CarvLock™ HDHM6 Hydraulic Machinable Jaw Vise

Instructions

INDUSTRIAL PRODUCTS DIVISION
1325 QUINCY STREET NE
MINNEAPOLIS, MN. 55413

TOLL FREE: (800) 328-2565
TEL: (763) 572-4424
FAX: (612) 623-3902

E-MAIL: workholding@kurt.com

www.kurt.com

HDH.Carv-95, Rev. C

CarvLock™ HD

Hydraulic Clamping
Model # HDHM6

Introduction

The CarvLock™ HD offers two clamping stations with carvable aluminum or ductile iron jaws. These jaws allow you to machine the contours of the part being held into the jaws, creating custom, dedicated fixturing. The vise is packaged to prevent any damage to its components. Please inspect your vise carefully for any shipping damage and, if necessary, report it to your carrier.

Caution – Do not attempt to elevate the vise by pulling up on the movable jaws in an unclamped state, the jaws will break loose under the weight.

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.
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 reduce any possible deflection.
b. The other way is to bolt through the vise body using the bolt holes provided. To access the holes, remove the stationary and movable jaws (See disassembly instructions). Both mounting options could be used if desired but not recommended.

3) Install hydraulic fitting and attach oil line. (SAE 7/16-20 straight thread)
Note: Operating Hydraulic Pressure, 300 PSI min. / 5,000 PSI max.

Carving Jaws

The CarvLock™ HD comes with 7075-T6 aluminum or ductile iron jaws that can be machined to match the contours of your parts. Optional jaw heights are available.
To carve the jaws;

1) Place spacers in each station positioning them as required to allow milling of the required contour. Spacer size should be approx. 1/2" long x 1/4" high x 1/8" thick. By using a 1/8" thick spacer no preload will result on the part. By using a 3/16" thick spacer 1/16" of preload will result, meaning you must slide the movable jaw back at least 1/16" to get the part into the carved contour. This allows one part to be held with spring pressure while the other station is loaded. Preload becomes an important element when the vise is used in a vertical position.
2) Clamp spacers in place.
3) 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.*
4) Unclamp and remove spacers.

Your vise is now ready for use.

Pre-Loading

The CarvLock™ HD features spring-loaded movable jaws which allow pre-clamping of a part before actuation of the hydraulics. To load a part, simply push (or pull) the movable jaws away from the stationary jaw, load your part and release the jaw. The jaw springs back toward the stationary jaw to pre-clamp your part. Make sure to apply hydraulic pressure to vise before machining.

Pre-Loading In Vertical Position

Note: Top jaw must always be loaded first.
Lift top movable jaw up and load part. Release the jaw. Part is now pre-clamped via spring pressure. Pull bottom movable jaw down, load part and release jaw. (Push jaw up into place if it does not retract by itself). Hold bottom part in place with hand and actuate hydraulic pressure to clamp both parts.

Disassembly

Occasionally it may be necessary to disassemble the CarvLock™ HD vise for cleaning.

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

1) Disconnect hydraulic line from the vise.
2) Remove stationary jaw by disengaging the two M10 x 1.5 socket head cap screws from the vise body locating pins. Pull up on the screws and rotate counterclockwise until they are engaged in the stationary jaw. Use these screws as handles to aid in removing the stationary jaw from the vise body. Lift the jaw straight up off of the locating pins. Lifting straight up will prevent the stationary jaw from binding on the pins.
3) 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.
4) Remove the rear end plate from the vise body by lifting it straight up. Slide the screw and nut assembly to the rear of the vise body until the front nose of the screw is out of the hole in the front end plate.
5) Remove the front end plate from the vise body by lifting it straight up.
6) Slide the screw and nut assembly out of the vise body.
7) Clean as required.

Re-assembly

Make sure the rear nut is connected to the front nut/ screw assembly. Slide screw and nut assembly in to the vise body.

Install front end plate with small blind hole facing out.

Slide nut/ screw assembly into the body from the opposite end until the hydraulic fitting end of the screw passes through the front end plate.

Install rear end plate.

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 pull back

and then down until the movable jaw snaps in to place. **CAUTION:** *Use care to avoid pinching fingers between jaw plates and the vise body.*

Place the stationary jaw on to the two locating pins and fasten down with two M10x1.5 socket head cap screws.

Reconnect hydraulic fitting and line.

Your vise is now ready for use.

Convertible Option

Set up

Note: the CarvLock™ HD model #HDHM6 is shipped from the factory with tapped holes in place for the convertible option. These holes are located at the end opposite the hydraulic fitting. If you want the hydraulic fitting at the same end as the convertible plate, remove the entire nut and screw assembly and rotate the body end for end. Reverse the end plates as well. You will need to replace the hydraulic fitting with a longer one to reach through the convertible plate.

Disconnect hydraulic lines from vise and remove any elbow fittings if necessary.

Remove the 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 handles 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.

Remove both front and rear movable jaws by pushing or pulling each jaw away from the center of the vise and lifting the opposite edge of the jaw up until it clears the nut.

Remove the rear end plate from the vise body by lifting it straight up.

Slide the screw and nut assembly to the rear of the vise body until the front nose of the screw is out of the hole in the front end plate.

Remove the front end plate from the vise body by lifting it straight up.

Rotate the front end plate around 180 degrees so the small blind hole faces inward and reinstall.

Slide the screw and nut assembly forward until the front nose of the screw is through the hole in the front end plate.

Install the rear end plate.

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 ¾" deep.

Install rear movable jaw with the tapped holes facing rearward.

Fasten convertible end plate to vise body with four M10 X 1.5 socket head cap screws

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

Install front movable jaw.

Install chip guard by squeezing the spring steel edges together and snap it into the chip guard pocket on the vice body.

Install hydraulic fittings and lines. (SAE 7/16-20 straight thread)

Using a 3 17/32” wide spacer in place of the stationary jaw to carve movable jaws offers no spring preload on the part.
Using a 3 5/8” wide spacer in place of the stationary jaw to carve movable jaws offers 1/8” of spring preload.