

# FORMAX<sup>®</sup>

---

---

FD 87HDS Hard Drive Shredder

OPERATOR/MAINTENANCE/PARTS MANUAL  
FIRST EDITION



# TABLE OF CONTENTS

<b>TOPIC</b>	<b>PAGE</b>
Safety Precautions	1-2
Checking Safety Devices	3
Overview	4
Specifications	4
Installation	4
Start-up: Main Switch and Control Panel	5
Operation, Overloading	6
Emptying Waste Bin	7
Exterior Cleaning	7
Maintenance & Inspection	7 - 8
Parts	9 - 15

# **Safety Precautions**

## **“Work safety” symbol**



This symbol marks all work safety notes in this manual which can endanger the health or life of operators. Please pay attention to this symbol and exercise particular care in such cases. Please also forward all work safety notes to other users. Apart from the instructions in this manual, you should also follow generally applicable safety and accident prevention regulation.

## **“Attention” notes**



This icon marks information in this manual which requires particular attention including guidelines, regulations, instructions and correct working procedures intended to prevent damage to the machine and/or other equipment.

## **Notes on work safety**

The FD 87HDS Hard Drive Shredder has been inspected for safety. However, improper operation and misuse risk the following:

- the health or life of the operator
- the machine and other valuable equipment
- the efficient operation of the shredder.

The FD 87HDS Hard Drive Shredder employs state-of-the-art technology and is safe to operate. However, this machine can become hazardous if used incorrectly, by untrained staff or for purposes other than those for which it is designed.

- Keep long hair, loose clothes, ties, scarves, etc. away from the shredding chamber.
- Only one person should operate the shredder at a time.
- Always follow local safety and accident prevention regulations when operating the shredder.
- No pedestals or other raised surfaces may be placed in the vicinity of the machine if they alter the safety clearances.
- All connecting cables must be laid in such a way that they cannot be tripped over.
- Mechanical wearing parts must be inspected once a year.

The FD 87HDS Hard Drive Shredder is intended **only** for shredding discarded hard drives from desktop and laptop computers. The hardened, solid-steel cutting blades are designed to handle these materials.

Any other use beyond the scope described here is regarded as not being in accordance with the instructions. The manufacturer will not be held liable for damage resulting from incorrect use; the user alone is responsible.

Users must also follow the assembly, dismantling, re-assembly, operation and maintenance procedures specified by the manufacturer. The operation, maintenance and repair of the machine must be performed only by trained personnel who are aware of the potential dangers.

The relevant accident prevention regulations as well as other generally recognized rules concerning safety engineering and occupational safety must be observed.

- Each person responsible for assembling, dismantling and reassembling and maintenance (inspection, servicing, repair) of the shredder must have read and fully understood the entire operating manual, in particular the "Safety" section.
- The shredder may only be operated, serviced and repaired by authorized, trained personnel.
- The shut-down procedures specified in this manual must be followed during all assembly, dismantling and re-assembling, cleaning, and maintenance work. This type of work must be performed only when the machine is idle.
- The drive of the FD 87HDS shredder must be secured against unintentional switching-on before performing work on the machine. Set the main switch to "Off" and unplug machine from wall outlet.
- After repair, check all protective devices to be sure they have been re-installed before operation.
- Do not perform any work which may impair your safety while operating the machine.
- Immediately report any changes which impair your safety to the person responsible. Shut the machine down until such damage has been resolved.
- Before operating the shredder, ensure that it is in perfect working condition.
- Ensure that the workplace around the FD 87HDS shredder is always clean and safe.
- The user must not make any conversions or changes on his own initiative which impair the safety of the FD 87HDS shredder. Protective devices must not be removed or rendered inoperative.
- All work which is not directly connected to the normal operation of the machine must always be performed when the machine is idle.
- Doors and flaps must not be opened until the machine is motionless. Observe safety labels!
- Test the safety features after installing or repairing electrical components.

## Checking the safety devices

Check the safety devices:

- at the start of each work shift (when operation is sporadic)
- at least once a week in continuous operation
- after each maintenance or repair

Check the safety devices for:

- specified condition
- specified location
- safe attachment
- specified function

Correct any defects before using the shredder.

1. Immediately shut down the shredder if defects occur during operation and make sure the defects are fixed.
2. Do not modify or remove protective devices. Do not switch off protective devices. For safety reasons, modifications of the machine are not allowed.



**Danger:** Defective safety devices can cause serious accidents. If safety devices are not working properly, the shredder should immediately be put out of operation.

**Never** reach into the cutting system while it is operating; you risk serious injury!

Only when all safety devices are operating correctly can the shredder be used again.

Operate the shredder only when these devices have been checked and are in order.

1. **Emergency Stop Button (A)** on the left of the control panel:

The shredder must switch off immediately when the **Emergency Stop Button** is pressed, and the Emergency stop light must illuminate.

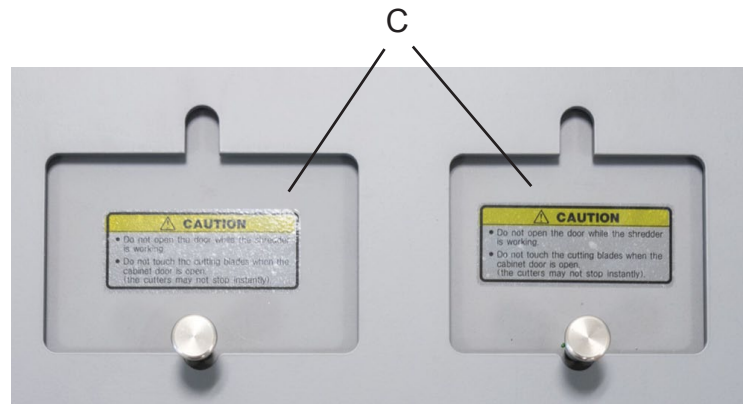
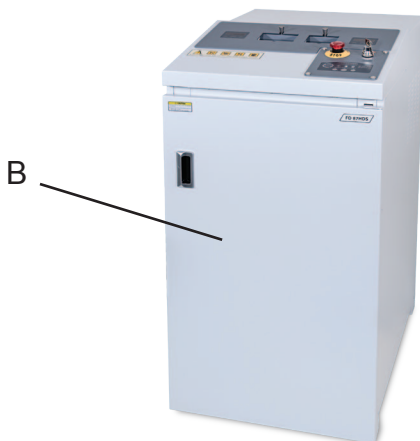


2. **Waste Bin Door (B):**

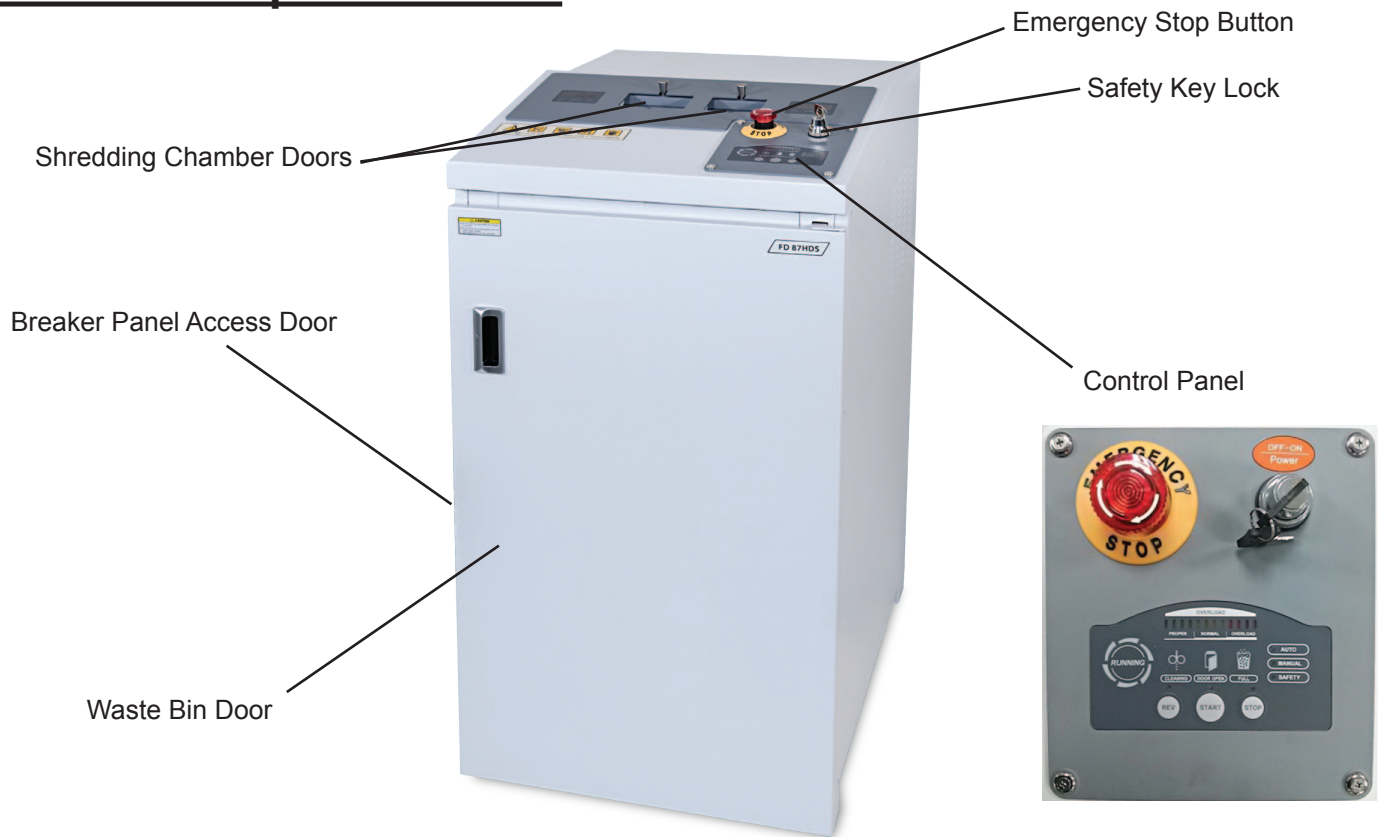
The shredder must stop immediately when the door is opened.

3. **Shredding Chamber Safety Shields (C):**

The cutting blades should not engage if the shredding chamber safety shields are open.



# Overview & Specifications



## Specifications

	<b>3.5" Desktop Hard Drive</b>	<b>2.5" Laptop Hard Drive</b>
Feed Opening:	4.72" (120mm)	3.54" (40mm)
Shred Particle Size:	1.6" (40mm) x random	.19" (5mm) x random
Infeed Capacity:	1 hard drive at a time	1 hard drive at a time
Speed:	3 - 4 drives per minute	3 - 4 drives per minute
Dimensions:	19.68" W x 18.5" D x 35" H (500 x 470 x 890mm)	
Weight:	1,102 lbs. (500kg)	
Security Level:	H-6 (DIN 66399 standard)	
Power Supply:	3-Phase, 220V, 20Amp NEMA L15-20P plug included NEMA L15-20R receptacle required	

\* Capacity may vary due to variations in power supply.

## Installation

1. Appropriate power outlet must be available at installation site.
2. The FD 87HDS is delivered completely assembled. During transport, be aware of the shredder's high center of gravity.
3. The shredder can be moved on its casters. If a fork-lift is used, be sure to use the designated pick-up points.
4. Install the shredder on a flat and even floor without carpeting.
5. Once the shredder is in place, lock the caster brakes, and plug in power to appropriate power source.

# Start-up and Operation

## Main Switch

1. On the left side of the machine, open the door leading to the electrical control panel. Push on the lever (Fig. 1) and the handle will pop out. Pull to open (Fig. 2).
2. Flip the main power switch to the UP position (Fig. 3). Close electrical control panel door.
3. Insert key into On-Off switch to right of control panel (Fig. 4). Turn key right, to the On position.



Fig. 1



Fig. 2

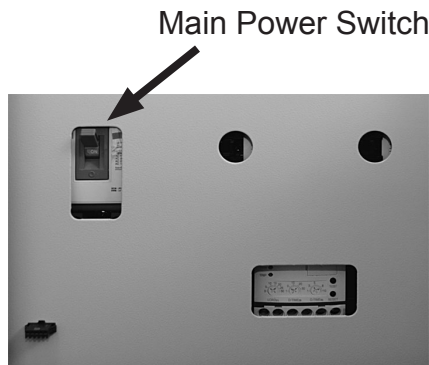
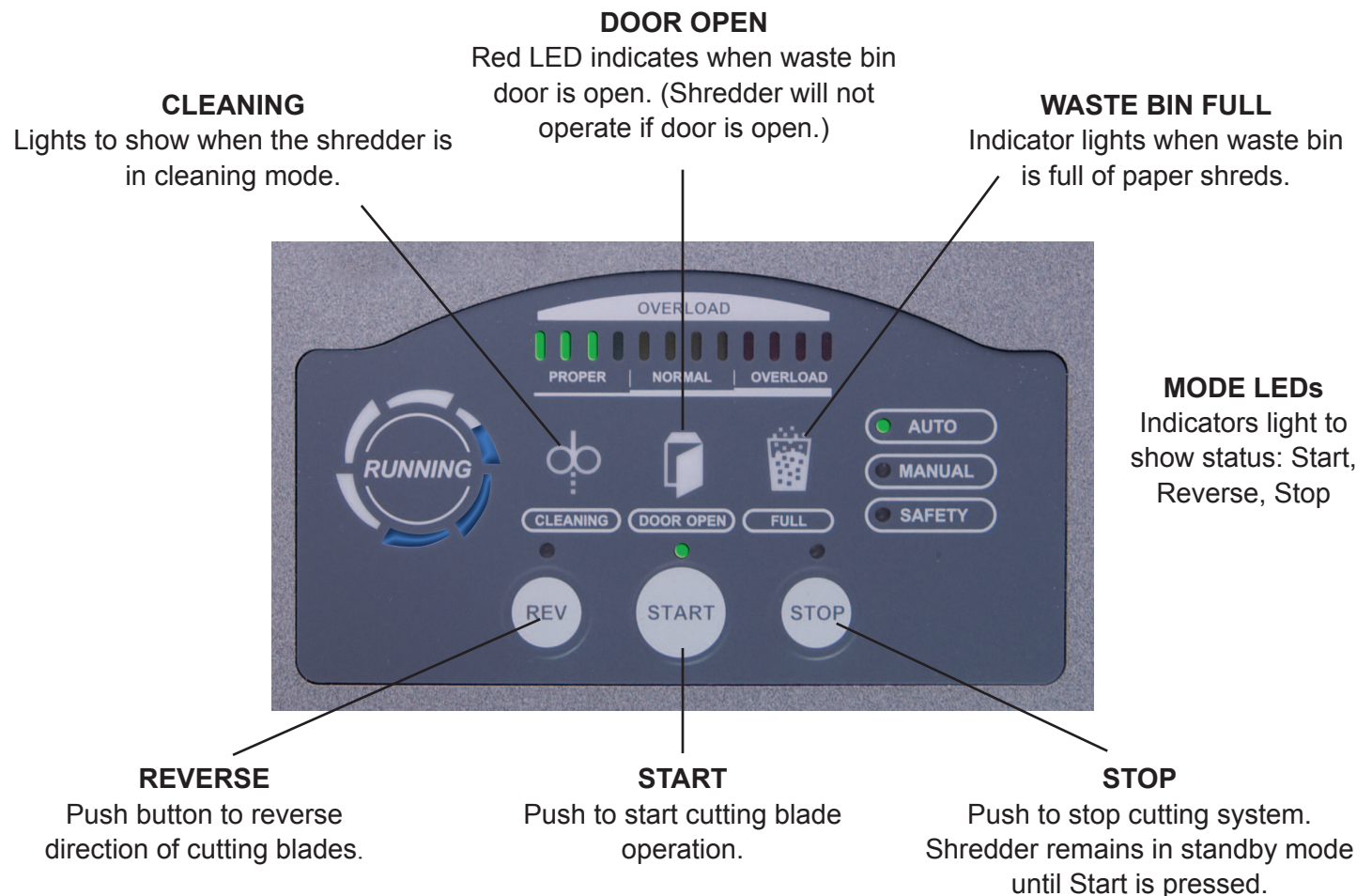


Fig. 3



Fig. 4

## Control Panel





## **Operation**

1. Set main switch to ON (Fig. 3). Turn the OFF/ON key switch on the control panel to the ON position.
2. Open the appropriate shredding chamber door (based on the size of the hard drive). Drop in the hard drive to be shredded. Close the door.
3. Touch the START pad on the control panel. The blades will begin to move and shred the hard drive.

NOTE: If material is accidentally placed into the shredding chamber, DO NOT REACH FOR IT. Instead, press the Emergency Stop Button on the control panel. Turn off the key lock. Open the shredding chamber door and remove the items. To resume shredding, press the START pad.

### **Turning off the shredder**

1. To shut down the shredder, press the STOP pad on the control panel.
2. Turn OFF/ON key switch on the control panel to the OFF position.
3. Open the electrical control panel door, and flip the main power switch DOWN to the off position.

### **Overloading the motor**

If the shred capacity of the machine is exceeded, the shredder will stop automatically. To resume shredding:

1. Push and hold the reverse pad until the hard drive backs completely out of the shredder.
2. Press STOP on the control panel, then reinsert the hard drive.
3. Press START on the control panel. The shredding mechanisms will begin to move.
4. Continue shredding.

### **Frequent Overloading**

If the shredder is repeatedly overloaded, the motor can overheat, which will cause the shredder to switch off automatically. To resume shredding:

1. Allow the motor to cool down for approximately 20 - 30 minutes before using.
2. Once the motor has cooled sufficiently, resume shredding by following standard operating procedure (see Operation).



#### **NOTE:**

To maintain optimum performance and allow constant operation, avoid repeatedly overloading the shredder. This will prevent time-consuming reversing cycles, and will provide the highest possible throughput.

## Emptying the Waste Bin

Shredded particles accumulate in the waste bin during normal operation. When the red “Waste Bin Full” lamp lights, empty the waste bin.

1. Switch the shredder off by pressing the STOP pad on the control panel, turn the OFF/ON key switch to the OFF position and flip the main power switch to the OFF position.
2. Open the waste bin access door. Pull out and empty the waste bin.
3. Push the waste bin back in, close the door, turn power switches back on and resume shredding.

## Exterior cleaning

- Turn shredder off and unplug from wall outlet.
- Wipe the exterior surfaces with a soft cloth. If the surfaces are very dirty, use a neutral detergent, then wipe again with a soft cloth.

CAUTION:

- Never put water directly on the surface of the shredder.
- Never clean the case with benzene or thinner, since it will cause discoloration.

## Maintenance and Inspection



**NOTE: The maintenance procedures which follow should be performed only by authorized and trained technicians.**

### Removing & Reinstalling Side Covers

Each side cover is attached by ten Phillips head screws.

1. To remove a cover, insert screwdriver through access holes (Fig. 5), and remove screws.

NOTE: It is easier to remove the lower screws first, then the upper. When reinstalling the cover, install upper screws first, then lower.



Fig. 5

- **Checking the Cutting Head Chain Tension**

Check the chain tension once every week in the first month, then once a month thereafter.

1. Switch off the shredder and unplug from wall outlet.
2. Remove the right side cover.
3. The sagging of the chain (see Fig. 6) should be 9 - 14 mm, measured from the top inside of the frame to the cutting head chain.

If it is not within this range, loosen the tension screws until the sagging reaches the correct level. Retighten the tension nuts.

4. Replace the side cover, plug in the shredder.



**NOTE:**

Excessive tensioning of the chain can cause premature wear of the chain and bearings. The smallest allowed chain sagging in the first month of operation is 5 mm. After that, 9 mm.

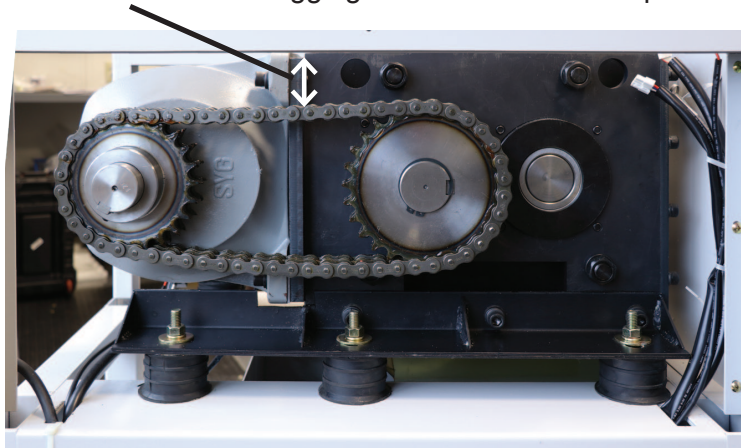
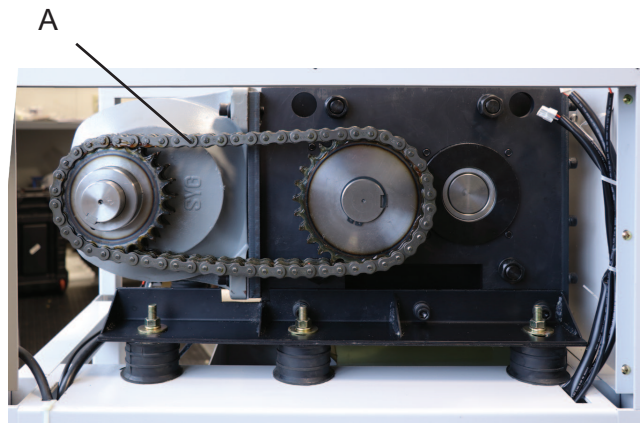


Fig. 6

- **Drive Chains:**

The drive chain should be checked during PMs, and greased as needed.

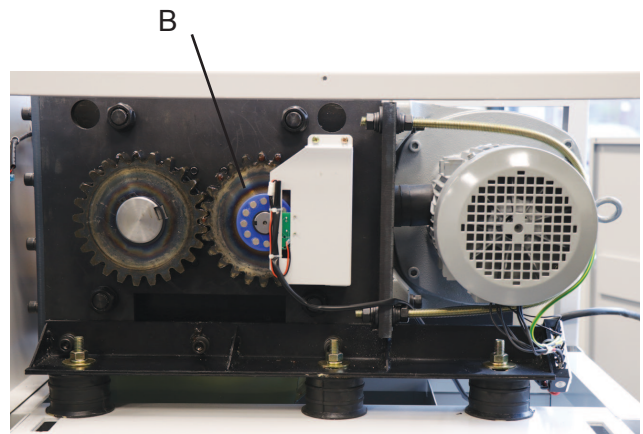
1. Switch off the shredder and unplug from wall outlet.
2. Remove both side covers.
3. Grease the motor drive chain (A).
4. Replace side covers and plug in shredder.



Left Side

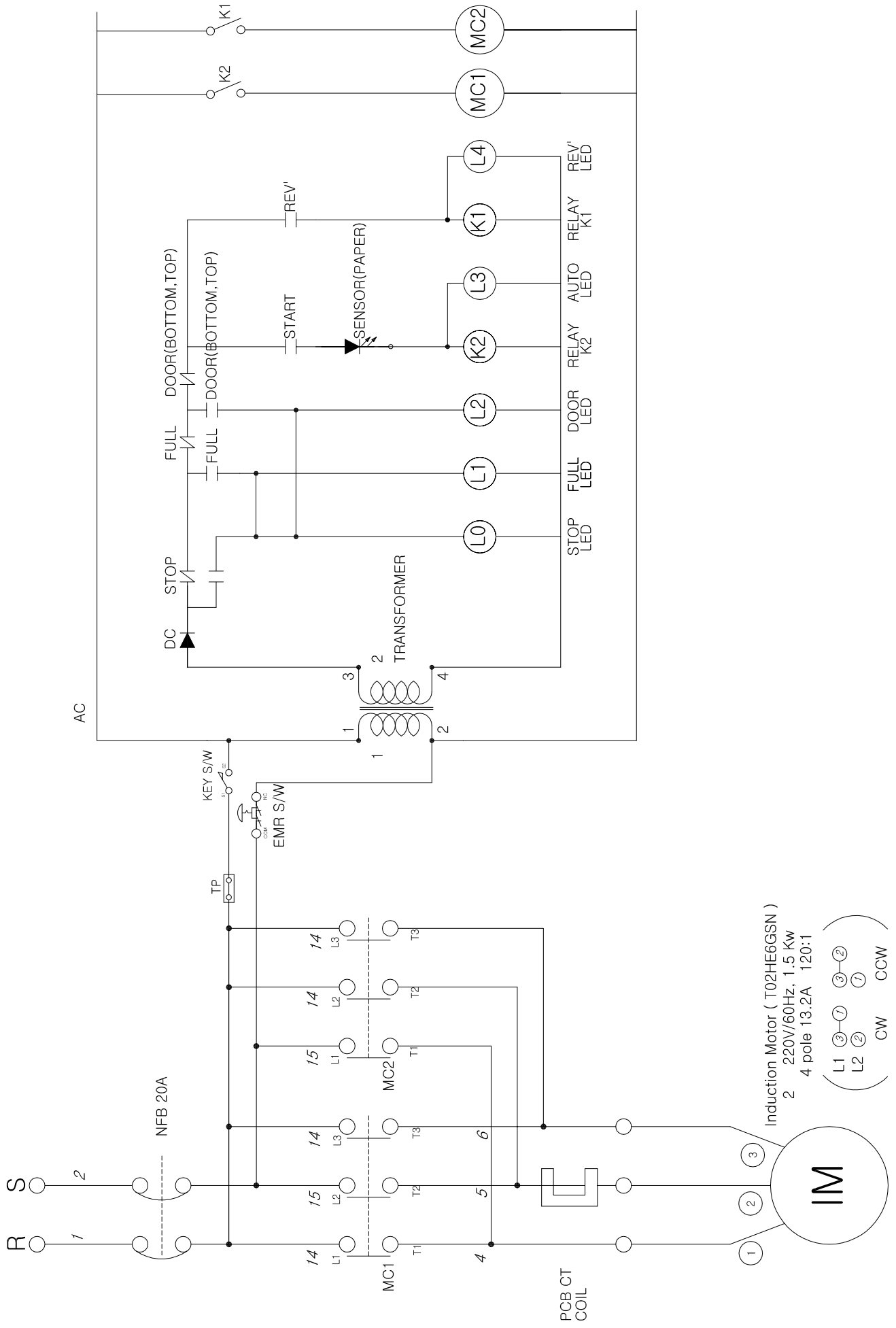
- **Synchronizing Wheels:**

1. Switch off the shredder and unplug from wall outlet.
2. Remove right side cover.
3. Grease the synchronizing toothed wheel (B).
4. Replace side cover and plug in shredder.

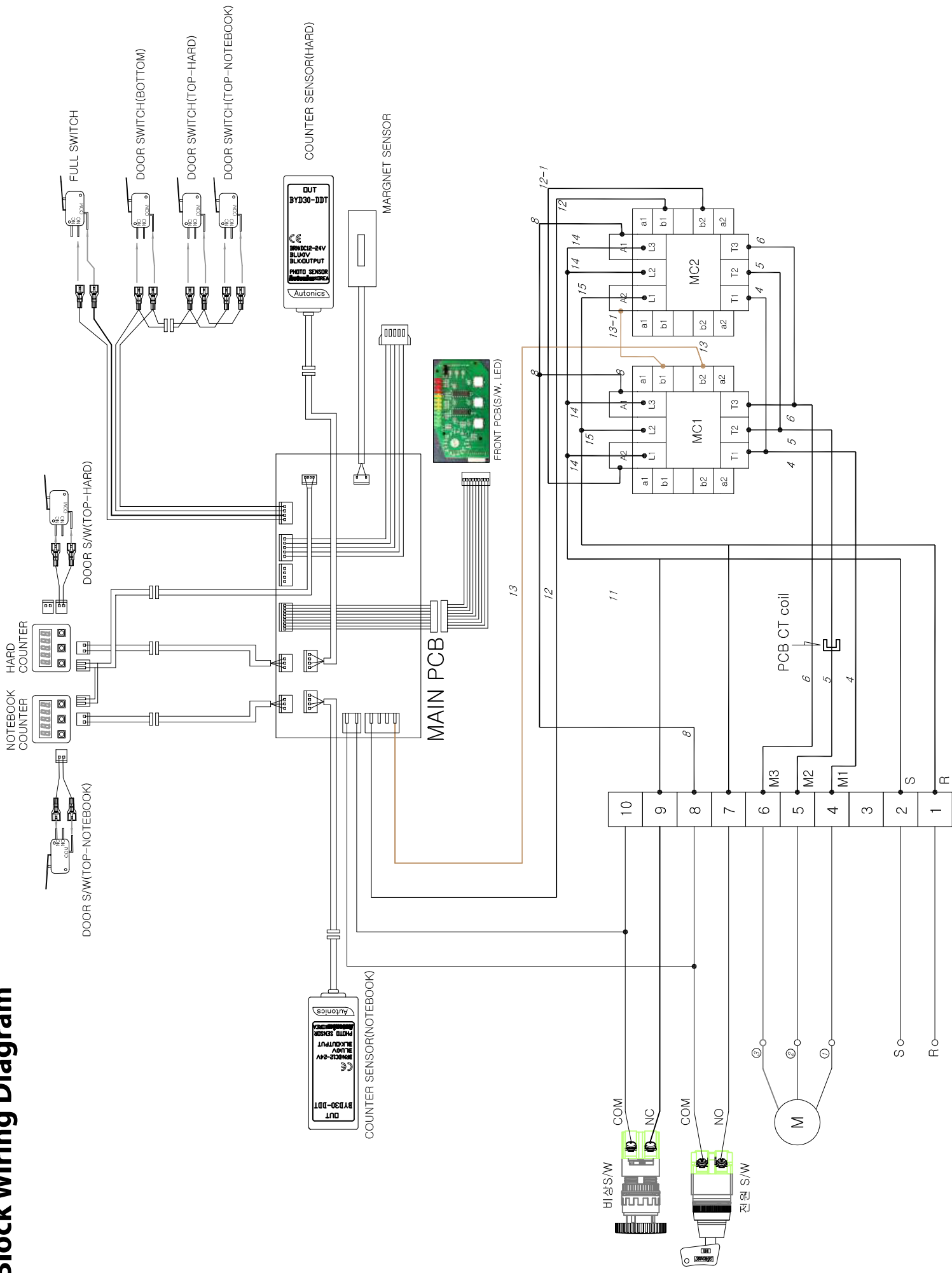


Right Side

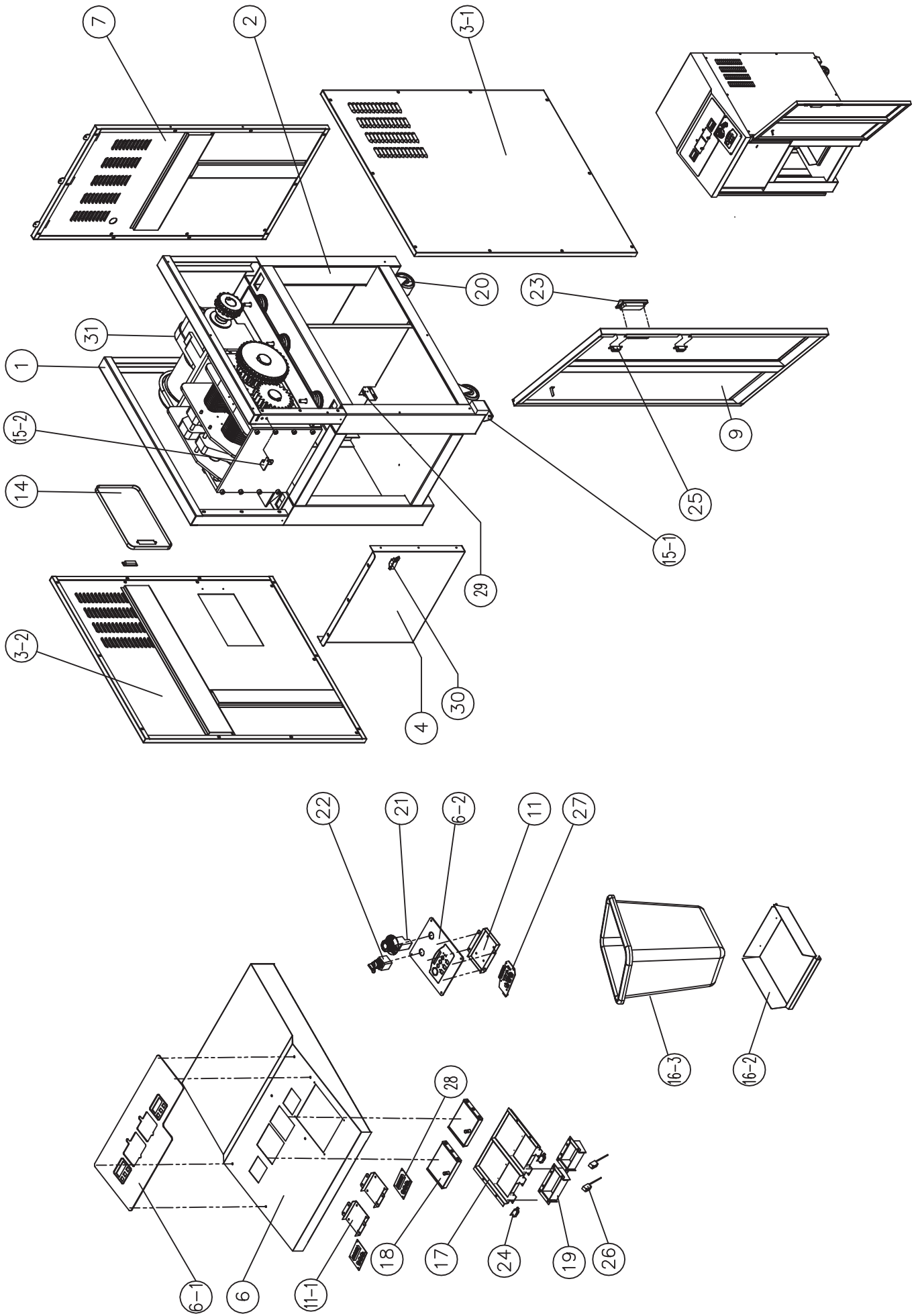
# Electrical Schematic



# Block Wiring Diagram

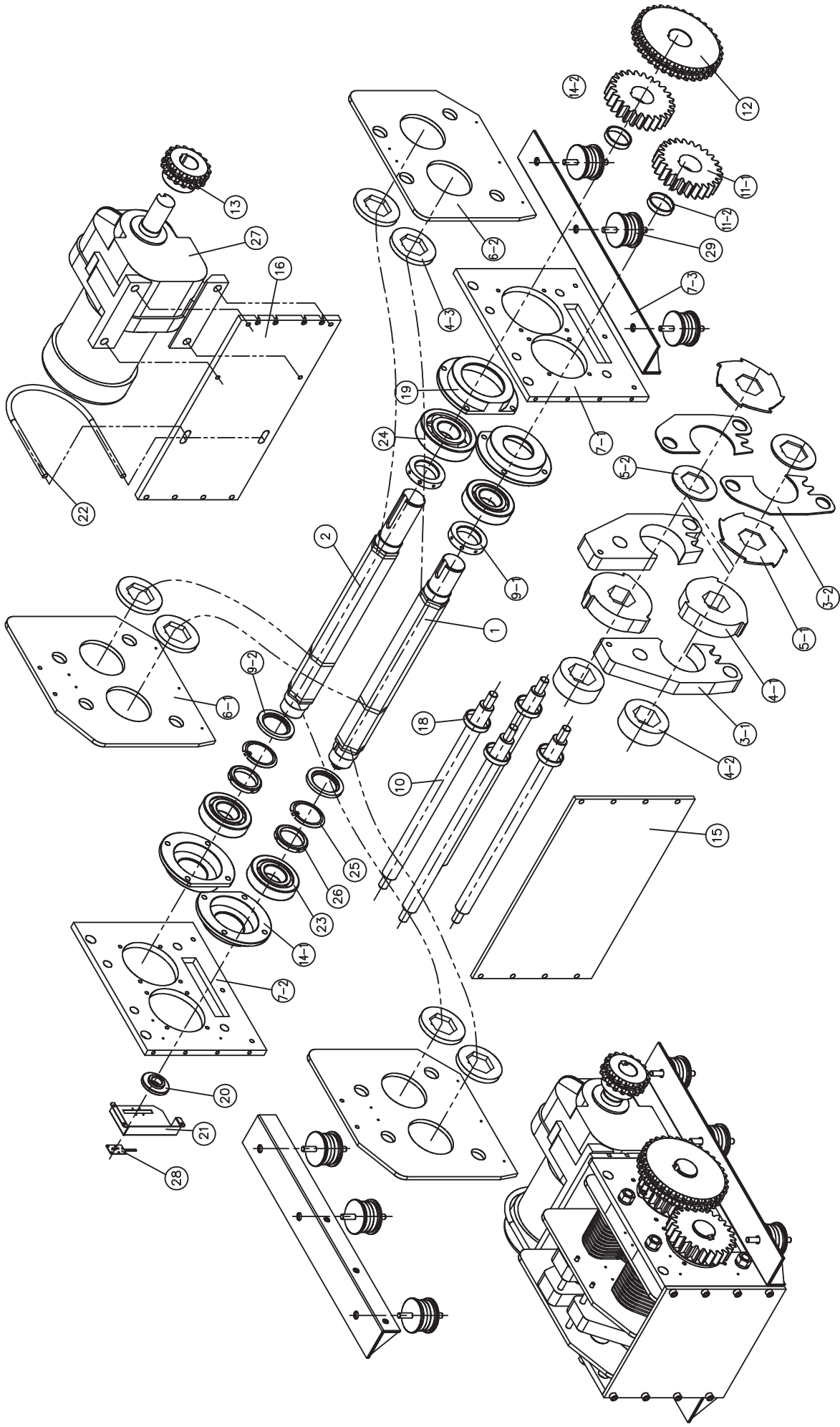


# CASE ASS'Y



No.	Part number	Description	Qty
1	13120HD-A-001	UPPER CASE	1
2	13120HD-A-002	BOTTOM CASE	1
3-1	13120HS-A-004	SIDE COVER(R)	1
3-2	13120HD-A-004	SIDE COVER(L)	1
4	13120HS-A-005	FRONT COVER	1
6	13120HD-A-005	TOP CASE	1
6-1	13120HS-A-006	TOP PLATE	1
6-2	13120HD-A-006	OPERATING PLATE	1
7	13120HS-A-007	REAR COVER	2
9	13120HD-A-007	DOOR	1
11	13120HS-A-008	KEYBOARD PCB COVER	1
11-1	13120HD-A-008	COUNTER PCB COVER	1
14	13120HS-A-009	PCB DOOR	1
15-1	13120HD-A-009	DOOR HINGE A	1
15-2	13120HS-A-010	DOOR HINGE B	1
16-2	13120HD-A-010	WASTE BASKET COVER	1
16-3	13120HD-A-020	WASTE BASKET	1
17	13120HS-A-011	SLOT UNDER COVER	1
18	13120HD-A-011	HARD SLOT DOOR	1
19	13120HS-A-012	HARD SLOT	1
20	13120HD-A-012	CASTER	4
21	13120HS-A-013	EMERGENCY SWITCH	1
22	13120HD-A-013	KEY SWITCH	1
23	13120HS-A-014	DOOR HANDLE	1
24	13120HD-A-014	FEEDER DOOR SWITCH	4
25	13120HS-A-015	DOOR MAGNET	2
26	13120HD-A-015	COUNTER SENSOR	2
N/S	13120HS-A-016	KEYBOARD PCB	1
N/S	13120HS-A-017	COUNTER PCB	2
N/S	13120HD-A-016	MAIN PCB	1
N/S	13120HD-A-017	MCCB	1
N/S	13120HS-A-018	MAGNET CONTACT	1
N/S	13120HD-A-018	FULL SWITCH	1
N/S	13120HS-A-019	DOOR SWITCH	1

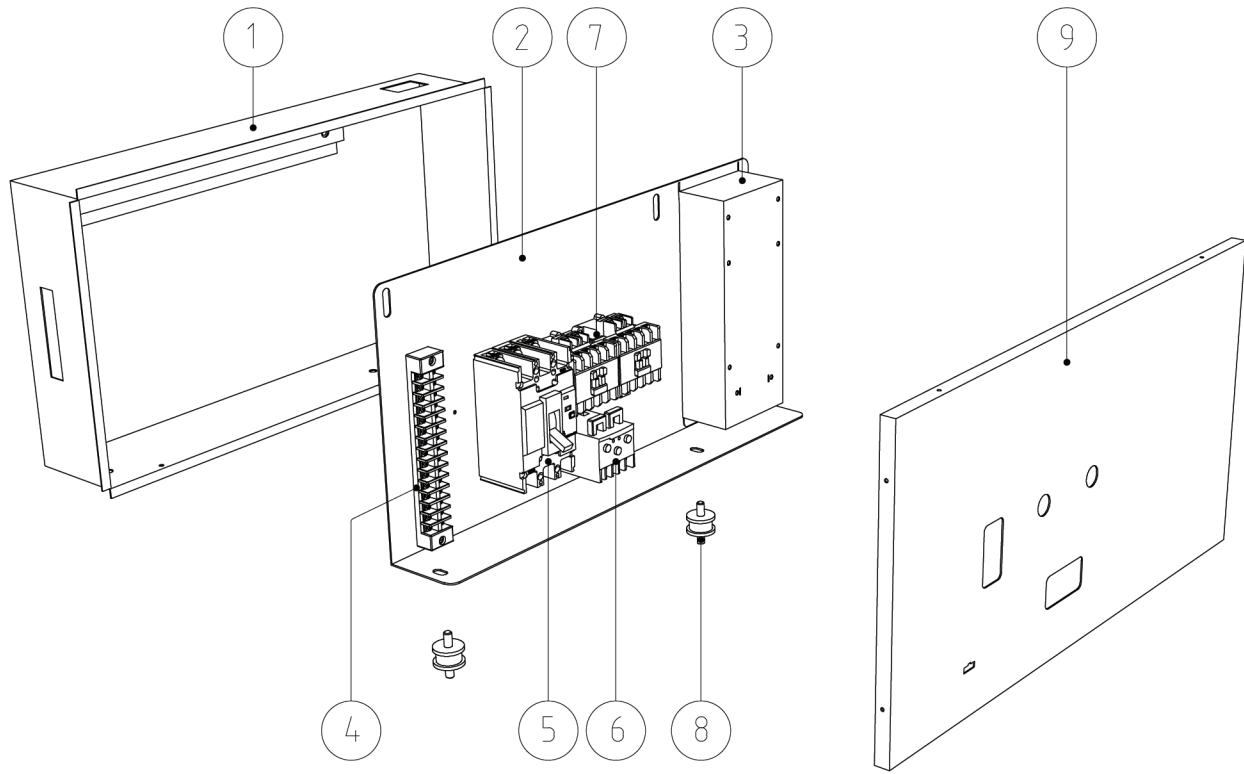
# Cutting Block





<b>No.</b>	<b>Parts number</b>	<b>Description</b>	<b>Qty</b>
1	13120HD-B-001	SHAFT(Short)	1
2	13120HD-B-002	SHAFT(Long)	1
3-1	13120HD-B-003	HARD DRIVE GUIDE	3
4-1	13120HD-B-004	HARD DRIVE CUTTER	3
5-1	13120HD-B-005	NOTEBOOK CUTTER	3
5-2	13120HD-B-006	GUIDE SUPPORT RING	4
6-1	13120HD-B-007	HARD GUIDE SUPPORT	2
7-1	13120HD-B-008	SIDE PLATE(R)	1
7-2	13120HD-B-009	SIDE PLATE(L)	1
7-3	13120HD-B-010	VIBRATION PROOF BRACKET	2
8	13120HD-B-011	WASTE BIN GUIDE	1
9-1	13120HD-B-012	CUTTER NUT	2
9-2	13120HD-B-013	CUTTER PUSH RING	2
10	13120HD-B-014	POST	4
11-1	13120HD-B-015	SPUR GEAR	2
11-2	13120HD-B-016	SPACE RING	2
12	13120HD-B-017	SPROCKET(SHAFT)	1
13	13120HD-B-018	SPROCKET(MOTOR)	1
14-1	13120HD-B-019	BEARING HOUSING	3
15	13120HD-B-020	FRONT COVER	1
16	13120HD-B-021	MOTOR PLATE	1
17	13120HD-B-022	FULL PLATE	1
18	13120HD-B-034	GUIDE POST RING	7
19	13120HD-B-023	BEARING HOUSING	1
20	13120HD-B-024	MAGNETIC BRACKET	1
21	13120HD-B-025	SENSOR BRACKET	1
22	13120HD-B-033	MOTOR BAND	1
23	13120HD-B-026	BEARING	3
24	13120HD-B-027	BEARING	1
25	13120HD-B-028	BEARING WASHER	2
26	13120HD-B-029	BEARING NUT	2
27	13120HD-B-030	MOTOR	1
28	13120HD-B-031	MAGNETIC SENSOR	1
29	13120HD-B-032	VIBRATION PROOF RUBBER	6

# DISTRIBUTION BOX ASSEMBLY



Item	Part #	Description	Qty
1	FD87HDS C 001	CONTROL BOX	1
2	FD87HDS C 002	CONTROL PANEL	1
3	FD87HDS C 003	PCB BOX	1
4	FD87HDS C 004	TERMINAL BLOCK	1
5	FD87HDS C 005	CIRCUIT BREAKER	1
6	FD87HDS C 006	EOCR	1
7	FD87HDS C 007	MC	2
8	FD87HDS C 008	VIBRATION PROOF RUBBER	2
9	FD87HDS C 009	COVER	1