



MX350 MaxLock

Operating Instructions Manual
Manual de instrucciones de operación



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WARNING:

Indicates a potential danger that requires correct action to avoid personal injury.

Vise 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 kurtworkholding.com

Introduction

Thank you for purchasing a Kurt vise. You have just purchased one of the best machine vises in the industry. Our new MX350 MaxLock 5-axis vise is a welcomed product in our industry. The outstanding accuracy of this product is second to none. Backed by a IRONCLAD lifetime warranty, this product will last a lifetime when used and maintained properly.

The original Kurt Anglock vises are designed for precision clamping. The new 5-axis vise incorporates that time tested theory and give the precision you need the in the area you need it. Having the clamping screw directly below your work we can achieve maximum clamping force and provide up to .0005 in clamping repeatability. It offers ultra-high precision through many important features.

Features include:

1. A maximum of 40ft.lbs of torque providing up to 7000 lbs. of clamping force.
2. .625 inches of stroke.
3. Pull type design to decreases stationary jaw deflection.
4. Main screw is simple to machine and is 100% replaceable by the customer.
5. Flexibility in mounting using auxiliary clamping slots provided on the sides of the vise.
6. Fully machinable jaws for greater accuracy eliminating the need for parallels.

The patented Anglock design allows the movable jaw to advance in such a way that each pound of force forward induces a ½ pound force downward which minimizes the jaw lift and increases accuracy. This combined with the needle bearings increases jaw clamping pressure.

Set-up Instructions

The MX350 will come packaged and assembled in a ready to use state. Check your list of parts with the items you have received with your MX350 5-axis vise. You should have items 1 thru 23. These are the items provided with the standard MX350 vise. Mounting bolts will be in a plastic bag. Optional accessories will be addressed later in this manual.

The MX350 vise is designed to be mounted using a 2" center to center mounting hole pattern (see Fig. 1). Follow the steps below to set-up your new MX350 for operation.

1. Remove the MX350 from the carton and rest it on the work surface.
2. Remove the main screw by first removing the retainer that holds the screw in place (item 7 & 22). Back the screw out using the handle provided. The bearings and washers should come out with the screw. **DO NOT LOSE THEM.**
3. Remove the chip guard (item 9 & 23) on the rear of the moveable (item 1).
4. Next you will need to set-up the movable jaw. (see diagram 3) You will note that there is a 1/4-20 set-screw in the rear of the movable jaw. This will need to be backed out slightly. You can now remove the movable jaw from the nut by lifting up on the movable jaw.
5. With the nut (item 3) exposed you will see another 1/4-20 set-screw that needs to be backed out. You can now slide the nut out of the base.
6. Set your base on the work table in the area you wish to mount it using the 1/2-13 SHCS provided. Lightly tighten the bolts to hold the base in place.
7. Set the stationary side of the vise (item 4) on the work table opposite the movable base. Set it up so you have about 3/8" less than the thickness of your part. (see diagram 2). Find the long 1/2-13 SHCS (items 19 & 20) to mount the stationary with and tighten them to 30ft.lbs. max.
8. Now you can tighten the SHCS in the movable base to 30ft. lbs.
9. With the movable and stationary base bolted securely to the work table you can reinstall the nut (item 3). Re-tighten the set-screw in until it stops and back it out 1/8 of a turn. (diagram 3)
10. Lower the movable jaw back on to the nut. Re-tighten the set-screw in until it stops and then back out 1/8 of a turn.
11. Replace the chip guard on the back of the movable base.
12. Screw the main screw back into the assembly until you can reinstall the retainer.

Your new Kurt MX350 5-axis vise is ready for operation. Be sure to use caution when clamping your parts and DO NOT exceed the recommended maximum torque value of 40lbs of torque

Fig.1

Mounting hole pattern

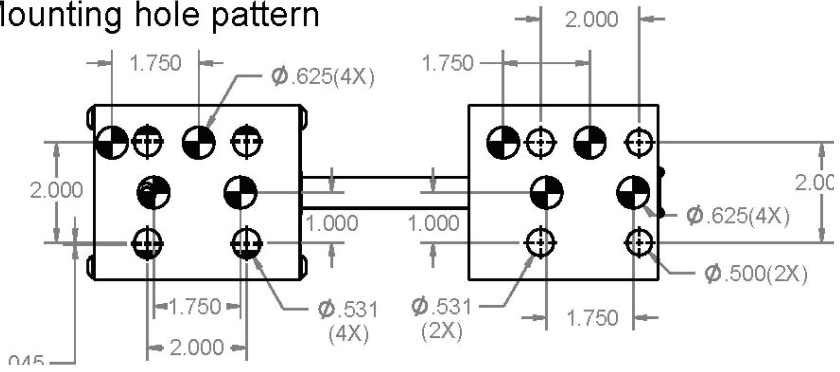
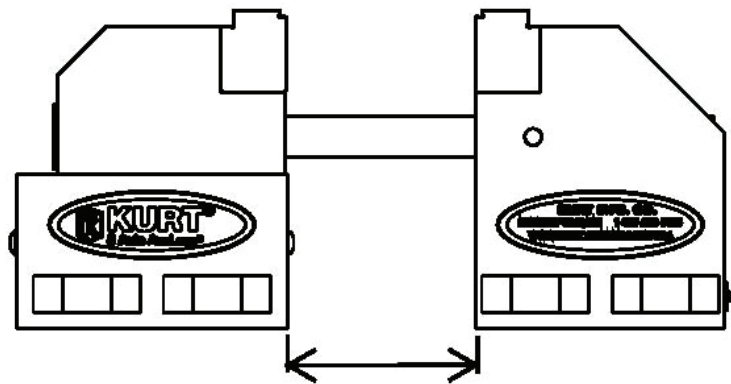


Fig.2



Set this distance at approximately 3/8 inch less than the thickness of your part.

Operating Instructions

For proper vise operation insert the handle on the hex end of the vise. Rotate clockwise to clamp and counterclockwise to unclamp your 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. A high quality calibrated torque wrench can be used if needed. The maximum torque for the MX350 is 40ft. lbs. This will yield approx. 7000lbs of clamping force. DO NOT use any other type of pressure to open or close your vise.

To properly clamp a part in the MX350 5-axis vise and for the best accuracy and repeatability you should machine the horizontal surface of the jaw. (*Fig. 4*) This is best done after you have the vise completely set up and ready for operation. Insert a small piece of material in the vise just below the step in the jaw as shown in diagram 4. Tighten the jaws on the part and hold tight. Run the cutter down the horizontal surface on both sides of the vise removing approximately .005 of stock. Be careful not to cut the vertical surfaces if you can. This will true up the jaw and make for a very accurate repeatable vise. If you choose not to cut your jaws you can expect a tolerance of +/- .005 on the step. The standard jaw is hardened to 40RC and is coated with a black oxide treatment. Your vise is now prepared and ready for full operation. Be sure that all screws are tight and guards are in place.

NOTE: The tolerance build-up will affect the location of the step in the "Z" axis. Mill to clean up the horizontal surfaces of the step jaws when the greatest accuracy is needed. (*Fig.4*)



WARNING:

The use of handle extensions, air impact wrenches, breaker bars or hammer strikes are not recommended and will void the warranty if used. This can cause damage to the thrust bearing and screw threads.

Fig.3

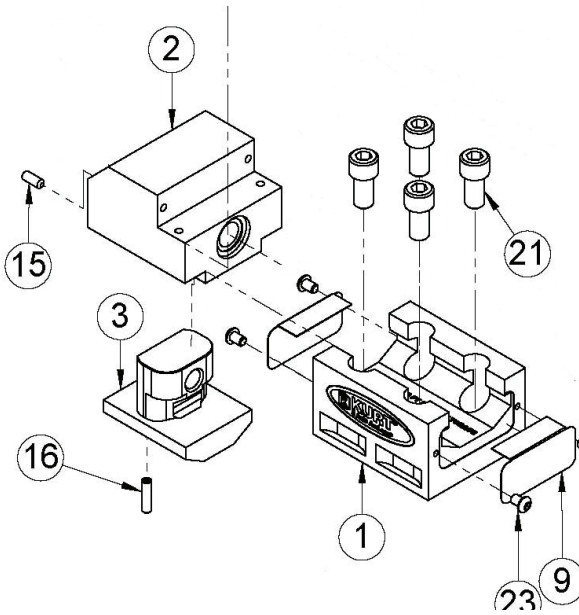
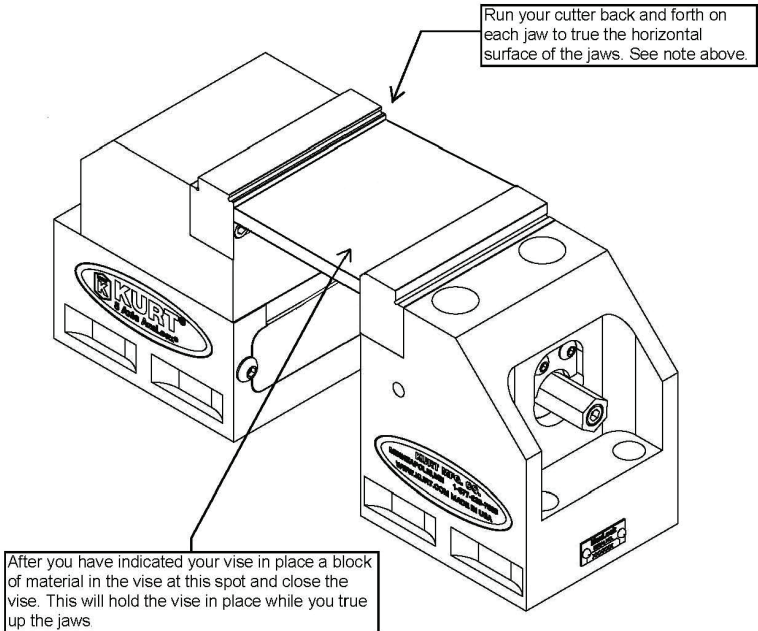
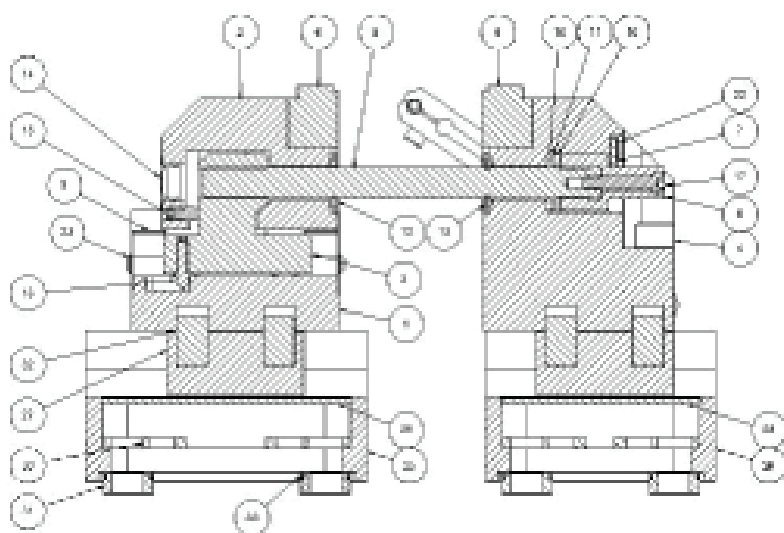
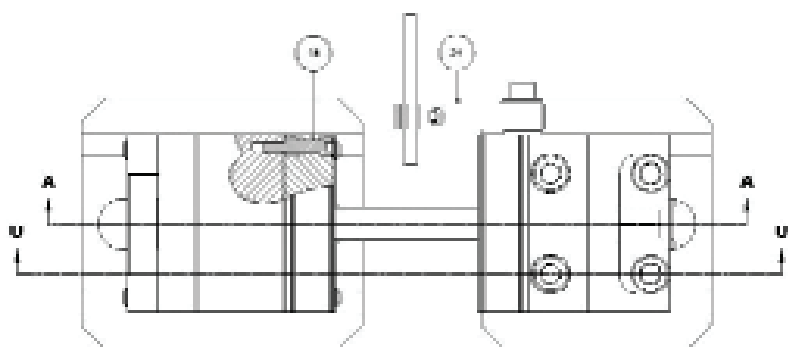
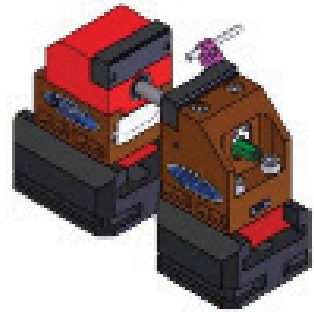


Fig.4

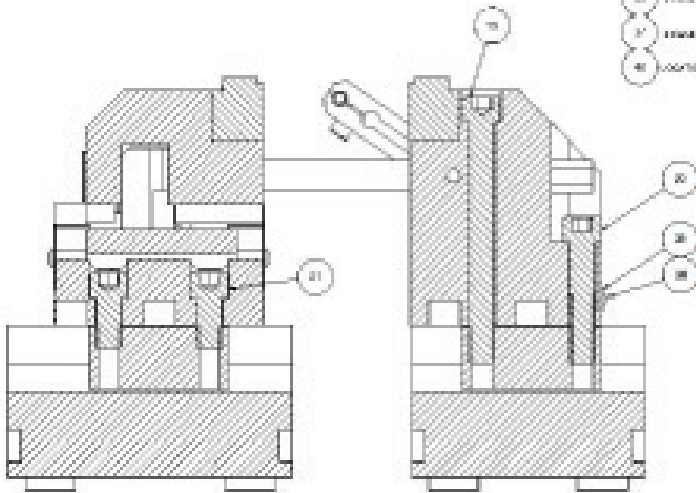






LEGENDA

- 1) HANDLE KEYWAY
- 2) HANDLE KEYWAY
- 3) TECHNIC AXLE
- 4) TECHNIC BUSH
- 5) TECHNIC BUSH
- 6) AXLE LOCK/TIGHTENER BUSH

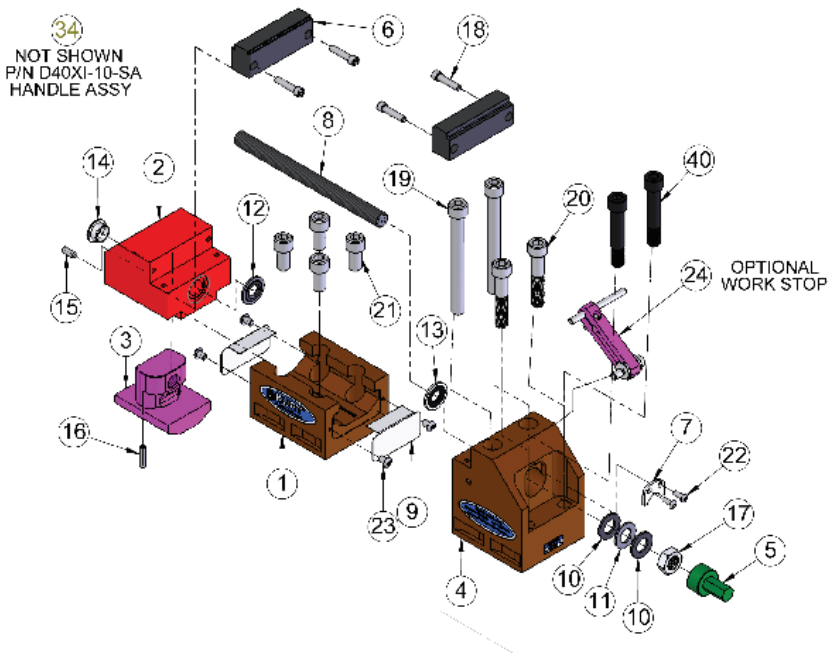


MX350 Parts List

ITEM#	PART#	DESCRIPTION	QTY.
1	MX350-1	T-SLOT BASE	1
2	MX350-2	MOVABLE	1
3	MX350-3	NUT	1
4	MX350-6	STATIONARY	1
5	MX350-293	DRIVE, SCREW	1
6	MX350-236	HARD JAW PLATE	2
7	MX350-252	RETAINER, LOCKING	1
8	MX350-5-	5/8-11 THREADED ROD MODIFIED	1
9	MX350-248	CUSTOM CHIP GUARD	2
10	MX350-42	THRUST WASHER	2
11	MX350-41	THRUST BEARING	1
12	MX350-97	THREAD SEAL WIPER	1
13	MX350-211	INTERNAL BRUSH SEAL	1
14	MX350-12	PLASTIC CAP	1
15	01-3477	SHSS 1/4-20 X 5/8 LONG	1
16	01-3480	SHSS 1/4-20 X 1.0 LONG	1
17	MX350-163	JAM NUT	1
18	00-1294	SHCS 1/4-20 X 1 1/8 LONG	4
19	00-1431	SHCS 1/2-13 X 4 3/4 LONG	2
20	00-1425	SHCS 1/2-13 X 2 1/2 LONG	2
21	00-1419	SHCS 1/2-13 X 1 1/4 LONG	4
22	03-0022	BHCS 10-32 X 1/2 LONG	2
23	03-0020	BHCS 10-32 X 1/4 LONG	4
24	6AWS	WORKSTOP	1
25	MX350-276L	RAIL	1
26	MX350-276S	RAIL	1
27	MX350-291	4 BOLT NUT	2
28	MX350-53S	SLOT COVER	1
29	MX350-53L	SLOT COVER	1
30	MX350-259	DUAL WASHER	4
31	MX350-31	O-RING KEY	4
32	04-0107	5/8n X 1.00 LG DOWEL	4

33	D40-68	O-RING #024	4
34	D40XI-10-SA	HANDLE ASSEMBLY	1
35	MX350-111	KURT / 5 AXIS STICKER	2
36	MX350-313R	WEBSITE STICKER	1
37	MX350-314F	MAXLOCK STICKER	1
38	07-0230	DRIVE SCREW	2
39	MX350-102	SERIAL TAG	1
40	MX350-176	LOCATOR BOLT	2

MX350 Mechanical Drawing



Replacement of 5/8 - 11 Threaded Rod



1. When reassembling the hex drive (drive screw) to threaded rod, thread (2) 5/8 - 11 nuts onto the new threaded rod. 1/4 - 20 tapped hole should extend about 1 - 1/2" beyond nuts.



2. Tighten jam nuts on threaded rod. These will allow you to clamp threaded rod in vise without damaging threads.



3. With nuts clamped in vise install the hex drive (drive screw), #MX350-293 and torque to 120 ft. - lbs.



4. Install 1/4 - 20 cap screw and torque to 200 in. - lb.



**Thank you for your purchase!
If you have any feedback or questions.**

**Please contact us at:
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or
1-877-226-7823**

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Manual Revision: 05.14.2014