



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. Weld-in Hull Flange (WHF) (Note 2) | Oa. Yoke Travelstop Bolt | Wb. Cylinder Mount Supports |
| D. WHF Coverplate | P. Actuator Flange Bolt | Wc. Cylinder Mount Dowel Pins |
| E. WHF Seal-ring | R. Lockpin Housing | Wd. Cylinder Mount Support Bolts |
| F. WHF Seal-ring Bolt | Ra. Lockpin Housing Bolt | We. Cylinder Mount Support Dowel Pins |
| G. WHF Coverplate Screw | 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 | |
| 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 | |
| X. HDPE Washers (4X) | 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
F	WHF Seal-ring Bolt	12	M24 - 3.00	620 / (840)	M
G	WHF Coverplate Screw	6	M8 - 1.25	7 / (9.5)	M
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.

NOTES:

- 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.
- See Sheet 2 of 2 for Hull Flange Assembly details. CAUTION!! The Weld-in hull flange must be indexed for actuator cylinder clearance position before it is welded into the hull.
- The Weld-in Hull Flange is to be supported by integrated gussets, hull framing and stringers which are provided by the customer according to the naval architect's specifications.
- 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.
- 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	BK			
	CHECKED	BK	Parts & Dimensions for Metal Hull Installation All Dimensions are inches unless noted		
	ISSUED	BK			
	6/14/2013	SCALE: N.T.S.	SHEET: 1 OF 2	REV: C	