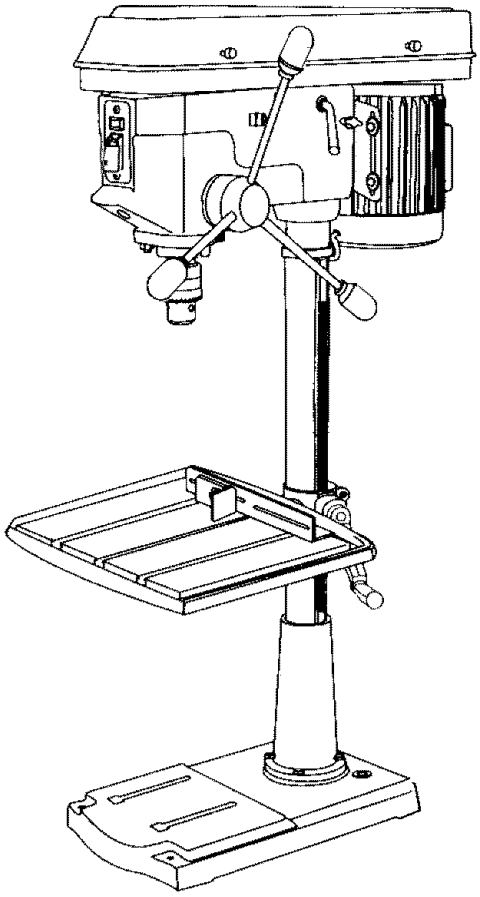
Operator's Manual

CRAFTSMAN®

Stationary Floor Model
2 HP (Maximum Developed)
12 Speeds (150-4200 R.P.M.)
3/4 Inch Chuck

20-INCH DRILL PRESS

Model No.
137.229201



CAUTION:
Before using this Drill Press, read this manual and follow all its Safety Rules and Operating Instructions

- Safety Instructions
- Installation
- Operation
- Maintenance
- Parts List

Customer Help Line
1-800-843-1682

Sears, Roebuck and Co., Hoffman Estates, IL 60179 USA
Visit our Craftsman website: www.sears.com/craftsman
Part No. 137229201001

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WARRANTY

ONE-YEAR FULL WARRANTY ON CRAFTSMAN TOOL

If this Craftsman tool fails due to a defect in material or workmanship within one year from the date of purchase, **CALL 1-800-4-MY-HOME® TO ARRANGE FOR FREE REPAIR** (or replacement if repair proves impossible). If this tool is used for commercial or rental purposes, this warranty will apply for only ninety days from the date of purchase. This warranty applies only while this tool is in the United States.

This warranty gives you specific legal rights, and you may also have other rights, which vary, from state to state.

Sears, Roebuck and Co., Hoffman Estates, IL 60179

PRODUCT SPECIFICATIONS

Chuck Size	3/4"
Speed	12 (150 ~ 4,200 RPM)
Motor	120V, 60 Hz, 15 Amps
Horsepower	2 HP (Max. Developed)
Built-in Light	60 Watt (Maximum) (Bulb not included)
Table Size	19-1/4" x 18-3/8"
Table Tilt	45° Right or Left
Spindle Travel	4-3/4"
Throat	10-1/4"
Base Size	17-3/4" x 24-1/8"
Height	66-3/4"

⚠ WARNING

To avoid electrical hazards, fire hazards, or damage to the tool, use proper circuit protection.

Your drill press is wired at the factory for 120V operation. Connect to a 120V, 15 AMP branch circuit and use a 15 AMP time delay fuse or circuit breaker. To avoid shock or fire, replace power cord immediately if it is worn, cut or damaged in any way.

SAFETY

GENERAL SAFETY INSTRUCTIONS

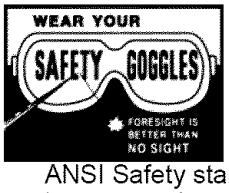
BEFORE USING THIS DRILL PRESS

Safety is a combination of common sense, stay alert and knowing how to use your drill press.

⚠ WARNING

To avoid mistakes that could cause serious injury, do not plug the drill press in until you have read and understood the following.

1. **READ** and become familiar with the entire instruction manual. **LEARN** the tool's application, limitations and possible hazards.
2. **KEEP GUARDS IN PLACE** and in working order.
3. **DON'T USE IN DANGEROUS ENVIRONMENT.** Don't use power tools in damp and wet locations, or expose them to rain. Keep work area well lighted.
4. **DO NOT** use power tools in the presence of flammable liquids or gases.
5. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invited accidents.
6. **KEEP CHILDREN AWAY.** All visitors should be kept safe distance from work area.
7. **DON'T FORCE THE TOOL.** It will do the job better and safer at the rate for which it was designed.
8. **USE THE RIGHT TOOL.** Do not force a tool or an attachment to do a job for which it was not designed.
9. **WEAR PROPER APPAREL.** Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry which may get caught in moving parts. Nonslip footwear is recommended. Wear protective hair covering to contain long hair.
10. **WEAR A FACE MASK OR DUST MASK.** Sawing operation produces dust.
11. **DISCONNECT TOOLS** before servicing; when changing accessories such as blades, bits, cutters, and the like.
12. **REDUCE THE RISK OF UNINTENTIONAL STARTING.** Make sure the switch is in the off position before plugging in.
13. **USE RECOMMENDED ACCESSORIES.** Consult the owner's manual for recommend accessories. The use of improper accessories may cause risk of injury to persons.
14. **REMOVE ADJUSTING KEYS AND WRENCHES.** Form habit of checking to see that keys and adjusting wrenches are removed from the tool before turning it ON.
15. **NEVER LEAVE A TOOL RUNNING UNATTEND. TURN THE POWER "OFF".** Don't leave the tool until it comes to a complete stop.
16. **NEVER STAND ON THE TOOL.** Serious injury could occur if the tool is tipped or if the cutting tool is unintentionally contacted.
17. **DON'T OVERREACH.** Keep proper footing and balance at all times.
18. **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
19. **CHECK FOR DAMAGED PARTS.** Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine 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.
20. **MAKE WORKSHOP CHILD PROOF** with padlocks, master switches, or by removing starter keys.
21. **DO NOT** operate the tool if you are under the influence of any drugs, alcohol or medication that could affect your ability to use the tool properly.
22. Dust generated from certain material can be hazardous to your health. Always operate the table saw in a well-ventilated area and provide for proper dust removal. Use a dust collection system whenever possible.



23. **ALWAYS WEAR EYE PROTECTION.** Any drill press can throw foreign objects into the eyes and could cause permanent eye damage. ALWAYS wear Safety Goggles (not glasses) that comply with ANSI Safety standard Z87.1 Everyday eyeglasses have only impact –resistance lenses. They ARE NOT safety glasses. Safety Goggles are available at Sears. **NOTE**: Glasses or goggles not in compliance with ANSI Z87.1 could seriously hurt you when they break.

SAVE THESE INSTRUCTIONS

SPECIFIC SAFETY INSTRUCTIONS FOR THE DRILL PRESS

⚠ WARNING

For your own safety, do not try to use your drill press or plug it in until it is completely assembled and installed according to the instructions, and until you have read and understood this instruction manual:

1. **YOUR DRILL PRESS MUST BE BOLTED** securely to a workbench. In addition, if there is any tendency for your drill press to move during certain operations, bolt the workbench to the floor.

2. **THIS DRILL PRESS** is intended for use in dry conditions, indoor use only.

3. **WEAR EYE PROTECTION.** USE A face or dust mask along with safety goggles if drilling operation is dusty. USE ear protectors, especially during extended periods of operation.

4. **DO NOT** wear gloves, neckties, or loose clothing.

5. **DO NOT** try to drill material too small to be securely held.

6. **ALWAYS** keep hands out of the path of a drill bit. Avoid awkward hand positions where a sudden slip could cause your hand to move into the drill bit.

7. **DO NOT** install or use any drill bit that exceeds 175 mm (7") in length or extends 150 mm (6") below the chuck jaws. They can suddenly bend outward or break.

8. **DO NOT USE** wire wheels, router bits, shaper cutters, circle (fly) cutters, or rotary planers on this drill press.

9. **WHEN** cutting a large piece of material ,make sure it is fully supported at the table height.

10. **DO NOT** perform any operation freehand. ALWAYS hold the workpiece firmly against the table so it will not rock or twist. Use clamps or a vise for unstable workpieces.

11. **MAKE SURE** there are no nails or foreign objects in the part of the workpiece to be drilled.

12. **CLAMP THE WORKPIECE OR BRACE IT** against the left side of the column to prevent rotation. If it is too short or the table is tilted, clamp it solidly to the table and use the fence provided.

13. **IF THE WORKPIECE** overhangs the table such that it will fall or tip if not held, clamp it to the table or provide auxiliary support.

14. **SECURE THE WORK.** Use clamps or a vise to hold the work when practical. It's safer than using your hand and it frees both hands to operate tool.

15. **WHEN** using a drill press vise, always fasten to the table.

16. **MAKE SURE** all clamps and locks are firmly tightened before drilling.

17. **SECURELY LOCK THE HEAD** and table support to the column, and the table to the table support before operating the drill press.

18. **NEVER** turn your drill press on before clearing the table of all objects (tools, scraps of wood, etc.)

19. **BEFORE STARTING** the operation, jog the motor switch to make sure the drill bit does not wobble or vibrate.

20. **LET THE SPINDLE REACH FULL SPEED** before starting to drill. If your drill press makes an unfamiliar noise or if it vibrates excessively, stop immediately, turn the drill press off and unplug. If do not restart the unit until the problem is corrected.

21. **DO NOT** perform layout assembly or set up work on the table while the drill press is in operation.

22. **USE THE RECOMMENDED SPEED** for any drill press accessory and for different workpiece material. READ THE INSTRUCTIONS that come with the accessory.

23. **WHEN DRILLING** large diameter holes, clamp the workpiece firmly to the table. Otherwise, the bit may grap and spin the workpiece at high speeds. DO NOT USE fly cutters or multiple-part hole cutters, as they can come apart or become unbalanced in use.

24. **MAKE SURE** the spindle has come to a complete stop before touching the workpiece.

25. **TO AVOID INJURY** from accidental starting, always turn the switch "OFF" and unplug the drill press before installing or removing any accessory or attachment or making any adjustment.

26. **KEEP GUARDS IN PLACE** and in working order.

27. **USE ONLY THE SELF-EJECTING TYPE CHUCK KEY** as provided with the drill press.

SAVE THESE INSTRUCTIONS

GROUNDING INSTRUCTIONS

IN THE EVENT OF A MALFUNCTION OR BREAKDOWN, grounding provides a path of least resistance for electric current and reduces the risk of shock. This tool is equipped with an electric cord that has an equipment grounding conductor and grounding plug. The plug MUST be plugged into a matching receptacle that is properly installed and grounded in accordance with ALL local codes and ordinances.

DO NOT MODIFY THE PLUG PROVIDED. If it will not fit the receptacle, have the proper receptacle installed by a qualified electrician.

IMPROPER CONNECTION of the equipment grounding conductor can result in risk of electric shock. The conductor with the green insulation (with or without yellow stripes) is the equipment grounding conductor. If repair or replacement of the electric cord or plug is necessary, DO NOT connect the equipment grounding conductor to a live terminal.

CHECK with a qualified electrician or service personnel if you do not completely understand the grounding instructions, or if you are not sure the tool is properly grounded.

USE ONLY 3-WIRE EXTENSION CORDS THAT HAVE 3-PRONG GROUNDING PLUGS AND 3-POLE RECEPTACLE THAT ACCEPT THE TOOL'S PLUG. REPAIR OR REPLACE DAMAGED OR WORN CORD IMMEDIATELY.

GUIDELINES FOR EXTENSION CORDS

Make sure your extension cord is in good condition. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. The table below shows the correct size to use according to cord length and nameplate ampere rating. If in doubt, use the next heavier gauge. The smaller the gauge number, the heavier the cord.

Be sure your extension cord is properly wired and in good condition. Always replace a damaged extension cord or have it repaired by a qualified person before using it. Protect your extension cords from sharp objects, excessive heat and damp or wet areas.

Use a separate electrical circuit for your tools. This circuit must not be less than #12 wire and should be protected with a 15 Amp time lag fuse. Before connecting the motor to the power line, make sure the switch is in the OFF position and the electric current is rated the same as the current stamped on the motor nameplate. Running at a lower voltage will damage the motor.
This tool is intended for use on a circuit that has a receptacle like the one illustrated in FIGURE A.

FIGURE A shows a 3-prong electrical plug and receptacle that has a grounding conductor. If a properly grounded receptacle is not available, an adapter **(FIGURE B)** can be used to temporarily connect this plug to a 2-contact ungrounded receptacle. The adapter **(FIGURE B)** has a rigid lug extending from it that MUST be connected to a permanent earth ground, such as a properly grounded receptacle box. **THE TEMPORARY ADAPTER SHOULD BE USED ONLY UNTIL A PROPER GROUNDED OUTLET CAN BE INSTALLED BY A QUALIFIED ELECTRICIAN.** The Canadian Electrical Code prohibits the use of adapters.

CAUTION: In all cases, make certain the receptacle in question is properly grounded. If you are not sure have a certified electrician check the receptacle.

⚠ WARNING

This drill press is for indoor use only. Do not expose to rain or use in damp locations.

Fig. A

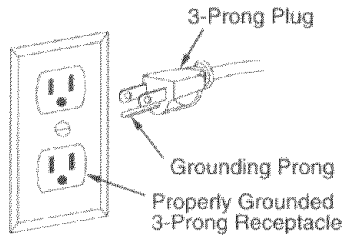
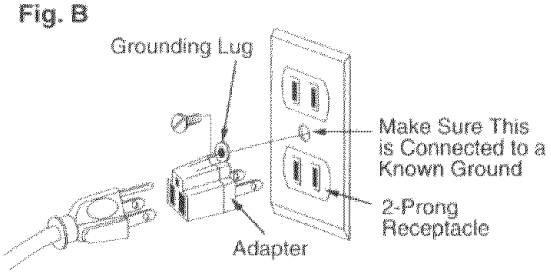


Fig. B



⚠ WARNING

This tool must be grounded while in use to protect the operator from electrical.

MINMUN GAUGE FOR EXTENSION CORDS (AWG)					
(When using 120 volts only)					
Ampere	**Rating**	**Total length of cord in feet**			
more than	not more than	25'	50'	100'	150'
0	6	18	16	16	14
6	10	18	16	14	12
10	12	16	16	14	12
12	16	14	12	Not recommended	

SAVE THESE INSTRUCTIONS

ACCESSORIES AND ATTACHMENTS

RECOMMENDED ACCESSORIES

⚠ WARNING

Use only accessories recommended for this drill press. Follow the instructions that accompany the accessories. Use of improper accessories may cause hazards.

Visit your Sears Hardware Department or see the Craftsman Power and Hand Tools Catalog for the following accessories:

- Drill bits
- Hold-Down Clamps
- Drill press Vises

⚠ WARNING

Use only accessories designed for this drill press to avoid injury from broken parts or thrown workpieces.

Sears may recommend other accessories not listed in this manual. See your nearest Sears store or Power and Hand Tool Catalog for all other accessories.

Do not use any accessory unless you have completely read the instruction or operator's manual for that accessory.

CARTON CONTENTS

UNPACKING AND CHECKING CONTENTS

⚠ WARNING

If any part is missing or damaged, do not plug the drill press in until the missing or damaged part is replaced, and assembly is complete.

Carefully unpack the drill press and all its parts, and compare against the list below.

To protect the drill press from moisture, a protective coating has been applied to the machined surfaces. Remove this coating with a soft cloth moistened with kerosene or WD-40.

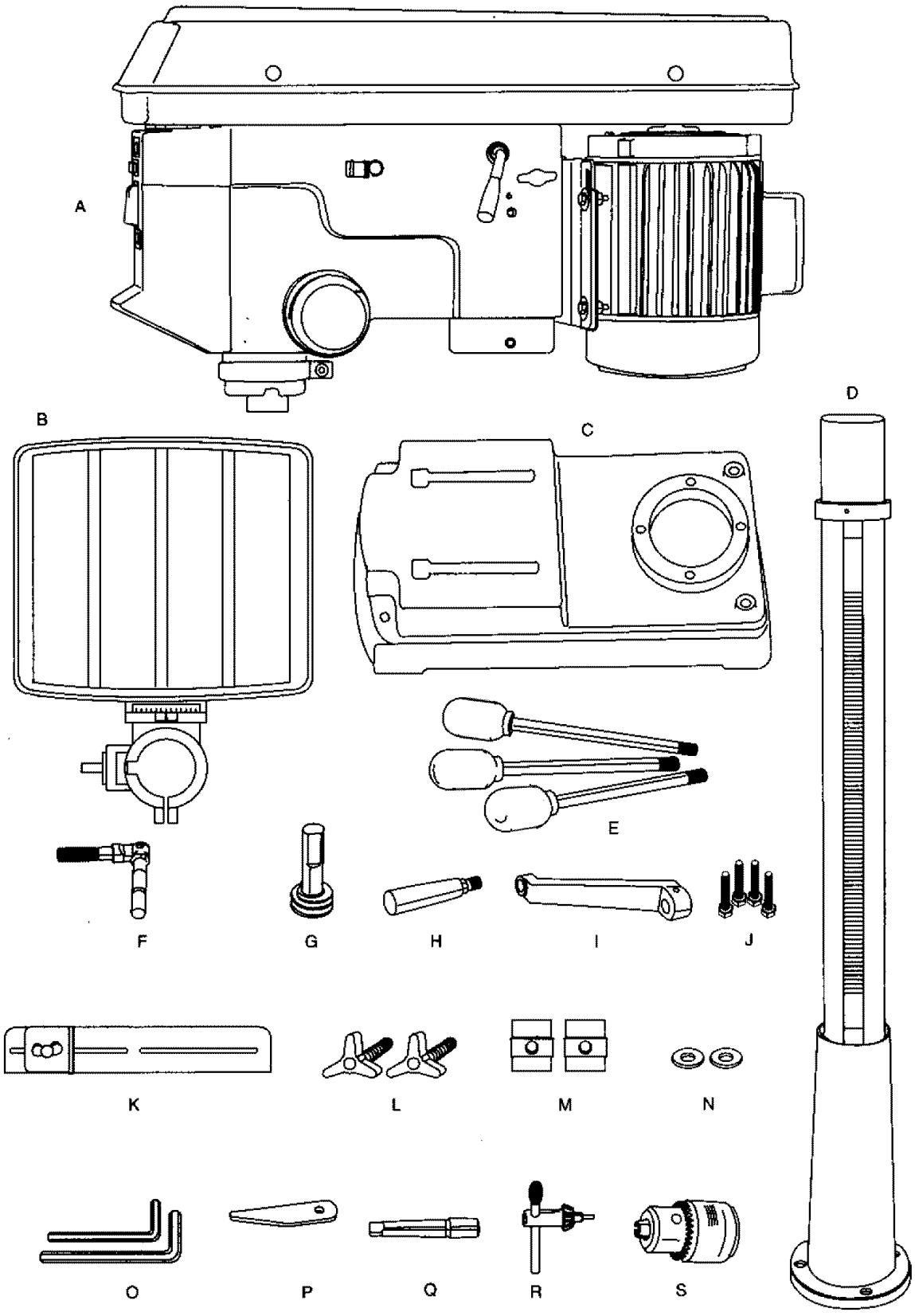
⚠ WARNING

To avoid fire or toxic reaction, never use gasoline, naphtha, acetone, lacquer thinner or similar highly volatile solvents to clean the drill press.

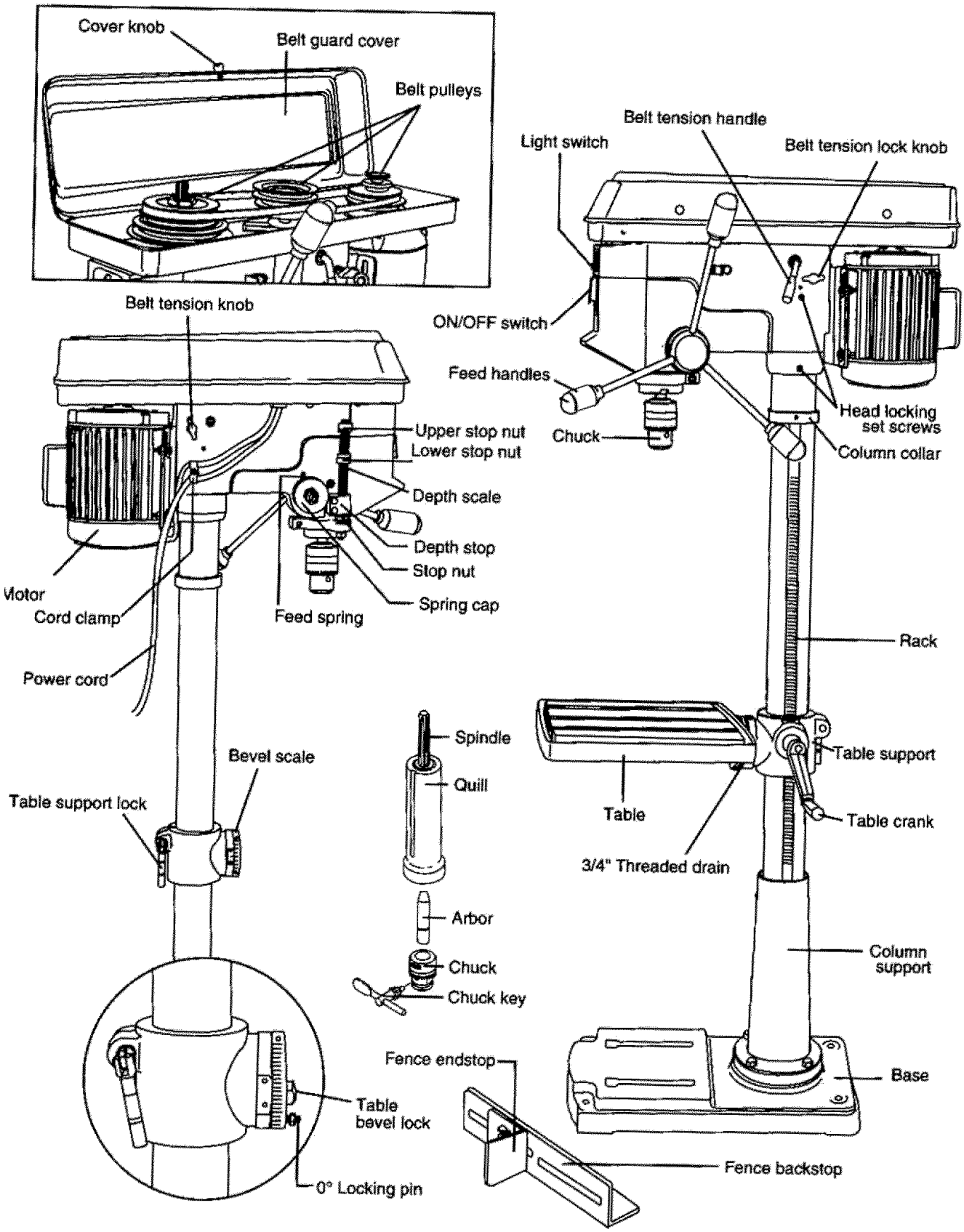
TABLE OF LOOSE PARTS

ITEM	DESCRIPTION	QUANTITY
A.	Head assembly	1
B.	Table	1
C.	Base	1
D.	Column assembly	1
	Loose parts bag:	
E.	Feed handle	3
F.	Lock handle	1
G.	Worm gear	1
H.	Crank Handle	1
I.	Crank arm	
J.	Hex bolts	4
K.	Fence assembly	1
L.	Triangle knobs	2
M.	T-Block	2
N.	Washer	2
O.	Hex wrenches	3
P.	Wedge	1
Q.	Arbor	1
	Box:	
R.	Chuck key	1
S.	Chuck	1

CARTON CONTENTS



KNOW YOUR DRILL PRESS



GLOSSARY OF TERMS

BASE – Supports drill press. For additional stability, holes are provided in the base to bolt drill press to the floor. (See "specific Safety Instructions for Drill Presses".)

BACKUP MATERIAL – A piece of scrap wood placed between the workpiece and table. The backup board prevents wood in the workpiece from splintering when the drill passes through the backside of the workpiece. It also prevents drilling into the table top.

BELT GUARD ASSEMBLY – Covers the pulleys and belt during operation of the drill press.

BELT TENSION – Refer to the "Assembly" Section, "Installing and Tensioning Belt."

BELT TENSION HANDLE – Turn the handle clockwise to apply tension to belt, turn the handle counterclockwise to release belt tension.

BELT TENSION LOCK KNOBS – Tightening the knobs locks the motor bracket support and the belt tension handle, maintaining correct belt distance and tension.

BEVEL SCALE – Shows degree of table tilt for bevel operations. The scale is mounted on the side of the arm.

CHUCK – Holds a drill bit or other recommended accessory to perform desired operations.

CHUCK KEY – A self-ejecting chuck key which will pop out of the chuck when you let go of it. This action is designed to help prevent throwing of the chuck key from the chuck when the power is turned "ON". Do not use any other key as a substitute; order a new one if damaged or lost.

COLUMN – Connects the head, table, and base on a one piece tube for easy alignment and movement.

COLUMN COLLAR – Holds the rack to the column. Rack remains movable in the collar to permit table support movements.

COLUMN SUPPORT – Supports the column, guides the rack and provides mounting holes for the column to the base.

DEPTH SCALE STOP NUTS – Lock the spindle to a selected depth.

DEPTH SCALE – Indicates depth of hole being drilled.

DRILL BIT – The cutting tool used in the drill press to make holes in a workpiece.

DRILL ON/OFF SWITCH – Has locking feature. This feature is intended to help prevent unauthorized and possible hazardous use by children and others. Insert the key into the switch to turn the drill press on.

DRILLING SPEED – Changed by placing the belt in any of the steps (grooves) in the pulleys. See the Spindle Speed Chart inside belt guard.

FEED HANDLE – Moves the chuck up or down. If necessary , one or two of the handles may be removed whenever the workpiece is of such unusual shape that it interferes with the handles.

FENCE – Attaches to the table to align the workpiece or for fast repetitive drilling. Removable. Remove fence when it interferes with other drill press accessories.

HEAD LOCKS – Locks the head to the column. ALWAYS lock the head in place while operation the drill press.

RACK – Combines with gear mechanism to provide easy elevation of the table by the hand operated table crank.

REVOLUTIONS PER MINUTE (R.P.M.) – The number of turns completed by a spinning object in one minute.

SPINDLE SPEED – The R.P.M. of the spindle.

SPRING CAP – Adjusts the quill return spring tension.

TABLE SUPPORT LOCK – Tightening locks the table support to the column. Always have it locked in place while operating the drill press.

TABLE – Provides a working surface to support the workpiece.

TABLE BEVEL LOCK – Locks the table in any position from 0° to 45°.

TABLE CRANK – Elevates and lowers the table. Turn clockwise to elevate the table. Support lock must be released before operating the crank.

TABLE LOCK – Locks the table after it is rotated to various positions.

TABLE SUPPORT – Rides on the column to support the table arm and table.

THREADED DRAIN (5/8") – Attach a 5/8" (pipe threaded) metal pipe to the threaded opening for draining excess oil into a quill container. For a non-draining surface, attach a threaded metal plug. Pipe and plug not included.

WORKPIECE – Material being drilled.

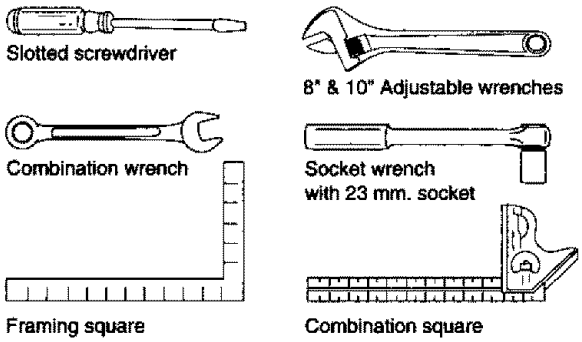
ASSEMBLY AND ADJUSTMENTS

ASSEMBLY INSTRUCTIONS

⚠ WARNING

For your own safety, never connect plug to power source outlet until all assembly and adjustment steps are completed, and you have read and understood the safety and operating instructions.

TOOLS NEEDED



⚠ WARNING

The Drill Press is very heavy and MUST be lifted with the help of 2 PEOPLE OR MORE, to safety assembly it.

COLUMN SUPPORT TO BASE (FIG. A)

1. Position the base (1) on the floor.
2. Place the column (2) on the base, aligning the holes in the column support with the holes in the base.
3. Locate the four long hex bolts (3) from the loose parts bag.
4. Place a bolt in each hole through the column support and the base. Tighten with an adjustable wrench.

Fig. A

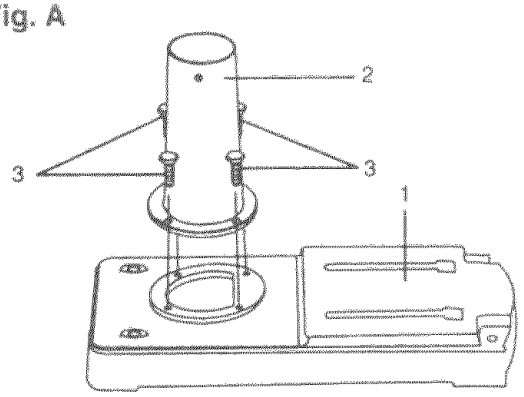
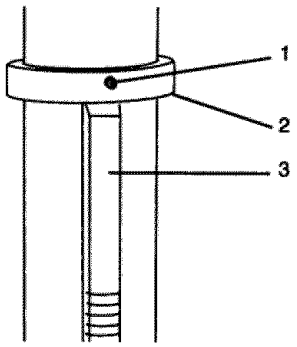


TABLE ASSEMBLY TO COLUMN SUPPORT (FIG. B THROUGH I)

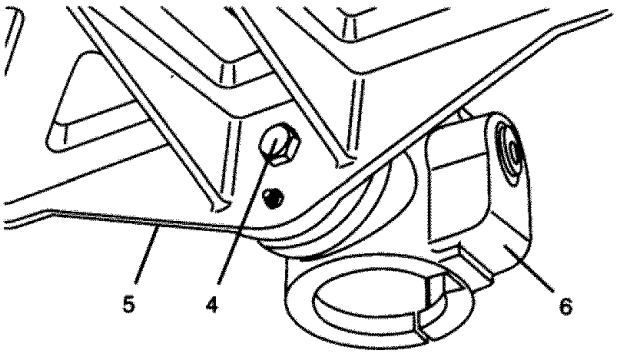
1. Locate the worm gear, table crank arm, crank handle, and table support lock handle from the loose parts bag.
2. Loosen the set screw (1) in the column collar (2). Remove the collar and the rack (3) from the column.

Fig. B



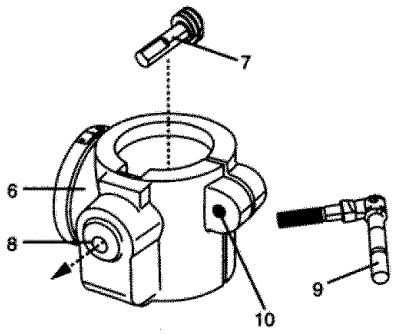
3. Remove the large hex bolt (4) with the 23mm socket wrench from the table assembly. Remove the table (5) from the table support (6).

Fig. C



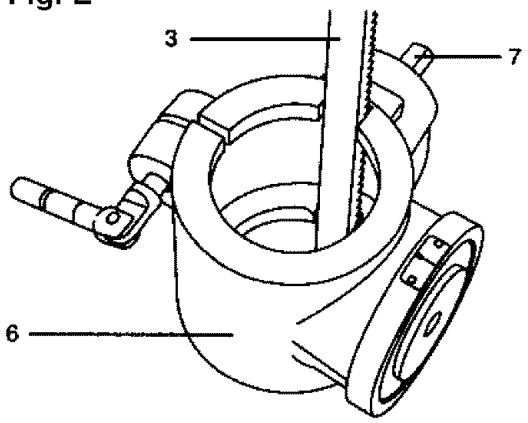
4. Insert the worm gear (7) into the table crank handle hole (8) from inside the table support (6). Make sure the worm gear meshes with the inside gear.
5. Insert the table support lock handle (9) into the hole (10) at the rear of the table support.Tighten.

Fig. D



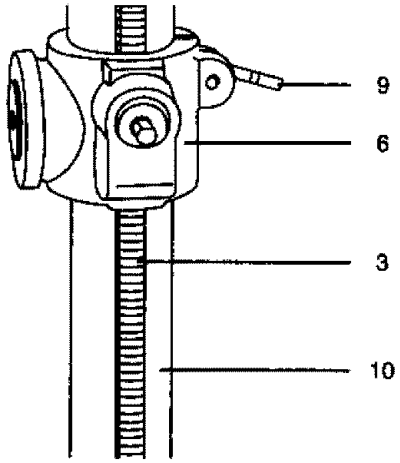
6. Place the rack (3) in position inside the table support (6), making sure the worm gear (7) on the inside of the table support is engaged with the teeth of the rack.

Fig. E



7. Slide the table support assembly with the rack (6, 7, 3) together onto the column support (10).
8. Engage the bottom of the rack (3) with the lip of the column. Tighten the support lock handle (9) to lock the table support assembly to the column.

Fig. F

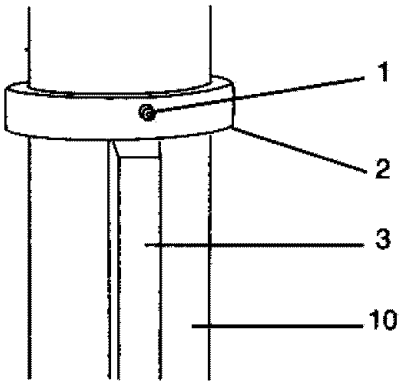


9. Install the collar (2) to the top end of the rack (3) on the column (10). Tighten the set screw (1).

IMPORTANT: The bottom of the collar MUST NOT be pushed all the way down onto the top of the rack. MAKE SURE the top of the rack is under the bottom of the collar and that there is enough clearance to allow the rack to freely rotate around the column.

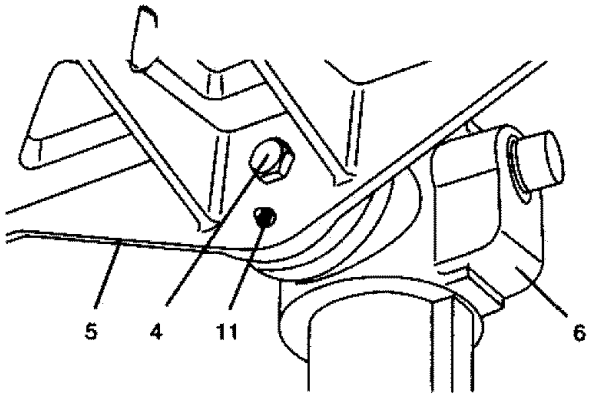
CAUTION: To avoid column or collar damage, DO NOT OVERTIGHTEN the set screw.

Fig. G



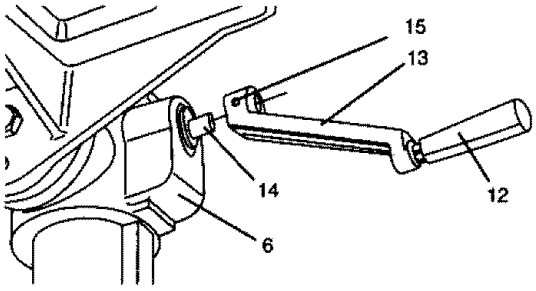
10. Assemble table (5) to the table support (6) using the large hex head bolt (4). Hand tighten the hex bolt. Align the locking pin (11) with the corresponding hole in the table support (6). Turn the locking pin nut to the outside end of threads. Gently top the locking pin until it is seated in the hole.
11. Tighten the hex head locking bolt (4) with a socket wrench, 23mm socket.
12. Finger tighten the small locking pin and nut (11), to lock the table in the 0° horizontal position.

Fig. H



13. Thread the table crank handle (12) onto the crank arm (13) and tighten.
14. Install the assembled table crank handle (13) to the shaft (14) on the side of the table support (6).
15. Line up the flat side of the shaft with the set screw (15) in the crank handle and tighten the screw with a hex wrench.

Fig. I



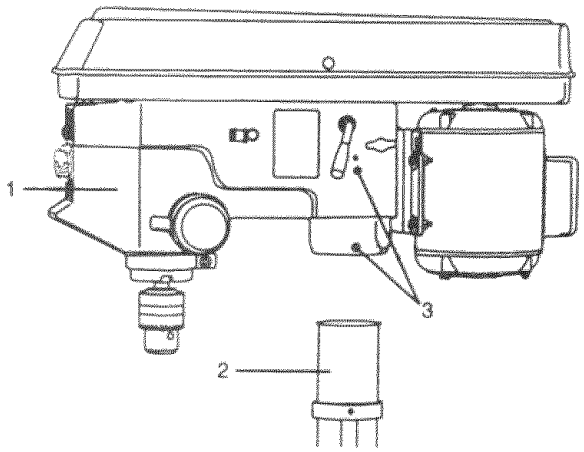
INSTALLING THE HEAD (FIG. J)

⚠ WARNING

The Drill Press head is very heavy and MUST be lifted with the help of 2 PEOPLE OR MORE to safely assemble the Drill Press head on the column.

1. Carefully lift the head (1) above the column (2) and slide it onto the column. Make sure the head slides down over the column as far as possible. Align the head with the base.
2. Using the hex wrench, tighten the two head lock set screws (3) on the right side of the head.

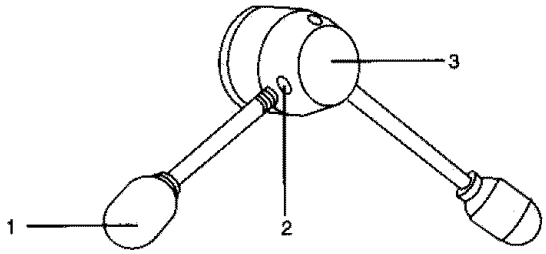
Fig. J



INSTALLING FEED HANDLES (FIG. K)

1. Locate the three feed handles in the loose parts bag.
2. Screw the feed handles (1) into the right or left of threaded holes (2) in the hub (3). Tighten.

Fig. K

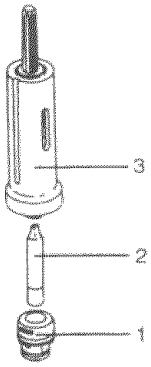


INSTALLING THE CHUCK (FIG. L, M and N)

1. Clean out the tapered hole in the chuck (1) with a clean cloth.
2. Clean tapered surfaces on the arbor (2) and spindle (3).

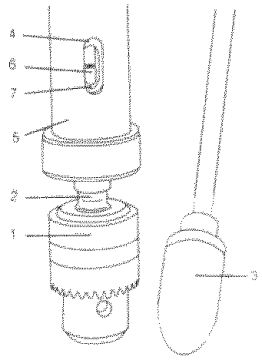
   CAUTION: Make sure there are no foreign particles sticking to the surfaces. The slightest piece of dirt on any of these surfaces will cause the drill chuck and bit to wobble. If tapered hole is extremely dirty, use a cleaning solvent.

Fig. L



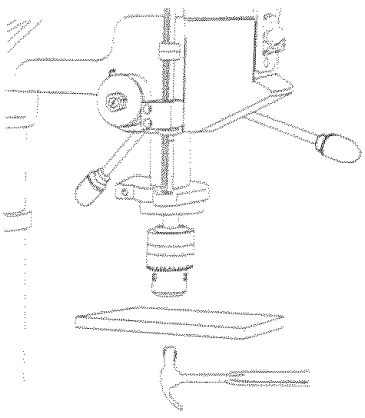
3. **(FIG. M)** Push the chuck (1) onto the spindle arbor (2). Tap gently to ensure seat.
4. Lower the spindle by turning the feed handles (3) counterclockwise, until the slot (4) appears on the quill (5).
5. Push the chuck and spindle arbor up into the spindle, making sure the tang (6) (upper narrow end of the spindle arbor shank) is engaged and locked in the inner slot (7) of the spindle. This can be seen through the outer slot (4) of the quill by rotating the chuck and arbor until the two slots are aligned.
6. Open the jaws of the chuck (1) by rotating the chuck sleeve clockwise. To prevent damage, make sure the jaws are completely receded into the chuck.

Fig. M



7. **(FIG. N)** Using a rubber mallet, plastic-tipped hammer, or a block of wood and a hammer, firmly tap the chuck upward into position on the spindle shaft.

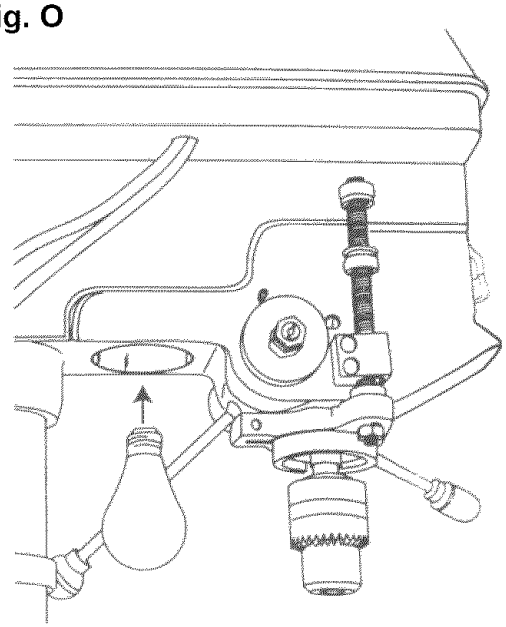
Fig. N



INSTALLING LIGHT BULB (FIG. O) (not included)

1. Install a light bulb (no larger than 60 watt) into the socket inside the head.

Fig. O

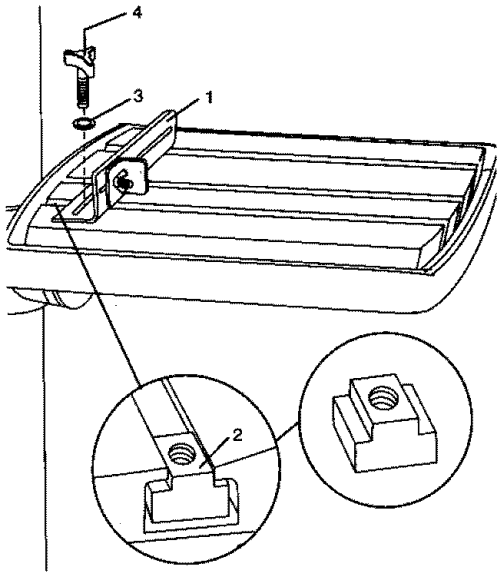


FENCE ASSEMBLY (FIG. P)

This drill press has a channeled table top.

1. Determine the desired location for the fence (1). Slide the T-block (2) into the appropriate channels as shown.
2. Align the mounting holes of the fence over the T-block's threaded holes.
3. Place a washer (3) on the threaded end of the knob (4). Insert the knob through the mounting hole of the fence and the T-block, and tighten.
4. Repeat for the other knob and T-block.

Fig. P



DRILL PRESS ADJUSTMENTS

CAUTION: All the adjustments for the operation of the drill press have been completed at the factory. Due to normal wear and use, some occasional readjustments may be necessary.

⚠ WARNING

To prevent personal injury, always disconnect the plug from the power source when making any adjustments.

ALIGNING THE BELT PULLEYS (FIG. Q)

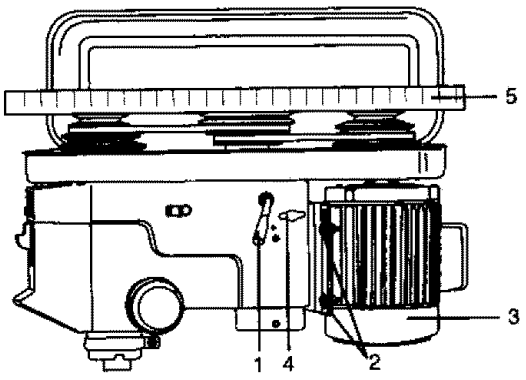
⚠ WARNING

To avoid injury from an accidental start, ALWAYS make sure the switch is in the "OFF" position, the switch key is removed, and the plug is not connected to the power source outlet before making belt adjustments.

Open the head cover of the Drill Press. Check alignment of the pulleys with a straight edge (5) such as a framing square, a level, or a piece of wood. Lay the straight edge across the top of the pulleys. If all the three pulleys are NOT aligned:

1. Release belt pressure by loosening the belth tension lock knobs (4) on either side of the head, unlocking the belt tension handle (1).
2. Loosen the motor mount nuts (2). Lift or lower the motor (3) until the pulleys are in line.
3. Tighten the motor mount nuts (2) using an adjustable wrench.
   NOTE: To avoid rattles or other noise, the motor housing should not touch the lower belt guard housing.
4. Retighten the belts by turning the belt tension handle (1) clockwise, until the belt deflects approximately 1/2 inch when pressed in the center.
   NOTE: Refer to the chart inside the belt guard cover for recommended drilling speeds and belt/pulley positions.
5. Lock the belt tension lock knobs (4) by turning clockwise.
   NOTE: When the belts are new, it may be difficult to move the belts. As the machine is used, the belts will gain more elasticity and will be easier to adjust.

Fig. Q

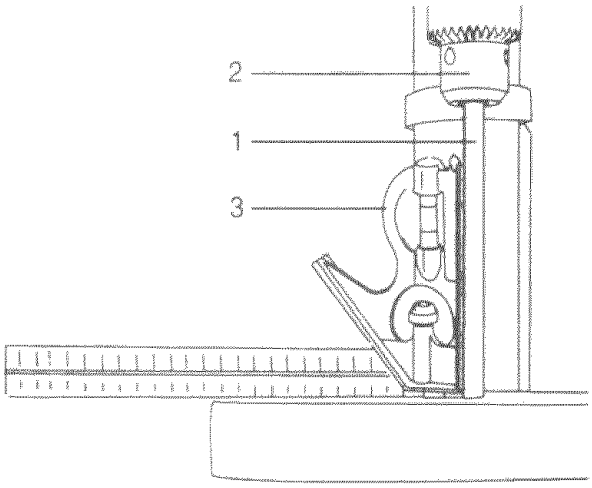


SQUARING THE TABLE TO THE HEAD (FIG. R and S)

NOTE: The table and support has a predrilled hole with a locking pin inserted for locking the table to a predetermined 0° horizontal position. It must be loosened to change the angle of the table.

1. Insert a 1/4", or larger diameter, precision ground steel rod (1), approximately 3" long, into the chuck (2). Tighten the chuck jaws.
2. Raise table to working height and lock.
3. Using the combination square (3), place one edge flat on the table, and align the other edge vertically beside the rod (1).

Fig. R



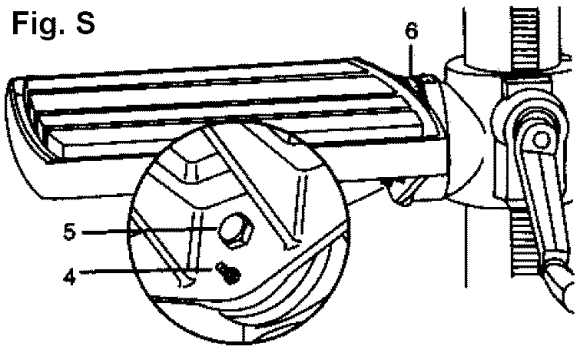
4. (Figure S) If an adjustment is necessary, TIGHTEN the nut (4) on the locking pin clockwise to RELEASE it from the table support.
5. Loosen the large hex head bevel locking bolt (5).

⚠ WARNING

To prevent injury, be sure to hold the table & table arm assembly, so it will not swivel or tilt.

6. Align the square to the rod by rotating the table until the square and rod are in line.
7. Retighten the large hex bolt (5).

Fig. S

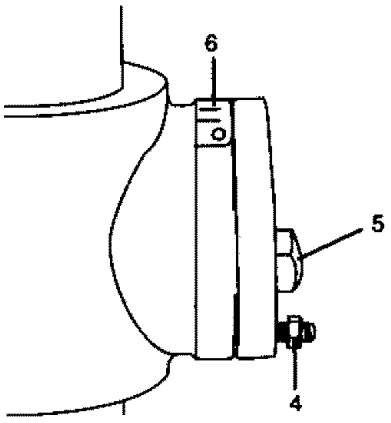


BEVEL SCALE (FIG. T)

NOTE: The bevel scale has been included to measure approximate bevel angles. If precision is necessary, a square or other measuring tool should be used to position the table. To use the bevel scale (6):

1. TIGHTEN the nut (4) on the locking pin clockwise to RELEASE it from the table support.
2. Loosen the large hex head bevel locking bolt (5).
3. Tilt the table, aligning the desired angle measurement to the zero line opposite the scale (6).
4. Tighten the bevel locking bolt (5).
5. To return the table to its original position, loosen the bevel locking bolt (5). Realign the bevel scale (6) to the 0° position.
6. Return nut (4) on locking pin to the OUTSIDE END in the hole. Finger tighten nut (4).
   NOTE: the table has been removed from the illustration for clarity.

Fig. T



⚠ WARNING

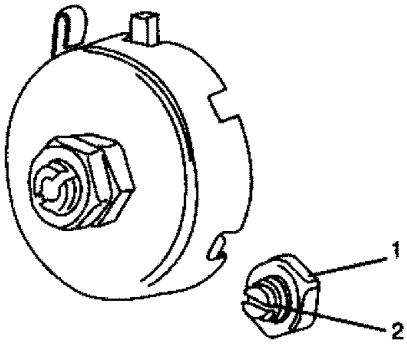
To prevent personal injury, always disconnect the plug from the power source when making any adjustment.

SPINDLE / QUILL (FIG. U)

Rotate the feed handles counterclockwise to lower spindle to its lowest position. Hand support the spindle securely and move it back and forth around the axis. If there is too much play, do the following:

1. Loosen the lock nut (1).
2. Turn the screw (2) clockwise to eliminate the play, but without obstructing the upward movement of the spindle. (A little play in the spindle is mormal.)
3. Tighten the lock nut (1).

Fig. U



⚠ WARNING

To prevent personal injury, always disconnect the plug from the power source when making any adjustment.

QUILL RETURN SPRING (FIG. V)

The quill return spring may need adjustment if the tension causes the quill to return too rapidly or too slowly.

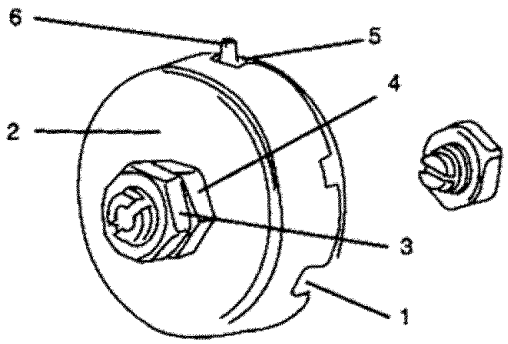
1. Lower the table for additional clearance.
2. Place a screwdriver in the lower front notch (1) of the spring cap (2). Hold it in place while loosening and removing only the outer jam nut (3).
3. With the screwdriver still engaged in the notch, loosen the inner nut (4) just until the notch (5) disengages from the boss (6) on the drill press head.

   CAUTION: DO NOT REMOVE THIS INNER NUT, because the spring will forcibly unwind.

4. Carefully turn the spring cap (2) counterclockwise with the screwdriver, engaging the next notch.
5. Lower the quill to the lowest position by rotating the feed handle in a counterclockwise direction while holding the spring cap (2) in position.
6. If the quill moves up and down as easily as you desire, tighten the standard nut (4) with the adjustable wrench. If too loose, repeat steps 2 through 5 to tighten. If too tight, reverse steps 4 and 5.
   DO NOT OVERTIGHTEN and restrict quill movement.

7. Replace the jam nut (3) and tighten against the standard nut (4) to prevent the standard nut from reversing.

Fig. V



⚠ WARNING

To avoid injury from an accidental start, ALWAYS make sure the switch is in the "OFF" position, the switch key is removed, and the plug is not connected to the power source outlet before making belt adjustments.

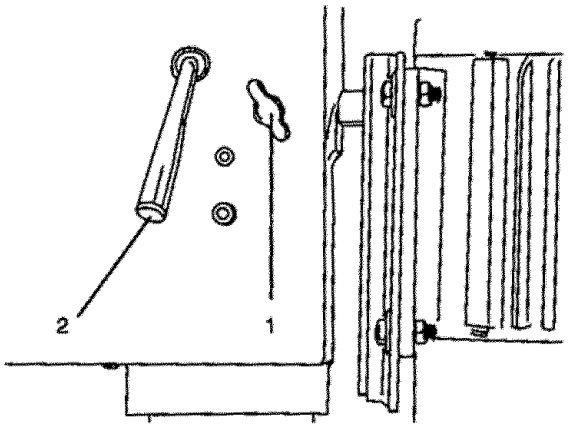
BELT TENSION (FIG. W)

Make sure pulleys are aligned properly as shown in Figure R.

1. To release the belt tension, turn the belt tension lock knobs (1) on each side of the drill press head counterclockwise.
2. Tighten the belts by turning the belt tension handle (2) counterclockwise.
3. Loosen the belts by turning the belt tension handle (2) clockwise, Set belts on pulley steps for desired speed.
4. Lock the belt tension lock knobs (1) by turning clockwise.

   NOTE: Belt tension is correct if the belt deflects approximately 1/2 inch when pressed at its center.

Fig. W



OPERATIONS

BASIC DRILL PRESS OPERATIONS

YOUR PROTECTION

⚠ WARNING

For your own safely, always observe the safety INSTRUCTIONS listed here and on pages 3, 4, and 5 of the the instruction manual.

⚠ WARNING

To avoid being pulled into the power tool, do not wear loose clothing, gloves, neckties, or jewelry. Always tie back long hair.

1. If any part of your drill press is missing, malfunctioning, damaged or broken, stop operation immediately until that part is properly repaired or replaced.
2. Never place your fingers in a position where they could contact the drill bit or other cutting tool. The workpiece may unexpectedly shift, or your hand could slip.
3. To avoid injury from parts thrown by the spring, follow instructions exactly when adjusting the spring tension of the quill.
4. To prevent the workpiece from being torn from your hands, thrown, spun by the tool, or shattered, always properly support your workpiece as follows:
   a. Always position BACKUP MATERIAL (used beneath workpiece) so that it contacts the left side of the column, or use the fence provided and a clamp to brace a small workpiece.
   b. Whenever possible, position the WORKPIECE to contact the left side of the column. If it is too short or the table is tilted, use the fence provided or clamp it solidly to the table, using the table slots.
   c. When using a drill press vise, always fasten it to the table.
   d. Never do any work freehand (hand-holding the workpiece rather than supporting it on the table), except when polishing.
   e. Securely lock the head and support to the column, the table arm to the support, and the table to the table arm, before operating the drill press.
   f. Never move the head or the table while the tool is running.
   g. Before starting an operation, jog the motor switch to make sure the drill or other cutting tool does not wobble or cause vibration.
   h. If a workpiece overhangs the table so it will fall or tip if not held, clamp it to the table or provide auxiliary support.
   i. Use fixtures for unusual operations to adequately hold, guide, and position workpieces.
   j. Use the SPINDLE SPEED recommended for the specific operation and workpiece material. Check the panel on the inside pulley cover or the chart below for drilling speed information. For accessories, refer to the instructions provided with each accessory.
5. Never climb on the drill press table, it could break or pull the entire drill press down on you.
6. Turn the motor switch "OFF", and put away the switch key when leaving the drill press.
7. To avoid injury from thrown work or tool contact, do not perform layout, assembly, or set up work on the table while the cutting tool is rotating.

SPEEDS AND BELT PLACEMENT (FIG. X)

This drill press has 12 speeds, as listed below:

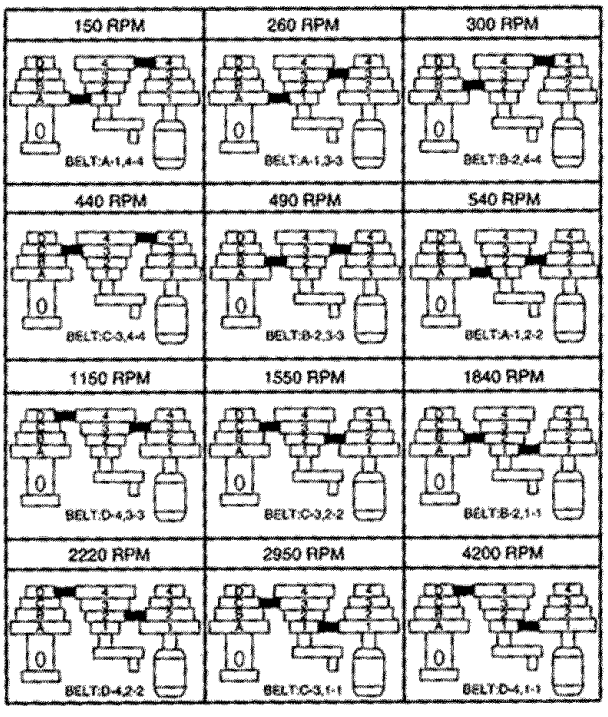
150 RPM	490 RPM	1840 RPM
260 RPM	540 RPM	2220 RPM
300 RPM	1150 RPM	2950 RPM
440 RPM	1550 RPM	4200 RPM

See inside of the belt guard for specific placement of belts on the pulleys to change speeds.

⚠ WARNING

To avoid possible injury, keep the guard closed, in place, and in proper working order while the tool is in operation.

Fig. X



DRILL SPEED RPM (FIG. Y)

Fig. Y

DRILLING SPEED TABLE (rpm)

Drill Bit Diam. (Inches)	Material					
	Alumi-num	Rubber Plastic	Hard Wood	Soft Wood	Cast Iron	Mild Steel
1/16	4200	4200	4200	4200	4200	4200
1/8						1840-2950
3/16					1840 2950	1150 1550
1/4	1840 2950	1840 2950				
5/16					1150-1550	490 540
3/8	1150 1550	1150 1550			490 540	
7/16			1840 2950	1840 2950		300 440
1/2	490 540	490 540				
9/16					300 440	
5/8						
11/16		300 440	1150 1550	1150 1550		
3/4	300-440					

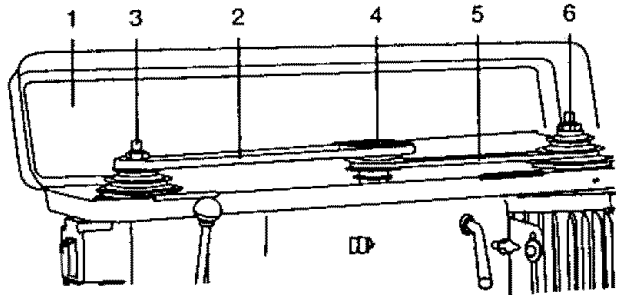
CHANGING SPEED (FIG. Z)

⚠ WARNING

Disconnect the radial drill press from the power source before changing speeds.

1. Open the pulley cover (1).
2. Position the belt (2) on the desired steps of the spindle pulley (3) and the center pulley (4) and the motor pulley (6).
   NOTE: When positioning the belt, always start by moving the end of the belt that will go from a larger step to a smaller step first.

Fig. Z



ON / OFF SWITCH PANEL (FIG. S)

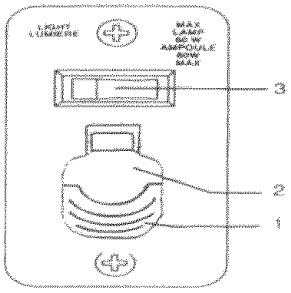
The "ON / OFF" switch has a removable, yellow plastic key. With the key removed from the switch, unauthorized and hazardous use by children and others is minimized.

1. To turn the drill press "ON", insert the key (1) into the slot of the switch (2), and move the switch upward to the "ON" position
2. To turn the drill press "OFF", move the switch downward.
3. To lock the switch in the "OFF" position, grasp the yellow part of the toggle switch and pull it out.
4. With the switch key removed, the switch will not operate to power the drill press on.
5. If the switch key is removed while the drill press is running, it can be turned "OFF" but cannot be restarted without inserting the switch key.
6. To turn the worklight "ON", press the rocker switch (3) to the on position.
7. Never leave the drill press unattended. Turn the light switch and power switch "OFF" and wait until it comes to a complete stop, and remove the safety key to prevent unauthorized starts.

⚠ WARNING

ALWAYS lock the switch "OFF" when the drill press is not in use. Remove the key and keep it in a safe place. In the event of a power failure, blown fuse, or tripped circuit breaker, turn the switch "OFF" and remove the key, preventing an accidental startup when power comes on.

Fig. AA



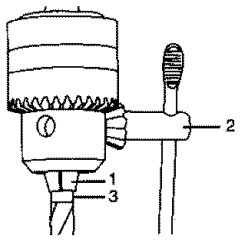
INSTALLING DRILL BIT IN CHUCK (FIG. BB)

1. With the switch "OFF" and the yellow switch key removed, open the chuck jaws (1) using the chuck key (2). Turn the chuck key counterclockwise to open the chuck jaws (1).
2. Insert the drill bit (3) into the chuck far enough to obtain maximum gripping by the jaws, but not far enough to touch the spiral grooves (flutes) of the drill bit when the jaws are tightened.
3. Make sure that the drill is centered in the chuck.
4. Turn the chuck key clockwise to tighten the jaws.

⚠ WARNING

To avoid injury or accident by the chuck key ejecting forcibly from the chuck when the power is turned "ON", use only the self-ejecting chuck key supplied with this drill press. ALWAYS recheck and remove the chuck key before turning the power "ON".

Fig. BB

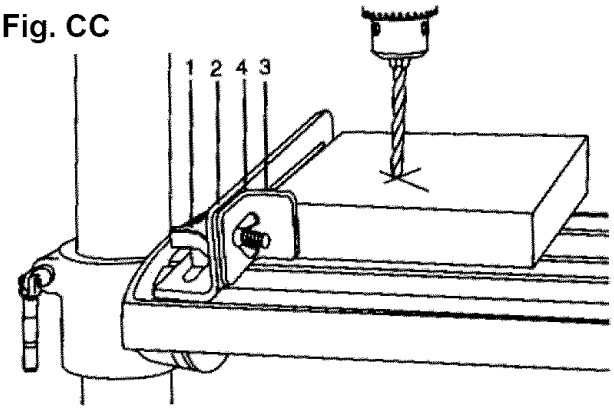


USING THE FENCE (FIG. CC)

The fence provides a way of accurately and quickly setting up the workpiece for more precision or for repitive drilling operations.

1. Using the centerpunch or sharp nail, make an indentation in the workpiece where you want to drill.
2. Lower the drill bit to align with the indentation on the workpiece. See "HOLDING A DRILLING LOCATION" page 19.
3. Loosen the knobs (1) and slide the fence back stop (2) firmly against the long side of the workpiece. Tighten the knobs when in position.
4. Loosen the wing nut (3) and slide the end stop (4) along the fence until it is firmly against the left side of the workpiece. Tighten the wing nut.
5. Check the accuracy by drilling a scrap workpiece. Adjust if needed.
6. Hold with your hand or clamp the top surface of the workpiece firmly to prevent it from lifting off the table when the bit is raised.

Fig. CC



DRILLING A DEPTH (FIG. DD)

Using a center punch or a shap nail, dent the workpiece where you want the hole. Before turning the switch on, bring the drill bit down to the workpiece, lining it up with the hole location. Turn the switch on and pull down on the feed handles with only enough effort to allow the dirll to cut. FEEDING TOOL SLOWLY might cause the drill bit to turn. FEEDING TOOL RAPIDLY might stop the motor, cause the belt or drill to slip, tear the workpiece loose, or break the drill bit, When drilling metal, it will be necessary to lubricate the tip of the drill bit with oil to prevent if from overheating.

Workpiece method

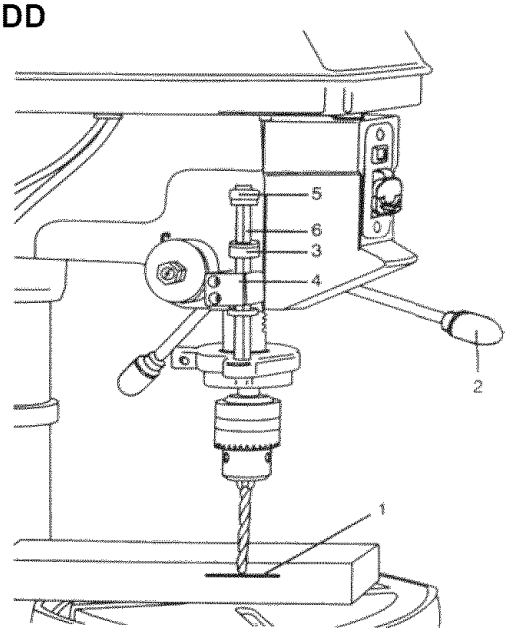
1. Mark the depth (1) of the hole on the side of the workpiece.
2. With the switch "OFF", bring the drill bit down until the tip is even with the mark.
3. Hold the feed handle (2) at this position.
4. Spin the lower nut (3) down to contact the depth stop (4) on the head.
5. Spin the upper nut (5) down and tighten against the lower nut (3).
6. The drill bit will now stop after traveling the distance marked on the workpiece.

Depth scale method

Note: With the chuck quill assembly fully retracted the tip of the drill bit must be just slightly above the top of the workpiece.

1. With the switch "OFF", turn the feed handle (2) until depth stop (4) points to the desired depth on the depth scale (6) and hold the feed handle in that position.
2. Spin the lower nut (3) down to contact the depth stop (4).
3. Spin the upper nut (5) against the lower stop nut (3) and tighten.
4. The drill bit will stop after traveling the distance selected on the depth scale.

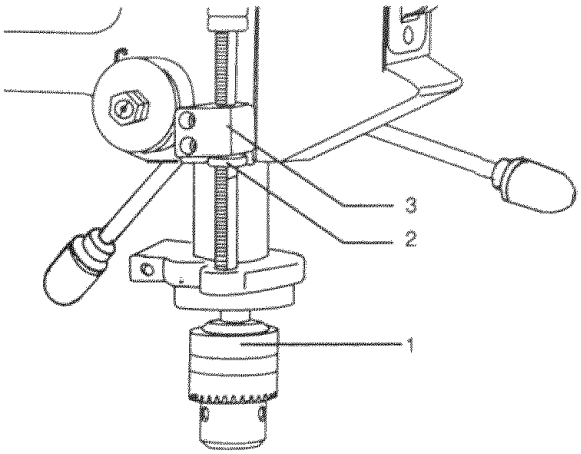
Fig. DD



LOCKING THE CHUCK AT THE DESIRED DEPTH (FIG. EE)

1. With the switch "OFF", turn the feed handles until the chuck (1) is at the desired depth. Hold the feed handles at this position.
2. Turn the stop nut (2), located under the depth stop (3), counterclockwise and upwards, until it is against the depth stop.
3. The chuck will now be held at this position when the feed handles are released.

Fig. EE

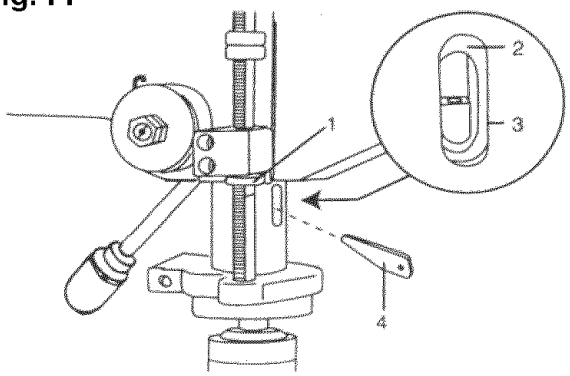


REMOVING CHUCK AND ARBOR (FIG. FF)

1. With the switch "OFF", adjust the depth stop scale (1) to hold the drill at a depth of three inches. (See instructions for "LOCKING CHUCK AT DESIRED DEPTH").
2. Align the key holes in the spindle (2) and quill (3) by rotating the chuck by hand.
3. Insert the key wedge (4) into the key holes (2 & 3).
4. Tap the key wedge (4) lightly with a plastic tipped hammer, until the chuck and arbor fall out of the spindle.

NOTE: Place one hand below the chuck to catch it when it falls out.

Fig. FF



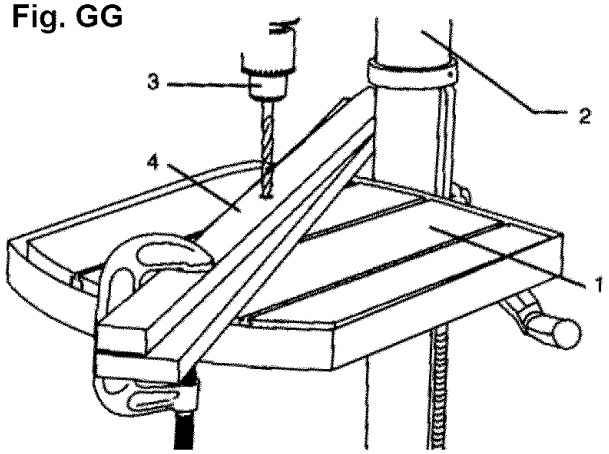
POSITIONING THE TABLE AND WORKPIECE (FIG. GG and HH)

1. Lock the table (1) to the column (2) at a position so the tip of the drill bit (3) is just above the top of the workpiece (4).
2. ALWAYS place BACK-UP MATERIAL (scrap wood) on the table beneath the workpiece. This will prevent splintering or heavy burring on the underside of the workpiece. To keep the back-up material from spinning out of control, it MUST contact the LEFT side of the column.

⚠ WARNING

To prevent the workpiece or backup material from being torn from your hands while drilling, you MUST position it against the LEFT side of the column. If the workpiece or the backup material is not long enough to reach the column, use the fence provided with the drill press to brace the workpiece. Failure to do this could result in personal injury.

Fig. GG

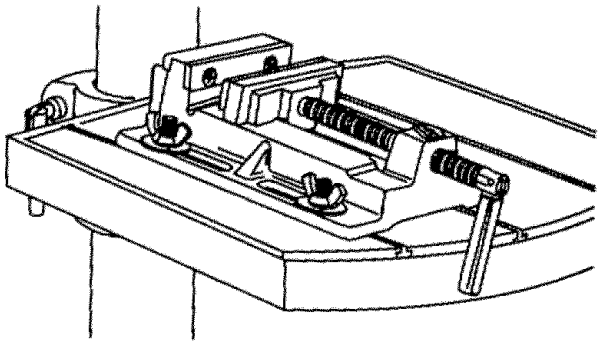


3. For small pieces that cannot be clamped to the table, use a drill press vise (optional accessory).

⚠ WARNING

The drill press vise MUST be clamped or bolted to the table to avoid injury from a spinning workpiece, or damaged vise or bit parts.
Remove the drill press fence when it interferes with other drill press accessories.

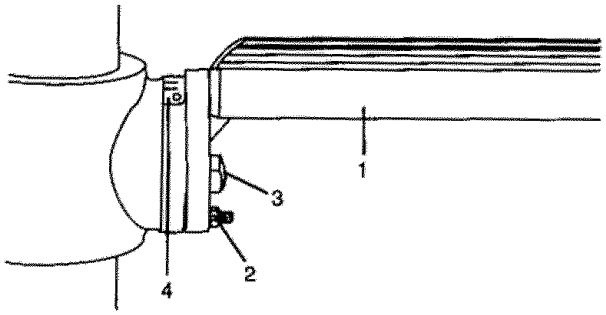
Fig. HH



TILTING THE TABLE (FIG. II)
NOTE: The table arm and support (1) has a predrilled hole with a locking pin inserted for locking the table into a predetermined 0° horizontal position.
1. To use the table in a bevel (tilted) position, TIGHTEN the nut (2) on the locking pin clockwise to RELEASE it from the table support.
2. Loosen the large hex head bevel locking bolt (3).

⚠ WARNING
To prevent injury, be sure to hold the table & table arm assembly, so it will not swivel or tilt.

Fig. II



3. Tilt the table, aligning the desired angle measurement to the zero line opposite the scale (4). Tighten the bevel locking bolt.
4. To return the table to its original position, loosen the bevel locking bolt (3). Realign the bevel scale (4) to the 0° position.
5. Loosen the nut (2) on the locking pin to the OUTSIDE END OF THREADS. Gently tap the locking pin until it is seated on the hole. Finger tighten the nut.

⚠ WARNING
To avoid injury from spinning work or tool breakage, always clamp workpiece and backup material securely to the table before operating the drill press with the table tilted.

FEEDING
1. Pull down the feed handles with only enough effort to allow the drill bit to cut.
2. Feeding too slowly might cause the drill bit to burn. Feeding too rapidly might stop the motor, cause the belt or drill to slip, or tear the workpiece loose and break the drill bit.
3. When drilling metal, it may be necessary to lubricate the drill bit tip with motor oil, to prevent burning the tip. The drill bit tip with motor oil, to prevent burning the tip.

MAINTENANCE

MAINTAINING YOUR DRILL PRESS

⚠ WARNING
For your own safety, turn the switch "OFF" and remove the plug from the power source outlet before maintaining or lubricating your drill press.

Frequently blow out, using an air compressor or dust vacuum, any dust that accumulates inside the motor.

A coat of automotive paste wax applied to the table and column will help to keep the surface clean & help to avoid rust.

⚠ WARNING
To avoid shock or fire hazard, if the power cord is worn or cut in any way, have it replaced immediately.

LUBRICATION

All of the drill press ball bearings are packed with grease at the factory. They require no further lubrication.

Periodically lubricate the gear and rack for table elevation mechanism, spindle and the rack (teeth) of the quill.

TROUBLESHOOTING

TROUBLESHOOTING GUIDE

⚠ WARNING

To avoid injury from an accidental start, turn the switch "OFF" and always remove the plug from the power source before making any adjustment.

- Consult your local Sears Service Center if for any reason the motor will not run.

PROBLEM	POSSIBLE CAUSES	REMEDY
Noisy operation	1. Incorrect belt tension. 2. Dry spindle. 3. Loose spindle pulley. 4.Loose motor pulley.	1. Adjust tension. See Section "ASSEMBLY - TENSIONING BELT" 2. Lubricate spindle. See Section " LUBRICATION". 3. Check tightness of retaining nut on pulley, and tighten if necessary. 4. Tighten set screw in motor pulley.
Drill bit burns	1. Incorrect speed. 2. Chips not coming out of hole. 3. Dull drill bit. 4. Feeding too slowly. 5. Not lubricated.	1. Change speed. See Section " BASIC DRILL PRESS OPERATION - SPINDLE SPEEDS" 2. Retract drill frequently to clear chips. 3. Resharpen drill bit. 4. Feed fast enough – allow drill to cut. 5. Lubricate drill. See Section "BASIC DRILL PRESS OPERATION – FEEDING".
Run out of drill bit point - drilled hole not round.	1. Hand grain in wood or lengths of cutting flutes and/or angles not equal. 2. Bent drill bit.	1. Resharpen drill bit correctly. 2. Replace drill bit.
Wood splinters on underside.	1. No backup material under workpiece.	1. Use backup material. See Section "BASIC DRILL PRESS OPERATION".
Workpiece torn loose from hand.	1. Not supported or clamped properly.	1. Support workpiece or clamp it. See Section "BASIC DRILL PRESS OPERATION".
Drill bit binds in workpiece.	1. Workpiece pinching drill bit, or excessive feed presure. 2. Improper belt tension.	1. Support workpiece or clamp it. See Section "BASIC DRILL PRESS OPERATION". 2. Adjust tension. See Section" ASSEMBLY – TENSIONING BELT".
Excessive drill bit runout or wobble.	1. Bent drill bit. 2. Worn bearings. 3. Drill bit not properly installed in chuck. 4. Chuck not properly installed.	1. Use a straight drill bit. 2. Replace bearings. 3. Install drill properly. See Section "BASIC DRILL PRESS OPERATION" and ASSEMBLY". 4. Install chuck properly. See Section "ASSEMBLY – INSTALLING THE CHUCK".
Quill returns.	1. Spring has improper tension.	1. Adjust spring tension. See Section " ASSEMBLY – too slow or too fast. ADJUSTMENTS –QUILL RETURN SPRING".
Chuck will not stay attached to spindle. It falls off when trying to install.	1. Dirt, grease, or oil on the tapered inside surface of chuck or on the spindle's tapered surface.	1. Using a household detergent, clean the tapered surface of the chuck and spindle to remove all dirt, grease and oil. See Section "ASSEMBLY – INSTALLING THE CHUCK".

PARTS LIST

20" DRILL PRESS PARTS LIST

MODEL NO. :137.229201

⚠ WARNING

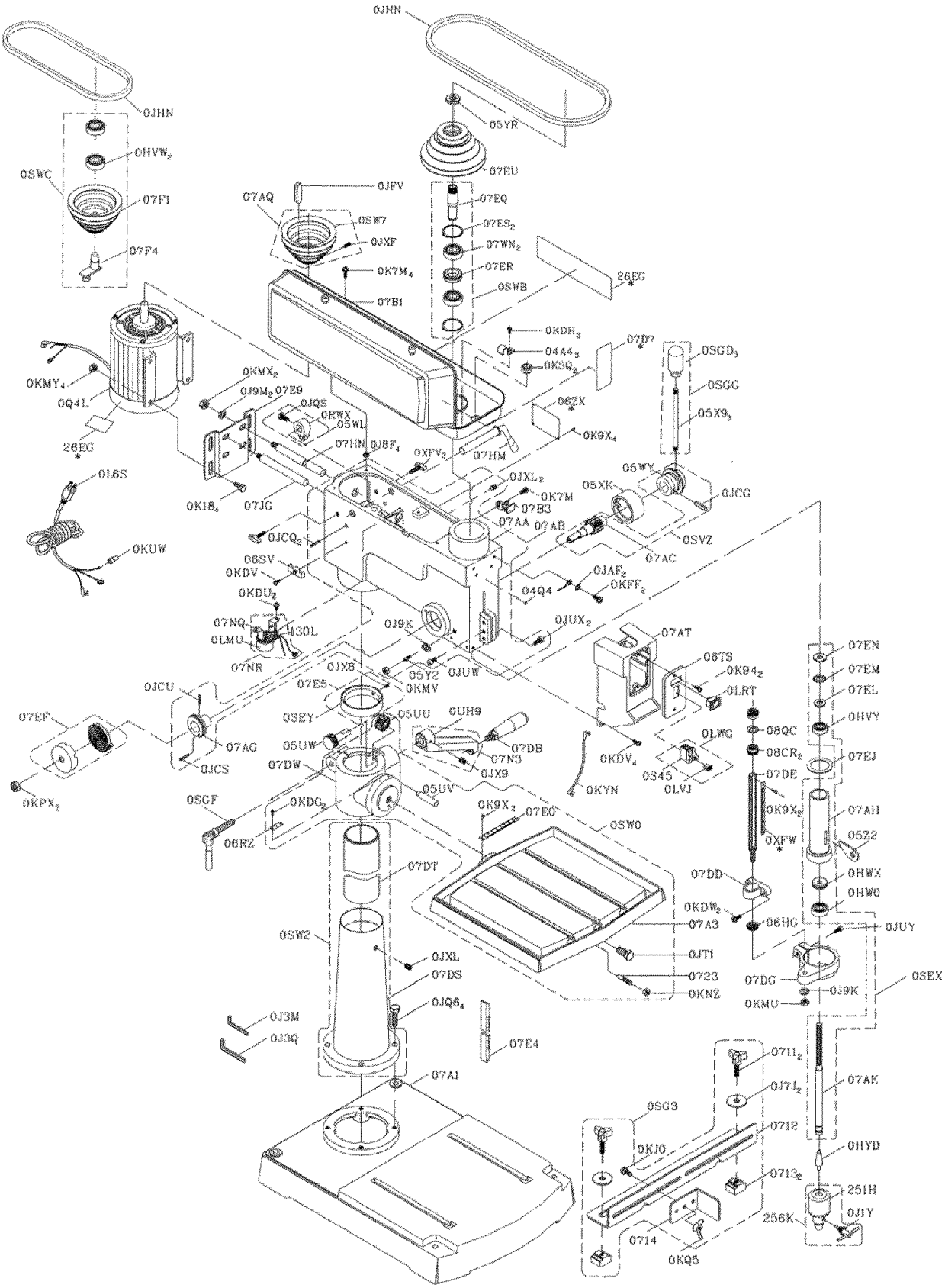
When servicing use only CRAFTSMAN replacement parts. Use of any other parts many create a HAZARD or cause product damage.

⚠ WARNING

Any attempt to repair or replace electrical parts on this Drill Press may create a HAZARD unless repair is done by a qualified service technician. Repair service is available at your nearest Sears Service Center.

Always order by I.D. NUMBER.

I.D. No.	Description	Size	Qty
04A4	CLAMP-CORD		3
04Q4	STICKER		1
05UW	WORM		1
05WL	MOTOR BAR SHIFTER ASS'Y		1
05XK	SCALE RING		1
05Y2	QUILL SET SCREW	M10*1.5-28	1
05YR	PULLEY SET NUT		1
05Z2	WEDGE SHIFTER		1
06HG	CIRCULAR NUT		1
06SV	CLAMP-CORD		1
06TS	SWITCH COVER		1
06ZX	WARNING LABEL		1
0711	LOCK KNOB	M8*1.25	2
0712	PARALLEL BRACKET		1
0713	SLIDE PLATE		2
0714	PLATE		1
07A1	BASE		1
07AB	HEAD ASS'Y		1
07AQ	MOTOR PULLEY ASS'Y		1
07AT	SWITCH BOX		1
07B1	PULLEY COVER ASS'Y		1
07B3	CHUCK KEY HOLDER		1
07D7	TRADE-MARK LABEL		1
07DB	HANDLE BAR	M10*1.5	1
07DD	PLUNGER HOUSING		1
07DE	SET BOLT		1
07DG	SET RING		1
07E4	RACK		1
07E5	RACK RING ASS'Y	φ85	1
07E9	MOTOR BASE	125*140	1
07EF	SPRING CAP ASS'Y		1
07EJ	RUBBER WASHER		1
07EU	SPINDLE PULLEY		1
07HM	HANDLE SHIFTER		1
07HN	MOTOR ROD		1
07JG	MOTOR ROD		1
07N3	CRANK HANDLE ASS'Y		1
07NR	BULB SOCKET ASS'Y		1
08CQ	WASHER		1
08CR	NUT	M16*2.0	2
0HYD	DRILLING ARBOR	MT3*JT4	1
0J1Y	CHUCK KEY		1
0J3M	WRENCH HEX.	3-57	1
0J3Q	WRENCH HEX.	5-70	1
0J7J	FLAT WASHER	3/8*1 5/32-7/64	2
0J8F	FLAT WASHER	1/4*3/4-3/16	4
0J9K	SPRING WASHER		1
0J9K	SPRING WASHER		1
0J9M	SPRING WASHER	φ1/2"	2
0JAF	EXTERNAL TOOTH LOCK WASHER	φ5	2
0JCQ	SPRING PIN	8-25	2
0JCS	SPRING PIN	6-16	1
0JFV	PARALLEL KEY	5*6-27	1
0JHN	V-BELT	A-32	2
0JQ6	HEX. HD. BOLT	M12*1.75-40	4
0JQS	HEX. HD. BOLT	M8*1.25-16	1
0JUW	HEX. SOC. HD. CAP BOLT	M8*1.25-25	1
0JUX	HEX. SOC. HD. CAP BOLT	M8*1.25-30	2
0JUY	HEX. SOC. HD. CAP BOLT	M8*1.25-35	1
0JXL	HEX. SOC. SET SCREW	M10*1.5-12	2
0K18	HEX. HD. SCREW AND WASHER	M8X1.25-25	4
0K7M	CR. RE. ROUND WASHER HD. SCREW	M6*1.0-18	4
0K7M	CR. RE. ROUND WASHER HD. SCREW	M6*1.0-18	1
0K94	CR. RE. TRUSS HD. TAPPING SCREW	M5*12-16	2
0K9X	DRIVE SCREW	φ2.3-5	4
0K9X	DRIVE SCREW	φ2.3-5	2
0KDH	CR. RE. PAN HD. SCREW	M5*0.8-8	3
0KDU	CR. RE. PAN HD. SCREW	M6*1.0-12	3
0KDV	CR. RE. PAN HD. SCREW	M6*1.0-16	1
0KDV	CR. RE. PAN HD. SCREW	M6*1.0-16	4
0KDW	CR. RE. PAN HD. SCREW	M6*1.0-20	2
0KFF	CR. RE. PAN HD. SCREW	M5*0.8-8	2
0KJ0	CAP HD. SQ.NECK BOLT	M6*1.0-16	1
0KMU	HEX. NUT	M10*1.5 T=8	1
0KMV	HEX. NUT	M10*1.5 T=8	1
0KMX	HEX. NUT	M12*1.75 T=10	2
0KMY	HEX. NUT	M8*1.25 · T=6.5	4
0KPX	HEX. NUT	1/2*20UNF T=6.5	1
0KQ5	WING NUT	M6X1.0	1
0KSQ	STRAIN RELIEF	φ20	2
0KUW	TERMINAL		1
0KYN	LEAD WIRE ASS'Y		1
0L6S	POWER CABLE		1
0LRT	ROCKER SWITCH		1
0LVJ	SWITCH KEY		1
0LWG	ROCKER SWITCH		1
0Q4L	MOTOR		1
0RWX	MOTOR BAR SHIFTER		1
0S45	ROCKER SWITCH ELEMENT		1
0SEX	SPINDLE ASS'Y	MT3	1
0SG3	HARDWARE BAG ASS'Y		1
0SGF	COLUMN LOCK HANDLE	M12*1.75-35	1
0SGG	HANDLE BAR ASS'Y	2-M12X1.75	1
0SVZ	HUB ASS'Y		1
0SW0	TABLE ASS'Y		1
0SW2	COLNMM HOLDER ASS'Y		1
0SWB	DRIVING SLEEVE ASS'Y		1
0SWC	CENTER PULLEY ASS'Y		1
0XFV	SHIFTER BOLT	M10*1.5-40	2
0XFW	SCALE		1
251H	CHUCK		1
256K	CHUCK&KEY		1
26EG	LABEL		1
26EH	SPEED DIAGRAM		1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07WN2
07ER
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07B1
26EG
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07D7
0SGD3
0SGG
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0J9M2
07E9
0JQS
0RWX
05WL
07HN
0J8F4
0XFV2
07HM
06ZX
0K9X4
0KMY4
0Q4L
26EG
0L6S
0KU W
0K18
07JG
0JXL2
0K7M
07B3
07AA
07AB
05WY
05XK
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0SVZ
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0KFF2
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0LMU
130L
0J9K
0JUX2
07AT
07NR
0JXB
05Y2
0JUW
0KMV
07E5
0JCU
07EF
0SEY
05UU
0UH9
07DB
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0JX9
05UW
07AG
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07DW
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0KDQ2
06RZ
0K9X2
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0SW0
0KDV4
0KYN
0LWG
0S45
0LVJ
06TS
0K942
0LRT
07EN
07EM
07EL
0HVY
08QC
08CR2
07EJ
07DE
0K9X2
07AH
0XFW
05Z2
07DD
0HWX
0HW0
0KDW2
07A3
06HG
0JUY
07DG
0J9K
0SEX
0KMU
0JTI
0723
0KNZ
07DT
0SW2
0JXL
07DS
0JQ64
0J3M
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