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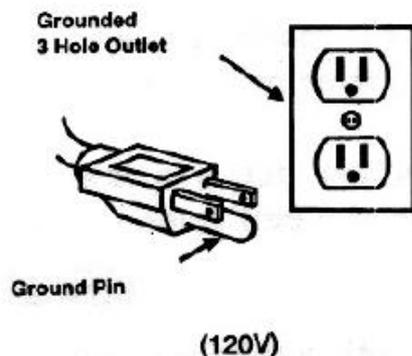
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# SAFETY PRECAUTIONS

## GROUNDING INSTRUCTIONS

General –This floor – finishing machine shall be grounded while in use to protect the operator from electric shock. The machine is provided with a three –conductor cord and a three contact grounding type attachment plug to fit the proper grounding type receptacle. The green [or green and yellow] conductor in the cord is the grounding wire. Never connect this wire to other than the grounding pin of the attachment plug.

This machine is for use on a nominal 120-Volt circuit and has a grounding plug that resembles the plug illustrated in figure below. Make sure that the machine is connected to an outlet having the same configuration as the plug. No adapter should be used with this machine.



This machine is intended for Commercial use. It is constructed for use in an indoor environment and is not intended for any other use. Use only recommended accessories.

All operators shall read, understand and exercise the following safety precautions:

1] Do not operate machine:

- Unless trained and authorized.
- Unless you have read and understand operators manual.
- In flammable or explosive areas.
- With a damaged cord or plug.
- If not in proper operating condition.
- In outdoor areas.
- In standing water.
- With the use of extension cords.

2] Before operating machine:

- Make sure all safety devices are in place and operate properly.

3] When using machine:

- Do not run machine over cord.
- Do not pull machine by cord or plug.
- Do not pull cord around sharp edges of corners.
- Do not unplug by pulling on the cord.
- Do not stretch cord.
- Do not handle plug with wet hands.
- Keep cord away from heated surfaces.
- Report machine damage or faulty operation immediately.

4] Before leaving or servicing machine:

- Turn off machine.
- Unplug cord from outlet.

5] When servicing machine:

- Unplug cord from outlet.
- Use manufacturer supplied or approved replacements parts.
-

# Operation of Floor Machines

**\* READ OPERATORS MANUAL THOROUGHLY PRIOR TO OPERATING OR SERVICING THIS MACHINE.**

## **GENERAL USE**

1. Remove any obstructions or other obstacles in the area which is to be cleaned.
2. Place the handle in the upright position and tilt machine back until handle rests on the floor  
**\* Be sure the machine is not plugged into an outlet**
3. Attach the pad driver or brush to the machine by placing the clutch plate over the gearbox hub and turning the driver / brush ¼ turn.
4. Place machine back into its upright position.
5. Plug power cord into a grounded outlet.  
**\* Never use an extension cord in conjunction with the standard power cord.**
6. The handle height may be adjusted by lifting up the compression handle which is located on the right side of the handle tube about 1 foot above floor level. Release the compression handle and adjust handle to safe operating height, then push back down on the compression handle to lock the handle in operating position.
7. Select either low speed (185rpm) or high speed (330rpm) by pushing the motor mounted switch into the low or high position.  
**\* Never change the speed while operating the machine. Be sure the power is turned off prior to changing the speed.**
8. To start the machine, press the red safety button on the top of the upper switch housing, and then squeeze either of the operating triggers. (the safety button must be depressed prior to squeezing the operating triggers.)
9. When the machine is in operation, both hands should be placed on the switch housing (upper handle).

10. During operation, to make the machine go right, gently raise the handle. To make the machine go left, gently lower the handle.
11. To stop the machine at any time, simply release the operating trigger(s) and the machine will stop automatically.

## **MAINTENANCE**

To keep the machine performing well for many years, please follow the following maintenance procedures.

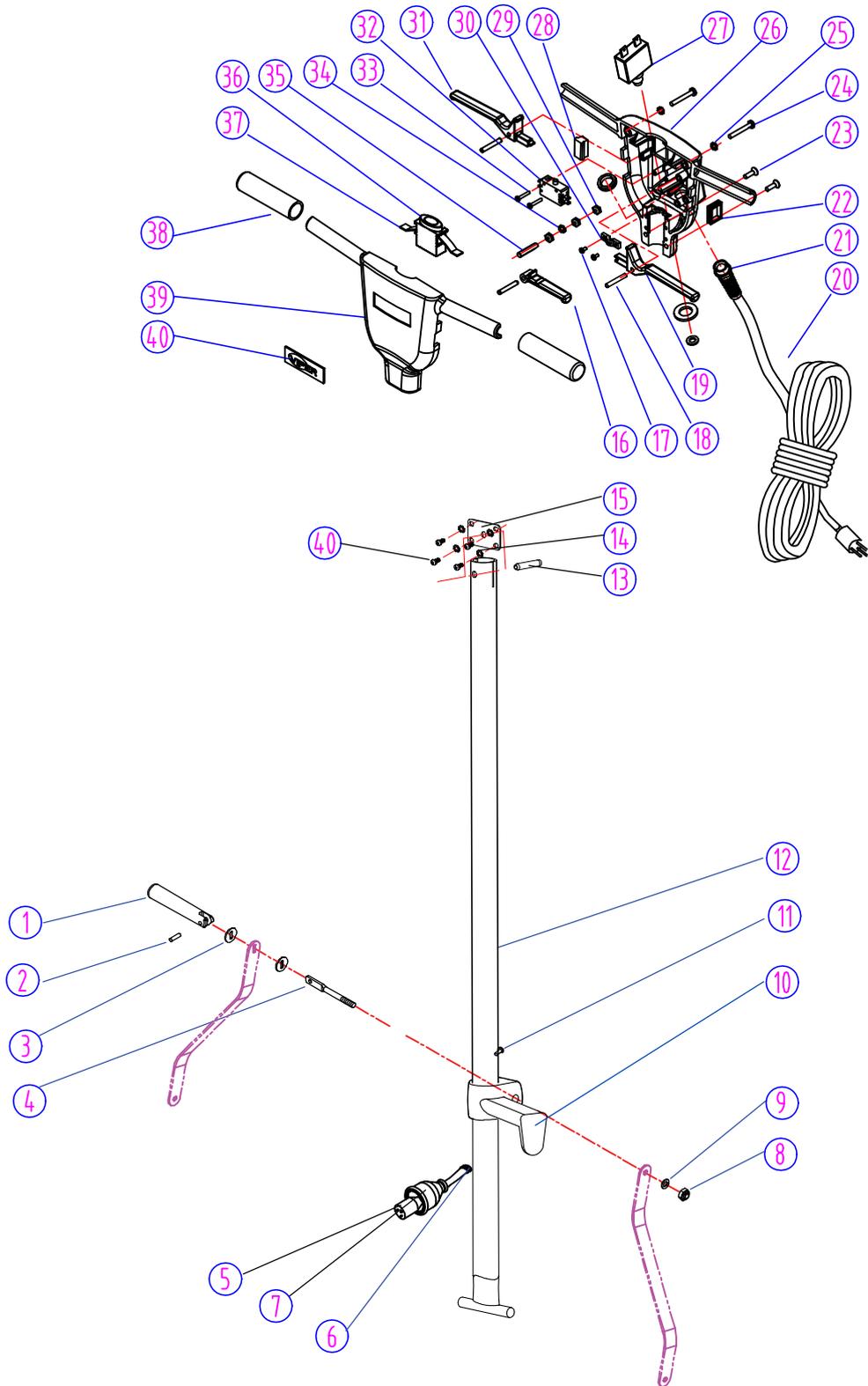
**\* Always confirm that the machine is unplugged prior to performing any maintenance or repairs.**

1. Unplug machine as soon as you are done using it.
2. Tilt machine back and remove pad driver or brush.  
**\* Never store a low speed machine with the pad driver or brush mounted to the machine.**
3. Clean the outside of the machine with a mild cleaner.
4. Check power cord for any damage. If damage is detected, replace power cord immediately.
5. Lubricate wheels with a water resistant lubricant once a month.
6. Check machine for loose or missing nuts and bolts, and replace as necessary.
7. If the machine is used in a dusty environment, you may remove the motor cover and blow the motor clean with compressed air. This will ensure proper ventilation, and allow the motor to run cooler.

## **STORAGE**

1. Unplug machine from power source and wrap cord on handle.
2. Tilt machine back and remove pad driver or brush.
3. Store machine in upright position and in a dry area.

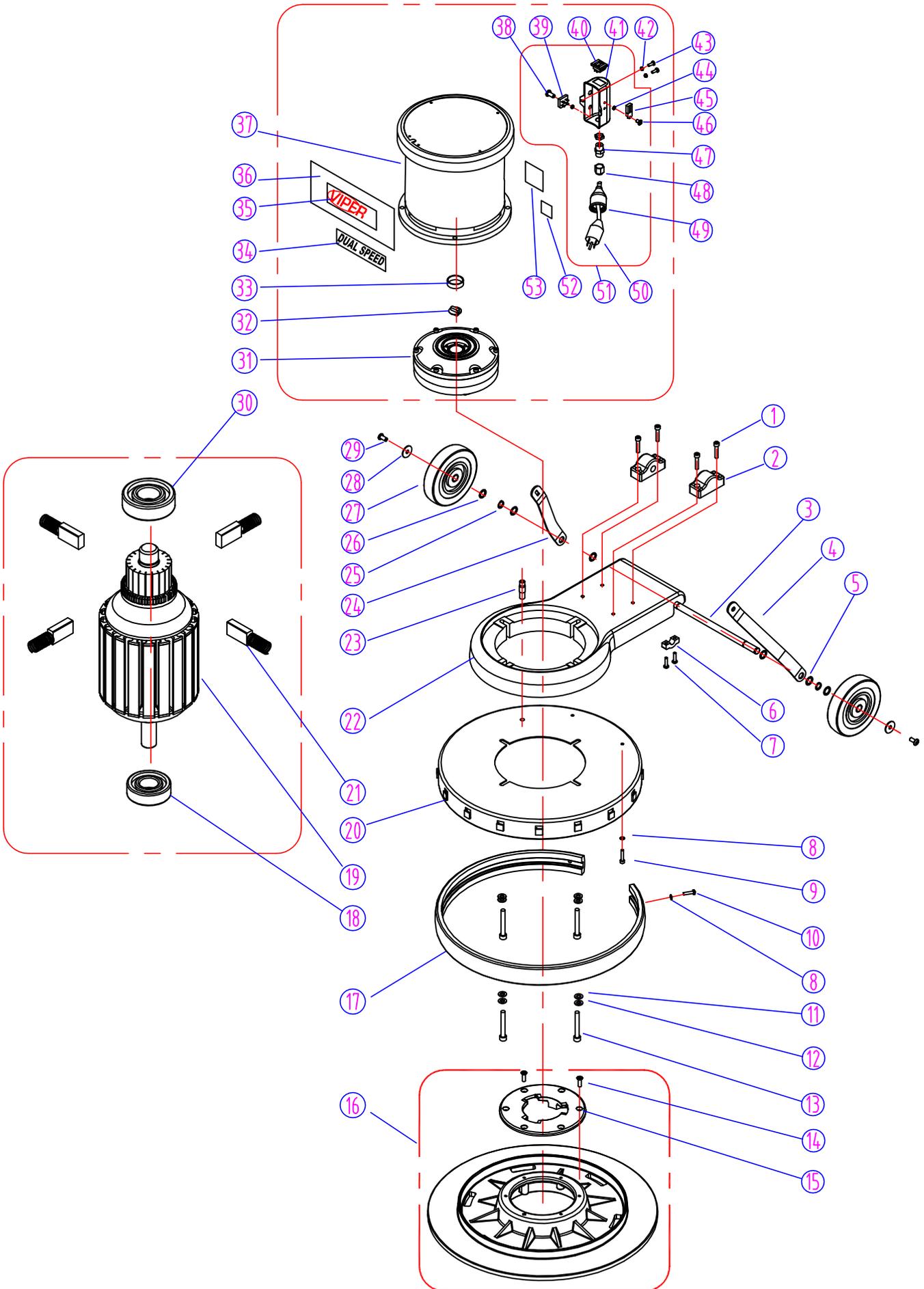
HANDLE GROUP FOR VN20DS



**HANDLE GROUP FOR VN20DS**

<b>DIA NO</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>NO REQ'D</b>
1	VF30016	HANDLE RELEASE	1
2	VF30017	SCREW	1
3	VF30018	WASHER,PLAIN	2
4	VF300152	BOLT,HANDLE RELEASE	1
5	VF45125	CORD,HANDLE	1
6	AS41901	PLUG PROTECTOR SMALL MALE	1
7	VF50120A	GROMMET	1
8	VF13504	NUT,LOCK,M10	1
9	VF30027	WASHER,PLAIN	1
10	VF300141	CORD WRAP BLOCK	1
11	VF13493	SCREW,M6X10	1
12	AS112205A	TUBE	1
13	VF13570	PIN	1
14	VF13604	WASHER,TEETH,M5	4
15	VF40169	CONNECTION PLATE	1
16	VF44018	LEVER,SOLUTION	1
17	VV13661	SCREW,M4X12	2
18	VF48306	PIN	3
19	VF44016	LEVER,LEFT,SWITCH	1
20	VF45119	CORD,POWER SUPPLY	1
21	AS22009	STRAIN RELIEF,CORD	1
22	VF30108	GASKET,HANDLE,SOLUTION	1
23	VF14223	SCREW,M6X25	2
24	VF14218	SCREW,M6X45	2
25	VF13528	TEETH WASHER,M6	2
26	VF30102	REAR COVER	1
27	VF99010C	BREAKER,CIRCUIT	1
28	VF30109	COVER	1
29	GT13013	NUT,M4	3
30	VF48309	CLAMP BLOCK	1
31	VF44017	LEVER,RIGHT,SWITCH	1
32	VF44203	SWITCH ASSY	1
33	VF14212	SCREW M3X25	2
34	VF13527	WASHER,TEETH,M4	1
35	VF13526	SCREW,M4X30	1
36	VF46705	SAFETY BOTTON	1
37	GV40218	SPRING,SAFETY BUTTON	1
38	VF48310	HANDLE GRIP	2
39	VF30101	FRONT COVER	1
40	VF47035A	LOGO	1
41	VF14222	SCREW,M5X12	4

BASE GROUP FOR VN20DS



**BASE GROUP FOR VN20DS**

<b>DIA NO</b>	<b>PART NUMBER</b>	<b>DESCRIPTION</b>	<b>NO REQ'D</b>
1	GT13080	SCREW, M6 X 30	4
2	VF30011	CLAMP BLOCK, HANDLE	1
3	VF30026	AXLE	1
4	VF30020	BRACKET, LEFT HANDLE	1
5	VV20274	WASHER, PLAIN, M13	4
6	GV40235	CLAMP BLOCK, AXLE	2
7	VV13621	SCREW, SELF-TAPPING, ST, M5 X 20	4
8	VF13474A	WASHER, PLAIN, M5	4
9	VF13613	SCREW, M5 X 20	2
10	VA13474	SCREW, M5 X 16	5
11	VF13524	WASHER, PLAIN, M8	4
12	VF13519	WASHER, LOCK, M8	4
13	VF13618	SCREW, 5/16" - 2 1/4"	4
14	MF-VF002-4A	SCREW, SELF-TAPPING, 1/4"-1"	6
15	MF-VF002-2	CLUTCH PLATE	1
16	MF-VF022	PAD HOLDER, 19"	1
17	VF30004	BUMPER, 20"	1
18	ZD48315	BEARING, #6002Z	1
19	ZD48200	SHAFT & ROTOR ASSEMBLY	1
20	VF30006	FRAME, 20"	1
21	VF99926-2	KIT, CARBON BRUSH	1
22	VF30008	ALUMINIUM BASE, MOTOR	1
23	VF40152	HOSE BARB	1
24	VF30019	BRACKET, HANDLE, RIGHT	1
25	VF13520	WASHER, LOCK	2
26	VF50119	WASHER, LOCK, M12	2
27	VF48202	WHEEL, 5"	2
28	VF13666	WASHER, M6	2
29	VF44012	SCREW, M6 X 12.7	2
30	ZD40225	BEARING, #6203Z	1
31	VF999802B	GEAR BOX	1
32	VF99021	COULPING	1
33	MT01102	SLEEVE	1
34	VF40990	LABEL, DUAL SPEED	1
35	VF41079	LABEL, VIPER	1
36	ZD48310	LABEL, MOTOR	1
37	ZD48000	MOTOR, DUAL SPEED	1
38	VA13473	SCREW, M4 X 16	1
39	VF44204	RECTIFIER	1
40	VA91347	SWITCH	1
41	ZD48309DY	SHELL	1
42	VF13604	WASHER, TOOTH, M5	2
43	VF14214	SCREW, M5 X 8	2
44	GT13014	NUT, NYLON INSERT, M4	2
45	ZD48316A	TRIAC ASSEMBLY	1
46	GT13048	SCREW, M4 X 12	1
47	VV67405	STRAIN RELIEF, CORD	1
48	VV67405-1A	NUT	1
49	AS41902	PLUG PROTECTOR, LARGE, FEMALE	1
50	VF999794	CORD, MOTOR	1
51	ZD48330	KIT, SPEED ADJUSTMENT	1
52	VF40994	READ MANUAL LABEL	1
53	VF40997	SERIAL TAG	1

# Wiring Diagram

