



# KA75 HAMMER MANUAL

**READ BEFORE OPERATING**

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**Andy Davis & Nate Brandt had an idea, to build a quality c-frame forging press that would fit in their residential shop. From junkyard scraps they welded their first frame together, and through trial and error they assembled a functional press. Through that successful build Coal Iron Works was born...**

# Introduction

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Congratulations! Your purchase of the KA75 Air Striking Hammer puts you in an ever growing number of blacksmiths who recognize the value of this hammer as a profitable addition to their shop.

As you become familiar with the operation of the machine and practiced with the control pedal, you will find the hammer responds with infinite precision. Please read all the instructions carefully and be sure you understand them to get the most from the machine and ensure safe operation.

We always want you to be satisfied with this machine and we will help in any way we can. Please feel free to call us at any time with your questions or comments.

## Initial Inspection:

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- ▶ Make sure that the pallet your hammer arrived on is intact and shows no signs of alteration by the shipping company.
- ▶ Remove the plastic wrapping from your pallet and check for signs of damage that the packaging may have hidden.
- ▶ Check the machine for signs of damage. Bent components, scraped paint, ect.
- ▶ Check contents of any packaging for damage and order accuracy.

You must note damage to the driver before signing for the machine. If the damage is not noted before the truck leaves we cannot make a claim for the repair or replacement and you may be liable for costs.

# Safety

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- ▶ Never operate the hammer without reading the owner's manual
- ▶ Always maintain full use of vision and hearing PPE (close fitting natural fiber or flame retardant clothing and close toed shoes are also strongly encouraged any time you are near forges or furnaces)
- ▶ Ram pops up when air is turned on - stand clear
- ▶ Keep foot off pedal between operations and when placing small pieces on die
- ▶ Turn air off when not in use to prevent others from cycling ram unintentionally
- ▶ Don't let untrained people use the hammer
- ▶ Don't set tools on top of the ram
- ▶ Don't allow people to lean on the ram
- ▶ Watch out for cur off Ends. They can fly off and hit someone or land in a corner and start a fire
- ▶ Block up the ram when changing dies
- ▶ Contact Coal Iron Works before doing any repair or replacement to the machine. Failure to do so may void your warranty

# Machine Specifications

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- ▶ Single Blow Striking Hammer
- ▶ Interchangeable Dies
- ▶ Total Weight - 450 lbs
- ▶ Ram Weight - 100 lbs
- ▶ Ram Stroke - 10 inches
- ▶ Base Dimensions - 16" x 16" x 1" thick
- ▶ Overall Height with Ram Down - 45.5"
- ▶ Overall Height with Ram Up - 55.5"
- ▶ Floor to Die Height - 36.5"
- ▶ Blows per Minute - up to 120
- ▶ Air Required - 10 - 20 C.F.M. @ 100 P.S.I.G.



# KA75 Installation

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## *Foundation*

The best results are obtained when the hammer is mounted on a reinforced concrete inertia block of approximately one half cubic yard. Mounting on a heavy concrete floor (6" – 8" reinforced) is also possible.

## *Concrete Block Foundation*

In general, the softer the soil, the larger the footprint should be. A pad two foot square by one foot thick works well.

## *Steel Block Foundation*

A steel plate from your local steel supplier is also a good solution. Use a plate four to six inches thick and about two foot square. This can be buried flush with the floor and the hammer bolted or welded down. No padding is used in this installation. It can be free standing and movable also.

## *Bolting*

Holes are provided for three anchor bolts. These may be cast in the foundation or anchors may be used. Thick ( 1" ) rubber washers with steel flat washers or valve springs should be placed under the bolt heads. If springs are used, the bolts or nuts should be tightened so the springs are about three-quarters compressed.

## *Floor Mount*

If floor mounting is chosen, make certain the floor is at least 6" thick reinforced concrete. Some local cracking may occur as the vibration on the machine causes the soil underneath to settle. Isolation material should be placed under the machine. Fabreka or vulcanized fabric belting work well. Bolt as above.

# Operation

Always check to make sure die wedges are tight. re-check wedges regularly when operating. A light coating anti-seize or grease on wedges is recommended. Regular inspection and tightening of all connections and fastening on this and any power hammer are mandatory. Open shut-off valve slowly. Always stand clear when the ram comes up! Lubricate guides before each session. This is a single blow hammer with fantastic control. As with any manually operated machine, operator skill plays a large part in the satisfactory performance of the machine. In most cases, the operator needs to anticipate the blow and let off the treadle just before the hammer strikes so that the hammer can bounce off the work. If a more holding blow is used, a lot of heat is sucked from the work and another heat may be required. When striking repeated blows, it is not necessary (or even desirable) to let the hammer return all the way to the top of its stroke. Come down on the treadle soon enough so the hammer only raises about six or eight inches off the work. We offer many standard dies for your hammer and would be happy to quote on any special dies for your requirements.

## *Air Supply*

Machine must be supplied with clean, dry compressed air at 80-120 p.s.i.g. Minimum volume to operate is about 10 S.C.F.M. under typical conditions (such as hobby blacksmithing), more air may be required for production work or unusual conditions. All air lines should be ½" N.P.T. or larger. The best configuration is to use an air tank of at least a 20 gallon capacity near the hammer. A line from the tank feeds the hammer. A line oiler is placed in this line with a Safety shut-off valve or lockable 90 degree ball cock/shut-off valve close to the operator. If a ball cock is used a bleed-off valve should be installed after it to bleed down any remaining air to the hammer. If the bleed valve is pointed up it can be used as an oiler by shutting off the main valve and opening the bleed valve and squirting in a little oil. Close bleed valve before opening shut-off valve! Oiler should be adjusted to allow only a few drops per hour of light hydraulic oil to be used.

## *Lubrication*

Lubricate with light hydraulic oil, auto transmission fluid works well. A squirt can should be kept at the machine for this purpose. Cylinder guides should be kept just wet with oil.

## *Removing Dies*

Open shut-off valve slowly. Place a block of wood (2 x 4) about 12 inches long between ram and anvil cap. Close shut-off valve to lower ram. Bleed valve should remain open until ready to run the hammer! Make sure ram resting securely on block! Shut-off valve with operators secure key padlock! Drive wedge loose from the operator side. When removing top die it must be held up by hand or prop as the wedge is withdrawn. Remove wedge and die should be free to come out.

## *Installing Dies*

With hammer blocked as described above, put die in place with center pin (locating pin) and insert proper wedge. Tighten wedge just snug (from side opposite operator). Close bleed valve and open shutoff valve slowly. When ram raises remove block, close shut-off valve and open bleed valve to lower ram. Sock wedges tight with two-pound hammer. Re-check wedges after one or two strikes of the ram. Re-check position of the dies often after changing dies.

## Warranty:

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All Coal Iron Works products come with a standard 1 year warranty that covers parts and labor. Covering defects exposed through normal wear and tear. This includes all parts manufactured or resourced by Coal Iron Works. After one year Coal Iron Works will offer lifetime service on all manufactured products through quotes including parts, labor, and shipping.

Email [service@coaliron.com](mailto:service@coaliron.com) for more information or service requests.

Our products are warranted free of manufacturer's defects for one year after delivery to the original purchaser. Replacement parts are warranted free of manufacturer's defects for the remaining warranty period for our products on which the part is installed. Subject to the conditions hereinafter set forth, the manufacturer will repair or replace any portion of the product that proves defective in materials or workmanship. The manufacturer retains the sole right and option, after inspection, to determine whether to repair or replace defective equipment, parts or components, the manufacturer will assume ownership of any defective parts replaced under this warranty.



## Warranty Will Not Apply To:

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1. Units and parts which are not installed in accordance with applicable local codes, ordinances and good trade practices;
1. Defects or malfunctions resulting from failure to properly install, operate, or maintain the unit in accordance with the printed instructions provided;
2. Failure resulting from abuse, accident or negligence;
3. Normal maintenance service and the parts used in connection with such service;
4. Units and parts which have been altered or repaired other than by the manufacturer or as specifically authorized by the manufacturer;
5. Units and parts used for purposes other than for what it was designed and manufactured.

Any item covered under this warranty will be repaired or replaced free from all charges except authorized transportation. This warranty is in lieu of all other warranties and no representations, guarantees, or warranties, expressed, implied, or statutory (included, but not limited to, a warranty of merchantability of fitness for a particular purpose) are made by the manufacturer in connection with the manufacture or sale of its products. The remedies set forth herein are exclusive and in lieu of all other remedies and manufacturer shall not, under any circumstances, be liable for incidental, consequential or special damages, such as, but not limited to, damage to, or loss of, other property or equipment, loss of profits, inconvenience, or other incidental or consequential damages of any type or nature. The liability of the manufacturer shall not exceed the price of the product upon which the liability is based.

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