

**VICES, BASES, PALLETS & TOMBSTONES**

***5 AXIS WORKHOLDING***

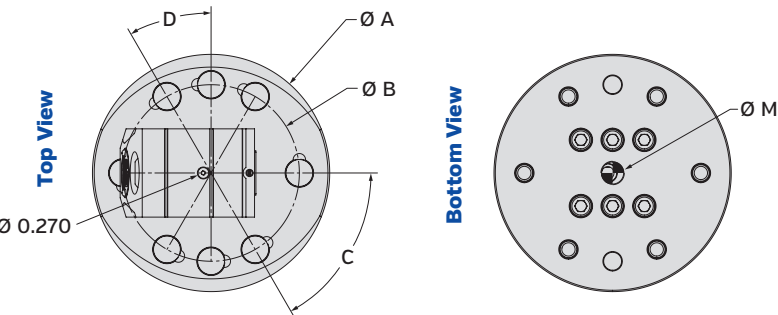


**KURT**   
The Original AngLock® Vise Company

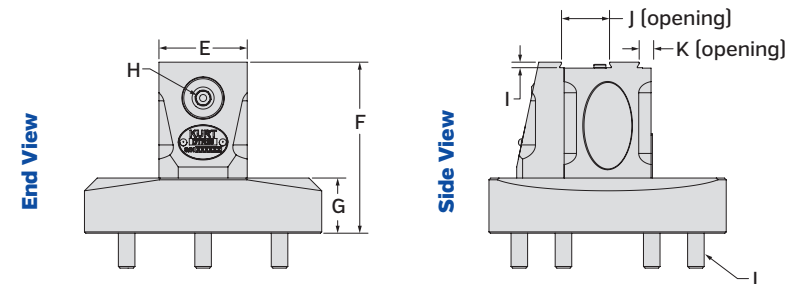
# DoveLock™ Dovetail 5 Axis Vise



- 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.



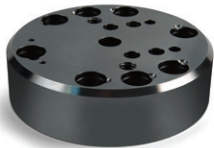
|                     | DTR20        | DTR10        | DT20         |
|---------------------|--------------|--------------|--------------|
| ØA                  | 5.38         | 2.69         | 4.47         |
| ØB                  | 4.00         | 2.00         | 3.50         |
| C                   | 60°          | 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 Ship 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           |



Dovetail Cutter  
Model: DT20-1



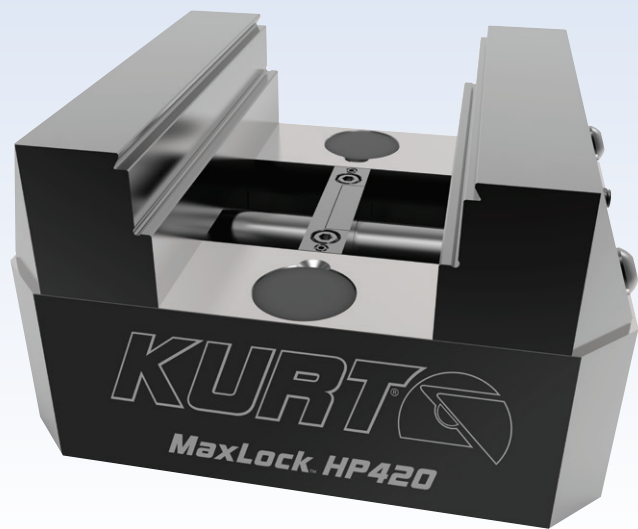
Optional Riser Base  
for DT20 vise only  
Model: DT20-1

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



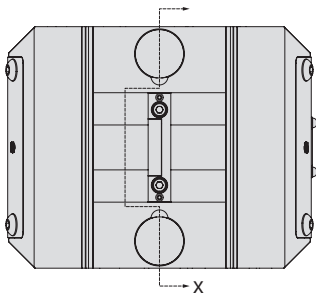
Additional pallet options available-  
contact factory for details

# MaxLock™ HP420 Vise

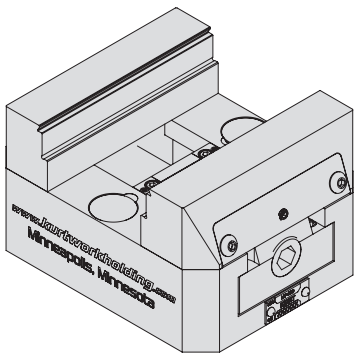
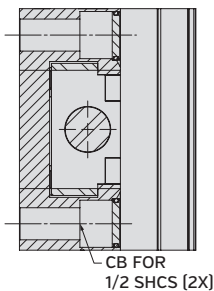


- Designed with 2 sets of jaws, Serrated and Dovetail (shipped with serrated jaws).
- Each set of jaws has 3 different clamping areas, at the bed, in the middle of the jaw and at the top of the jaw. See table below.
- Combats lift with new Kurt lift control system.
- ±0.0005" repeatability.
- 80,000 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.
- Estimated Ship Weight: 10 Lbs. [HP420]
- Clamps both OD and ID.
- Patents pending.

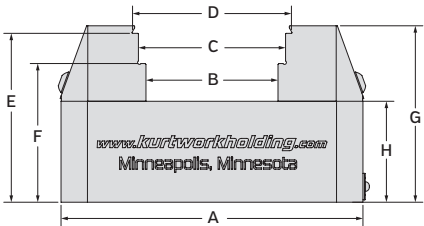
Top View



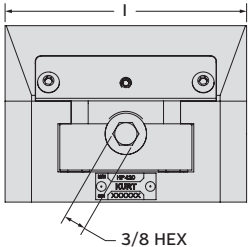
Section X-X



Side View



End View



| CLAMPING FORCE RANGE |                 |
|----------------------|-----------------|
| Inch Pounds          | Pounds of Force |
| 10                   | 500             |
| 20                   | 1,200           |
| 30                   | 1,900           |
| 40                   | 2,500           |

| Model | Jaw Type | A     | B             | C             | D             | E     | F     | G     | H     | I     |
|-------|----------|-------|---------------|---------------|---------------|-------|-------|-------|-------|-------|
| HP420 | Dovetail | 5.000 | 0.600 - 2.190 | 0.310 - 2.440 | 0.500 - 2.630 | 2.797 | 2.297 | 2.922 | 1.672 | 4.000 |
|       | Serrated |       |               |               | 0.560 - 2.690 |       |       |       |       |       |
| HP440 | Dovetail | 7.000 | 2.600 - 4.190 | 2.310 - 4.440 | 2.500 - 4.630 | 2.797 | 2.297 | 2.922 | 1.672 | 4.000 |
|       | Serrated |       |               |               | 2.560 - 4.690 |       |       |       |       |       |
| HP460 | Dovetail | 9.000 | 4.600 - 6.190 | 4.310 - 6.440 | 4.500 - 6.630 | 2.797 | 2.297 | 2.922 | 1.672 | 4.000 |
|       | Serrated |       |               |               | 4.560 - 6.690 |       |       |       |       |       |

# MaxLock™ 5 Axis Vise



Shown with optional riser base

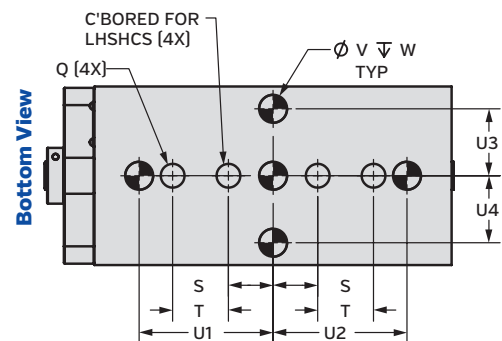
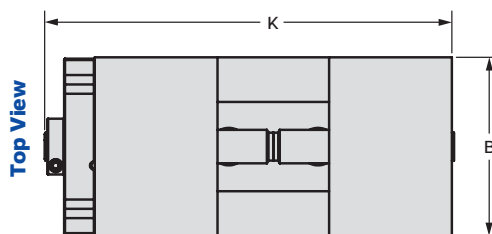
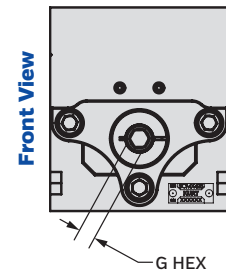
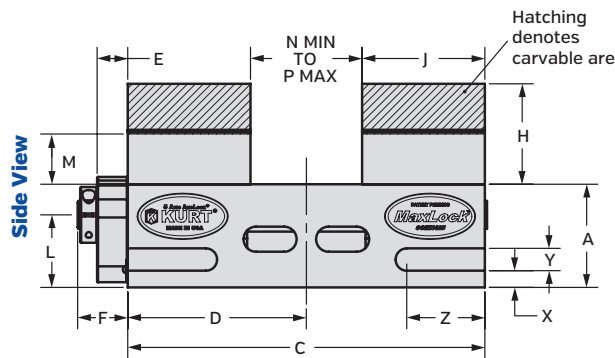
- Self-centering vise for five axis machining.
- $\pm 0.0002$ " repeatability.
- Adjustable Center Line.
- Machinable Jaws – choice of aluminum or steel.
- The customer will machine in a step for higher accuracy eliminating the need for parallels.
- Holds up to a 6-1/2" long parts with model SCM425.
- 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:  
SCM250: 5/64", 3/32"  
SCM425: 3/32", 1/8"



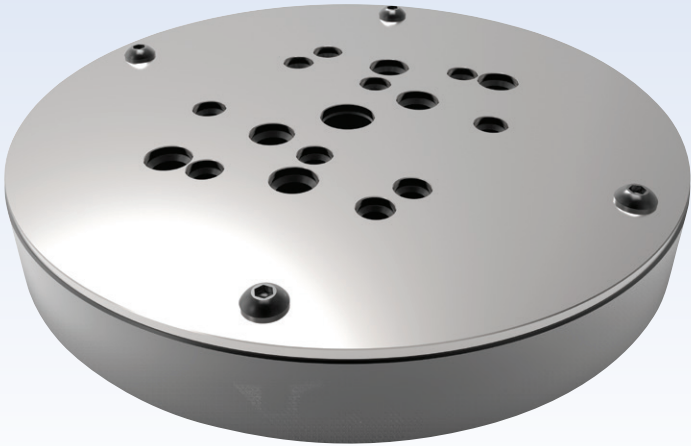
Optional riser bases:  
SCM250-RISERKIT  
SCM425-RISERKIT

Optional mounting  
pallets – contact  
factory for options

| DIMENSIONAL DATA |         |         | SCM250 CLAMPING FORCE LBS. |           | SCM425 CLAMPING FORCE LBS. |           | JAW KITS (INCLUDES TWO JAWS)     |        |       |        |        |
|------------------|---------|---------|----------------------------|-----------|----------------------------|-----------|----------------------------------|--------|-------|--------|--------|
|                  | SCM425  | SCM250  | Ft. Lbs                    | Lbs Force | Ft. Lbs                    | Lbs Force | Part Number                      | Length | Width | Height | Weight |
| A                | 2.313   | 2.000   | 10                         | 350       | 10                         | 500       | SCM250AL-JAWKIT Aluminum Jaw Kit | 2.00   | 2.50  | 1.50   | 2      |
| B                | 4.000   | 2.500   | 20                         | 750       | 20                         | 1,000     | SCM425AL-JAWKIT Aluminum Jaw Kit | 2.75   | 4.00  | 2.25   | 5      |
| C                | 8.000   | 5.000   | 30                         | 1,300     | 30                         | 1,500     | SCM250C-JAWKIT Steel Jaw Kit     | 2.00   | 2.50  | 1.50   | 4      |
| D                | 4.000   | 2.500   | 40                         | 1,800     | 40                         | 2,000     | SCM425C-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 Ship Weight  | 30 Lbs  | 10 Lbs  |                            |           |                            |           |                                  |        |       |        |        |



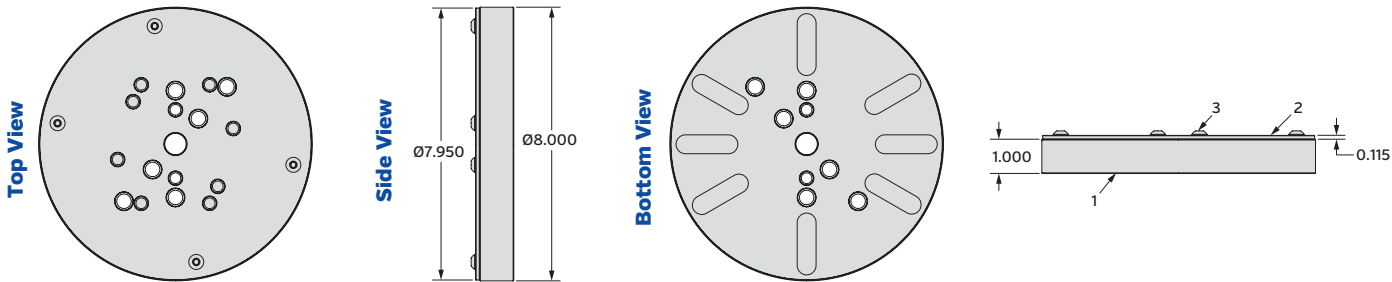
# BP8 5 Axis Adapter Plates



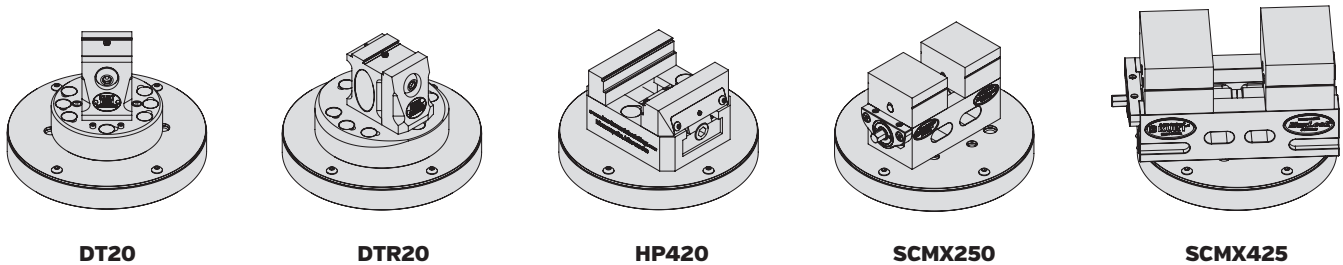
- Designed to cover a wide range of vises and a wide range of tables.
- The mounting slots are designed to be covered up when a vise is mounted to keep clear of chips.
- An easier way to mount Kurt 5 axis vises to a machine table.

| 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   |



## Example Setups



# MaxLock™ Multi-Axis AngLock® Vise

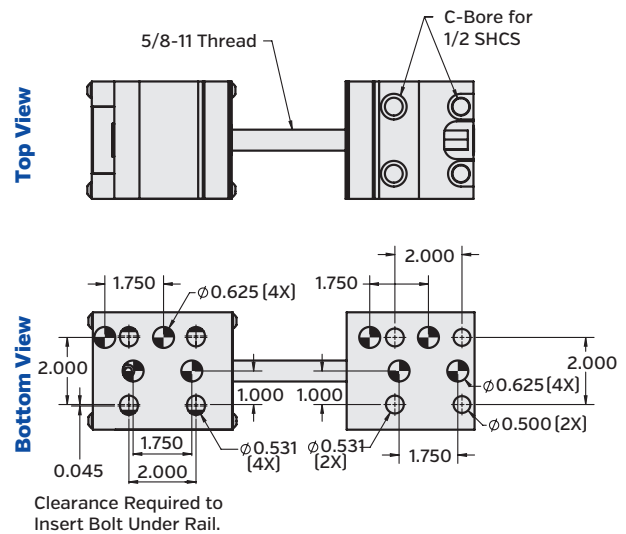
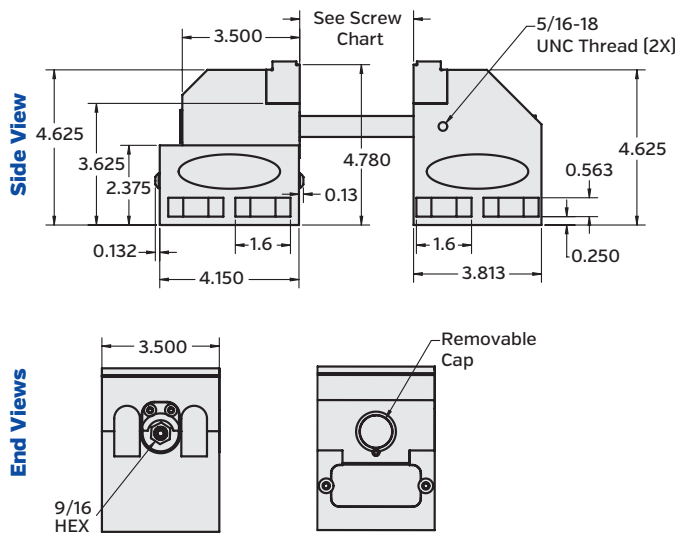


- Kurt AngLock Design pulls the part down.
- Pull Type feature decreases stationary deflection.
- 0.625" stroke – Allows for wider range of clamping before having to change setup.
- Modular Design – Mounts on two inch grid patterns when removed from the riser and "T" slots or center hole grids 100 mm 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.
- Ship Weight: 31 Lbs.

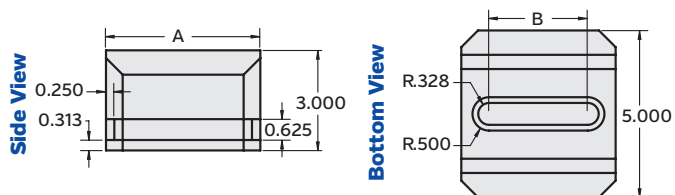
## Screw Selection Chart

| 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

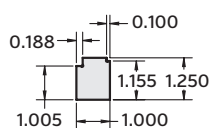


## Optional Risers Part No MX350RL and MX350RS



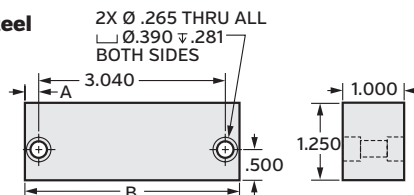
| Part Number | A     | B    |
|-------------|-------|------|
| MX350RS     | 4.625 | 2.95 |
| MX350RL     | 5.650 | 3.97 |

## 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 |

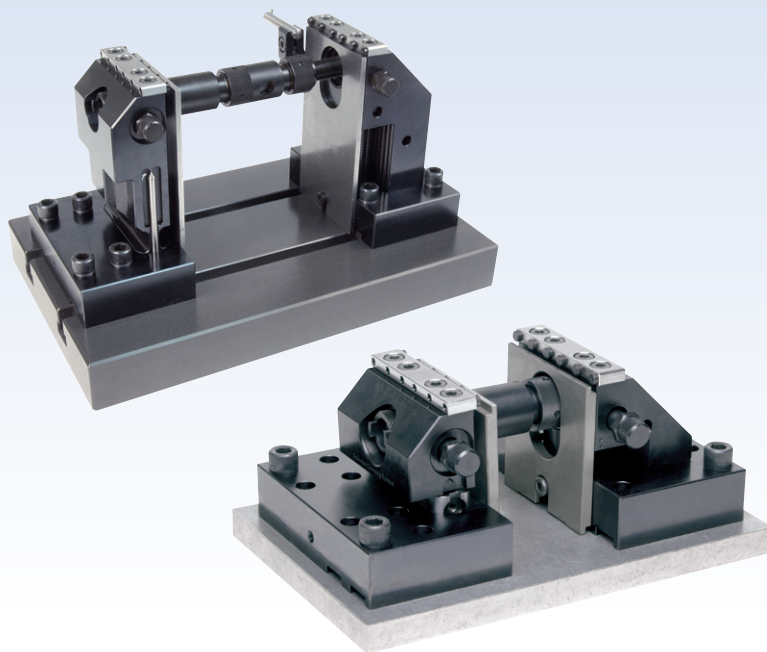


## Options:

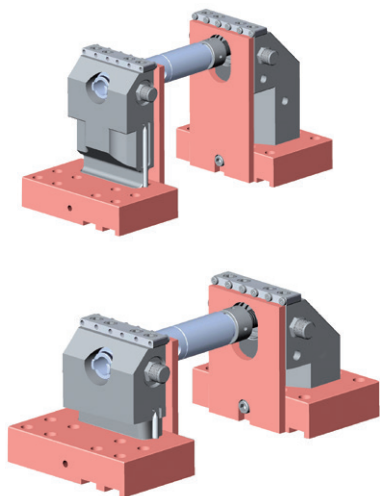
MX350-236 Double Step Jawplate

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, by incorporating the tension spindle directly below the work piece support.
- 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.

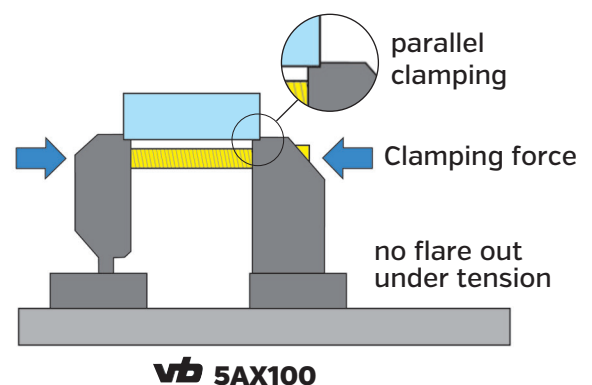
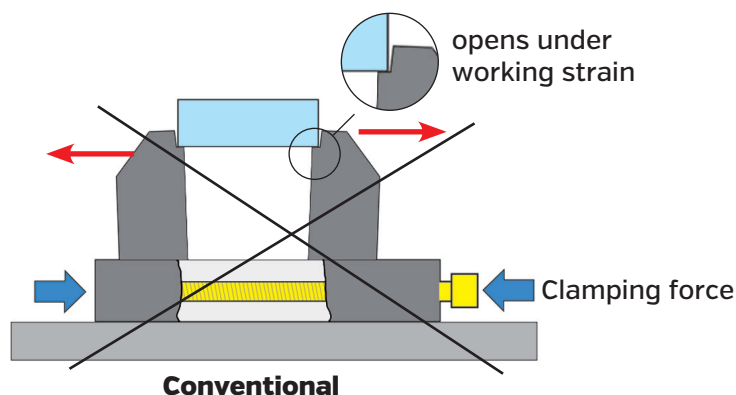


| Technical Data                                                | VB 5 AX 100-H<br>740-01-000-51   | VB 5 AX 100-L<br>740-01-003-61   |
|---------------------------------------------------------------|----------------------------------|----------------------------------|
| Clamping Height above machine table [CH]                      | 175 mm* [6.889"]                 | 100 mm* [3.937"]                 |
| Extended height +25 mm<br>see pos.9 [Parts No. 740-04-025-00] | 200 mm [7.874"]                  | 125 mm [4.921"]                  |
| Extended height +50 mm<br>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<br>[1124-8992 Lbs]     | 5 - 40 kN<br>[1124-8992 Lbs]     |
| Clamping width with standard set                              | 20 - 236 mm<br>[0.787" - 9.291"] | 20 - 236 mm<br>[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

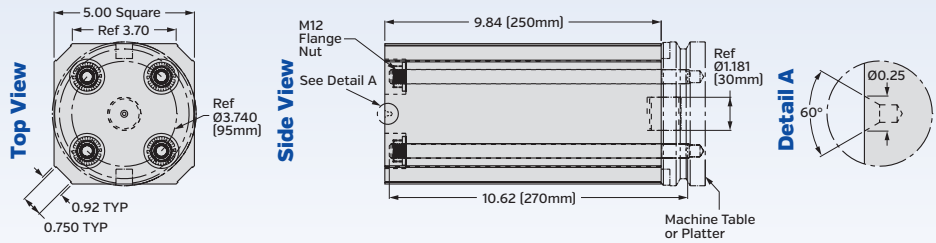
The clamping force is generated right where it is needed



## 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 handle by today's CNC machines.



## MiniLock Clamps



- Ideal for use with KURT Mini Tombstones or for palletizing small parts to be loaded into receivers.
- 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.
- Clamping jaw made from rugged Ampco 18 aluminum bronze.
- Actuating screw is made from a special alloy steel.
- Steps may be machined into the clamp jaw for to raise parts above surface.
- The low profile allows for machining of top surfaces.
- Standard thread sizes and standard hex keys.
- One MiniLock package contains six MiniLocks.

| Model Number         | Hex Size | Hex Thickness | Screw Size | Hex Wrench Size | Screw Length | Suggested Tapped Hole Loc. 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 [-.39-.13mm]                                   | C'Bore Depth ±0.020 (±.50mm) | Max part Size Differential Double Clamp | Approx. Thread Engagement |                |                     |
| <b>INCH MODELS</b>   |          |               |            |                 |              |                                              |                             |                            |                         |                                         |                                                                         |                              |                                         |                           |                |                     |
| 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               |
| <b>METRIC MODELS</b> |          |               |            |                 |              |                                              |                             |                            |                         |                                         |                                                                         |                              |                                         |                           |                |                     |
| 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               |

## Kurt® Manufacturing

### Industrial Products Division

9445 E. River Road NW, Minneapolis, MN 55433

Phone 763.574.8309 Toll Free Phone US & Canada 1.877.226.7823

Fax 763.574.8313 Toll Free Fax US Only 1.877.226.7828

email [workholding@kurt.com](mailto:workholding@kurt.com)

[www.kurtworkholding.com](http://www.kurtworkholding.com)



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