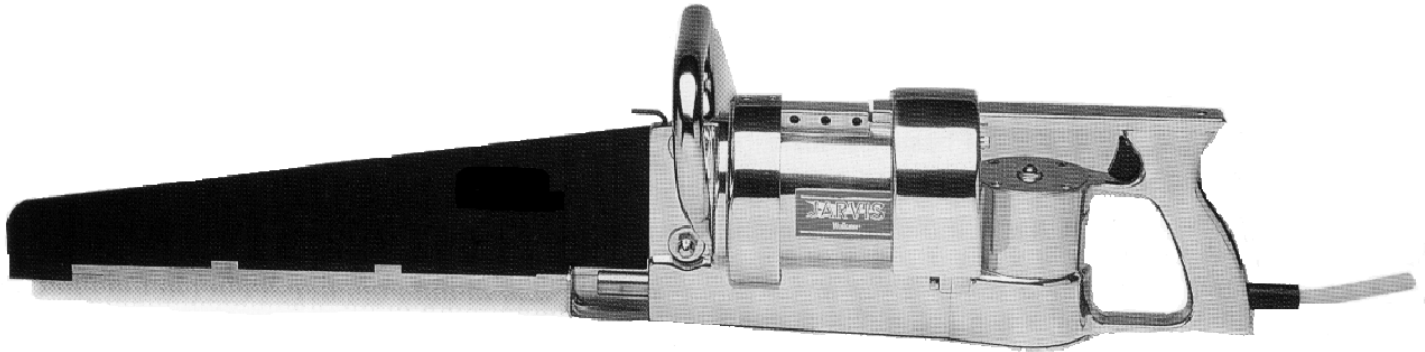


JARVIS

Model 444 Wellsaw Electric Powered Reciprocating Saw



EQUIPMENT SELECTION Ordering No.

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SAFETY MESSAGES TO EMPLOYER AND SAFETY DIRECTOR
AVOID INJURY

1. **Ensure** that all employees who use this tool are trained in the proper use of this tool and are aware of the dangers that may arise if they do not follow the procedures outlined in this brochure.
2. **Follow** our installation and maintenance instructions for proper installation and care of the tool.
3. Enclosed are four (4) copies of “**NOTICE TO OPERATORS AND MAINTENANCE AND CLEANUP PERSONNEL.**” Post one copy on the employees’ bulletin board; give one copy to operator(s); give one copy to the maintenance foreman; and give one copy to the sub-contract clean-up / internal cleanup foreman. *Additional copies will be provided upon request.*
4. The tool is designed and intended to be powerful. That fact should be obvious to your employees, but you must emphasize it to them.
5. **Always** disconnect the tool from its power supply when it is not in use.
6. **Ensure** that employees wear eye protection in accordance with OSHA’s eye and face protection requirements (29 CFR 1910.133) when using the tool.
7. **Hand/Wrist/Arm** injury and other Cumulative Trauma Disorders may result from repetitive work, motion or vibration. You must make your employees aware of hazards, symptoms of injury and appropriate prevention. See OSHA’s “Ergonomics Program Management Guidelines for Meatpacking Plants.”
8. **Remove** and **repair** any tool that malfunctions. **All** personnel must be instructed to remove any malfunctioning equipment.
9. **Never** make modifications or alterations to the tool. *Replace any missing or illegible labels.*
10. **Avoid** injury. Do not permit the tool to be misused.
11. **If you resell** or **distribute** a Jarvis product, you must provide the purchaser with the appropriate safety sheets and tool brochure. *Additional copies of safety sheets and tool brochures will be provided upon request.*



**SAFETY MESSAGES TO OPERATORS, MAINTENANCE AND CLEANUP
PERSONNEL**

***REMOVE ANY MALFUNCTIONING TOOL FROM SERVICE
REPORT ANY PROBLEMS TO YOUR SUPERVISOR***

1. **Disconnect** the power supply in accordance with OSHA's lockout/tagout procedures (29 CFR 1910.147) before changing the blade.
2. **Disconnect** the power supply in accordance with OSHA's lockout/tagout procedures (29 CFR 1910.147) before performing any repair or maintenance.
3. **Disconnect** the power supply - or have the power supply disconnected - in accordance with OSHA's lockout/tagout procedures (29 CFR 1910.147) before performing any cleanup.
4. **Disconnect** the power supply when the tool is not in use.
5. **Always** wear eye protection in accordance with OSHA's eye and face protection requirements (29 CFR 1910.133) and when needed, a dust mask.
6. **Do not** operate near flammable liquids or in gaseous atmospheres.
7. **Do not** operate in outdoor locations or in damp or wet locations.
8. **Do not** overreach; keep proper footing and balance when using the tool.
9. **Never** put fingers, hands or other parts of the body on the cutting edge of the blade or in the cutting path.
10. **Always** use both hands when starting and operating the tool to avoid the risk of possible "kick back" or "recoil." Continue holding the tool with both hands until the saw blade comes to a complete stop.
11. **Test** the tool prior to use or daily. **Depress** the trigger and the tool should start. **Release** the trigger and the tool should stop. *If the tool malfunctions, remove it from service and report or repair it immediately.*
12. **Never** depress the trigger unless you are going to use or test the tool.
13. **Never** make any alterations to the tool. *Report or replace any missing or illegible labels.*

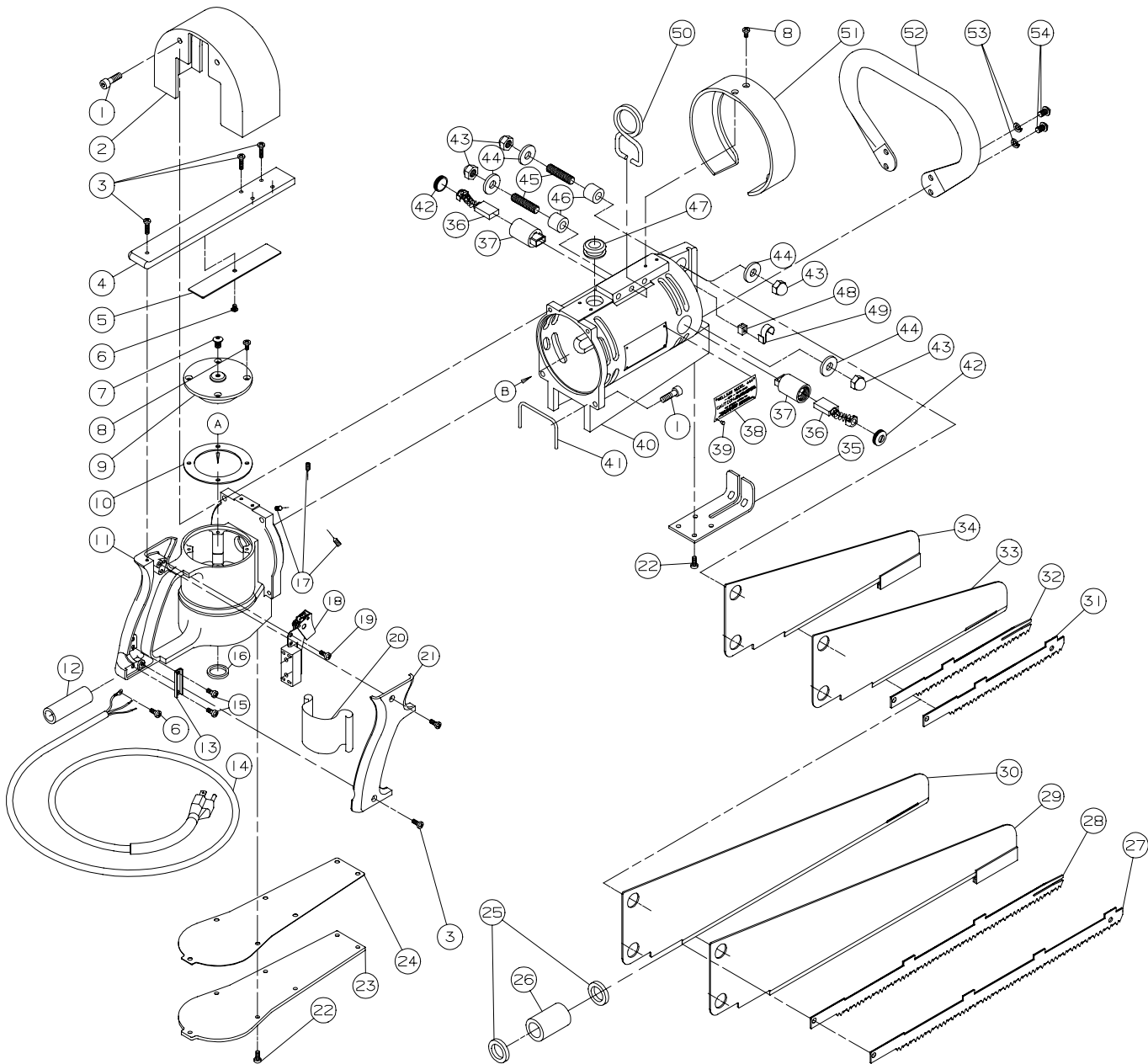
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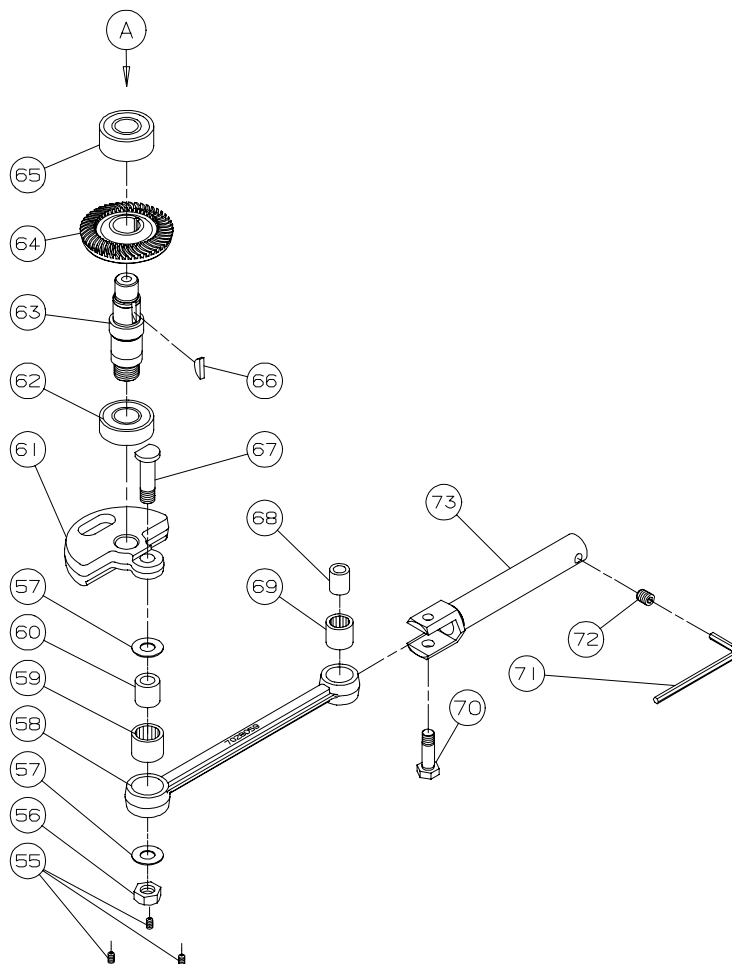
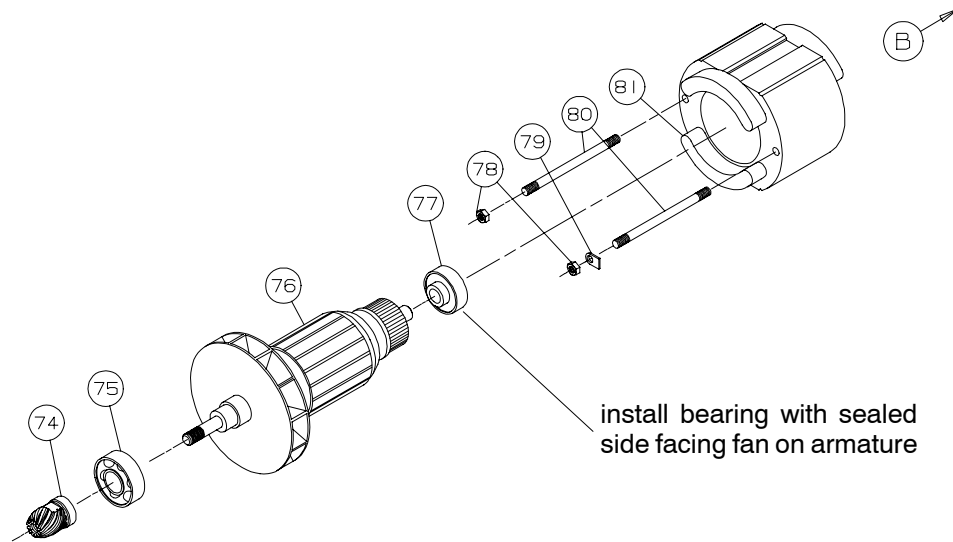
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ITEM	PART NO.	PART NAME	QTY
1	1055948	Socket Head Cap Screw	4
2	1024095	Guard	1
3	1055439	Oval Head Screw	7
4	1061188	Tie Bar	1
5	1002198	Cover Plate	1
6	1055454	Round Head Screw	2
	1055438	Set of 12 Screws	
7	1055434	Button Head Screw	1
8	1055431	Oval Head Screw	6
9	1002194	Bearing Cap	1
10	1035198	Gasket	1
11	1016200	Gear Housing	1
12	1063121	Strain Relief	1
13	1012048	Clamp Bar	1
14	1001028	Power Cord Set, 115v	1
	1001029	Power Cord Set, 230v	1
	3001016	European Line Cord	1
	3063091	Control Box 42v, includes:	1
	1001111	Switch Cord	1
	1063537	Fuse	1
	1063601	Relay	1
15	1055430	Fillister Head Screw	2
16	1035194	Seal	1
17	1055436	Set Screw	3
18	1005038	Switch	1
19	1073190	Round Head Screw	2
20	1063124	Insulator	1
21	1002195	Handle Cover	1
22	1055452	Flat Head Screw	11
	1055426	Set of 12 Screws	
23	1002196	Bottom Plate	1
24	1035196	Bottom Plate Gasket	1
25	1035195	Seal	2
26	1036118	Bushing	1
35	1024060	Blade Guard	1
36	3063009	Brush and Spring Assy	2
37	1063122	Brush Holder	2
38	1017035	Information Label, 115v	1
	1017036	Information Label, 230v	1
39	1055425	Label Mounting Screw	4
40	1016201	Motor Housing and Label	1
41	1035203	Gasket	1
42	1002199	Brush Cap	2
43	1007163	Cap Nut	4
44	1004150	Flat Washer	4
45	1027046	Stud	2
46	1036119	Insert	2
47	1063123	Grommet	1
48	1012047	"U" Clip	1
49	1012046	"S" Clip	1
50	1001027	Hanging Ring	1
51	1002197	Shroud	1
52	1019079	Handle (incls. items 52-53)	1
53	1004049	Lock Washer	4
54	1055069	Button Head Screw	4
55	1055100	Set Screw	3
56	1007165	Lock Nut	1
57	1004127	Thrust Bearing Race	2
58	1028059	Connecting Rod	1
59	1021221	Needle Bearing	1
60	1021223	Inner Race	1
61	1061189	Crank Arm	1

ITEM	PART NO.	PART NAME	QTY
62	1021230	Ball Bearing	1
63	1020130	Drive Shaft	1
64	1026070	Spiral Bevel Gear	1
65	1021210	Ball Bearing	1
66	1030100	Woodruff Key	1
67	1027044	Drive Stud	1
68	1021222	Inner Race	1
69	1021220	Needle Bearing	1
70	1027045	Rod Stud	1
71	8030032	Hex Key	1
72	1055423	Set Screw	1
73	1065026	Push Rod	1
74	1026071	Spiral Bevel Pinion Gear	1
75	1021211	Ball Bearing	1
76	1063603	Armature, 42v	1
	1063113	Armature, 115v	
	1063114	Armature, 230v	
77	1021209	Ball Bearing	1
78	1007164	Lock Nut	2
79	1012049	Clamp	1
80	1027047	Stator Stud	2
81	1063602	Stator, 42v	1
	1063115	Stator, 115v	
	1063116	Stator, 230v	

replacement kits

ITEM	PART NO.	PART NAME	QTY
	3016120	Gear Housing & Seal Assy	1
	3016121	Motor Housing & Seal Assy	1
	3061069	Drive Shaft Assembly	1
	3061070	Crank Arm Assembly	1
	3028031	Connecting Rod & Bearing	1
	3063092	Armature & Brg. Assy, 42v	1
	3063005	Armature & Brg. Assy, 115v	1
	3063006	Armature & Brg. Assy, 230v	1
	1062003	Gear Grease, 1 Pound	1
	1017083	Danger Label	1

blades and blade supports

ITEM	PART NO.	PART NAME	QTY
27	1023121	Blade 16", End Cutting	1
28	1023124	Blade 16" 4 tpi, Heavy Duty	1
29	1058072	Blade Support 16" Hvy. Duty	1
30	1058077	Blade Support 16" End Cut	1
31	1023122	Blade 8", End Cutting	1
32	1023123	Blade 8" 4 tpi, Heavy Duty	1
33	1058076	Blade Support 8" End Cut	1
34	1058073	Blade Support 8" Heavy Duty	1

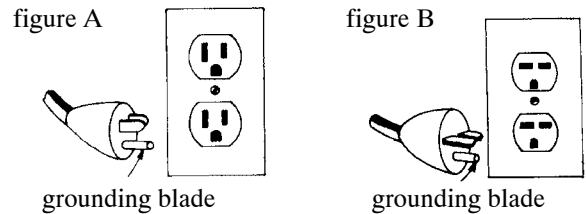
assembly tools

ITEM	PART NO.	PART NAME	QTY
	8039105	Brush Alignment Bar	1
	8039106	"T" Handle Stator Studs	1
	8039107	"T" Handle Hex Key	1
	8039108	Brush Wiring Tool	1
	8039109	Brush Alignment Shaft	1
	8039110	All Tools Listed Above	

SPECIFICATIONS

Model 444 Wellsaw		
Motor Power	2 hp	1491 W
Voltage	115V, 1 phase, 50/60 Hz 230V, 1 phase, 50/60 Hz	
Full Load Amperes	at 115V	15 A
	at 230V	7.5 A
	at 42V	41 A
Blade Speed	6300 cycles per minute	
Stroke	1.5 in	38 mm
Control Handle	single trigger	electric
Blade Lengths	8 in	203 mm
	16 in	406 mm
Overall Length (with 16 in / 400 mm blade)	38 in	965 mm
	Weight	23 lbs

GROUNDING: 115 volt and 230 volt tools only.
 Your **Jarvis** Wellsaw should be grounded to protect the user from electric shock or **ELECTROCUTION**. The **Jarvis** Wellsaw is equipped with an approved three conductor cord and three-prong grounding-type plug to fit the proper grounding-type receptacle. The green conductor in the cord is the grounding wire. Never connect the green wire to a live terminal. If your **Jarvis** Wellsaw is the 115 volt model, it has a plug that looks like figure “A”. If your **Jarvis** Wellsaw is the 230 volt model, it has a plug that looks like figure “B”.



Do not use any adapters with the **Jarvis** Wellsaw.

INSTALLATION INSTRUCTIONS

These instructions have been prepared to assure you of satisfactory operation through proper use of your **Jarvis** Wellsaw. *Read them carefully and keep them for future reference.*

OPTIONAL BALANCER:

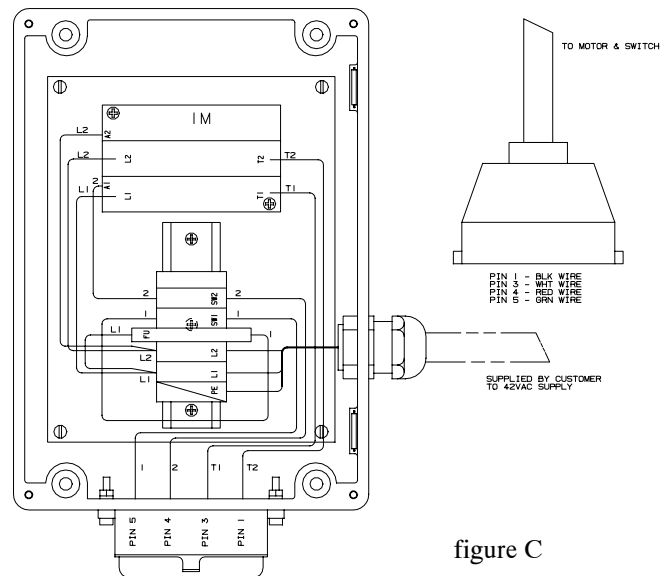
Install the Model 444 above the work station from a balancer. **Jarvis** part number 4042037 is available.

POWER SUPPLY:

Your **Jarvis** Wellsaw operates on 50 or 60 Hz., single phase alternating current. Its voltage rating is indicated on the name plate (42 volt, 115 volt or 230 volt). If an extension cord is to be used, be sure that the wire size is adequate to maintain full line voltage to the tool. For the 115 and 230 volt tools, be sure that it is a three conductor cord with a three prong grounding-type plug (with the grounding blade intact).

CONTROL BOX: 42 volt tool only.

Your **Jarvis** Wellsaw must be connected to the electrical control box (3063091) as shown in figure “C”.



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 **Jarvis Wellsaw** 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 depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord.

Minimum Wire Gage for Extension Cords

Volts	Total Length of Cord in Feet			
120	0-25	26-50	51-100	101-150
240	0-50	51-100	101-200	201-300

Amp Rating	Wire Size (AWG)			
6-10	18	16	14	12
12-16	14	12	not recommended	

When tool is used outdoors, use only extension cords labeled for outdoor use.

OPERATION INSTRUCTIONS

Before starting regular operation of the **Jarvis Wellsaw** we recommend that you make a few cuts with a fine pitch blade to acquaint yourself with the operation of the tool before using any of the coarser blades.

A. AVERAGE CUTTING AND RIPPING:

- 1 Place your work piece on a solid support at a convenient working height.
- 2 Adjust the material so that the line of cut will be close to the support. Secure it firmly.
- 3 To prevent the starting torque of the motor from pulling the saw away from the line of the cut, make a few short strokes until the blade has cut

into the material about 1/4 inch. Then squeeze the trigger.

- 4 **Both hands should be on the saw at all times when cutting. Continue holding the tool with both hands until the saw blade comes to a complete stop.**
- 5 The saw should be kept at a 90 degree angle to the work piece while cutting material that is thicker than 1 inch.
- 6 The saw should be pushed firmly into the material while cutting.
- 7 Do not allow the saw blade or the blade support to leave the work piece while cutting.
- 8 Never permit any part of the saw, except the blade and the blade support, to contact the work piece during the cut.

B. SINKING THE BLADE THROUGH A SURFACE:

- 1 Your power hand saw is not designed for regular use in starting its own hole by sinking the blade through a surface, commonly called “plunge cutting”. If attempted, you must:
 - a. Keep the saw blade as parallel to your work as possible.
 - b. As the blade makes contact with work piece, immediately start to draw the saw back slowly from your starting point.
 - c. Repeat the operation outlined in “b”, if necessary.
 - d. Have room to draw the saw at least 4-6 inches before cutting through a 1 inch thickness.
 - e. Do not force the saw blade, but keep it moving slowly on the draw back from the starting point. After a break through cut has been made and the end of the blade support extends through material at least 1-1/2 inches, the saw may be tipped to a normal cutting angle.

- C. NOT FOR CUTTING SMALL RADII
- D. ALWAYS KEEP A SHARP BLADE ON THE SAW:
- 1 Cutting with a dull or badly worn blade can overload the saw and cause damage from overheating.
 - 2 New blades can be purchased from **Jarvis Products Corporation**.

MAINTENANCE INSTRUCTIONS

Always disconnect the saw from its power supply before performing any maintenance.

Item numbers: refer to the parts diagrams on pages 4-5.

A. LUBRICATION:

- 1 The gear case should be kept 1/3 full of grease. To check the grease level remove the bottom plate and its gasket (items 23 and 24). It should be checked every 30 days for saws that are used moderately and every two weeks for saws that are used daily. If replacement grease is required it should be obtained from **Jarvis Products Corporation**.

B. BLADE INSTALLATION:

NOTE: Your **Jarvis** Wellsaw is equipped with a hex key wrench (item 71) for removing and installing the blade. This wrench is located in the motor housing.

- 1 Insert hex key (item 71) into set screw (item 72).
- 2 Fasten the set screw into the hole in the end of push rod (item 73). Do not tighten.
- 3 *STANDARD BLADE SUPPORT (End Cutting):*
 - a. Align blade (items 27 or 31) with blade support (item 30 or 33). *The blade should extend approximately 3 inches from the end of the blade support.*

- b. Slide the blade onto the blade support until the crimp in the blade is touching the end of the blade support.
- c. Use a rubber hammer and tap the end of blade towards the body of the saw until the crimp in the blade slides into the slot in the blade support.

HEAVY DUTY BLADE SUPPORT (Heavy Duty):

- a. Place the grooved end of blade (item 28 or 32) into the guide in the blade support (item 29 or 34).
 - b. Slide the blade over the blade support towards the body of the saw. *Make sure that the tabs on the blade extend over each side of the blade support.*
- 4 Slide the blade into the push rod (item 73) as far as it will go.
 - 5 Tighten the set screw (item 72) with the hex key (item 71).

C. BLADE SUPPORT INSTALLATION:

- 1 Remove cap nuts (item 43) and flat washers (item 44) from threaded stud (item 45).
- 2 Slide the blade support over inserts (item 46) until the blade support is against the housing.
- 3 Replace flat washers (item 44) and cap nuts (item 43) and tighten firmly.

D. DISASSEMBLY OF MOTOR:

- 1 Remove blade and set screw (item 72).
- 2 Remove handle cover (item 21).
- 3 Disconnect the two wires from the stator (item 81) and the two wires from the power cord (item 14) attached to switch (item 18). Remove switch (item 18).
- 4 Remove tie bar (item 4) and cover plate (item 5).
- 5 Remove shroud (item 51), brush cap (item 42) and brush and spring assembly (item 36).
- 6 Remove bottom plate (item 23) and bottom plate gasket (item 24).

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- 7 Insert a small block of wood between the connecting rod and the housing to stop rotation of the crank arm (item 61). Remove locknut (item 56) and rod stud (item 70). Remove connecting rod (item 58).
 - 8 Remove push rod (item 73) by pulling it toward the center of the saw. *If the outer end of the push rod is deformed, grinding may be necessary to allow it to pass through the bushing (item 26).*
 - 9 Reinsert the small block of wood to stop rotation of the crank arm (item 61). Insert 5/16 inch hex key wrench into the drive shaft (item 63) and turn clockwise to loosen and remove crank arm (item 61).
 - 10 Remove drive shaft (item 63).
 - 11 Remove (4) screws (item 1).
 - 12 Rotate gear housing (item 11), approximately 90 degrees relative to the motor housing (item 40). Separate the housings by pulling or tapping lightly with a rubber hammer.
 - 13 Back off, but do not remove, (3) set screws (item 17).
 - 14 Remove armature (item 76) by inserting two screwdrivers between the gear housing and the armature fan and gently prying.
 - 15 Clean the gear housing cavity and the drive shaft assembly to remove any contaminated lubricant.
 - 16 Remove (4) screws (item 8) and (1) screw (item 7).
 - 17 Insert screw (item 1) into the center tapped hole of the bearing cap (item 9) and tighten to remove the bearing cap.
 - 18 Turn the bottom up and push or tap it lightly to remove drive shaft assembly (items 62-66).
 - 19 Remove stator wires (item 81) from brush holders (item 37).
 - 20 Remove (2) locknuts (item 78). Pull the stator lead wires through the grommet hole and remove the stator (item 81).
 - 21 Using an arbor press remove the bushing (item 26) and the (2) seals (item 25). *New seals will be required after removing the bushing.*
 - 22 Assembly may be accomplished by reversing these steps.
 - 23 *Caution: the armature must turn counter-clockwise as viewed from behind the handle looking toward the blade.* To reverse rotation, put stator leads on opposite brush holders.
- E. DRIVE SHAFT ASSEMBLY:**
- 1 Place the drive shaft assembly assembly (items 62-66) into the gear housing (item 11). *Make sure that the sub-assembly is completely bottomed out in the bearing bore.*
 - 2 Place the armature sub-assembly (items 74-77) into the gear housing. *Make sure that the sub-assembly is completely bottomed out in the bearing bore .*
 - 3 Grease the gear housing until it is 1/4 full.
 - 4 Fasten the gasket (item 10) and bearing cap (item 9) to the gear housing.
 - 5 Lock the armature sub-assembly in place with (3) set screws (item 17). *Do not over tighten the screws as they may distort the bearing and cause uneven rotation.*
 - 6 Assemble the motor housing (item 40) and the remaining parts of the saw assembly to the gear housing *with the exception of:*
 - crank arm and stud assembly (items 61 and 67)
 - connecting rod and bearing assembly (items 58, 59 and 69)
 - push rod (item 73)
 - (3) set screws (items 55)
 - (1) screw (item 7)
 - 7 Place the saw on its back with connecting rod cavity facing up.

- 8 Screw in each of (3) set screws (items 55) to a depth of approximately two complete turns.
- 9 Connect the saw to a power source and turn on the saw.
- 10 With the saw running, turn each set screw (item 55) - slowly and equally - until the saw starts to slow down (there may be a change in pitch of the motor). *It is very important that the set screws are drawn down equally. Failure to do so can result in misalignment of gears.*
- 11 Back off each set screw in equal amounts until the full speed of the saw is reached.
- 12 Turn off the saw and disconnect it from the power source.
- 13 *Check to see that there is very little backlash between the bevel and the pinion gears.* If there seems to be too much backlash, back off set screws (items 55) and repeat steps 7-13.
- 14 Assemble the remainder of the saw.

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