The BH-USA A-Drive is a double worm gear reducer, meaning a C-face electric motor mounts directly to the small input worm reducer, and this in turn, powers the larger reducer that has the output shaft.

The A-Drive is dependent on six press-in, rubber seals that keep the gear oil inside the gear housing. There is an output shaft on the larger reducer designed to accept a hardened shaft of 1.25" diameter. The output shaft has a general mounting flange that can be bolted using four bolts to brackets designed to install the hoist to the lift.

BH-USA manufactures brackets for specific installations. The Worm Gear reducer or any other boat hoist is not designed to be load bearing.

When using the A-Drive in an overhead lift, these guidelines illustrate the safest and most common installation methods. Any other type installation not referenced in this guide could result in the hoist failing and not being covered under warranty.

Overhead installations of the BH-USA A-Drive, or any enclosed drive dependent on seals, should only be installed to steel or aluminum I-beams running across the slip.

**BH-USA supplies a hardened GR5 bolt with all drive shafts to attach the drive pipe to the A-Drive. It is the end-users responsibility to insure that their installer uses the GR5 bolt supplied from BH-USA. Using a weaker grade bolt can cause the weaker bolt to fail and drop the boat.**

BH-USA assumes no responsibility or liability for installations and/or improper use of the equipment. This guide is intended to be used as a reference and general guideline only. BH-USA is not responsible for the design, construction or installation of docks, piers or lifts.
BH-USA WARRANTY INFORMATION

The following warranty applies to all components of hoists manufactured by BH-USA. Warranty applies to manufacturing defects and/or failures due to design or fabrication. Replacement parts or a new unit will be supplied at no charge at the discretion of BH-USA. This does NOT include labor or freight.

• MOTORS - ONE YEAR
• SWITCH AND GFCI - 30 DAYS
• GEARPLATE ASSEMBLIES (GPAS) - LIFETIME
• ENCLOSED GEARS - TWO YEARS

THE FOLLOWING ARE NOT WARRANTABLE BUT ARE MANUFACTURED AND REGULATED BY SPECIFIC INDUSTRY STANDARDS.

SLINGS AND CRADLES -
STRUCTURAL STEEL
FASTENERS
CABLE AND RIGGING

Warranty is void if unit is improperly installed, maintained, or greased or alterations are made to the original manufacturer’s design.

Warranty is predicated on the gear being inspected and serviced on an annual basis by a qualified technician.

A record of inspection is required with any warranty request.

Warranty applies to original owner.

Warranty is VOID if transfer of ownership.

BH-USA RETURNS
2368 FM 2087N
LONGVIEW, TX
75603

Call prior to returning equipment for RMA (Returned Merchandise Authorization)
All Returns must have RMA number clearly listed on return box.
We are not responsible for damages incurred in shipment.
Customer is responsible for return shipping costs.
Once received, within two weeks we will deem item returned warrantable.
BH-USA reserves the right to decide whether warranted items will be repaired or replaced.

WHILE EVERY CARE HAS BEEN TAKEN TO AVOID MISTAKES, BH-USA WILL NOT ACCEPT LIABILITY FOR ANY ERRORS, MISPRINTS, TYPOGRAPHERICAL ERRORS, OMISSIONS OR MISINTERPRETATIONS OF THE BH-USA OVERHEAD LIFT GUIDE - APPENDIX A.

* See BH-USA Limited Warranty Information on the inside back cover of this publication.
BH-USA A-DRIVES AVAILABLE AND SPECIFICATIONS

Double worm gear reductor, type: 40:75 for the BH-A Drive 4000 and 40:90 for the BH-A Drive 7000.

All aluminum with a standard 56C adjustable motor mount.

BH-USA manufactures an aluminum lift bracket that allows for the BH-USA A-Drive can be used on the All Aluminum BH-USA 4-Post lifts as an alternative to the flat-plate hoist.

BH-USA Grease can be ordered online at BH-USA.com, item # 12280.
THE FOLLOWING INSTALLATION METHODS ARE NOT RECOMMENDED FOR ENCLOSED DRIVES

Mounting hoist to a wood beam

Using one hoist to lift front of boat and one to lift the back of the boat

Using one hoist on the side and running cable to pulleys on the other side

Welding any part of the lift to the structure

Open gear flat plate systems will make noise, leave metal shavings or boil grease off when placed in overloaded conditions or installed incorrectly.

The enclosed A-Drive conceals all these characteristics, therefore voltage drop be checked under load.

Determine the voltage at the service panel.

Then check the voltage across L-1 & L-2 on each motor while lifting the load.

The drop must not exceed 4%. If the drop is more than 4%, the problem should be addressed before leaving the job site.

BH-USA A-DRIVES AVAILABLE AND SPECIFICATIONS

**SPECIFICATIONS: 3000**

- **Type:** 40:75
- **Actual Ratios:** 40:50, 75:30
- **Make:** Aluminum
- **Lube:** Synthetic
- **Motor:** 3/4 hp
- **Motor Mount:** 56C Adjustable
- **Manufacturer:** BH-USA
- **Warranty:** 2 Year

**SPECIFICATIONS: 4000**

- **Type:** 40:75
- **Actual Ratios:** 40:50, 75:30
- **Make:** Aluminum
- **Lube:** Synthetic
- **Motor:** 1 hp
- **Motor Mount:** 56C Adjustable
- **Manufacturer:** BH-USA
- **Warranty:** 2 Year

**SPECIFICATIONS: 7000**

- **Type:** 40:90
- **Actual Ratios:** 50:50, 75:30
- **Make:** Aluminum
- **Lube:** Synthetic
- **Motor:** 1.5 hp
- **Motor Mount:** 56C Adjustable
- **Manufacturer:** BH-USA
- **Warranty:** 2 Year

*BH-USA A-drive and components can be ordered online at BH-USA.COM.*
HELPFUL TIPS ON OVERHEAD LIFTS  
USING AN A-DRIVE

In this construction there are two structural aluminum I-beams span the slip, typically resting on the stringers or structural aluminum channel that has been bolted to the structure to form stringers. The clean and simple look has become very popular. BH-USA manufactures aluminum hangers that easily bolt to the I-Beams that span the slip, allowing for a center mount of up to 8500lbs, and a side mount of up to 4500lbs. Depending upon the actual structure, a twin drive design for up to 12,000lbs is possible.

The hoist hanger slides onto the beam for a guide and four bolts are drilled and inserted in the correct location to mount. BH-USA makes hoist hanger for the A-drive and the flat-plate hoists.

The hoist hanger also functions as a pipe support like the steel hoist hanger.

The rear pipe support mounts the same way by sliding onto the beam and bolting.

For center and side mount installation, sheave housings are available to slide onto the beam then bolt.

Drive pipe running down center of the slip with lifting cable going out to four blocks attached to the I-beam. The A-Drive should be attached to the flange of an aluminum I-beam using BH-USA Aluminum I-Beam mount.

BH-USA aluminum pipe support should be used on the opposite beam. To run the cable use BH-USA blocks.

It is crucial that the lifting cable be between two pipe sleeves. Never use the A-Drive as a pipe support. For more lifting power or to keep the center clear of the lifting pipe Boat Hoist USA suggests a twin drive system with a hoist on both sides of the boat.

For this installation use two BH-A-Drive mounts and two aluminum dual pipe supports.

It is important that the cable pulls from the center of the dual pipe support and not outside the sleeve.

*Outside diameter of the pipe.

BH-USA Enclosed Drive Guide 
Appendix B–5

800-259-8715
HELPFUL TIPS ON OVERHEAD LIFTS

- Proper cable attachment to the pipe is important. Cables should be perpendicular to pipe. Do not use a hose clamp. Always drill the hole through the drive pipe and use on piece of cable, this way there will be minimal torque on the pipe. (Fig. 2-Placement).

- Make sure cable is winding off opposite sides of the pipe (Fig. 1-Placement).

- Cable clamps should be attached to the cable correctly with the saddle side on the uncut side of the cable.

- Strap hangers, if used, should be hung at a 45 degree angle to the boat. (Figure 2).

- Cable winders are optional, they increase the life of the cable and can increase the speed of the lift, however they decrease the lifting capacity of the hoist.

- Permanently mount the switch, with the cable coming from the bottom to eliminate water penetration.

- Never attempt to use any more than four lift points.

- Never mount one hoist in the back of boat and one hoist in the front of boat. The back of the boat is the heaviest, so twin drives should always be mounted on either side of the boat to disperse the weight of the boat evenly to each hoist.

- You must use a full length of pipe connecting forward and aft pipe supports, never use two short pieces of pipe.

- Never “offset” drive pipe, it should always be centered.

- Never mount hoist in the center of pipe.

- Use a GR5 or stronger bolt to secure drive pipe to hoist.

BH-USA supplies a hardened GR5 bolt with all hoists and A-drives, to attach the drive pipe to the flat-plate hoist. It is the end-users responsibility to insure that the installer did use the GR5 bolt supplied from BH-USA, using a weaker grade bolt can cause the weaker bolt to fail and drop the boat.

When designing your lift, check all component ratings. BH-USA uses no less than schedule 40 steel pipe that is 1.5” inside diameter and 2-3/8” outside diameter. Any other size pipe will change the ratings for the hoist overall.

The lifting capacity of your hoist/lift is only as high as the weakest rated component used.

For example, if the motor, hoist and gearplate are rated for 8500 lbs but you use a block rated for 800 lbs. then your lifting capacity is only 800 lbs.

A hoist should NEVER be used to lift human beings.
Hoists are not designed, nor intended to lift human beings, or to lift loads over areas where humans might be. NEVER use this hoist for any other application other than the one for which it is designed. NEVER stand beneath the boat on a hoist.

APPROX. WEIGHTS

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fuel Weight</td>
<td>Gallons x 6 lb</td>
</tr>
<tr>
<td>Tuna Towers or Wake Board Towers</td>
<td>+/- 400 lbs</td>
</tr>
<tr>
<td>Steel Cradles</td>
<td></td>
</tr>
<tr>
<td>5” I-beams</td>
<td>10 lbs per foot</td>
</tr>
<tr>
<td>6” I-beams</td>
<td>12.5 lbs per foot</td>
</tr>
<tr>
<td>2.21/4” Angle</td>
<td>3.29 lbs per foot</td>
</tr>
<tr>
<td>2 x 8’ Lumber</td>
<td>Approx. 2 lbs per foot</td>
</tr>
</tbody>
</table>

SIGNS A HOIST IS IN A BIND OR BEING USED AS LOAD BEARING:

- Unit is not lifting
- Unit “squeals”
- Gear or back plate bearing breaks
- Metal shavings are coming from the worm housing
- Unit freezes or locks up when turned by hand.

DETERMINING BOAT WEIGHT - AN EXAMPLE ONLY

Dry Weight of Boat = 2900 lbs
40 Gallons of Fuel = 240 lbs
Wakeboard Tower = 400 lbs
Gear (Coolers, Skies, Etc) = 150 lbs
Steel I-Beam Boat Cradle = 500 lbs

Approximate Weight = 4190 lbs

In this example a hoist rated over 4,190 lbs is needed to lift the boat.
SAFETY FIRST!

A hoist should NEVER be used to lift human beings. Hoists are not designed, nor intended to lift human beings, or to lift loads over areas where humans might be. NEVER use this hoist for any other application other than the one for which it is designed.

NEVER put children or adults in a boat while the boat is on a lift.

NEVER allow children to play in or around a boat while it is on a lift.

NEVER allow children or adults to swim around or under a boat lift or near the boat lift when it is submerged.

Precautions, such as using NEMA and UL components and installing GFCIs on systems and wiring should not be relied upon when the risk of electrocution is possible. Components can fail. For this reason it is NEVER a good idea to swim around a lift.

Be vigilant about safety, submerged cables can conduct electricity to the water if your system is not properly grounded, or you have developed a voltage leak.

CAUTION ABOUT CABLE CRAWL:

This is a common occurrence that can be very dangerous in a boat lift. When the cable wraps onto the drive pipe it can "crawl" on top of itself it can then start wrapping backward. The section that "crawled" will now be lifting at a different ratio than the other three lift points, causing the lift to either stop working; to transfer more load to one point; to damage the cable, or to become in a bind and even break, dropping the boat.

CAUSES OF CABLE CRAWL:

• Improper cable installation
• Using too much cable (If you have too much cable wrapping on the pipe, the arther out the cable will track, it will start to pull back, thus beginning the "crawl". There should only be approximately 7" of cable wrap for each lifting point on the pipe.)
• Using old cable which has begun to fray or splinter with causes it to want to "crab" itself due to the coarseness

NEVER stand on a lift platform if partially submerged, due to the possibility of electric shock.

NEVER mount or hang a drum switch where it can be reached while in the boat.

ALWAYS exit the boat and have all passengers exit the boat before lifting the boat.

NEVER ride the lift while in the boat.

NEVER leave your boat in the lift with the drain plug open, if the lift drops the boat while you are absent, the boat could fill with water and sink.

ALWAYS have an operating bilge pump with a functional float switch in any boat on a lift. Rain water can fill the boat adding thousands of pounds that the lift might not be able to handle.
BH-USA guarantees to the original purchaser a two-year warranty on the BH-USA's A-Drive to be free of any and all manufacturing defects in material and workmanship. BH-USA will only cover damage to the A-Drive due to defects in workmanship or quality of the material. Warranty is valid only when this product is used under normal conditions of recommended use.

BH-USA will only replace merchandise or products manufactured or supplied by BH-USA. BH-USA reserves the right, to either repair or replace the A-Drive or its components at our discretion. This warranty does not cover damage resulting from abuse, neglect, improper handling or incorrect installations.

Warranty is predicated upon the A-Drive being inspected and serviced on an annual basis, by a qualified technician. A record of inspection is required with any warranty request.

Do not exceed the posted rating of the gear plate being used. BH-USA will not be responsible for any incidental or consequential damages or injuries. This guarantee does not cover ordinary wear and tear. As with any gear component parts, particularly moving parts, will show wear over time and eventually will need to be replaced. If such wear and tear occurs, BH-USA can sell you a new worm gear reducer.

Any person using equipment manufactured by BH-USA will be subject to all BH-USA terms and conditions.

Warranty does not include the gears or machined parts on the hoist and is intended for the overall assembly only.

THE FOLLOWING ITEMS WILL VOID WARRANTY:

1. EXCEEDING THE WEIGHT RATING POSTED ON THE FRONT OF THE GEAR PLATE ASSEMBLY;
2. SUBJECTING THE GPA TO ABUSE, NEGLECT, ACCIDENT, OR IMPROPER USAGE;
3. ALTERATION OR REPAIR OF THE GPA BY ANYONE NOT AUTHORIZED BY BH-USA;
4. INSTALLING THE GPA INCORRECTLY OR USING THE HOIST IN A LIFT THAT IS CONSIDERED IMPROPERLY INSTALLED;
5. USING THE GPA AS A LOAD BEARING UNIT;
6. USING THE GPA FOR ANY PURPOSE OTHER THAN LIFTING A BOAT;
7. IGNORING DEFECTS IN MATERIALS OR WORKMANSHIP WHICH COULD HAVE BEEN DISCOVERED BY A REASONABLE EXAMINATION OF THE PRODUCT OR COMPONENT PART UNDER NORMAL USE AND SERVICE;
8. USING THE GPA FOR NON-RESIDENTIAL OR COMMERCIAL USE;
9. ANYTHING BH-USA DEEMS OUTSIDE THE INTENDED USE OF THIS PRODUCT.

All defective parts must be returned to BH-USA with the required information to be considered for warranty replacement within 30 days of failure. Items must be shipped pre-paid and must have a returned merchandise authorization (RMA) number on outside of box(s).

Please contact BH-USA for warranty issues or to have an RMA number assigned to your return. This warranty is valid only if an annual inspection record is presented by a professional lift installer.

Information and inspection records should include the following:

- Date of Installation
- Type of lift
- Weight being lifted
- Detailed description of the problem
- Any service history