



SLEIPNER

Side-Power

Stabilisation Systems Sleipner Vector Fins

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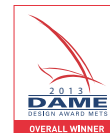
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SLEIPNER

Stabilizer systems

Sleipner's Vector fins™ is the only top performing 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.



Vector Fins™ systems

Superior stabilization in every situation

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

What can Stabilizers do for you?

Stabilizers reduce the roll movement of a vessel, which is in most situations by far the most dominant and most uncomfortable motion. So reducing roll by a good percentage will make a substantial difference in comfort and safety on board.

However, it is not always so clear what type of stabilisation system to choose because the two leading technologies (fins and gyros) have significant functional differences, meaning that no one type suits all boats or all owners' cruising priorities.

Key things to consider

- Choose the right stabilisation technology to match the type of boating you do.
- Check the practical limitations of your boat – not all systems will fit all boats, mainly due to space limitations.
- Consider what is best suited to your boat and what is likely to retain the most value when the time comes to sell – some sizes and style of boat lean more towards one technology than another.

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: $\text{force} = \text{speed}^2$.

Gyro-type stabilisers 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 stabilisers 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.

Vector fin stabilizer

- Unlike Gyros, efficiency increases with speed
- Minimal to no increase in fuel consumption
- Minimal to no loss of speed
- Silent all night operation
- Minimal internal space requirement
- Also suitable for retrofit

Which System Is Right For You?

If your only priority is having stabilisation at zero speed, with these size choices, the gyro will eliminate more roll than the fins when anchored. However, if you also use your boat on longer cruises and want to have excellent stabilisation when cruising in the open sea between sheltered anchorages, fins have a colossal force benefit. They can reduce or eliminate many times the wave height and length of a gyro of this size.

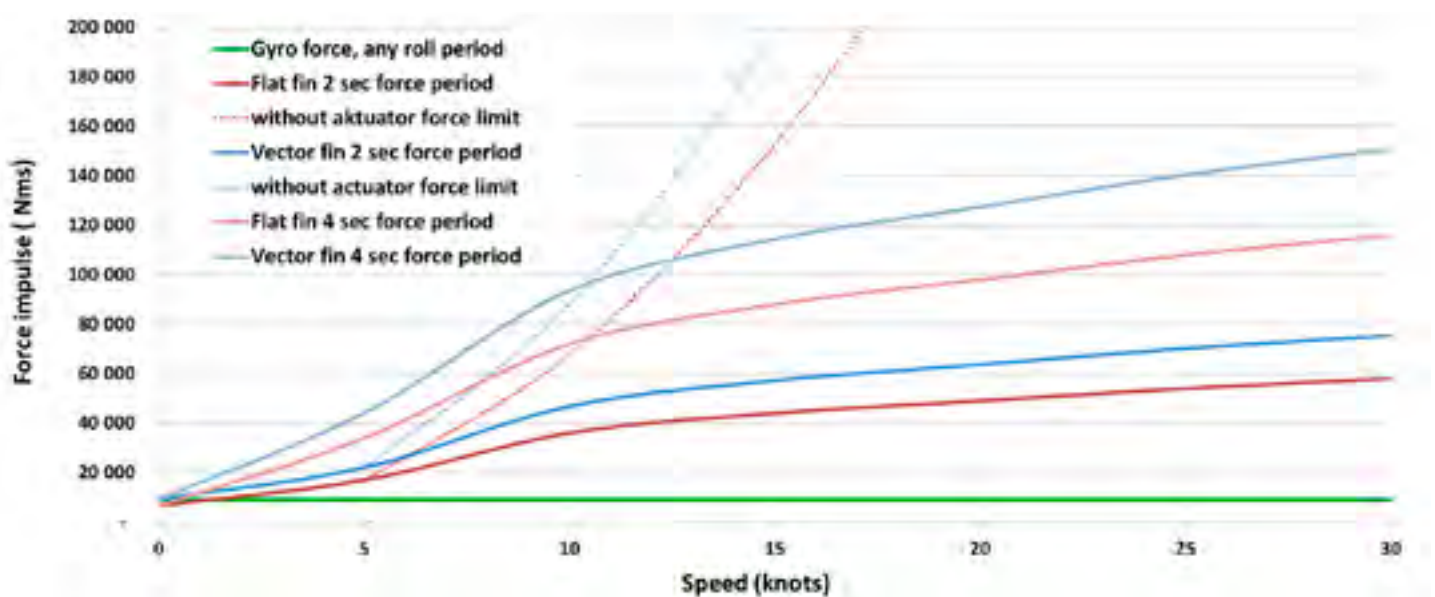
Vector FinsTM

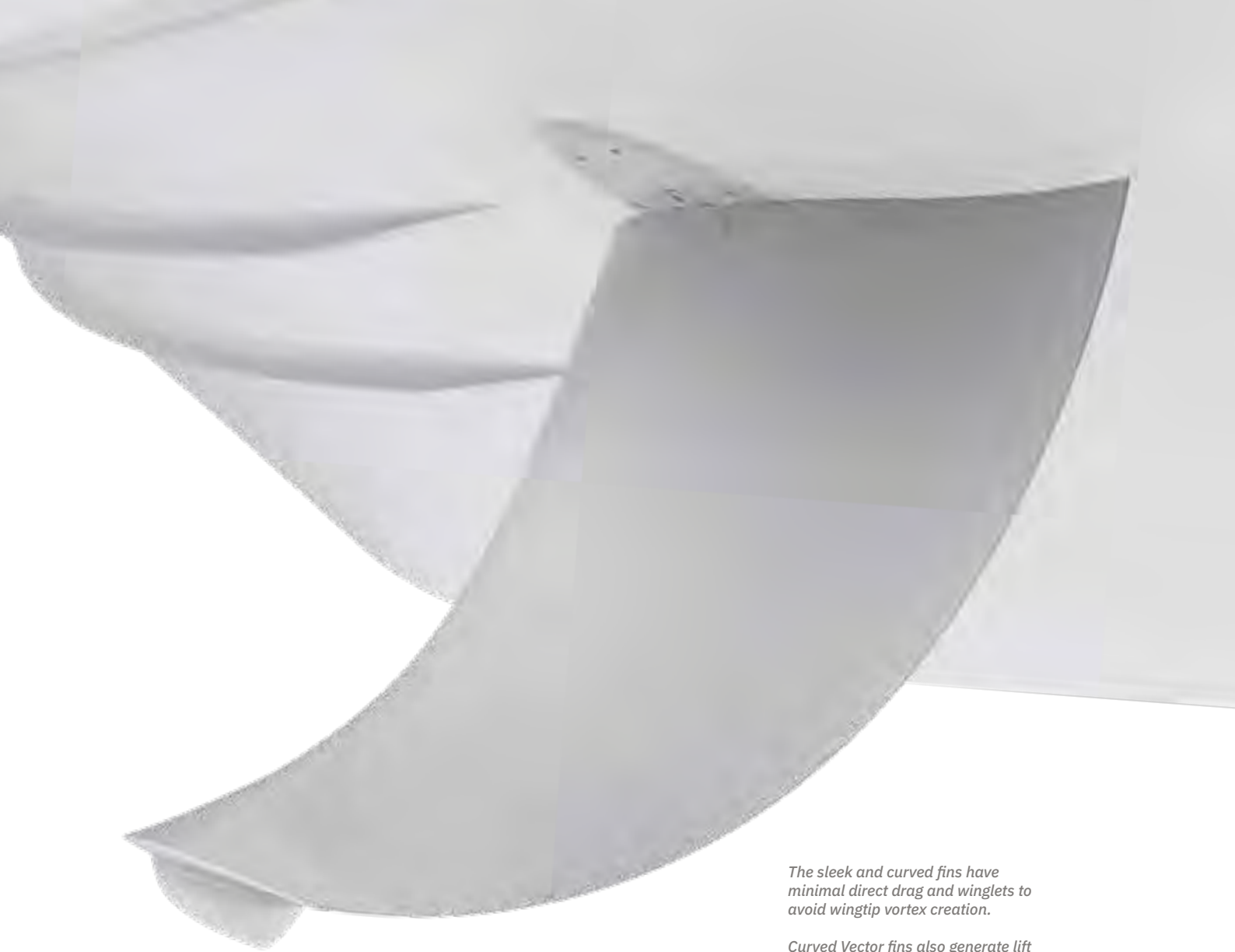
- it's all about the physics

Most boaters who have ever had a stabilised boat would never buy another boat without. Most stabiliser systems on the market today will make a huge impact on onboard comfort, safety and second hand boat value.

However, there are important technological and efficiency differences that must be considered to choose the optimal system for a given boat.

The two most common roll reducing systems on the market today are gyro and fins. It is well established that fins are better for those who want effective stabilisation both at anchor and underway, while gyro is good choice for boaters who are primarily focused on at anchor stabilisation. The reason is that gyro stabilisers has a maximum stabilisation force while fins will increase their stabilising efficiency with speed by a factor of 2.





The sleek and curved fins have minimal direct drag and winglets to avoid wingtip vortex creation.

Curved Vector fins also generate lift at speed, helping to offset drag.

Verified stabilization test results Princess 56 with 0,6m² Vector Fins™



	No stabilizer	Vector Fins™	Reduction of roll	Reduction of seasickness
Cruising at 11 knots				
Maximum roll movement	10.4°	0.3°	97%	99.8%
Average roll movement	5.7°	0.15°	97%	99.9%
At Anchor				
Maximum roll angle	9.4°	2.6°	72%	92%
Average roll angle	4.1°	1.4°	66%	88%



Actuators

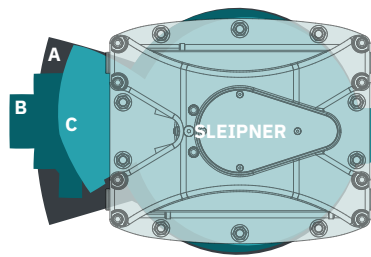
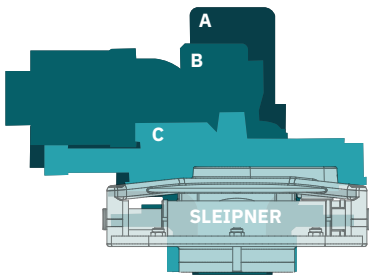
The height inside the boat is often the key measurement to allow for installation in modern boats. The Sleipner actuators are typically 25% to 75% lower than others. They are constructed for easy installation and minimal noise reproduction.

Technical design benefits

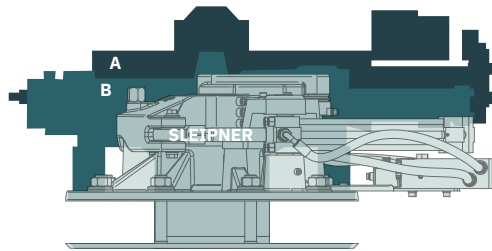
- Precision machining and assembly ensures a long lifetime and durability.
- No additional center lock, this is automatic in the standard hydraulic system – very safe due to the hydraulics having extreme safety limits.
- Dual cylinders provide
 - balanced load unlike single cylinder solutions.
 - less bearing load, thereby allowing for a more compact shaft bearing assembly.
- Purpose-designed dual shaft sealing - superior to standard Simmer Ring 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.
- Most stabilizer systems require you to periodically service their bearings, meaning either a part change, lubrication and/or mechanical adjustments. Side-Power's latest generation of bearings do not need any of that, saving time and money for the owner with lifetime lubricated high-end bearings as standard, meaning one less service point on your vessel.
- 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 the fins accidentally hitting something.
- All exterior parts are in stainless steel.

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 60-70 feet and larger
- Can power many applications from one central hub
- Low maintenance
- Silent operation



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



■ Sleipner actuators

The most compact actuator



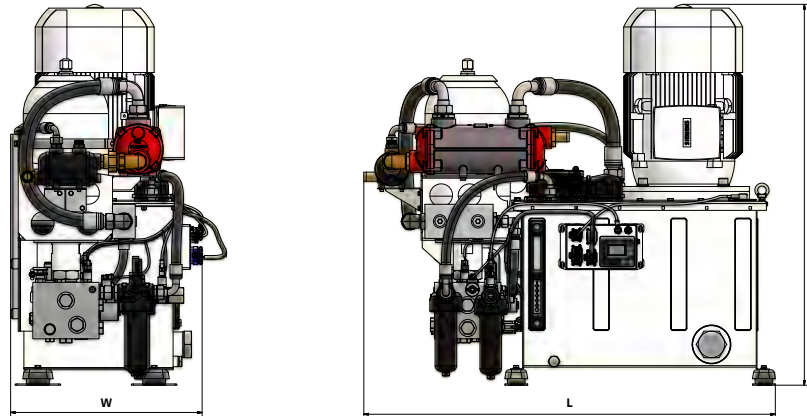
Compact,
quiet and
easy to
install



Hydraulic Power pack for standalone installations

This is a complete hydraulic power unit (HPU) for installations where the vessel does not have a hydraulic thruster system. All of the hose and wire connections are pre-installed, allowing for faster system install and startup in the field. All connections are focused on two sides of the tank, allowing installation in confined spaces.

We also offer pre-connected and easy to install central hydraulic systems with S-Link™ CAN bus system.



Power pack	10 4435C-W-01	10 4450C-W-01	10 4455C-W-01	10 4475C-W-xx-xx	10 44110C-W-xx-xx	10 44150C-W-xx-xx
Rated power (kw)	3.5	4.6	5.5	7.5	11	15
Weight (kg • lbs)	111 • 245	116 • 256	135 • 298	N/A	300 • 661	312 • 687
L (mm • in)	726 • 28.6	726 • 28.6	780 • 30.7	1087 • 42.8	1087 • 42.8	1087 • 42.8
W (mm • in)	432 • 17	432 • 17	465 • 18.3	506 • 19.9	506 • 19.9	506 • 19.9
H (mm • in)	762 • 30	756 • 29.8	790 • 31.1	1006 • 39.6	1006 • 39.6	1006 • 39.6
Generator load (kVA)*	4.6	6	7	9.8	13	18
For fin size (short r. p.)*	VF650 (SPS55)	VF800 (SPS55B)	-	VF1050 (SPS66B)	VF1350 (SPS93B)	VF1650 (SPS93B)
For fin size (long r. p.)*	VF650 (SPS55)	VF800 (SPS55B)	VF1050 (SPS66B)	VF1350 (SPS93B)	VF1350 (SPS93B)	VF1650 (SPS93B)

* Single phase supply will increase current with factor 1.73 and will require more margins on generator capacity.
 * ECO mode available in new 2018 control system for reduced generator load.
 xx-xx - available in 230V 1-phase, 230V 3-phase and 400V configuration.

* Short r. p. = Short roll period
 * Long r. p. = Long roll period
 Roll period is the time between two waves



Courtesy of
Ferretti Group



New feature Q1 2020; Built in Wi-Fi module:

- Allows for software upgrades for the S-Link™ system without additional computer tool or service technicians.
- Allows for faster support, as service technicians can remotely access the control system upon request.

DMC-SCU Dynamic Motion Controller TP-43

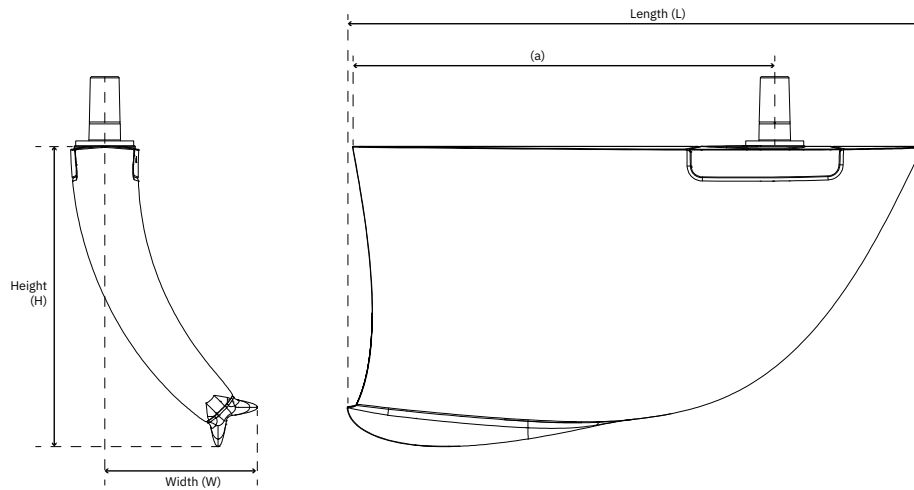
4,3" Sunlight color touch panel for ease of use and control.
Multiple Control panels can be installed in one system.

Features

- Continuous development of the best control software possible, cooperating with leading companies in control technologies.
- Self adjusting – advanced algorithms – also “Any/No Speed” functions for stabilization at anchor.
- Easy upgrade of software ensures future compatibility and improvements.
- Reverse gear position input, but also other sensors to safeguard that fins are centered and locked immediately if the boat is starting to move backwards.
- GPS speed input (no shaft sensor) helps control algorithms do the best possible job.
- S-Link™ integrates common intelligence with thruster systems and main hydraulics.
- Can be flushed mounted.



Vector fins™



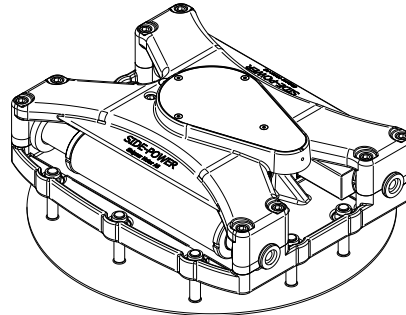
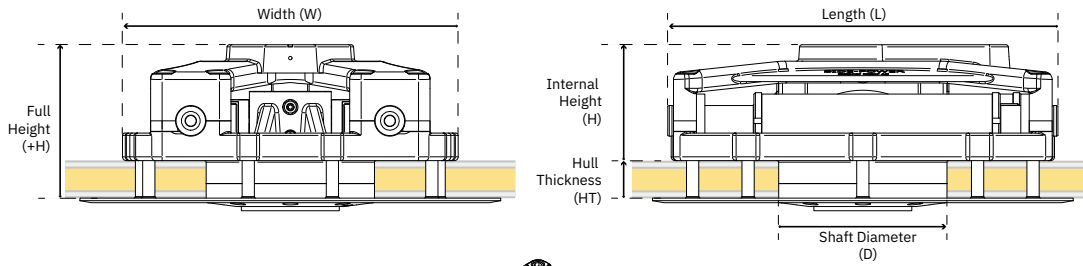
Actuator	SPS55B	SPS55B	SPS66B / SPS67B	SPS92B	SPS93B / SPS94B	SPS96B / SPS97B
Vector Fin	VF650	VF800	VF1050	VF1350	VF1650	VF1950



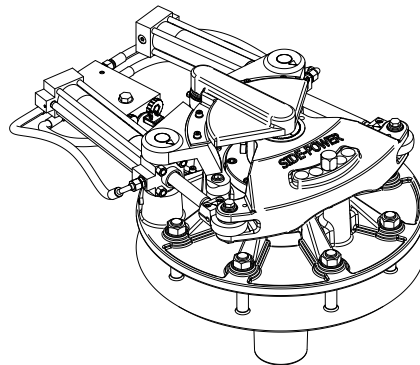
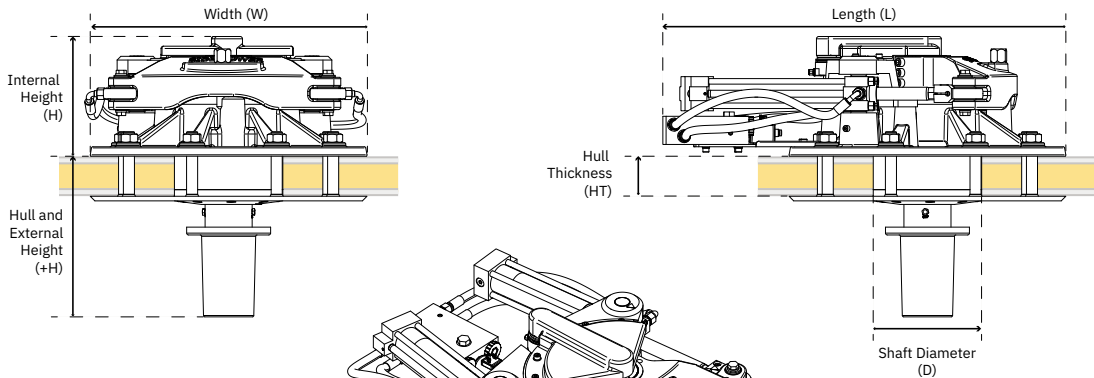
Vector Fins™ (mm)	VF650	VF800	VF1050-66	VF1350	VF1650	VFS1950-M
(H) Height	661	733	847	956.5	956.5	1054.1
(L) Length	1271	1395	1618	1835	1835	2081
(W) Width	337	337	429	485	485	533
Size	VF650	VF800	VF1050	VF1350	VF1650	VF1950-A/M/HS
Weight	0 weight in water	0 weight in water	0 weight in water	0 weight in water	0 weight in water	0 weight in water

Fins have zero weight in water

Actuator




Measurements SPS55B



Measurements SPS66B / 67B / 92B / 93B / 94B / 96B / 97B

*For metal framed boats extra
actuator available*

Actuator (mm)	SPS55B	SPS66B	SPS67B	SPS92B	SPS93B	SPS94B	SPS96B	SPS97B
(H) Height	149.5	190	190	260	260	260	346	346
(+H) Additional Height	201	318	-	347	347	-	-	-
(L) Length	510	770	770	871	871	871	871	871
(W) Width	430	650	650	700	700	700	700	700
(D) Diameter	-	175	175	235	235	235	235	235
(HT) Hull Thickness	49	70	159	86	86	237	86	237
Weight	100	105	114	185	185	190	185	190



Up to
55%
less side
effects

Up to
50%
more efficient



*Boat owner John Maxey
on his experience with
Sleipner Stabilizers.*

”

It is like riding on a
Magic Carpet