

Interceptors - The X-Series

*Superior reliability for boats from 25 up to 60 feet
Powerful 50mm (2") blades for world class motion control
Reliable performance with ultra-fast blade speed
Auto-Trim, Auto-List, Coordinated Turn and Active Ride Control
Durability by Humphree, continuous innovations since 2002*



HUMPHREE®
Trim and Stabilisation Systems

NEW Series!

More boat control - The new X-series!

The Swedish based company Humphree, the leading manufacturer of interceptor trim and stabilisation systems, now introduces the Humphree X-series interceptors. The new X-Series is intended mainly for boats from 25 up to 60 feet. Four sizes, X300, X450, X600 and X750 are available, all with the powerful 50mm (2") stroke needed for superior control of dynamic hull motions. The X300 and X450 are also an excellent choice for high performance RIBs. The X-Series delivers the same reliability and superior performance as the other Humphree interceptors but the X-Series range is limited to four standard sizes. The X-Series features the same control system, ultra-fast servo actuators and control panel. All automatic options, including full ACTIVE Ride Control, can be selected and later upgraded for the new X-series. The X-Series is here to bring unparalleled comfort and safety.

The interceptor and its function

The interceptor's main function is to create a lift force in order to reduce the boats wave resistance giving improved performance. The same function can be generated by a traditional trim tab, however an interceptor is more efficient. With reduced wave resistance, the speed is increased and fuel consumption is reduced. The lift force generated is also used to counteract undesirable boat list (heel) that may be the result of uneven load or cross winds causing the boat to list. The key to achieve good control of the boat dynamics is how fast the lift forces can be generated on the hull. Interceptor blades can extend relatively easy, allowing them to move very fast if a powerful servo motor is involved. This is why we use ultra-fast servo actuators moving 50mm(2") in less than 0.7seconds!



50 millimeter (2") blades

To control boat list effectively it is essential to position the lift force as far out from the keel as possible creating a large righting arm. For this reason Humphree use minimum 50mm stroke on our interceptors. The interceptor force must quickly build up as close to the chine as possible, providing fast response and keeping the boat at even keel in a safe and comfortable manner.

When placing lift force over a wide area of the transom, much more lift force needs to be generated to create the same counteracting boat movement and this will typically cause undesired trimming of the boat generating a bow down condition causing a bad behaving boat. X-Series full 50mm blade movement ensure that the lift force can be positioned where it should be positioned – close to the chines!

In a boat larger than 55ft a wider part of the transom can be used as the trimming effect drops with the size of the hull.

Customer expectation

The new Control Panel shows that Humphree is quality straight through. With great feel buttons and user friendliness it means pure pleasure to control the system. It has a pleasant night mode for better visibility during night navigation.



Automation - Enjoy the ride

Optimal running trim, good visibility and greater onboard comfort. All of Humphree's auto functions are developed to enhance the qualities of your boat, make it safer, faster, and more fun to drive with lower fuel consumption. With these functions included you can concentrate on your family and friends while staying focused on navigation.



Automatic control is the future

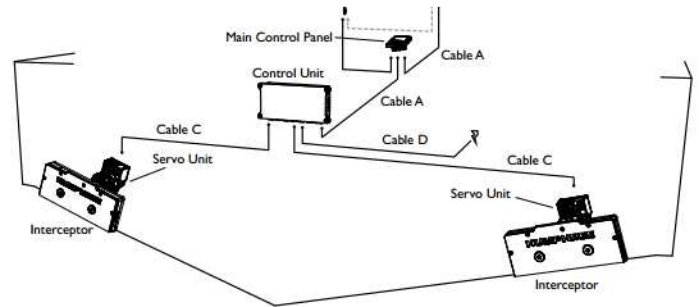
With new technology both trim and list can be controlled automatically. Humphree calls this functionality Auto Trim Control and Auto List Control. Other manufacturers may have other names and all will claim to have "automatic control". It is easy to claim to have "auto" but the big challenge is to deliver a safe and reliable function that will handle all situations at sea, especially when the sea conditions are getting worse. The reaction time for generating lift force is paramount for a well-functioning true automatic control that doesn't create surprises or even result in unsafe situations.

For improved behavior during turns, Humphree offers the Coordinated Turn Control. The function coordinates the rudder movement with the interceptors to create a heel angle during the turn that is highly comfortable! The turning radius can also be significantly reduced with the Coordinated Turn Control.

13 years of continuous development ensure world class automatics for safe control providing highest comfort and performance no matter if it's sunshine or rough seas.

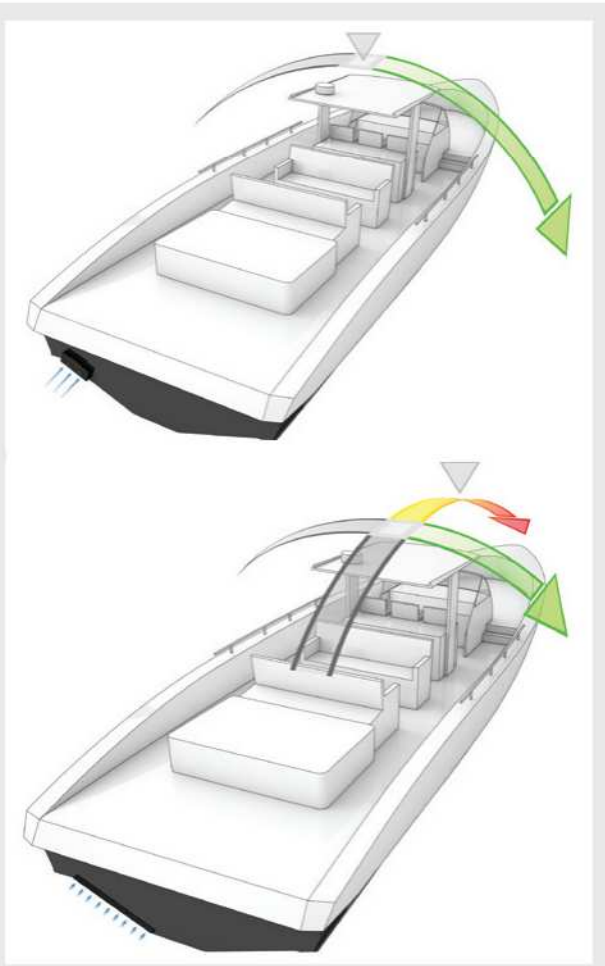
The system

A system consists of Interceptors that are mounted on the transom as far out towards the chine as possible for best control. The interceptors are actuated by ultra-fast servo motors mounted on the inside of the transom for easy access if needed. The servo units are connected to a control unit distributing power supply and data communication. A control panel controlling the system and located at the helm. The installation is a straight forward and easy procedure.



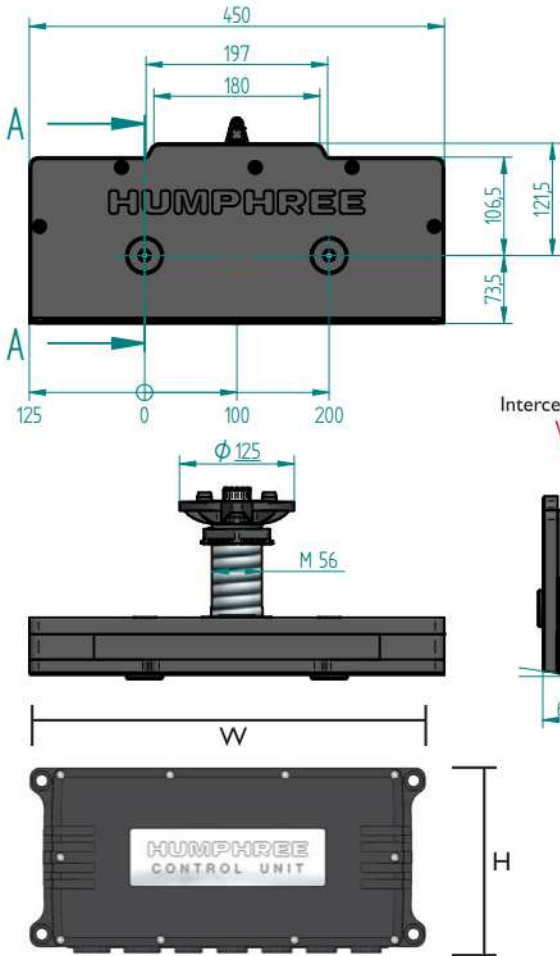
Stabilisation

Stabilisation means that the system actively counteracts the boat's roll and pitch motions by superfast generation of lift force that affects the boat opposite to its roll and pitch movements. When trying to roll stabilise a boat with interceptors it is even more important that the blades are controlled fast. If the system would be too slow there is a large risk of amplifying the roll motions instead of reducing them. Again, our ultra-fast servo motors is capable of moving the blade 71mm/second making this system one of a kind. The stabilisation is very noticeable for people onboard and the human brain can register the decreased motion providing a more comfortable ride experience. The risk of seasickness also decreases with the reduced acceleration motions.



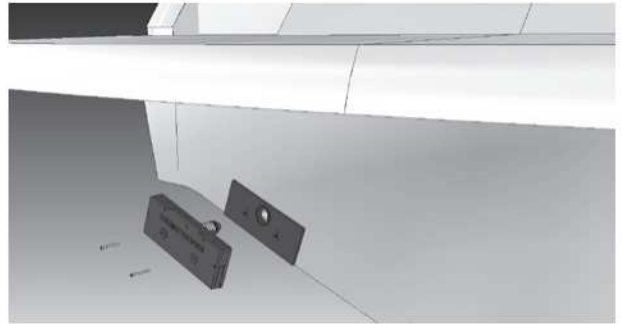
The Interceptor

The X-series interceptor comes in four sizes from 300 mm up to 750 mm. All with the powerful 50 mm blade. The interceptors are made of composite with stainless steel bolts and screws.

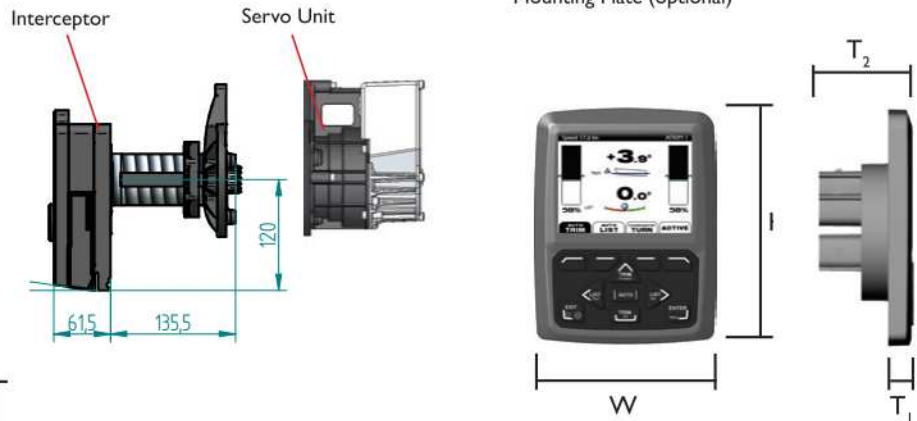


Mounting plates simplifies installations

The mounting plate is commonly fixed to the hull with through hull bolts. It is prepared from factory with stainless steel inserts for mounting the interceptor to the plate. Bolts for fixing the interceptor to the mounting plate are included in the delivery.



Mounting Plate (optional)



High quality parts

All parts are manufactured in Sweden, they are water proof and we only choose premium quality materials for the products.

Interceptor dimensions

Type	W x H x T (mm)	Weight (kg)	Supply (V)
Standard interceptor	300-750 x 195 x 61	3,1; 4,5; 5,8; 7	11-32
Servo unit	124 x 159 x 121	2	
Control unit	343 x 160 x 58	1	
Control panel	102 x 132 x 14/52	0,2	

Selector guide Recommended interceptor sizes - Planing hulls

Boat size		Stern drive		
Boat size		Low hump trim	Normal hump trim	High hump trim
Shaft line & Water jet		<5° at hump	5-6,5° at hump	>6,5° at hump
25-35 ft	X300	X300	X300	X300
35-45 ft	X450	X300	X450	X450
25 ft	X300	X300	X300	X300
30 ft	X300	X300	X450	X450
35 ft	X300	X300	X450	X600
40 ft	X300	X300	X450	X600
45 ft	X450	X450	X600	X750
50 ft	X600	X600	X750	H900
55 ft	X750	X750	X750	H900
60 ft	X750	X750	H900	H1050

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