



**KURT** WORKHOLDING

**PF420C**  
**PF420D**  
**PF420S**

Operating Instruction Manual



ENGLISH

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## WISE DATA

Use this to fill out information about your vise for quick reference.

Purchase Date: \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_

Purchase Order: \_\_\_\_\_

Purchased From: \_\_\_\_\_

Delivery Date: \_\_\_\_\_

Serial No.: \_\_\_\_\_

**NOTE: MAKE SURE TO REGISTER YOUR WARRANTY ONLINE AT [KURTHOLDING.COM](http://KURTHOLDING.COM)**

# INTRODUCTION

Thank you for purchasing a Kurt Precision Force vise. The PF Series of vises are top of the line workholding options for today's rapidly growing 5-Axis market. Backed by a lifetime warranty against workmanship and material defects, these vises will perform at the highest levels of precision and reliability for years to come, when used and maintained properly.

Kurt Anglock maintains it's time tested design, which gives you the part pull down that you need when machining high end parts. Other features Include:

- Gibbed jaws for maximum clamping repeatability
- Multiple interchangeable jaw options
  - Carvable (PF420C)
  - Dovetail (PF420D)
  - Serrated (PF420S)
- Easily adjustable center line
- Fast and effortless lash removal system
- Double ended screw for flexible vise operation

PF VISE CLAMP FORCE	
TORQUE FT-LBS	FORCE IN LBS.
10	720
20	1,520
30	2,250
40	3,050
45	3,375

# OPERATING INSTRUCTIONS

For proper vise operation insert the handle onto the hex of the vise. This handle, combined with the correct amount of torque will provide you with all the clamping force you will need to machine your parts. **DO NOT** use any other type of pressure to open or close your vise.

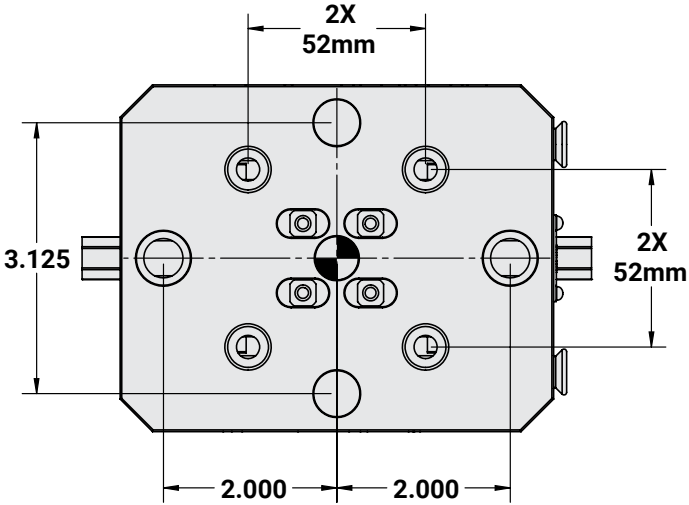
The uses of handle extensions, air impact wrenches, breaker bars, or hammer strikes are not recommended and will void the warranty if used. This will also cause damage to the central holding block and screw threads. If you need more clamping force you may require a larger vise.

To properly clamp a part in your Kurt vise you should place the part in the center of the jaws. Clamping only on one side can result in loss of accuracy. If one-sided clamping is necessary you **MUST** use a dummy part on the other side.

# INSTALLATION & MOUNTING

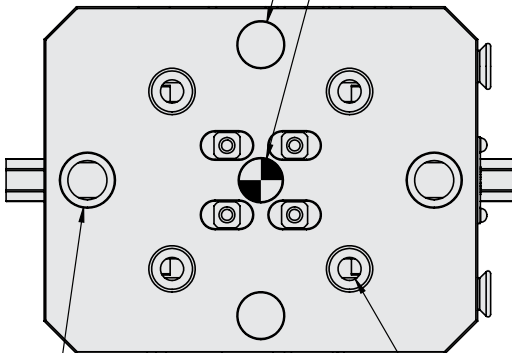
All of the vises in the PF Series can be mounted with 1/2 inch SHCS using the counter-bored through holes in the center of the rails of the vise. Additional hole locations are shown below.

Fig.1



2X DRILLED & C'BORED  
FOR 1/2" SHCS

Ø0.500  $\nabla$  0.500



2X KURT STANDARD  
PULL STUD HOLES

Ø12MM PULL STUD  
M8 X 1.25 THREADS (4X)

# JAW ASSEMBLY

When you receive your new PF Series vise, you will notice that the jaws do not come attached. To install the vise jaws, follow the steps given below.

1. Place both movable jaws on the rails of the vise, and slide the movable jaws over the beaks of the nuts.
2. Set the rear covers into their slots in the back of the movable jaws, then use the button head screws to anchor the rear covers to the movable jaws.
3. Finish Securing the movable jaws by installing the spring plungers into the rear covers. Tighten the spring plungers until they are snug, then loosen them by 1/8 to 1/4 turn.

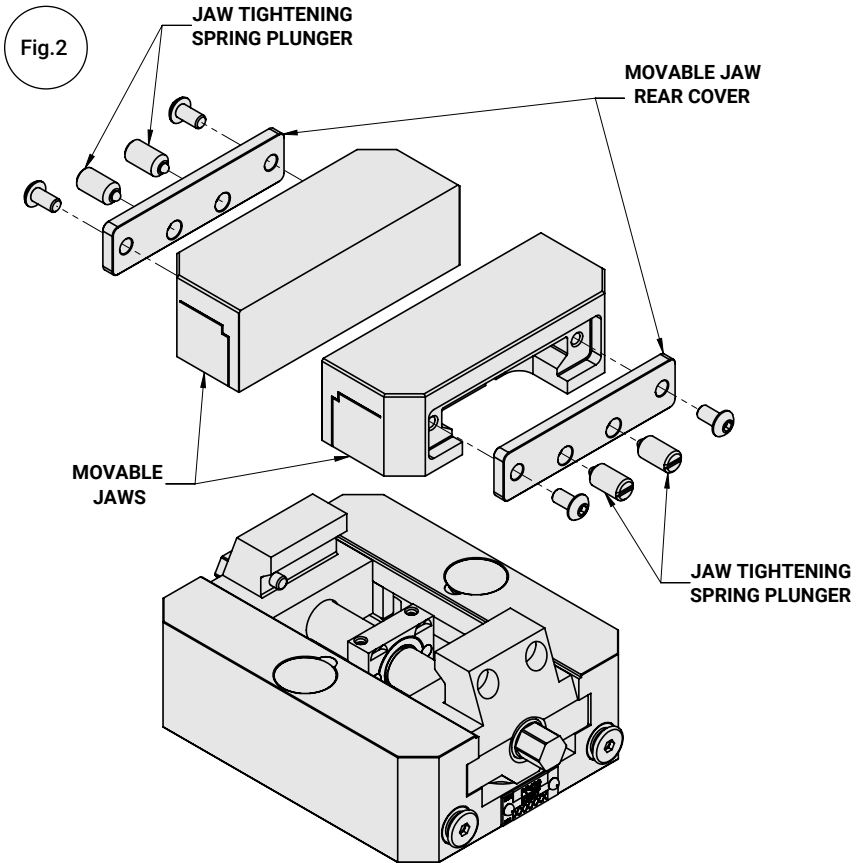


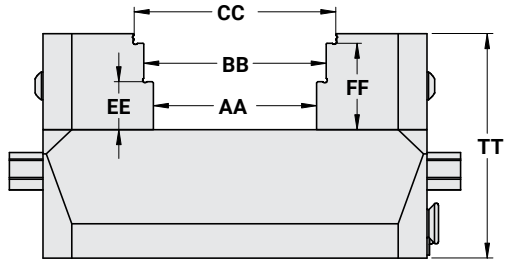
Fig.3

# JAW POSITIONING

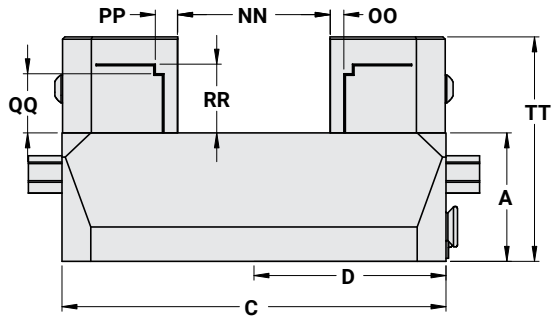
**Note:** Dimensions below are in inches unless specified.

<b>A</b>	1.672
<b>C</b>	5.000
<b>D</b>	2.500
<b>AA</b>	2.125
<b>BB</b>	2.375
<b>CC</b>	2.625
<b>DD</b>	2.501
<b>EE</b>	0.625
<b>FF</b>	1.125
<b>NN</b>	2.000
<b>OO</b>	0.190
<b>PP</b>	0.303
<b>QQ</b>	0.770
<b>RR</b>	0.885
<b>TT</b>	2.922

## Serrated Jaws (PF420S)



## Carvable Jaws (PF420C)



## Dovetail Jaws (PF420D)

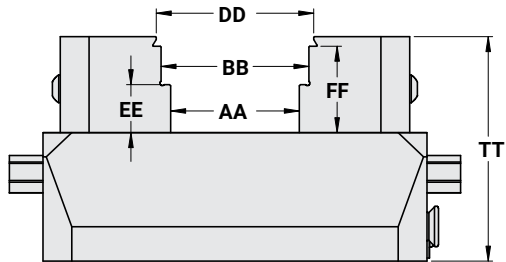
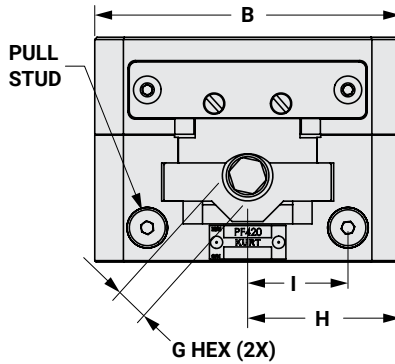
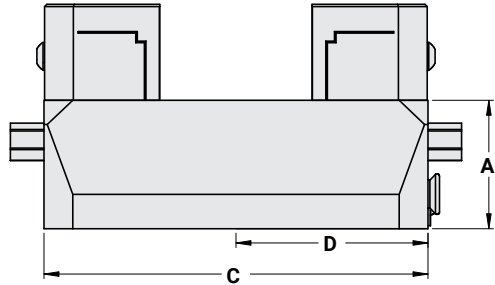


Fig.4

# SIDE & END VIEW

**Note:** Dimensions below are in inches unless specified.

<b>A</b>	1.672
<b>B</b>	4.000
<b>C</b>	5.000
<b>D</b>	2.500
<b>G</b>	7/16
<b>H</b>	2.000
<b>I</b>	1.313
<b>S</b>	4.921



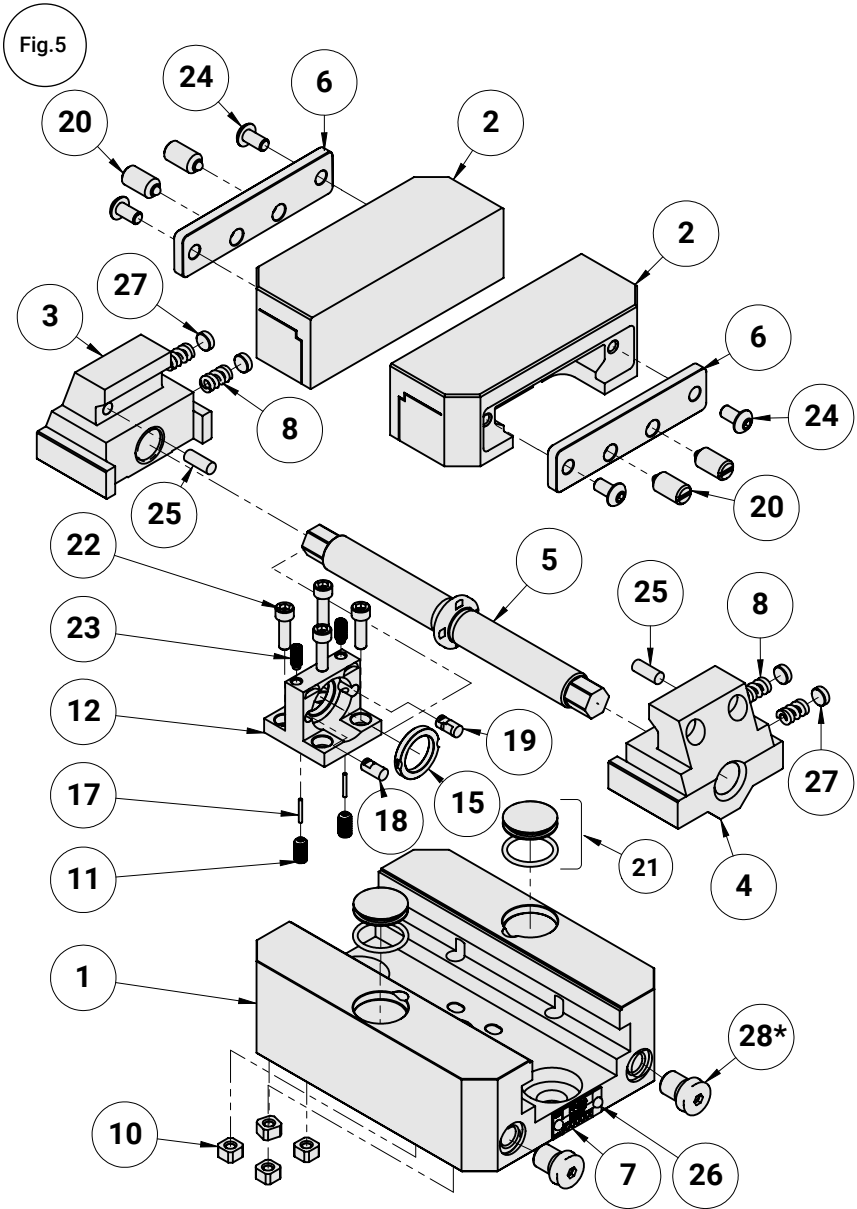
# PF420 PARTS LIST

ITEM#	PART#	DESCRIPTION	QTY.
1	PF420-1	Body	1
2	PF420-2*	Movable Jaw	2
3	PF420-3R	Nut 9/16-18 Right Hand Thread	1
4	PF420-3L	Nut 9/16-18 Left Hand Thread	1
5	PF250-5	Screw	1
6	PF420-53	Rear Cover	2
7	PF420-102	Model/Serial Number Tag	1
8	PF420-169	Compression Spring	4
10	PF250-195	Heavy Duty Square Nut	4
11	PF250-196	Set Screw w/Nyloc Modified	2
12	PF420-212-CP	Central Holding Block	1
15	PF250-272	Thrust Washer Collar	1
17	PF250-311	Straight Wire Spring	2
18	PF250-364L	Locking Pin Left Hand	1
19	PF250-364R	Locking Pin Right Hand	1
20	PF420-366	Spring Plunger	4
21	3600V-191-SA	Subassembly includes: Protective Plug (3600V-191) and O-Ring (605-03)	2
22	00-1194	SHCS 8-32 X 0.562 LG	4
23	01-1853	Half Dog Set Screw	2
24	03-0021	SBHCS 10-32 X 0.375 LG	4
25	04-0028	Dowel Pin	2
26	07-0230	U-Type Drive Screw	2
27	PF420-16	Pad Guide	4
28**	PF420-367	Pull Stud for Lifting Vise	2
29	PF420-10-SA	P420-10-SA Handle Assembly	1
<p>*Note: PF420C Carvable Jaw - PF420-2C  PF420D Dovetail Jaw - PF420-2D  PF420S Serrated Jaw - PF420-2S</p>			

\*\*Pull Stud not included – available as an accessory at [www.kurtworkholding.com](http://www.kurtworkholding.com).



# PF420 MECHANICAL DRAWING

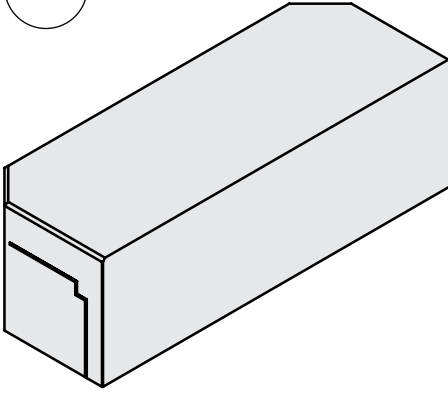


29 HANDLE ASSY  
NOT SHOWN

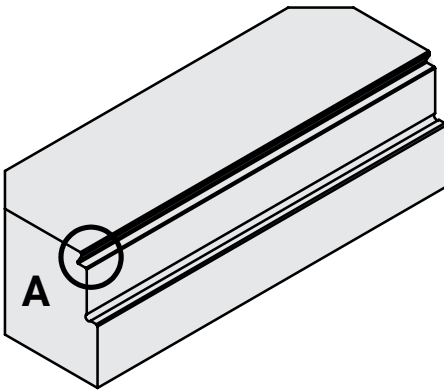
\*Pull Stud not included – available as an accessory at [www.kurtworkholding.com](http://www.kurtworkholding.com).

# STANDARD JAW OPTIONS

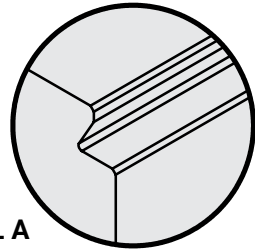
Fig.6



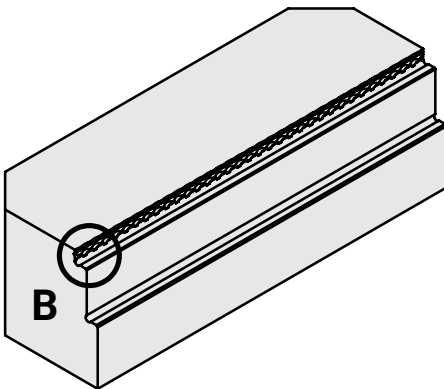
**PF Series Carvable Jaws**  
Part Number: PF420-2C



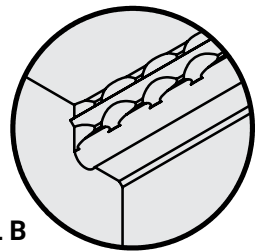
**PF Series Dovetail Jaws**  
Part Number: PF420-2D



DETAIL A



**PF Series Serrated Jaws**  
Part Number: PF420-2S



DETAIL B

# CENTERLINE ADJUSTMENT

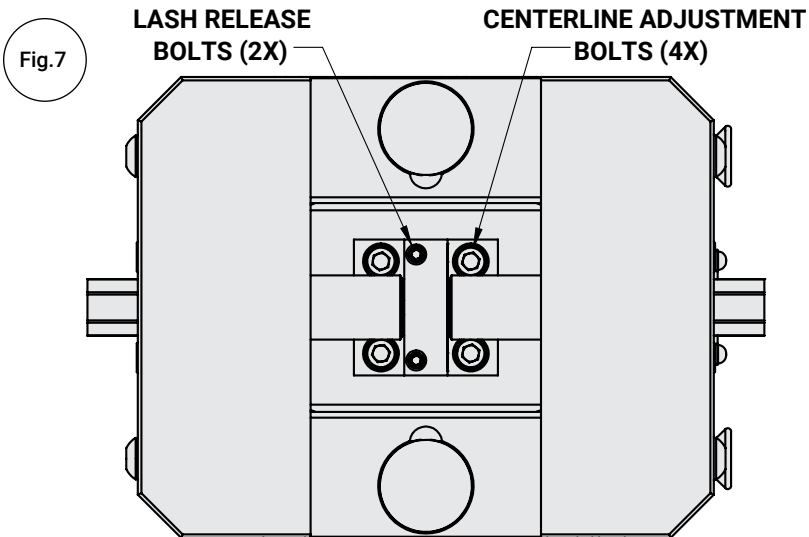
The PF Series of vises are designed for quick and easy adjustment of the vise centerline.

1. Loosen the four centerline adjustment bolts using a 9/64 hex wrench
2. Adjust the centerline by sliding the nut and screw assembly within the body of the vise. A mallet may be required to gently tap the ends of the screw in the direction of the desired adjustment.
3. When the centerline is in the desired position, re-tighten the four centerline adjustment bolts.

# LASH REMOVAL

Along with an easily adjustable centerline, the PF vises also have an extremely simple to use lash removal system.

4. Loosen the two lash release bolts on the top surface of the central holding block, using a 5/64 hex wrench.
5. Tap the top of the central holding block with your finger.
6. Re-tighten the lash release bolts.

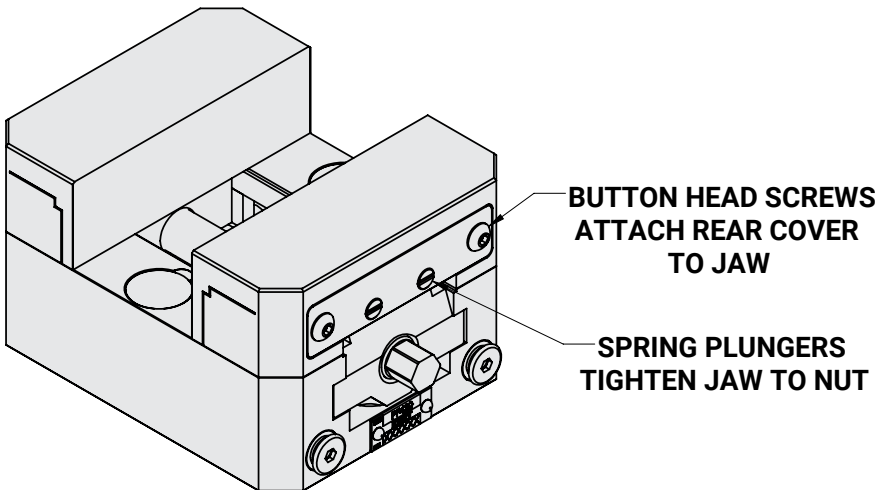


# JAW REMOVAL

The Jaws on the PF420 are easily removed. The following steps will help you remove them for replacement or maintenance purposes.

1. Loosen the spring plungers with a flat head screwdriver, to remove any spring forces that may be pushing against the rear cover plate.
2. Loosen and remove the two button head screws that attach the rear cover plate to the movable jaw, using a 1/8 hex wrench.
3. Slide the free jaw forward on the bed of the vise until it clears the beak of the nut. Then lift the freed jaw off of the vise.
4. Repeat the above process for the second jaw.

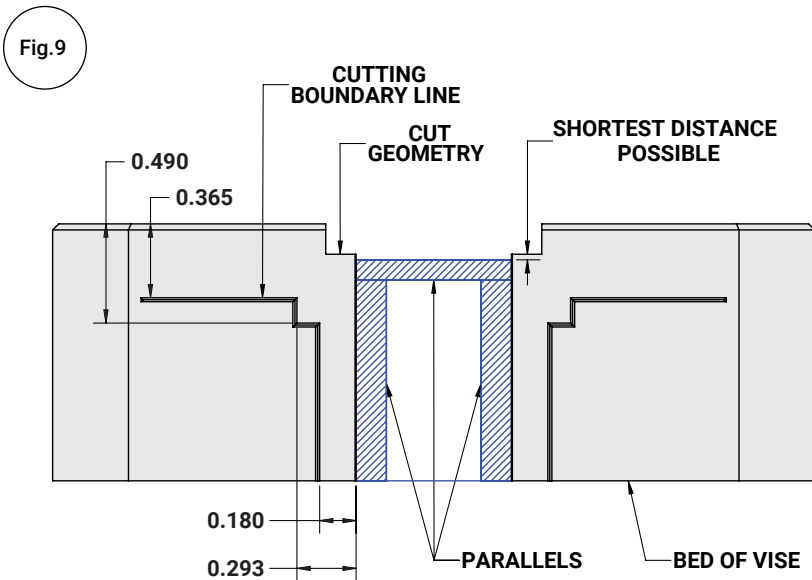
Fig.8



# MACHINING THE CARVABLE JAWS

For the best results when machining the carvable jaws for the PF Series of vises, follow the procedure below.

1. Use parallels, vise hard jaws, or other precision cut blocks that are set just below the cut surface as shown in the diagram below.
2. Clamp your precision blocks in the vise. For the best accuracy, clamp the vise to the same amount of torque you will be using during production when cutting your jaws.
3. **DO NOT** cut inside the boundaries of the scribed lines on the jaw blanks. Cutting inside of these lines will damage the internal features of the jaw. Dimensions are shown below.



# MAINTENANCE SCHEDULE

It is very important to perform regular maintenance on your Kurt vise to assure proper operation. Improper maintenance will result in poor vise performance and may void your warranty.

## Daily/Weekly

1. Remove chips from surface of vise.
2. Visually inspect for chips, seals for damage and cleanliness.
3. Visually inspect for chip entrapments and remove when necessary.
4. Air-dry and apply rust inhibiting oil to the machined surface of the vise.

## Monthly

1. Open the vise to the maximum opening.
2. Remove the movable jaws using the procedure on page 10.
3. Turn the movable jaw over and clean the inside cavity.
4. Remove any chips, clean and apply a light coat of machine oil to the machined surface of the following item
  - a. Nut and Screw assembly (clean exposed threads on the screw)
  - b. Bed of vise (top of "rails")
  - c. Inside of the vise between the center ways.
5. Your vise is now ready for use. Open and close your vise to check for proper operation. Center the part to be clamped in the vise and close. Your parts should be centered from side to side to insure proper clamping.

**A**ll Kurt Manufacturing Company industrial workholding products and parts with the exceptions noted below, are warranted against defects in material and workmanship for the life of the product or part. (The life of the product is defined as that point in time when such item no longer functions due to normal wear and tear.) Failure to properly maintain and/or properly operate the product or part that has been worn out, abused, heated, ground or otherwise altered, used for a purpose other than that for which it was intended, or used in a manner inconsistent with any instructions regarding its use. The sole obligation of Kurt Manufacturing Company, Inc. (Kurt) and the purchaser's **SOLE AND EXCLUSIVE REMEDY** hereunder, shall be limited to the replacement or repair of any Kurt product or part (by an authorized Kurt technician) which are returned to Kurt Manufacturing Company's place of business or any authorized service center, transportation, shipping and postal charges prepaid, and there determined by Kurt Manufacturing Company to be covered by the warranty contained herein.



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Thank you for your  
purchase! If you have any  
feedback or questions  
please contact us:

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