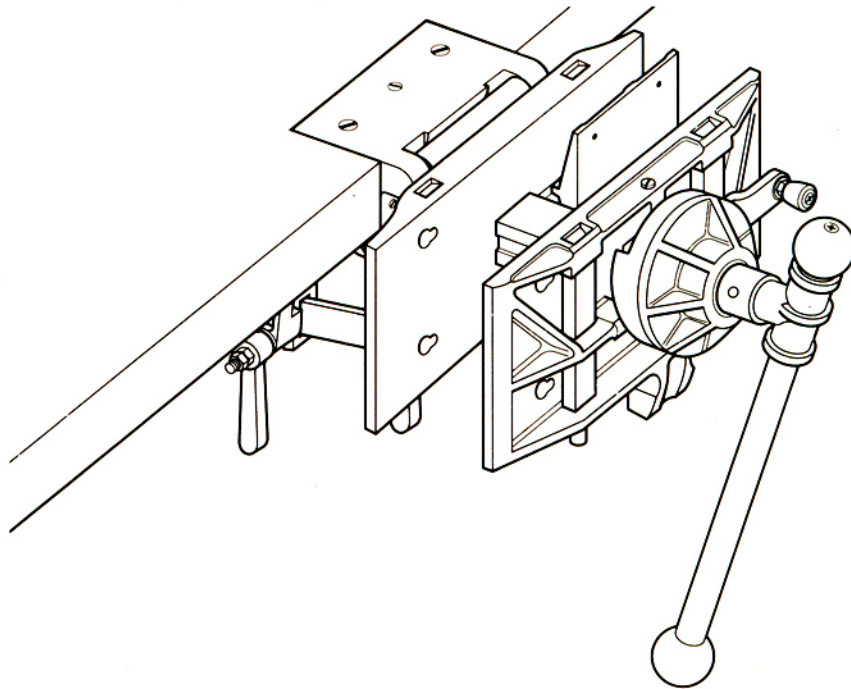


**owner's
manual**

- assembly
- operating
- repair parts

CAUTION:
Read SAFETY RULES
and INSTRUCTIONS
carefully



Specifications

Weight .....	.55 pounds
Jaw Size (length x width)	
Main .....	.13 3/4" x 5"
Small .....	.2" x 2 1/8"
Auxiliary .....	.5 3/4" x 5"
Jaw Travel .....	.14"
Jaw Depth (face to square beam)	
Main .....	.2 1/8"
Small .....	.3 1/2"
Extension Dog Height (max) .....	.2 1/4"
Tilt Range .....	.0°-90°
Rotation Range .....	.0°-360°
Jaw Pivot Range	
Main .....	.5° Both Directions-10° Total
Auxiliary20° Both Directions-40° Total
Material	
Jaws and Vise HubCast Iron
Lead ScrewSteel

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GENERAL SAFETY RULES FOR TOOLS



1. **KNOW YOUR TOOL**
For your own safety, read the owner's manual carefully. Learn the application and limitations as well as the specific hazards peculiar to this tool.
2. **REMOVE ADJUSTING KEYS AND WRENCHES**
Form habit of checking to see that keys and adjusting wrenches are removed from tool before use.
3. **KEEP WORK AREA CLEAN**
Cluttered areas and benches invite accidents.
4. **KEEP CHILDREN AWAY**
All visitors should be kept a safe distance from work area.
5. **MAKE WORKSHOP KID-PROOF**
with padlocks, master switches, or by removing starter keys.
6. **USE RIGHT TOOL**
Don't force tool or attachment to do a job for which it was not designed.
7. **WEAR PROPER APPAREL**
No loose clothing, gloves, neckties, rings, bracelets, or jewelry to get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.
8. **ALWAYS WEAR SAFETY GLASSES**
Also use face or dust mask if cutting operation is dusty. Everyday eyeglasses only have impact-resistant lenses. They are NOT safety glasses.
9. **SECURE WORK**
Use clamps or a vise to hold work when practical. It's safer than using your hand and frees both hands to operate tool.
10. **DON'T OVERREACH**
Keep your proper footing and balance at all times.
11. **MAINTAIN TOOLS IN TOP CONDITION**
Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
12. **DISCONNECT TOOLS FROM POWER SOURCE**
before servicing and when changing accessories such as blades, bits, cutters, or when mounting and re-mounting motor.
13. **REDUCE RISK OF UNINTENTIONAL STARTING**
Make sure switch is in "OFF" position before plugging in cord.
14. **USE RECOMMENDED ACCESSORIES**
Consult the owner's manual for recommended accessories. Use of improper accessories may be hazardous.
15. **NEVER STAND ON TOOL**
Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.
16. **CHECK DAMAGED PARTS**
Before further use of the tool, a guard or other part that is damaged should be carefully checked to ensure that it will operate properly and perform its intended function—check for alignment of moving parts, binding of moving parts, breakage of parts, mounting, and any other conditions that may affect its operation. A guard or other part that is damaged should be properly repaired or replaced.



The operation of any power tool can result in foreign objects being thrown into the eyes, which can result in severe eye damage. Always wear safety goggles complying with ANSI Z87.1 before commencing power tool operation.

TOOLS REQUIRED

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. Router/or Hand Chisels 2. Hand Chisels 3. 5/16"-Diameter Drill Bit 4. 1/8"-Diameter Drill Bit | <ol style="list-style-type: none"> 5. Screwdriver 6. (2) 8-Inch Adjustable Wrenches 7. Electric Drill |
|---|--|

UNPACKING AND CHECKING CONTENTS

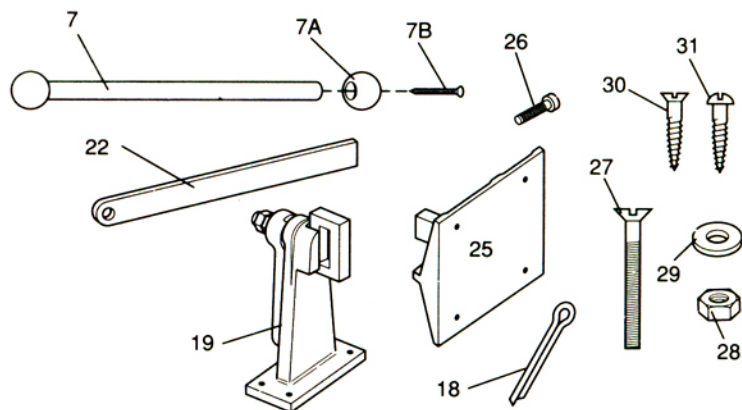
Model C334 Pattern Maker's Vise is shipped complete in one carton. Carefully unpack and separate parts from packing material. Check loose parts against Table of Loose Parts on page 3 and Repair Parts on page 6. If any parts are missing or damaged, do not mount or operate the vise until replacement parts are obtained and properly

installed. Some parts such as the vise jaws are coated with rust preventative that can be removed with a soft cloth soaked in kerosene. Do not use acetone, gasoline, or lacquer thinner; these are dangerous.

Apply a coating of paste wax to the face of the jaws and other exposed machined surfaces.

TABLE OF LOOSE PARTS

REF. NO.	DESCRIPTION	QTY.
7	Wood Handle	1
7A	Handle Knob	1
19	Tilt Bracket Assembly	1
22	Tilt Bar	1
7B	Knob Screw	1
18	Cotter Pin	1
25	Auxiliary Jaw	1
27	1/4-20 x 3" Flat Head Machine Screw	2
28	1/4-20 Hex Nut	2
29	1/4 Flat Washer	2
30	#10 x 1" Wood Screw	3
26	Jaw Retaining Screw	1
31	#10 x 3/4" Pan Head Screw	4



MOUNTING AND ASSEMBLY



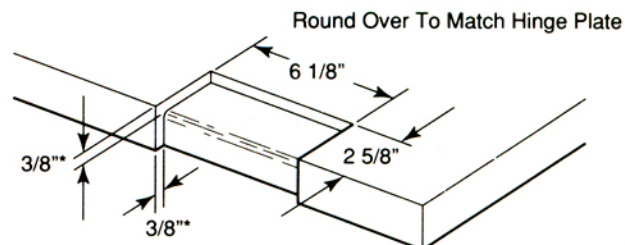
CAUTION: DO NOT ATTEMPT TO INSTALL ON WORK SURFACE LESS THAN 1 1/2" THICK.

1. Remove the Front Jaw, Beam, and Lead Screw Assembly by opening the Vise until the screw disengages. Hold the Front Jaw and Beam firmly and pull the assembly away from the Vise Hub and put aside. This will reduce the weight of the vise for easier installation.
2. Lay out the Hinge Plate Recess using template provided as shown. Drill (2) 5/16"-diameter holes and (3) 1/8"-diameter holes as shown on template.
3. The underside of the workbench will need to be cut to provide clearance for the Vise Hub and Square Beam. This can be accomplished by using a Router and/or Hand Chisel.
4. Rout or chisel out the recessed area following the layout lines. The recess allows the Hinge Plate to be mounted flush or slightly below the top and front surfaces of the workbench.

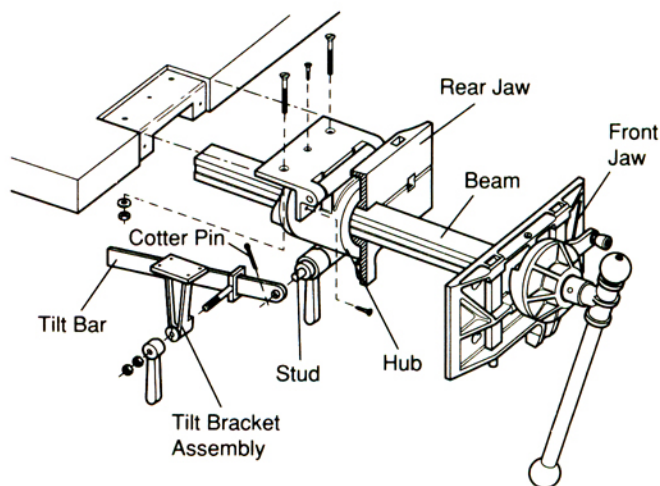
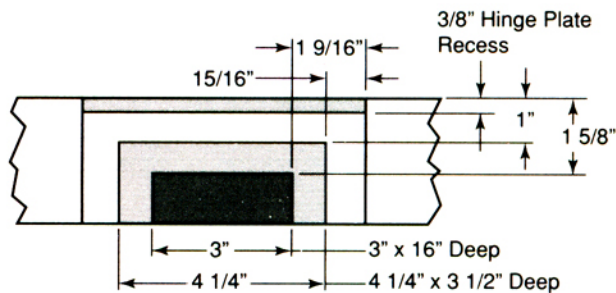


CAUTION: FAILURE TO RIGIDLY MOUNT THE HINGE PLATE TO THE WORK SURFACE USING ALL FASTENERS PROVIDED COULD RESULT IN DAMAGE TO THE VISE OR PERSONAL INJURY.

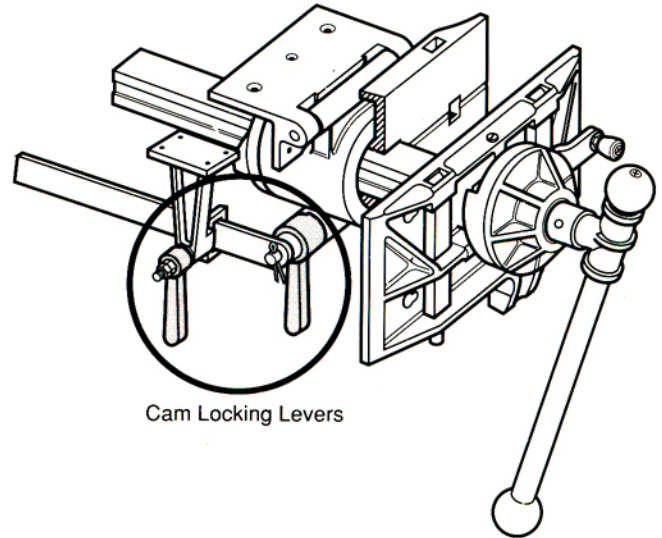
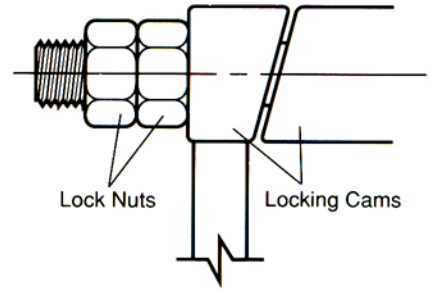
5. Fasten the Hinge Plate in the recess using the following:
 For the top outside holes, use (2) 1/4-20UNC x 3" Flat Head Machine Screws (REF 27) with Nuts (REF 28) and Flat Washers (REF 29).
 For the top center hole, use (1) #10 x 1" Wood Screw (REF 30).
 For the front holes, use (2) #10 x 1" Wood Screws (REF 30).
6. Remove Knob (REF 7A) from one end of Wood Handle (REF 7). Insert Wood Handle through T-casting. Reattach knob to end of handle. Reassemble the Front Jaw, Beam, and Lead Screw assembly to the mounted Rear Jaw.
7. Install the Tilt Bar (REF 22) by sliding it onto the Stud at the lower left of the Vise Hub, then secure with the Cotter Pin (REF 18) supplied.



*Dimension is Approximate. Hinge Plate Must Be Mounted Flush or Slightly Below The Top and Front Surfaces.



8. a) Slide the Tilt Bracket Assembly (REF 19) onto the Tilt Bar. The bar goes through the rectangular opening in the assembly.
 - b) Draw a line on the bottom of the bench top 3 3/4" from the edge.
 - c) Position the Bracket under the workbench top so that the Tilt Bar is equal distance from the beam, and the front edge of the Tilt Bracket is on the line.
 - d) Locate the centers of the four mounting holes located in the Bracket, and drill 1/8"-diameter holes on the centers.
 - e) Attach Bracket using (4) #10 x 3/4" Pan Head Wood Screws (REF 31).
9. There are two Cam Locking Levers on the Pattern Maker's Vise. One locks the rotation of the vise and is located on the lower left of the Vise Hub. The other locks the Tilt Angle Bar and is located on the left side of the Tilt Bracket. The adjustment procedure for both Locking Levers is the same, as follows:
 - a) Loosen the Lock Nuts on the threaded stud end.
 - b) Position the lever in the intended unclamped position. Pay close attention to the Locking Cams; there should be enough travel left for the cams to operate effectively.
 - c) Tighten the first Lock Nut, finger tight only. Lock the first nut in position by tightening the second nut against it using two Wrenches. Be careful not to tighten the first nut any further in the process.
 - d) Test the operation of the levers. Make sure that the cams unlock completely to allow free movement and that they clamp securely. The levers should be oriented to allow easy access and not create pinch points that may result in personal injury.



ADJUSTMENTS



WARNING: THIS VISE HAS BEEN ADJUSTED AT THE FACTORY TO ASSURE PROPER OPERATION. SHIPPING AND HANDLING, HOWEVER, MAY ALTER THESE SETTINGS.

Front Jaw Pivot

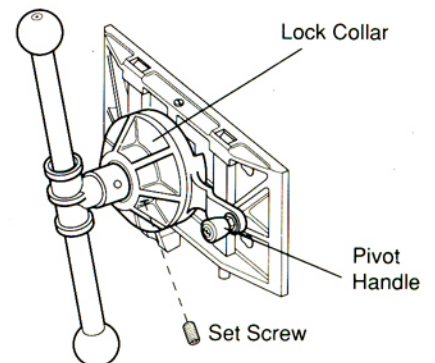
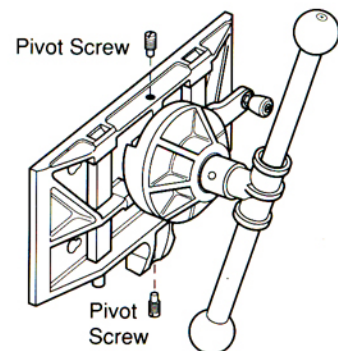
Adjustment of jaw alignment is provided by two Pivot Screws located in the Front Jaw, one at the top and one at the bottom.

1. Loosen top and bottom Pivot Screws slightly.
2. Close Vise lightly, and align the Front Jaw to the Rear Jaw.
3. Tighten both top and bottom Pivot Screws.

Pivot Cam

The force required to move the Jaw Pivot Cam is adjustable. It can be set to match clamping conditions or to operator's specifications.

1. Loosen Lock Collar Set Screw.
2. Rotate Lock Collar clockwise or counterclockwise until tension on Pivot Cam is acceptable.
3. Tighten Set Screw.

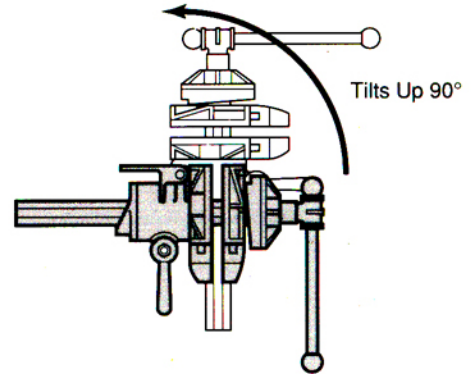


OPERATION

Vise Tilt

The Pattern Maker's Vise can be tilted from the normal position (perpendicular to the work surface) through 90° until the jaws are parallel to the bench top. The Vise can be locked in any position along the 90° travel.

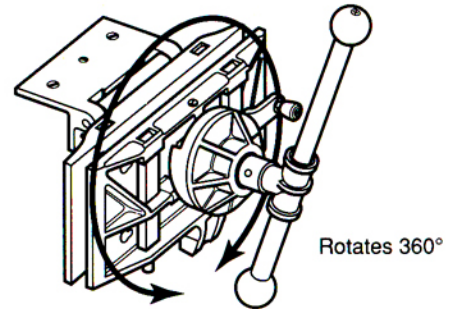
1. Hold Vise firmly, and unlock Tilt Bar by disengaging Locking Cam Lever.
2. When Tilt Bar is unlocked swing Vise to desired position.
3. Engage Locking Cam Lever firmly until Tilt Bar is securely locked.



Vise Rotation

The Vise rotates 360° around the Vise Hub and can be locked at any angle of circular rotation.

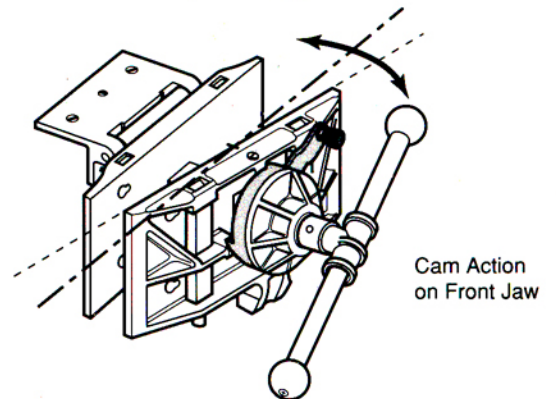
1. Hold Vise, and disengage Rotation Locking Cam Lever.
2. Rotate Vise into position.
3. Firmly engage Locking Cam Lever until Vise is securely locked.



Front Jaw Pivot

To clamp tapered workpieces, the Front Jaw pivots 5° in either direction. Or it can be positioned parallel to the Rear Vise Jaw for normal clamping operation.

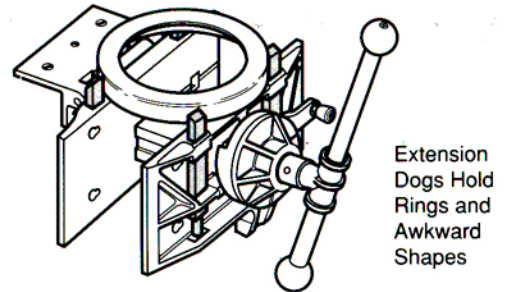
1. Open jaws and position stock in Vise.
2. Close jaws until they are close to, but not touching, the workpiece.
3. Pivot Front Jaw parallel to taper of workpiece by moving Cam Arm up or down.
4. Tighten jaws on workpiece.



Integral Clamping Dogs

Each jaw is equipped with two adjustable Clamping Dogs for clamping irregular-shaped pieces. The dogs are equipped with Side Springs so they hold their position above the jaw.

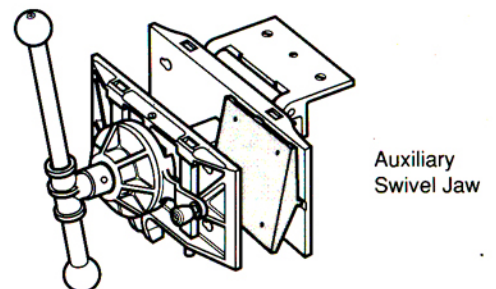
1. Push up on Round Dog Extension that protrudes under jaws.
2. Position workpiece on top face of jaws.
3. Adjust height of dogs so that the top of dog is slightly below top of workpiece.
4. Tighten jaws.

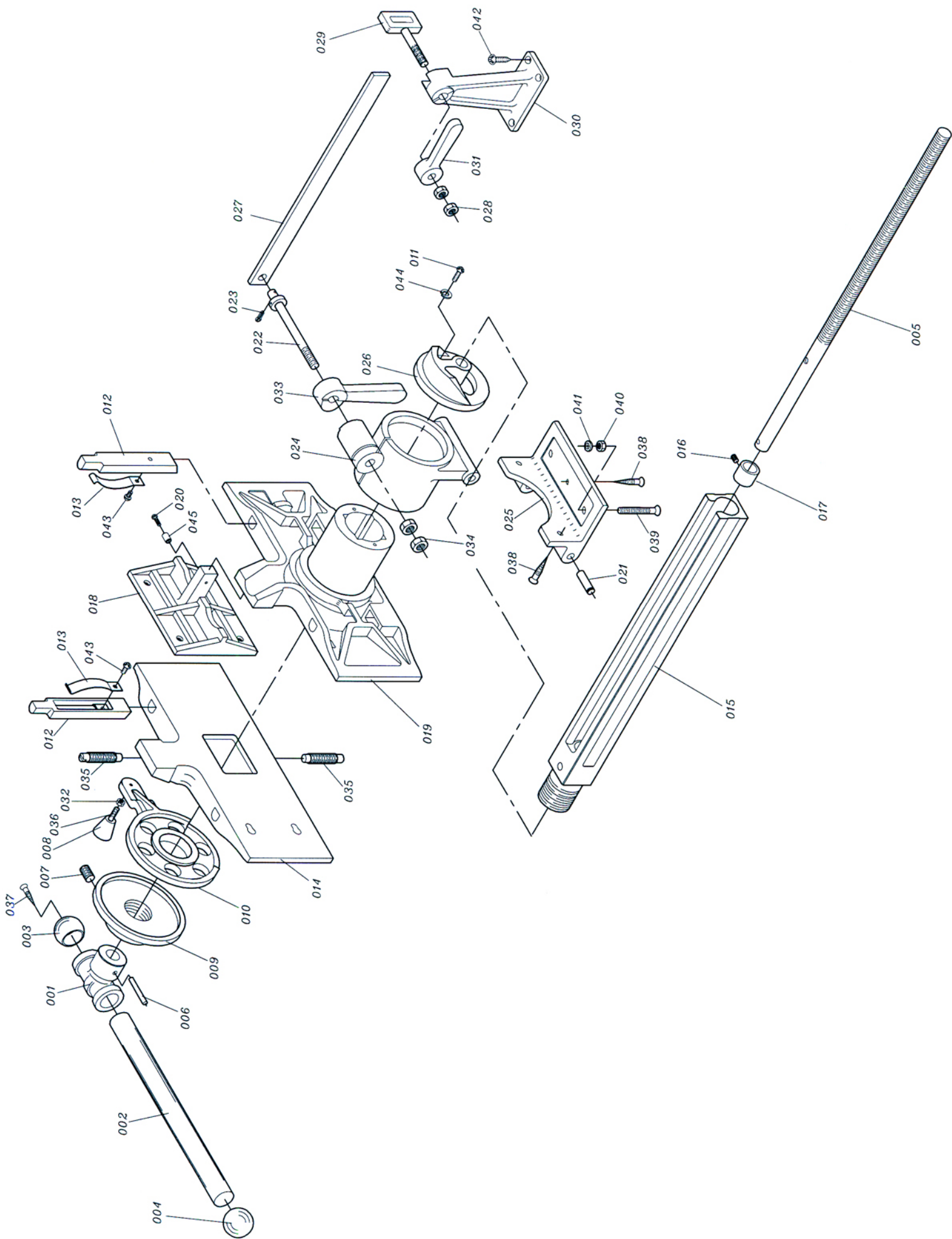


Auxiliary Swivel Jaw

An Auxiliary Internal Jaw is provided for clamping tapered pieces greater than 5°. This jaw can be assembled and disassembled quickly for special-purpose clamping.

1. Open Vise far enough to fit Swivel Jaw between main jaws.
2. Insert tongue of Swivel Jaw through rectangular hole in Rear Main Jaw. Tapped hole in tongue should point away from main beam of Vise.
3. Locate the ridge of the Swivel Jaw into the machined slot in the Rear Main Jaw. Thread the Keeper Screw into the Swivel Jaw Tongue.
4. Be certain that the ridge remains in the slot during the clamping operation.





PATTERN MAKER'S VISE

NO.	P/ NO.	DESCRIPTION	SIZE	Q'TY
1	13011001	HANDLE CASTING		1
2	13011002	WOOD HANDLE		1
3	13011003	HANDLE HEAD		1
4	13011004	HANDLE HEAD		1
5	13011005	LEAD SCREW		1
6	50602015	HANDLE PIN	D8*40L	1
7	50153011	SET SCREW	1/2"-13UNC*1/2"L	1
8	13011006	PIVOT HANDLE		1
9	13011007	LOCKING COLLAR		1
10	13011008	PIVOT CAM		1
11	50154011	RND HEAD SCREW	1/4"-20UNC*3/4"L	2
12	13011009	WISE DOG		4
13	13011010	SPRING		4
14	13011011	FRONT JAW		1
15	13011012	SQUARE BEAM		1
16	50153006	SET SCREW	5/16"-18UNC*5/16"L	1
17	13011013	SLEEVE		1
18	13011014	AUX. PIVT JAW		1
19	13011026	REAR JAW		1
20	50154002	RND HEAD SCREW	#10-24UNC*3/4"L	1
21	13011027	FIXING AXE		2
22	13011016	ROTATION STUD		1
23	50603002	COTTER PIN	D3*30L	1
24	13011017	WISE HUB		1
25	13011018	HUB BRACKET		1
26	13011019	REAR COLLAR		1
27	13011020	TILT BAR		1
28	50201005	HEX. NUT	M10*1.5P	2
29	13011021	TILT STUD		1
30	13011022	TILT BRACKET		1
31	13011023	TIL TLOCKING LEVER		1
32	50251002	HEX. NUT	1/4"-20UNC	1
33	13011024	ROTA. LOCKING LEVER		1
34	50251016	HEX.NUT	1/2"-12UNC	2
35	13011025	PIVOT SCREW		2
36	50152006	CAP SCREW	1/4"-20UNC*1-1/2"L	1
37	50161008	WOOD SCREW	#10*1-3/8"L	1
38	50161007	WOOD SCREW	#10*1"L	3
39	50155010	MACH. SCREW	1/4"-20UNC*3"L	2
40	50251002	HEX. NUT	1/4"-20UNC	2
41	50351003	FLAT WASHER	D1/4"*D13*1t	2
42	50161037	TAPING SCREW	#10*3/4"L	4
43	50104002	RND SCREW	#10-24UNC*3/4"L	1
44	50352002	SPRING WASHER	D1/4"	2
45	13011028	BUSHING		

