

VICES, BASES, PALLETS, TOMBSTONES, ACCESSORIES

& NEW WORKHOLDING



KURT
The Original AngLock® Vise Company Since 1960

NEW SOLUTIONS FROM **KURT**



> NEW DX6 CrossOver Vise



> NEW SideWinder
2nd Ops Vise



> NEW DoveLock Quick
Change Jaws



> NEW Responsive website



> NEW HP MaxLock
5 Axis Vises



> NEW SCMX Self-Centering
5 Axis Vises



> NEW DTR DoveTail
5 Axis Vises

> NEW 5 Axis Vise
Pallet Options

KURT
The Original AngLock® Vise Company Since 1960

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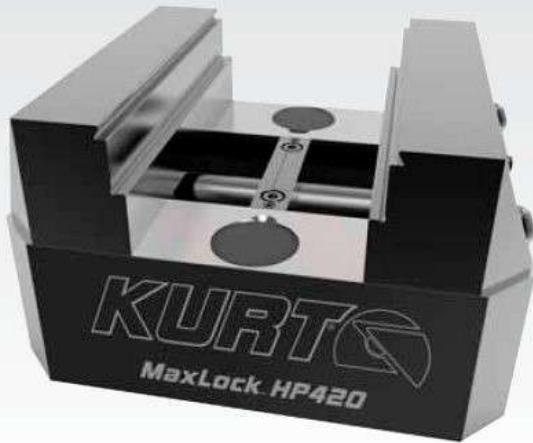


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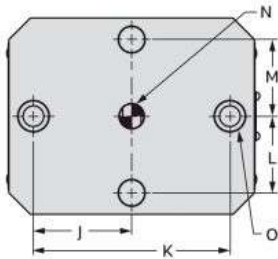




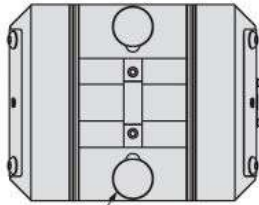
MaxLock™ HP420, HP440, & HP460 Vises

- Available with Serrated, Dovetail [D], or Carvable [C] jaws.
- Serrated and Dovetail jaws have 3 different clamping areas, at the bed, in the middle of the jaw and at the top of the jaw. See table below.
- Combats lift with new Kurt lift control system.
- ±0.0005" repeatability.
- 80,000 psi Ductile iron body for rigidity and vibration damping.
- Hardened ways.
- 4140 heat treated steel jaws.
- 3/4" screw diameter for strength.
- Heavy duty bolt down with 1/2" cap screws.
- Screw internally hexed for a smaller footprint.
- Center line on vise easily adjusts to the center of the table rotation.
- Three sizes available: 5", 7", and 9" Long.
- Patents pending.

Bottom View



Top View



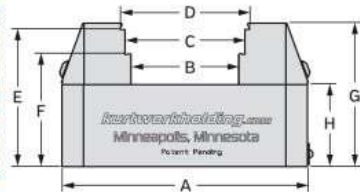
C'Bore for 1/2 SHCS [2X]

| | HP420 | HP420D | HP420C | HP440 | HP440D | HP440C | HP460 | HP460D | HP460C |
|----------|-------------|-------------|------------|-------------|-------------|------------|-------------|-------------|------------|
| Jaw Type | Serrated | Dovetail | Carvable | Serrated | Dovetail | Carvable | Serrated | Dovetail | Carvable |
| A | 5.000 | 5.000 | 5.000 | 7.000 | 7.000 | 7.000 | 9.000 | 9.000 | 9.000 |
| B | 0.06 / 2.19 | 0.06 / 2.19 | 0 / 1.94 | 0.06 / 4.19 | 0.06 / 4.19 | 0 / 3.94 | 0.06 / 6.19 | 0.06 / 6.19 | 0 / 5.94 |
| C | 0.31 / 2.44 | 0.31 / 2.44 | NA | 0.31 / 4.44 | 0.31 / 4.44 | NA | 0.31 / 6.44 | 0.31 / 6.44 | NA |
| D | 0.56 / 2.69 | 0.50 / 2.63 | NA | 0.56 / 4.69 | 0.50 / 4.63 | NA | 0.56 / 6.69 | 0.50 / 6.63 | NA |
| E | 2.797 | 2.797 | 2.797 | 2.797 | 2.797 | 2.797 | 2.797 | 2.797 | 2.797 |
| F | 2.297 | 2.297 | 2.297 | 2.297 | 2.297 | 2.297 | 2.297 | 2.297 | 2.297 |
| G | 2.922 | 2.922 | 2.922 | 2.922 | 2.922 | 2.922 | 2.922 | 2.922 | 2.922 |
| H | 1.672 | 1.672 | 1.672 | 1.672 | 1.672 | 1.672 | 1.672 | 1.672 | 1.672 |
| I | 4.000 | 4.000 | 4.000 | 4.000 | 4.000 | 4.000 | 4.000 | 4.000 | 4.000 |
| J | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 |
| K | 4.000 | 4.000 | 4.000 | 4.000 | 4.000 | 4.000 | 4.000 | 4.000 | 4.000 |
| L | 1.563 | 1.563 | 1.563 | 1.563 | 1.563 | 1.563 | 1.563 | 1.563 | 1.563 |
| M | 1.563 | 1.563 | 1.563 | 1.563 | 1.563 | 1.563 | 1.563 | 1.563 | 1.563 |
| N | Ø 0.500 | Ø 0.500 | Ø 0.500 | Ø 0.500 | Ø 0.500 | Ø 0.500 | Ø 0.500 | Ø 0.500 | Ø 0.500 |
| O | Ø 0.625 | Ø 0.625 | Ø 0.625 | Ø 0.625 | Ø 0.625 | Ø 0.625 | Ø 0.625 | Ø 0.625 | Ø 0.625 |
| Q | 1/2-13 THD | 1/2-13 THD | 1/2-13 THD | 1/2-13 THD | 1/2-13 THD | 1/2-13 THD | 1/2-13 THD | 1/2-13 THD | 1/2-13 THD |
| P | NA | NA | 0.221 | NA | NA | 0.221 | NA | NA | 0.221 |
| Q | NA | NA | 0.417 | NA | NA | 0.417 | NA | NA | 0.417 |
| Weight | 11 lbs | 11 lbs | 11 lbs | 14 lbs | 14 lbs | 14 lbs | 17 lbs | 17 lbs | 17 lbs |

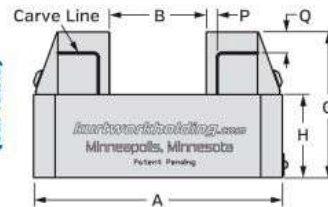
Clamping Force Range

| Foot Pounds | Pounds of Force |
|-------------|-----------------|
| 10 | 500 |
| 20 | 1,200 |
| 30 | 1,900 |
| 40 | 2,500 |

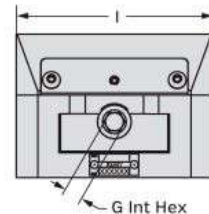
Side View (Serrated, Dovetail)



Side View (Carvable)



End View



MaxLock™ HP Optional Risers



HP420-RISERKIT



HP440-RISERKIT

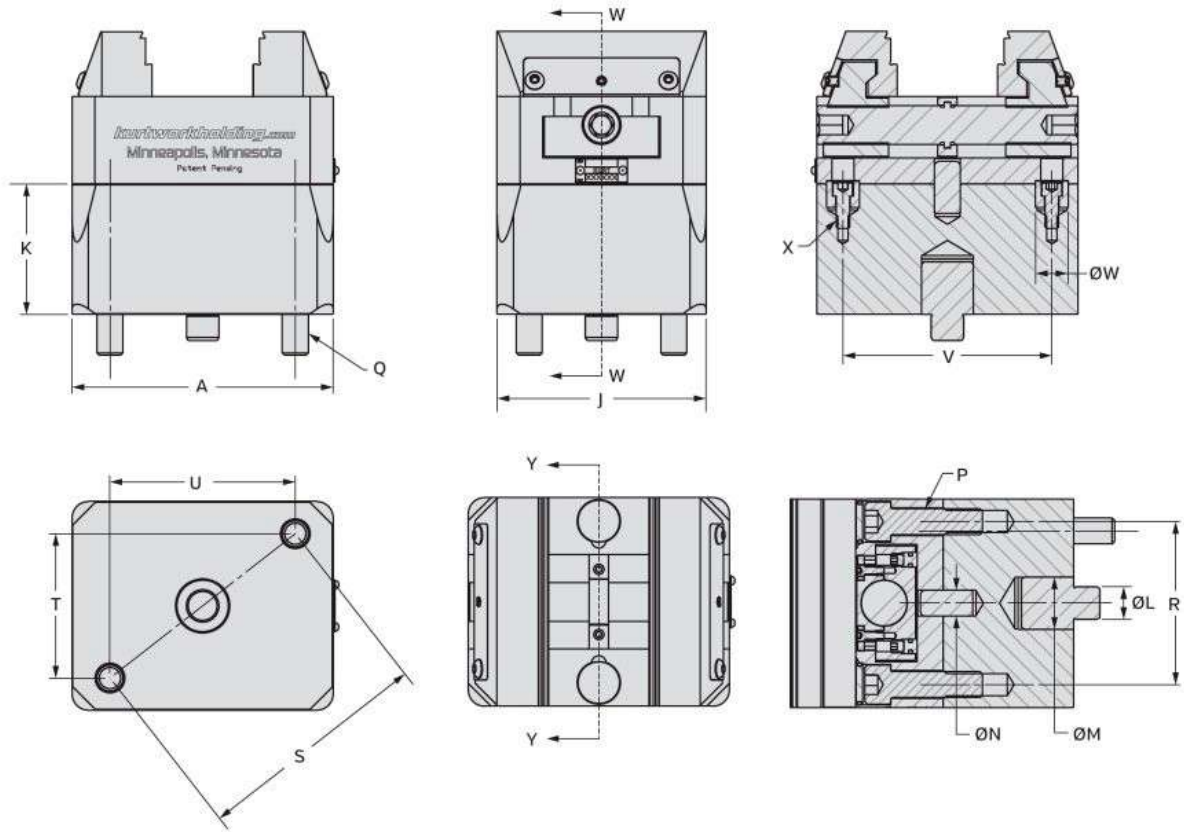


HP460-RISERKIT

| | HP420-RISERKIT | HP440-RISERKIT | HP460-RISERKIT |
|--------|----------------|----------------|----------------|
| A | 5.000 | 7.000 | 9.000 |
| J | 4.000 | 4.000 | 4.000 |
| K | 2.500 | 2.500 | 2.500 |
| P | 1/2-13 SHCS | 1/2-13 SHCS | 1/2-13 SHCS |
| Q | 1/2-13 SHCS | 1/2-13 SHCS | 1/2-13 SHCS |
| R | 3.125 | 3.125 | 3.125 |
| S | 4.500 | 4.500 | 4.500 |
| T | 2.767 | 2.767 | 2.767 |
| U | 3.549 | 3.549 | 3.549 |
| V | 4.000 | 4.000 | 4.000 |
| W | Ø 0.625 | Ø 0.625 | Ø 0.625 |
| X | 1/4-20 SHCS | 1/4-20 SHCS | 1/4-20 SHCS |
| Weight | 6 lbs. | 8 lbs. | 11 lbs. |

| Replacement Jaw Kits | |
|----------------------|------------------|
| Part Number | Description |
| HP420-2S | Serrated Jaw Kit |
| HP420-2C | Carvable Jaw Kit |
| HP420-2 | Dovetail Jaw Kit |

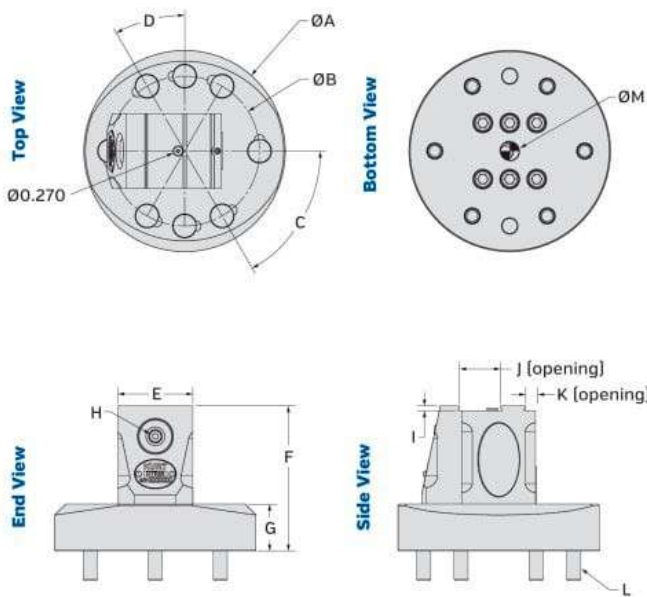
Sold Individually





DoveLock™ Dovetail 5 Axis Vise

- DoveLock™ dovetail vise for 4 and 5 axis CNC machining with access to five sides of the workpiece.
- Manufactured from pre-hardened 4140 steel, the DoveLock maintains part rigidity and minimizes deflection or clamp creep when under high machining pressure.
- Reversible models allow for a wide range of dovetail widths.
- High clamping screw location reduces deflection.
- Movable jaw slide is retained within the stationary jaw and creates more anti-deflection control.
- Embedded locating pin keeps part location accurate when applying side load pressure.
- Models available: Standard model DT20. Reversible jaw models DTR20 and DTR10.
- Mounting base has pre-configured hole pattern to fit most machines.
- Easy part prep requires only 1/8" of material to hold workpiece in place.
- Movable and stationary jaws are matched pairs.
- Lifetime Iron Clad Warranty.



| | DTR20 | DTR10 | DT20 |
|---------------------|--------------|--------------|--------------|
| ØA | 5.38 | 2.69 | 4.47 |
| ØB | 4.00 | 2.00 | 3.50 |
| C | 60° | 60° | 60° |
| D | 30° | 30° | 30° |
| E | 2.00 | 1.00 | 2.00 |
| F | 3.875 | 2.00 | 3.75 |
| G | 1.25 | 0.625 | 1.25 |
| H | 1/2-13 BHSCS | 1/4-20 BHSCS | 1/2-13 BHSCS |
| I | 0.125 | 0.125 | 0.125 |
| J [opening] | 1.09 - 1.65 | 0.52 - 0.80 | 1.18 - 1.68 |
| K [opening] | 0.33 - 0.88 | 0.29 - 0.57 | NA |
| L | 3/8-16 SHCS | 10-32 SHCS | 3/8-16 SHCS |
| ØM [slip fit dowel] | 0.500 | 0.250 | 0.500 |
| Est. Weight | 11 Lbs | 1.5 Lbs. | 8 Lbs |

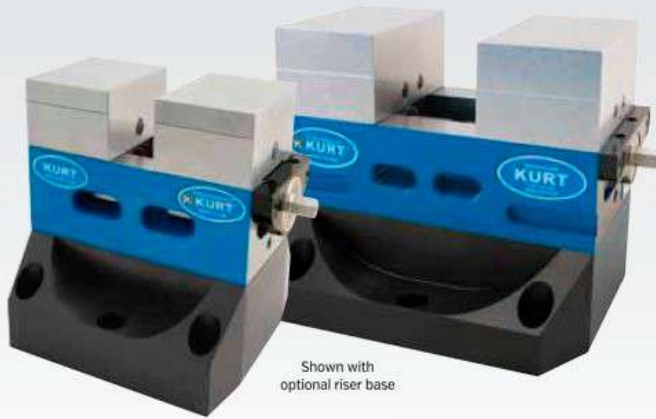
| Clamp Force DT20 DTR20 | |
|------------------------|-----------------|
| Inch Pounds | Pounds of Force |
| 80 | 1,000 |
| 160 | 2,000 |
| 240 | 3,000 |
| 320 | 4,000 |



| DT20-1 Riser Base | |
|-------------------|--------|
| Riser Height | 1.250" |
| Riser Diameter | 4.47" |
| Weight | 5 Lbs. |



Additional pallet options available - contact factory for details



Shown with optional riser base



Optional riser bases:
SCMX250-RISERKIT SCMX425-RISERKIT

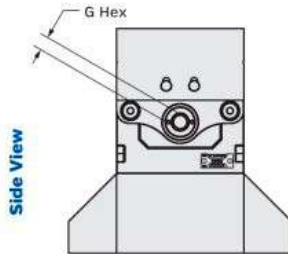


Optional mounting pallets - contact factory for options

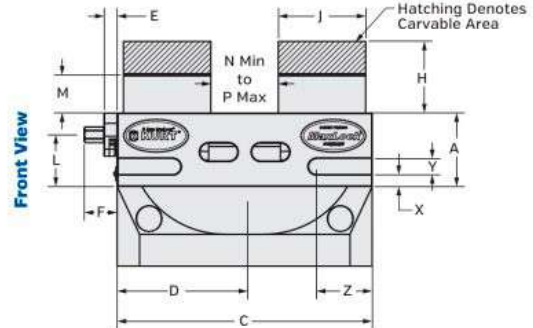
MaxLock™ 5 Axis Self-Centering Vise

- Vise for five axis machining.
- ±0.0002" repeatability.
- Adjustable Center Line.
- Machinable Jaws - choice of aluminum or steel.
- The customer will machine in a step for higher accuracy eliminating the need for parallels.
- Holds up to a 6-1/2" long parts with model SCMX425.
- Clamp both OD and ID.
- Kurt AngLock design pulls the part down.
- 2-1/2" & 4" jaw widths.
- Tall jaws for increased spindle clearance.
- Jaws are reversible.
- Flexible mounting options.
- Hex keys required for jaw removal:
SCMX250: 5/64", 3/32"
SCMX425: 3/32", 1/8"

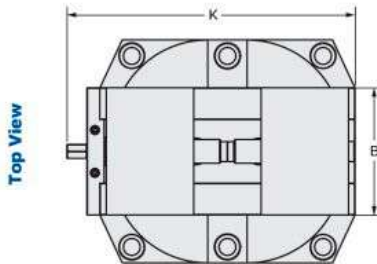
| Dimensional Data | SCMX250 Clamping Force Lbs. | | SCMX425 Clamping Force Lbs. | | Jaw Kits (Includes Two Jaws) | | | | | | |
|------------------|-----------------------------|----------------------|-----------------------------|-----------|------------------------------|-----------|-----------------------------------|--------|-------|--------|--------|
| | SCMX425 SCMX425AL | SCMX250 SCMX250AL | Ft. Lbs | Lbs Force | Ft. Lbs | Lbs Force | Part Number | Length | Width | Height | Weight |
| A | 2.313 | 2.000 | 10 | 350 | 10 | 500 | SCMX250AL-JAWKIT Aluminum Jaw Kit | 2.00 | 2.50 | 1.50 | 2 |
| B | 4.000 | 2.500 | 20 | 750 | 20 | 1,000 | SCMX425AL-JAWKIT Aluminum Jaw Kit | 2.75 | 4.00 | 2.25 | 5 |
| C | 8.000 | 5.000 | 30 | 1,300 | 30 | 1,500 | SCMX250C-JAWKIT Steel Jaw Kit | 2.00 | 2.50 | 1.50 | 4 |
| D | 4.000 | 2.500 | 40 | 1,800 | 40 | 2,000 | SCMX425C-JAWKIT Steel Jaw Kit | 2.75 | 4.00 | 2.25 | 12 |
| E | 0.69 | 0.69 | | | 50 | 2,500 | | | | | |
| F | 1.12 | 1.11 | | | 60 | 3,000 | | | | | |
| G | 3/8 | 5/16 | | | | | | | | | |
| H | 2.25 | 1.50 | | | | | | | | | |
| J | 2.75 | 2.00 | | | | | | | | | |
| K | 9.12 | 6.11 | | | | | | | | | |
| L | 1.625 | 1.344 | | | | | | | | | |
| M | 1.125 | 0.940 | | | | | | | | | |
| N | 0.000 | 0.000 | | | | | | | | | |
| P | 2.500 | 1.000 | | | | | | | | | |
| Q | 0.531 Ø | 0.406 Ø | | | | | | | | | |
| S | 1.000 | 1.000 | | | | | | | | | |
| T | 1.250 | - | | | | | | | | | |
| U1 | 3.000 | - | | | | | | | | | |
| U2 | 3.000 | 2.000 | | | | | | | | | |
| U3 | 1.500 | - | | | | | | | | | |
| U4 | 1.500 | - | | | | | | | | | |
| V | 0.625 | 0.375 | | | | | | | | | |
| W | 0.688 | 0.500 | | | | | | | | | |
| X | 0.375 | - | | | | | | | | | |
| Y | 0.500 | - | | | | | | | | | |
| Z | 1.750 | - | | | | | | | | | |
| Est. Weight | 30 Lbs | 10 Lbs | | | | | | | | | |



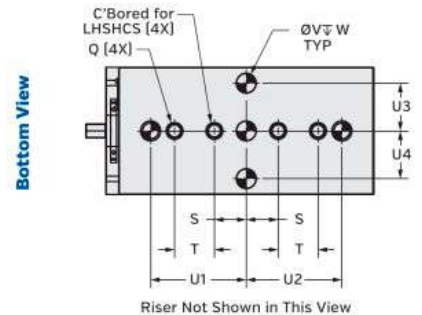
Side View



Front View



Top View



Bottom View

Riser Not Shown in This View



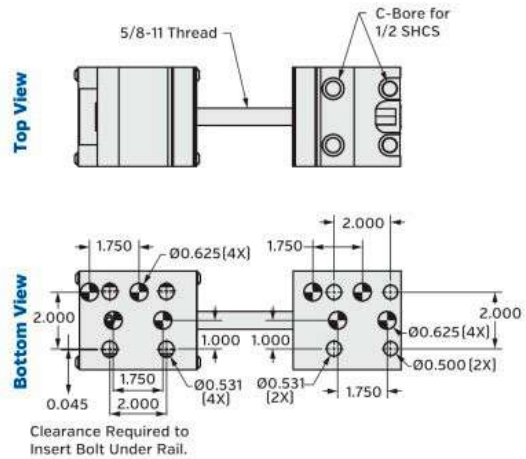
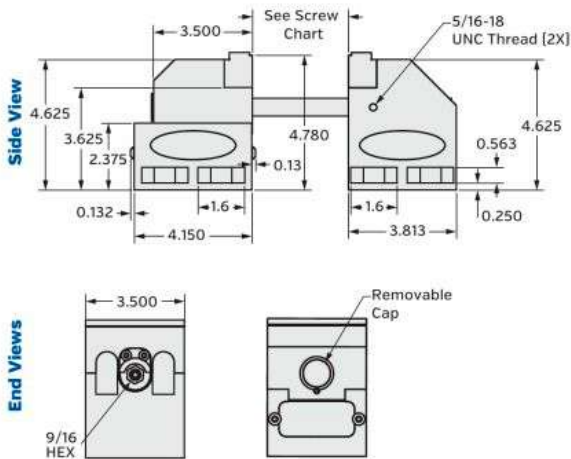
MaxLock™ MX350 Multi-Axis AngLock® Vise

- Kurt AngLock Design pulls the part down.
- Pull Type feature decreases stationary deflection.
- 0.625" stroke – Allows for wider range of clamping before having to change setup.
- Modular Design – Mounts on two inch grid patterns when removed from the riser and "T" slots or center hole grids 100 mm and under.
- When mounted in a two inch grid the vise comes with locator bolts for quick alignment.
- When mounted on the risers, precision 5/8 holes have been added so Kurt sine keys can be used for quick alignment.
- Auxiliary clamping slots – allows the customer more flexibility in mounting the vise.
- The customer will finish machine the horizontal surface of the jaw plate for higher accuracy, eliminating the need for parallels.
- Machinable semi-hard steel jaws available in 3 lengths.
- The screw is easily manufactured and changed, by the customer, to allow a broad range of part sizes.
- Maximum of 40 Ft. Lbs. provides up to 7,000 Lbs. clamping force.
- Weight: 31 Lbs.
- Patented

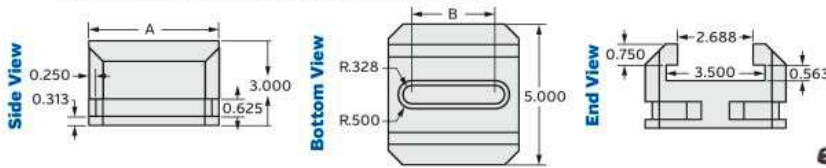
Screw Selection Chart

| Part Number | Screw Length | Minimum Jaw Opening | Maximum Jaw Opening |
|-------------|--------------|---------------------|---------------------|
| *MX350-5-8 | 8.00 | 0.15 | 3.5 |
| MX350-5-12 | 12.00 | 3.5 | 7.5 |
| MX350-5-18 | 18.00 | 7.5 | 11.5 |
| MX350-5-24 | 24.00 | 11.5 | 15.5 |

*Comes standard with MX350-5-8 screw

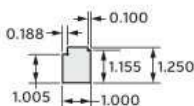


Optional Risers Part No MX350RL and MX350RS



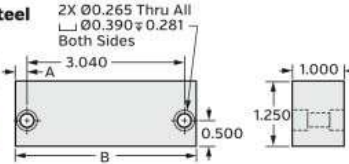
| Part Number | A | B |
|-------------|-------|------|
| MX350RS | 4.625 | 2.95 |
| MX350RL | 5.650 | 3.97 |

MX350-236 Jawplate



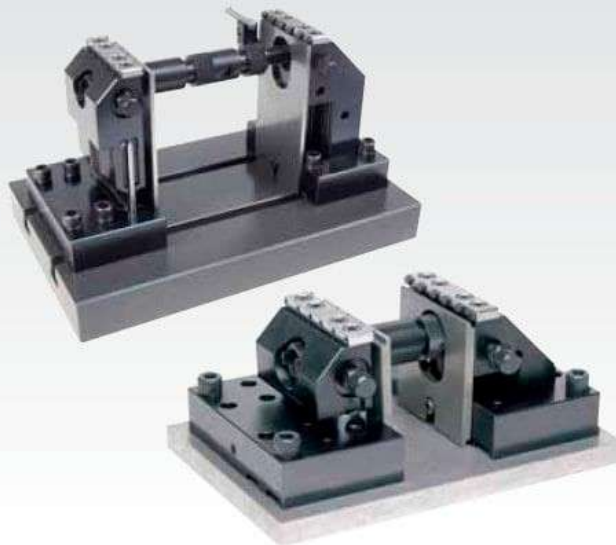
Machinable Jaw Semi-Hard Steel

| Part Number | A | B |
|--------------|-------|------|
| MX350-235-35 | 0.230 | 3.50 |
| MX350-235-45 | 0.730 | 4.50 |
| MX350-235-55 | 1.230 | 5.50 |



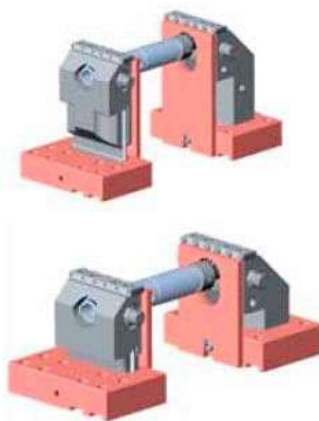
Options:

- MX350-236 Double Step Jawplate
- MX350-236-1 Double Step Jawplate w/CBN Coating



VB Schenke Clamping System

- High clamping force (up to 40 kN) exactly where it is needed.
- Form fit clamping with embossing pins. No pre-embossing required.
- No flare out of the jaws under tension, no distortion on machine table.
- Extreme rigidity permits maximum cutting forces.
- The special design and a clamping depth of just 8 mm permits obstruction free machining on 5 sides.
- Any desired clamping width, limited only by the size of the machine table. The two clamping jaws, one fixed and one moving, can be positioned at any desired distance from each other.
- Clamps blank work pieces, machined work pieces, round and irregularly formed work pieces.
- 5AX100 clamping system can be mounted on T-slot or location grid machine tables or any custom fixture.
- Imported from Germany.



| Technical Data | Model Number Part Number | VB 5 AX 100-H 740-01-000-51 | VB 5 AX 100-L 740-01-003-61 |
|---|-----------------------------|----------------------------------|----------------------------------|
| Clamping Height above machine table (CH) | | 175 mm* [6.889"] | 100 mm* [3.937"] |
| Extended height +25 mm see pos.9 (Parts No. 740-04-025-00) | | 200 mm [7.874"] | 125 mm [4.921"] |
| Extended height +50 mm see pos.9 (Parts No. 740-04-050-00) | | 225 mm [8.858"] | 150 mm [5.906"] |
| Jaw width | | 100 mm [3.937"] | 100 mm [3.937"] |
| Clamping force on work piece | | 5 - 40 kN [1124-8992 Lbs] | 5 - 40 kN [1124-8992 Lbs] |
| Clamping width with standard set | | 20 - 236 mm [0.787" - 9.291"] | 20 - 236 mm [0.787" - 9.291"] |
| Clamping depth | | 8 mm [0.315"] | 8 mm [0.315"] |
| h | | 36 mm [1.417"] | 36 mm [1.417"] |
| l | | see parts list | see parts list |
| b | | 98 mm [3.858"] | 98 mm [3.858"] |

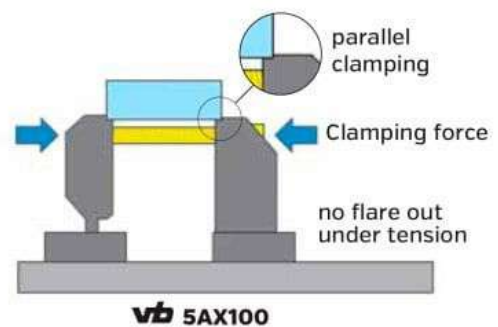
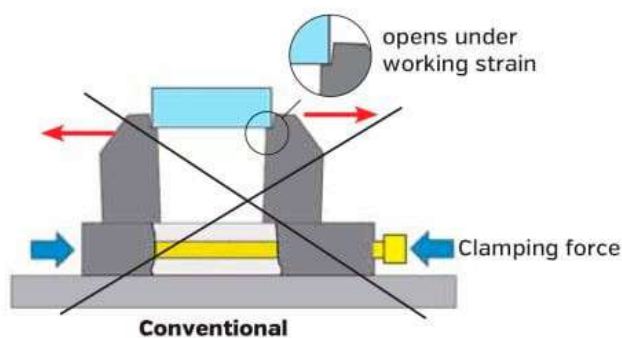
* The clamping height of the 100 mm or 175 mm respectively can be raised by using the mounting block raise.

740-04-025-00 25mm raise

740-04-050-00 50mm raise

* Mounting blocks and support plates must be ordered separately.

The clamping force is generated right where it is needed



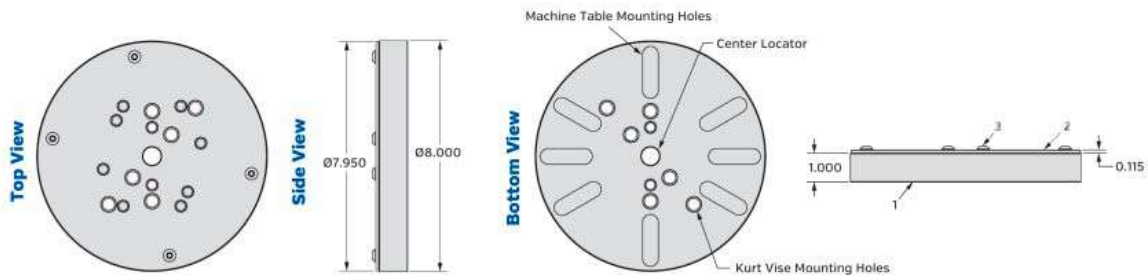


BP8 5 Axis Adapter Plates

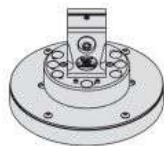
- Designed to cover a wide range of vises and a wide range of tables.
- The mounting slots are designed to be covered up when a vise is mounted to keep clear of chips.
- An easier way to mount Kurt 5 axis vises to a machine table.
- Comes complete with Base Plate, Cover Plate, and Cover Plate Screws.
- Weighs 13lbs.

| Model | Locating Spud Ø | Locating Spud | Mounting Bolts |
|---------|-----------------|---------------|-------------------------------|
| DT20 | 0.5000 | BP8-277-2 | 3/8-16 X 1.375 LG S.H.C.S. |
| DTR20 | 0.5000 | BP8-277-2 | 3/8-16 X 1.375 LG S.H.C.S. |
| HP420 | 0.5000 | BP8-277-2 | 1/2-13 X 1.875 LG S.H.C.S. |
| SCMX250 | 0.3750 | BP8-277-1 | 3/8-16 X 1.25 LG L.H.S.H.C.S. |
| SCMX425 | 0.6250 | BP8-277-3 | 1/2-13 X 1.50 LG L.H.S.H.C.S. |

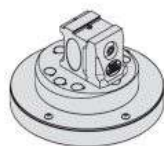
| Item No. | Part Number | Qty | Description |
|----------|--------------------------------------|-----|-------------------------|
| 1 | BP8-244 [5 Axis 8.0 Base Plate] | 1 | 8 Inch Round Base Plate |
| 2 | BP8-53 [5 Axis 8.0 Base Plate Cover] | 1 | Base Plate Cover |
| 3 | 03-0133 | 4 | SBHCS 1/4-20 X 1/2 LG |



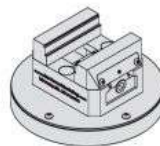
BP8 works With These Vises



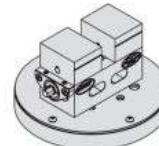
DT20



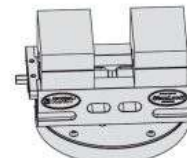
DTR20



HP420
HP440
HP460



SCMX250

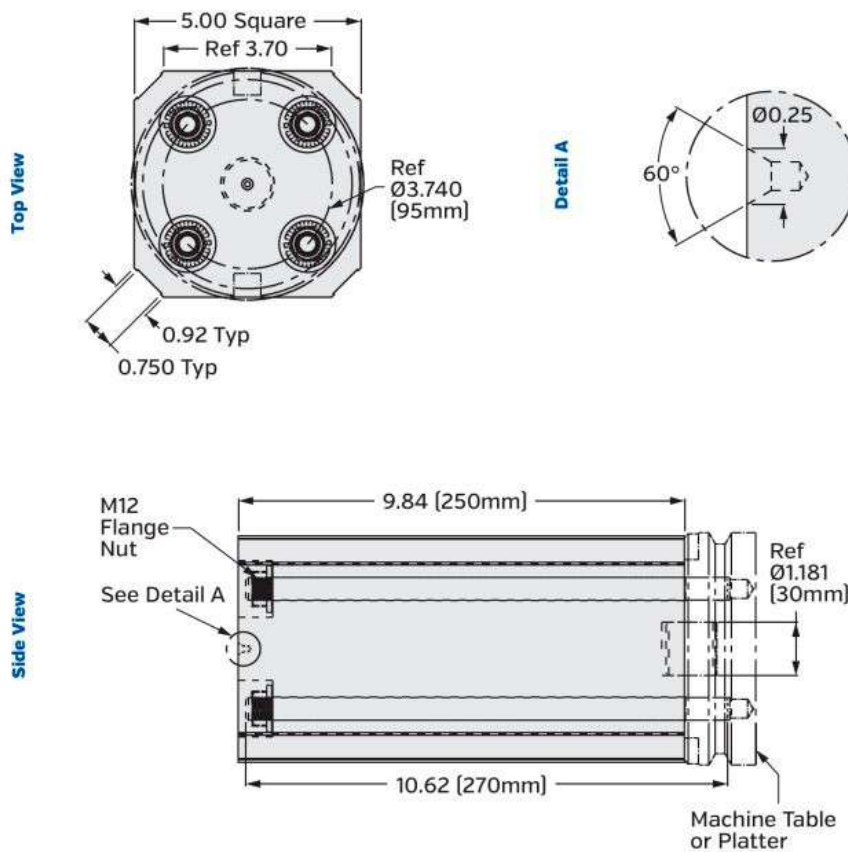


SCMX425



Mini ToolBlox™

- Designed to fit a wide range of machine tables.
- Easily handles a variety of KURT 5 axis vises and MiniLock systems.
- Machined from solid aluminum.
- Weighs only 22lbs. and easily handled by today's CNC machines.
- Mounting hardware for Matsuura Machines included.



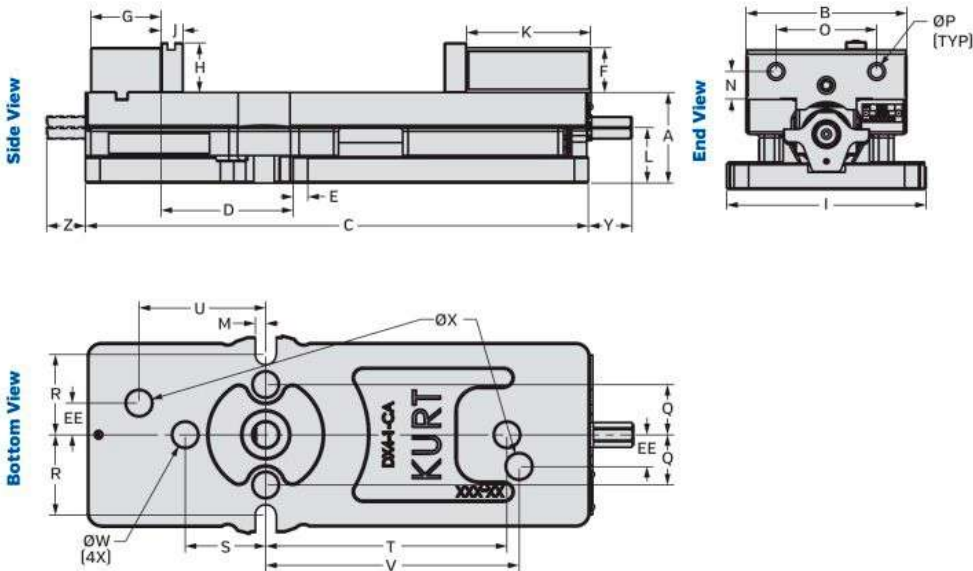


Kurt® DX4™ CrossOver® Vise

Introducing the Kurt DX4 CrossOver Vise

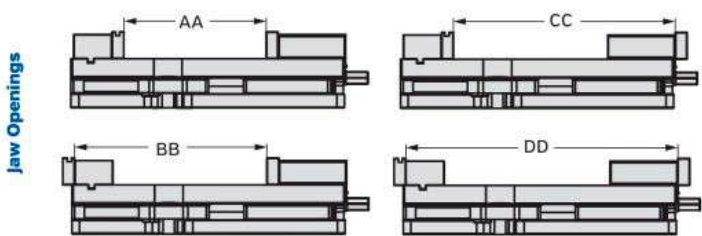
The evolutionary DX4 CrossOver® Vise combines all the great features of the world-renowned KURT D40 and 3400V vises, along with new state-of-the-art workholding features. DX4 CrossOver achieves new levels in precision and performance where flatness and parallelism are important and is a better vise than our own D40 in every way we measure a vise. With KURT'S MADE IN AMERICA commitment, the DX4 CrossOver is destined to become the go-to-vise for today's machining applications.

Metric versions available - call factory.



| Dimensional Data | |
|------------------|--------|
| DX4/DX4R | |
| A | 2.250 |
| B | 4.000 |
| C | 12.500 |
| D | 3.285 |
| E | 0.365 |
| F | 1.115 |
| G | 1.750 |
| H | 1.235 |
| I | 4.962 |
| J | 0.547 |
| K | 3.090 |
| L | 1.387 |
| M | 0.260 |
| N | 0.687 |
| O | 2.500 |
| P | 3/8-16 |
| Q | 1.250 |
| R | 2.000 |
| S | 2.000 |
| T | 6.000 |
| U | 80MM |
| V | 160MM |
| W | 0.625 |
| X | 16 mm |
| Y | 1.084 |
| Z | 0.976 |

Vise Mounting Options - See page 76



| Clamping Force Lbs. | |
|---------------------|-----------|
| Ft. Lbs | Lbs Force |
| 10 | 512 |
| 20 | 1,487 |
| 30 | 2,464 |
| 40 | 3,440 |
| 50 | 4,415 |
| 60 | 5,391 |
| 70 | 6,367 |
| 80 | 7,342 |
| AA | 6,500 |
| BB | 8,797 |
| CC | 10,137 |
| DD | 12,434 |
| EE | 20MM |
| Weight | 30 lbs |

DX4™ CrossOver® Features:

1. DX4 CrossOver vise is a combination of AngLock®, Pull-Type and 2 top bolt FEA designed stationary jaw. When combined they create an ultra unique strategy for a better vise:
 - AngLock® design reduces jaw lift
 - Pull-type design reduces stress on body during clamping
2. Hardened vise bed/jaw plates
3. Semi-hard steel screw
4. 80,000 psi ductile iron body, nut and movable jaw
5. 6.5" opening
6. New wider 2 bolt stationary design fastens from the top
7. Bolts & locates on 40mm, 50mm and 2" grid patterns
8. Accepts sine keys for alignment [not included]
9. Chip evacuation straight through the body
10. Screw support held in place with snap rings
11. Groove Lock® jaw plate and workstop included
12. New brush seal nut design makes it easier to replace
13. Includes chip guard
14. Powder coat paint is long lasting and durable
15. Matching of the bed heights or keyway to stationary jaw [additional cost]
16. Lifetime Iron Clad Warranty

DX4 CrossOver features comparison to D40 Vise:

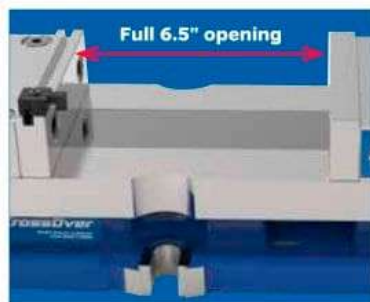
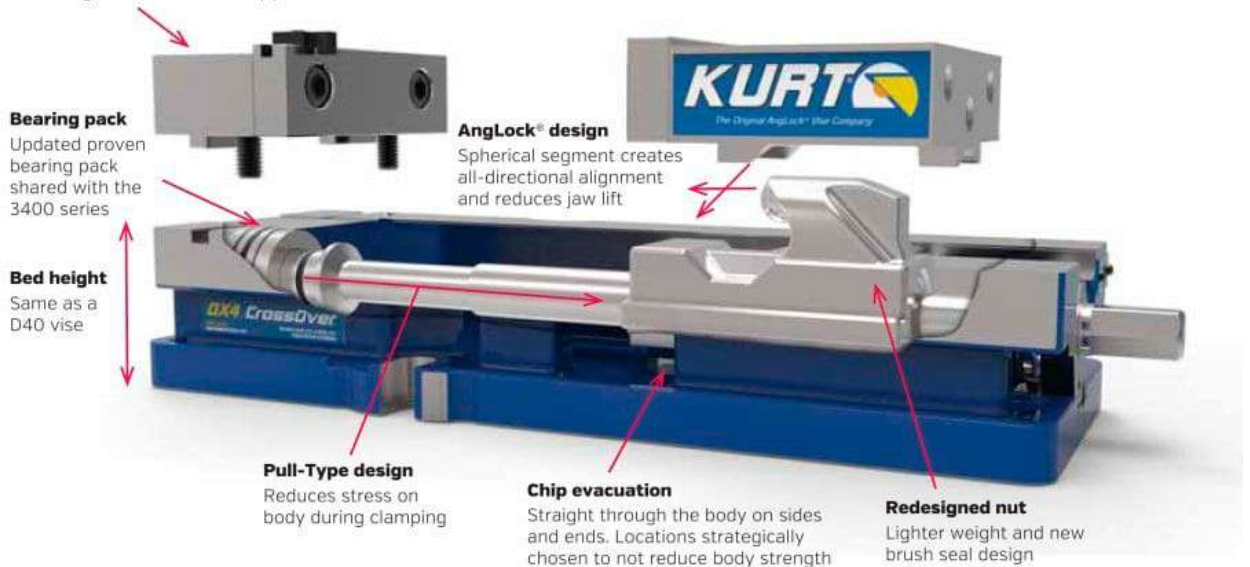
17. DX4 is a replacement vise to D40 vise
18. Larger opening [6.5" versus 3-7/8"]
19. Same bed height as D40
20. Narrower body style than D40 and allows more vises on machine table
21. Updated proven bearing pack shared with the 3400 series
22. Same distance from the keyway to stationary as D40

DX4 CrossOver Vise Models available:

- DX4 Manual
- DX4R Manual Reverse

New stationary jaw

FEA designed 2 bolt stationary jaw reduces deflection





DX6 - MANUAL

Kurt DX6® CrossOver® Vise

Introducing the Kurt DX6® CrossOver® Vise

The evolutionary DX6® CrossOver® Vise combines all the great features of the world-renowned KURT D688 and 3600V vises, along with new state-of-the-art workholding features. DX6® CrossOver® achieves new levels in precision and performance where flatness and parallelism are important and is a better vise than our own D688 in every way we measure a vise.

New hydraulic models come with single and double acting actuation. Only requires switching out a brass fitting with the supplied hydraulic fitting.

Single acting: hydraulic clamping and spring return for unclamping

Double acting: hydraulic to clamp and unclamp for faster, more precise setup

Metric versions available - call factory.



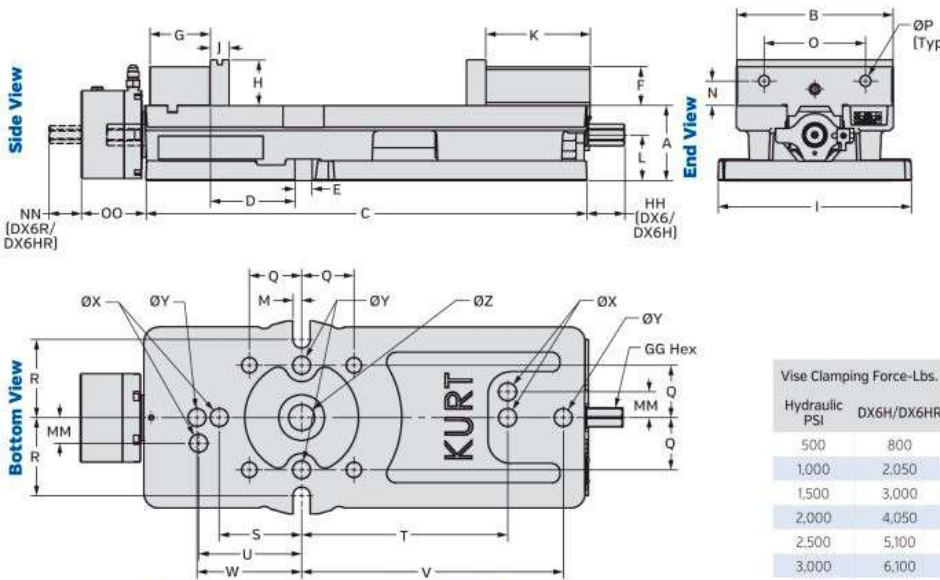
DX6R - MANUAL REVERSE



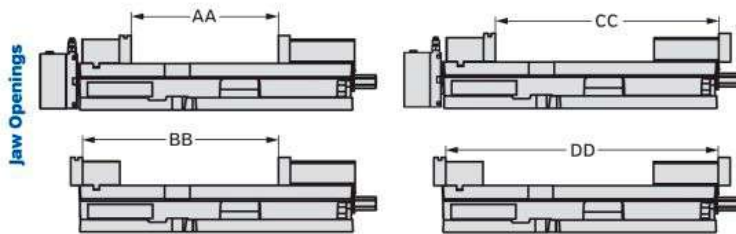
DX6H - HYDRAULIC



DX6HR - HYDRAULIC REVERSE



Vise Mounting Options - See page 76



Dimensional Data

| | DX6/DX6R | DX6H/DX6HR |
|----------|----------|------------|
| A | 2.875 | 2.875 |
| B | 6.000 | 6.000 |
| C | 16.810 | 16.810 |
| D | 3.234 | 3.234 |
| E | 0.656 | 0.656 |
| F | 1.485 | 1.485 |
| G | 2.312 | 2.312 |
| H | 1.735 | 1.735 |
| J | 7.391 | 7.391 |
| K | 4.000 | 4.000 |
| L | 2.295 | 2.295 |
| M | 0.328 | 0.328 |
| N | 0.940 | 0.940 |
| O | 3.875 | 3.875 |
| P | 1/2-13 | 1/2-13 |
| P Metric | M12 | M12 |
| Q | 2.000 | 2.000 |
| R | 2.986 | 2.986 |
| S | 80 mm | 80 mm |
| T | 200 mm | 200 mm |
| U | 100 mm | 100 mm |
| V | 10.000 | 10.000 |
| W | 4.000 | 4.000 |
| X | 16 mm | 16 mm |
| Y | 0.625 | 0.625 |
| Z | 0.992 | 0.992 |
| AA | 9.080 | 9.080 |
| BB | 12.117 | - |
| CC | 13.805 | 13.805 |
| DD | 16.842 | - |
| GG | 3/4 | 3/4 |
| HH | 1.46 | 1.46 |
| MM | 25 mm | 25 mm |
| NN | 1.52 | 1.52 |
| OO | - | 2.500 |
| Weight | 65 lbs | 65 lbs |

| Vise Clamping Force-Lbs. | DX6H/DX6HR |
|--------------------------|------------|
| 500 | 800 |
| 1,000 | 2,050 |
| 1,500 | 3,000 |
| 2,000 | 4,050 |
| 2,500 | 5,100 |
| 3,000 | 6,100 |
| 3,200 | 6,700 |

| Vise Clamping Force-Lbs. | DX6/DX6R |
|--------------------------|----------|
| 10 | 786 |
| 20 | 1,800 |
| 30 | 2,508 |
| 40 | 3,423 |
| 50 | 4,210 |
| 60 | 5,020 |
| 70 | 6,287 |
| 80 | 6,884 |

DX6® CrossOver® Features:

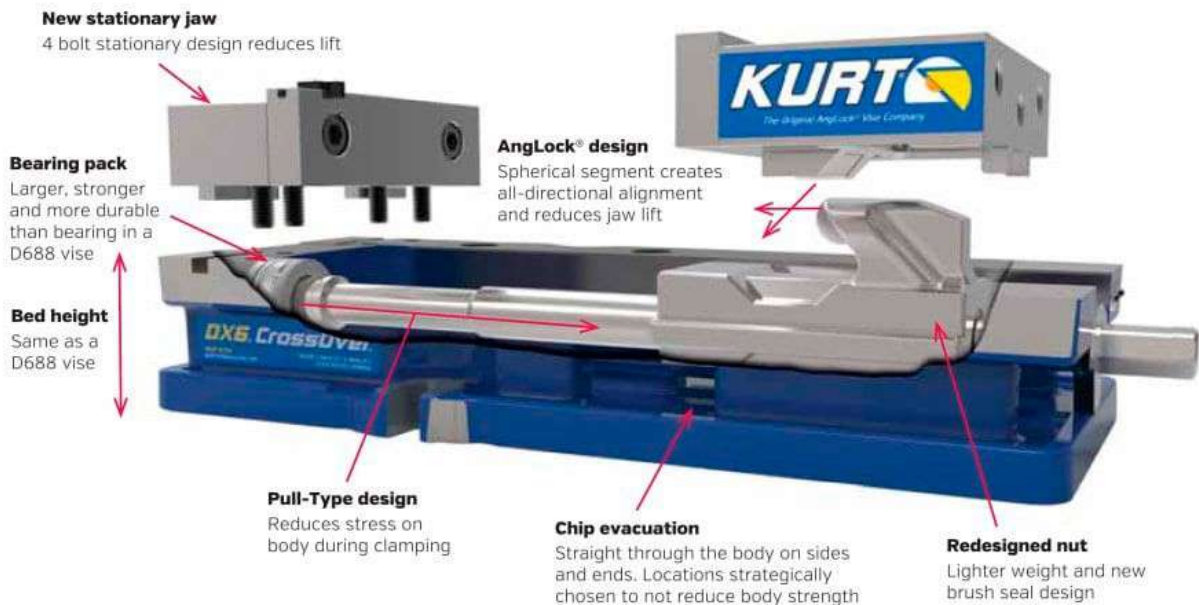
1. DX6® CrossOver® vise is a combination of AngLock®, Pull-Type and 4 bolt stationary jaw design. When combined they create an ultra unique strategy for a better vise:
 - AngLock® design reduces stress on body during clamping
 - Pull-type design reduces stress on body during clamping
 - 4 bolt design reduces stationary jaw deflection and alleviates body stress
2. Hardened vise bed/jaw plates
3. Semi-hard steel screw
4. 80,000 psi ductile iron body, nut and movable jaw
5. Large 9" opening
6. New wider 4 bolt stationary design fastens from the top
7. Bolts & locates on 40mm, 50mm and 2" grid patterns
8. Accepts sine keys for alignment (not included)
9. Chip evacuation straight through the body
10. Screw support held in place with snap rings
11. Groove Lock® jaw plate and workstop included
12. New brush seal design makes it easier to replace
13. Includes chip guard
14. Powder coat paint is long lasting and durable
15. Matching of the bed heights or keyway to stationary jaw (additional cost)
16. Fits on D50-4-SA swivel base
17. Lifetime Iron Clad Warranty

DX6® CrossOver® features comparison to D688 Vise:

18. DX6 is a replacement vise to D688 vise
19. Larger opening (9.0" versus 8.8")
20. Same bed height as D688
21. Narrower body style than D688 and allows more vises on machine table
22. Larger, stronger, and more durable bearing pack lasts longer
23. Same distance from the keyway to stationary as D688
24. Body height matched $\pm 0.0005"$

DX6® CrossOver® Vise Models available:

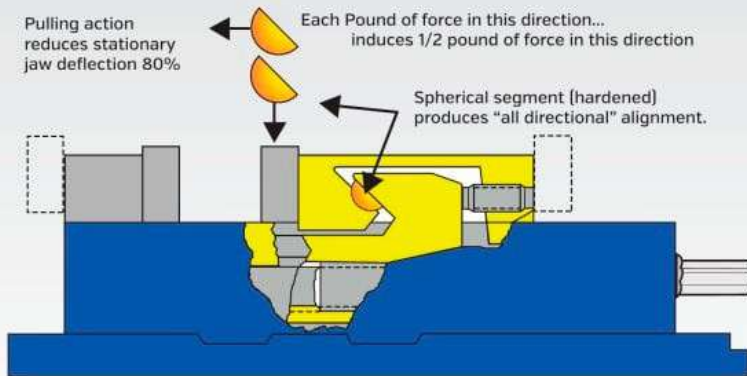
- DX6 Manual
- DX6R Manual Reverse
- DX6H Hydraulic
- DX6HR Hydraulic Reverse



AngLock® D-Series Vises

Features of All D-Series Vises Include:

- AngLock design assures the movable jaw does not lift.
- Standard bed height of ± 0.001 ".
- Matching bed heights within ± 0.001 " at additional cost.
- Hardened vise bed.
- Hardened jaw plates.
- Semi-hard steel screw.
- 80,000-PSI ductile iron body.
- Matching of the keyway to the stationary jaw ± 0.001 " is available for all vises at additional cost.



Models: D810 DM810 D100

The original Kurt AngLock D-Series vises are designed for precision part clamping on basic machine tools such as knee-type mills, and machining centers. D-Series vises are ideal for use in running production parts where datums, flatness and parallelism is important. You can precision bore, tap, drill, grind and finish with high accuracy on most parts made of die cast aluminum, steel, and iron in your Kurt AngLock vises. No other brand can give you the time proven accuracy of the Kurt AngLock vises.

All Kurt vises have a friction reducing, needle bearing, thrust collar. The needle bearing increases jaw clamping pressure.



D810 & DM810 (Metric)

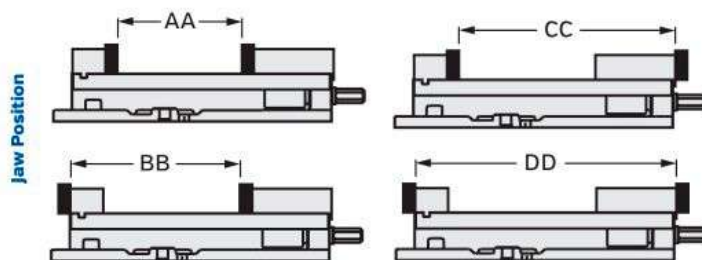
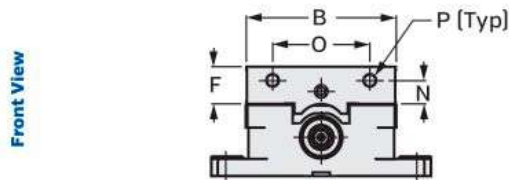
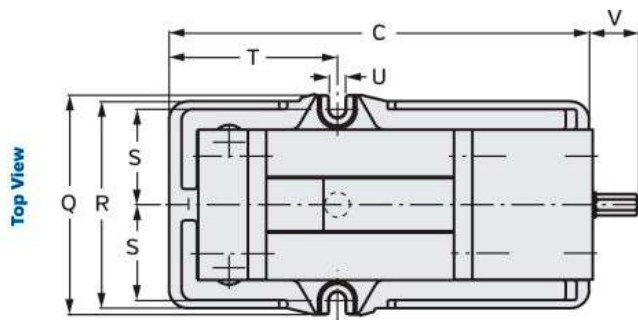
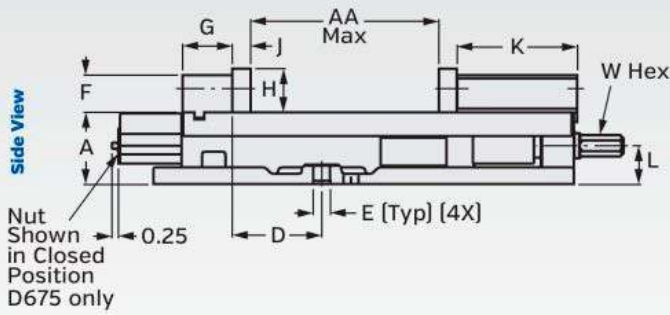
Kurt's D810 features a new updated body style:

- Quick Set-up feature.
- Top down, four bolt design on the stationary jaw reduces vise deflection by 25 percent while allowing total disassembly of the vise without removing the body from the machine table. Special brush seals shield and protect vise screw threads from machined chips and residue.
- The nut has been shortened so as not to protrude past the end of the vise body. New powder coat paint finish resists coolant-induced peeling for greater corrosion protection. The overall vise footprint is identical to earlier models so both can be used interchangeably and in tandem.
- With a jaw opening of 10" and clamping force up to 11,600 Lbs., the D810 vise locks parts precisely including very large parts for aggressive "hogging out" operations.



D100

The D100 is the largest and strongest of our general purpose vises. With 9-3/4" of jaw opening, it has the capacity and strength to take on your highest horsepower milling cuts. It's the most precise and rugged 10" production vise in the world.



| Torque Ft.-Lbs. | Manual Vise Clamping Force-Lbs. | |
|-----------------|---------------------------------|--------|
| | D810 | D100 |
| 10 | - | - |
| 20 | 1,834 | 1,698 |
| 30 | - | - |
| 40 | 3,843 | 3,300 |
| 50 | - | - |
| 60 | 4,349 | 4,686 |
| 70 | - | - |
| 80 | 5,706 | 6,623 |
| 100 | 7,042 | 7,842 |
| 120 | 8,688 | 9,970 |
| 140 | 10,413 | 11,429 |
| 160 | 11,596 | 12,792 |
| 180 | - | 14,681 |
| 200 | - | 16,163 |

| | Dimensional Data | |
|--------|------------------|--------|
| | D810 | D100 |
| | Inch | Inch |
| A | 3.310 | 3.875 |
| B | 8.000 | 10.000 |
| C | 21.810 | 27.500 |
| D | 4.686 | 5.875 |
| E | 0.813 | 0.813 |
| F | 1.965 | 2.465 |
| G | 3.652 | 2.950 |
| H | 2.200 | 2.937 |
| J | 1.075 | 1.320 |
| K | 6.190 | 8.630 |
| L | 1.865 | 2.225 |
| N | 1.220 | 1.625 |
| O | 4.750 | 5.750 |
| P | 5/8-11 | 3/4-10 |
| Q | 11.500 | 14.500 |
| R | 11.000 | 13.250 |
| S | 4.940 | 6.188 |
| T | 8.500 | 10.590 |
| U | 0.880 | 0.940 |
| V | 2.375 | 1.690 |
| W | 0.875 | 1 |
| AA | 10 | 9-3/4 |
| AA Min | 0 | 0 |
| BB | 14.730 | 14.000 |
| BB Min | 4.730 | 3.500 |
| CC | 17.260 | 19.750 |
| CC Min | 7.260 | 9.200 |
| DD | 21.990 | 24.00 |
| DD Min | 11.990 | 13.500 |
| Weight | 158 | 300 |

Repair Kits

| Model | Repair Kit |
|-------|------------|
| D30 | *D30-KIT |
| D40 | *D40-KIT |
| D50 | *D50-KIT |
| D60 | D60-KIT |
| D675 | *D675-KIT |
| D688 | *D688-KIT |
| DX6 | DX6-KIT |
| D80 | D80-KIT |
| D810 | *D810-KIT |
| D100 | D100-KIT |

*= Same as Metric Vise

See page 86 for kit descriptions

VersatileLock® Vises

Manual [3400V] and Hydraulic [3400H]

The VersatileLock vise is the industry's ultimate single station CNC vise. It offers ultra-precision function through these important design features: The original, time proven Kurt AngLock design prevents parts from lifting upward under heavy clamping loads. The "pull-type" jaw clamping reduces stationary jaw deflection by at least 80%. The one piece vise body and stationary jaw provide greater strength while reducing weight.

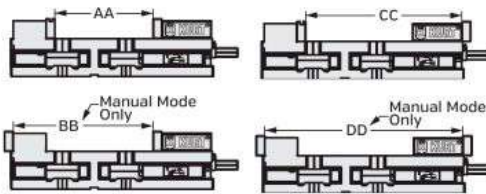
Features:

- Full 6" Opening.
- Can be mounted upright [3400V] or on either side.
- Matched stationary jaw to keyway including the body height $\pm 0.001"$.
- 0.0005" clamping repeatability.
- Footprint is less than 13", Ideal for the smallest machines.
- All hydraulic units feature a 1/4" vise stroke.
- Groove Lock workstop included.



3400V

Jaw Position

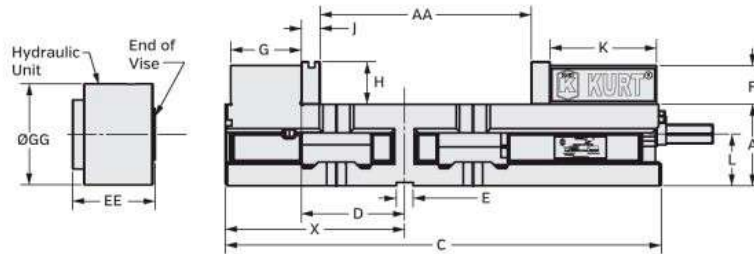


| Clamping Force Lbs. | |
|---------------------|---------|
| Torque Ft/Lbs. | 3400V |
| 10 | 1,050 |
| 20 | 2,195 |
| 30 | 3,485 |
| 40 | 4,675 |
| 50 | 6,245 |
| 60 | 7,500 |
| Weight | 28 Lbs. |

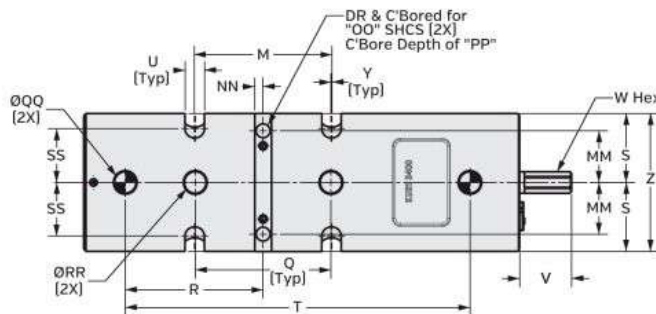
| Clamping Force Lbs. | |
|--------------------------|-------|
| Hydraulic Pressure (Lbs) | 3400H |
| 500 | 350 |
| 1,000 | 1,600 |
| 1,500 | 3,000 |
| 2,000 | 4,300 |
| 2,500 | 5,700 |
| 3,000 | 7,200 |
| 3,200 | 7,800 |

| Dimensional Data | |
|------------------|---------|
| | 3400V/H |
| A | 2.375 |
| B | 4.000 |
| C | 12.644 |
| D | 3.000 |
| E | 0.5005 |
| F | 1.115 |
| G | 2.047 |
| H | 1.235 |
| J | 0.547 |
| K | 3.090 |
| L | 1.505 |
| M | 4.000 |
| N | 0.687 |
| O | 2.500 |
| P | 3/8-16* |
| Q | 100 mm |
| R | 4.000 |
| S | 2.000 |
| T | 10.000 |
| U | 0.563 |
| V | 0.950 |
| W | 9/16* |
| X | 5.203 |
| Y | 0.031 |
| Z | 4.000 |
| AA | 6.000 |
| BB | 8.594 |
| CC | 9.637 |
| DD | 12.231 |
| EE | 2.580 |
| FF | - |
| GG | 2.937 |
| MM | 1.500 |
| NN | 0.2503 |
| OO | 3/8* |
| PP | 0.541 |
| RR | M16 |
| SS | 1.558 |

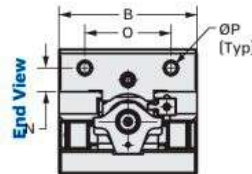
Side View



Bottom View



End View



Vise Mounting Options - See page 76



VersatileLock® Vises

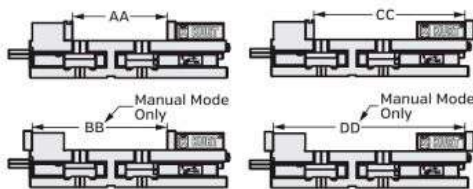
Reverse Manual (3410V) and Reverse Hydraulic (3410H)

Use the VersatileLock in this configuration for the added benefit of easier part programming in "Y axis" positive direction. It also reduces the "reach-over" distance making part loading safer and easier for the operator.

Features:

- Full 6" Opening.
- Can be mounted upright or on either side.
- Matched stationary jaw to the keyway including the body height $\pm 0.001"$.
- 0.0005" clamping repeatability.
- Footprint is less than 13". Ideal for the smallest machines.
- All hydraulic units feature a 1/4" vise stroke.
- Groove Lock workshop included.
- Weight: 3410V [28 Lbs.]/ 3410H [31 Lbs.]

Jaw Position

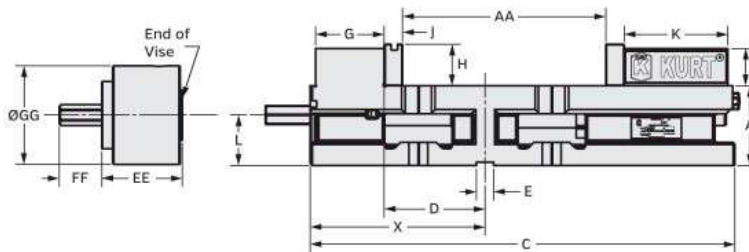


| Torque Ft/Lbs | Clamping Force Lbs. | | Hydraulic Pressure (Lbs) | 3410H |
|---------------|---------------------|-------------------------------|--------------------------|-------|
| | 3410V | 3410H | | |
| 10 | 1,050 | 500 | 350 | |
| 20 | 2,195 | 1,000 | 1,600 | |
| 30 | 3,485 | 1,500 | 3,000 | |
| 40 | 4,675 | 2,000 | 4,300 | |
| 50 | 6,245 | 2,500 | 5,700 | |
| 60 | 7,500 | 3,000 | 7,200 | |
| Weight | 28 Lbs. | 3,200 | 7,800 | |
| | | Hydraulic Displacement Cu. In | 0.80 | |
| | | Weight | 31 Lbs. | |

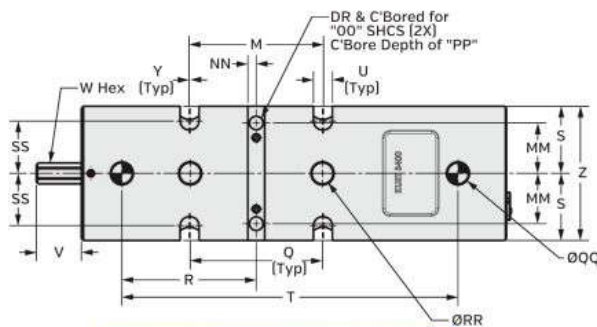
Dimensional Data

| | 3410V/H |
|----|---------|
| A | 2.375 |
| B | 4.000 |
| C | 12.644 |
| D | 3.000 |
| E | 0.5005 |
| F | 1.115 |
| G | 2.047 |
| H | 1.235 |
| J | 0.547 |
| K | 3.090 |
| L | 1.505 |
| M | 4.000 |
| N | 0.687 |
| O | 2.500 |
| P | 3/8-16* |
| Q | 100 mm |
| R | 4.000 |
| S | 2.000 |
| T | 10.000 |
| U | 0.563 |
| V | 0.966 |
| W | 9/16* |
| X | 5.203 |
| Y | 0.031 |
| Z | 4.000 |
| AA | 6.000 |
| BB | 8.594 |
| CC | 9.637 |
| DD | 12.231 |
| EE | 2.580 |
| FF | 1.275 |
| GG | 2.937 |
| MM | 1.500 |
| NN | 0.2503 |
| OO | 3/8* |
| PP | 0.541 |
| QQ | 0.6253 |
| RR | M16 |
| SS | 1.558 |

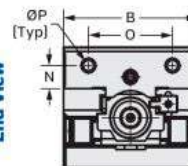
Side View



Bottom View



End View



Vise Mounting Options - See page 76



3600V



3600A - Standard Air



3600H - Standard Hydraulic

VersatileLock® Vises

Standard [3600] and Short [3620] Manual, Hydraulic, and Air Models

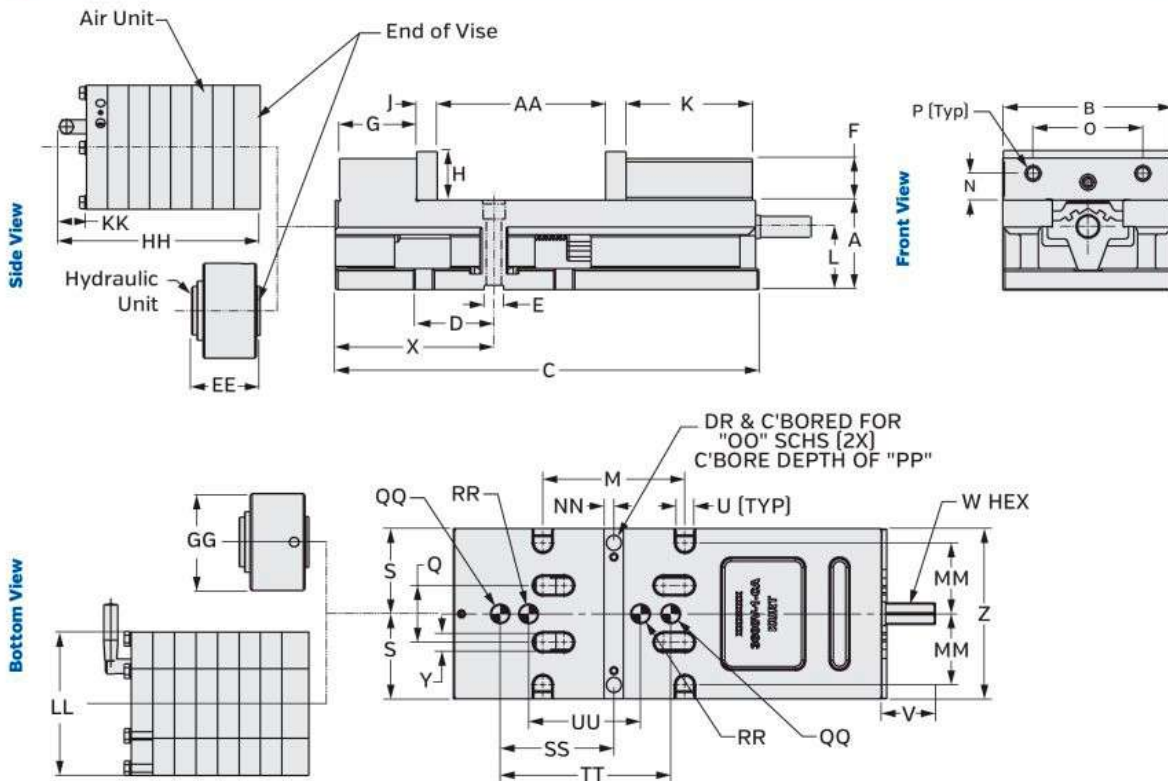
The VersatileLock vise is the industry's ultimate single station CNC vise. It offers ultra-precision function through these important design features: The original, time proven Kurt AngLock design prevents parts from lifting upward under heavy clamping loads. The "pull-type" jaw clamping reduces jaw stationary deflection by at least 80%. The one piece vise body and stationary jaw provide greater strength while reducing weight.

Features:

- Can be mounted upright or on either side.
- Matched stationary jaw to keyway including the body height $\pm 0.001"$.
- 0.0005" clamping repeatability.
- Footprint on the short version is 13". Ideal for the smallest machines.
- Hydraulic option is available. See pages 74-75 for KHP5000 hydraulic pumps.
- All air and hydraulic units feature a 1/4" vise stroke.
- Air vise has a precise and repeatable "gentle touch" for delicate parts.
- Optional internal hex available for 3600V only. [3600V-INT].
- Patented

3600H

- New hydraulic model is capable of: Single acting with spring return for unclamp, or Double acting with hydraulic unclamp. Includes fittings for both configurations.
- Threaded ports on body: Female 1/8" NPT
- Included adapters: Male 1/8" NPT to Male #4 JIC, quantity of two



Vise Mounting Options - See page 76



The 3600V shown mounted "back to back". Makes a fast, easy and economical vise tombstone. Bases can be tailored for most HMC's.

See pages 80-81

Repair Kits

| Model | Repair Kit |
|-------|------------|
| 3600V | *3600V-KIT |

*= Same as Metric Vise

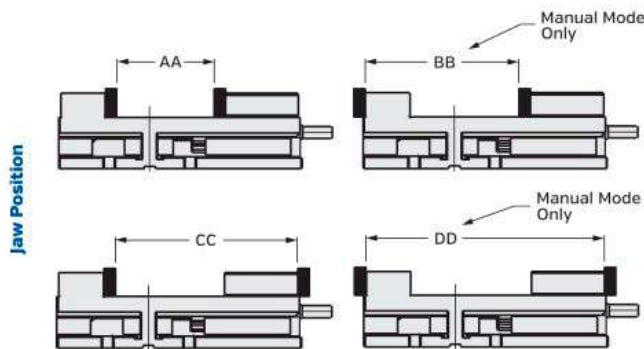
| Manual Torque Ft.-Lbs. | Vise Clamping Force-Lbs. | |
|------------------------|--------------------------|-------|
| | Manual | |
| | 3600V | 3620V |
| 10 | 653 | 653 |
| 20 | 1,743 | 1,743 |
| 30 | 2,234 | 2,234 |
| 40 | 3,015 | 3,015 |
| 50 | 3,833 | 3,833 |
| 60 | 4,438 | 4,438 |
| 70 | 5,528 | 5,528 |
| 80 | 6,356 | 6,356 |

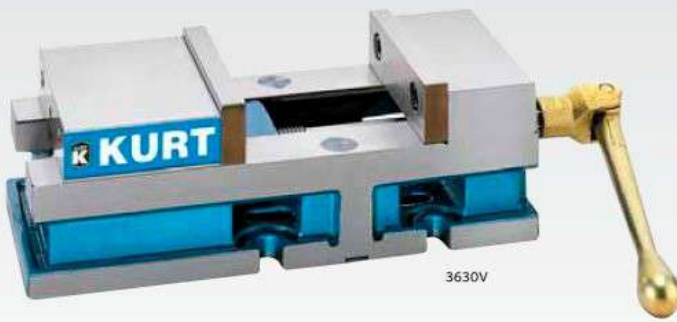
| Hydraulic PSI | Vise Clamping Force-Lbs. | |
|--------------------------------|--------------------------|-------|
| | Hydraulic | |
| | 3600H | 3620H |
| 400 | 900 | 900 |
| 800 | 1,525 | 1,525 |
| 1,200 | 2,750 | 2,750 |
| 1,600 | 3,650 | 3,650 |
| 2,000 | 4,600 | 4,600 |
| 2,400 | 5,500 | 5,500 |
| 2,800 | 6,425 | 6,425 |
| 3,200 | 7,350 | 7,350 |
| Hydraulic Displacement Cu. In. | 0.69 | 0.69 |

Note: Clamping force is only estimated

| Air PSI | Vise Clamping Force-Lbs. | |
|---------|--------------------------|-------|
| | Air | |
| | 3600A | 3620A |
| 10 | 320 | 320 |
| 20 | 840 | 840 |
| 30 | 1,280 | 1,280 |
| 40 | 1,780 | 1,780 |
| 50 | 2,200 | 2,200 |
| 60 | 2,720 | 2,720 |
| 70 | 3,240 | 3,240 |
| 80 | 3,800 | 3,800 |
| 90 | 4,380 | 4,380 |
| 100 | 5,000 | 5,000 |

| | Dimensional Data | | | | | | | |
|-------------|------------------|----------|-----------|---------|---------|---------|---------|--|
| | Manual | | Hydraulic | | Air | | | |
| | 3600V | 3600VM | 3620V | 3600H | 3620H | 3600A | 3620A | |
| | Inch | mm | Inch | Inch | Inch | Inch | Inch | |
| A | 3.187 | 80.949 | 3.187 | 3.187 | 3.187 | 3.187 | 3.187 | |
| B | 6.000 | 152.400 | 6.000 | 6.000 | 6.000 | 6.000 | 6.000 | |
| C | 15.060 | 382.524 | 12.940 | 15.060 | 12.940 | 15.060 | 12.940 | |
| D | 2.750 | 69.850 | 2.750 | 2.750 | 2.750 | 2.750 | 2.750 | |
| E | 0.688 | 17.475 | 0.688 | 0.688 | 0.688 | 0.688 | 0.688 | |
| F | 1.485 | 37.719 | 1.485 | 1.485 | 1.485 | 1.485 | 1.485 | |
| G | 2.750 | 69.850 | 2.750 | 2.750 | 2.750 | 2.750 | 2.750 | |
| H | 1.735 | 44.069 | 1.735 | 1.735 | 1.735 | 1.735 | 1.735 | |
| J | 0.725 | 18.415 | 0.725 | 0.725 | 0.725 | 0.725 | 0.725 | |
| K | 4.500 | 114.300 | 4.500 | 4.500 | 4.500 | 4.500 | 4.500 | |
| L | 2.250 | 57.150 | 2.250 | 2.250 | 2.250 | 2.250 | 2.250 | |
| M | 5.000 | 127.000 | 5.000 | 5.000 | 5.000 | 5.000 | 5.000 | |
| N | 0.937 | 23.800 | 0.937 | 0.937 | 0.937 | 0.937 | 0.937 | |
| O | 3.875 | 98.425 | 3.875 | 3.875 | 3.875 | 3.875 | 3.875 | |
| P | 1/2-13 | M12 X 25 | 1/2-13 | 1/2-13 | 1/2-13 | 1/2-13 | 1/2-13 | |
| Q | 2.000 | 50.800 | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 | |
| R | 4.250 | 107.950 | 4.250 | 4.250 | 4.250 | 4.250 | 4.250 | |
| S | 3.000 | 76.200 | 3.000 | 3.000 | 3.000 | 3.000 | 3.000 | |
| T | 1.380 | 35.025 | 1.380 | 1.380 | 1.380 | 1.380 | 1.380 | |
| U | 0.630 | 16.002 | 0.630 | 0.630 | 0.630 | 0.630 | 0.630 | |
| V | 1.940 | 49.276 | 1.940 | 1.940 | 1.940 | 1.940 | 1.940 | |
| W | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | 3/4 | |
| X | 5.640 | 143.256 | 5.640 | 5.640 | 5.640 | 5.640 | 5.640 | |
| Y | 0.630 | 16.002 | 0.630 | 0.630 | 0.630 | 0.630 | 0.630 | |
| Z | 6.000 | 152.400 | 6.000 | 6.000 | 6.000 | 6.000 | 6.000 | |
| AA | 6.000 | 152.400 | 4.000 | 6.000 | 4.000 | 6.000 | 4.000 | |
| BB | 9.500 | 241.300 | 7.500 | - | - | - | - | |
| CC | 11.250 | 285.750 | 9.250 | 11.250 | 9.250 | 11.250 | 9.250 | |
| DD | 14.750 | - | 12.750 | - | - | - | - | |
| EE | - | - | - | 2.500 | 2.500 | - | - | |
| GG | - | - | - | 3.375 | 3.375 | - | - | |
| HH | - | - | - | - | - | 7.220 | 7.220 | |
| KK | - | - | - | - | - | 1.030 | 1.030 | |
| LL | - | - | - | - | - | 5.000 | 5.000 | |
| MM | 2.500 | 374.650 | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | |
| NN | 0.344 | 63.500 | 0.344 | 0.344 | 0.344 | 0.344 | 0.344 | |
| OO | 1/2 | M12 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | |
| PP | 0.671 | 17.043 | 0.671 | 0.671 | 0.671 | 0.671 | 0.671 | |
| QQ | 0.625 | 0.625 | 0.625 | 0.625 | 0.625 | 0.625 | 0.625 | |
| RR | 16 MM | 16 MM | 16 MM | 16 MM | 16 MM | 16 MM | 16 MM | |
| SS | 4.000 | 4.000 | 4.000 | 4.000 | 4.000 | 4.000 | 4.000 | |
| TT | 6.000 | 6.000 | 6.000 | 6.000 | 6.000 | 6.000 | 6.000 | |
| UU | 100 MM | 100 MM | 100 MM | 100 MM | 100 MM | 100 MM | 100 MM | |
| Est. Weight | 69 Lbs. | 32 Kgs. | 64 Lbs. | 74 Lbs. | 69 Lbs. | 75 Lbs. | 70 Lbs. | |





VersatileLock® Vises

Reverse (3610) and Short Reverse (3630) Manual, Hydraulic, and Air Models

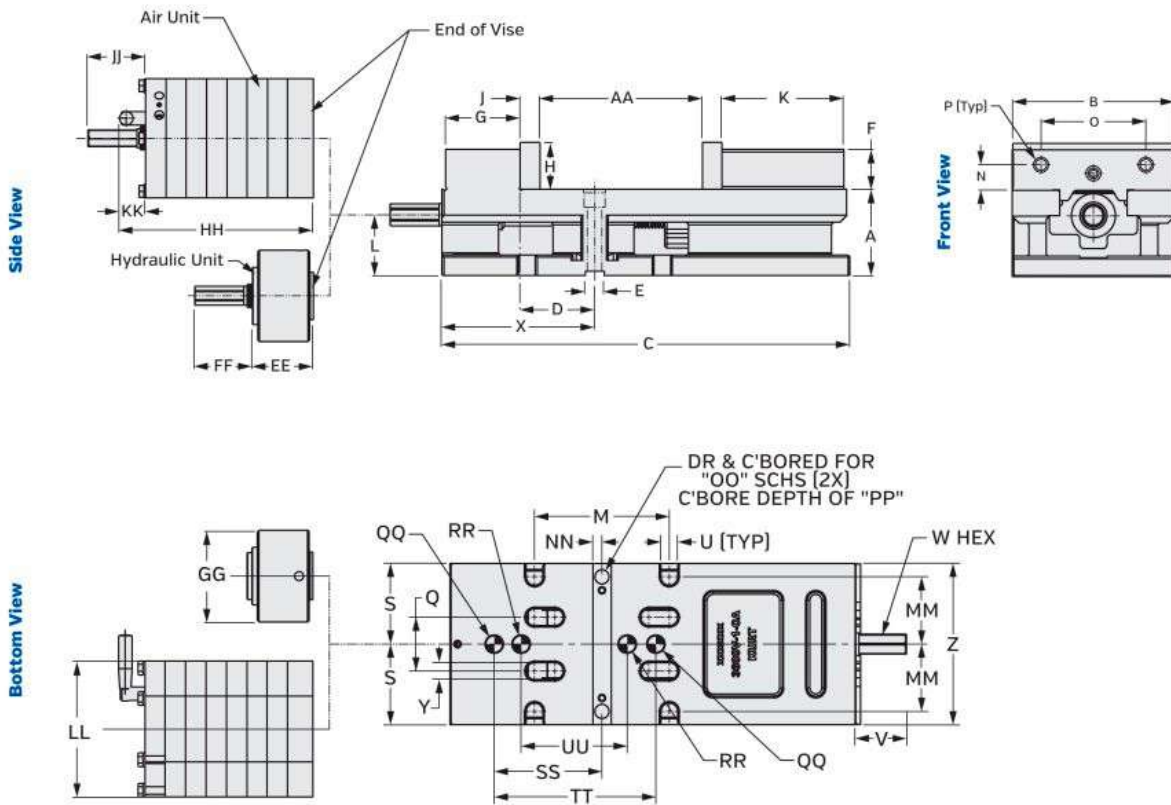
Use the VersatileLock in this configuration for the added benefit of easier part programming in "Y axis" positive direction. It also reduces the "reach-over" distance making part loading safer and easier for the operator.

Features:

- Can be mounted upright or on either side.
- Matched stationary jaw to the keyway including the body height $\pm 0.001"$.
- 0.0005" clamping repeatability.
- Footprint on the short version is 13". Ideal for the smallest machines.
- All air and hydraulic units feature a 1/4" vise stroke.
- Air vise has a precise and repeatable "gentle touch" for delicate parts.
- Some models available in metric.
- Patented

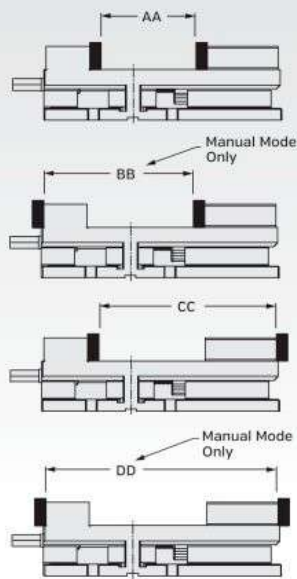
3610H and 3630H

- New hydraulic model is capable of: Single acting with spring return for unclamp, or Double acting with hydraulic unclamp. Includes fittings for both configurations.
- Threaded ports on body: Female 1/8" NPT
- Included adapters: Male 1/8" NPT to Male #4 JIC, quantity of two



Vise Mounting Options - See page 76

Jaw Position



| Manual torque Ft.-Lbs. | Vise Clamping Force-Lbs. | |
|------------------------|--------------------------|-------|
| | Manual | |
| | 3610V | 3630V |
| 10 | 653 | 653 |
| 20 | 1,743 | 1,743 |
| 30 | 2,234 | 2,234 |
| 40 | 3,015 | 3,015 |
| 50 | 3,833 | 3,833 |
| 60 | 4,438 | 4,438 |
| 70 | 5,528 | 5,528 |
| 80 | 6,356 | 6,356 |

| Hydraulic PSI | Vise Clamping Force-Lbs. | |
|-------------------------------|--------------------------|-------|
| | Hydraulic | |
| | 3610H | 3630H |
| 400 | 900 | 900 |
| 800 | 1,525 | 1,525 |
| 1,200 | 2,750 | 2,750 |
| 1,600 | 3,650 | 3,650 |
| 2,000 | 4,600 | 4,600 |
| 2,400 | 5,500 | 5,500 |
| 2,800 | 6,425 | 6,425 |
| 3,200 | 7,350 | 7,350 |
| Hydraulic Displacement Cu. In | 0.69 | 0.69 |

Note: Clamping force is only estimated

| Air PSI | Vise Clamping Force-Lbs. | |
|---------|--------------------------|-------|
| | Air | |
| | 3610A | 3630A |
| 10 | 320 | 320 |
| 20 | 840 | 840 |
| 30 | 1,280 | 1,280 |
| 40 | 1,780 | 1,780 |
| 50 | 2,200 | 2,200 |
| 60 | 2,720 | 2,720 |
| 70 | 3,240 | 3,240 |
| 80 | 3,800 | 3,800 |
| 90 | 4,380 | 4,380 |
| 100 | 5,000 | 5,000 |

| | Dimensional Data | | | | | |
|-------------|------------------|--------|-----------|--------|--------|--------|
| | Manual | | Hydraulic | | Air | |
| | 3610V | 3630V | 3610H | 3630H | 3610A | 3630A |
| A | 3.187 | 3.187 | 3.187 | 3.187 | 3.187 | 3.187 |
| B | 6.000 | 6.000 | 6.000 | 6.000 | 6.000 | 6.000 |
| C | 15.060 | 12.940 | 15.060 | 12.940 | 15.060 | 12.940 |
| D | 2.750 | 2.750 | 2.750 | 2.750 | 2.750 | 2.750 |
| E | 0.688 | 0.688 | 0.688 | 0.688 | 0.688 | 0.688 |
| F | 1.485 | 1.485 | 1.485 | 1.485 | 1.485 | 1.485 |
| G | 2.750 | 2.750 | 2.750 | 2.750 | 2.750 | 2.750 |
| H | 1.735 | 1.735 | 1.735 | 1.735 | 1.735 | 1.735 |
| J | 0.725 | 0.725 | 0.725 | 0.725 | 0.725 | 0.725 |
| K | 4.500 | 4.500 | 4.500 | 4.500 | 4.500 | 4.500 |
| L | 2.250 | 2.250 | 2.250 | 2.250 | 2.250 | 2.250 |
| M | 5.000 | 5.000 | 5.000 | 5.000 | 5.000 | 5.000 |
| N | 0.937 | 0.937 | 0.937 | 0.937 | 0.937 | 0.937 |
| O | 3.875 | 3.875 | 3.875 | 3.875 | 3.875 | 3.875 |
| P | 1/2-13 | 1/2-13 | 1/2-13 | 1/2-13 | 1/2-13 | 1/2-13 |
| Q | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 | 2.000 |
| R | 4.250 | 4.250 | 4.250 | 4.250 | 4.250 | 4.250 |
| S | 3.000 | 3.000 | 3.000 | 3.000 | 3.000 | 3.000 |
| T | 1.380 | 1.380 | 1.380 | 1.380 | 1.380 | 1.380 |
| U | 0.630 | 0.630 | 0.630 | 0.630 | 0.630 | 0.630 |
| V | 1.940 | 1.940 | 1.940 | 1.940 | 1.940 | 1.940 |
| W | 3/4 | 3/4 | 3/4 | 3/4 | - | - |
| X | 5.640 | 5.640 | 5.640 | 5.640 | 5.640 | 5.640 |
| Y | 0.630 | 0.630 | 0.630 | 0.630 | 0.630 | 0.630 |
| Z | 6.000 | 6.000 | 6.000 | 6.000 | 6.000 | 6.000 |
| AA | 6.000 | 4.000 | 6.000 | 4.000 | 6.000 | 4.000 |
| BB | 9.500 | 7.500 | - | - | - | - |
| CC | 11.250 | 9.250 | 11.250 | 9.250 | 11.250 | 9.250 |
| DD | 14.750 | 12.750 | - | - | - | - |
| EE | - | - | 2.500 | 2.500 | - | - |
| FF | - | - | 1.940 | 1.940 | - | - |
| GG | - | - | 3.375 | 3.375 | - | - |
| HH | - | - | - | - | 7.220 | 7.220 |
| JJ | - | - | - | - | 2.100 | 2.100 |
| KK | - | - | - | - | 1.030 | 1.030 |
| LL | - | - | - | - | 5.000 | 5.000 |
| MM | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 | 2.500 |
| NN | 0.344 | 0.344 | 0.344 | 0.344 | 0.344 | 0.344 |
| OO | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 |
| PP | 0.671 | 0.671 | 0.671 | 0.671 | 0.671 | 0.671 |
| QQ | 0.625 | 0.625 | 0.625 | 0.625 | 0.625 | 0.625 |
| RR | 16 MM | 16 MM | 16 MM | 16 MM | 16 MM | 16 MM |
| SS | 4.000 | 4.000 | 4.000 | 4.000 | 4.000 | 4.000 |
| TT | 6.000 | 6.000 | 6.000 | 6.000 | 6.000 | 6.000 |
| UU | 100MM | 100MM | 100MM | 100MM | 100MM | 100MM |
| Weight Lbs. | 68 | 64 | 73 | 68 | 74 | 69 |



KHP5000 Hydraulic Pump, page 75



KHP3H Hydraulic Pump page 74



KHP3F Hydraulic Pump page 74



Automation Pump page 74



3800H



3800V

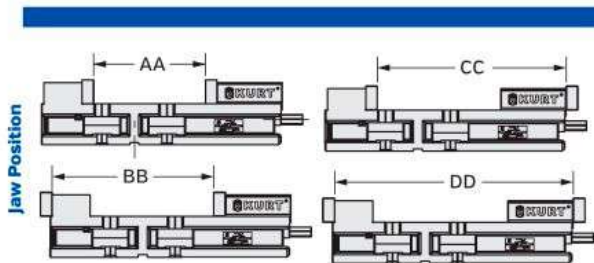
VersatileLock® Vises

Manual (3800V) and Hydraulic (3800H)

The VersatileLock vise is the industry's ultimate single station CNC vise. It offers ultra-precision function through these important design features: The original, time proven Kurt AngLock design prevents parts from lifting upward under heavy clamping loads. The "pull-type" jaw clamping reduces stationary jaw deflection by at least 80%. The one piece vise body and stationary jaw provide greater strength while reducing weight.

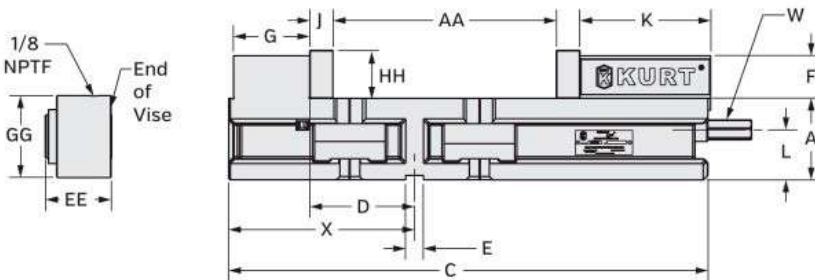
Features:

- Full 10" opening.
- Can be mounted upright (3800V) or on either side.
- Matched stationary jaw to keyway including the body height ± 0.001 ".
- 0.0005" clamping repeatability.
- All hydraulic units feature a 1/4" vise stroke.

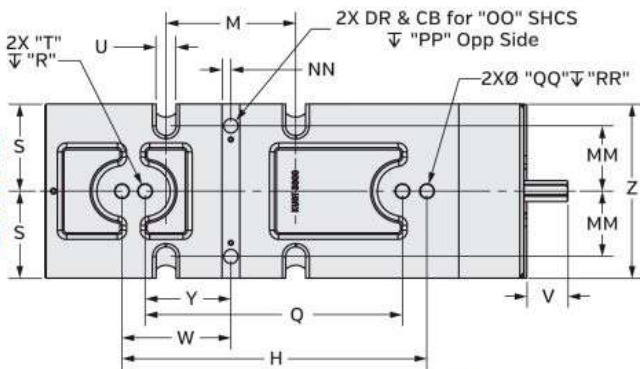


Jaw Position

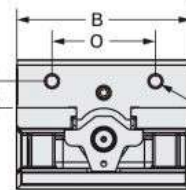
Side View



Bottom View



End View



| Clamping Force Lbs. | | Clamping Force Lbs. | | Dimensional Data | |
|---------------------|-------|-----------------------------------|--------|------------------|-----------------|
| Torque Ft/Lbs | 3800V | Hydraulic Pressure (Lbs) | 3800H | 3800V | 3800H |
| 10 | 625 | | | A | 3.750 3.750 |
| 20 | 1,000 | 500 | 1,500 | B | 8.000 8.000 |
| 30 | 1,625 | 1,000 | 3,000 | C | 22.000 22.000 |
| 40 | 2,025 | 1,500 | 4,500 | D | 4.812 4.812 |
| 50 | 2,625 | 2,000 | 6,000 | E | 0.813 0.813 |
| 60 | 3,450 | 2,500 | 7,500 | F | 1.965 1.965 |
| 70 | 4,050 | 3,000 | 9,000 | G | 3.500 3.500 |
| 80 | 5,100 | 3,200 | 11,000 | H | 14.000 14.000 |
| 90 | 6,150 | | | J | 1.075 1.075 |
| 100 | 6,550 | | | K | 6.000 6.000 |
| | | Hydraulic Displacement Cu In 1.82 | | L | 2.305 2.305 |
| | | | | M | 5.953 5.953 |
| | | | | N | 1.220 1.220 |
| | | | | O | 4.750 4.750 |
| | | | | P | 5/8-11 5/8-11 |
| | | | | Q | 300 mm 300 mm |
| | | | | R | 12.7 mm 12.7 mm |
| | | | | S | 4.000 4.000 |
| | | | | T | 16 mm 16 mm |
| | | | | U | 0.927 0.927 |
| | | | | V | 2.000 2.000 |
| | | | | W | 7/8 7/8 |
| | | | | X | 8.531 8.531 |
| | | | | Y | 100 mm 100 mm |
| | | | | Z | 8.000 8.000 |
| | | | | AA | 10.250 10.250 |
| | | | | BB | 14.825 14.825 |
| | | | | CC | 17.325 17.325 |
| | | | | DD | 21.900 21.900 |
| | | | | EE | - 2.982 |
| | | | | FF | - 2.000 |
| | | | | GG | - 3.750 |
| | | | | HH | 2.200 2.200 |
| | | | | MM | 3.000 3.000 |
| | | | | NN | 0.407 0.407 |
| | | | | OO | 5/8 5/8 |
| | | | | PP | 0.790 0.790 |
| | | | | QQ | 0.625 0.625 |
| | | | | RR | 0.500 0.500 |
| | | | | Est. Weight | 148 Lbs 155 Lbs |

Vise Mounting Options - See page 76



3810V



3810H

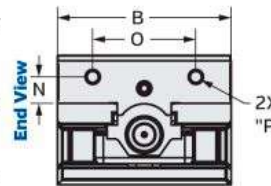
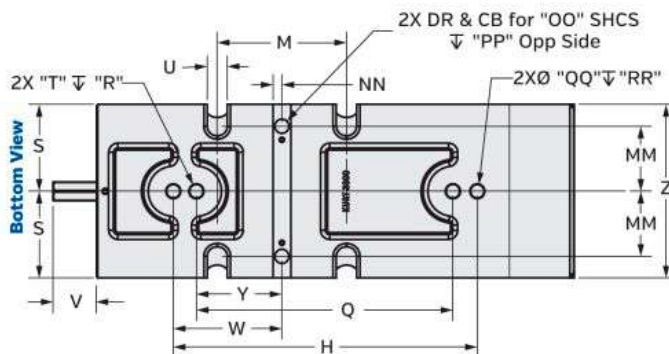
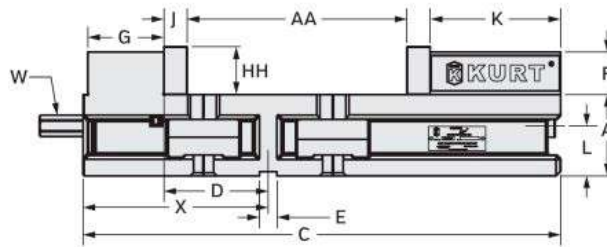
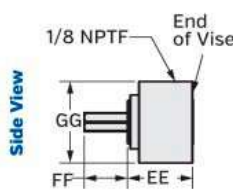
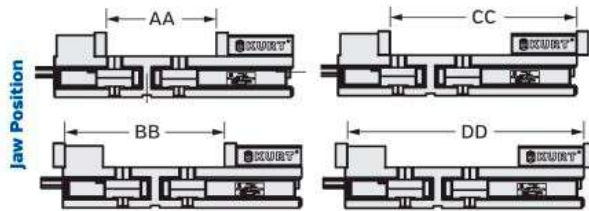
VersatileLock® Vises

Reverse Manual (3810V) and Reverse Hydraulic (3810H)

VersatileLock vises are available in reverse configuration for the added benefit of easier part programming in "Y axis" positive direction. It also reduces the "reach-over" distance making part loading safer and easier for the operator.

Features:

- Full 10" opening.
- Can be mounted upright (3810V) or on either side.
- Matched stationary jaw to the keyway including the body height $\pm 0.001"$.
- 0.0005" clamping repeatability.
- All hydraulic units feature a 1/4" vise stroke.



| Clamping Force LBS. | | Clamping Force LBS. | |
|---------------------|-------|------------------------------------|--------|
| Torque Ft/Lbs | 3810V | Hydraulic Pressure [Lbs] | 3810H |
| 10 | 625 | 500 | 1,500 |
| 20 | 1,000 | 1,000 | 3,000 |
| 30 | 1,625 | 1,500 | 4,500 |
| 40 | 2,025 | 2,000 | 6,000 |
| 50 | 2,625 | 2,500 | 7,500 |
| 60 | 3,450 | 3,000 | 9,000 |
| 70 | 4,050 | 3,200 | 11,000 |
| 80 | 5,100 | Hydraulic Displacement: Cu In 1.82 | |
| 90 | 6,150 | | |
| 100 | 6,550 | | |

| Dimensional Data | | |
|------------------|---------|---------|
| | 3810V | 3810H |
| A | 3.750 | 3.750 |
| B | 8.000 | 8.000 |
| C | 22.000 | 22.000 |
| D | 4.812 | 4.812 |
| E | 0.813 | 0.813 |
| F | 1.965 | 1.965 |
| G | 3.500 | 3.500 |
| H | 14.000 | 14.000 |
| J | 1.075 | 1.075 |
| K | 6.000 | 6.000 |
| L | 2.305 | 2.305 |
| M | 5.953 | 5.953 |
| N | 1.220 | 1.220 |
| O | 4.750 | 4.750 |
| P | 5/8-11 | 5/8-11 |
| Q | 300 mm | 300 mm |
| R | 12.7 mm | 12.7 mm |
| S | 4.000 | 4.000 |
| T | 16 mm | 16 mm |
| U | 0.927 | 0.927 |
| V | 2.000 | 2.000 |
| W | 7/8 | 7/8 |
| X | 8.531 | 8.531 |
| Y | 100 mm | 100 mm |
| Z | 8.000 | 8.000 |
| AA | 10.250 | 10.250 |
| BB | 14.825 | 14.825 |
| CC | 17.325 | 17.325 |
| DD | 21.900 | 21.900 |
| EE | - | 2.982 |
| FF | - | 2.000 |
| GG | - | 3.750 |
| HH | 2.200 | 2.200 |
| MM | 3.000 | 3.000 |
| NN | 0.407 | 0.407 |
| OO | 5/8 | 5/8 |
| PP | 0.790 | 0.790 |
| QQ | 0.625 | 0.625 |
| RR | 0.500 | 0.500 |
| Est. Weight | 148 Lbs | 155 Lbs |

Vise Mounting Options - See page 76



HD690



HDH690

- New hydraulic model is capable of: Single acting with spring return for unclamp, or Double acting with hydraulic unclamp. Includes fittings for both configurations.
- Threaded ports on body; Female 1/8" NPT
- Included adapters: Male 1/8" NPT to Male #4 JIC, quantity of two

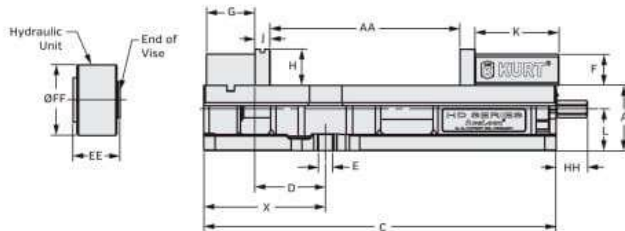
HD690 Vises

- A full 9 inch opening between jaws when using standard hard jaw plates.
- Less deflection of stationary jaw. Wider more stable stationary jaw equals less deflection.
- Stationary jaw bolts down from top. No need to remove from table to disassemble vise. Bolting the stationary from the top reduces the stress in the body and will stay flatter after assembly.
- Narrower body width allows more vises in the same work envelope.
- Taller body design equals less deflection under clamping loads.
- Bolts and locates directly on standard grid plates: 40mm, 50mm or 2 inch.
- Pull type body design reduces stress in the body resulting in more accurate clamping.
- Quick change movable jaw. The HD platform movable jaw allows for quick change and carvability to hold that odd shaped part.
- Groove Lock jaw and workstop included.
- Uses sine keys for alignment.
- Swivel base available. Part No. D50-4-SA
- Bed height matched $\pm 0.0005"$
- Weight: HD690/HDM690 [75 Lbs.], HDH690 [80 Lbs.]
- Patented.

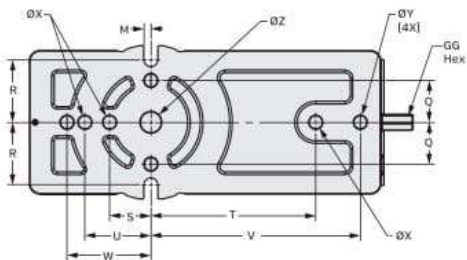
Jaw Position



Side View



Bottom View

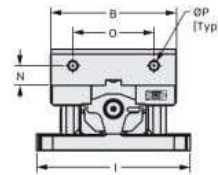


Vise Mounting Options - See page 76

| Vise Clamping Force-Lbs. | | Vise Clamping Force-Lbs. | | Dimensional Data | |
|--------------------------|--------------|--------------------------|--------|---------------------|--------|
| Manual Torque FL-Lbs. | HD690 HDM690 | Hydraulic PSI | HDH690 | HD690/HDM690 HDH690 | |
| 10 | 975 | 400 | 900 | A | 3.125 |
| 20 | 1,625 | 800 | 1,525 | B | 6.000 |
| 30 | 2,400 | 1,200 | 2,750 | C | 16.810 |
| 40 | 3,250 | 1,600 | 3,650 | D | 3.375 |
| 50 | 3,700 | 2,000 | 4,600 | E | 0.6600 |
| 60 | 4,275 | 2,400 | 5,500 | F | 1.485 |
| 70 | 4,700 | 2,800 | 6,425 | G | 2.312 |
| 80 | 5,250 | 3,200 | 7,350 | H | 1.735 |
| | | | | I | 7.338 |
| | | | | J | 0.725 |
| | | | | K | 4.000 |
| | | | | L | 2.000 |
| | | | | M | 0.330 |
| | | | | N | 0.940 |
| | | | | O | 3.875 |
| | | | | P | 1/2-13 |
| | | | | P Metric | M12 |
| | | | | Q | 2.000 |
| | | | | R | 2.986 |
| | | | | S | 50 mm |
| | | | | T | 200 mm |
| | | | | U | 80 mm |
| | | | | V | 10.000 |
| | | | | W | 4.000 |
| | | | | X | 16 mm |
| | | | | Y | 0.625 |
| | | | | Z | 0.992 |
| | | | | AA | 9.062 |
| | | | | BB | 12.099 |
| | | | | CC | 13.787 |
| | | | | DD | 16.824 |
| | | | | EE | 2.500 |
| | | | | FF | 3.375 |
| | | | | GG | 3/4 |
| | | | | HH | 1.508 |

Note: Clamping force is only estimated

End View

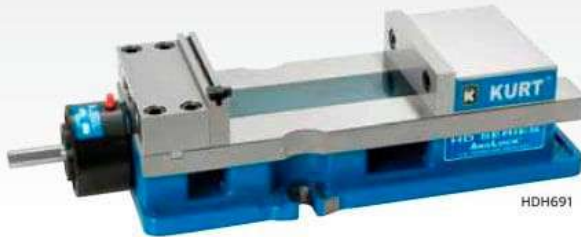


HD690 Aluminum Machinable Kit
Part No. HD690AL-JAWKIT





HD691



HDH691

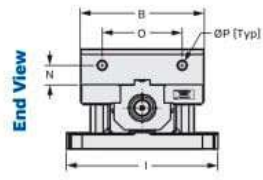
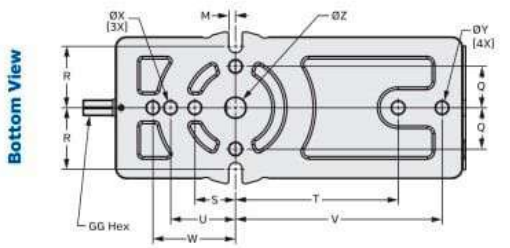
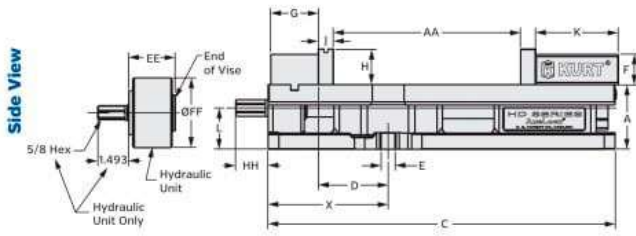
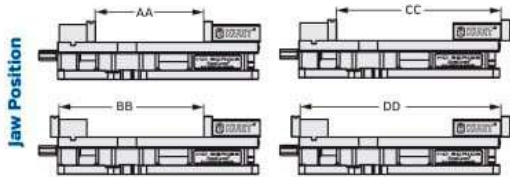
HDH691

- New hydraulic model is capable of: Single acting with spring return for unclamp, or Double acting with hydraulic unclamp. Includes fittings for both configurations.
- Threaded ports on body: Female 1/8" NPT
- Included adapters: Male 1/8" NPT to Male #4 JIC, quantity of two

HD691 Vises

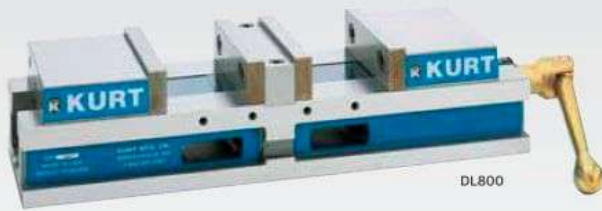
- Easier programming in the "Y" axis positive direction
- Reduces "reach-over" distance making part loading safer and easier
- A full 9 inch opening between jaws when using standard hard jaw plates.
- Less deflection of stationary jaw. Wider more stable stationary jaw equals less deflection.
- Stationary jaw bolts down from top. No need to remove from table to disassemble vise. Bolting the stationary from the top reduces the stress in the body and will stay flatter after assembly.
- Narrower body width allows more vises in the same work envelope.
- Taller body design equals less deflection under clamping loads.
- Bolts and locates directly on standard grid plates: 40mm, 50mm or 2 inch.
- Pull type body design reduces stress in the body resulting in more accurate clamping.
- Quick change movable jaw. The HD platform movable jaw allows for quick change and carvability to hold that odd shaped part.
- Groove Lock jaw and workstop included.
- Uses sine keys for alignment.
- Swivel base available. Part No. D50-4-SA
- Bed height matched $\pm 0.0005"$
- Weight: HD691 (75 Lbs.), HDH691 (80 Lbs.)
- Patented.

| Vise Clamping Force-Lbs. | | Vise Clamping Force-Lbs. | | Dimensional Data | |
|--------------------------|-------|--------------------------------|--------|------------------|--------|
| Manual Torque Ft.-Lbs. | HD691 | Hydraulic PSI | HDH691 | HD691 | HDH691 |
| 10 | 975 | 400 | 900 | A | 3.125 |
| 20 | 1,625 | 800 | 1,525 | B | 6.000 |
| 30 | 2,400 | 1,200 | 2,750 | C | 16.810 |
| 40 | 3,250 | 1,600 | 3,650 | D | 3.375 |
| 50 | 3,700 | 2,000 | 4,600 | E | 0.6600 |
| 60 | 4,275 | 2,400 | 5,500 | F | 1.485 |
| 70 | 4,700 | 2,800 | 6,425 | G | 2.312 |
| 80 | 5,250 | 3,200 | 7,350 | H | 1.735 |
| | | Hydraulic Displacement Cu. In. | 0.69 | I | 7.338 |
| | | | | J | 0.725 |
| | | | | K | 4.000 |
| | | | | L | 2.000 |
| | | | | M | 0.330 |
| | | | | N | 0.940 |
| | | | | O | 3.875 |
| | | | | P | 1/2-13 |
| | | | | P Metric | M12 |
| | | | | Q | 2.000 |
| | | | | R | 2.986 |
| | | | | S | 50 mm |
| | | | | T | 200 mm |
| | | | | U | 80 mm |
| | | | | V | 10.000 |
| | | | | W | 4.000 |
| | | | | X | 16 mm |
| | | | | Y | 0.625 |
| | | | | Z | 0.992 |
| | | | | AA | 9.062 |
| | | | | BB | 12.099 |
| | | | | CC | 13.787 |
| | | | | DD | 16.824 |
| | | | | EE | 2.500 |
| | | | | FF | 3.375 |
| | | | | GG | 3/4 |
| | | | | HH | 1.575 |



Note: Clamping force is only estimated

Vise Mounting Options - See page 76



DL800

DoubleLock® Vises (Manual)

DL800 Features:

- Large Capacity -DL800 8" wide x 6" opening each station.
- Productivity - multiple part workholding for better spindle utilization, reduced tool change time, and reduced machine travel from part to part.
- Accuracy - repeatable clamping to 0.0002".
- Durability - 80,000-PSI ductile iron body and steel components provide strength, rigidity and long term accuracy while absorbing machining vibration.
- Self-adjusting holding block over the entire clamping range.
- Metric version available.
- Optional internal hex screw available.
- Pre-load is adjustable from 0.010" to 0.150".
- New holding block features the ability to clamp dissimilar sized parts and provides preloading ability in the front or back jaw.
- Patented



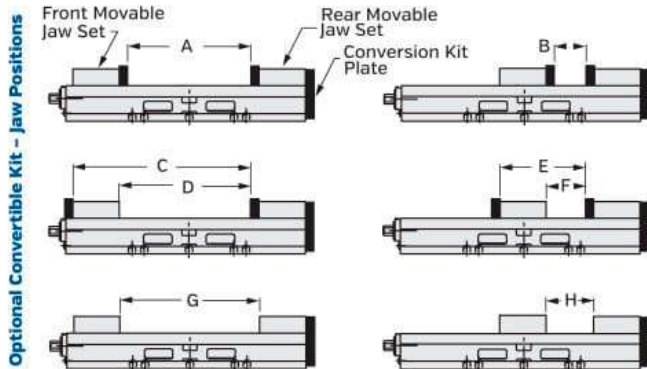
DLH800



DoubleLock® Vises (Hydraulic)

DLH800 Features:

- Repeatable clamping [0.0002"] for high accuracy machining and handles a higher horsepower cut than the manual version.
- Compact design features a wide range of clamping forces up to 9,450 Lbs. 1/4" stroke - 1/8" per side.
- Productivity - multiple part workholding for better spindle utilization, reduced tool change time, and reduced machine travel from part to part.
- Durability - 80,000-PSI ductile iron body and steel components provide strength, rigidity and long term accuracy while absorbing machining vibration.
- Patented



| Optional Convertible Kit - Jaw Opening Positions | | | | | | | | | |
|--|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| Part # | A | B | C | D | E | F | G | H | Wt. Lbs |
| DLC800 - KIT | 16,000 | 12,000 | 23,000 | 17,000 | 19,000 | 13,000 | 18,000 | 14,000 | 20 |



Shown with optional convertible kit.

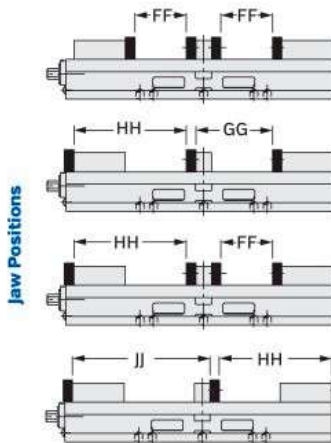
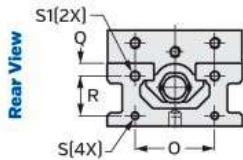
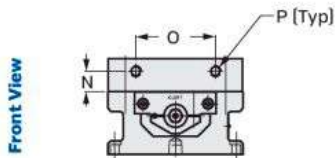
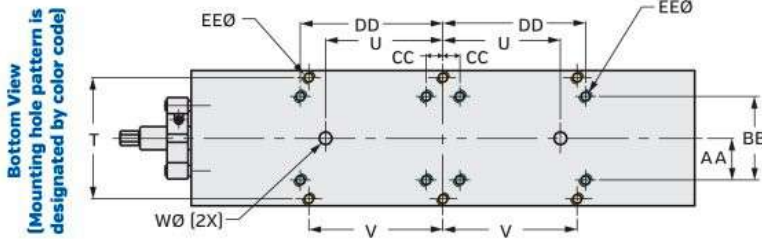
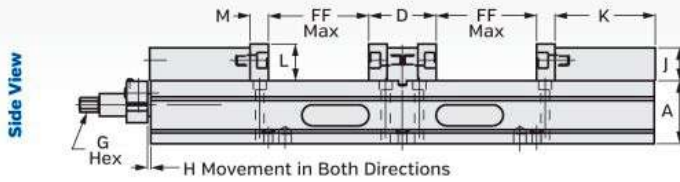
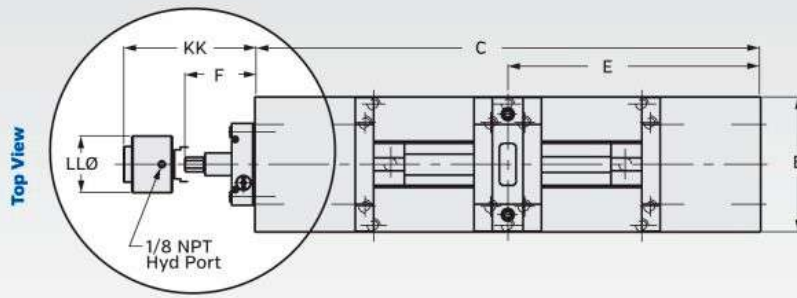
Use your DoubleLock vise to it's full capacity with the DoubleLock convertible kit. The kit is available for the DL800 vise. DLC800-KIT



KHP3H Hydraulic Pump, page 74



KHP5000 Hydraulic Pump, page 75



Dimensional Data

| | DL800 | DLH800 |
|--------------------------|--------|------------|
| A | 3.750 | 3.750 |
| B | 8.060 | 8.060 |
| C | 30.000 | 30.000 |
| D | 4.000 | 4.000 |
| E | 15.000 | 15.000 |
| F | 4.250 | N/A |
| G | 3/4 | 7/16 - INT |
| H | 0.190 | 0.190 |
| J | 1.965 | 1.965 |
| K | 6.000 | 6.000 |
| L | 2.200 | 2.200 |
| M | 1.075 | 1.075 |
| N | 1.220 | 1.220 |
| O | 4.750 | 4.750 |
| P | 5/8-11 | 5/8-11 |
| Q | 0.750 | 0.750 |
| R | 2.375 | 2.375 |
| S | 1/2-13 | 1/2-13 |
| S1 | 5/8-11 | 5/8-11 |
| T | 7.250 | 7.250 |
| U | 7.000 | 7.000 |
| V | 8.000 | 8.000 |
| W | 0.750 | 0.750 |
| AA | 2.500 | 2.500 |
| BB | 5.000 | 5.000 |
| CC | 1.000 | 1.000 |
| DD | 8.500 | 8.500 |
| EE | 1/2 | 1/2 |
| FF | 6.000 | 6.000 |
| GG | 8.925 | 8.925 |
| HH | 13.075 | 13.075 |
| JJ | 16.000 | 16.000 |
| KK | - | 6.49 |
| Weight | 250 | 360 |
| Hyd Displacement Cu. In. | - | 2.36 |

Vise Clamping Force-Lbs.

| Manual torque Ft.-Lbs. | DL800 |
|------------------------|-------|
| 10 | - |
| 20 | 2,023 |
| 30 | - |
| 40 | 3,578 |
| 50 | - |
| 60 | 5,136 |
| 70 | - |
| 80 | 6,883 |
| 100 | 8,997 |

Vise Clamping Force-Lbs.

| Hydraulic PSI Max. | DLH800 |
|--------------------|--------|
| 400 | 1,575 |
| 800 | 3,150 |
| 1,200 | 4,725 |
| 1,600 | 6,300 |
| 2,000 | 7,875 |
| 2,400 | 9,450 |



HDL AngLock® Vises

Manual & Hydraulic

4 Inch Base Models:

- HDL4 Manual English
- HDHL4 Hydraulic
- HDLM4 Manual Metric
- HDHLM4 Hydraulic

6 Inch Base Models:

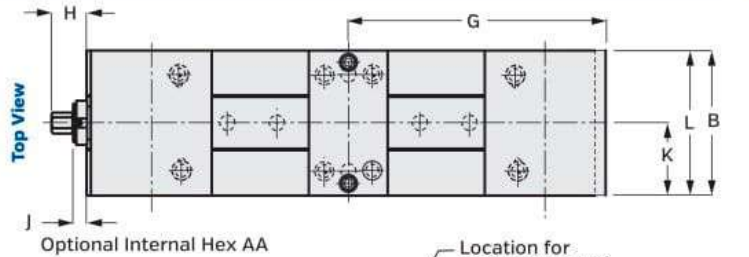
- HDL6 Manual English
- HDHL6 Hydraulic
- HDLM6 Manual Metric
- HDHLM6 Hydraulic

The HDL AngLock Vises are high density long vises with two clamping stations. They provide repeatable clamping to 0.0002" and combine high density with heavy duty features. Designed on a rugged 80,000 PSI ductile iron body with steel components, both models provide strength, rigidity and long term accuracy while absorbing machining vibration.

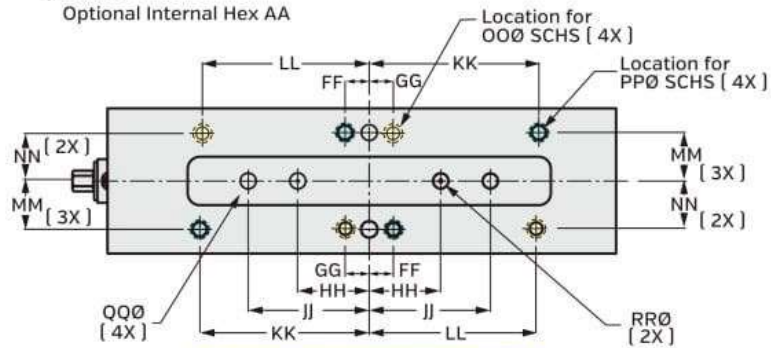
For specific model numbers see page 44.

Features:

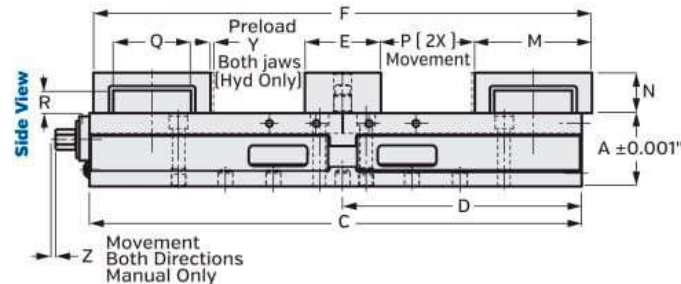
- Two clamping stations - repeatable clamping to 0.0002".
- Full 3 and 4 inch opening in each station with standard hard jaw system.
- Jaws are indexable 180 degrees.
- Manual and hydraulic models available.
- Fast easy conversion between manual and hydraulic models. Part #HDHLM4-3-SA-KIT [4 inch] & #HDHLM6-3-SA-KIT [6 inch]
- Maximizes the number of parts in the work envelope.
- Adjustable pre-load feature allows you to minimize pre-load range thus reducing the turns of the handle to open or close the vise (manual version).
- Holding block features the ability to clamp same or dissimilar sized parts and provides pre-loading ability in the front or back jaw (manual version).
- Lifetime Iron Clad Warranty.
- Bed height tolerance $\pm 0.001"$.
- Patented
- Optional clutchless design available for lower clamp force applications. Call factory.



Bottom View
(Mounting hole pattern is designated by color code)

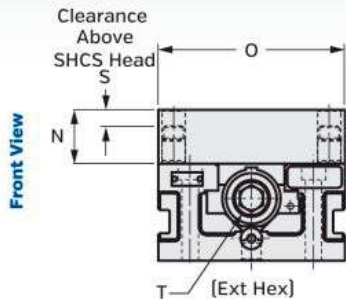


Vise Mounting Options - See page 76



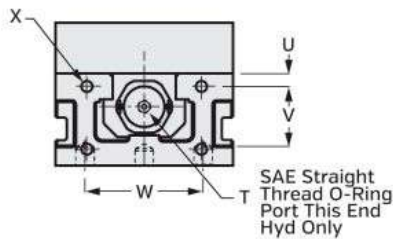
| Torque- Ft. Lbs. | Clamping Force Lbs. | | | | | |
|---------------------|---------------------|---|-----------------|--------|--|-----------------|
| | HDL M4 HDL4 | Hydraulic PSI | HDHLM4 HDHL4 | HDL M6 | Hydraulic PSI | HDHLM6 HDHL6 |
| 10 | 1,040 | 1,000 | 775 | 1,540 | 500 | 875 |
| 20 | 2,125 | 1,500 | 1,450 | 2,520 | 1,000 | 1,600 |
| 30 | 3,140 | 2,000 | 1,900 | 3,350 | 1,500 | 2,330 |
| 40 | 4,040 | 2,500 | 2,550 | 4,310 | 2,000 | 3,130 |
| 50 | 4,980 | 3,000 | 3,100 | 5,750 | 2,500 | 3,950 |
| 60 | 5,870 | 3,500 | 3,700 | 6,860 | 3,000 | 4,750 |
| | | 4,000 | 4,200 | 7,460 | 3,500 | 5,475 |
| | | 4,500 | 4,800 | | 4,000 | 6,350 |
| | | | | | 4,500 | 7,100 |
| | | Hyd. Displacement 0.414 cubic inches | | | Hyd. Displacement 1.08 cubic inches | |

| Dimensional Data | | | | | | | | |
|---|--------------------|------------------|------------------------------|------------------------------|--------------------|-----------------|----------------------------|----------------------------|
| High Density 4" & 6" Full OpenVise HDL Manual & Hydraulic | | | | | | | | |
| | HDL M4 / HDL4 | | HDHLM4 / HDHL4 | | HDL M6 / HDL6 | | HDHLM6 / HDHL6 | |
| | mm | Inch | mm | Inch | mm | Inch | mm | Inch |
| A | 60.325 | 2.375 | 60.325 | 2.375 | 79.375 | 3.125 | 79.375 | 3.125 |
| B | 101.600 | 4.000 | 101.600 | 4.000 | 152.400 | 6.000 | 152.400 | 6.000 |
| C | 415.925 | 16.375 | 415.925 | 16.375 | 533.400 | 21.000 | 533.400 | 21.000 |
| D | 200.025 | 7.875 | 200.025 | 7.875 | 258.877 | 10.192 | 258.877 | 10.192 |
| E | 63.500 | 2.500 | 63.500 | 2.500 | 82.550 | 3.250 | 82.550 | 3.250 |
| F | 418.287 | 16.468 | 418.287 | 16.468 | 539.750 | 21.250 | 539.750 | 21.250 |
| G | 209.144 | 8.234 | 209.144 | 8.234 | 269.875 | 10.625 | 269.875 | 10.625 |
| H | 33.680 | 1.326 | - | - | 36.830 | 1.450 | - | - |
| J | 9.855 | 0.388 | - | - | 21.844 | 0.860 | - | - |
| K | 41.275 | 1.625 | 41.275 | 1.625 | 63.500 | 2.500 | 63.500 | 2.500 |
| L | 82.550 | 3.250 | 82.550 | 3.250 | 127.000 | 5.000 | 127.000 | 5.000 |
| M | 101.600 | 4.000 | 101.600 | 4.000 | 127.000 | 5.000 | 127.000 | 5.000 |
| N | 35.560 | 1.400 | 35.560 | 1.400 | 43.891 | 1.728 | 43.891 | 1.728 |
| O | 101.600 | 4.000 | 101.600 | 4.000 | 152.400 | 6.000 | 152.400 | 6.000 |
| P | 75.794 | 2.984 | 75.794 | 2.984 | 101.600 | 4.000 | 101.600 | 4.000 |
| Q | 65.075 | 2.562 | 65.075 | 2.562 | 84.125 | 3.312 | 84.125 | 3.312 |
| R | 20.625 | 0.812 | 20.625 | 0.812 | 24.613 | 0.969 | 24.613 | 0.969 |
| S | 7.722 | 0.304 | 7.722 | 0.304 | 13.259 | 0.522 | 13.259 | 0.522 |
| T | 14.275 Ext. Hex | 9/16 Ext. Hex | 7/16 - 20 UNF O-Ring Port | 7/16 - 20 UNF O-Ring Port | 19.050 Ext. Hex | 3/4 Ext. Hex | 7/16-20 UNF O-Ring Port | 7/16-20 UNF O-Ring Port |
| U | 9.525 | 0.375 | 9.525 | 0.375 | 11.125 | 0.438 | 11.125 | 0.438 |
| V | 42.875 | 1.688 | 42.875 | 1.688 | 53.975 | 2.125 | 53.975 | 2.125 |
| W | 63.500 | 2.500 | 63.500 | 2.500 | 98.425 | 3.875 | 98.425 | 3.875 |
| X | M8 x 1.25 | M8 x 1.25 | M8 x 1.25 | M8 x 1.25 | M10 x 1.5 | M10 x 1.5 | M10 x 1.5 | M10 x 1.5 |
| Y | - | - | 3.175 | 0.125 | - | - | 3.175 | 0.125 |
| Z | 3.048 | 0.120 | - | - | 3.962 | 0.156 | - | - |
| AA | 11.099 Int. Hex | 7/16 Int. Hex | 11.900 Int. Hex | 0.437 Int. Hex | 15.875 Int. Hex | 5/8 Int. Hex | 15.875 Int. Hex | 5/8 Int. Hex |
| BB | 9.525 | 0.375 | 9.525 | 0.375 | 11.125 | 0.438 | 11.125 | 0.438 |
| CC | 34.325 | 1.375 | 34.325 | 1.375 | 28.575 | 1.125 | 28.575 | 1.125 |
| DD | 65.100 | 2.563 | 65.100 | 2.563 | 79.375 | 3.125 | 79.375 | 3.125 |
| EE | M8 x 1.25 | M8 x 1.25 | M8 x 1.25 | M8 x 1.25 | M8 x 1.25 | M8 x 1.25 | M8 x 1.25 | M8 x 1.25 |
| FF | - | 0.750 | - | 0.750 | - | 1.000 | - | 1.000 |
| GG | 20.000 | - | 20.000 | - | 25.000 | - | 25.000 | - |
| HH | 100.000 | - | 100.000 | - | 75.000 | - | 75.000 | - |
| JJ | - | 5.250 | - | 5.250 | - | 5.000 | - | 5.000 |
| KK | - | 5.250 | - | 5.250 | - | 7.000 | - | 7.000 |
| LL | 100.000 | - | 100.000 | - | 175.000 | - | 175.000 | - |
| MM | - | 1.500 | - | 1.500 | - | 2.000 | - | 2.000 |
| NN | 40.000 | - | 40.000 | - | 50.000 | - | 50.000 | - |
| OO | M8 SHCS | - | M8 SHCS | - | M12 SHCS | - | M12 SHCS | - |
| PP | - | 5/16 SHCS | - | 5/16 SHCS | - | 1/2 SHCS | - | 1/2 SHCS |
| QQ | - | 0.625 | - | 0.625 | - | 0.625 | - | 0.625 |
| RR | 16.000 | - | 16.000 | - | 16.000 | - | 16.000 | - |
| SS | 48.260 | 1.900 | 48.260 | 1.900 | 60.960 | 2.400 | 60.960 | 2.400 |
| TT | 20.422 | 0.804 | 20.422 | 0.804 | 30.328 | 1.194 | 30.328 | 1.194 |
| | | | | | 34 Lbs/15.42 Kgs | | 33 Lbs/14.96 Kgs | |
| | | | | | | | 32.21 Kgs/71 Lbs | |
| | | | | | | | 31.75 Kgs/70 Lbs | |

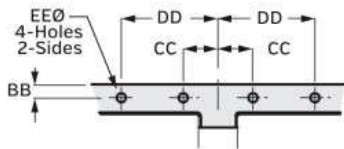
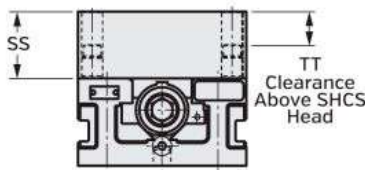


AA Int Hex for Hydraulic
AA Optional Int Hex for Manual

Rear View of
Standard Height Jaw



Optional Jaw Kit
1.9 Height Jaw (4 Inch) or
2.5 Height Jaw (6 Inch)



HD & HDL Jaw Kits & Fixture
Plates see pages 40-43



HDM6AL (shown with optional machinable aluminum jaws)

HD CarvLock® Manual Short Visers

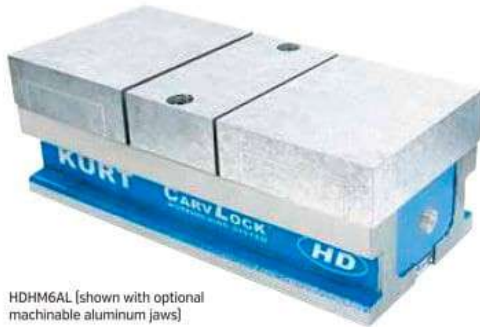
Model: HDM6AL Manual

The HD CarvLock Visers are High-Density and Heavy-Duty. The overall vise is very compact, making possible maximum density workholding across the full range of today's machining centers. The HD Vise can be equipped with quick change jaws in aluminum, cast iron or with a fixture plate.

Features:

- Compact size. Overall length of just 13.750" and overall width of only 6".
- Clamping power/accuracy - produces up to 7,800 Lbs of clamping force with repeatable clamping to 0.0002".
- Durability - 80,000 PSI ductile iron vise body for rugged strength, rigidity and long-term accuracy while absorbing machining vibration.
- Enclosed vise body keeps out chips and contaminants - makes cleanup fast and easy.
- Fast, easy conversion from manual to hydraulic. Easy to switch between both styles. Part No. HDHM6-3-SA-KIT.
- Jaws are indexable 180 degrees.
- Lifetime Iron Clad Warranty.

The HDM6 Manual vise body has optional jaw systems which include a set of 7075 T-6 aluminum jaw blocks or a set of ductile iron jaw blocks [1.73" standard thickness, 2.40" optional thickness] or fixture plate. Screw and nut assemblies are reversible with the vise body. One jaw kit will handle two different parts.



HDHM6AL (shown with optional machinable aluminum jaws)

HD CarvLock® Hydraulic Short Visers

Model: HDHM6AL Hydraulic

Single acting hydraulic vise uses hydraulic pressure to clamp and spring pressure to unclamp. Extremely reliable operation compared to other vises using mechanical operation for unclamping. Designed for automated systems.

Features:

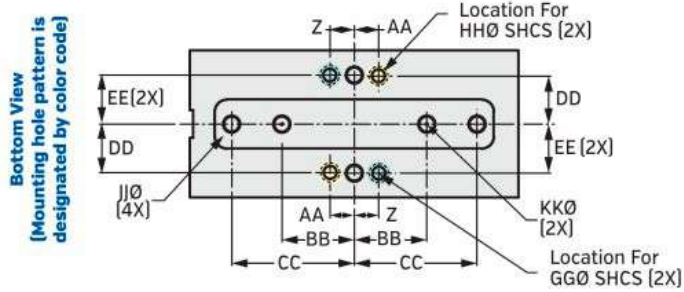
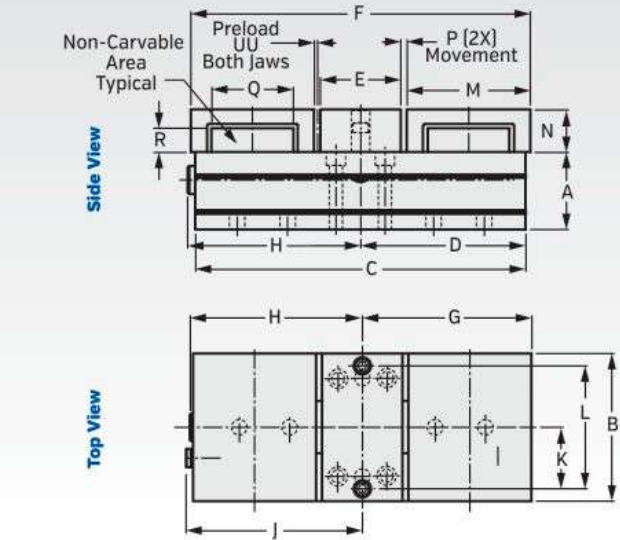
- Well suited for automation.
- Fast, positive open/close cycle.
- Compact size - overall length of just 13.750" and overall width of only 6".
- Clamping power/accuracy - produces up to 7,800 Lbs clamping force @ 5,000 PSI of hydraulic pressure with repeatable clamping to 0.0002".
- Durability - 80,000 PSI ductile iron vise body for rugged strength, rigidity and long-term accuracy while absorbing machining vibration.
- Enclosed vise body keeps out chips and contaminants - makes cleanup fast and easy.
- Jaws are indexable 180 degrees.
- Lifetime Iron Clad Warranty.

The HDHM6 Hydraulic vise body has optional jaw systems which include a set of 7075 T-6 aluminum jaw blocks or a set of ductile iron jaw blocks [1.73" standard thickness, 2.40" optional thickness] or fixture plate. Screw and nut assemblies are reversible with the vise body. One jaw kit will handle two different parts.

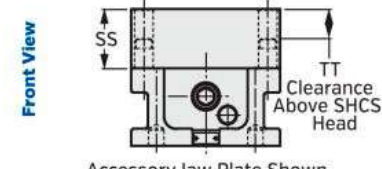
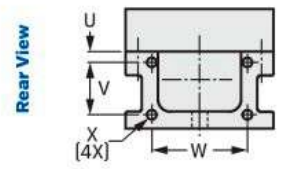
For specific model numbers see page 44.

HD & HDL Jaw Kits & Fixture

Plates see pages 40-43



Vise Mounting Options - See page 76

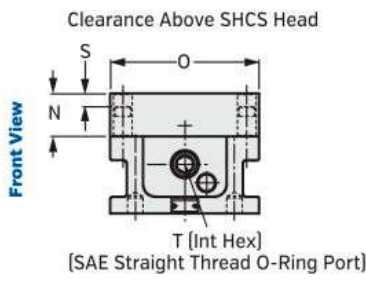
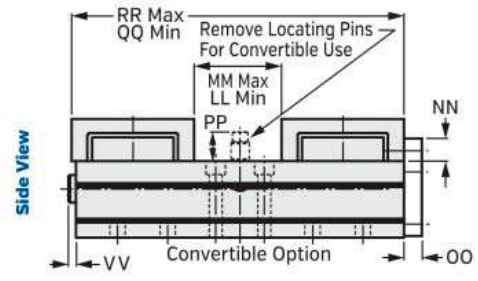


Accessory Jaw Plate Shown With Optional 2.5 Height Jaw

| | Dimensional Data High Density 6" HD Vise Manual & Hydraulic | | | |
|----|--|----------------|-------------------------|-------------------------|
| | HDM6 | | HDHM6 | |
| | mm | Inch | mm | Inch |
| A | 79.375 | 3.125 | 79.375 | 3.125 |
| B | 152.400 | 6.000 | 152.400 | 6.000 |
| C | 339.725 | 13.375 | 339.725 | 13.375 |
| D | 169.875 | 6.688 | 169.875 | 6.688 |
| E | 82.550 | 3.250 | 82.550 | 3.250 |
| F | 349.250 | 13.750 | 349.250 | 13.750 |
| G | 174.625 | 6.875 | 174.625 | 6.875 |
| H | 177.800 | 7.000 | 174.630 | 6.875 |
| J | 182.040 | 7.167 | - | - |
| K | 63.500 | 2.500 | 63.500 | 2.500 |
| L | 127.000 | 5.000 | 127.000 | 5.000 |
| M | 127.000 | 5.000 | 127.000 | 5.000 |
| N | 43.891 | 1.728 | 43.891 | 1.728 |
| O | 152.400 | 6.000 | 152.400 | 6.000 |
| P | 6.350 | 0.250 | 6.350 | 0.250 |
| Q | 84.120 | 3.312 | 84.120 | 3.312 |
| R | 24.610 | 0.969 | 24.610 | 0.969 |
| S | 13.260 | 0.522 | 13.260 | 0.522 |
| T | 15.875 Int. Hex | 0.625 Int. Hex | 7/16-20 UNF O-Ring Port | 7/16-20 UNF O-Ring Port |
| U | 11.125 | 0.438 | 11.125 | 0.438 |
| V | 53.975 | 2.125 | 53.975 | 2.125 |
| W | 98.43 | 3.875 | 98.43 | 3.875 |
| X | M10 x 1.5 | M10 x 1.5 | M10 x 1.5 | M10 x 1.5 |
| Z | 1.000 | 1.000 | 1.000 | 1.000 |
| AA | 25.000 | - | 25.000 | - |
| BB | 75.000 | 2.953 | 75.000 | 2.953 |
| CC | 127.000 | 5.000 | 127.000 | 5.000 |
| DD | 50.000 | - | 50.000 | - |
| EE | 2.000 | 2.000 | 2.000 | 2.000 |
| GG | 5/8-18 | 1/2 | 5/8-18 | 1/2 |
| HH | - | - | - | - |
| JJ | 15.875 | 0.625 | 15.875 | 0.625 |
| KK | 16.000 | 0.630 | 16.000 | 0.630 |
| LL | 77.770 | 3.062 | 82.550 | 3.250 |
| MM | 90.470 | 3.562 | 95.250 | 3.750 |
| NN | 23.830 | 0.938 | 23.830 | 0.938 |
| OO | 18.540 | 0.730 | 18.540 | 0.730 |
| PP | 30.630 | 1.206 | 30.630 | 1.206 |
| QQ | 331.770 | 13.062 | 336.550 | 13.250 |
| RR | 344.470 | 13.562 | 349.250 | 13.750 |
| SS | 60.960 | 2.400 | 60.960 | 2.400 |
| TT | 30.330 | 1.190 | 30.330 | 1.190 |
| UU | - | - | 3.180 | 0.125 |
| VV | 7.92 | 0.312 | 4.78 | 0.188 |

Estimated Weight of Vise Body Only 21.8 Kgs [48 Lbs]

Convertible Kits for Optional Machinable Jaws - Part Number HDM6-CONVKIT



| Torque-Ft. Lbs. | Clamping Force Lbs. | | |
|-----------------|---------------------|---------------|-------|
| | HDM6 | Hydraulic PSI | HDHM6 |
| 10 | 883 | 500 | 875 |
| 20 | 1,684 | 1,000 | 1,600 |
| 30 | 2,503 | 1,500 | 2,330 |
| 40 | 3,187 | 2,000 | 3,130 |
| 50 | 3,963 | 2,500 | 3,950 |
| 60 | 4,837 | 3,000 | 4,750 |
| 70 | 5,556 | 3,500 | 5,475 |
| | | 4,000 | 6,350 |
| | | 4,500 | 7,100 |
| | | 5,000 | 7,800 |

Hyd. Displacement 1.08 cubic inches



[shown with optional aluminum jaws]

[shown with optional hard jaws]

HDL CarvLock® Towers

Manually or Hydraulically operated, eight station HDL Cluster Tower system features a ductile iron integral vise tower. Designed for use on mid-size and larger machining centers including horizontal and vertical machining centers with a fourth axis and indexable tables. This workholding system achieves workpiece immobility while damping cutter induced vibration.

Features:

- High density vise tower system. Hold multiple parts in eight clamping stations. Increase part volume.
- Repeatable clamping to 0.0002". 4 inch model delivers up to 5,870 Lbs. each station at 60 Ft Lbs of torque. 6 inch model delivers up to 7,460 Lbs. of clamping force at 70 Ft Lbs of torque.
- Self-adjusting holding block of either front or back jaw for clamping the same or dissimilar sized parts. To further enhance fast operation, an adjustable pre-load feature reduces handle turns for opening and closing clamping stations.
- Ductile iron column ensures strength, rigidity and long term accuracy.
- Jaw options available to fit your application. Select from Hard jaws, Machinable aluminum jaws, Machinable ductile Iron jaws. See pages 40-43.
- Jaws are indexable 180 degrees.
- Aluminum fixture plate available See pages 42-43.
- Elevated column makes clearing chips and contaminants fast and easy.
- Lifetime Iron Clad Warranty.
- Optional clutchless design available for lower clamp force applications. Call factory.

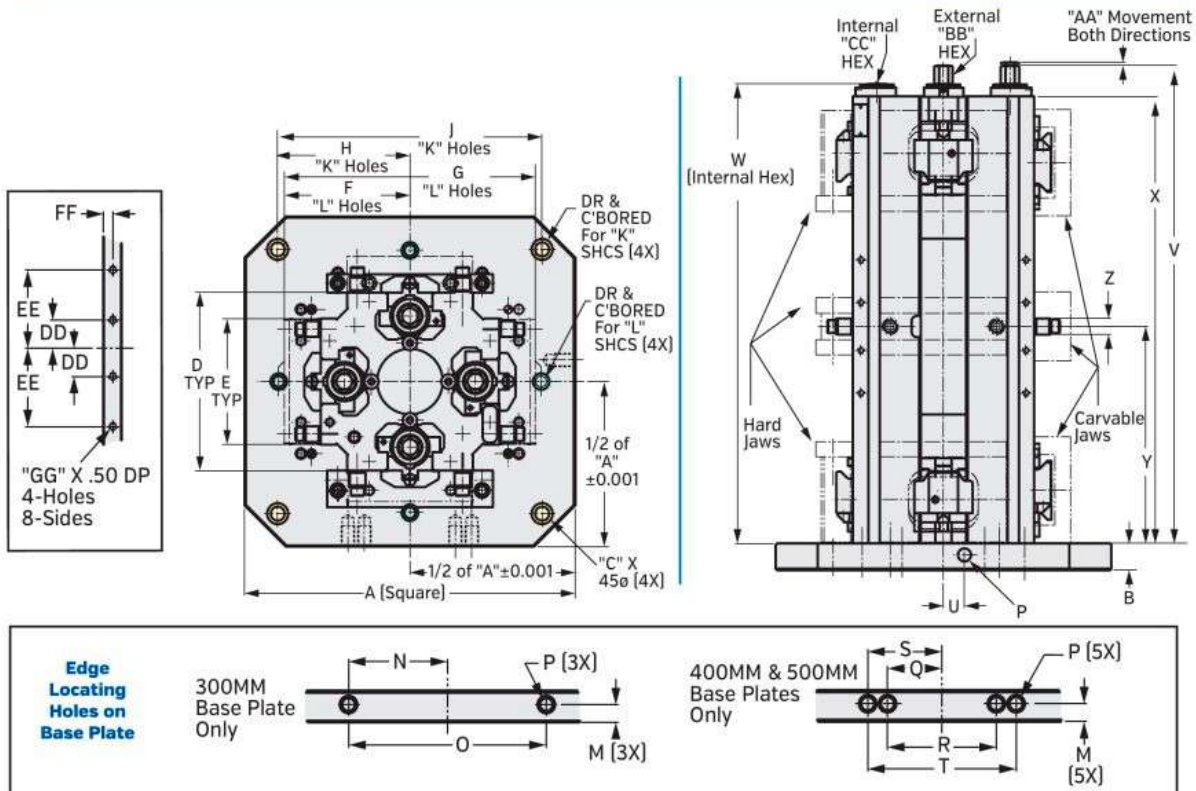
For specific model numbers see page 44.

4 Inch Base Models:

| | |
|------------------|-----------------|
| CTHDL443 English | CTHDL443 Metric |
| CTHDL444 English | CTHDL444 Metric |
| CTHDL445 English | CTHDL445 Metric |

6 Inch Base Models:

| | |
|------------------|-----------------|
| CTHDL644 English | CTHDL644 Metric |
| CTHDL645 English | CTHDL645 Metric |
| CTHDL646 English | CTHDL646 Metric |



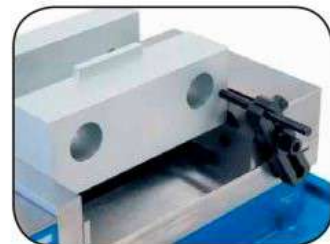
| Clamping Force Lbs. | | |
|---------------------|---------|---------|
| Torque-Fl. Lbs. | HDL[M]4 | HDL[M]6 |
| 10 | 1,040 | 1,540 |
| 20 | 2,125 | 2,520 |
| 30 | 3,140 | 3,350 |
| 40 | 4,040 | 4,310 |
| 50 | 4,980 | 5,750 |
| 60 | 5,870 | 6,860 |
| 70 | | 7,460 |

| Clamping Force Lbs. | | |
|---------------------|---|----------|
| Hydraulic PSI | HDHL[M]4 | HDHL[M]6 |
| 500 | | 875 |
| 1,000 | 775 | 1,600 |
| 1,500 | 1,450 | 2,330 |
| 2,000 | 1,900 | 3,130 |
| 2,500 | 2,550 | 3,950 |
| 3,000 | 3,100 | 4,750 |
| 3,500 | 3,700 | 5,475 |
| 4,000 | 4,200 | 6,350 |
| 4,500 | 4,800 | 7,100 |
| | Hyd. Displacement per screw 1.08 cubic inches | |

| | Base Dimensional Data HDL Long Cluster Tower | | | | | | | | | | | |
|-------------|--|-----------|------------|-----------|------------|----------|------------|----------|------------|----------|------------|----------|
| | CTHDL[M]44 | | CTHDL[M]64 | | 300MM Base | | 400MM Base | | 500MM Base | | 630MM Base | |
| | mm | Inch | mm | Inch | mm | Inch | mm | Inch | mm | Inch | mm | Inch |
| A | | | | | 300 | 11.811 | 400 | 15.748 | 500 | 19.685 | 630 | 24.803 |
| B | | | | | 25.4 | 1 | 31.75 | 1.25 | 31.75 | 1.25 | 38.1 | 1.5 |
| C | | | | | 20 | 0.79 | 50 | 1.97 | 60 | 2.36 | 70 | 2.76 |
| D | | | | | 158.75 | 6.25 | 158.75 | 6.25 | 158.75 | 6.25 | 215.9 | 8.5 |
| E | | | | | 101.6 | 4 | 101.6 | 4 | 101.6 | 4 | 152.4 | 6 |
| F | | | | | - | - | 158.75 | 6.25 | 203.2 | 8 | 254 | 10 |
| G | | | | | - | - | 317.5 | 12.5 | 406.4 | 16 | 508 | 20 |
| H | | | | | 127 | 5 | 160 | 6.299 | 200 | 7.874 | 250 | 9.842 |
| J | | | | | 254 | 10 | 320 | 12.598 | 400 | 15.748 | 500 | 19.685 |
| K | | | | | M12 SHCS | - | M16 SHCS | - | M16 SHCS | - | M16 SHCS | - |
| L | | | | | - | 1/2 SHCS | - | 1/2 SHCS | - | 1/2 SHCS | - | 1/2 SHCS |
| M | | | | | 15 | 0.59 | 18 | 0.709 | 18 | 0.709 | 18 | 0.790 |
| N | | | | | 40 | 1.575 | - | - | - | - | 200 | 3.937 |
| O | | | | | 80 | 3.15 | - | - | - | - | 100 | 7.874 |
| P | | | | | M12 x 1.75 | - | M16 x 2.0 | - | M16 x 2.0 | - | M16 x 2.0 | - |
| Q | | | | | - | - | 55 | 2.165 | 55 | 2.165 | - | - |
| R | | | | | - | - | 110 | 4.33 | 110 | 4.33 | - | - |
| S | | | | | - | - | 75 | 2.953 | 75 | 2.953 | - | - |
| T | | | | | - | - | 150 | 5.906 | 150 | 5.906 | - | - |
| U | | | | | - | - | 25 | 0.984 | 25 | 0.984 | 25 | 0.984 |
| V | 449.6 | 17.701 | 570.23 | 22.45 | | | | | | | | |
| W | 425.78 | 16.763 | 548.38 | 21.59 | | | | | | | | |
| X | 415.92 | 16.375 | 533.4 | 21 | | | | | | | | |
| Y | 200.03 | 7.875 | 258.88 | 10.192 | | | | | | | | |
| Z | 15 | 0.59 | 19.05 | 0.75 | | | | | | | | |
| AA | 3.05 | 0.12 | 3.95 | 0.156 | | | | | | | | |
| BB | 14.28 | 0.562 | 19.05 | 0.750 | | | | | | | | |
| CC | 11.1 | 0.437 | 15.87 | 0.625 | | | | | | | | |
| DD | 34.92 | 1.375 | 28.58 | 1.125 | | | | | | | | |
| EE | 65.1 | 2.563 | 79.38 | 3.125 | | | | | | | | |
| FF | 9.53 | 0.375 | 9.53 | 0.375 | | | | | | | | |
| GG | M8 x 1.25 | M8 x 1.25 | M8 x 1.25 | M8 x 1.25 | | | | | | | | |
| Base Weight | | 119 Lbs | 270 Lbs | | 39 Lbs | | 85 Lbs | | 133 Lbs | | 255 Lbs | |

Center Locator Part #36V2T400-277-2

Ask about our
12 Station
HD CarvLock Towers



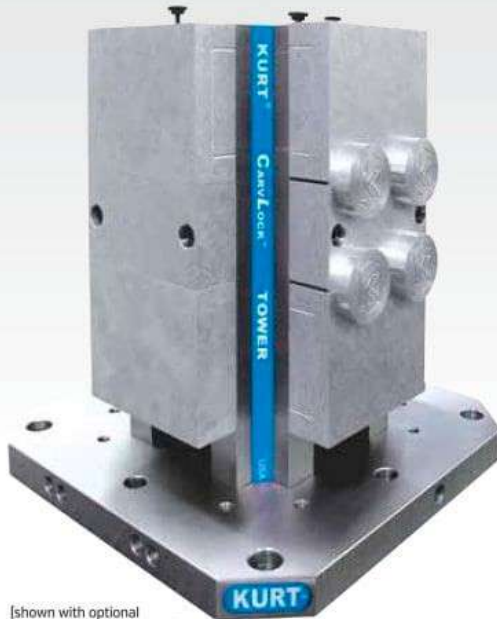
HD & HDL Jaw Kits & Fixture Plates see pages 40-43

6AWS and 6AWSM Workstop, page 72

HD CarvLock® Towers

Base Model: CTHDM64 (Manual)

For specific model numbers see page 44.



[shown with optional machinable aluminum jaws]

This manually operated, eight station HD Cluster Tower system features a cast iron integral vise tower. Ideal for horizontal machining centers or vertical machining centers with indexable tables. This workholding system achieves workpiece immobility while damping cutter induced vibration.

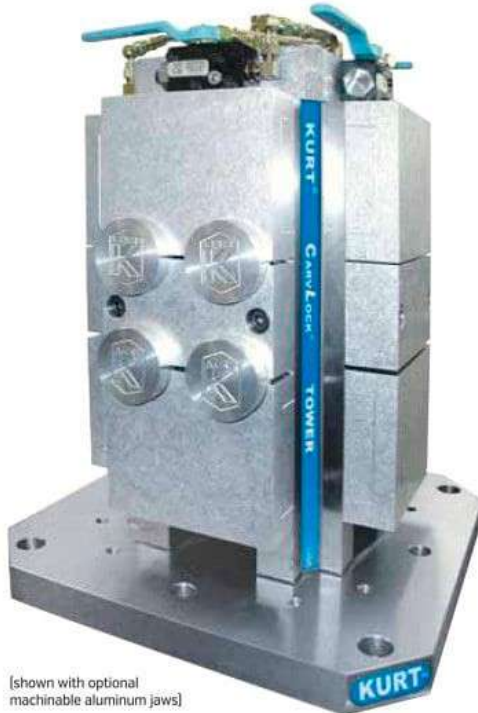
Features:

- Most compact, high density vise tower system in the industry.
- Hold multiple parts in eight clamping stations. Increase part volume.
- Small footprint which reduces spindle travel, part to part, maximizing throughput without compromising holding accuracy.
- Ductile iron column insures strength, rigidity and long term accuracy.
- Jaw options available to fit your application. Select from Machinable aluminum jaws, Machinable ductile Iron jaws and Aluminum fixture plate.
- Jaws are indexable 180 degrees.
- Base sizes available include: 300mm, 400mm, 500mm, 630mm.
- Elevated column makes clearing chips and contaminants fast and easy.
- Lifetime Iron Clad Warranty.

HD CarvLock® Towers

Base Model: CTHDHM64 (Hydraulic)

For specific model numbers see page 44.



[shown with optional machinable aluminum jaws]

Identical in capacity and features as the manual HD CarvLock Tower system, this system is actuated hydraulically. Hydraulic piston is an integral part of the vise nut within the vise and tower body to conserve valuable space on the machine table. This hydraulic version also shares all of the jaw options and other accessories which are available in the manual version. Hydraulic pump and hose not included.

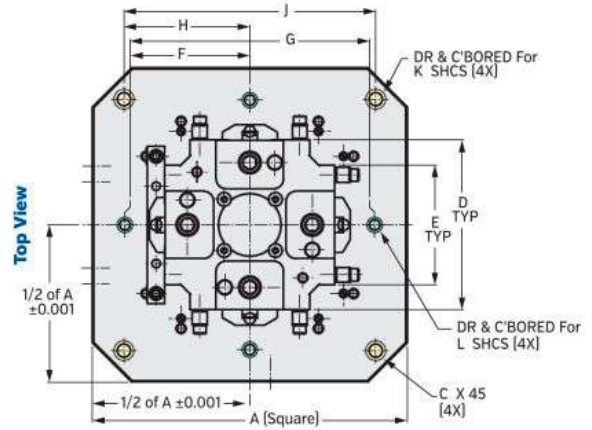
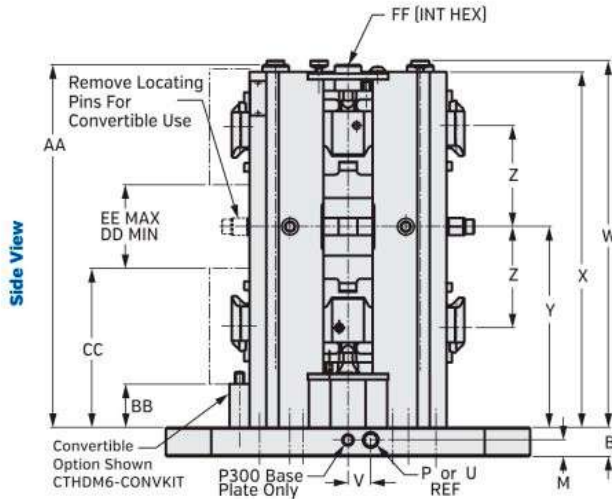
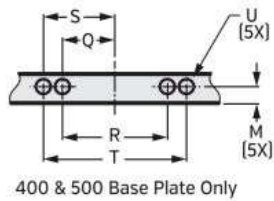
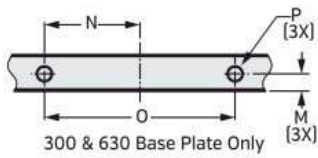
Features:

- Up to 7,800 pounds of clamping force.
- Jaw options available to fit your application. Select from Machinable aluminum jaws, Machinable ductile Iron jaws and Aluminum fixture plate.
- Jaws are indexable 180 degrees.
- Elevated column makes clearing chips and contaminants fast and easy.
- Base sizes available include: 300mm, 400mm, 500mm, 630mm.
- Lifetime Iron Clad Warranty.

CTHDHM64 Specifications see page 38

| Clamping Force Lbs. | |
|---------------------|-------|
| Torque-Ft. Lbs. | HDM6 |
| 10 | 883 |
| 20 | 1,684 |
| 30 | 2,503 |
| 40 | 3,187 |
| 50 | 3,963 |
| 60 | 4,837 |
| 70 | 5,556 |

| | HD Manual Tower Dimensions | | | | | | | |
|---|----------------------------|----------------|-----------------|----------------|-----------------|----------------|-----------------|----------------|
| | CTHDM643 | | CTHDM644 | | CTHDM645 | | CTHDM646 | |
| | mm | Inch | mm | Inch | mm | Inch | mm | Inch |
| A | 300.000 | 11.811 | 400.000 | 15.748 | 500.000 | 19.685 | 630.000 | 24.803 |
| B | 25.400 | 1.000 | 31.750 | 1.250 | 31.750 | 1.250 | 38.100 | 1.500 |
| C | 20.000 | 0.787 | 50.000 | 1.969 | 60.000 | 2.362 | 70.100 | 2.760 |
| D | 215.900 | 8.500 | 215.900 | 8.500 | 215.900 | 8.500 | 215.900 | 8.500 |
| E | 152.400 | 6.000 | 152.400 | 6.000 | 152.400 | 6.000 | 152.400 | 6.000 |
| F | - | - | 158.750 | 6.250 | 203.200 | 8.000 | 254.000 | 10.000 |
| G | - | - | 317.500 | 12.500 | 406.400 | 16.000 | 508.000 | 20.000 |
| H | 127.000 | 5.000 | 160.000 | 6.299 | 200.000 | 7.874 | 250.000 | 9.843 |
| J | 254.000 | 10.000 | 320.000 | 12.598 | 400.000 | 15.748 | 500.000 | 19.685 |
| K | M12 | M12 | M16 | M16 | M16 | M16 | M16 | M16 |
| L | - | - | M12 | M12 | M12 | M12 | M12 | M12 |
| M | 15.000 | 0.591 | 18.000 | 0.709 | 18.000 | 0.709 | 18.000 | 0.709 |
| N | 40.000 | 1.575 | - | - | - | - | 100.000 | 3.937 |
| O | 80.000 | 3.150 | - | - | - | - | 200.000 | 7.874 |
| P | M12 x 1.75 | M12 x 1.75 | - | - | - | - | M16 x 2.0 | M16 x 2.0 |
| Q | - | - | 55.000 | 2.165 | 55.000 | 2.165 | - | - |
| R | - | - | 110.000 | 4.331 | 110.000 | 4.331 | - | - |
| S | - | - | 75.000 | 2.953 | 75.000 | 2.953 | - | - |
| T | - | - | 150.000 | 5.906 | 150.000 | 5.906 | - | - |
| U | - | - | M16 x 2.0 | M16 x 2.0 | M16 x 2.0 | M16 x 2.0 | - | - |
| V | - | - | 25.000 | 0.984 | 25.000 | 0.984 | 25.000 | 0.984 |
| W | 403.230 | 15.875 | 403.230 | 15.875 | 403.230 | 15.875 | 403.230 | 15.875 |
| X | 390.520 | 15.375 | 390.520 | 15.375 | 390.520 | 15.375 | 390.520 | 15.375 |
| Y | 220.680 | 8.688 | 220.680 | 8.688 | 220.680 | 8.688 | 220.680 | 8.688 |
| Z | 111.130 | 4.375 | 111.130 | 4.375 | 111.130 | 4.375 | 111.130 | 4.375 |
| AA | 398.480 | 15.688 | 398.480 | 15.688 | 398.480 | 15.688 | 398.480 | 15.688 |
| BB | 47.625 | 1.875 | 47.625 | 1.875 | 47.625 | 1.875 | 47.625 | 1.875 |
| CC | 174.625 | 6.875 | 174.625 | 6.875 | 174.625 | 6.875 | 174.625 | 6.875 |
| DD | 82.550 | 3.250 | 82.550 | 3.250 | 82.550 | 3.250 | 82.550 | 3.250 |
| EE | 92.080 | 3.625 | 92.080 | 3.625 | 92.080 | 3.625 | 92.080 | 3.625 |
| FF | 15.875 Int. Hex | 0.625 Int. Hex | 15.875 Int. Hex | 0.625 Int. Hex | 15.875 Int. Hex | 0.625 Int. Hex | 15.875 Int. Hex | 0.625 Int. Hex |
| Approx. weight Kgs/Lbs without jaw sets | 139.7 | 308 | 161.0 | 355 | 183.7 | 405 | 239.5 | 528 |

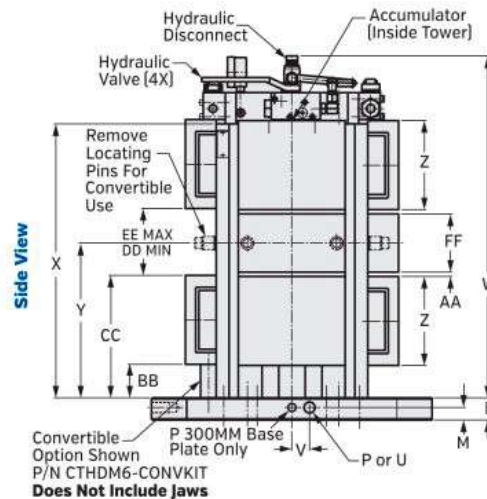
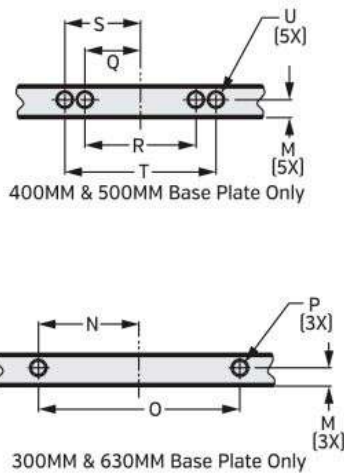
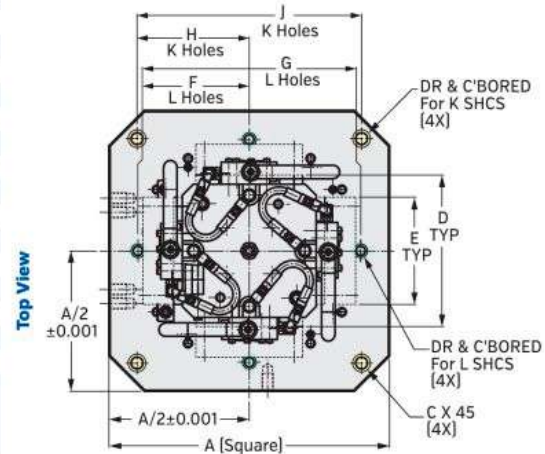


HD & HDL Jaw Kits & Fixture Plates see pages 40-43

HD CarvLock® Towers (Hydraulic) CTHDHM64 Specifications

| | HD Hydraulic Tower Dimensions | | | | | | | |
|---|-------------------------------|------------|-----------|-----------|-----------|-----------|-----------|-----------|
| | CTHDHM643 | | CTHDHM644 | | CTHDHM645 | | CTHDHM646 | |
| | mm | Inch | mm | Inch | mm | Inch | mm | Inch |
| A | 300.000 | 11.811 | 400.000 | 15.748 | 500.000 | 19.685 | 630.000 | 24.803 |
| B | 25.400 | 1.000 | 31.750 | 1.250 | 31.750 | 1.250 | 38.100 | 1.500 |
| C | 20.000 | 0.787 | 50.000 | 1.969 | 60.000 | 2.362 | 70.100 | 2.760 |
| D | 215.900 | 8.500 | 215.900 | 8.500 | 215.900 | 8.500 | 215.900 | 8.500 |
| E | 152.400 | 6.000 | 152.400 | 6.000 | 152.400 | 6.000 | 152.400 | 6.000 |
| F | - | - | 158.750 | 6.250 | 203.200 | 8.000 | 254.000 | 10.000 |
| G | - | - | 317.500 | 12.500 | 406.400 | 16.000 | 508.000 | 20.000 |
| H | 127.000 | 5.000 | 160.000 | 6.299 | 200.000 | 7.874 | 250.000 | 9.843 |
| J | 254.000 | 10.000 | 320.000 | 12.598 | 400.000 | 15.748 | 500.000 | 19.685 |
| K | M12 | M12 | M16 | M16 | M16 | M16 | M16 | M16 |
| L | - | - | M12 | M12 | M12 | M12 | M12 | M12 |
| M | 15.000 | 0.591 | 18.000 | 0.709 | 18.000 | 0.709 | 18.000 | 0.709 |
| N | 40.000 | 1.575 | - | - | - | - | 100.000 | 3.937 |
| O | 80.000 | 3.150 | - | - | - | - | 200.000 | 7.874 |
| P | M12 x 1.75 | M12 x 1.75 | - | - | - | - | M16 x 2.0 | M16 x 2.0 |
| Q | - | - | 55.000 | 2.165 | 55.000 | 2.165 | - | - |
| R | - | - | 110.000 | 4.331 | 110.000 | 4.331 | - | - |
| S | - | - | 75.000 | 2.953 | 75.000 | 2.953 | - | - |
| T | - | - | 150.000 | 5.906 | 150.000 | 5.906 | - | - |
| U | - | - | M16 x 2.0 | M16 x 2.0 | M16 x 2.0 | M16 x 2.0 | - | - |
| V | - | - | 25.000 | 0.984 | 25.000 | 0.984 | 25.000 | 0.984 |
| W | 487.170 | 19.180 | 487.170 | 19.180 | 487.170 | 19.180 | 487.170 | 19.180 |
| X | 390.520 | 15.375 | 390.520 | 15.375 | 390.520 | 15.375 | 390.520 | 15.375 |
| Y | 220.680 | 8.688 | 220.680 | 8.688 | 220.680 | 8.688 | 220.680 | 8.688 |
| Z | 127.000 | 5.000 | 127.000 | 5.000 | 127.000 | 5.000 | 127.000 | 5.000 |
| AA | 6.350 | 0.250 | 6.350 | 0.250 | 6.350 | 0.250 | 6.350 | 0.250 |
| BB | 47.625 | 1.875 | 47.625 | 1.875 | 47.625 | 1.875 | 47.625 | 1.875 |
| CC | 174.625 | 6.875 | 174.625 | 6.875 | 174.625 | 6.875 | 174.625 | 6.875 |
| DD | 82.550 | 3.250 | 82.550 | 3.250 | 82.550 | 3.250 | 82.550 | 3.250 |
| EE | 95.250 | 3.750 | 95.250 | 3.750 | 95.250 | 3.750 | 95.250 | 3.750 |
| FF | 82.550 | 3.250 | 82.550 | 3.250 | 82.550 | 3.250 | 82.550 | 3.250 |
| Approx. weight Kgs/Lbs without jaw sets | 148.8 | 328 | 170.1 | 375 | 192.8 | 425 | 248.6 | 548 |

| Clamping Force Lbs. | |
|---------------------------|-------|
| Hydraulic PSI | HDHM6 |
| 500 | 875 |
| 1,000 | 1,600 |
| 1,500 | 2,330 |
| 2,000 | 3,130 |
| 2,500 | 3,950 |
| 3,000 | 4,750 |
| 3,500 | 5,475 |
| 4,000 | 6,350 |
| 4,500 | 7,100 |
| 5,000 | 7,800 |
| Hyd. Displacement Cu. In. | 1.08 |





[shown with optional hard jaws]

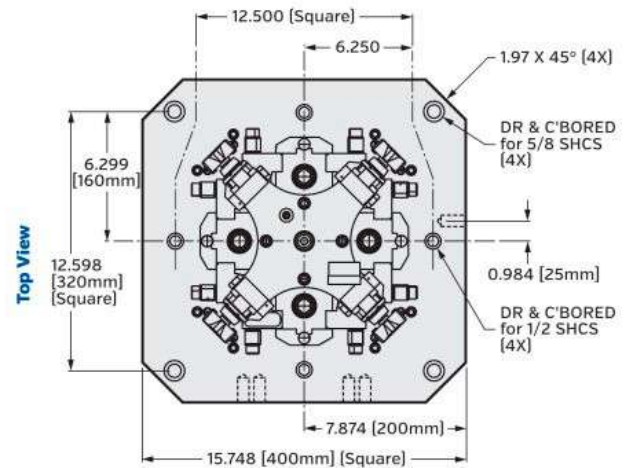
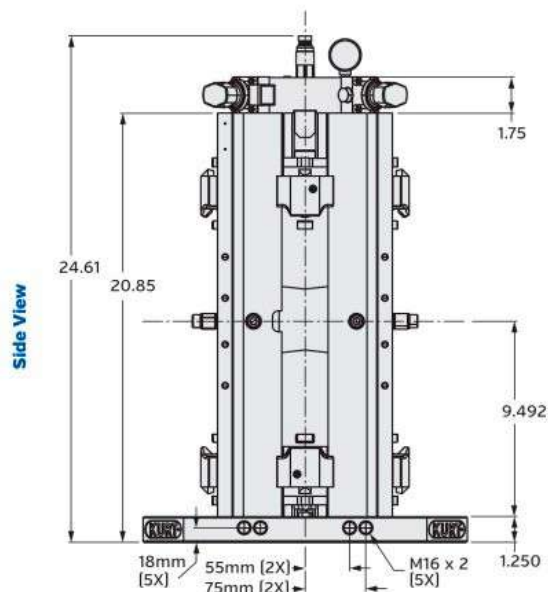
HDL CarvLock® Towers

CTHDHL64 Hydraulic Tower – English
CTHDHLM64 Hydraulic Tower – Metric

This hydraulically operated eight station tower features all-new design for fast loading of parts. All internalized hydraulic piston/nut saves valuable space. Includes all original KURT AngLock precision clamping and iron clad rigid construction for damping vibration.

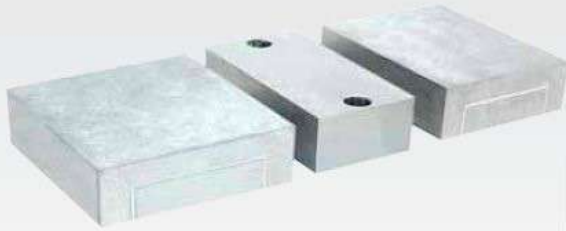
Features:

- Hydraulically operated eight station CTHDHL64 Cluster Tower.
- Utilizes an all internal hydraulic piston nut to conserve space. Pressure is maintained until released by operator or triggering device. Easy disconnect for pallet shuttle.
- Repeatable clamping to 0.0002". Each station delivers up to 7,100 Lbs. of clamping force at 4,500 PSI.
- Each face is controlled separately for convenient part loading and removal.
- Jaw opening is 4" per station.
- Each face has a maximum total stroke of 1/4" [1/8" per station].
- Jaw options available: Hard jaws, machinable aluminum, machinable ductile iron. See pages 38-41
- Base sizes available: 400mm, 500mm, 630mm.
- Lifetime Iron Clad Warranty



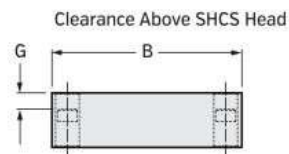
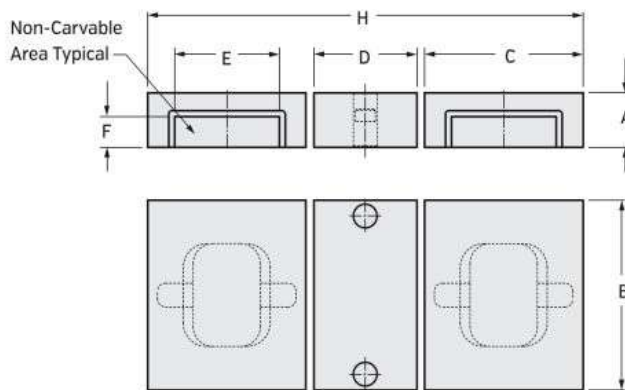
HD & HDL Jaw Kits & Fixture Plates see pages 40-43

HD & HDL Vises Machinable Jaw Kits



7075T6 Aluminum and Cast Iron Machinable Jaws
Jaw Kit Dimensional Data for High Density 6" HD & HDL Vises

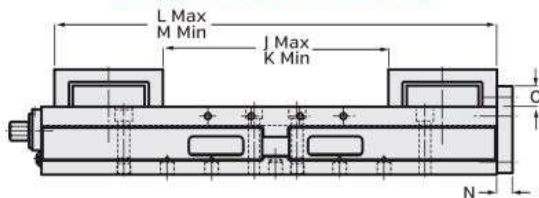
| | HD6AL Jaw Kit | | HD6AL2.5 Jaw Kit | | HD6C Jaw Kit | |
|--------|------------------|--------|---------------------|---------|-----------------|---------|
| | mm | Inch | mm | Inch | mm | Inch |
| A | 43.891 | 1.728 | 60.960 | 2.400 | 43.891 | 1.728 |
| B | 152.400 | 6.000 | 152.400 | 6.000 | 152.400 | 6.000 |
| C | 127.000 | 5.000 | 127.000 | 5.000 | 127.000 | 5.000 |
| D | 82.550 | 3.250 | 82.550 | 3.250 | 82.550 | 3.250 |
| E | 84.120 | 3.312 | 84.120 | 3.312 | 84.120 | 3.312 |
| F | 24.160 | 0.951 | 24.160 | 0.951 | 24.160 | 0.951 |
| G | 13.260 | 0.522 | 30.330 | 1.190 | 13.260 | 0.522 |
| H | 349.250 | 13.750 | 349.250 | 13.750 | 349.250 | 13.750 |
| Weight | 3 Kgs. | 7 Lbs. | 9 Kgs. | 19 Lbs. | 15 Kgs. | 33 Lbs. |



Convertible Options - Dimensional Data for Carvable Jaws

| | 4" Manual / Hydraulic | | 6" Manual / Hydraulic | |
|---|-----------------------|--------|-----------------------|--------|
| | mm | Inch | mm | Inch |
| J | 205.968 | 8.109 | 274.574 | 10.810 |
| K | 55.880 | 2.200 | 77.775 | 3.062 |
| L | 409.168 | 16.109 | 528.574 | 20.810 |
| M | 259.080 | 10.200 | 331.775 | 13.062 |
| O | 18.262 | 0.719 | 23.825 | 0.938 |
| P | 15.240 | 0.600 | 15.367 | 0.605 |

Convertible Option for Carvable Jaws (Manual Vise Shown) HDLM4-CONVKIT & HDLM6-CONVKIT



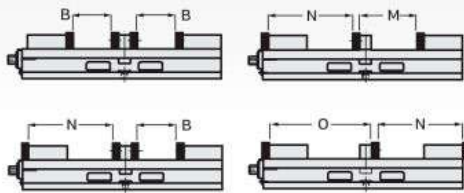
Machinable Jaw Kit Part Numbers

| Part No. | Description | Lbs | Kgs |
|------------------|----------------------------|-----|-----|
| HDLM4AL-JAWKIT | 1.40 High Aluminum Jaw Kit | 6 | 3 |
| HDLM4AL19-JAWKIT | 1.90 High Aluminum Jaw Kit | 8 | 4 |
| HDLM4C-JAWKIT | 1.40 High Iron Jaw Kit | 14 | 7 |
| HD6AL-JAWKIT | 1.73 High Aluminum Jaw Kit | 14 | 7 |
| HD6AL2.5-JAWKIT | 2.4 High Aluminum Jaw Kit | 19 | 9 |
| HD6C-JAWKIT | 1.73 High Iron Jaw Kit | 33 | 15 |

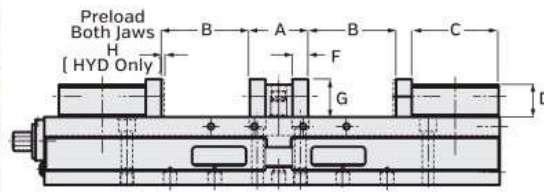
HDL Vise Hard ("J") Jaw Kits



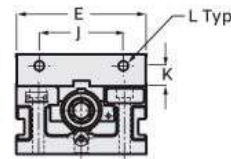
Hardened Jaw Positions
(Manual Vise Shown)



Hardened Jaws
(Manual Vise Shown)



Front View



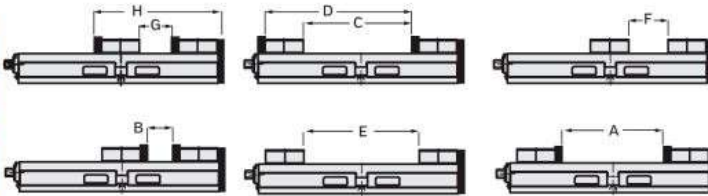
HARD JAW OPTION - DIMENSIONAL DATA

| | 4" MANUAL HYDRAULIC | | 6" MANUAL HYDRAULIC | |
|---|----------------------|----------------------|----------------------|----------------------|
| | mm | Inch | mm | Inch |
| A | 59.538 | 2.344 | 68.326 | 2.690 |
| B | 76.200 | 3.000 | 101.600 | 4.000 |
| C | 73.812 | 2.906 | 101.600 | 4.000 |
| D | 28.321 | 1.115 | 37.719 | 1.485 |
| E | 101.600 | 4.000 | 152.400 | 6.000 |
| F | 13.894 | 0.547 | 18.415 | 0.725 |
| G | 31.369 | 1.235 | 44.069 | 1.735 |
| H | 3.175 Hydraulic Only | 0.125 Hydraulic Only | 3.175 Hydraulic Only | 0.125 Hydraulic Only |
| J | 63.500 | 2.500 | 98.425 | 3.875 |
| K | 17.450 | 0.687 | 23.876 | 0.940 |
| L | M10 x 1.50 | 3/8 - 16 | M12 x 1.75 | 1/2 - 13 |
| M | 121.844 | 4.797 | 151.511 | 5.965 |
| N | 163.906 | 6.453 | 221.615 | 8.725 |
| O | 209.550 | 8.250 | 271.526 | 10.690 |

Hard Jaw Kit Part Numbers

| Part No. | Description | Lbs | Kgs |
|---------------|-----------------------------|-----|-----|
| HDL4J-JAWKIT | Inch J Style Hard Jaw Kit | 10 | 5 |
| HDLM4J-JAWKIT | Metric J Style Hard Jaw Kit | 10 | 5 |
| HDL6J-JAWKIT | Inch J Style Hard Jaw Kit | 27 | 13 |
| HDLM6J-JAWKIT | Metric J Style Hard Jaw Kit | 27 | 13 |

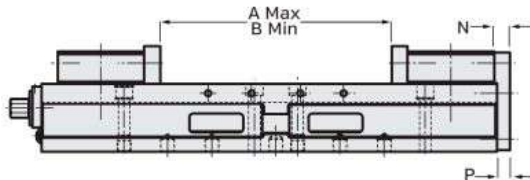
Hardened Jaw Positions
(Manual Vise Shown)



Convertible Options - Dimensional Data for Hard Jaws

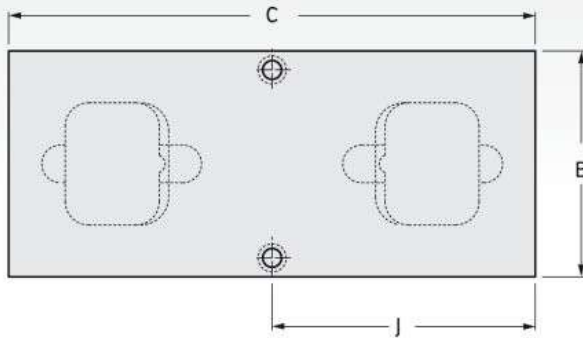
| | 4" Manual / Hydraulic | | 6" Manual / Hydraulic | |
|---|-----------------------|--------|-----------------------|--------|
| | mm | Inch | mm | Inch |
| A | 211.938 | 8.344 | 271.526 | 10.690 |
| B | 59.538 | 2.344 | 68.326 | 2.690 |
| C | 225.831 | 8.891 | 289.941 | 11.415 |
| D | 299.644 | 11.797 | 391.541 | 15.415 |
| E | 239.725 | 9.438 | 308.356 | 12.140 |
| F | 87.325 | 3.438 | 105.156 | 4.140 |
| G | 73.431 | 2.891 | 86.741 | 3.415 |
| H | 147.244 | 5.797 | 188.341 | 7.415 |
| N | 20.625 | 0.812 | 18.542 | 0.730 |
| O | 18.262 | 0.719 | 23.825 | 0.938 |
| P | 15.240 | 0.600 | 15.367 | 0.605 |

Convertible Option for Hard Jaws
HDLM4J-CONVKIT & HDLM6J-CONVKIT (Manual Vise)

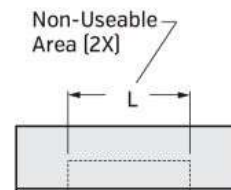
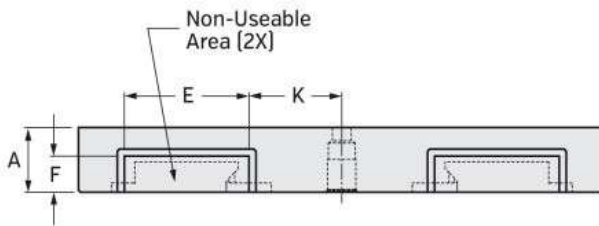


HD & HDL Vise and Tower Fixture Plates

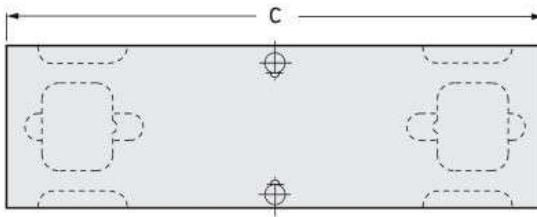
Fits HD CarvLock® Vise & CTHD CarvLock® Towers



| HD6ALP620-239 Fixture Plate | | |
|--------------------------------|---------|--------|
| | mm | Inch |
| A | 50.290 | 1.980 |
| B | 152.400 | 6.000 |
| C | 355.600 | 14.000 |
| E | 84.120 | 3.312 |
| F | 24.610 | 0.969 |
| J | 177.800 | 7.000 |
| K | 62.710 | 2.469 |
| L | 82.550 | 3.250 |
| Est. Weight | 6.4 Kgs | 14 Lbs |

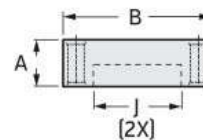
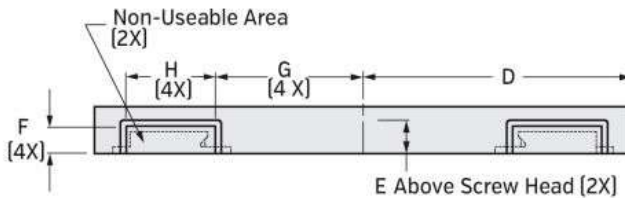


Fits HDL CarvLock® Vise & CTHDL CarvLock® Towers



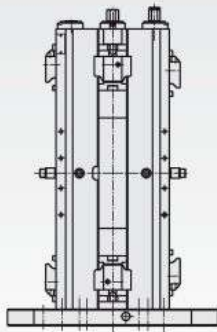
| Aluminum Fixture Plate Accessory for HDLM Vise & CTHDLM Tower 4" | | |
|--|--------|--------|
| HDL4ALP419 | | |
| | mm | Inch |
| A | 48.26 | 1.900 |
| B | 101.60 | 4.00 |
| C | 393.70 | 15.500 |
| D | 196.85 | 7.750 |
| E | 40.54 | 1.596 |
| H | 20.57 | 0.810 |
| J | 65.07 | 2.562 |
| K | 100.84 | 3.970 |
| L | 65.02 | 2.560 |
| Est. Weight | 2 Kgs | 4 Lbs |

| Aluminum Fixture Plate Accessory for HDLM Vise & CTHDLM Tower 6" | | |
|--|---------|--------|
| HDL6ALP619 | | |
| | mm | Inch |
| A | 48.260 | 1.900 |
| B | 152.400 | 6.000 |
| C | 508.000 | 20.000 |
| D | 254.000 | 10.000 |
| E | 30.988 | 1.220 |
| F | 24.613 | 0.969 |
| G | 138.938 | 5.470 |
| H | 84.125 | 3.312 |
| J | 82.550 | 3.250 |
| Est. Weight | 5 Kgs | 11 Lbs |



HD & HDL CarvLock® Tower Jaw Kits

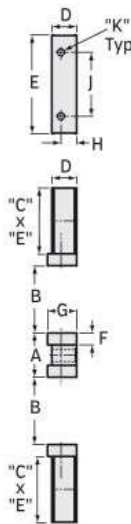
Manual & Hydraulic



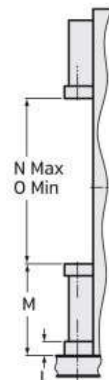
| | 4 Inch Jaw Accessories | | | | | | 6 inch Jaw Accessories | | | | | |
|---|------------------------|----------|-----------------------------------|-------|--------------------|-------|------------------------|----------|-------------------------------|-------|------------------|-------|
| | Hard jaws | | Machinable jaws | | | | Hard Jaws | | Machinable jaws | | | |
| | HDLM4J-Jaw Kit | | HDLM4AL-Jaw Kit HDLM4C-Jaw Kit | | HDLM4AL1.9-Jaw Kit | | HDLM6J-Jaw Kit | | HD6AL-Jaw Kit HD6C-Jaw Kit | | HD6AL2.5-Jaw Kit | |
| | mm | Inch | mm | Inch | mm | Inch | mm | Inch | mm | Inch | mm | Inch |
| A | 59.538 | 2.344 | 63.500 | 2.500 | 63.500 | 2.500 | 68.326 | 2.690 | 82.550 | 3.250 | 82.550 | 3.250 |
| B | 76.200 | 3.000 | 66.675 | 2.625 | 66.675 | 2.625 | 103.170 | 4.062 | 90.630 | 3.568 | 90.630 | 3.568 |
| C | 73.812 | 2.906 | 101.600 | 4.000 | 101.600 | 4.000 | 101.600 | 4.000 | 127.000 | 5.000 | 127.000 | 5.000 |
| D | 28.321 | 1.115 | 35.560 | 1.400 | 48.260 | 1.900 | 37.719 | 1.485 | 43.890 | 1.728 | 60.960 | 2.400 |
| E | 101.600 | 4.000 | 101.600 | 4.000 | 101.600 | 4.000 | 151.610 | 5.968 | 152.400 | 6.000 | 152.400 | 6.000 |
| F | 13.894 | 0.547 | - | - | - | - | 18.415 | 0.725 | - | - | - | - |
| G | 31.369 | 1.235 | - | - | - | - | 44.069 | 1.735 | - | - | - | - |
| H | 17.450 | 0.687 | - | - | - | - | 23.876 | 0.940 | - | - | - | - |
| J | 63.500 | 2.500 | - | - | - | - | 98.425 | 3.875 | - | - | - | - |
| K | M10 x 1.50 | 3/8 - 16 | - | - | - | - | M12 x 1.75 | 1/2 - 13 | - | - | - | - |
| L | - | - | - | - | - | - | - | - | - | - | - | - |
| M | - | - | - | - | - | - | - | - | - | - | - | - |
| N | - | - | - | - | - | - | - | - | - | - | - | - |
| O | - | - | - | - | - | - | - | - | - | - | - | - |
| P | - | - | 7.722 | 0.304 | 20.422 | 0.804 | - | - | 13.260 | 0.522 | 30.330 | 1.194 |
| Q | - | - | 20.625 | 0.812 | 20.625 | 0.812 | - | - | 24.610 | 0.969 | 24.610 | 0.969 |
| R | - | - | 65.075 | 2.562 | 65.075 | 2.562 | - | - | 84.120 | 3.312 | 84.120 | 3.312 |

| | 4 Inch Jaw Accessories Convertible Option | | | |
|---|---|-------|-----------------|-------|
| | Hard Jaws | | Carvable Jaws | |
| | CTHDLM4J-CONVKIT | | CTHDLM4-CONVKIT | |
| | mm | Inch | mm | Inch |
| A | - | - | - | - |
| B | - | - | - | - |
| C | - | - | - | - |
| D | - | - | - | - |
| E | - | - | - | - |
| F | - | - | - | - |
| G | - | - | - | - |
| H | - | - | - | - |
| J | - | - | - | - |
| K | - | - | - | - |
| L | 13.894 | 0.547 | 13.874 | 0.547 |
| M | 101.600 | 4.000 | 115.494 | 4.547 |
| N | 196.850 | 7.750 | 169.060 | 6.656 |
| O | 57.150 | 2.250 | 57.150 | 2.250 |
| P | - | - | - | - |
| Q | - | - | - | - |
| R | - | - | - | - |

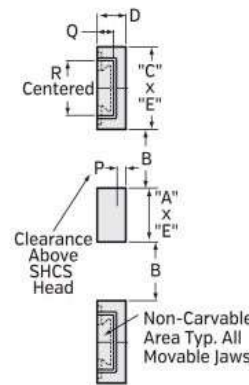
| | 6 Inch Jaw Accessories Convertible Option | | | |
|---|---|--------|-----------------|--------|
| | Hard Jaws | | Carvable Jaws | |
| | CTHDLM6J-CONVKIT | | CTHDLM6-CONVKIT | |
| | mm | Inch | mm | Inch |
| A | - | - | - | - |
| B | - | - | - | - |
| C | - | - | - | - |
| D | - | - | - | - |
| E | - | - | - | - |
| F | - | - | - | - |
| G | - | - | - | - |
| H | - | - | - | - |
| J | - | - | - | - |
| K | - | - | - | - |
| L | 21.590 | 0.850 | 18.415 | 0.725 |
| M | 141.605 | 5.575 | 145.415 | 5.725 |
| N | 254.640 | 10.025 | 256.540 | 10.100 |
| O | 68.326 | 2.690 | 79.760 | 3.140 |
| P | - | - | - | - |
| Q | - | - | - | - |
| R | - | - | - | - |



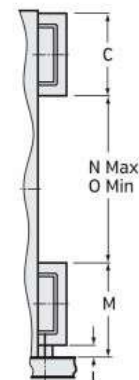
Hard Jaws Typ.



Convertible Option
Shown Hard Jaws Does
Not include Jaws



Alum. or Ductile Carvable
Jaws Shown Typ.



Convertible Option
Shown Carvable Jaws

Cluster Tower Weights Complete With Specific Jaw Or Fixture Plate

| | Base Model (No Jaw) | "J" Hard Jaw | "AL" Alum Jaw | "AL-2.5" High Alum Jaw | "C" Cast Jaw | Fixture Plate |
|----------|---------------------|--------------|---------------|------------------------|--------------|---------------|
| CTHDM644 | 355 | 463 | 403 | 431 | 511 | 411 |
| CTHDM645 | 405 | 513 | 453 | 481 | 561 | 461 |
| CTHDM646 | 528 | 636 | 576 | 604 | 684 | 584 |
| CTHDM644 | 355 | 483 | 423 | 451 | 531 | 431 |
| CTHDM645 | 405 | 533 | 473 | 501 | 581 | 481 |
| CTHDM646 | 528 | 656 | 596 | 624 | 704 | 604 |
| CTHDL443 | 158 | 198 | 182 | 190 | 214 | 202 |
| CTHDL444 | 204 | 244 | 228 | 236 | 260 | 248 |
| CTHDL445 | 252 | 292 | 276 | 284 | 308 | 296 |
| CTHDL644 | 355 | 463 | 403 | 431 | 511 | 411 |
| CTHDL645 | 403 | 511 | 451 | 479 | 559 | 459 |
| CTHDL646 | 525 | 633 | 573 | 601 | 681 | 581 |
| CTHDL644 | 375 | 483 | 423 | 451 | 531 | 431 |
| CTHDL645 | 423 | 531 | 471 | 499 | 579 | 479 |
| CTHDL646 | 545 | 653 | 593 | 621 | 701 | 601 |

HD/HDL Visas and Towers

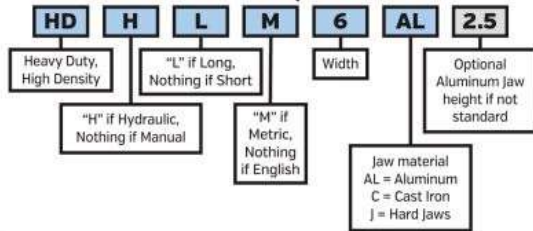
How To Order, Special Options, Fewer Components

HDLM6J [Manual 6" vise with hard jaws.]

HDHLM6AL2.5 [Hydraulic vise with optional height aluminum jaws.]



HDL Double Station Vise Examples:

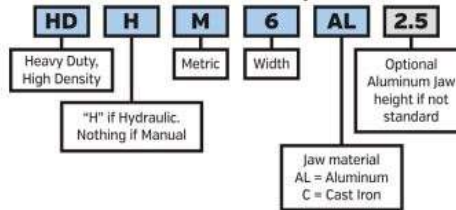


HDM6AL [Manual 6" vise with standard aluminum jaws.]

HDHDM6AL2.5 [Hydraulic vise with optional height aluminum jaws.]



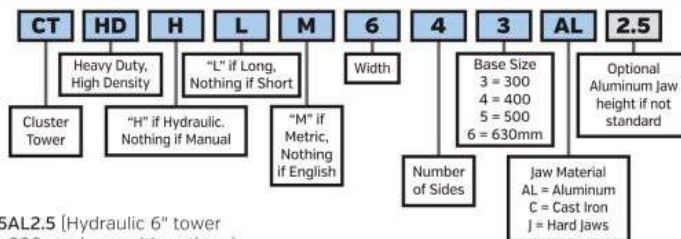
HD Double Station Vise Examples:



HD and HDL Cluster Tower Examples:

CTHDM643AL [Manual 6" short tower with 4 sides, 300mm base with standard height aluminum jaws.]

CTHDM645AL2.5 [Hydraulic 6" tower with 4 sides, 500mm base with optional height aluminum jaws.]

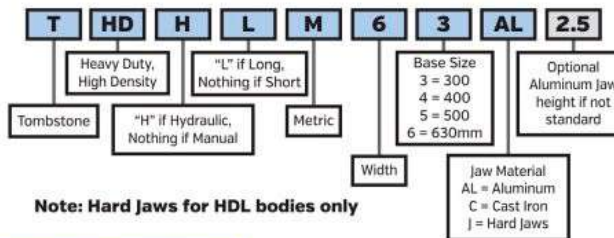


HD Back-To-Back Visas Examples:

THDM63AL [Manual 6" short back-to-back vise, 300mm base with standard height aluminum jaws.]

THDM66AL2.5 [Hydraulic 6" short back-to-back vise, 630mm base with optional height aluminum jaws.]

Estimated weight: 88.9 Kgs/196 Lbs



Note: Hard Jaws for HDL bodies only

HD & HDL Jaw Kits & Fixture Plates see pages 40-43

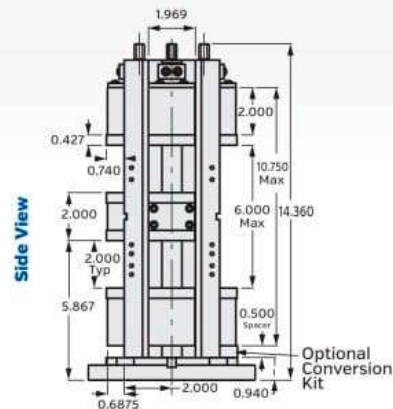
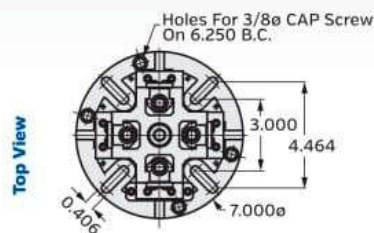
ClusterLock Cluster Tower®

Model: CT2DC4B

Features:

- Made from ductile iron and steel, a stiffness of 2.5 times aluminum is achieved. Vibration damping of ductile iron is 20 times higher than aluminum. Includes hardened bed and jaws.
- Four double vises with 50mm [1.968"] wide jaw and 50mm [2"] opening.
- Pilot [0.8768"] in both ends. Four and six bolt mounting hole pattern fits all indexers. Has 60° center in outboard end.
- Convertible to single station large opening vise.
- Options include machinable jaws, tail support, workstops, and conversion kit.
- Chip guards included.
- 45 Lbs.

| CT2DC4B Cluster Tower Double Manual Vise Clamping Force | |
|---|-------|
| Torque-Ft. Lbs. | Lbs. |
| 9 | 1,000 |
| 14 | 1,500 |
| 19 | 2,000 |
| 25 | 3,000 |
| Maximum Force | 3,000 |



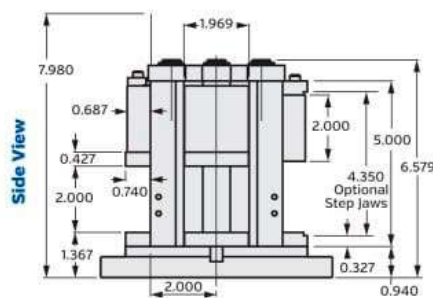
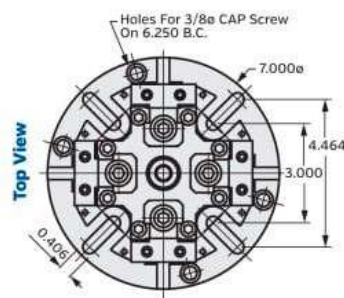
ClusterLock Cluster Tower®

Model: CT2SH4A

Features:

- Made from ductile iron and steel, a stiffness of 2.5 times aluminum is achieved. Vibration damping of ductile iron is 20 times higher than aluminum. Includes hardened bed and jaws.
- Four single vises with 50mm [1.968"] jaws and 50mm [2"] opening.
- Pilot [0.8768"] in both ends. Four and six bolt mounting hole pattern fits all indexers. Has 60° center in outboard end.
- Options include machinable jaws, tail support, workstops.
- Does not require tail support.
- Chip guards included.
- Internal hex screw standard.
- 25 Lbs.

| CT2SH4A Cluster Tower Single Manual Vise Clamping Force | |
|---|-------|
| Torque-Ft. Lbs. | Lbs. |
| 10 | 1,000 |
| 15 | 1,500 |
| 20 | 2,000 |
| 25 | 3,000 |
| Maximum Force | 3,000 |

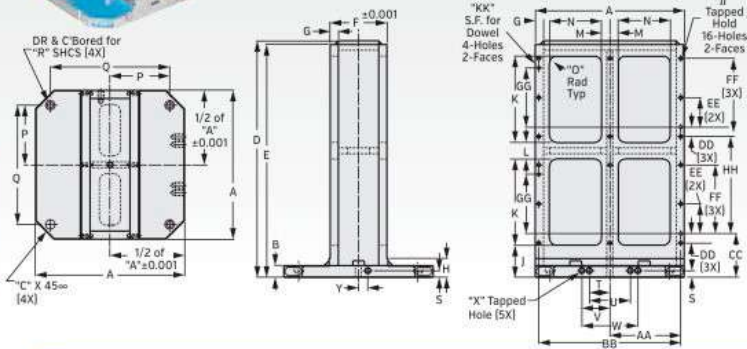




Modular ToolBlox™

2 Face Modular ToolBlox

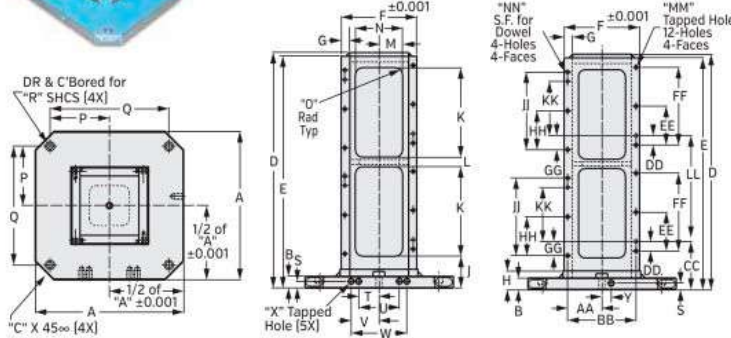
Here's a new lighter weight building block module to add high density and versatility to most model horizontal machining centers. It is over 30% lighter than comparable size tombstones with aluminum sub-plates. Provides a lower cost alternative to dedicated fixtures. Features bolt holes and dowel pattern on each face for fast installation and removal of sub-plates and other workholding components. Class 30 Grey Iron.



Modular ToolBlox™

4 Face Modular ToolBlox

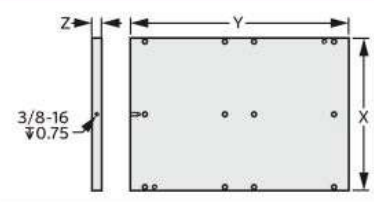
This 4 sided tombstone is another lower cost option over dedicated fixtures. It is over 30% lighter than comparable size tombstones with aluminum sub-plates and is designed to reduce setup time. Provides versatility for mounting manual and hydraulic vises and most clamping devices. Standard and custom sub-plates are also available. Class 30 Grey Iron.



| | 2-Sided Tombstone Cage Dimensional Data | | 4-Sided Tombstone Cage Dimensional Data | |
|------------|---|--------------------|---|--------------------|
| | TC2C40616 | TC2C50820 | TC4C40808 | TC4C51010 |
| A | 400mm | 500mm | 400mm | 500mm |
| B | 1.250 | 1.250 | 1.250 | 1.250 |
| C | 1.970 | 2.360 | 1.970 | 2.360 |
| D | 25.000 | 28.000 | 25.000 | 28.000 |
| E | 24.625 | 27.625 | 24.625 | 27.625 |
| F | 6.000 | 8.000 | 8.000 | 10.000 |
| G | 0.875 | 0.875 | 0.875 | 0.875 |
| H | 2.000 | 2.000 | 2.000 | 2.000 |
| J | 3.375 | 3.375 | 3.375 | 3.375 |
| K | 9.125 | 10.500 | 9.500 | 10.625 |
| L | 1.750 | 2.000 | 1.000 | 1.750 |
| M | 0.875 | 1.000 | 2.500 | 3.375 |
| N | 5.500 | 7.125 | 5.000 | 6.750 |
| O | 0.750 | 0.750 | 0.750 | 0.750 |
| P | 6.299 | 7.874 | 6.299 | 7.874 |
| Q | 12.598 | 15.748 | 12.598 | 15.748 |
| R | 5/8 | 5/8 | 5/8 | 5/8 |
| S | 0.709 | 0.709 | 0.709 | 0.709 |
| T | 2.165 | 2.165 | 2.165 | 2.165 |
| U | 4.330 | 4.330 | 4.330 | 4.330 |
| V | 2.953 | 2.953 | 2.953 | 2.953 |
| W | 5.906 | 5.906 | 5.906 | 5.906 |
| X | 5/8-11NC x 1" DP | 5/8-11NC x 1" DP | 5/8-11NC x 1" DP | 5/8-11NC x 1" DP |
| Y | 0.984 | 0.984 | 0.984 | 0.984 |
| AA | 7.500 | 9.4375 | 3.625 | 4.625 |
| BB | 15.000 | 18.875 | 7.250 | 9.250 |
| CC | 4.625 | 4.625 | 5.125 | 5.125 |
| DD | 1.000 | 1.000 | 1.000 | 1.000 |
| EE | 4.125 | 4.625 | 4.125 | 4.625 |
| FF | 8.250 | 9.250 | 8.250 | 9.250 |
| GG | 6.250 | 7.250 | 1.500 | 1.500 |
| HH | 11.250 | 12.750 | 4.125 | 4.625 |
| JJ | 3/8-16NC x 0.88 DP | 3/8-16NC x 0.88 DP | 8.250 | 9.250 |
| KK | 0.3750 x 0.75 DP | 0.3750 x 0.75 DP | 5.750 | 6.750 |
| LL | - | - | 11.250 | 12.750 |
| MM | - | - | 3/8-16NC x 0.88 DP | 3/8-16NC x 0.88 DP |
| NN | - | - | 0.3750 x 0.75 DP | 0.3750 x 0.75 DP |
| Est Weight | 326 Lbs | 546 Lbs | 245 Lbs | 361 Lbs |
| Est Weight | 148 Kgs | 248 Kgs | 112 Kgs | 164 Kgs |

Fixture Plates

- Please specify material as A36 HRS, 7075 Aluminum or ATP-5 Aluminum Jig Plate
- Each plate is furnished with all necessary dowels & screws for mounting to ToolBlox
- Customized hole patterns & features can be supplied upon request
- Fixture plate thickness tolerances are: A36 = ±0.001, 7075 = ±0.001, ATP-5 = ±0.005
- Fixture plates are ground flat & parallel to: A36 = 0.001, 7075 = 0.001, ATP-5 = 0.005
- You can permanently mount Kurt vises to the Toolblox fixture plates for fast, easy set-up changes on milling machines.



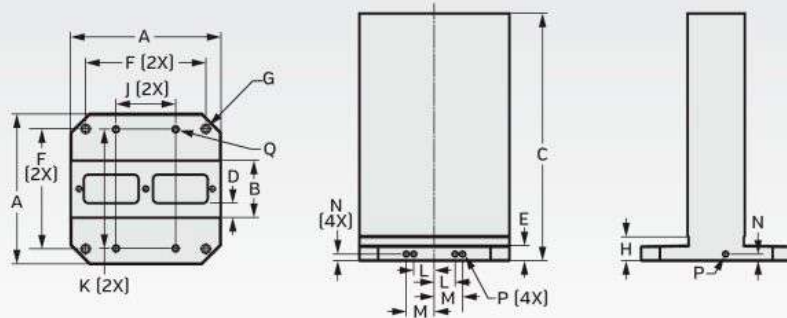
| Model | TC2C40616 | TC2C50820 | TC4C0808 | TC4C51010 |
|--------|-----------|-----------|----------|-----------|
| Part # | FP416 | FP520 | FP408 | FP510 |
| X | 15.688 | 19.625 | 8.000 | 10.000 |
| Y | 22.500 | 25.500 | 22.250 | 25.500 |
| Z | 1.000 | 1.000 | 1.000 | 1.000 |

Note: Outside dimensions (X&Y) are cut dimensions

ToolBlox™
2 Face ToolBlox



The Kurt 2 face ToolBlox is ideal for mounting vises. Sub-plates may be bolted and doweled on either side for quick, easy set-up. All vises or collet chucks may be mounted directly on Kurt ToolBlox faces. Made of Class-35 cast iron. Consult our factory for other sizes.



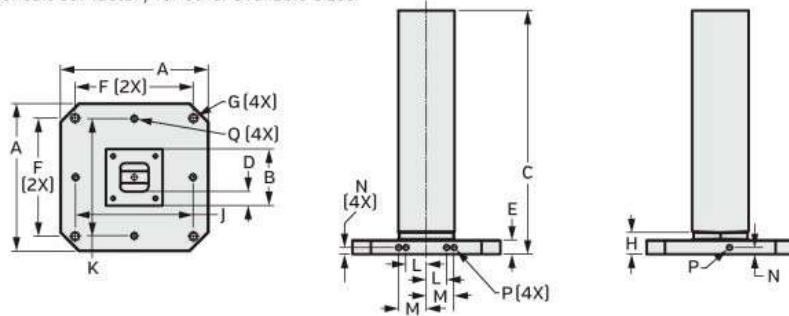
| Model | A | B | C | D | E | F | G (SHCS) | H | J | K | L | M | N | P | Q (SHCS) | Est. Wt Kgs/Lbs. | Surface Datum A Base Flatness | Face Perp. To Base | Edge Locator Perp | Face Dimension | Face Locator to Edge Parallelism |
|-----------|--------|------|-------|------|------|--------|-------------|------|-------|-------|-------|--------|-------|-----------|---------------|------------------|-------------------------------|--------------------|-------------------|----------------|----------------------------------|
| TB2C40616 | 400 mm | 6.00 | 26.00 | 1.50 | 1.50 | 320 mm | 5/8" or M16 | 2.50 | 6.25 | 12.50 | 55 mm | 75 mm | 18 mm | 5/8-11UNC | 1/2" or 13 mm | 235 / 516 | 0.001 | 0.003 | 0.0015 | 6.000 ±0.002 | 0.001 |
| TB2C50820 | 500 mm | 8.00 | 34.00 | 1.50 | 1.75 | 400 mm | 5/8" or M16 | 2.75 | 8.00 | 16.00 | 55 mm | 75 mm | 18 mm | 5/8-11UNC | 1/2" or 13 mm | 412 / 908 | 0.001 | 0.003 | 0.0015 | 8.000 ±0.002 | 0.001 |
| TB2C60825 | 630 mm | 8.00 | 38.00 | 2.00 | 2.00 | 500 mm | 5/8" or M16 | 3.00 | 10.00 | 20.00 | - | 100 mm | 18 mm | 5/8-11UNC | 1/2" or 13 mm | 663 / 1461 | 0.001 | 0.003 | 0.0015 | 8.000 ±0.002 | 0.001 |

Note: ToolBlox can be cut down to any height.

ToolBlox™
4 Face ToolBlox



The Kurt 4 face ToolBlox is ideal for mounting vises of any size. Made of Class-35 cast iron. Consult our factory for other available sizes.



| Model | A | B | C | D | E | F | G (SHCS) | H | J | K | L | M | N | P | Q (SHCS) | Est. Wt Kgs/Lbs. | Surface Datum A Base Flatness | Face Perp. To Base | Edge Locator Perp | Face Dimension | Face Locator to Edge Parallelism |
|-----------|--------|-------|-------|------|------|--------|-------------|------|-------|-------|-------|--------|-------|-----------|---------------|------------------|-------------------------------|--------------------|-------------------|----------------|----------------------------------|
| TB4C40606 | 400 mm | 6.00 | 26.00 | 1.50 | 1.50 | 320 mm | 5/8" or M16 | 2.50 | 12.50 | 12.50 | 55 mm | 75 mm | 18 mm | 5/8-11UNC | 1/2" or 13 mm | 128 / 282 | 0.001 | 0.003 | 0.0015 | 6.000 ±0.002 | 0.002 |
| TB4C40808 | 400 mm | 8.00 | 26.00 | 1.50 | 1.50 | 320 mm | 5/8" or M16 | 2.50 | 12.50 | 12.50 | 55 mm | 75 mm | 18 mm | 5/8-11UNC | 1/2" or 13 mm | 163 / 359 | 0.001 | 0.003 | 0.0015 | 8.000 ±0.003 | 0.002 |
| TB4C41010 | 400 mm | 10.00 | 26.00 | 1.50 | 1.50 | 320 mm | 5/8" or M16 | 2.50 | 12.50 | 12.50 | 55 mm | 75 mm | 18 mm | 5/8-11UNC | 1/2" or 13 mm | 198 / 436 | 0.001 | 0.003 | 0.0015 | 10.000 ±0.004 | 0.002 |
| TB4C50808 | 500 mm | 8.00 | 34.00 | 1.50 | 1.75 | 400 mm | 5/8" or M16 | 2.90 | 16.00 | 16.00 | 55 mm | 75 mm | 18 mm | 5/8-11UNC | 1/2" or 13 mm | 237 / 522 | 0.001 | 0.003 | 0.0015 | 8.000 ±0.004 | 0.002 |
| TB4C51010 | 500 mm | 10.00 | 34.00 | 1.50 | 1.75 | 400 mm | 5/8" or M16 | 2.90 | 16.00 | 16.00 | 55 mm | 75 mm | 18 mm | 5/8-11UNC | 1/2" or 13 mm | 284 / 626 | 0.001 | 0.003 | 0.0015 | 10.000 ±0.005 | 0.002 |
| TB4C51212 | 500 mm | 12.00 | 34.00 | 1.50 | 1.75 | 400 mm | 5/8" or M16 | 2.90 | 16.00 | 16.00 | 55 mm | 75 mm | 18 mm | 5/8-11UNC | 1/2" or 13 mm | 333 / 734 | 0.001 | 0.003 | 0.0015 | 12.000 ±0.007 | 0.002 |
| TB4C51414 | 500 mm | 14.00 | 34.00 | 1.50 | 1.75 | 400 mm | 5/8" or M16 | 2.90 | 16.00 | 16.00 | 55 mm | 75 mm | 18 mm | 5/8-11UNC | 1/2" or 13 mm | 440 / 970 | 0.001 | 0.003 | 0.0015 | 14.000 ±0.008 | 0.002 |
| TB4C61010 | 630 mm | 10.00 | 38.00 | 1.50 | 1.75 | 500 mm | 5/8" or M16 | 3.20 | 20.00 | 20.00 | - | 100.00 | 18 mm | 5/8-11UNC | 1/2" or 13 mm | 369 / 812 | 0.001 | 0.003 | 0.0015 | 10.000 ±0.009 | 0.002 |
| TB4C61818 | 630 mm | 18.00 | 38.00 | 2.00 | 2.00 | 500 mm | 5/8" or M16 | 3.20 | 20.00 | 20.00 | - | 100.00 | 18 mm | 5/8-11UNC | 1/2" or 13 mm | 778 / 1715 | 0.001 | 0.003 | 0.0015 | 18.000 ±0.010 | 0.002 |

Note: ToolBlox can be cut down to any height.



SideWinder™

Model: SDW25II

The Kurt SDW25II SideWinder is a vise that mounts vertically to the back of any Kurt industry standard 6" vise. The SideWinder includes a stabilization leg that will mount to the table on the movable end of the vise and a workstop to position the height of the part.

Purpose:

For doing 2nd op work holding the part vertically rather than horizontally.

Advantage:

- Saves set up time for 2nd op vertical work
- Machining can be done on both vises in the same setup
- Vise is at an elevated position which is more conducive to longer reach machining
- Has a stabilizer foot for vibration control
- Can be mounted to the back of any Kurt industry standard 6" vise
- Does not interfere with the host vise
- Pull type vise
- AngLock design
- Patented



SideWinder™

Model: SDW35

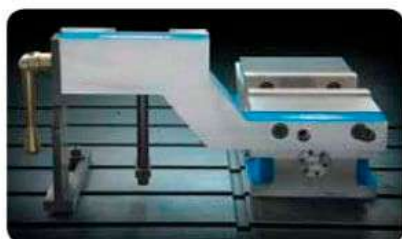
The Kurt SDW35 SideWinder is a vise that mounts vertically to the back of any Kurt industry standard 6 or 8" vise. The SideWinder includes a stabilization leg that will mount to the table on the movable end of the vise and a workstop to position the height of the part.

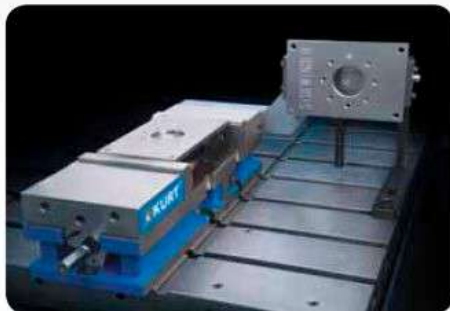
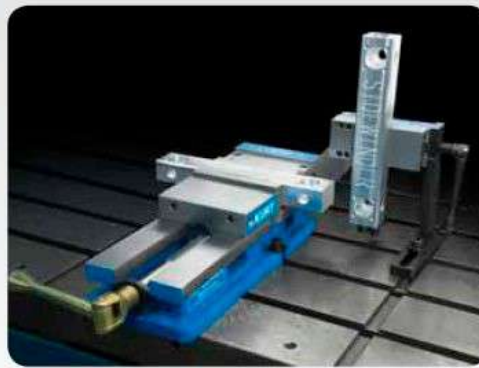
Purpose:

For doing 2nd op work holding the part vertically rather than horizontally.

Advantages:

- Saves set up time for 2nd op vertical work
- Machining can be done on both vises in the same setup
- Vise is at an elevated position which is more conducive to longer reach machining
- Has a stabilizer foot for vibration control
- Can be mounted to the back of any Kurt industry standard 6" or 8" vises. [Included spacer required when mounting to a 3800 series vise]
- Does not interfere with the host vise
- Pull type vise
- AngLock design
- Patented





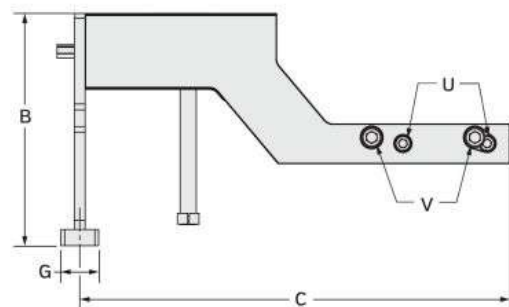
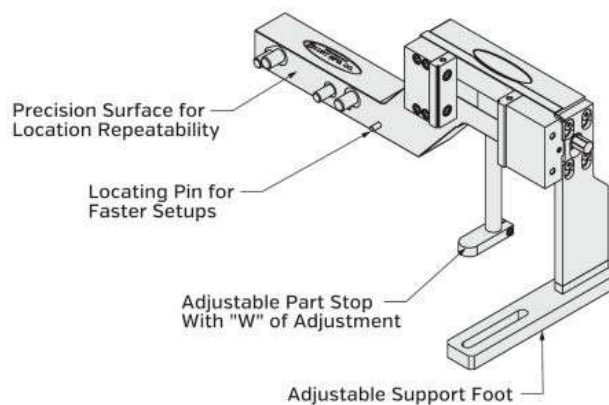
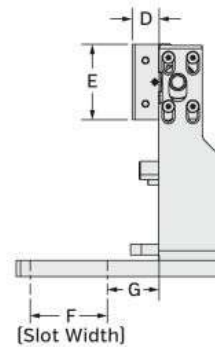
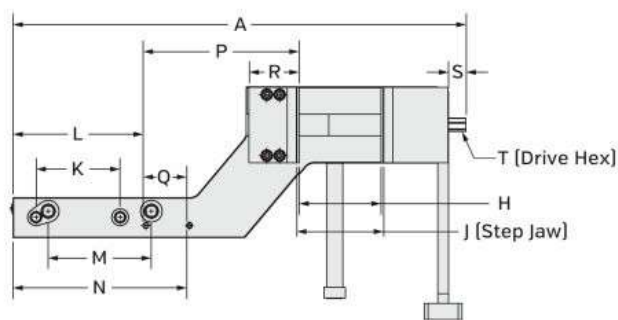
SideWinder Dimensions

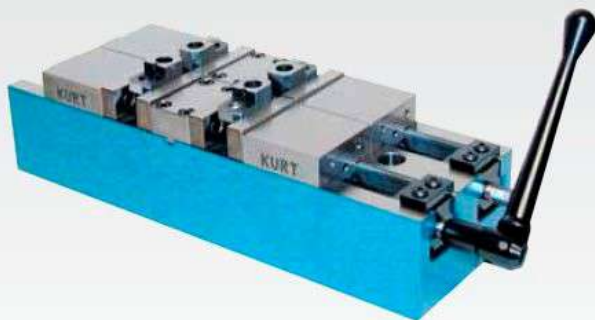
| | SDW25II | SDW35 |
|--------|-----------|------------|
| A | 14.56 | 20.86 |
| B | 8.00/8.31 | 9.80/10.70 |
| C | 13.75 | 19.81 |
| D | 1.06 | 1.235 |
| E | 2.50 | 3.47 |
| F | 3.00 | 3.56 |
| G | 0.53 | 2.38 |
| H | 0.0/2.50 | 0.0/3.75 |
| J | - | 0.25/4.00 |
| K | 3.875 | 3.875 |
| L | 6.000 | 6.000 |
| M | - | 4.750 |
| N | - | 8.00 |
| P | 3.2 | 7.17 |
| Q | - | 2.000 |
| R | 1.75 | 2.30 |
| S | 0.56 | 0.80 |
| T | 3/8 | 9/16 |
| U | 1/2-13 | 1/2-13 |
| V | - | 5/8-11 |
| W | 5.00 | 5.75 |
| Weight | 20 Lbs. | 45 Lbs. |

Clamp Force

| SDW25II SideWinder | |
|--------------------|---------------------|
| Torque-Ft. Lbs. | Clamping Force-Lbs. |
| 4 | 580 |
| 6 | 880 |
| 8 | 1,120 |
| 10 | 1,540 |
| 12 | 2,450 |

| SDW35 SideWinder | |
|------------------|---------------------|
| Torque-Ft. Lbs. | Clamping Force-Lbs. |
| 5 | 500 |
| 10 | 1,000 |
| 15 | 1,500 |
| 20 | 2,000 |
| 25 | 2,500 |
| 30 | 3,000 |
| 35 | 3,500 |
| 40 | 4,000 |





ClusterLock

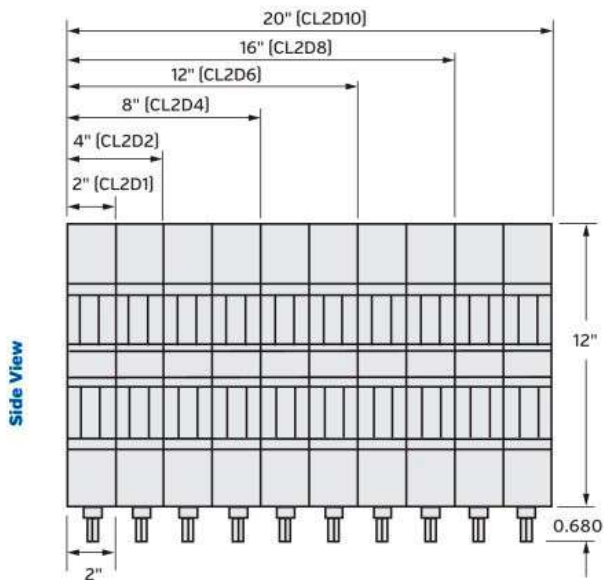
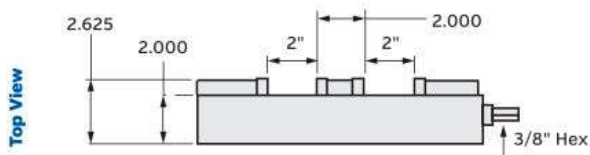
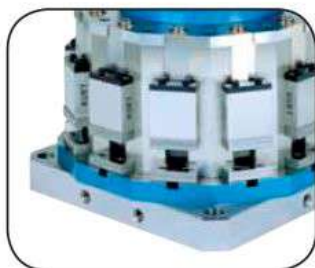
Model: CL2D2-2A

ClusterLock is a precision double vise, configured from 1 to 10 units in a common base. The AngLock principle ensures that the movable jaw will not lift.

Features:

- 80,000-PSI ductile iron construction.
- Hardened bed ways and hardened steel jaw plates.
- Standard spacing is 1.968" [50mm]. Consult the factory for other spacing.
- Vise bed surface is ground parallel to within 0.001".
- Ideal for small VMC's with pallet changers.
- Suitable for tombstone mounting on HMC's.
- Can be converted to single opening (6" maximum) with the optional convertible kit.

| Part # | Weight Lbs. | ClusterLock Manual Vise Clamping Vise | |
|-----------|-------------|---------------------------------------|-------|
| | | Torque- Ft. Lbs. | Lbs. |
| CL2D1-2A | 12 | | |
| CL2D2-2A | 24 | | |
| CL2D4-2A | 48 | 9 | 1,000 |
| CL2D6-2A | 72 | 14 | 1,500 |
| CL2D8-2A | 96 | 19 | 2,000 |
| CL2D10-2A | 120 | 25 | 3,000 |



Kurt Toolroom Vise

Model: KTR35

An extremely versatile vise that can fit on the smallest machine tables with ease. The overall length including hex is 10.125" and weighs only 20 pounds. The jaw is 3.470" wide with a maximum opening of 3.81" on the bed, and 4.06" in step of jaw. The vise is fully chip guarded. Mounting can be accomplished through the body or with outrigger toe clamps mounted to the outside of the body [sold separately]. All sides of the vise are ground and can easily be mounted on its side with the toe clamps [sold separately]. Four cavities in the ends of the body make mounting this vise with the toe clamps very quick and easy. By using a receiver vise this vise can be used as a sine vise with 30, 45 and 60° angles built into the side of the body on the stationary side. To utilize this feature remove the triangular shaped magnets and place the dowel pins in the proper holes to get the angle you desire.

Features:

- Jaw Width: 3.470"
- Jaw Height Overall: 1.235"
- Jaw Height to Step: 1.118"
- Max Opening: 4.060"
- Max Clamping Force: 4,500 Lbs.
- Hex Size: 0.561"
- Overall Vise Length: 10.125"
- Base Height: 2.000"



Optional KTR35-ClampKit



Optional angles built in. Call factory for pricing



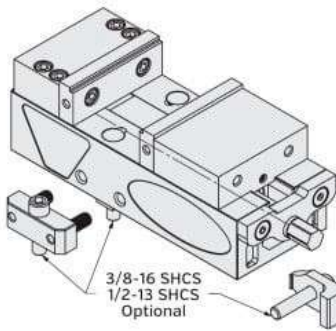
Mounts on side with optional KTR35-ToeKit



Optional KTR35-ToeKit

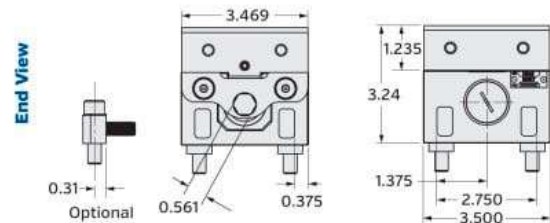
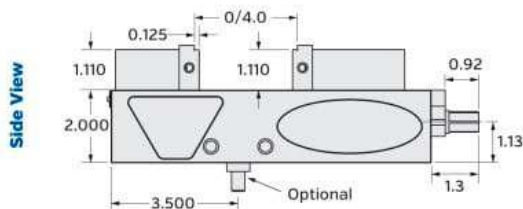
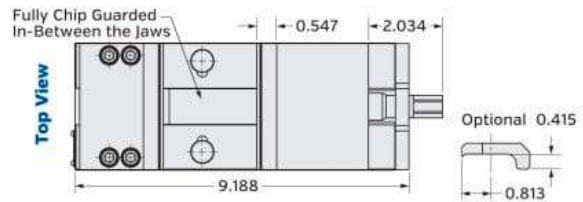
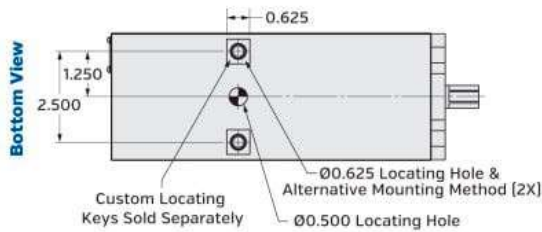
Optional KTR35-ClampKit (3/8")
Optional KTR3512-ClampKit (1/2")

Optional KTR35-KeyKit



3/8-16 SHCS
1/2-13 SHCS
Optional

| KTR35 Clamp Force | |
|-------------------|---------------------|
| Torque-Ft. Lbs. | Clamping Force-Lbs. |
| 5 | 500 |
| 10 | 1,000 |
| 15 | 1,500 |
| 20 | 2,000 |
| 25 | 2,500 |
| 30 | 3,000 |
| 35 | 3,500 |
| 40 | 4,000 |
| 45 | 4,500 |
| Weight | 20 Lbs. |



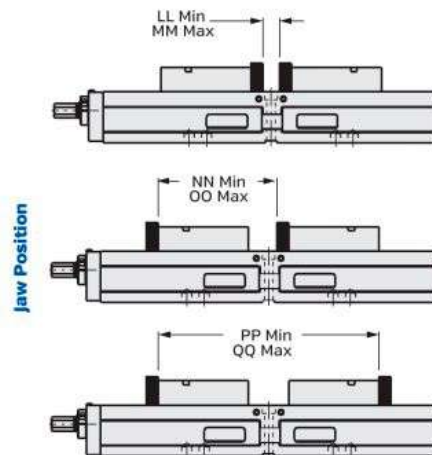
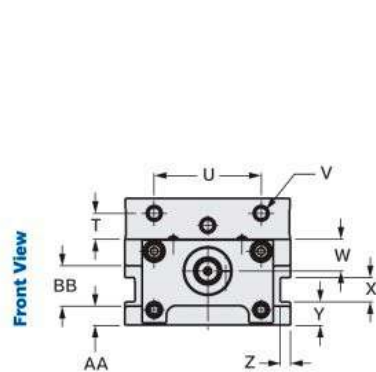
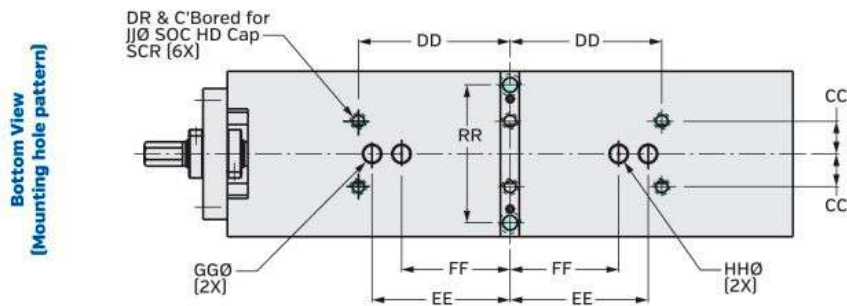
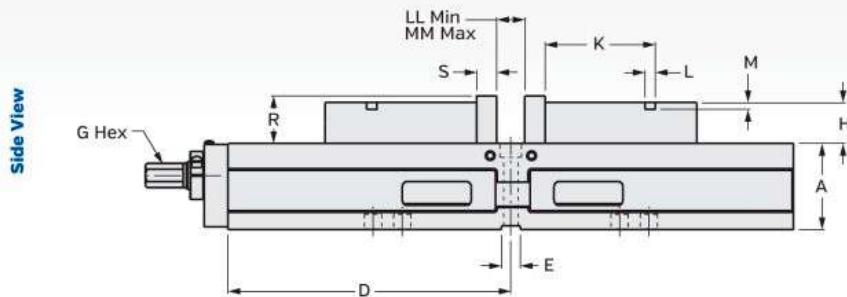
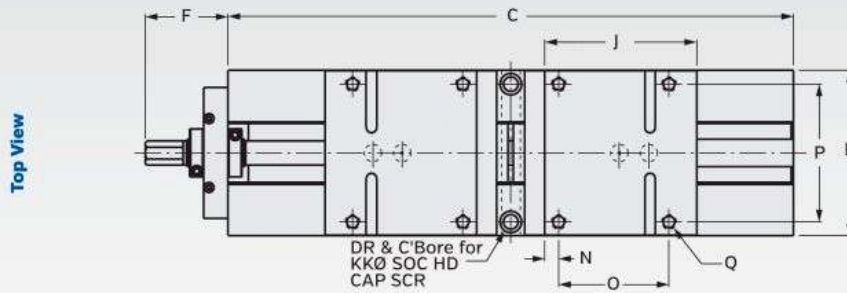
**Self-Centering Vise****Models: SCD430 | SCD640**

Kurt has two Self-Centering vises, a 4" jaw width [SCD430] and a 6" jaw width [SCD640]. Jaw opening on the 4" model is 6.25" and 8" on the 6". Centering accuracy from minimum to maximum opening is 0.0006" with 0.0002" repeatability. Both movable jaws are AngLock design with zero lift. A unique feature is an adjustment that allows the centerline of the jaws to be set. This is especially important when mounting several vises on one machine and all centerlines must match.

Features:

- Lip seals on main screw.
- Chip guards.
- Hardened jaws.
- Hardened bed ways.
- 80,000-PSI ductile iron construction.





VICE CLAMPING FORCE-LBS.

| Torque-Ft. Lbs. | SCD430 | SCD640 |
|-----------------|--------|--------|
| 10 | 500 | 985 |
| 20 | 1,100 | 1,760 |
| 30 | 1,800 | 2,576 |
| 40 | 2,500 | 3,770 |
| 50 | 3,300 | 4,382 |
| 60 | 4,100 | 5,764 |

Dimensional Data

| | SCD430 | SCD640 |
|-------------|---------|---------|
| A | 2.375 | 3.125 |
| B | 4.000 | 6.000 |
| C | 15.500 | 20.500 |
| D | 7.750 | 10.250 |
| E | 0.5005 | 0.6880 |
| F | 2.400 | 3.000 |
| G | 9/16 | 3/4 |
| H | 1.115 | 1.485 |
| J | 4.000 | 5.500 |
| K | 3.000 | 4.000 |
| L | 0.250 | 0.375 |
| M | 0.188 | 0.250 |
| N | 0.312 | 0.500 |
| O | 3.000 | 4.000 |
| P | 3.312 | 5.000 |
| Q | 5/16-18 | 1/2-13 |
| R | 1.235 | 1.735 |
| S | 0.547 | 0.725 |
| T | 0.687 | 0.940 |
| U | 2.500 | 3.875 |
| V | 3/8-16 | 1/2-13 |
| W | 0.871 | 1.156 |
| X | 0.690 | 0.880 |
| Y | 0.700 | 0.850 |
| Z | 0.250 | 0.360 |
| AA | 0.550 | 0.690 |
| BB | 1.000 | 1.470 |
| CC | 0.813 | 1.188 |
| DD | 3.750 | 5.500 |
| EE | 5.000 | 5.000 |
| FF | 3.370 | 3.937 |
| GG | 0.625 | 0.625 |
| HH | 0.630 | 0.630 |
| JJ | 5/16 | 3/8 |
| KK | 3/8 | 1/2 |
| LL | 1.000 | 1.000 |
| MM | 6.250 | 8.000 |
| NN | 5.540 | 7.240 |
| OO | 10.790 | 14.240 |
| PP | 10.090 | 13.470 |
| QQ | 15.340 | 20.470 |
| RR | 3.000 | 5.000 |
| Est. Weight | 40 Lbs | 100 Lbs |

Extra Capacity 6" XL Vises

Models: XL6 | XL6R | XL6H | XL6HR | XL6A | XL6AR



XL6 Manual Version



XL6R Manual Reverse Version

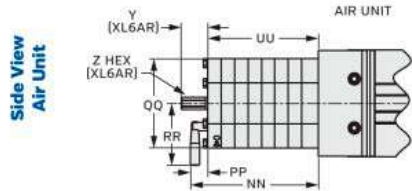
Kurt XL vises are designed for precision clamping of very large parts for both tool and die and production CNC applications. With up to a 28.750" jaw opening, these vises lock precisely, even for high horsepower "hogging out" operations. All sides of Kurt XL vises are accurate to within 0.001" for precise, easy alignment in multiples. XL vises may be mounted and used as receivers for other workholding devices.

Features:

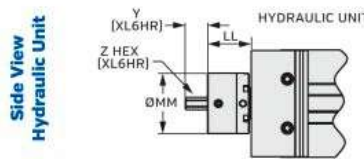
- AngLock design reduces jaw lift.
- 80,000-PSI ductile iron body.
- "Pull-Type" clamping means high precision and repeatability.
- Great for high horsepower "hogging out" applications.
- Reverse model reduces "reach-over" distance making part loading safer and easier for the operator. Also part programming is easier in the "Y" axis positive direction.
- Manual, air and hydraulic models available.
- Air and hydraulic feature a 1/4" stroke.
- Air power option provides a precise and repeatable "gentle touch" for delicate parts.
- Internal hex screw available.

XL6H and XL6HR

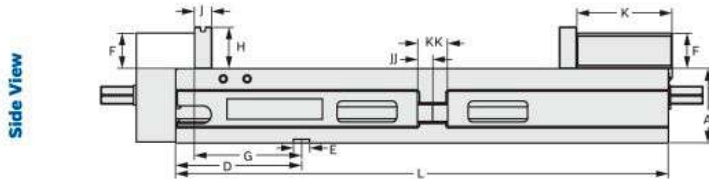
- New hydraulic model is capable of: Single acting with spring return for unclamp, or Double acting with hydraulic unclamp. Includes fittings for both configurations.
- Threaded ports on body: Female 1/8" NPT
- Included adapters: Male 1/8" NPT to Male #4 JIC, quantity of two



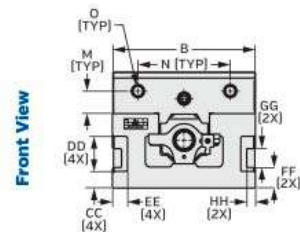
Side View Air Unit



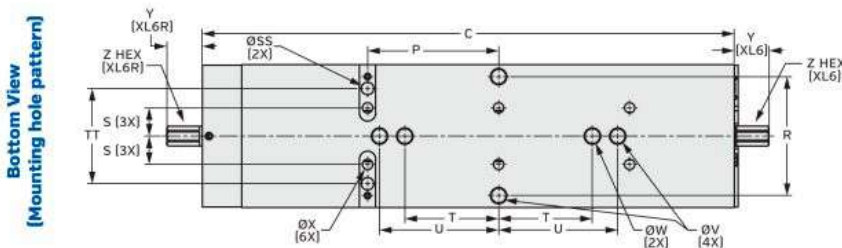
Side View Hydraulic Unit



Side View



Front View



Bottom View (Mounting hole pattern)

Vise Mounting Options - See page 76

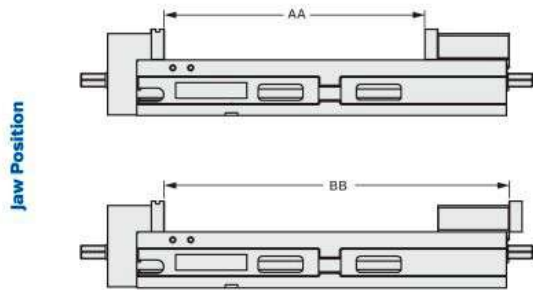
| | Dimensional Data | | | | | |
|--------------------------------|------------------|---------|-----------|-------------------|---------|-------------|
| | Standard | Reverse | Hydraulic | Hydraulic Reverse | Air | Air Reverse |
| | XL6 | XL6R | XL6H | XL6HR | XL6A | XL6AR |
| A | 3.125 | 3.125 | 3.125 | 3.125 | 3.125 | 3.125 |
| B | 6.000 | 6.000 | 6.000 | 6.000 | 6.000 | 6.000 |
| C | 22.40 | 22.40 | 22.40 | 22.40 | 22.40 | 22.40 |
| D | 5.287 | 5.287 | 5.287 | 5.287 | 5.287 | 5.287 |
| E | 0.688 | 0.688 | 0.688 | 0.688 | 0.688 | 0.688 |
| F | 1.485 | 1.485 | 1.485 | 1.485 | 1.485 | 1.485 |
| G | 4.500 | 4.500 | 4.500 | 4.500 | 4.500 | 4.500 |
| H | 1.735 | 1.735 | 1.735 | 1.735 | 1.735 | 1.735 |
| J | 0.725 | 0.725 | 0.725 | 0.725 | 0.725 | 0.725 |
| K | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| L | 20.68 | 20.68 | 20.68 | 20.68 | 20.68 | 20.68 |
| M | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| N | 3.875 | 3.875 | 3.875 | 3.875 | 3.875 | 3.875 |
| O | 1/2-13 | 1/2-13 | 1/2-13 | 1/2-13 | 1/2-13 | 1/2-13 |
| P | 5.500 | 5.500 | 5.500 | 5.500 | 5.500 | 5.500 |
| R | 5.000 | 5.000 | 5.000 | 5.000 | 5.000 | 5.000 |
| S | 1.188 | 1.188 | 1.188 | 1.188 | 1.188 | 1.188 |
| T | 100 MM | 100 MM | 100 MM | 100 MM | 100 MM | 100 MM |
| U | 5.000 | 5.000 | 5.000 | 5.000 | 5.000 | 5.000 |
| V | 0.625 | 0.625 | 0.625 | 0.625 | 0.625 | 0.625 |
| W | 16 MM | 16 MM | 16 MM | 16 MM | 16 MM | 16 MM |
| X | 0.438 | 0.438 | 0.438 | 0.438 | 0.438 | 0.438 |
| Y | 1.500 | 1.500 | 1.500 | 1.500 | 1.500 | 1.500 |
| Z | 0.750 | 0.750 | 0.750 | 0.625 | 0.750 | 0.625 |
| AA | 14.50 | 14.50 | 14.50 | 14.50 | 14.50 | 14.50 |
| BB | 19.25 | 19.25 | 19.25 | 19.25 | 19.25 | 19.25 |
| CC | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 | 0.69 |
| DD | 1.47 | 1.47 | 1.47 | 1.47 | 1.47 | 1.47 |
| EE | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| FF | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 | 0.85 |
| GG | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 | 0.80 |
| HH | 0.375 | 0.375 | 0.375 | 0.375 | 0.375 | 0.375 |
| JJ | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 | 0.63 |
| KK | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 | 1.25 |
| LL | - | - | 2.500 | 2.500 | - | - |
| MM | - | - | 3.38 | 3.38 | - | - |
| NN | - | - | - | - | 7.20 | 7.20 |
| PP | - | - | - | - | 1.00 | 1.00 |
| QQ | - | - | - | - | 5.00 | 5.00 |
| RR | - | - | - | - | 3.50 | 3.50 |
| SS | 0.531 | 0.531 | 0.531 | 0.531 | 0.531 | 0.531 |
| TT | 4.000 | 4.000 | 4.000 | 4.000 | 4.000 | 4.000 |
| UU | - | - | - | - | 6.187 | 6.187 |
| Weight | 100 Lbs | 100 Lbs | 105 Lbs | 105 Lbs | 106 Lbs | 106 Lbs |
| Hydraulic Displacement Cu. In. | - | - | 0.69 | 0.69 | - | - |

| Vise Clamping Force-Lbs. | | |
|--------------------------|--------|-------|
| Manual Torque Ft.-Lbs. | Manual | |
| | XL6 | XL6R |
| 10 | 786 | 786 |
| 20 | 1,800 | 1,800 |
| 30 | 2,508 | 2,508 |
| 40 | 3,423 | 3,423 |
| 50 | 4,210 | 4,210 |
| 60 | 5,020 | 5,020 |
| 70 | 6,287 | 6,287 |
| 80 | 6,884 | 6,884 |

| Vise Clamping Force-Lbs. | | |
|--------------------------|-----------|-------|
| Hydraulic PSI | Hydraulic | |
| | XL6H | XL6HR |
| 400 | 900 | 900 |
| 800 | 1,525 | 1,525 |
| 1,200 | 2,750 | 2,750 |
| 1,600 | 3,650 | 3,650 |
| 2,000 | 4,600 | 4,600 |
| 2,400 | 5,500 | 5,500 |
| 2,800 | 6,425 | 6,425 |
| 3,200 | 7,350 | 7,350 |

Note: Clamping force is only estimated

| Vise Clamping Force-Lbs. | | |
|--------------------------|-------|-------|
| Air PSI | Air | |
| | XL6A | XL6AR |
| 10 | 320 | 320 |
| 20 | 840 | 840 |
| 30 | 1,280 | 1,280 |
| 40 | 1,780 | 1,780 |
| 50 | 2,200 | 2,200 |
| 60 | 2,720 | 2,720 |
| 70 | 3,240 | 3,240 |
| 80 | 3,800 | 3,800 |
| 90 | 4,380 | 4,380 |
| 100 | 5,000 | 5,000 |





8XLPTLSS Manual Version

Extra Capacity 8" XL Vises

Kurt XL vises are designed for precision clamping of very large parts for both tool and die and production CNC applications. With up to a 28.750" jaw opening, these vises lock precisely, even for high horsepower "hogging out" operations. All sides of Kurt XL vises are accurate to within 0.001" for precise, easy alignment in multiples. XL vises may be mounted and used as receivers for other workholding devices.

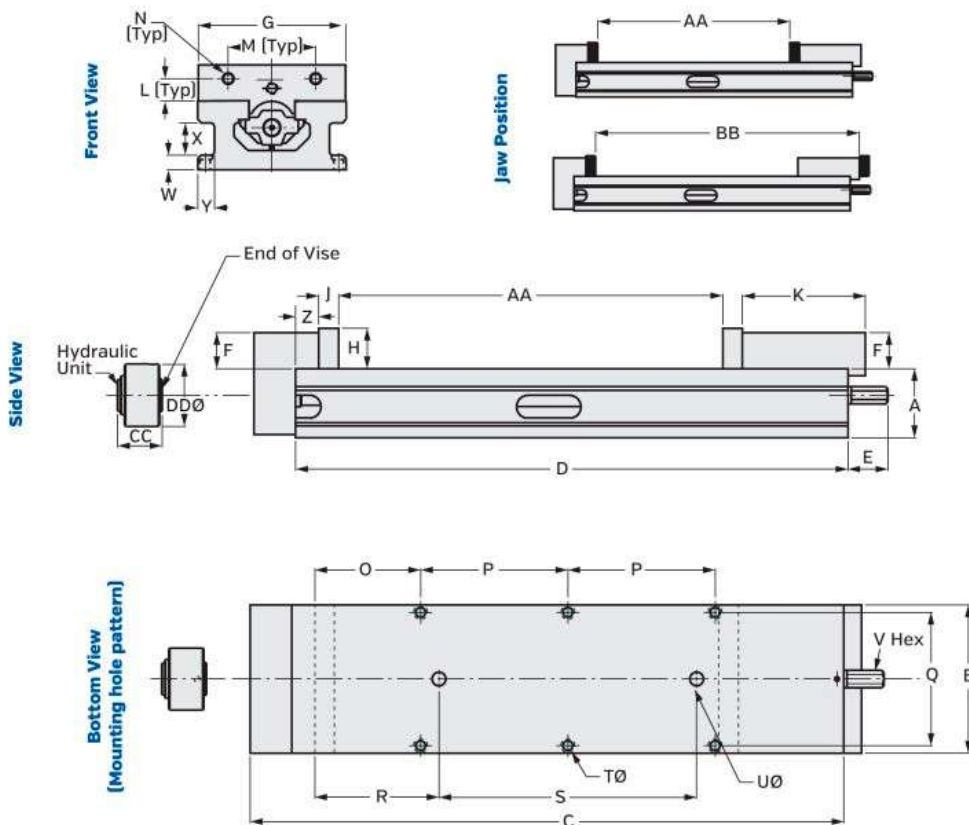
Features:

- AngLock design reduces jaw lift.
- 80,000-PSI ductile iron body.
- "Pull-Type" clamping means high precision and repeatability.
- Great for high horsepower "hogging out" applications.
- Reverse model reduces "reach-over" distance making part loading safer and easier for the operator. Also part programming is easier in the "Y" axis positive direction.
- Manual, air and hydraulic models available.
- Air and hydraulic feature a 1/4" stroke.
- Air power option provides a precise and repeatable "gentle touch" for delicate parts.
- Internal hex screw available.

8XLPTLSHS and 8XLPTLSHR

- New hydraulic model is capable of: Single acting with spring return for unclamp, or Double acting with hydraulic unclamp. Includes fittings for both configurations.
- Threaded ports on body; Female 1/8" NPT
- Included adapters: Male 1/8" NPT to Male #4 JIC, quantity of two

Standard (S)



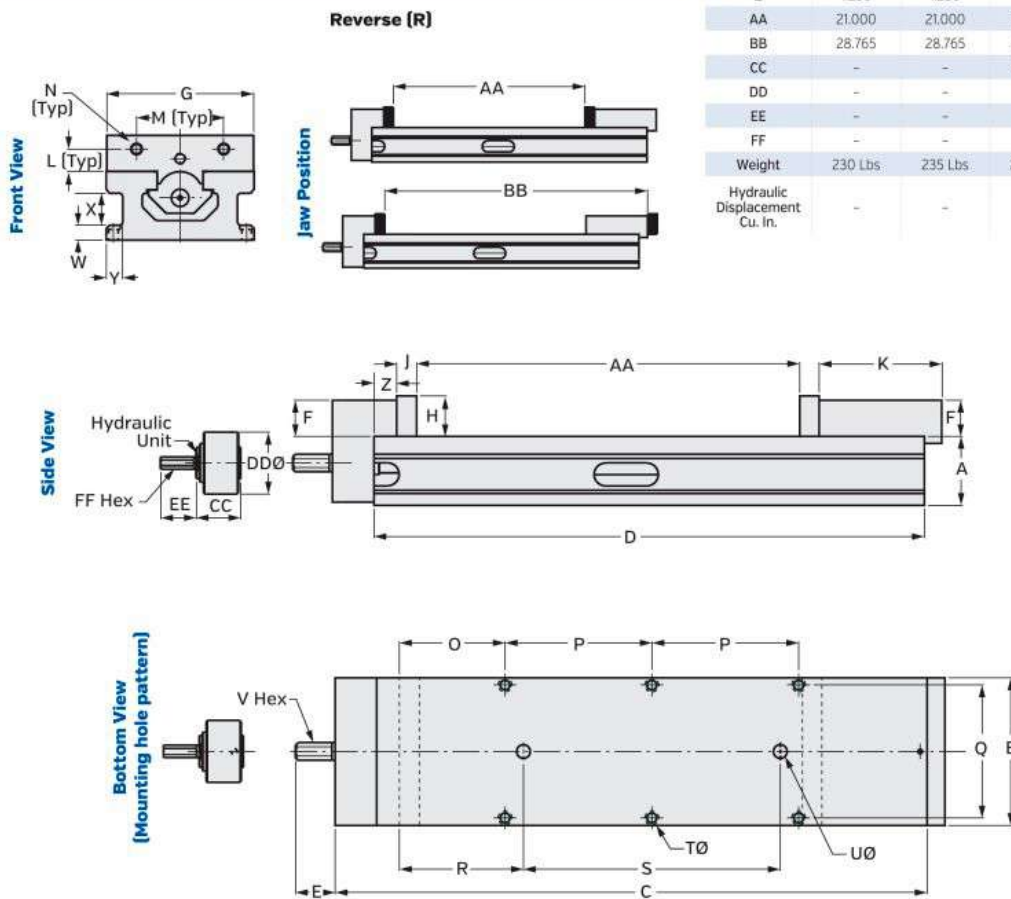
| Vise Clamping Force-Lbs. | | |
|--------------------------|-----------|-----------|
| Hydraulic PSI | Hydraulic | |
| | 8XLPTLSHS | 8XLPTLSHR |
| 400 | 900 | 900 |
| 800 | 1,525 | 1,525 |
| 1,200 | 2,750 | 2,750 |
| 1,600 | 3,650 | 3,650 |
| 2,000 | 4,600 | 4,600 |
| 2,400 | 5,500 | 5,500 |
| 2,800 | 6,425 | 6,425 |
| 3,200 | 7,350 | 7,350 |

Note: Clamping force is only estimated

| Vise Clamping Force-Lbs. | | |
|------------------------------|----------|----------|
| Manual Torque Ft.-Lbs. | Manual | |
| | 8XLPTLSS | 8XLPTLSR |
| 20 | 2,904 | 2,904 |
| 40 | 5,664 | 5,664 |
| 60 | 7,872 | 7,872 |
| 80 | 10,824 | 10,824 |
| 100 | 13,848 | 13,848 |
| 120 | 16,632 | 16,632 |
| 140 | 19,008 | 19,008 |
| 160 | 20,376 | 20,376 |

| | Dimensional Data | | | |
|--------------------------------------|------------------|----------|-----------|-----------|
| | Manual | | Hydraulic | |
| | 8XLPTLSS | 8XLPTLSR | 8XLPTLSHS | 8XLPTLSHR |
| A | 3.750 | 3.750 | 3.750 | 3.750 |
| B | 8.060 | 8.060 | 8.060 | 8.060 |
| C | 32.250 | 32.250 | 32.250 | 32.250 |
| D | 30.000 | 30.000 | 30.000 | 30.000 |
| E | 2.170 | 1.890 | 2.160 | - |
| F | 1.965 | 1.965 | 1.965 | 1.965 |
| G | 8.000 | 8.000 | 8.000 | 8.000 |
| H | 2.200 | 2.200 | 2.200 | 2.200 |
| J | 1.075 | 1.075 | 1.075 | 1.075 |
| K | 6.690 | 6.690 | 6.690 | 6.690 |
| L | 1.220 | 1.220 | 1.220 | 1.220 |
| M | 4.750 | 4.750 | 4.750 | 4.750 |
| N | 5/8-11 | 5/8-11 | 5/8-11 | 5/8-11 |
| O | 5.750 | 5.750 | 5.750 | 5.750 |
| P | 8.000 | 8.000 | 8.000 | 8.000 |
| Q | 7.250 | 7.250 | 7.250 | 7.250 |
| R | 6.750 | 6.750 | 6.750 | 6.750 |
| S | 14.000 | 14.000 | 14.000 | 14.000 |
| T | 1/2 | 1/2 | 1/2 | 1/2 |
| U | 0.750 | 0.750 | 0.750 | 0.750 |
| V | 7/8 | 3/4 | 7/8 | - |
| W | 0.810 | 0.810 | 0.810 | 0.810 |
| X | 1.750 | 1.750 | 1.750 | 1.750 |
| Y | 0.900 | 0.900 | 0.900 | 0.900 |
| Z | 1.250 | 1.250 | 1.250 | 1.250 |
| AA | 21.000 | 21.000 | 21.000 | 21.000 |
| BB | 28.765 | 28.765 | 28.765 | 28.765 |
| CC | - | - | 2.500 | 2.500 |
| DD | - | - | 3.375 | 3.375 |
| EE | - | - | - | 1.940 |
| FF | - | - | - | 5/8 |
| Weight | 230 Lbs. | 235 Lbs. | 230 Lbs. | 235 Lbs. |
| Hydraulic Displacement Cu. In. | - | - | 0.69 | 0.69 |

**Note: Keyway slots
can be machined in.
Call CEW group for
quotation 1-877-226-7823**





Stationary jaw MLS351

MoveLock Modular System

This high precision two-piece vise is the first of its type to utilize the famous Kurt AngLock concept to prevent jaw lift during clamping. As power is applied to the piston, it is driven forward to locate on an internal segment. While the lateral force is clamping the part, downward pressure is being applied to the movable jaw, which minimizes or prevents part lift. For every pound of clamping force on the jaw, there is a half pound of force exerted down on the movable jaw.

Features:

- Movable and stationary jaws sold separately.
- Movable jaws are available in either manual or hydraulic actuation.
- May be used as a single or double station vise, and can be mounted side by side.
- Can be configured into high density fixturing. [See SeraLock pages 60-61]
- Features a 5/16" stroke.
- Mounts on a 2" x 2" grid system, T-slot sub-bases with a 2" pitch, standard sub-plates and machine tables and SeraLock system.
- Clamps large workpieces - jaw opening limited only by the work envelope.
- Light weight.
- Small footprint - 3.500" jaw width.
- Patented

Special jaw plates and workstops are available. Contact the factory for pricing and availability.



Manual Movable Jaw ML35

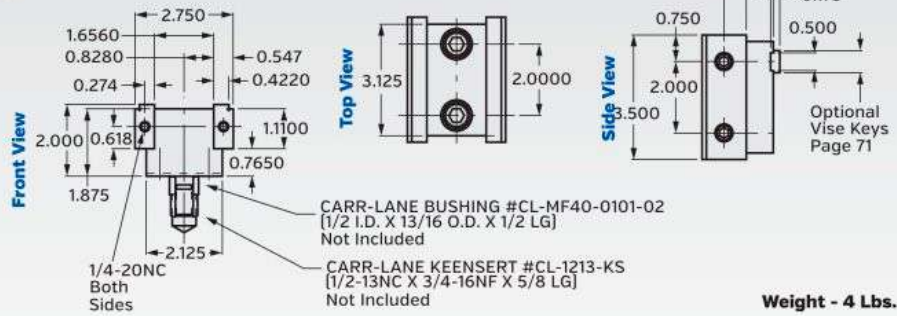


Hydraulic Movable Jaw MLH35

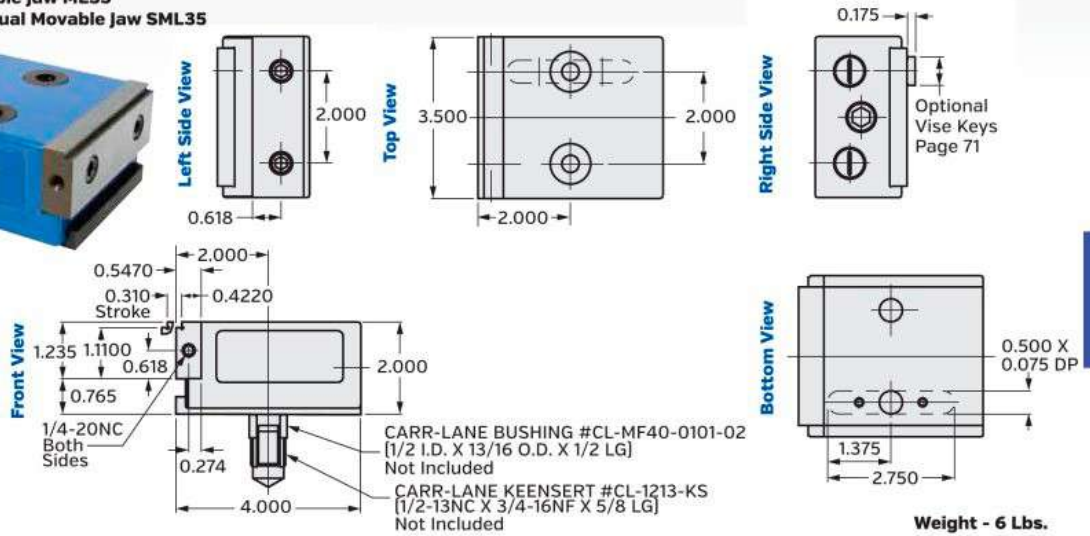
| MLH35 Hydraulic Pressure To Clamping Force Chart | | ML35 Torque/Clamping Force Chart | |
|--|----------------------|----------------------------------|----------------------|
| Hyd. Pressure (PSI) | Clamping Force (Lbs) | Torque (Ft Lbs) | Clamping Force (Lbs) |
| 400 | 200 | 5 | 750 |
| 800 | 500 | 10 | 1,550 |
| 1,200 | 850 | 15 | 2,600 |
| 1,600 | 1,200 | 20 | 3,550 |
| 2,000 | 1,550 | 25 | 4,450 |
| 2,400 | 1,850 | 30 | 5,400 |
| 2,800 | 2,150 | 35 | 6,300 |
| 3,200 | 2,500 | 40 | 6,900 |



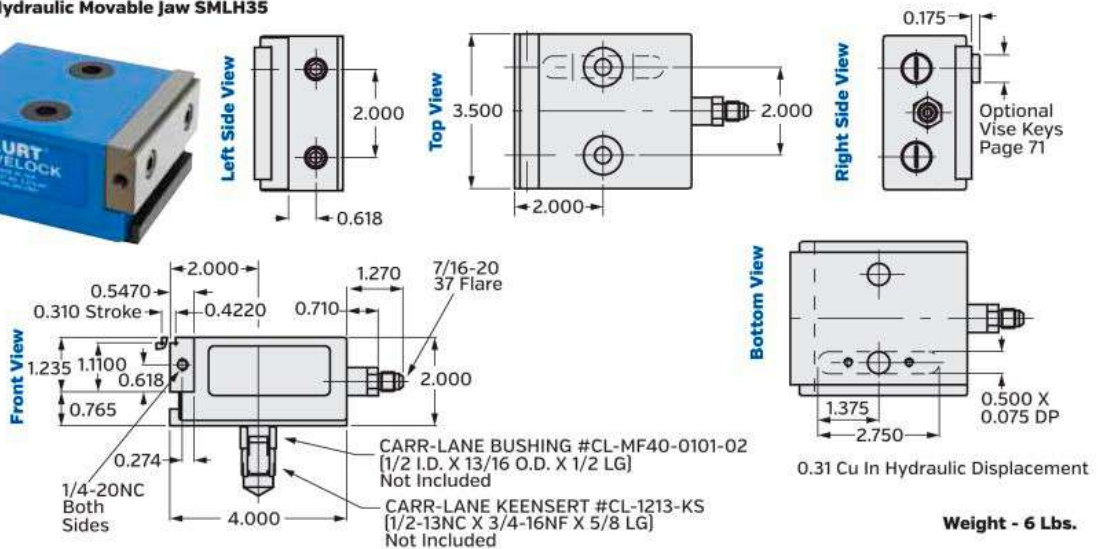
Stationary Jaw MLS351 Serrated Stationary Jaw SMLS351



Manual Movable Jaw ML35 Serrated Manual Movable Jaw SML35



Hydraulic Movable Jaw MLH35 Serrated Hydraulic Movable Jaw SMLH35





SeraLock® Foundations
SeraLock Tower Options

The SeraLock Towers, SeraLock Pallets, WedgeLock Module system and MoveLock Modular System are the latest innovation for achieving high density, highly repeatable part clamping.

SeraLock Towers and SeraLock Pallets are designed with interlocking "V" shaped serrated surfaces for precise and repeatable alignment of WedgeLock and MoveLock clamping modules.

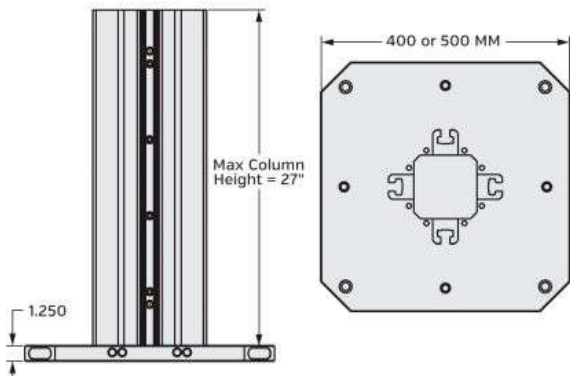
SeraLock Towers are available in four sided, two sided and single sided towers with a base that will mount to your HMC or an indexer for VMC applications. SeraLock pallets are available in sizes that will accommodate most vertical machining centers. A custom, high density workholding system can be configured quickly when our WedgeLock modular system of single and double sided clamping jaws are used with the SeraLock Tower or SeraLock Pallet.

SeraLock features:

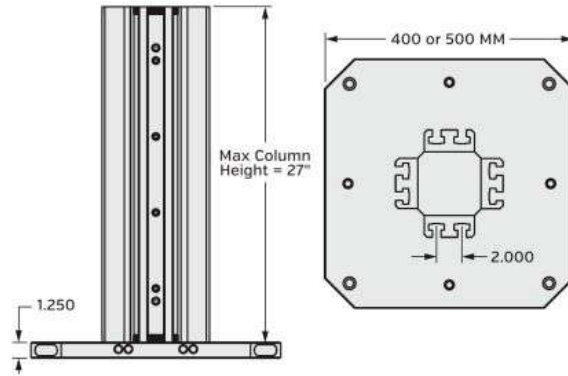
- Self-aligning.
- Multiple components may be used at the same time.
- Like and unlike workpieces may be machined all in the same setup.
- Mix and match components.
- Allows creation of the equivalent of a custom fixture in less time than the custom fixture can be designed.
- Modular components can be used over and over again.
- Very economical.



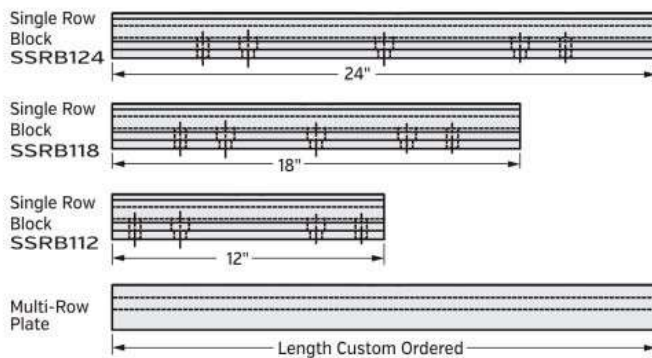
Tower & Base Options (Single)



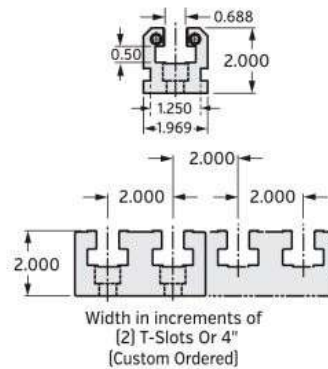
Tower & Base Options (Double)



Pallet Length Options



Pallet T-Slot Options

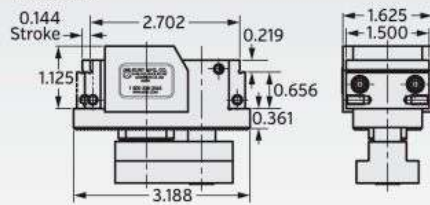


Serrated WedgeLock Clamping Modules

WedgeLock Clamping Options

SWSC1 Single Clamp

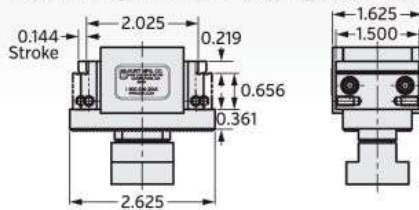
1.25 Wide Body. Contains stationary jaw on one side and movable jaw on back side.



SWSC1

SWDC1 Double Clamp

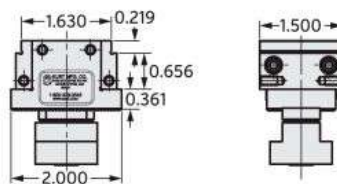
1.25 Wide Body. Contains two movable jaws. Used with stationary block to become a high density workholding solution. Clamp two parts with one screw.



SWDC1

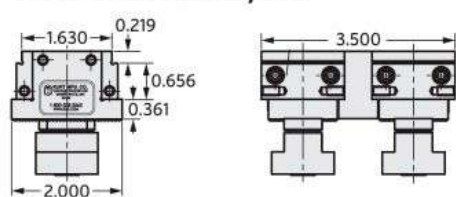
SWSB1 Stationary Block

1.25 Wide Body. Used with single or double clamp.



SWSB1

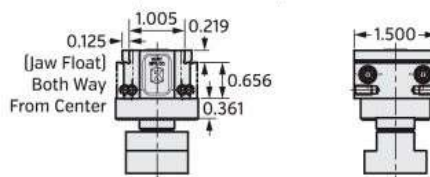
SWDSB1 Double Stationary Block



SWDSB1

SWDJ1 Dividing Jaw

1.25 Wide Body. Use in between movable and stationary jaw when milling several identical parts. Jaw floats to accommodate slight part difference. Allows several parts to be clamped with one movable jaw.

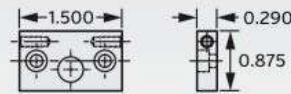


SWDJ1

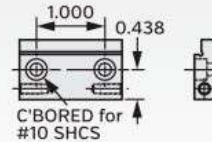
Jaw Plates

Standard Length

SW1-7-SAMAG Flat Jaw Plate w/Magnet



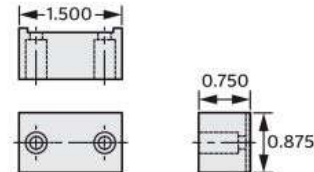
SWSC1-32A Stepped/Reversible jaw Plate



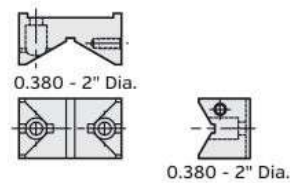
SW1-47-SAMAG Serrated Jaw Plate w/Magnet



SW1-317 Carvable/Reversible Aluminum Jaw Plate



SW1-237 "V" Jaw Plate



| Clamping Force | |
|----------------|------------|
| Ft. Lbs. | Lbs. Force |
| 5 | 550 |
| 10 | 870 |
| 20 | 1,590 |
| 30 | 2,300 |
| 40 | 3,000 |



MoveLock System

see page 58

Parallels

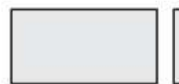
Standard Length



SW1-337.1
0.125 x 0.500 x 1.500



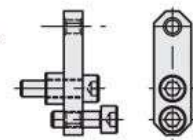
SW1-337.2
0.125 x 0.625 x 1.500



SW1-337.3
0.125 x 0.750 x 1.500

Workstops

SW1RWS Reversible Workstop





MiniLock

Unlike many competitive cam action models, this product employs the same AngLock concept as the world famous Kurt vises. When a quarter turn is applied to the screw, the split clamp jaw is forced both laterally and down, precisely clamping the part and preventing part lift at the same time. In-house tests showed zero lift when the MiniLock was used in several grinding operations.

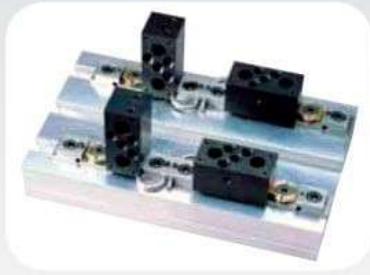
Models: {Inch}
MT4 | MT5 | MT6 | MT8

Models: {Metric}
MTM4 | MTM5 | MTM6 | MTM8

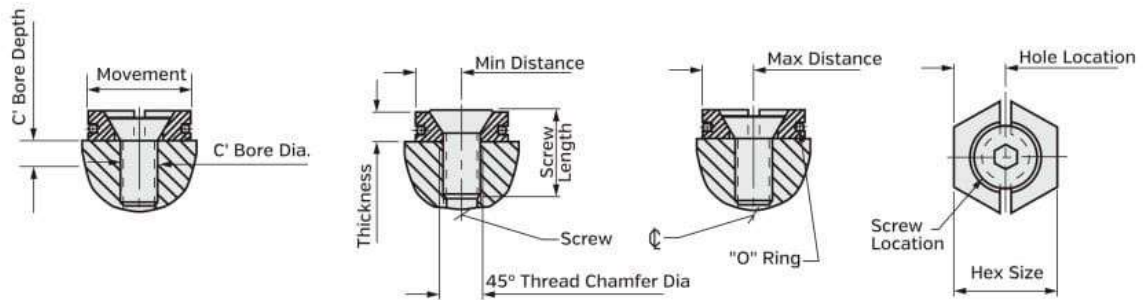
Features:

- By using stationary blocks or pins, two parts may be clamped by a single MiniLock.
- The versatile MiniLock can be used in single holding, double holding or multiples of both single and double holding applications.
- Ideal for dedicated fixturing as well as for palletizing small parts to be loaded into receivers on machine tables.
- Through the use of a variety of locating blocks, workstops and MiniLocks, several similar parts or a part "family" can be located on a single pallet.
- Clamping jaw made from rugged Ampco 18 aluminum bronze.
- Actuating screw is made from a special alloy steel.
- While one pallet of parts is being machined, the operator can be unloading and loading a second similarly configured pallet away from the machine tool.
- Steps may be machined into the clamp jaw for operations that require parts to be raised above the pallet or machine table.
- The low profile allows for machining of complete top surfaces of parts without having to re-clamp.
- Conveniently uses standard thread sizes and standard hex keys.
- One MiniLock package contains six MiniLocks.
- Patented





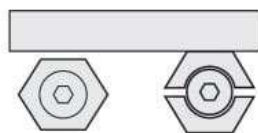
| Model Number | Hex Size | Hex Thickness | Screw Size | Hex Wrench Size | Screw Length | Suggested Tapped Hole Location From Edge of Part | Min. Distance From Screw CL | Max. Distance From Screw CL | 45° Thread Chamfer Dia. | Max part Size Differential Double Clamp | Optional C'Bored Tapped hole use for Larger part Tolerance Differential | | | | Torque Ft. Lb. | Clamping Force Lbs. |
|----------------------|----------|---------------|------------|-----------------|--------------|--|-----------------------------|-----------------------------|-------------------------|---|---|-------------------------------|---|---------------------------|----------------|---------------------|
| | | | | | | | | | | | C'Bore Dia. +0.015-0.005 (-0.39-0.13mm) | C'Bore Depth +0.020 (-0.50mm) | Max part Size Differential Double Clamp | Approx. Thread Engagement | | |
| Inch Models | | | | | | | | | | | | | | | | |
| MT4 | 0.688 | 0.188 | 1/4-20 | 0.156 | 0.625 | 0.324 | 0.308 | 0.350 | 0.300 | 0.010 | 0.281 | 0.156 | 0.020 | 0.250 | 11 | 987 |
| MT5 | 0.875 | 0.250 | 5/16-18 | 0.188 | 0.750 | 0.412 | 0.384 | 0.442 | 0.368 | 0.010 | 0.344 | 0.203 | 0.020 | 0.283 | 18 | 1,400 |
| MT6 | 0.938 | 0.312 | 3/8-16 | 0.218 | 1.000 | 0.439 | 0.400 | 0.482 | 0.437 | 0.010 | 0.406 | 0.375 | 0.020 | 0.307 | 30 | 2,200 |
| MT8 | 1.125 | 0.375 | 1/2-13 | 0.312 | 1.250 | 0.528 | 0.492 | 0.584 | 0.500 | 0.010 | 0.531 | 0.468 | 0.020 | 0.384 | 83 | 2,600 |
| Metric Models | | | | | | | | | | | | | | | | |
| MTM4 | 17.476 | 4.776 | M6 x 1 | 3.963 | 15.875 | 8.230 | 7.824 | 8.890 | 7.620 | 0.254 | 7.138 | 3.963 | 0.508 | 6.350 | 11 | 987 |
| MTM5 | 22.250 | 6.350 | M8 x 1.25 | 4.776 | 19.050 | 10.465 | 9.754 | 11.227 | 9.348 | 0.254 | 8.738 | 5.157 | 0.508 | 7.189 | 18 | 1,400 |
| MTM6 | 23.826 | 7.925 | M10 x 1.5 | 5.538 | 25.400 | 11.151 | 10.160 | 12.243 | 11.100 | 0.254 | 10.313 | 9.525 | 0.508 | 7.798 | 30 | 2,200 |
| MTM8 | 28.575 | 9.525 | M12 x 1.75 | 7.925 | 31.750 | 13.412 | 12.497 | 14.834 | 12.700 | 0.254 | 13.488 | 11.888 | 0.508 | 9.754 | 83 | 2,600 |



Option:

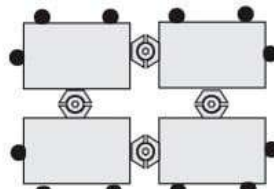
To allow a greater differential between workpieces, it is suggested you create a thread free zone to allow more sideways movement for the screw head.

Important Notice: Full thread is required when MiniLock is used clamping only on one side.



MiniLock before tightening clamp screw

MiniLock after tightening clamp screw



Clamp multiple parts with several MiniLocks and workstops.



Three MiniLocks used to clamp one larger part.



PinLock™ Mounting System

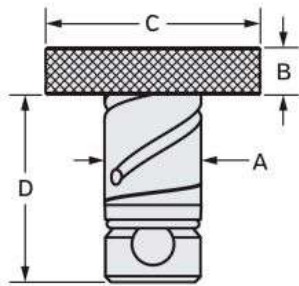
Locating and Clamping Shanks:

The PinLock system is designed to reduce time spent accurately positioning and clamping fixture plates and subplates. A system requires a minimum of two PinLock locators, a primary and a secondary locator. Or two primary bushings can be used to achieve higher accuracy. Liner bushings are used to reduce wear on fixture plates. Receiver bushings are used with the PinLock for locating and clamping. For larger subplates additional PinLocks may be used where higher holding force is required. Additional clearance is required on these PinLocks so as not to influence the primary and secondary locators.

Features

- Extraction assist for side load conditions.
- Compatible with existing systems.
- Material : Shank/Bushing, high strength alloy steel
- Finish: Black Oxide
- Heat Treat: Shanks, RC 46-50
Bushings, RC 46-50
Liners, RC 46-50
Pins, RC 56-60
- Operating Temperature Range
-49° to 400°F
- Patent #8,720,874

PinLock features a helical extraction design. This feature aids in overcoming binding in side load conditions and enhances the removal of the PinLock in any application.



Locating and Clamping Shank Dimensions

| Part Number | Shank Diameter (mm) A | Fixture Plate Thickness ±0.005 | Head of Shank | | Length Under Head D | Hex Wrench Size for Set Screw | Hex Wrench Size for Removal | Recommended | |
|-------------|-----------------------|--------------------------------|---------------|------------|---------------------|-------------------------------|-----------------------------|-----------------------|-----------------------|
| | | | Height B | Diameter C | | | | Screw Torque (In/Lbs) | Hold-Down Force (Lbs) |
| PL16-050 | 16 | 0.50 | 0.31 | 1.38 | 1.15 | 5/32 | 3/8 | 24 | 1,200 |
| PL16-075 | | 0.75 | | | 1.40 | | | | |
| PL20-075 | 20 | 0.75 | 0.38 | 1.75 | 1.53 | 5/32 | 3/8 | 55 | 2,250 |
| PL20-100 | | 1.00 | | | 1.78 | | | | |
| PL25-075 | 25 | 0.75 | 0.38 | 2.00 | 1.70 | 5/32 | 3/8 | 200 | 5,444 |
| PL25-100 | | 1.00 | | | 1.95 | | | | |



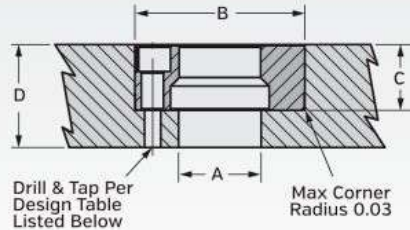
Back Mount



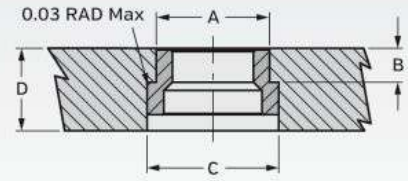
Face Mount

Back Mount and Face Mount styles of receiver bushings are available. Generally, the Face Mount receiver bushing is utilized in blind hole applications (Slip Fit). The Back Mount receiver bushing is used in applications for through hole (Light Press Fit).

Note: Both type of bushings should be installed approximately 0.012" below subplate surface.



Face Mount Bushing Installation Instructions



Back Mount Bushing Installation Instructions

Installation Dimension

Face Mount

| Part Number | Shank Dia. (mm) | Actual O.D. +0.0000 -0.0004 | Clearance Drill Diameter A | Bore +0.0005 -0.0000 B | Depth +0.002 -0.000 C | Tap Size & Depth H | Bolt Circle Diameter 3 PL Equally Spaced | Min. Subplate Thickness D |
|-------------|-----------------|-----------------------------|----------------------------|------------------------|-----------------------|--------------------|--|---------------------------|
| PL16RBF | 16 | 1.4370 | 13/16 | 1.4370 | 0.470 | 8-32x5/16 | 1.125 | 13/16 |
| PL20RBF | 20 | 1.6873 | 13/16 | 1.6873 | 0.637 | 10-32x3/8 | 1.362 | 1-1/8 |
| PL25RBF | 25 | 2.0623 | 1 | 2.0623 | 0.799 | 1/4-28x1/2 | 1.644 | 1-1/4 |

Back Mount

| Part Number | Shank Dia. (mm) | Actual O.D. +0.0000 -0.0004 A | Depth +0.000 -0.002 B | C-Bore ±0.006 C | Min. Subplate Thickness D |
|-------------|-----------------|-------------------------------|-----------------------|-----------------|---------------------------|
| PL16RBB | 16 | 0.8760 | 0.281 | 1.156 | 3/4 |
| PL20RBB | 20 | 1.0950 | 0.345 | 1.280 | 7/8 |
| PL25RBB | 25 | 1.3763 | 0.416 | 1.593 | 1 |

Liner Bushings



Determining if one primary and one secondary or two primary liners are needed will depend on the locating repeatability. With two primary liners, repeatability of ±0.0005" will be maintained if the two holes for receiver bushings are held to a centerline distance of ±0.0002" tolerance.

| Fixture Plate Thickness ±0.005" | Shank Diameter (mm) | Primary Liner Part Number | Secondary Liner Part Number | Liner O.D. +0.0000" -0.0004" |
|---------------------------------|---------------------|---------------------------|-----------------------------|------------------------------|
| 0.50 | 16 | PL16LBP-050 | PL16LBS-050 | 1.0018 |
| 0.75 | 16 | PL16LBP-075 | PL16LBS-075 | 1.0018 |
| 0.75 | 20 | PL20LBP-075 | PL20LBS-075 | 1.3772 |
| 1.00 | 20 | PL20LBP-100 | PL20LBS-100 | 1.3772 |
| 0.75 | 25 | PL25LBP-075 | PL25LBS-075 | 1.3772 |
| 1.00 | 25 | PL25LBP-100 | PL25LBS-100 | 1.3772 |

Note on Installation of Press Fit Liners & Back Mount Style Receiver Bushings

To alleviate the possibility of binding the shank in the bore, the maximum interference fit between bore bushing O.D. should not exceed 0.0005".

PinLock Repair Kits

| Shank Diameter | Kurt Part Number |
|----------------|------------------|
| 16 mm | PL16-Kit 2 |
| 20 mm | PL20-Kit 2 |
| 25 mm | PL25-Kit 2 |



PLHT2 PinLock hex tool
Fold up hex key set for all 20-30 mm PinLock Clamping Assemblies

VB DockLock

The VB DockLock system is the original zero-point workholding system. The patented zero-point design increases productivity and reduces setup and changeover. The VB DockLock system integrates with new or existing workholding devices such as Kurt vises and fixtures, and provides fast, ultra accurate setup on machining centers. Time consuming setup, alignment and bolt down tasks are eliminated.

The system consists of a patented locking cylinder device that positions and locks the vise or fixture onto the machine worktable. It allows the user to locate or remove the workholding from a machine, or move it offline or to another machine and/or back again in just seconds with zero-point positioning accuracy every time. The system engages mechanically and disengages hydraulically or pneumatically.

For complete details request a copy of the VB DockLock catalog, or download a digital catalog at <http://www.kurtworkholding.com/downloads.php>

The leading zero-point workholding system on machining centers, proven in thousands of applications

Advantages:

- Set-up changes parallel to machining
- Work interruption possible at any time without losing "zero point"
- Zero-point repeat accuracy $\pm 0.0002"$
- 5 face processing without unclamping
- Further usage of existing fixtures
- Inexpensive plug for clamping and centering
- Dynamical, form-fit clamping
- Cylinders for direct integration into machine tables
- Built-in cylinders
- Built-in cylinders

Benefits:

- Lowers machine setup time by 90% and increases productivity
- Flexibility for urgent orders
- Interruption anytime without losing the zero-point
- Obstruction free machining
- Huge time and cost savings
- Simple mounting to fixtures, pallets or workpieces
- Improved surfaces, increased tool life and high security
- No distortion forces in the machining table
- Allow any configuration in spacing on plates, set-up tables and CMM's
- For a flexible arrangement on every machine

Comparison of average loss on set-up changes! (machining hour \$ 90.-)

Conventional

(a) Vise



20 min. \$30.-

(b) Fixture



40 min. \$60.-

with VB DockLock

(a) Vise



2 min. \$3.-

(b) Fixture



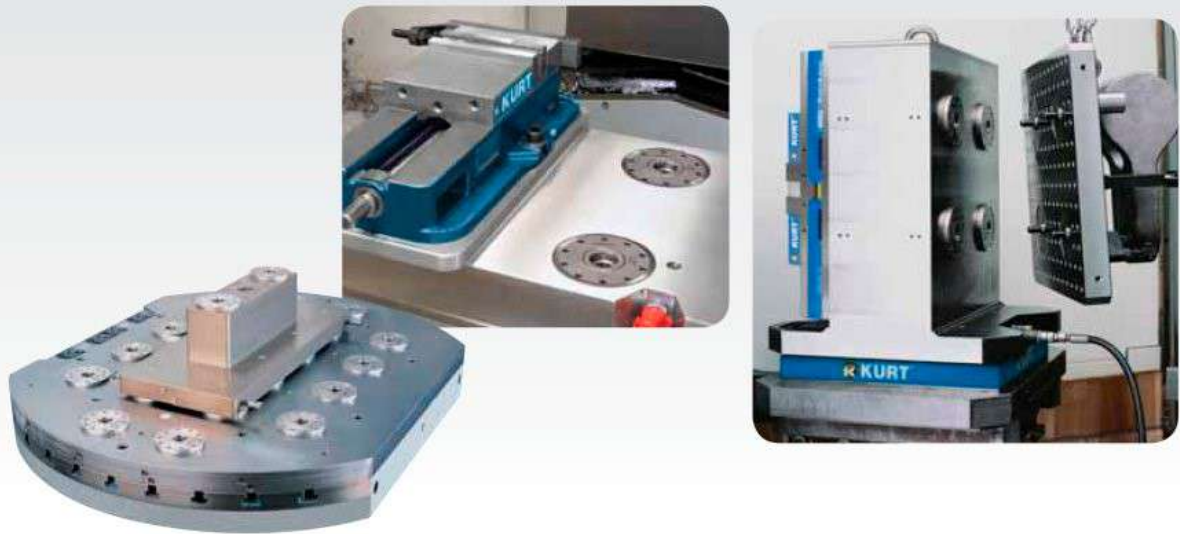
2 min. \$3.-

Increased efficiency with VB DockLock zero-point workholding system (assumption 200 working days) Based on Published Averages

| (a) With Vise | | Savings in One Year | |
|--------------------------|-----------|---------------------|------------|
| Savings \$27.00 | 1 Machine | 5 Machines | 5 Machines |
| With Every Change | 1 Shift | 1 Shift | 3 Shifts |
| 1 Set-Up Change Per Day | \$ 5,400 | \$ 27,000 | \$ 81,000 |
| 2 Set-Up Changes Per Day | \$ 10,800 | \$ 54,000 | \$ 162,000 |
| 4 Set-Up Changes Per Day | \$ 21,600 | \$ 108,000 | \$ 324,000 |

| (b) With Fixture | | Savings in One Year | |
|--------------------------|-----------|---------------------|------------|
| Savings \$57.00 | 1 Machine | 5 Machines | 5 Machines |
| With Every Change | 1 Shift | 1 Shift | 3 Shifts |
| 1 Set-Up Change Per Day | \$ 11,400 | \$ 57,000 | \$ 171,000 |
| 2 Set-Up Changes Per Day | \$ 22,800 | \$ 114,000 | \$ 342,000 |
| 4 Set-Up Changes Per Day | \$ 45,600 | \$ 228,000 | \$ 684,000 |

Only available through KURT in the Americas



Fixtures / workpieces



Plug mounting



Integrated cylinders

Base plate with built-in cylinders

Built-up cylinders



Machine level



DoveLock™ Quick Change Jaw System

Models available for 3.5", 4", 6", and 8" jaw widths

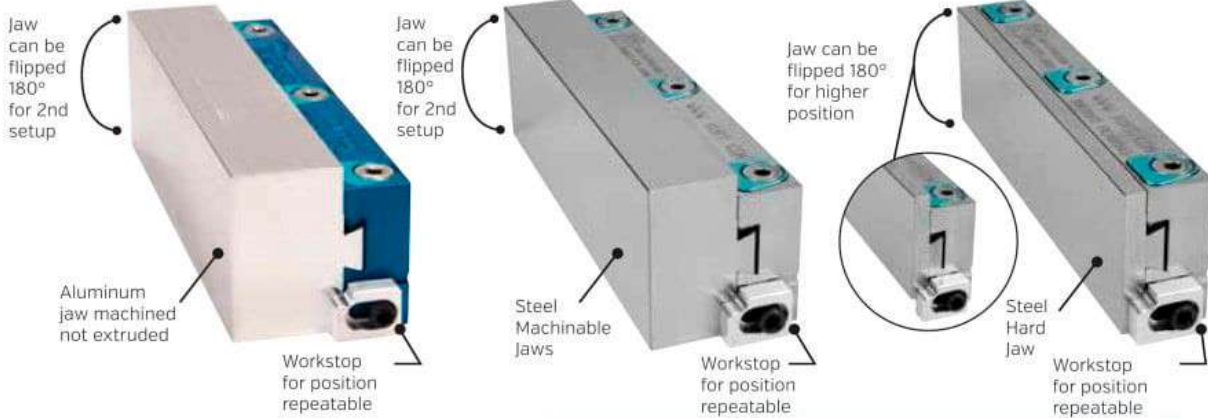
- Quick change for fast setups in under 1 minute. DoveLock jaws are changed from the top by loosening 3 quick-clamps. Jaws can be removed from the front or side.
- Workstop for position repeatability to $\pm 0.001"$.
- Aluminum jaws are machined not extruded.
- Jaws are machinable for part profile or steps.
- Jaws can be turned 180° to do 2 different setups.
- Master jaw set and jaw kits machined of 6061 aluminum. Steel master jaws and jaw kits are made of 4140 prehard.
- Patent Pending design.
- Fits all Kurt industry standard 3.5", 4", 6" & 8" vises and towers.

Master jaw set includes:

- 2 master jaws, 4 cap screws,
- T-handle hex key.

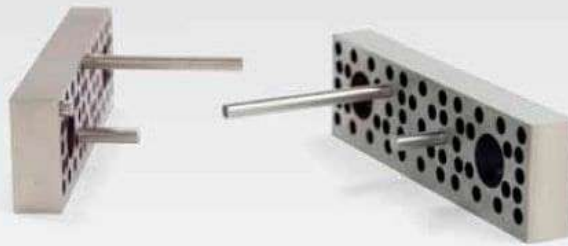
Jaw kits include:

- 2 jaws.



| Part Number | Length | Width | Height | Weight |
|--|--------|-------|--------|---------|
| 3.5" Al | | | | |
| DJ3.5 Master Jaw Kit | 3.500 | 0.630 | 1.250 | 1 Lb. |
| DL3.5AL-JAWKIT | 3.500 | 1.062 | 1.250 | 1 Lb. |
| 4" Aluminum | | | | |
| DJ4 Master Jaw Kit | 4.000 | 0.630 | 1.307 | 1 Lb. |
| DJ4SK Starter Jaw Kit | 4.000 | N/A | N/A | 3 Lbs. |
| DJ404AL-JAWKIT | 4.000 | 1.275 | 1.414 | 2 Lbs. |
| DL406AL-JAWKIT | 6.000 | 1.275 | 1.414 | 3 Lbs. |
| 6" Aluminum | | | | |
| DJ6 Master Jaw Kit | 6.000 | 0.775 | 1.725 | 2 Lbs. |
| DJ6M (Metric) Master Jaw Kit | 6.000 | 0.775 | 1.725 | 2 Lbs. |
| DJ6SK Starter Jaw Kit | 6.000 | N/A | N/A | 6 Lbs. |
| DJ606AL-JAWKIT | 6.000 | 1.250 | 1.980 | 4 Lbs. |
| DJ607AL-JAWKIT | 7.000 | 1.500 | 1.980 | 5 Lbs. |
| DJ608AL-JAWKIT | 8.000 | 1.500 | 1.980 | 6 Lbs. |
| DI610AL-JAWKIT | 10.000 | 1.500 | 1.980 | 7 Lbs. |
| 6" Steel | | | | |
| DJ6S Steel Master Jaw Kit | 6.000 | 0.775 | 1.725 | 4 Lbs. |
| DJ606S-JAWKIT Machinable Steel Jaw Kit | 6.000 | 1.000 | 1.980 | 7 Lbs. |
| DJ6STFJ-JAWKIT Steel Hard Jaw Kit | 6.000 | 0.250 | 1.715 | 2 Lbs. |
| 8" Aluminum | | | | |
| DJ8 Master Jaw Kit | 8.000 | 1.075 | 2.220 | 4 Lbs. |
| DJ8SK Starter Jaw Kit | 8.000 | N/A | N/A | 11 Lbs. |
| DJ808AL-JAWKIT | 8.000 | 1.475 | 2.450 | 7 Lbs. |
| DJ810AL-JAWKIT | 10.000 | 1.475 | 2.450 | 8 Lbs. |



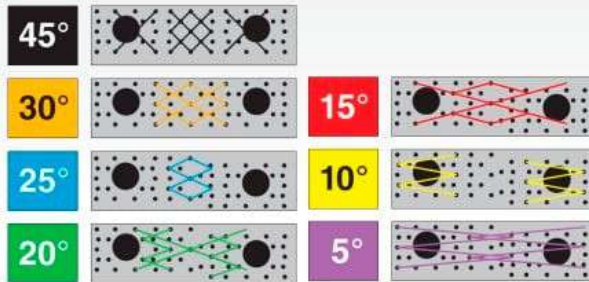


3-In-One System Jaw Plates

Models:
KSJ6 (for 6 inch vise)
KSJ8 (for 8 inch vise)

Features:

- Ideal for quick setups of common angle cuts.
- Preset patterns in jaws provide for these 7 popular angles: 5°, 10°, 15°, 20°, 25°, 30°, 45°.
- Tolerance between holes 0.0004" [0.01mm]
- Jaw dimensions:
KSJ6 6" x 1.735" x 0.725" ±0.000787" [±0.02mm]
KSJ8 8" x 2.20" x 1.075" ±0.000787" [±0.02mm]
- Pins Sets Included are:
 - 4 ea 6mm x 22mm
 - 3 ea 6mm x 40mm
 - 3 ea 6mm x 58mm
 - 3 ea 6mm x 76mm
- Pin Sets Dimensional Tolerance: ±0.0007" [0.018mm]
- Doubles as a convenient workstop, Triples as parallel. Does the work of 3 products.
- Made for Kurt in Sweden.
- Weights: **KSJ6** 4 lbs. / **KSJ8** 9 lbs.



InnerLock Jaw Plates



With the InnerLock jaw plates, it takes only 40 seconds to change. By minimizing down time, the unique reversible feature saves you money on the jaw plates. Each jaw plate can be mounted in two directions, giving you two jaw plates for the price of one. For instance, the plain jaw plate when in the inverted position has a step for holding small parts closer to the spindle. Our small through-hole design allows for greater gripping surface.

| InnerLock Individual jaws | 4" Vise | | 6" Vise | | 8" vise | |
|---------------------------------------|-----------|--------|-----------|--------|-----------|---------|
| Jaw Type | Part # | Weight | Part # | Weight | Part # | Weight |
| Single Step | AJ400-32 | 1 Lb. | AJ600-32 | 2 Lbs. | AJ800-32 | 6 Lbs. |
| Double Step | AJ400-236 | 1 Lb. | AJ600-236 | 2 Lbs. | AJ800-236 | 5 Lbs. |
| Aluminum | AJ400-234 | 1 Lb. | AJ600-234 | 1 Lb. | AJ800-234 | 2 Lbs. |
| Semi-Hard Steel [4150] | AJ400-235 | 1 Lb. | AJ600-235 | 3 Lbs. | | |
| Serrated | AJ400-47 | 1 Lb. | AJ600-47 | 2 Lbs. | AJ800-47 | 6 Lbs. |
| V Jaw Hardened & Ground | AJ400-237 | 2 Lbs. | AJ600-237 | 5 Lbs. | AJ800-237 | 10 Lbs. |
| *Bolts-D Pieces 2/Plate | 00-3353 | 1 Lb. | 00-3417 | 1 Lb. | 00-3481 | 1 Lb. |
| *Bolts-PT Pieces 2/Plate | 00-3353 | 1 Lb. | 00-3417 | 1 Lb. | 00-3481 | 1 Lb. |
| *Bolts-DL Pieces (Stationary) 2/Plate | 00-3348 | 1 Lb. | 00-3412 | 1 Lb. | - | - |
| *Bolts-DL Pieces (Movable) 2/Plate | 00-3353 | 1 Lb. | 00-3417 | 1 Lb. | - | - |

| Metric LHSCS For HDL Vises | Part # | Dimensions |
|----------------------------------|-----------|--------------------------|
| HDL Series Vise - Movable [4] | AJ600-89 | LHSCS M12 x 1.75 30mm Lg |
| HDL Series Vise - Stationary [4] | AJ600-143 | LHSCS M12 x 1.75 16mm Lg |

| Part # | InnerLock Jaw Plate Dimensions | | | | | | | | | | | | | | | | | | | | | | |
|--------|--------------------------------|-------|-------|-----------|-------|-------|--------|-------|-------|-------|-------------|-------|-------|-------|----------|-------|-------|-------|-------|-------|-------|-------|-------|
| | Aluminum | | | Semi Hard | | | Single | | | | Double Step | | | | Serrated | | | V-jaw | | | | | |
| | W | L | H | W | L | H | W | L | H | STEP | W | L | H | ST1 | ST2 | W | L | H | W | L | H | SMØ | LGØ |
| AJ400 | 0.730 | 3.969 | 1.374 | 0.730 | 3.969 | 1.374 | 0.570 | 3.969 | 1.374 | 0.125 | 0.547 | 3.969 | 1.374 | 0.250 | 0.500 | 0.547 | 3.969 | 1.374 | 1.125 | 3.969 | 1.374 | 0.100 | 1.500 |
| AJ600 | 0.9810 | 5.969 | 1.880 | 1.125 | 5.969 | 1.880 | 0.725 | 5.969 | 1.880 | 0.188 | 0.735 | 5.969 | 1.880 | 0.375 | 0.750 | 0.725 | 5.969 | 1.880 | 1.875 | 5.969 | 1.880 | 1.125 | 3.000 |
| AJ800 | 1.230 | 7.969 | 2.440 | - | - | - | 1.075 | 7.969 | 2.440 | 0.250 | 1.075 | 7.969 | 2.440 | 0.500 | 1.000 | 1.075 | 7.969 | 2.440 | 2.375 | 7.969 | 2.440 | 1.500 | 4.500 |

*InnerLock jaws require low profile cap screws (LPCS). Sold as each.

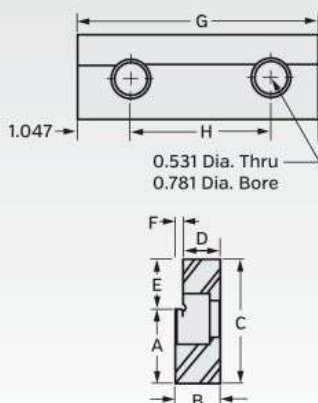
Machinable Aluminum Jaw Plate For All Kurt 6" Vises



XJAB6A-318

- 6" Aluminum [6061-T6] soft jaw. Fits all Kurt 6" vises.
- Reversible top to bottom and front to back. (Counter bore both sides).
- Extra thickness for carving part shapes into jaw plate.
- 5.969" L x 1.500" W x 1.874" H.
- Weight 2.00 Lbs

Standard Individual Jaw Plates



| Part # | Dim "A" | Dim "B" | Dim "C" | Dim "D" | Dim "E" | Dim "F" | Dim "G" | Dim "H" | Description | Weight |
|-------------|---------|---------|---------|---------|---------|---------|---------|---------|----------------------|----------|
| D40-7 | N/A | 0.547 | 1.235 | N/A | N/A | N/A | 3.969 | 2.500 | Std. Hard Jaw | 1 Lbs. |
| D40-7 SOFT | N/A | 0.562 | 1.250 | N/A | N/A | N/A | 3.969 | 2.500 | Std. Soft Jaw | 1 Lbs. |
| D60-7 | N/A | 0.750 | 1.750 | N/A | N/A | N/A | 5.969 | 3.875 | Std. Hard Jaw | 2 Lbs. |
| D60-7 SOFT | N/A | 0.750 | 1.750 | N/A | N/A | N/A | 5.969 | 3.875 | Std. Soft Jaw | 2 Lbs. |
| 60-32-1 | 1.693 | 0.725 | 1.880 | 0.610 | 0.187 | 0.115 | 5.969 | 3.875 | Std. Step Jaw | 2 Lbs. |
| 60-236-1 | 1.505 | 0.725 | 1.880 | 0.610 | 0.375 | 0.115 | 5.969 | 3.875 | Std. Step Jaw | 2 Lbs. |
| 60-236-2 | 1.130 | 0.725 | 1.880 | 0.610 | 0.750 | 0.115 | 5.969 | 3.875 | Std. Step Jaw | 2 Lbs. |
| *60-234-1 | N/A | 0.980 | 1.880 | N/A | N/A | N/A | 5.969 | 3.875 | Aluminum | 1 Lbs. |
| *60-235-1 | N/A | 1.125 | 1.880 | N/A | N/A | N/A | 5.969 | 3.875 | 4140 Pre-Hard | 3.5 Lbs. |
| LP60-32 | 1.469 | 0.725 | 1.635 | 0.610 | 0.166 | 0.115 | 5.969 | 3.875 | Low Profile Step Jaw | 2 Lbs. |
| *60-47-1 | N/A | 0.725 | 1.735 | N/A | N/A | N/A | 5.969 | 3.875 | Std. Serrated | 2 Lbs. |
| D80-7 | N/A | 1.105 | 2.200 | N/A | N/A | N/A | 7.969 | 4.750 | Std. Hard Jaw | 5 Lbs. |
| D80-7 SOFT | N/A | 1.105 | 2.200 | N/A | N/A | N/A | 7.969 | 4.750 | Std. Soft Jaw | 5 Lbs. |
| D100-7 | N/A | 1.320 | 2.937 | N/A | N/A | N/A | 10.125 | 5.750 | Std. Hard Jaw | 6 Lbs. |
| D100-7 SOFT | N/A | 1.350 | 2.957 | N/A | N/A | N/A | 10.125 | 5.750 | Std. Soft Jaw | 6 Lbs. |
| D100-47 | N/A | 1.375 | 3.000 | N/A | N/A | N/A | 10.125 | 5.750 | Std. Serrated | 6 Lbs. |

*60-234-1 is a carve your own pocket jaw plate.
 *60-235-1 is a carve your own pocket jaw plate.
 *60-47-1 Serrations are aggressive and will mark parts.

8" Parallel Sets (IMPORTED)



8PS6 6 Pair Set Features:

- 1,000", 1,250", 1,500", 1,750", 2,000", 2,125" Heights.
- 0.250" ±0.002" Thickness.
- 0.0002" Parallelism.
- Hardened RC 52-58
- 1 ea. Plastic storage box.
- Weight 12 Lbs.

8PS9 9 Pair Set Features:

- 1,000", 1,250", 1,375", 1,500", 1,625", 1,750", 1,875", 2,000", 2,125" Heights
- 0.250" ±0.002" Thickness.
- 0.0002" Parallelism.
- Hardened RC 52-58
- 1 ea. Plastic storage box.
- Weight 17 Lbs.

| 8" Parallel Sets | |
|------------------|-------------|
| Part # | Description |
| 8PS6 | 6 Pair Set |
| 8PS9 | 9 Pair Set |

6PJS Magnetic Jaw Plate and Parallel Set (Imported)

This 6" magnetic jaw set from Kurt comes complete with two jaw plates with an embedded rare earth magnet for holding the parallels in place, leaving hands free to hold and clamp the workpiece. Genuine Kurt Groove Lock workstops are also included, all in it's own convenient plastic storage box. Patented



This 11 Piece Set Includes:

- 2 ea. 3/16" x 1" x 6" ground steel parallels.
- 2 ea. 3/16" x 1-1/4" X 6" ground steel parallels.
- 2 ea. 3/16" x 1-1/2" x 6" ground steel parallels.
- 1 ea. D60-7-SAMAG hardened jaw plate with rare earth magnet.
- 1 ea. D60-315-SAMAG hardened Groove Lock jaw plate with rare earth magnet.
- 1 ea. WSR46 Kurt Groove Lock workstop.
- 1 ea. WSR46 Kurt Groove Lock extended workstop.
- 1 ea. plastic storage box.

Features:

- Fits all Kurt 6" vises.
- Powerful rare earth magnets hold the parallels in place securely.
- Genuine Kurt Groove Lock workstops are included.
- Storage box helps keep you organized.
- Ground steel jaw plates and parallels.
- 8 Lbs.

6" Magnetic Jaw Plates

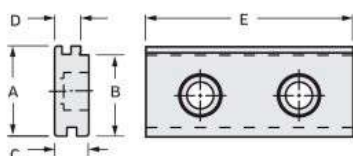
Features powerful rare earth magnets for holding parallels securely in place, leaving hands free to hold and clamp the workpiece. Fast and accurate set-ups. Patented



| 6" Magnetic Jaw Plates | | | | |
|------------------------|---|--------|-------|--------|
| Part # | Description | Length | Width | Height |
| D60-7-SAMAG | 6" Magnetic Jaw Plate | 5.969 | 0.725 | 1.735 |
| D60-315-SAMAG | 6" Magnetic Jaw Plate Accepts Groove Lock Workstops | 5.969 | 0.725 | 1.735 |

Workstop sold separately

Groove Lock® Reversible Style Step jaw plates



| Reversible Style Step Jaw Plates | | | | | | |
|----------------------------------|---------|---------|---------|---------|---------|---------|
| Vise Size | Part # | Dim "A" | Dim "B" | Dim "C" | Dim "D" | Dim "E" |
| 4" | D40-316 | 1.374 | 1.250 | 0.672 | 0.547 | 3.969 |
| 6" | D60-316 | 1.880 | 1.700 | 0.735 | 0.547 | 5.969 |

Groove Lock® Workstop



D60-315



WSRL46



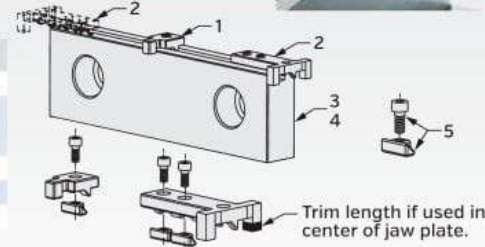
WSRLE46

| Item | Part # | Description |
|------|--------------|---|
| 1 | WSRL46 | Workstop assembly, suitable to use with 2" thru 6" jaw plates |
| 2 | WSRLE46 | Extended length workstop assembly, suitable to use with 4" thru 6" jaw on outside. Can be used on right or left end of jaw. Note: To use in center of jaw length, locating ear must be shortened to clear the top of the stationary jaw area. |
| 3 | D60-315-P | 6" Groove Lock jaw plate (Not reversible) 1.735 x 0.7250 x 5.969 |
| 4 | D40-315 | 4" Groove Lock jaw plate (Not reversible) 1.235 x 0.5470 x 3.969 |
| 5 | WSRL46-86-SA | Replacement clamp assembly |

All items sold separately

Features:

- Simple, functional, integral workstop system.
- Workstop does not interfere with part or spindle.
- Single bolt design for tightening workstop.
- Multiple parts can be located on the same jaw plate.
- Patented



Trim length if used in center of jaw plate.

Vise Keys



Sold in pairs

Hardened vise keys are used to align your Kurt vise to your milling machine table. Step keys are used when the keyway in the vise is different than that of the machine T-slot. Standard keys are used when they are the same width.

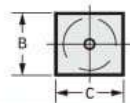
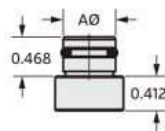
| Hardened Standard Keys [Pair] | | | Hardened Step Keys [Pair] | | |
|-------------------------------|---------------|-----------|---------------------------|---------------|---------|
| Vise Model | Key Size | Part # | Vise Model | Key Size | Part # |
| 4" Vise | 1/2 x 1/2 | D30-50 | 4" Vise | 1/2 x 5/8 | D30-33A |
| 6" Vise | 11/16 x 11/16 | D50-50 | 6" Vise | 11/16 x 5/8 | D50-33A |
| 8" & 10" Vises | 13/16 x 13/16 | D80-50 | | 11/16 x 13/16 | D50-33B |
| | | | | 11/16 x 3/4 | D50-33C |
| Hardened Metric Keys [Pair] | | | 11/16 x 9/16 | D50-33D | |
| Vise Model | Key Size | Part # | 11/16 x 1/2 | D50-33E | |
| 4" Vise | 1/2 x 18 mm | D30-33M18 | 8" & 10" Vises | 13/16 x 7/8 | D80-33A |
| 6" Vise | 11/16 x 16 mm | D50-33M16 | | 13/16 x 1/16 | D80-33B |
| 6" Vise | 11/16 x 18 mm | D50-33M18 | 13/16 x 3/4 | D80-33C | |
| 8" Vises | 13/16 x 16 mm | D80-33M16 | 13/16 x 5/8 | D80-33D | |
| 8" & 10" Vises | 13/16 x 18 mm | D80-33M18 | | | |

Sine Keys (Non-Expandable O-Ring Style)

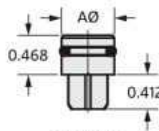
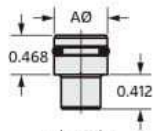
• 32-37 RC Hardness



Rectangle Style



Round Style Diamond Style



Sine Keys - Non-Expandable O-Ring Style - English [Each]

| P/N | Style | AØ | B | C | DØ |
|-----------|-----------|--------|--------|--------|--------|
| SKOA8.9 | Rectangle | 0.6250 | 0.4995 | 0.5620 | |
| SKOA10.11 | Rectangle | 0.6250 | 0.6245 | 0.6870 | |
| SKOA12.13 | Rectangle | 0.6250 | 0.7495 | 0.8120 | |
| SKOA14.16 | Rectangle | 0.6250 | 0.8745 | 0.9995 | |
| SKOA8RD | Round | 0.6250 | | | 0.4998 |
| | Diamond | 0.6250 | | | 0.4998 |
| SKOA10RD | Round | 0.6250 | | | 0.6250 |
| | Diamond | 0.6250 | | | 0.6250 |

Sold in pairs

Sine Keys - Non-Expandable O-Ring Style - Metric [Each]

| P/N | Style | AØ | B | C | DØ |
|------------|-----------|--------|------|------|----|
| SKOAM14.16 | Rectangle | 0.6250 | 14mm | 16mm | |
| SKOAM18.20 | Rectangle | 0.6250 | 18mm | 20mm | |
| SKOAM20.22 | Rectangle | 0.6250 | 20mm | 22mm | |

Sold in pairs

Swivel Base



T-Bolt and Washer

| Swivel Base | | | |
|-------------|-------------------|------------------------|---------|
| Part # | T-Bolt and Washer | Fits These Vise Models | Weight |
| D40-4-SA | D40-27-SA | D40 | 16 Lbs. |
| D50-4-SA | D50-27-SA | DX6, HD690 | 20 Lbs. |
| D60-4-SA | D60-27-SA | D60, D675, D688 | 26 Lbs. |
| D80-4-SA | D80-27-SA | D80, D810 | 80 Lbs. |



Swivel base allows positioning in 1 degree increments.

2MWS Magnetic Workstop



Features:

- Fast, accurate positioning of parts.
- Rare earth magnet attaches anywhere on the workholding setup without the need for connecting bolts or screws.
- Removes quickly to clear spindle travel when necessary.
- 12 Lbs of pull.
- Body is 2 5/8" long with 2" adjustable stop pins on both ends of body.
- Ideal for single, multiple station vises and high density workholding setups.
- 1 Lb. weight.

AngLock Workstop



360PWS

Versatile, quick mounting workstops will work above jaws when gang mounting vises and space for a workstop does not exist. These Kurt workstops permit fast, accurate positioning on repetitive work. They team up with your AngLock precision vise for accurate parts production.



| AngLock Vise Workstops | | |
|------------------------|-----------|--------|
| Part # | Vise Size | Weight |
| D30-45 | 4" Vise | 1 Lb. |
| 360PWS | 6" Vise | 3 Lbs. |
| D80WS | 8" Vise | 4 Lbs. |

6AWS Workstop



New adjustable workstop can be used on all Kurt high-density vises. The body clamp has a 2" adjustment and features a 3" long stop pin for fast and easy set-ups. A long and short spacer is also available to fit almost any application.

Features:

- Versatile.
- Economical.
- Fast, easy set-up.
- Black oxide finish.
- Fast accurate positioning of parts.

| Workstops | |
|--------------------------|-------------------------------|
| English Vise 5/16-18 | Metric Vise m8 x 1.25 |
| 6AWS-Kit | 6AWSM-Kit |
| 6AWS Workstop | 6AWSM Workstop |
| 6AWS-288 1" Short Spacer | 6AWSM-288 25.4mm Short Spacer |
| 6AWS-289 2" Long Spacer | 6AWSM-289 50.8mm Long Spacer |

Kits include the workstop and both long and short spacers.

Parallel Keeper

Models:
KPS-6000
KPS-8000

Place your parallels in the vise against the jaws. Take the Parallel Keeper, squeeze it together and place it inside the parallels. Release the Parallel Keeper, it will push against the parallels, holding them against the jaws of the vise. It's that simple! KPS-6000 model opens to 6" and has an overall size of 8" x 14". KPS-8000 model opens to 8" and has an overall size of 10" x 14". Your new revolutionary labor saver, your "machinists third hand," is at work, saving part change time. 1 Lb. weight.



Shown with 3610V

Kurt Speed Handle D60SH



The Kurt Speed handles reduce set-up and clamp times. The **D60SH** with a 3/4" internal hex will fit all our 6 inch model vises. Our handles do not interfere with the milling machine giving you rapid part loading and unloading. You get Kurt's quality in a custom steel designed product. There is no aluminum hex to strip. 4 Lbs.

Kurt Torque Handle TH6



The Kurt Torque Handle provides repeatable clamping for small delicate parts. The Torque Handle fits a 3/4" Hex and gives you a precise feel while providing an audible "click". The small 10-3/4" overall length will not interfere with most table set-ups and the steel construction will give you the versatility and reliability demanded by today's modern machine shops. A set screw allows your Torque Handle to become an integral part of your vise. 4 Lbs.

| Torque Vs. Position | | | | |
|---------------------|---|---|----|----|
| Position | 1 | 2 | 3 | 4 |
| Torque Ft. Lbs. | 6 | 8 | 10 | 20 |

Torque Tolerance ±2 Lbs.

Replacement Vise Handles



Kurt original equipment handles are solid cast iron for strength and durability and are plated for rust protection. The handle portion is one-piece with a cast ergonomic ball on the end.

| Part # | Hex | Length |
|-------------|------|------------|
| D40I-10-SA | 9/16 | 6 in. |
| D60I-10-SA | 3/4 | 8-5/8 in. |
| D80I-10-SA | 7/8 | 16-1/8 in. |
| D100I-10-SA | 1 | 16-1/8 in. |

KH6 and KH8 Handle Hangers

Never lose a vise handle again. New Kurt Vise Handle Hanger.

- Models KH6 (for 6" handles) and KH8 (for 8" handles)
- Made from high strength Thermoplastic
- Mount to workbenches, tool carts, cabinets or any surface near machine tables.
- Creates a convenient holding spot for quick access to vise handles.

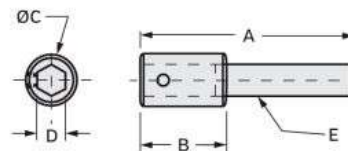


Vise Screw Hex Extension



Features:

- Vise screw hex extensions become useful when the vises are mounted on large machines where extending the hex will allow better access.



| Vise Screw Hex Extension | | | | | | | | |
|--------------------------|-------------|--------|---------|---------|---------|---------|---------|--------|
| Vise Size | Handle Size | Part # | Dim "A" | Dim "B" | Dim "C" | Dim "D" | Dim "E" | Weight |
| 6" | 6 | HEX6 | 5.000 | 2.000 | 1.250 | 0.750 | 0.750 | 1Lb. |

Spanner Wrench

Model No. DL430-307-SA - 4"
Model No. DL640-307A-SA - 6"

Features:

- Adjust the preload on your Kurt DoubleLock vise simply and quickly
- All Aluminum
- Knurled end for better grip
- Two models available: 4" and 6"





KHP3 Complete Pump Shown

KHP3 Pneumatic/Hydraulic Pumps

Kurt's KHP3 Hydraulic pump is powered by normal shop air versus an electric motor. The pump uses 40-100 psi input pressure and sustains up to 3,400 psi of constant pressure into the hydraulic vises.

The KHP3 pump uses an internal load-limiting valve for protection against overload, a common problem with other hydraulic pumps. The special load-limiting valve allows the piston mechanism to cycle automatically when the systems ask for hydraulic flow at low pressures. This performance-on-demand feature keeps the pump pressurized and ready to give hydraulic flow whenever it is needed.

Other features:

- Air exhaust muffler for noise suppression
- Compact foot-print of the pump is 6" x 8"
- Each pump kit comes with all the necessary fittings, oil and choice of foot switch or hand switch.
- Weight: KHP3 = 21 Lbs., KHP3H = 26 Lbs., KHP3F = 31 Lbs., KHP3T = 25 Lbs.
- Useable Oil Volume is 75 Cu. In.



KHP3H Complete Pump and Hand Kit Shown

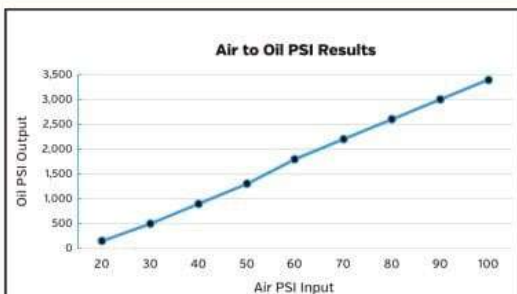
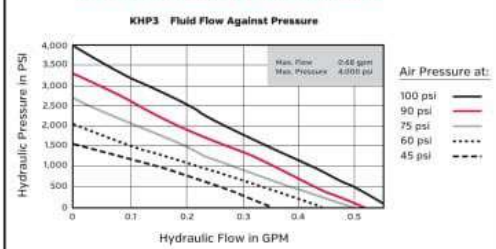


KHP3F Complete Pump and Foot Kit Shown



KHP3T Toggle Pump Shown

Flow and Pressure Performance Guides



| Air PSI Input | Oil PSI Output |
|---------------|----------------|
| 20 | 150 |
| 30 | 500 |
| 40 | 900 |
| 50 | 1,300 |
| 60 | 1,800 |
| 70 | 2,200 |
| 80 | 2,600 |
| 90 | 3,000 |
| 100 | 3,400 |

Valve Blocks



KHM4-303
4 Valve Manifold Block



KHM2-303
2 Valve Manifold Block



KHM-53
Cover

Solenoids



KHS-379 Solenoid
Double Acting



KHS-381 Solenoid
Normally Open



KHS-380 Solenoid
Normally Closed

Hydraulic Pump for Automation



Connects to
CNC Controller

Complete Machine
Activation

Call Factory For Details

KHP5000 Hydraulic Pump

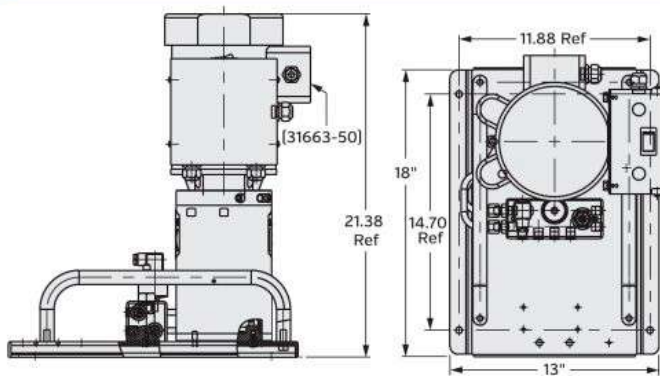


- Dump Pump for single acting systems
- 1 HP Motor, 115/208-230 VAC
- Max Amps 11.1 @ 5,000 PSI
- External safety relief is user adjustable from 500-5,000 PSI
- Internal safety relief set at 5,000 PSI
- Auto dump valve
- 127 Cu. In. [0.54 gal] total capacity
- 75 Cu. In. [0.32 gal] usable capacity
- Weight 82 Lbs
- Average Pump Output Volume 31.3 Cu. In.

KHP5000BP Hydraulic Pump



- Demand Pump for double or single acting systems
- 1 HP Motor, 115/208-230 VAC
- Max Amps 11.1 @ 5,000 PSI
- External safety relief is user adjustable from 500-5,000 PSI
- Internal safety relief set at 5,000 PSI
- Auto dump valve
- 127 Cu. In. [0.54 gal] total capacity
- 75 Cu. In. [0.32 gal] usable capacity
- Weight 82 Lbs
- Average Pump Output Volume 31.3 Cu. In.
- Does Not Include Foot Pedal
- Optional 3-Way Valve [Part #KDC-M035NS]



Overview of pump styles:

Dump Pump: Generally used where the fixture is to be disconnected from the pump for cycling. Most commonly used with a "pallet" valve. Run the pump with the foot valve until clamped and then close the pallet valve and release the foot valve.

Demand Pump: Used where the fixture will stay connected to the pump during the cycle. If the pump loses approximately 200PSI of pressure then it will start back up on its own to bring up the pressure to the set level. Move the lever forward to pressure up and clamp. Pull the lever back to release the pressure.

Note: The Kurt KHP5000BP pump is used with the Kurt KDC-M035NS directional control valve (sold separately) if the customer does not have their own.

Kurt Hydraulic Pump Chart

| Part Number | Pump Type Demand Dump | Actuation | Max PSI | Usable Oil Cap. C.U. | Single Acting Systems | Double Acting Systems | Power Type | Wt. Lbs. |
|-------------|--------------------------|-----------|---------|----------------------|-----------------------|-----------------------|-----------------|----------|
| KHP5000 | X | Foot | 5,000 | 75 | Y | N | 115/208-230 VAC | 82 |
| KHP5000BP | X | Hand | 5,000 | 75 | Y | Y | 115/208-230 VAC | 82 |
| KHP3F | X | Foot | 3,400 | 85 | Y | N | Pneumatic | 31 |
| KHP3H | X | Hand | 3,400 | 85 | Y | N | Pneumatic | 26 |
| KHP3T | X | Toggle | 3,400 | 85 | Y | N | Pneumatic | 25 |

KHP5000PF-KIT Optional Vise Connection Kit

| Kurt Part # | Qty | Unit | Description |
|-------------|-----|------|----------------------------|
| 1HLZ8 | 1 | Each | Coupler, Male, Air |
| 219-00-RM | 5 | Foot | Tubing, Polyethylene, 1/4" |
| 226-02 | 2 | Each | Fitting, 1/4", Straight |
| 312.06 | 1 | Each | FRL W/ Gage, Micro-Fog MOD |
| APD50-309 | 1 | Each | #4 SAE Fitting, 7/16-20UNF |
| APD60-109-1 | 1 | Each | Fitting, 1/4"-18, Straight |
| APD60-109-2 | 1 | Each | Fitting, 1/8"-27, Straight |
| AT-L4 | 1 | Each | Dil, Air Tool |

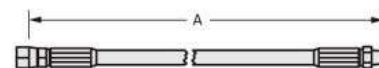
2404-06-06 Adapter



- 3/8" Male NPT to #6 Male JIC [6M] - 6MP]
- For use on KHP3 pumps bought BEFORE October 2017 with a Female NPT Swivel on the high pressure outlet.
- Adapter converts pre October 2017 pump outlet from 3/8" Female NPT to #6 Male JIC to make them compatible with current hoses options.

| Kurt Part # | Optional Hydraulic Hoses (sold separately) |
|-------------|---|
| KTH3 | 36" Kurt Tuff Hydraulic Hose W/Fittings, #6 Male Pipe, #4 Female JIC |
| KTH6 | 72" Kurt Tuff Hydraulic Hose W/Fittings, #6 Male Pipe, #4 Female JIC |
| KTH12 | 144" Kurt Tuff Hydraulic Hose W/Fittings, #6 Male Pipe, #4 Female JIC |

For use on KHP3 pumps bought BEFORE October 2017 with a Female NPT Swivel on the high pressure outlet.



| Kurt Part # | Optional Hydraulic Hoses (sold separately) |
|---------------------------|--|
| KHA040364 - Hose Assembly | 1/4" x 3' LG 6FJX - 4FJX |
| KHA040664 - Hose Assembly | 1/4" x 6' LG 6FJX - 4FJX |
| KHA041264 - Hose Assembly | 1/4" x 12' LG 6FJX - 4FJX |



Vise locating with Bolt-on Keys vs Sine Keys

Bolt-on keys are a traditional way to locate vises to mills and beds which have t-slots. But today's machine shops also utilize grid plates with pre-machined hole patterns or mount vises to other style sub-plates and fixture plates for many applications. This usually requires machining mounting holes into the bottom of most vises for these applications.

New Kurt vise models have better and more flexible locating features than previous vise designs. They can still be located to t-slots using sine keys, plus they have additional mounting hole patterns to fit 2" x 2", 40mm x 40mm, 50mm x 50mm grid patterns.

Kurt vise models using the new Sine Key feature include: DX4 & 6 series, 3400, 3600 & 3800 series, HD690 series, XL6 series, HDL 4 & 6 series and HDM6 series.

Traditional vise keyways for t-slot mounting.



Bolt-on keys

1. Requires mounting with SHCS screws
2. Slow mounting: uses hex wrench for tightening
3. Slow unmounting: using hex wrench
4. No additional mounting features

Dowel holes for installing sine keys for t-slot mounting or for alternate mounting options listed below #5.

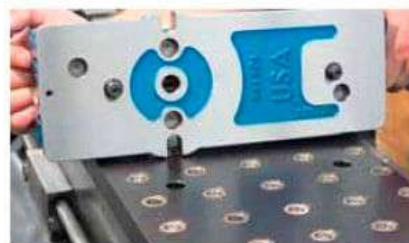


Sine keys

1. No screws required - o-ring holds securely
2. Fast mounting: inserts easily into dowel hole
3. Fast unmounting: sine keys quickly release
4. Precision mounting to grid plates: 2" x 2", 40mm x 40mm, 50mm x 50mm
5. Alternate mounting made easy. Mount to sub-plates fixture plates and tombstones. No need to drill additional holes in vise base.



IMPROVED MOUNTING OPTIONS
Scan QR code or visit
www.kurtworkholding.com/mounting



Automatic Drawbar



Mechanical Drawbar



PowerLock Drawbar

Available for most manual & CNC mills with standard R-8 collets or 30 or 40 taper tool holders. Automate your present "Knee-Type" milling machines by installing a Kurt PowerLock Drawbar. PowerLock Drawbars reduce tool change time and allow more cutting time in the cycle. This eliminates waste. The whole process using the Kurt automatic or mechanical PowerLock Drawbar cuts the tool change time to one-fourth the time required to change tools manually with wrenches. An added benefit is consistent torque on the drawbar rod. When you multiply the time savings for every tool change on all of your mills, it can really add up.

Features:

- Easy installation - operator can install with no special tools (instructions provided).
- Reduces operator fatigue - improves productivity and safety.
- Eliminates drawbar tapping to free tool in collet - reduces operator abuse.
- Convenient control - eliminates operator stretching to reach the drawbar.
- Assures uniform collet tightening - prevents under tightening and tool slip or over tightening and drawbar breakage.
- Operates on shop air supply - filter/lubricator, regulator and gauge included with most units. Provides clean oiled air to ensure long life.
- Safety interlock on automatic models prevents accidental engagement.
- Used with present tooling - operates R-8, #30 & #40 taper tool holders. Additional special tool holders not needed.
- Machine your own Drawbar Kits. Available for R-8 collets, #30 or #40 taper tool holders.
- Patented



PowerLock Drawbar is available for these popular mills:

- | | |
|-----------------|--------------|
| Acer | Lagun |
| Acramill | Mighty |
| Alliant | Millport |
| Bridgeport | Royal |
| Chevalier | Seiki |
| Clausing/Kondia | Sharp |
| Comet | Shizouka |
| DoAll | South Bend |
| Ex-Cell-O | Southwestern |
| Hurco | Supermax |
| Jet | Tri-Onics |
| Kent | Webb |
| Kondia | Willis |

For manufacturers not listed, contact factory.

*Note: All machines that have Erickson Quick Change Spindle, and are converted to a Power Drawbar will have sharp threads and drive keys exposed near the spindle nose. We recommend the installation of a 194-00-SA Erickson Spindle Nose Guard.



You can also view a tutorial video on this process at the Kurt Workholding YouTube Channel.

www.youtube.com/kurtworkholding

Custom Engineered Workholding

Kurt brings more than five decades of experience in providing solutions to CNC machine workholding problems and a deep understanding of how workholding integrates into today's productivity and quality driven manufacturing process.

At Kurt, we provide the complete spectrum of workholding solutions with the same dedication that has produced the most successful vises for over 40 years. Our custom engineered workholding engineers have built an industry leading reputation assisting automotive, aerospace and other metalworking intensive industries to improve quality and reduce cycle times.

1 Year Iron Clad Warranty



Application: Medical Device



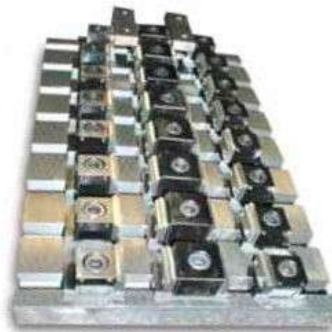
Solution: Custom pallet vise enhances VMC throughput for Device manufacturer.

Application: Commercial Industry



Solution: Eight station indexing trunnion fixture for high speed machining.

VMC Applications



Application: Hydraulic Industry



Solution: High density fixture clamping four parts per station.

Application: Machine Tool Industry



Solution: Grinding fixture increases holding power and improves accuracy.

Application: Aerospace component



Solution: Rotary table fixtured with a zero-point docking system for repeatability.

Application: Machine Tool Industry



Solution: Second operation grinding fixture feeds productivity into FMS.

Application: Automotive Industry



Solution: Up to three-sided machining using an indexing trunnion fixture.



Application: Aerospace Industry



Solution: High density DoubleLock vise setup holds 18 parts for precision machining.

Application: Machine Tool Industry



Solution: Window fixture for 2 sided machining enhances automated FMS line.

Application: Hydraulic Industry



Solution: Multiple towers with DoubleLock vises on palletized machining center for 24/7 production.

HMC Applications



Application: Aerospace Industry



Solution: Two-sided tombstone with six MoveLock clamping stations handle wide range of part sizes.

Application: Automotive Industry



Solution: D100 movable and stationary jaws integrated onto a tower.

Application: Hydraulic Industry



Solution: Window hydraulic (AB Load) fixture allows matching on five sides.

Application: Hydraulic Industry



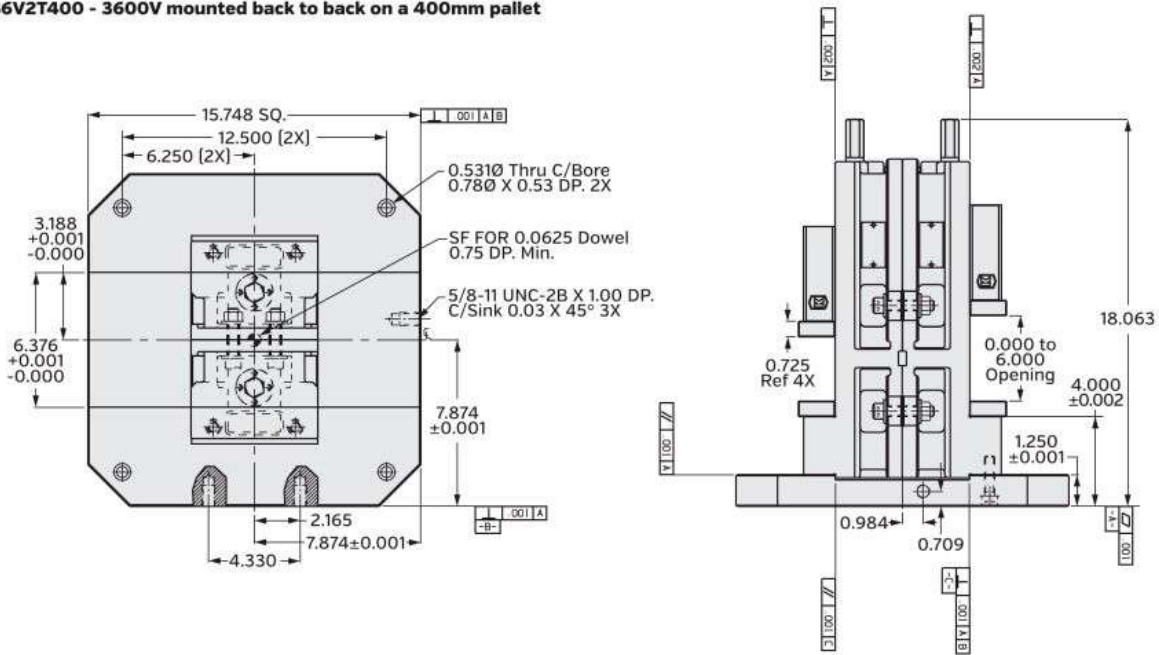
Solution: Kurt serrated Double Station vise towers on palletized machining centers for 24/7 production.

Back to Back

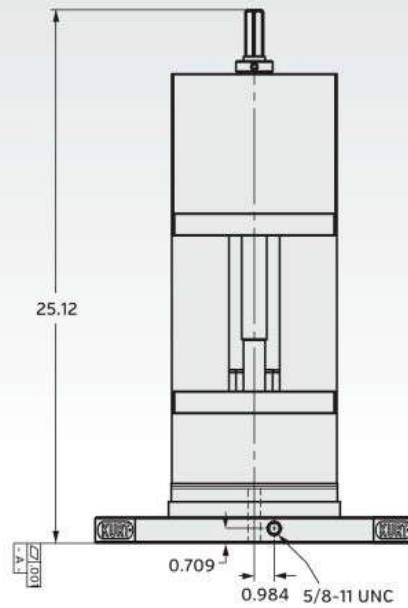
Back to Back Models: D100, D810, HDLM6, 3600V
Available with and without risers - consult factory for options.



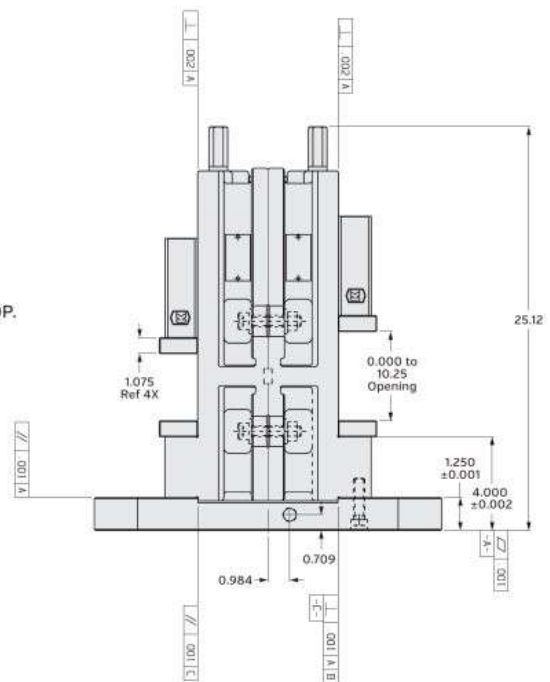
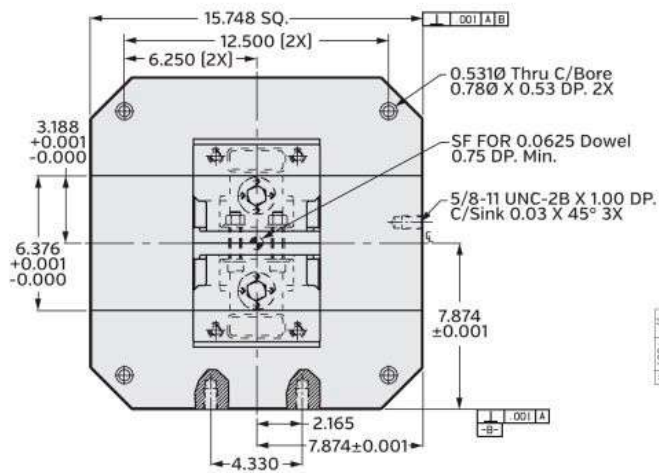
36V2T400 - 3600V mounted back to back on a 400mm pallet



3600V Back to Back
Available with and without riser – consult factory for options.



38V2T400-3800V back to back on a 400mm Base





Add this tower to your indexer or have Kurt provide a turnkey solution.

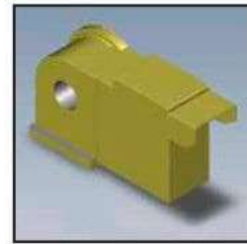
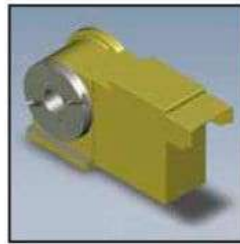
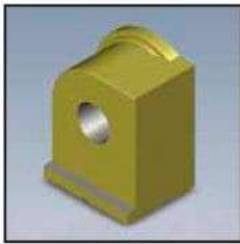
Kurt Rotary Table Workholding Systems

Features:

- High density vise tower system. Hold multiple parts in eight clamping stations. Increase part volume.
- Repeatable clamping to 0.0002". Each station delivers up to 7,460 Lbs. of clamping force at 70 Ft Lbs of torque.
- Self-adjusting holding block of either front or back jaw for clamping the same or dissimilar sized parts. To further enhance fast operation, an adjustable pre-load feature reduces handle turns for opening and closing clamping stations.
- Ductile iron column insures strength, rigidity and long term accuracy.
- Jaw options available to fit your application. Select from hard jaws, machinable aluminum jaws, machinable ductile iron jaws and aluminum fixture plate.
- Jaws are indexable 180 degrees.
- Lifetime Iron Clad Warranty.
- Optional single-station convertible kit available for machinable jaws [CTHDL4-CONVKIT] and hard jaws [CTHDL4]-CONVKIT).

What comes with the kit:

- Four-sided column with jaw kits
 - End Support Assembly
 - Indexer Locator
 - T-Nuts
 - Face Plate
 - Locating Pin
 - Screws
- *Sub-plates not included. Can be quoted separately.



Kits are available for the following models:

| Centroid [Golden Sun] | Haas | Hardinge | Nikken | | SMW | Troyke | Tsudakoma | | Yuasa | Yukiwa |
|--------------------------|--------|----------|---------|---------|--------|--------|-------------|-------------|----------|-------------|
| RT-150 [CNC-151R] | HRT210 | GD160 | CNC180 | CNC302 | RT-225 | DL-9 | RN-150 [FP] | RNCM-301 | DMNC-220 | JNC170 [FP] |
| RT-200 [CNC-201R] | HRT310 | GD210 | CNC180B | CNC302B | RT-275 | DL-10 | RN-200 [FP] | RNCM-401 | DMNC-280 | JNC200 [FP] |
| RT-250 [CNC-251R] | | | CNC202 | CNC320 | | DL-12 | RN-250 | RB-250 | DMNC-320 | JNC250 [FP] |
| RT-320 [CNC-321R] | | | CNC202B | CNC321 | | | RN-300 | RB-300 | DRFT-220 | YNC170 [FP] |
| | | | CNC200 | CNC321B | | | RNCV-401 | RZ-160 [FP] | DRFT-280 | YNC200 [FP] |
| | | | CNC250 | CNC400 | | | RNCM-251 | RZ-200 [FP] | DRFT-320 | YNC250 [FP] |
| | | | CNC260 | CNC401 | | | | | | |
| | | | CNC260B | CNC401B | | | | | | |

Available jaw and fixture options:

- Aluminum, cast iron, steel, and fixture plate.
See pages 40-43



Air Vise - Air Powered Vise for Automation

Features:

- Air powered motorized clamping provides consistent preset force and can be set to stop precisely on location
- Works great in automated systems and with Robotic workpiece handling
- Helps provide consistent clamping in unattended CNC operation
- Ideal for prismatic work pieces
- Can be equipped with most Kurt vise models
- Air motor can be positioned under or on the side of the vise
- Features push-to-connect air fittings
- Operates on 20-100 PSI and requires air/oil mist
- Movable jaw can move through the entire stroke of the vise
- Air motor advantages include clean and easy pneumatic circuit hookup
- Mounts to table or fixture using sine keys or 1/2 socket cap screws
- Uses optional 3mm proximity switch sensing or can be equipped with encoder for programmability
- Optional double start screw thread for higher clamp & unclamp speed if desired.
- Consult factory for more information



SCM425



SCD430



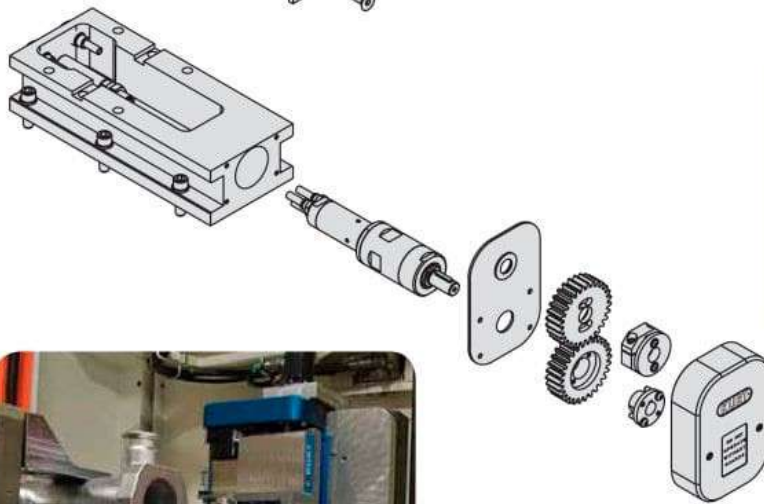
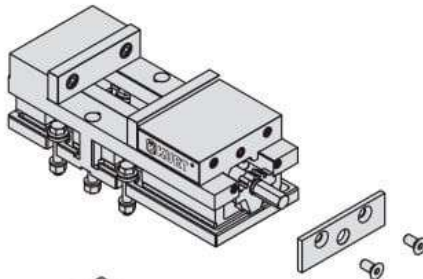
640XLS



SCD640

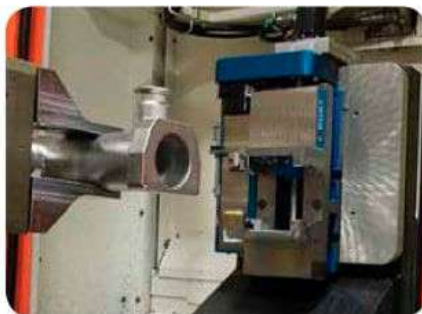


HDLM6



AIR- HDLM6 - 060 - B

| Vise Model: | RPM: | Jaw Sensor: |
|-------------|------|-----------------------|
| 3400V | 060 | A=None |
| 3600V | 140 | B=Proximity Switch |
| 3800V | 210 | C=Glass Digital Scale |
| XL6 | 370 | |
| 8XLPTLSS | 500 | |
| DX6 | | |
| HDLM6 | | |
| HP460 | | |
| SCD430 | | |
| SCD640 | | |
| SCMX425 | | |



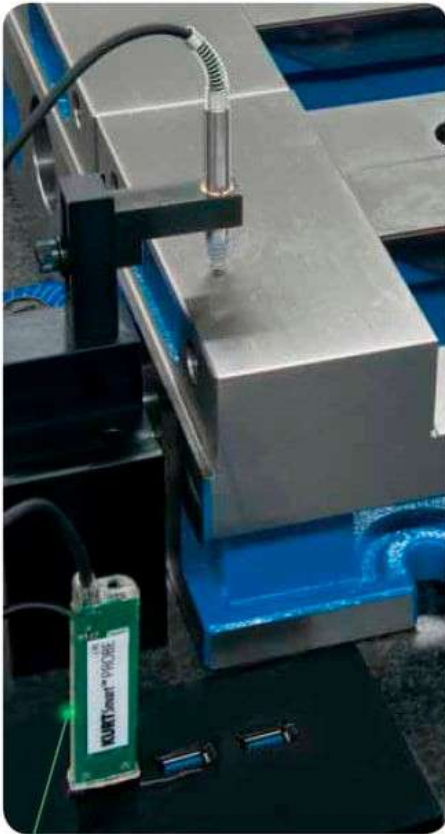
Automation Pump
page 74

KURTSmart™ PROBE


The KURTSmart™ PROBE is a standalone device that will provide a measurement result without being connected to any kind of computer station. The probe is completely linear over the entire stroke length. With a set of five small LED's on each side of the probe, the device can be programmed to visually show an operator if a part is good (green), trending bad (yellow) or bad (red). Each KURTSmart™ PROBE also has a single output port that can be utilized.

Specifications:

- 14 Bit Precision
 - 2.0mm probe travel, approximately 0.125 micron resolution
- Range from 0.5mm to 10.0mm
- Pre-calibrated - All devices measure identically over the full stroke
- On board dynamic scans: MAX, MIN, TIR, AVG
- LED indicators have a programmable scale to fit a tolerance range
 - Visible from Top or Side, mounted on both sides
- On board I/O for stand-alone operation
 - I/O is 5-24VDC Optically Isolated
 - Input: Programmable to trigger events such as data collection, re-mastering or others
 - Output: Programmable to trigger on LED or measurement status
- Namable for consistent identification by the software
- USB to COM port interface
 - Compatible with any software that can import RS-232 data
- Compatible with standard USB hubs allowing multiple probes per system



LED indicates whether a part is good (green), trending bad (yellow), or bad (red).



Kurt probes are available in many lengths and spring extended and pneumatically extended versions.



LED indicates:
good (green)



LED indicates:
trending bad (yellow)



LED indicates:
bad (red).

Gaging Products & Automation

Designed, built and tested by a manufacturer for manufacturing companies.

As manufacturing requirements continue to change, demanding higher precision, accuracy and output, gaging requirements have also changed. The need for precise, reliable gages, built to service the increasing demands of manufacturing has become a driving force for gage builders. Kurt has been responding to these demands since the late 80's by providing superior measurement solutions that include gaging hardware, software and electronics for virtually any measurement requirement.

Kurt's simple yet robust designs provide measurement resolutions in the millionths, with gage R&R capabilities of 10% or less in most cases. Kurt's Modular Gaging systems can measure your most challenging features on OD's, ID's and lengths, including GD&T callouts such as position and form, in systems for manually loaded post process fixtures to in-line fully automatic machines using contact or non-contact measurement technology.

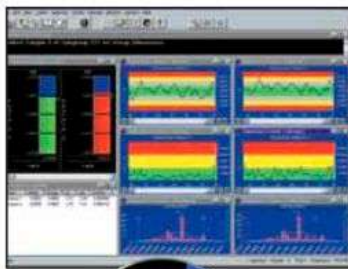


Bench-top, post-process gaging fixtures configured around any part



In-Line Fully Automated Gage Fixture

KurtPremium Data Collection Software



KurtICS Industrial Computers



Kurt USB Gaging Interfaces



KURT Smart™ DISPLAY and KURT Smart™ PROBE



KURT Automation & Gaging Solutions

The Kurt Integrated Technology (KurtKIT) provides automation integration of gaging, custom workholding and robotics. In addition to custom gaging and workholding, Kurt Engineered Systems now provides turn-key automatic cell integration robotic solutions using FANUC Robotic systems. As a stand alone robotics system or an integrated solution, the Kurt Integrated Technology systems provide you with a complete one-stop source for your manufacturing needs.



Repair Kits For Vises

| Single Station Vises | *D40-KIT | *D50-KIT | D60-KIT | *D675-KIT | *D688-KIT | DX6-KIT | D80-KIT | *D810-KIT | D100-KIT |
|---------------------------|-------------|-------------|-------------|-------------|---------------|-----------------------|-------------|----------------|--------------|
| Cap, Plastic | D40-12A | D50-12A | D60-12A | | | | D80-12A | | D100-12A |
| Drive Type Grease Fitting | | | | 3300-C | | | | 3300-C | |
| Internal Brush Seal | | | | D675-211 | D688-211 (x2) | D688-211 (x2) | | PT800-211 (x2) | |
| O-Ring | D40-68 | D50-68 | | D675-68 | D675-68 | 3600V-99 3600V-128 | | D810-68 | |
| Plug, Grease Fitting | | | | D675-292 | | | | D675-292 | |
| Segment | D40-9 | D50-9 | D60-9 | D60-9 | D60-9 | | D80-9 | D80-9 | D100-9 |
| Grease Fitting | | | | 3300-C | | | | | |
| Spiral Retaining Ring | D40-217A | D50-217A | D675-217A | D675-217A | D675-217A | 3600V-147 (x2) | | D810-217 | |
| Thrust Bearing | D40-41 | D50-41 | D60-41 | D60-41 | D60-41 | D80-41 | D80-41 | D80-41 | D100-41 |
| Thrust Bearing Washer | D40-42 (x3) | D50-42 (x3) | D60-42 (x3) | D60-42 (x3) | D60-42 (x3) | 3600V-42 (x2) | D80-42 (x2) | D80-42 (x3) | D100-42 (x3) |
| Wave Spring | | | | | | DX6-169 (x2) | | | |

*= Same as Metric Vise

| Single Station Vises | *3600V-KIT | 3600H-KIT | HD690-KIT | PT400A-KIT | PT800A-KIT | PTH400A-KIT | PTH800A-KIT |
|----------------------------|-----------------------|--|---------------------------------|----------------|----------------|--|---------------------------|
| Back Up Ring | | PTH600-188 360HU-187 | | | | PTH400-188 PTH400-187 | |
| Springs | | | HD6-197 | | | | |
| Guides | | | HDM6-142 | | | | |
| Screws | | | 00-0251 | | | | |
| Cap, Plastic | | | | | | | |
| Internal Brush Seal | 3600V-211 (x2) | 3600V-211 (x2) | D688-211 (x2) | PT400-211 (x2) | PT800-211 (x2) | PT400-211 (x2) | PT800-211 (x2) |
| O-Ring and/or Backer Rings | 3600V-99 3600V-128 | 3600V-99 3600V-128 360HU-98 PTH600-96 | 3600V-99 3600V-128 MT6-96 | PT400-99 | PT800-99A | PT400-99 PTH400-198 PTH400-197 PT400-97 | PT800-99A PT800-97 |
| Polypak Piston Seal | | | | | | | PTH800-198A PTH800-96A |
| Segment | D60-9 | D60-9 | | D40-9 | D80-9 | D40-9 | D80-9 |
| Spiral Retaining Ring | 3600V-147 (x2) | 3600V-147 (x2) 360HU-231 | | | | | |
| Thrust Bearing | D80-41 | D80-41 | D80-41 | PT400-41 | PT800-41 | PT400-41 | PT800-41 |
| Thrust Bearing Washer | 3600V-42 (x2) | 3600V-42 (x2) | 3600V-42 (x2) | PT400-42 (x2) | PT800-42 (x3) | PTH400-42 | D80-42 (x2) |
| Thrust Washer | | | | | | | PTH800-42 (x2) |

*= Same as Metric Vise



HDL Nut & Screw Assembly



HDL Nut & Screw Assembly



Vise Nut, D-Series



Vise Screw, D-Series



Vise Screw, HD-Series



Vise Repair Kit



D675 Repair Kit



Bearing Assembly



Thrust Bearing Washer



O-Ring



D675-292 Plug, Grease Fitting



3300-C Drive Type Grease Fitting



Plastic Cap



Spiral Retaining Ring



Internal Brush Seal



Segment



Movable Jaw w/Jaw Plate



Rear Stationary Jaw



Clutch



Find your local workholding service center by following the "Vise Repair Service Locations" link at www.kurtworkholding.com

Repair Kits For Vises

| Double Station Vises | Serial # <-3300 DL430-KIT1 | Serial # 3301- > DL430-KIT2 | Serial # 1000-3734 *DL640-KIT1 | Serial # 3735-4999 *DL640-KIT2 | Serial # 5001- > *DL640-KIT3 | HDL4-KIT1 | HDHL4-KIT1 |
|-----------------------|-------------------------------------|---|--------------------------------------|---|------------------------------------|---|---|
| Back Up Ring | | | | | | | HDHLM4-187 HDHLM4-188 |
| Friction Clamp | DL430-225A | DL430-225A-P | | | | | |
| O-Ring | DL430-128 DL430-68 | DL430-127 DL430-128 DL430-129 DL430-68 | DL640-128 DL640-68 | DL640-128 DL640-68 | DL640-128 DL640-68 DL640-129 | DL430-127 DL430-128 DL430-129 DL430-68 | 360AU-99B 3600V-99 MT4-96 HDHLM4-68 HDHLM4-96 |
| Pin, Dowel | 04-0031 | 04-0030 | 04-0031 | 04-0031 | 04-0030 | 04-0030 | |
| Pin, Roll | 04-4138 | | 04-4144 | 04-4144 | | | |
| Protective Plug | | | | | | | HDLM4-191 |
| Retaining Ring | DL430-217 DL430-217 DL430-231 | DL430-147A DL430-217 DL430-231 | DL640-147 | DL640-147A DL640-147 DL640-217 DL640-231 | DL640-217 DL640-231 | DL430-147A DL430-217 DL430-231 | |
| Seal, U-Cup | | | DLU6-146 | | | | |
| Segment | D40-9 | D40-9 | | | | | |
| Spring | | DL430-197 [x4] | | | | | |
| Spring Clutch | DL600-215A | DL640-215A [3] | DL600-215A [4] | DL600-215A [4] | DL640-215 [3] | DL640-215 | KDLM4-169 |
| Spring, Pre-Load | DL430-311A | DL430-311A | DL640-311A | DL640-311A | DL640-311A | HDLM4-311 | HDHLM4-311 |
| Thrust Bearing | D40-41 | D40-41 | D60-41 | D60-41 | D60-41 | D40-41 | |
| Thrust Bearing Washer | DL400-42A [x2] | DL400-42A [x3] | D60-42 [2] | D60-42 [2] | D60-42 [3] | DL400-42A | |
| Truarc Ext. Snap Ring | | | | | DL640-147B | | |
| U-Cup Seal | | | DL640-180 [2] | | | | |
| Wiper Ring Seal | DL430-331 [x2] DL430-97 | DL430-97 | | DL640-331 [2] DL640-97 | DL430-331 DL640-97 | DL430-97 | |

*= Same as English/Metric Vise

| Replacement Parts | HD6-KIT1 | HDH6-KIT1 | *HDLM6-KIT1 | HDHLM6-KIT1 |
|---------------------------|------------------------------|---|------------------------------------|-------------------------------|
| Back Up Ring | | HDH6-187 HDH6-188 | | HDH6-187 HDH6-188 |
| Friction Clamp | | | | |
| O-Ring | 3600V-99 HD6-68 HD6-96 | MLH35-173A PM43-96 HDH6-96 HDH6-68 | DL640-128 DL640-68 DL640-129 | HDH6-96 DLU4-96 HDH6-68 |
| Pin, Dowel | | | 04-0030 | |
| Plug, Nylon | | | | HDHLM6-168 |
| Protective Plug | | | | 3600V-191 |
| Retaining Ring | DL640-217 | | DL640-217 DL640-231 | DL430-217 DL430-231 |
| Spring Clutch/Compression | | | DL600-215 [x3] | HDHLM6-169 |
| Spring, Pre-Load | | | DL640-311A | HDHLM6-311A |
| Thrust Bearing | D60-41 | | D60-41 | |
| Thrust Bearing Washer | D60-42 [x2] | | D60-42 [x2] | |
| Truarc Ext. Snap Ring | HD6-147 | | DL640-147B | |
| Wiper Ring Seal | DL640-97 | | DL430-331 DL640-97 | DL430-97 DL430-331 |

Hydraulic Intensifiers

| APD50-112-KIT | APD60-112-KIT |
|---------------|---------------|
| APD50-119 | APD60-127 |
| APD50-127 | APD60-128 |
| APD50-128 | APD60-129 |
| APD50-129 | APD60-130 |
| APD50-130 | APD60-131 |
| APD50-131 | |

Power Drawbar Parts



500-00 Drawbar Assembly Cover



101-02 Powerhead Assembly



Mechanical Power Drawbar Assembly



212-1000 Drawbar Wrench



102-01A Valve Assembly w/FRL [312-06], Switch [102-04A]



Drawbar



202-03-SA Actuator Block Assembly

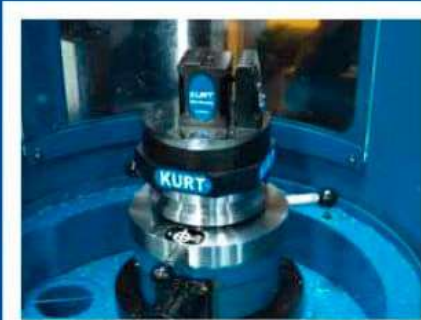


400-10 Universal Base



208-00 Drawbar Socket

www.kurtworkholding.com PH 763.574.8309 TOLL FREE PH 1.877.226.7823 FAX 763.574.8313



DTR DoveLock 5 axis vise mounted on a Kurt Pallet



XL vises mounted back-to-back



SeraLock Towers for high density



DoveLock jaws used for glass machining



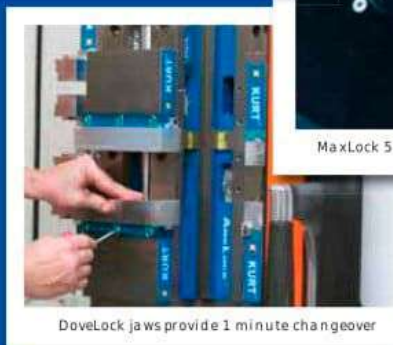
MaxLock 5 axis vise mounted in a Kurt vise used as a receiver.



PinLock locating system installed in a tombstone



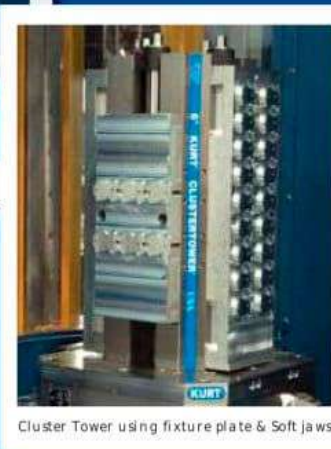
MaxLock 5 axis vise used for turbine blade machining



DoveLock jaws provide 1 minute changeover



Air powered vise used in a robotic cell



Cluster Tower using fixture plate & Soft jaws

Kurt® Manufacturing

Industrial Products Division

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