

HEGNER

Universal Precision Saws

Instruction Manual for HEGNER models: 14E, 14V, 18S, 18V, 22V, and Polymax

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**International Patents
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Made in Germany

**Index: I. Before You Start
II. Tips & Techniques
III. Troubleshooting
IV. Parts Diagram & Complete Parts List**

IMPORTANT: Read this entire manual before proceeding with assembly and setup.

I. Before You Start

1) UNPACKING YOUR SAW

a) When removing the saw from its box, be sure not to lift it or carry it by the upper reciprocating arm, which may cause arm misalignment and other damage. Instead, grasp the machine under the saw table and by the "C" frame at the back when lifting or carrying it. (illustration 1)

b) The saw box contains the machine and an accessory bag. Please check the contents of this bag to make sure all the items shown below are included (illustration 2).

Save the box and all packing materials for possible future use.



(illustration 1)

#A One Tuffwrench (HTW)

#B Two Tuffscrews (HTS)

#C One 5mm Allen wrench

#D One 4mm Allen wrench

#E One 3mm Allen wrench

#F One 9mm open end wrench

#G One red blade pack with 76 Scroll Saw Blades #H Separate polybag containing 3-5 mm bolts and split lockwashers (Polymax comes with 4 bolts, washers, and bolts)

#I One approximately 6 x 1/4" round steel bar (not included with models 14E and P3)

#J Two red replacement rollers for Quick-Lock Tension System (part#XM22-373; included with models 22V, 18V, and 18S only)

#K One oil pump (included with model P3 only)



(illustration 2)

General Instructions for Use

The Tuffwrench and Tuffscrews are used with bladeclamps for blade installation.

The Allen wrenches are used for setup and assembly, and later for maintenance and repairs, if required.

The bolts and lockwashers in the separate polybag are used to attach the saw to the factory stand.

The steel bar is used to impede rotation of the motor flywheel for changing the stroke or replacing the main bearing connector.

The blades are your **free bonus** to get you started with your HEGNER!

NOTE: Please report any defects or shortages promptly by calling our customer service department toll-free at 1-800-727-6553, or write to Advanced Machinery, P.O. Box 312, New Castle, DE 19720-0312 for service in the U.S.

2) SETTING UP YOUR SAW

a) Place the machine on the stand, lining up the three threaded holes in the saw base with the matching holes in the top of the factory stand (illustration 3). For the Polymax, line up the four unthreaded holes. (illustration 3)

b) Install all three stand bolts with split washers through the stand holes from the bottom side of the stand and finger tighten. Then use the 5 mm (large) Allen wrench to gently tighten all three bolts approximately on-half turn, or just until the lockwashers are almost fully compressed. For the Polymax, use four bolts, washers, and nuts.

c) If you are installing the machine on a surface other than the factory stand, be sure that it is held securely in place on a surface that provides both sufficient stiffness and dampening characteristics. Reciprocating equipment is highly vulnerable to vibration, and proper support is essential for optimum performance. Call our customer service department if you have any questions.

3) INSTALLING ACCESSORIES

If you have purchased any Advanced Machinery accessories for your HEGNER, they should be installed before proceeding further. This manual includes instructions for installing the most popular accessory items.

a) Magnifying Lamp

Designed either for insufficiently lit areas, or for those who prefer sharper, easier visual access to detailed scroll work, the illuminated magnification system is easy to use and quickly installed.

Unpack according to manufacturer instructions, being sure to remove any excess packaging materials, particularly around the bulb. The standard "C" bracket may be mounted directly on the stand, although this may result in interference with workpiece movement.

Interference-free mounting is possible with the HEGNER Lamp Bracket, which bolts directly on to the top of the saw where the hold-down arm is attached to the orange mainframe (illustration 4).

Tip: When attaching lamp bracket, remove only one bolt at a time, while leaving the other loosely installed. This will make it easier to keep the bracket and hold-down properly positioned.

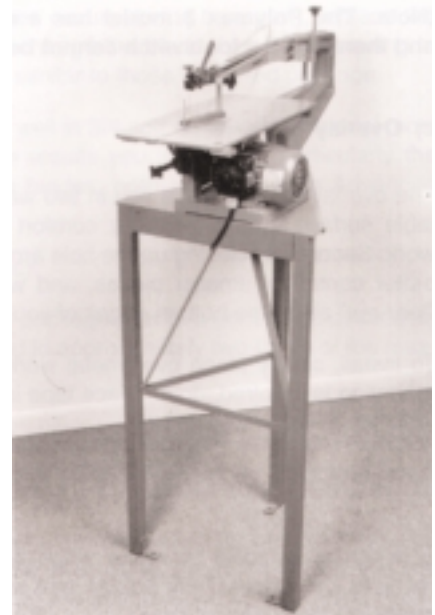
When using the HEGNER Bracket to attach your lamp to the saw, the "C" bracket may be used to mount the lamp elsewhere for better utilization when the lamp is not needed for scrolling.

b) Footswitch

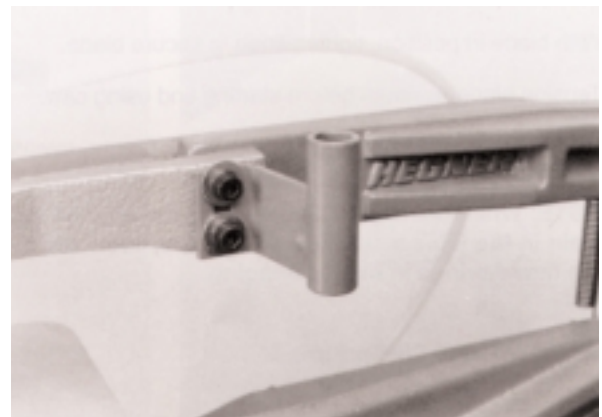
THE HEGNER Footswitch is used to turn the machine on and off without needing to take your hand off your workpiece. It enhances both convenience and safety, since the machine can be turned off more quickly and more easily than by hand.

Also, since the switch is a momentary-contact design, meaning that constant pressure on the switch is required to run the saw, the machine can never start by itself or be run unattended when the footswitch is in place. This also aids operating safety.

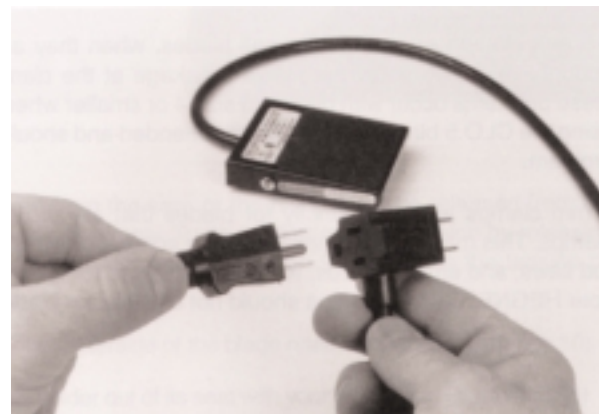
To install, simply plug footswitch plug into any standard outlet, and plug the saw cord into the receptacle on the back of the footswitch plug (illustration 5).



(illustration 3)



(illustration 4)



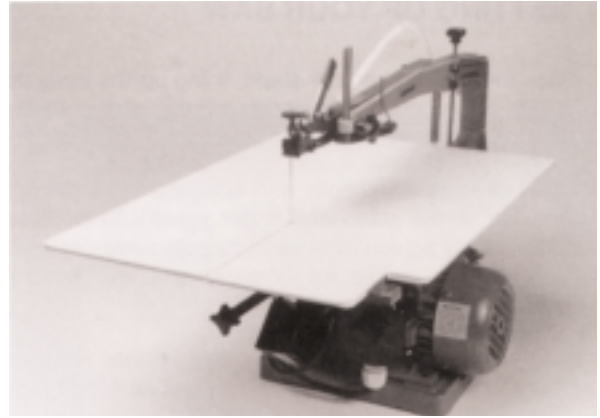
(illustration 5)

To use, place on/off switch on saw into "on" position. Step on footswitch to start the saw, step off to turn it off.

(NOTE: The Polymax 3 model has a magnetic on/off switch and therefore the footswitch cannot be used with this model.)

c) Overlay Table

The overlay table benefits you in two ways. First, it expands the table surface areas for greater comfort and control with larger work. Second, by closing up the hole around the blade, you have better control of smaller pieces, and will also experience less "tear-out" along the bottom edges of your work (illustration 6).



(illustration 6)

To install, simply place over metal worktable. If a more secure mounting is required, double-face tape is effective. Caution: use tape sparingly to avoid the possibility of breaking the overlay table when later removing it.

d) HEGNER Quick-Clamp

This device is highly beneficial when doing repetitive inside cuts, or fretwork. It replaces the upper blade holder, and simplifies release and reinstallation of the saw-blade for inside cut setup.

To use, install blade in lower blade clamp only (See 5.f-I). Install Quick-Clamp in upper saw arm, being sure to completely lock down the knurled safety-stop screw to hold Quick-Clamp firmly in place (illustration 7).

Release tension more than usual, since the blade will install further up in the Quick-Clamp than in a regular clamp. Set blade into Quick-Clamp as far up and back as it will go, making sure not to bend the tip of the blade (illustration 8).

With blade in position, tighten knob to secure blade.

Tension blade as usual before starting and using saw.

Before releasing the blade from the Quick-Clamp, release the tension.

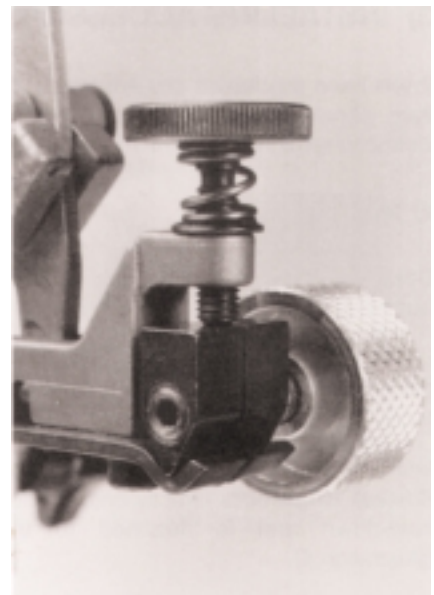
NOTE: When using the Quick-Clamp, the knurled lock-down knob should remain the locked position at all times, even when sawing. This maximizes the time savings in blade changing.

e) Other Blade Clamp Sizes

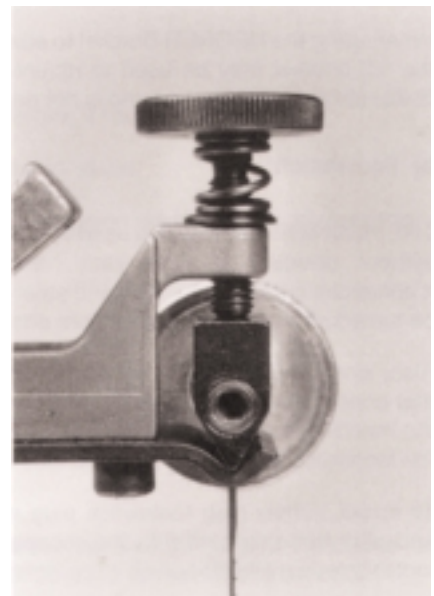
Blade clamps delivered with machine are the medium, or 0.7 mm size. These clamps are suitable for the vast majority of blades. Other clamp sizes are useful as follows:

0.5 mm clamps are used for small blades, when they are either not held tightly enough, or if they show excessive breakage at the clamp exit point. If either of these problems occur with blades in size 4 or smaller when using standard clamps, using the CLO.5 blade clamps is recommended and should reduce or eliminate the problem.

1 mm clamps are used strictly for blades that are too large to fit into standard clamps. This may include bandsaw blade scrap, certain large metal-cutting blades, rod saws, and emery boards, which can be used for finishing and shaping work on your HEGNER. 1 mm clamps should not be used on blades smaller than size 9.



(illustration 7)



(illustration 8)

4) BLADE SELECTION

a) Check the blade in the saw. If it appears bent severely or is broken (this sometimes occurs during transport), replace the blade with one of your choosing, following the instructions provided. You should also change the blade if you are planning to saw a material for which the original blade is not suited. The original blade is a PBO5, similar to those in the red package.

The PBO5 is provided because it is the most commonly used of all blades, and works well in _ soft woods, the material most often cut on scroll saws. However, please be aware that other blades may provide results you like better, particularly the reverse-tooth blades like the Scroll America RT and precision-ground PG Premium blades, both available from Advanced Machinery.

b) If the installed blade is suitable, proceed to section 5. If it is not, continue with step c).

c) First decide which blade will be best for the job. To help you with this, the red blade package provides general guidelines as to the maximum thickness each blade can handle. Generally, you should limit hardwood to approximately two-thirds of the maximum thickness indicated for best results.

NOTE: For additional information on the blades provided, as well as many other types of sizes of scroll saw blades, please refer to the Advanced Machinery Catalog. If you do not have one, please call 1-800-220-4264 for your free copy.

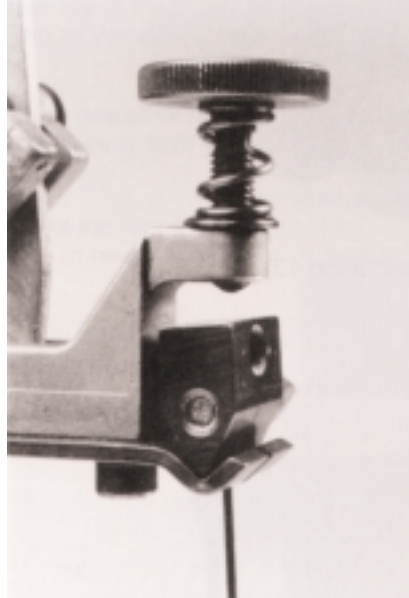
In all cases, your personal preference will determine the best blade for the job. Generally, smaller blades are better for intricate patterns, thin materials, or where super-smooth edges are desired. Large blades, on the other hand, usually cut faster and last longer. Reverse-tooth blades are helpful in reducing or even elimination "tear-out" along the bottom edge of your work. Precision-ground blades cut faster and cleaner, and last longer than regular blades. These blades also have reversed lower teeth.

5) SAW BLADE INSTALLATION

If the blade assembly is in the machine, begin with step a). Otherwise go to step e).



(illustration 9)



(illustration 10)



(illustration 11)

a) To replace a blade, the entire blade assembly must first be removed from the saw, or the blade must be released from the upper blade holder. Most people find it easiest to remove the entire blade assembly. To do so, first release tension by releasing the Quick-Lock tension lever in its vertical position (models 22V, 18V, and 18S only, illustration 9) or release the tension by turning the tension rod counterclockwise (illustration 26).

b) Unscrew the safety stop screw until its tip is barely protruding through the underside of the blade retaining fixture (illustration 10).

c) Gently push down the upper saw arm with one hand while lifting upper blade holder out of its seat with your other hand (illustration 11).

d) Remove lower blade holder from saw by angling the upper blade clamp forward while reaching underneath the saw table with your other hand to grasp lower blade holder. Grasp lower blade holder gently on both sides, press down slightly against retaining clip and remove the blade assembly (illustration 12).

e) To install the new blade, place lower blade clamp into blade clamp holder (illustration 13).

f) Using Tuffwrench, loosen Tuffscrew just enough to release blade fully, usually no more than $\frac{1}{2}$ to $\frac{1}{4}$ turn (illustration 14).

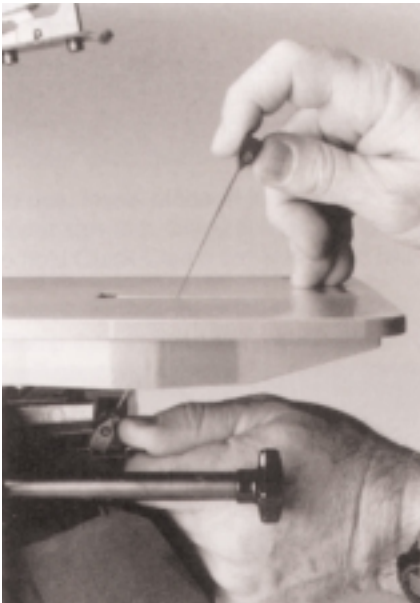
g) Grasp new blade near lower end with one hand, with teeth facing to the right and to the rear of the saw. Leave your forefinger free to steady your hand against the edge of the blade clamp holder (illustration 13).

h) Slide blade end straight into blade clamp at its forward tip approximately $\frac{1}{8}$ inch.

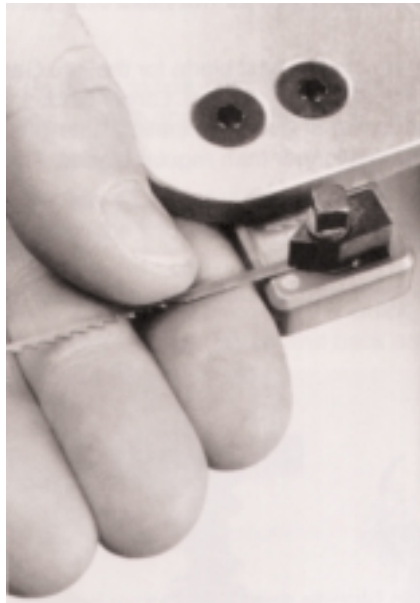
i) Inspect the blade to check centering and alignment. Illustration 15 shows a correctly aligned sawblade, illustrations 16 and 17 show incorrectly aligned blades. (illustrations 15, 16, 17)

j) Repeat the last two steps if necessary. Once blade is properly aligned, tighten Tuffscrew approximately another one-twelfth of a turn (the same as one hour on a clock face) to secure blade.

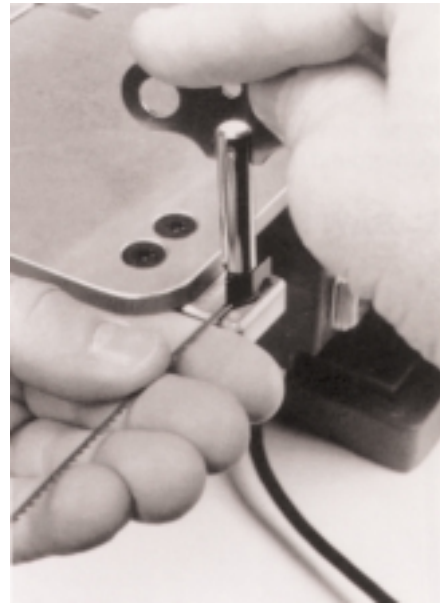
NOTE: Do not over-torque Tuffscrew. This causes undue wear and tear on the Tuffwrench and Tuffscrew!



(illustration 12)



(illustration 13)



(illustration 14)



(illustration 15)



(illustration 16)



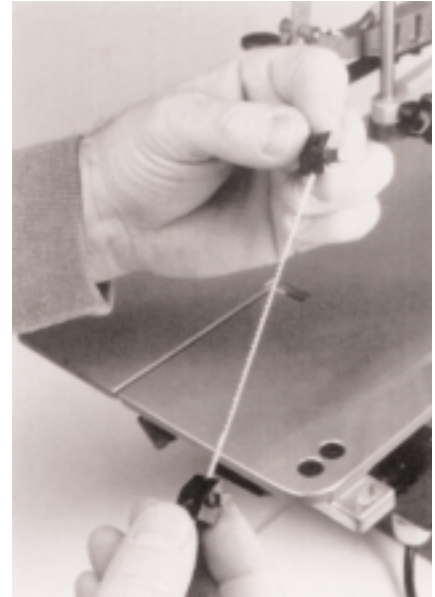
(illustration 17)

k) Remove blade clamp (with blade installed) from holder. If using HEGNER Quick-Clamp, proceed directly to step n). If using standard HEGNER blade clamps at both blade ends, place second blade clamp in holder. This will become the upper blade clamp. (The clamps are identical – you may use either as upper or lower.)



(illustration 18)

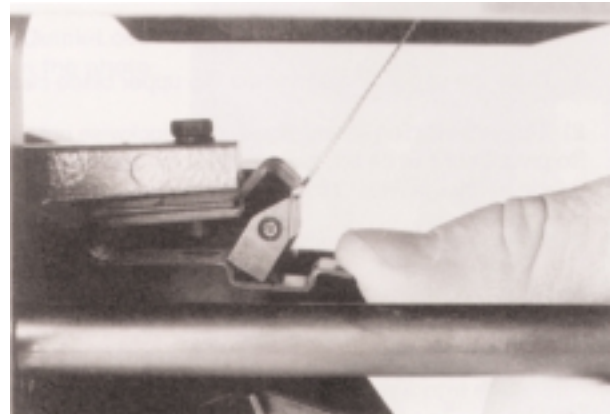
l) Install remaining blade end in upper blade clamp using the same procedure as above. However, instead of observing the direction of the blade teeth, have the Tuffscrew in lower blade holder pointing up. In other words, when installation is complete the Tuffscrews in both blade clamps should be pointing in the same direction (illustration 18).



(illustration 19)

By following this procedure you can easily ensure your sawblade teeth are always facing in the proper direction. By inserting the blade into the saw with the screw heads to the right, and with the teeth facing you, the teeth will always be pointing down against the tables, as they must for proper performance (illustration 19).

m) You are now ready to install the blade assembly in the saw. To do so, grasp the lower blade clamp (the only one if you are using the Quick-Clamp) in one hand, keeping the tips of the fingers free so you can feel the end of the lower arm as you install the blade clamp.



(illustration 20)

n) Hold the upper end of the blade assembly in your other hand as you angle the blade with the bottom pointed away from you and slide into the table slot (illustration 12).

o) Place the lower blade clamp on the ledge of the spring steel retaining clip while centering the blade clamp in relationship to the tip of the lower arm (illustration 20).

p) Gently press the clamp down and back into positions as you bring the blade into a vertical position (illustration 21).



(illustration 21)



(illustration 22)



(illustration 23)



(illustration 24)

q) If using a standard blade assembly:

- 1) Draw the upper arm down and slip upper blade clamp into position on upper arm (illustration 22).
- 2) Tighten retaining safety-stop screw clockwise onto blade clamp, then back off approximately one-half turn to permit clamp to pivot freely, while still blocking it at the extreme pivot angles. This prevents the clamp from being ejected in the event of blade breakage (illustration 23).

r) If using the HEGNER Quick-Clamp (preferred for fretwork)

- 1) Draw arm down, position blade in Quick-Clamp, and tighten aluminum knob (illustration 24).

NOTE: When positioning blade in Quick-Clamp, be careful not to push hard just below the clamp, as this can deflect the blade into a position where you cannot secure it properly.

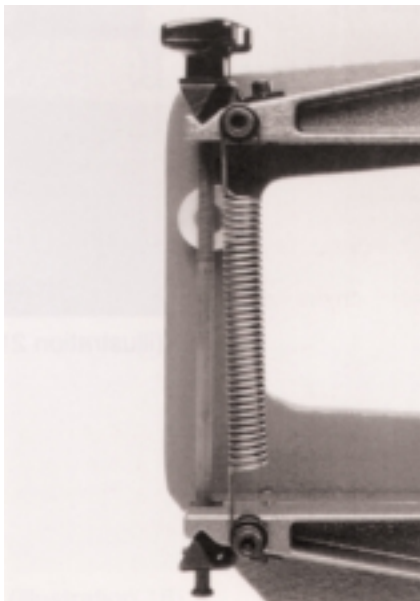
- 2) Leave safety-stop screw locked down for maximum blade changing convenience when using Quick-clamp.

You are now ready to tension the sawblade.

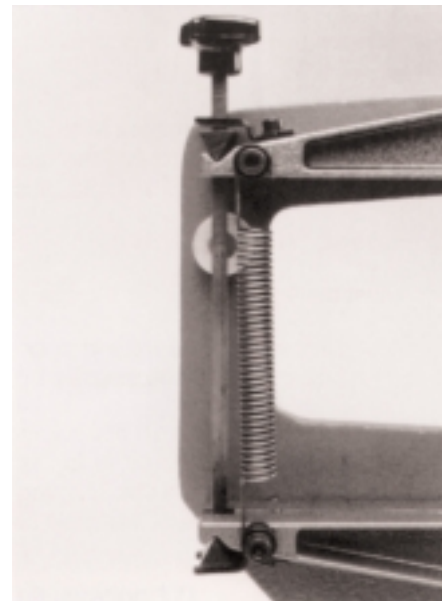
6) SETTING THE BLADE TENSION

a) Some saws are shipped with the tension rod all the way down (illustration 25). This provides extra protection for the rod assembly: when transporting the saw in the future, the tension rod should be returned into this position.

b) Before operating your saw, set tension by first turning the tension rod clockwise (with a blade installed) until you feel gentle resistance, or stiffness. If the rod was all the way down, several extra turns will be required for initial setup (illustration 26).



(illustration 25)



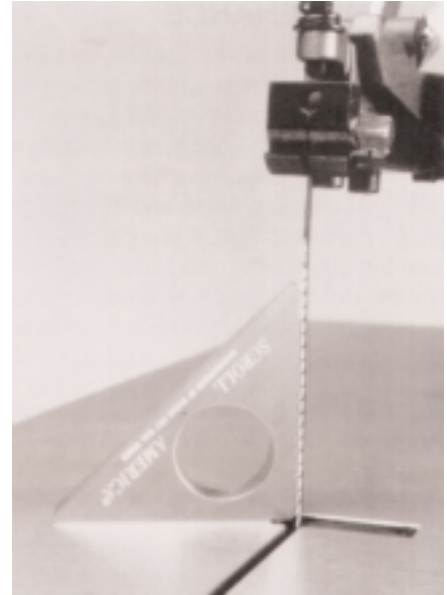
(illustration 26)



(illustration 27)



(illustration 28)



(illustration 29)

NOTE: For models 22V, 18V, and 18S, while adjusting tension, the Quick-Lock lever must be in the locked, or angles-back position, as shown in the photo (illustration 27).

c) Once you reach this point of gentle resistance, called the "Slack point", you will actually be placing tension on the sawblade as you proceed. Normal tension is from a minimum of one-half turn to one full turn clockwise past the slack point. If you are sawing thick or hard materials, or if you plan to saw aggressively, you may want to increase tension, but not exceeding two full turns past the initial point of resistance.

d) Always release the tension when the saw is not in use. For models 22V, 18V, and 18S, simply loosen the tension by releasing Quick-Lock lever when you have finished working for the day. For all other models, turn the tension rod counterclockwise until loose.

7) SQUARING YOUR WORKTABLE

Before beginning your first project, make some test cuts in scrap material to become comfortable with the feel of the machine. At this time, it is also recommended to check the squareness of your table, since it may shift during the transport.

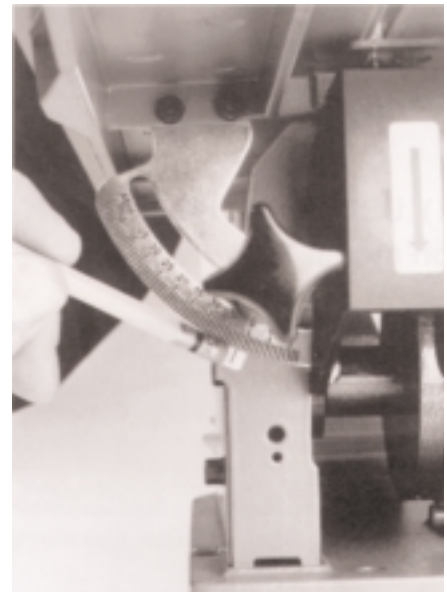
a) If you own a Scroll America Mini-Square (available from Advanced Machinery), this is a useful application. Set the table to 0 degrees using the indicator underneath the left front of the worktable (illustration 28)

b) Place square on worktable next to either side of the blade (illustration 29)

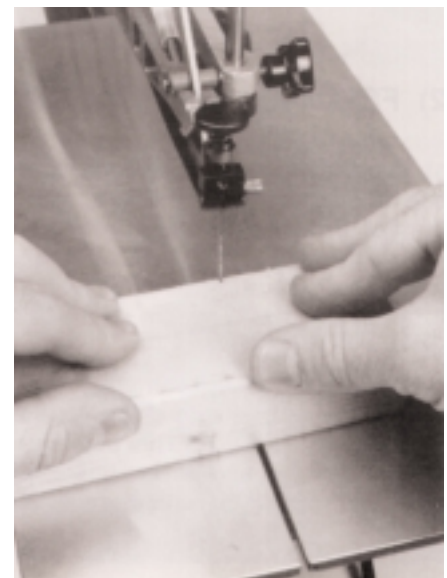
c) Adjust the table as needed to align the blade with the vertical edge.

d) If an adjustment is needed, use a pencil eraser or similar blunt-ended device to reposition scale indicator (illustration 30).

e) As a final test, make a 1/16" cut into the edge of the thickest flat piece of wood available that fits into the saw (a 2x4 is fine) (illustration 31). Then slide the piece around and behind the blade, aligning the cut mark with the back edge of the blade. If the table is square, the blade should fit right into the slot you just cut in the wood (illustration 32).



(illustration 30)



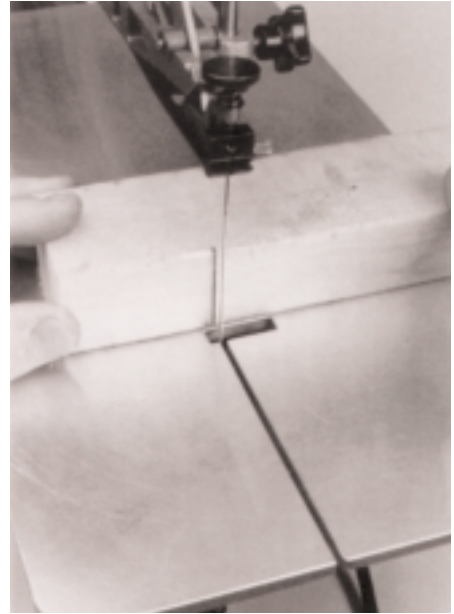
(illustration 31)

8) MAINTENANCE

Your Hegner saw requires little maintenance. Keep your machine clean and always release the tension when the saw is not in use. Before operation and after every ten hours of use, oil each main bearing supporting the upper and lower reciprocating arms. Use heavy machine oil in the oil ports (#34 on parts diagram) for Polymax. On Multimax 14, 18, and 22 use light machine oil on both ends of the bearings (#8 on parts diagram). If you cannot reach the inside ends of the bearings, drop oil near the edge of the arm above the bearing – it will run to the proper spot. Wipe off any excess oil. Make sure no oil runs to the threads of the tension rod. Oil on the tension rods threads may cause the tension rod to turn loose while the machine is running.

Important: Always wear proper eye protection when operating this or any power tool. Operate only with all safety covers and guards in place.

You are now ready to start enjoying your HEGNER!



(illustration 32)

II TIPS & TECHNIQUES

1) USING THE HOLDDOWN

(Holddown arm is optional on model 14E)

- a) The workpiece hold-down/fingerguard should always be in place with the guard portion immediately in front of the sawblade (illustration 33).
- b) To set the height, place the workpiece directly underneath the hold-down foot and simply drop the foot onto the workpiece by releasing the locking knob.

NOTE: If your workpiece has an uneven surface, you may wish to raise the hold-down slightly to allow free movement of the piece.

The threaded hole located approximately 3" from the front end of the silver hold-down arm is for holding part of the optional coolant fluid reservoir assembly, useful for sawing metals, stone, or glass.



(illustration 33)

2) FEEDING YOUR WORKPIECE

- a) To make straight cuts, feed your work into the blade by placing one hand on each side of the blade (**NEVER place your hand in front of the blade!**) and pushing the work gently but firmly directly into the blade evenly with both hands. You should also press gently down as you push forward. The harder you are feeding the work, the more downward pressure should be applied (illustration 34).

NOTE: The single most common cutting error is inadvertently pushing the workpiece sideways into the blade instead of forward into the blade. This puts side pressure on the blade and can lead to shorter blade life, uneven cuts, burning of the workpiece edges, and more bouncing of the work on the table.



(illustration 34)

b) To make turns, increase feed rate on one side while reducing it on the other. Be sure to hold work down more firmly during turns for best results. You can turn on the spot with your HEGNER whenever and as often as you wish (illustration 35).

3) TILTING THE TABLE

While most scroll work is done at 90 degrees, you can tilt the table on your HEGNER Precision Saw for additional versatility, easily and securely. Simply release the locking knob under the left front corner of the worktable (turn counterclockwise) and position the table to suit your task. Tighten knob clockwise to lock table into position.

Be sure to re-square your table after doing bevel cuts.
(See SECTION 1, Para. 6).

4) CHANGING THE STROKE LENGTH (models 14V, 18S, 18V, and 22V only)

Your HEGNER Variable-Speed Scroll Saw is shipped from the factory set on the long stroke, which is generally best for nearly all scroll work.

However, for working in extremely thin and light materials, such as wood veneer or single layer sheet metal, reducing the stroke can increase sawing control and smoothness. To change the stroke, proceed as follows:

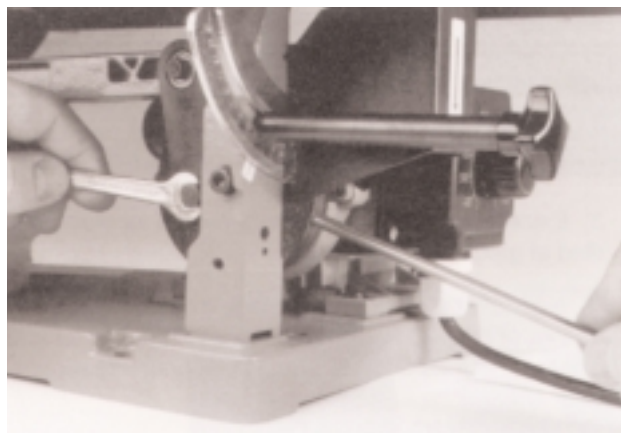
- a) Remove safety shield (illustration 36).
- b) Insert 6x1/4" steel bar into hole on perimeter of motor flywheel eccentric (illustration 37).
- c) Insert 9 mm open-end wrench in machine screw #26 and loosen fully. **Do not remove** (illustration 37).
- d) Locate the desired hole in the face of the flywheel face. The hole closer to the center of the flywheel gives you the shorter stroke (illustration 38).
- e) Carefully slide screw #26 into the desired hole in the flywheel face. Make sure you position the spacer washer #60 on the machine screw between the connector and the flywheel (illustration 39).



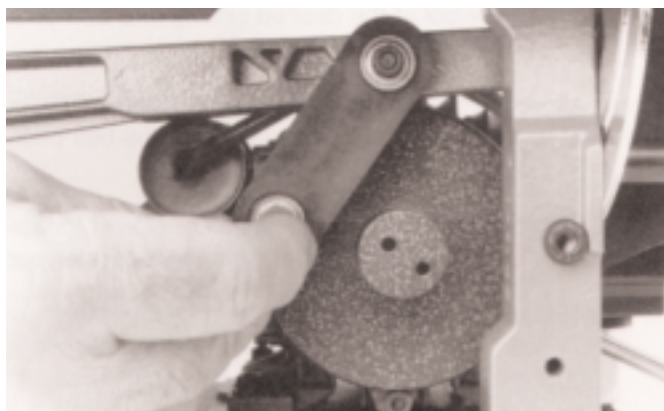
(illustration 33)



(illustration 34)



(illustration 35)



(illustration 36)



(illustration 37)

f) Securely tighten screw #26, being sure to completely compress the split lockwasher.

g) Remove steel bar and replace cover.

5) CHANGING THE STROKE LENGTH (model Polymax 3 only)

Your HEGNER Polymax Scroll Saw is shipped from the factory set on the long stroke, which is generally best for nearly all scroll work.

However, for working in extremely thin and light materials, such as wood veneer or single layer sheet metal, reducing the stroke can increase sawing control and smoothness. To change the stroke, proceed as follows:

a) Remove safety shield (illustration 36).

b) Place a block of wood under bearing connector #21 to prevent complete rotation (illustration 40).

c) Insert 5 mm hex wrench in machine screw #29 and loosen fully. Do not remove (illustration 40).

d) Locate the desired hole in the face of the drive shaft face. The hole closer to the center provides the shorter stroke (illustration 41).

e) Securely tighten screw #29, being sure to completely compress the split lockwasher #65.

f) SPEED SELECTION (does not apply to models 14E and 18S) Factors to consider when choosing cutting speed:

1) Generally, slower speeds are preferable when control, accuracy, or delicacy are important, while higher speeds are generally preferable for increased work output and reduced sawing time

2) Thin or delicate materials and blades are best handled at slower speeds.

3) Extra-thick or heavy materials, as well as most plastics, are usually best handled at medium or slower speeds.

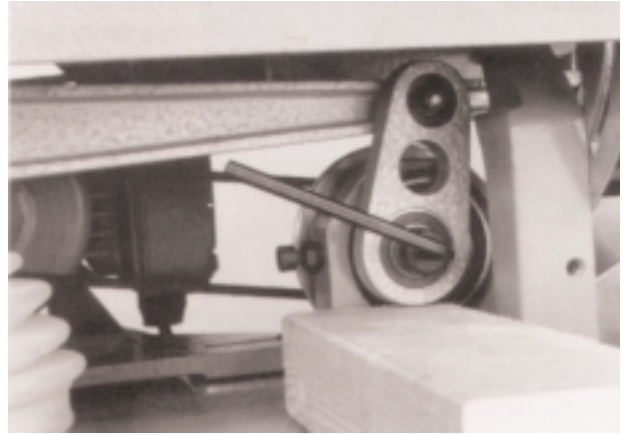
4) A good method when first starting out is to set the machine at medium speed for 1/2" or thicker woods, or slow speeds for thinner or difficult materials. Then adjust speed as you go until you achieve your ideal comfort level. You can change speed any time, and as often as you like, without interrupting your work.

6) CHANGING SPEEDS

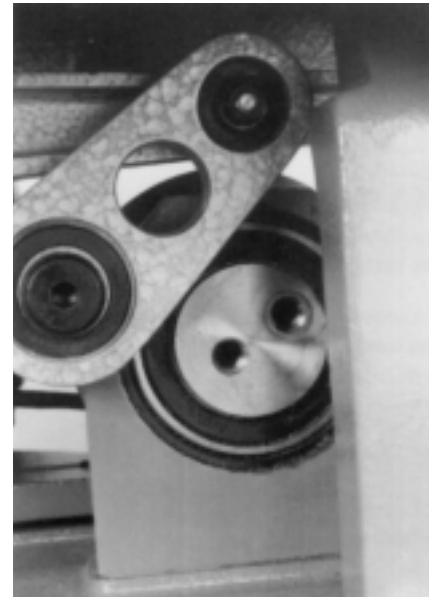
For models 14V, 18V, and 22V: Your HEGNER Saw is equipped with an electronic speed control permitting you to operate between 400 and 1700 RPM, or strokes per minute. Simply set the electronic speed control at the desired setting and turn your machine on or off with the switch on the side of the control box.

For model Polymax 3: Your Polymax operates on a four-step pulley system, allowing you to run the saw at 700, 1100, 1270, or 1600 strokes per minute. The highest speed is achieved with the belt closest to the motor, and the lowest with the belt positioned farthest from the motor.

Your saw is shipped to you set on the second-fastest speed, 1270 RPM. It should be operated at this speed or slower for approximately the first two hours of operation, which is the recommended "break-in" period. After this time, you may operate your saw at any speed appropriate to your task and personal comfort level.



(illustration 38)



(illustration 39)

To change speeds, first remove belt guard (illustration 42).

Next, release locking lever (illustration 43).

Slide motor forward to release belt tension (illustration 44).

Reposition drive belt, making sure that the belt is in the same pulley position at both ends. For instance, if the belt is in the second groove from the right at the motor pulley, it should also be in the second groove from the right in the front pulley (illustration 45).

Warning: Misaligning the belt will cause increased wear and premature failure of the drive belt, and will also produce an operating speed not reflected in the selection chart.

Push motor back to re-tension belt and lock lever. Reposition belt guard.

IMPORTANT: Never operate machine unless the belt guard and all other guards are in place!



(illustration 40)



(illustration 41)



(illustration 42)



(illustration 43)

III TROUBLESHOOTING GUIDE

If any of the following situations occur, proceed as indicated.

Situation	Possible Solution
Saw chatters at low speed	Check blade tension Check saw bolts to stand
Saw chatters at high speed	Same as above, plus Check blade clamps (should be straight up-and-down) Check hold-down arm for interference with saw arm Check for loose items around saw Check motor bolts to saw base Check Quick-Lock & tension rod Check stand for broken welds
Saw vibrates excessively	Check saw bolts to stand Check blade alignment

NOTE: Saws not mounted on factory stands may not operate as smoothly as otherwise possible. Consult factory.

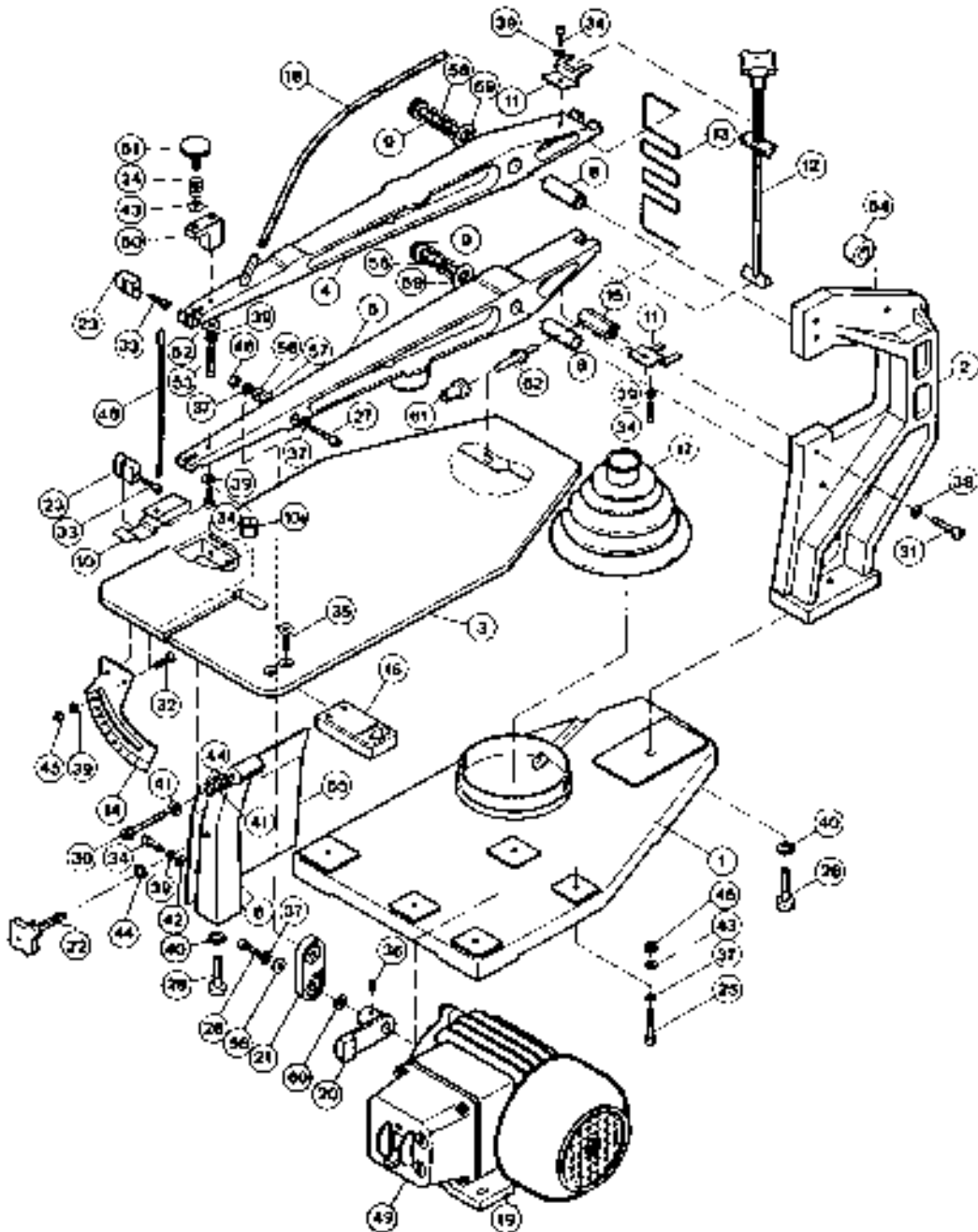
Blades break near ends	Check blade clamps for burr on inside clamping edge Check blade clamps for straight up-and-down position when blade is tensioned Can clamps pivot freely? Check blade clamps seats for horizontal alignment Check for proper clamp size. Small blades should not be mounted in large clamps
Blades break near middle	Check blade chart for proper selection Check tension, increase if in doubt Check sawing technique (perhaps excessive side pressure) Check blades for factory defect, try other batch or size
Saw fails to start	Check outlet for power Unplug motor first and check cord for cuts If using footswitch, disconnect and plug motor cord directly into outlet Replace on/off switch if needed
Saw stops unexpectedly	Turn motor off immediately! Carefully check motor for signs of overheating Check for obstructions (unplug motor first) Test saw for movability by hand (unplug first) Check switch
Variable speed stops working	Call factory
Tension rod loosens by itself	Check for oil in threads, clean if present If problem persists, check for wear in threads and/or upper prism, replace if needed
Sudden loss of tension	Blade or clamp improperly mounted (permits slippage)
Quick-Lock lever pops loose	Check tension groove for definition – carefully refile if needed.
Quick-Lock rollers wear out	Replace both (spares packed with saw)

NOTE: To order parts, please refer to the parts diagram for your machine. Also, have the serial number of your machine available when calling, to ensure you receive the correct parts. The six digit serial number is found on the top of the machine base, at the rear of your saw on the right-hand side.

IV. Parts List & Diagrams

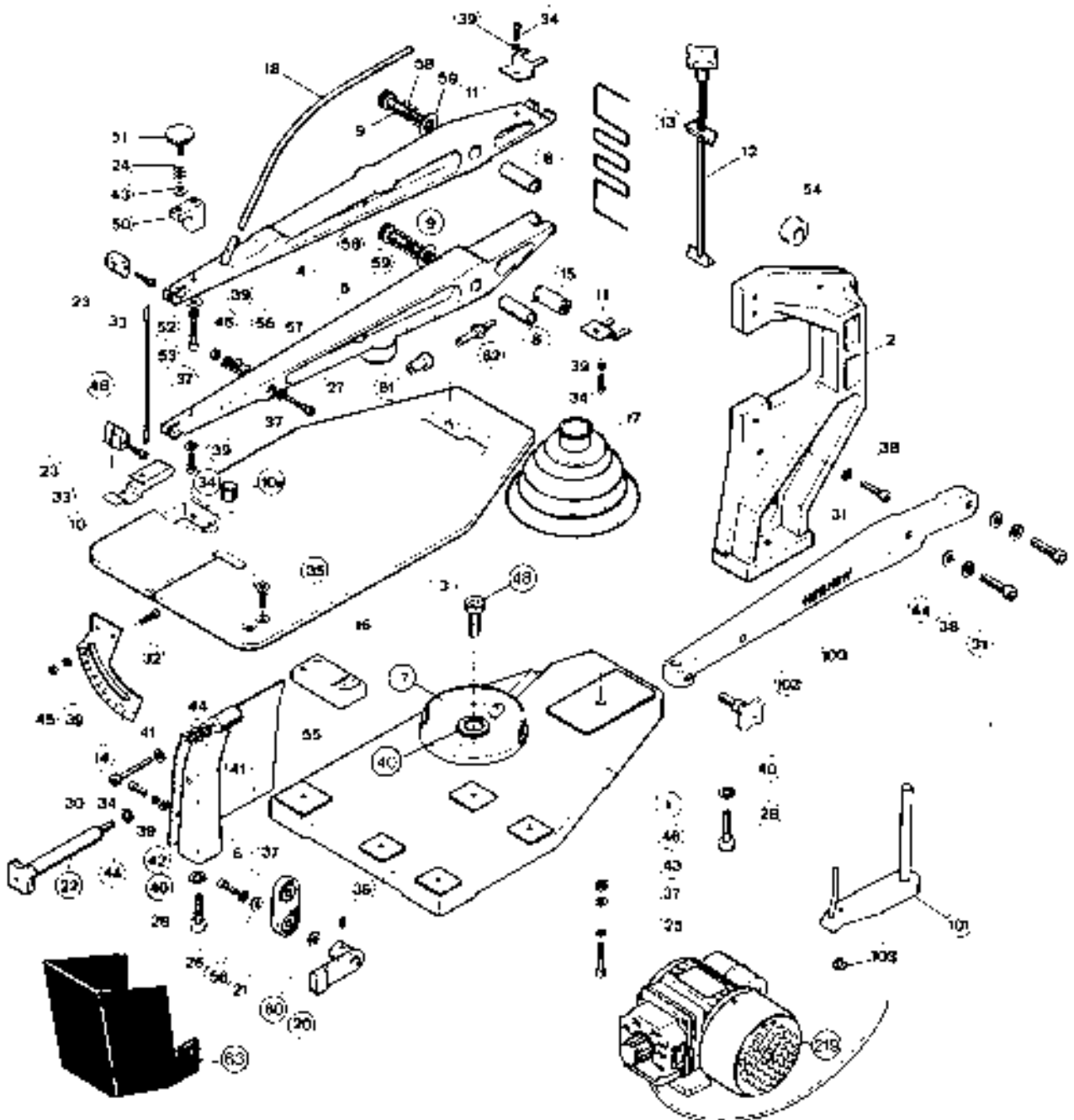
HEGNER MULTIMAX®-14E

- | | | |
|-----------------------|-------------------------|-----------------------|
| 1 Base | 13 Spring | 25-46 Screws etc. |
| 2 C-Frame | 14 Table guide | 50 Blade clamp holder |
| 3 Table | 15 Boltblock | 51 Thumbscrew |
| 4 Upper arm | 16 Blademounting device | 52 Washer |
| 5 Lower arm | 17 Bellows | 53 Bolt |
| 6 Table support | 18 Air line | 54 Rubber bumper |
| 8 Bushing | 19 Motor Mx 14E | 55 Cover |
| 9 Bushing support | 20 Eccentric | 56 Spacer |
| 10 Spring clampholder | 21 Connector | 57 Spacer |
| 10a Spacer | 22 Thumbscrew | 58 Spring |
| 11 Retainer | 23 Blade clamp | 59 Washer |
| 12 Tension rod | 24 Spring | |



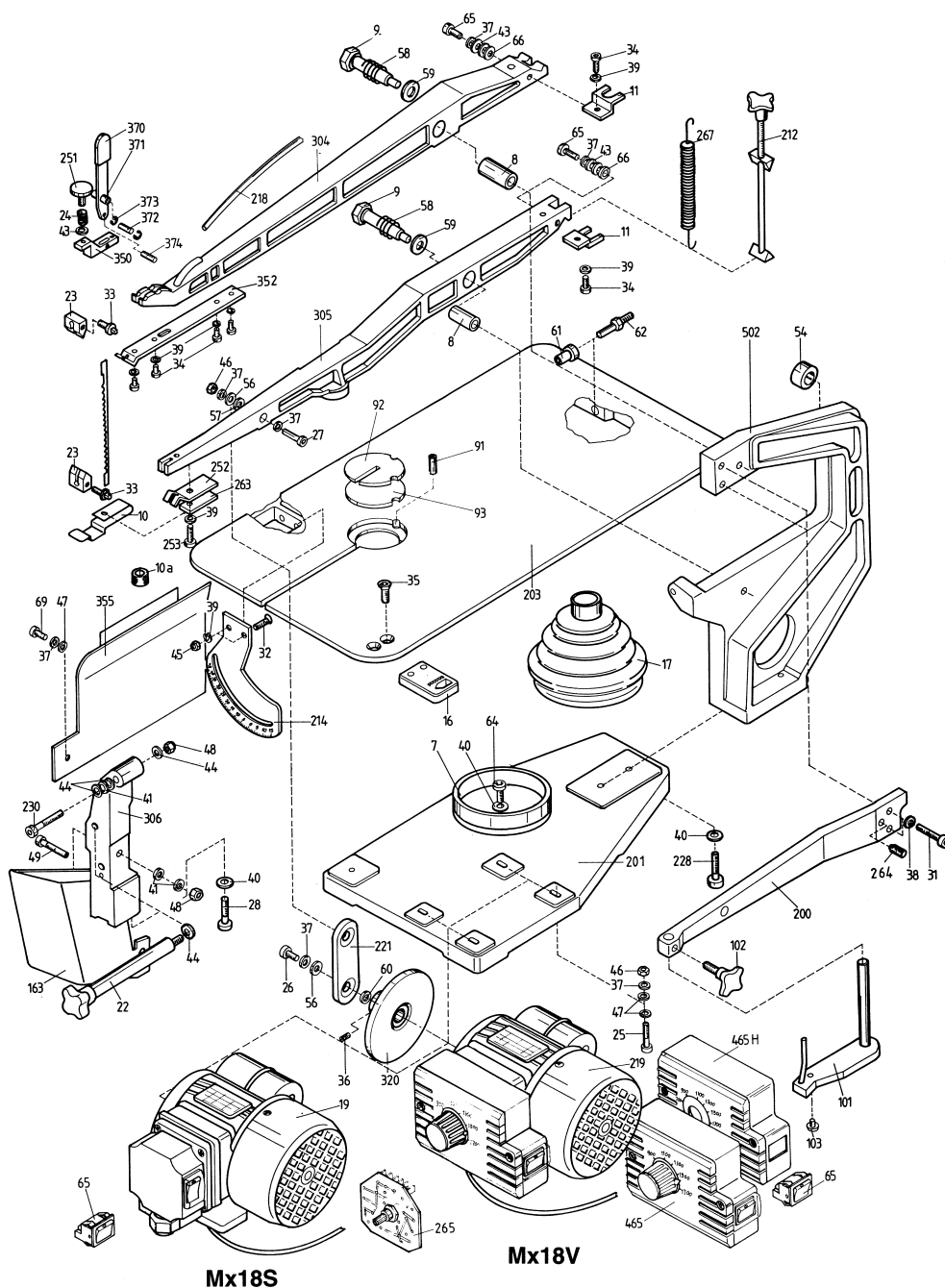
HEGNER MULTIMAX®-14V

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|-----------------------|--------------------------|--------------------------------------|
| 1 Base | 14 Table guide | 51 Screws etc. |
| 2 C-Frame | 15 Boltblock | 52 Blade clamp holder |
| 3 Table | 16 Blademounting device | 53 Thumbscrew |
| 4 Upper arm | 17 Bellows | 54 Washer |
| 5 Lower arm | 18 Air line | 55 Bolt |
| 6 Table support | 219 Variable speed motor | 56-57 Rubber bumper |
| 8 Bushing | 20 Eccentric | 58 Cover |
| 9 Bushing support | 21 Connector | 59 Spacer |
| 10 Spring clampholder | 22 Thumbscrew | 100 Spacer |
| 10a Spacer | 23 Blade clamp | 101 Spring |
| 11 Retainer | 24 Spring | 102 Washer |
| 12 Tension rod | 25-46 Screws etc. | 103 PLastic insert for holddown fork |
| 13 Spring | 50 Blade clamp holder | |



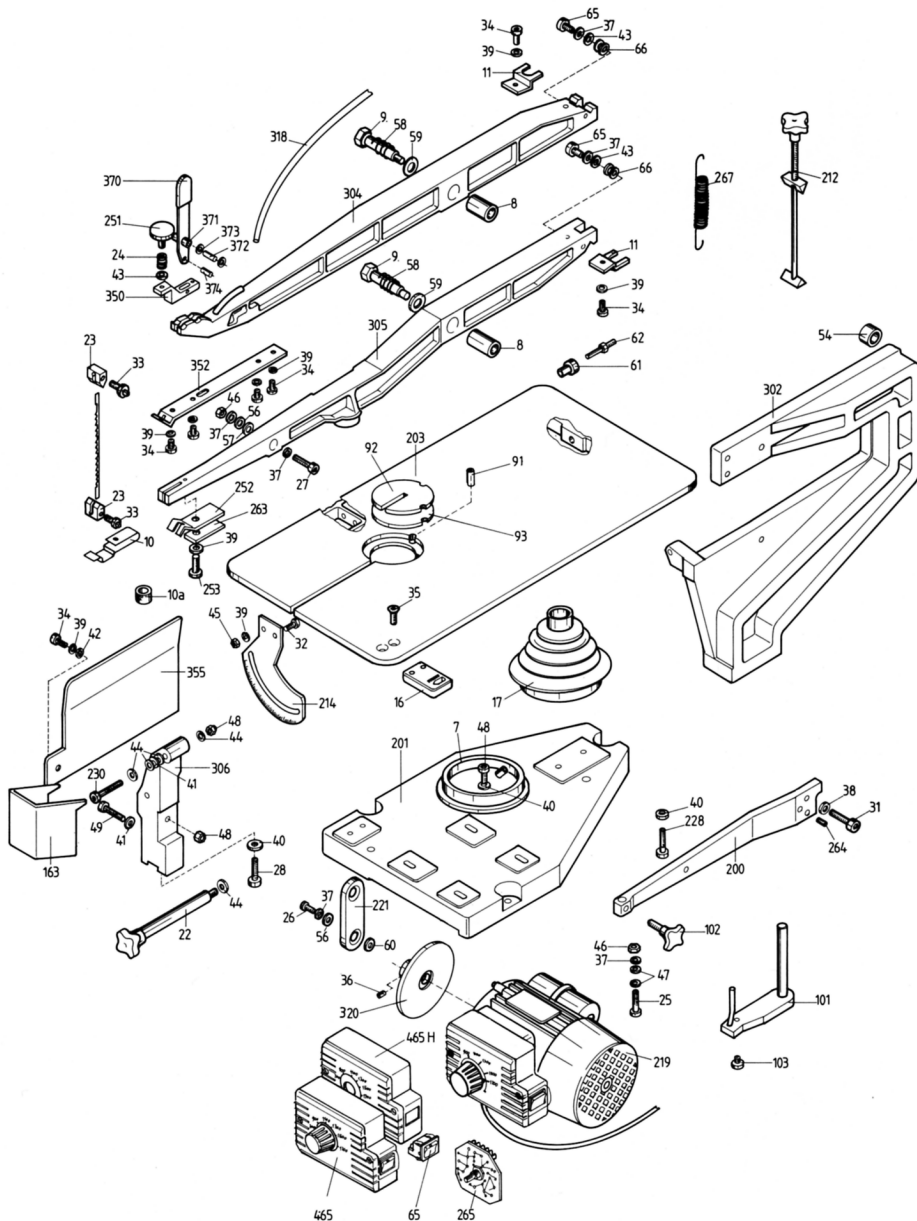
HEGNER MULTIMAX®-18

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|-----|----------------------|-------|---|------|---|
| 201 | Base | 221 | Connector | 267 | Spring |
| 502 | C-Frame | 22 | Thumbscrew | 370 | Tension lever only |
| 303 | Table | 23 | Blade clamp | 371 | Tension lever rollers only |
| 304 | Upper arm | 24 | Spring | 372 | Pin |
| 305 | Lower arm | 25-46 | Screws, etc. | 373 | Tension lever roller clips |
| 306 | Table support | 350 | Blade clamp holder | 374 | Pin |
| 8 | Bushing | 251 | Thumbscrew | 465 | Switch box complete with switch and speed control |
| 9 | Bushing support | 252 | Clamp carriage | 465H | Switch box only |
| 10 | Spring clampholder | 352 | Clamp carriage leaf spring | 200 | Holddown arm |
| 11 | Retainer | 253 | Screw | 101 | Fork |
| 212 | Tension rod | 54 | Rubber bumper | 102 | Thumbscrew |
| 214 | Table Guide | 355 | Cover | 103 | Plastic insert for holddown fork |
| 16 | Blademounting device | 56-57 | Spacer | | |
| 17 | Bellows | 58 | Spring | | |
| 218 | Air line | 59 | Washer | | |
| 19 | Motor Mx-18S | 65 | Rocker switch (wide) | | |
| 219 | Motor Mx-18V | 265 | (B) Variable speed control (board only) | | |
| 320 | Eccentric | | | | |



HEGNER MULTIMAX®-22

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|----------------------------|--------------------------------|---|
| 201 Base | 24 Spring | 62 Swivel bearing |
| 303 Table | 25-28 Screw | 65 Rocker switch (wide) |
| 304 Upper arm | 228, 230 Screw | 163 Guard |
| 305 Lower arm | 31-32 Screw | 264 Screw |
| 306 Front support | 33 Blade clamp screw | 265 (B) Variable speed control (board only) |
| 7 Bellows base | 34 Allen screw | 66 Support roller f. safety spring |
| 8 Bushing | 35 Screw | 267 Safety spring |
| 9 Bushing bolt | 37-41 Lockwasher | 370 tension lever only |
| 10 Clampholder with spring | 42-44, 47 Washer | 371 Tension lever rollers only |
| 212 Tension rod complete | 45, 46, 48 Nut | 372, 374 Pin |
| 214 Table guide | 49 Screw | 373 Tension lever roller clips |
| 15 Clamp wing nut | 350 Bladeclamp holder, top | 465 Switch box complete with switch and speed control |
| 16 Blade mounting device | 251 Knurl nut | 465 H Switch box only |
| 17 Bellows | 352 Clamp carriage leaf spring | 200 Holddown arm |
| 318 Airhose | 54 Rubber bumper | 101 Holddown arm fork |
| 219 Variable speed motor | 355 Cover plate | 102 Thumbscrew |
| 320 Eccentric | 56, 57 Washer | 103 Plastic insert f. holddown fork |
| 221 Connector | 58 Spring | |
| 22 Thumbscrew, extended | 59, 60 Washer | |
| 23 Blade clamp | 61 Bearing bush | |



HEGNER POLYMAX®- 3

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|--------------------------|--------------------------------|-------------------------------------|
| 201 Base | 19 Thumbscrew, extended | 56-57 Washer |
| 303 C-Frame | 219 Blade clamp | 58 Spring |
| 304 Table | 320 Spring | 59 Washer |
| 305 Upper arm | 221 Screw | 267 Bearing bush |
| 306 Lower arm | 22 Screw | 370 Swivel bearing |
| 7 Table support | 23 Screw | 371 Guard |
| 8 Bushing | 24 Blade clamp screw | 372 Screw |
| 9 Bushing support | 25-46 Allen screw | 373 Support roller f. safety spring |
| 10 Spring clampholder | 350 Screw | 374 Safety spring |
| 212 Retainer | 251 Lockwasher | 200 Tension lever only |
| 214 Tension rod | 252 Washer | 101 Tension lever rollers only |
| 15 Table guide | 352 Nut | 102 Pin |
| 16 Blade mounting device | 253 Screw | 103 Tension lever roller clips |
| 17 Bellows | 54 Bladeclamp holder, top | 200 Holddown arm |
| 318 Air line | 355 Knurl nut | 101 Holddown arm fork |
| 219 Variable speed motor | 352 Clamp carriage leaf spring | 102 Thumbscrew |
| 320 Eccentric | 54 Rubber bumper | 103 Plastic insert f. holddown fork |
| 221 Connector | 355 Cover plate | |

