HOW TO OPERATE AND MAINTAIN THE MAGNA 18" JIGSAW

The Magna 18" Jigsaw is a valuable addition to your power workshop. Its basic function is to cut curved lines. These may be exterior cuts, started from the edge of the stock, or they may be confined entirely within the perimeter of the work. The latter is referred to as piercing and is an exclusive jigsaw operation. Various sizes and styles of blades can be mounted. Fine blades may be used to cut a very thin kerf and turn extremely tight radii which makes the jigsaw especially adapted to intricate scroll and fretwork. Fine crafts such as inlay, intarsia, marquetry, and intricate pierced design work in metals are almost entirely dependent on the jigsaw. In addition, it is rugged enough so that with a heavy blade it will easily cut through a 2x4. It is a safe and easy tool to use and ideal for teaching a youngster the art of woodworking. Even a seven or eight-year-old will soon do a creditable job of jigsawing.

JIGSAW NOMENCLATURE:

1. Tension lock knob
   Locks cylinder to control tension on blade.
2. Guide rod
   Supports and positions blade guide assembly.
3. Upper chuck
   Top end of blade locks between jaws of chuck.
4. Blade guide lock screw
   Adjusts and locks end of split tube to thickness of blade being used.
5. Blade back-up lock screw
   Locks adjustable back-up to support blade when cutting.
6. Air tube
   Flexible tube directs air from pump in upper housing through hollow blade guide to clear dust from cutting line.
7. Spring hold-down lock knob
   Secures spring hold-down at normal or angular settings.
8. Spring hold-down
   Keeps blade from lifting work from table on "up" stroke.
9. Table insert
   Removable insert provides support around cutting area. May also be used with files.

10. Lower chuck
    Bottom end of blade locks between jaws of chuck, has V-block for locking round file shanks.
11. Indexing screw
    Permits turning lower chuck 90°.
12. Lower blade guide and back-up
    Guides and backs up blade when saber sawing.
13. Table trunnion
    Guides table through tilt range.
14. Tilt indicator
    Adjustable plate for tilting table to exact degree.
15. Tilt lock
    Locks table at any angular setting.
16. Auto-stop set screw
    Adjustable Nylok screw affords automatic setting at 0° position.
17. Drive shaft
    Turns mechanism which converts rotary motion to up and down action of jigsaw blade.
18. Twin mounting tubes
    Slip in Power-Mount on SHOPSMITH Mark V and Mark VII. Also used for mounting jigsaw as individual tool.

SPECIFICATIONS:

CAPACITY
.Thickness of cut...2"  
.Cuts to center of...36" panel
(Unlimited as saber saw)

DIMENSIONS
.Table...11" x 11"
.Overall...27" high x 11" wide x 25½" long

TABLE TILT
.0° - 45°

STROKE
.¾"  

UPPER AND LOWER CHUCK INDEX
.90°

TABLE STOP
.Adjustable auto-stop at 0°

BEARINGS
.Bronze and nylon

SPEED
.2580 RPM Maximum (Recommended)
HOW TO MOUNT THE JIGSAW

The separate Instruction Sheet, packed with this manual in the Jigsaw package, contains pertinent information in regard to mounting the Jigsaw on SHOPSMITH Mark VII, SHOPSMITH Mark 5, or as an individual tool on steel MAGNA Power Stand or a stand you can make yourself.

MAGNA TOOLS ARE THE MOST VERSATILE POWER TOOLS AVAILABLE

ON SHOPSMITH Mark VII

ON SHOPSMITH Mark 5

ON DOUBLE POWER STAND

ON HOMEMADE STAND

ON WALL BRACKET

USE PROPER SPEED and DRIVE

As a single-purpose tool use a 3-step pulley (Item No. 505653) on the Jigsaw; mate 2" or 3" step on Jigsaw with 3" or 2" step on 1725 rpm motor pulley (Item No. 505654) to provide driven pulley speed of 2580 or 1150 rpm; mate 3" or 4" step on Jigsaw with 3" or 2" step on motor pulley to provide driven pulley speed of 1725 or 860 rpm. Mount Jigsaw in Mounting Base (Item No. 505655). On Magna Power Stand (Item No. 505645) use 53" x 1/2" Vee-Belt (Item No. 505646). Belt length on other stands will vary with each stand.

ON SHOPSMITH MARK 5 or Mark VII use Power Mount Coupling Kit (Item No. 505631). Set speed by control dial marking.

ADJUSTMENTS

There are few adjustments to be made on a jigsaw, but—as on any other machine—these should be carefully made to assure accuracy, efficiency, and smooth-running operation.

HOW TO MOUNT A BLADE: Remove table insert and loosen upper and lower jaws with the Allen wrench. Upper and lower chucks are not identical (Fig. 3).

Place the blade, teeth pointing down and forward between jaws of lower chuck so back of blade rests against lower chuck housing. Loosen rod lock knob and allow upper guide assembly to rest on table. Loosen spring cylinder lock knob and pull down on cylinder so top end of blade can be secured in upper chuck with back of blade resting against chuck housing. Placing back of blade against chuck housings insures proper vertical blade alignment (Fig. 4).

For normal operations, upper and lower chucks should each hold approximately 1/4" of blade. Maximum depth of cut can be achieved by grasping only 3/4" of blade in each chuck.

Fig. 3 Position of blade in chucks

UPPER CHUCK

BLADE

LOWER CHUCK

Fig. 4 Vertical alignment of blade
BLADE TENSION: After installing blade, lift up on spring cylinder until desired blade tension is achieved and tighten cylinder locking knob. Blade tension depends on size of blade and material being cut. Proper tension can be readily determined after some experience on the jigsaw. A general rule is that more tension is required for thinner blades and harder materials.

BLADE GUIDES: Tighten rod lock knob while upper guide assembly is resting on table. Loosen two blade guide lock screws and adjust split tube so the sides extend only to bottom of teeth on blade. Allow clearance between the sides of the split tube and the blade. Do not tighten the split tube so that it pinches the blade as this will result in blade breakage. Adjust back-up tube so it merely touches the back of blade (Fig. 5). When using fine blades, the split tube should cover their entire width.

The lower blade back-up is a hard fibre rod. Adjust this rod until it bears lightly against back of blade. If you desire a slot in this back-up, merely reverse blade in chuck and feed the rod into the blade. This fibre back-up provides blade support when saber sawing.

SQUARING TABLE: Jigsaw will produce square cuts only if table is 90° to blade. To check this alignment, place a square on the table and against side of blade (do not place square against teeth or back of blade). If table is not properly aligned, adjust set screw which is found behind tilt indicator. One end of this screw rests against lower assembly housing. Loosen table tilt knob and turn set screw until the square shows the blade and table are properly aligned (Fig. 6). Line up zero on adjustable tilt indicator with zero on trunnion so that all future settings will be correct. Check this table and blade alignment periodically to insure square cuts.

HOW TO ADJUST SPRING HOLD-DOWN: Before you begin to saw, it is necessary to adjust the spring hold-down so that it exerts a slight pressure on the stock. Place the stock at the rear of the blade (Fig. 7). Lower guide assembly so spring hold-down rests on the stock. Push down on the guide assembly with one hand and tighten rod lock knob with the other.

The knurled nut at rear of upper guide assembly secures the spring hold-down and must be loosened to tilt it to match table tilt when bevel cutting.

SPEEDS: See chart, page 7, for correct speeds for material being cut and blade being used. Generally, lower speeds have more power and are used with larger blades for heavy cutting. Higher speeds are used with smaller blades for smooth cuts on lighter materials.

When the Jigsaw is used as an individual tool, use a MAGNA 2"-3"-4" step pulley on the Jigsaw and mate with 2" or 3" step on MAGNA motor pulley (1725 rpm motor) to produce speeds as follows:

<table>
<thead>
<tr>
<th>Tool Pulley</th>
<th>Motor Pulley</th>
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<tbody>
<tr>
<td>2</td>
<td>2580 rpm</td>
</tr>
<tr>
<td>3</td>
<td>1150 rpm</td>
</tr>
<tr>
<td></td>
<td>or</td>
</tr>
<tr>
<td>3</td>
<td>1725 rpm</td>
</tr>
<tr>
<td>4</td>
<td>860 rpm</td>
</tr>
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</table>

OPERATION: Try cutting a few pieces of 1/4" scrap wood before beginning an actual project. This will give you the feel of the machine. As a general rule, the work is fed with the right hand and guided along the line of the pattern with the left hand (Fig. 8). Allow blade to do cutting, as forcing the work will result in blade breakage.

Notice how air generated by pumping action of cylinder keeps pattern line free of sawdust.

Fig. 5 Correct blade guide adjustment

Fig. 6 Squaring table to blade

Fig. 7 Light pressure is sufficient

Fig. 8 Feed slowly, do not force blade
CUTTING THICK STOCK: The rugged Magna Jigsaw has a generous capacity of 2", a desirable feature when coping large moldings or pad sawing. For correct blades and speeds, consult the chart on page 7. A general rule for cutting stock over 3/4" thick is to use a slow speed and a blade with large teeth. Remember, applying heavy pressure to stock does not hasten blade cutting action, and could result in frequent blade breakage.

PIERCED WORK: The jigsaw is one of the woodworking power tools which can cut out sections of a piece of material without the necessity of making a lead-in cut. This is called piercing (Fig. 9). It is necessary to drill a hole in the area to be sawed out so the blade can be inserted. To save cutting time, drill the hole near the line of the pattern. Release the blade from the upper chuck and raise the spring cylinder and guide assembly. Hold the stock in one hand while guiding the hole to the blade and support the blade with the other hand. Although the blade is flexible, be careful when making this set-up to avoid bending or breaking the blade. Secure the blade in the upper chuck and adjust the spring cylinder and upper guide assembly.

It is necessary to drill a blade entry hole in each section of the project that is to be cut out.

PAD SAWING: Cutting several pieces of stock at the same time and to the same pattern is called pad sawing (Fig. 10). The advantage being that all pieces will be identical and that it is necessary to lay out the pattern on only the top piece of stock. The pieces can be fastened together by nailing the stock in waste portions of the pattern.

INDEXING CHUCKS: Chucks of the Magna Jigsaw are indexed in a position that locate the tube arm to the left of the operator when he is standing in normal operating position. This means you can cut to the center of a 36" panel with no limit on length. It also permits use of the saw table and extension table as additional support when cutting long pieces.

At times, when cutting a wide panel, it may be necessary to turn the blade to eliminate interference from tube arm. On the Magna Jigsaw, it is an easy matter to rotate upper and lower chucks 90° to the right (Fig. 11).

To do this, remove the blade, unscrew the tilt lock knob and remove the table. Loosen indexing screw in lower chuck housing and turn housing 90° to right. Give the set screw several turns, but do not tighten it. You should not be able to rotate the chuck, but only move it from side to side. This indicates the tapered end of set screw is in the mating hole and only requires tightening properly to align the chuck.

To rotate upper chuck and guide assembly, loosen rod lock knob and lower guide rod until it is free of assembly. Turn drive shaft so lower chuck is at bottom of stroke. Do not remove rod from bracket on spring cylinder. Loosen tension lock knob and rotate spring cylinder counter-clockwise so guide rod will insert in the other hexagonal hole in the upper assembly.

METAL CUTTING: Metal cutting can be done on the jigsaw merely by using a metal cutting blade which should have approximately 20 teeth per inch (Fig. 12). Consult the chart on page 7 to determine the proper speeds for various thicknesses and metals.

Thin sheet metal has a tendency to bend down along the kerf due to cutting action of blade. This condition can be improved by making an auxiliary table of plywood which has a hole just large enough to accommodate the blade. This gives the work maximum support at cutting area. Another method would be to make a special wood insert with a small opening for the blade.

Fig. 9 Drill hole for each section

Fig. 10 Use one pattern to cut duplicate pieces

Fig. 11 Chucks index 90°

Fig. 12 Metal cutting is another Jigsaw operation
SAVER SAVING: There are times when it is necessary to perform a jigsaw type operation on large panels. The Magna Jig Saw is designed to convert easily to a saber saw of unlimited capacity (Fig. 13). Changing over to a saber saw is done quickly by loosening the tube arm locking screw and removing the tube arm from the lower housing. Since the blade will be held in only the lower chuck, it is necessary that a heavier than average blade be used. The heaviest jigsaw blades shown on page 7 are correct for saber sawing. Properly adjust the lower blade back-up as it provides the only means of vertical support. With little practice you will discover the features of saber sawing and use this method many times in the future.

DUAL PURPOSE SET-UPS: SHOPSMTIH Mark 5 Power-Mount makes it possible to simultaneously operate two complementary tools. For example, the jointer is always used with the table saw because it is a natural sequence of operations to saw an edge and then plane it smooth. After cutting a curved line on the jigsaw, the next step would be to sand that edge smooth. With the drum sander (Item No. 505552) mounted on the main spindle, you can quickly sand smooth inside and outside curves as well as internal circular cut-outs large enough to accommodate the drum (Fig. 14). Mount the drum on the spindle before starting work on the jigsaw and it will be ready for use when needed. It is possible to adjust the SHOPSMTIH table as a guide which holds the work square to the drum thus assuring a square edge.

The disc sander is another abrasive tool which may be advantageously operated in conjunction with the jigsaw since it does an excellent job of sanding outside curves (Fig. 15). Rough cut discs are quickly brought to a perfect circle either freehand or through use of a pivot jig.

It is also possible to mount wire brushes, polishing pads, buffing wheels, etc., on the main spindle to polish metals or plastics cut on the jigsaw.

SHOPSMTIH BOOK: Should you desire further information on jigsaw techniques and procedures, as well as detailed instructions for all power tool applications, see the new book, POWER TOOL WOODWORKING FOR EVERYONE by R. J. De Cristofo, which is available through your local SHOPSMTIH dealer. An excellent book for all power tool users; especially useful for SHOPSMTIH owners since SHOPSMTIH is the tool around which the book was written.

MAINTENANCE, LUBRICATION, STORAGE

General lubrication instructions for the drive shaft mechanism are given on lower assembly cover plate. To check oil level, remove the cover plate and the cap screw found under it. Add oil until it begins to run out the cap screw hole. Drain oil once yearly or after 100 hours operation and replace with SAE 10.

The spring cylinder should be lubricated after every 3 hours of operation. Remove upper assembly cap and place a few drops of light oil in the end of the cylinder.

Dirt and fine sawdust will plug the small breather hole at the front of lower housing. Check frequently and clean with a fine wire or pin.

Store jigsaw in such a position that oil will not drain out breather hole. A wall bracket with two holes for mounting tubes is ideal for holding the jigsaw when not in use.
BLADES AND SPEEDS FOR GENERAL USE

<table>
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<tr>
<th>ITEM NUMBER</th>
<th>THICKNESS INCHES</th>
<th>WIDTH INCHES</th>
<th>TEETH PER INCH</th>
<th>STOCK THICKNESS (Inches)</th>
<th>CUT RADIUS</th>
<th>KERF</th>
<th>BEST FOR</th>
<th>R.P.M. AND SPEED DIAL LETTER</th>
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<td>.020</td>
<td>.250</td>
<td>7</td>
<td>1/4 &amp; up</td>
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<td>coarse</td>
<td>soft &amp; hard wood-pressed wood</td>
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<td>15</td>
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<td>.070</td>
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<td>very fine</td>
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<td>505671</td>
<td>.020</td>
<td>.250</td>
<td>20</td>
<td>3/32-1/2 (1/4 max. in steel)</td>
<td>large</td>
<td>coarse</td>
<td>aluminum-copper-mild steel</td>
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NOTE: This chart is a suggested guide for average use. As a general rule, use higher speeds with thin blades and lower speeds with wide blades. Plastics and heavy metals are generally cut at lower speeds. When working with material new to you, make a few test cuts with various blades and speeds to determine the desired cutting action. Use closest available speed.

BLADES AND OTHER ACCESSORIES

WORK LAMP Item No. 505578.

Because of the fine kerfs and small cuts made on the jigsaw, you need a well lighted work area. The MAGNA lamp is quickly and easily "snap-mounted" on any power tool, work table, bench or desk. Uses up to 100 watt bulb in cool design shade.
**PARTS LIST—WARRANTY**

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<th>Ref. Part No.</th>
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**WARRANTY**

Your Jig Saw carries a one-year warranty against defective materials or workmanship, provided you signed and returned the warranty card that came with your machine. For repair or replacement of a part under warranty, it is necessary for the part to be sent prepaid to our factory or nearest authorized service station, with a letter describing the nature of the difficulty and the serial number of the machine. If warranty is applicable, the part will be repaired or replaced, no charge. Parts should be shipped to MAGNA AMERICAN, or to the MAGNA authorized Service Station advised.

It is a good idea before shipping parts, to contact your MAGNA dealer, many of whom can give excellent mechanical service. When ordering parts, be sure to supply part number and description, plus model and serial number of machine.

Replacement of bearings in lower housing is a factory job. For repair or replacement, return the entire housing or order a complete housing assembly.

MAGNA AMERICAN CORPORATION
CINCINNATI, OHIO, U.S.A.

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Litho in U. S. A.
Educational materials are provided for customer's use to assure complete satisfaction with MAGNA products. It is extremely important that you thoroughly read this sheet and the Owner's Manual before using the Jigsaw, not only to guarantee correct setup of your new tool, but also to provide full enjoyment of the many advanced features built into it.

ADJUSTING LOWER ASSEMBLY

After removing Jigsaw from carton, loosen Allen screw found next to tube arm at rear of lower housing. Turn tube arm so alignment pin in tube rests inside semi-circular shape in housing. This pin aligns lower assembly housing with upper assembly. Tighten Allen screw to secure tube arm to lower assembly.

MOUNTING TUBES

Place short end of mounting tubes in Mark VII or Mark 5 Power-Mount so snap rings rest on casting. Place Jigsaw on mounting tubes so drive shaft points toward auxiliary spindles of headstock. Be sure snap rings rest on Power-Mount casting and hand grip lock is tight. DO NOT TIGHTEN SET SCREWS ON MOUNTING TUBES UNTIL JIGSAW IS PROPERLY ALIGNED.

MOUNTING ON SHOPSITH Mark VII & Mark 5

Slide headstock over to Jigsaw until upper auxiliary spindle is approximately 1/8" from Jigsaw drive shaft. Using template attached to this sheet, align drive shaft and upper auxiliary spindle by adjusting Jigsaw height on mounting tubes. Remember, snap rings must remain seated on Power-Mount Casting. Lock Jigsaw at correct height for vertical alignment by tightening two Allen screws located in lower housing. This alignment, required only during initial mounting of Jigsaw, is important and must be done carefully. The mounting tube snap rings which rest on Power-Mount will automatically provide correct alignment thereafter.

ATTACHING UPPER CAP

Put several drops of oil in end of spring cylinder before placing cap on upper assembly. Fasten cap to upper assembly using four cap screws 3/8" long. Position cap so two guide rod openings are at rear of upper assembly near tube arm.
ATTACHING GUIDE POST

Screw in the guide post until it extends approximately 2-1/4" above housing. Diagonal hole for back-up should be in line with jaws of lower chuck. Tighten jam nut down against housing to hold guide post in desired position. Insert fiber back-up rod in guide post and tighten Allen screw to secure it in place.

MOUNTING TABLE

Hold table in horizontal position above lower housing and engage table tilt trunnion in mating groove located above drive shaft. Insert tilt lock knob through curved slot in table trunnion and screw into lower housing. This tilt lock knob secures the table at any desired position from 0° to 45°.

FILLING WITH OIL

Remove cap screw found on drive shaft side of lower housing. With Jigsaw in normal vertical position add SAE No. 10 OIL through this screw hole until it is up to level of hole. Replace cap screw. NEVER OPERATE JIGSAW WITHOUT OIL.

ATTACHING COVER PLATE

General lubrication instructions for drive shaft mechanism are given on lower assembly cover plate. Use two screws provided to fasten this plate to the drive shaft side of lower housing.

MOUNTING AS AN INDIVIDUAL TOOL

MAGNA tools are the most versatile tools available. By virtue of MAGNA's exclusive Twin-Mounting tubes and unique Mounting Base, MAGNA tools may be mounted on wooden stands you can make yourself or on steel, MAGNA Power Stands. Use 3-step pulley (Item No. 505653) on the Jigsaw; mate 2" or 3" step on Jigsaw with 3" or 2" step on motor pulley (Item No. 505654) to provide driven pulley speed of 2580 or 1150 RPM; mate 3" or 4" step on Jigsaw with 3" or 2" step on motor pulley to provide driven pulley speed of 1725 or 860 RPM. Mount Jigsaw in Mounting Base (Item No. 505655) on MAGNA Power Stand (Item No. 505645). Use 53" x 1/2" V-Belt (Item No. 505646). Belt length on other stands will vary with each stand. Since all MAGNA tools are interchangeable on the same Mounting Base, you can use one stand and one motor to run any single tool (on single stand), or any combination of two tools (on double stand).

SPACE-SAVING WALL STORAGE

The Twin-Mounting tubes also provide a convenient means of storing the Jigsaw on a simple wall bracket; thus much valuable floor space is saved, and the Jigsaw is always ready for use in seconds. FOR INFORMATION ON ADJUSTMENTS, OPERATION, AND MAINTENANCE, CAREFULLY READ THE OWNER'S MANUAL.

*T.M. Reg. MAGNA AMERICAN CORPORATION CINCINNATI, OHIO, U.S.A.

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