

User's Manual –

KA-66 Automatic PCB lead cutter

I. KA-66 - Introduction

1. A model design to trim the extra long leads automatically and efficiently on the PCBA that components inserted and soldered.
2. A pair of conveyor chain is equipped in the model in which clamp and deliver the PCBA to the blade turning in high speed for trimming.
3. Expandable in function and working independently– The model can be optional connecting in line with wave soldering machine by Connection Bridge and operates automatically.

II. Spec and application range

1. Tungsten carbide blade: I.D \varnothing 70mm, O.D \varnothing 200mm& \varnothing 250mm both size
2. Thickness of P.C.B: 0.8mm~2.5mm
3. MAX.PCB Range: Length 600mm * width 300mm
4. Power: AC220V .50Hz or 60Hz (Please specify in ordering)
5. Main spindle speed: 4500rpm
6. Main spindle motor: 3/4HP
7. Conveyor speed: Free step adjustable, 0~3m/minute.
8. Cutting height: 0.6mm min. (optional track for less height)

III. Description – Cutting construction

A、 Blade – installation steps:

1. Release the main spindle fixed screw by T allen-key(C189).
2. Down the spindle by hand wheel (D14).
3. Remove the blade cover (C187), cleaning the surface on the spindle for the blade, place the blade to the right position. Tighten the blade cover screw. Checks wobble by turning the blade manually. Repeat the steps if necessary.

B、 Height adjustment – Cutting spindle:

1. Release first the spindle fixed screw before move the height adjustment hand wheel.
2. The cutting height of the wire leads is adjusted by the height of spindle in which the more closer to the track, the less cutting height will be.



3. The most adequate distance between the blade and track will be at range of 0.2~0.1mm. The blade and track must not be crashed (touched).
4. Tighten the spindle fixed screw after adjustment.

C、 Tips for sound when blade is turning:

1. The sound generated by air-resistance while the spindle running in 4500RPM high speed is normal.
2. Belt (A23) too tight will make noise in running, however, too loose may slip the pulley and powerless to trim the leads.
3. An abnormal noise may possible caused by damaged bearing (C192&C193). Please replace it if true.

D、 Tungsten carbide blade –Resharpending and usage

1. The blade is super hard and sharp but fragile in property. It is normal condition while the knife-edge crack after trimming.
2. Resharpen the blade if the crack is around the edge.
3. The quality of the blade is nothing to do with the crack except comparing in same cutting condition. The more throughput blade is the best.
4. Cutting angle- 18° ~ 22°. The cutting angle depends on the cutting property of the leads. Small angle for fine (or soft) one, big angle for big or hard wires.

IV. Description – Delivery system

A、 Feeding the PCBs

1. The left conveyor (B161) and right conveyor (B162) will open and close synchronously when turning the hand wheel (D13).
2. Place the PCB on the track (B20,B21), push it forward to be clamped by the clamp finger (B151) in the conveyor. Check the tightness to ensure the PCB is held properly. Re-adjust it if necessary.
3. Turn on the switch (A117) that will move the conveyor.

B、 Cutting and PCB delivery

1. The PCB is held and clamped by the spring finger (B153) which has good tension and good at clamping the PCBs.
2. Adjusting the holding force of the finger according to the property of wire leads (wire lead diameter or hardness)
3. Free step adjusting the conveyor speed by the knob A119. For instance, must slow down to cut the big wire leads.



C、 Spring finger and the track

1. The spring finger (B153) and U brackets (B152) can be replaced independently when worn out.
2. The U bracket (B152) is assembled on the chain. The tightness of the chain will affect the efficiency of the PCB delivery.
3. The track bottom plate (B163) in thickness of 0.6mm is consumable which need to be replaced when worn out. An optional track bottom plate with more thin for cutting height 0.3 ~ 0.5.

D、 Tightness adjustment – spring finger chain

1. The spring finger chain (B151) will be lengthen and loose the tightness after a working period.
2. It has to be adjusted to avoid damaging the bottom track.
3. Adjustment steps
 - (1). Release the nut(B215)(each in both conveyor)
 - (2). Turning the nut (B213)
 - (3). Check the tightness (Don't too tight! The transmission shaft will be damaged or bent if so)
 - (4). Fastening the nut released

E、 Parallel adjustment - conveyor

1. The left and right conveyor (B161&B162) must be parallel to delivery the PCB smoothly.
2. The chip block the screw rod (D132,D135) is the main reason which cause the un-parallel condition. The synchronous motion of both side conveyors is linked by the chain D133 and chain wheel (D134) and screw rod of (D132&D135).
3. The main reason to cause the un-parallel is one of the chain wheel slip out of the position.
4. Adjusting steps:
 - (1). Release the fixed screw on the chain wheel (D134)
 - (2). Keep the allen-key on the socket.
 - (3). Turn the hand wheel (D13), moving only the front screw rod and the front part of conveyor.
 - (4). Check the parallel by actual PCB.
 - (5). Tighten the chain wheel screw (D134)



V. Remedy – Warp PCB

1. **Application - Thimble wheel**

- (1). The equipped thimble wheel is a security device to prevent damaging the warp boards in trimming operation
- (2). Adjustment of the thimble wheel
- (3). Release the screw (C176) for moving the assembly forward or backward.
- (4). Release the screw (C177), adjusting the height by turning the eccentric shaft (C170)
- (5). The best height of the wheel is around 0.5mm higher than the surface of blade.

2. **Application – Pressure bar**

- (1). Release the screw (A236). Move the device to the center of shaft.
- (2). Down the pressure bar (A237) to the place without components to press down the warp.
- (3). Two(2) bakelite frames are attached for the PCB which is no space for the pressure bar directly.

VI. Electric control

- (1). The lamp (A113) indicate the power condition when turn on/off the power switch (A112).
- (2). Cutter pushbutton (A114) – Activate the turning of cutting blade
- (3). **Note: The finger chain will move even if the conveyor switch is in off position when the cutting is activated.**
- (4). Emergency button (A116) – Stop all function of the machine.
- (5). Conveyor switch (A117) – Move chain in “on” position for test run. Turn to “off” when turn “on” the cutter
- (6). Chain speed control knob (A119): Free step control the speed of the delivery conveyor.
- (7). Security switch(A110) – Ensure the safety acrylic cover is closed. Break whole the circuit if open cover.



VII. Tips for maintenance

- (1). Clean the chip or foreign matter on the screw rod (D132,D135). Otherwise will block the width adjustment.
- (2). Lubricate the guide shaft (D136) in regular maintenance period.
- (3). Lubricate the (B122) hex shaft that is for power transmission.
- (4). Dismantle and lubricate the track cover (B150) in regular period for smoothing the move of chain.

VIII. Maintenance and technical support

1. Please copy the sketch on the manual for further questions.
2. Descript the question and contact us by Fax. We'll reply you very soon.
3. For spare parts requirement, please ordering by fax in which specified part number or indicate by sketch.
4. Welcome your inquiry for any question if unclear

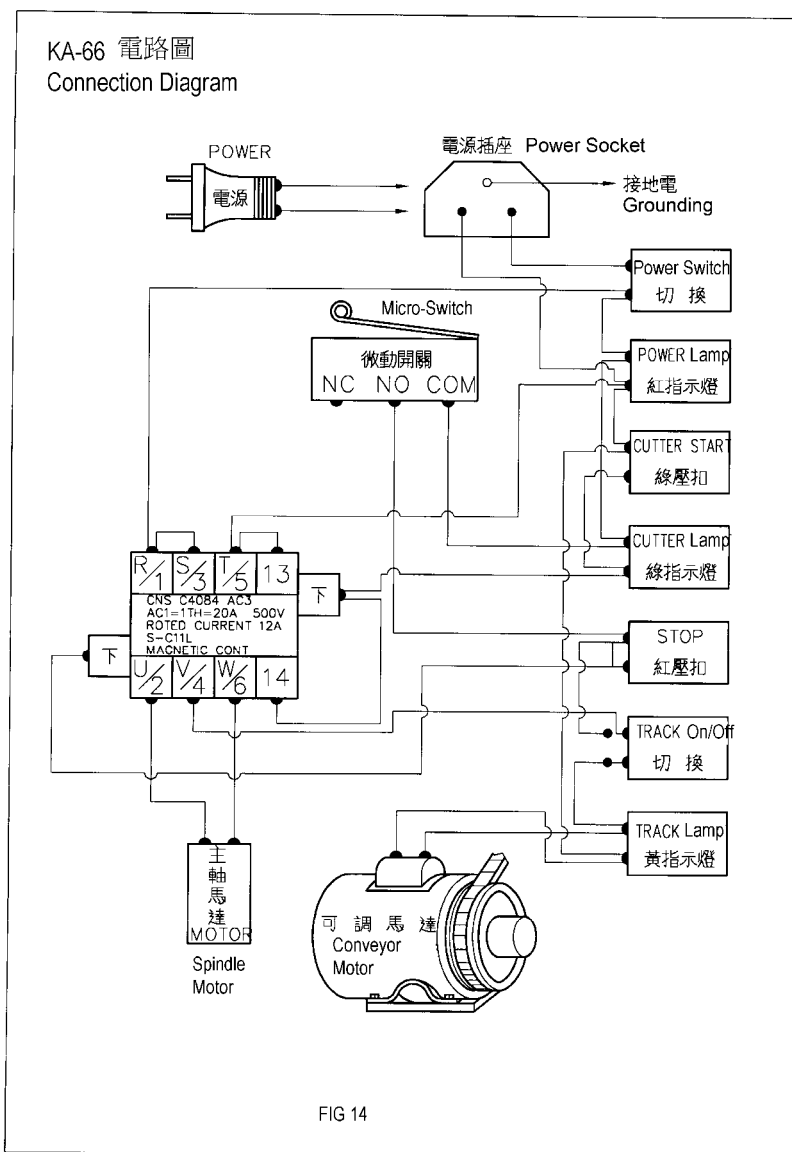


KA-66 Spare Part list

Part No.	Part name	Part No.	Part name	Part No.	Part name
A10	Right frame	B150	Track cover	C180	Spindle bushing
A100	Right mid. frame	B151	Clamp finger chain	C181	Spindle
A101	Left frame	B152	Chain U bracket	C182	Pulley (Big)
A102	Castor	B153	Clamp finger	C183	belt A23
A103	Construction bar	B154	Finger screw	C184	Blade bracket
A104	Castor Bar	B155	Front track base	C185	3/4HP motor
A105	Front cover	B156	Rear track base	C186	Pulley (S)
A106	Rear cover	B16	Conveyor	C187	Blade cover
A107	Outlet board	B160	Track guard plate	C188	Hole for stopper
A108	Waste chute	B161	Left track	C189	T allen-key
A109	Left mid. frame	B162	Right track	C190	Blade cover screw
A11	Electric Material Box	B163	Bottom track	C191	Bearing cover
A110	Micro switch	B164	Chain wheel	C192	Bearing 6205zz
A111	Power	B165	Chain wheel	C193	Bearing 6304zz
A112	Power switch	B166	Feeding bottom track	C194	Nut – spindle
A113	Power lamp	B167	Key chain wheel	C195	Fixed screw
A114	Cutter button	B168	Bearing 6001zz	C196	Screw –lever adj
A115	Cutter lamp	B169	Key – tooth wheel	C197	Blade - mid frame
A116	Emergency stop	B2	Conveyor system	D13	Hand wheel
A117	Conveyor switch	B20	Right conveyor	D131	Handle
A118	Conveyor lamp	B21	Left conveyor	D132	Front screw rod
A119	Speed knob	B210	Washer	D133	Connection chain
A231	Pressure bar shaft	B211	Bushing	D134	Chain wheel
A232	Screw	B212	Plate– feeding track	D135	Rear screw rod
A233	Left cover	B213	Nut- chain adjust	D136	Guide shaft
A234	Right cover	B214	Bracket–chain adjust	D137	Bearing 6001zz
A235	Acrylic cover	B215	Nut- fixed chain	D138	Eccentric shaft
A236	Fixed post	B216	Chain rod	D139	Chain cover
A237	Pressure bar	B217	Chain shaft	D14	Hand wheel
A238	Bakelite frame	B218	Screw	D140	Screw rod
B12	Tooth wheel cover	C17	Thimble wheel ASSY	D141	Bracket
B120	Motor tooth wheel	C170	Eccentric shaft	D142	Hex rod
B121	Tooth wheel	C171	Thimble wheel	D143	U bracket



B122	Hex shaft	C172	Bushing	D144	Shaft
B123	Angle tooth wheel	C173	Screw	D145	Screw
B124	Angle tooth wheel	C174	Bracket		
B125	Angle tooth wheel	C175	Base – thimble wheel		
B126	Angle tooth wheel	C176	Screw		
B127	Bearing 6003zz	C177	Screw		
B128	Bearing 6005zz	C178	Front chip barrier		
B129	Motor -40W	C179	Rear chip barrier		
B130	Gear box 90GN	C18	Blade		



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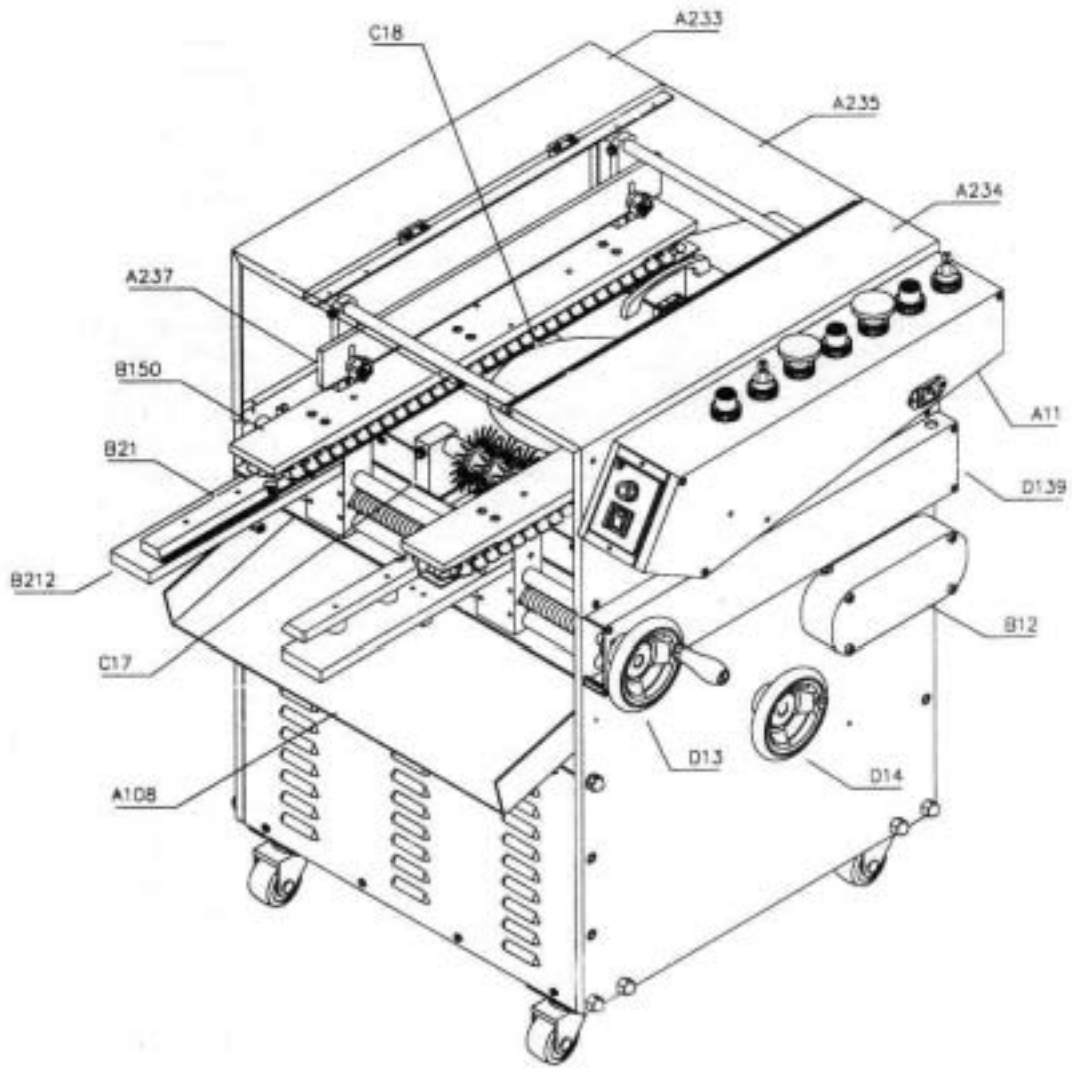


FIG-1



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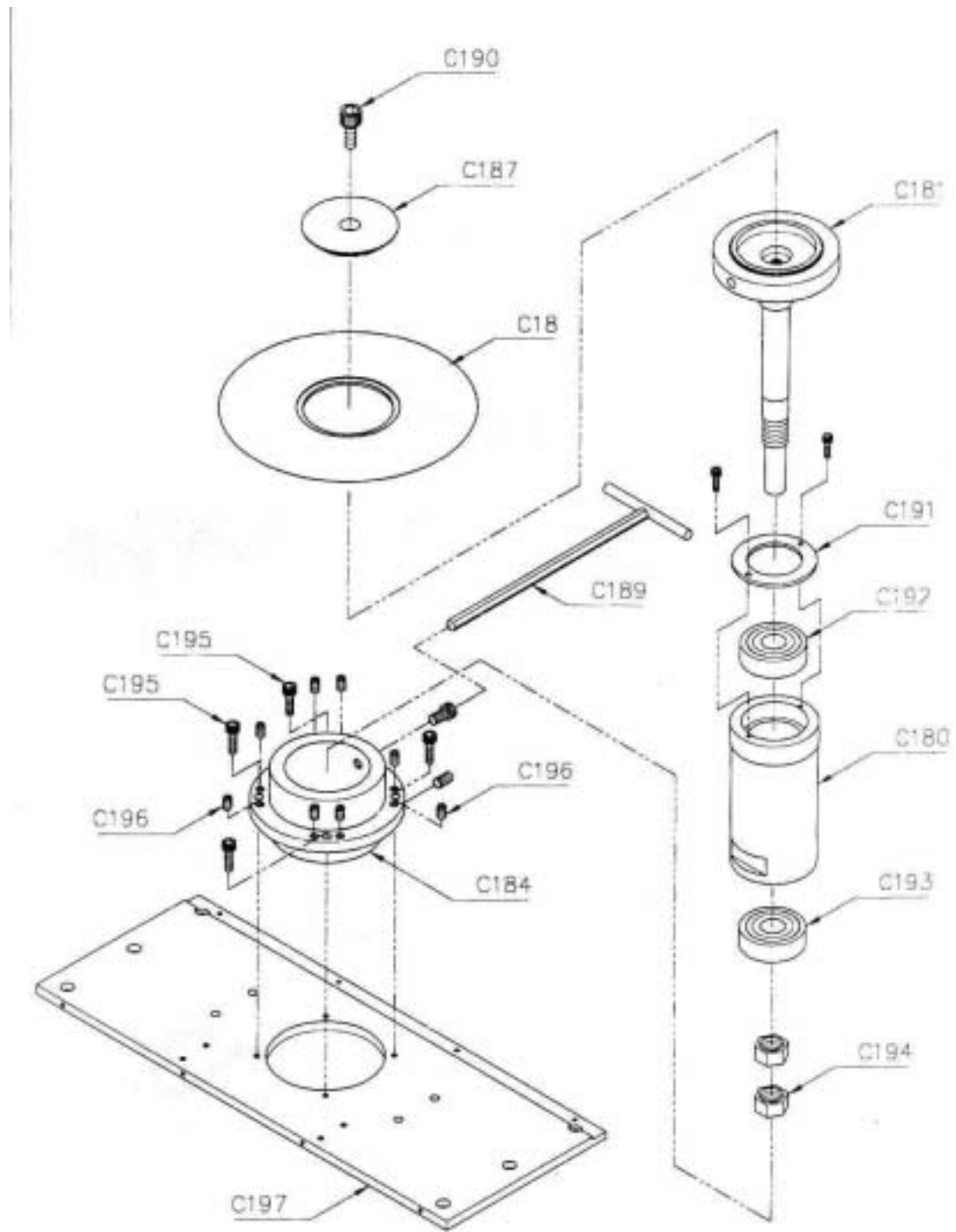


FIG-2

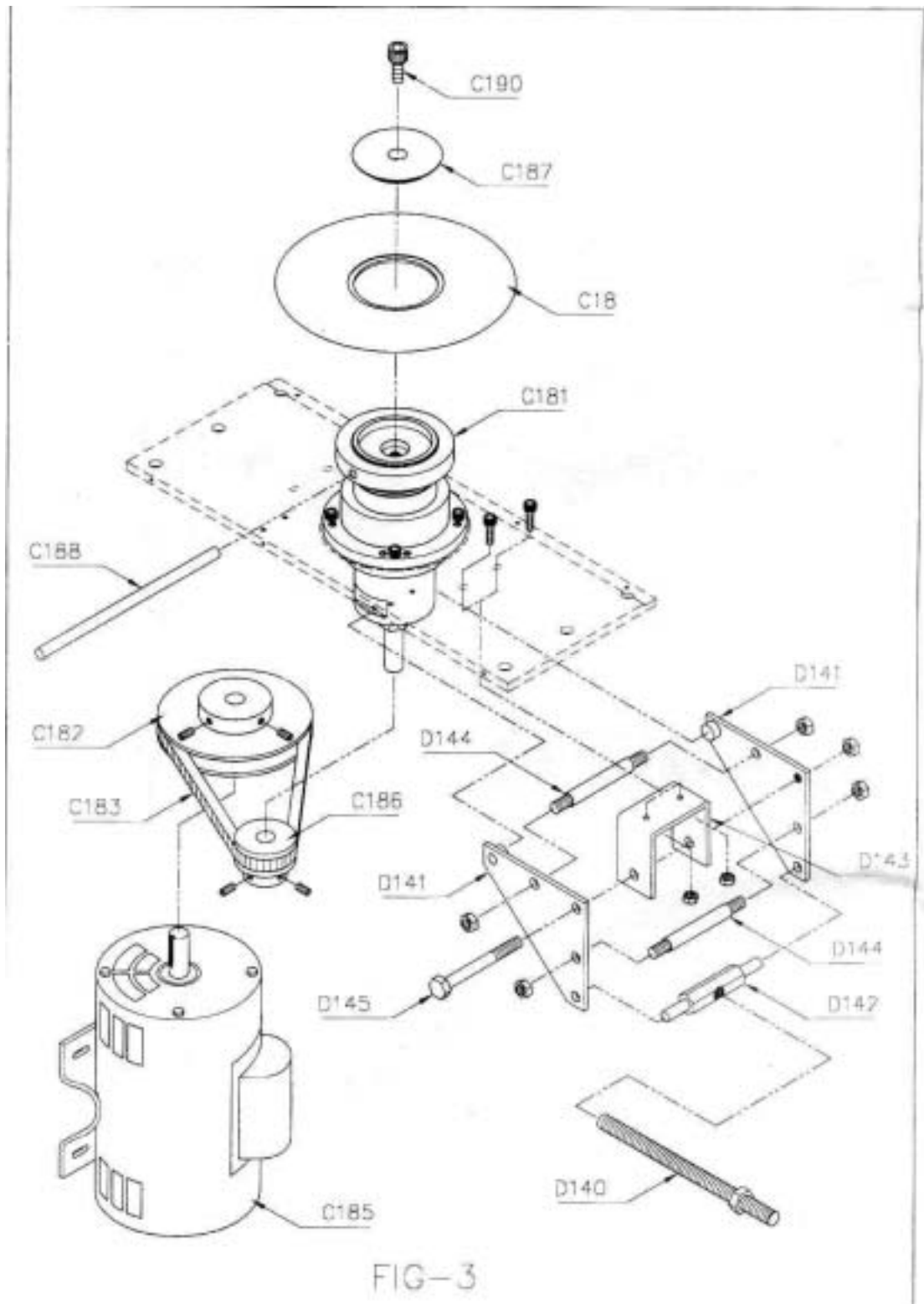


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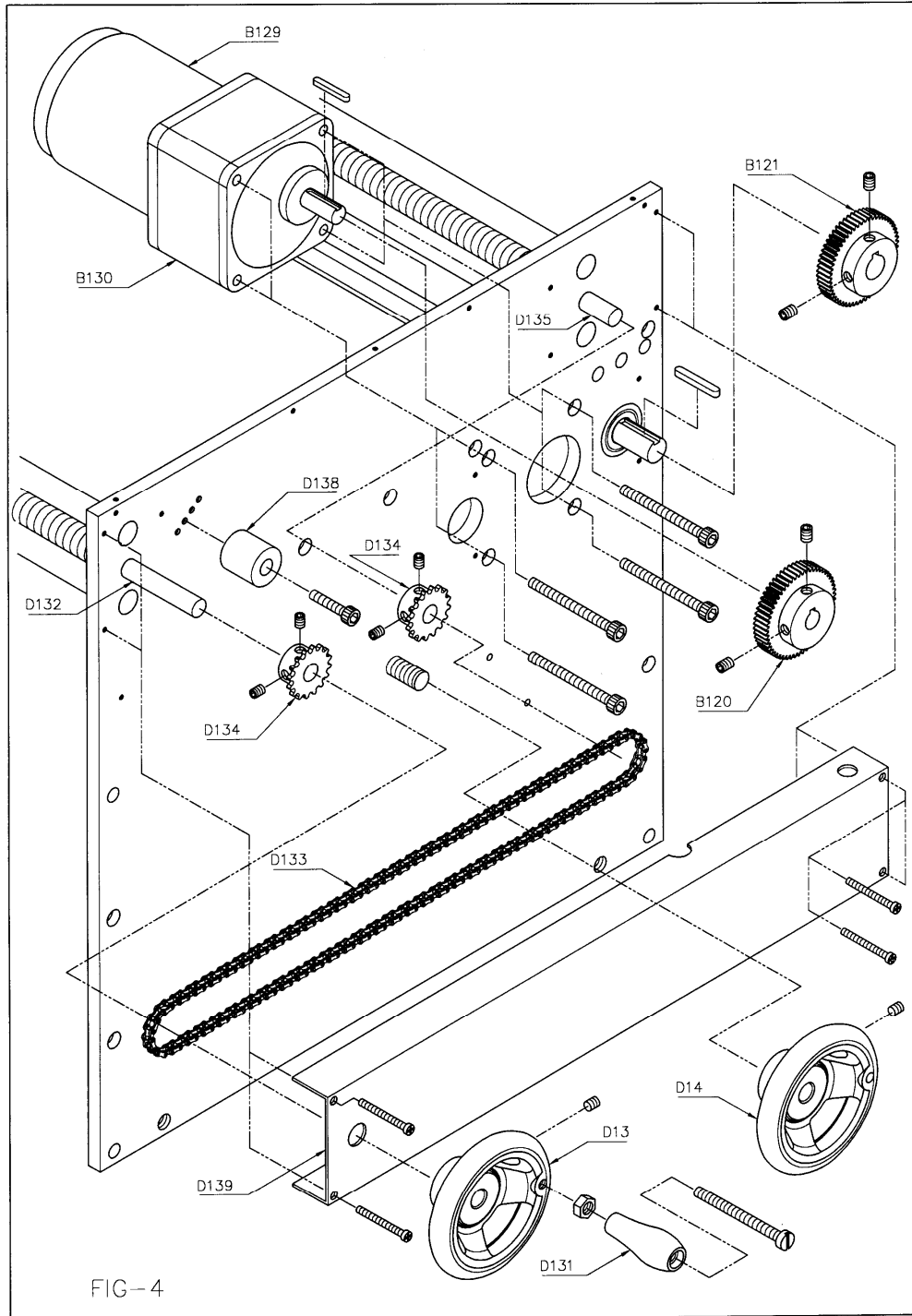
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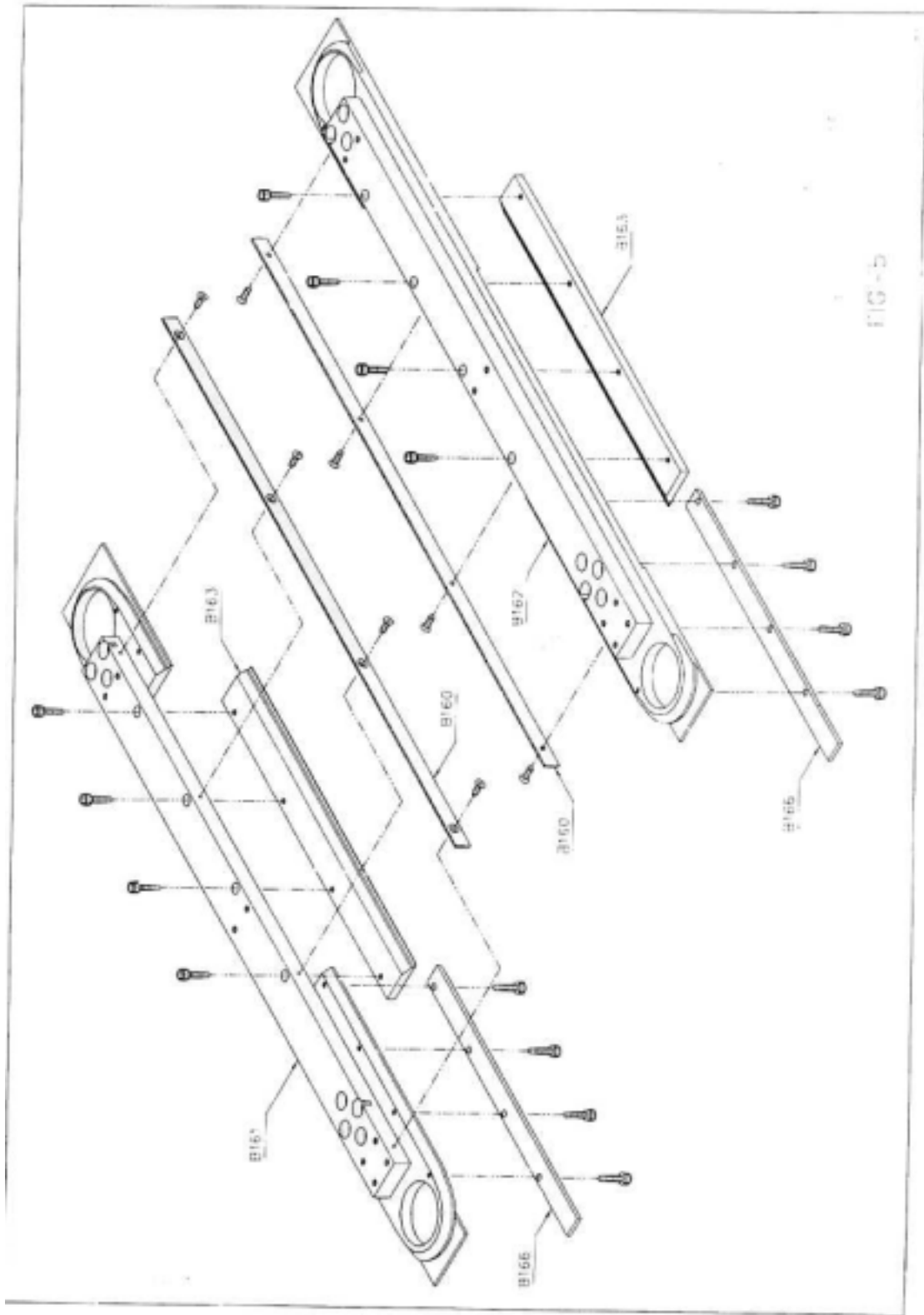


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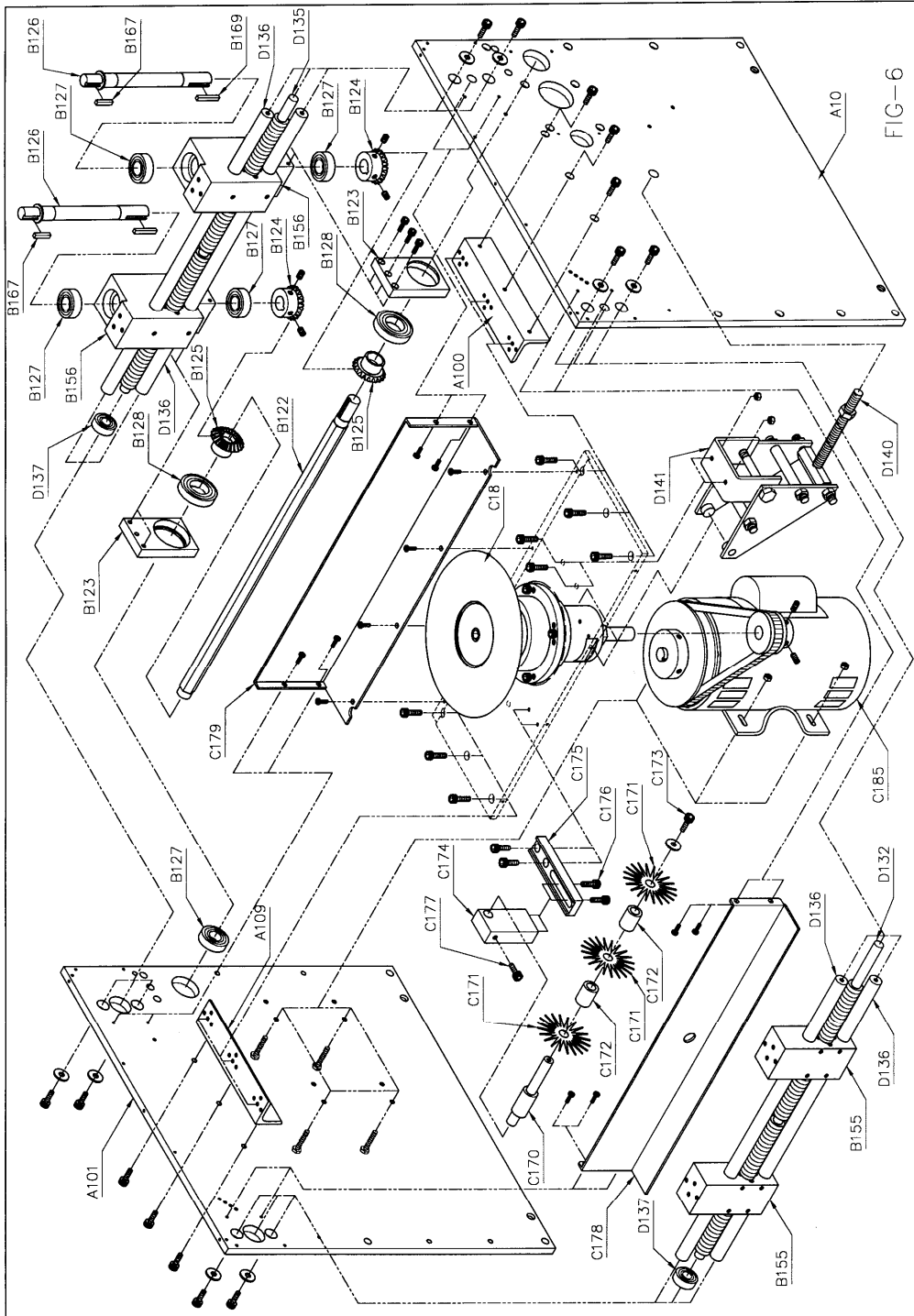
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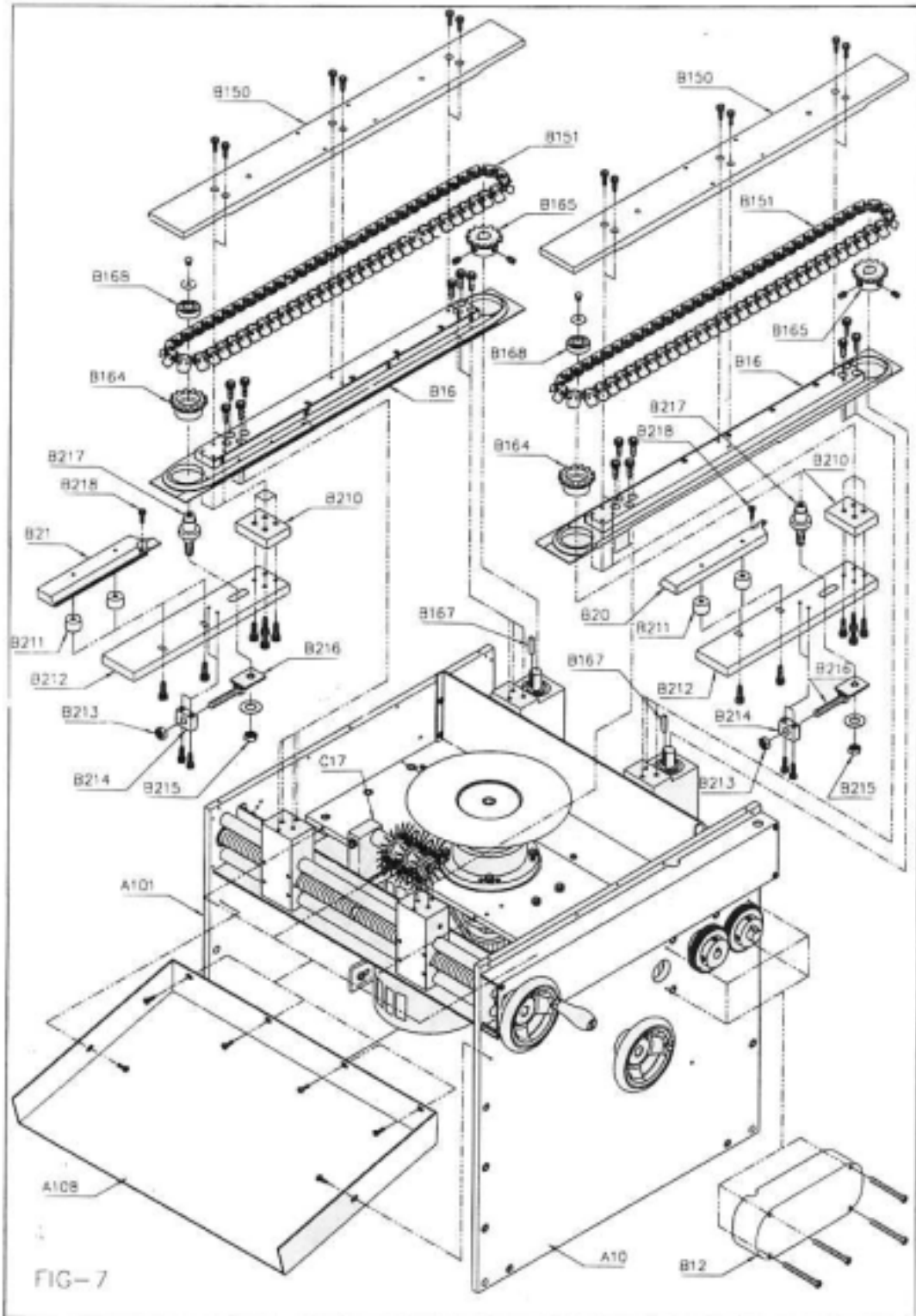
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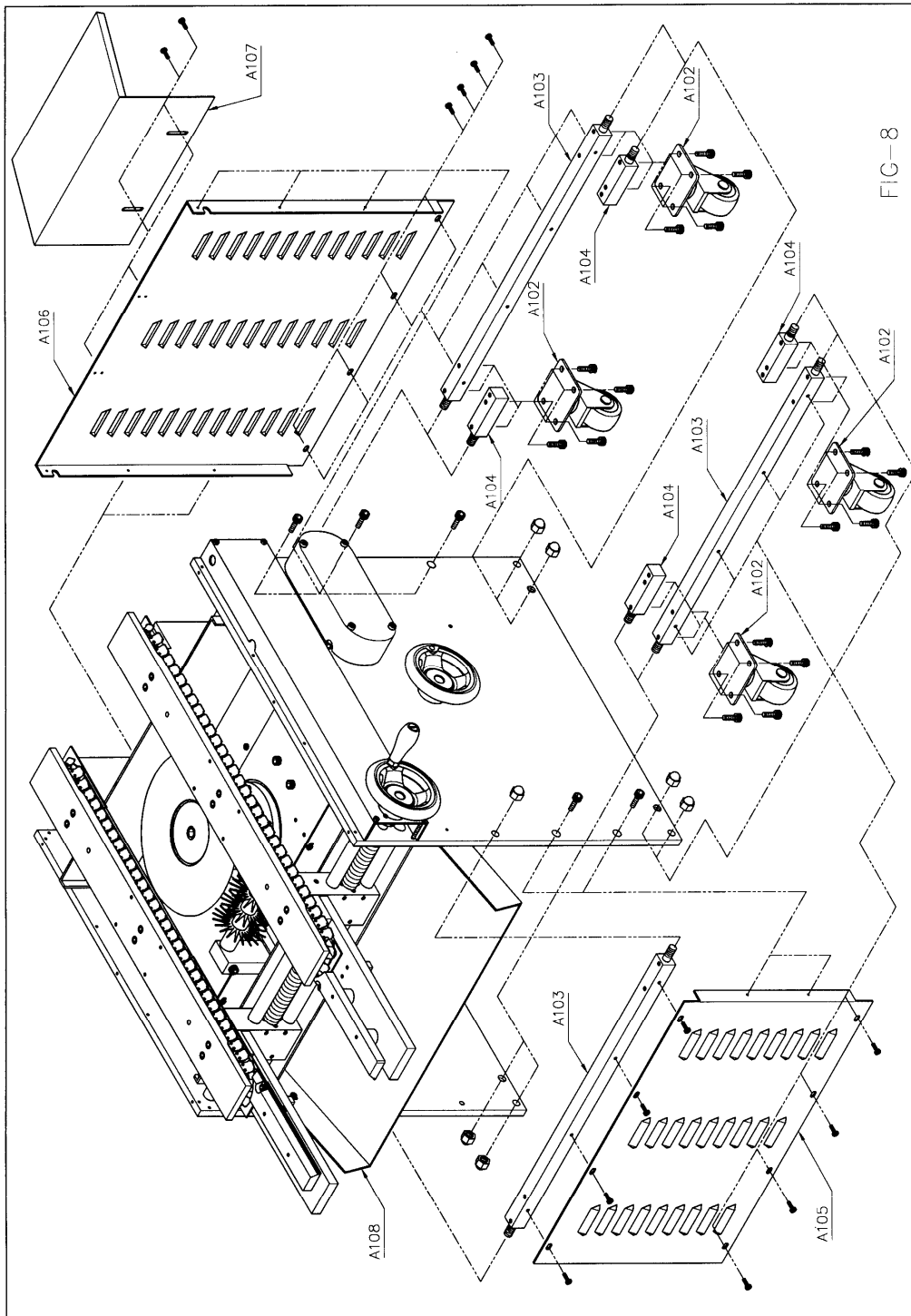


FIG-8



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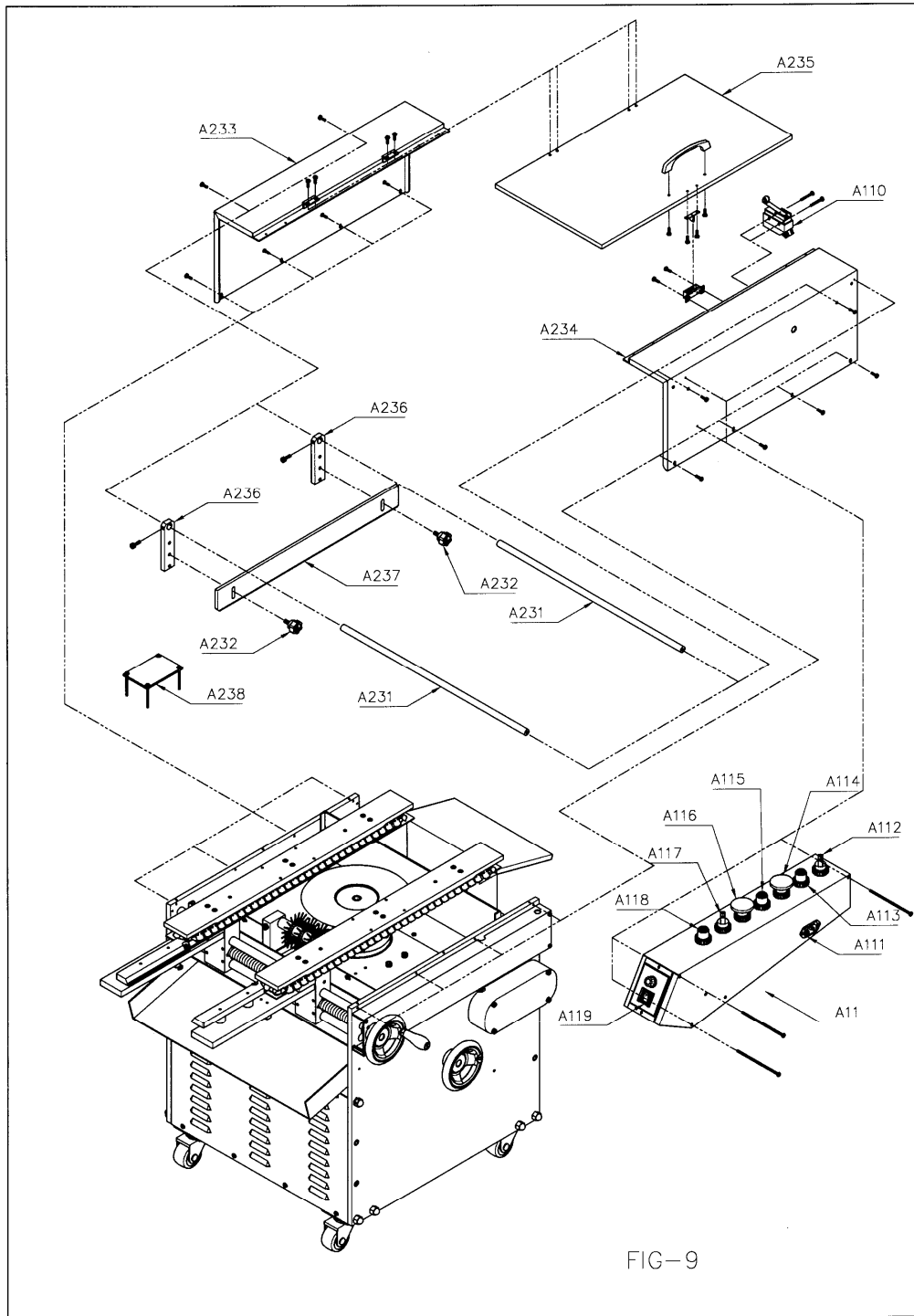


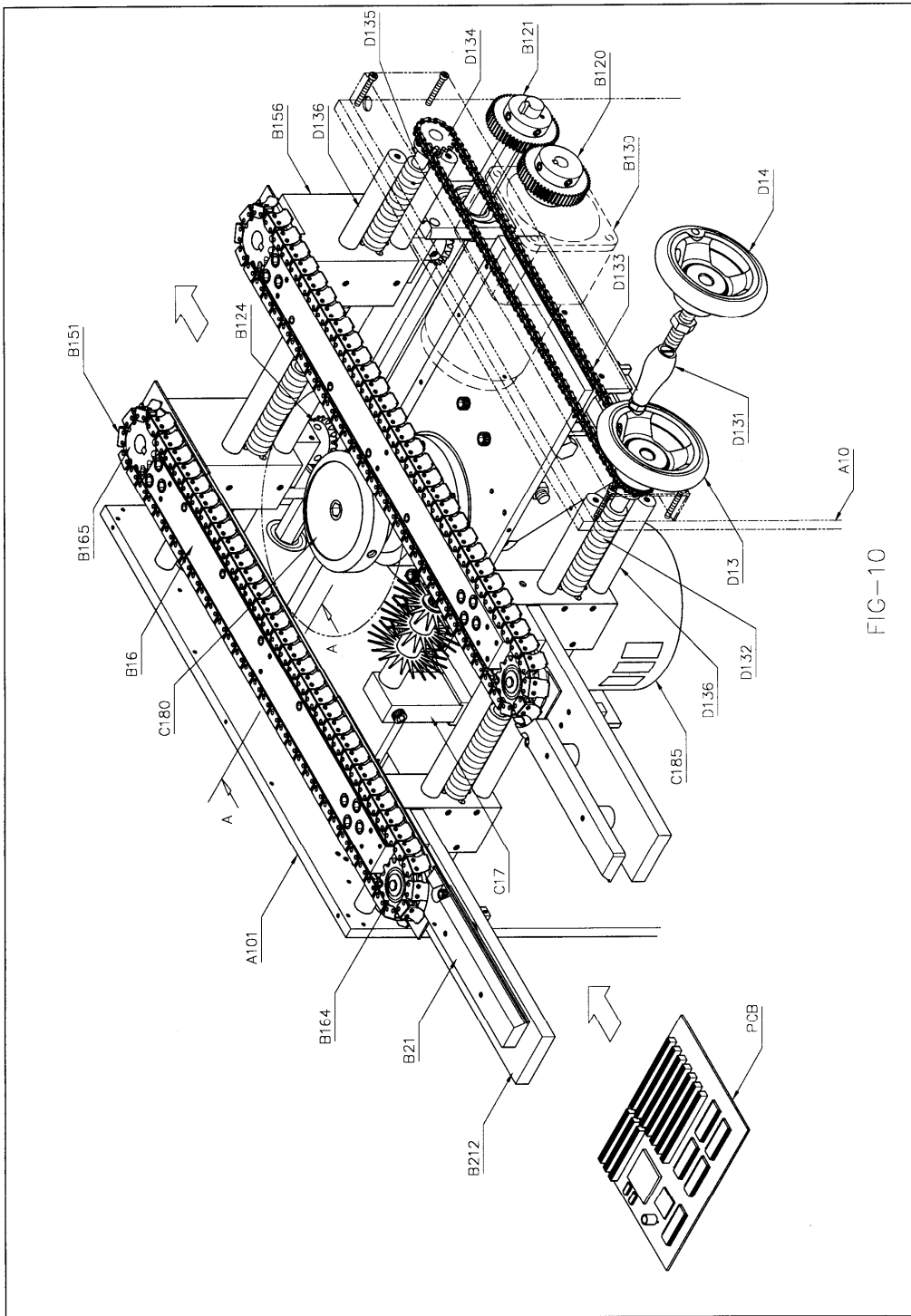
FIG-9



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