



# **CarvLock™ HDM6 Manual Machinable Jaw Vise**

Instructions

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**HD.Carv-95, rev. A**

# CarvLock™ HD

Manual Clamping

Model # HDM6

## **Introduction**

The CarvLock™ HD model #HDM6 offers two clamping stations with carvable aluminum or ductile iron jaws mounted to an 80,000 PSI ductile iron base. This lightweight double station vise has a small footprint, yet provides over 11,000 pounds of clamping force. The quick-change aluminum jaws can be machined to match the contours of your parts, creating dedicated fixturing at an “off the shelf” price.

The CarvLock™ HD is backed by Kurt™ Manufacturing’s industry leading 10 year limited warranty. Please inspect your vise carefully for any shipping damage and, if necessary, report it to your carrier.

**Caution: Do not attempt to lift vise ass’y. by gripping the movable jaws, they will break loose and personal injury could result.**

**Also, attempting to open the vise beyond the stops , located in the front and rear nut, may cause damage to the vise assembly. This vise has a much smaller opening than previous Kurt products you may be familiar with (.250” per station).**

## **Installation Instructions**

- 1) Position the vise on your machine table, pallet, or sub-plate using the locating holes (5/8” or 16mm) on the bottom of the vise if you prefer or other suitable methods.
- 2) There are two methods that can be used to secure your vise in place.
  - a. One way is to clamp the vise in place using the clamp ledge on either side of the vise. Locate the clamps near the center of the vise body to minimize deflection.
  - b. The other way is to use existing holes that run vertically through the vise body. To access the holes, remove the stationary and movable jaws (See disassembly instructions).

Both mounting options could be used if desired but is not required or recommended.

### **Carving Jaws**

The CarvLock™ HD comes with 7075-T6 aluminum jaws that can be machined to match the contours of your parts. Optional jaws are available.

Note: If using the convertible option, refer to the carving instructions in the convertible option section.

To carve the jaws;

- 1) Back off the pre-load adjusting screw to ensure that it is not making contact with the front nut.
- 2) Position (2) spacers in each station locating them near the outside edges of the vise jaws. Spacer size should be approx. 1" long x 1/4" high x 1/8" thick.
- 3) Clamp spacers in place.
- 4) Machine contours in to jaws. **Caution:** *Do not machine beyond the grooves marked on the sides of the jaws. Machining past these points may damage your vise and could void the warranty.*
- 5) Unclamp and remove spacers.
- 6) Reset pre-load adjustment, if necessary.

Your vise is now ready for use.

### **Pre-Load Adjustment**

The CarvLock™ HD offers a pre-load feature which allows the rear jaw to lightly clamp a part while allowing space in the front jaw set to load a part.

To pre-set this feature:

Install a part in both the front and rear jaws. Tighten the clamping screw to clamp them.

Turn the pre-load adjusting screw clockwise until it stops.

Unclamp the parts and check for your required clearance on the front jaw.

If more clearance is required, re-clamp the parts and rotate the pre-load adjusting screw counterclockwise one or two turns and recheck clearance. Parts with greater tolerance variations will require more pre-load clearance.

**Note:** Pre-loaded part must be located in rear jaw set.

## **Disassembly**

Occasionally it may be necessary to disassemble the CarvLock™ HD vise for cleaning to ensure trouble free operation.

**Note:** Vise body should be clamped to a table or workbench for disassembly or re-assembly.

- 1) Remove stationary jaw by loosening the two M10 x 1.5 socket head cap screws from the vise body. Pull up on the screws and rotate counterclockwise until they are engaged in the stationary jaw. Use these screws as a handle to aid in removing the stationary jaw from the vise body. Lift the jaw straight up off of the locating pins to prevent the stationary jaw from binding on the pins.
- 2) Remove both front and rear movable jaws by lifting up on the back edge of the jaw until it snaps loose. Slide the jaw toward the center until you can lift it off.
- 3) Back the pre-load adjusting screw out until the front of the screw is flush with the inside edge of the front plate.
- 4) Insert vise handle into the screw hex and rotate clockwise, closing the vise, until it stops.
- 5) With one hand push against the rear nut, until the vise screw clears the end plate hole. (You will be compressing the preload spring in this step.)
- 6) While holding the screw and nut assembly at the rear of the vise body, use your other hand to lift the front end plate from the vise body.
- 7) Slide the screw and nut assembly out of the vise body.
- 8) If necessary, remove the rear end plate from the vise body.
- 9) Clean as required.

## **Re-assembly**

- 1) Install rear end plate.
- 2) Insert compression spring into pocket on rear nut assembly. Slide nut and screw assembly into the vise body.
- 3) With one hand, push on the rear nut, moving the nut and screw assembly toward the rear of the vise body. (You will be compressing the preload spring in this step.)
- 4) While holding the nut and screw assembly to the rear of the vise body, use your other hand to insert the front end plate into the vise body.
- 5) Rotate the clamping screw counterclockwise, opening the vise, until roll pins engage end plates and stops.
- 6) Install the front and rear movable jaws by tipping them slightly toward the center of the vise. Hook the front of the moveable jaw onto the hook area of the nut and press down on the back of the movable jaw until it snaps in to place. **CAUTION:** *Use care to avoid pinching fingers between movable jaw and the vise body.*
- 7) Place the stationary jaw on to the two locating pins and fasten down with two M10x1.5 socket head cap screws.
- 8) Adjust the pre-load adjusting screw as required.

Your vise is now ready for use.

## Convertible Option

### Set up

Note: The CarvLock™ HD comes from the factory with the tapped holes for the convertible kit at the back of the vise. If your needs require the convertible kit at the front of the vise, simply disassemble the vise (see disassembly section) and turn the vise body end for end so that the tapped holes are on the same end as the handle.

Remove stationary jaw by loosening the two M10 x 1.5 socket head cap screws from the vise body. Pull up on the screws and rotate counterclockwise until they are engaged in the stationary jaw. Use these screws as a handle to aid in removing the stationary jaw. Lift the jaw straight up off of the locating pins. Use care to prevent the jaw from binding up.

Rotate the clamping screw counterclockwise until the vise is in the full open position. Remove the rear movable jaw by lifting up on the rear edge of the jaw until it snaps loose. Slide toward the center of the vise and lift off.

Modify rear movable jaw by drilling and tapping two M10 x 1.5 holes on the rear edge of the jaw (see sketch provided with convertible kit). Make sure you tap the holes at least 3/4" deep.

Install the rear movable jaw with the tapped holes facing the rear of the vise (the end with the four holes). Hook the front of the moveable jaw on the hook area of the nut and press down on the back of the movable jaw until it snaps in to place. **CAUTION:** *Use care to avoid pinching fingers between jaw plates and the vise body.*

Rotate the screw clockwise until the rear edge of the rear movable jaw is flush with the back edge of the vise body.

Attach the convertible kit end plate to the rear of the vise body with four M10 X 1.5 socket head cap screws.

Fasten rear movable jaw to the convertible end plate using two M10 X 1.5 socket head cap screws.

Install chip guard into vise body by squeezing the spring steel edges and snapping into the chip guard pocket on the vise body.

### Carving Jaws

The pre-load adjusting screw is not used in the convertible option. Back off or remove the pre-load adjusting screw to ensure that it is not making contact with the front nut.

Install a large spacer in between front and rear jaw. Spacer size should be approx. 1" wide X 1/4"-1/2" high X 3-7/16" long. (This will allow for approximately 1/8" jaw movement for loading and unloading parts. If more or less movement is required, change spacer length accordingly)

Clamp spacers in place, locating them at the center of the vise jaws.

Machine contours in to jaws. **Caution:** *Do not machine beyond the grooves marked on the sides of the jaws. Machining past these points may damage your vise and could void the warranty.*

Unclamp and remove spacers. Your vise is now ready for use.