

PATRIOT LIFT CO.

ON-LIFT Installation  
Guidelines

# Choosing A Landing Gear Type

It is important to note that ON-LIFT operates with different raising & lowering timing and lifting capabilities based on the landing gear.

SAF Holland Atlas Fast Gear	= 6 sec / 46,000lbs.
SAF Holland Mark V	= 8 sec / 60,000lbs
SAF Holland Classic	= 12 sec / 35,000lbs.
SAF Holland Atlas 55/65/iM	= 15 sec / 70,000lbs.
SAF Holland 50,000 / 51,000	= 15 sec / 61,000lbs.
JOST 400 SERIES	= 35 sec / 20,000lbs.

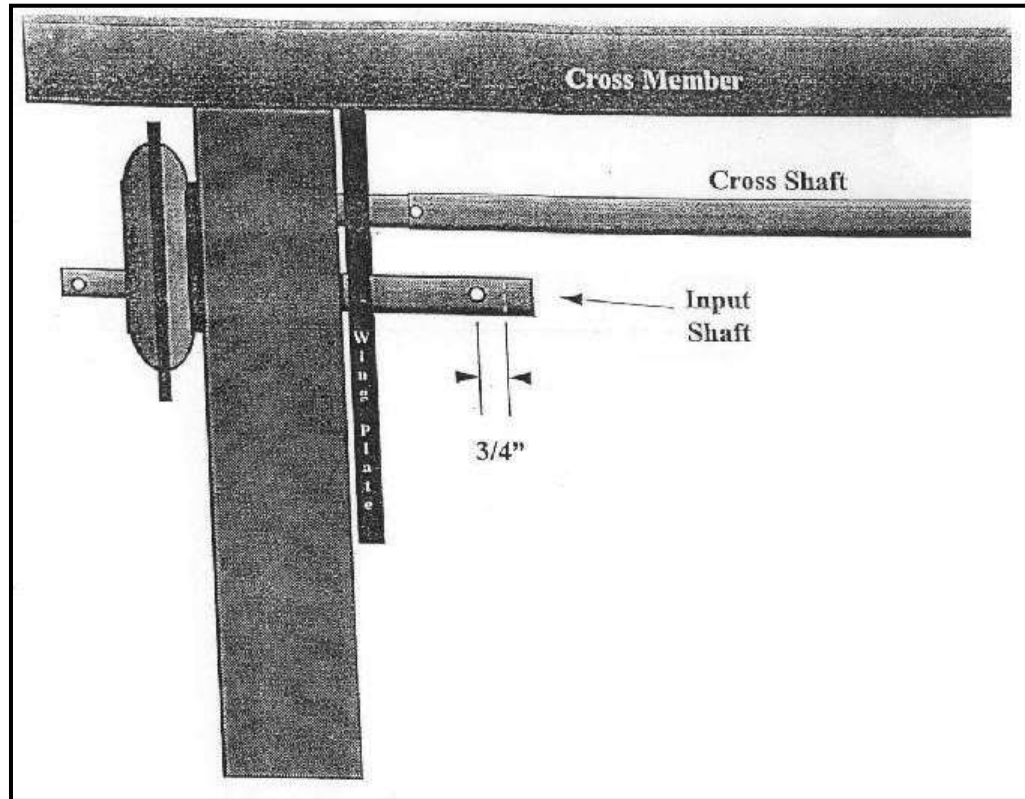
# Universal Installation

Follow these steps for installation using the universal mounting plate as shown below.



## STEP 1: INPUT SHAFT

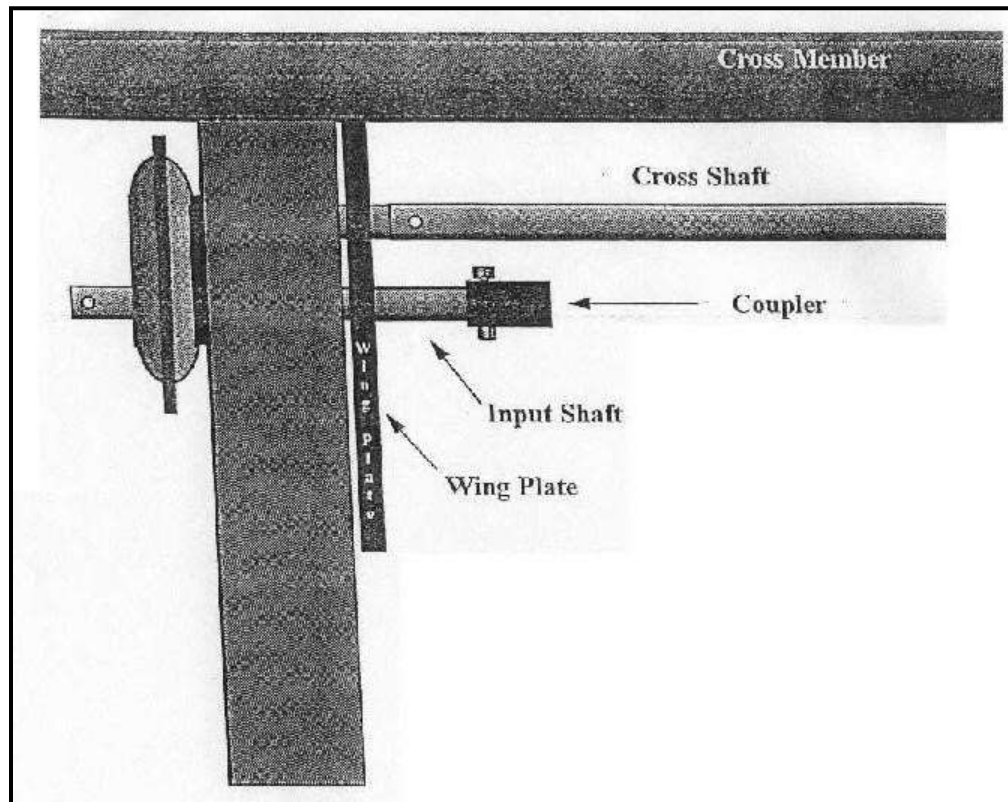
The 3/8" thru hole in the gearbox input shaft on the inboard side of the landing gear must be located 3/4" from the end of the shaft as shown. If this distance is longer then the shaft must be cut



## STEP 2: COUPLER

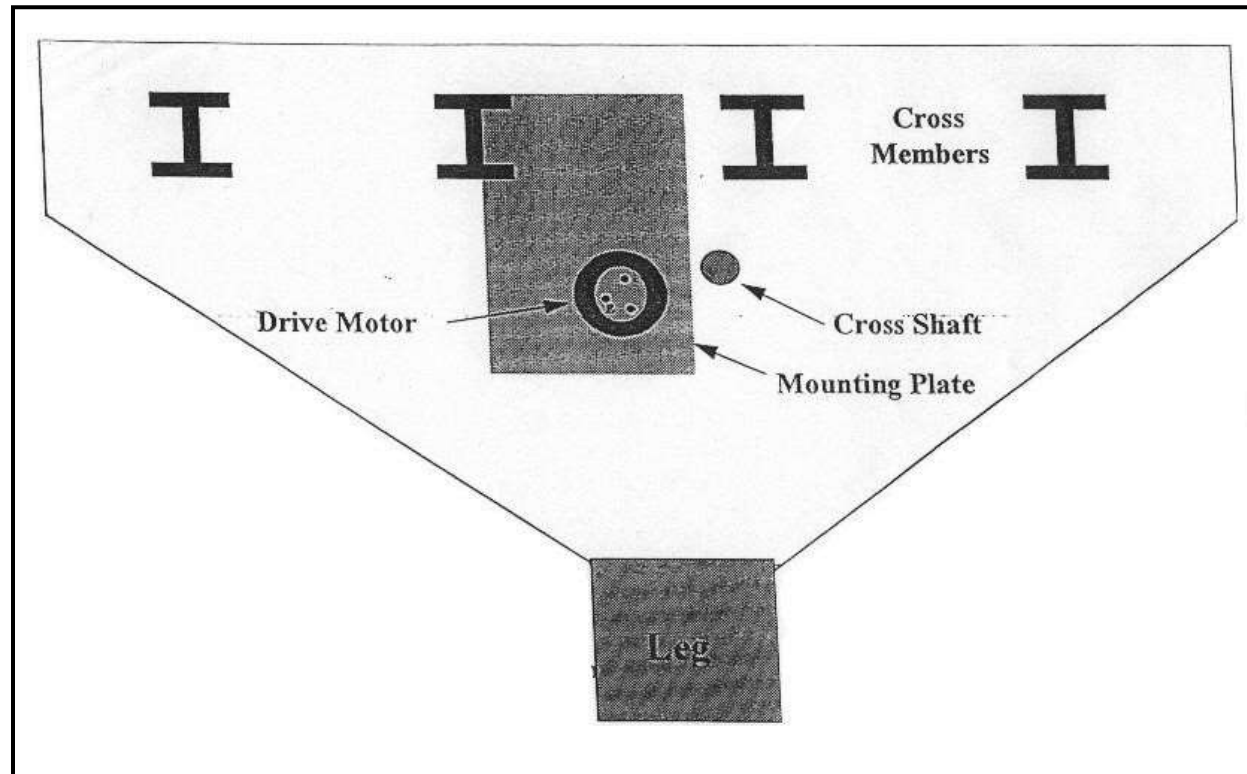
Once the input shaft has been modified as per Step One, slide the 1" coupler over the input shaft as shown.

Insert the 3/8-16x2 pin (bolt and NyLoc nut) into the coupler hole to secure it to the input shaft.



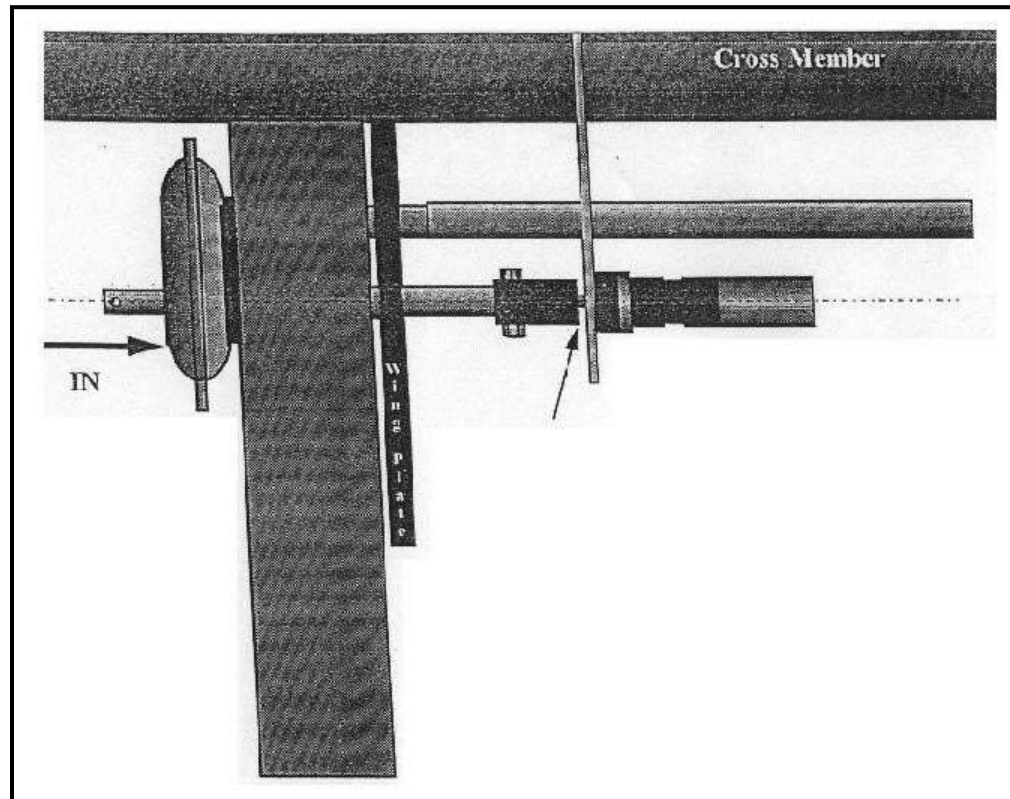
### STEP 3: MOUNTING PLATE

Cut plate as required to allow 1/16" clearance where the plate intersects with a cross member and sub-floor, or any other obstacle. Position the plate between the cross members as shown, with the drive motor attached and the square shaft slid into the coupler.



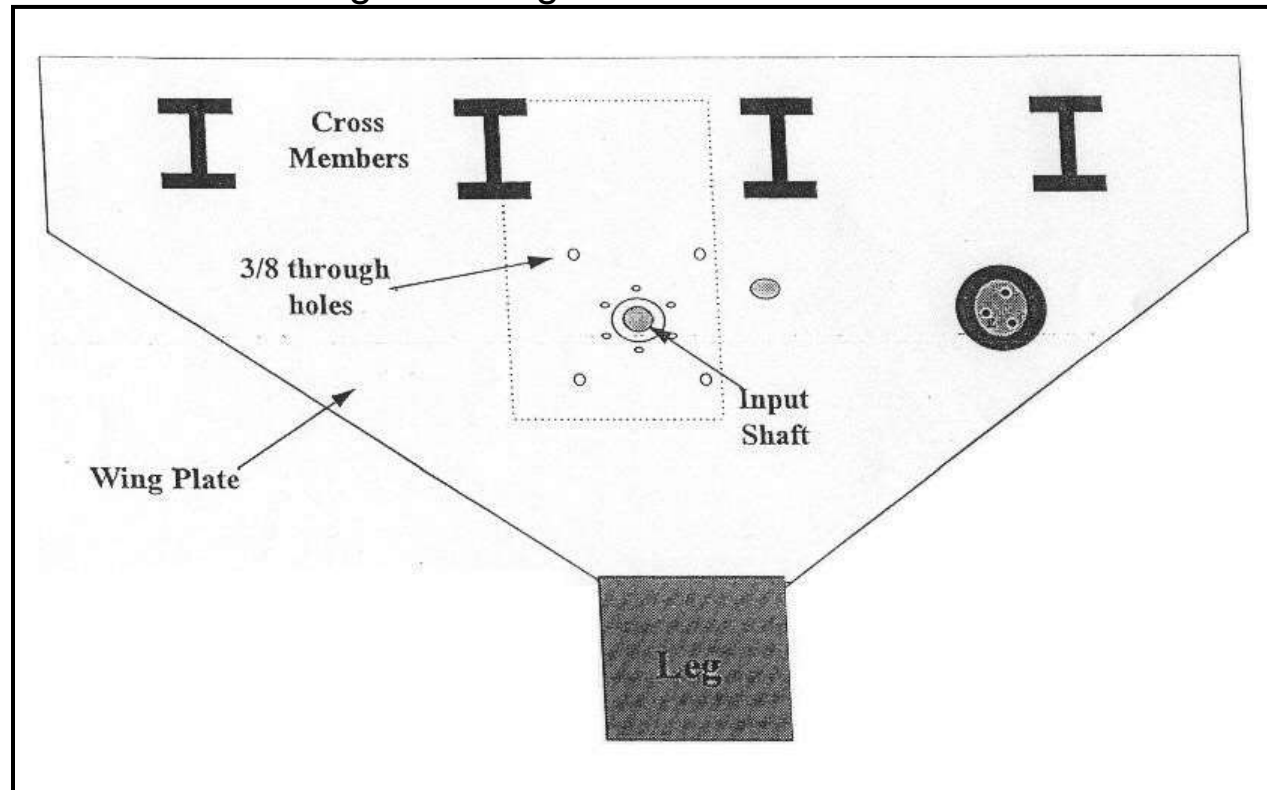
## STEP 4: MOTOR SHAFT

Position the square drive shaft of the motor through the clearance hole in the mounting plate and bolt the drive motor to the plate. With the landing gear input shaft in the IN position, slide the motor's square drive shaft into the square hole in the coupler. Leave  $3/16$ " clearance between the coupler and the mounting plate with the landing gear input shaft in the IN position as shown.



## STEP 5: WINGPLATE

Drill four 1/4" holes through the wing plate as shown, for the mounting rods, located as equally symmetric as possible around the input shaft. Make sure holes are located where they can be easily accessed when fastening mounting rods with nuts and washers.

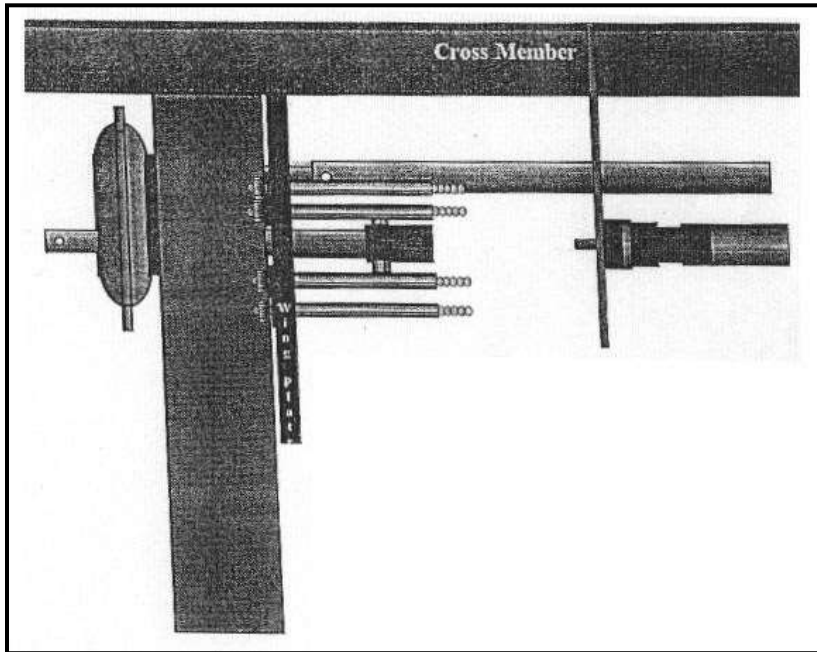




## STEP 6: MOUNTING TO WINGPLATE

Attach four (4) 1/4-20x12" mounting rods to the wing plate, using washers, lock washers, and nuts, as shown.

If landing gear is inside mounted, remove 4 screws from gearbox and attach mounting rods to these locations, as shown below.



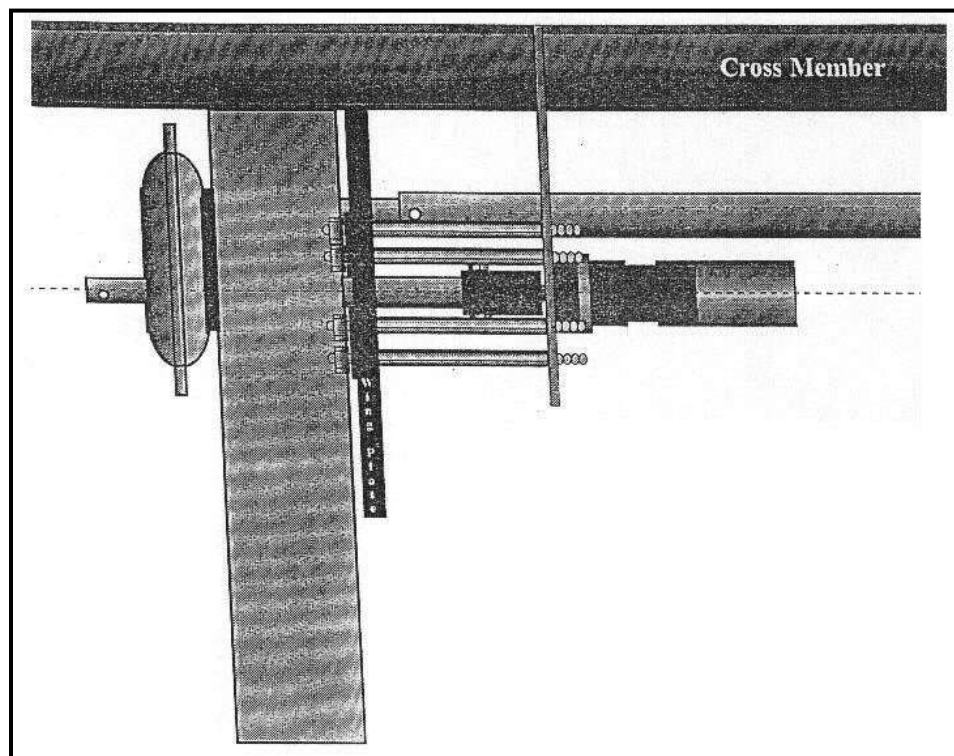
## STEP 7: MOTOR MOUNTING

After drilling the four holes and attaching the four (4) 1/4-20x12” mounting rods to the wing plate, drill the motor mounting plate so that the mounting rods can be attached thereby fastening the mounting plate to the wing plate as shown.

**Note:** During this step and throughout the installation, make sure to move the input shaft in and out of high/low gear to insure no binding between the coupler and the drive motor shaft. Prior to final assembly, the square drive motor shaft must be coated with grease.

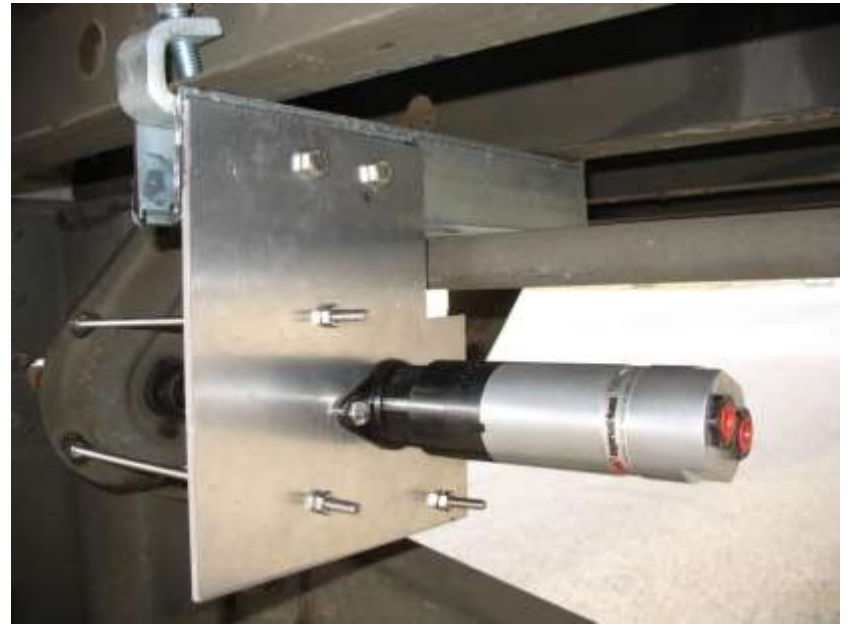
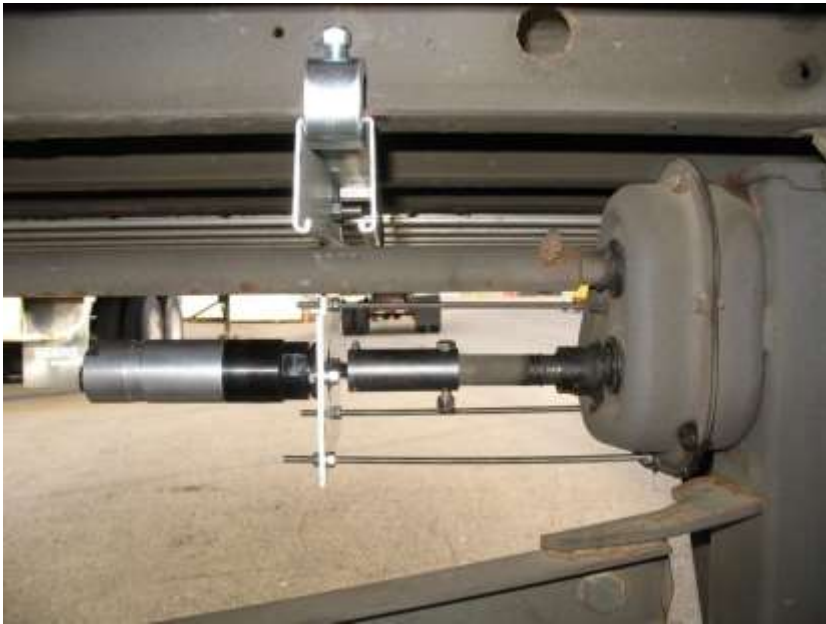
### **\*\*\*SPECIAL NOTE ON ALIGNMENT:**

*The drive motor, coupler, and input shaft must be perfectly aligned for the system to operate properly. Improper alignment will cause premature wear on the drive motor, coupler, and landing gear bearing. This is very important.*



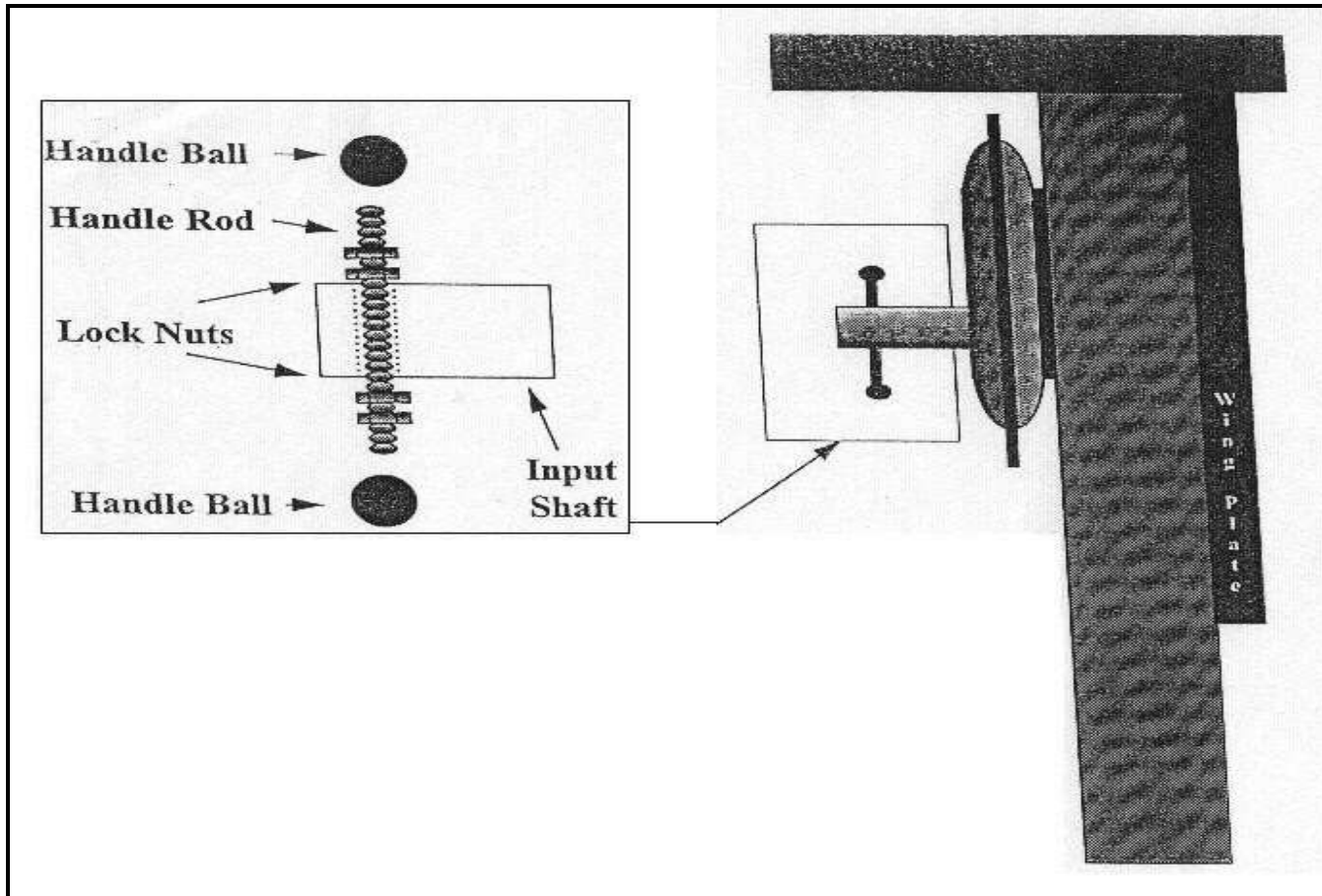
## STEP 8: MOUNT TO TRAILER FRAME

When hard mounting to trailer frame, position channel section next to mounting plate and underneath two closest beams as shown below (if beams are closer than the standard 12" center to center, channel section may need to be cut). Secure the channel section with the beam clamps, to outer edge of each beam. Next, drill two 3/8" holes through plate and channel. Secure plate to channel section with the supplied 3/8 hardware. When finished, apply Loctite to beam clamp threads to prevent loosening.



## STEP 9: INSTALL SHIFT HANDLE

Assemble shift handle hardware as shown and tighten bolt in place. Tighten handles.



## STEP 10: MASTER CONTROL BOX MOUNTING

To mount Master Control Box, determine its desired location and drill holes, minimum 3 locations, to attach enclosure to wing plate. Alternately, MCB can be mounted anywhere else on the trailer.

For safety, we recommend that the mounting location chosen allows the operator to have a direct line of sight to the landing gear to view the leg movement during raising and lowering.



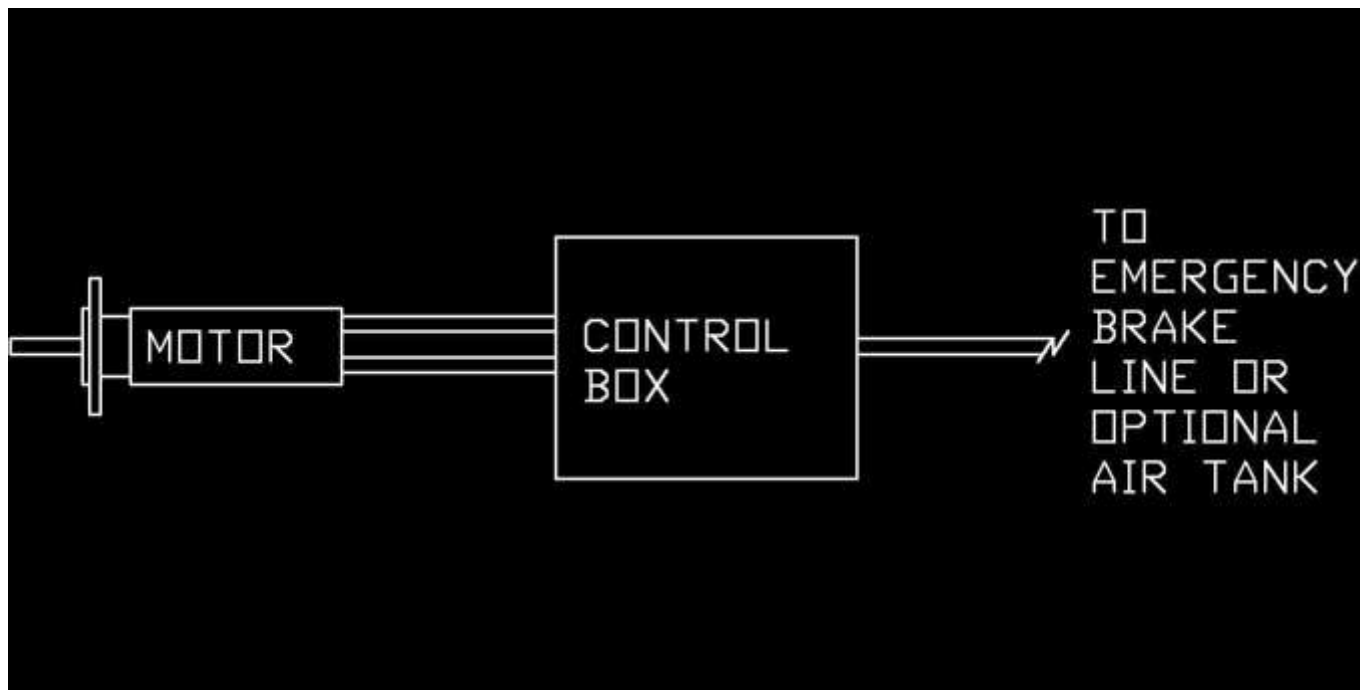
## STEP 11: INSTALLING MOTOR MUFFLER

Slide muffler onto motor with the larger diameter end first. Wrap the sound deadening material around the motor exhaust collar tightly. While holding material in place slide muffler forward on motor until the larger diameter section of muffler is securely in place over sound deadening material. Make sure that muffler is not placed too far forward and prevents air to escape from exhaust collar of muffler. The section that holds the sound deadening material should be right over the motor exhaust. Tighten the clamp around muffler to lock it in place and prevent sliding on motor. Tighten the screws on the muffler to hold sound deadening material in place.



## STEP 12: CONNECTING AIR SOURCE

Using the tee fitting, tap into the emergency brake line of trailer. Run section of airline from the tee connection to the input of the Master Control Box (single fitting side). Run two sections of airline from the output of the Master Control Box to the motor, making sure that air supplied to motor will operate the leg up when control valve handle is moved up, and down when control valve handle is moved down. If airline needs to be reversing after connecting, switch connections at quick disconnect fittings on the Master Control Box. CHECK FOR AIR LEAKAGE.



## STEP 13: OPTIONAL AIR RESERVOIR

If using an air reservoir, mount the reservoir underneath trailer and connect air from source to reservoir and from reservoir to master control box. A one-way valve at the input to the reservoir is recommended. Air reservoir tank is not included.





## **STEP 14: LUBRICATOR FILL AND ADJUSTMENT**

Add the provided ON-LIFT oil to lubricator by removing bowl and adding to fill line. Lubricator bowl is removed by gently pushing up and turned clockwise.

The lubricator is set at the factory for ideal lubrication. Occasionally a lubricator may need to be adjusted. **ADJUST ONLY IF NECESSARY.** Using an Allen wrench, **GENTLY** turn the lubricator adjustment screw, located on the top of the lubricator, to the OFF position, fully clockwise. Next, turn the screw one revolution counterclockwise. Remove exhaust mufflers from control valve and check lubrication by holding a thumbnail of mirror at the exhaust points while operating unit. A heavy film indicates over lubrication; turn screw clockwise to reduce drip rate. If more lubrication is desired, turn screw counter-clockwise until there is a fine mist at the exhaust points.

## TROUBLESHOOTING

1. Check air supply- the system must have a minimum of 90 PSI to insure proper operation.
2. The motor must be properly mounted as per the installation instruction. The motor spindle must be properly lined up with the gearbox input shaft otherwise too much stress on the motor bearing will prevent it from operating properly and result in decreased motor performance or premature failure. If a motor spindle becomes bound and cannot be turned by hand using a wrench, a vane may have broken and/or a bearing may have expired and will need replacement. This may happen over extended use as it is normal for vanes, bearings, and endplates to wear over time and extended operation. Tune-up and rebuild kits are available.
3. If on operation oil leaks out of control valve via exhaust mufflers, the lubricator needs to be adjusted.
4. Periodically check that exhaust mufflers do not get clogged with dirt or grime. Replace if necessary. Check motor muffler sound deadening material.
5. Check condition of legs and landing gear. Bent or rusted legs may effect the operation of the system and result in decreased performance. Also, improperly lubricated gearing inside landing gear will result in decreased performance. Cold weather requires specific lubrication for best performance.

## MAINTENANCE

1. Lubricator must not be allowed to run dry of oil for proper operation and longevity of motor. Periodically check the oil level inside lubricator bowl and add ON-Lift oil when it falls near bottom of bowl. To fill lubricator, make sure that the ON/OFF ball valve inside the control box is in the OFF position and there is no air pressure in the controls. Twist off bowl and fill within ½” to top with ON-Lift oil. Use of other lubricants will void manufacturer’s warranty. Proper lubricator adjustment will prevent excessive use of oil while keeping the system well lubricated. Follow the adjustment instructions at the end of each installation section to adjust lubricator. Use only ON-Lift oil, use of any other lubricant will void warranty.
2. The motor requires minimum maintenance as long as it gets proper lubrication and clean dry air. Occasionally, the motor should be inspected and cleaned if necessary. If dirt or grime is allowed to accumulate on the motor it may effect operation by clogging the exhaust port on the motor. Greasing of the air motor spindle and the coupling socket is recommend at every trailer service interval, as well as a visual inspection and cleaning of the motor. Proper greasing will ensure that the motor will continue to operate without any problems and keep the spindle and socket from corroding. In time, an overhaul of the motor vains, bearings, and endplates may be necessary as they will wear out like any air tool. Motor tune-up kits are available.

## **MAINTENANCE**

3. The mufflers inside the control box should be inspected and cleaned if necessary. Dirt and grime will impede air flow if allowed to accumulate on the surface of the mufflers. In time, mufflers may need replacement.
4. It is recommended that cold weather grease inside the landing gear when operating the ON-Lift in areas of prolonged cold weather. This will prevent the legs to become frozen or hard to turn during freezing conditions and allow the unit to operate smoothly.
5. Check sound deadening material every 3 months and replace if needed. Replace every 6 months.

## LIMITED WARRANTY

Patriot Lift Company, LLC. (hereinafter Patriot) warrants this hardware product to be free from defects in materials and workmanship for a period of one (1) year from the date of purchase. This non-transferable, limited warranty is only to you, the first end-user purchaser for which the Patriot product is originally installed.

This warranty does not apply to: (a) expendable components such as fittings, mufflers, lubricators, valves, air hoses; or (b) third party products, supplied with the warranted product. Patriot makes no warranty of any kind on such products, which, if included, are provided "AS IS" or such products shall carry whatever warranty from the third party manufacturer or supplier which can be passed on to Patriot's end-user. This warranty also excludes damage caused by accident, misuse, abuse, alteration, use of non-Patriot approved lubricant, external environmental causes, or if the product has not been stored, installed, maintained and operated in accordance with good industry practices or specific recommendations of Patriot.

Your sole and exclusive remedy for a covered defect is repair or replacement of the defective product, at Patriot's sole option, and Patriot may use new or refurbished parts or products to do so. Shipping charges may apply. Patriot shall not be liable for any repairs, replacements, or other adjustments or any costs of labor performed by others without Patriot's prior written consent.

The above is Patriot's entire obligation to you under this warranty. **IN NO EVENT SHALL PATRIOT BE LIABLE FOR INDIRECT, INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OR LOSSES, INCLUDING LOSS OF USE, OR PROFITS EVEN IF PATRIOT HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.** In no event shall Patriot's liability exceed the original purchase price of the product. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

## Obtaining Warranty Service

You must notify Patriot in writing with reasonable particularity of the claimed non-conformity within the warranty period to receive warranty service. When notifying Patriot about a warranty issue, you must provide both the serial number of the product and the date of installation. Patriot's specific customer support policies (including fees for services) and procedures change as technology and market conditions dictate. To obtain information about Patriot's current policies or warranty service, please write to: Patriot Lift Co LLC, attn: Customer Service, RR 2, Box 9905, Suite 1, Kingshill, VI 00850-9724, or call (340)7725438.

## Limitations

**THE ABOVE WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. To the extent permitted by applicable law, PATRIOT SPECIFICALLY DISCLAIMS AND EXCLUDES ANY IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, COURSE OF DEALING, OR USAGE OF TRADE** Any implied warranty required by applicable law shall be limited in duration to the express warranty term. Some jurisdictions do not allow disclaimers of implied warranties or limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

This warranty gives you specific legal rights and you may also have other rights that vary from jurisdiction to jurisdiction. Any suit for breach of any warranty on your Product must be filed with one (1) year of the first date the suit could have been brought.

# Patriot Lift Company, LLC

14 White Birch Lane, Units C&D

York, ME 03909

Mailing address:

P.O. Box 1029

York Beach, ME 03910

207-703-8433

For technical assistance please contact:

Celio Gomes

203-213-9998

[cgomes@onlift.com](mailto:cgomes@onlift.com)