



Nylon Washers must be installed between the top surface of the cylinder mount/yoke and the clevis as shown

~.07" Gap Between Taperlock SHCS's and Top Plate

DETAIL A SCALE 2 : 3

Assembly Weights:		
640 Actuator	1650 lbs	(748 kg)
Weld-in Hull Flange (Steel)	875 lbs	(397 kg)

### Assembly Parts

- |   |                          |                                       |
|---|--------------------------|---------------------------------------|
| A. Fin Nut*                                 | N. Yoke Taperlock Bolt   | W. Cylinder Mount                     |
| B. Actuator Shaft Stud                      | O. Actuator Shaft Yoke   | Wa. Cylinder Mount Bolts              |
| C. Hull Doubler Plate (Note 2)              | Oa. Yoke Travelstop Bolt | Wb. Cylinder Mount Supports           |
| D. Augmented hull thickness (Notes 1 and 5) | P. Actuator Flange Bolt  | Wc. Cylinder Mount Dowel Pins         |
| E. Inboard Hull Flange (Note 4)             | R. Lockpin Housing       | Wd. Cylinder Mount Support Bolts      |
| F. Hull Flange Spacer (Note 5)              | Ra. Lockpin Housing Bolt | We. Cylinder Mount Support Dowel Pins |
| G. Companion Flange                         | S. Locking Cylinder      | Y. Actuator Cylinder                  |
| H. Augmented hull thickness (Note 1)        | T. Top-plate             | Z. Clevis Pin                         |
| I. Hull Flange Gusset (Note 3)              | Ta. Top-plate Screw      | X. HDPE Washers (4X)                  |
| J. Hull Framing (Note 3)                    | Tb. Top-plate Standoff   |                                       |
| K. Hull Flange Top-Plate                    | U. Sensor Cover          |                                       |
| L. Actuator Companion Flange                | Ua. Sensor Cover Screw   |                                       |
| M. Yoke Lockpin                             | V. Cable Cover           |                                       |
|   | Va. Cable Cover Screw    |                                       |

### Assembly Fasteners

Part	Description	Qty	Size # or inch	Install Torque ft-lb / (Nm)	Install with Coating**
A	Fin Nut *	6	M16 - 2.0	120 / (163)	Loctite 262
B	Actuator Shaft Stud	1	M64 - 6.00	610 / (827)	H
Ca	Hull Flange Bolt	8	M24 - 3.00	250 / (339)	M
Ga	Flange Jacking Screw	3	M16 - 2	-- / --	--
N	Yoke Taperlock Bolt	8	M20 - 2.5	370 / (501)	H
Oa	Yoke Travelstop Bolt	4	M12 - 1.75	70 / (95)	M
P	Actuator Flange Bolt	11	M24 - 3.0	750 / (1017)	H
Ra	Lockpin Housing Bolt	4	M20 - 2.5	350 / (475)	M
Ta	Top-plate Screw	6	M12 - 1.75	45 / (62)	M
Tb	Top-plate Standoff	2	M20 - 2.5	220 / (297)	M
Ua	Sensor Cover Screw	6	M5 - 0.8	1.5 / (2.0)	--
Va	Cable Cover Screw	6	M3 - 0.5	0.3 / (0.4)	--
Wa	Cylinder Mount Bolts	6	M24 - 3.0	500 / (678)	H
Wc	Cylinder Mount Dowel Pins	4	3/4 x 1.5	--	N
Wd	Cylinder Mount Support Bolts	12	M16 - 2.0	180 / (244)	H
We	Cylinder Mount Support D. Pins	4	3/4 x 2.0	--	N
Z	Clevis Pin	4	--	--	N

\* See Note 6  
 \*\* M = Medium strength thread lock compound; H = High Strength thread lock compound. Install torques shown here require coating on threads and also, as lubricant, under bolt head or nut, whichever is turned; N = Never-Seez anti seize compound or equivalent.

- It is the responsibility of the installer to determine what reinforcement measures should be taken to properly strengthen the hull for withstanding forces that may be encountered if the fin or the fin shaft strikes an immovable object while the vessel is under way. Recommendations made by American Bow Thruster are to be used as starting guidelines only. American Bow Thruster is NOT a naval architecture firm and is NOT qualified to advise on structural matters. American Bow Thruster strongly recommends that you seek the advice of a naval architect familiar with your make of vessel.
- CAUTION!!** The Hull Doubler plate is a retainer surface for assembly fasteners and sealants. The Hull Doubler Plate should NOT be considered to provide structural hull reinforcement.
- The Hull Flange Bolts will through-bolt the Hull Doubler Plate and Inboard Hull Flange.
- Assembly Fasteners illustrated and listed on this page should be installed with indicated coating applied to threads and to head or nut sliding surfaces and torqued to the values shown.
- Actuator specifications and dimensions are subject to change without prior notice. Do not use this print for final installation without contacting the factory for certified dimensions.
- Inboard Hull Flange with eight integral riser columns and adjustable spacer stacks.
- The final installed position of the outboard end of the Actuator Seal Housing must be flushed with or slightly extend (.00" / + .125") from the outboard plane of the Hull Doubler Plate.
- With the fin fully installed, tighten the fin nut as tight as possible by hand. Hand tighten the 6 fin nut jacking bolts so that they engage the slots in the fin socket. Loosen the fin nut so that the 6 jacking bolts in the fin nut stop against the slots in the fin socket. Torque the 6 jacking bolts in a star pattern to 50 ft-lbs. In a circular pattern torque the 6 fin nut jacking bolts to 120 ft-lbs. Make several passes applying the finished torque value until the jacking bolts turn less than 10 degrees.

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	DRAWN	CE	Parts & Dimensions for Fiberglass Hull Installation All Dimensions are inches unless noted		
	CHECKED		SCALE:	N.T.S.	SHEET: 1 OF 1
	ISSUED	2/25/2014	SCALE:	N.T.S.	SHEET: 1 OF 1
					REV: C