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Installation Instructions – Atlas MicroJack Reinforcement Kit

Thank you for purchasing the Atlas MicroJack Reinforcement Kit (MJRK) from Hull Marine Products! This kit is designed to replace the existing slide bolts and hardware to allow for more rigid alignment of the jack plate assembly, less binding, smoother operation and increased longevity in the electro-hydraulic actuator. The kit is composed of two 316 Stainless Steel plate and stud assemblies along with stainless shims, washers nuts and oil embedded bronze sleeve and thrust bearings with optional upgraded C954 Aluminum Bronze bearings that are highly recommended for saltwater use.



Figure 1 - MicroJack Reinforcement Kit

Note: This kit is designed to reinforce the original design of the Atlas Micro Jack and operate within the original design parameters of the Micro Jack. Hull Marine Products, LLC assumes no responsibility for personal injury or damage to either the Atlas MicroJack or your boat and/or outboard engine.

Tools Required:

1. ½" Drill Bit and Drill
2. ¾" Open Ended Wrenches and Sockets
3. Hammer
4. Punch
5. Engine Hoist or other means to remove engine from Jack Plate
6. Marine grade lubricant
7. Marine grade sealant

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Removal of Old Components and Preparation:

1. Remove your outboard engine from the engine brackets – we are not going to recommend a way to do this. Please be safe.
2. Position the jack-plate at approximately half travel.
3. Use a punch and hammer to remove the spring pin at the bottom of the actuator.



Figure 2 - Spring Pin Removed

4. If removing/replacing the actuator loosen and remove the 9" long 1/2" bolt across the top of the engine brackets and hydraulic ram. If not, simply loosen the nut on the 9" bolt.
 - a. Many of these long bolts are seized within the aluminum spacers and actuator due to galvanic corrosion and may need to be cut/pressed out for replacing the actuator.
 - b. If you did not order replacement spacers and hardware for the actuator, those can be ordered for an additional cost.
5. Lift the bottom of the actuator rod out of the pocket in the lower crossmember and rotate the actuator up and out of the way. Secure it so that it does not swing downward. The actuator may be removed if desired.
 - a. If the actuator and bolt is seized, use a liberal amount of penetrant to free up the actuator enough to be rotated up and out of the way.



Figure 3 - Rotating the Actuator

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6. Loosen and remove the $\frac{1}{2}$ " jam nuts on the backside of the four slot bolts.
7. Back out the four slot bolts and remove associated hardware.
8. The engine brackets and the actuator may be set aside.



Figure 4 - Actuator and Engine Brackets set aside

9. Using a $\frac{1}{2}$ " Drill Bit, carefully drill out each of the four $\frac{1}{2}$ "-13 tapped holes in the transom brackets.



Figure 5 - Drilled Holes in Transom Bracket

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10. Deburr and clean up the holes drilled in the transom brackets to ensure a clean installation of components.
11. If there is any deformation on the outside surfaces of the engine brackets where the thrust washers will ride on the bracket face, carefully use a file to make the surface flat. This will ensure the plate runs as smoothly as possible as there is a small amount of clearance between these surfaces and the thrust bearings. Failure to complete this step could result in damage to the bearings and/or jackplate/actuator.

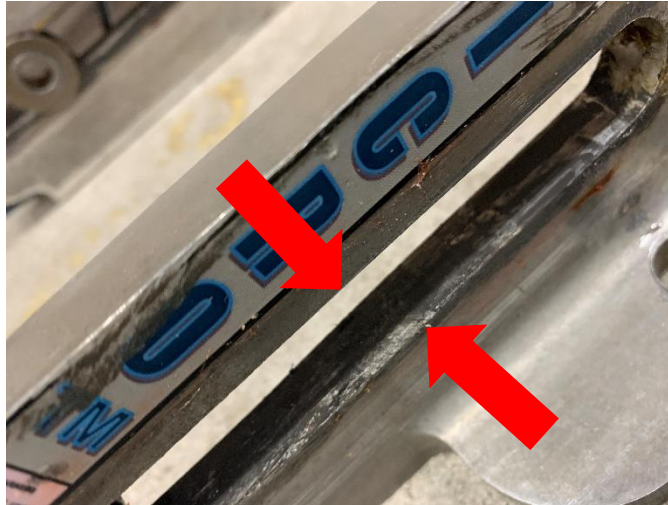


Figure 6 - Ensure smooth edges on inside and outside of engine brackets

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Installation of Reinforcement Kit:

1. Press the bronze sleeve bearings into the thicker (1/8" thick) thrust bearings, full insertion is not required at this time.



Figure 7 - Sleeve Bearing pressed into Thrust Washer

2. Place the bronze sleeve bearings into each of the four slots on the transom brackets with the thicker thrust bearing on the inboard sides. There may be a tight fit, this is normal due to the wide tolerance of the Atlas parts.



Figure 8 - Ensure Thick Washer is on the inboard side

3. Carefully position the engine brackets back on the outsides of the transom brackets with the bronze sleeve bearings in place and thick thrust washers between the engine and transom brackets. Marine grade grease may be used to help keep them in the slots.
4. Place a liberal amount of marine grade sealant onto the base of the studs where they will sit in the transom brackets to inhibit saltwater intrusion and galvanic corrosion where the stainless studs may contact the aluminum bracket.

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5. With the actuator positioned out of the way, insert the reinforcement plate studs through the drilled holes in the transom bracket and pass the studs through the thick thrust washer and sleeve bearings in the engine brackets.



Figure 9 - Reinforcement Plate Inserted into Transom Bracket

6. Place the thinner bronze thrust washers onto the studs.
7. If using the original bronze bearings, place the thin SS shims over the studs, outside of the thin thrust washers. **These shims are not required for the C954 upgraded bearings.**

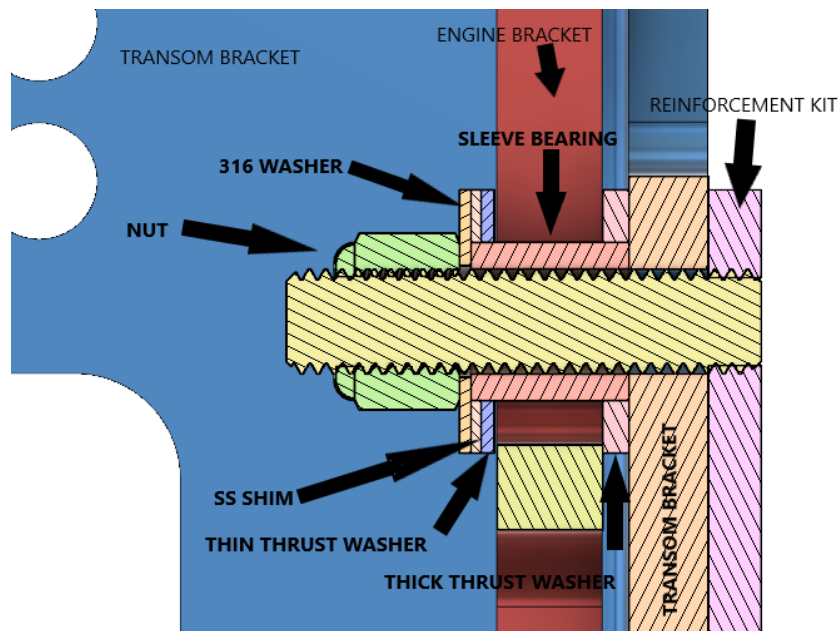


Figure 10 – Cross Section of Bearing, Washer and Nut Stack-up

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8. Place the SS washers over the studs, outside of the SS shims, or the thin bearing on the C954 kit.
9. Install the ½" nylock nuts onto the studs.
10. Ensuring the thin bronze thrust bearing, SS shim and washer are concentric to the stud and sleeve bearing, carefully tighten the ½" nuts wrench tight. The thin thrust bearing and shim should press over the OD of the bronze sleeve bearing.
 - a. Do not overtighten. Stop if resistance is met prior to mating all washers and nuts with the surfaces of the brackets.



Figure 11 - Concentricity of Thrust Washers and Shims

11. If the actuator was not removed from the engine brackets, rotate the actuator down into place and insert the rod into the pocket in the crossmember.



Figure 12 - Insert Actuator Rod into Pocket

12. Install the roll pin.

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13. If the actuator was removed, replace the 9" long ½" bolt and aluminum spacers between the engine brackets and hydraulic ram. If not, tighten the nut.
14. Examine the installation of all nuts, thrust bearings, shims and washers to ensure there is only a very small gap between the surfaces of the engine brackets and the thrust washers. If any large gaps are identified, back the nuts off and ensure the shims and thin thrust bearings have pressed over the OD of the sleeve bearings.



Figure 13 - Installed Hardware

15. Run the jack plate from full down to full up to ensure proper operation and no binding. It is normal to see flex in the 9" bolt and uneven travel between the two plates without the engine mounted.
16. Once smooth operation has been verified, torque each ½"-13 nylock nut to approximately 45 ft-lbs.
17. Apply a light amount of marine grade lubricant to the slot areas and bearings.
18. Lower the engine brackets fully, using a mallet to ensure both plates are lowered fully due to the flex in the 9" bolt.
19. Reinstall outboard engine to engine brackets.
20. Run the jackplate again ensuring no issues with operation.
21. It is highly recommended to retorque the nylock nuts after a few hours of operation.

Maintenance

1. It is highly recommended to relubricate the slots and bearings as necessary to help protect the bronze bushings from corrosion and ensure smooth operation.
2. Applies only to original bearings: It is normal to see some corrosion of the bronze bushings due to their iron content. C954 bearings should not see any corrosion.
3. The bushings and bearings are replaceable and can be ordered if necessary due to prolonged wear.

Please email: hullmarineproducts@gmail.com with any questions