

SITEX[®]

MARINE ELECTRONICS

SP110 AUTOPILOT DRIVE SOLUTIONS



PRECISION PRODUCTS FOR POWER AND SAIL BOATS



Designed for small boats, the SI-TEX SP-110 autopilot brings all the features of more expensive models into a single compact unit, without the need for a separate junction box. It works with rudder feedback units or it's also fully capable of Virtual Feedback operation. Suitable for small motorboats as well as sailing yachts up to around 15 meters.

Designed to an industry standard 110mm square casing it fits nicely together with other instruments. SI-TEX has developed the SP-110 to provide performance and reliability for the small boat user. There are simply no other autopilots on the market so compact and easy to install with the same level of functionality.

The SP-110 can operate as a stand-alone system with the control unit and compass connected to either reversing pumps or mechanical drive units. Alternatively, the system can be integrated via NMEA-0183 interface with navigational aids such as a GPS or GPS plotters to provide waypoint steering. The SP-110 also features a Wind steering Mode that enables the unit to steer to wind when interfaced via NMEA-0183 to a Wind Sensor.

MAIN FEATURES

- Splashproof Control Unit with large, easy to read backlit display
- Simple operation with push button controls
- Attractive styling complements existing vessel instrument layout
- Off course alarm
- Steer to GPS or Steer to Wind modes



AUTOPILOT MODES

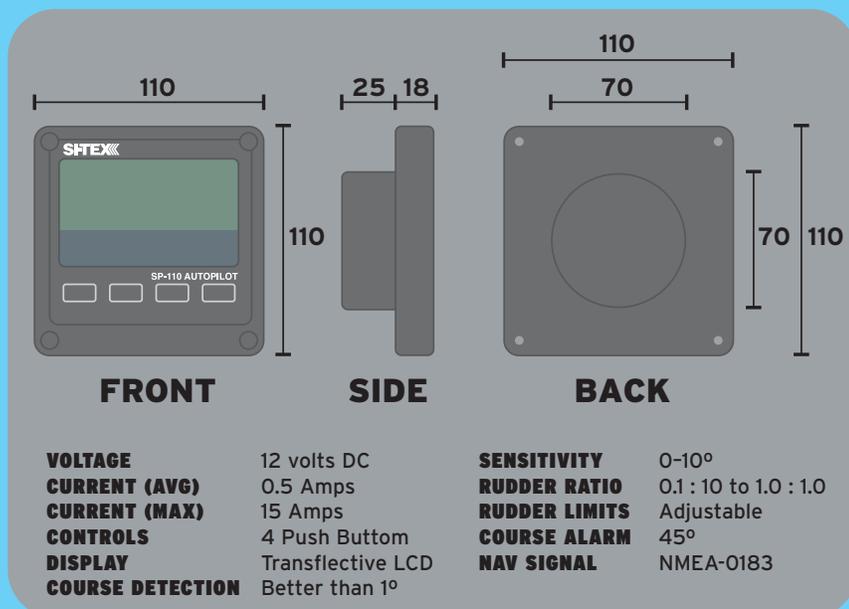
Manual Mode: Your vessel is under manual steering control, the autopilot does not apply automatic steering control. The display shows current magnetic heading.

Auto Mode: The autopilot will maintain your vessel on any desired magnetic course, which can be set from the Control Unit.

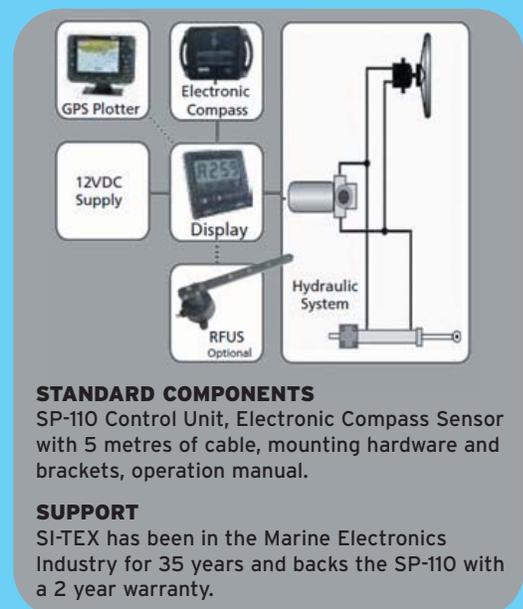
GPS Mode: When interfaced with a GPS via NMEA-0183, the autopilot can steer the vessel to a precise Lat/Long position, through any number of desired course changes.

Wind Mode: When interfaced with a NMEA-0183 wind sensor the autopilot will steer the vessel relative to the selected Apparent Wind Angle.

SP-110 DIMENSIONS & SPECIFICATION

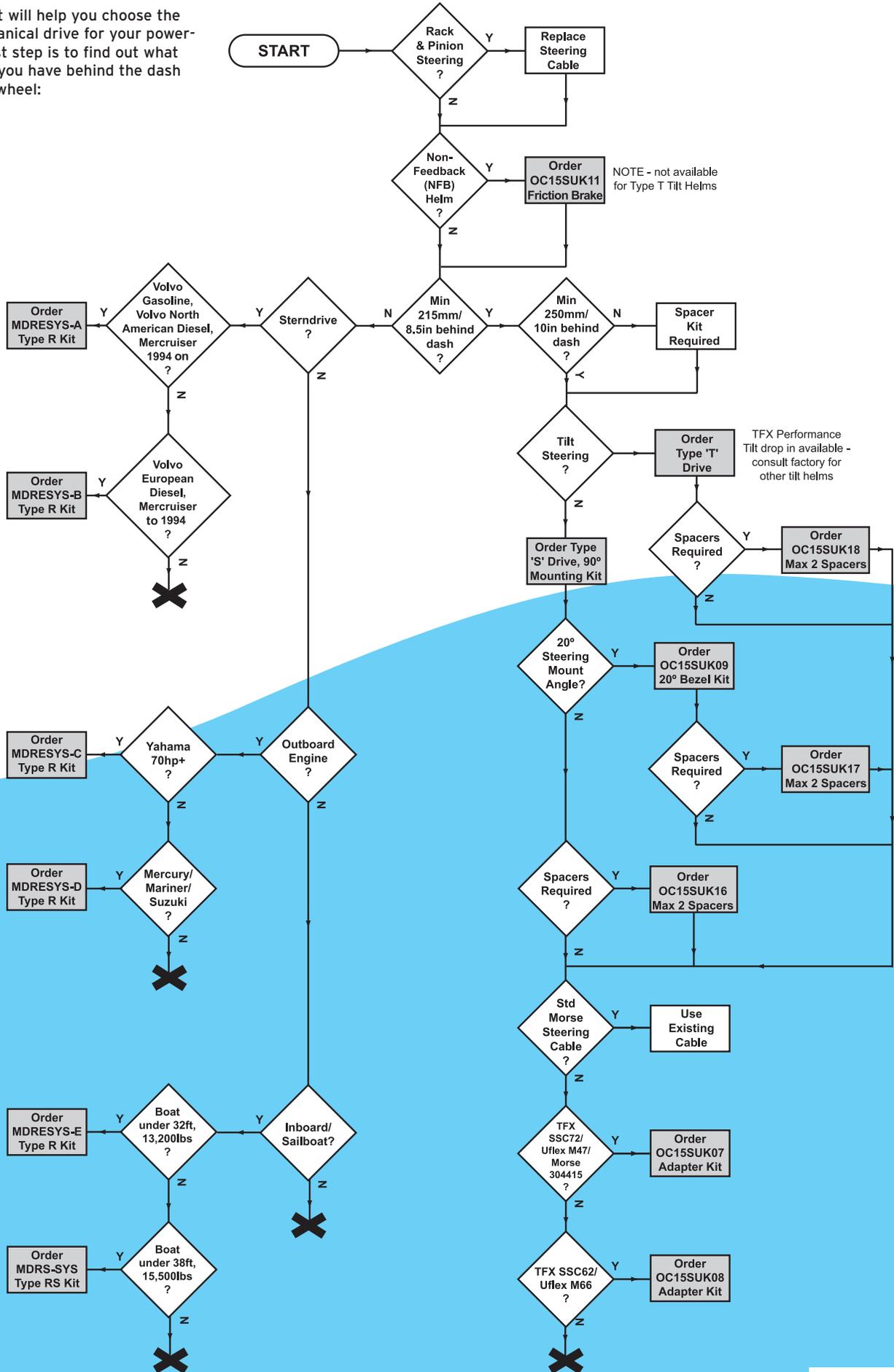


SP-110 SYSTEM (TYPICAL)



MECHANICAL DRIVE SELECTION GUIDE

This flowchart will help you choose the correct mechanical drive for your powerboat. The first step is to find out what manual helm you have behind the dash and steering wheel:



POWERBOAT SYSTEMS

MECHANICAL DASHBOARD DRIVE TYPE S/T

SUITABLE FOR CABLE STEERED BOATS UP TO 35FT IN LENGTH!

PROFESSIONAL SOLUTIONS FOR STERN DRIVE & OUTBOARD ENGINES

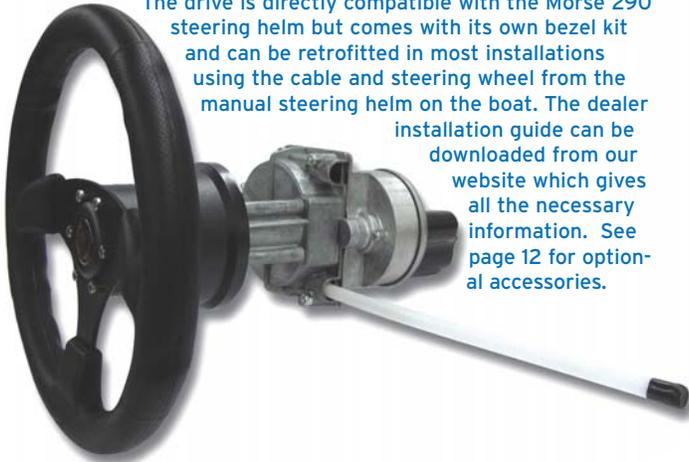
These drives are a professional solution replacing the manual helm with a manual helm/autopilot drive combination. No unsightly autopilot drive is seen behind the steering wheel in front of the dash.

UNIQUE AUTOPILOT DRIVES FOR CABLE STEERED BOATS

TYPE S BEHIND THE DASH DRIVE MDMSW

The Straight shaft drive unit replaces the manual drive used on cable steered boats and is mounted directly behind the dash.

The drive is directly compatible with the Morse 290 steering helm but comes with its own bezel kit and can be retrofitted in most installations using the cable and steering wheel from the manual steering helm on the boat. The dealer installation guide can be downloaded from our website which gives all the necessary information. See page 12 for optional accessories.



TYPE T TILT BEHIND THE DASH DRIVE MDTPW

This drive unit replaces a manual Tilt drive and is mounted directly behind the dash, but still allows the angle of the steering wheel to be changed. It uses the front end from Teleflex SH91800 (not supplied).

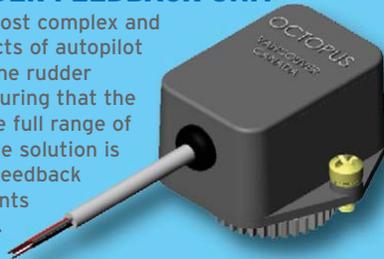
See page 12 for optional accessories.



OPTIONAL RUDDER FEEDBACK UNIT

Typically one of the most complex and time-consuming aspects of autopilot installation is fitting the rudder feedback unit and ensuring that the geometry matches the full range of rudder movement. The solution is an integrated rudder feedback unit that directly mounts to the drive unit itself.

A range of rudder feedback units are compatible with all major autopilot brands and models.

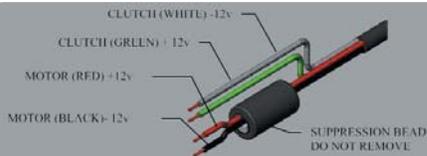


POWERBOAT SYSTEMS

MECHANICAL DASHBOARD DRIVE TYPE S/T



MOTOR & CLUTCH CABLE CONNECTIONS



HOOK-UP TABLE

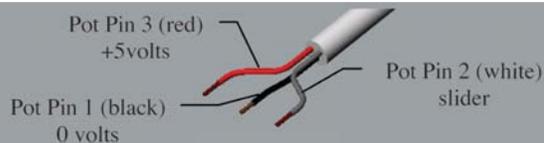
OCTOPUS DRIVE

RED
BLACK
GREEN
WHITE

SP110

YELLOW
YELLOW/BLACK
+12V SUPPLY
GREEN

RFB CABLE CONNECTIONS



HOOK-UP TABLE

OCTOPUS RFB

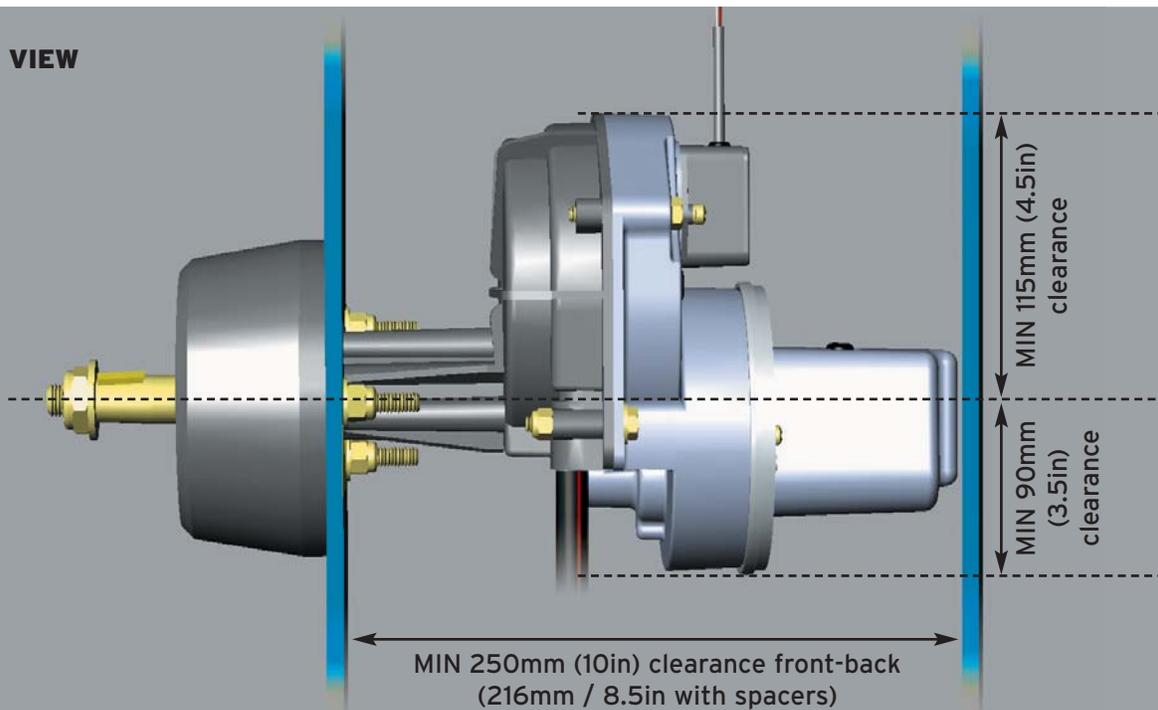
RED
WHITE
BLACK

SP110 DISPLAY SOCKET

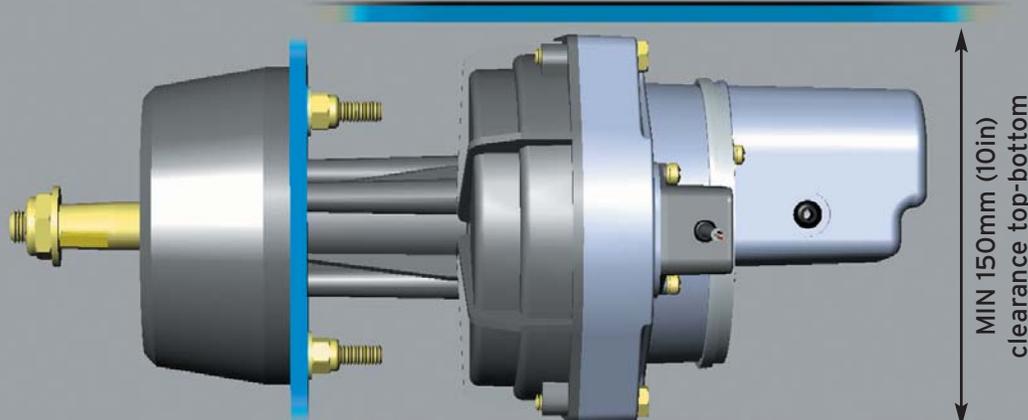
PIN 1 (5V)
PIN 2 (WIPER)
PIN 3 (0V)

INSTALLATION ENVELOPE

TOP VIEW



SIDE VIEW



POWERBOAT SYSTEMS

MECHANICAL REMOTE DRIVE - SYSTEM PACKS

ONE DRIVE, ALL BOATS

The revolutionary Type R Remote Drive System makes selection and installation simple - one standard drive unit is suitable for all boat types, whether it's a powerboat with outboard, sterndrive or inboard steering as well as sailboats.

EVERYTHING YOU NEED IN THE BOX

Now Octopus have made things even easier with the new Remote Drive Autopilot Packs - everything needed for fitting is supplied in one box, including steering cable and installation kit. To specify, simply choose the appropriate engine make and drive system.

OPTIONAL RUDDER FEEDBACK UNIT

With an autopilot installation, typically one of the most complex and time-consuming aspects is fitting the rudder feedback unit and ensuring that the geometry matches the full range of rudder movement.

The Type R system gets around this problem with its optional integrated rudder feedback unit that directly mount to the drive unit itself. A range of rudder feedback units are compatible with all major autopilot brands & models - see page 11 for the selection chart.



Optional Rudder Feedback Unit

UNIVERSAL SOLUTION

One drive fits most engine and steering types.

EASY TO BUY

Everything you need in one box - drive unit, cable, installation kit.

EASY TO FIT

Simple to mount installation kits and optional integrated rudder feedback make for easy fitting.

COMPACT

The remote drive unit has a tiny 0.25ft² footprint and can be mounted in the most convenient location on your boat.

RELIABLE & SAFE

Proven, tested design. The drive unit features a manual override without having to disengage the autopilot first.

COMPATIBLE WITH YOUR PILOT

Compatible with all major autopilot brand electronics.

SELECTION GUIDE

PART No.	DRIVE SYSTEM	ENGINE MAKE / MAX DISPLACEMENT
MDRESYS-A	Sterndrive	Mer cruiser 1994+/ Volvo Gasoline
MDRESYS-B	Sterndrive	Mer cruiser 1983-93/ Volvo Diesel
MDRESYS-C	Outboard	Yamaha 70hp+
MDRESYS-D	Outboard	Mercury, Mariner, Suzuki
MDRESYS-E	Inboard/Sail	13,200lbs (6t) 32ft (9.75m)



ONE DRIVE FITS ALL!

OUTBOARD ENGINES	
Engine Type	Part Number
Yamaha 70hp+	MDRESYS-C
Mercury, Mariner, Suzuki	MDRESYS-D

STERNDRIVES	
Engine Type	Part Number
Mer cruiser 1983-93	MDRESYS-B
Mer cruiser 1994-	MDRESYS-A
Volvo Diesel	MDRESYS-B
Volvo Gasoline	MDRESYS-A

INBOARD ENGINES	
Boat Size	Part Number
Up to 32ft (9.75m)	MDRESYS-E
13,200lbs (6,000Kg) displacement	

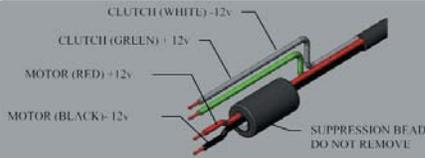
SAILBOATS	
Boat Size	Part Number
Up to 32ft (9.75m)	MDRESYS-E
13,200lbs (6,000Kg) displacement	

See p7 for larger drive model suitable for inboard/sailboats up to 38ft/15,500lbs

MECHANICAL REMOTE DRIVE - SYSTEM PACKS



MOTOR & CLUTCH CABLE CONNECTIONS



HOOK-UP TABLE

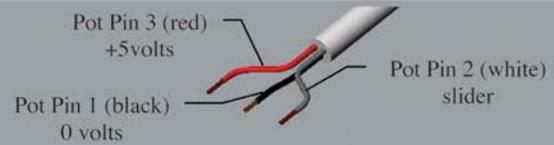
OCTOPUS DRIVE

RED
BLACK
GREEN
WHITE

SP110

YELLOW
YELLOW/BLACK
+12V SUPPLY
GREEN

RFB CABLE CONNECTIONS



HOOK-UP TABLE

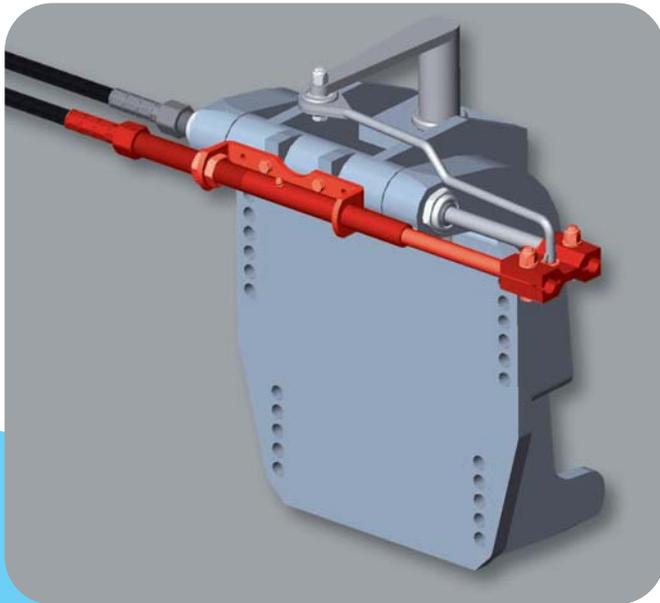
OCTOPUS RFB

RED
WHITE
BLACK

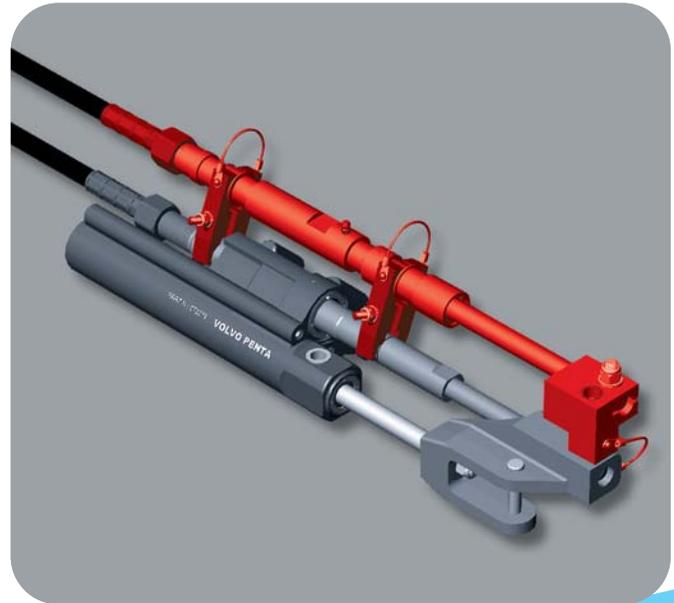
SP110 DISPLAY SOCKET

PIN 1 (5V)
PIN 2 (WIPER)
PIN 3 (0V)

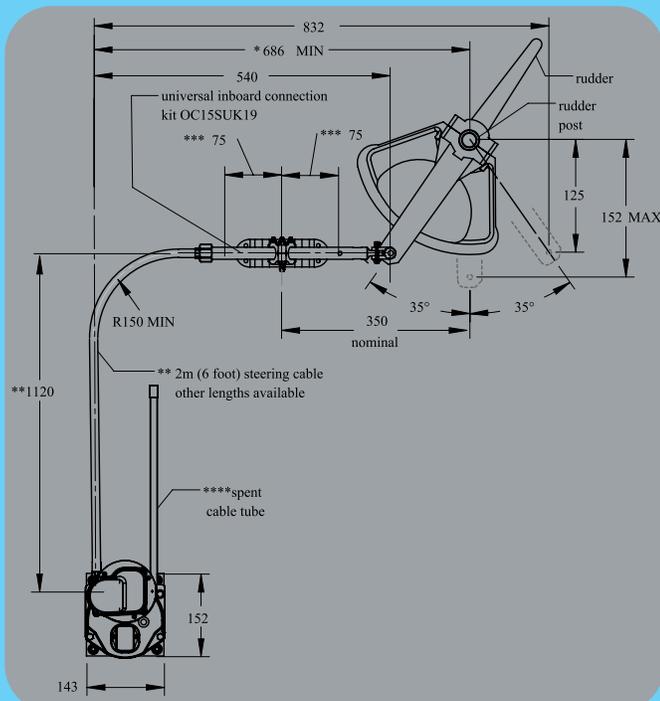
OUTBOARD CONNECTION KIT



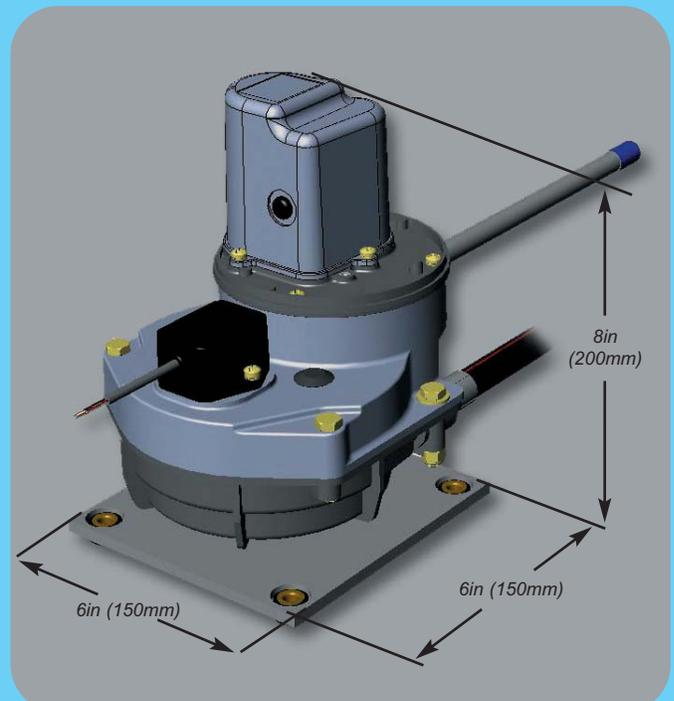
TYPICAL STERNDRIVE CONNECTION KIT



INBOARD/SAILBOAT INSTALLATION ENVELOPE



DRIVE ENVELOPE



POWERBOAT SYSTEMS

MECHANICAL LINEAR DRIVE TYPE RS

ALSO
SUITABLE
FOR INBOARD
ENGINE POWER
BOATS!

COMPACT AND CONVENIENT SOLUTION

The Octopus Remote Sailboat Drive System makes it easy and economical to install an autopilot on light displacement Sailboats steered with mechanical cable or tiller. The drive is very responsive and has little feedback resistance when in 'Standby' Pilot mode making it very suitable for racing yachts.

The linear drive connection kit can be fitted into very small spaces which makes it ideal for the smaller to midsize modern yachts which have limited space to fit drive units.

Recommended for Yachts up to 38ft (11.5m) with a maximum displacement of 15400 lbs / 7000 kg.

EVERYTHING YOU NEED IN THE BOX

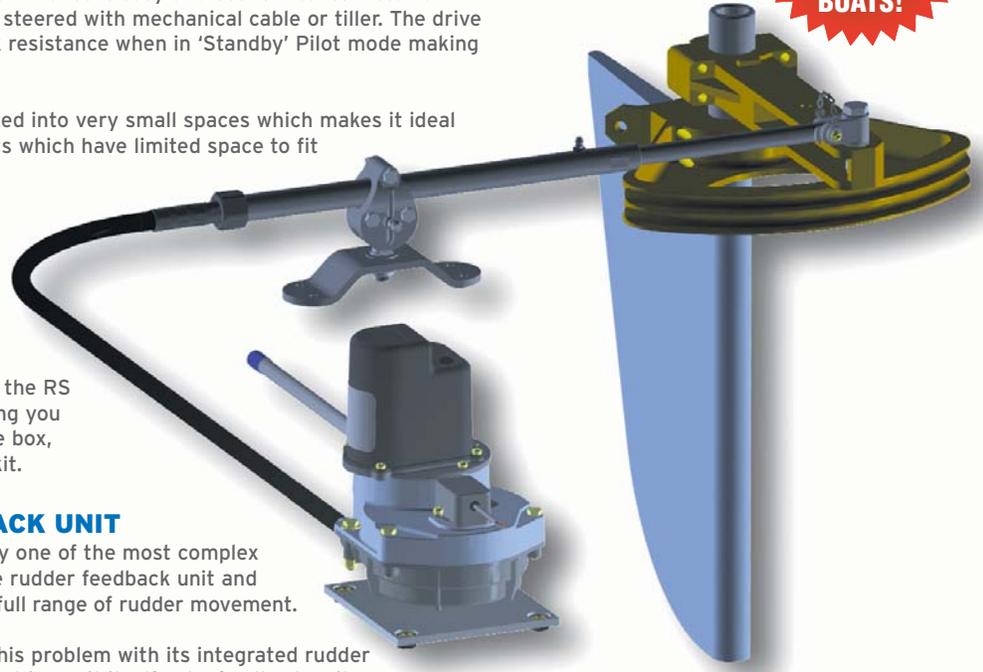
We've made things even easier with the RS Sailboat Drive Autopilot Packs - everything you need to install the drive is supplied in one box, including steering cable and installation kit.

INTEGRATED RUDDER FEEDBACK UNIT

With an inboard pilot installation, typically one of the most complex and time-consuming aspects is fitting the rudder feedback unit and ensuring that the geometry matches the full range of rudder movement.

The Type RS Remote Drive gets around this problem with its integrated rudder feedback unit that directly mounts to the drive unit itself. The feedback unit can easily be configured to work with mainstream Autopilot electronics from all major manufacturers.

See available cable lengths and rudder feedback versions on page 11.



POWERBOAT SYSTEMS

EASY TO BUY

Everything you need supplied in one box - drive unit, 6ft steering cable and linear drive connection kit.

EASY TO FIT

Simple to mount installation kits and the integrated rudder feedback make for easy fitting.

COMPACT

The remote drive unit has a tiny 0.25ft² footprint and can be mounted in the most convenient location on your boat, horizontally or vertically.

RELIABLE & SAFE

Proven, tested design. The drive unit features a manual override without having to disengage the autopilot first.

COMPATIBLE WITH YOUR PILOT

The Type RS Remote Drive System is compatible with all major autopilot brand electronics.

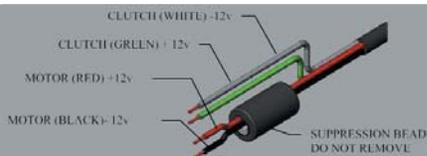
SPECIFICATION

ORDER CODE	MDRS-SYS
MAXIMUM STROKE	305mm / 12in
PEAK THRUST	180kg / 400lbs
MAX RUDDER TORQUE	450nm / 333 lbft
HARD OVER TIME	12-15 seconds
PEAK POWER	7 Amps
AVERAGE POWER	2.5 Amps
TILLER ARM RADIUS	254mm / 10in
MAX DISPLACEMENT (FULLY LADEN)	7000kg / 15,400lbs
MAX BOAT LENGTH	11.5m / 38ft
VOLTAGE	12v DC
CLUTCH CIRCUIT POWER	850mA



MECHANICAL LINEAR DRIVE TYPE RS

MOTOR & CLUTCH CABLE CONNECTIONS



HOOK-UP TABLE

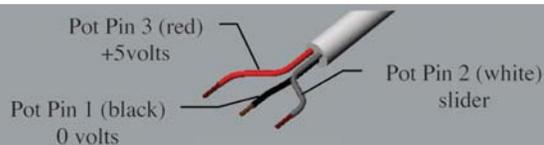
OCTOPUS DRIVE

RED
BLACK
GREEN
WHITE

SP110

YELLOW
YELLOW/BLACK
+12V SUPPLY
GREEN

RFB CABLE CONNECTIONS



HOOK-UP TABLE

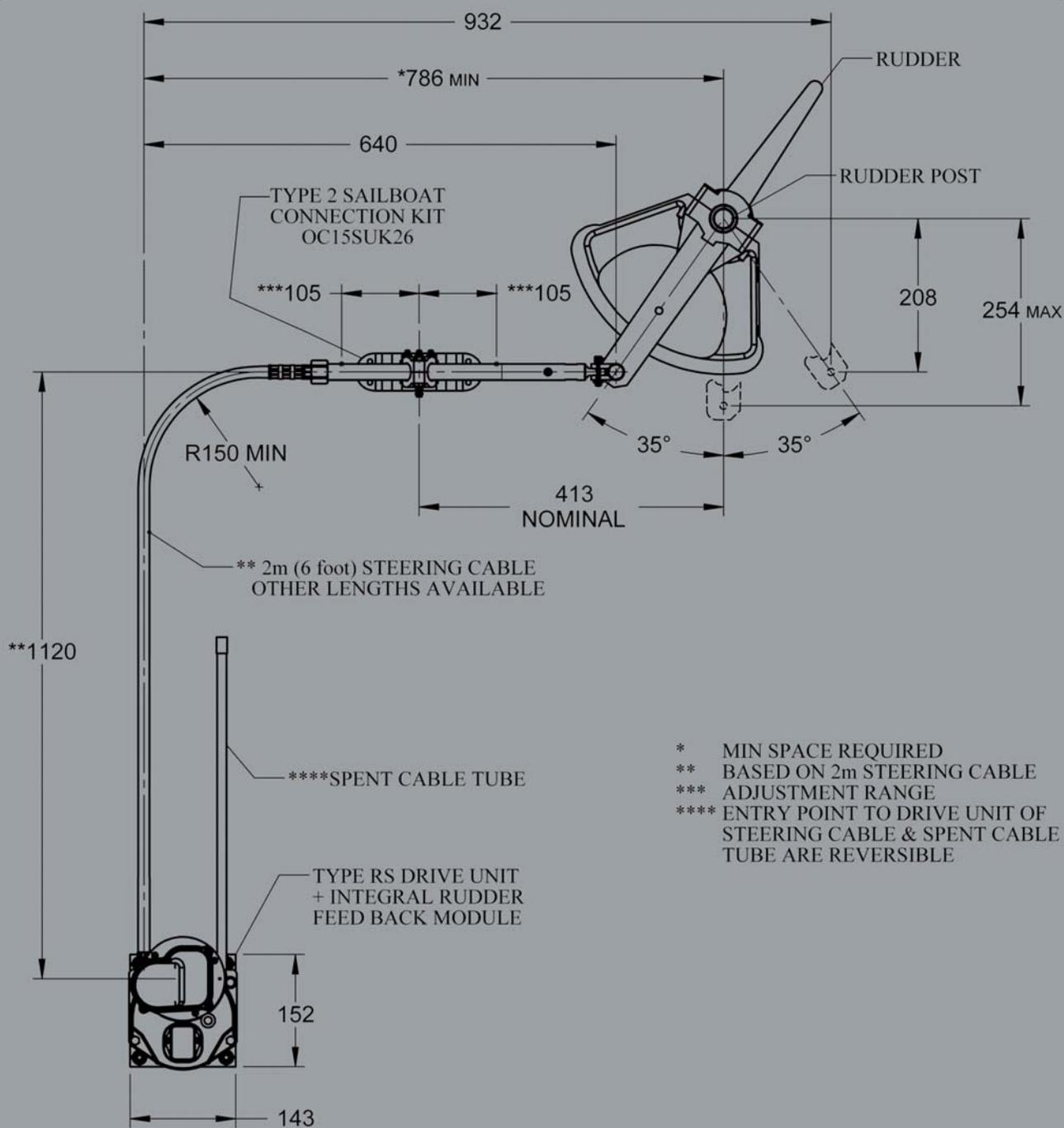
OCTOPUS RFB

RED
WHITE
BLACK

SP110 DISPLAY SOCKET

PIN 1 (5V)
PIN 2 (WIPER)
PIN 3 (0V)

INSTALLATION ENVELOPE



- * MIN SPACE REQUIRED
- ** BASED ON 2m STEERING CABLE
- *** ADJUSTMENT RANGE
- **** ENTRY POINT TO DRIVE UNIT OF STEERING CABLE & SPENT CABLE TUBE ARE REVERSIBLE

HYDRAULIC REVERSING PUMP

**ONLY
THREE
MOVING
PARTS!**

TWICE THE POWER

The Octopus piston pump delivers over twice the hydraulic output per watt of input than a hydraulic gear pump.

HALF THE CONSUMPTION

Gear pumps leak oil between the gears, while a piston (such as used in car engines) does not. This means the piston pump will place the cylinder ram exactly where it is required, positioning the rudder accurately. This gives far sharper steering, reducing unnecessary course corrections meaning battery consumption on Octopus pumps is up to half that of other pumps.

RELIABLE

Octopus pumps use the patented piston technology and have only three moving parts. Thousands of these pumps are in service around the world and have established a reputation of reliability.

SAVE ON INSTALLATION COSTS

A professional installation should always have a method of isolating the pump from the steering system - Octopus pumps feature inbuilt shut off valves in the pump manifold.

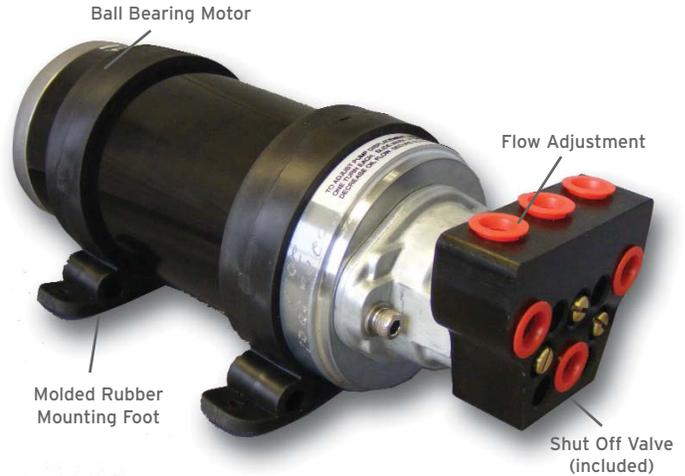
ADJUSTABLE FLOW RATE

A pump that does not have variable flow will be operating too fast or too slow in 90% of cases. Autopilot manufacturers get around this problem by adjusting the output to the pump to compensate. However, this either forces the pump to operate for longer periods of time which increases power consumption and wear on the parts, or the pump will operate at high pressure for short periods of time - also putting unnecessary strain and wear on the system.

Octopus Variable Flow Reversing Pumps precisely control the speed of the ram, reducing unnecessary battery consumption, pressure, strain and wear on the hydraulic system.

PINPOINT ACCURACY

Leading autopilot manufacturers choose Octopus pumps for their non RFB pilot systems which do not have a Rudder Feedback unit. Previously, slop in the system caused by gear leakage meant that a Rudder Feedback unit was necessary to tell the pilot the exact rudder position. As Octopus pumps will always bring the ram back to the required position the Rudder Feedback unit is not required, which also greatly simplifies installation.



HOOK-UP TABLE

OCTOPUS DRIVE

RED
BLACK

SP110

YELLOW/BLACK
YELLOW

ADJUSTABLE FLOW PUMPS OFFER A PROFESSIONAL SOLUTION TO MATCHING AN AUTOPILOT PUMP TO A STEERING SYSTEM

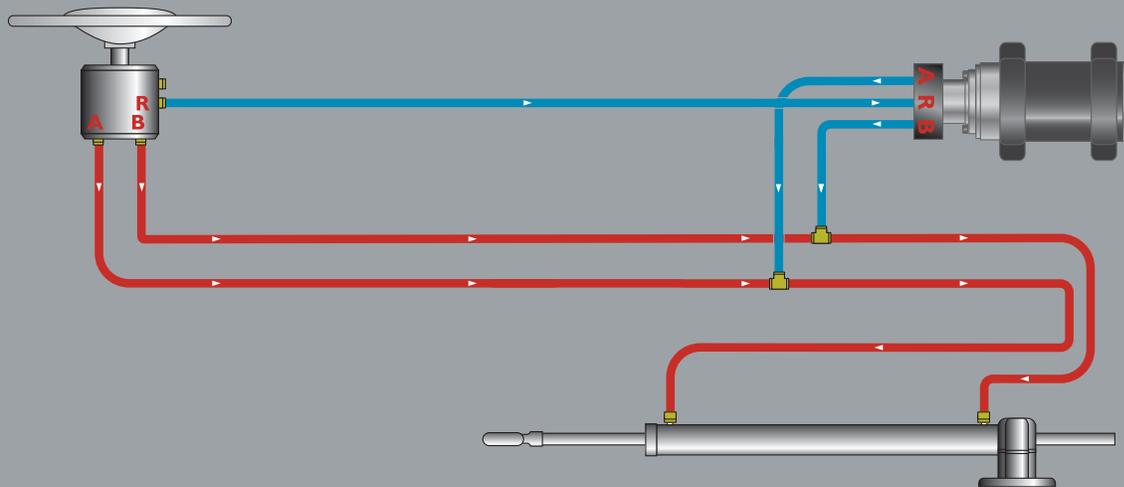


HYDRAULIC REVERSING PUMP

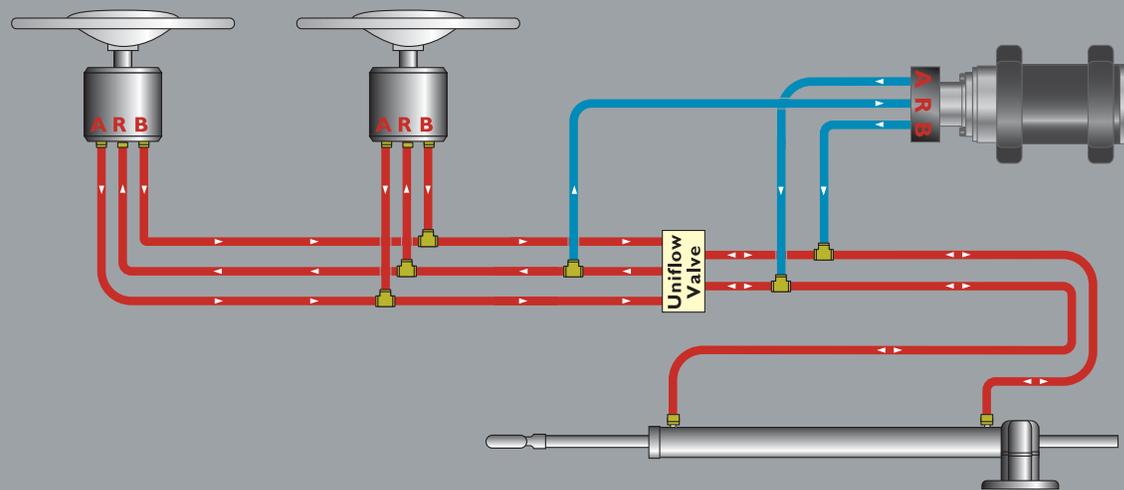
TYPICAL HYDRAULIC STEERING CONFIGURATIONS



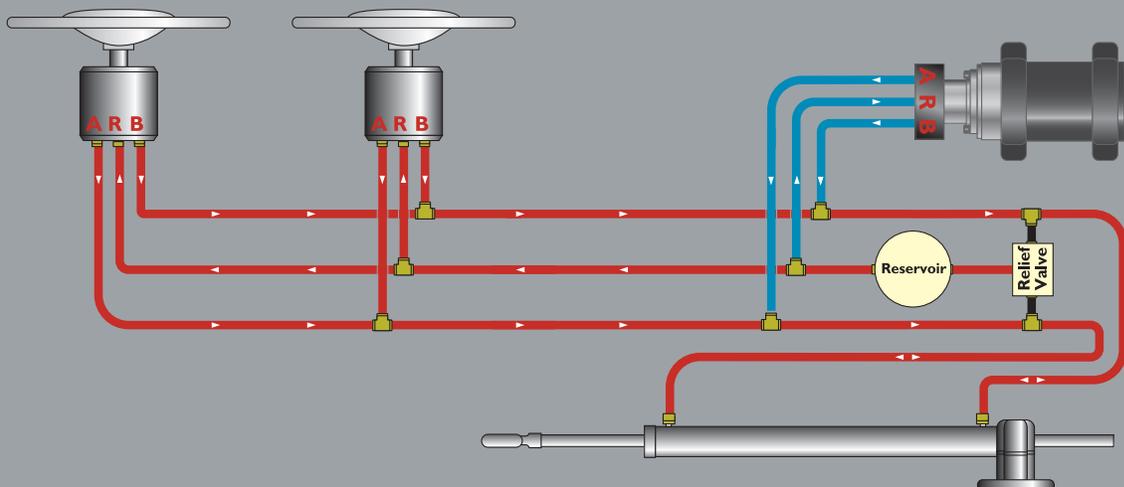
TWO LINE SYSTEM



THREE LINE SYSTEM



PRESSURISED SYSTEM



ACCESSORIES - MECHANICAL DRIVES



TYPE S/T DASHBOARD DRIVE ACCESSORY KITS

OC15SUK10 90 degree Bezel Mounting Kit - for Type S Straight Shaft Drive



OC15SUK09 20 degree Bezel Mounting Kit - for Type S Straight Shaft Drive



OC15SUK07 Steering Cable Adapter Kit - for TFX SSC72 - Uflex M47 - Morse 304415



OC15SUK08 Steering Cable Adapter Kit - for TFX SSC62 - Uflex M66



OC15SUK11 Adjustable Friction Brake - for Type S Straight Shaft Drive with 90° Bezel Mounting Kit



OC15SUK16 Spacer Kit x 19mm for - 90° Bezel Mounting Kit

OC15SUK17 Spacer Kit x 16mm for - 20° Bezel Mounting Kit

OC15SUK18 Spacer Kit x 13mm - for TFX Performance Tilt Mechanism (Type T)

TYPE R REMOTE DRIVE ACCESSORY KITS



OC15SUK12B Type B - Multi I/O Connection Kit - To Fit to Sterndrive Power Assist Steering Cylinders for Mercruiser engines (from 1994) and Volvo Gas engines & Volvo Diesel engines USA (from 1997)



OC15SUK12C Type C - Multi I/O Connection Kit - To fit to Sterndrive Power Assist Steering Cylinders for Mercruiser Saginaw (up to 1993) & Volvo Diesel drives Europe (from 1994)



OC15SUK15A Yamaha 115-220 O/B Installation Kit - for Second Steering Cable Connection to Outboard



OC15SUK15B Mercury-Mariner-Suzuki O/B Installation Kit - for Second Steering Cable Connection to Outboard



OC15SUK19 Universal Connection Kit - for Custom Steering Cable Connection to Tiller or Quadrant



OC15109-6 Standard Steering Cable x 6 foot long

OC15109-9 Standard Steering Cable x 9 foot long

OC15109-12 Standard Steering Cable x 12 foot long

TYPE RS REMOTE DRIVE ACCESSORY KITS



OC15211-4 Sail Boat Steering Cable 12 Inch Stroke. 4 foot long

OC15211-6 Sail Boat Steering Cable 12 Inch Stroke. 6 foot long

OC15211-9 Sail Boat Steering Cable 12 Inch Stroke. 9 foot long



OC15SUK26 Universal Connection Kit 12 inch Stroke



RUDDER FEEDBACK UNIT

OC15SUK27A Rudder Feed Back Module - For Si-Tex Autopilots

Dealer

SI-TEX MARINE ELECTRONICS

25 Enterprise Zone Drive
Suite #2
Riverhead
NY 11901
USA

Phone: + 1 - 631 - 996 - 2690
Fax: + 1 - 631 - 996 - 2693
Email: customerservice@si-tex.com
Website: www.si-tex.com

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