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If you have any feedback or questions.**

**Please contact us at:
workholding@kurt.com
or
1-877-226-7823**

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3600H-Series Vise “Hydraulic” Base Assembly

3600H - Forward

3610H - Reverse

3620H - Forward, Short

3630H - Reverse, Short

Operating Instructions Manual



ENGLISH

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CAUTION:

Is used when your action or lack of action may cause serious 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



LIFETIME WARRANTY

IRON CLAD™

On All Kurt® AngLock® Workholding Products

All 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, transportation, shipping and postal charges prepaid, and there determined by Kurt Manufacturing Company to be covered by the warranty contained herein.

THE LIMITED WARRANTY DESCRIBED HEREIN IS MADE EXPRESSLY IN LIEU OF ANY OTHER EXPRESSED OR IMPLIED WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. KURT MANUFACTURING COMPANY IS NOT RESPONSIBLE FOR THE IMPROPER USE OF ITS PRODUCTS. KURT SHALL NOT BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL SPECIAL OR CONSEQUENTIAL DAMAGES, INCLUDING BUT NOT LIMITED TO, LOSS OF USE, REVENUE OR PROFIT.

KURT ASSUMES NO LIABILITY FOR, AND MAKES NO WARRANTY REGARDING ANY PURCHASE ITEMS WHERE THE MANUFACTURER OF SUCH ITEM EXTENDS A SEPARATE WARRANTY.



9445 East River Road NW
Minneapolis, MN 55433

kurtworkholding.com

Phone: 877-226-7823
Fax: 877-226-7828

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Troubleshooting Tips

The Kurt 3600-Series vise will operate mostly trouble free for many years. If properly maintained, this product is indestructible. In some cases it will be necessary to troubleshoot. Use the information below to help in the process.

Problem: My vise turns hard.

Tip: As a new vise the brush seal could be stiff. Allow for break in of vise.

Tip: As a used vise, it could be filed with chips and threads could be jammed. Properly clean and grease vise.

Problem: The collar comes off.

Tip: Retighten the four SHCS that hold it on. Proper adjustments need to be made. See the 3-6 month maintenance schedule.

Problem: The handle support is loose or comes off.

Tip: You may need a new retaining ring. This support will float, this is normal. Install a new snap ring if needed.

Problem: My vise will not turn in either direction.

Tip: The vise is jammed with debris. Disassemble and clean as needed.

Problem: My vise won't hold tolerance.

Tip: You may be experiencing jaw lift from clamping too high or on one side of the jaw. Lower the part in the vise jaw and clamp more material.

Problem: My vise won't clamp pneumatically.

Tip: Check pressure setting and valve position.

Operating Instructions

For proper vise operation insert the handle on to 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. Air pressure is only used for clamping purposes 1/4" stroke maximum. All other operations remain the same. A high quality calibrated torque wrench can be used if needed. **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 thrust bearing and screw threads. If you need more clamping force you may need to upgrade the vise to a larger one.

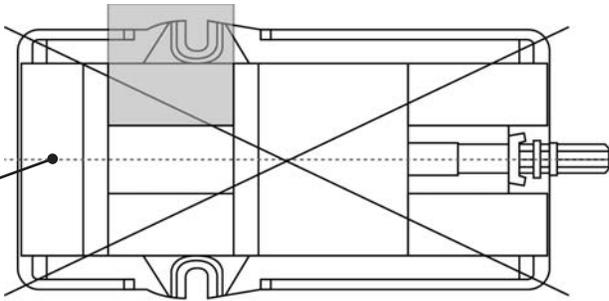
To properly clamp a part in your Kurt vise you should place the part in the center of the jaws resting on the ways of the vise. Clamping only on one side or above the movable and stationary jaws can result in jaw lift or loss of accuracy. *(See Fig. 1 on next page)*

If one-sided clamping is necessary you **MUST** use a dummy part on the other side. When using parallels or step jaws you must select a size that keeps the bottom of the clamped part at or below the top of the movable and stationary jaws. Always use jaw plates for clamping. If jaw plates are not used damage to the mounting surface of the movable and stationary jaw will occur. This will result in reduced clamping accuracy and repeatability.

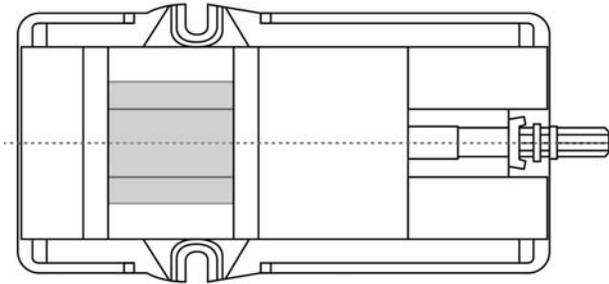
Fig.1

Sketch #2A
Incorrect part
clamping.

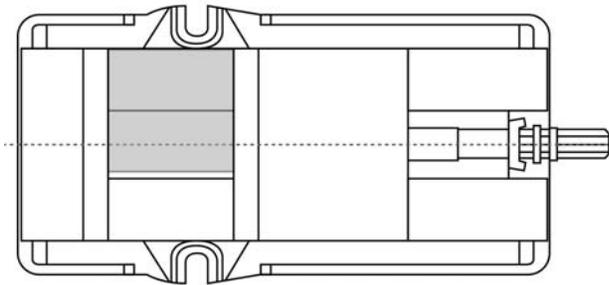
Vise width
centerline



Sketch #2B
Correct part
clamping.



Sketch #2C
Correct part
clamping.



Sketch #2D
Correct part
clamping.

Non-
machined
spacer

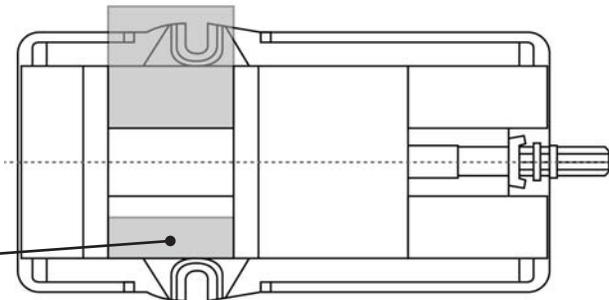


Fig.6

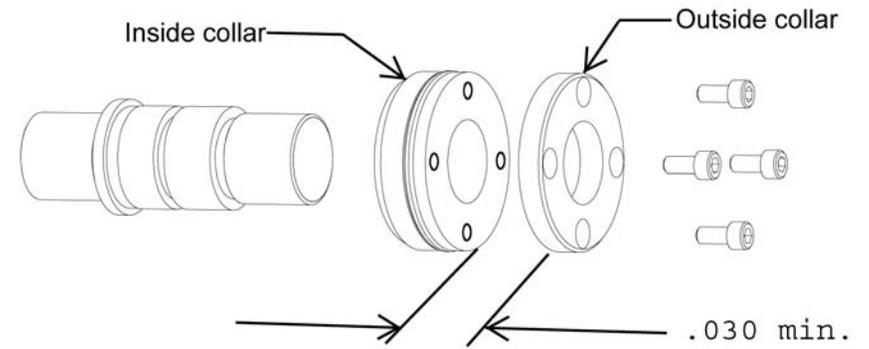
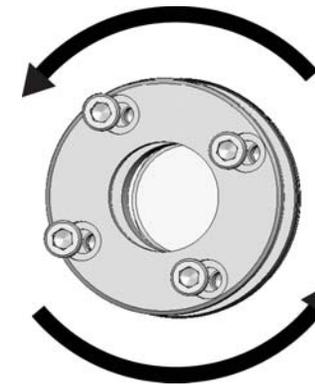


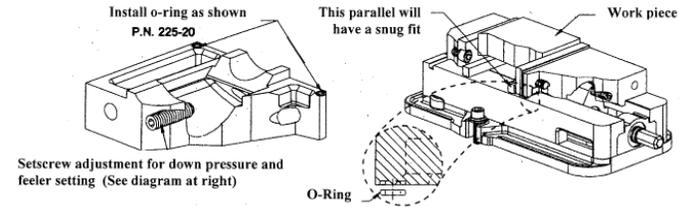
Fig.7



3 to 6 months

1. Open vise to maximum opening.
2. Loosen and remove the movable jaw.
3. Remove spiral-retaining ring from handle end of the vise screw.
4. Remove the screw support from the vise body.
5. Remove the two-piece locking collar by removing the four SHCS.
6. With one screw still half way out spin off the first collar.
7. Using a pin or screw reach into the second collar and spin it off exposing the bearings.
8. Remove the thrust bearing assembly consisting of (2) thrust washers and (1) thrust bearing from the counter bore in the end of the body.
9. Clean and inspect the counter bore, thrust washers and thrust bearing.
10. Apply water resistant grease to the thrust washer (i.e. Kurt lube p/n KLA or marine grade grease)
11. Install thrust bearing assembly on the screw in the reverse manner.
12. Install the first collar by spinning on the screw until it stops.
(Items 12-14 — See Fig. 6)
13. Install the second collar behind the first and spin on until it stops.
At this point the screw holes may or may not be lined up.
14. Turn the second collar counterclockwise until a hole lines up.
15. Then turn the collar back TWO (2) more screw holes. This will allow proper distance for the collar to lock on the threads and keep the bearings firmly in place. (Items 15-16 — See Fig. 7)
16. Install the four SHCS and make tight.
17. Install the screw support in the body on the screw (Hex end).
18. Your vise is now ready to use.

Proper O-Ring installation and usage

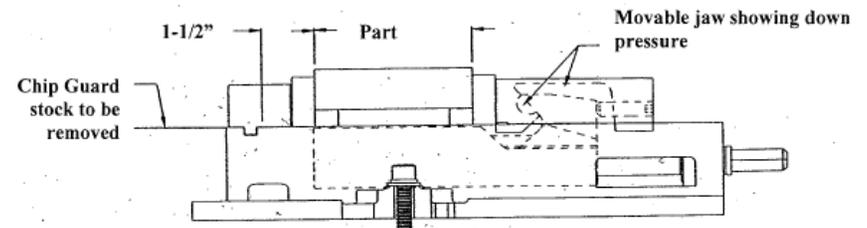


Most jobs require a tight contact between the workpiece and the parallels (see above). This option offered by Kurt Manufacturing Company is ideal for that. The O-Ring installation will provide for the movement needed when working with parallels.

Note: We do not recommend using this option with step jaws.

Installation: Install the O-Ring in the movable jaw as shown above in two places. Tighten the adjustment set screw for a .002" space under the front face of the movable jaw, then the jaw will tighten down during clamping and provide down movement, pulling the part onto the supporting parallel.

Proper Chip Guard installation and usage



CAUTION:

Chip Guard stock shown above is provided to keep chips from the nut and screw assembly and must be cut and deburred to meet your application and safety needs.
*This Chip Guard stock should be cutoff to fill the opening between jaw plates.

Example: Part plus 1 1/2 inches = Length of Chip Guard stock.

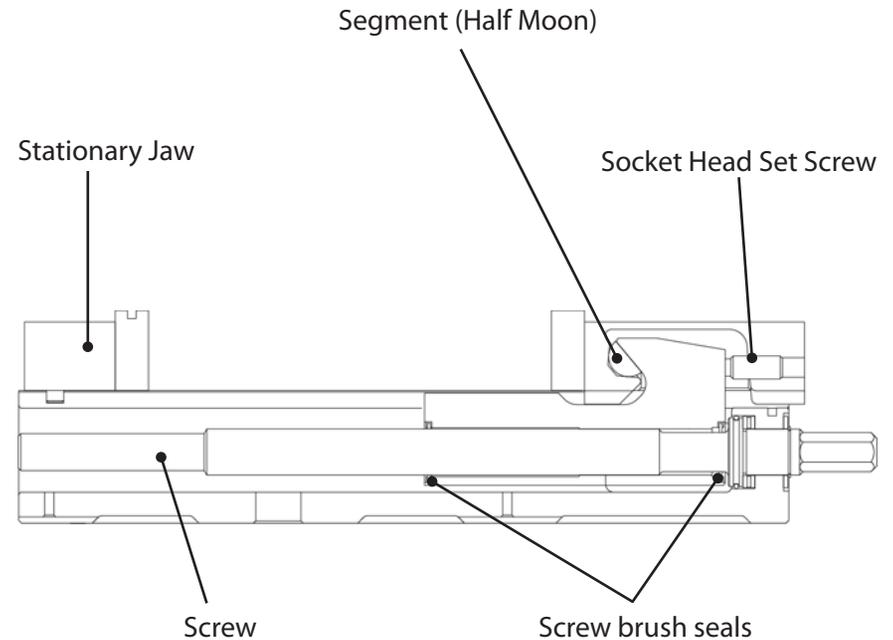
Note: Remove Chip Guard stock to lift vise. Corners of Chip Guard stock if left extended as shown above could cause injury.

3600H Parts List

ITEM#	PART #	DESCRIPTION	QTY.
1	3600V-1	Body	1
2	3600V-2	Movable Jaw	1
3	3600V-3	Nut	1
4	3600V-224B	Screw Support	1
5	360HU-5	Screw (STD Hydraulic)	1
6	3600V-211	Internal Brush Seal	2
7	D60-7	Jaw Plate	2
8	3600V-8-P	Retaining Nut, Two Piece	1
9	D60-9	Segment	1
10	D60I-10-SA	Handle Assembly	1
11	3600V-11A	Socket Set Screw, 1/2-13	1
12	Jan-78	Screw, SHSS, 1/4-20 x 3/4	1
13	3600V-128	O-Ring, Buna N, #129	1
14	3600V-99	O-Ring, Buna N, #117	1
15	00-1419	Screw, SHCS, 1/2-13 x 1-1/4	4
16	00-1191	Screw, SHCS, #8-32 x 3/8	4
17	3600V-147	Spiral Retaining Ring	2
18	3600V-248	Chip Guard, Short	1
19	3600V-249	Chip Guard, Long	1
20	36BHU	Hydraulic Clamping Unit	1
25	225-20	O-Ring, Polyurethane #008	2
26	DLU4-96	O-Ring, #016	2
27	3600V-191	Protective Plug	2

- Tighten the setscrew to firmly contact the nut. Back off the setscrew ¼ turn (approx.) note: DO NOT leave the setscrew tightened firmly to the nut as this may cause improper operation. The movable jaw is designed to move slightly (pivot side to side) so maximum jaw plate contact is maintained when clamping out-of-parallel, sawed, or cast parts.
- 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. (See Fig. 5 below)

Fig.5



Maintenance Schedule

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

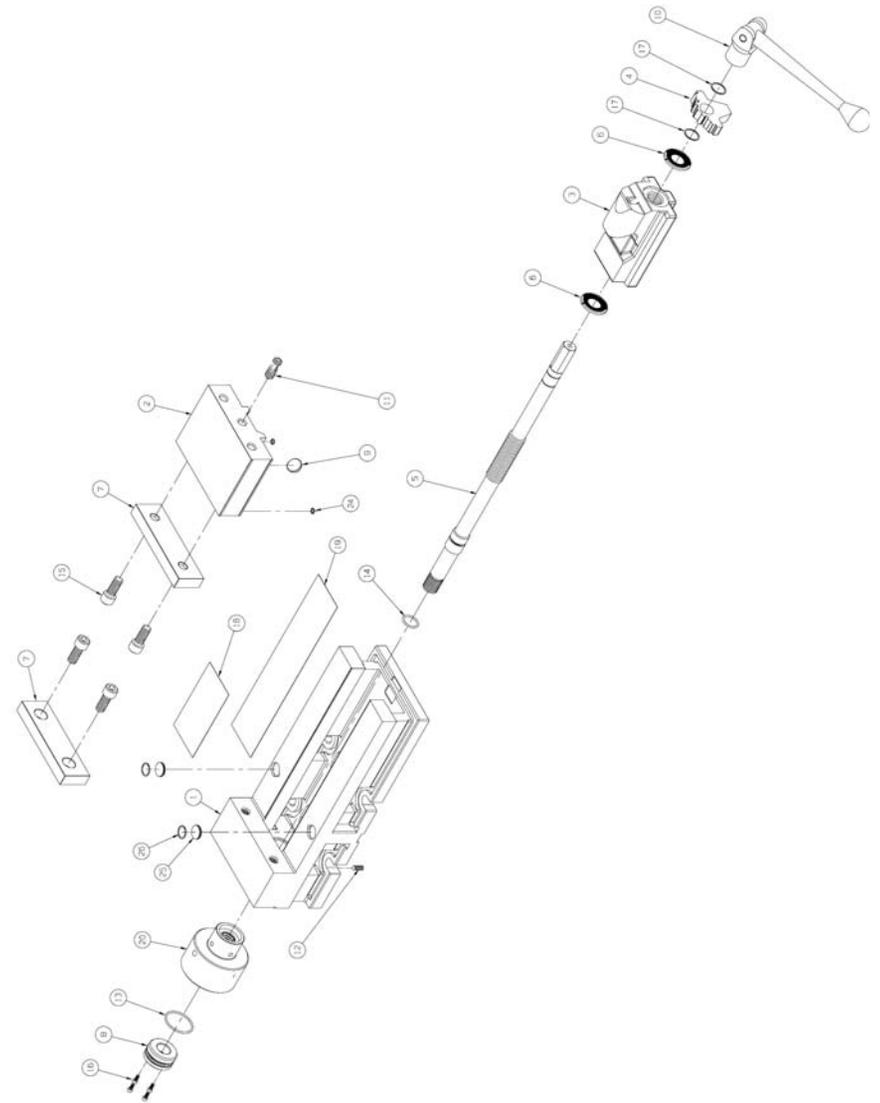
Daily/ Weekly

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. In the back of the movable jaw (handle end, center hole) loosen the socket head set screw (approx. 6 turns) With the hex key (Allen wrench) in the set-screw socket lift up and forward to pivot the Jaw off of the vise bed.
3. Slide the Jaw slightly toward the stationary jaw and lift up to remove the jaw from the "hook" of the nut. Note: A spherical segment (shaped as $\frac{1}{2}$ of a steel ball) is inside the cavity of the movable jaw and may fall out as the jaw is removed. Take care not to lose or misplace the spherical segment.
4. Turn the movable jaw over and clean the inside cavity. Also clean the spherical segment.
5. Remove chips, clean and apply a light coat of machine oil to the machined surface of the following item:
 - a. Nut & Screw assembly (clean exposed threads on the screw)
 - b. Bed of vise (top of "rails")
 - c. Inside of the vise between the center ways.
6. To re-assemble the movable jaw, apply a "glob" of grease to the under side of the movable jaw in the pocket. Place the spherical segment in the mating pocket and push into the grease. The grease will hold the segment in place when the jaw is turned over to replace.
7. Tip the jaw so the front of the jaw (the side with the jaw plate) is on the vise bed. Lower the jaw on to the bed so that the segment contact the hook part of the nut and rest the jaw on to the vise bed.

3600H Mechanical Drawing



3610H Parts List

ITEM#	PART #	DESCRIPTION	QTY.
1	3600V-1	Body, Machined, Versalock	1
2	3600V-2	Movable Jaw	1
3	3600V-3	Nut	1
5	361HU-5	Screw (Reverse Hydraulic)	1
6	3600V-211	Internal Brush Seal	2
7	D60-7	Jaw Plate, Purchased	2
8	3600V-8-P	Retaining Nut, Two Piece	1
9	D60-9	Segment	1
10	D50-10A-SA	Handle Assembly	1
11	3600V-11A	Socket Set Screw, 1/2-13	1
12	Jan-78	Screw, SHSS, 1/4-20 x 3/4	1
13	3600V-128	O-Ring, Buna N, #129	1
14	3600V-99	O-Ring, Buna N, #117	1
15	00-1419	Screw, SHCS, 1/2-13 x 1-1/4	4
16	00-1191	Screw, SHCS, #8-32 x 3/8	4
18	3600V-248	Chip Guard, Short	1
19	3600V-249	Chip Guard, Long	1
20	36BHU	Hydraulic Clamping Unit	1
24	225-20	O-Ring, Polyurethane #008	2
25	3600V-191	Protective Plug	2
26	DLU4-96	O-Ring, #16	2
25	225-20	O-Ring, Polyurethane #008	2
26	3600V-191	Protective Plug	2
27	DLU4-96	O-Ring, #16	2

Typical Hydraulic
vise conection



Fig. 4

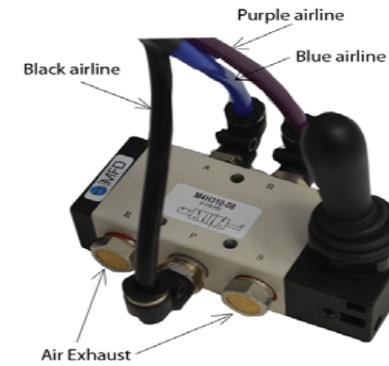


Fig. 5

Hand Valve connection



Fig.6

Hydraulic Set-up

The 3600H Series Hydraulic vises use the KHP5000PF or KHP5000PH Hydraulic Pump.

1. Remove plastic caps from pressure and release ports on Hydraulic pump. Install 90° fittings.
2. Remove plastic caps from pressure and release ports on hand or foot valve. Install straight fitting.
3. Install straight fitting on the Hydraulic Unit (1/8 NPTF) of the 3600H/3610H vise.
4. A filter-lubricator-regulator (KHP5000PF-KIT see fig. 3) combination is recommended to insure clean air coming into the unit. See Clamping Force Chart for air pressure required to attain desired clamping force.
5. Connect the FRL to the input air port on the rear of the KHP5000PF/PH hydraulic pump. See fig.4 & 6.
6. Connect the hydraulic line to the hydraulic unit on the vise and then to the output side of the hydraulic pump fig.4
7. If using a hand valve connect the 3-line cluster fig.5 & 6.
8. Apply air pressure (80 PSI maximum) to system. Loosen swivel fitting at vise and bleed air. Tighten fitting. Release air pressure.
9. Repeat previous step until all air is purged
10. The KHP5000PF/PH hydraulic will come pre-filled with oil (use #13 or DTE lite if needed)
11. System is now ready for use.

NOTE: For multiple vise hook-ups, call factory for recommendations.

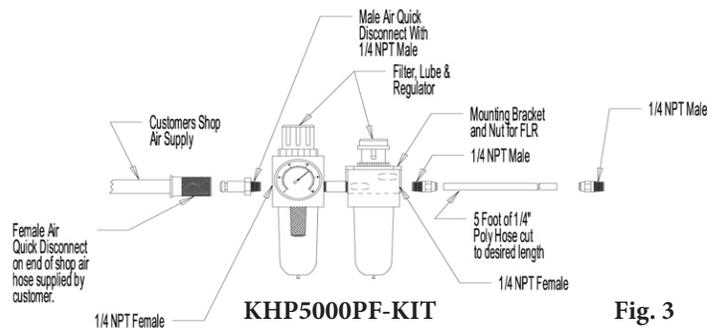
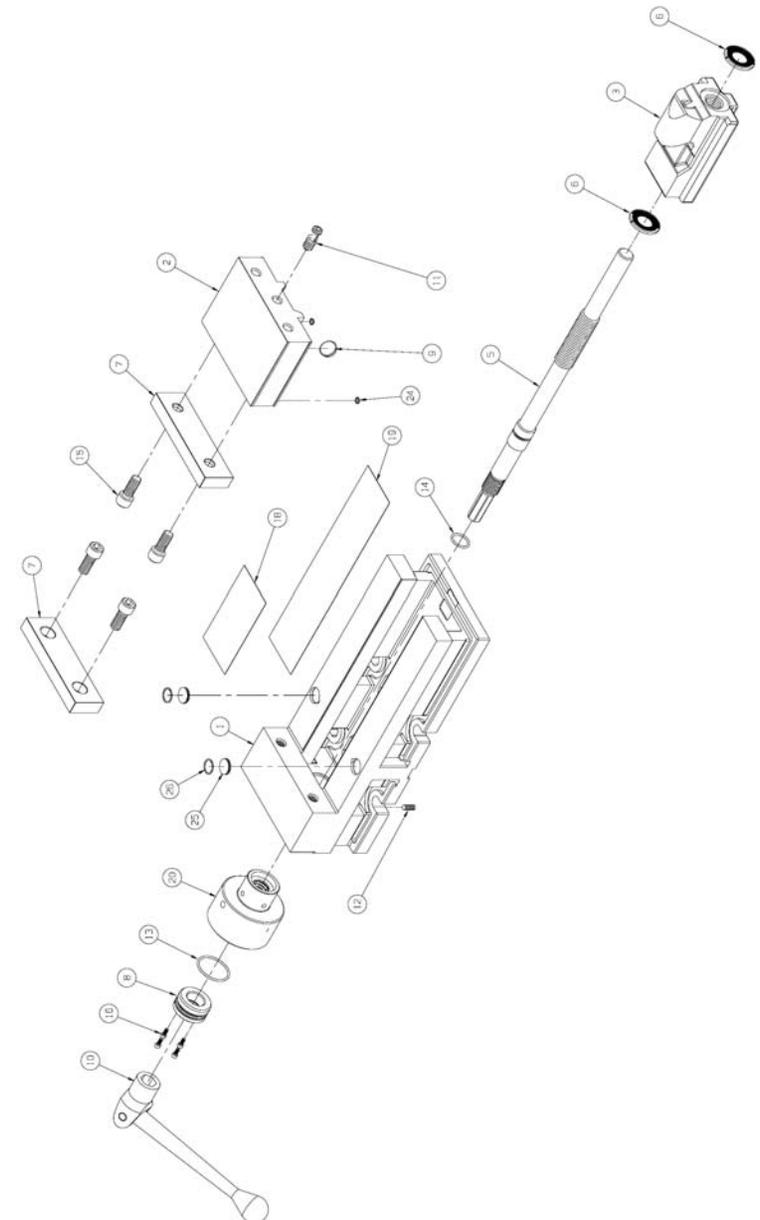


Fig. 3

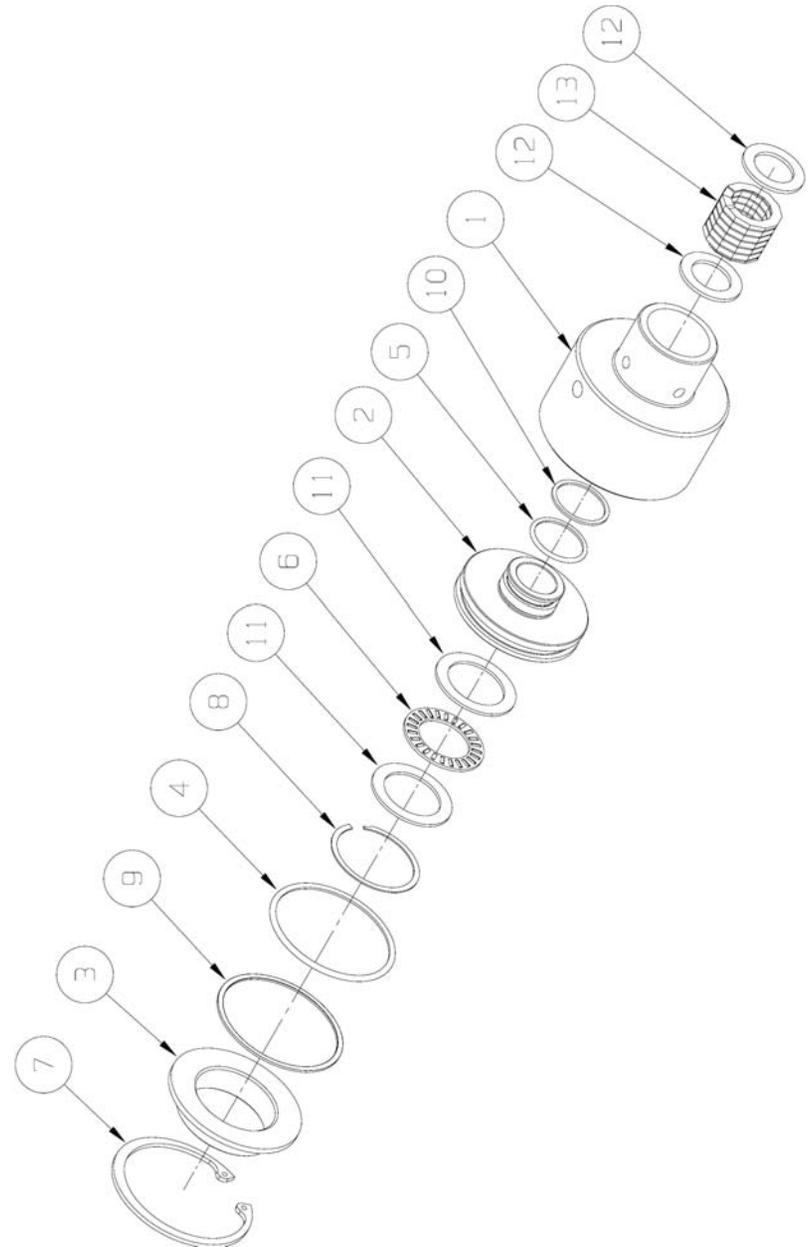
3610H Mechanical Drawing



3620H Parts List

ITEM#	PART #	DESCRIPTION	QTY.
1	3620V-1	Body (SHORT)	1
2	3600V-2	Movable Jaw	1
3	3600V-3	Nut	1
4	3600V-224B	Screw Support	1
5	362AU-5	Screw	1
6	3600V-211	Internal Brush Seal	2
7	D60-7	Jaw Plate	2
8	3600V-8-P	Retaining Nut, Two Piece	1
9	D60-9	Segment	1
10	D60I-10-SA	Handle Assembly	1
11	3600V-11A	Socket Set Screw, 1/2-13	1
12	Jan-78	Screw, SHSS, 1/4-20 x 3/4	1
13	3600V-128	O-Ring, Buna N, #129	1
14	3600V-99	O-Ring, Buna N, #117	1
15	00-1419	Screw, SHCS, 1/2-13 x 1-1/4	4
16	00-1191	Screw, SHCS, #8-32 x 3/8	4
17	3600V-147	Spiral Retaining Ring	2
18	3600V-248	Chip Guard, Short	1
19	3600V-249	Chip Guard, Long	1
20	36BHU	Hydraulic Clamping Unit	1
24	225-20	O-Ring, Polyurethane #008	2
25	3600V-191	Protective Plug	2
26	DLU4-96	O-Ring, #16	2

36BHU Mechanical Drawing

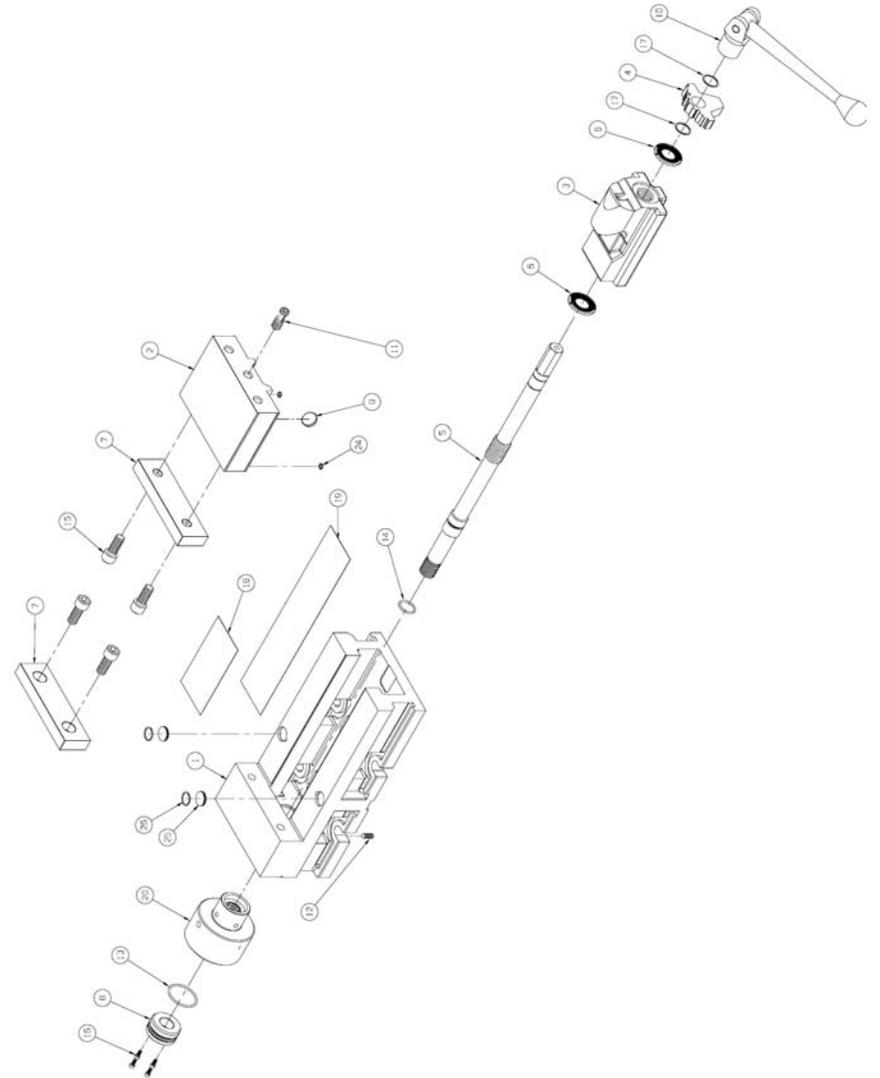


36BHU Parts List

ITEM#	PART #	DESCRIPTION	QTY.
1	N/A	Cylinder House	1
2	N/A	Piston	1
3	N/A	Retainer	1
4	PTH600-96	O-Ring, 2-230	1
5	360HU-98	O-Ring, 2-121	1
6	N/A	Thrust Bearing	1
7	N/A	Retaining Ring	1
8	N/A	Retaining Ring	1
9	PTH600-188	Backer Ring	1
10	360HU-187	Backer Ring	1
11	N/A	Thrust Bearing Washer	2
12	360HU-230	Washer	2
13	360HU-87A	Spring	1

NOTE: 36BHU-P is purchased as a unit. Items 4-5, 9-10 and 12-13 can be purchased as replacement items.
The 36BHU has an 1/8 NPTF thread.

3620H Mechanical Drawing



3630H Parts List

ITEM#	PART #	DESCRIPTION	QTY.
1	3620V-1	Body (SHORT), Machined	1
2	3600V-2-SA	Movable Jaw Asseby	1
3	3610V-3	Nut	1
5	363HU-5	Screw (SHT. REV. HYD.)	1
6	3600V-211	Internal Brush Seal	2
7	D60-7	Jaw Plate	1
8	3600V-8-P	Retaining Nut, Two Piece	1
9	D60-9	Segment	1
10	D50-10A-SA	Handle Assembly	1
11	3600V-11A	Socket Set Screw, 1/2-13	1
12	Jan-78	Screw, SHSS, 1/4-20 x 3/4	1
13	3600V-128	O-Ring, Buna N, #129	1
14	3600V-99	O-Ring, Buna N, #117	1
15	00-1414	Screw, SHCS, 1/2-13 x 3/4	4
16	00-1191	Screw. SHCS, #8-32 x 3/8	4
18	3600V-248	Chip Guard, Short	1
19	3600V-249	Chip Guard, Long	1
20	36BHU	Hydraulic Clamping Unit	1
24	225-20	O-Ring, Polyurethane #008	2
25	3600V-191	Protective Plug	2
26	DLU4-96	O-Ring, #16	2

3630H Mechanical Drawing

