

SmartPilot™

Guide to Raymarine Below Deck Autopilot Systems.



SmartPilot



It's a beautiful day, the sun's out, the sea is blue and you're underway - what a great opportunity for your Raymarine autopilot to take over the helm while you soak up the sun. Just press the button and the day is yours.

or...

The wind's come up, the sea is getting choppy, and mother nature unleashes a torrential rain - just press the Auto button and let your Raymarine autopilot take the strain while you mind the radar/chartplotter and set a course for safe harbor.

From the invention of Autohelm® tiller pilot almost 30 years ago to SmartPilot gyro enhanced Advanced Steering Technology™ today, Raymarine autopilots lead the way in autopilot technology and innovation and set a new benchmark in autopilot performance and reliability.



SmartPilot System Components...



Each system includes your choice of waterproof control heads.



The central intelligence hub of every SmartPilot, the corepack consist of a course computer, fluxgate compass and rudder reference unit.



A rugged Raymarine drive is matched to your specific vessel requirements .

ADDITIONS TO THE RAYMARINE AUTOPILOT LINE-UP



NEW Designed for sail and powerboats under 20,000 lbs, our all new S1 corepacks offer maximum features and performance, including Raymarine's Advanced Steering Technology and integral rate gyro. The S1 and S1G are also available in convenient all-in-one box autopilot System Packs!

NEW Get straight to the point with the all new ST8001 autopilot control head. Command the helm with the ST8001's rotary control knob and large high contrast LCD.



SmartPilot Technology



AST Advanced Steering Technology: State-of-the-art software for course computers with built-in rate gyro, gives superb steering performance and boat handling.



SeaTalk® networking: The world-renowned on-board plug and play solution for connecting multiple remote autopilot displays and Raymarine integrated navigation systems. SeaTalk enhanced features include:

- Waypoint and Route navigation
- Wind Instrument integration: Steer to wind angle – True/Apparent
- Speed Instrument integration: autopilot automatically adjust the amount helm based on vessel speed
- Handheld remote controls and multi station control head option



AutoTack: Tack the boat through a user-programmable turn. Perfect for when sailing with a shorthanded crew



Auto Speed Gain: Adjusts the amount of helm applied at different boat speeds for a smooth safe ride.



Wind Trim: Fully adjustable (up to 9 levels) and the ability to select true/apparent wind to steer.



AutoSeastate and AutoTrim: Automatically adjusts for wind and sea conditions to hold the best course.



Course Memory: After a manual course change to avoid an obstruction, simply press Auto for one second to return to your previous course.



Vane Mode: Utilizing wind information from SeaTalk wind instruments SmartPilot steers to wind angle and sets the boat up so that the sails are at full trim (balanced).



Clear Displays: Easy-to-Read and informative LCD displays with rudder angle indicator and SeaTalk data repeating capabilities



“Thanks to Raymarine, the Southern Ocean just got easier”



Brad Van Liew, winner Class 2 in the Around Alone race, praising the superb performance of his Raymarine autopilot.

“I can't say enough about the reliability and performance of my Raymarine electronics. All the way around the world the navigation and radar systems, instruments and autopilot, have been a decided advantage. On board *Tommy Hilfiger Freedom America*, the Raymarine autopilot with its superior software steered as well as a seasoned professional.”

Brad Van Liew, winner Class 2 in the Around Alone race and fastest Open 50 24hr distance record holder.

SmartPilot Control Heads



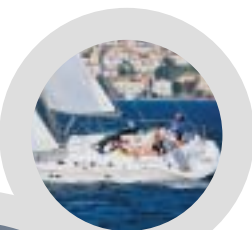
An extra crew member at your command, SmartPilot autopilot control heads offer advanced features and intuitive operation. Each SmartPilot control head offers the same level of performance when matched with a SmartPilot corepack. Choose the SmartPilot control head that best suits your needs.

RAYMARINE SMARTPILOT™

CONTROL HEAD FEATURES

- High contrast easy-to-read displays
- Rugged waterproof enclosures
- Easy installation with single SeaTalk® cable between the control head and SmartPilot course computer
- Easy addition of multiple remote ST6001, ST7001 and ST8001 control heads or multiple ST600R handheld remote
- SeaTalk networking and NMEA 0183 compatibility via SmartPilot course computer
- Customizable navigation and instrument repeater data pages

Whatever your boating passion, Raymarine has a SmartPilot solution for you.



ST6001



The ST6001 has become the benchmark for autopilot performance and styling, installed aboard more sail and motor yachts than any other inboard pilot. Perfect where space is limited, its clear LCD display with up to seven SeaTalk data pages allows you to monitor important navigational data.

ST6001 FEATURES

- Compact and stylish control head matches Raymarine ST60 Instruments easy-to-read high contrast 3" LCD display
- Simple setup and calibration with AutoLearn when used with G series corepacks
- A versatile data repeater with seven configurable instrument/navigation data pages
- Intuitive Autohelm® pilot controls
- Rudder angle indicator
- Programmable AutoTack control
- Available in surface mount (standard) or optional flush mount configurations
- Compatible with all SmartPilot corepacks and drive units
- Available in convenient preconfigured complete SmartPilot System Packs (with corepack and drive unit) for Sail and Powerboat applications

ST7001



A powerful and versatile extra large control unit, the ST7001 is really simple to use. Its large informative display and intuitive keypad give you quick and easy access to all pilot data, as well as up to 15 pages of selectable instrument or navigation data pages. Ideal for longer passages, the response function controls how the pilot helps the boat, ensuring the most comfortable ride at all times while keeping you right on course.

ST7001 FEATURES

- Large 4" crisp LCD display with easy-to-read rudder angle indicator
- Simple setup and calibration with AutoLearn when used with G series corepacks
- A versatile data repeater with 15 configurable instrument/navigation data pages
- Remote ST60 instrument control feature allows control of ST60 instrument displays from the ST7001 keypad
- Programmable AutoTack control
- Intuitive keypad and the proven Autohelm button control
- Compatible with all SmartPilot corepacks and drive units
- Dedicated controls for response, resume and set course



Integrates with Raymarine SeaTalk instruments with configurable data displays and GPS data.

ST8001

NEW



Simply dial in your destination and press auto; the all-new ST8001 puts total helm control at your fingertips with an easy-to-use rotary control for precision course changes and convenient power steering control. The oversized LCD display delivers large high contrast characters of pilot status, compass heading and user defined data pages, transforming the ST8001 into a versatile navigation instrument repeater display.

ST8001 FEATURES

- Large 4" high contrast LCD display with easy-to-read rudder angle indicator
- Simple setup and calibration with AutoLearn when used with G series corepacks
- A versatile data repeater with 15 configurable instrument/navigation data pages
- Programmable AutoTack control
- Available in convenient preconfigured complete SmartPilot System Packs (with corepack and drive unit) for Sail and Powerboat applications
- Compatible with all SmartPilot corepacks and drive units

ST600R HANDHELD REMOTE



More than just a handheld remote the innovative ST600R combines full autopilot control with an extensive navigation and instrument repeater display. The ST600R is comprehensively equipped with the proven Autohelm 6 button control system and easy-to-use chapter and page keys for accessing autopilot, instrument and navigation data. For added convenience, additional deck sockets can be added at any point through out the boat for easy plug-in remote autopilot control.

ST600R FEATURES

- Compact ergonomic design
- Rugged fixed mount cradle
- Easy-to-read high contrast backlit LCD display
- A versatile data repeater with 21 configurable instrument/navigation data pages
- Intuitive Autohelm® pilot controls
- Rudder angle indicator
- Programmable AutoTack control
- SeaTalk networking enables easy addition of multiple ST600R handheld remote

JOYSTICK

NEW



Use the fast response joystick for power-assisted manual steering – it adjusts the rudder angle using the autopilot course computer and drive unit.

JOYSTICK FEATURES

- SeaTalk compatible
- Multiple joysticks can be add for upper and lower stations



ST290 INSTRUMENT AUTOPILOT CONTROL OPTION

The next chapter in on board instrumentation, the ST290 instrument system takes autopilot integration to a new level. Combine a ST290 autopilot keypad with a multifunction ST290 Graphic display for complete SmartPilot control and functionality. The powerful ST290 Graphic serves as a dedicated autopilot display or it can be customized to display an extensive array of instrument and navigation data. An intelligent autopilot "pop up" feature activates whenever an autopilot control is activated to keep you informed. Go to www.raymarine.com to learn more about Raymarine's complete line of high performance ST290 instruments systems.



SmartPilot Technology



More powerful and rugged than ever before, Raymarine SmartPilot Series course computers serve as the central intelligence hub of our inboard pilot systems.

With a SmartPilot you can...



Maintain a razor sharp course with smooth, crisp and controlled turns right onto your next heading with Advanced Steering Technology (AST)* software and the new G-series course computers.



Stay right on course when the going gets tough – use Fastrim AST to correct any changes in standing helm to keep the vessel on course (i.e. weather helm or loss of one engine).

Control the way the pilot steers your boat using Sensitive Response AST* for the most comfortable ride or to conserve power on long sail passages.



Make cross track error a thing of the past – use your inboard pilot with a Raymarine GPS to track straight to your next waypoint.



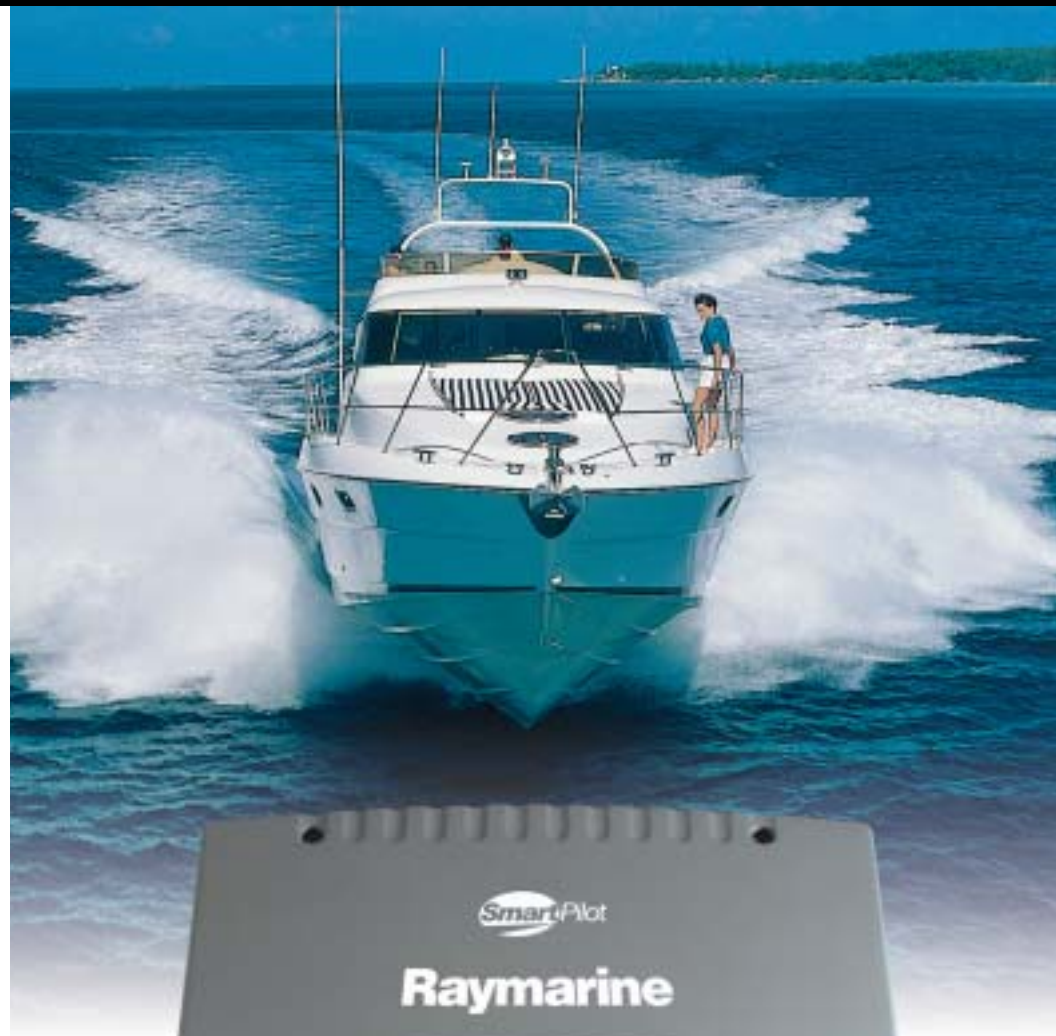
Set your pilot up for optimum performance using the intelligent AutoLearn* and AST* software that automatically learns your boat's handling characteristics.

Rate Gyro stabilized heading output for MARPA and Radar/Chart Overlay*.



G-series course computers also provide accurate and stable heading data for MARPA and chart overlay functions on Raymarine's Pathfinder radars and chartplotters.

*G Series Course computers only



A course computer installed "out of sight" behind a bulkhead.

COURSE COMPUTER FEATURES

- Complete all-in-one autopilot options
- Patented external fluxgate compass for optimum performance and course keeping accuracy
- SeaTalk networking
- Simple installation – affixes with two screws
- Connects to ST6001/7001/8001 control heads and ST600R remote
- Easy access enclosure
- Speed connectors for wiring
- Gyro option
- Current limiting protection



Corepacks

The central nervous system of every SmartPilot system Raymarine Corepacks are comprised of a course computer, patented fluxgate electronic compass and rudder reference unit.

RATE GYRO ENHANCED SMARTPILOTS WITH AST



SmartPilot corepacks with built in rate gyro bring autopilot performance to a new level. The rate gyro enables Raymarine's AST (Advanced Steering Technology) software to intelligently monitor the pitch and roll of the vessel and actually anticipates course changes. A specially developed course control algorithm then delivers razor sharp course keeping without instability or overshoot. This gyro enhanced autopilot performance and advanced software is especially valuable in difficult steering situations, such as downwind with a following sea. Raymarine's AST software also enables rate gyro equipped SmartPilots to "AutoLearn" the vessels steering characteristics, simplifying calibration and allowing the autopilot to constantly "adapt" to changing sea conditions.

S1 & S1G COREPACK

NEW



S1 & S1G FEATURES

- 12 Volt "mini" course computer designed for use with Type 1 Drives
- 6 Amp (15 Amp peak) motor drive output
- Recommended for mechanically steered vessels under 20,000 lbs (9000 Kg)
- Recommended for hydraulically steered vessels with cylinder ram sized 4.9in³– 10.5in³ (80cc – 172cc)

S2 & S2G COREPACK



S2 & S2G FEATURES

- 12 volt Course Computer designed for Type 1 Drive units
- 15 Amp (20 Amp peak) motor drive output
- Recommended for mechanically steered vessels under 24,000 lbs (11,000 Kg)
- Recommended for hydraulically steered vessels with cylinder ram sized 4.9in³ to 14in³ (80cc – 230cc)

S3 & S3G COREPACK



S3 & S3G FEATURES

- 12 and 24 volt Course Computer designed for Type 1,2 and 3 Drive units
- 30 Amp (40 Amp peak) motor drive output
- Recommended for mechanically steered vessels under 77,000 lb (35,000 kg)
- Recommended for hydraulically steered vessels with cylinder ram sized 14in³ to 30.5in³ (350cc – 500cc)
- Compatible with Raymarine constant running hydraulic pumps and hydraulic linear drive systems

NEW S1 SMARTPILOT SYSTEM PACKS

Designed for medium-sized power and sailboats, SmartPilot Systems Packs are complete autopilot systems in one box. Each system consists of a S1 or S1G corepack, ST6001 or ST8001 control, and Type 1 drive unit.

SmartPilot System Packs are available for powerboats in hydraulic or outboard configurations and for Sailboats with a mechanical linear drive.

See Page 13 for a complete list of SmartPilot system packs

NEW



Choosing a Raymarine SmartPilot System

Overview.

Next to choosing the boat itself, choosing the right autopilot can be one of the most important decisions a captain has to make. With a vast array of autopilot models and configurations to choose from, selecting the right autopilot can seem like a daunting task. The following pages are designed to assist you in selecting the right Raymarine SmartPilot system for your boat. A SmartPilot system is a combination of Autopilot Control Head, Corepack and Drive Unit. Here is a brief explanation of each component and the necessary steps for choosing the right SmartPilot for your boat.

Control Head

The control head is your interface to the autopilot system.

Raymarine control heads are available in several different configurations of display size and type. Multiple control heads can be used with any Raymarine autopilot system for dual or multi station installations. In addition, full function handheld remotes and joystick controls are available as options.



Corepack

The central intelligence hub of the autopilot system, Raymarine SmartPilot corepacks consist of a course computer, fluxgate compass, and rudder reference sensor. Corepacks are available in three different levels of performance, S1, S2 or S3, depending on the type drive and vessel size. Each Corepack is also available in a "G" version with a built in Rate Gyro for improved performance through Raymarine's AST (Advanced Steering Technology).



Fluxgate compass



Rudder reference sensor



Course computer

Raymarine SmartPilot corepacks consist of a course computer, fluxgate compass, and rudder reference sensor.

Drive Unit

Under the control of the course computer Raymarine autopilot drive units interface with your vessels steering system for reliable and straight course keeping. A broad range of drive units is available to match almost any type of steering system.

Hydraulic Drive



Linear Drive



Rotary Drive



STEP 1. DRIVE UNIT SELECTION

Know Your Boat and Your Steering System.

The first step in selecting an autopilot from Raymarine is choosing the proper autopilot drive unit for your vessel. Raymarine autopilot drive units are available in array of sizes and configurations to accommodate various steering system types and vessel displacements. To properly select an autopilot you will need to find out what type of steering system is installed. This may involve opening a few hatches and taking a peak at the gear, or this can be a simple as consulting your boat dealer or boat manufacturer.

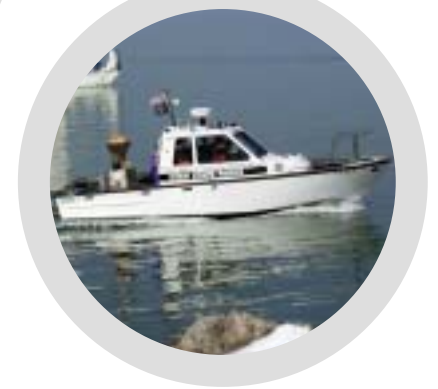
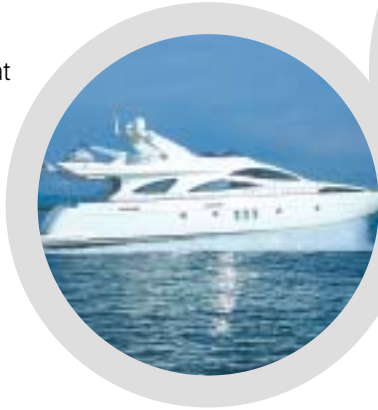
Raymarine SmartPilot systems accommodate both hydraulic, mechanical, and power assisted stern drive steering systems. If you are not sure how to determine what type of steering system is installed on your vessel consult an authorized Raymarine dealer. Raymarine dealers are well skilled and factory trained to evaluate and assist you in selecting the right Raymarine autopilot for your boat.



Hydraulic Steering Systems.

Raymarine SmartPilots connect to hydraulic steering systems using a rugged hydraulic pump that is matched to the capacity of the hydraulic steering system. To match a Raymarine SmartPilot hydraulic pump to your vessel you need to learn the size (in cubic inches) of the actual hydraulic cylinder ram or rams that are mounted to the rudder on inboard engine boats or the ram mounted to the drive on outboard engine boats. Your steering system documentation will have this information. Alternatively you can look on the actual cylinder ram itself for the brand and model number. Once you have learned the model number of your cylinder ram(s) visit our website www.raymarine.com and access our hydraulic cylinder ram cross-reference guide to learn which hydraulic autopilot pump is compatible with your hydraulic steering system.

Raymarine autopilot hydraulic pumps are available in several sizes to accommodate a broad range of steering cylinder capacities. The table below illustrates the capacity of each type of Raymarine hydraulic autopilot pump when used with the corresponding SmartPilot corepack.



Hydraulic Steering

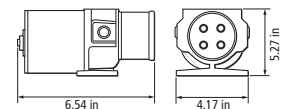
SMARTPILOT HYDRAULIC DRIVE SELECTION CHART

Drive Type	Type 1	Type 1	Type 2	Type 3
Vessel Displacement	<i>Does not apply here. The drive unit is matched to the ram capacity of the steering system</i>			
Ram Capacity	4.9in ³ – 10.5in ³ (80cc – 172cc)	4.9in ³ – 14in ³ (80cc – 230cc)	14in ³ – 21in ³ (230cc – 350cc)	21in ³ – 30.5in ³ (350cc – 500cc)
Maximum Stall Pressure at 12V	750psi (50bar)	750psi (50bar)	1450psi (100bar)	1160psi (80bar)
Peak Flow Rate (no load)	67in ³ /min (1000cc/min)	67in ³ /min (1000cc/min)	122in ³ /min (2000cc/min)	175in ³ /min (2900cc/min)
Corepack Used	S1 or S1G	S2 or S2G	S3 or S3G	S3 or S3G
Part Number	<input type="checkbox"/> M81120 (12 V)	<input type="checkbox"/> M81120 (12 V) <input type="checkbox"/> M81119 (24 V)	<input type="checkbox"/> M81121 (12 V) <input type="checkbox"/> M81123 (24 V)	<input type="checkbox"/> M81122 (12 V) <input type="checkbox"/> M81124 (24 V)

- In some systems with dual steering rams, cylinder capacity is total of the two rams. Visit www.raymarine.com to learn more about selecting a hydraulic drive for dual steering ram systems.
- Vessels with outboard engines require an optional Linear Rudder feedback (Model number M81188)
- Hydraulic steering systems with steering rams over 30.5in³ require our larger constant running hydraulic pumps used in conjunction with S3 or S3G corepacks. Visit www.raymarine.com for more on selecting a constant running hydraulic pump.
- Vessels with 24-volt DC power must use the S3 or S3G corepack and 24-volt drive.
- An authorized Raymarine Dealer is best suited for installing a hydraulic autopilot system.

SMARTPILOT TECH TIP

Raymarine recommends that you consult a Raymarine approved dealer who can specify, install and commission the correct Raymarine system for your boat. Visit our website www.raymarine.com to locate an authorized Raymarine dealer.



TYPE 1, 2 AND 3 HYDRAULIC PUMP DIMENSIONS

Choosing a Raymarine SmartPilot System



Linear Drive

Mechanical Steering Systems

When selecting an autopilot drive unit for a mechanical steering system, the vessel displacement is the determining factor for selecting the properly sized drive. **When determining your vessel displacement always add 20% to the dry weight of your vessel to account for the added weight of fuel, gear provisions and people.** Next select the type of autopilot drive that is right for your mechanical steering system. Raymarine SmartPilot drive units for mechanical steering systems are available in linear, hydraulic linear and rotary drive configurations. Below are descriptions of each type of mechanical steering drive.

Mechanical Steering

MECHANICAL LINEAR DRIVES

Our most common drive types for sailing vessels, Raymarine mechanical linear drives provide powerful thrust, fast hard over times and quiet operation. Mounted below decks, the linear drive moves the rudder directly by pushing the tiller arm or a rudder quadrant.

SMARTPILOT LINEAR DRIVE SELECTION CHART

Drive Type	Type 1	Type 1	Type 2 short	Type 2 long
Maximum boat displacement	20,000 lb (9,000 kg)	24,000 lb (11,000 kg)	33,000 lb (15,000 kg)	44,000 lb (20,000 kg)
Corepack Used	S1/S1G	S2/S2G	S3/S3G	S3/S3G
Peak thrust	295 kg (650 lb)	295 kg (650 lb)	480 kg (1,050 lb)	480 kg (1,050 lb)
Maximum stroke	12 in (300 mm)	12 in (300 mm)	12 in (300 mm)	16 in (400 mm)
Hard over to hard over time (+/- 35°, no load)	11 sec	11 sec	11 sec	14 sec
Maximum rudder torque	6,500 lb.in 735 Nm	6,500 lb.in 735 Nm	10,500 lb.in 1,190 Nm	14,700 lb.in 1,660 Nm
Power consumption	18-36 W	18-36 W	48-72 W	48-72 W
Part Number	<input type="checkbox"/> M81130	<input type="checkbox"/> M81130	<input type="checkbox"/> M81131 (12 V) <input type="checkbox"/> M81133 (24 V)	<input type="checkbox"/> M81132 (12 V) <input type="checkbox"/> M81134 (24 V)

- The linear drive unit connects to the rudder stock via an independent tiller arm. Accessory fittings from your steering system manufacturer may be required
- Vessels with 24 Volt DC power must use the S3 or S3G corepack and a 24-volt drive.
- An authorized Raymarine Dealer is best suited for installing a linear drive system



Hydraulic Linear Drive



Mechanical Steering

HYDRAULIC LINEAR DRIVES

Designed for larger mechanically steered vessels, our hydraulic linear drives are self-contained hydraulic steering systems consisting of reversing pump, reservoir and hydraulic ram.

- An hydraulic linear drive unit connects to the rudder stock via independent tiller arm. Accessory fittings from your steering system manufacturer may be required
- Vessels with 24-volt DC power must use the S3 or S3G corepack and a 24-volt drive.
- An authorized Raymarine dealer is best suited for installing a linear drive system

SMARTPILOT LINEAR DRIVE SELECTION CHART

Drive Type	Type 2	Type 3
Maximum boat displacement	48,500 lb (22,000 kg)	77,000 lb (35,000 kg)
Corepack Type	S3 or S3G	S3 or S3G
Peak thrust	1,290 lb (585 kg)	2,200 lb (1,000 kg)
Maximum stroke	10 in (254 mm)	12 in (300 mm)
Hard over to hard over time (+/- 35°, no load)	10 sec	12 sec
Maximum rudder torque	11,300 lb.in (1,270 Nm)	23,100 lb.in (2,565 Nm)
Part Number	<input type="checkbox"/> M81200 (12 Volts) <input type="checkbox"/> M81201 (24 Volts)	<input type="checkbox"/> M81202 (12 Volts) <input type="checkbox"/> M81204 (24 Volts)



Rotary Drive

Mechanical Steering

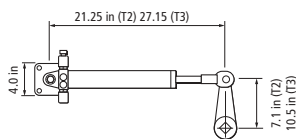
MECHANICAL ROTARY DRIVES

The rotary drive is designed for power and sailboat steering systems that can be driven from the helm position through a chain and sprocket (for example: cable and rod steering systems). The outstanding design of the Raymarine rotary drive unit provides smooth, powerful autopilot-controlled steering with quiet operation. Use the table below to select a rotary drive suitable for your vessel displacement.

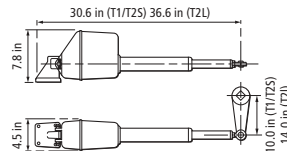
SMARTPILOT ROTARY DRIVE SELECTION CHART

Drive Type	Type 1 Rotary Drive	Type 1 Rotary Drive	Type 2 Rotary Drive
Vessel Displacement	20,000 lb (9,000 kg)	24,000 lb (11,000 kg)	44,000 lb (20,000kg)
Corepack Type	S1 or S1G	S2 or S2G	S3 or S3G
Peak Output Torque	180 lb.in (20 Nm)	180 lb.in (20 Nm)	300 lb.in (34 Nm)
Max Shaft Speed	33 rpm	33 rpm	33rpm
Recommended hard over time (no load)	10 seconds	10 seconds	10 seconds
Power Consumption	24-48 Watts	24-48 Watts	60-84 Watts
Part Number	<input type="checkbox"/> M81135	<input type="checkbox"/> M81135	<input type="checkbox"/> M81136 (12 V) <input type="checkbox"/> M81137 (24 V)

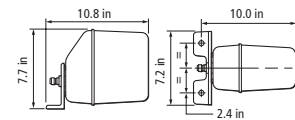
- Optional drive sprockets and modification to the steering chain may be required
- Vessels with 24-volt DC power must use the S3 or S3G corepack and a 24-volt drive.
- An authorized Raymarine Dealer is best suited for installing a rotary drive system.



TYPE 2 AND 3 HYDRAULIC LINEAR DIMENSIONS



TYPE 1 AND 2 LINEAR DRIVE DIMENSIONS



TYPE 1 AND 2 ROTARY DRIVE DIMENSIONS

Stern Drive Units

Boats equipped with inboard/outboard engines and power assisted cable steering can take advantage of our universal I/O drive unit. This innovative electromechanical drive unit operates the power steering valve in the same way as the steering cable.

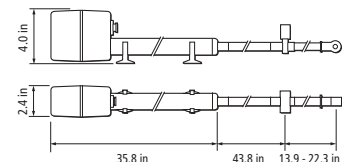


Stern Drive Steering

SMARTPILOT UNIVERSAL STERN DRIVE SELECTION CHART

Type	Universal I/O drive
Vessel Displacement	Does not apply
Corepack Type	S1 or S1G
Drive method	Electromechanical
Maximum thrust	50 kg (110 lb)
Maximum stroke	214 mm (8.3 in)
Hard over to hard over time	8.8 sec
Part Number	<input type="checkbox"/> E12026

- Always verify compatibility before installing a drive unit by consulting with an authorized Raymarine dealer or Raymarine's Customer Support Team
- This drive is not compatible with 1997 or later Mercruiser power assist Inboard/Outboard drives
- Cable steering systems using non feedback helms are not compatible with this drive
- Additional stern drive units are available for specific engine configurations. Visit our website www.raymarine.com to learn more.



UNIVERSAL STERNDRIVE DIMENSIONS

Choosing a Raymarine SmartPilot System

STEP 2. SELECT A COREPACK

Once you have determined the appropriate Drive Unit the next step is to select a SmartPilot Corepack. Corepacks, contain the SmartPilot course computers which are available in either standard configuration or "G" versions, with built in Rate Gyro sensor and Raymarine AST (Advanced Steering Technology). SmartPilot Corepacks are available in three levels (S1, S2 and S3) of performance. Based on the type of drive unit use the chart below to select the appropriately rated SmartPilot Corepack.



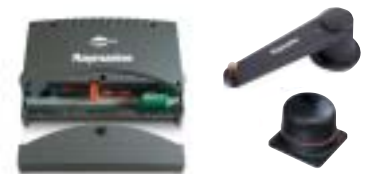
NEW



S1 & S1G Corepack



S2 & S2G Corepack

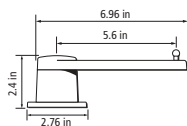


S3 & S3G Corepack

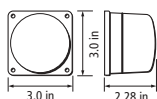
Corepacks

SMARTPILOT COREPACK SELECTION CHART

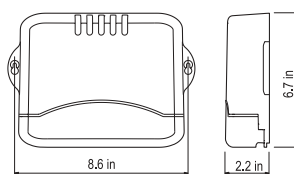
Core Packs	S1	S1G	S2	S2G	S3	S3G
Compatible Drive Types	Type 1	Type 1	Type 1	Type 1	Type 1,2 and 3	Type 1, 2 and 3
Supply voltage	12v	12v	12v	12v	12/24v	12/24v
Motor drive Current – continuous (peak)	6 amps (15 amps peak)	6 amps (15 amps peak)	15 amps (20 amps peak)	15 amps (20 amps peak)	30 amps (40 amps peak)	30 amps (40 amps peak)
Clutch current – Amps	2 amps	2 amps	5 amps	5 amps	5 amps	5 amps
Solenoid drive interface	No	No	No	No	Yes	Yes
Built In Rate Gyro	Upgradeable	Standard	Upgradeable	Standard	Upgradeable	Standard
AST with AutoLearn (Advanced Steering Technology)	Upgradeable	Standard	Upgradeable	Standard	Upgradeable	Standard
Fast Gyro Stabilized heading output for MARPA and radar/ chart overlay on Raymarine Radars	Upgradeable	5Hz	Upgradeable	10Hz	Upgradeable	10Hz
Part Number	<input type="checkbox"/> E12114	<input type="checkbox"/> E12115	<input type="checkbox"/> E12054	<input type="checkbox"/> E12091	<input type="checkbox"/> E12055	<input type="checkbox"/> E12092



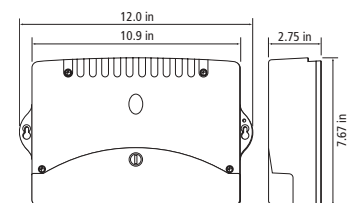
RUDDER REFERENCE DIMENSIONS



FLUXGAGE COMPASS DIMENSIONS



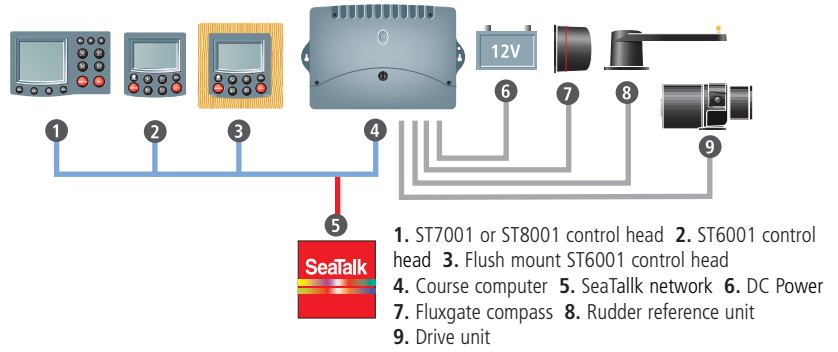
S1 AND S1G COURSE COMPUTERS DIMENSIONS



S2, S2G, S3 AND S3G COURSE COMPUTERS DIMENSIONS

STEP 3. SELECT A CONTROL HEAD

The final step, in the building a Raymarine SmartPilot system is selecting an autopilot control head. Here the decision is a matter of personal choice, since each fixed mount SmartPilot control head will offer the same level of autopilot performance. Adding additional control heads is easy thanks to Raymarine's SeaTalk networking.



- 1. ST7001 or ST8001 control head
- 2. ST6001 control head
- 3. Flush mount ST6001 control head
- 4. Course computer
- 5. SeaTalk network
- 6. DC Power
- 7. Fluxgate compass
- 8. Rudder reference unit
- 9. Drive unit

SmartPilot Control Heads and Remote...



ST6001



ST7001



ST8001



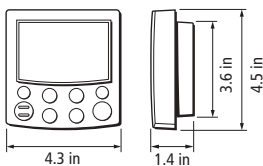
ST600R

Control Heads

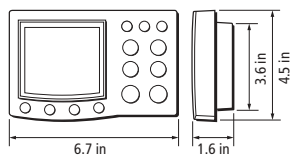
SMARTPILOT CONTROL HEAD SELECTION CHART

Control Head	ST6001	ST7001	ST8001	ST600R
Control Type	Push Button	Push Button	Rotary Knob	Push Button
LCD size	3" (81mm)	4" (98mm)	4" (98mm)	2" (51mm)
Customizable SeaTalk data pages for repeating instrument and GPS data	7	15	15	21
Power steer mode			•	
AST and AutoLearn (with G Type Corepack)	•	•	•	
Optional second or multi station control heads	•	•	•	•
Mounting	Flush or Surface options	Surface	Surface	Handheld with mounting cradle
Part Number	<input type="checkbox"/> E12098 (surface mount) <input type="checkbox"/> E12100 (flush mount)	<input type="checkbox"/> E12099	<input type="checkbox"/> E12119	<input type="checkbox"/> A12016

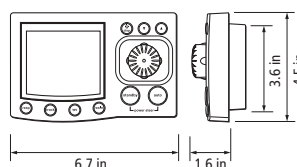
• When choosing a G series corepack a ST6001, ST7001 or ST8001 must be used for complete AST functionality and calibration.



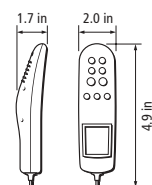
ST6001 PLUS CONTROL DIMENSIONS



ST7001 PLUS CONTROL UNIT DIMENSIONS



ST8001 PLUS CONTROL UNIT DIMENSIONS



ST600R REMOTE CONTROL DIMENSIONS

NEW SmartPilot S1 System Packs

All in one box SmartPilot S1 solutions.
Each kit is complete with S1 or S1G corepack, ST6001 or ST8001 control head and drive unit.



Inboard Hydraulic

S1 INBOARD HYDRAULIC SYSTEMS

For hydraulic steering systems with cylinder ram capacities between 4.9in ³ – 10.5in ³ (80cc – 172cc)	Part Number
S1 Hydraulic type 1 inboard (rotary rudder feedback unit) with ST6001 control head	<input type="checkbox"/> E12106
S1G Hydraulic type 1 inboard (rotary rudder feedback unit) with ST6001 control head	<input type="checkbox"/> E12120
S1 Hydraulic type 1 inboard (rotary rudder feedback unit) with ST8001 control head	<input type="checkbox"/> E12116
S1G Hydraulic type 1 inboard (rotary rudder feedback unit) with ST8001 control head	<input type="checkbox"/> E12121



ST6001 or ST8001 Displays



S1 or S1G Course Computer



Fluxgate compass, Hydraulic Drive and Rudder Reference

Outboard Hydraulic

S1 OUTBOARD HYDRAULIC SYSTEMS

For hydraulic steering systems with cylinder ram capacities between 4.9in ³ – 10.5in ³ (80cc – 172cc)	Part Number
S1 Hydraulic type 1 outboard (linear rudder feedback unit) with ST6001 control head	<input type="checkbox"/> E12107
S1G Hydraulic type 1 outboard (linear rudder feedback unit) with ST6001 control head	<input type="checkbox"/> E12122
S1 Hydraulic type 1 outboard (linear rudder feedback unit) with ST8001 control head	<input type="checkbox"/> E12117
S1G Hydraulic type 1 outboard (linear rudder feedback unit) with ST8001 control head	<input type="checkbox"/> E12123



ST6001 or ST8001 Displays



S1 or S1G Course Computer



Linear rudder feedback unit, Fluxgate compass and Hydraulic Drive

Mechanical Linear

S1 SAILPILOT MECHANICAL LINEAR DRIVE SYSTEMS

For use with mechanically steered vessels under 20,000 lbs (9000 kg)	Part Number
S1 Linear drive with ST8001 control head	<input type="checkbox"/> E12118
S1G Linear drive with ST8001 control head	<input type="checkbox"/> E12125
S1 Linear drive with ST6001 control head	<input type="checkbox"/> E12108
S1G Linear drive with ST6001 control head	<input type="checkbox"/> E12124



ST6001 or ST8001 Displays



S1 or S1G Course Computer



Fluxgate compass, Linear Drive and Rudder Reference

SmartPilot Accessories

Accessories

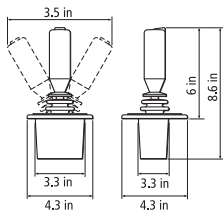
NEW

ACCESSORIES SELECTION CHART

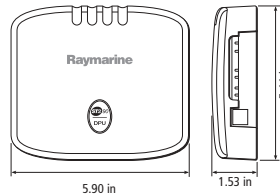
					
Joystick Control	4 Button SeaTalk Remote	Rate Gyro Upgrade	ST60 Rudder Angler Indicator**	ST60 Compass Display	
SeaTalk compatible power steering joystick control	Remote "dodger" with 1 and 10 degree course change controls	Adds Rate Gyro and AST technology to non "G" course computers*	SeaTalk compatible analog rudder repeater	SeaTalk compatible analog compass repeater	
Part Number	<input type="checkbox"/> E12136	<input type="checkbox"/> A15002	<input type="checkbox"/> E12101	<input type="checkbox"/> A22008	<input type="checkbox"/> A22007

*Requires ST6001, ST7001 or ST8001 control head for complete AST functionality

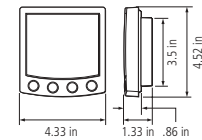
**ST60 rudder shown with optional flush mount kit.



JOYSTICK DIMENSIONS



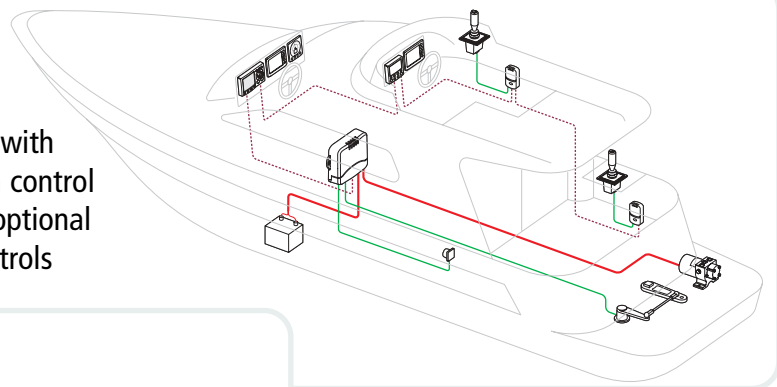
SMART HEADING SENSOR DIMENSIONS



ST60 COMPASS AND RUDDER DISPLAY HEAD DIMENSIONS

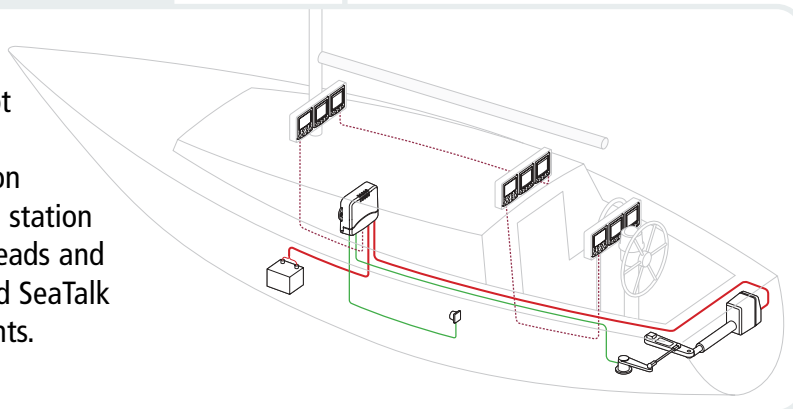
POWER INSTALLATION

Typical SmartPilot Powerboat installation with dual station control heads and optional joystick controls



SAIL INSTALLATION

Typical SmartPilot Sailboat installation with dual station control heads and integrated SeaTalk instruments.



About Raymarine

Raymarine, the world leader in marine electronics is dedicated to the design and manufacture of the most comprehensive range of electronic equipment for the recreational boating and light commercial marine markets. Designed for high performance and ease of use, our award-winning products are available through our global network of dealers and distributors.

For more information about Raymarine call 1-800-539-5539 or visit www.raymarine.com.

Raymarine®



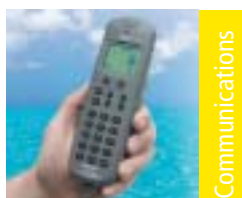
Instruments

Raymarine instruments are the preferred choice for cruisers and racers worldwide



Radar

Award-winning Pathfinder radars combine unparalleled performance with advanced integration



Communications

State-of-the-art VHF radiotelephones with DSC



Autopilots

Proven Autohelm® series autopilots for cruising, racing and fishing



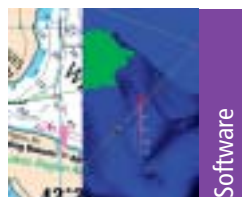
Nav aids

Navigation Aids, Satellite Differential WAAS GPS and easy-to-use Raycharts to guide you home



Fishfinders

Advanced echo sounders for the serious fisherman



Software

Software to transform your PC into an integrated navigation station



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