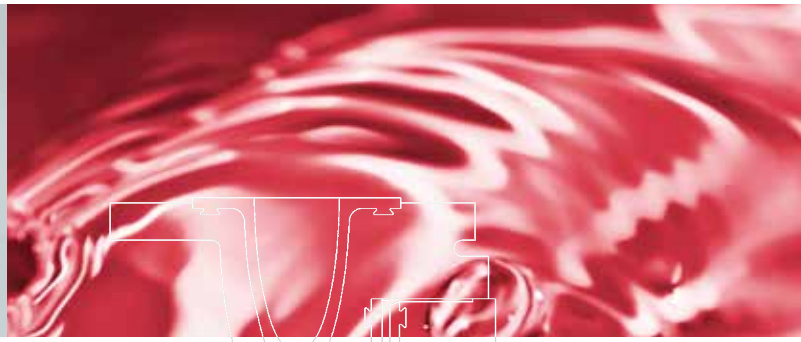
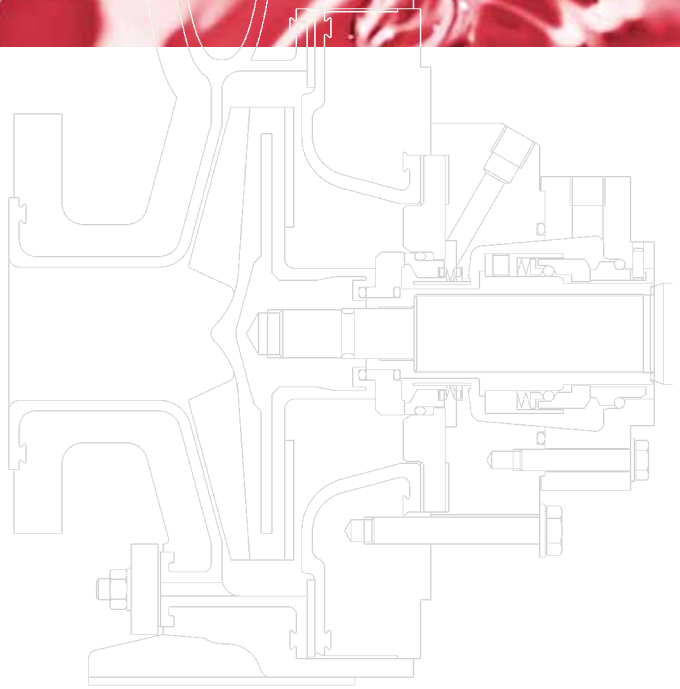
PFA Lined Double Mechanical Seal Centrifugal Pump

Efficient – Non-Corroding – Safe



EB
Double mechanical seal chemical process pump



Designed to:
DIN EN ISO 2858 and 5199

Compliant with:
EC Machinery Directive
EC ATEX Directive

Open impeller of the PFA lined double mechanical seal chemical process pump

CP Pump Systems
PFA Lined Double Mechanical Seal Chemical Process Pump

Our company
CP is a highly innovative Swiss company with a rich tradition. Since 1948 we have specialised in developing and manufacturing premium quality high-tech products and providing services for international customers with the most rigorous requirements.

We produce reliable and innovative centrifugal pumps for the chemical, pharmaceutical, petrochemical, biotechnology, food and beverage industries. CP is represented in over 70 countries through its network and offers first-class customer services. This proximity guarantees customers worldwide an efficient local service.

Reflecting our deep commitment to energy efficient products and services, we deliver environmentally friendly solutions that always go hand in hand with maximum safety and economy. As a pioneer in this area, we advise and assist customers with a wide range of needs – throughout the value chain.

CP operates a quality management system certified to ISO 9001:2015.

Energy efficiency in industry
Nowadays, industry is facing increasing demands to improve sustainability and energy efficiency. Pumps are considered to play a key role because they offer vast potential to save energy and costs. Already recognising this back in 1999, CP took action and has become a pioneer in energy-saving pumping systems.

In recent years, we have continuously enhanced the hydraulic performance of numerous pump systems, increasing their efficiency by up to 30 per cent. At the same time, we have steadily improved pump safety, a mission we have vigorously pursued ever since our company was established in 1948.

We are wholeheartedly committed to promoting sustainable manufacturing in industry around the world. Our customers benefit from a comprehensive range of solutions that reduce costs and CO_2 emissions over the long term. Cleaner pumps, cleaner planet: we firmly believe that sustainable research, thinking and action always pay off for everyone.

PFA lined double mechanical seal chemical process pump
Fitted with a double mechanical seal as standard, the EB pump is ideal to meet the stringent requirements of chemical processing and a multitude of other industries. This highly advanced and extremely energy efficient pump is built to handle a huge variety of corrosive fluids reliably and absolutely safely.

The pump casing has a thick, heavy-duty, corrosion- and permeation-resistant PFA lining positively, mechanically locked into the metal armour, ensuring vacuum resistance. This armour absorbs all mechanical stresses that can result from system pressure or piping nozzle loads.

For reliable handling of fluids containing solids, the EB features a non-clog, wear-resistant open impeller that delivers low NPSH and superior efficiency. Its plastic impeller also has a metal core for increased mechanical strength. The impeller clearance can be adjusted easily and accurately to maximise efficiency.

The EB is designed as a modular system constructed with very robust components. Its pump shaft is supported by an oil-lubricated bearing frame.

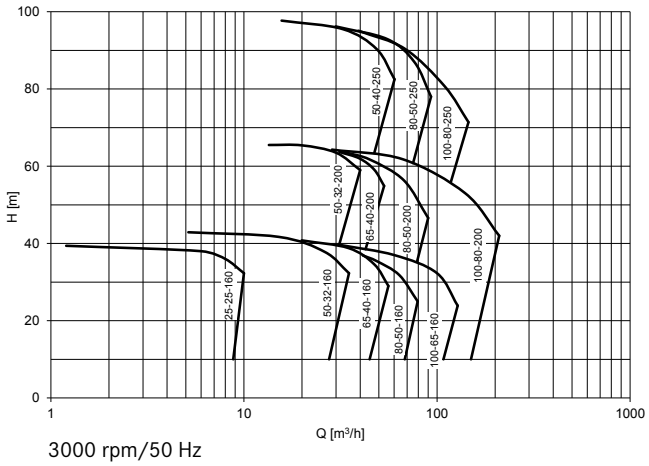
This pump's connection dimensions and performance data conform to DIN EN ISO 2858, making the EB easy to retrofit into any installation to replace old pumps.

EB
PFA Lined Double Mechanical Seal Chemical Process Pump

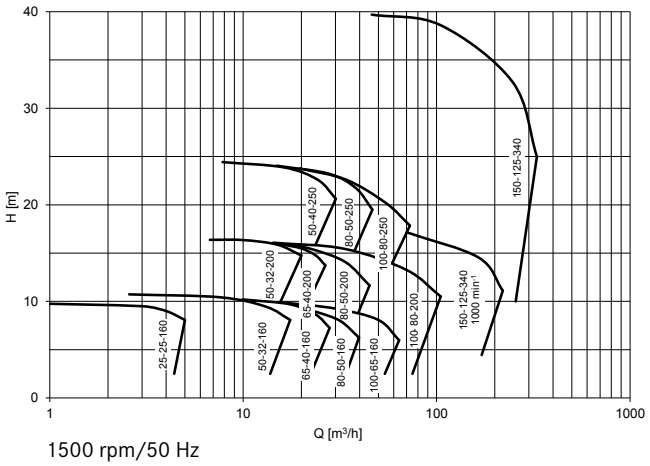
Technical data	
Capacities (min./max.)	0.5 to 400 m^3/h
Heads (min./max.)	5 to 140 m
Temperatures (min./max.)	–20 to +150°C
Kinematic viscosities	0.5 to 350 mm^2/s
Solids handling	after technical clarification

Directives
EC Machinery Directive
EC ATEX Directive

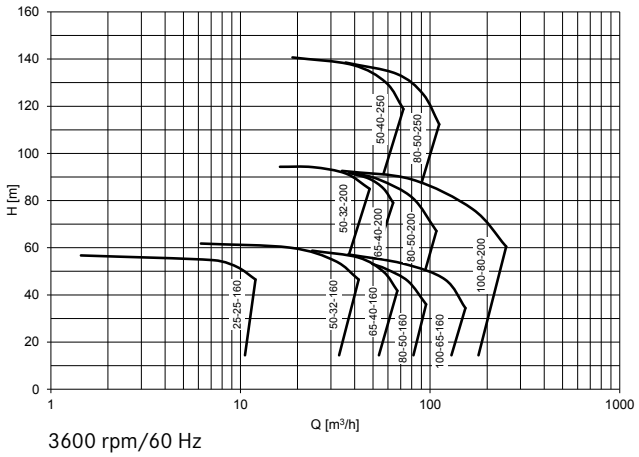
Standards
DIN EN ISO 2858
DIN EN ISO 5199



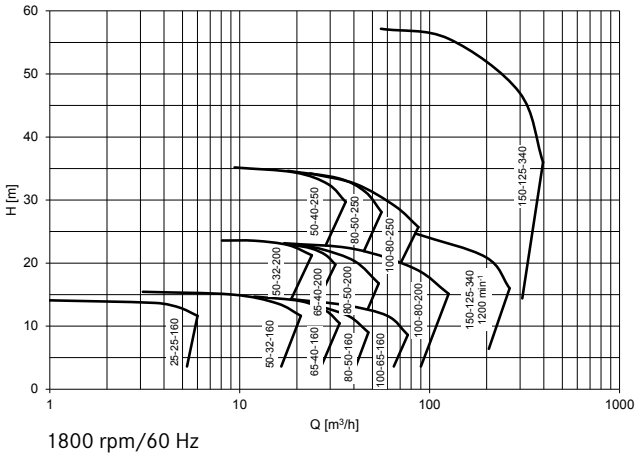
3000 rpm/50 Hz



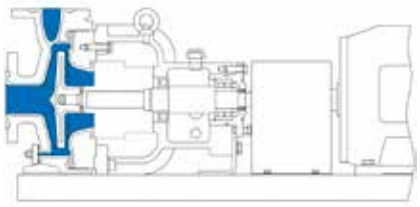
1500 rpm/50 Hz



3600 rpm/60 Hz



1800 rpm/60 Hz



Frame-mounted EB
with baseplate
–20°C to +150°C

EB with baseplate and motor
horizontal frame-mounted (–20°C to +150°C)

Options
Comprehensive – Individual – Combinable

Casing

Materials
– Cast iron (GGG 40.3) / vacuum-tight PFA lining

Pressure rating
– PN 16

Connection flanges
– To EN 1092-2
– Drilled to ANSI/ASME B16.5

Additional connections
– Casing drain (with or without flange)
– Mechanical seal housing drain/vent

Gasket materials
– PTFE-enveloped
– Gylon® blue

O-ring materials
– FEP/FKM
– Kalrez®/Chemraz®

Mechanical seal

Double mechanical seal
– FuturaTef®

Mechanical seal cover

Options
Comprehensive – Individual – Combinable

Double mechanical seal barrier/buffer fluid vessel

Vessel
- Cooling coil, manometer, thermometer and sight glass
- Total volume from 3 to 12 l (depending on vessel type)
- Hand refill pump (depending on vessel type)

Vessel connections
- Stainless steel braided PTFE hose
- Stainless steel piping

Brackets
- Steel
- Stainless steel

Pump protection

Barrier/buffer fluid monitoring
- Level switch
- Pressure switch
- Temperature probe

Engine load sensor

Mounts

Types
- Baseplate

Materials
- Steel
- Stainless steel

Stilts

Drip pan

Grounding lugs

Bearing frame

Lubrication
- Oil lubrication

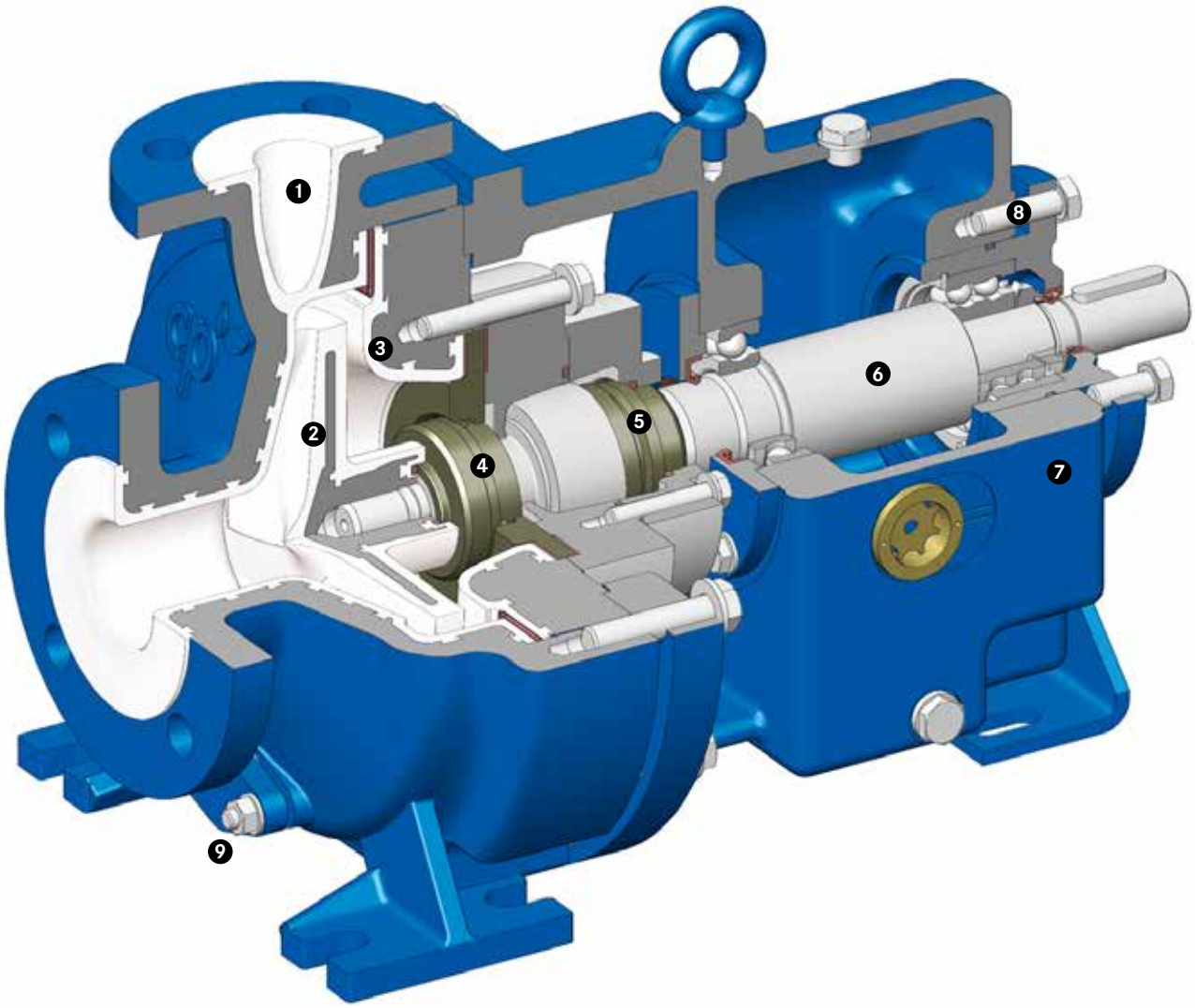
Oil lubrication options
- Constant level oiler

Coupling

Coupling guard
- Steel
- Brass

Sectional View

EB
horizontal frame-mounted (–20°C to +150°C)



1 Pump casing with PFA lining
2 Impeller
3 PFA lined casing cover
4 Seal faces (on product side)
5 Seal faces (on atmospheric side)
6 Pump shaft
7 Oil-lubricated bearing frame
8 Impeller clearance adjusting bolt
9 Casing drain

Doubly Effective – FuturaTef®

The FuturaTef® double mechanical seal is particularly well suited for demanding applications, especially in the chemical industry. First launched on the market in 1998, it has since been continuously enhanced to meet the growing demands of industry, while retaining all of its versatility and efficiency.

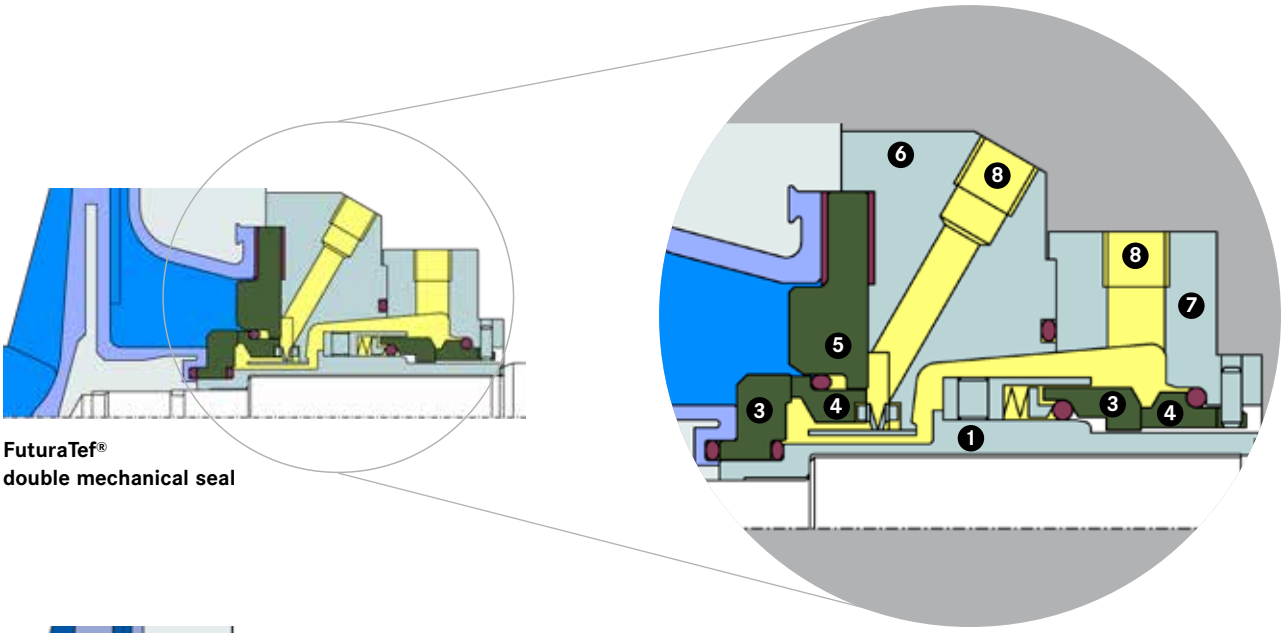
Designed for an impressively wide range of applications, it is:
- Ideal for sealing corrosive, solids-laden and abrasive media
- Highly suitable for PFA lined chemical process pumps
- Universally chemically resistant, having no wetted metal parts

Outstanding features are its safety mechanisms:
- Springs protected from the pumped medium
- Double seal remaining closed in the event of barrier fluid pressure loss
- Shaft sleeve to protect the shaft from damage

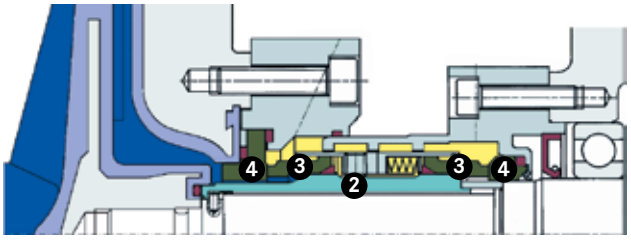
System for sealing integrity

The FuturaTef® is a double mechanical sealing system featuring high-grade ceramic (SSiC) seal faces and a metallic shaft sleeve for zero leakage. The spring assembly never comes into contact with the pumped medium. A barrier fluid in the mechanical seal lubricates the seal faces and simultaneously provides sealing integrity, preventing both the springs and the O-ring located on the atmospheric side from clogging or sticking. As a result, the pressure on the seal face is always maintained, ensuring that the seal operates reliably.

Consisting of few parts, the FuturaTef® is easy to install and requires no adjustments. SSiC (sintered silicon carbide) against SSiC is exclusively used as the seal material on the product side, while other seal face combinations are available on the atmospheric side. This allows the FuturaTef® to be configured for virtually any special application.



FuturaTef®
double mechanical seal



Back-to-back
double mechanical seal

1 Metallic shaft sleeve
2 Ceramic shaft sleeve
3 Rotating seal ring
4 Stationary seal ring
5 Insert ring
6 Seal cover
7 Shaft seal housing
8 Flush connections

Applications
Versatile – Complex – Special

CP's PFA lined double mechanical seal centrifugal pump is engineered to meet the most stringent quality standards and ensure reliability and utmost safety in production operations. Suitable for many different fluids in a variety of industries and processes, it is capable of handling low, medium and high flow volumes. The EB chemical process pump from CP offers tremendous advantages, especially in pumping very sensitive or hazardous substances.

Industries

- Chemical processing: basic and fine chemicals (agrochemicals, speciality chemicals)
- Pharmaceuticals
- Biotechnology processing

Processes

CP's PFA lined double mechanical seal centrifugal pump is designed for a wide range of processes, including:
- Chlor-alkali electrolysis
- Processes in multifunctional facilities
- Sulphuric acid recycling
- Tank unloading

Fluids

CP's PFA lined double mechanical seal centrifugal pump can handle acids, bases, solvents, suspensions and fluids containing solids.
For example:
- Calcium chloride
- Dichloromethane
- Glutaric acid
- Hydrochloric acid
- Hydrofluoric acid
- Methyl acetate
- Silane
- Sodium chloride
- Sulphuric acid

Our sales staff will be glad to give you personalised advice tailored to your specific needs, industry, processes and fluids.

CP Pump Systems
Our Product Portfolio

Customer service

We offer the highest quality, many years of experience and first-class advice from a single source. Our bespoke pump systems meet a wide range of different requirements.

CP's customers benefit from a full service offering: the fastest availability of genuine spare parts, a complete set of technical documentation, competent and efficient customer support, and a dynamic and flexible repair service. All these services ensure that your pumps will operate faultlessly. Thanks to a network in over 70 countries, we advise and serve our customers directly on site.

Energy efficiency consulting

As a trend scout specialised in energy efficiency, CP can deliver a wide spectrum of services relating to pumps and motors: comprehensive advice, in-depth system analysis, meticulous planning and design. Our goal is to actively help our customers optimise the energy consumption of their pumping systems and thereby cut costs over the long term.

Backed by our many years of broad experience, we today advise and assist customers in both the private and public sectors. These include owners and operators of fluid processing plants in the chemical, pharmaceutical and diverse other industries.

Are you interested? Do you have any questions? We would be happy to discuss all the different options with you personally.

Stainless steel magnetic drive centrifugal pumps

MKP
Magnetic drive chemical process pump

MKP-S
Self-priming magnetic drive chemical process pump

MKTP
Magnetic drive chemical process sump pump

MKP-ANSI
Magnetic drive chemical process pump

MKPP
Magnetic drive in-line chemical process peripheral pump

SZMK
Magnetic drive in-line chemical process pump

Stainless steel magnetic drive biotech process pump

MKP-Bio
Magnetic drive centrifugal pump for sterile processes

PFA lined magnetic drive centrifugal pumps

MKPL
Magnetic drive chemical process pump

MKPL-S
Self-priming magnetic drive chemical process pump

Solid PTFE magnetic drive centrifugal pumps

MSKP
Magnetic drive chemical process pump

MSKPP
Magnetic drive chemical process peripheral pump

MSKS
Self-priming magnetic drive chemical process side channel pump

Stainless steel mechanical seal centrifugal pumps

ZMP
The 3-In-One mechanical seal chemical process pump: crushing, mixing and pumping

PFA lined double mechanical seal centrifugal pump

EB
Double mechanical seal chemical process pump

Ceramic lined double mechanical seal centrifugal pump

ET
Double mechanical seal chemical process pump

Improving Energy Efficiency in Pumping Systems Helps to Create a Cleaner Planet.

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Switzerland, Zofingen

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+41 62 746 85 85 / info@cp-pumps.com

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