

PEG - 40Kg



***Propelled
Energy
Generator***

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PEG - 40KG PROPELLED ENERGY GENERATOR

INSTALLATION AND OPERATIONS GUIDE

This guide will familiarize you with the operation, maintenance, and safety information about the PEG - 40Kg. We urge you to read this publication carefully and follow its recommendations to help assure safe, reliable operation of the PEG - 40Kg impulse source. Like any piece of industrial equipment, the PEG - 40Kg should be treated with respect. Throughout parts of this guide there will be WARNINGS concerning the operation and maintenance of the PEG - 40Kg source. WARNINGS are given to prevent operation errors which could damage the source and possibly cause personal injury, or would reduce performance of the source.

WARNING - Prior to assembly or operation of the source, it is recommended that operators wear the correct protective equipment. This may include STEEL TOED SAFETY BOOTS, HARD HATS, and PROTECTIVE EYE WEAR.

Tools Required for Assembly

No special tools are required to install and setup the PEG - 40Kg. A basic set of tools with adjustable wrenches and screwdrivers are all that is needed to install the source.

Components

The PEG - 40Kg consists of three main parts. These are referred to as the **Hammer Frame Assembly**, the **Motor Assembly**, and the **Safety Shields**. In addition the PEG - 40Kg includes the following standard accessories and parts:

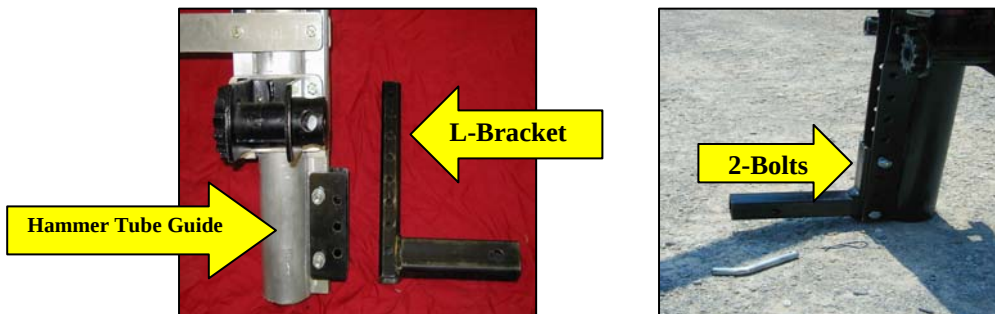
1. Impact Baseplate
2. Adjustable L-bracket and bolts
3. Hand-held controller and cable
4. (1) Elastomer band
5. (1) Stabilizing ratchet strap
6. Small Tools Kit

The PEG - 40Kg is designed to be quickly mounted on a variety of vehicles from small All Terrain Vehicles to full size pickup trucks. In order to achieve the correct operating height, an L-bracket has been designed to accommodate a range of vehicle sizes. The standard mounting bracket is designed to fit on vehicle mounted frame hitches with a 2" square head and then secured with a pin and clip. This method of mounting is designed to absorb the reaction forces generated by firing the PEG - 40Kg by using the vehicle mass as a "hold down weight".

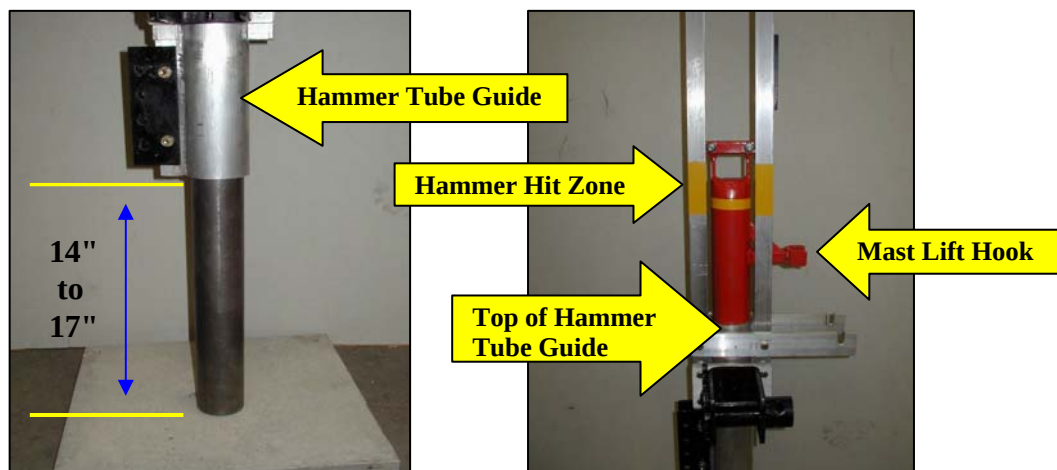
INSTALLATION OF THE PEG - 40KG

The PEG - 40Kg is delivered with the hammer mass in the up position, secured by a chain. The chain is only to prevent the hammer from falling while transporting. Slide the L-Bracket into the hitch and secure with locking pin and clip. Place impact base plate on ground below L-Bracket. Place hammer assembly on top of base plate, remove chain. Line up back of the hammer assembly with the L-Bracket, by lifting up the Hammer Frame, until you are in line with Pin/bolt holes on L-Bracket. Once in place secure with the two pins/bolts with keepers provided. Be sure the hammer height is correct and is in the Hammer Hit Zone. If not adjust Hammer Frame up or down. The caution tape on the Hammer and on the Hammer Frame designates hammer Hit Zone.

1. Slide L-bracket into vehicle's receiver hitch and secure with locking pin.
The L-bracket can be turned upside down to accommodate higher ground clearance vehicles.



2. Position baseplate under L-Bracket. With (1-2) one-two persons, lift the hammer frame to line up with bolt/pin holes on L-Bracket, secure with locking pin. Affix hammer frame assembly to the L-bracket so that there is ***approximately 14" to 17" (35 to 43 cm) of ground clearance***. Measure from the bottom of the hammer to the bottom of hammer guide tube and secure with bolts.



Or lift hammer assembly until the Caution tape on the hammer is in between the HAMMER HIT ZONE. The caution tape on the outer Hammer Frame designates Hammer Hit Zone. Check to make sure every time you move that the Hammer is still positioned in the Hammer Hit Zone.

- WARNING -

Damage may occur if the hammer lift hook is allowed to hit the frame during operation. The hammer mast lift hook must be at least 10cm (4") above the Top of Hammer Tube Guide. FAILING TO KEEP GROUND CLEARANCE WILL DAMAGE SOURCE AND VOID ANY WARRANTY.

The source is now ready for installation of the motor assembly. Holding the motor assembly by the handle rods and with the chain facing you, pick up the motor assembly and insert the rods into the slots on the forearm of the hammer frame assembly. Make sure both rods are fully inserted. Then grab the lower handles of the motor assembly and rotate it into its proper upright position. Secure the motor assembly to the motor mounting plate located on the right side of the hammer frame with the nuts provided and tighten with a wrench.

3. Picking up motor assembly by the Rod handles and with the chain facing you, insert Rod handles into the slots on the forearm of hammer assembly.



4. Grab the lower handles on motor assembly and rotate it into its proper upright position. Secure motor assembly to the motor mounting plate on hammer frame with two nuts provided. Tighten nuts with a socket wrench, carefully so as not to over tighten and strip.



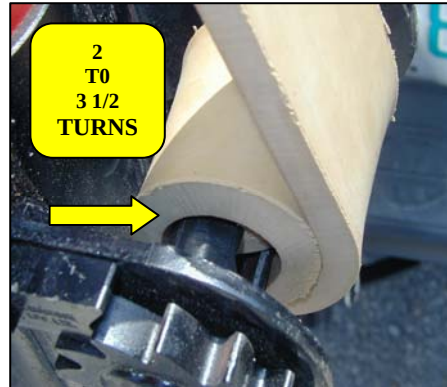
5. Thread the Elastomer Band through the eyelet at the top of the hammer and pull the band through so there is equal slack on both ends.

WARNING

The Elastomer Band must be installed with the hammer resting on the Impact Plate.



6. Thread the end of the Elastomer Band through each shackle and hand tighten. Using the silver rod or a large screwdriver, tighten the band a minimum of 2.5 turns around each shackle.



7. Manually maintaining tension on the band while tightening will ensure a good wrap and prevent band from slipping. Insert one end of band into shackle slot leaving approximately 2 inches excess. Using a screwdriver or metal bar, tighten band by $\frac{1}{2}$ turn of shackle. Repeat process on other end of band. Alternate $\frac{1}{2}$ turns of shackle on either side until band is equally wrapped two to three turns on both sides.

WARNING – Do not over tighten band.

If motor stalls or labors at the top of the cycle, the band may be too tight.

8. Attach protective shields over Elastomer Band.



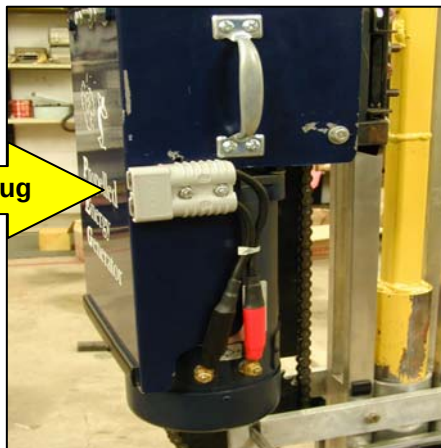
**- WARNING -
Do not operate
without shields
securely in place!**

9. Use of the stabilizing ratchet strap is strongly recommended. Attach ratchet tie down strap from top of PEG – 40Kg to an anchoring position on the bed or vehicle. This will keep the PEG unit stable during operation.



Stabilizing Ratchet Strap

10. Connect hand-held controller to PEG – 40Kg with the quick-disconnect plug.



Quick-Disconnect Plug

11. Connect the (+) and (-) lines to the 12V battery.

WARNING – Do not leave the PEG unit installed on the vehicle while travelling on highway or during extended driving.

OPERATING INSTRUCTIONS

WARNING – Do not operate PEG - 40Kg without safety shields in place over Elastomer Bands.

The PEG - 40Kg operates in single and continuous cycle modes. The hand-held controller houses a 3-position toggle switch (with on, off, and momentary positions).

To operate in single cycle mode, flip toggle switch on the hand-held controller to the “Momentary” position.

To operate in continuous cycle mode, flip the toggle switch to “On” position and unit will start firing.

The PEG - 40Kg is designed to operate in continuous mode for up to 25 cycles. Although the unit will exceed 25 cycles, it is recommended after 25 cycles, the unit is allowed a few minutes to cool before resuming operation.

MAINTENANCE

Loose Bolts

Periodically (daily) all bolts should be checked for tightness. (Do Not Over Tighten.)

Chain

Test tension on chain every 50 - 100 hits. With one of the **Chain Pick Up Bolts positioned on top of the top sprocket**, pull center of chain between the two sprockets. There should be no slack and little motion. If there is slack or motion use the chain adjusters above the lower sprockets. **(NEVER TEST CHAIN TIGHTNESS OR ADJUST CHAIN WITHOUT THE PICK UP BOLT BEING POSITIONED ON TOP OF TOP SPROCKET)**

Lightly oil chain periodically

Lightly oil exposed metal parts when needed

DISASSEMBLY INSTRUCTIONS

1. Lower hammer to baseplate, turn power off, and remove shields and Elastomer Band.
2. Remove stabilizer (ratchet strap).
3. Disconnect the battery and Control Box.
4. Remove motor assembly from hammer frame.
5. Remove hammer frame from L-bracket. With hammer frame sitting freely on baseplate secure with chain through the metal loop/eyelet of hammer and hammer assembly.
6. Remove L-Bracket from hitch
7. Crate and/or Load

TROUBLESHOOTING

Motor Stalls or Slows Down During Operation

1. Confirm ground clearance is not too high. Should be approximately **14-17"** (**35-43cm**) from the **Bottom** of **Hammer** to the **Bottom** of the **Hammer Tube Guide**.
2. Battery voltage low.
3. Loosen Elastomer Band if too tight.
4. Chain too tight or bound.

Chain

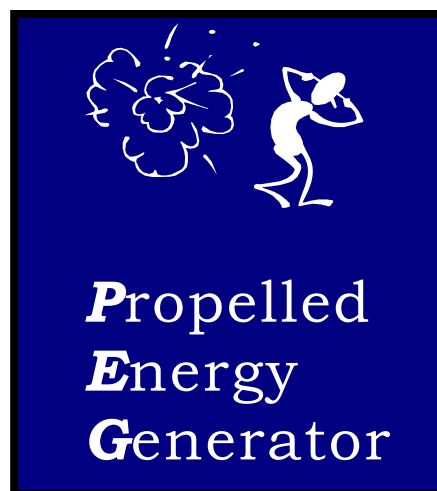
If the chain should bind, back the hammer down to the baseplate by reversing the polarity of the battery and using the momentary switch on the hand-held controller. Then change the polarity back to the proper connection and attempt to run. If chain still binds, use the chain adjusters above the lower sprocket.

Test chain tension every 50 - 100 hits

Chain must be keep tight, but not over tight. With one of the **Chain Pick Up Bolt positioned on top of the top sprocket**, pull center of chain between the two sprockets. There should be little or no motion. If there is slack or motion use the chain adjusters above the lower sprockets. **(NEVER ADJUST OR TEST CHAIN TENSION WITHOUT THE PICK UP BOLT BEING POSITIONED ON TOP OF TOP SPROCKET)**

Hand-Held Controller Failure

If the hand held controller should fail, the PEG unit can be operated by connecting a set of jumper cables directly to the motor and/or a 12V battery. Extreme caution should be exercised when using this method.

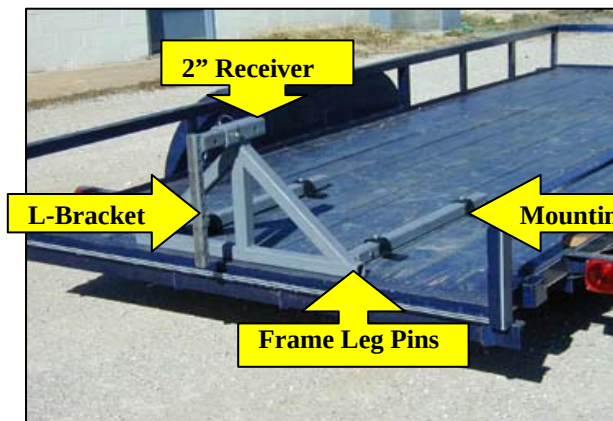


For any other problems or concerns, please contact us at 405-751-9696 Monday through Friday 8 am to 5 pm Central Standard Time or email your questions or concerns to rtclark@rtclark.com.

OPTIONAL: UNIVERSAL HITCH MOUNT (UHM)

The UHM is designed to be used with the 2" square receiver either in the "up" position (when the receiver is above the surface (bed) of your trailer or vehicle) or in the "down" position (when the receiver is below the surface (bed) of your trailer or vehicle). In addition, the UHM serves as a stand for your PEG unit when it is not in use.

UHM on Trailer in "Up" Position



UHM on Truck in "Down" Position



The UHM includes:

1. (1) 2" Receiver Assembly
2. (2) Receiver Assembly Frame Legs
3. (4) Frame Mounting Brackets
4. (2) Frame Leg Pins with Keepers

INSTALLATION ON TRAILER OR VEHICLE

1. Getting Ready

Attach Frame Legs to the Receiver Assembly aligning the holes in the top and sides of the legs with the holes of the receiver assembly. Secure legs to receiver assembly with 2 pins and keepers. Place and center UHM onto the surface (bed) of the trailer or vehicle to which the PEG will be mounted. When the receiver is in the "up" position, the receiver assembly should be flush with farthest point of the surface. When the receiver is in the "down" position, the receiver assembly should make contact with the edge of the surface.

2. Mounting

With the receiver assembly positioned, place the four brackets over the centering holes on the frame legs and insert the (4) coarse-thread centering bolts.

STOP! Before proceeding, check under the vehicle or trailer to determine that it will be safe to drill 8 securing holes in the bed of the vehicle or trailer and that the areas where the holes will be drilled are free of obstructions.

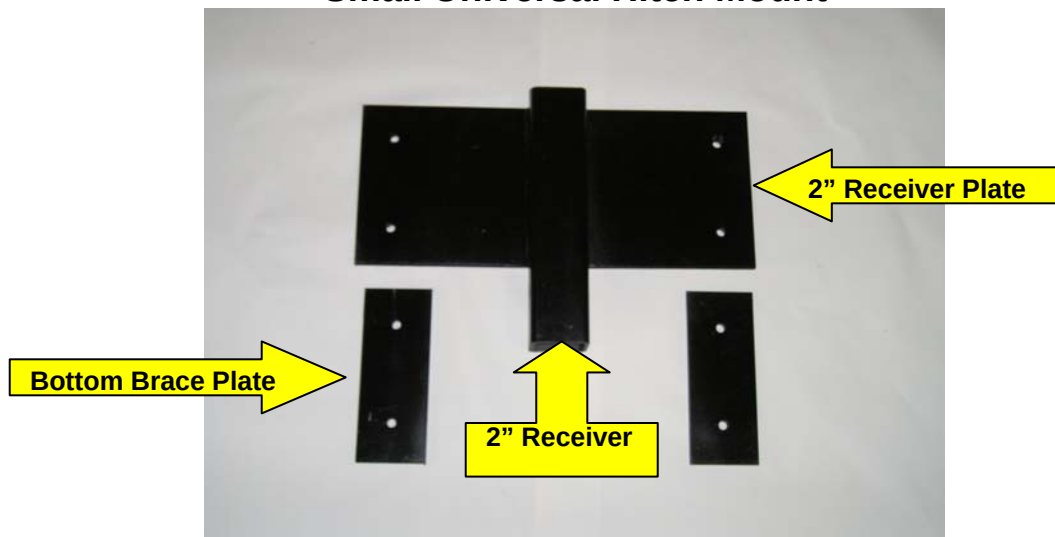
Drill eight (8) holes and securely bolt (Bolts not included.) the frame mounting brackets to the mounting surface. The frame mounting brackets can be left in place and the UHM can be easily removed by removing the (4) coarse-thread centering pins and sliding the complete assembly out.

USING THE UHM AS A STORAGE STAND

To use the UHM as a PEG Storage Stand, assemble the UHM with the frame legs and pins. Simply mount the PEG inside and between the frame legs. Carefully release hammer so hammer is resting on the ground.



Small Universal Hitch Mount



The Small UHM includes:

1. (1) 2" Receiver Plate
2. (2) Bottom Brace Plates

Bolts, Washers and Nuts not included

INSTALLATION

1. Getting Ready

Align the front edge of the 2" Receiver Plate flush with the edge of the surface in which the PEG will be mounted. Make sure Bottom Brace Plates will be able to be bolted flat to the bottom of the mounting surface. Mark the four points for the appropriate drilling points.

STOP! Before proceeding, check under the surface to determine that it will be safe to drill 4 securing holes that the areas where the holes will be drilled are free of obstructions.

2. Mounting

With the drilling points marked drill (4) holes and securely bolt (bolts not included) the 2" Receiver Plate to the surface with the Bottom Brace Plates in place.

Note about the Small Universal Hitch Mount:

The Small Universal Hitch Mount is provided to give the user more options on installing the PEG-40 on different types of vehicles, trailers or other carry type equipment.

The most critical aspect of the PEG-40 is the Ground Clearance and operating parameters of the mass.

As explained on Page 2 Paragraph 2 of this manual...

*"Affix hammer frame assembly to the L-bracket so that there is **approximately 14" to 17" (35 to 43 cm) of ground clearance.** Measure from the bottom of the hammer to the bottom of hammer guide tube and secure with bolts"*

The Small Universal Hitch Mount was provided at no additional cost with the optional "**UNIVERSAL HITCH MOUNT (UHM)**" so if the user need to alter this piece for their specific application they had the proper size material for any such alteration.