We create

world-leading technologies that consistently improve safety and comfort at sea and set the benchmark for the boating of tomorrow.

SLEIPNER®
Ocean born. Tech bred.

Worldwide sales and service
www.sleipnergroup.com

Distributor information:

SLEIPNER®
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COMMERCIAL PRODUCTS

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SLEIPNER®

OCEAN BORN. TECH BRED.

Quality legacy

We've lived and worked with the unruly sea for a hundred years. That's why we create products that can create a safer and more comfortable experience at sea – products you can rely on to get the job done.

Beautiful engineering

Our technology is world-class. Our meticulous attention to detail combined with extensive experience as a volume manufacturer is why your workday at sea always will be better with a Sleipner aboard.

Worldwide service

We care. Our global network is there for you to ensure continuous optimal function on your Sleipner solution, even when it has left for distant shores. You can rely on your Sleipner solution, year after year.

Our story

We are a Norwegian technology driven company, focused on creating world leading products and solutions of uncompromised quality to improve safety and comfort at sea. As boaters we know what safety at sea *means*.

So, we don't let our solutions slip out of sight for a second; We manufacture them ourselves, using technologies we have developed ourselves – and we work in close parthership with boat builders and our global service network to ensure optimal function throughout their lifetime.

You know what you get when you install a Sleipner. Our dedication to boating and innovation ensures that our solutions are the benchmark for the industry, today and tomorrow.

SLEIPNER®

Thrustworthy • Knowledgeable • Future ready

— This is Sleipner —

Established in Norway in **1908** with more than **116 years of experience.** Sleipner has 230+ employees, including **29 engineers** with more than **260 years combined experience** in the marine industry.

53

Third party sales and service organizations in **53 countries.**

18

18 CNC operators with more than **230 years** combined marine experience.

7

7 subsidiaries providing sales, support and after sales services.

5

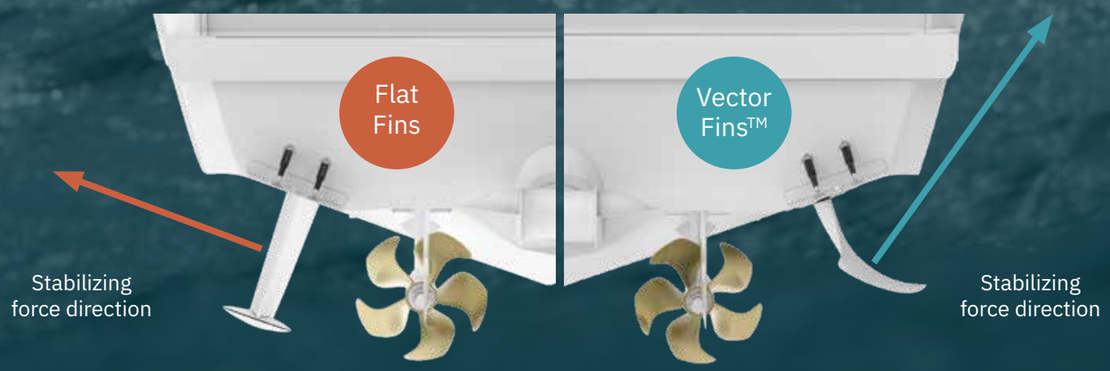
Strategic technology partnership with **5 external specialists.**

Vector Fins™ – a revolutionary generation of fin stabilizers

Stabilizer systems have been used on larger passenger ships for a long time. With ever more compact and efficient systems, owners can now enjoy the better usability and comfort on vessels of all sizes.

Sleipner's Vector fins™ is the only leading stabilizer system for both cruising and at anchor-use. The fins' patented, unique shape reduces drag and improves fuel efficiency – translating more of their power into actual roll stabilization. Enhanced comfort and safety with none of the drawbacks from flat fins.

The system is suitable for most monohull vessels up to 45 meters length. It can also be installed in a 4-fin configuration. Both electric and hydraulic actuators are available.



This simplified illustration shows how the Vector Fins™ better directs the fin forces toward the desired vertical direction, minimizing the energy waste of too many forces being used in the horizontal plane, which can cause unwanted side effects such as yaw and sway.

Vector Fins™ benefits:

- The top speed of the boat will be higher than with flat fin stabilizers
- You will use less fuel than with flat fin stabilizers
- Use less energy to achieve the same stabilizing forces at anchor
- Unlike Gyros, efficiency increases with speed
- Actuators can hold a constant torque load, no need for interceptors or trim tabs to correct vessel heeling while cruising
- Silent all night operation
- Minimal internal space requirement
- Also suitable for retrofit
- Solid and realiable construction
- Made in Norway at our ISO-certified factory
- Worldwide distribution and service

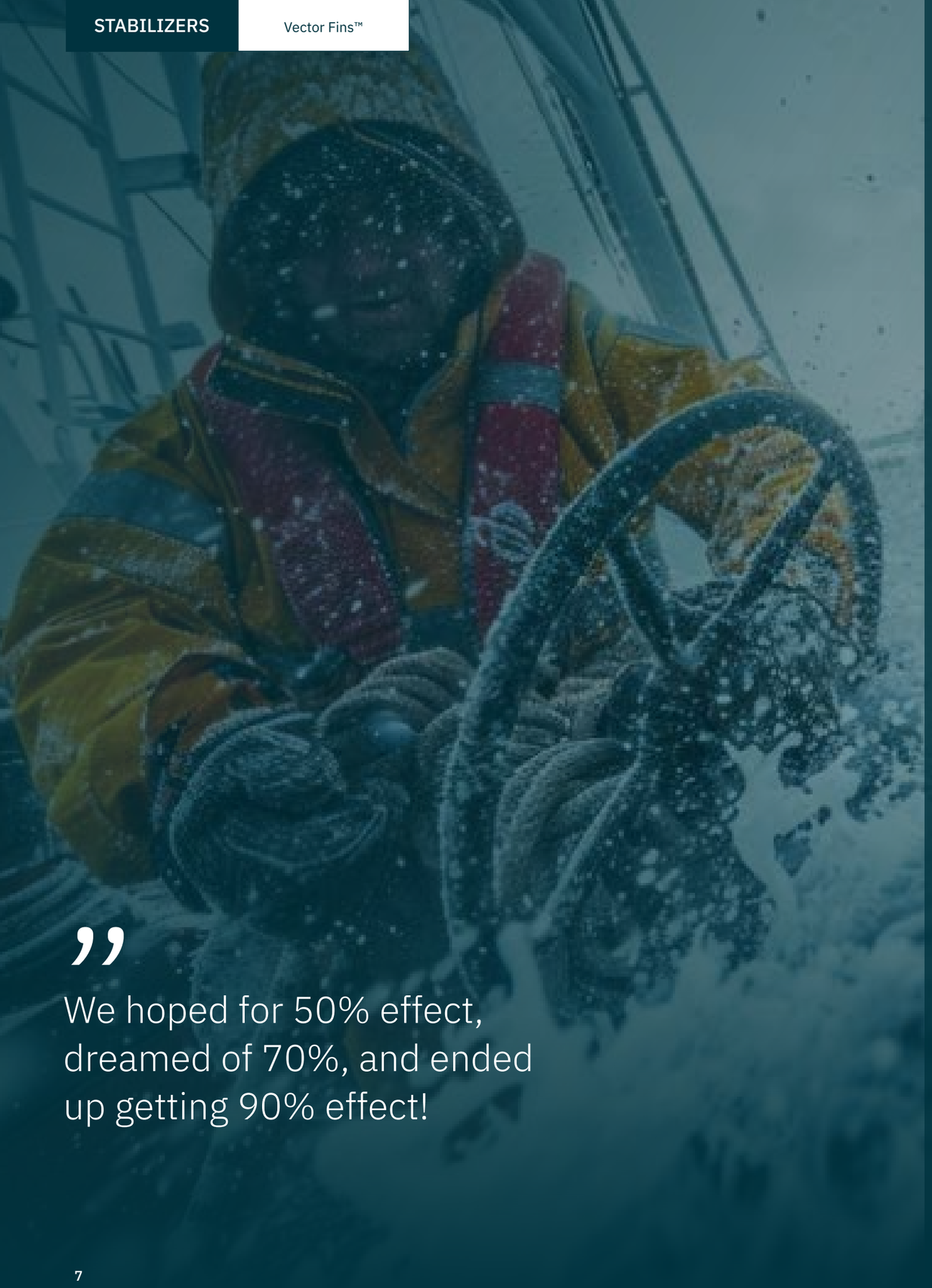
Available both as hydraulic and electric

Product features

- S-Link™
- ANYSPEED
- UNMATCHED HYDRODYNAMICAL PERFORMANCE
- INSTANT-ON (MAX POWER AT START-UP)
- POWER SAVE MODE (AC POWER REDUCTION AT ANCHOR)

Technical details

Ideal Vessel Class	Commercial vessels
Ideal Vessel Size	15-45m / 50-150ft
Power	Hydraulic or Electric
Actuator Position	360°
Performance priority	On selected fins: At anchor / Mixed / High speed



”

We hoped for 50% effect, dreamed of 70%, and ended up getting 90% effect!

Demanding conditions?

For work boats which operate under rough conditions, an active stabilization system can make the difference between getting the job safely done, or not done at all. A stabilized vessel improves the crew and passenger safety and comfort, as boat roll is is significantly reduced, both underway and at anchor.

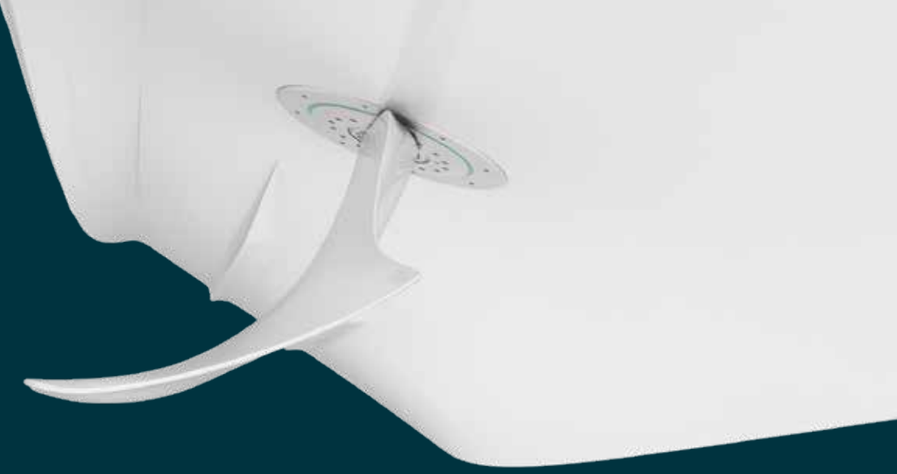
- Increase the operating hours of the vessel
- Increased safety and comfort for crew and passengers
- Unlike Gyros, stabilizing forces increase with speed^2
- Minimal to no increase in fuel consumption
- Minimal to no loss of speed
- Worldwide distribution and service
- Also suitable for retrofit

Scan the QR code for video

Ola Tønder, *owner of Grip Shipping on his experience after retrofitting the former rescue vessel MS Hagbart Waage with Sleipner stabilizers.*

The MS Hagbart Waage, previously a rescue vessel, has been converted into a passenger ship and now navigates to a coastal town amidst the choppy waters of Western Norway. Thanks to the incorporation of Sleipner's Vector Fins™ stabilizers, the comfort and safety of both crew and passengers has substantially increased.

Vector Fins™ – it's all about the physics



Vector Fins™ is the most effecient stabilizer system on the market. It's patented curved design is signficantly more effecient than the traditional flat fin design - both under way and at anchor.

A typical trade-off for any traditional stabilization system has been the added drag of the fins, which reduces speed and increases fuel consumption.

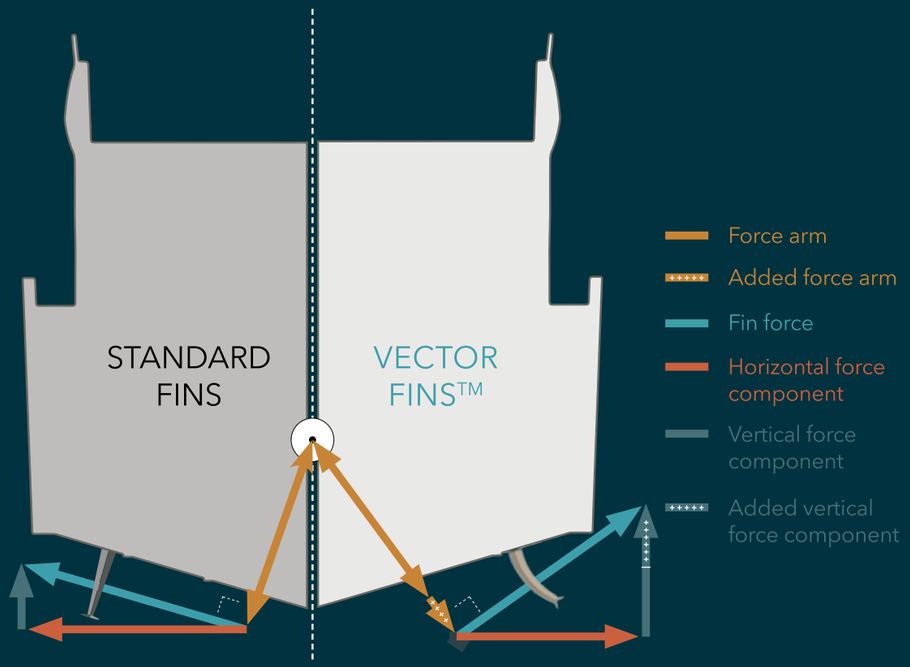
Since flat fins work relatively horizontally, much of the input energy goes to waste by pushing the boat sideways and rotationally. So, to achieve the desired roll reduction, rather larger fins had to be installed.

What sets Vector Fins™ apart is its ability to direct input forces in a more vertical angle, effectively combating roll. This innovative design significantly reduces the energy wasted on the unwanted yaw and sway movements that flat fins typically create.

As a result, a smaller fin can be used to achieve the same roll reduction, leading to less added drag and improved fuel economy.

But there is more. The fins' curved design also creates lift, which offsets much of their added drag, significantly improving the effects on speed and fuel consumption.

Depending on the hull shape, speed, and fin placement, Vector Fins™ can be up to twice as efficient as flat fins. This efficiency translates into a remarkable reduction in roll, with Vector Fins™ capable of reducing roll by up to about 97%.



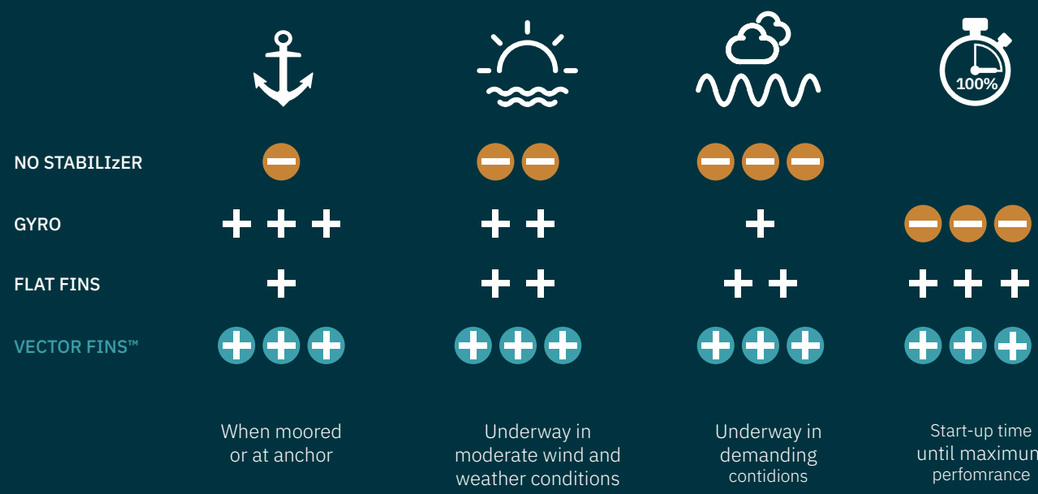
The two most common roll reducing systems on the market today are gyros and fins.

Understanding the basics
The roll forces depend not just on the wave height but also on the time during which it affects the boat (wavelength). Another big factor is the speed of the boat, where force is a factor of speed^2.

Gyro-type stabilizers are installed inside the boat and get their total roll reduction force from the precession motion that they generate to resist the roll of a boat. They have the same total force regardless of wave period and boat speed with limited force.

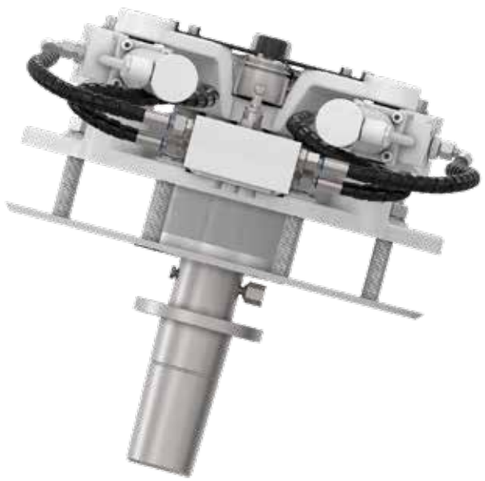
Fin stabilizers on the other hand act in the water and have two ways of creating roll reduction force, depending on the boat's speed. At zero speed or 'at anchor' mode, the fins rotate rapidly (flap) to generate force and like the gyro, have a definite limit. However, when the boat is moving forward, fins also generate roll reduction forces by the angle at which they pass through the water, like adjustable airplane wings or underwater foils. This force increases by speed squared, so the faster the boat moves, the more force they generate.

Which system is right for you?
If your only priority is having stabilization at zero speed, a gyro could be a good option. However, if you also want to have excellent stabilization when cruising in the open sea, fins have a colossal force benefit. They can reduce or eliminate many times the wave height and length of a gyro meeting the same at anchor performance.



Due to their design, gyro stabilizers provide a constant force to stabilize a vessel, while fin stabilizers increase the forces by the square of the speed which makes a big difference in demading conditions.

Hydraulic Vector Fins™



Hydraulic actuators

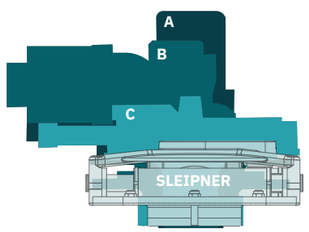
The height inside the boat is often the key measurement to allow for installation in modern vessels. The Sleipner actuators are typically 25% to 75% lower than others. They are constructed for easy installation and minimal noise reproduction.

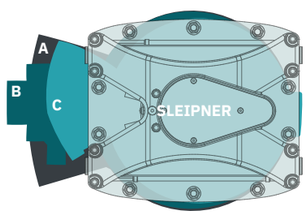
Technical design benefits

- Precision machining and assembly ensures a long lifetime and durability.
- No additional center lock, this is automatic in the standard hydraulic system – very safe due to the hydraulics having extreme safety limits.
- Dual cylinders provide
  - balanced load unlike single cylinder solutions.
  - less bearing load, thereby allowing for a more compact shaft bearing assembly.
- Purpose-designed dual shaft sealing
  - superior to standard lip seals.
- Internal hydraulic connections on actuators are pre-fitted from factory, the installer only connects non-moving hoses/ pipes - Easier and safer.
- No complex adjustments required to set up controller with lots of factors, these are set automatically on first seatrial of the boat.
- Sleipner's latest generation of high-end bearings delivers a long lifespan and is very simple to replace.
- Fins are installed and removed very easily and quickly from the outside for best convenience in transport or other haul-out situations where this might be needed.
- Defined shaft shear point in case of collision accidents.
- All exterior parts are in marine grade stainless steel.

Size of Sleipner actuator SPS55 compared to other brand actuators for similar fin sizes

Sleipner actuators





Advantages of a centralized hydraulic power system

- High efficiency for moving and holding high loads
- Proven and reliable technology
- Most used power system on boats from 15-20 metres and larger
- Can power many applications from one central system
- Low maintenance
- Silent operation

Vector Fins™	VF650	VFS800	VF1050	VFS1450	VFS1650	VFS1950
Any speed stabilizing	Yes	Yes	Yes	Yes	Yes	Yes
Instant on	Yes	Yes	Yes	Yes	Yes	Yes
4-fin configuration	Yes	Yes	Yes	Yes	Yes	Yes
Industry leading efficiency	Yes	Yes	Yes	Yes	Yes	Yes
Coordinated turn control	Yes	Yes	Yes	Yes	Yes	Yes
Performance priority*	-	-	-	-	Yes	Yes
AC Power Save Mode	Yes	Yes	Yes	Yes	Yes	Yes
Compatible actuator	SPS55B	SPS55B	SPS66B / 67B	SPS92B	SPS93B / 94B	SPS96B / 97B

** Fins with the performance priority feature allows for at anchor stabilization, mixed or high-speed performance optmisation.*

Hydraulic Power pack for standalone installations

This a complete hydraulic power unit (HPU) for installation of hydraulic stabilizers in vessels without a centralized hydraulic power system. All of the hose and wire connections are pre-installed, allowing for faster system install and startup in the field. All connection points are focused on two sides of the tank, allowing installation in confined spaces.

Compact, quiet and easy to install

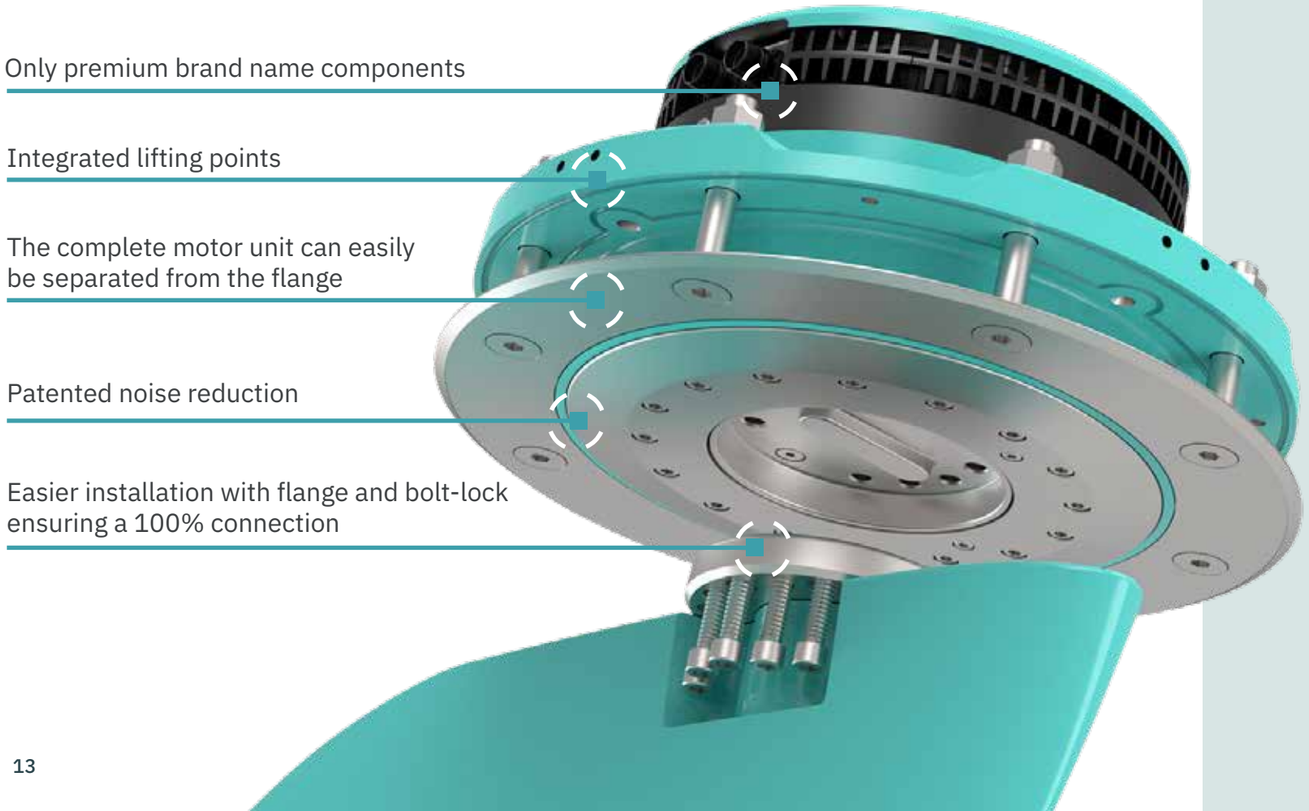
We also offer larger centralized hydraulic power systems to run stabilizers, thrusters, windlasses, windlasses, winches and other hydraulic powered equipment.

Electric Vector Fins™

The compact design of the actuator is cleverly engineered around a frameless torque motor and a Harmonic Drive® strain wave gear. A combination of aluminum, composite, and stainless-steel materials for minimal weight and maximum life expectancy. The gear type is chosen considering the sometimes extreme loads fins get in heavy seas and have safety factors and features way above the gear types typically used in electric actuators.

Patented solution for noise cancellation

Another focus has been on noise reduction through its development, resulting in a patented solution reducing 92% of the structural born noise from the actuator.
Another benefit is that it reduces peak stress loads on both the gears and the hull.



Key features actuator

- Instant on by the press of a button - no start-up period
- Light weight and compact construction
- Ultra responsive and energy efficient brushless motor
- Galvanically isolated design for easy installation in metal hulls
- 24/48V
- 230/400Volt – 1 and 3 phase

Serviceability

- Most parts can be changed on the water
- Motor unit can be removed from base flange in about an hours work
- Integrated lifting points
- Light weight aluminium construction

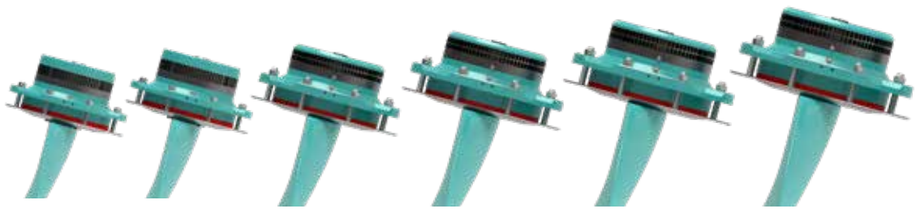
Stabilization panel and software

- Modern touchscreen display prepared for flush installation
- Possibility for remote diagnostics and service through onboard Wi-Fi
- Rudder, gearbox, and GPS input for more responsive stabilization
- Controls up to four fins for larger vessels
- Optional integration with multi function displays (accessory)

Features

- Dock mode: turn the fin stroke angle more towards the keel when docking longside
- Eco mode: limit power consumption to extend operation time from the battery bank
- "DP" mode: Analyses gearbox, GPS, and compass heading when operating in Dynamic Position mode to avoid fin lock while reversing in low speed

Electric Vector Fins™



Technical data

Actuator type	SPS40E	SPS50E*	SPS60E	SPS70E*	SPS80E	SPS100E*
Power supply (VDC)	24/48	24/48	48	-	-	-
Power supply (VAC)	-	-	230(1Φ)/400(3Φ)	230(1Φ)/400(3Φ)	400(3Φ)	400(3Φ)
Typical vessel size (m)	14 - 18	17 - 21	19 - 24	23 - 30	29 - 38	36 - 45
Fin model up to 23 knots*	V3-9	V4-12	V3-14	V3-23	V3-23	N/A
Fin model up to 35 knots*	V4-8	V4-8	V4-15	V4-19	V4-26	V4-31
Fin model over 35 knots*	N/A	V4-7HS	V4-12HS	V4-15HS	V4-19HS	V4-26HS
Fin model round bilge < 22 kn*	TBA	TBA	TBA	TBA	TBA	TBA
Inside hull materials actuator	Aluminium housing					
Outside hull materials actuator	Composite and stainless steel					
Actuator weight (kg)	65	75	118	TBA*	296	TBA*

** The boats natural roll period must also be considered for maximum fin size per actuator - please contact us for more information.*
** Estimated launch in 2024 - please visit www.sleipnergroup.com or contact us for updated information.*

Main features

Any speed stabilizing	Yes
Dock mode	Yes
Eco mode	Yes
Dynamic Position mode	Yes
Patented noise reduction	Yes
Plug and play communication	Yes - S-link™
Thruster communication integration	Yes - S-link™
Galvanic isolated	Yes
4 fin configuration available	Yes
On water service	Yes
Industry leading effeciency	Yes

Patents: sleipnergroup.com/patents

Main thruster features

AT SEA SERVICE
OIL REFILL

All thrusters for tunnel diameter 513 and 610 mm can now be delivered prepared for an on-water oil change. Eliminating the need to dry-dock the vessel for a scheduled oil change keeps the vessel operational and minimizes thruster service costs.

GRAVITY FEED
LUBRICATION

The thruster gearleg is supplied with oil from a separate reservoir above the waterline. This generates overpressure, making an effective seal against water intrusion.

SEALED DRIVE
LUBRICATION

The thruster gearleg is pre-filled for lifetime lubrication and sealed using a high-quality mechanical seal with ceramic and carbon surfaces for ultimate security against water intrusion.

Q-PROP

The Q-PROP™ has measured noise reductions of up to 75% in controlled environments. The five-bladed skew propeller reduces noise levels while maintaining exceptional efficiency. Some thruster models even see an increase in thrust power.

The expected noise reduction in average installations: 20-40%.

S-LINK™

S-Link™ is a CAN-based control system used for communication between Sleipner products installed on a vessel.

- Compact and waterproof plugs
- Keyed and color-coded connectors to ensure correct and easy installation
- Different cable lengths, extenders and T-connectors makes the system scalable and flexible to install.

SMART
SHUT-OFF

Sleipner control panels are programmed to shut down automatically after approximately 6 minutes without use to avoid accidental activation.

GALVANIC
SEPARATION

Immersed parts exposed to seawater are galvanic isolated from the onboard electrical system, eliminating stray currents.

Please visit sleipnergroup.com for complete technical information and an overview of features per product.

AC electric tunnel thrusters

Sleipner's AC thrusters offer the benefit of unlimited run time, enabling heavier duty usage. Each system is custom-built according to your vessels's specifications and operational conditions. AC thrusters are also perfect for hybrid or fully electric vessels.

©OCEA FPB 100 SOKAN

Sleipner's AC thruster systems are precisely matched to the generator capacity to maximize the amount of thrust you get from the system.

Each AC motor is controlled via a Variable Frequency Drive (VFD) to minimize startup loads on the power system and allow for precise variable speed control. No further setup of the VFD is required. The PDC-301 drive controller is configured from the control panel.

In addition to the standard VFD, we can deliver low harmonic VFD for installations with specific THD requirements.

The innovative S-Link™ control system ensures fast and trouble-free installation, and gives you the unique option to combine hydraulic and AC thrusters in a single control environment.

All of Sleipner's AC systems can be mixed and matched with hydraulic and DC Electric PRO systems with seamless integration.

All AC components are selected from top brand manufacturers ensuring the best quality and worldwide support. Standard range is designed for 230V / 400V. Setup for alternative power supply specifications can be delivered on request.

Benefits

- Continuous use
- Speed controll with variabel frequency drive
- Reliability
- S-Link™ operating system
- Plug and play control system
- The choice of leading boatbuilders
- DNV type approval for specific models
- Cost efficient, high quality components

TYPE APPROVED PRODUCT DNV DNV.COM/AF

Specific models

Complete AC thruster kit including
- *PDC 301 drive controller*
- *Variable Frequency Drive (VFD)*
- *Gearleg with propellers and bracket*
- *Flexible coupling*
- *AC motor*
- *EMC filter*

Product features

- S-LINK™
- GRAVITY FEED
- Q-PROP™
- GALVANIC SEPARATION (optional)
- PROPORTIONAL SPEED CONTROL

Technical details

Ideal Vessel Class	Commercial
Ideal Vessel Size	13–55 m / 42–175 ft
Power	AC 230/400 V
Thrust cont.	240–1200 kg/529–2646lbs
Thrust max.	240–1400 kg/529–3086 lbs
Tunnel diameter	250–610 mm
Placement	Bow / Stern

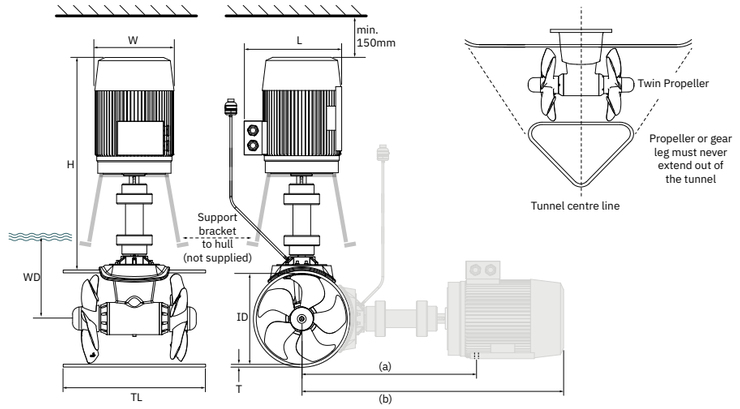
Image courtesy of Sunseeker Inc.

For light usage

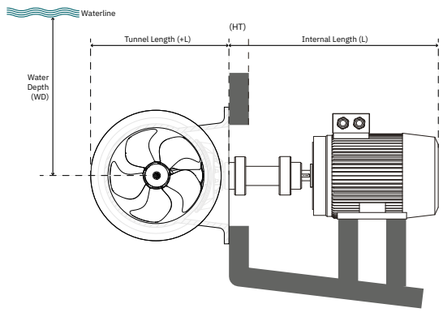
	SAC240/250TC	SAC320/300TC	SAC360/300TC	SAC450/386TC	SAC520/386TC	SAC520/386TC
Continous Thrust (kg)	240	280	360	450	520	520
Thrust, max. (kg) [1]	-	320	-	-	520	-
Power Output (kW • Hp)	14 • 19	21 • 27	27 • 37	28 • 38	35 • 48	35 • 48
Ideal Vessel Size (m/ft)	13-23/42-75	17-31/55-100	18-33/59-108	22-35/75-110	25-40/85-140	25-40/85-140
Internal Diameter (mm)	250	300	300	386	386	386
Item Code	SAC240/250-C-x-x	SAC320/300-I-x-x	SAC360/300-C-x-x	SAC450/386-C-x-x	SAC520/386-I-x-x	SAC520/386-C-x-x
Propulsion system	Twin Counter	Twin Counter	Twin Counter	Twin Counter	Twin Counter	Twin Counter
Gearleg lubrication	Sealed	Sealed	Gravity feed	Gravity feed	Gravity feed	Gravity feed
Galvanic separation [2]	Optional	Optional	Optional	Optional	Optional	Optional

(xx) Thrust values
Continuous thrust value: This value is the thrust available for unlimited time of operation without motor heating up to temperature limit for de-rating. Both "I" and "C" version will have this value. **Thrust max. value:** Only "I" models have a value listed in this field. This is the thrust available for a limited time until the motor temperature reach the limit for gradually de-rating of performance. All thrust values are nominal values for typical installations without tunnel grids. Losses from tunnel grids must be considered additionally.

Bow	Description (mm)
(H)	Height
(L)	Length
(W)	Width
(ID)	Internal Diameter
(WD)	Water Depth
(TL)	Recommended Tunnel Length
(TL min.)	Minimum Tunnel Length
(T min.)	Minimum Tunnel Wall Thickness
(T max.)	Maximum Tunnel Wall Thickness
(a)	Distance to mounting bracket hole
(b)	Height to center tunnel
Stern	
(L)	Internal Length
(+L)	Tunnel Length
(WD)	Stern Water Depth
(HT)	Maximum Hull Thickness



Sleipner thrusters can be installed at an angle off the vertical centre.
Tailored to fit any space available in your vessel.



[1] Max thrust is available until motor temperature will reduce performance to continuous thrust rating
[2] Isolation kit for galvanic separation available
[3] Weight stated is for complete thruster unit, excluding VFD

For heavy duty usage

SAC400/300TC	SAC700/412TC	SAC750/513TC	SAC900/513TC	SAC1100/513TC	SAC1100/513TC	SAC1300/610TC	SAC1400/610TC
400	700	600	750	900	1100	1100	1200
-	-	750	900	1100	-	1300	1400
30 • 41	42 • 57	41 • 56	53 • 72	70 • 95	70 • 95	74 • 101	83• 113
18-33/59-108	29-44/95-145	29-44/95-145	30-45/100-150	32-49/105-160	32-49/105-160	40-52/130-170	40-55/130-175
300	412	513	513	513	513	610	610
SAC400/300-C-x-x	SAC700/412-C-x-x	SAC750/513-I-x-x	SAC900/513-I-x-x	SAC1100/513-I-x-x	SAC1100/513-C-x-x	SAC1300/610-I-x-x	SAC1400/610-I-x-x
Twin Counter	Twin Counter	Twin Counter	Twin Counter	Twin Counter	Twin Counter	Twin Counter	Twin Counter
Gravity feed	Gravity feed	Gravity feed/ On water change	Gravity feed/ On water change	Gravity feed/ On water change	Gravity feed/ On water change	Gravity feed/ On water change	Gravity feed/ On water change
Optional	Optional	Optional	Optional	Optional	Optional	Optional	Optional

NEW MODELS LAUNCHING IN 2024: SAC950/610 and SAC1100/610

These new models utilize a larger tunnel diameter, which reduces water speed through the tunnel, which gives very high efficiency and reduced noise. Please visit our website for an updated model range, detailed information, CAD files, and more.

Measurements (mm)	H	L	W	ID	WD	TL	TL min.	T min.	T max.	Weight[3] kg
SAC240/250 (horizontal version)	688	347	262	250	380	550	300	7	10	68
SAC240/250 (vertical version)	688	347	262	250	380	550	300	7	10	68
SAC320/300 (horizontal version)	703	347	262	300	450	550	300	10	10	71
SAC320/300 (vertical version)	703	347	262	300	450	550	300	10	10	71
SAC360/300 (horizontal version)	774	397	313	300	450	550	370	10	10	105
SAC360/300 (vertical version)	774	397	313	300	450	550	370	10	10	105
SAC400/300 (horizontal version)	774	397	313	300	450	550	370	10	10	111
SAC400/300 (vertical version)	774	397	313	300	450	550	370	10	10	111
SAC450/386 (horizontal version)	999	439	356	386	580	750	500	10	15	189
SAC450/386 (vertical version)	999	439	356	386	580	750	500	10	15	189
SAC520/386 (horizontal version)	999	439	356	386	580	750	500	10	15	189
SAC520/386 (vertical version)	999	439	356	386	580	750	500	10	15	189
SAC700/412 (horizontal version)	964	439	356	412	620	800	550	12	16	205
SAC700/412 (vertical version)	964	439	356	412	620	800	550	12	16	205
SAC750/513 (horizontal version)	1079.5	496	396	513	700	1000	750	12	22	330
SAC750/513 (vertical version)	1079.5	496	396	513	700	1000	750	12	22	330
SAC900/513 (horizontal version)	1193.5	563	449	513	700	1000	750	12	22	450
SAC900/513 (vertical version)	1193.5	563	449	513	700	1000	750	12	22	450
SAC1100/513-C (horizontal version)	1303.5	642	495	513	770	1000	750	12	22	575
SAC1100/513-C (vertical version)	1303.5	642	495	513	770	1000	750	12	22	575
SAC1100/513-I (horizontal version)	1193.5	563	449	513	770	1000	750	12	22	465
SAC1100/513-I (vertical version)	1193.5	563	449	513	770	1000	750	12	22	465
SAC1300/610 (horizontal version)	1305	712	555	610	900	1000	750	14	24	680
SAC1300/610 (vertical version)	1305	712	555	610	900	1000	750	14	24	680
SAC1400/610 (horizontal version)	1305	712	555	610	900	1000	750	14	24	740
SAC1400/610 (vertical version)	1305	712	555	610	900	1000	750	14	24	740

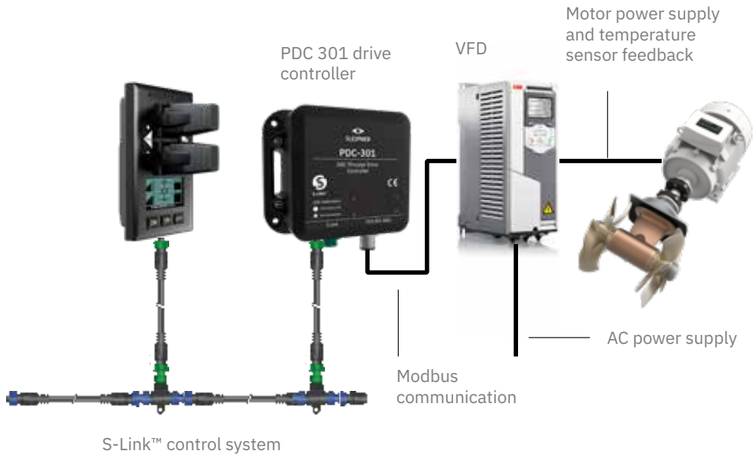
AC components

AC Thrusters are delivered as a complete ready to install kit.
- PDC301 drive controller
- Variable Frequency Drive (VFD)
- Gearleg with propellers and bracket
- Flexible coupling
- AC motor
- EMC Filter

Each AC thruster system is configured according to the specific working conditions and specifications. No further setup of the VFD is required. The PDC301 is configured from the PJC control panel.

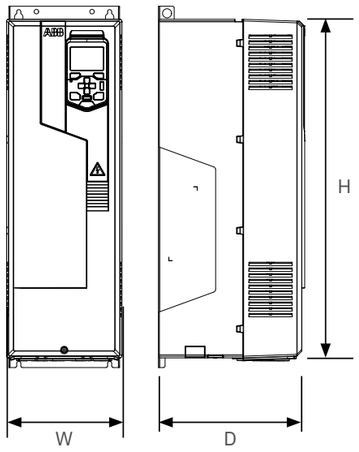
The S-Link™ control system ensures fast and trouble-free installation, and gives you the unique option to combine hydraulic and AC thrusters in a single control environment.

All with variable speed control.



PDC 301 drive controller
- Communication with VFD by Modbus connection
- Included 3-wire cable for connection to VFD Modbus terminals
- Monitoring and diagnostics
- Firmware upgrade through S-Link™ programmer

Variable frequency drive (VFD)



VFD protection: IP21
IP55 on request

VFD	Thruster model	VFD model	Weight (kg)	D (mm)	W (mm)	H (mm)
SAC240	SAC240/250-C-2-x²	ACS580-01-047A-2	11,8	228	203	454
	SAC240/250-C-4-x²	ACS580-01-033A-4	11,8	228	203	454
SAC320	SAC320/300-C-2-x²	ACS580-01-076A-2	19	258	203	600
	SAC320/300-C-4-x²	ACS580-01-046A-4	11,8	228	203	454
SAC360	SAC360/300-C-2-x²	ACS580-01-115A-2	28,3	295	203	732
	SAC360/300-C-4-x²	ACS580-01-073A-4	19	258	203	636
SAC400	SAC400/300-C-2-x²	ACS580-01-115A-2	28,3	295	203	732
	SAC400/300-C-4-x²	ACS580-01-073A-4	19	258	203	636
SAC450	SAC450/386-C-2-x²	ACS580-01-115A-2	28,3	295	203	732
	SAC450/386-C-4-x²	ACS580-01-062A-4	19	258	203	600
SAC520	SAC520/386-I-2-x²	ACS580-01-144A-2	42,4	369	252	727
	SAC520/386-I-4-x²	ACS580-01-089A-4	28,3	295	203	732
	SAC520/386-C-2-x²	ACS580-01-144A-2	42,4	369	252	727
	SAC520/386-C-4-x²	ACS580-01-089A-4	28,3	295	203	732
SAC700	SAC700/412-C-2-x²	ACS580-01-171A-2	54	370	284	880
	SAC700/412-C-4-x²	ACS580-01-106A-4	28,3	295	203	732
SAC750	SAC750/513-I-4-x²	ACS580-01-089A-4	28,3	295	203	732
SAC900	SAC900/513-I-4-x²	ACS580-01-106A-4	28,3	295	203	732
SAC1100	SAC1100/513-I-4-x²	ACS580-01-145A-4	42,4	369	252	727
	SAC1100/513-C-4-x²	ACS580-01-145A-4	54	370	284	880
SAC1300	SAC1300/610-I-4-x²	ACS580-01-169A-4	54	370	284	880
SAC1400	SAC1400/610-I-4-x²	ACS580-01-169A-4	54	370	284	880

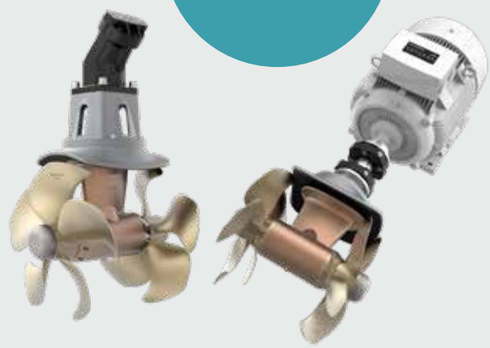
Preliminary launch - new products for 2024/2025

New larger thruster models - up to 2200 kg thrusts

New models with up to 2200 kg thrust

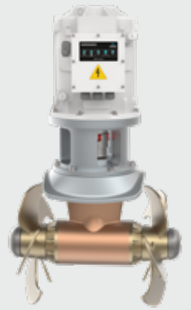
Sleipner launches two new gearleg sizes based on our proven design and experience. The new gearlegs can be combined with either hyraulic or AC electric motors.

The new hydraulic gearlegs are designed to deliver up to 1700 kg thrust in a 27" (679 mm) tunnel, or up to 2200 kg thrust in a 29" (730 mm) tunnel.



New AC electric thruster series

Our new SACPM series incorporates a brand new series of compact and light-weight permanent magnet water/glycol cooled synchronous electric motors.



Highlights*

- **Reduced weight:**
  - Motor: 40-70% reduction compared with traditional SAC motors.
  - Complete thruster unit: 30-55% reduction compared with traditional SAC motors.
- **Simplified handling and installation:**
  - Reduced installation time and installation cost
- **High efficiency:**
  - Typically 95%
- **Designed for demanding working conditions:**
  - IP 65 as standard
  - Motors designed and built for shock loads up to 50g
- **Wide range of power supply options:**
  - 380V-690V AC generator powered systems
  - 540V-1000V DC battery/hybrid systems

*) Compared with standard AC asynchronous motors. All values are preliminary.

Hydraulic tunnel thrusters

Power from 100 kg to 1400 kg and continuous operation make a hydraulic thruster system ideal for professional vessels. It is the natural choice when extensive thruster usage or long run cycles are required.

For all the hydraulic components to be compatible and maintain the same high quality, Sleipner offers complete hydraulic systems with optimised performance. Sleipner hydraulic systems use only brand-name hydraulic components, ensuring reliability and easy worldwide access to spare parts and service.

The innovative S-Link™ control system ensures fast and trouble-free installation, and gives you the unique option to combine hydraulic and AC thrusters in a single control environment.

All hydraulic systems provide a straightforward installation and the highest degree of quality assurance.

We offer complete hydraulic systems. Scan QR code to learn more

Benefits

- Continuous use
- Controlled power
- Reliability
- S-Link™ operating system
- Custom-made, ready to install with Plug & Play wiring
- The choice of leading boatbuilders
- Full documentation
- DNV type approval for specific models
- Suitable for joystick integration

TYPE APPROVED PRODUCT DNV DNV.COM/AF

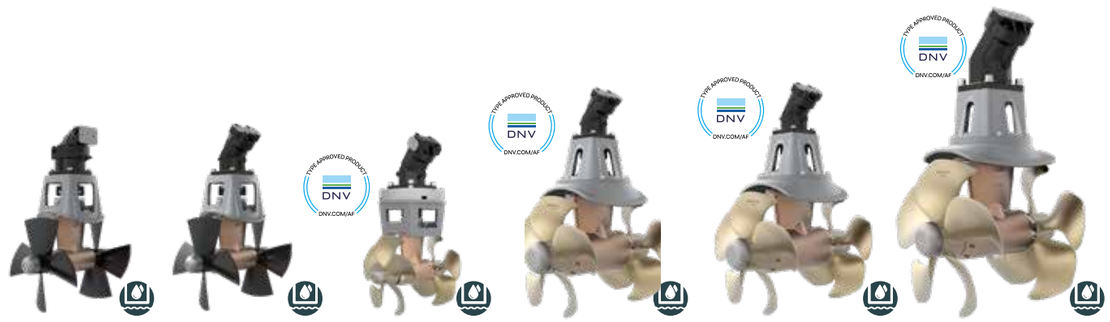
Specific models

Product features

- S-LINK™
- SEALED DRIVE LUBRICATION
- GRAVITY FEED LUBRICATION
- Q-PROP™
- PROPORTIONAL SPEED CONTROL

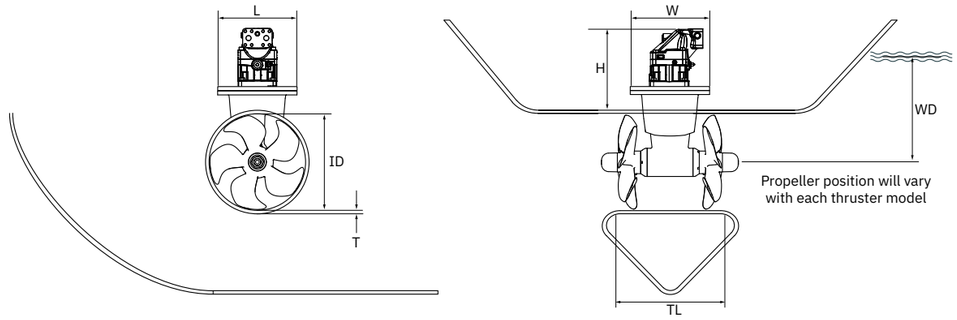
Technical details

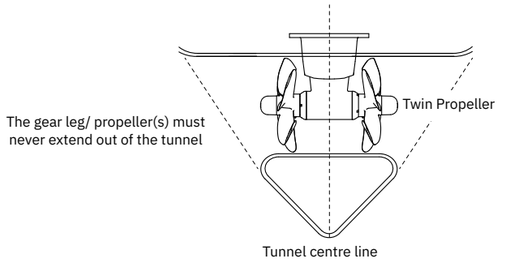
Ideal Vessel Class	Commercial
Ideal Vessel Size	9–55 m / 30–175 ft
Power	HYD
Thrust light duty	100–1100kg/220–2425 lbs
Thrust heavy duty	80–1400 kg/176–3085 lbs
Tunnel diameter	185–610 mm
Placement	Bow / Stern



	For light usage					For heavy duty usage					
	SH100/185T	SH160/215T	SH240/250TC	SH320/300TC	SH360/300TC	SH420/386TC	SH 550/386TC	SH400/300TC	SH 700/412TC	SH 1000/513TC	SH 1400/610TC
Light duty thrust (kg)*	100	160	240	320	-	-	550	-	-	1100	-
Heavy duty thrust (kg)*	80	140	220	270	360	420	500	400	700	1000	1400
Ideal Vessel Size (m/ft)	9-16/30-34	11-19/35-62	13-23/42-75	17-31/55-100	18-33/59-108	22-35/75-110	25-40/85-140	18-33/59-108	29-44/95-145	30-45/100-150	40-55/130-175
(ID) Internal Diameter (mm)	185	215	250	300	300	386	386	300	412	513	610
Power Output (kW • Hp)	6.9 • 9.3	10.0 • 13.4	14.9 • 20	17.4 • 23.3	27 • 37	31.8 • 42.6	39.9 • 53.5	30 • 41	43.4 • 58.2	59.8 • 80.2	80.1 • 107.4
Q-PROP™	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Propulsion system	Twin	Twin	Twin Counter	Twin Counter	Twin Counter	Twin Counter	Twin Counter	Twin Counter	Twin Counter	Twin Counter	Twin Counter
Lubrication	Sealed	Sealed	Sealed	Sealed	Gravity feed	Gravity feed	Gravity feed	Gravity feed	Gravity feed	Gravity feed/On water change	Gravity feed/On water change

*All thrust values are nominal values for typical installations without tunnel grids. Losses from tunnel grids must be considered additionally.



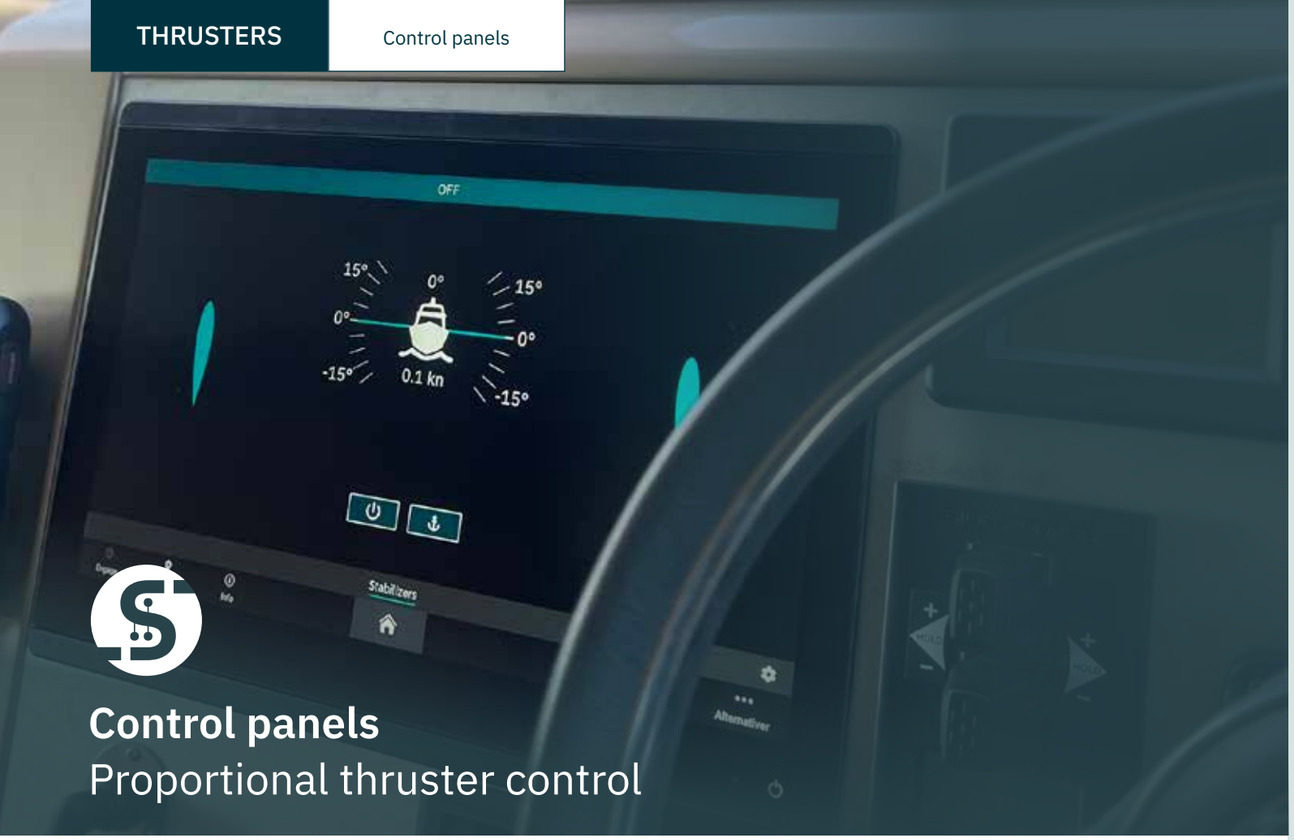


Sleipner thrusters can be installed at an angle off the vertical centre.
Tailored to fit any space available in your vessel.

Bow	SH100/185T	SH160/215T	SH240/250TC	SH320/300TC	SH360/300TC	SH420/386TC	SH 550/386TC	SH400/300TC	SH 700/412TC	SH 1000/513TC	SH 1400/610TC
(ID) Internal Diameter (mm)	185	215	250	300	300	386	386	300	412	513	610
Weight[1] (kg)	7.8	11.4	13.5	17.16	26	46	56	31	72–76	168–182	211
(H) Height (mm)	215	195	235	245	356	369	369	356	450	486	500
(L) Length (mm)	203	203	203	258	258	268	268	258	268	398	398
(W) Width (mm)	203	203	203	258	258	268	268	258	268	398	398
(ID) Internal Diameter (mm)	185	215	250	300	300	386	386	300	412	513	610
(WD) Water Depth (mm)	200	215	250	300	450	580	580	450	620	750	900
(TL) Rec. Tunnel Length (mm)	340	560	600	550	550	750	750	550	800	1000	1000
(TL min.) Minimum Tunnel Length (mm)	170	280	300	370	370	500	500	370	550	750	750
(T min.) Min. Tunnel Wall Thickness	4	6	7	10	10	10	10	10	16	16	18

Stern	SH100/185T	SH 160/215 T	SH 240/250 TC	SH 320/300TC	SH 360/300 TC	SH 420/386 TC	SH 550/386TC	SH 400/300TC	SH 700/412TC	SH 1000/513TC	SH 1400/610TC
(L) Internal Length (mm)	405	172	912	195	310	257	257	305	n. a.	405	470
(+L) Tunnel Length (mm)	705	300	340	420	420	540	540	422	n. a.	705	820
(WD) Stern Water Depth (mm)	770	215	250	300	300	380	380	300	n. a.	770	915
(HT) Maximum Hull Thickness	120	54	60	60	60	54	54	60	n. a.	120	145
Stern thruster kit	90086i	90135i	90140i	90200i	90350	90550	90550	90350	90700	91000	91400
Cowls - short model	90075	-	-	-	-	-	-	N/A	N/A	N/A	N/A
Cowls - long model	90077	90136	90132	90220	90220	90560	90560	90220	90760	90770	N/A

[1] Weight of hydraulic motor comes in addition



Control panels
Proportional thruster control

PJC2 series

Single or dual joystick with integrated LCD display

- Fingertip control with purpose-designed joysticks
- Hold function enables to set and leave the level of thrust
- Compact design
- Backlit LCD with instant feedback:
  - System status and diagnostics
  - Indication of power and direction of thrust
  - Interactive multi-language menus
- S-Link™ CAN-bus communication
- Built-in alarm buzzer
- Connector for external alarm buzzer
- Plug & Play cables, waterproof and compact connectors
- Supports all Sleipner retractable thrusters
- Supports Vector Fins™ on/off control

Control panel	PJC211	PJC212	PJC221	PJC222
Control panel DNV Design Approved*	N/A	N/A	N/A	N/A
For thruster type	DC/AC	DC/AC	DC/AC/HYD	DC/AC/HYD
Display	Integrated	Integrated	Integrated	Integrated
Height (mm)	141	141	141	141
Width (mm)	83	83	83	83
S-Link™ CAN-Bus	Yes	Yes	Yes	Yes
Multi-voltage	Yes	Yes	Yes	Yes
Stop function	No	No	Yes	Yes
Thruster operation	Single	Dual	Single	Dual
Joystick type	Spring, hold-button	Spring, hold-button	Spring, hold-button	Spring, hold-button

*Only available for thruster models with DNV approved gear house

S-Link Display Interface

The S-Link™ Display Interface (SDI-1) activates a Sleipner app on Multi-Functional Displays (MFD). The app enables monitoring and configuration of thruster and stabilizer systems:

- Activate stabilizers and adjust gain
- Monitor thruster operation and status
- Observe and clear active alarms

Works with compatible MFDs from Raymarine, Garmin, Simrad, B&G, and Lowrance. Please consult MFD manufacturers for information on compatible models before purchase.

SDI-1 connects easily to the S-Link™ bus with an S-Link™ spur cable and has a standard RJ45 Ethernet port for connection to MFDs. Some MFDs require a special Ethernet adapter cable. One SDI-1 can interface with multiple MFDs on the same network.

The supplied power cable must power SDI-1.
At least one Sleipner control panel must be installed to configure thruster and stabilizer systems.

PJC4 series

Single or dual joystick with stand-alone color LCD display. The bright 3,5" daylight touch screen with an intuitive interface offers an easy day-to-day operation.

- Back-lit touch color LCD with instant feedback:
  - System status and diagnostics
  - Indication of power and direction of thrust
  - Interactive multi-language menus
- IPX7 water ingress rated control panel
- Flush or top mount control panel (HxW: 149x112mm)
- Built-in Wi-Fi module
- S-Link™ CAN-bus communication
- Built-in alarm buzzer
- Plug & Play cables, waterproof and compact connectors
- Dedicated connector for IO signals
- Supports various joystick designs

Environmental testing

- DNVGL-CG-0339:2019
- IACS E10:2018
- IEC 60945
- IEC 60092-504:2016

DNV design approved product variant for all available joystick types

- Power supply fault monitoring
- Display of propeller RPM
- Gearleg low oil level monitoring
- Select station, command transfer between multiple operator stations

TP-35

The PJC4 package consists of joystick of choice and TP-35 control panel.

PJC421-PVREL	PJC422-PVREL	PJC421-LE90	PJC422-LE90	PJC421-LF90X	PJC422-LF90X	PJC421-LF90	PJC422-LF90
PJC421-PVREL-DNV	PJC422-PVREL-DNV	PJC421-LE90-DNV	PJC422-LE90-DNV	PJC421-LF90X-DNV	PJC422-LF90X-DNV	PJC421-LF90-DNV	PJC422-LF90-DNV
DC/AC/HYD	DC/AC/HYD	DC/AC/HYD	DC/AC/HYD	DC/AC/HYD	DC/AC/HYD	DC/AC/HYD	DC/AC/HYD
Stand-alone	Stand-alone	Stand-alone	Stand-alone	Stand-alone	Stand-alone	Stand-alone	Stand-alone
123,4	206,0	96,0	96,0	96,0	96,0	96,0	96,0
105,5	106,0	96,0	96,0	96,0	96,0	96,0	96,0
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Single	Dual	Single	Dual	Single	Dual	Single	Dual
Spring, twist detent	Spring, twist detent	Detent	Detent	Detent	Detent	Detent	Detent

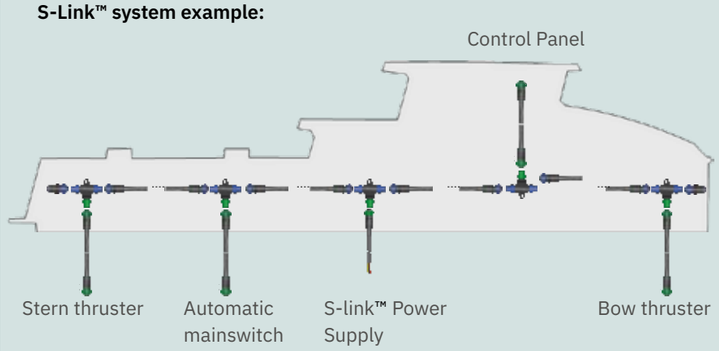
S-Link™

S-Link™ is a CAN-bus based control system with full intelligent communication between all units in the system, much like a computer network. The system saves precious installation time as you can control DC, AC or Hydraulic thrusters, Stabilizers, Hydraulic Power Systems, control panels, joysticks, and various interfaces and automatic main switches all on the same network.

Advantages

- Round, compact and waterproof plugs with unique keying and color coding to avoid faulty hookup
- Unlimited number of commands or information transfer on a single cablel
- User feedback to panel
- Intelligent troubleshooting

S-Link™ system example:



S-Link™ system example

S-Link™ system with two control positions and a dual PRO™ thruster setup (bow and stern)

Depending on the boat's construction, there might be several different ways to route the S-Link™ backbone. Find the most practical way to implement the backbone and remember that the S-Link™ equipment does not need to be connected in a specific order.

Item code	Description	Parts
6 1320-xx	Backbone cable	4 pcs
6 1321-xx	Spur cable	4 pcs
6 1326	T connector	5 pcs
6 1328	Power cable	1 pc
6 1327	End terminator	2 pcs

S-Link™ cable components

Backbone cables

Forms the communication and power bus throughout the vessel. Available in different standard lengths.

Item code:
6 1320-xxM (xx=length)
6 1320-0.2M (0.2m)
6 1320-2M (2.0m)
6 1320-4M (4.0m)
6 1320-7M (7.0m)
6 1320-10M (10.0m)
6 1320-15M (15.0m)
6 1320-20M (20.0m)

Backbone extender

Connects two BACKBONE cables to extend the length.

Item code: 6 1322

Spur cables

Used to connect S-Link™ compliant products to the backbone cable. One SPUR Cable must be used for each connected component, with no exceptions. Recommended to be as short as practically possible. Available in different standard lengths.

Item code:
6 1321-xxM (xx=length)
6 1321-0.4M (0.4m)
6 1321-1M (1.0m)
6 1321-3M (3.0m)
6 1321-5M (5.0m)

T connector

Used for connection of SPUR or POWER Cable to the BACKBONE Cable. One T-Connector for each connected cable.

Item code: 6 1326

Power cable

Required in all installations for connection of BACKBONE cable to a power supply. It shall not be more than one POWER cable in an installation. Length: 2,5 m.

Item code: 6 1328

End terminator

Must be one at each end of the BACKBONE bus.

Item code: 6 1327

S-Link™ 4-Port T-connector

Allows four spur cable connections in the same devic for a more tidy installation with fewer parts. Two sealing caps included for protection.

Item code: 6 1403

Accessories S-Link™ system

Voyage Data Recorder Interface

The VDRI-1 acts as a gateway between the Sleipner S-Link™ bus and a Voyage Data Recorder (VDR) NMEA0183 interface. VDRI-1 is compliant with SOLAS' and IMO's VDR requirements.

VDRI-1	
H (mm)	43,2
W (mm)	121,2
D (mm)	96

Thruster Monitoring Unit

The TMU-1 makes additional thruster information available on the S-Link™ bus. RPM of the thruster motor and gearleg low oil level alarm can be made available on Sleipner's PJC4 control panels by interfacing the thruster with TMU-1. This requires an RPM sensor on the thruster motor and a connection of Sleipner's 2.5 litres oil tank kit to the gearleg.

TMU-1 - SAC/SH	
H (mm)	43,2
W (mm)	121,2
D (mm)	96

Oil tank kit for thruster 2.5 litres

Connecting the external oil tank to the gearleg enables on-water oil change on selected models.
By interfacing the oil tank's built-in level switch to TMU-1, S-Link™ control panels supporting TMU-1 can generate low-level alarms.

S-Link™ Interface

S-Link™ interface to connect footswitch, control panel and radio remote to the S-Link™ system (foot switch, panel and remote not included). Multivoltage 12/24V.

S-Link™ Interface 8730 B / 8730 S	
H (mm)	45
W (mm)	80
D (mm)	145
Item code bow thruster	8730 B
Item code stern thruster	8730 S

Gateway

The GW-1 gateway is used to interface NMEA2000 devices and Sleipner's S-Link™ system. The gateway can also be used to interface NMEA 0183 compliant GPS products, enabling S-Link™ products to receive GPS time and position data. Manufacturer can apply for access to parts of Sleipner's S-Link™ protocol, allowing 3rd party products to monitor and control Sleipner's S-Link™ thrusters and stabilizer systems.

GW-1	
H (mm)	26
W (mm)	50
D (mm)	127

S-Link Display Interface

The S-Link™ Display Interface (SDI-1) activates a Sleipner app on Multi-Functional Displays (MFD). The app enables monitoring and configuration of thruster and stabilizer systems.

SDI-1	
H (mm)	84
W (mm)	118
D (mm)	54

External Signal Interface

The ESI-1 External Signal Interface is used to interface digital IO signals and Sleipner's S-Link™ system. Two analog 4-20mA inputs offer proportional control of S-Link™ compliant bow and stern thrusters. Digital IOs are available for control and feedback signals.

ESI-1	
H (mm)	156
W (mm)	212
D (mm)	62

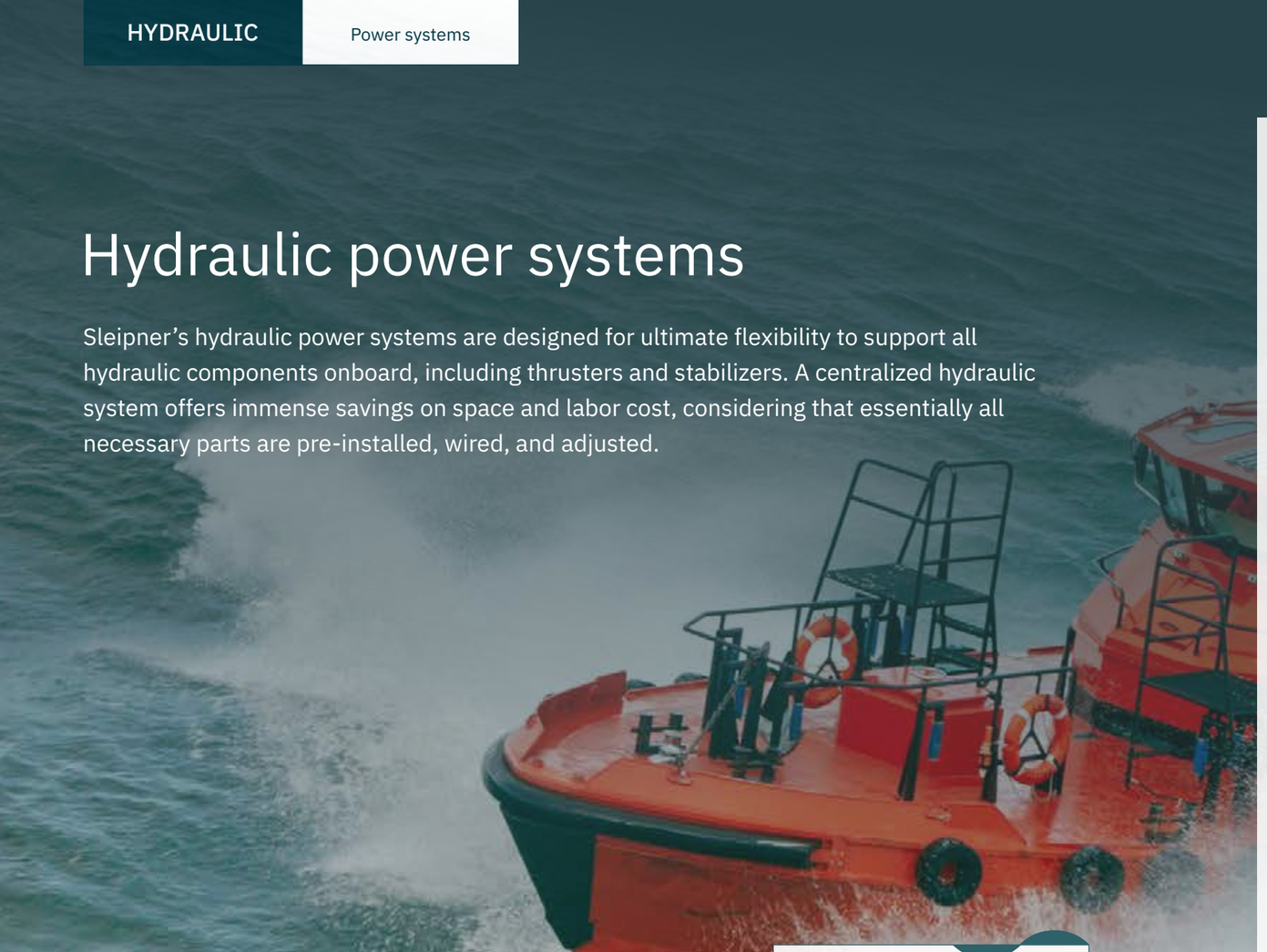
Foot switch

Foot switch kit suitable for 8730 S-Link™ interface. Kit contains 2 switches with covers to protect from unwanted operation.
(Cables from switches to 8730 S-Link™ interface not included).

Foot Switch	
Diameter (mm)	105
Item code (kit)	8751

Hydraulic power systems

Sleipner’s hydraulic power systems are designed for ultimate flexibility to support all hydraulic components onboard, including thrusters and stabilizers. A centralized hydraulic system offers immense savings on space and labor cost, considering that essentially all necessary parts are pre-installed, wired, and adjusted.



A common hydraulic system makes sound economic sense for many vessels as several functions can run off one central hydraulic source. Once the primary system is in place, including the pump, reservoir, and cooler, adding a function is simply a matter of adding a relatively inexpensive hydraulic valve. This approach is more efficient and cost-effective than running each part with its own electric motor, solenoid, fuse, and battery switch, especially with larger equipment.

Hydraulic valves and motors are better choices in harsh environments such as the forepeak, bilge, and transom areas and areas requiring ignition protection. Typical hydraulic applications are thrusters, stabilizers, winches, capstans, cranes, and so on.

For all the hydraulic components to be compatible and maintain the same high quality, Sleipner offers complete hydraulic systems with optimized performance. Sleipner hydraulic systems use only brand-name hydraulic components, ensuring reliability and easy worldwide access to spare parts and service.

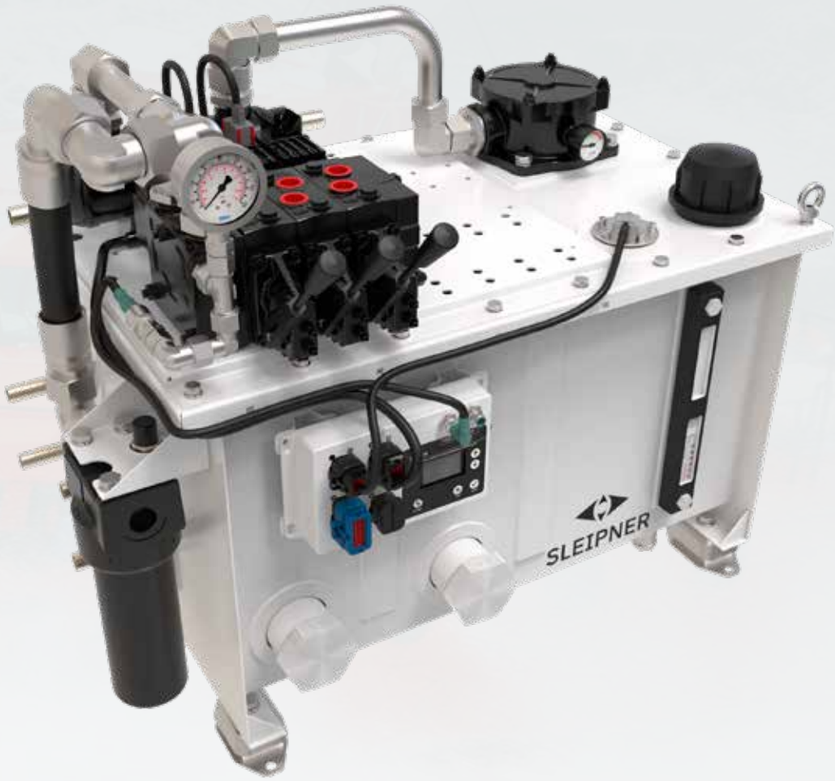
The hydraulic pumps are based on the well-proven and reliable load sense principle, ensuring high efficiency, low noise, and low heat generation.

The system’s brain is the PHC-3 with real-time component diagnostics on both the integrated LCD panel and at the helm. Installed directly on the tank, it provides below deck access to diagnostics and local configuration of parameters.

All hydraulic tanks are delivered with all components pre-installed, to provide a straightforward installation and the highest degree of quality assurance.

Benefits

- Compact-sized units and easy maintenance
- Delivered pre-fitted with all components adjusted
- Advanced real-time diagnostics
- S-Link™ operating system
- Plug-and-go wiring
- Available as standard or customized by our hydraulic expert engineers
- Bulkhead and floor installation options
- Delivered with complete system-specific documentation
- Load sensing hydraulic pumps for optimal efficiency
- Easy firmware update through S-Link™



Product features

HYDRAULIC

S-LINK™

DIAGNOSTIC MONITORING

Technical details

Ideal Vessel Class	Commercial
Ideal Vessel Size	9–55 m / 30–175 ft
Power Source	Main engine / Generator
Reservoir	Powder coated stainless steel
Placement	Bulkhead / Floor / Rack mount
Control Signal	S-Link™

Project engineering

Sleipner has been working in close partnership with leading boat builders for decades. Our in-house knowledge amongst our engineers represents more than 250 years of combined experience.

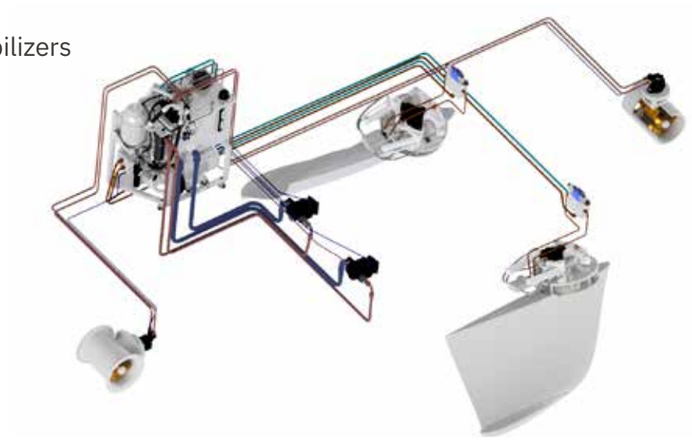
More than 5,000 vessels have been fitted with a Sleipner hydraulic system just in the last 20 years.

Scan the QR code below to see our commercial reference list for a small selection of our deliveries.

> We have always worked passionately to create a safer, more comfortable experience at sea. Our products continue to be a benchmark for the boating industry.
>
> *Tore Eriksen, Chief Technical Officer*

Main services

- Complete designs for thrusters, stabilizers and hydraulic power systems
- 3D modelling
- Calculations
- System specific documentation
- Type approvals / certifications
- On board system set up / training



A reliable partner

- In-house engineering, manufacturing and assembly
- Engineering assisted by extensive experiencence
- Use of superior material
- Controlled quality of every supplied part
- Only high quality brand components
- Worldwide product support

TYPE APPROVED PRODUCT DNV DNV.COM/AF

Inboard steering systems

Close collaboration with shipyards and shipowners has allowed Sleipner to develop robust hydraulic steering systems for the professional market. You can easily select the best-suited equipment for your boat's specific needs within a wide range of pumps, cylinders, and accessories made from marine-grade materials.

Advantages

- Safer and more precise control of your vessel
- An integrated non-return valve helps the rudder maintain its position without holding the steering wheel
- Reduced mechanical wear means minimal maintenance and extended product-life
- Best alternative if you want two or more steering positions
- Stable course with minimal use of force

Steering Pumps

Sleipner's steering pumps are a result of intensive R&D and many years of experience in the production of hydraulic steering systems.

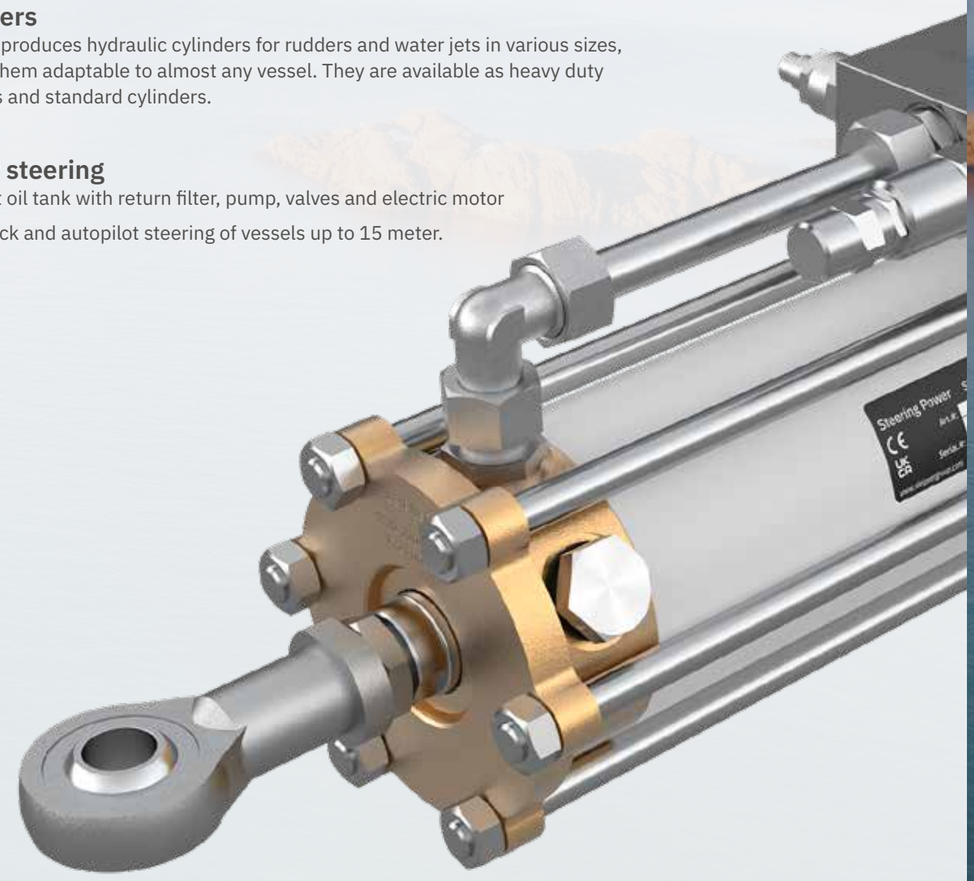
Cylinders

Sleipner produces hydraulic cylinders for rudders and water jets in various sizes, making them adaptable to almost any vessel. They are available as heavy duty cylinders and standard cylinders.

Power steering

Compact oil tank with return filter, pump, valves and electric motor

for joystick and autopilot steering of vessels up to 15 meter.



Certification

Heavy Duty Cylinders
DNV type approved

Standard Cylinders
Approved by DNV for Recreational Boats.

Technical details

Ideal Vessel Class	Commercial
Steering Positions	Single or multiple
Standard Cylinder	110–1170 cm³ / 50 bar
Heavy duty Cylinder	1111–1187 cm³ / 70–85 bar
Helm Pumps	26, 35, 43, 70 cm³
Helm pump installation	Flange, flush, tilt

Hydraulic steering pumps

The steering pump is the heart of a hydraulic steering system. This component decides how much oil to pump through to the system's muscle which is the cylinder.

Sleipner offers three different models for different boats and dashboard designs.

All three models are available in 26 cm³, 35 cm³ and 43 cm³ for adaption to different hydraulic cylinders.

Additionally, we have a more extensive steering pump of 70 cm³, which has 10 pistons. This pump is mainly used together with our larger cylinders, only available with flange.

According to ISO 10592

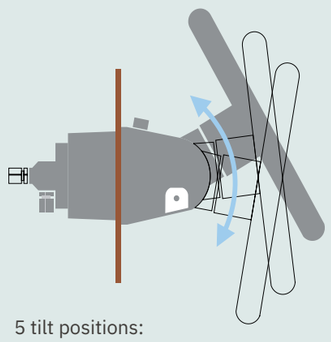
- Axial piston pump with fine-tuned piston angles
- Seven pistons for smooth and precise steering
- Piston in hardened steel
- Stable and rigidly mounted steering shaft with high quality bearings
- Integrated non-return valves
- Large internal oil reservoir
- All parts in marine grade corrosion-free materials

Helm pump with flange

Helm pump with flush mount

Helm pump with flange 70 ccm

Helm pump with tilt



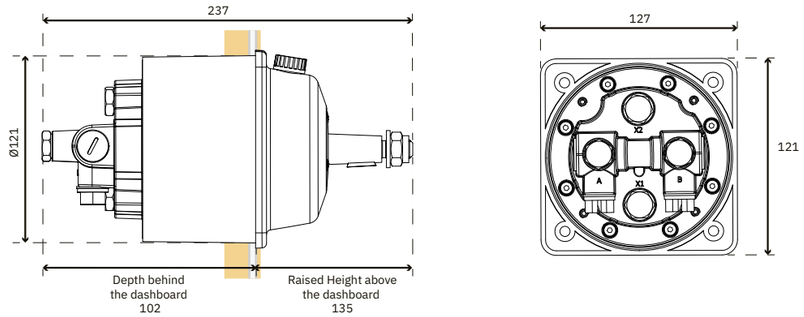
5 tilt positions:
-10°, 0°, 10°, 20 , 30°

Item code	Pump displacement	Pump type	Port dimensions BSP A/B	x1/x2
72061	26 ccm	with flange	1/4”	1/4”
72062	35 ccm	with flange	1/4”	1/4”
72063	43 ccm	with flange	1/4”	1/4”
72064	26 ccm	with tilt	1/4”	1/4”
72065	35 ccm	with tilt	1/4”	1/4”
72066	43 ccm	with tilt	1/4”	1/4”
72067	26 ccm	flush mount	1/4”	1/4”
72068	35 ccm	flush mount	1/4”	1/4”
72069	43 ccm	flush mount	1/4”	1/4”
72070	70 ccm	with flange	3/8”	1/4”

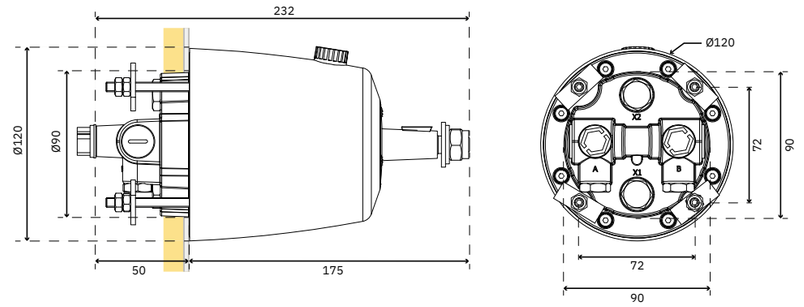
Helm pumps 26–43 ccm

Item number 72061–72069

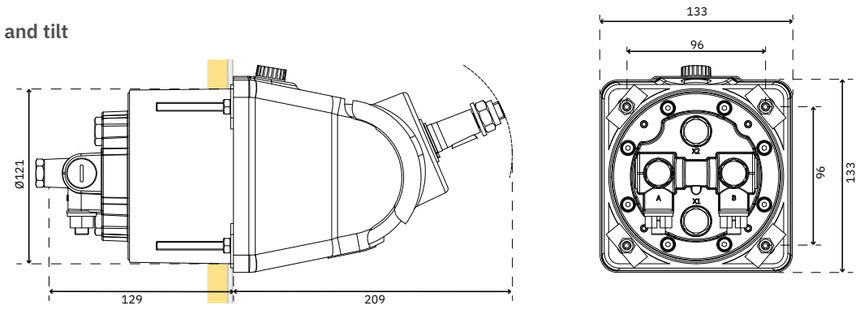
Helm pumps with flange



Helm pumps flush mount



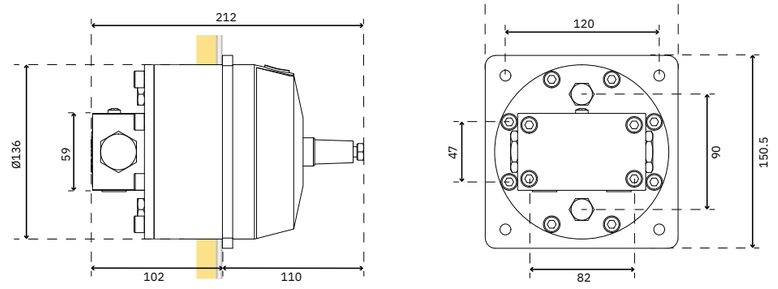
Helm pumps with flange and tilt



Helm pump 70 ccm

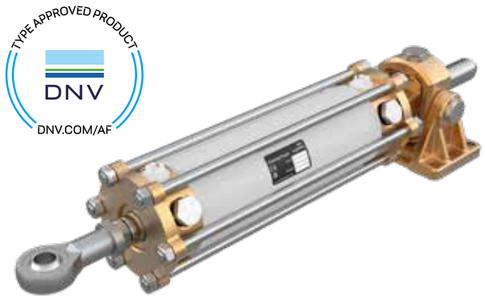
Item number 72070

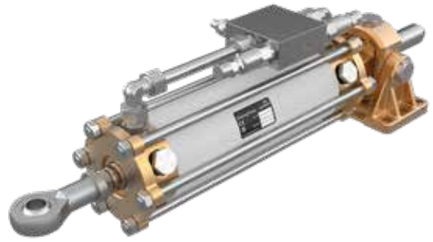
Helm pumps with flange



Hydraulic cylinders

Sleipner’s hydraulic cylinders fit a wide range of installations. They are adaptable to most rudder types as long as the rudder torque does not exceed cylinder ratings. The rudder torque is calculated based on rudder size, shape and vessel speed.





Heavy Duty Cylinders
Our series of heavy-duty cylinders are designed to deliver maximum performance and reliability for our power steering systems. Still, several of the cylinders are equally suitable with a traditional hydraulic steering pump. Teflon gaskets of the highest quality provides smooth operation with minimal friction and maintains high performance.

- Three sets of connection ports allow for installation of optional shock and by-pass valve
- DNV Type approved

Wheel rotations and cylinder pump volume

Item code	43 ccm	70 ccm
8032-200-xx	–	12,0
9032-200-xx	–	16,7
8032-305-xx	–	18,5

Standard Cylinders
Sleipner’s standard cylinders are of very high quality and are in use in thousands of boats. The cylinders are proven and have a very long service life.

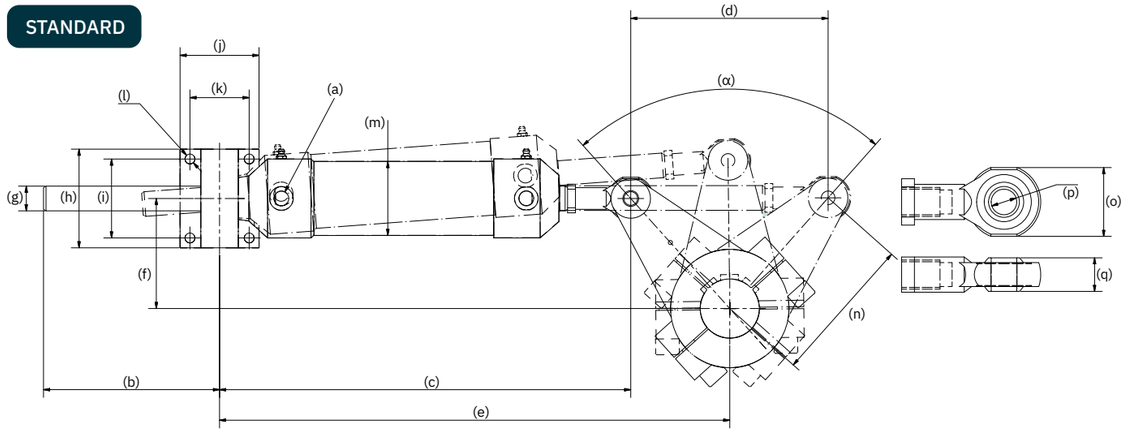
- Robust construction in stainless steel and brass
- Long lifetime
- Easy air purging
- Supplied with attachment nipples
- Approved by DNV for Recreational Boats

Wheel rotations and cylinder pump volume

Item code	26 ccm	35 ccm	43 ccm	70 ccm
71030*	4,2	3,1	–	–
71060	4,8	3,6	–	–
71090	8,3	6,1	5,0	–
71140	–	–	8,0	4,9
71220	–	–	–	8,1

Contact Sleipner for more information.

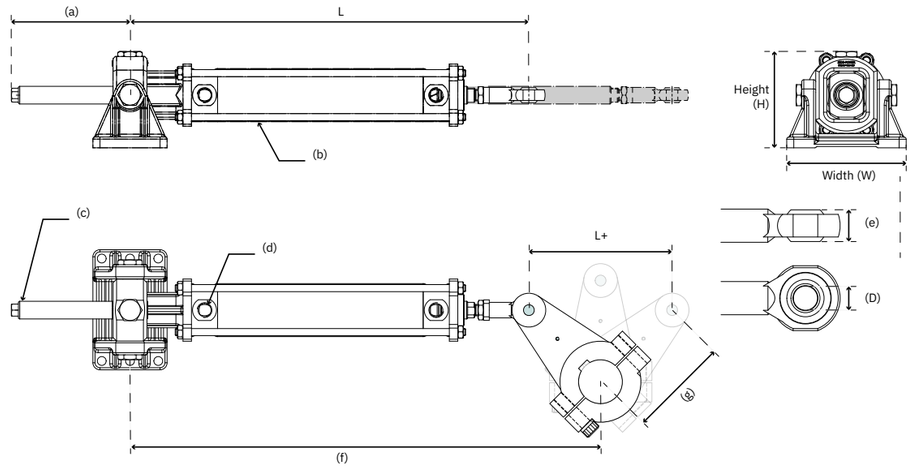
STANDARD



Item code	Volume (ccm)	Wp*	Recom. hose ID	(a) BSP	(b)	(c)	(d)	(e1)	(e2)	(f1)	(f2)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n1)	(n2)	(α1)	(o)	(p)	(q)
Standard cylinder																								
71030	110	50	3/8"	1/4"	151,5	338,5	175	425,5	425,5	121,8	157,3	16	60	42	50	35	6,5	38	150	180	71,4	32	12	16
71060	125	50	3/8"	1/4"	179,5	363,5	200	464	467	111,5	147,5	16	70	52	60	44	8,5	38	150	180	83,6	32	12	16
71090	215	50	3/8"	1/4"	178,5	366,5	200	465	470	111,5	147,5	20	70	52	60	44	8,5	48	150	180	83,6	32	12	16
71140	345	50	1/2"	1/4"	179	392	200	488,5	491	111,5	147,5	20	80	64	60	44	8,5	57	150	180	83,6	36	14	19
71140P190	328	50	1/2"	1/4"	178	379	190	474,2	484	115,8	153	20	110	90	80	60	10,5	57	150	180	78,6	50	20	25
71220	565	50	1/2"	3/8"	178,5	416,5	200	517	520	111,5	147,5	25	100	80	80	60	10,5	75	150	180	83,6	44	16	21
71220P190	537	50	1/2"	3/8"	168,5	406,5	190	515	502	115,41	153	25	130	110	80	60	10,5	75	150	180	78,6	50	20	25
71220P220	622	50	1/2"	3/8"	198,5	436,5	220	547,15	546,5	101,42	142,5	25	130	110	80	60	10,5	75	150	180	94,3	50	20	25
71500	1170	50	5/8”	M22x1,5	141,5	495,5	200	596	599	111,5	147,5	25	110	86	120	97	10	100	150	180	83,6	50	20	25

Measurements in mm.
Wp: Max working pressure in bar
(e1): with 150mm tiller arm
(e2): with 180mm tiller arm
(f1): with 150mm tiller arm
(f2): with 180mm tiller arm
(n1): with 150mm tiller arm
(n2): with 180mm tiller arm

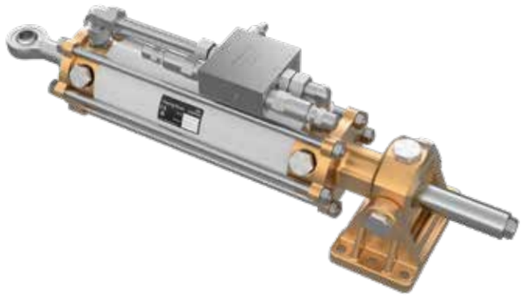
HEAVY DUTY



Item code	Volum (ccm)	Working pressure (bar)	Recom. hose ID	Cylinder diam. (b)	Rod diam. (c)	Port dimension (d)	Max Extension (a)	Length (L	(f)	Stroke length (+L)	(g)	Diameter (D)	Height (e)
Heavy duty cylinder													
9032-200-7-60	1111	70	1/2”	100	32	1/2”	135	556	656	200	150	20	25
9032-200-7-70**	1111	70	1/2”	100	32	1/2”	135	556	656	200	150	20	25
8032-305-9-60	1287	85	1/2”	90	32	1/2”	240	679	832	305	260	25	20
8032-305-9-70**	1287	85	1/2”	90	32	1/2”	240	679	832	305	260	25	20

Measurements in mm. Contact Sleipner for more information and dimensioning.
**with shock and by-pass valve

Cylinder torque values



Standard cylinders, torque values at max pressure rating:

Item code	Cylinder working pressure	150 mm rudder arm			180 mm rudder arm			260 mm rudder arm		
		Max angle +/- deg	Torque @ max angle [kgm]	Torque @ 35 deg	Max angle +/- deg	Torque @ max angle [kgm]	Torque @ 35 deg	Max angle +/- deg	Torque @ max angle [kgm]	Torque @ 35 deg
Standard cylinder										
71030	50 bar	35,7 deg	39 kgm	39 kgm	29,1 deg	50 kgm	N/A	19,7 deg	78 kgm	N/A
71060	50 bar	41,8 deg	36 kgm	39 kgm	33,7 deg	48 kgm	N/A	22,6 deg	77 kgm	N/A
71090	50 bar	41,8 deg	61 kgm	67 kgm	33,7 deg	82 kgm	N/A	22,6 deg	131 kgm	N/A
71140	50 bar	41,8 deg	99 kgm	108 kgm	33,7 deg	132 kgm	N/A	22,6 deg	211 kgm	N/A
71140P190	50 bar	39,3 deg	102 kgm	108 kgm	31,9 deg	135 kgm	N/A	21,4,deg	213 kgm	N/A
71220	50 bar	41,8 deg	161 kgm	177 kgm	33,7 deg	216 kgm	N/A	22,6 deg	346 kgm	N/A
71220P190	50 bar	39,3 deg	167 kgm	177 kgm	31,9 deg	220 kgm	N/A	21,4,deg	349 kgm	N/A
71220P220	50 bar	47,2 deg	147 kgm	177 kgm	37,7 deg	205 kgm	N/A	25,0 deg	340 kgm	N/A
71500	50 bar	41,8 deg	335 kgm	368 kgm	33,7 deg	448 kgm	N/A	22,6 deg	718 kgm	N/A

For class vessels, minimum 35 degree rudder angle is required.

Heavy Duty Cylinders, Torque values at max pressure rating:

Item code	Cylinder working pressure	150 mm rudder arm			180 mm rudder arm			260 mm rudder arm		
		Max angle +/- deg	Torque @ max angle [kgm]	Torque @ 35 deg	Max angle +/- deg	Torque @ max angle [kgm]	Torque @ 35 deg	Max angle +/- deg	Torque @ max angle [kgm]	Torque @ 35 deg
Heavy duty cylinder										
9032-200-7-60	70 bar	41,8 deg	443 kgm	487 kgm	33,7 deg	594 kgm	N/A	22,6 deg	952 kgm	N/A
9032-200-7-70**	70 bar	41,8 deg	443 kgm	487 kgm	33,7 deg	594 kgm	N/A	22,6 deg	952 kgm	N/A
8032-305-9-60	85 bar	>90 deg	N/A	450 kgm	57,9 deg	350 kgm	539 kgm	35,9 deg	770 kgm	779 kgm
8032-305-9-70**	85 bar	>90 deg	N/A	450 kgm	57,9 deg	350 kgm	539 kgm	35,9 deg	770 kgm	779 kgm

**with shock and by-pass valve

For class vessels, minimum 35 degree rudder angle is required.

Heavy Duty Cylinders, Torque values at 50 bar HPU pressure rating:

Item code	HPU working pressure	150 mm rudder arm			180 mm rudder arm			260 mm rudder arm		
		Max angle +/- deg	Torque @ max angle [kgm]	Torque @ 35 deg	Max angle +/- deg	Torque @ max angle [kgm]	Torque @ 35 deg	Max angle +/- deg	Torque @ max angle [kgm]	Torque @ 35 deg
Heavy duty cylinder										
9032-200-7-60	50 bar	41,8 deg	317 kgm	348 kgm	33,7 deg	424 kgm	N/A	22,6 deg	680 kgm	N/A
9032-200-7-70**	50 bar	41,8 deg	317 kgm	348 kgm	33,7 deg	424 kgm	N/A	22,6 deg	680 kgm	N/A
8032-305-9-60	50 bar	>90 deg	N/A	264 kgm	57,9 deg	206 kgm	317 kgm	35,9 deg	453 kgm	458 kgm
8032-305-9-70**	50 bar	>90 deg	N/A	264 kgm	57,9 deg	206 kgm	317 kgm	35,9 deg	453 kgm	458 kgm

**with shock and by-pass valve

For class vessels, minimum 35 degree rudder angle is required.

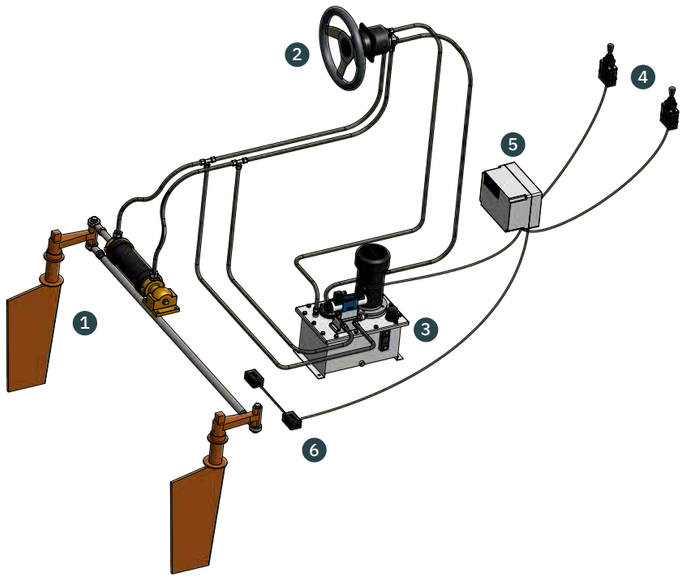
Power Steering PS600

The PS600 is suitable for joystick and autopilot steering of commercial vessels up to 15 meters. To ensure long life and high operational reliability, an adjustable auto-stop function is built into the control unit which significantly reduces the running time of the pump and motor, and thereby power consumption as well.

The system will automatically start on input signals from either the joystick or autopilot, and automatically shut down 30 seconds after last input. Automatic rudder end stop switches are standard, and is an important feature to reduce the load and stress on the system.

To add emergency steering capability, in case of power failure, simply add a standard Sleipner helm pump to the system. Two PS600 systems can be run in parallelle, also in a DC / AC configuration for added redundancy.

The system is delivered with all components installed and tested from our ISO-certified factory in Norway. Choose bestween DC or AC power, hydraulic pump volume and the optional temperature and oil level sensors.



Component overview:

1. Hydraulic steering cylinder
2. Hydraulic helmpump (optional)
3. Hydraulic power unit consists of electric motor, hydraulic pump, oil filter, valve system and oil tank
4. Joystick, one or two
5. Electronic control unit handling signals from joystick, autopilot and rudder stop switches. Output signals from the control box controls directional valves and the motor starter relay
6. Rudder end stop switches
7. Level and temperature sensor (optional)

Visit our web site for CAD files and installation manuals.

Please contact us directly for further information.

Features:

- Compact oil tank with return filter, pump, valve and electric motor
- 600W 24V or 550W 230/400VAC electric motor options
- Fits steering cylinder volume from 345cm³ to 1200cm³
- When using autopilot, no external pump is required
- Auto stop function on electric motor (30 sec standard, adjustable)
- Selectable pump of 6.7, 4.3 or 3.2 liters per. minute
- Prepared for joystick, autopilot and manual control
- Operating pressure is 50 bar.
- Dimensions DC version: 490x406x272mm (HxWxD)
- Dimensions AC version: 430x406x272mm (HxWxD)
- Tank volume: 10 L

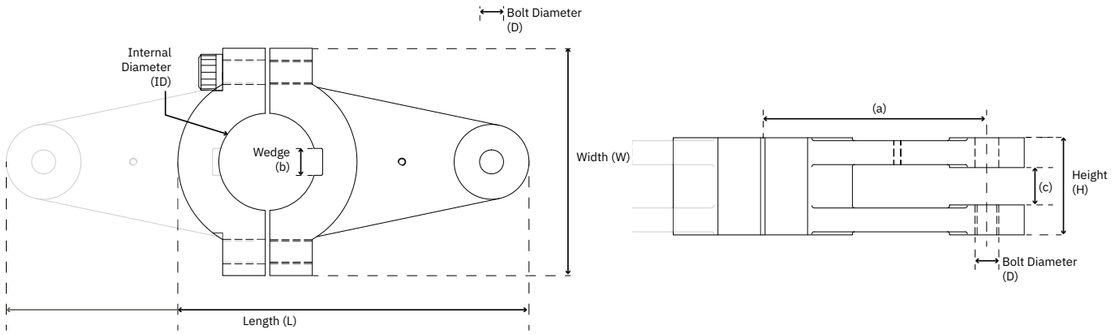
Item code				Pump volume at 27V	Cylinder art. no	Cyl. volume	Time from port to starboard
Input power							
24C DC*	230/400V 3-phase	24V DC	230/400V 3-phase				
Prepared for temp and level switches		With temp and level switches					
74352	74352-AC3	74352-S		3,2 liters per min	71140	345 cm3	6,5 sec**
74352	74352-AC3	74352-S		3,2 liters per min	71220	565 cm3	10,6 sec
74351	74351-AC3			4,3 liters per min	71220	565 cm3	7,9 sec
74351	74351-AC3			4,3 liters per min	71140 x 2 pcs	690 cm3	9,6 sec
74351	74351-AC3			4,3 liters per min	9032-200-x	1111 cm3	15,5 sec
74350	74350-AC3	74350-S	74350-S-AC3	6,7 liters per min	71220	565 cm3	5,1 sec**
74350	74350-AC3	74350-S	74350-S-AC3	6,7 liters per min	71140 x 2 pcs	690 cm3	6,2 sec**
74350	74350-AC3	74350-S	74350-S-AC3	6,7 liters per min	8032-305-x	1287 cm3	11,4 sec
74350	74350-AC3	74350-S	74350-S-AC3	6,7 liters per min	9032-200-x	1111 cm3	9,9 sec

24V systems supplied with starting relay* * These port to starboard run times may be to short for autopilots*

Item code	Optional accessories
74363	Control equipment for PS600 including rudder end stop switches
10 2209	Joystick

Rudder tiller arm
Made of coated cast iron, available as single or dual arm, for shafts of 40–80 mm diameter, length 215–345 mm, width 115-180 mm.

Contact us for more details and custom-made products.



Item code	Material	Description	(ID)	(H) Height	(L) Length	(W) Width	(D) Bolt dia.	(a)	(b)	(c)
72848	Coated cast iron	Single	40	55	215	115	14	150	14	22
72849	Coated cast iron	Dual	40	55	340	115	14	150	14	22
72844	Coated cast iron	Single	40	55	340	115	16	150	14	22
72847	Coated cast iron	Dual	40	55	215	115	16	150	14	22
72850	Coated cast iron	Single	45	55	215	115	14	150	14	22
72851	Coated cast iron	Dual	45	55	340	115	14	150	14	22
72836	Coated cast iron	Single	45	55	215	115	16	150	14	22
72837	Coated cast iron	Dual	45	55	340	115	16	150	14	22
72852	Coated cast iron	Single	50	55	215	115	14	150	14	22
72853	Coated cast iron	Dual	50	55	340	115	14	150	14	22
72838	Coated cast iron	Single	50	55	215	115	16	150	14	22
72839	Coated cast iron	Dual	50	55	340	115	16	150	14	22
72854	Coated cast iron	Single	55	64	235	150	16	150	18	26
72855	Coated cast iron	Dual	55	64	345	150	16	150	18	26
72856	Coated cast iron	Single	60	64	235	150	16	150	18	26
72857	Coated cast iron	Dual	60	64	345	150	16	150	18	26
72858	Coated cast iron	Single	65	64	235	150	16	150	18	26
72859	Coated cast iron	Dual	65	64	345	150	16	150	18	26
72860	Coated cast iron	Single	60	64	235	150	20	150	18	35

Measurements in mm

Item code: WH28SS
Constructed material: Stainless steel
Diameter: 28 cm

Item code: WH28SORT
Constructed material: Stainless steel/rubber
Diameter: 28 cm

No crimp fittings needed. Can

Hydraulic hose for steering

1 layer steel braided
Inner Ø: 9,5 mm (3/8”).
Outer Ø: 12 mm
DNV standard EN 30592

By-pass valve

Hydraulic oil

Meets ISO-VG-15, DIN 51524-3 HVLP specifications.

Hose coupling, 90°

T-coupling

Straight fitting

Description	Item code standard brass	Item code stainless
Straight fitting 1/4”BSPx10mm	72200	72210
Hose coupling, 10mm for 3/8” hose, no crimp fitting needed	72335	72336
T-coupling for 10 mm	72500	73510
Hose coupling, 90°, 10 mm	72400	72410
Hydraulic hose for steering, 3/8” 1 layer steel braided	72135	
Hyd. hose for steering, PA/11 2004, non pressure ventilation hose	72140	
By-pass valve 10 mm	72600	
By-pass valve 12 mm	72612	
Hydraulic oil for steering, 1 ltr	72750	
Hydraulic oil for steering, 12 pack (12x1 ltr)	72760	
Hydraulic oil for steering, 2,5 ltr	72700	

Propellers and propeller equipment

Scandinavian markets only

Sleipner has been producing propeller shaft systems for decades. We stock shafts and accessories up to 60mm in diameter, but other dimensions may be delivered upon request.

In addition to our own products, we distribute a selection from high-end brands such as Tides Marine shaft seals, Centa couplings and Radice brass propellers, struts and rudders.

These products are mainly distributed in the Scandinavian market, and more details and complete product selection are available on our websites.

A typical Sleipner system:

1. Outer housing
2. Stern tube
3. Shaft bracket
4. Shaft seal
5. Shaft seal oil reservoar
6. Propeller shaft
7. Nut with anode

Tides Marine
Self-aligning shaft seal systems in fiber-reinforced composite with integrated bearing. Water cooled for single of twin engine installations. Smart spare seal solution available.

Sleipner
Fixed couplings for shaft diameters up to 60 mm for most common gear box flanges.

Radice
Sleipner has been delivering quality propellers from Italian Radice since 1978 and stocks a large selection of 2-, 3- and 4-bladed bronze propellers with several blade profiles for various hull types and speeds.

Radice
High quality shaft struts in brass and GRP for shaft diameters up to 60mm.

Sleipner
Engine mounts up to 700kg motor weight pr mount.

Visit sleipnergroup.com for more information.

Imprint

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