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Manual Revision: 05.15.2014



HD6 Series Manual & Hydraulic Base Assembly

HDM6 & HDHM6 (SHORT)

HDL(M)6 & HDHL(M)6 (LONG)

(English and Metric)

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.

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Vise Installation Instructions



CAUTION:

Do not attempt to lift the vise by attaching to any of the jaws or injury may result. Always attach lifting device to the vise base frame.

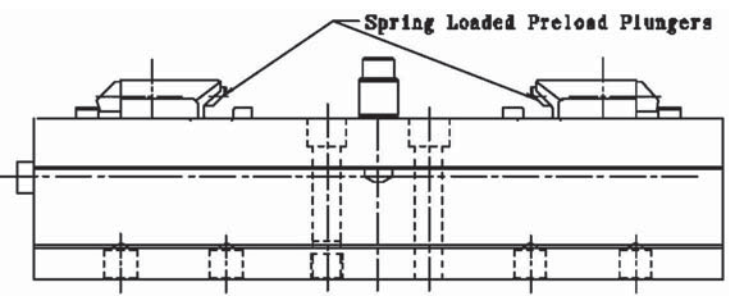
1. Position vise on your machine table, pallet or tombstone using the .625 or 16 MM (.6299") locating holes found on the bottom of the vise. We recommend using the holes that are the farthest apart for better accuracy.
2. Bolt in place using strap clamps placed on the clamping ledge as indicated by "Clamp Here" sticker or by bolting directly through the vise body. When bolting through the body, the stationary jaw must be removed to gain access to those holes. On the "Long" versions, the outboard holes have plugs to keep debris out and must be removed if you wish to use those holes as well. Replace plugs after bolts are secured.

NOTE: Some of the clamp holes are at inch locations and some are at metric. For exact hole locations, consult your catalog or go to our web site at www.kurtworkholding.com and click on Workholding Products.

3. After vise is mounted in place, add the vise jaws to the base assembly. See jaw installation instructions that came with the jaw kit. If a hard jaw kit "J style" was installed, tram the stationary jaw for straightness prior to using. If it exceeds .0006" in six inches, remove stationary jaw and disassemble the 10mm bolt, the tapered top clamp and .750 dia. split sleeve and clean with solvent and a clean cloth. Do Not apply grease or oil to these components. Re-assemble and retest. This should not be necessary when using the carvable type unless a high degree of accuracy is required and you are not re-cutting the jaw contour.

Maintenance Log/Notes:

Fig.2



Preload on the HDHLM6 (hydraulic-long) is accomplished in the same fashion except the part width must be added into the .187/ .219 dimension to obtain proper preload.

Preload on the HDHLM6 (hydraulic-long) with the "J" style, factory hard jaw set, is accomplished by placing parts in the front and rear station. Begin to close the vise, rear jaw is only one moving, until it clamps the rear part. Front jaw will now begin closing and close until front jaw is approximately .030 from the part. Lift the part out and slowly continue closing until part will no longer slip between the stationary and movable jaw. Pull front movable jaw back, spring loaded, with one hand and drop the part in with the other. It should now be held in place by spring pressure. Rotate handle 1/2 turn counter clockwise to allow rear movable to move away from part to allow the spring preload feature to operate. If more or less preload is desired, increase or decrease on the 1/2 turn amount.

NOTE: There will ALWAYS be spring pressure preload on the front station and the movable jaw will have to be pulled back by hand to get parts in and out. The rear station is optional it can be set with preload or without if desired.

Preload on the HDLM6 (manual-long) is accomplished by adjusting the threaded preload ring found in the holding block. The preload amount is equal to .156 at its maximum to nearly zero if you wish. The threaded ring can be rotated in 180 degree increments to obtain desired amount. First loosen the set screw found on top of the holding block and then rotate the threaded ring, using a two prong spanner wrench, until one of the two notches on the ring align with the set screw. The farther the threaded ring is inside the holding block the less preload amount will be in play when the jaws are opened.

Maintenance Log/Notes:

HDM6 Parts List

ITEM#	PART#	DESCRIPTION	QTY.
1	HDM6-1	MACHINED BODY	1
2	HD6-253	END PLATE, REAR	1
3	HD6-327	SPRING, COMPRESSION	1
4	HDM6-3R	REAR NUT	1
5	HD6-5	SCREW	1
6	DL640-97	WIPER SEAL	1
7	DL640-217	SPIRAL RETAINING RING	1
8	HD6-147	RETAINING RING	1
9	HDM6-3F	FRONT NUT	1
10	D60-42	THRUST BEARING	2
11	D60-41	THRUST BEARING WASHER	1
12	HD6-68	O-RING #126	1
13	HDM6-333	END PLATE, FRONT, METRIC	1
14	HD6-96	O-RING, BUNA N #122	1
19	04-4428	ROLL PIN 1/4	1
20	HDM6-277A	STAT. JAW LOCATING PIN	2
21	HD6-209	CLAMP SLEEVE	2
22	HD6-35	CLAMP, STATIONARY JAW	2
23	HDM6-18	SCREW, ADJUSTING	1
24	HDM6-22	PLASTIC THUMB SCREW KNOB	1
25	26-0082	SHCS M5X.8	2
26	HDM6-142	SPRING GUIDE	2
27	HD6-267	COMPRESSION SPRING	2
28	DL640-10-SA	HANDLE, INTERNAL 5/8 HEX	1
33	HD6-248	CHIP GUARD	1
34	3600V-99	O-RING	1
35	26-0232	SHCS M10x1.5 x 45MM LG.	2

Fig.2

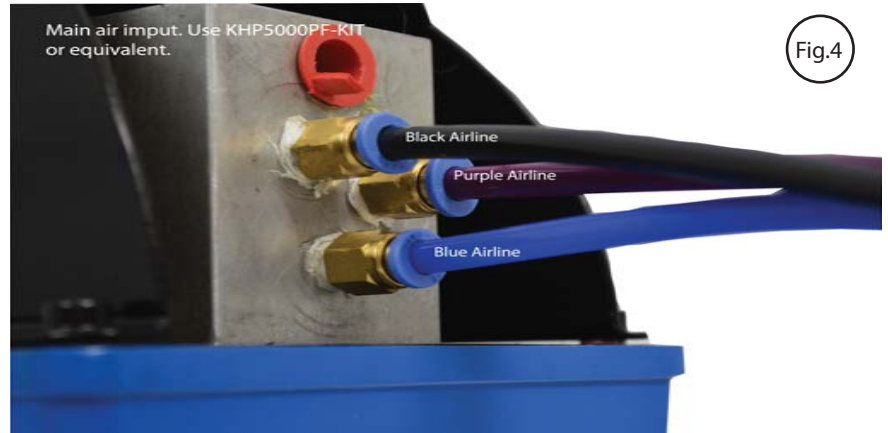
Typical Hydraulic
vise conection



Fig.3



Fig.4



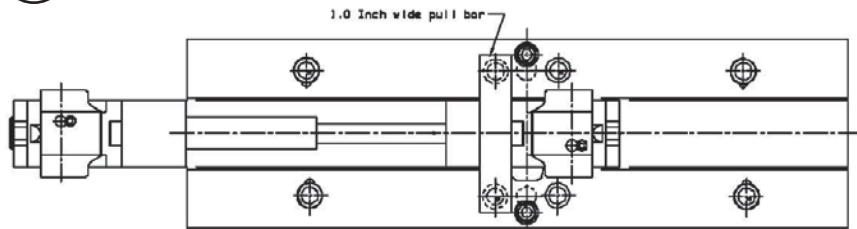
Hydraulic Set-up

The HDH6 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 a SAE 4 straight fitting into the 7/16-20 port found on one end of the vise screw.
4. A filter-regulator-lubricator (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 HDH6 or HDHL6 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.

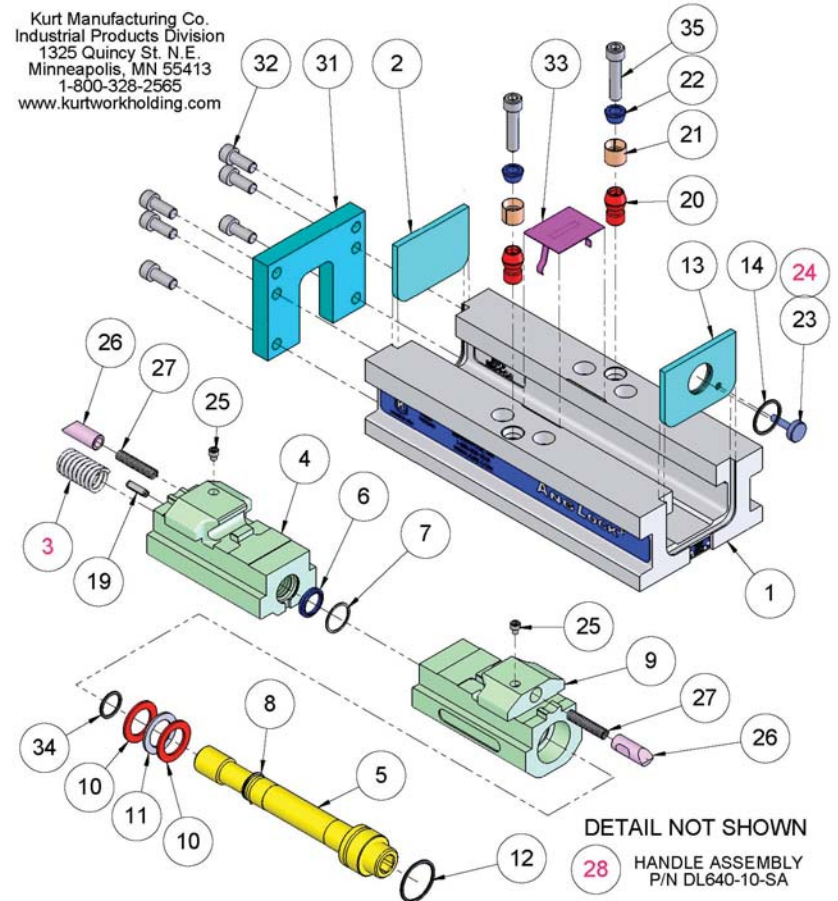
NOTE: For multiple vise hook-ups, call factory for recommendations.

Fig.2



HDM6 Mechanical Drawing

Kurt Manufacturing Co.
Industrial Products Division
1325 Quincy St. N.E.
Minneapolis, MN 55413
1-800-328-2565
www.kurtworkholding.com



HDM6

6" DOUBLE LOCK HIGH DENSITY METRIC MANUAL VISE
(BASE MODEL)

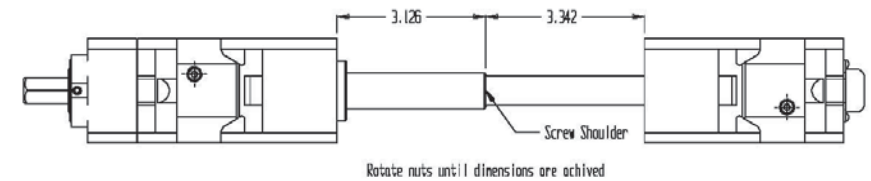
HDHM6 Parts List

ITEM#	PART#	DESCRIPTION	QTY.
1	HDM6-1	MACHINED BODY	1
2	HD6-253	END PLATE, REAR	1
3	HDHM6-3R	REAR NUT	1
4	HDH6-5	SCREW	1
5	PM43-96	O-RING #125	1
6	HDHM6-3F	FRONT NUT	1
7	360HU-87A	SPRING, COMPRESSION	2
8	HDH6-187	SEAL	2
9	HDH6-68	O-RING #115	2
10	HDH6-96	O-RING #223	2
11	HDH6-188	SEAL	1
12	HDH6-93	PISTON/RETAINING RING	1
13	HDH6-333	END PLATE, FRONT	1
14	MLH35-173A	O-RING #114,	1
19	04-4428	ROLL PIN 1/4X7/8	1
20	HDM6-277A	STAT. JAW LOCATING PIN	2
21	HD6-209	CLAMP SLEEVE	2
22	HD6-35	CLAMP, STATIONARY JAW	2
23	26-0082	SHCS M5X.8	2
24	HDHM6-142	SPRING GUIDE	2
25	HD6-267	SPRING COMPRESSION	2
26	HDH6-334	PRE-LOAD PLUNGER	2
32	HD6-248	CHIP GUARD	1
33	26-0232	SHCS M10x1.5 x 45MM LG	2
34	HDHM6-312	CARR-LANE REST BUTTON	1
34	3600V-99	O-RING	1

HDHL(M)6

1. On the HDHLM6 (hydraulic-long) model, start by double checking the nut timing position before installing the nut/ screw assembly into the vise body. See diagram 6.

Fig.2

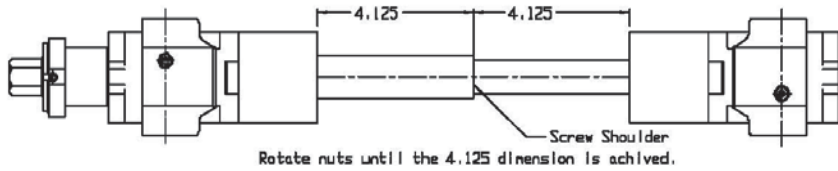


2. Slide the nut/ screw assembly into the vise body up to the friction shoes on the front nut. Place the pull bar that came with the vise into the counter bored holes as shown in diagram 8 and start closing, rotate screw clockwise, the vise.
3. Once the friction shoes are inside the vise body continue closing until there is room to replace the front nut stop and button head cap screw. Ref. bill of materials items 18 & 19.
4. Open vise to free up pull bar and remove it. Remount jaws and vise is now ready to for use.

HDL(M)6

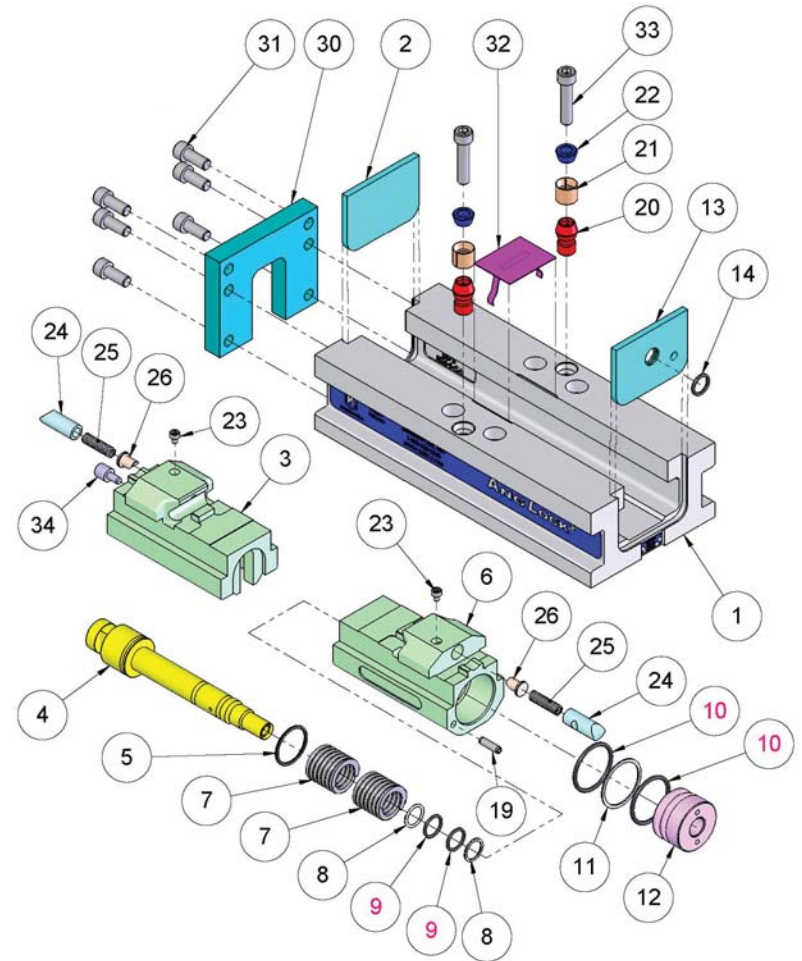
1. On the HDLM6 (manual-long) model, start by double checking the nut timing position before installing the nut/ screw assembly into the body. (See diagram Fig. 3)

Fig.2



2. Slide nut/ screw assembly, rear nut first, into the vise body up to the holding block. See diagram 3 for holding block identification. Install stationary and rear movable jaws. Place a 3.25 spacer in the rear station and start closing, clockwise rotation, the vise. You may have to help get the friction clamp, rectangle piece with tapered ends, started into the body by using a pair of pliers to help compress the spring material.
3. Once the holding block is inside the body, reinstall the M10 button head cap screw in the end of the body. Install front movable jaw and vise is now ready to go.

HDHM6 Mechanical Drawing



HDL(M)6 Parts List

ITEM#	PART#	DESCRIPTION	QTY.
1	HDLM6-1	BODY, MACHINED LONG	1
2	DL600-218	END CAP,	1
3	07-0230	SCREW,DRIVE,#2 X .25	2
5	DL640-97	WIPER RING SEAL	1
6	DL640-217	RETAINING RING	1
7	DL640-5B-CP	SCREW, MACHINED	1
8	DL640-61A	SPACER, THREADED	1
9	DL430-331	WIPER RING	1
10	DL640-147B	TRUARC EXT. SNAP RING	1
11	DL640-215	CLUTCH SPRING, STAINLESS	3
12	04-0030	DOWEL PIN, 3/16 DIA.	1
13	DL640-273B	CLUTCH, DL640	1
14	HDLM6-3F-CP	NUT, MACHINED FRONT	1
15	DL640-129	METRIC "O" RING	1
16	DL640-231	RETAINING RING	1
17	DLM640-212	HOLDING BLOCK, METRIC	1
18	DL640-68	O-RING, 1-3/8 X 1-1/2	1
19	D60-42	WASHER, THRUST BEARING,	3
20	D60-41	THRUST BEARING,	1
21	DL640-197	SPRING, COMPRESSION	6
22	DL640-8A	COLLAR, DL640 VISE	1
23	DL640-91-P	COLLAR, THREADED,	1
24	DL640-128	O-RING, 1-3/16 ID, 1-5/16	1
25	28-1122	SOCKET SET SCREW, M5 X.8	1
28	29-0218 Metric	SCREW, BHCS M10X1.5 X 12.	1
28	03-0148 English	SCREW, BHCS 3/8-16 x 1/2	1
33	DL640-225A-P	FRICITION CLAMP	1
34	DL640-311A	SPRING, PRE-LOAD	1
35	HDM6-277A	STAT. JAW LOCATING PIN (METRIC)	2
35	HD6-277A	STAT. JAW LOCATING PIN (ENGLISH)	2
36	HD6-209	CLAMP SLEEVE	2
37	HD6-35	CLAMP, STATIONARY JAW	2

HDHL(M)6

1. On the HDHLM6 (hydraulic-long) model, start by removing the rear movable jaw and rotating the screw clockwise to close the vise. Remove the button head cap screw and "L" shaped bracket located by the internal hex of the screw.
2. At this point, remove the stationary and front movable jaws. Place a 4 3/4" long x 3/4" wide x 3/16" thick piece of stock between the rear nut and the positive stop on the machined nut rail support surface found on the inside floor of the body.
3. Rotate the screw counter clockwise of open the vise and this will push the front nut out of the vise body.

Reassembly

To reassemble nut/ screw assembly back into the body follow the instructions below:

HDM6

1. On the HDM6 (manual-short) model, using the vise handle, rotate the screw until the nuts touch one another. Place the .970 dia. spring into the rear nut.
2. Slip the rear end plate, has no hole, into the body. Slide the nut/ screw assembly into the body with rear nut going first.
3. By placing one hand on top of the rear nut, push toward the rear to compress the spring. With the other hand slip the front end plate into the vise body and allow the screw hex end to come thru the plate. Install the preload screw, see diagram 1, and return the nuts to full open position and reinstall jaws.

HDHM6

1. On the HDHM6 (hydraulic-short) model, hook the rear nut onto the front nut and with both hands supporting the nuts, slide the assembly into the vise body.
2. Install the front end plate, one with hole in it for screw shaft, and slide the nut/ screw assembly back toward you so screw shaft comes thru the end plate. Install the rear plate.
3. Install the movable jaws onto the nuts followed by the stationary jaw.

Disassembly

Occasionally it may be necessary to disassemble the Nut/Screw assembly from the vise body to perform routine maintenance.

HDM6

1. On the HDM6 (manual-short) model, start by removing the stationary jaw first and then the movable jaws.
2. Using the vise handle, rotate vise screw to close/ move nuts toward each other until they touch. Remove preload adjustment screw out of the front plate, see diagram 1.
3. By placing one hand on top of the rear nut, push toward the rear to compress the spring in that nut. When the internal hex end diameter on the screw has cleared the front plate, lift that plate out of the vise body slot. The nut/ screw assembly can now be removed from the body.

HDHM6

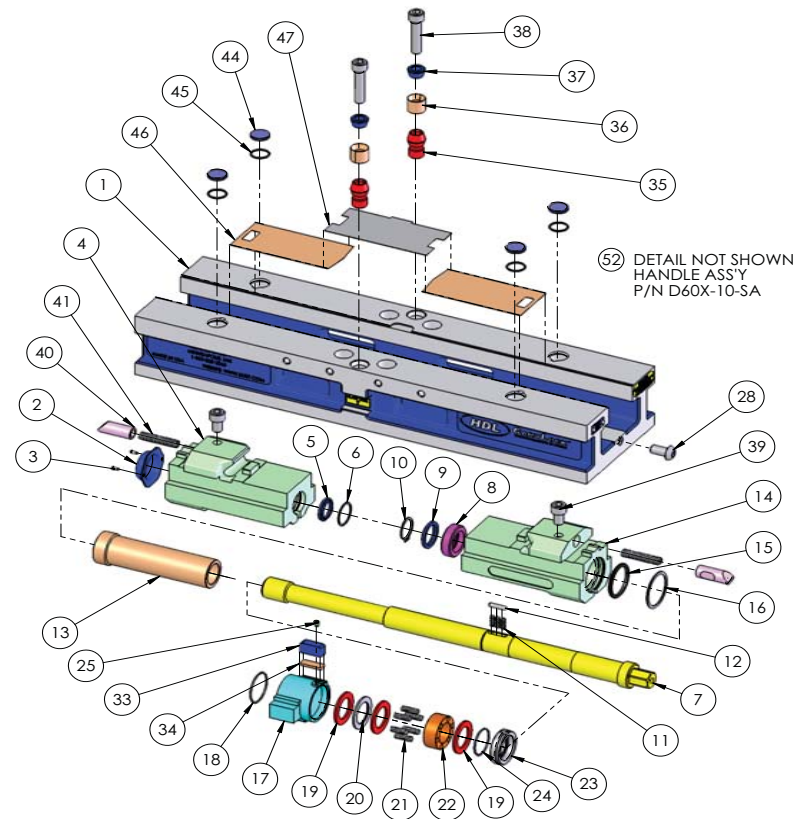
1. On the HDHM6 (hydraulic-short) model, start by removing the jaws as well and the hydraulic port fitting from the end of the vise screw.
2. Lift the rear end plate, one without a hole, from the vise body and slide nut/ screw assembly toward the rear until the screw shaft clears the front plate.
3. Remove the front plate and slide the assembly by pulling on the front nut and supporting the rear with the other hand. The rear nut is attached to the front only by a hook device so beware it can drop off once the assembly clears the body.

HDL(M)6

1. On the HDLM6 (manual-long) model, start by removing the M10 button head cap screw located under the holding block and threaded into the vise body. See diagram 3.
2. Remove rear station movable jaw. Place a 3.25 thick spacer in the front station and start closing the vise and this will drive the holding block out of the vise body.
3. Once the holding block is clear of the body, reverse the screw rotation so the spacer can be removed. Remove the stationary and front movable jaws and the nut/ screw assembly can now be slid out of the vise.

38	26-0232	Metric	SHCS M10x1.5 x 45MM LG.	2
38	00-1360	English	SHCS 3/8-16 x 1-3/4 LG.	2
39	26-0082		SCREW,SHCS M5x.8 x 6MM LG	2
40	HDM6-142		SPRING GUIDE, METRIC	2
41	HD6-197		SPRING, (RED) MANUAL	2
44	3600V-191		PROTECTIVE PLUG,	2
45	DLU4-96		O-RING,#016	4
46	HDLM6-249		CHIP GUARD, MOVABLE	2
47	HDLM6-248		CHIP GUARD, STATIONARY	1
52	D60XI-10-SA		HANDLE ASSY.,LONG SOCKET	1

HDL(M)6 Mechanical Drawing



HDHL(M)6 Parts List

ITEM#	PART#	DESCRIPTION	QTY.
1	HDLM6-1	BODY, MACHINED LONG	1
2	HDH6-93	PISTON/RETAINING RING	1
3	HDH6-96	O-RING #223	2
4	HDH6-188	PARKER PARBACK	1
5	HDH6-68	O-RING #115	2
6	HDH6-187	PARKER PARBACK	2
7	360HU-87A	SPRING (COMPRESSION)	2
8	HDHLM6-3R	REAR NUT	1
9	HDHLM6-25	TIMING PIN	1
10	HDHLM6-89	PISTON SCREW	1
11	DL430-217	SPIRAL RETAINING RING	1
12	DL430-97	WIPER RING SEAL	1
13	HDHLM6-5	SCREW EXTENSION	1
14	DL430-231	SPIRAL RETAINING RING	1
15	DL430-331	WIPER RING SEAL	2
16	HDHLM6-169	SPRING	4
17	HDHLM6-3FA	FRONT NUT	1
18	HDHLM6-61	SPACER,	1
19	29-0218 Metric	SCREW, BHCS M10X1.5 X 12.	1
19	03-0148 English	SCREW, BHCS 3/8-16 X 1/2	
22	HDHLM6-225A	FRICTON CLAMP	1
23	HDHLM6-53A	COVER	1
24	HDHLM6-311A	SPRING (PRE-LOAD)	1
30	26-0232 Metric	SHCS M10x1.5 x 45MM LG.	2
30	00-1360 English	SHCS 3/8-16 X 1-3/4	2
31	HD6-35	CLAMP, STATIONARY JAW	2
32	HD6-209	CLAMP SLEEVE	2
33	HDM6-277A	STAT. JAW LOCATING PIN (METRIC)	1
33	HD6-277A	STAT. JAW LOCATING PIN (ENGLISH)	1
34	26-0082	M5X.8 SHCS	2
35	HDHM6-142	SPRING GUIDE	2
36	HD6-267	SPRING (COMPRESSION) (RATE 7.8#)	2

39	3600V-191	PROTECTIVE PLUG,	2
40	DLU4-96	O-RING,#016	4
41	HDLM6-249	CHIP GUARD, MOVABLE	2
42	HDLM6-248	CHIP GUARD, STATIONARY	1
43	HDH6-334	PRE-LOAD PLUNGER	2
48	DL640X-10-SA	EXT. HANDLE ASSY.	1
50	HDHLM6-168	PLUG	1

HDHL(M)6 Mechanical Drawing

