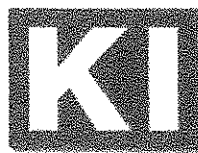


INSTRUCTION MANUAL

DS20



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Specifications

Motor	220V/60Hz, 2 HP Single Phase, 12 Amps
Disc Size	20 inches
Disc RPMs	1740
Miter Slot Width	3/4"
Overall Dimensions	27-1/8" x 10-3/8"
Base Dimensions	22" x 22"
Table Tilt Capacity	30 Degrees Up, 45 Degrees Down
Vacuum Chute Diameter	2-1/2" O.D. with 2-3/16" Adapter

Save This Manual

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

Safety Warnings and Precautions

WARNING: When using tool, basic safety precautions should always be followed to reduce the risk of personal injury and damage to equipment.

Read all instructions before using this tool!

1. **Keep work area clean.** Cluttered areas invite injuries.
2. **Observe work area conditions.** Do not use machines or power tools in damp or wet locations. Don't expose to rain. Keep work area well lighted. Do not use electrically powered tools in the presence of flammable gases or liquids.
3. **Keep children away.** Children must never be allowed in the work area. Do not let them handle machines, tools, or extension cords.
4. **Store idle equipment.** When not in use, tools must be stored in a dry location to inhibit rust. Always lock up tools and keep out of reach of children.
5. **Do not force tool.** It will do the job better and more safely at the rate for which it was intended. Do not use inappropriate attachments in an attempt to exceed the tool capacity.
6. **Use the right tool for the job.** Do not attempt to force a small tool or attachment to do the work of a larger industrial tool. There are certain applications for which this tool was designed. Do not modify this tool and do not use this tool for a purpose for which it was not intended.
7. **Dress properly.** Do not wear loose clothing or jewelry as they can be caught in moving parts. Protective, electrically non-conductive clothes and non-skid footwear are recommended when working. Wear restrictive hair covering to contain long hair.

8. **Use eye, ear and face protection.** Always wear ANSI approved impact safety goggles. Wear a full face shield if you are producing metal filings or wood chips. Wear an ANSI approved dust mask or respirator when working around metal, wood, and chemical dusts and mists.
9. **Do not overreach.** Keep proper footing and balance at all times. Do not reach over or across running machines.
10. **Maintain tools with care.** Keep tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories. Inspect tool cords periodically and, if damaged, have them repaired by an authorized technician. The handles must be kept clean, dry, and free from oil and grease at all times.
11. **Disconnect power.** Unplug tool when not in use.
12. **Remove adjusting keys and wrenches.** Check that keys and adjusting wrenches are removed from the tool or machine work surface before plugging it in.
13. **Avoid unintentional starting.** Be sure the switch is in the Off position when not in use and before plugging in.
14. **Stay alert.** Watch what you are doing, use common sense. Do not operate any tool when you are tired.
15. **Take caution as some woods contain preservatives such as copper chromium arsenate (CCA) which can be toxic.** When cutting these materials extra care should be taken to avoid inhalation and minimize skin contact.
16. **Check for damaged parts.** Before using any tool, any part that appears damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment and binding of moving parts; any broken parts or mounting fixtures; and any other condition that may affect proper operation. Any part that is damaged should be properly repaired or replaced by a qualified technician. Do not use the tool if any switch does not turn On and Off properly.
17. **Guard against electric shock.** Prevent body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerator enclosures.
18. **Replacement parts and accessories.** When servicing, use only identical replacement parts. Use of any other parts will void the warranty. Only use accessories intended for use with this tool. Approved accessories are available from Harbor Freight Tools.
19. **Do not operate tool 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 operate the tool..
20. **Maintenance.** For your safety, maintenance should be performed regularly by a qualified technician.

Note: Performance of this tool (if powered by line voltage) may vary depending on variations in local line voltage. Extension cord usage may also affect tool performance.

Warning: The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

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 chromium from chemically treated lumber

Your risk from these exposures varies, 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.)

Unpacking

When unpacking, check to make sure parts listed on page 8 are included. If any parts are missing or broken, please call at the number on the cover of this manual as soon as possible.

Warning! Operation of equipment in close proximity to a heart pacemaker could cause interference or failure of the pacemaker.

Assembly

1. Have a licensed electrician attach a 220 Volt plug to the power cord.
2. Stick a PSA (Pressure Sensitive Adhesive) backed 20 inch sanding disc on the metal sanding / grinding disc.

Operation

Note: Prior to operation, go through the following checklist:

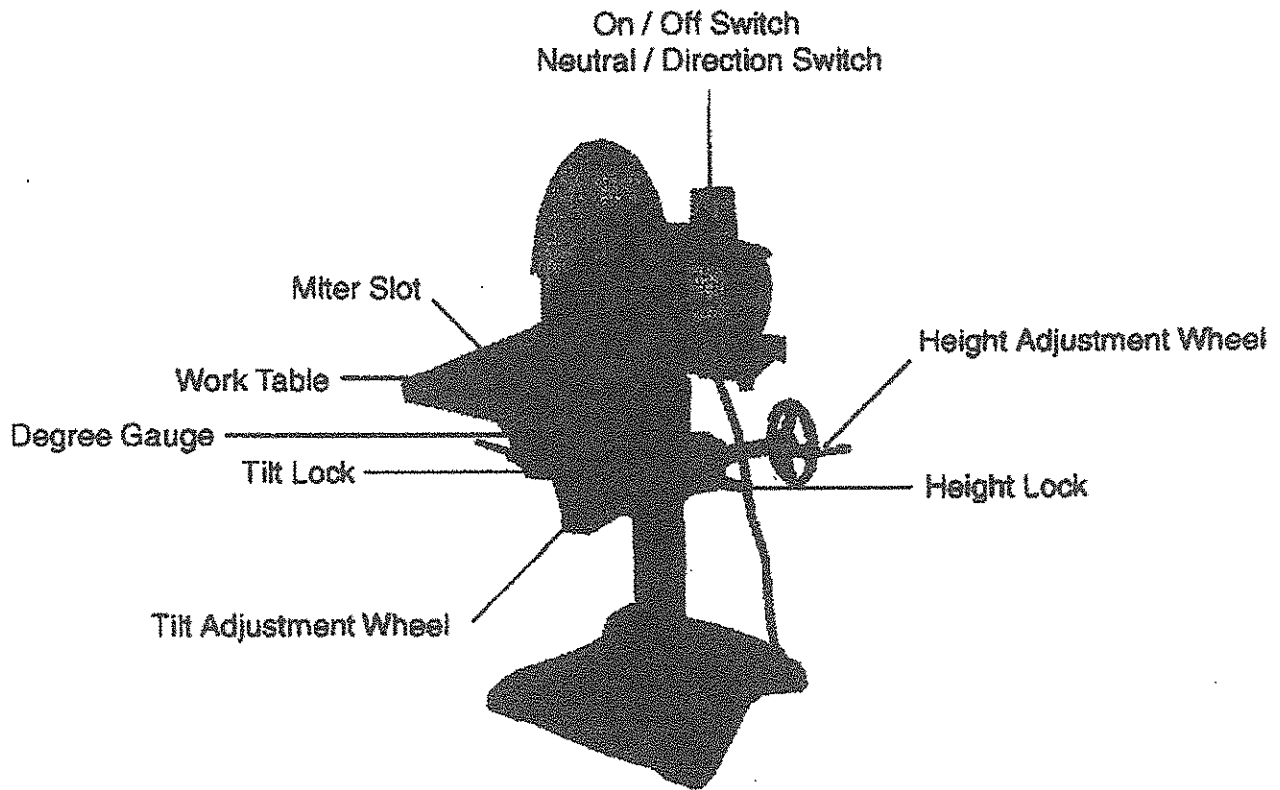
1. Make sure power is off before plugging in the Sander/ Grinder.
2. Check Sander / Grinder for damaged parts.
3. Make sure all clamps, locks, and bolts are tight.
4. Remove any adjusting keys or wrenches.
5. Make sure guards are in place and in proper working order.

Warning! Make sure table is securely locked into place following adjustments. Table should be secured to a flat, level surface capable of supporting weight of the Sander/Grinder as well as workpiece material being used.

6. Give Sander / Grinder a test run. If the tool vibrates irregularly or makes unfamiliar noises, turn it off, unplug it, and refer to an authorized service technician.

Work Table Adjustment

Figure 1



Note: There must be a 1/16" clearance between the Work Table and the face of the Sanding Disc. Refer to Figure 1 above.

1. The angle of the of the work table adjusts between 0 - 30 degrees to the left (standing at rear adjustment), or 0 - 45 degrees to the right.
2. Loosen the Tilt Lock lever and turn the Tilt Adjustment Wheel to the desired direction. Use the Degree Gauge to set precise angles. Tighten the Tilt Lock lever.

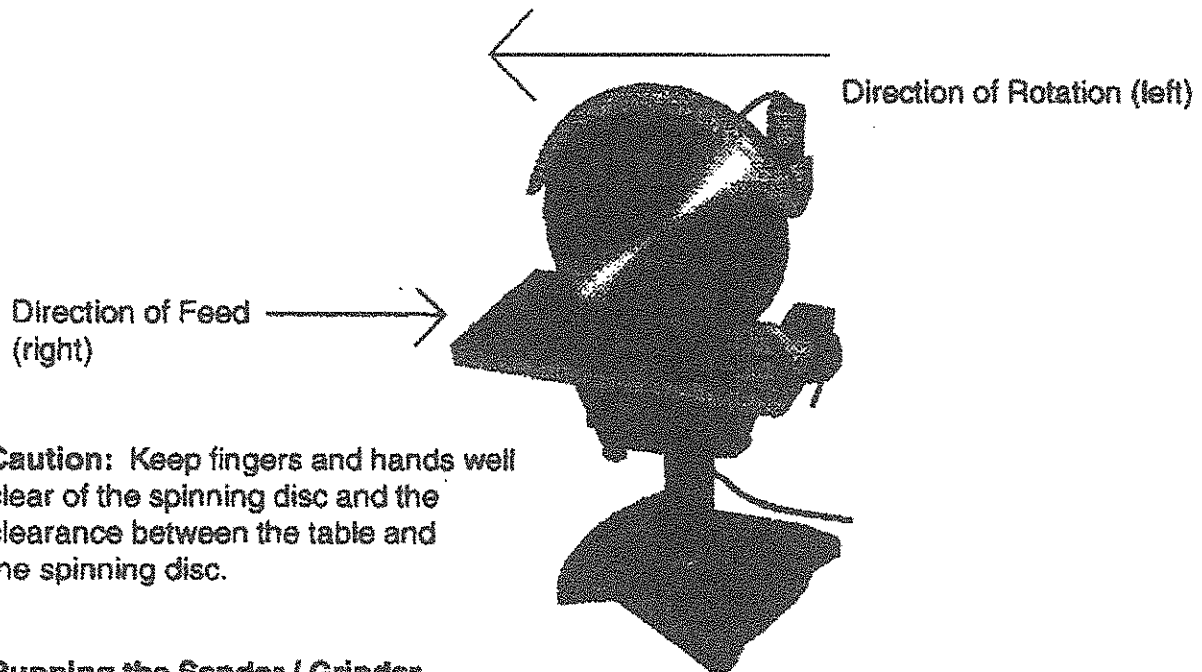
Operation (continued)

Refer to **Figure 1** on page 5.

3. To adjust the height of the Work Table, loosen the Height Lock lever and turn the Height Adjustment Wheel to the desired height. Tighten the Height Lock lever.

Note: Before operation, make sure you are working in the right direction of feed. The disc will travel in either direction. You must move your workpiece in the opposite direction of the disc. See **Figure 2** below. Failure to feed the material in the proper direction will lead to serious personal injury or property damage.

Figure 2



Caution: Keep fingers and hands well clear of the spinning disc and the clearance between the table and the spinning disc.

Running the Sander / Grinder

1. You should always use a miter gauge (not included) to move material through the Sander / Grinder. Miter gauges are available. This tool uses a 3/4" miter gauge. Read the instructions that come with the miter gauge for miter settings and adjustments. Always hold the workpiece firmly against the miter gauge and the Table; be aware of the potential for workpiece "kickback".
2. Plug in the Sander / Grinder.
3. Make sure the Neutral / Direction Switch is in neutral to start. See **Figure 1** on page 5
4. Turn the On / Off Switch to On. See **Figure 1** on page 5.
5. Determine the direction you want the disc to spin, and flip the Neutral / Direction Switch in that direction.

Warning! Make sure you feed material from the opposite direction. Failure to feed the material in the proper direction will lead to serious personal injury or property damage. See **Figure 2** above.

Operation (continued)

6. When you finish sanding or grinding, turn the Neutral / Direction Switch to neutral and wait until the wheel comes to a complete stop. Turn off the On / Off Switch. See Figure 1.
7. If you wish to switch rotation direction without turning off the machine, turn the Neutral / Direction Switch to neutral and wait until the wheel comes to a complete stop, and then turn switch to the opposite direction.

Maintenance

Warning! Make sure your Sander / Grinder is unplugged before attempting any maintenance.

- Clean the surface of the Sander / Grinder with a clean cloth or soft dry brush.
- Check all nuts and bolts for tightness. Tighten if necessary.
- Check sanding disk for tears or frays. Replace if necessary.
- Clean debris from 3/4" miter slot.

Parts List

Part No.	Description	Qty.	Part No.	Description	Qty.	Part No.	Description	Qty.
1	Base	1	36	Spring Pin	1	71	Set Screw	4
2	Column	1	37	Worm Gear	1	72	Fixed Washer	8
3	Cover/Support	1	38	Washer	1	73	Motor Base	2
4	Screw	4	39	Fixed Washer	1	74	Washer	4
5	Spring Washer	4	40	Sheave Stand	1	75	Fixed Nut	4
6	Set Washer	4	41	Lock Handle	1	76	Fixed Screw	4
7	Motor Mount	1	42	Knob	1	77	Steel Washer	8
8	Upper Spring Pin	1	43	Rack	1	78	Motor	1
9	Stud Bolt	1	44	Rack Set Screw	2	79	Nut	4
10	Fixed Nut	1	45	Solid Segment	1	80	Cord	1
11	Set Spring Washer	1	46	Table	1	81	Equal Key	1
12	Fixed Washer	1	47	Screw	1	82	Screw	3
13	Spring Stud Bolt	1	48	Fixed Pin	1	83	Fixed Washer	3
14	Stud Washer	1	49	Table Adj.	1	84	Hub	1
15	Bracket	1	50	Table Screw	1	85	Disc	1
16	Spring	2	51	Table Washer	1	86	Clamp Block	1
17	Keeper	2	52	Pilot	1	87	Clamp Screw	1
18	Sheave	2	53	Pilot Screw	4	88	Sanding Cloth	1
19	Fixed Screw	1	54	Spring Pin	1	89	Disc Guard	1
20	Fixed Washer	2	55	Pilot	1	90	Left Arm Guard	1
21	Fixed Nut	1	56	Gear Segment	1	91	Right Arm Guard	1
22	Pin	1	57	Scale Set Knob	1	92	Guard Screw	4
23	Screw	1	58	Scale Plate	1	93	Guard Washer	4
24	Fixed Nut	1	59	Gear Segment	1	94	Guard Bracket	2
25	Wire Rope	1	60	Worm Fill	1	95	Screw	2
26	Screw Bracket	1	61	Spring Pin	1	96	Washer	2
27	Handle	1	62	Shaft	1	97	Set Screw	2
28	Handle Wheel	1	63	Screw	1	98	Set Washer	2
29	Set Screw	1	64	Pointer	1	99	Set Nut	2
30	Shaft Base	1	65	Knob	1	100	Adj. Screw	2
31	Set Screw	4	66	Scale Set	1	101	Switch Plate	1
32	Steel Washer	4	67	Protractor	1	102	Screw	2
33	Shaft	1	68	Nail	3	103	Switch Control	1
34	Washer	2	69	Set Screw	1	104	Screw	4
35	Spring Pin	1	70	Set Nut	1	105	Steel Washer	4

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.

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

Assembly Drawing

