

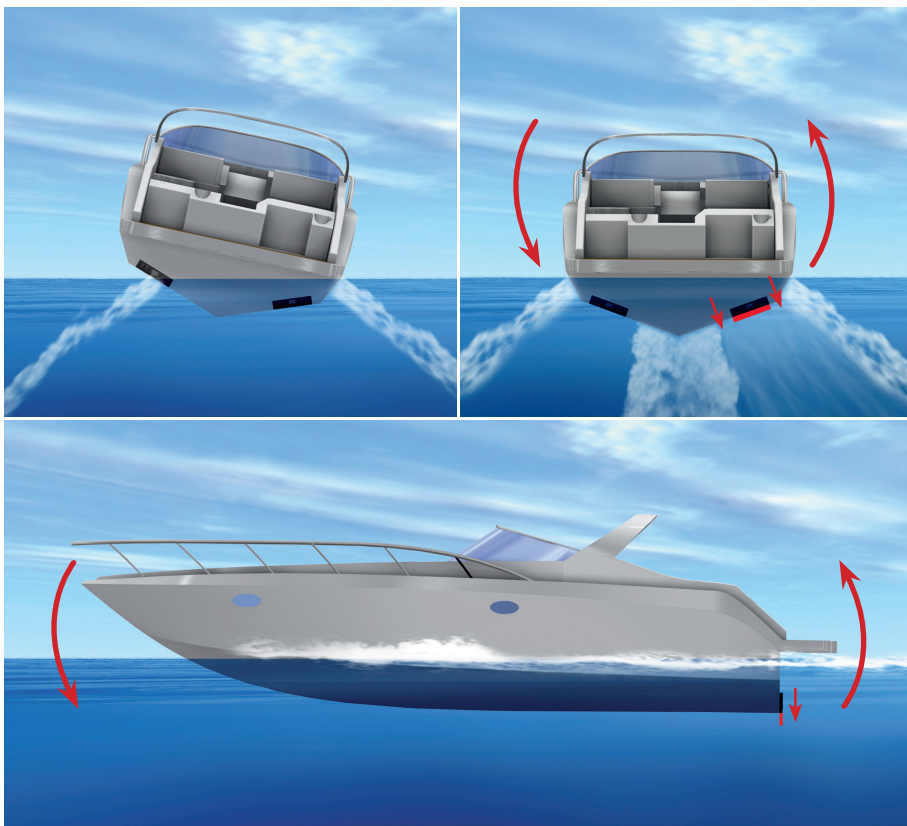
BOAT TRIM SYSTEM

Enjoy a smoother ride, automatically

The Boat Trim System (BTS) with its patented interceptor technology gives you perfect control over pitch and heel with rapid response, quicker onto plane, lower fuel consumption and a more comfortable ride. Even better, add the Automatic Boat Trim option which takes over the task of keeping the boat correctly trimmed - automatically!



Easy to install, corrosion free and virtually no maintenance is required. Intuitive and user-friendly control.



Thanks to the interceptor technology you get a smoother ride. The trim system, recommended for speeds up to 45 knots, has all the same performance qualities as conventional trim tabs plus the additional benefits of quicker response, less drag and compact design. Unlike conventional trim systems using hydraulics the system is operated electronically. As no hydraulic oil is used, there's no risk of oil leakage in sensitive marine environments.

YOU GET

- Improved fuel efficiency.
- Greater lift and less drag compared with conventional trim tabs.
- Quickly onto the plane.
- Intuitive, user-friendly control panel.
- Automatic Boat Trim functionality (option)

**VOLVO
PENTA**

EASY TO OPERATE

The Boat Trim System is easy to manually operate from the control panel. The trim indicators show the position of port and starboard interceptor units. With the four push buttons you adjust; bow down and bow up, list starboard and list port. Several control panels may be installed for multiple stations.

To reduce the risk of damage and minimize marine growth, the blades are automatically retracted at engine shut off.

AUTOMATIC BOAT TRIM OPTION

The Automatic Boat Trim option further enhances comfort and safety. Just press the "A" button and the system automatically keeps the pre-

set preferred boat attitude. The trim indicators continuously shows the blades position, making it possible to see how the system is working.

The Automatic Boat Trim option compensates for changes in speed, wind or people moving about on board. Thanks to the integrated GPS receiver, it also senses changes in course and does not compensate for heeling in turns. The system also automatically gets the boat quicker onto plane, by using a few pre-defined blade positions when accelerating.

The Automatic Boat Trim option can be configured to compensate for both pitch and heel, or only for heel. The latter is recommended if Volvo Penta Power Trim Assistant is activated.

LOW MAINTENANCE

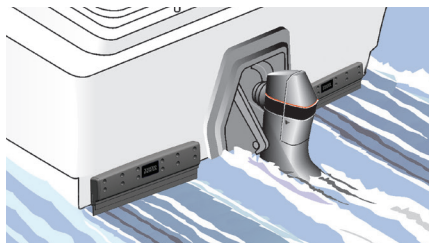
The system is made of composite material and all electrical parts are "sealed for life". It is virtually corrosion free and will not cause any galvanic corrosion. This means there is very little maintenance compared to conventional hydraulic trim tab systems.

COMPACT INSTALLATION

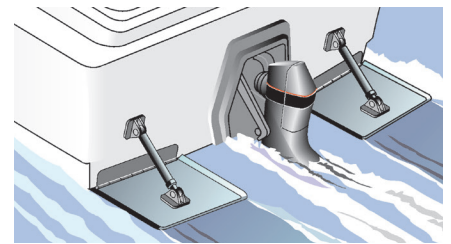
With its compact design, the interceptor units are easily mounted. The only affect on the hull is a small hole for the electrical connection. Additional interceptor units may be installed side by side, i.e. two units on each side of the hull. The trim system is designed for several helm stations.



Intuitive and user-friendly control panel



Boat Trim System with interceptors.



Traditional trim system.

Volvo Penta Boat Trim System

FEATURES & BENEFITS

- 12V and 24V.
- Improved fuel efficiency.
- Quicker onto plane.
- Enhanced onboard comfort and safety.
- Rapid response.
- Intuitive control panel.
- Precise trim indication.
- Automatic retraction at engine shut off.
- Greater lift, less drag compared with conventional trim tabs.
- Composite material, no corrosion.
- Electronic actuator, no hydraulics
- Virtually no maintenance
- Designed for up to four helm stations.
- Easy to install.
- Compact dimensions, light weight.
- Ideal for outboard, inboard, I/O and waterjet installations.
- Complies with CE and ABYC requirements.

AUTOMATIC BOAT TRIM OPTION

- Fully automatic boat trim.
- Always perfect trim for optimal onboard comfort and fuel economy.
- Senses changes in course and does not try to compensate for boat heeling in sharp turns.
- Preferred boat attitude retained in memory on engine shut down.
- Manual override at any time.
- Easy installation.
- Can be retrofitted to existing Boat Trim Systems, without lifting the boat.
- No extra maintenance required.
- Complies with CE and ABYC requirements.



Watch the BTS-movie



The Boat Trim System is recommended for speeds up to 45 knots and ideal for outboard, inboard I/O and waterjet installations.

SIZING GUIDELINES

The following sizing recommendations are general and based on average performance for planing boats. You may need a larger interceptor configuration than recommended if the boat is underpowered relatively heavy, has a low cruising speed or

has a high planing threshold. The interceptor units are available in two lengths; 300 mm and 450 mm. They may be installed individually or in pair. The largest possible interceptor blade surface suited to the transom is also the most effective solution.

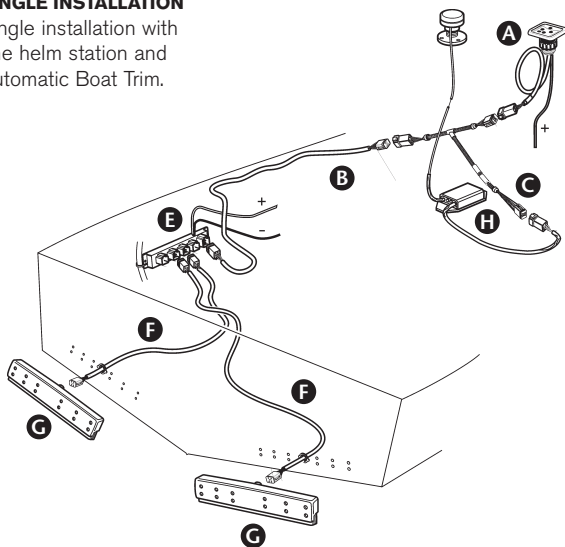
As many factors affect the choice of properly sized interceptor unit configurations, the ultimate responsibility for selection is up to the boat owner or the boat producer. Contact your local Volvo Penta dealer for further guidance.

Boat length	Single engine installation	Twin engine installation
15' - 24'	BTS 300	BTS 300
22' - 30'	BTS 450	BTS 450
28' - 34'	BTS 450	BTS 450
32' - 44'	BTS 450 + BTS 300	BTS 450
42' - 46'	BTS 450 x 2	BTS 450 x 2

For semi-planing hulls, it may be necessary to increase the length of the trim unit configuration.

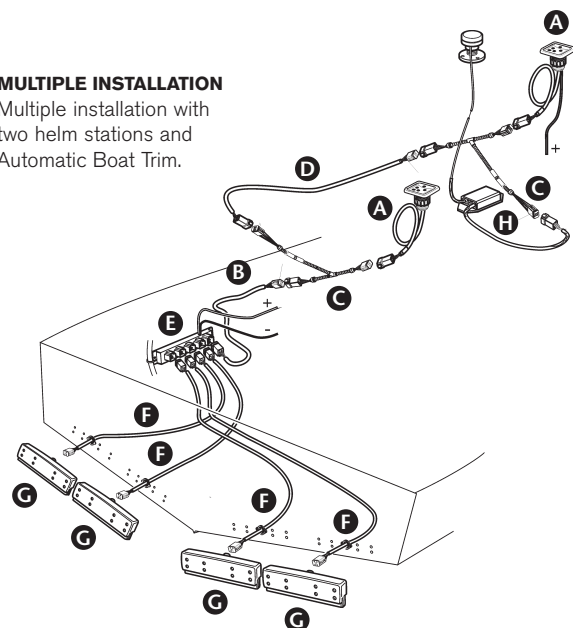
SINGLE INSTALLATION

Single installation with one helm station and Automatic Boat Trim.



MULTIPLE INSTALLATION

Multiple installation with two helm stations and Automatic Boat Trim.



Component guide and how to order, see next page

HOW TO ORDER

There are two basic kits for single installation with one helm station and one optional Automatic Boat trim kit available for ordering. The kits and their content are:

BTS 300 mm, Part No. 21534532

2 Interceptor units, 300	2 x 21527471
1 Control panel	1 x 21809318
1 Control unit	1 x 21546221
2 Cables, 2,5 m	2 x 3817171
1 Cable, 5 m	1 x 874789

BTS 450 mm, Part No. 21534533

2 Interceptor units, 450	2 x 21527472
1 Control panel	1 x 21809318
1 Control unit	1 x 21546221
2 Cables, 4 m	2 x 3817172
1 Cable, 9 m	1 x 889551

AUTOMATIC BOAT TRIM, Part No. 21561103 ***

1 GPS receiver	1 x 3847459
1 Attitude control unit	

For other configurations, use the separate ordering and component guide as below.

ORDERING AND COMPONENT GUIDE

Description		Part No.	1 helm station					2 helm stations*				
			2x300	2x450	2x300 + 2x450	4x300	4x450	2x300	2x450	2x300 + 2x450	4x300	4x450
Mandatory components												
A	Control panel	21809318	1	1	1	1	1	2	2	2	2	2
B	6-pole cable (select length)		1	1	1	1	1	1	1	1	1	1
	5 m	874789										
	7 m	889550										
	9 m	889551										
	11 m	889552										
	13 m	888013										
C	6-pole Y-cable	3588972										
D	6-pole extension cable (select length)											
	1,5 m	3889410										
	3 m	3842733										
	5 m	3842734										
	7 m	3842735										
	9 m	3842736										
	11 m	3842737										
E	Control unit	21546221	1	1	1	1	1	1	1	1	1	1
F	4-pole cable (select length)		2	2	4	4	4	2	2	4	4	4
	2,5 m	3817171										
	4,0 m	3817172										
G	Interceptor unit 300 mm	21527471	2		2	4				2	4	
	Interceptor unit 450 mm	21527472		2	2		4		2	2		4
Optional component												
H	Automatic Boat Trim ***	21561103	1	1	1	1	1	1	1	1	1	1
	Resettable breaker 8A **	966689	2	2	2	2	2	2	2	2	2	2

* Note! For each extra helm station (max 4 helm stations possible), add one control panel (A), one 6-pole Y-cable (C) and one 6-pole extension cable (D).

** Note! If the boat does not have a separate fuse box accessible, Volvo Penta resettable 8A breaker may be used. 966689 is not ignition proof and must therefore not be used in gasoline engine rooms.

*** Note! For the installation one 6-pole Y-cable (C) is always needed. Depending on installation type, there might be a need for a 6-pole extension cable (D). The 6-pole cable on the Attitude control unit (H) is approx. 25 cm.

The cables have to be ordered separately.

Automatic Boat trim can of course be retro fitted to existing BTS installations. If the existing system is branded "Volvo Penta", just follow the guide above. If the existing system is branded "QL Marine" the following applies: The existing QL control unit must be replaced, order therefore also 1 Control unit, part number 21546221. To be able to see the position of the interceptor blades in Auto mode, control panel 21809318 is needed. So if that functionality is required, order also 1 control panel 21809318.

VOLVO PENTA

AB Volvo Penta
SE-405 08 Göteborg, Sweden
www.volvopenta.com