SELECTION & INSTALLATION GUIDE

REV: A 05 JUNE 2008

TYPE S & TYPE T - DASHBOARD MOUNT

A1. SYSTEM OVERVIEW:

1. The Intellisteer Type S & Type T Remote Steering Control is versatile, easy and economical to install on smaller powerboats steered with mechanical push pull cable steering systems. For small sailboats with access to a quadrant or tiller or for auxiliary engine remote steering see Type R system. The helm unit is powerful and fast - capable of delivering over 300lbs of cable thrust, with a normal H.O. to H.O. time of 15 seconds. The multiple (hand held or fixed) control units can be located for maximum convenience.

2. The Intellisteer helm unit either replaces or is used in conjunction with common brands of mechanical rotary and rack & pinion steering helms, it incorporates a drive motor and a solenoid clutch. The helm drive unit is based on the MORSE 290 rotary helm and accepts MORSE 304415 steering cables and Teleflex SSC52 steering cables without modification. If the vessel is fitted with a TELLEFLEX 'Safe T' or 'Big T' or UFLEX 'T71', T73NR', 'T81' system, a simple cable end adapter must be fitted to the cable before installing the drive. If the vessel is fitted with a rack and pinion type steering system (or other brands of rotary system), the drive can be used, but the steering cable must also be replaced with either a MORSE 304415 or Teleflex SSC52 type.

A2. PRODUCT LIMITATION:

The Intellisteer helm drive will fit a large number of vessels, which were just difficult or economically not practical to fit remote steering control to before. The product has limitations, which must be observed, please note the following:

1. The Intellisteer helm drive unit is designed around the MORSE 290 Rotary Helm manufactured by TFX-Morse Controls of Limerick Pennsylvania, USA. To meet A.B.Y.C. regulations, this type of steering is recommended for use on vessels with a maximum speed of 40 m.p.h. The Intellisteer helm drive should not be fitted to vessels, which exceed this speed.

2. The Intellisteer drive unit should not be fitted to boats where the maximum horsepower of the engines exceeds the maximum horsepower rating for the vessel as stated on the vessel manufacturers tag.

3. If the existing steering system on the vessel is a **NFB** (no feed back) type. The Intellisteer drive, which is **NOT** a **NFB** helm, can be fitted, but it is **STRONGLY** advised that the helmsman be formally familiarized with the operational characteristics of the new helm.

4. In the event of **UNCONTROLLED** remote steering or other **EMERGENCY** situations, automatic return to **MANUAL** steering is provided through the operation of a built in slip clutch. It is **STRONGLY** advised that the helmsman be formally familiarized with this **MANUAL OVERIDE** procedure.

5. The Intellisteer helm drive is designed to produce a maximum cable push/pull of 300lbs, which requires a peak power of 60 watts. This makes the unit very capable of handling the vast majority of cable steered vessels. However some vessels fitted with push pull cable steering systems have very stiff steering or steering which is heavily loaded in one direction due to hull design and engine considerations. Generally speaking, the Intellisteer drive will steer vessels that do not require more than a 15-lb force on the rim of a 14-inch diameter steering wheel to hold a course, this equals 105 in/pounds of torque. If the steering wheel input torque exceeds this figure, the Intellisteer is not a satisfactory drive system and we would suggest that the vessel be fitted with a hydraulic linear actuator drive system such as our OCTOPUS 1212LAM12 which is capable of steering with much higher power.

A3. 4 – STEP INSTALLATION PLANNING:

When planning an installation, it is recommended that you follow 4 steps:

STEP 1: Ensure that there is adequate space available to accommodate the drive.

STEP 2: Determine the compatibility of the existing steering cable – cable adapter selection.

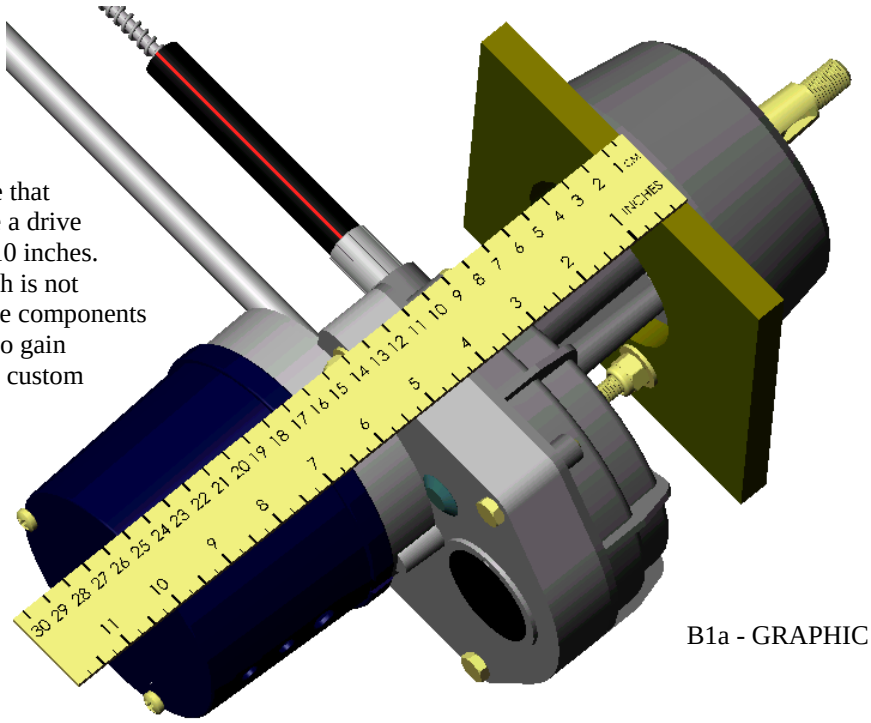
STEP 3: Determine the dashboard mounting style – bezel kit + helm spacer kit selection.

STEP 4: Accessories Selection Review.

B1. STEP 1 – Determine Available Space behind dashboard

B1a. DEPTH

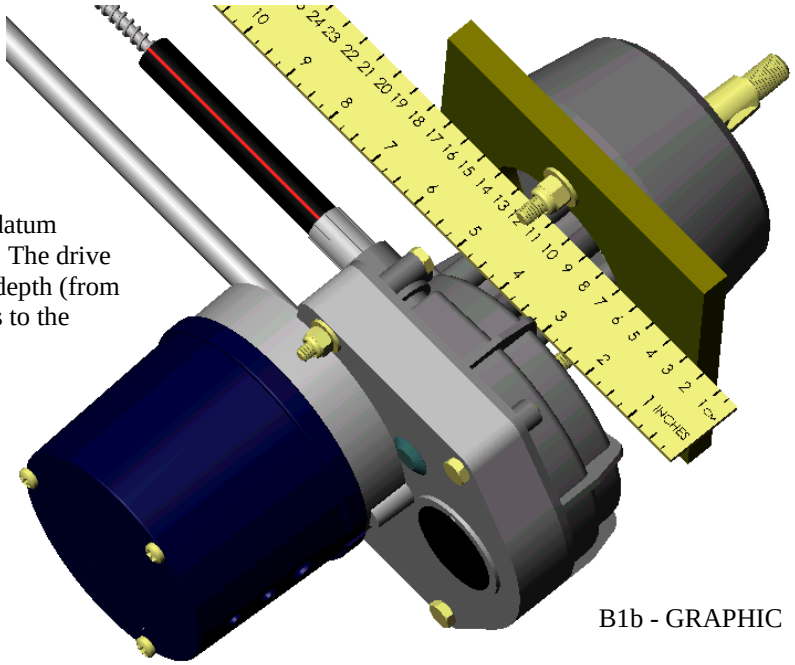
Depending upon the dashboard mount style that is used, the depth required to accommodate a drive will vary slightly, but all styles are within 10 inches. Note that in some cases where enough depth is not available, it may be possible to re-rout some components or wiring harness etc. Also there is a way to gain additional depth clearance by introducing a custom spacer. See page 15 for details.



B1a - GRAPHIC

B1b. LEFT - RIGHT

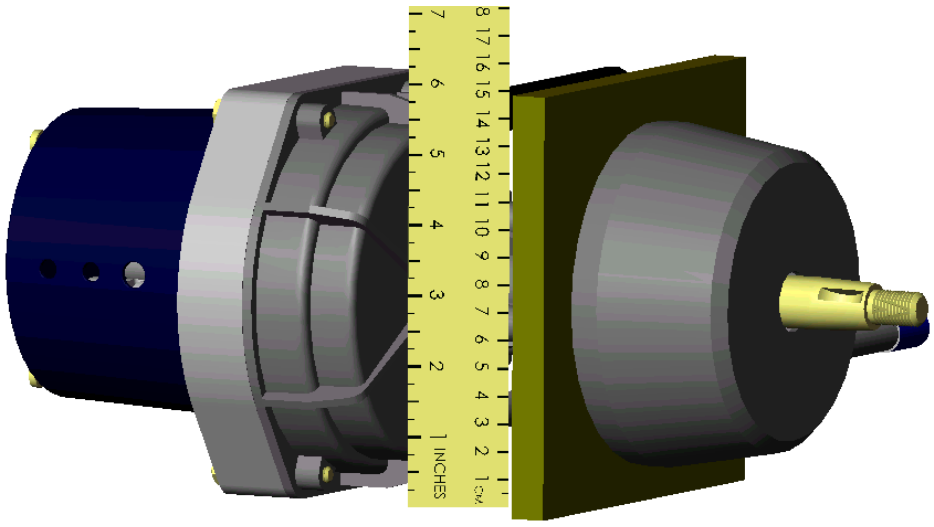
Using the centerline of the steering wheel shaft as datum and looking forward in normal helmsman position. The drive requires 4-1/4 inches to the left x approx. 6 inches depth (from the rearmost face of the dashboard and 3-1/2 inches to the right x 10 inches.



B1b - GRAPHIC

B1c. UP - DOWN

Using the centerline of the steering wheel shaft as datum and looking forward in normal helmsman position. The drive requires 3 inches up x 10 inches and 3 inches down x 10 inches.



B1c - GRAPHIC

C1. STEP 2 – Determine Steering Cable Compatibility

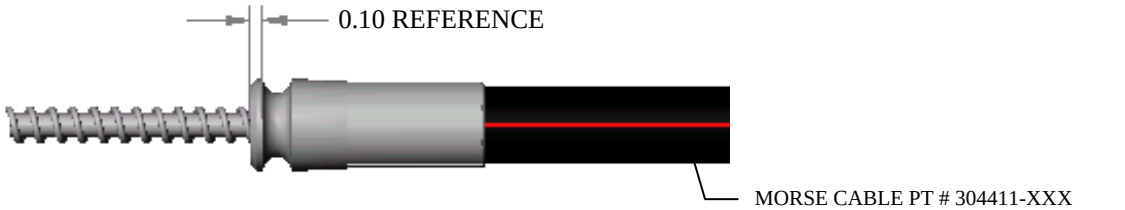
The Octopus drive is based upon the Morse 290 rotary helm unit and accepts Morse 304415 rotary steering cables and Teleflex SSC52 rotary steering cables. Cable adapters are available to accept rotary steering cables from other popular rotary helm manufacturers.

a. Manufacturers identify the steering cable with a part number and length. This can usually be found on the outer case near to the tiller/engine connection. Using either cable part number or by comparison of outer cable head detail, see graphics C2a thru C2d, establish if a cable adapter is required.

b. If the existing steering cable/helm is a RACK type, see graphic C2e. A new Morse 304415 or Teleflex SSC52 rotary steering cable must be fitted, see section ? for guide to calculating the cable length.

C2. STEP 2 – Cable Head Detail Graphics

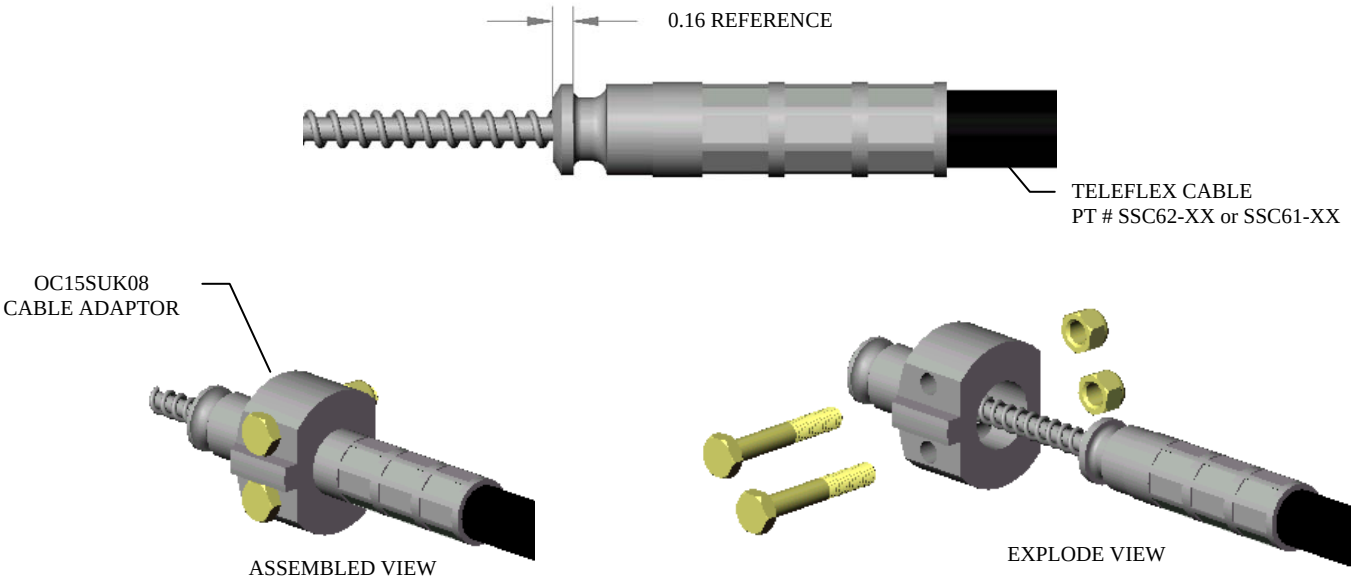
C2a. Morse Cable Part # 304411-XXX or Teleflex Cable Part # SSC52-XX (No Cable Adapter Required)



C2a - GRAPHIC

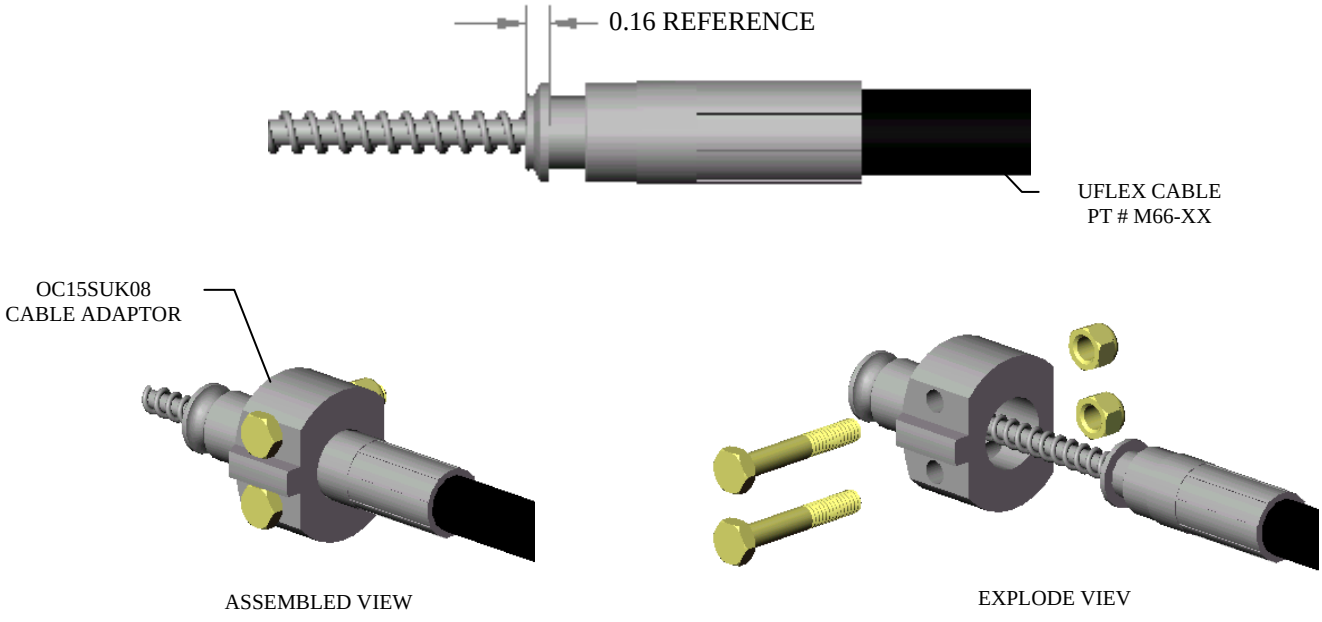
C2. STEP 2 – Cable Head Detail Graphics (Continued)

C2b. Teleflex Cable Part # SSC62-XX or SSC61-XX- Order OC15SUK08 Cable Adapter



C2b - GRAPHICS

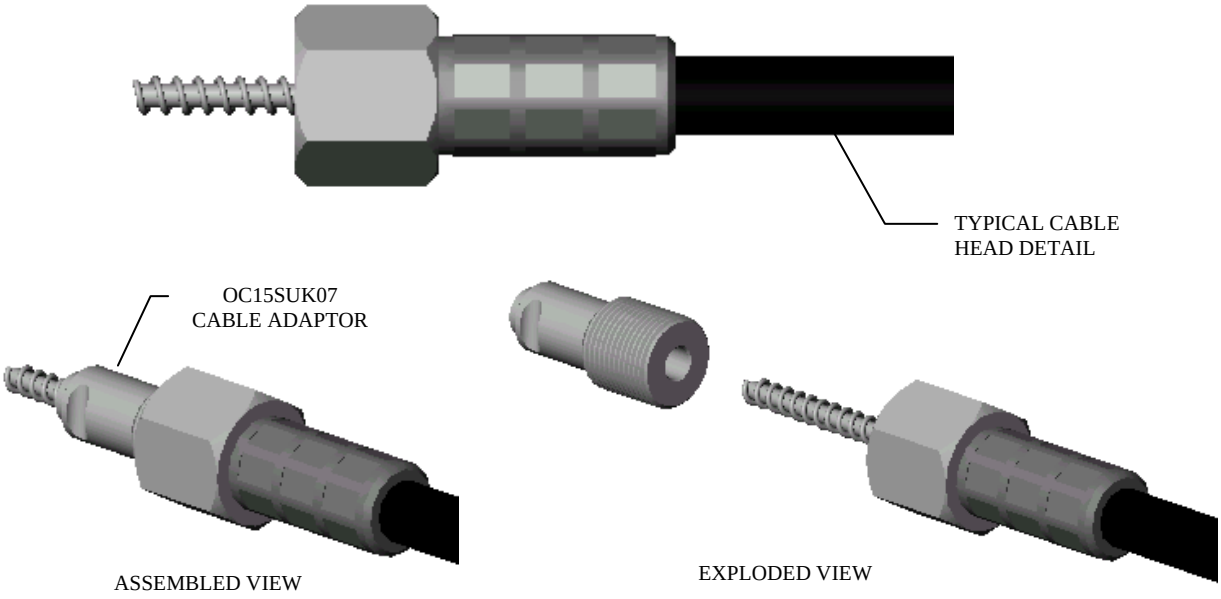
C2c. Uflex Cable Part # M66-XX - Order OC15SUK08 Cable Adaptor



C2c - GRAPHICS

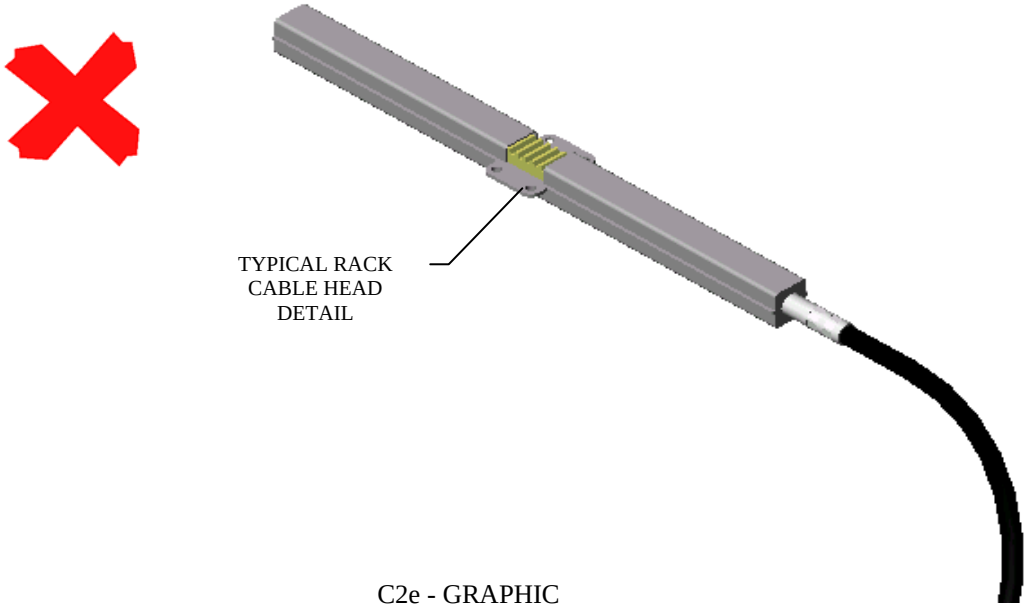
C2. STEP 2 – Cable Head Detail Graphics (Continued)

C2d.	Morse Cable Part # 304415-XXX	– Order OC15SUK07 Cable Adaptor Kit
	Teleflex Cable Part # SSC72-XX	– Order OC15SUK07 Cable Adaptor Kit
	Uflex Cable Part # M47-XX	– Order OC15SUK07 Cable Adaptor Kit



C2d - GRAPHICS

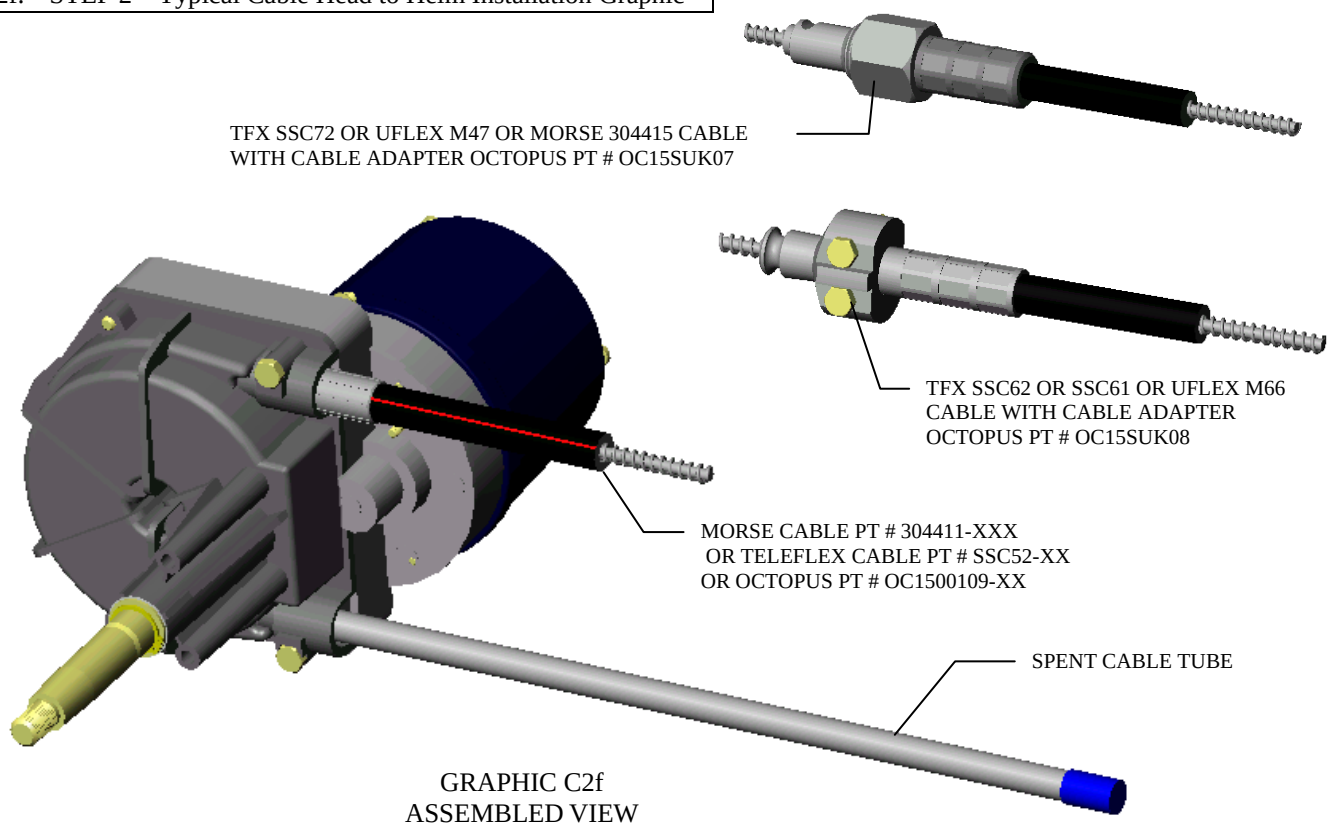
C2e. RACK Style Cable – Replace Rack Cable with new Rotary Cable - Order OC15109-XX Cable)
See section ? on page ? for guide to calculating Cable length.



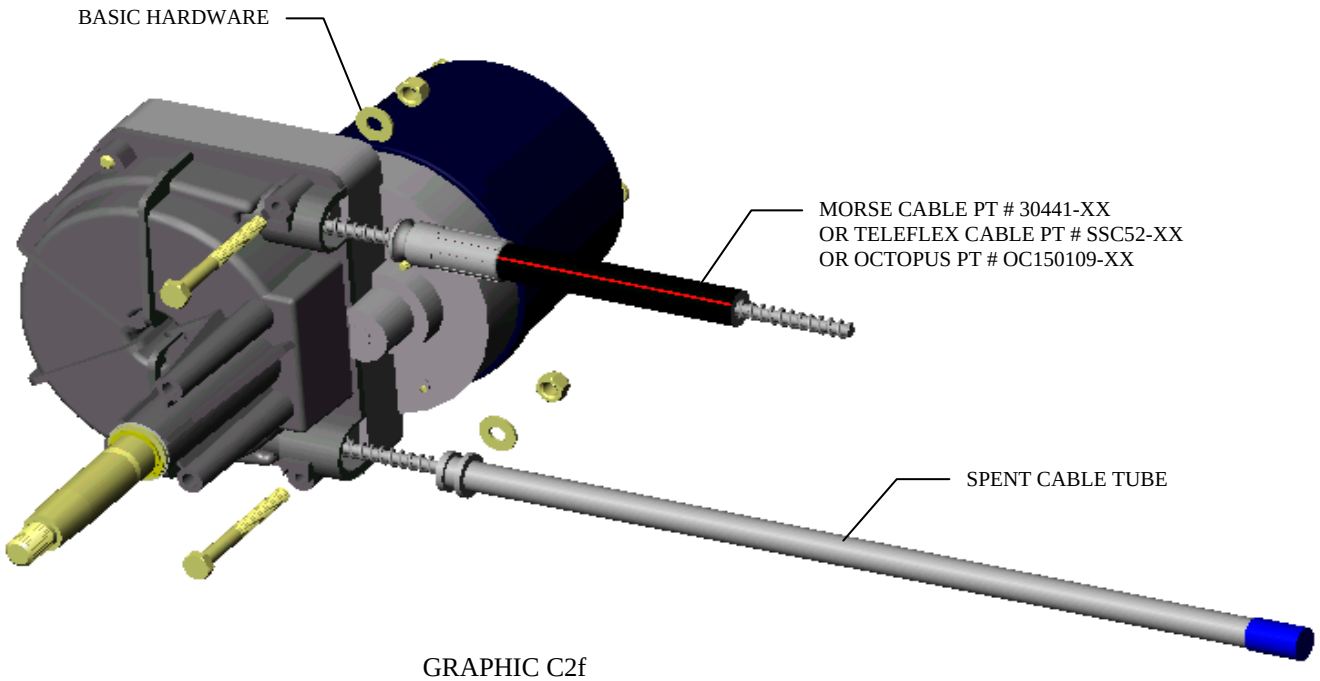
C2e - GRAPHIC

C2. STEP 2 – Cable Head Detail Graphics (Continued)

C2f. STEP 2 – Typical Cable Head to Helm Installation Graphic



GRAPHIC C2f
ASSEMBLED VIEW



GRAPHIC C2f
EXPLODED VIEW

D1. STEP 3 – Determine the Dashboard Mounting Style

In order to accommodate the full range of dashboard mounting orientations, bezels and rigid/tilt steering wheel shaft options. The Intellisteer drive can be mounted to the dashboard panel in a variety of ways using different mounting brackets and if required, spacers and bezel kits. There are 2 main dashboard mounting types.

TYPE S – STRAIGHT SHAFT: This type can be mounted in 2 ways, either at 90 degrees to the dashboard or at 20 degrees to the dashboard. Spacer Kits are available to reduce the space required behind the dashboard. See graphics D2a & D2b for basic Bezel Kits & E2a & E2b for Bezel Kits + Spacer Kits.

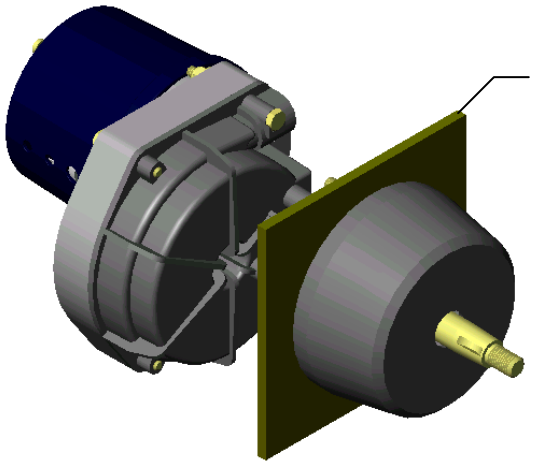
TYPE T – TILT SHAFT: This style mates the drive with the "Performance" Tilt steering mechanism manufactured by Teleflex. The tilt mechanism is supplied with the original steering system. Spacer Kits are available to reduce the space required behind the dashboard. See graphic D2c for basic Tilt Mechanism and E2c for Tilt Mechanism + Spacer Kit.

D2. STEP 3 – Dashboard Mounting Style Detail Graphics

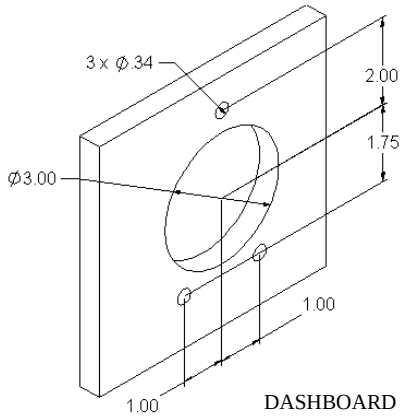
D2a. TYPE S – STRAIGHT SHAFT: Morse 90 degree Mounting

REQUIRED PARTS:

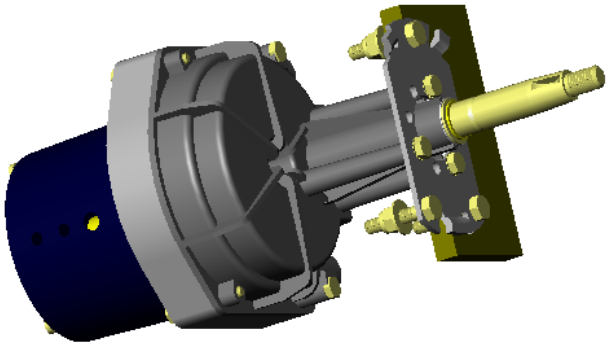
a. Octopus Part Number AFINTSA (straight shaft drive unit + hand held control unit – flex cable)
b. Octopus Part Number AFINTSB (straight shaft drive unit + hand held control unit – fixed cable)
c. Octopus Part Number OC15SUK10 (90 degree bezel kit)



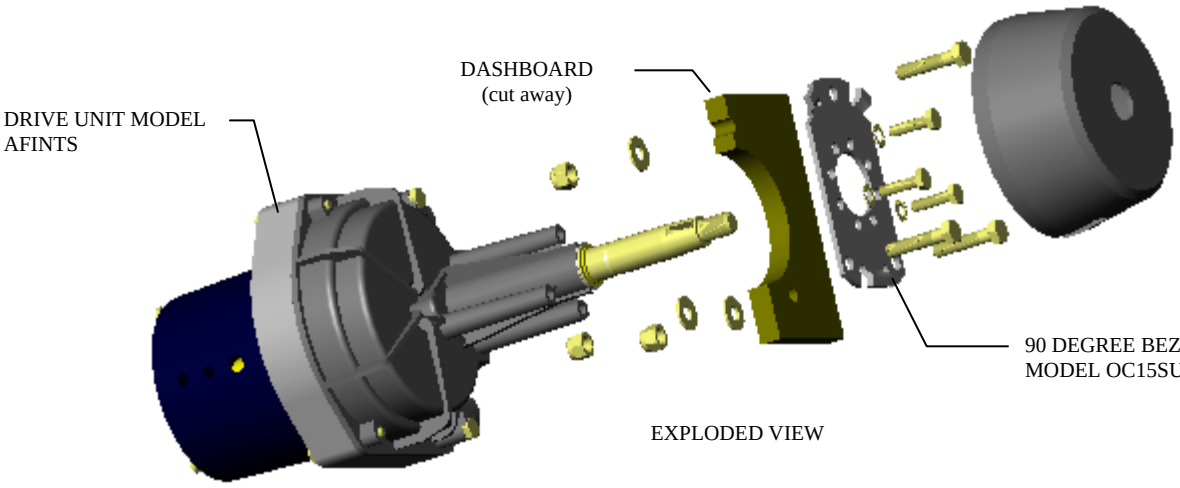
COMPLETE INSTALLATION



DASHBOARD PREPARATION



ASSEMBLED VIEW
(bezel omitted)



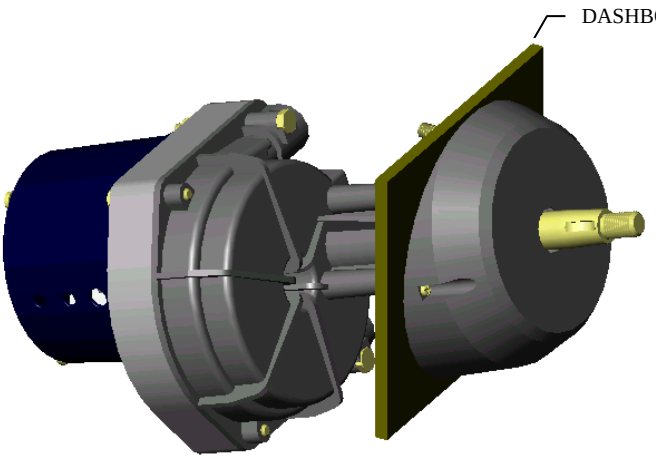
EXPLODED VIEW

D2. STEP 3 – Dashboard Mounting Style Detail Graphics (Continued)

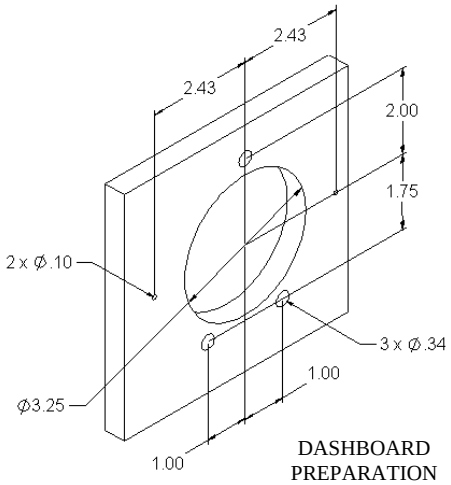
D2b. TYPE S – STRAIGHT SHAFT: Morse 20 Degree Mounting

REQUIRED PARTS:

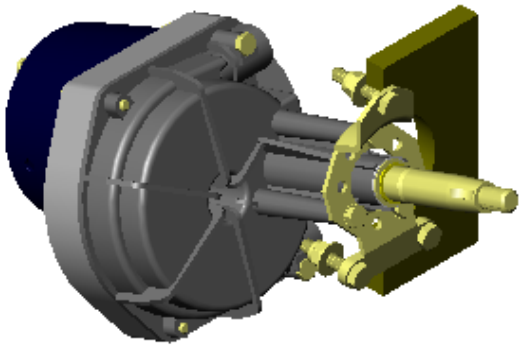
a. Octopus Part Number AFINTSA (straight shaft drive unit + hand held control unit – flex cable)
b. Octopus Part Number AFINTSB (straight shaft drive unit + hand held control unit – fixed cable)
c. Octopus Part Number OC15SUK09 (20 degree bezel kit)



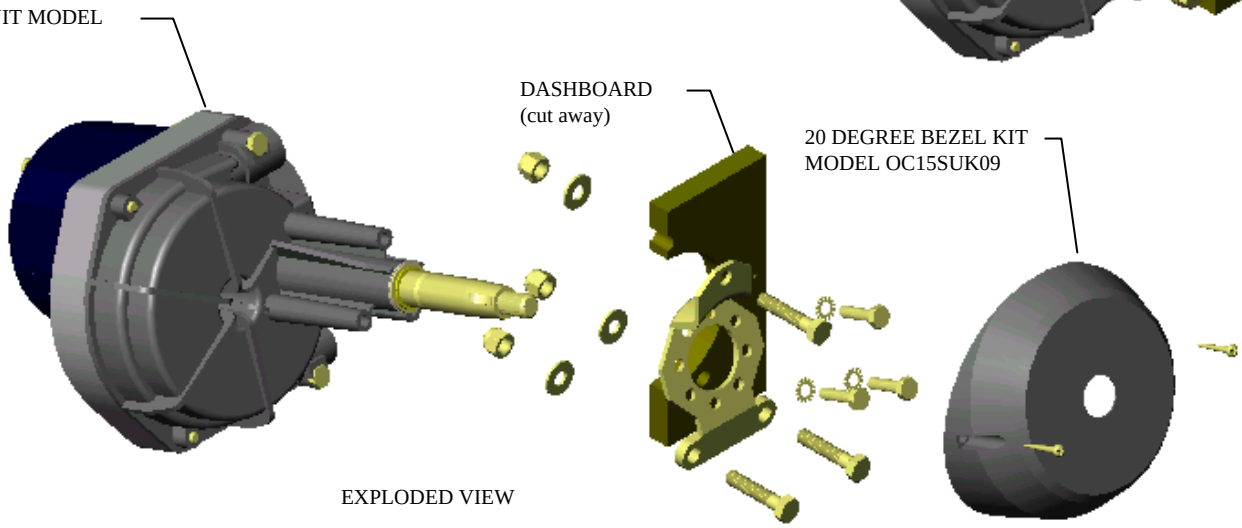
COMPLETE INSTALLATION



DASHBOARD PREPARATION



ASSEMBLED VIEW (bezel omitted)



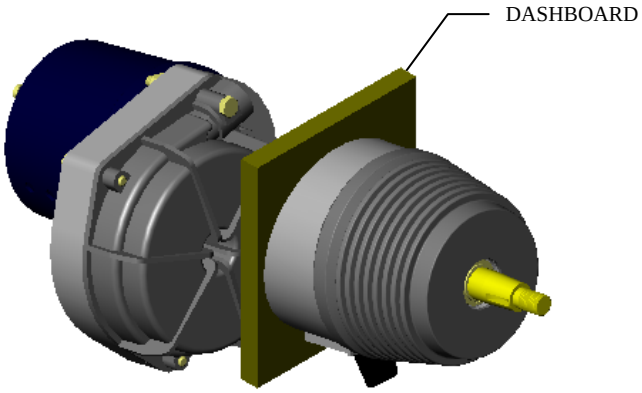
EXPLODED VIEW

D2. STEP 3 – Dashboard Mounting Style Detail Graphics (Continued)

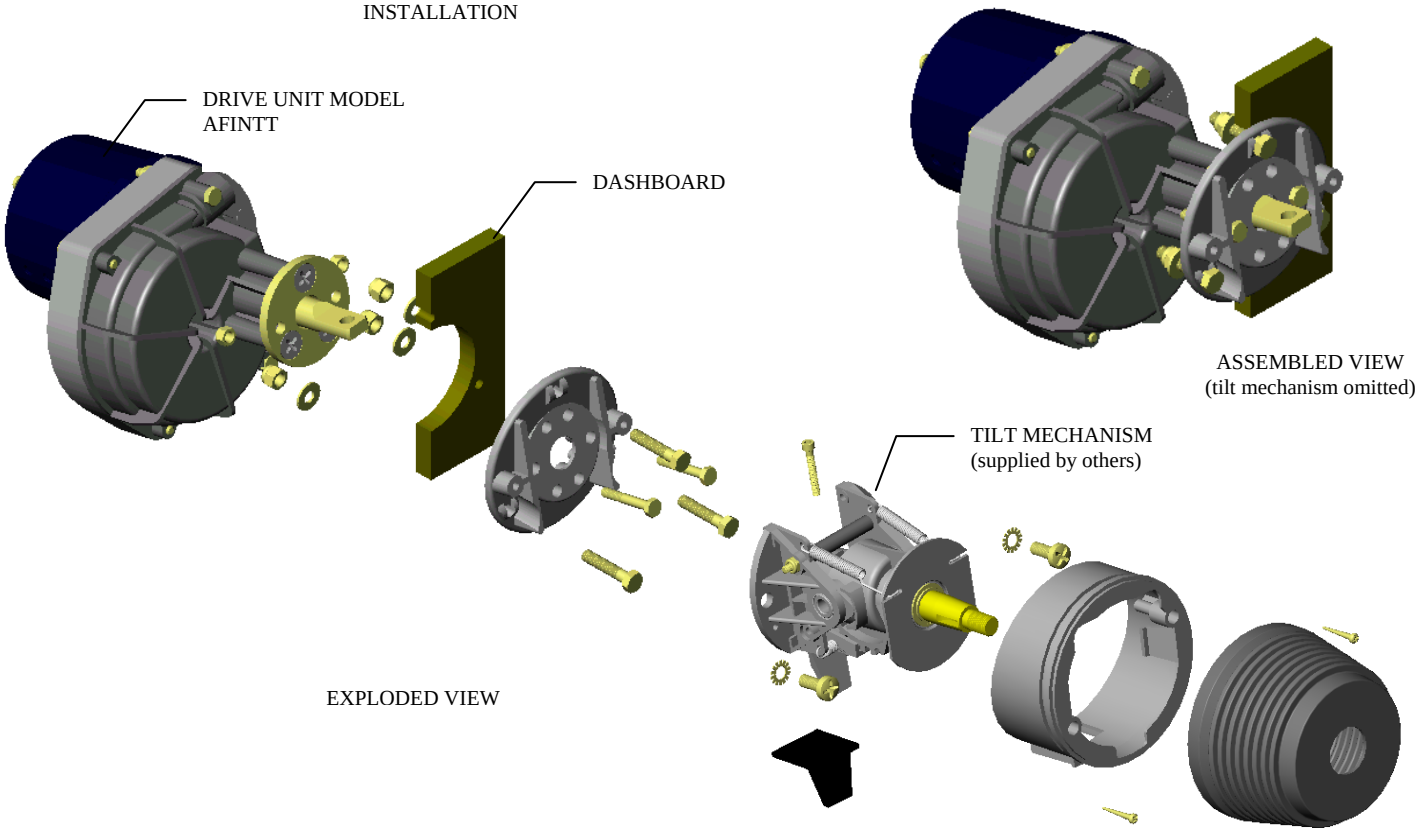
D2c. TYPE T – TILT SHAFT: TFX Performance Tilt Mechanism

REQUIRED PARTS:

a. Octopus Part Number AFINTTA (TFX Performance tilt drive unit + hand held control unit – flex cable)
b. Octopus Part Number AFINTTB (TFX Performance tilt drive unit + hand held control unit – fixed cable)
c. Teleflex Performance Tilt Mechanism (supplied by end user)



COMPLETE
INSTALLATION



ASSEMBLED VIEW
(tilt mechanism omitted)

EXPLODED VIEW

E1. STEP 4 – Accessory Selection Review

There are 3 types of accessory to be considered.

ACCESSORY A – GENERAL:

a. Additional Hand Held Control Unit – To provide additional helm stations in convenient locations, maximum 3 stations. Available with flex cable or hard wire cable x 15 feet long and comes complete with "Y" cable adapter.

For Flex Cable Control Unit	order OC15SUK13A
For Fixed Cable Control Unit	order OC15SUK13B

b. Control Cable Extension x 15' – To provide increased flexibility for convenient control cable routing. Each Cable Extension comes complete with waterproof and foolproof self locking cable connectors.

For Control Cable Extension x 15" order OC15SUK20

ACCESSORY B – STEERING CABLE ADAPTERS AND CABLES:

a. Steering Cable Adapter – Needed when reusing existing steering cable from other helm types with new Intellisteer helm, (see graphics C2a thru C2d on pages 4-6)

For TFX SSC62	order OC15SUK08
For TFX SSC61	order OC15SUK08
For TFX SSC72	order OC15SUK07
For Morse 304415	order OC15SUK07
For Uflex M47	order OC15SUK07

b. Steering Cable – Needed when replacing a Rack type helm (see graphic C2e on page 6) or when replacing a worn or damaged steering cable. Cable length must be matched to cable being replaced or calculated from formula , see guide.

For steering cable x length in feet order OC15109-XX

ACCESSORY C – BEZEL KIT + HELM SPACER KIT:

a. 90 degree Bezel Kit – Needed when mounting the helm drive with the straight shaft at 90 degrees to the dashboard (see graphic D2a on page 9).

For 90 degree Bezel Kit order OC15SUK10

b. 20 degree Bezel Kit – Needed when mounting the helm drive with the straight shaft at 20 degrees to the dashboard (see graphic D2b on page 10)

For 20 degree Bezel Kit order OC15SUK09

c. Helm Spacer Kit – Available to shift the helm rearwards in order to reduce the amount of space required behind the dashboard. The kits consist of multiple stackable spacers and connection hardware. The individual spacers are manufactured from aluminum and are protected from the environment with a black anodized finish (see graphics E2a thru E2c on pages 13-15).

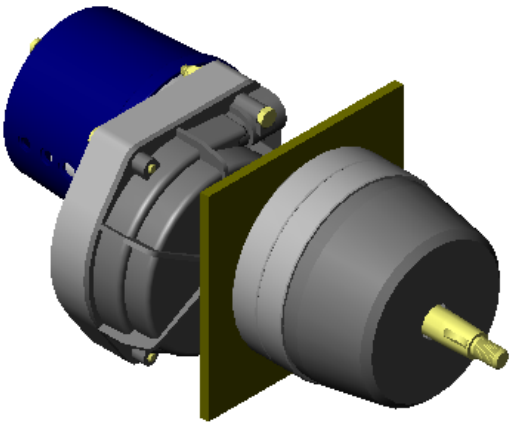
For Helm Spacer Kit – 90 degree Bezel	order OC15SUK16
For Helm Spacer Kit – 20 degree Bezel	order OC15SUK17
For Helm Spacer Kit – TFX Tilt Mechanism	order OC15SUK18

E2. STEP 4 – Helm Spacer Kit - Selection Detail Graphics

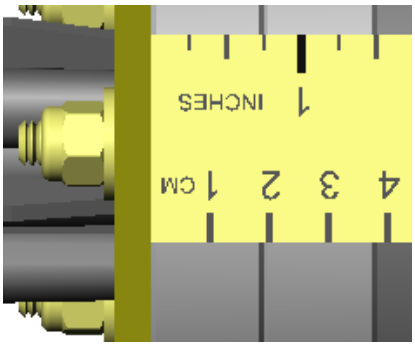
E2a. 90 degree Bezel Mount - Helm Spacer Kit

REQUIRED PARTS:

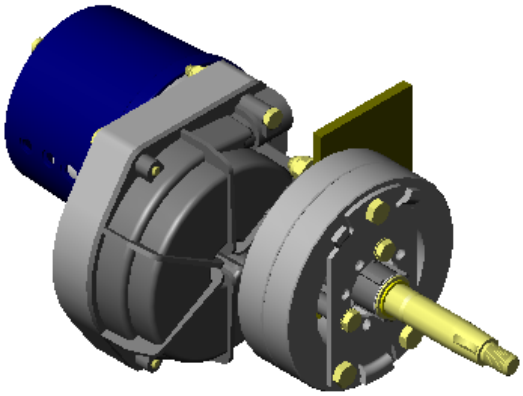
a. Octopus Part Number OC15SUK16 (90 degree mount spacer kit x ¾ inch thick)



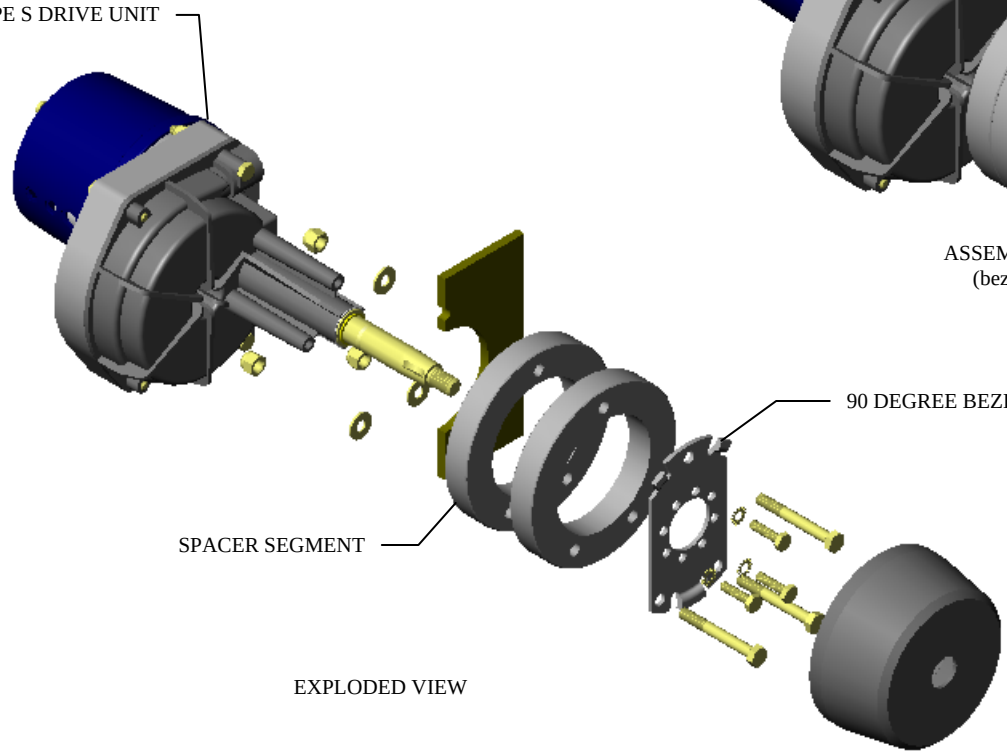
COMPLETE INSTALLATION



MAX THICKNESS =1.5 INCHES
OR 38mm (2 SPACERS)



ASSEMBLED VIEW
(bezel omitted)



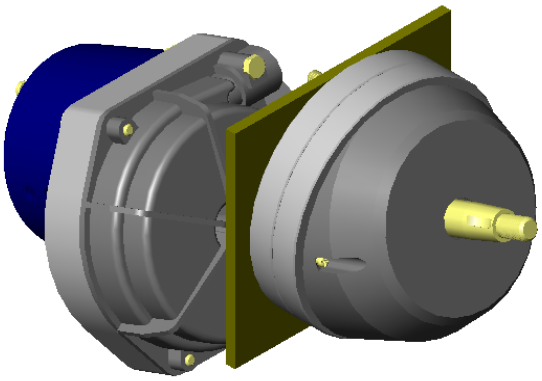
EXPLODED VIEW

E2. STEP 4 –Helm Spacer Kit - Selection Detail Graphics (continued)

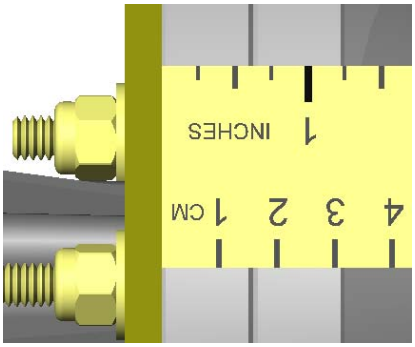
E2b. 20 degree Mount Helm Spacer Kit

REQUIRED PARTS:

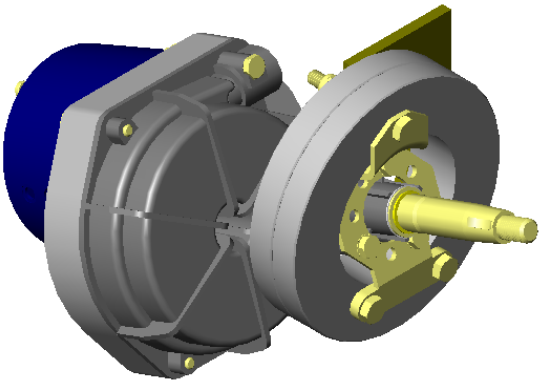
a. Octopus Part Number OC15SUK17 (20 degree mount spacer kit x 5/8 inch thick)



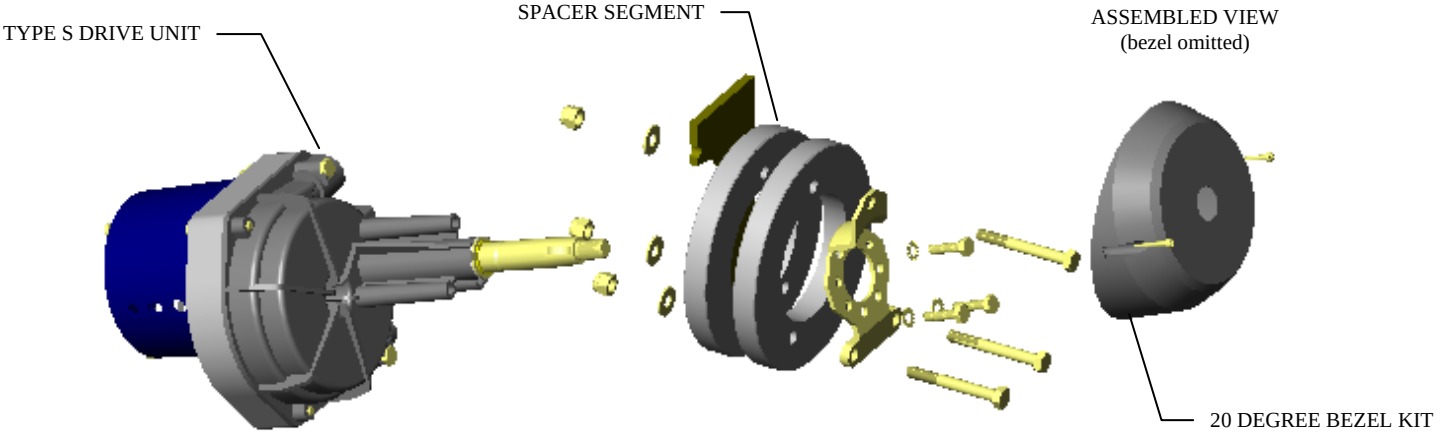
COMPLETE INSTALLATION



MAX THICKNESS = 1.25 INCHES
OR 32mm (2 SPACERS)



ASSEMBLED VIEW
(bezel omitted)



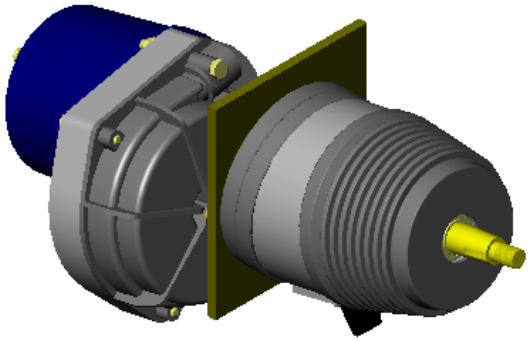
EXPLODED VIEW

E2. STEP 4 – Helm Spacer Kit - Selection Detail Graphics (Continued)

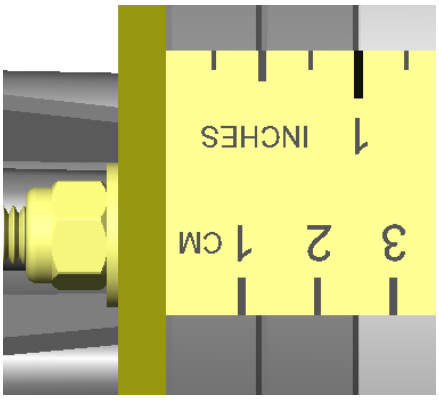
E2c. TFX Performance Tilt Mechanism Mount Helm Spacer Kit

REQUIRED PARTS:

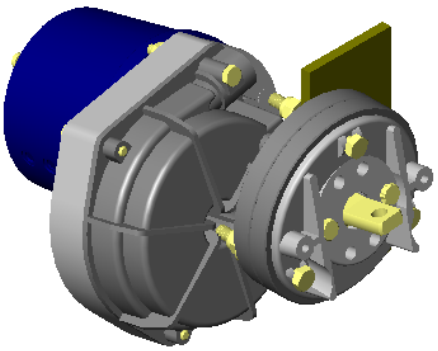
a. Octopus Part Number OC15SUK18 (TFX Performance tilt mount spacer kit x ½ inch thick)



COMPLETE INSTALLATION



MAX THICKNESS = 1.0 INCHES
OR 25mm (2 SPACERS)



ASSEMBLED VIEW
(tilt mechanism omitted)

EXPLODED VIEW

E3. STEP 4 – System & Accessories Checklist

CHECKLIST 1				
DASHBOARD MOUNT REMOTE STEERING SYSTEM				
	DESCRIPTION		**PART NUMBER**	**ORDER**
MANDATORY SELECTIONS	**BASIC SYSTEM** includes: - 1 x OC15SUK13A - flex hand held control unit - 1x OC15SUK07 - cable adaptor - 1 x OC15SUK08 - cable adaptor	straight shaft drive unit (includes 90 degree bezel kit)	OCTAFINTSA (type 'S')	
		tilt shaft drive unit (includes TFX performance tilt mechanism mount)	OCTAFINTTA (type 'T')	
OPTIONAL ACCESSORY SELECTIONS	**CONTROL CABLE OPTIONS**	flex hand control unit	OC15SUK13A	
		fixed hand control unit	OC15SUK13B	
		control cable extension 15'	OC15SUK20	
	STEERING CABLE OPTIONS	adaptor for TFX SSC61	OC15SUK08	
		adaptor for TFX SSC62	OC15SUK08	
		adaptor for TFX SSC72	OC15SUK07	
		adaptor for MORSE 304415	OC15SUK07	
		adaptor for UFLEX M47	OC15SUK07	
		steering cable	OC15109-XX (length calculated from routing path)	
	HELM MOUNT OPTIONS	90 degree bezel kit	OC15SUK10	
		20 degree bezel kit	OC15SUK09	
		90 degree bezel spacer kit	OC15SUK16	
		20 degree bezel spacer kit	OC15SUK17	
		TFX tilt mechanism spacer kit	OC15SUK18	