

HYGHSPIN – a twin screw pump for a wealth of industries

HYGHSPIN twin screw pumps are to be found in the most diverse industries and are synonymous with the best possible results:

- **Food production**
Dairy industry, convenience food, ketchup, sauces, confectionery and baby food
- **Beverage production**
Fruit juices, syrups, concentrates and brewery products
- **Pharmaceutical industry**
Raw materials, cell solutions, glucose, glycerol and blood plasma
- **Cosmetics industry**
Creams, pastes, lotions and shampoos
- **Chemical industry**
Adhesives, paints, coatings, plastics and cleaning agents

And in many other industries in which materials with different levels of viscosity need to be handled.

Jung Process Systems – Experience and expertise

Jung Process Systems is your specialist in hygienic stainless steel twin screw pumps – its name is synonymous with the ultimate in quality and in-depth expertise in pump technology. The company produces twin screw pumps to meet the most diverse demands and industries, offering comprehensive support worldwide.

All pumps from the HYGHSPIN series need to be extremely compact, space-saving and maintenance-friendly. They offer a high level of availability

with minimal downtimes for maintenance work (optimum MTTR ratio).

All designs are also based on the principles of hygienic design and thus fulfil the most exacting quality requirements for many different industries that work with sensitive raw materials or ingredients.

The production facilities provide logistical flexibility with reduced delivery times and a Quality Management System certified to ISO 9001:2015.



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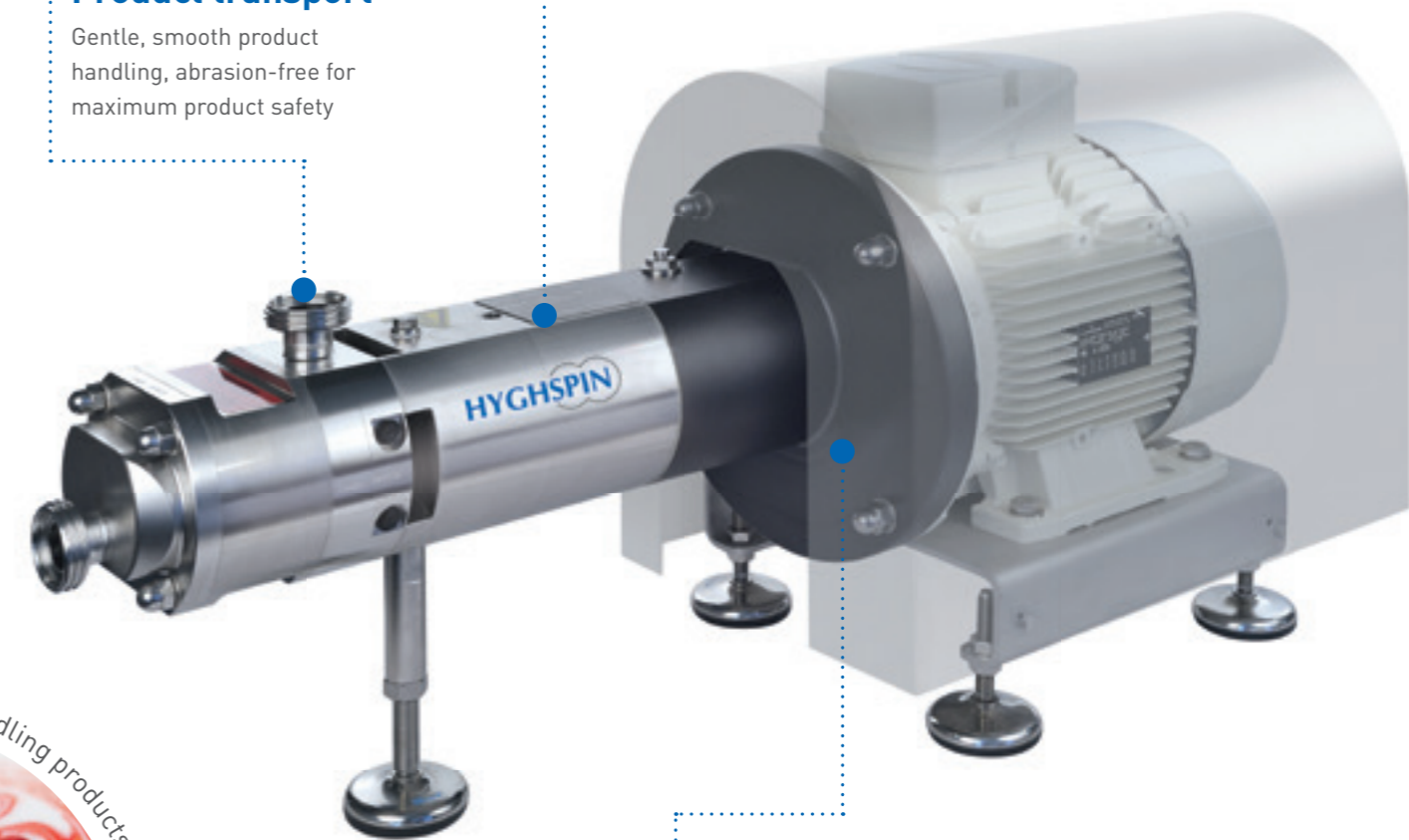
Flexible use – maximum efficiency: Gentle product handling plus CIP with one and the same pump!

Product transport

Gentle, smooth product handling, abrasion-free for maximum product safety

CIP cleaning

Proven HYGHSPIN technology: no additional pump required for CIP cleaning



Flexible design

Available as block design pump or with a bare shaft

The information given on this data sheet is subject to change and should be checked in each case. Technical changes reserved.



HYGHSPIN

Twin screw pumps

The efficient solution for flow capable products

Whether aqueous, high-viscosity, lumpy, fibrous or gas-charged – the worldwide proven HYGHSPIN pump series, made of high-quality stainless steel, is suitable for products of virtually any consistency and therefore stands out on account of its outstanding efficiency. The particularly service-friendly twin screw pump impresses with its high-performance suction capability and gentle transport of all products. The use of the HYGHSPIN Hopper is recommended for non-flow capable media. A key benefit of all versions of HYGHSPIN pumps is also the time- and cost-savings they offer, as no separate pump is needed for CIP cleaning. There is therefore no need for additional investment and maintenance costs are significantly reduced.



The HYGHSPIN ensures maximum flexibility and is available in block design or with a bare shaft.

The benefits at a glance

- Maximum flexibility**
 Wide range of products, viscosities and volumes can be handled with just one pump
- Gentle and uniform product handling**
 Low speed, minimum pulsation and no surges
- Outstanding quality**
 Made entirely from stainless steel
- Exceptionally service-friendly**
 The pump does not need to be removed from the system for maintenance work
- Considerable cost savings**
 Reduced investment and maintenance costs
- Maximum levels of hygiene**
 No cavities and extremely good cleaning of the shaft seal; wetted components are made of solid material, therefore no risk of cast defects
- CIP and SIP**
 Cleaning and sterilisation in place, use as a CIP pump possible

Twin screw pumps have clear advantages over other pumps, as centrifugal, rotary lobe or gear pumps. They win out, above all, by excellent flexibility and ultra low-pulsation and thus gentle product handling.

The HYGHSPIN is available in all sizes as a block design and in sizes 70, 90 and 125 with a bare shaft. The differential pressure is up to 35 bar with single-flow and up to 50 bar with double-flow units.

Pump outlet / pump inlet

- Reversible operation is possible
- Horizontal outlet for complete drainage
- Various dimensions and standards available

Four guide bolts with cap nuts

- Rapid assembly/dismantling for inspection and/or manual cleaning
- Guide bolts for damage-free handling of the components

Feed screws

- Balanced rotors
- Speed control from 5 to 130 Hz
- Product handling and cleaning with one pump
- Excellent suction performance and low NPSHr values
- Axial pumping, gentle on products
- Pumping of lumpy products
- Pumping of gas-charged media
- Hardened surfaces with excellent wear resistance

Pump outlet / pump inlet

- Reversible operation is possible
- Various dimensions and standards available

Bearing support

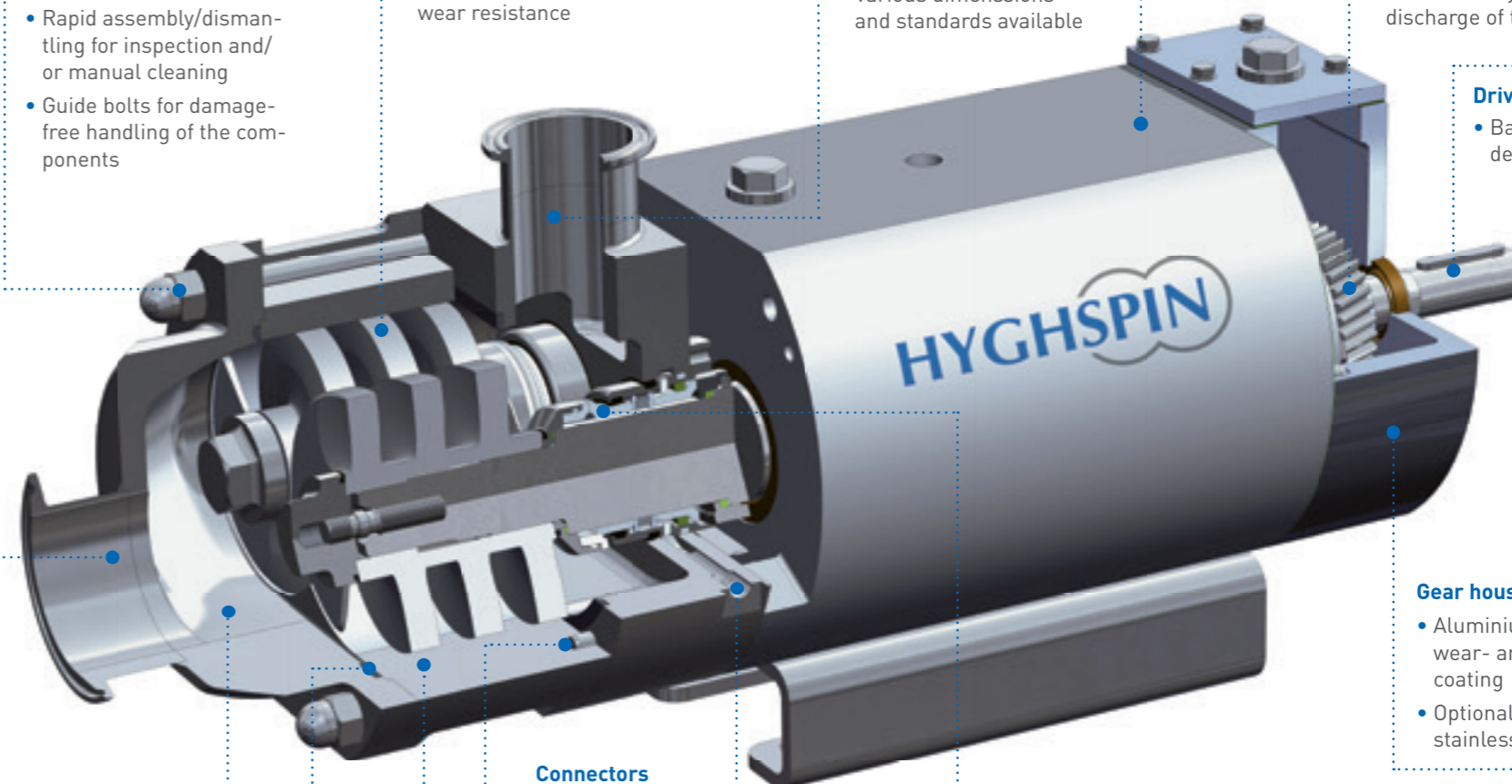
- Stainless steel design with high-performance bearing
- Very low heat transfer to the pump housing

Synchronisation gear wheels

- Inspection opening with access to the gearbox
- Adjustment of the flank clearance in the system without discharge of the gear oil

Drive shaft

- Bare shaft or block design



Wetted surfaces

- Electropolished for ideal cleaning (Ra < 0.8)
- Optional: Ra < 0.4

Static seals

- Hygienic formrings – no cavities
- Various qualities of FDA-approved elastomers
- Optional: Aseptic model with vapour barrier

Connectors

- Flushing of the mechanical seal

Positioning

- Accurate positioning of the components due to precise manufacture

Pump housing

- Optional: Hardened surfaces with excellent wear resistance
- Optional: Heating jacket

Shaft seal

- Identical installation space for:
 - single acting mechanical seal
 - double acting mechanical seal (safe-to-run dry with flushing)
 - Cartridge design lip seal (safe-to-run dry without flushing)
- Cartridge design for static parts with integral service-friendly removal device

Gear housing

- Aluminium design with a wear- and acid-resistant coating
- Optional: stainless steel design



HYGHSPIN

HOPPER

HYGHSPIN Hopper – the 3-in-1 solution for non-flow capable products

The HYGHSPIN Hopper is an extension to the worldwide proven HYGHSPIN stainless steel pump series. This innovative twin screw pump is able to easily transport products with viscosities of up to 5000 Pas. The feed screws are extended so that they can draw in non-flow capable products below the inlet, like an extruder, and feed them into the pump chamber. This ensures particularly gentle handling – no need for an external extruder.



The HYGHSPIN Hopper therefore provides a very attractive 3-in-1 solution: feeding, pumping and cleaning by just one component. It is available in sizes 70, 90 and 125.

2. Pumping

Feed screws with built-in extruder



1. Feeding

The built-in extruder enables a radial inlet of non-flow capable products, either through an open hopper or also through a pipe connection

3. Cleaning

Proven HYGHSPIN technology: no need for an additional pump for CIP cleaning

Even more benefits

The HYGHSPIN Hopper provides the general benefits of the HYGHSPIN series as well as:

- **Self-feeding extruder function**

The product drops by gravity into the pumping chambers and is reliably fed into the pump

- **Gentle product feed**

Sensitive products, such as cooked cherries, sink gently from above into the pumping chambers. There is no risk of damage by a rotating entry

- **Enhanced safety from cavitation**

The extended feed screws overcome entry losses into the chambers. The HYGHSPIN Hopper is therefore particularly suitable for critical installations, such as deaerators, evaporators or cooking units

The HYGHSPIN Hopper can be integrated into existing systems by adapting it to pipe connections.

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DOUBLE FLOW

HYGHSPIN Double Flow – the high-pressure solution

The HYGHSPIN Double Flow extends the range of the HYGHSPIN series to differential pressures of up to 50 bar. It has bearings on both sides. Two parallel stages transport the product to a central outlet, thereby compensating for axial thrust. The extremely low bearing load of the HYGHSPIN Double Flow cannot fail to impress.



Bearings on both sides

The two-sided support controls the shaft deflection and thus provides for high differential pressures

Central outlet

The central outlet can point upwards or downwards



The HYGHSPIN Double Flow, which is available in sizes 90 and 125, is the first choice for challenging pumping tasks in systems with heat exchangers or when using filtration systems.

Outer inlets

The two parallel stages each feature an outer inlet, which can either point upwards or downwards

Shaft seals

The HYGHSPIN series offers a range of different shaft seals to enable you to make the right choice for your application

- **Identical installation space**

Problem-free conversion of the type of seal*

- **Cartridge design for static parts**

Easy assembly

- **Maximum hygiene**

Hard/hard combinations for the product side seal faces – no product contamination

The following shaft seals are available.

The elastomers are matched to the product.

- **Single-acting unflushed mechanical seals**

Excellent hygiene, no ingress of flushing medium into the product is possible

- **Double-acting flushed mechanical seals**

Excellent operational reliability – the pump is safe-to-run dry by flushing

- **Double-acting barred mechanical seals**

A product leak outwards is prevented by applying pressure to the flushing chamber

- **Single-acting unflushed lip seals**

The safe-to-run dry solution without flushing, particularly suitable for mobile pumps

An integral removal device provides for controlled and safe dismantling of all shaft seals even if there are crystallised leaks.



Mechanical seals with a knife edge design prevent start up damage from adhesion.



* Exception: Hopper model with lip seals

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INLINE

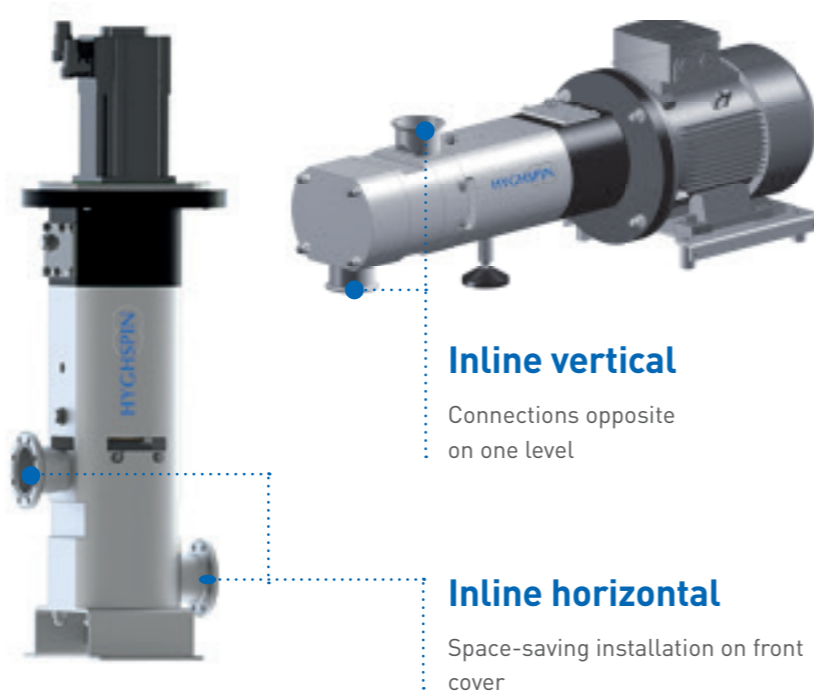
HYGHSPIN Inline – Connections of your choice

HYGHSPIN twin screw pumps are available with the most diverse connection orientations. Inline models are available with parallel connections for pipework that continuously runs vertically or horizontally.

These models facilitate the simple change from rotary lobe pumps or circumferential piston pumps to HYGHSPIN twin screw pumps.

HYGHSPIN twin screw pumps can be mounted

- horizontally
- vertically facing upwards or downwards
- laterally to a wall.



Inline vertical

Connections opposite on one level

Inline horizontal

Space-saving installation on front cover

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MOBIL

HYGHSPIN Mobil – suitable for use everywhere

HYGHSPIN Mobil is a solution with all the general benefits of the HYGHSPIN series. The extreme flexibility of the HYGHSPIN series is ideally combined with locational independence.



- **Simple and safe local control**
Motors with add-on frequency converter and control panel, up to IP66 rating, service switch on the mobile unit, connection via a CEE plug
- **Safe-to-run dry**
When using a double-acting flushed mechanical seal combined with a flushing system or when a lip seal is used as a shaft seal
- **Reliable block design**
The block design reliably centres the motor on the pump and enables operation on any ground without the risk of coupling misalignment

Drives

HYGHSPIN twin screw pumps are combined with high-quality drives selected on the job. The following options are available:

- **Three-phase motors**
The standard version with high flexibility, featuring forced ventilation or add-on frequency converter if required
- **Gear motors**
For high torque at low speed combined with good controllability
- **Synchronous motors**
Wide speed range and fine-tuned control with even torque curve, compact and easy to clean
- **Stainless steel hygiene drives**
Ideal to clean, time-saving to operate

Technical data

Type	HYGHSPIN 50	HYGHSPIN 70	HYGHSPIN 90	HYGHSPIN 105	HYGHSPIN 125
Max. pump capacity	20 m³/h	40 m³/h	100 m³/h	180 m³/h	300 m³/h
Max. differential pressure	20 bar	25 bar	30 bar	20 bar	35 bar
Max. ø solid material	16 (25) mm	20 (30) mm	28 (45) mm	35 mm	45 (67) mm
Suction capability	NPSHr > 0.5 m, suction heights of up to 9 m are possible				
Viscosity	0.5–1,000,000 mPas, higher values on consultation				
Operation temperature	–10 to 180° C, higher values on request				
Cleaning	fully CIP-capable (cleaning in place) in the system				
Sterilisation	SIP in the system with steam or hot water				
Wetted parts	1.4404, 1.4539 or 1.4462 as an option, other materials on request				
Elastomers	HNBR, FPM, EPDM, FFPM, FDA-approvals, other elastomers on request				
Shaft seals	single- and double-acting mechanical seals, with knife edge for adhesive media to avoid start up damage, single-acting safe-to-run dry lip seals				
Pump orientation	horizontal, vertical or lateral, INLINE models are possible				
Connections	different sizes and connector standards by arrangement				
Designs	compact robust block design for all sizes, with bare shaft for sizes 70, 90, 105 and 125				
Drives	three-phase, gear or servo motors, hygienic drives in stainless steel as an option				

Performance data depending on the pump configuration, temperatures depending on speed, pressure and choice of elastomers

Accessories / Versions



HYGHSPIN with stainless steel hygienic motor



HYGHSPIN with compact synchronous motor

A wealth of options, such as motor protection hoods, heated pump housings, feeder systems or ATEX models, are available for HYGHSPIN twin screw pumps.

Many applications have exceptional demands. They can be fulfilled by versions of HYGHSPIN twin screw pumps.

- **Corrosion resistance**
Use of 1.4539, 1.4462 or special materials
- **Gentle on the product / Metering precision**
Special designs, which reduce backflows to a minimum

- **Wear resistance**
Special processes enable even the most difficult products to be handled
- **Pharmaceutical applications**
The best surface quality, special documentation, housing seals with vapour barrier
- **Leak-tightness requirements**
HYGHSPIN twin screw pumps are technically leak-tight when using barred double-acting mechanical seals

