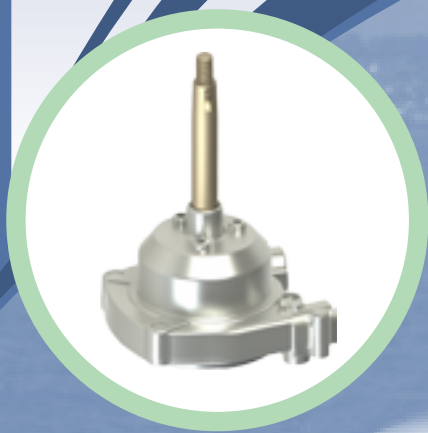


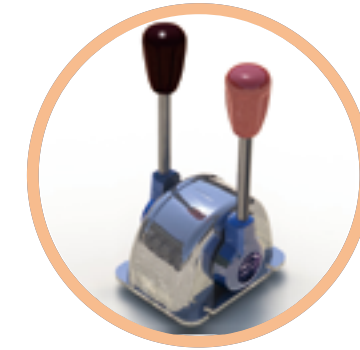
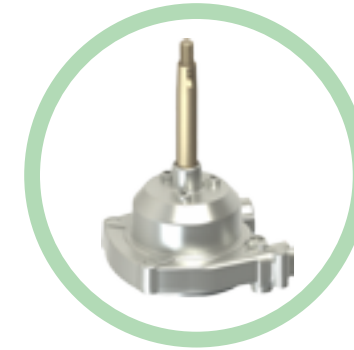
# CABLES AND CONTROLS



*Steer your way*



# Connection Technology Success



## PRETECH CABLES AND CONTROLS

Pretech has been the leading manufacturer and supplier of Steering Systems, Control Cables, Control Levers and Accessories for over 20 years. As a premier manufacturer and supplier to the marine industry, Pretech's products are one of the highest quality.

There are over 40 global Pretech distributors supplying marine and industrial products in 30 countries around the world. Hundreds of boat builders and special equipment industrial dealers have installed Pretech's steering systems, control cables and control levers in their boats and equipment.

Pretech is committed to develop new and innovative products and customer satisfaction is the highest priority.

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# STEERING SYSTEM

steerflex

# STEERING SYSTEM

steerflex

## COMPLETE STEERING SYSTEM

### Components

- ZTS Rotary Steering Helm
  - a. ZTS Rotary Single Helm
  - b. ZTS Rotary Dual Helm
- Mounting Bezel
  - a. 90° Black Bezel
  - b. 20° Black Bezel
- Steering Cable
  - a. Pinnacle Rotary Steering Cable (Stainless Steel)
  - b. Rotary Steering Cable (Galvanized)
- Tilt System

### Components

- 3000 Rotary Steering Helm
  - a. 3000 Rotary Single Helm
  - b. 3000 Rotary Dual Helm
- Mounting Bezel
  - a. 90° Black Bezel
  - b. 20° Black Bezel
- Steering Cable
  - a. Pinnacle Rotary Steering Cable (Stainless Steel)
  - b. Rotary Steering Cable (Galvanized)
- Tilt System

### Components

- LT Rotary Steering Helm
- LT Rotary 90° Bezel Kit
- LT Rotary Steering Cable  
(20° bezel Kit is not available)

### Components

- 2000 Rack Steering Helm
  - a. 2000 Rack Single Helm
  - b. 2000 Rack Dual Helm
- Mounting Bezel
  - a. 90° Black Bezel
  - b. 20° Black Bezel
- Rack Steering Cable
- Tilt System

ZTS Rotary Steering System



3000 Rotary Steering System



LT Rotary Steering System



2000 Rack Steering System



\*ILLUSTRATION SHOWN in Steerflex Pinnacle Series

# ZTS ROTARY STEERING SYSTEM

steerflex

The Zero Torque System (ZTS) is designed to withstand the external forces such as sudden current change, propeller's torque and waves while driving the boat. ZTS eliminates torque coming from the steering cable with a uniquely patented design of the torque clutch.

## Application Guide

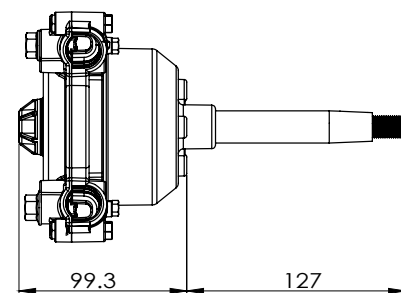
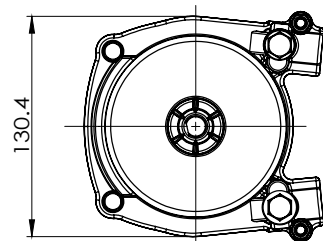
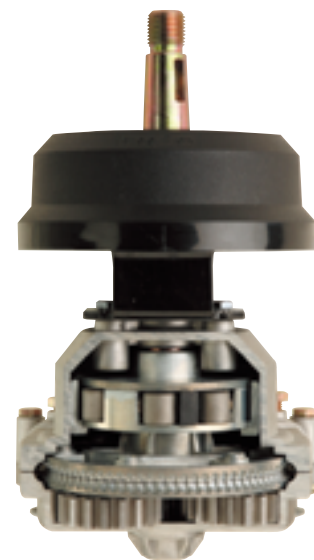
- Mechanical rotary steering non-power assisted outboard engine up to V-4.
- Standard 3/4" tapered shaft.  
Approximately 3.8 turning revolution from lock to lock.
- Maximum wheel size : 16" (406.4 mm) diameter.
- Minimum steering cable bend radius : 8" (203.2 mm).
- Should not be used on boats equipped with engines that exceed the maximum horse power rating of the boat.
- Bolt-in replacement for our standard 3000 Rotary Steering System.
- Replace/Upgrade the following competitors' helms :  
Teleflex®: Safe-T® QC, Safe-T®, NFB™ 4.2 NFB™ Safe-T™ II  
Uflex® : T71FC, T73NR FC



## Features & Specification

- Patented ZTS (Zero Torque Steering) System.
- ZTS system substantially minimizes torque from engine.
- Optional stainless steel steering cable construction : output ends and inner core.
- Snap-on bezel with minimum tools required.
- Compact size and easy installation.
- Bolt-in replacement (upgrade) for our standard 3000 Gen II Rotary Steering System.
- Can generally be used on boats up to 25ft. in length.
- Manufactured to meet or exceed A.B.Y.C., N.M.M.A., I.M.C.I.(CE) certification requirements.

PLANETARY GEAR



## ZTS Steerflex Rotary Steering System



\*Steering cable available in lengths from 5~30ft. in 1 ft. increments

③ 700040



⑥ 700050



④ 500012



⑤ 500014



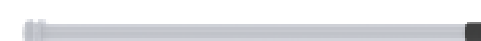
① 5500XX



② 4620XX



⑦ 370297



⑧ 370002



Part No.	Description
Complete system – Include helm, cable and 90° bezel	
<b>5600XX</b>	ZTS Rotary Steering System
<b>5100XX</b>	ZTS Rotary Steering System (Standard)
Components	
① <b>5500XX</b>	Pinnacle Rotary Steering Cable (Stainless Steel)
② <b>4620XX</b>	Rotary Steering Cable (Galvanized)
③ <b>700040</b>	ZTS Rotary Single Helm
④ <b>500012</b>	90° Bezel Kit (Black)
<b>500016</b>	ZTS Rotary Single Helm + 90° Bezel Kit (Black) = [③+④]
Options	
⑤ <b>500014</b>	20° Bezel Kit (Black)
⑥ <b>700050</b>	ZTS Rotary Dual Helm
Accessories	
⑦ <b>370297</b>	Spent Core Tube
⑧ <b>370002</b>	Rotary Helm Hardware Kit (1/2-20 Thread)

# 3000 ROTARY STEERING SYSTEM

steerflex

## COMPLETE STEERING SYSTEM

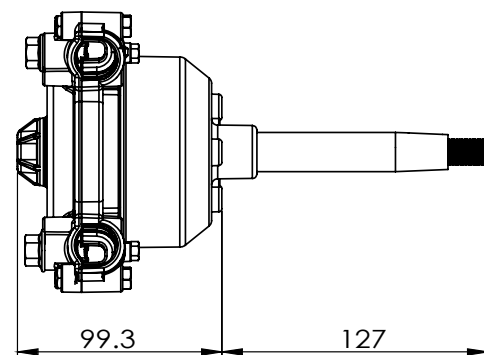
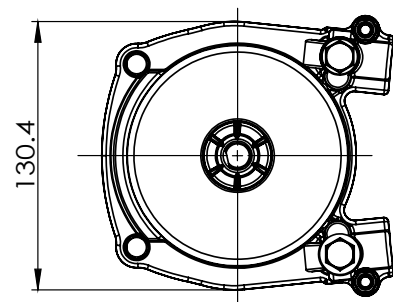
### Application Guide

- Can generally be used on boats up to 25ft. in length.
- For single station use only.
- Maximum wheel size : 16" (406.4 mm) diameter.
- Should not be used on boats equipped with engines that exceed the maximum horse power rating of the boat.
- Replace/Upgrade the following competitor's helm: Teleflex® : Safe-T® QC, Safe-T® Uflex® : T71FC



### Features & Specification

- Smoother operation and durable with planetary gear design.
- Snap-on bezel with minimum tools required.
- 3.8 turning revolutions from lock to lock.
- Standard 3/4" tapered shaft.
- Compact size with maximum performance.
- Minimal feedback.
- Manufactured to meet or exceed A.B.Y.C., N.M.M.A., I.M.C.I.(CE) certification requirements.



## 3000 Steerflex Rotary Steering System



\*Steering cable available in lengths from 5~30ft. in 1 ft. increments

③ 700010



⑥ 700020



④ 500012



⑤ 500014



① 5500XX



② 4620XX



⑦ 370297



⑧ 370002



Part No.	Description
Complete system – Include helm, cable and 90° bezel	
<b>3150XX</b>	3000 Pinnacle Rotary Steering System
<b>3180XX</b>	3000 Rotary Steering System
Components	
① <b>5500XX</b>	Pinnacle Rotary Steering Cable (Stainless Steel)
② <b>4620XX</b>	Rotary Steering Cable (Galvanized)
③ <b>700010</b>	3000 Rotary Single Helm
④ <b>500012</b>	90° Bezel Kit (Black)
<b>500015</b>	3000 Rotary Single Helm + 90° Bezel Kit (Black) = [③+④]
Options	
⑤ <b>500014</b>	20° Bezel Kit (Black)
⑥ <b>700020</b>	3000 Rotary Dual Helm
Accessories	
⑦ <b>370297</b>	Spent Core Tube
⑧ <b>370002</b>	Rotary Helm Hardware Kit (1/2-20 Thread)

Complete system – Include helm, cable and 90° bezel

**3150XX** 3000 Pinnacle Rotary Steering System

**3180XX** 3000 Rotary Steering System

Components

① **5500XX** Pinnacle Rotary Steering Cable (Stainless Steel)

② **4620XX** Rotary Steering Cable (Galvanized)

③ **700010** 3000 Rotary Single Helm

④ **500012** 90° Bezel Kit (Black)

**500015** 3000 Rotary Single Helm + 90° Bezel Kit (Black) = [③+④]

Options

⑤ **500014** 20° Bezel Kit (Black)

⑥ **700020** 3000 Rotary Dual Helm

Accessories

⑦ **370297** Spent Core Tube

⑧ **370002** Rotary Helm Hardware Kit (1/2-20 Thread)

# LT ROTARY STEERING SYSTEM



LT Rotary Steering System is ideal for boats under 18ft. (4.74 m) with a motor not exceeding 55 horsepower

## Application Guide

- Single helm with 90 degree mounting only
- Cable travel : 9" (230 mm)
- Wheel turns 2.6 lock to lock
- Maximum wheel size : 15 (381 mm) diameter
- Minimum bend radius : 8" (203.2 mm)

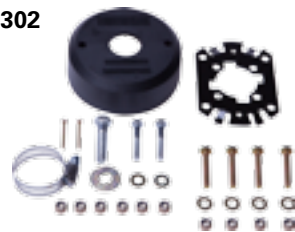
## Features

- HD cast machined gear drive
- Friction brake is standard
- Choice of cable entry for easy installation
- Compact design for quick installation

② 230301



③ 230302



④ 2500XX



① 2080XX



### Part No.

### Description

Complete system – Include helm, cable and 90° bezel

① **2080XX** LT Rotary Steering System Package

Component

② **230301** LT Rotary Steering Helm

③ **230302** LT Rotary 90° Bezel Kit

④ **2500XX** LT Rotary Steering Cable Only

**230303** LT Rotary Steering Helm with 90° Bezel Kit

\*20 Degree Bezel Kit is not available

# 2900 ROTARY STEERING SYSTEM

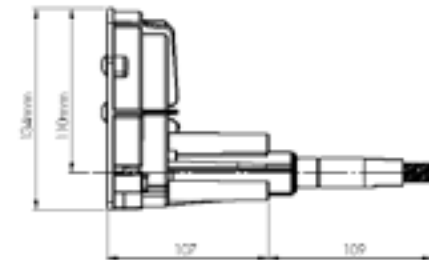
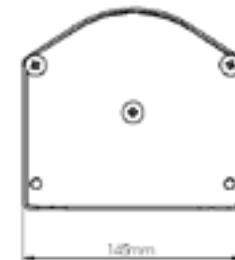


## Application Guide

- Generally 2900 Steerflex can be used on boats up to 25ft. in length.
- 2900 Steerflex should NOT be used on boats equipped with engines that exceed the maximum horsepower rating of the boat.
- Maximum allowable steering wheel diameter is 16 inch (406.4mm).

## Features

- Compact, quick, and easy installation.
- 3 turning revolutions from lock to lock.
- Snap-on bezel with minimum tools required.
- Standard 3/4" tapered shaft.
- Manufactured to meet or exceed A.B.Y.C., N.M.M.A., I.M.C.I. (CE) certification requirements.



### Part No.

### Description

Complete System – Include helm, cable & 90° bezel kit

① **3080XX** 2900 Steerflex Rotary Steering System

Component

② **370525** 2900 Rotary Steering Helm

③ **370559** 2900 90° Bezel Kit

④ **4620XX** Rotary Steering Cable

Options

⑤ **370621** 2900 20° Bezel Kit

Accessories

⑥ **370522** Adjustable Brake for 2900 Rotary Helm

**370002** 2900 Rotary Helm Hardware Kit (1/2-20 Thread Shaft)

**370297** Spent Core Tube

① 3080XX



② 370525



③ 370559



⑤ 370561



⑥ 370522



④ 4620XX



# TILT SYSTEM

steerflex

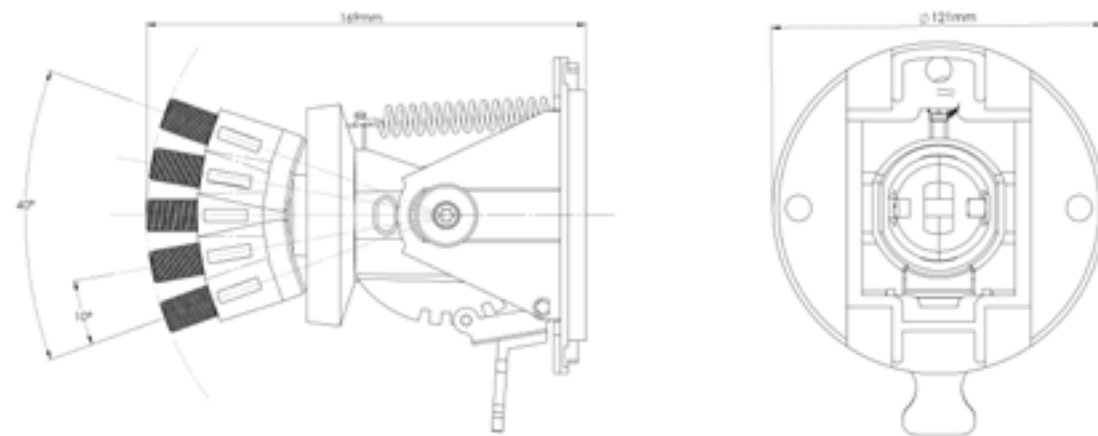
Pretech's tilt helm assembly is designed for boaters seeking what only a five way adjustable helm assembly can offer, freedom, flexibility and comfort. With it's full 40 degree range of motion, the steering wheel can now be adjusted to you, not you to the steering. Modern boat cockpit styling makes tilts a perfect blend.

## Application Guide

- Maximum wheel size: 16" diameter
- Shaft size: Stainless Steel 3/4" tapered shaft
- Use with ZTS rotary, 3000 Rotary, 2000 Rack or 2900 Rotary tilt helm

## Features & Specification

- 5 tilt positions within 40 degree range.
- 90 degree mounting allow first wheel position to be at vertical.
- Standard black boot comes with tilt mechanism.
- Meets/Exceeds applicable requirements.



# TILT SYSTEM

steerflex

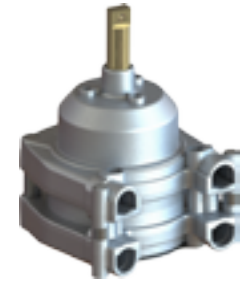
① 370980



② 700042/700012



③ 700052/700022



④ 370974



⑤ 370975



⑥ 370990



⑦ 370015



## Part No.

## Description

① 370980 Tilt Mechanism Unit Only (with S.S. shaft)

### TILT HELM ONLY

② 700042 ZTS Rotary Single Tilt Helm

700012 3000 Rotary Single Tilt Helm

③ 700052 ZTS Rotary Dual Tilt Helm

700022 3000 Rotary Dual Tilt Helm

④ 370974 2000 Rack Single Tilt Helm

⑤ 370975 2000 Rack Dual Tilt Helm

⑥ 370990 2900 Rotary Single Tilt Helm

⑦ 370015 2900 Rotary Dual Tilt Helm

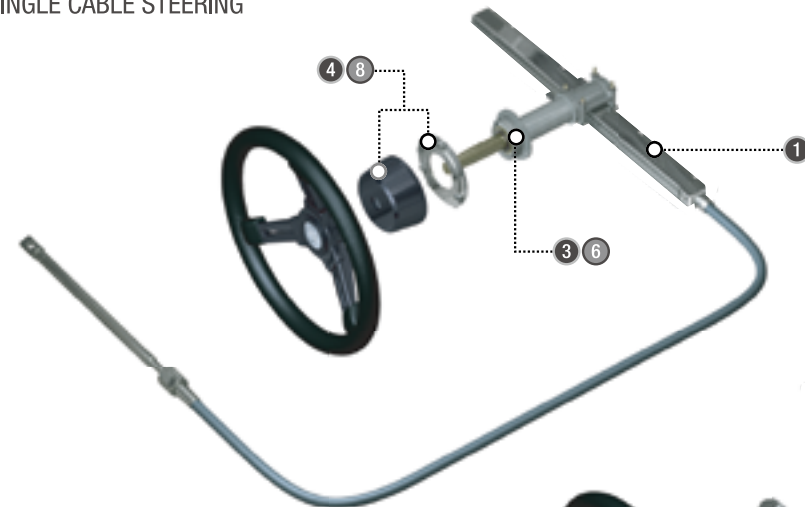
### Boot

370999 Black Boot - Standard

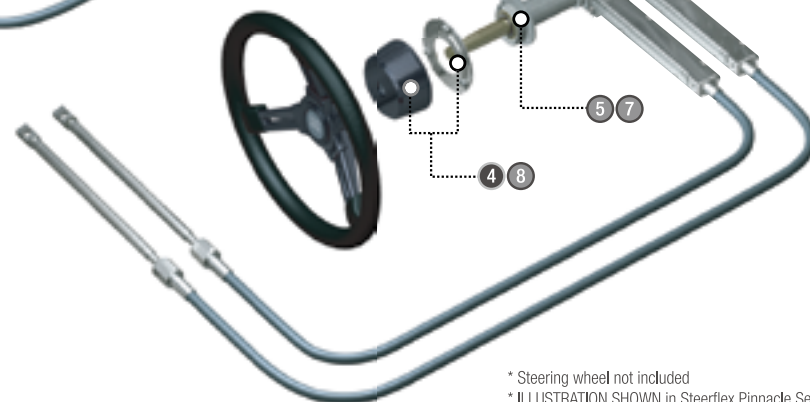
# 2000 RACK & PINION STEERING SYSTEM

steerflex

SINGLE CABLE STEERING



TWIN CABLE STEERING



\* Steering wheel not included  
\* ILLUSTRATION SHOWN in Steerflex Pinnacle Series

## Application Guide

- Can generally be used on boats up to 25ft. in length.
- Should not be used on boats equipped with engines that exceed the maximum horse power rating of the boat.
- Maximum allowable steering wheel diameter is 16" (406.4 mm) diameter.
- Dual cable system is recommended for boats whose maximum speed exceeds 50 mph.
- For single station use only.

## Features

- 3.5 turning revolutions from lock to lock.
- Smoother and easier operation with less loss of motion.
- Standard galvanized steering cable.
- Standard 3/4" tapered shaft.
- Dual cable system minimize steering instability at high speed.
- Quick and easy installation.
- Manufactured to meet or exceed A.B.Y.C., N.M.M.A., I.M.C.I.(CE) certification requirements.
- Suitable for power- assisted stern drive, inboard or ski boat.

## 2000 Rack & Pinion Steering System



\*Steering cable available in lengths from 5-30ft. in 1 ft. increments

② 370252



④ 370853



⑤ 370974



⑥ 370975



③ 370519



⑦ 370470



① 3500XX



## Part No.

## Description

Complete system – Include helm, cable and 90° bezel

**3100XX** 2000 Rack Steering System 3000 Gen II Rotary Steering System

## Components

① **3500XX** Rack Steering Cable (Galvanized)

**3500XX** Rack Steering Cable (Galvanized) - Requires 2 cables for Dual Helm

② **370252** 2000 Rack Single Helm

③ **370519** 90° Bezel Kit (Black)

Options \*Requires tilt mechanism (370979) to complete tilt steering system installation (Page 10)

④ **370853** 2000 Rack Dual Helm

⑤ **370974** 2000 Rack Single Tilt Helm \*

⑥ **370975** 2000 Rack Dual Tilt Helm \*

⑦ **370470** 20° Bezel Kit (Black)



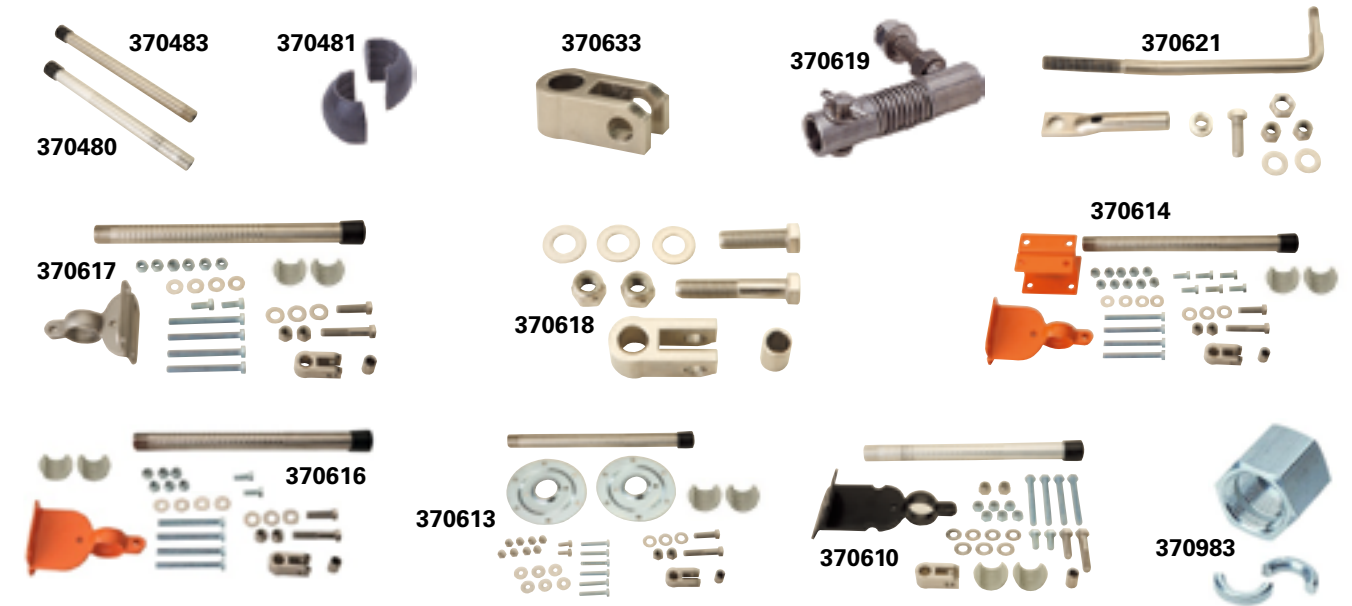
# REPLACEMENT STEERING CABLE

steerflex

# STEERING ADAPTER AND HARDWARE

steerflex

Part No.	Replacement Steering Cable	Steering Cable & Helm
<b>5090XX</b> UR Rotary Replacement Steering Cable		<b>Pretech</b> 3000 Gen II Rotary Single/Dual Helm (700010 / 700020) ZTS Gen II Rotary Single/Dual Helm (700040 / 700050)  <b>Teleflex®</b> Safe-T® QC, NFB™ 4.2, NFB™ Safe-T II  <b>Ultraflex®</b> T7FC, T72FC, T73NR FC, T81FC, T82FC, T83NRFC
<b>5020XX</b> UR Pinnacle Rotary Replacement Steering Cable (S.S.)		<b>Pretech</b> 3000 Gen II Rotary Single/Dual Helm (700010 / 700020) ZTS Gen II Rotary Single/Dual Helm (700040 / 700050)  <b>Teleflex®</b> Safe-T® QC, NFB™ 4.2, NFB™ Safe-T II  <b>Ultraflex®</b> T7FC, T72FC, T73NR FC, T81FC, T82FC, T83NRFC
<b>3500XX</b> 2000 Rack Steering Cable (Galvanized)		<b>Pretech</b> 370252, 370853 (2ea), 370974, 370975 (2ea)  <b>Teleflex®</b> Morse® Command 200 Rack Morse® Dual Rack Cable (2ea) 300620 or 300619 Cable, SSC130XX
<b>1240XX</b> TX Rack Single Steering Cable		<b>Pretech</b> N/A  <b>Teleflex®</b> "The Rack"(Rack&Pinion) - Std.SH5098P "The Rack" Dual Cable System - Std.SH5097P (2ea) SSC124XX
<b>1340XX</b> TX Back Rack Steering Cable		<b>Pretech</b> N/A  <b>Teleflex®</b> "The Rack"(Back Mount):SS141XX - Std.SH5210P, Tilt SH91610P NFB™ Rack(Back Mount):SS151XX - Std.SH5230P, Tilt SH91630P, SSC134XX, SSC154XX
<b>1350XX</b> TX Dual Back Rack Steering Cable		<b>Pretech</b> N/A  <b>Teleflex®</b> "The Rack" (Back Mount) 2 Cable - Std.5210P, Tilt SH91610P NFB™ Pro (Back Mount) Dual Cable System : 152XX - Std.SH5230P, Tilt SH91630P, SSC135XX



Part No.	Description
<b>370480</b>	Support Tube (290.0 mm)
<b>370481</b>	Half Bushing Kit
<b>370482</b>	Support Tube (285.5 mm)
<b>370483</b>	Support Tube (Stainless Steel 290.0 mm)
<b>370609</b>	Thru-Hinge Pin Kit for O.B.
<b>370621</b>	Thru-Hinge Pin Kit for O.B. (Stainless Steel)
<b>370610</b>	Transom Mount Front Hook Up (Galvanized)
<b>370611</b>	Splashwell Mount for O.B. (Stainless Steel)
<b>370613</b>	Splashwell Mount for O.B.
<b>370614</b>	Inboard Transom Kit for Volvo®
<b>370616</b>	Inboard Tall Bracket Kit
	Inboard Short Bracket Kit 2" (Galvanized)
<b>370046</b>	Inboard Short Bracket Kit 2" (Stainless Steel)
<b>370618</b>	Swivel Assembly Kit (Stainless Steel)
<b>370619</b>	Ball Joint for Steering Cable (Stainless Steel)
<b>370620</b>	Short Bracket Kit (Stainless Steel)
<b>370623</b>	Support Tube for 12" Steering Cable
<b>370633</b>	Swivel Only
<b>370983</b>	Steering Cable Adapter (BIG-T®, SAFE-T® & 290 NFS™ HELM) to 3000 Rotary Steering Cable

# STEERING WHEEL

steerflex

# MEMO

steerflex



Pismo  
MF33521  
13.8" (350mm)



Hermosa  
MF33581  
13.8" (350mm)



Coronado  
MF3511  
13.8" (350mm)



Laguna  
MF7403S  
13.4" (345mm)



New Port  
MF7403 BFC  
13.6" (345mm)



New Port II  
(with knob)  
MF7403 SCK  
13.6" (345mm)

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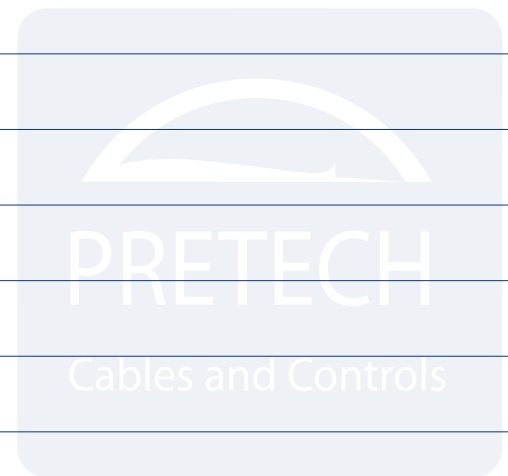
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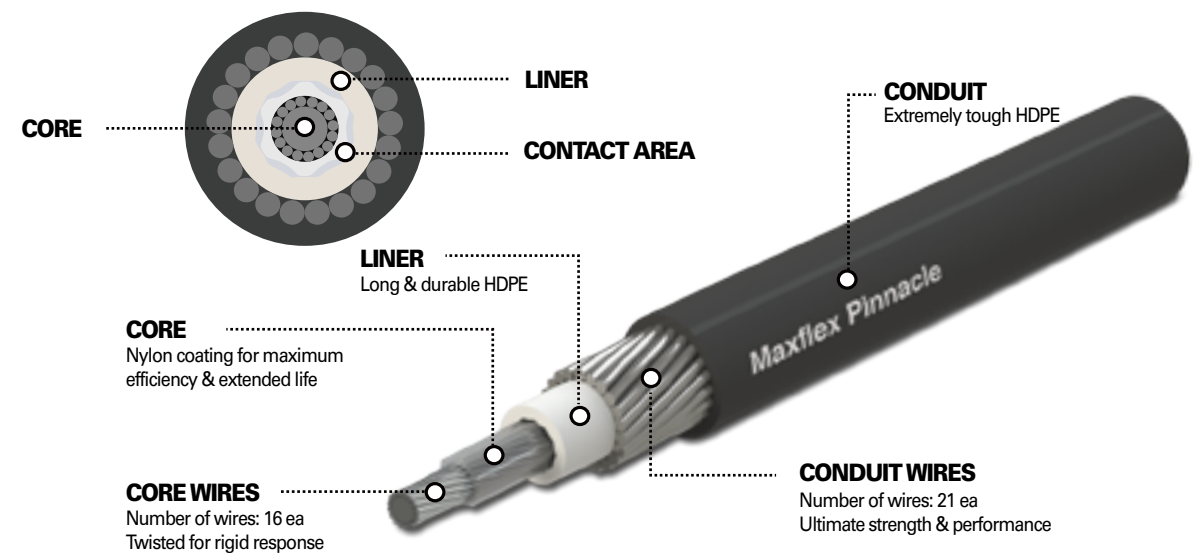
# CONTROL CABLE

# MAXFLEX PINNACLE CABLE

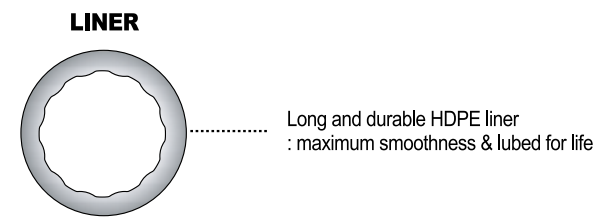


## Results in Maximum Efficiency and Reduced Backlash

Maximized the cable efficiency by reducing 50% of the contact area of core-to-liner when minimal input force is applied. Results in lower backlash at all input force by reducing clearance and contact area between core and liner.



Newly designed Maxflex Control Cable represents the superior quality to the other manufacturer's control cable. Its corrosion resistant construction and high efficiency have literally set the industry standard. It is Pretech's continuous goal to manufacture the best cable in the industry.




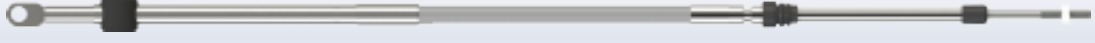


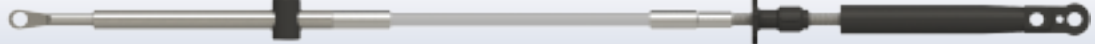
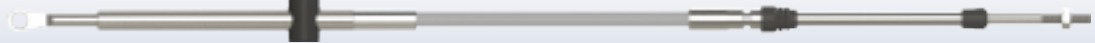
## Features

- Revolutionary design of grooved both liner and inner core to minimized friction.
- Unique core design to minimize lost motion.
- Durable UV resistant HDPE outer casing resistant to salt water, chemicals, petrol & oil and other environmental elements.
- All stainless steel end fittings.
- High efficiency with smooth operation.

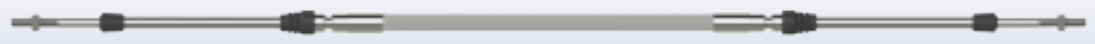
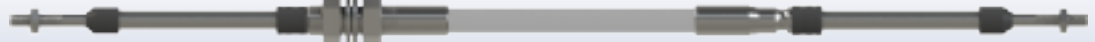
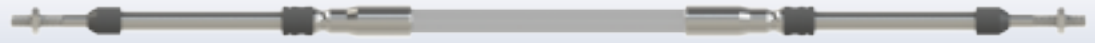


# MAXFLEX PINNACLE CABLE



## Pinnacle Engine Control Cable - Throttle & Shift

Part No.	Specification
<b>639XX</b>	KM Maxflex Pinnacle - Mercury®, Mercruiser®, Mariner® (except pre-1993 40HP and lower models) 
<b>610XX</b>	OC Maxflex Pinnacle - Mariner® (pre-1993 low HP engine: 40 HP and below) 
<b>530XX</b>	Gen II Maxflex Pinnacle - Mercury® Gen II Platinum cable for 4000/4500 Gen II remote controls 
<b>695XX</b>	KB Maxflex Pinnacle - Mercury®, Mercruiser®, Mariner® (except pre-1993 40HP and lower models: 10-32 threaded) 
<b>395XX</b>	MC Maxflex Pinnacle - OMC®/Johnson®/Evinrude® (1979-date), OMC® turbo jet throttle control 
<b>419XX</b>	VO Maxflex Pinnacle - Volvo® engines using OMC® controls: OMC® turbo jet (gate controls) 

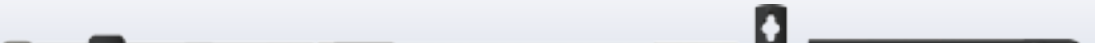
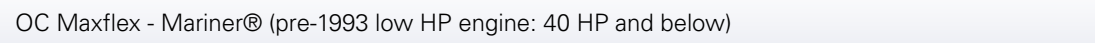
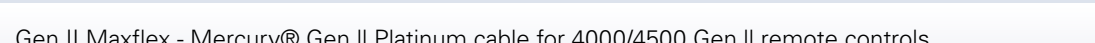
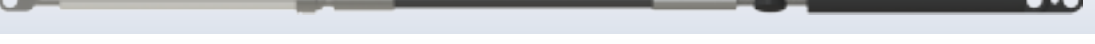

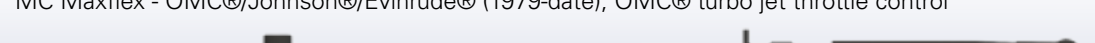
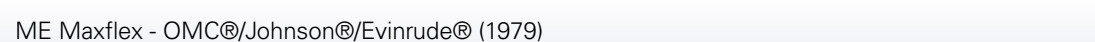
## Pinnacle Control Cable

Part No.	Specification
<b>630XX</b>	3300S Maxflex Pinnacle - 3" travel 10-32 threaded 
<b>460XX</b>	4300BC Maxflex Pinnacle - 3" travel 1/4-28 threaded 
<b>650XX</b>	4300C Maxflex Pinnacle - 3" travel 1/4-28 threaded 
<b>690XX</b>	6400BC Maxflex Pinnacle - 4" travel 5/16-24 threaded 
<b>680XX</b>	6400C Maxflex Pinnacle - 4" travel 5/16-24 threaded 



# MAXFLEX CABLE



## Engine Control Cable - Throttle & Shift

Part No.	Specification
<b>637XX</b>	KM Maxflex- Mercury®, Mercruiser®, Mariner® (except pre-1993 40HP and lower models) 
<b>310XX</b>	OC Maxflex - Mariner® (pre-1993 low HP engine: 40 HP and below) 
<b>535XX</b>	Gen II Maxflex - Mercury® Gen II Platinum cable for 4000/4500 Gen II remote controls 
<b>635XX</b>	KB Maxflex - Mercury®, Mercruiser®, Mariner® (except pre-1993 40HP and lower models: 10-32 threaded) 
<b>305XX</b>	MC Maxflex - OMC®/Johnson®/Evinrude® (1979-date), OMC® turbo jet throttle control 
<b>307XX</b>	ME Maxflex - OMC®/Johnson®/Evinrude® (1979) 
<b>410XX</b>	VO Maxflex - Volvo® engines using OMC® controls: OMC® turbo jet (gate controls) 

## Control Cable

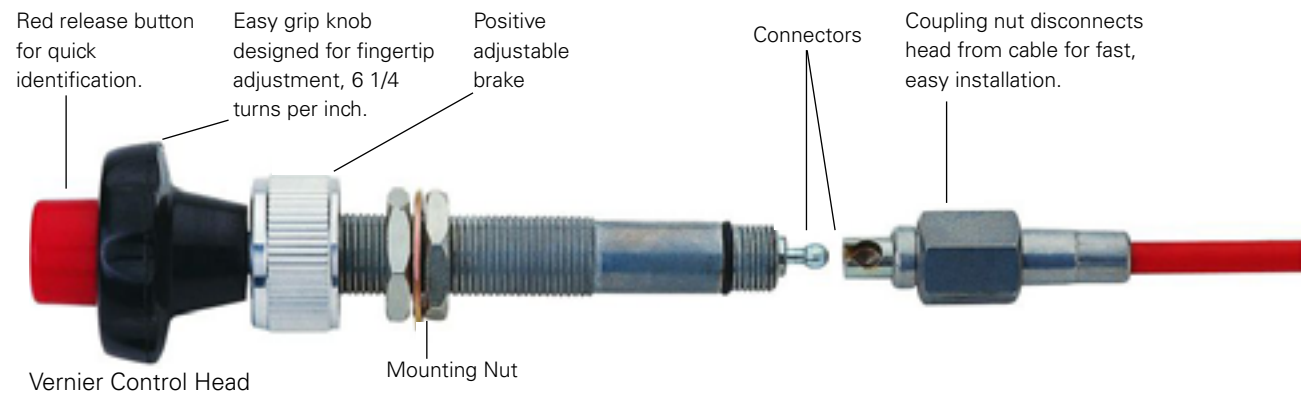
Part No.	Specification
<b>330XX</b>	3300C Maxflex - 3" travel 10-32 threaded 
<b>230XX</b>	2300C Maxflex - 3" travel 10-32 threaded 

# UTILITY CABLE



## Vernier Control Head And Cable

Vernier Control is ideal for remote manual operation of engine RPM setting (throttles), chokes, valves or application requiring coarse or fine adjustment



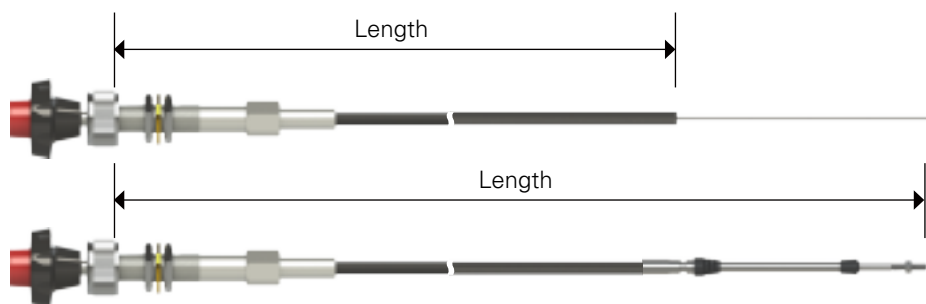
Part No.	Description
901XX	Clamp end fitting
900XX	No end fitting
902XX	Bulkhead fitting
903XX	3300C support tube and end rod



• Vernier head only: Part no. 377941

### How To Measure

All utility cables are measured to the point where the core wire exits the cable conduit. Cables with rod-type end fittings are measured to the rod end.



# UTILITY CABLE



## T-Handle Utility Cable

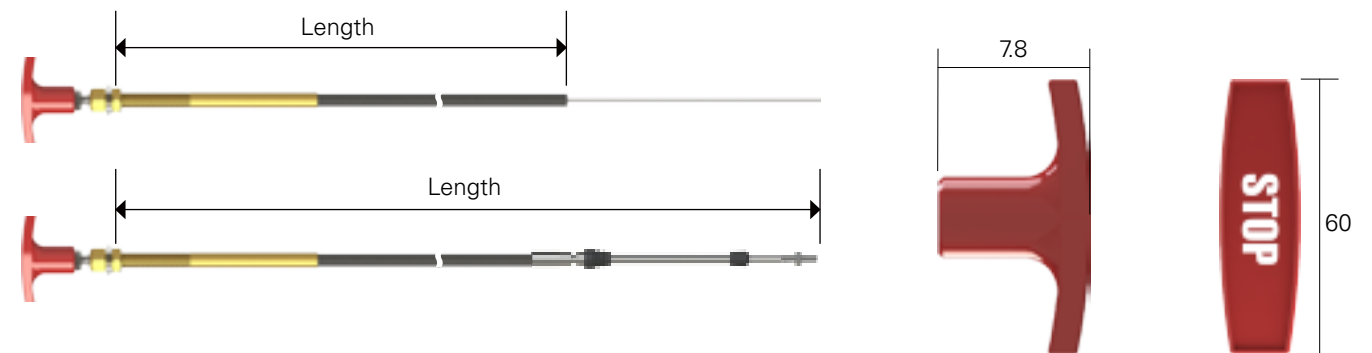
T-Handle Utility Cables are ideal for a variety of control needs such as chokes, switches, throttles, valves, latches, etc. with a light or "pull only" load.

Part No.	Description
315XX	Clamp end fitting
318XX	No end fitting
316XX	Bulkhead fitting
31533XX	3300C support tube and end rod



• T-Handle only: Part no. 31780

### How To Measure



Part No.	Description
<b>Utility Cable T-Handles</b>	
31780	Red T-Handle, STOP
377910RF	Red T-Handle, Flame
377910BP	Black T-Handle, Petro Pump
<b>Utility Cable Hardware</b>	
331702	Bulkhead Adapter Kit
332758	Clamp Adapter Kit

# UTILITY CABLE

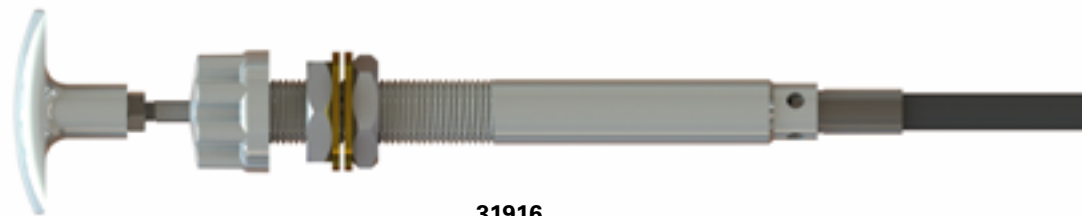


# CONTROL CABLE ADAPTER AND HARDWARE

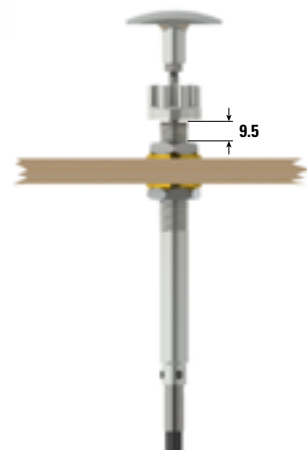


## SD Control

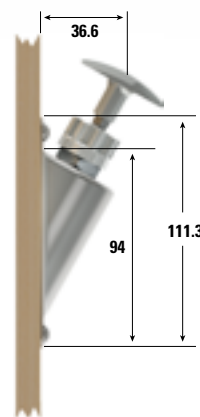
SD Control is ideal for throttle, choke, air or fuel shutdown. It also uses for governor or valve control using 3300C control cable.



31916



Flush Mount



Side Mount



31917

Part No.	Description
31916	SD Control compatible with 3300C and/or Pinnacle series cables
31917	Mounting Bracket (Stainless Steel)

### Part No. Description

#### Control Adapter Kits

30107	Mercury® Control Adapter
30493	OMC® Control Adapter

#### Cable Adapter Kits

30055	OMC® Sterndrive Cable Adapter
30172	Johnson®/Evinrude® Outboard Cable Adapter
30190	Mercury® Outboard Cable Adapter
30212	MerCruiser® Sterndrive Cable Adapter



30107



30493



30055



30172



30190

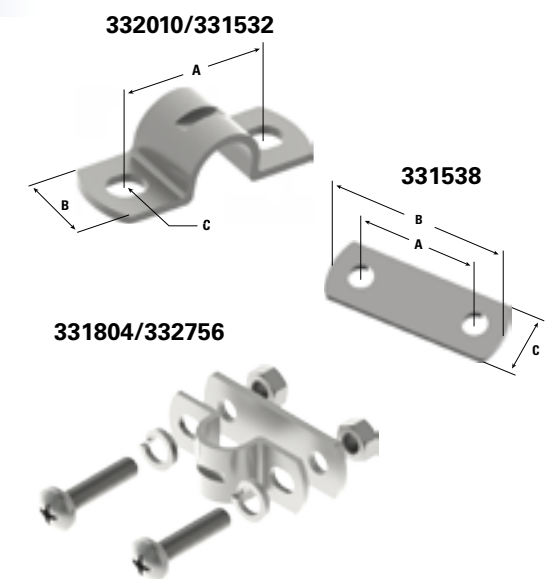


30212

### Clamp & Shim

#### Part No. Description (mm)

Part No.	Description (mm)			
	A	B	C	
332010	3000 Series Clamp (Stainless Steel)	25.5	12.9	5
331532	4000 Series Clamp (Stainless Steel)	25.5	12.9	5
331538	Shim (Stainless Steel)	25.5	38.4	13.1
331804	3000 Series Clamp & Shim Kit (Stainless Steel)			
332756	4000 Series Clamp & Shim Kit (Stainless Steel)			



332010/331532

331538

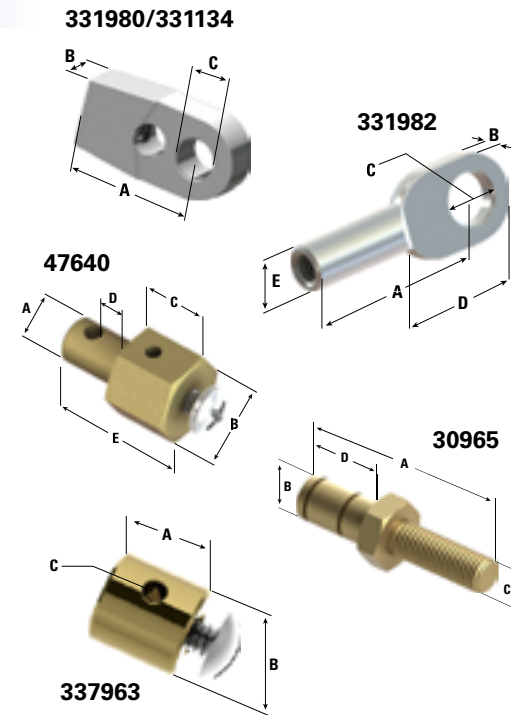
331804/332756

# CONTROL CABLE ADAPTER AND HARDWARE



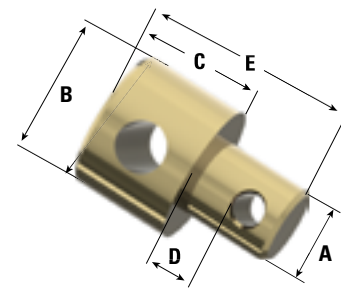
## Terminal Eye & Stop Collar

Part No.	Description (mm)				
	A	B	C	D	E
<b>331980</b>	3000 Series Terminal Eye				
	25	7.9	7.9	-	-
<b>331134</b>	4000 Series Terminal Eye				
	25	7.9	7.9	-	-
<b>331982</b>	3000 Series Terminal Eye Stainless Steel				
	26.5	2.7	6.5	16.9	6.3
<b>47640</b>	Core Fitting				
	6.3	11.1	9.5	6.2	19.6
<b>30965</b>	Terminal Eye Pin				
	38.1	8.0	¼-28	15.1	-
<b>337963</b>	Stop Collar				
	9.5	9.5	2.3	-	-



## Pivot

Part No.	Description (mm)				
	A	B	C	D	E
<b>308650</b>	3000 Series Stainless Steel Hook Clip				
	6.4	11.0	8.3	3.6	15.9
<b>308729</b>	3000 Series Stainless Steel Double Hook Clip				
	7.9	11.0	9.5	4.0	17.6
<b>308729</b>	3000 Series Stainless Steel Double Hook Clip				
	6.4	11.0	8.3	3.6	15.9
<b>308729</b>	3000 Series Stainless Steel Double Hook Clip				
	7.9	11.0	9.5	4.0	17.6

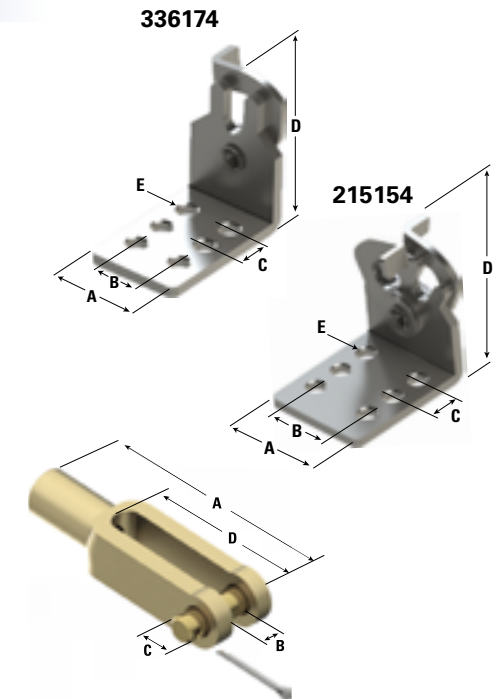


# CONTROL CABLE ADAPTER AND HARDWARE



## Hook Clip

Part No.	Description (mm)				
	A	B	C	D	E
<b>336174</b>	3000 Series Stainless Steel Hook Clip				
	25.2	12.7	9.5	38.0	5.1
<b>215154</b>	3000 Series Stainless Steel Double Hook Clip				
	32	19.0	9.5	38.0	5.1

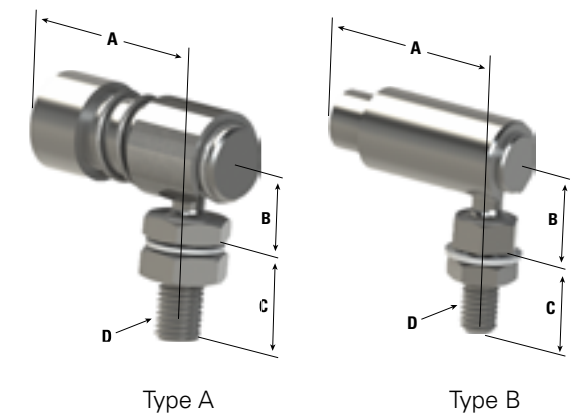


## Clevis

Part No.	Description (mm)			
	A	B	C	D
<b>331125</b>	3300 Series clevis (10-32)			
	50.8	7.2	6.4	31.8
<b>339025</b>	4300 Series clevis (1/4-28)			
	50.8	7.2	6.4	31.8

## Ball Joint

Part No.	Description (mm)				
	A	B	C	D	Type
<b>31799</b>	3000 Series S.S. Ball Joint (10-32)				
	23.0	11.9	11.1	10-32UNF	B
<b>31126</b>	3000 Series S.S. Ball Joint (1/4-28)				
	24.6	11.9	14.3	¼-28UNF	A
<b>29104</b>	4000 Series S.S. Ball Joint (1/4-28)				
	24.6	11.9	14.3	¼-28UNF	A
<b>098444S</b>	S.S. Quick-Release Type Ball Joint (1/2-20)				
	53	25.4	31.8	½-24UNF	A
<b>100623S</b>	S.S. Quick-Release Type Ball Joint (1/2-20)				
	53	25.4	31.8	½-20UNF	A



# TS CONTROL



# CONTROL



## TS Single Control



TS Controls were developed to make it suitable for the latest engines and gearboxes in the market. It operates both shift and throttle with one handle.

### Function

- Single lever dual function

### Features

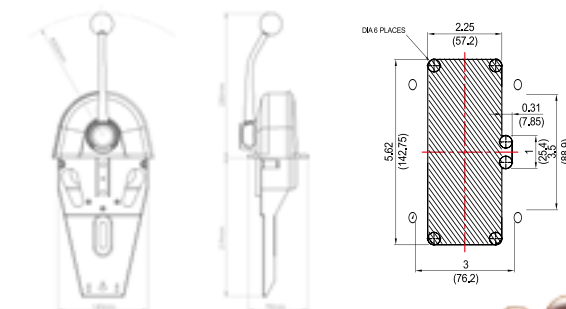
- Easy instinctive action with crisp detents in FWD/NEU/REV
- Handle pulls out to operate neutral throttle.
- Can be mounted left or right handed.
- Optional neutral safety switch to ensure engine only starts when in neutral.
- Chrome housing gives quality look to your cabin.
- 3 Shift adjustment position.

### Specification

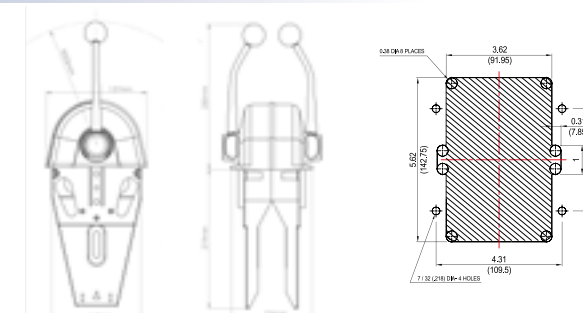
- Suits all outboards, inboards and sterndrives.
- Suits hydraulic gearboxes (not mechanical).
- Not suitable for engines with heavy governor load.

### Cables

- Uses 3300C Maxflex, Maxflex Pinnacle or 4300C Maxflex series cables.
- Fitting for these cables supplies as standard with the control.



## TS Twin Control



### Note

4300 Maxflex series cable not to be used on TS Twin control as interference will occur because of internal space limitation.

Part No.	Description
<b>308601</b>	TS Single Engine Control
<b>308602</b>	TS Twin Engine Control
<b>378742</b>	Heavy Duty Conversion Kit for TS Control (Single Only)

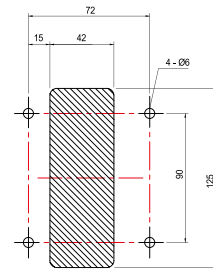
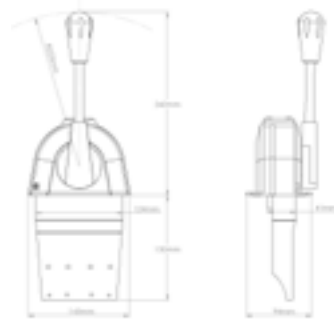


# TC CONTROL



TC Controls is a heavy-duty lever control with positive brake and shut off position for heavy throttles (governor). The throttle lever, a red knob, can activate the brake by turning in a clockwise direction. The clutch lever, a black knob, has a detent function so that an operator can feel the position of neutral, forward and reverse.

## TC Single Control



### Function

- Single designated function control.
- For throttle, clutch and hydraulic application

### Features

- Available as throttle or clutch only, or clutch and throttle, or twin throttle, or twin clutch.
- The throttle brake is simply applied by twisting the lever once the desired setting has been established.
- Can be used for dual station where both stations move together. Care must be taken to avoid operating one station if the other one is firmly dampened down.
- Chrome plated handle shafts and housing.

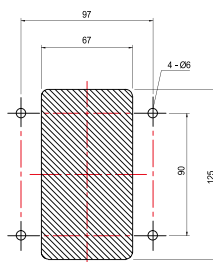
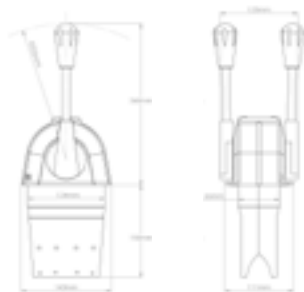
### Specification

- Suits all outboards, inboards and sterndrives.
- Suits hydraulic gearboxes (concrete mixer).

### Cables

- Uses 3300C Maxflex, Maxflex Pinnacle or 4300C Maxflex series cables.
- Fitting for these cables supplies as standard with the control.

## TC Twin Control

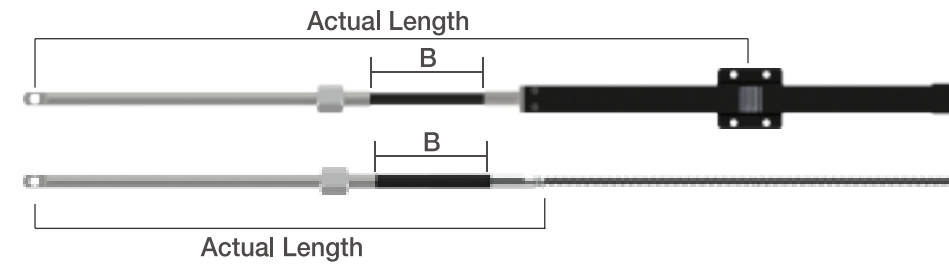


Part No.	Description
31001	TC Single Lever Throttle
31002	TC Single Lever Clutch
36468	TC Twin Lever Throttle & Clutch
36469	TC Twin Lever Throttle & Throttle
36470	TC Twin Lever Clutch & Clutch

# HOW TO MEASURE CABLE



## Steering Cable Measurement



"B" Measurement = \_\_\_\_\_  
 Add 30" = 30"  
 Total = =====  
 Divide Total by 12 = \_\_\_\_\_  
 Round up to next whole foot measurement which is \_\_\_\_\_ feet  
 Order this length of cable

"B" Measurement = 152"  
 Add 30" = 30"  
 Total = 182"  
 Divide Total by 12 = 15.2  
 Round up to next whole foot measurement which is 16 feet

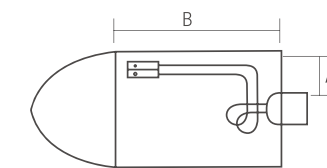
### EXAMPLE

When replacing your existing cable, you can usually find a part number and/or length stamped on the outer jacket. If it is not legible, it will be necessary to make careful examination of your system to determine what type of cable you need and then to actually measure the length required for proper cable replacement of selection and installation.

Follow the above quick method for measuring all steering cables to determine the correct length you will need. Simply measure the length of the "B" requirement as indicated below. Then add 30 inches. Divided the total by 12. Your answer will probably be xx.x. Whatever the number before the decimal is the whole foot conversion. Take the number and round up to the next whole foot measurement. This work for either rack (shown above) or rotary steering cable.

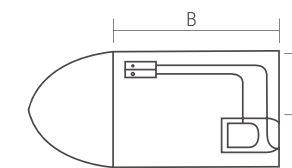
## Control Cable Measurement

If you are installing a cable in a new installation, plan the cable routing carefully. Always make it the shortest route with the least bends, from the control to the device you are controlling (i.e. throttle, transmission). After you have determined the route of your cable, simply measure the complete distance from control to the device, then round up to the nearest whole foot measurement.



OUTBOARD

Typical Outboard Cable Routing: A+B+3'=L



INBOARD/STERN DRIVE

Typical Stern Drive/  
 Inboard Control Cable Routing  
 :A+B+Round up to next even foot

# MEMO



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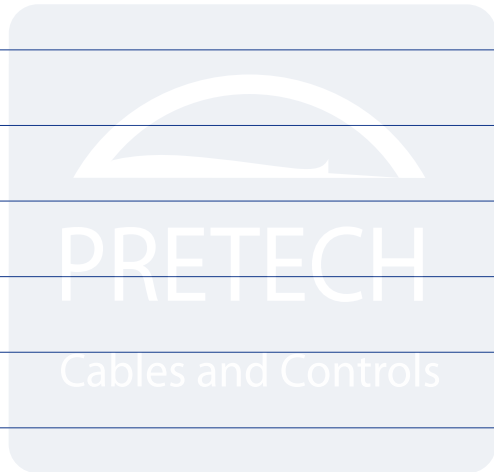
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# MEMO



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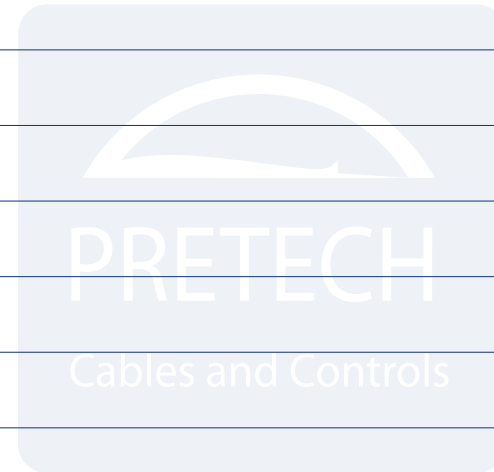
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