been fitted as a two-stage brake booster.
- For stage machinery, spring-operated brakes have been very effectively noise-reduced and operate as quietly as a mouse as a redundant braking system.
- In servo motors, the backlash of the spring-operated brake has been reduced and its design adapted to the installation conditions in the engine housing.

INDUSTRIAL TRUCKS ARE EQUIPPED WITH SPRING-OPERATED BRAKES ON THE DRIVE MOTOR AND ELECTROMAGNETIC LOAD WHEEL BRAKES.





## Spring-operated brakes

### The versatile modular system INTORQ BFK458

Our modular system forms the basis of a product programme that can be adapted to suit practically any application. The BFK458 spring-operated brake is a standard product that can be used anywhere, but its modular design means it can also be used for special applications. Its versatility is its strength.

#### Features

- Braking torque: 2–600 Nm
- 9 sizes in CSA-CUS design
- DC voltages: 24, 103, 180, 205 V
- Thermal class F (155 °C)
- Preset air gap
- Braking torque can be reduced (module E)
- Long rotor/hub guide with low rate of wear
- Manual release facilities for all sizes
- Air gap and wear monitoring (optional)

#### Application areas

Brake motors, cranes, warehousing, wood working machines, industrial trucks, stage machinery, vehicles for the disabled and escalators

### Compact and quickly installed INTORQ BFK457

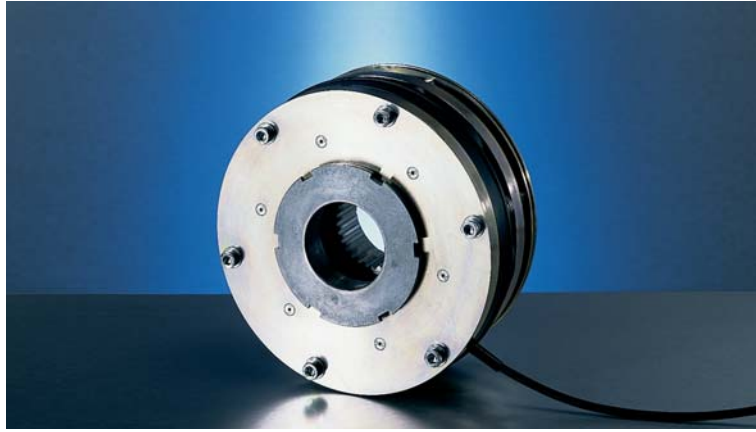
In many applications, all that is required of the brake is that it fulfils its basic function. For such situations the BFK457 is just the job. The fact that it can also be installed quickly using the integral fixing screws and fixed air gap makes this spring-operated brake even more attractive.

#### Features

- Braking torque: 0.12–125 Nm
- 9 sizes
- DC voltages: 24, 205 V
- Thermal class F (155 °C)
- Compact construction with rotor and flange
- Integral fixing screws for quick and easy installation
- Fixed air gap
- Noise-reduced double spring-operated brake <50 dB(A)

#### Application areas

Small motors, vehicles for the disabled, wood working machines, automation systems and general mechanical engineering



## Multipole spring-operated brakes

### The new performance standard INTORQ BFK468

High-performance drives are generating ever higher motor speeds and drive torques. Although performance requirements are increasing, less and less space is available for the brake. The INTORQ spring-operated brake for high-performance applications is the BFK468. The innovative multipole technology allows it to be released through a large air gap, even when forces are high.

#### Features

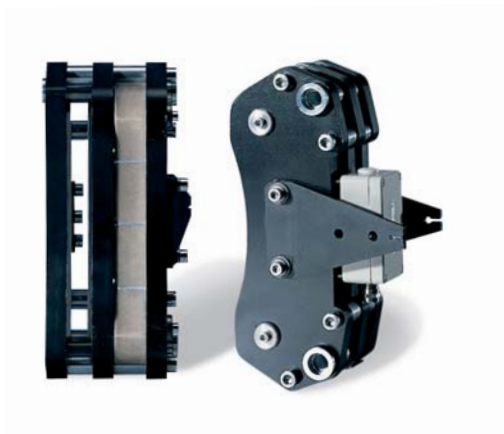
- Spring-operated brake with multipole system
- Up to twice the braking torque compared to the BFK458
- Fixed or adjustable braking torque
- “Cold brake” by holding current derating
- Short operating times on AC side
- Large working air gap means long maintenance intervals

### For disc brakes up to 10,000 Nm INTORQ BFK466

Direct drives for modern hoists demand brakes with high braking torques, short response times and low-noise operation. The multipole BFK466 satisfies all these requirements and can also be adapted to the contour of the motor.

#### Features

- Spring-operated brake in the form of a caliper
- For multiple and redundant arrangements
- High braking torque and large working air gap
- Release without residual torque and quiet operation
- Optimal contour adaptation to the design of the motor
- High magnetic forces caused by overexcitation when releasing
- “Cold brake” through holding current derating
- Air gap or wear monitoring using micro switch





## Sector solutions

### For the safe raising and lowering of hoists INTORQ BFK454

This dual-circuit spring-operated brake is specially designed for geared motors in lift applications. It ensures safe operation as a holding brake and for emergency stop duties. It is TÜV tested and satisfies the TRA200 requirements for hoists.

#### Features

- Braking torque: 15–400 Nm
- 7 sizes
- Small unit volumes with 80 % redundant braking torque
- Low motor moment of inertia
- Adjustable braking torque
- Simple maintenance and monitoring of dual-circuit function

#### Application areas

Lifts, hoists

### Spring-operated brakes in servo motors INTORQ BFK418

Servo drives require holding brakes that have short operating times and very little torsional backlash. The temperature-resistant friction linings of the brakes are also ideally suited to handle emergency stops from high speeds. This makes the low-cost BFK418 a viable alternative to permanent magnet brakes, and not just from a technical point of view.

#### Features

- Braking torque: 5–150 Nm
- Little torsional backlash
- Temperature-resistant
- Low moment of inertia compared to permanent magnet brakes
- Simple installation thanks to threaded holes in stator
- Preset working air gap
- Large shaft diameters possible

#### Application area

Servo motors





## Electromagnetic clutches and brakes

### INTORQ 14.105 and 14.115

In machines that have a centralised drive, electromagnetic clutches and brakes control the speeds of lower-level drive assemblies. INTORQ products are characterised by short operating times, low motor moment of inertia and torque transfer with no torsional backlash.

#### Features

- Clutch and braking torques from 7.5–480 Nm
- 7 sizes
- DC voltage: 24 V
- Thermal class B (130 °C)
- Torque transfer with no torsional backlash
- Wide range of applications thanks to the various types of magnet and armature element
- Short operating times and low motor moment of inertia mean high switching frequencies

#### Application areas

Packaging machines, mechanical and apparatus engineering, gates, folding and printing machinery

### Clutch-brake combinations

Clutch-brake combinations are frequently used in switched-mode systems with synchronous drive speeds. They are very rugged and easy to maintain.

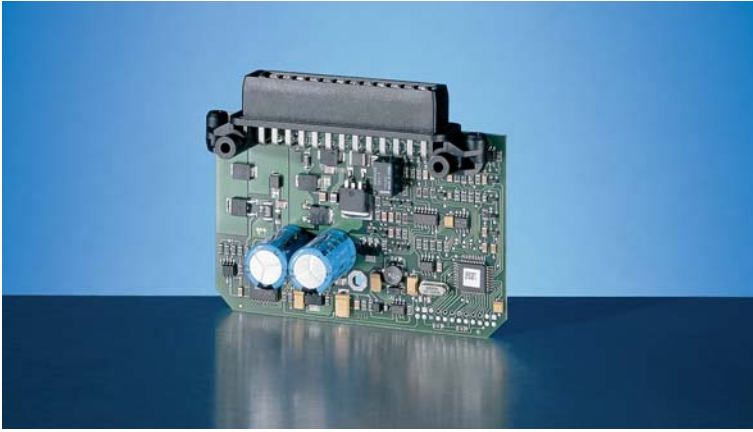
#### Features

- Characteristic torques of 7.5–120 Nm
- Brake and clutch mounted in a housing
- Rapid acceleration and deceleration at constant motor speed
- Easy to maintain as result of patented wear compensation system
- Available with motor and gearbox from the Lenze programme

#### Application areas

Packaging and labelling machines, filling plants, mechanical and apparatus engineering





## Electrical accessories

### Variable braking with INTORQ Control

Spring-operated brakes basically work on the on/off principle. The mechatronic INTORQ Control braking system enables the braking torque to be applied very precisely and adapted to the dynamic response of the drive. The ideal combination of mechanics and electronics.

#### Features

- Variable braking torque  $M = 20 - 100 \% M_k$
- DC voltages: 24, 48 V and mains-operated
- CAN bus for flexible networking

#### Operating modes

- Pedal-operated brakes (manual input of braking torque)
- Ramp-controlled brakes (time-controlled input of braking torque)
- Sensor-controlled brakes (load-dependent input of braking torque)
- Speed-controlled brake (stopping time independent of load and speed)

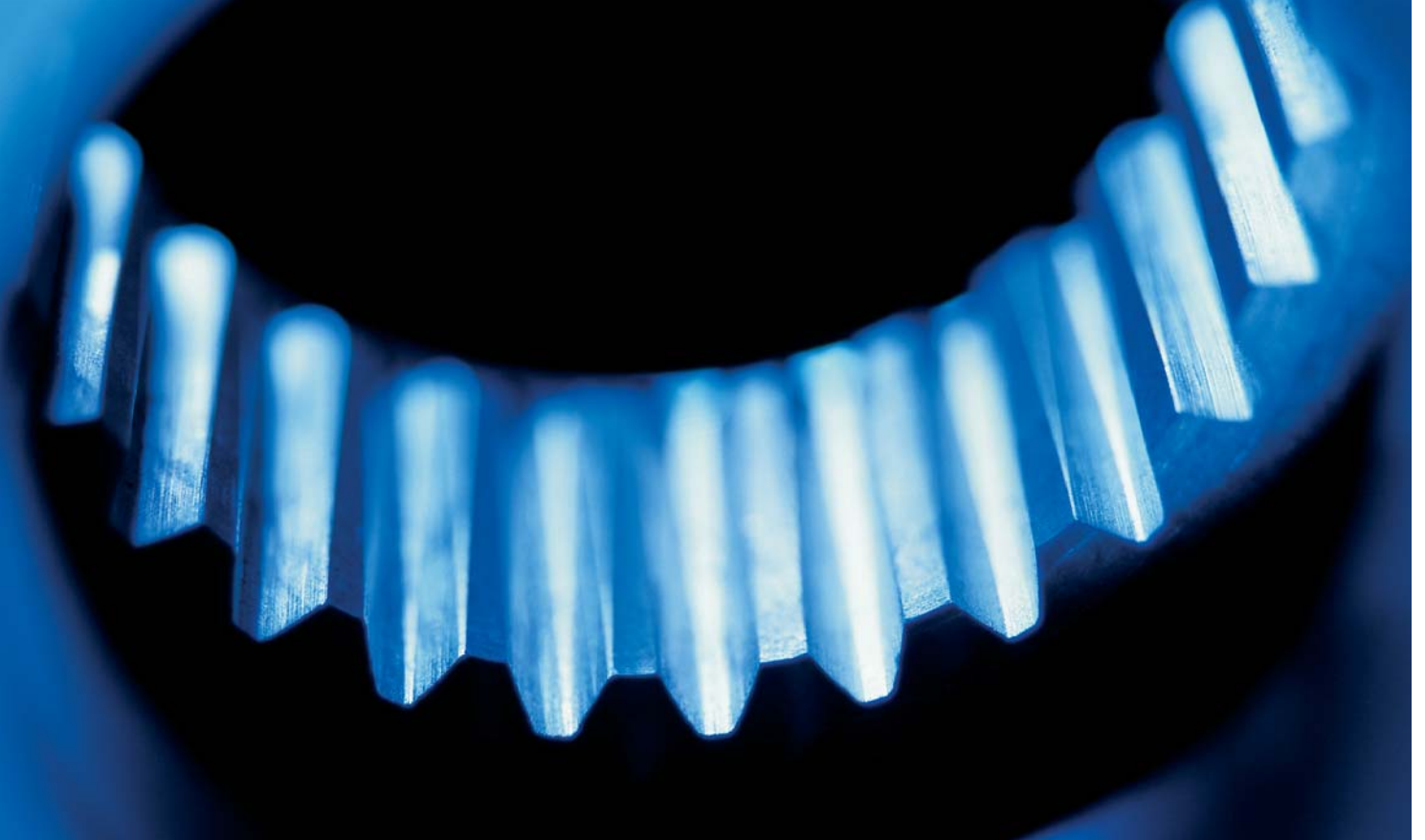
#### Application areas

Industrial trucks, escalators, cranes and automation technology



#### Other electrical accessories

- High-speed switchgear
- Electronic switchgear
- Half-wave and bridge rectifiers
- Spark suppressors



## INTORQ – Sales and Service around the world

Our customers can reach us at any time from anywhere in the world. We cooperate with Lenze's network of worldwide sales offices and service centres.

Our helpline (008000 24 46877) will provide you with expert advice, 24 hours a day, 365 days a year.

Information about our products, catalogues and Operating Instructions can be found at **[www.intorq.de](http://www.intorq.de)**

Contact the Lenze service centres and sales partners through the Lenze website **[www.Lenze.com](http://www.Lenze.com)**.





## Worldwide sales at [www.Lenze.com](http://www.Lenze.com)



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|--------------------|---------------------|
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| Argentina          | Latvia              |
| Australia          | Lithuania           |
| Austria            | Luxembourg          |
| Belgium            | Macedonia           |
| Bosnia-Herzegovina | Malaysia            |
| Brazil             | Mauritius           |
| Bulgaria           | Mexico              |
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| Finland            | Russia              |
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| Germany            | Singapore           |
| Greece             | Slovak Republic     |
| Hungary            | Slovenia            |
| Iceland            | South Africa        |
| India              | South Korea         |
| Indonesia          | Spain               |
| Iran               | Sweden              |
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**INTORQ GmbH & Co. KG**

Postfach 11 03  
D-31849 Aenzen

Wülmsers Weg 5  
D-31855 Aenzen

Tel +49 (0)51 54/95 39-01

Fax +49 (0)51 54/95 39-10

E-mail [info@intorq.de](mailto:info@intorq.de)

[www.intorq.de](http://www.intorq.de)

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