

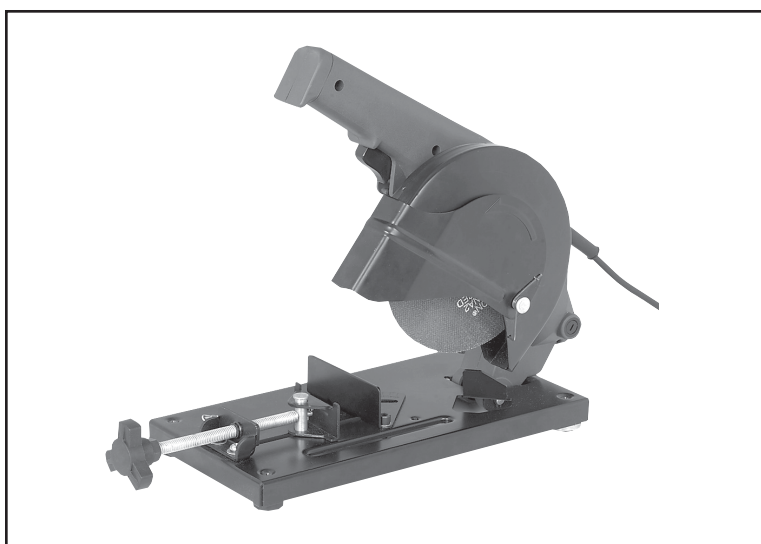
# CHICAGO<sup>®</sup>

Electric

## 6" CUTOFF SAW

Model 41453

### ASSEMBLY AND OPERATING INFORMATION



3491 Mission Oaks Blvd., Camarillo, CA 93011  
Visit our Web site at <http://www.harborfreight.com>

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**For technical questions please call 1-800-444-3353.**

MANUAL REVISED 01/02

## SPECIFICATIONS TABLE

Item	Description
Electrical Requirements	115 VAC, 60 Hz, 5.3 Amps, 9,000 RPM, 16 Gauge, 6' UL Listed Cord with 2 Prong Plug
Cut-Off Grinding Wheel (Not Included)	6" Maximum Diameter, 9,000 Minimum RPM
Spindle Diameter	5/8" (outer flange adapts to fit 7/8" Arbor)
Base Dimensions	14" x 16" x 11"
Vise Jaw Opening	3-1/8"
Vise Swivel Cap (with Scale)	0-45 Degrees
Weight	9.3 Pounds

**FOR USE WITH CUTOFF GRINDING WHEEL (SKU #42400)- NOT INCLUDED.**

### SAVE THIS MANUAL

You will need this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance, and cleaning procedures. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Keep this manual and invoice in a safe and dry place for future reference.

### GENERAL SAFETY WARNINGS AND PRECAUTIONS

- KEEP WORK AREA CLEAN AND DRY.** Cluttered, damp or wet work areas invite injuries.
- KEEP CHILDREN AWAY FROM WORK AREA.** Do not allow children to handle this product.
- STORE IDLE EQUIPMENT.** When not in use, tools and equipment should be stored in a dry location to inhibit rust. Always lock up tools and equipment and keep out of reach of children.
- DO NOT USE THIS PRODUCT IF UNDER THE INFLUENCE OF ALCOHOL OR DRUGS.** Read warning labels on prescriptions to determine if your judgment or reflexes are impaired while taking drugs. If there is any doubt, do not attempt to use this product.
- USE EYE, HEARING, AND BREATHING PROTECTION.** Wear ANSI approved safety impact eyeglasses, hearing protectors, dust masks or respirator when using this product. ANSI approved safety impact eyeglasses, hearing protectors, dust masks and respirators are available from Harbor Freight Tools.

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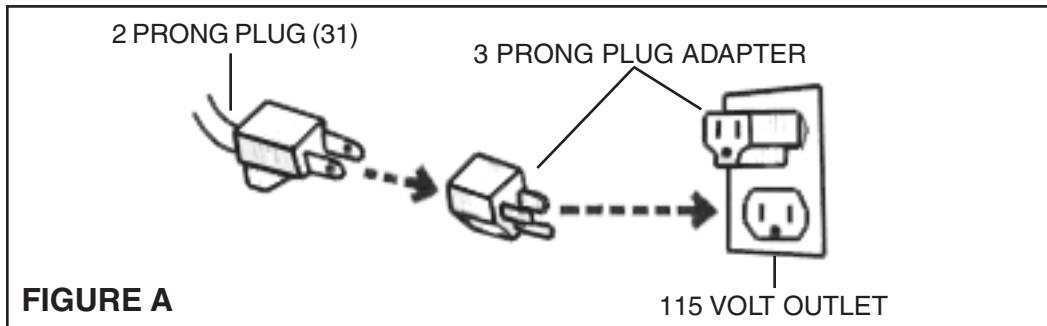
6. **DRESS SAFELY.** Nonskid footwear or safety shoes should be used when working with this product. Do not wear loose clothing or jewelry as they can become caught in moving parts. Wear a protective hair covering to prevent long hair from becoming caught in moving parts. If wearing a long-sleeve shirt, roll sleeves up above elbows.
7. **INDUSTRIAL APPLICATIONS MUST FOLLOW OSHA REQUIREMENTS.**
8. **DO NOT OVERREACH.** Keep proper footing and balance at all times to prevent tripping, falling, back injury, etcetera.
9. **STAY ALERT.** Watch what you are doing at all times. Use common sense. Do not use this product when you are tired or distracted from the job at hand.
10. **CHECK FOR DAMAGED PARTS.** Before using this product, carefully check that it will operate properly and perform its intended function. Check for damaged parts and any other conditions that may affect the operation of this product. Replace or repair damaged or worn parts immediately.
11. **REPLACEMENT PARTS AND ACCESSORIES.** When servicing, use only identical replacement parts. Only use accessories intended for use with this product. Approved accessories are available from Harbor Freight Tools.
12. **MAINTAIN THIS PRODUCT WITH CARE.** Keep this tool clean and dry, and keep cutoff grinding wheels clean and sharp for better and safer performance.
13. **MAINTENANCE:** For your safety, service and maintenance should be performed regularly by a qualified technician.
14. **USE THE RIGHT PRODUCT FOR THE RIGHT JOB.** There are certain applications for which this product was designed. Do not use small equipment, tools or attachments to do the work of larger industrial equipment, tools or attachments. Do not use this product for a purpose for which it was not intended.

## **SPECIFIC PRODUCT WARNINGS AND PRECAUTIONS**

1. **DANGER! Do not use unapproved accessories. Do not use circular saw blades or wire brushes on this tool. Do not use any accessory except 6" Cut-Off Grinding Wheels rated at 9,000 RPMs or higher.**
2. **GUARD AGAINST ELECTRIC SHOCK.** Do not submerge the Cut-Off Saw in water or other liquids. Always prevent body contact with grounded surfaces such as pipes, radiators, ranges, refrigerators, etcetera. Do not operate the Cut-Off Saw if the operator is standing in water.

To comply with the National Electric Code (NFPA70), and to provide additional protection from the risk of electrical shock, the Cut-Off Saw should only be connected to a 115 Volt, 3 prong, electrical outlet that is protected by a Ground Fault Circuit Interrupter (GFCI).

3. **ALWAYS USE A 3 PRONG PLUG ADAPTER (not provided).** This Cut-Off Saw is equipped with a 2 prong Power Cord Plug (31). For increase safety always attach and use a 3 prong, grounded, Plug Adapter. **(See Figure A, and Assy. Diagram.)**



4. **MAKE SURE THE POWER SWITCH IS IN THE “OFF” POSITION BEFORE PLUGGING IN THE POWER CORD.**
5. **DO NOT ABUSE THE POWER CORD.** Do not use the Power Cord to pull the Plug from a power outlet. Keep Power Cord away from heat, oil, sharp edges, and moving parts. Replace a damaged Power Cord immediately. Route the Power Cord safely. Protect it from being damaged by other equipment in the work area. Do not route the Power Cord where it can be walked on or tripped over.
6. **IF YOU USE AN EXTENSION CORD, MAKE SURE TO USE ONLY UL APPROVED CORDS HAVING THE CORRECT GAUGE AND LENGTH. (SEE FIGURE B.)**

<b>REQUIRED EXTENSION CORD GAUGE</b>						
Nameplate Amperes	Extension Cord Length					
	25'	50'	75'	100'	150'	200'
0 - 5	16	16	16	14	12	12
5.1 - 8	16	16	14	12	10	-
8.1 - 12	14	14	12	10	-	-
12.1 - 15	12	12	10	10	-	-
15.1 - 20	10	10	10	-	-	-

**FIGURE B**

7. **NOTE:** Performance of this tool may vary depending on variations in local line voltage. Extension cord usage may also affect tool performance.
8. **MAINTAIN A SAFE WORK ENVIRONMENT.** Do not use the Cut-Off Saw in or near damp or wet areas. Do not expose this tool to rain. Keep the work area well lit. Make sure there is adequate surrounding workspace. Use this tool in a well ventilated area. Do not operate this tool in the presence of flammable liquids, gases, or dust.
9. **DO NOT FORCE THE EQUIPMENT.** This Cut-Off Saw will do the work better and safer at the speed and capacity for which it was designed.
10. **KEEP ALL GUARDS IN PLACE AND IN WORKING ORDER.**
11. **REMOVE ALL ADJUSTING WRENCHES FROM THE CUTOFF SAW BEFORE TURNING IT ON.**
12. **AVOID UNINTENTIONAL STARTING.** Make sure you are prepared to begin work before turning the Power Switch “ON.”
13. **ALLOW THE CUTOFF GRINDING WHEEL TO SPIN UP TO FULL SPEED BEFORE FEEDING MATERIAL INTO IT.** When turning it off, allow the Cut-Off Grinding Wheel to spin down and stop on its own. Do not press against the Cut-Off Grinding Wheel to stop it.
14. **ALWAYS KEEP HANDS AND FINGERS AWAY FROM THE CUTOFF GRINDING WHEEL.** Never pass hands directly in front of, to the rear, or below the Cut-Off Grinding Wheel when cutting a workpiece.
15. **DO NOT FORCE THE CUTOFF GRINDING WHEEL INTO THE WORKPIECE WHEN CUTTING.** Apply moderate pressure, allowing the Cut-Off Grinding Wheel to cut without being forced.
16. **NEVER ATTEMPT TO REMOVE MATERIAL STUCK IN THE MOVING PARTS OF THE CUTOFF SAW WHILE IT IS PLUGGED IN AND RUNNING.**
17. **TURN OFF THE CUTOFF SAW IF THE WORKPIECE IS TO BE BACKED OUT OF AN UNCOMPLETED CUT.**
18. **MAKE SURE THE WORKPIECE IS FREE FROM ANY FOREIGN OBJECTS WHICH COULD DAMAGE THE CUTOFF GRINDING WHEEL.**
19. **MAKE SURE THE WORKPIECE IS SUPPORTED AT ALL TIMES DURING OPERATION.** Use a Roller Stand (not provided) with a larger workpiece if necessary.

20. **MAINTAIN CONTROL OF THE WORKPIECE AT ALL TIMES.** Whenever possible, secure the work piece with clamps, in a vise, etcetera.
21. **ALWAYS DISCONNECT THE CUTOFF SAW FROM ITS ELECTRICAL SUPPLY SOURCE BEFORE PERFORMING ANY SERVICES OR MAINTENANCE.** Unplug the Cut-Off Saw when leaving the work area, moving the tool from one location to another, changing Cut-Off Grinding Wheels, cleaning debris from the tool, etcetera.
22. **WARNING:** Some dust created by power sanding, sawing, grinding, drilling, and other construction activities, contain chemicals known (to the State of California) to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are: lead from lead-based paints, crystalline silica from bricks and cement or other masonry products, arsenic and various, depending on how often you do this type of work. To reduce your exposure to these chemicals; work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles. (California Health & Safety Code § 25249.5, *et seq.*)
23. **WARNING:** People with pacemakers should consult with their physician(s) before using this product. Operation of equipment in close proximity to a heart pacemaker could cause interference or failure of the pacemaker.

## UNPACKING

When unpacking, check to make sure all parts listed and shown on **pages 10 and 11** are included. If any parts are missing or broken, please call Harbor Freight Tools at the number shown on the cover of this manual as soon as possible.

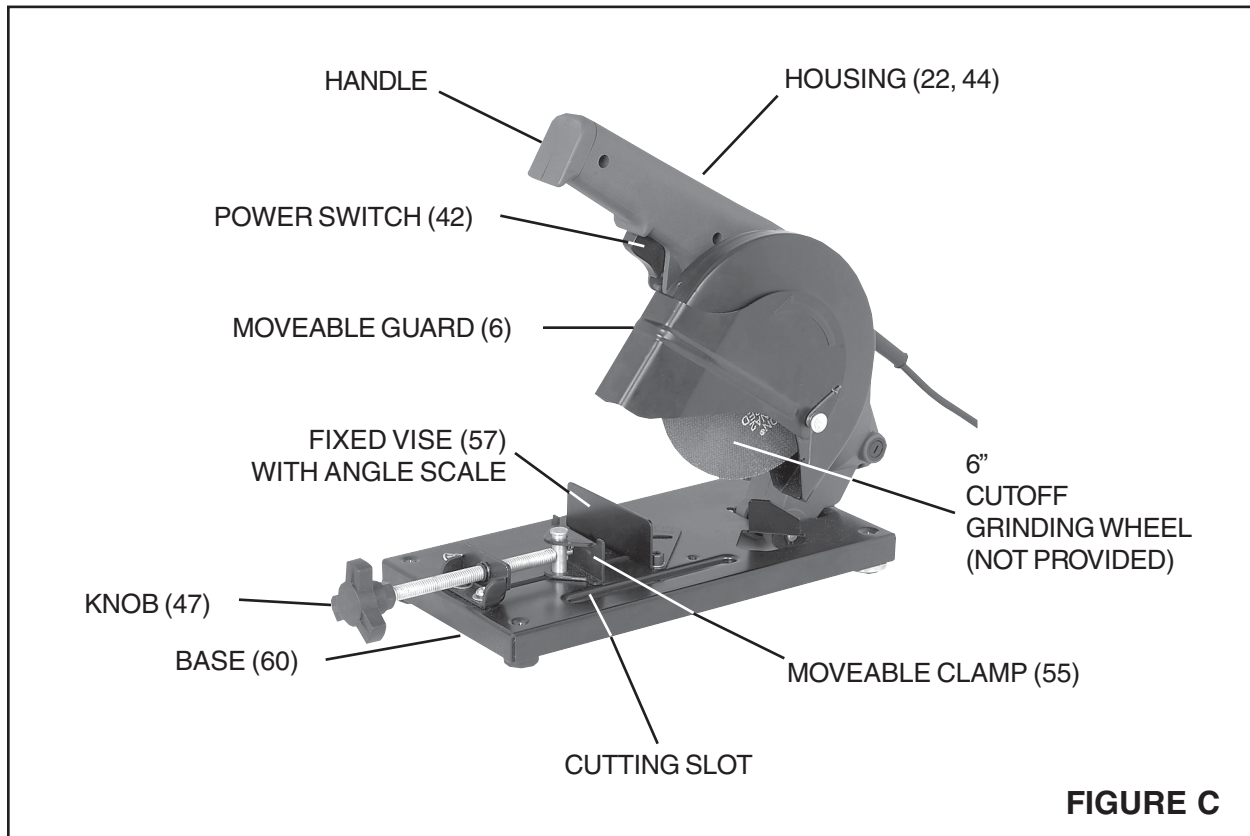
## ASSEMBLY INSTRUCTIONS

**For additional references to the parts listed below, refer to pages 10 and 11 of this manual.**

### **To Install A 6" Cut-Off Grinding Wheel:**

1. **Caution:** Prior to installing a Cut-Off Grinding Wheel (not provided), make sure the Cut-Off Saw is disconnected from its electrical power source.
2. Release the Chain (51), and allow the Housing (22, 44) to rest in its full upward position. **(See Figure C, and Assy. Diagram.)**

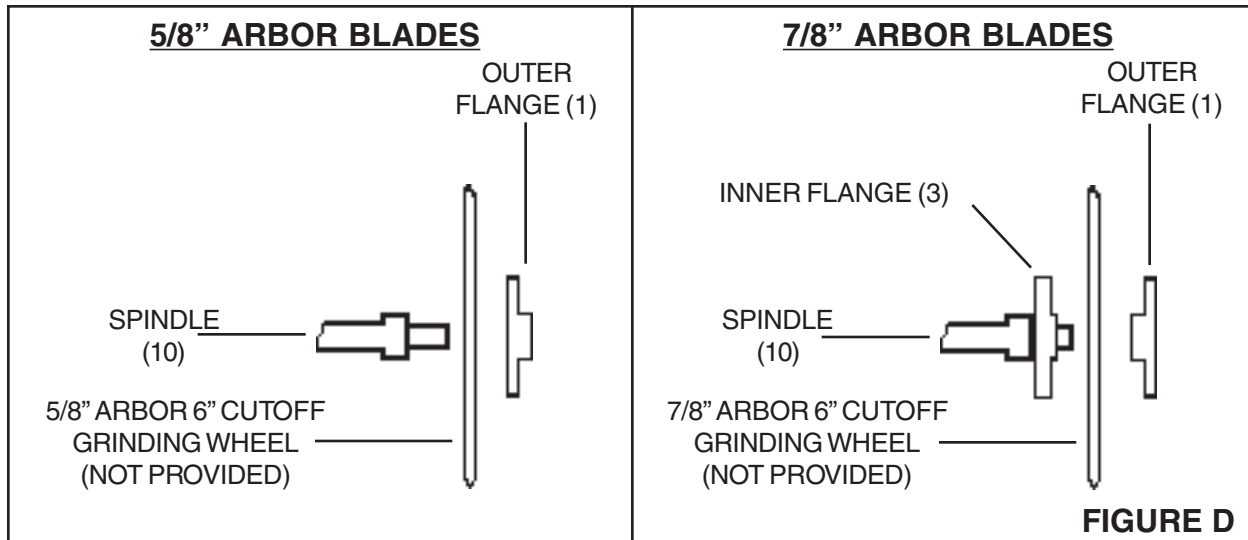
3. With assistance, pull the spring loaded Moveable Guard (6) up to its highest position and hold it in place. **(See Figure C.)**



4. Insert Spanner (45) into the access slot behind Guard (9), so that it engages the flats on the Spindle, and hold it firmly.
5. Use Wrench (46) to remove (CCW) the Outer Flange (1) from the Spindle.
6. **Note: This saw accepts wheels with 2 different arbor sizes: 5/8", 7/8".**
  - 5/8" Arbor:** Place the Wheel directly onto the spindle without using the Inner Flange (3). Place the Flange on the spindle with the step *facing away from* the cutoff wheel.
  - 7/8" Arbor:** Install the Inner flange with the step facing the cutoff wheel. Place the Wheel onto the spindle over the Inner Flange (3). Place the Flange on the spindle with the step *facing* the cutoff wheel.

Check to ensure that the wheel is positioned correctly, then firmly tighten the Outer Flange.
7. Allow the Moveable Guard (6) to return to its down position. **(See Figure C.)**

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## OPERATING INSTRUCTIONS

**For additional references to the parts listed below, refer to pages 10 and 11 of this manual.**

1. **WARNING!** Do not use unapproved accessories. Do not use circular saw blades or wire brushes on this tool. Do not use any accessory except 6" Cut-Off Grinding Wheels rated at 9,000 RPMs or higher.
2. **NOTE:** Be aware that friction from cutting will heat up both the wheel and workpiece. Do not overwork the Cut-Off Saw, as damage may result.
3. Determine the angle of cut required, and adjust the Fixed Vise (57) to the degree of angle required, using the Scale located on the Fixed Vise. The Fixed Vise can be set from 0 to 45 degrees. To adjust the angle, loosen the Screw (58). Set the angle required. Then, retighten the Screw. **(See Figure C, and Assy. Diagram.)**
4. Insert the workpiece between the Fixed Vise (57) and Moveable Clamp (55). **(See Figure C, and Assy. Diagram.)**
5. Turn the Knob (47) *clockwise* to secure the workpiece in place between the Fixed Vise (57) and Moveable Clamp (55). **(See Figure C, and Assy. Diagram.)**
6. Hold the Handle with one hand, and pull it down slightly toward the workpiece. Make sure the Cut-Off Grinding Wheel is aligned with the workpiece and cutting slot located on the Base (60). **(See Figure C, and Assy. Diagram.)**
7. Depress the Power Switch (42) to turn on the tool, and allow the Cut-Off Grinding Wheel to come to full speed. **(See Figure C, and Assy. Diagram.)**

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8. Slowly lower the Cut-Off Grinding Wheel into the workpiece. Continue applying light downward pressure until the workpiece is fully cut. Then, release pressure on the Power Switch (42) to turn off the tool. **(See Figure C, and Assy. Diagram.)**
9. Allow the Cut-Off Grinding Wheel to come to a complete stop. Then secure the Housing (22, 44) to its down position on the Base (60) by coiling the Tie-Down Chain (51) around the Handle. **(See Assy. Diagram.)**
10. **NOTE:** Before trying new or complicated techniques, study the procedure and practice with scrap material.

## INSPECTION, MAINTENANCE, AND CLEANING

1. **Caution:** Always disconnect the Cut-Off Saw from its electrical power supply source before performing any inspection, maintenance, or cleaning.
2. Before each use, inspect the general condition of the Cut-Off Saw. Inspect the Power Switch, Power Plug, Cord assembly, and extension cord (if used) for damage. Check for a cracked or damaged Cut-Off Grinding Wheel, improper mounting of a Cut-Off Grinding Wheel, loose screws, broken parts, misalignment, or binding of moving parts, and any other condition that may affect its safe operation. If abnormal noise or vibration occurs, turn off the Cut-Off Saw immediately and have the problem corrected before further use. Do not use damaged equipment.
3. The Cut-Off Saw features *two* Carbon Brushes (27) which, periodically, should be examined for wear. The Carbon Brushes are located on the Right Housing (22) and Left Housing (44). To inspect or replace the Carbon Brushes, use a small standard screwdriver to remove the Brush Covers (26). Remove the Carbon Brushes from the two Brush Holders (28), and examine the concave surface of the Carbon Brushes. The surface should be smooth and clean. If the Carbon Brushes appear only dirty, they may be cleaned by rubbing them with a pencil eraser. Make sure to remove any eraser dust which may have occurred during cleaning. If there are large scratch marks in the Carbon Brushes, or parts of the Carbon Brushes have broken off, replace *both* Carbon Brushes immediately with approved replacement Carbon Brushes from Harbor Freight Tools. To reinstall the Carbon Brushes, insert them into the Brush Holders. Turn the Carbon Brushes vertically so they will fit into the Brush Holders. Then, replace the Brush Covers. **(See Assy. Diagram.)**
4. With a brush, soft cloth, or vacuum, remove all debris from the Cut-Off Saw.

5. Do not use solvents to wipe off the Cut-Off Saw, as damage may result. If necessary, wipe with a damp cloth. You may use a mild detergent.
6. Do not introduce water into the electric motor through the motor vents.
7. Once clean, lubricate all moving parts with a light weight oil.
8. When storing, keep the Cut-Off Saw covered with a cloth cover.

**PLEASE READ THE FOLLOWING CAREFULLY**

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER NOR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

## PARTS LIST

Part #	Description	Qty.	Part #	Description	Qty.
1	Outer Flange	1	34	Screw (M4 x 16)	1
2	Cutting Wheel (Not Included)	1	35	Cable Fixer	1
3	Inner Flange	1	36	Label	1
4	Rivet	1	37	Rotor	1
5	Spring	1	38	Bearing	1
6	Moveable Guard	1	39	Pinion	1
7	Bolt (M5 x 10)	3	40	Washer (6mm)	3
8	Washer (5mm)	3	41	Nut	1
9	Guard	1	42	Switch	1
10	Spindle	1	43	Capacitor	1
11	Insert	1	44	Left Housing	1
12	Cover	1	45	Spanner	1
13	Bolt	1	46	Flange Wrench	1
14	Bearing	1	47	Knob	1
15	Bearing Cover	1	48	Nut (10mm)	1
16	Washer (4mm)	1	49	Threaded Bolt	1
17	Screw (M4 x 10)	1	50	Split Pin	1
18	Gear	1	51	Chain	1
19	Washer (10mm)	1	52	Support	1
20	Washer (10mm)	1	53	Ring (6mm)	2
21	Bearing	2	54	Screw (M6 x 12)	1
22	Right Housing	1	55	Moveable Clamp	1
23	Screw	1	56	Pin	1
24	Ring (4mm)	1	57	Fixed Vise	1
25	Steel Sleeve	1	58	Screw (M6 x 12)	1
26	Brush Cover	2	59	Screw (M4 x 8)	1
27	Carbon Brush	2	60	Base	1
28	Brush Holder	2	61	Rubber Support	4
29	Inductor	1	62	Nut	4
30	Spring	1	63	Spring	1
31	Plug	1	64	Fixing Pin	1
32	Cable Sleeve	1	65	Washer (8mm)	1
33	Rotor Housing	1	-----	-----	-----
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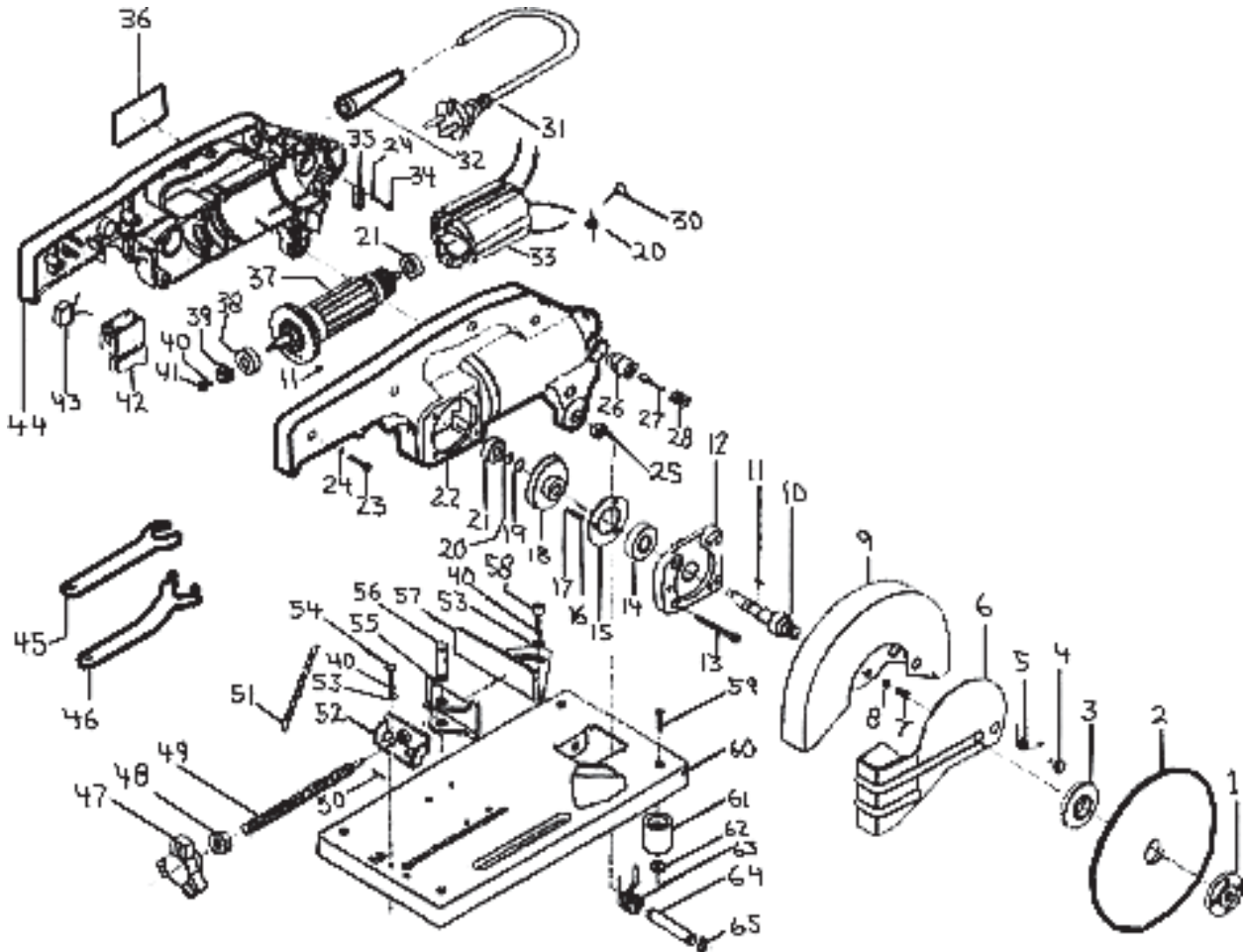
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# ASSEMBLY DIAGRAM



**NOTE:** Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

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