

AUTOPILOT

Autopilot System Guide



New



NEW SMARTPILOT X-SERIES COURSE COMPUTERS

Our award winning SmartPilot series is now smarter with a whole new range of SmartPilot X-Series course computers and the innovative ST70 color autopilot control head.



COURSE COMPUTER FEATURES

- Built in rate gyro sensor and AST™ (Advanced Steering Technology) adapts to vessel and sea conditions
- AutoLearn calibration
- Raymarine SmartSteer™ technology ensures smooth and accurate helm control at all speeds, including zero speed trolling
- Smart Rudder Sense™ technology eliminates the need for a rudder sensor
- SeaTalk^{ng} compatible for seamless integration with ST70 instruments and NMEA2000 networks
- New one button Dodge mode when used with ST70 autopilot control head
- Improved integration with Raymarine MFD's. Engage the autopilot directly from the chartplotter interface
- Improved hardware with enhanced short circuit protection, reverse polarity protection and new removable connectors
- 12/24 volt capability and improved power efficiency (X-5 is 12 volt only)

NEW ST70 AUTOPILOT CONTROL

Designed for the SmartPilot X-Series, the ST70 autopilot control head takes full advantage of the SmartPilot X-Series capabilities and performance.



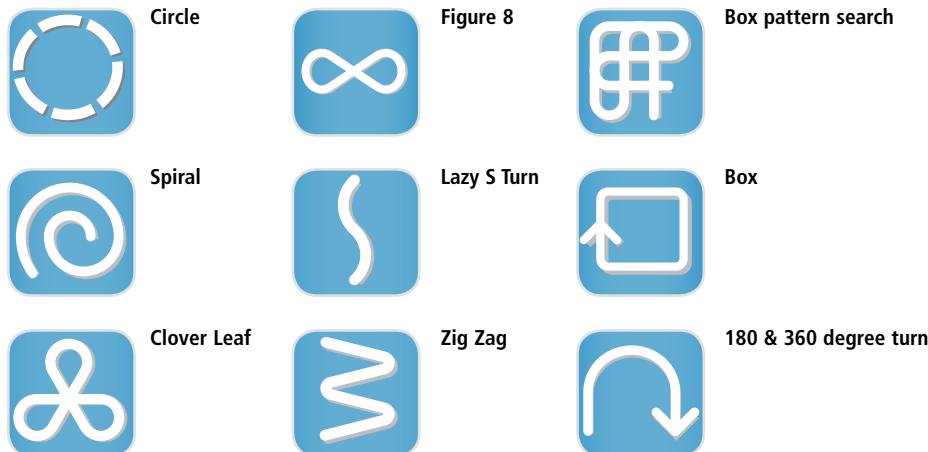
ST70 FEATURES

- 3.5" Sunlight viewable color display
- Simple start-up wizard quickly configures the autopilot
- New SeaTalk^{ng} data bus interface with NMEA2000 interface capability
- Use as a primary control head for SmartPilot X-Series course computers or as a repeater for legacy SeaTalk autopilot systems
- Digital display, compass rose or 3D isometric screens
- Intuitive icons and menus simplify set-up and calibration
- Surface or flush mount
- Can be used as a master display or a color repeater to an existing system
- Intuitive dodge function – when connected to an SmartPilot X-Series course computer
- Extensive automatic fishing patterns steering– when combined with a SPX (SmartPilot X-Series) course computer

NEW AUTOMATIC FISHING PATTERNS

SmartPilot X-Series course computers and the ST70 autopilot control head give fisherman the edge with pre-programmed automatic fishing patterns. Automatically steer an orbit around your favorite hot spot or use the Cloverleaf mode to make repeated passes over specific location. Zig Zag mode automatically creates random course changes to make bait more realistic and tempting.

Available Fishing Patterns (when used with ST70) include:



SMARTPILOT X-SERIES TECHNOLOGY



Advanced Networking

All Raymarine SmartPilot systems support standard NMEA 0183 and SeaTalk interfaces. In addition ST70 and X-Series course computers utilize Raymarine's CAN based SeaTalk^{ng} data bus technology. SeaTalk^{ng} is a super fast data network that features rugged color coded connectors and cables for hassle free installation. Plus SeaTalk^{ng} enables seamless integration with NMEA2000 devices and networks.



AutoTack

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



Auto Speed Gain

Adjusts the amount of helm applied at different boat speeds for a smooth safe ride



AutoSeastate and AutoTrim

Automatically adjusts for wind and sea conditions to hold the best course



Dodge

A single press the Dodge key facilitates manual course changes with options to resume the current track or start a new 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)



Wind Trim

9 trim levels filter out unwanted autopilot movement due to wind gusts, conserving power while maintaining a straighter track



AutoLearn

AST technology and SPX course computers enable SmartPilot to AutoLearn your vessel's steering characteristics, simplifying calibration and allowing the autopilot to constantly adapt to changing sea conditions



Smart Rudder Sense™

Smart Rudder Sense technology enables precision steering without the use of a rudder feedback sensor. Ideal for outboard engines and installations that cannot fit a rudder sensor



SMARTPILOT AST™

Advanced Steering Technology

Each SmartPilot X-Series course computer is equipped with a built in rate gyro sensor. The rate gyro enables SmartPilot AST™ software to intelligently monitor vessel yaw and actually anticipates course changes. SmartPilot AST software then produces razor sharp course keeping without overshoot or instability. This added intelligence is valuable in difficult steering situations, such as downwind with a following sea.



INTRODUCTION

From the invention of the tiller pilot over 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.

NEW SMARTPILOT X-5 TILLER PILOT SYSTEMS

The SmartPilot X-5 Tiller or the high performance SmartPilot X-5 Tiller GP feature a remotely mounted course computer, fluxgate compass and ST6002 control head. The GP Tiller drive is used by the world's top single handed race skippers.



SmartPilot X-5 Tiller

- Now equipped with the all new SmartPilot X-5 course computer
- Built-in rate gyro sensor enables Raymarine's AST (Advanced Steering Technology) software to intelligently monitor vessel yaw and actually anticipates course changes.
- AutoLearn simplifies the calibration procedure enabling the SmartPilot X-5 to automatically adjust calibration settings based on the vessels steering characteristics



TILLER PILOTS

Raymarine tiller pilots set the standard for performance, reliability and ease of use. A valuable member of your crew, the ST1000 and ST2000 feature powerful and efficient drives, housed in rugged waterproof enclosures. For larger boats the X-5 Tiller Pilot offers below deck pilot features and performance.



The ST1000 and ST2000 feature a NMEA0183 and SeaTalk interface for GPS waypoint steering

All Raymarine Tiller Pilots Feature:

- Easy-to-use controls
- Backlit LCD confirms current and locked heading plus wind and navigational data when connected to a system
- Autotack
- Auto sea state for efficient, intelligent steering and optimum power conservation
- WindTrim control in WindTrim mode

ORDERING INFORMATION & FIT GUIDE

PART #	DESCRIPTION
A12004	ST1000+ Tiller Pilot, for sailing vessels up to 6,600 lbs (3,000 kg)
A12005	ST2000+ Tiller Pilot, for sailing vessels up to 10,000 lbs (4,500 kg)
E12203	SmartPilot X-5 Tiller for sailing vessels up to 13,000 lbs (6,000 kg) displacement
E12204	SmartPilot X-5 Tiller GP for sailing vessels up to 16,500 lbs (7,500 kg) displacement
E12137	SmartPilot X-5 Tiller Core Pack (Course computer, fluxgate compass and drive unit only - no control head included)
E12138	SmartPilot X-5 Tiller GP Core Pack (Course computer, fluxgate compass and drive unit only - no control head included)

TECH TIP

Remember 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

NEW SMARTPILOT X-5 WHEEL PILOT FOR SAILBOATS

The SmartPilot X-5 Wheel Pilot is the successor to the popular ST4000 and S1 Wheel drive systems. Equipped with the new X-5 course computer this rugged wheel pilot system features Raymarine's Advanced Steering Technology (AST). The SPX-5's integral rate gyro sensor and AST offers smarter performance and enables the SPX-5 to "AutoLearn" the vessel's steering characteristics for improved course keeping and simplified calibration.



Wheel Pilot Features:

- Advanced wheel mounted cockpit autopilot system for sailing vessels
- All new SmartPilot X-5 rate gyro equipped course computer
- Fully enclosed MkII wheel-drive delivers below deck autopilot performance
- Simple clutch engagement mechanism
- Easy-to-install, no rudder reference sensor required
- Available bundled with the ST6002 control head

SmartPilot X-5 Course Computer



Compass

ST6002 Control Head

NEW ST70 CONTROL HEAD OPTION

Combine the SmartPilot X-5 Wheel or Tiller Pilot corepacks (drive, course computer and compass) with your choice of autopilot control heads, including the all new ST70 autopilot control head.

- Intuitive menu and icon driven interface
- 3.5" sunlight viewable color display
- Graphical compass display and unique 3D steering display



ST70 Control Head

ORDERING INFORMATION & FIT GUIDE

PART #	DESCRIPTION
E12201	SmartPilot X-5 Wheel Pilot For wheel steered sailing vessels up to 16,500lbs (7,500kg) displacement.
E12133	SmartPilot X-5 Wheel Corepack (Course computer, fluxgate compass and drive unit only - no control head included)



NEW SMARTPILOT X-5 SPORT

The perfect crew member for power and sport boats, the SmartPilot X-5 Sport is an innovative helm mounted autopilot system that is easy-to-use and easy-to-install. The newly engineered Sportdrive system simply mounts to an existing fixed or tilt steering helm. No cutting hydraulic lines or complicated rudder sensors are required. Behind the scenes the intelligent X-5 course computer provides precise steering, while the proven ST6002 control head offers intuitive autopilot control.

- Helm mounted autopilot system
- Easy-to-install autopilot for power boats typically up to 30' (9m)
- Built-in rate gyro sensor with Raymarine AST (Advanced Steering Technology)
- AutoLearn technology simplifies calibration and enables the autopilot to automatically adapt to changing sea conditions
- Smart Rudder Sense technology eliminates the need for a rudder reference sensor
- SeaTalk®, SeaTalk^{ng}, NMEA 0183 and NMEA2000 compatible

Modular system includes

- X-5 course computer and fluxgate compass
- Sport Drive
- ST6002 control head



ST6002

Fluxgate
Compass

X-5 Course Computer

S1000 WIRELESS AUTOPILOT SYSTEM

No wires, no plugs. The S1000 utilizes the latest in wireless technology for reliable and convenient autopilot control. Everything you need for installation is included in the SmartPilot S1000 box, including fittings, hoses and tools. (For most applications. In some instances, additional fittings, hardware or tools may be required.)



S100 Wireless Control

S1000 Course Computer

S1000 Hydraulic Pump

Key features of the S1000 Autopilot system include:

- Smooth course changes regardless of boat speed
- The anglers' copilot with automatic fishing patterns
- Intuitive, menu driven interface
- No rudder reference is required

Minimum trolling speed 1.5knts

ORDERING INFORMATION

PART #	DESCRIPTION
E12206	SmartPilot X-5 Sport autopilot system
E12132	SportDrive without a control head

FIT GUIDE

Cable steered powerboats with a laden displacement of up to 2,000 kg (4,400 lbs) or powerboats with manual hydraulic and servo hydraulic steered vessels up to 3,500 kg (7,700lbs)

Steering Helm Requirements

2.5 to 5.0 turns lock to lock
15Nm (11 lbs) torque



Sport Drive
(Wheel not included)

ORDERING INFORMATION

PART #	DESCRIPTION
E12169	S1000 Wireless Autopilot System

FIT GUIDE

For hydraulically steered vessels typically up to 25 feet in length. The S1000 is designed for hydraulic steering systems with a capacity of 5 to 8 cubic inches (80 to 130 cubic centimeters). Compatible balanced hydraulic steering systems:

- SeaStar steering systems HC5345, HC5347, HC5348 and HC5358
- Teleflex steering systems with HC4600, HC4645, HC4647, HC4648 and HC4658
- BayStar steering rams
- Hynautic K6 steering rams
- See www.raymarine.com for additional applications

SeaTalk or NMEA0183 GPS input required

SELECTING A BELOW DECK SMARTPILOT SYSTEM

SmartPilot System Overview

		
<p>Control Head</p> <p>Each system requires an ST70 autopilot control head</p>	<p>Corepack</p> <p>The central intelligence hub of every SmartPilot. Each corepack consists of the course computer and fluxgate compass. X-30 and X-SOL models include a rudder reference sensor</p>	<p>Drive Unit</p> <p>A rugged Raymarine drive unit is matched to your specific vessel's requirement.</p>

1 STEP 1: SELECT A DRIVE UNIT

Know your boat and your steering system

The first step in selecting an autopilot from Raymarine is selecting the proper autopilot drive unit for your vessel. Raymarine autopilot drive units are available in an 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 peek at the gear, or this can be as simple as consulting your boat dealer or boat manufacturer.



2 STEP 2: SELECT A COREPACK

Once you have determined the appropriate drive unit the next step is to select the appropriate SmartPilot Corepack. Choose the SmartPilot X-10 for all Type 1 drives, the X-30 for all Type 2 and 3 drives. Choose the SmartPilot X-SOL for constant running hydraulic drives and solenoid based steering systems. The SmartPilot X-CAN is a special corepack for modern Steer-by-wire systems like the Volvo IPS.



3 STEP 3: ADD THE ST70 CONTROL HEAD

The final step in the building a Raymarine SmartPilot X-Series system is choosing the ST70 autopilot control head. Each SmartPilot X-Series system must include at least one ST70 autopilot control head for full functionality



4 STEP 4: SELECT ADDITIONAL CONTROLS

Choose additional control heads or optional wireless autopilot controls. Adding additional control heads is easy thanks to Raymarine's SeaTalk® networking.



Fixed mount



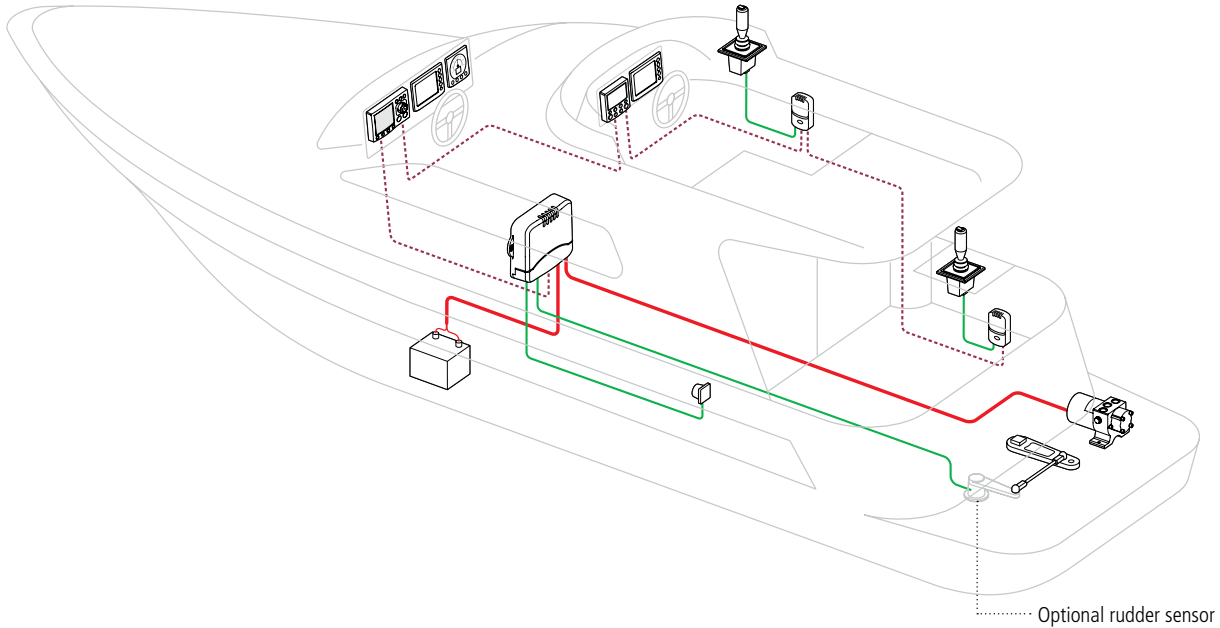
Wireless

TECH TIP

Raymarine SmartPilot systems accommodate 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.

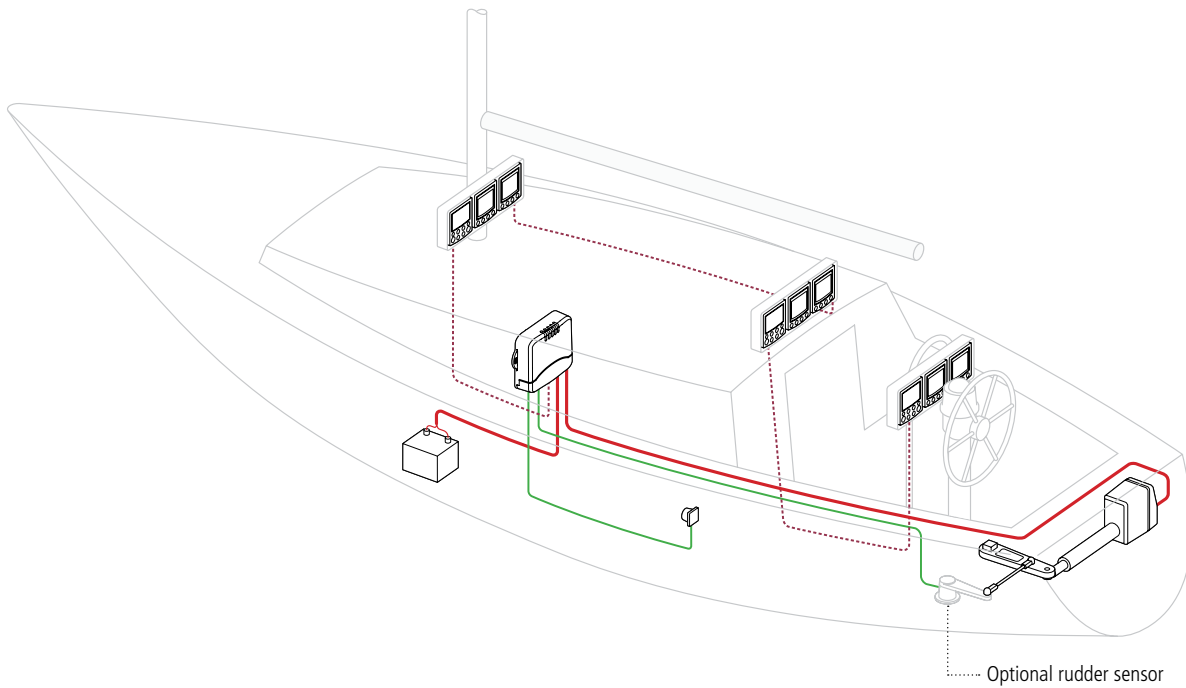
POWER INSTALLATION

Typical SmartPilot Powerboat installation with dual station control heads and optional joystick controls (P/N E12136).



SAIL INSTALLATION

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



SELECTING A DRIVE: HYDRAULIC STEERING SYSTEMS



Raymarine SmartPilots connect to hydraulic steering systems using a rugged hydraulic pump matched to the capacity of the vessel's hydraulic steering system. To properly match a Raymarine hydraulic pump to a specific vessel and steering system, the actual size (in cubic inches) of the hydraulic cylinder ram (or rams) needs to be determined. 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 to access our hydraulic cylinder ram cross-reference guide to learn which Raymarine hydraulic autopilot pump type is compatible with your hydraulic steering system.

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

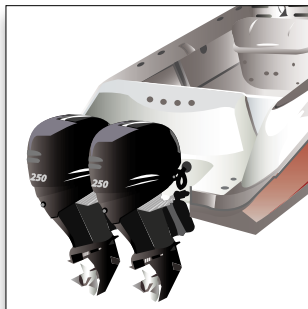
SMARTPILOT HYDRAULIC DRIVE SELECTION CHART

Drive Type	Type 0.5	Type 1	Type 2	Type 3
Ram Capacity	3.1in ³ - 6.7in ³ (50-110cc)	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	50 bar	750psi (50bar)	1450psi (100bar)	1160psi (80bar)
Peak Flow Rate (no load)	39in ³ (650cc/min)	67in ³ /min (1000cc/min)	122in ³ /min (2000cc/min)	175in ³ /min (2900cc/min)
Corepack Used	X-10	X-10	X-30	X-30
Part Number	<input type="checkbox"/> E12139 (12v only) Suitable for Volvo Penta D4 applications	<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.
- Hydraulic steering systems with steering rams over 30.5in³ require our larger constant running hydraulic pumps used in conjunction with our X-SOL corepacks. Visit www.raymarine.com for more on selecting a constant running hydraulic pump.
- A Certified Raymarine Dealer is best suited for installing a hydraulic autopilot system.

MERCURY VERADO SYSTEMS

Choose the SmartPilot X-10 corepack, Type 1 hydraulic drive and the optional Verado hose kit (part # A18127) for vessels equipped with single or twin Mercury Verado outboard engines. Raymarine Smart Rudder Sense technology eliminates the need for a rudder feedback sensor, simplifying the autopilot installation with Verado propulsion systems.



MERCURY VERADO TIPS

For triple or quad Verado engine applications please consult your Certified Raymarine Dealer or visit www.raymarine.com to learn more

SELECTING A DRIVE: MECHANICAL STEERING SYSTEMS



Linear Drive

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 LINEAR DRIVES

Our most common drive type 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 rudder quadrant.

SMARTPILOT LINEAR DRIVE SELECTION CHART

Drive Type	Type 1	Type 2 short	Type 2 long
Maximum boat displacement	24,000 lb (11,000 kg)	33,000 lb (15,000 kg)	44,000 lb (20,000 kg)
Corepack Used	X-10	X-30	X-30
Peak thrust	295 kg (650 lb)	480 kg (1,050 lb)	480 kg (1,050 lb)
Maximum stroke	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	14 sec
Maximum rudder torque	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	48-72 W	48-72 W
Part Number	<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.
- An authorized Raymarine Dealer is best suited for installing a linear drive system.

HYDRAULIC LINEAR DRIVES

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

- A hydraulic linear drive unit connects to the rudder stock via an independent tiller arm. Accessory fittings from your steering system manufacturer may be required
- An authorized Raymarine dealer is best suited for installing a hydraulic linear 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	X-30	X-30
Peak thrust	1,290 lb (585 kg)	2,700 lb (1,200 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)	28,800 lb.in (3,200 Nm)
Part Number	<input type="checkbox"/> M81200 (12 Volts) <input type="checkbox"/> M81201 (24 Volts)	<input type="checkbox"/> M81202 (12 Volts) <input type="checkbox"/> M81202 (12 Volts)

SELECTING A DRIVE: MECHANICAL STEERING SYSTEMS

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 2 Rotary Drive
Vessel Displacement	24,000 lb (11,000 kg)	44,000 lb (20,000 kg)
Corepack Type	X-10	X-30
Peak Output Torque	180 lb.in (20 Nm)	300 lb.in (34 Nm)
Max Shaft Speed	33 rpm	33rpm
Recommended hard over time (no load)	10 seconds	10 seconds
Power Consumption	24-48 Watts	60-84 Watts
Part Number	<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.
- An authorized Raymarine Dealer is best suited for installing a rotary drive system.

SELECTING A DRIVE: STERN DRIVES

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.



Rotary Drive

SMARTPILOT STERN DRIVE SELECTION CHART

Type	Universal I/O drive
Vessel Displacement	Does not apply
Corepack Type	X-10
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 Stern Drive

SELECTING A COREPACK

Once you have determined the appropriate Drive Unit, the next step is to select a SmartPilot Corepack. Corepacks contain the SmartPilot course computer and compass. The X-30 and X-SOL corepacks also include a rudder reference sensor. Corepacks are available in three levels of performance (X-10, X-30 or X-SOL). Based on the type of drive unit your vessel requires, use the chart below to select the appropriate level of SmartPilot Corepack.



X-10 COREPACK



X-30 COREPACK



X-SOL COREPACK



SMARTPILOT X-SERIES COREPACK SELECTION CHART

Core Packs	X-10	X-30	X-SOL
Compatible Drive Types	Type 1	Type 2 ,3	Solenoid Drive Systems
Supply voltage	12/24v	12/24v	12/24v
Motor drive Current	10 amps	30 amps	-
– continuous (peak)	(25 amps peak)	(50 amps peak)	-
Clutch current – Amps	1.2 amps	3 amps	2 amps
Solenoid drive interface	No	No	Yes
Supplied with Rudder Reference Sensor	No	Yes	Yes
Smart Rudder Sense technology	Yes	Yes	No
Fast 10Hz Gyro Stabilized heading output for MARPA and radar/chart overlay on Raymarine Multifunction Displays	Yes	Yes	Yes
Part Number	<input type="checkbox"/> E12198	<input type="checkbox"/> E12199	<input type="checkbox"/> E12205

SELECTING A COREPACK: X-CAN FOR STEER-BY-WIRE SYSTEMS

Designed to integrate with modern steer-by-wire system like the Volvo Penta IPS, the Raymarine SmartPilot X-CAN represents the convergence of autopilot and propulsion technology. Employing Raymarine's proven AST (Advanced Steering Technology), the SmartPilot X-CAN delivers razor sharp course keeping and smooth course turns. CAN Bus communication protocol provides the SmartPilot X-CAN with a single cable interface to today's modern propulsion systems. SeaTalk^{ng} technology provides captains their choice of multiple SmartPilot or ST70 control heads as well as seamless integration with Raymarine's multifunction displays, instrument systems and NMEA2000 devices.

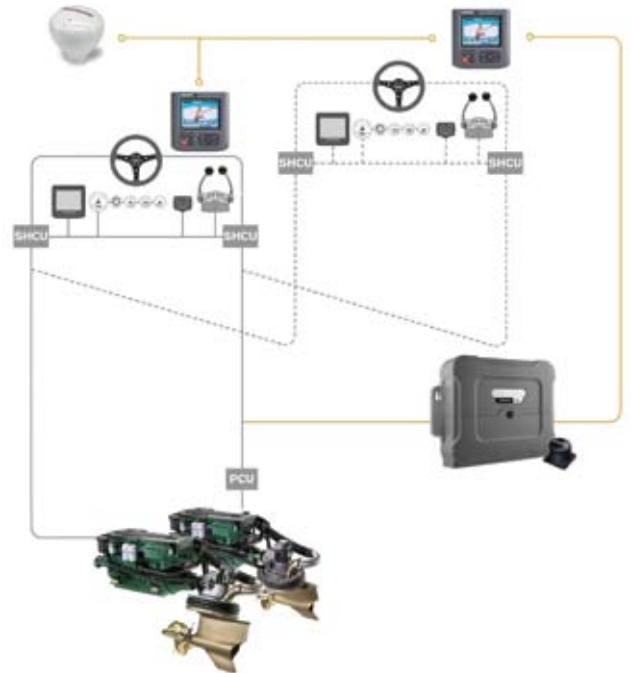
Features:

- Steer-By-Wire Technology
- Simplified CAN Bus interface*
- Advanced Steering Technology (SmartPilot AST)
- Compatible with the new ST70 autopilot control head

ORDERING INFORMATION

PART #	DESCRIPTION
E12200	SmartPilot CAN Corepack

* Volvo Penta Autopilot Gateway required for some installations. Please consult your Raymarine dealer for more information.



SELECT AUTOPILOT CONTROL HEADS

The final step in building a Raymarine SmartPilot system is choosing the ST70 autopilot control head. Each system must contain at least one ST70 autopilot control in the system. Additional ST70 controls are easily added thanks to SeaTalk^{ng} networking. In addition, ST6002, ST7002 and ST8002 control heads can be added to the system as remote secondary autopilot displays.

PRIMARY ST70 AUTOPILOT CONTROL



ADDITIONAL CONTROL HEADS



S100 WIRELESS SEATALK AUTOPILOT REMOTE CONTROL

Compact and lightweight, the S100 remote delivers the freedom of wireless control to any Raymarine autopilot. The bright display is easy to read with two lines of text and a graphical autopilot mode indicator. The 5 button ergonomic keypad and intuitive menu structure provides simple operation and easy access to extended features. Rugged and waterproof, the S100 fits in your pocket or clips to your belt, keeping full function autopilot control always within reach

S100 Features:

- Two line display with a graphical autopilot status indicator
- Crisp, high contrast 24 x 127 dot matrix backlit display
- Raised profile on Standby button for easy identification in the dark
- Convenient, replaceable AAA alkaline batteries
- Compatible with all Raymarine and Autohelm® SeaTalk autopilots



Belt Clip



Lanyard



Bulkhead Mount



S100 Wireless Control

ORDERING INFORMATION

PART #	DESCRIPTION
E15024	S100 Wireless Autopilot Control

SMARTCONTROLLER WIRELESS SEATALK AUTOPILOT AND INSTRUMENT REMOTE CONTROL

Take control of your Raymarine SeaTalk® network with the powerful SmartController wireless handheld remote. Set a new course to steer or monitor vital instrument and navigation data in the palm of your hand. Big on features, the waterproof SmartController is lightweight and compact for easy handling.

The SmartController features a rechargeable battery that recharges from the SeaTalk® network power supply. A convenient mounting cradle holds the SmartController firmly in place when recharging.

SmartController Features:

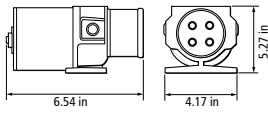
- Backlit display and keypad
- Up to eight user definable data pages
- Single, dual or four line data displays
- Graphical CDI (Course Deviation Indicator) display
- Rechargeable via SeaTalk® network
- Compatible with all Raymarine and Autohelm SeaTalk autopilots



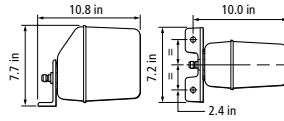
ORDERING INFORMATION

PART #	DESCRIPTION
E15023	SmartController Wireless Autopilot Control

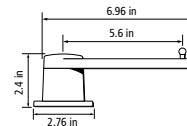
COMPONENT DIMENSIONS



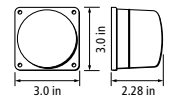
TYPE 1, 2 AND 3 HYDRAULIC PUMP DIMENSIONS



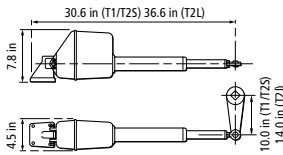
TYPE 1 AND 2 ROTARY DRIVE DIMENSIONS



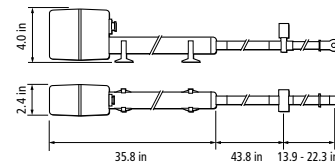
RUDDER REFERENCE DIMENSIONS



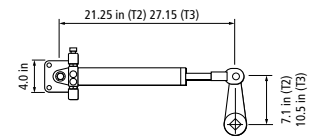
FLUXGATE COMPASS DIMENSIONS



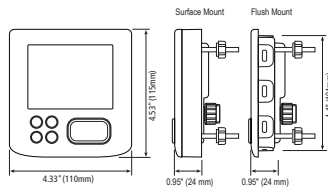
TYPE 1 AND 2 LINEAR DRIVE DIMENSIONS



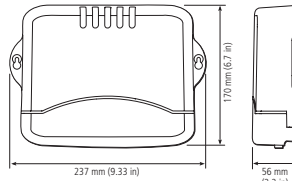
UNIVERSAL STERNDRIVE DIMENSIONS



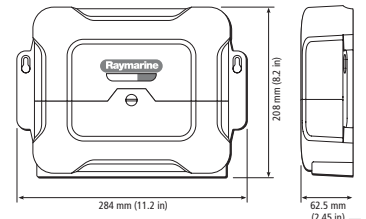
TYPE 2 AND 3 HYDRAULIC LINEAR DIMENSIONS



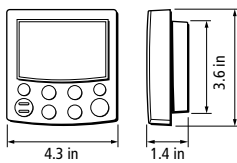
ST70 CONTROL DIMENSIONS



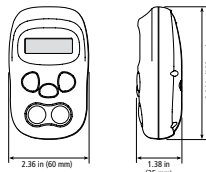
X-5 COURSE COMPUTER DIMENSIONS



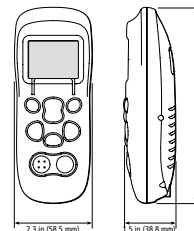
X-10, X-30, X-SOL AND X-CAN COURSE COMPUTERS DIMENSIONS



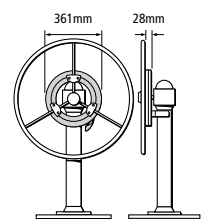
ST6002 CONTROL DIMENSIONS



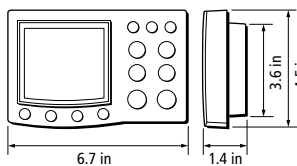
S100 CONTROLLER DIMENSIONS



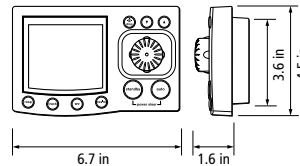
SMARTCONTROLLER DIMENSIONS



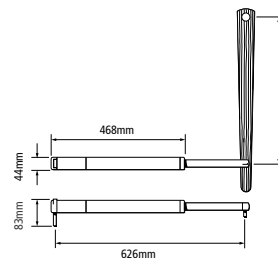
X-5 WHEEL PILOT DIMENSIONS



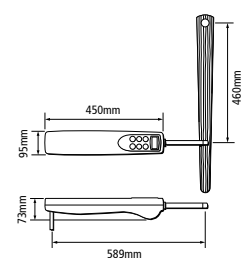
ST7002 CONTROL UNIT DIMENSIONS



ST8002 CONTROL UNIT DIMENSIONS



X-5 TILLER PILOT DIMENSIONS



ST1000 AND ST2000 TILLER PILOT DIMENSIONS

Raymarine®

Raymarine Incorporated
21 Manchester Street
Merrimack, NH 03054
USA
Tel: 603.881.5200
Fax: 603.864.4756
www.raymarine.com

Raymarine plc
Anchorage Park
Portsmouth, Hampshire PO3 5TD
United Kingdom
Tel: +44 (0)23 9269 3611
Fax: +44 (0)23 9269 4642
www.raymarine.com

Additional information, specifications
and interactive product tours available
online at www.raymarine.com



Product specifications subject to change without notice