



# **STEP TP-502CE**

## **(OPERATION, SAFETY & SPARE PARTS MANUAL)**



41000040 Manual UK 190821  
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## COMPANY INTRODUCES

"We believe packaging solutions for our customers should be simple, easy to use, ergonomic and sustainable.

We offer a wide range of packaging products and solutions, and web design and engineer production lines specifically built to your needs.

Our motto is simple: Sal-Tech Easy Packaging makes your life simpler through engineering and good design, and your job less stressful. We Keep Things Together."

Gunnar Salbæk  
Owner/CEO

## About Sal-Tech

Sal-Tech Easy Packaging offers a wide range of solutions for simple and reliable packaging of your products.

If it is a standard or a special solution that's needed for your assignment, we have a creative input to solve your needs, securing you an up to date packaging application.

Sal-Tech Easy Packaging is 100% owned by Gunnar Salbæk,

CVR no.: DK18429098 Salbæk Easy Packaging v/Gunnar Bjørn Salbæk.

Our team works together on a 100% virtual platform and therefore please forward all correspondence and invoices to e-mail til [invoice@sal-tech.com](mailto:invoice@sal-tech.com).

Bank connection: Nordea Denmark.





# PART I

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## 1. Safety Instructions

THIS MANUAL GIVES YOU INFORMATION ON SAFETY INSTRUCTIONS, SPECIFICATIONS, OPERATION AND MAINTENANCE OF STRAPPING MACHINES.

BEFORE OPERATING OR SERVICING THE MACHINE, PLEASE REVIEW THE ENTIRE MANUAL AND FOLLOW THE SAFETY INSTRUCTIONS CAREFULLY.

### (1) Before Operating

- a. Verify that the power line voltage is correct.
- b. The machine must be properly grounded to avoid a shock hazard. All wiring must be in accordance with local wiring standards.
- c. The strapping machine can only be operated with polypropylene (P.P.) strapping; do not use polyester (PET) strapping or polyethylene (PE) cord strap.

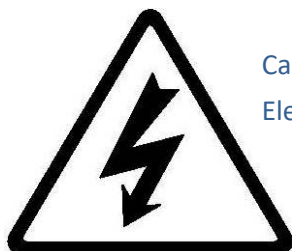
### (2) During Operation

- a. The weight of the package cannot exceed 80 kg (176 lbs).
- b. The size of the package should not be less than 80mm (width) × 20mm (high) (3.16" × 0.79").
- c. Check if the machine emits any smokes or unusual sound when it is running.

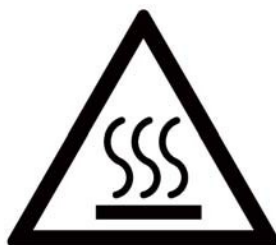
### (3) After operating

- a. Remove dust and dirt from the unit; pay particular attention to the interior of the arch.
- b. Turn off the power when the machine is not in use.

### (4) Signs



Caution!  
Electric Shock Hazard



Caution!  
Hot!  
Do not touch!

### (5) Maintenance

- a. Turn off the power before removing either of the top covers.
- b. Use the correct tools and parts to repair the machine.
- c. The heater tongue is very hot; do not touch it.







## **(6) Storage**

- a. The store room must be dry.
- b. Do not expose the machine to extreme cold or heat environment.
- c. Place the machine on an even floor in order to avoid any distortion.

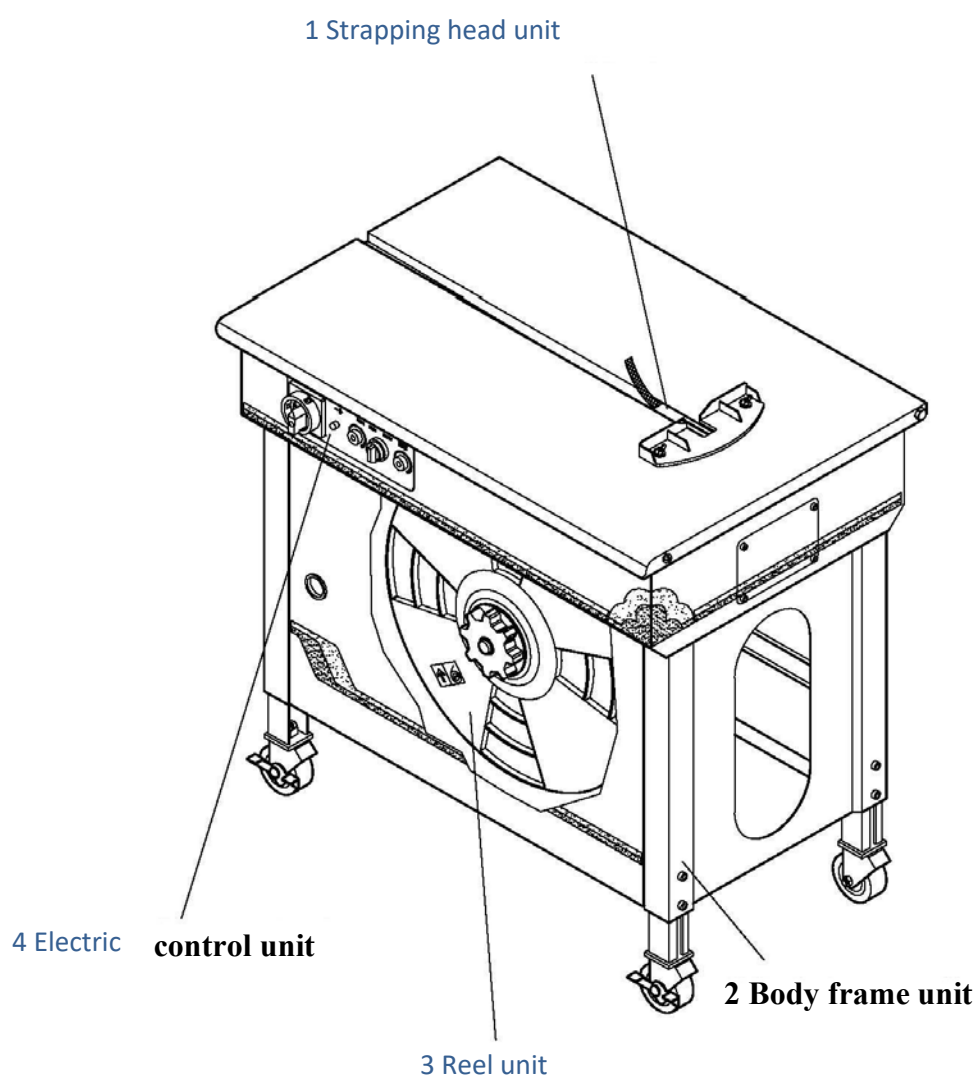
## **(7) Other Reminders**

- a. Do not alter or bypass protective interlocks.
- b. An operation manual must remain attached to the machine at all times.
- c. Do not alter the equipment or circuitry unless authorized to do so by the manufacturer.





## 2. Construction and Units





### **3. General Safety Remarks**

#### **(1) Basic Operation**

The manual and the safety remarks are to be read before use. The operator manual should be kept with the machine at all times. Intervals for maintenance and inspections are to be adhered to.

This machine was built with state of the art technology and rigid adherence to safety standards. Unless used properly, it can cause injury to operators or persons in close proximity to the machine. In addition, improper use can cause damage to the machine or property around the machine.

#### **(2) Basic Safety Precautions**

The user is to be instructed in all other generally applicable legal and other mandatory regulations relevant to accident prevention and environmental protection in addition to the operating instructions.

For safety reasons, long hair must be tied back or otherwise secured, garments must be close fitting and no jewelry may be worn.

Use protective equipment whenever required by circumstances or by law.

Carefully observe all safety instructions and warnings attached to the machine and make sure that they are always complete and perfectly legible.

Always make certain that persons being trained and instructed in working on or with the machine are permanently supervised by an experienced person.

Work on the electrical system and equipment of the machine is only to be carried out by a skilled electrician or by persons under the supervision and guidance of a skilled electrician and in accordance with the rules and regulations of electrical engineering.

#### **(3) Safety Instructions Governing Specific Operational Phases**

Avoid any operation mode that might be unsafe.

All necessary precautions to ensure that the machine is only used being in a safe and reliable state are to be taken. The machine is only to be operated if all protective and safety devices, including removable safety devices, emergency shut-off equipment, noise-protection elements and exhaust systems are in right place and fully functional.





The machine is to be checked for damage and defects at least once per work shift. Any changes including the working behavior of the machine are to be reported to competent persons immediately. If necessary, the machine is to be stopped and locked immediately.

In case of any malfunction the machine must be stopped and locked until the defect has been eliminated.

Generally make sure that nobody is at risk before starting up the machine.

All personnel that will be operating this machine should be thoroughly trained in all phases of operation and safety.

Always tighten unscrewed connections after maintenance and repair.

After completing maintenance and repair all safety devices removed for setting up or repairing the machine must be reinstalled and checked for functionality prior to putting the machine back into service.

To minimize the environmental impact all consumables and replaced parts must be disposed of safely.

Before starting the machine check that the accessories have been stowed away safely. Do not

attempt any operation that may be a risk to the stability of the machine.

#### **(4) Warning of Electrical Dangers**

Immediately remove power to the machine in case of trouble in the electrical system. Replace a fuse with one with the same style and ratings; pay particular attention to matching the specified current.

Any electrical work performed on the equipment must be conducted by a skilled electrician or under the supervision of a skilled electrician. All work must be observed good electrical engineering practice and follow safety rules and local wiring standards.

Inspect the electrical equipment of the machine at regular intervals. Tighten any loose connections. Check wiring for scorch marks; replace scorched wiring and determine and correct the reason for the overheating.

When working on live equipment, ensure that a second person is available to cut power in case of an emergency. When appropriate, secure the working area with safety tape and a warning sign. Use insulated tools for electrical work.





Before working on high-voltage assemblies, turn off the power supply. Carefully discharge the supply cable and short-circuit any energy-storage components such as capacitors.

If the equipment was moved, carefully refit and refasten all parts removed for transport before reapplying power.

Before moving the machine, remember to disconnect the power cable.

## (5) Grounding Instructions Shall Include the Following:

This product must be grounded. In the event of an electrical short circuit, grounding reduces the risk of electric shock. This product is equipped with a cord that has a grounding wire and an appropriate grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.

If repair or replacement of the cord or plug is necessary, connect the ground wire to the ground terminal of the plug. The wire with green insulation (with or without yellow stripes) is the grounding wire.

Check with a qualified electrician or service person if the grounding instructions are not clear or if in doubt about the proper grounding of the machine. Do not modify the plug provided; if it will not fit the power outlet, have the proper outlet installed by a qualified electrician.

This product is designed for use on a nominal 120 (230) volt AC circuit and has a grounding plug.

**DANGER!**

Improper installation of the grounding can result in electrocution.

## (6) Extension Cords:

Use only a three-wire extension cord that has a grounded, three-pronged plug. Use a power receptacle suitable for the plug on the product. Make sure the extension cord is in good mechanical condition. When using an extension cord, be sure to use the right cable size to carry the current of the product. A cord of insufficient capacity will cause a drop in line voltage resulting in loss of power and overheating. Refer to the following table:

Length (feet)	25	50	100	150	200	250	300	400	500
Gauge	16	14	10	8	8	6	6	4	4
mm <sup>2</sup>	1.25	2	5.5	8	8	14	14	22	22





## **4. Machine Information**

### **(1) Areas of Application and Machine Description**

This plastic strapping machine can be used for a wide range of applications where the minimum package width is at least 80mm, and the minimum height is 20mm.

This machine is particularly suitable for heavy packaged goods as well as printed products, boxes, etc.

#### **Machine Description**

Semi-automatic plastic strapping machine for use with polypropylene strapping. Heavy duty construction.

Simple, safe and user-friendly operation.

Moveable, with large table area high capacity strap reel and stainless steel table. Two locking castors, to ensure safe operation.

Extremely low-noise strapping head.

Strap tension adjustable from low to extremely high.

#### **Environment Information**

The strapping machine shall be installed in the following conditions:

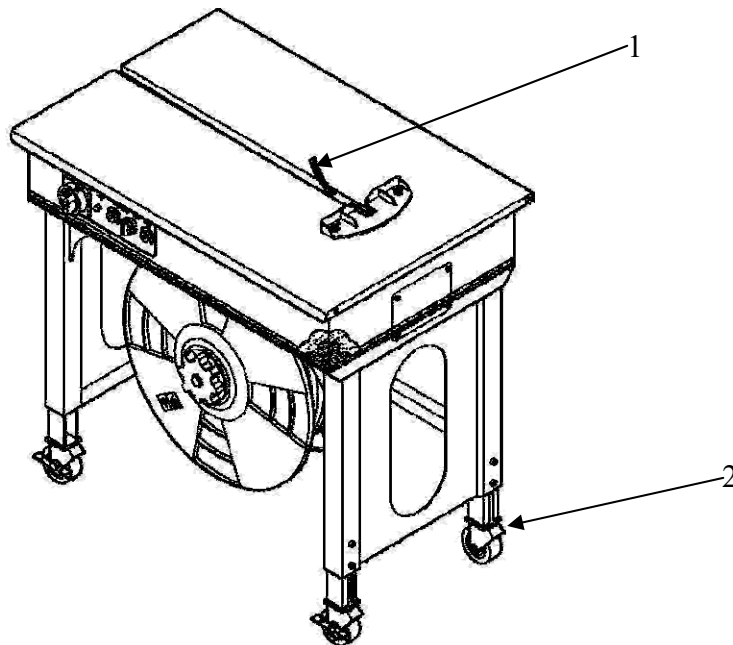
- Supply voltage: 0.9 - 1.1 nominal supply voltage.
- Source frequency: 0.99 - 1.01 nominal frequency.
- Ambient temperature: 5°C - 40°C (41°F-104°F).
- Relative humidity: not exceed 50% at 40°C.
- Please provide a suitable illumination around the machine for safety operation.





## (2) the Safety Devices

Only Polypropylene strapping can be used in this machine. The use of other synthetic straps can produce substances hazardous to health.



### Caution!

The heating unit operates at a very high temperature in order to melt the P.P. strapping. To prevent burns, avoid contact with this area. (1)

To move the machine, the two lockable casters (2) must be unlocked. Relock the two casters when the machine is in its new position.

### Description of the Safety Devices

The machine is turned on when it is connected to AC power and the main power switch (QS1), located on the front operating panel, is placed in the ON position. After approximately 3 minutes, the heating element will reach its operating temperature and the machine will be ready for use.

If it is necessary to make adjustments inside the machine during operation, after a strap jam for example, the table top can be unscrewed. Observe caution as the machine is still fully functional with the covers removed. If machine with safety switch, when table top is opened, safety switch is activated. This will remove power but heating element is keeping heating.





### (3) Electrical Specifications

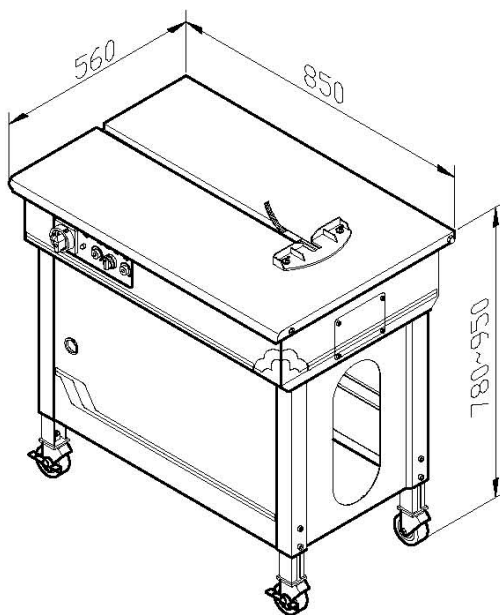
System configuration :	1L+N+PE (Ground)	1L+N+PE (Ground)
Nominal power :	0.3 KW	0.3 KW
Rated current :	2A	3A
Rated voltage :	220V/230V/240V	110V
Rated frequency :	50Hz	60Hz
Type of current :	AC - single phase	AC - single phase

#### Minimum Requirements

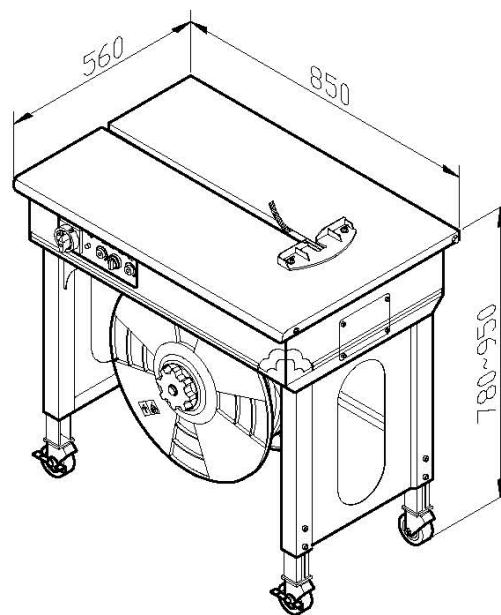
The electrical supply line for the machine must have a minimum cross-section of at least 3C×1.0mm<sup>2</sup>.



#### (4) Technical Data



TP-501/TP-501-15(Enclosed Frame)

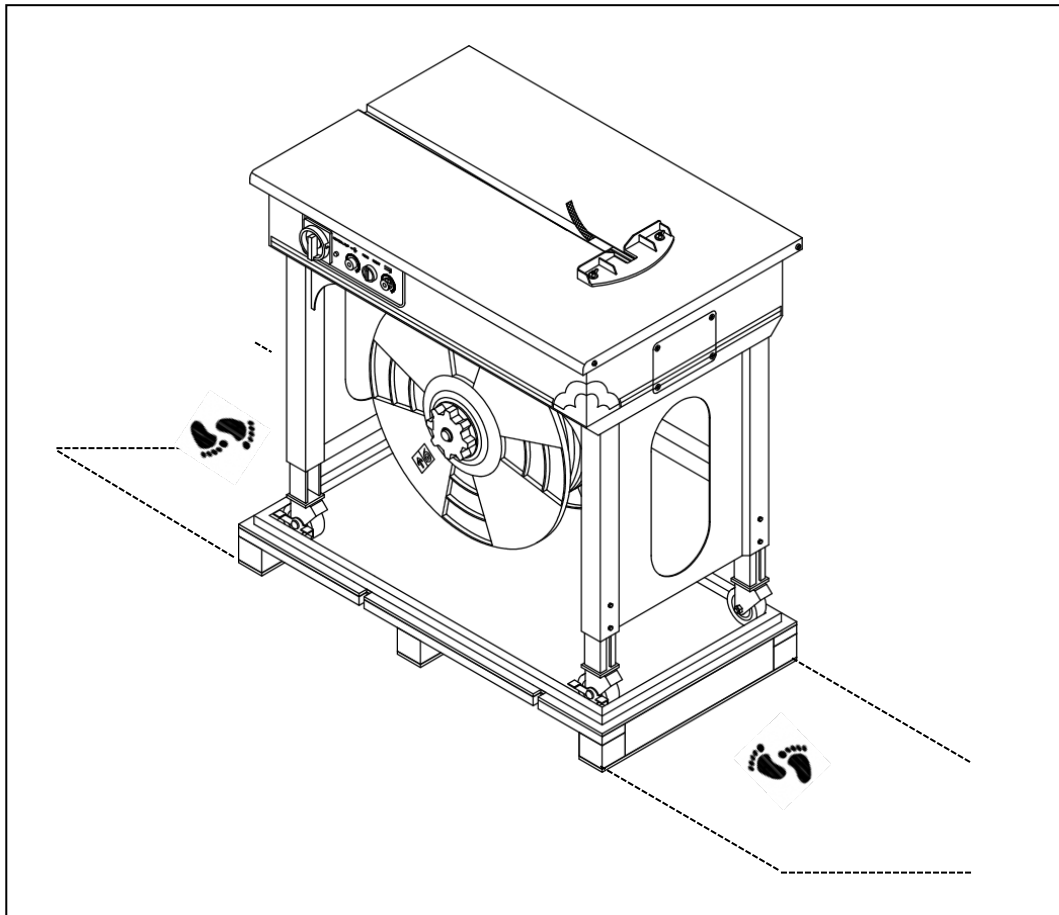


TP-502/TP-502-15(Open Frame)

Sealing method:	Heat
Strap width:	5 mm up to 12 mm (For TP-501/TP-502) 12 mm up to 15.5 mm (For TP-501-15/TP-502-15)
Strap reel diameter:	200 mm / 280mm (If strap core is 280mm, you can take off the center drum to have core size 200mm.)
Width :	850 mm
Depth:	560 mm
Height:	minimum 780 mm minimum 950 mm
Weight:	70kg (154 lbs)(TP-502), 76kg (167 lbs)(TP-501)
Noise emission:	65dB (A)

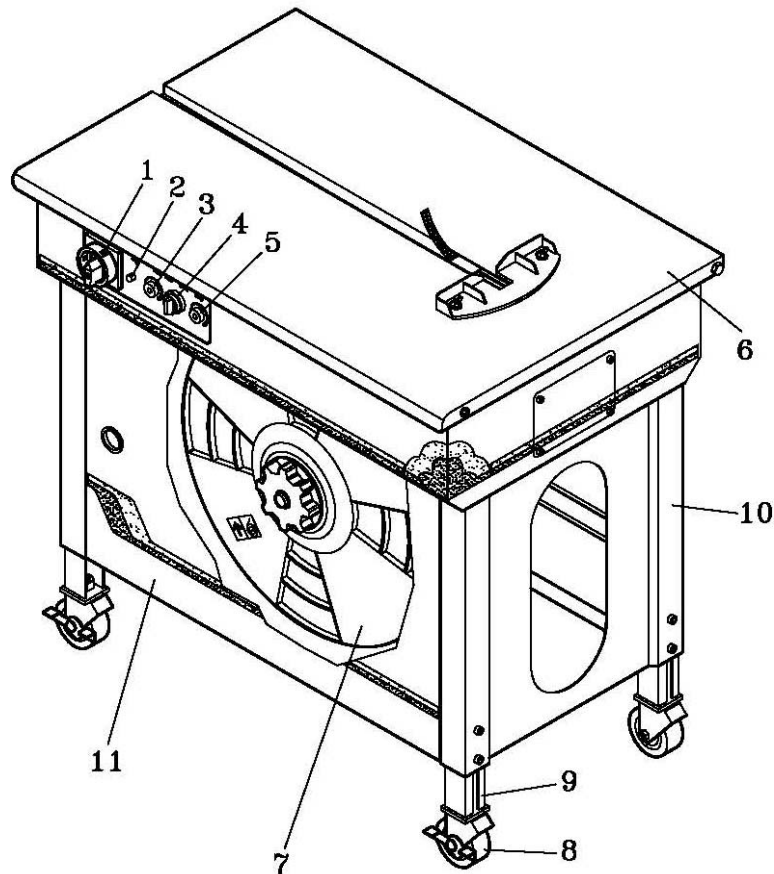
### (5) How to Remove/Handle the Machine from the Pallet

Two people stand on each side of the machine and remove the machine from the pallet to the floor.





## (6) Machine and Operating Elements

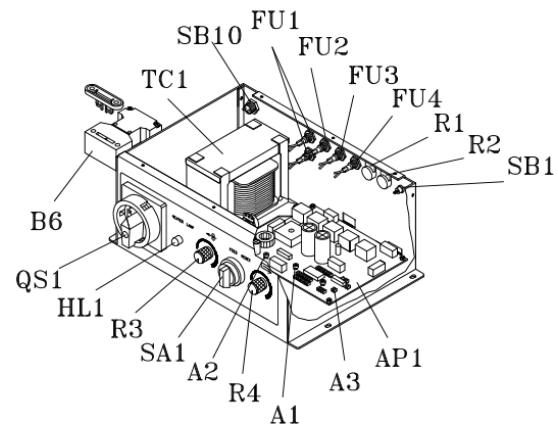
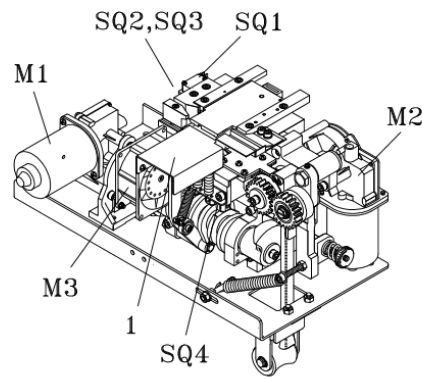


1. Main power switch
2. Ready lamp, lamp will light up after turn on the Main power switch, and flash when machine error
3. Feed length knob, strap feed length
4. Selector switch, strap feed and reset
5. Tension adjustment knob, strap tension adjustment
6. Table top
7. Strap reel
8. Castor, two lockable 、 two free
9. Adjustable legs
10. Frame
11. Door (For TP-501)





## (7) Installation Diagram



M1	Motor 1, unit drive	B6	Interlock safety switch (Option)
M3	Fan	QS1	Main power switch
SQ2	Switch, home position	HL1	Ready lamp
SQ3	Switch, sealing position	TC1	Transformer
1	Heater ass'y	R3	Feed length knob
SQ1	Switch, start	FU1	Fuse 110V/3A, 220V/230V/240V/2A (For power)
SQ4	Switch, low tension	SA1	Selector switch, strap feed and reset
M2	Motor 2, strap feed and reverse	A2	Feed length knob
		R4	Tension adjustment
		FU2	knob Fuse 1A (For P.C.B.)
		FU3	P.C.B.)
		A1	Fuse 10A (For Motor)
		FU4	High tension knob Fuse 1A (For Heater)
		R1	Weld cooling timer
		AP1	P.C.B.
		SB1	Jog switch



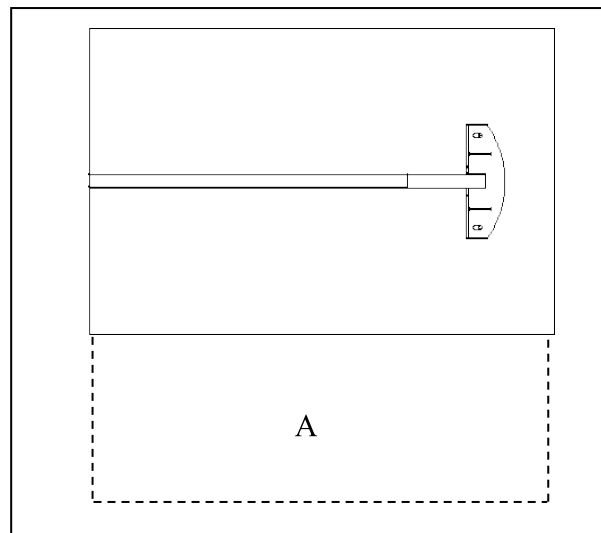


## 5. Operating the Machine

### (1) Operation Space

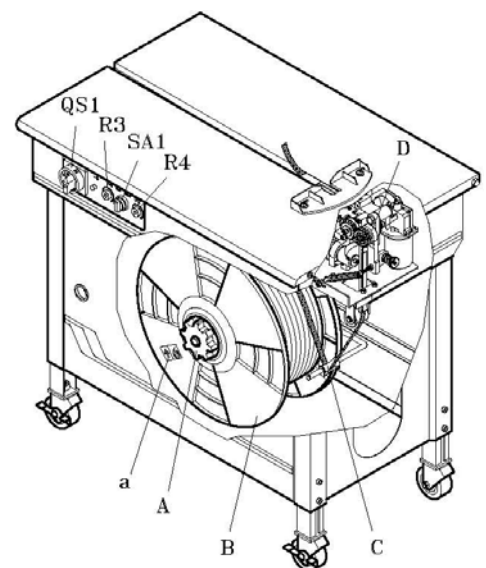
Keep the area (A) free for the operator.

The area (A) is necessary for operation strapping machine or changing the strap coil.



### (2) How to Load and Thread P.P. Strap

1. Turn reel nut handle (A) left and remove it.
2. Remove the outer flange (B) and install the strap reel.
3. Make sure that the sense of rotation is counterclockwise (a) when unrolling.
4. Put the outer flange back on and tighten reel nut handle (A) to the right.
5. Remove all adhesive strips or other adhesive material.
6. Unroll about 1.5 m of strap and make sure that it is not twisted.
7. Thread the strap over (C) to roller (D) in direction of the arrow.
8. Turn left button SA1 (strap feed) to the left until obtaining the length you need.







### (3) How to Operate

1. Turn main switch QS1 to ON. The heating element reaches the working temperature at approximately 3 minutes.
2. Place a package on the table top (The package must cover the Slide Table).
3. Properly adjust the strap tension potentiometer R4 according to various package.
4. Place the strap around the package to be strapped and insert the strap into the strapping head until it stops.
5. The strapping and welding sequence should complete.
6. At end of strapping sequence the strap end is fed automatically, and potentiometer R3 is to adjust the strap length

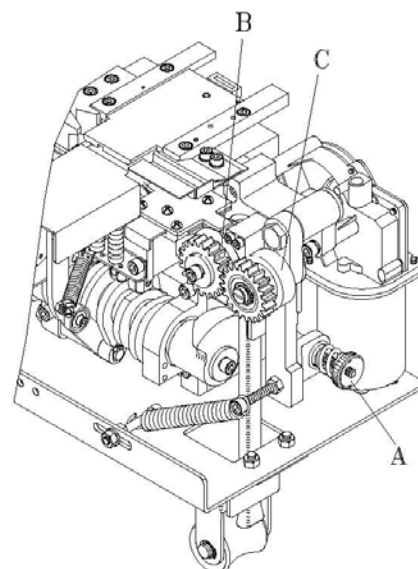
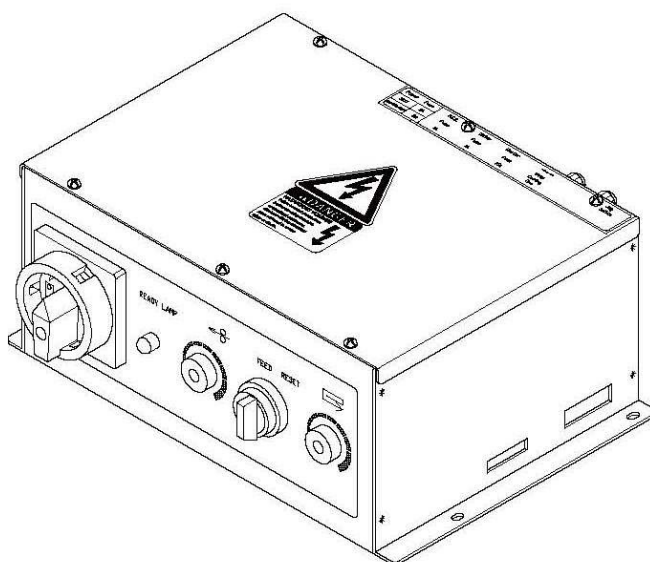
## 6. Adjustment

### (1) Adjustment on Tensioning Rollers

The machine is already well set for enough high tension. However, according to different strap characteristics (such as smoother surface or different thickness), some adjustments for higher tension might be necessary.

When insufficient strapping tension occurs while R4 (tension adjustment knob) is on MAX position, please turn Nut A clockwise.

This can solve the problem of insufficient strapping tension at high tension and strap slipping between B & C due to this.



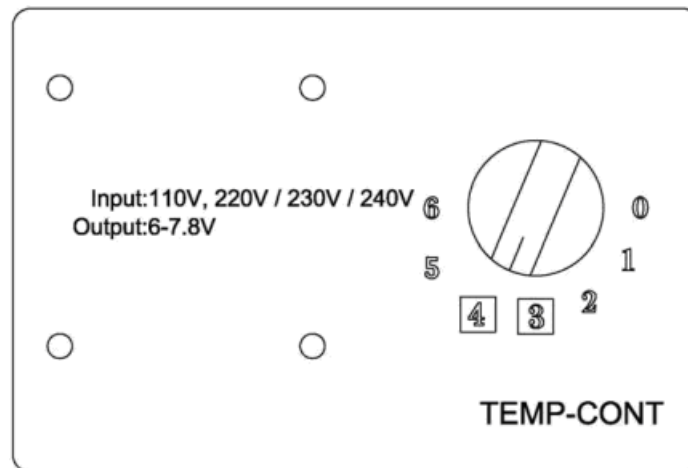




## (2) Heater temperature

Set the knob to position 3 or 4. Adjust the heater temperature by selecting a position between 1 and 6. Choose the suitable temperature, bearing in mind the environmental conditions of the machine. If the heater temperature is too high or too low, a proper seal will not be obtained.

Gradually increase or reduce the position until obtaining an optimum seal.



## (3) Strap Width

1. Adjust Guide Front (TB-197) for inserting strap. The inlet for strap should be 0.5 mm – 1.0 mm wider than strap in use.
2. Adjust the position of Strap Guide B (T5-1-10150 / T5-1-10152) according to the strap width. (refer to fig. 5)
3. Loosen the 5 screws outside the Strap Guide B (T5-1-24131 / T5-1-24132) and adjust its position according to the scale indicated. ( refer to fig. 6)

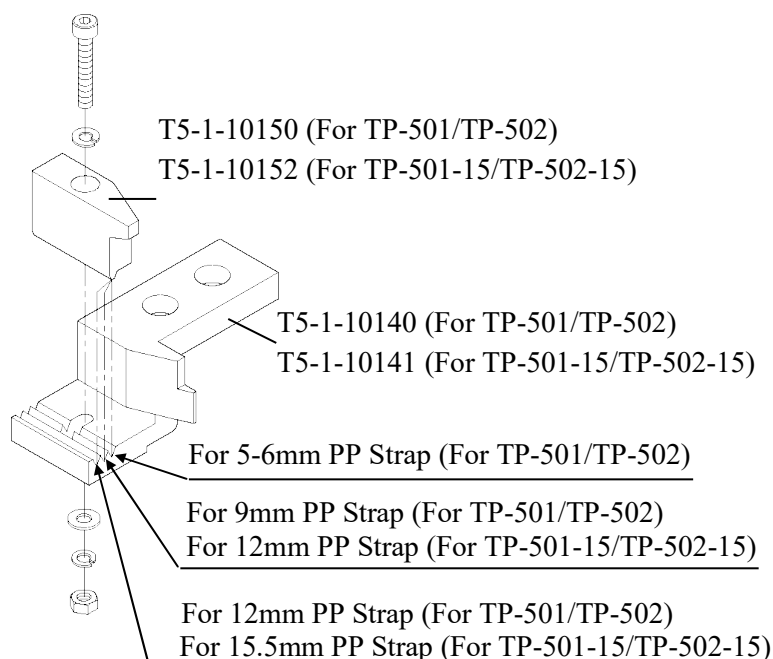


Fig.5.

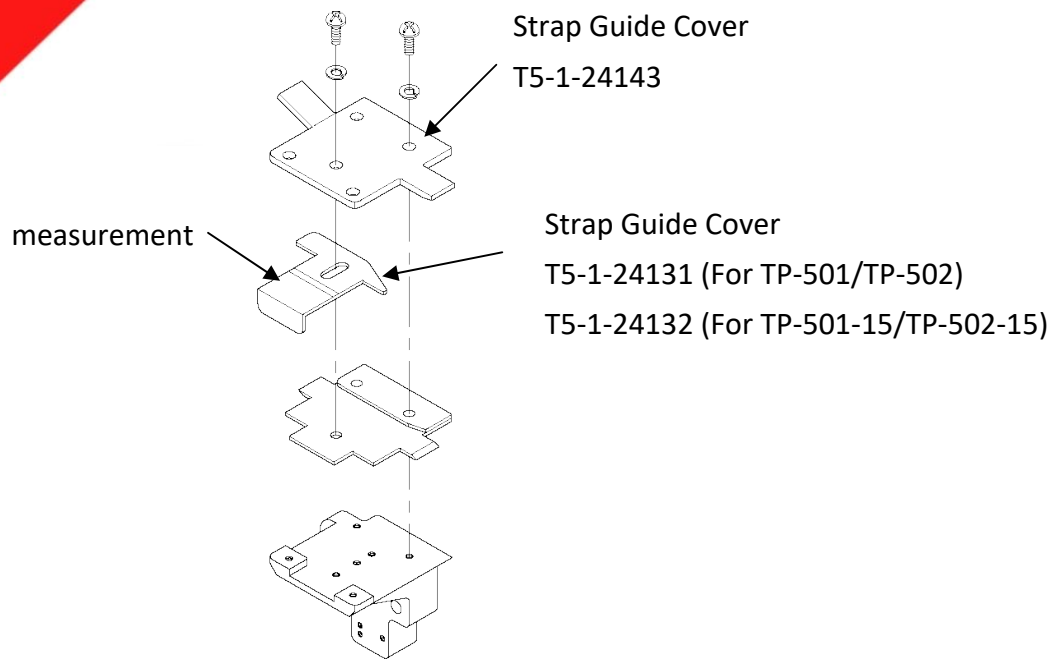


Fig.6.

## 7. Maintenance

### Warning:

**Before any maintenance or repairs on the machine, set the Main Power Switch to "O" (OFF). Wait about 5 minutes for cooling down the heater to avoid burns with this area.**

### 1. Cleaning and Lubrication

The high reliability and long service life of the strapping machine will depend on regular cleaning and maintenance.

#### ATTENTION!

All the important strap transport components, such as the tension rollers and the strap guides, must be kept free from oil and grease. (lubricant)

The lubricant has to be non-resinous. The lubricant is SAE 30

### 2. Maintenance

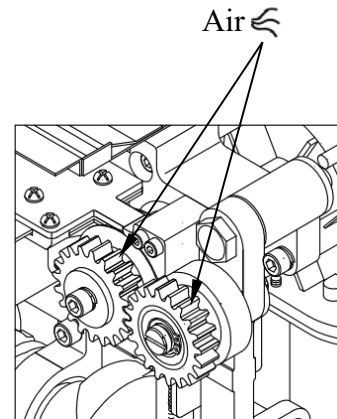
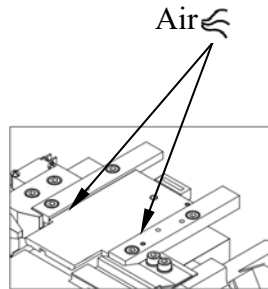
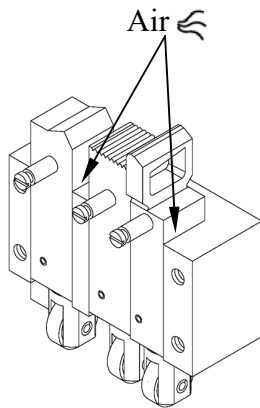
Only use original spare parts supplied by manufacturer.





**Daily:**

Use air gun to clean the circled positions (nearby the cutters, strap guide daily Remove plastic residue in the machine.



**Weekly:**

Lubricate front bar, press bar and rear bar weekly.

Please refer to the following mesh areas for instruction.

Before lubricating, be sure to clean the parts first to avoid mixing oil and debris which might have a bad effect on machine's function.

**Monthly : ( or 3,000 strapping cycles )**

Clean both sides of heater plate and polish with fine sandpaper if necessary.

**ATTENTION:** Make sure the welding plate is cool first!!

Check cam rollers of seal head for easy movement. slide table back to home position automatically by the spring tension.

Be sure to clean any debris in the tension roller.

**6 Months: ( or 18,000 strapping cycles )**

Check heater plate, replace and readjust it if necessary. Check strap cutter in seal head, replace it if necessary.

Check that connector at wiring loom to printed circuit board is firmly fixed.

Make machine ready for operation. Strap one bundle manually several times, paying attention to mal-functions, repeat procedure.

**1 year : ( or 36,000 strapping )**

Replace deflection roller if it shows visible changes.

In case of loud noise at bearings: locate them, replace the bearings.





Get machine ready for operation again, strap one bundle manually several times, paying attention to malfunctions.

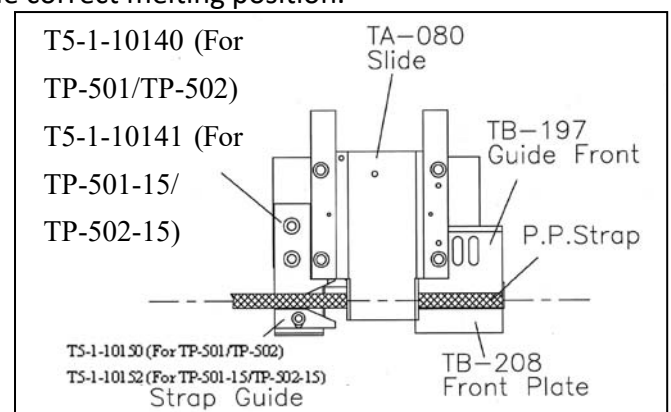




## 8. Troubleshooting

### (1) Strap doesn't joint after sealing

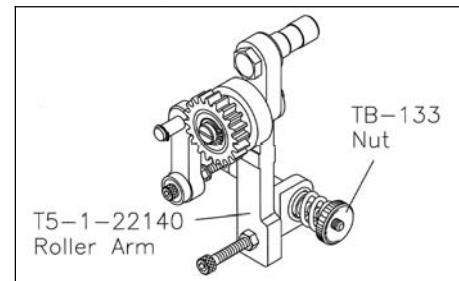
- Check if Heater TB-113 has too much carbonized debris resided on both sides. Too much debris will cause Heater incapable of melting straps. Clean the surfaces of Heater from carbonized debris.
- The temperature of Heater is whether too high or too low. When the temperature is too high, there might be not enough cooling time for cooling down. When the temperature is too low, Heater will be unable to melt the straps.
- Increase welding cooling time (T5-4-10231) behind the control box so to produce longer cooling time.
- Return Spring (TB-114) for Heater Arm (TB-102) is either broken, coming off or worn which makes Heater unable to enter the correct melting position.
- If you find the jointed surface is smaller than the standard size, check if the position of the Strap Guide (B) (T5-1-10150 / T5-1-10152) is according to your requested strapping width. Or you can adjust Guide Front (TB-197) and Front Plate (TB-208) as illustrated in the following drawing for positioning PP straps equal to each other.



### (2) Insufficient strapping tension`

- Turn VR T5-4-10231 clockwise to increase the tension.
- The package is too small (smaller than 80mm).
- The Bearing (BR635ZZ) for Rear Bar (TA-074) is broken or the tip of Rear Bar (TA-074) is worn which makes Rear Bar unable to hold the straps after tensioning. This produces bad quality tension.
- Replace PC Board.
- Turn Tension Adjustment Nut (TB-133) clockwise for an increase in the tension pressure as illustrated in the following drawing.

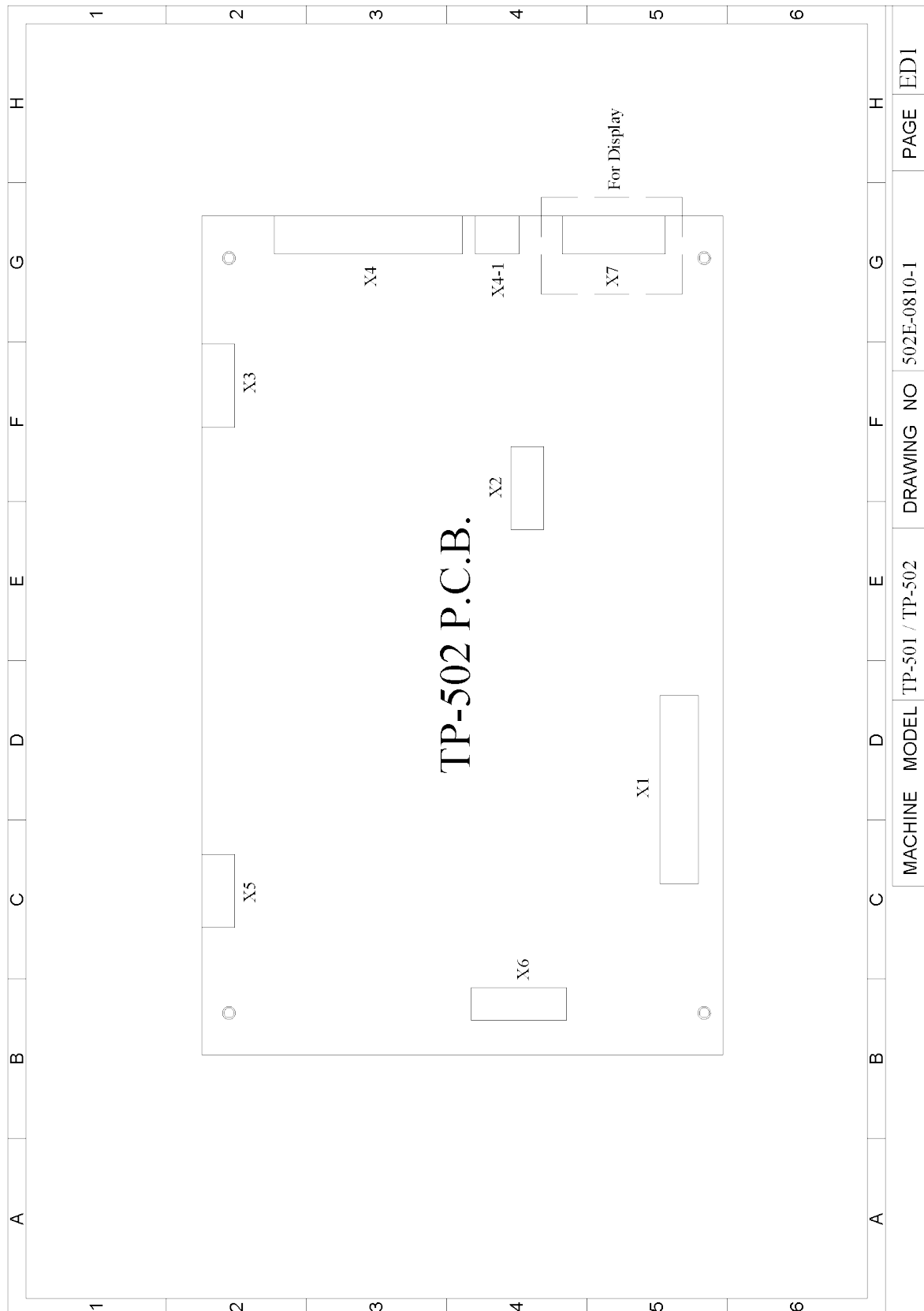






## 9. Wiring Diagram

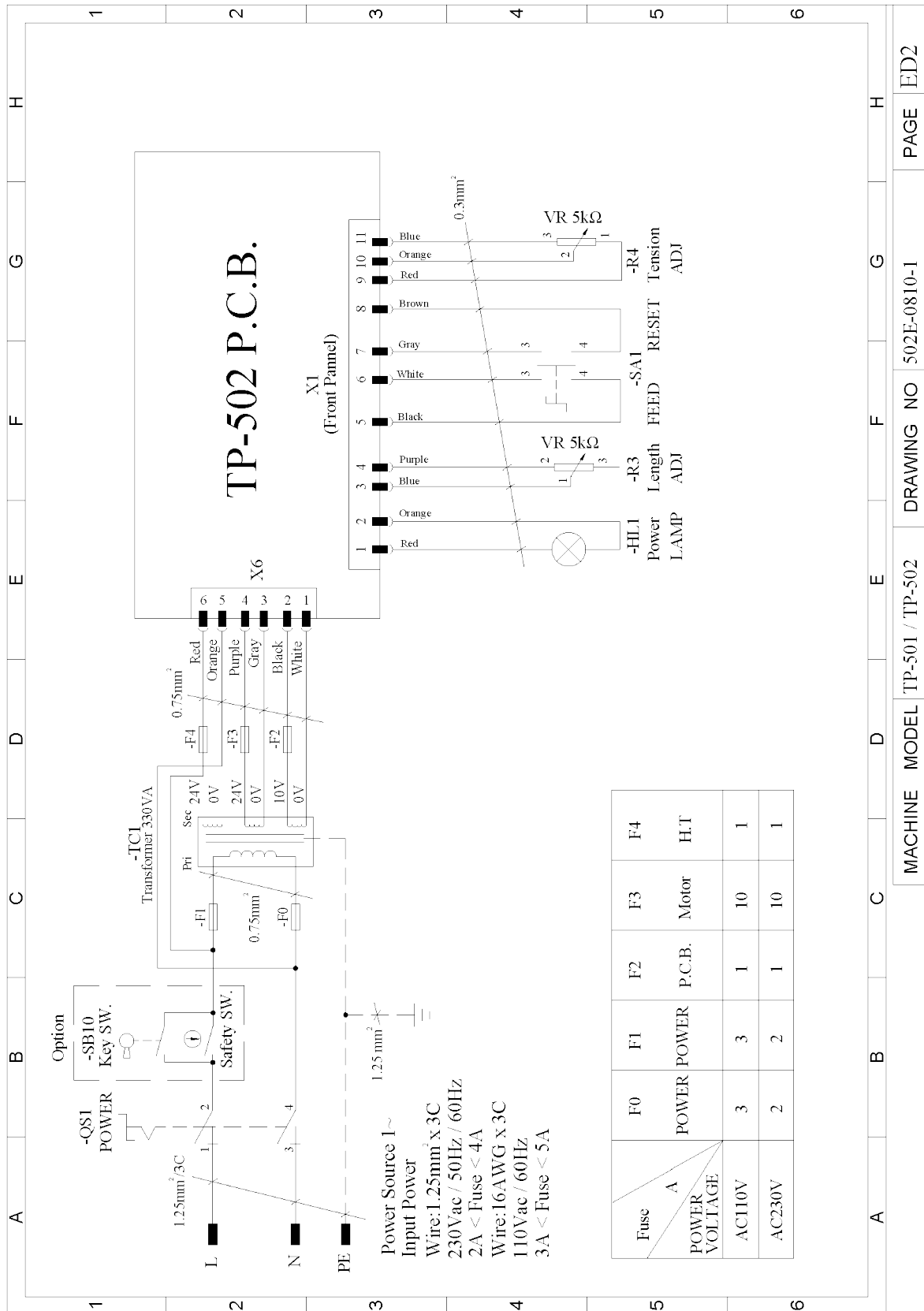
### a. TP-501/TP-502





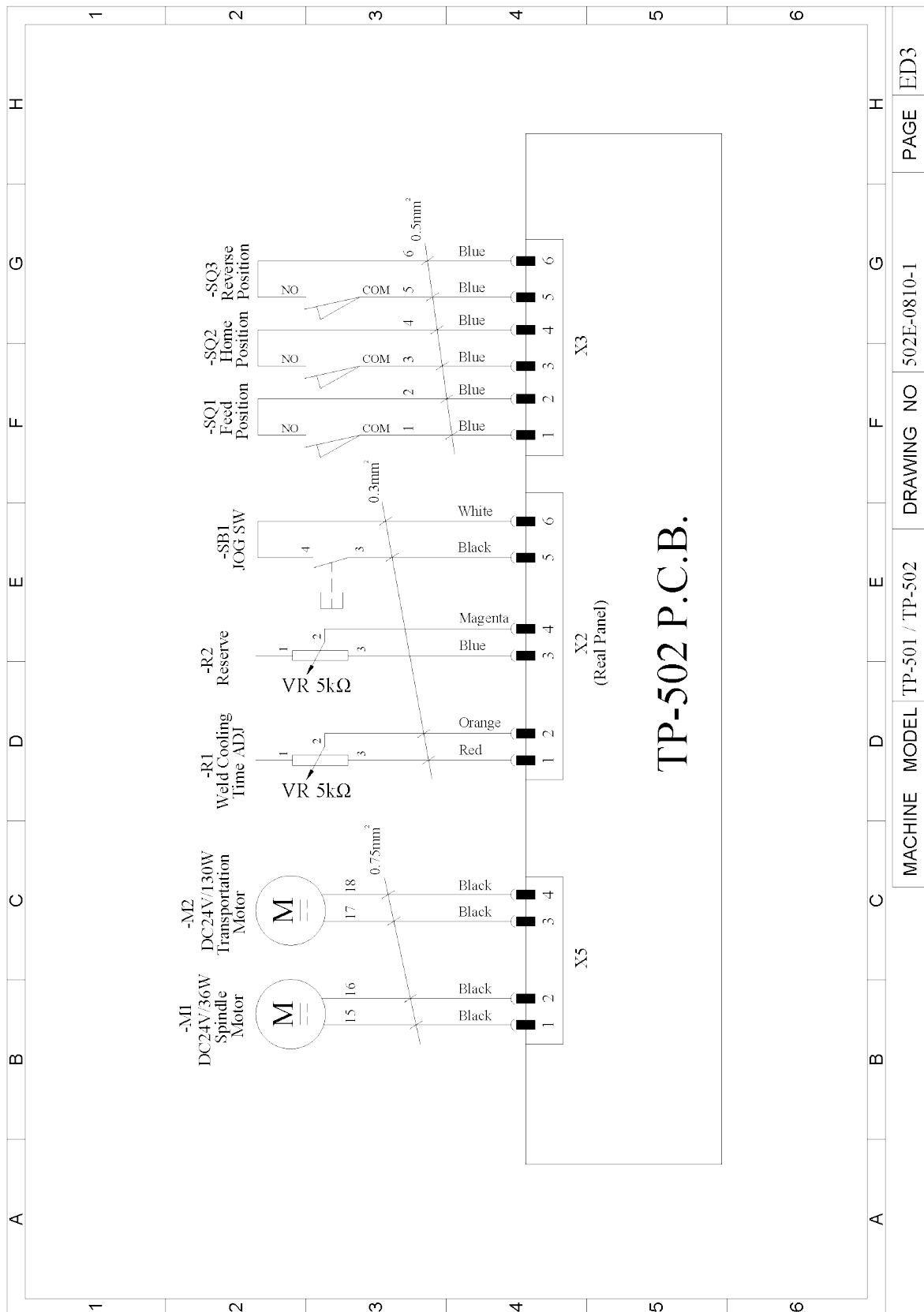


a. TP-501/TP-502



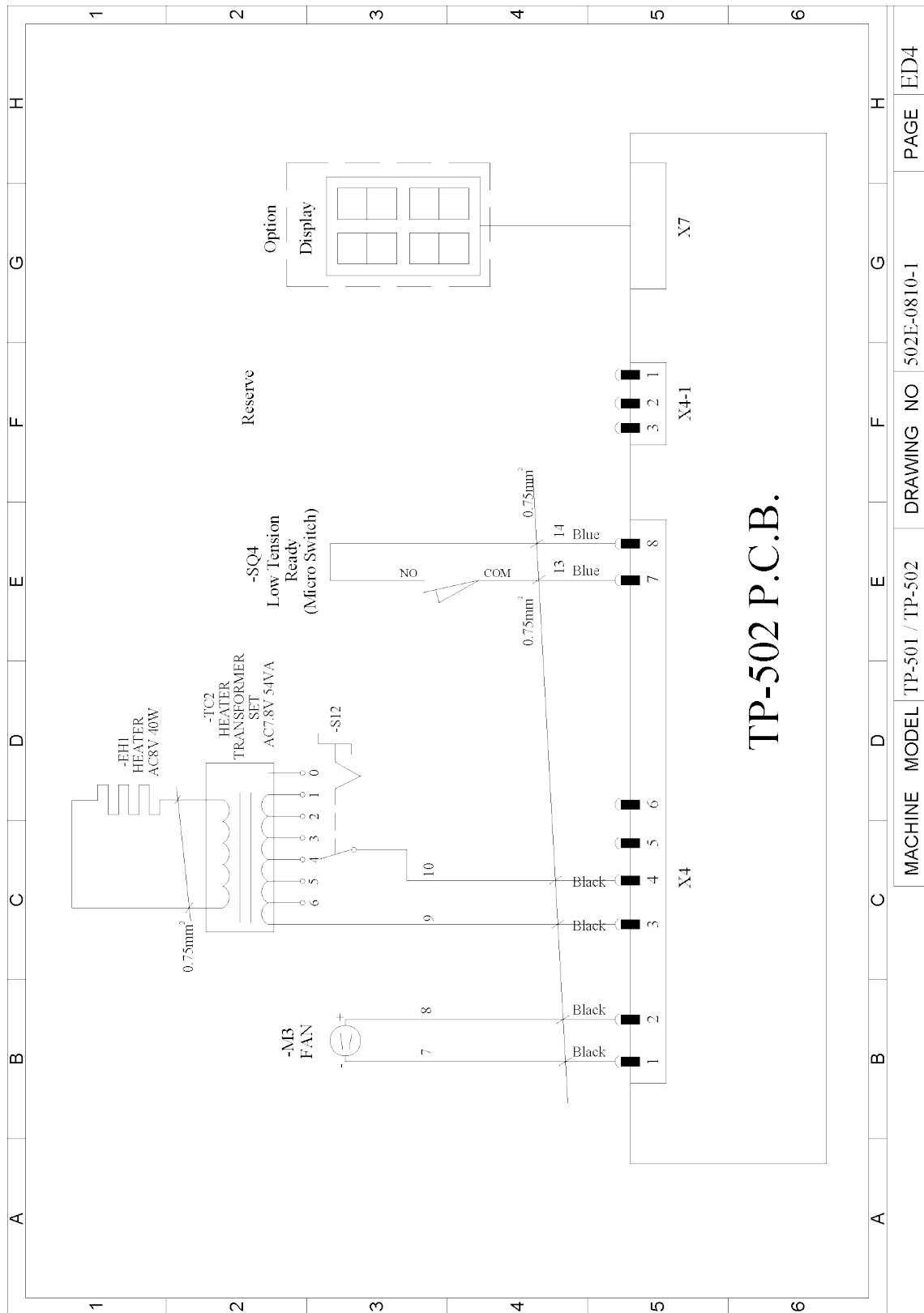


a. TP-501/TP-502







































a. TP-501/TP-502





shape	classification	shape	classification
	HBS		ER
	TMS		RR
	PMS		SR
	FMS		SP
	HB		BR
	THS		MB
	HSS		KYA
	CAP		KYB
	HN		KYC
	WN		HBW
	FLG		PWA \$ 8x \$ 12~ \$ 16x0.8~1.2t \$ 6x \$ 13~ \$ 14x0.8~1.2t
	NTE		PWB \$ 8x \$ 14~ \$ 16x1.2~1.5t \$ 6x \$ 15~ \$ 16x1.2~1.5t
	PN		PWC \$ 8x \$ 20~ \$ 23x2.0t \$ 6x \$ 16~ \$ 19x2.0t
	PW		PWD
	SW		DS
	TW		TTP
	BWW		FTP





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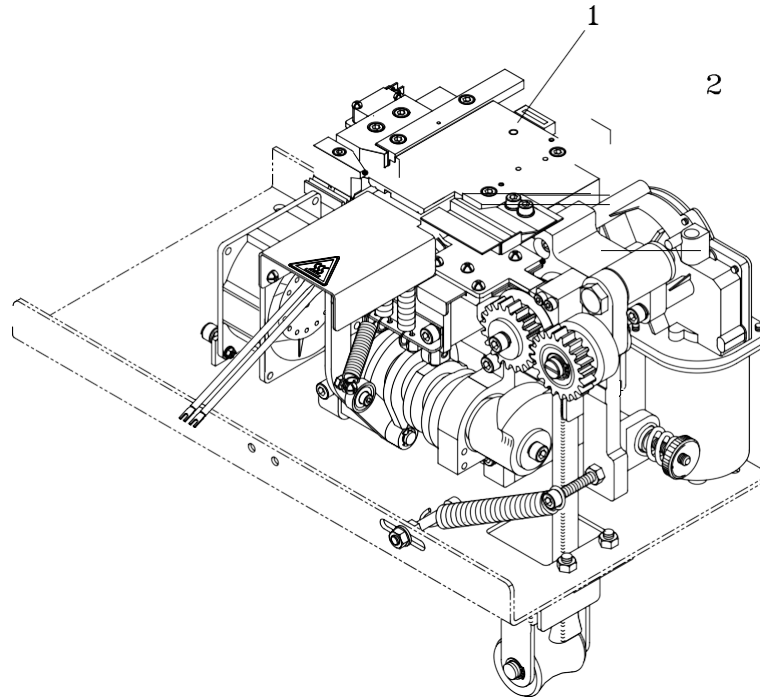




# 1 STRAPPING HEAD UNIT

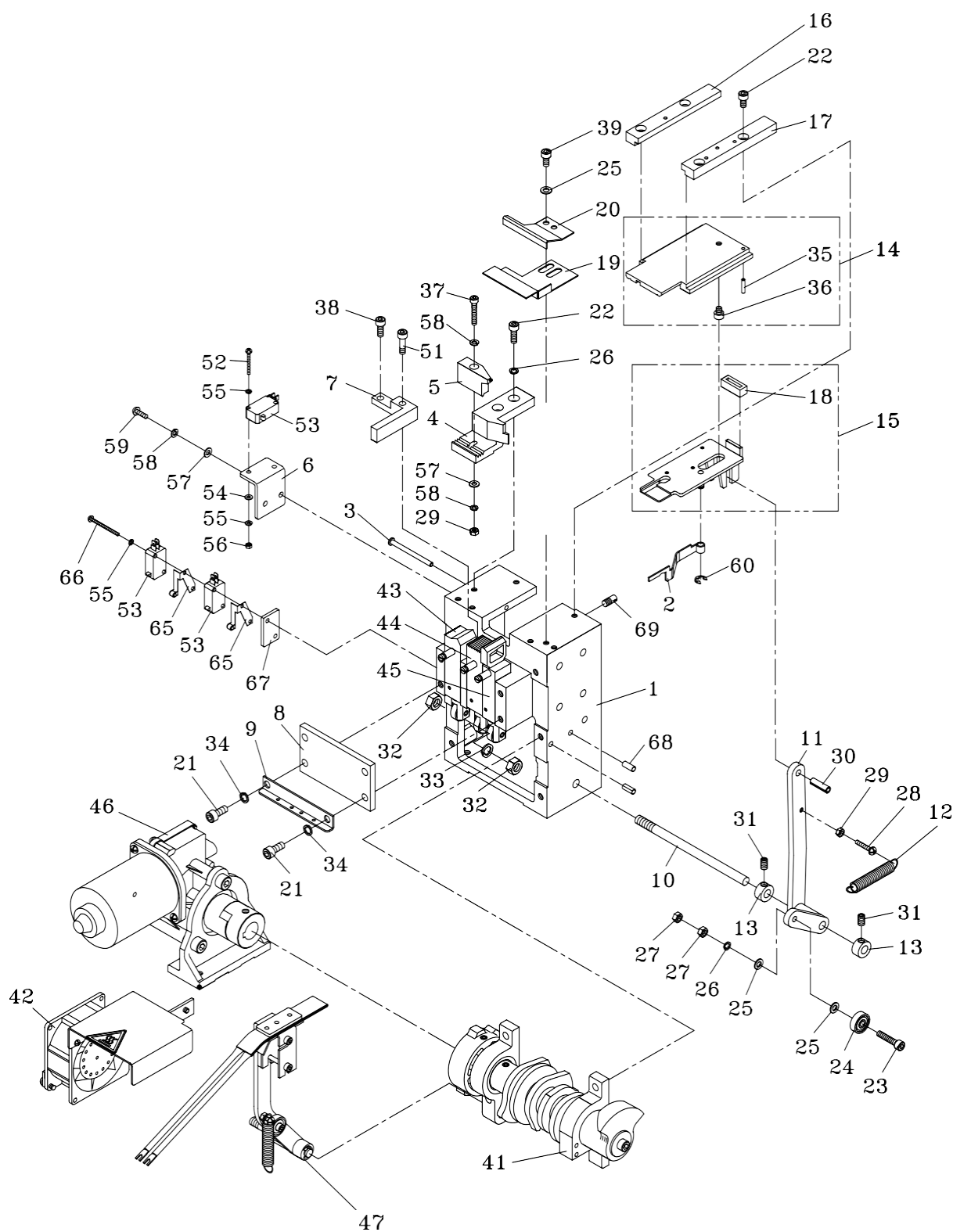
T5-1-90002

T5-1-90004



REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
1	T5-1-90002	Strapping Head Unit (For 5~12mm)	1	SEE PAGE 2
	T5-1-90004	Strapping Head Unit (For 12~15.5mm)	1	
	T5-1-10001	Strapping Head Group (For 5~12mm)	1	
	T5-1-10003	Strapping Head Group (For 12~15.5mm)	1	
2	T5-1-20002	Feed Group (For 5~12mm)	1	SEE PAGE 11
	T5-1-20004	Feed Group (For 12~15.5mm)	1	









**1-1**

## STRAPPING HEAD GROUP

**T5-1-10001**

**T5-1-10003**

REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
	T5-1-10001	Strapping Head Group (For 5~12mm)	1	
	T5-1-10003	Strapping Head Group (For 12~15.5mm)	1	
1	T5-1-10110	Main Body Block	1	
2	T5-1-10120	Switch Lever	1	
3	T5-1-10130	Switch Pin	1	
4	T5-1-10140	Strap Guide (A)(For 5~12mm)	1	
	T5-1-10141	Strap Guide (A)(For 12~15.5mm)	1	
5	T5-1-10150	Strap Guide (B)(For 5~12mm)	1	
	T5-1-10152	Strap Guide (B)(For 12~15.5mm)	1	
6	T5-1-10160	Switch Bracket	1	
7	TA-239	Cutter Holder	1	
8	TA-067	Bar Guide Lid	1	
9	TA-072	Spring Hook	1	
10	TA-094	Shaft	1	
11	TA-090	Arm	1	
12	TB-114	Return Spring	1	
13	TA-229	Collar	2	
14	TA-080A	Slide Ass'y	1	
15	T5-1-10250A	Separator Ass'y	1	
16	TA-095	Guide (L) Guide	1	
17	TA-226	(R) Rubber	1	
18	TA-236	Buffer Front	1	
19	TB-208	Plate Guide	1	
20	TB-197	Front HBS,	1	
21	HBS0616	M6×16 HBS,	4	
22	HBS0512	M5×12 HBS,	6	
23	HBS0525	M5×25	1	
24	BR635ZZ	Bearing, 635ZZ	1	
25	PW05	PW, M5	2	
26	SW05	SW, M5	5	
27	HN05	HN, M5	2	
28	PMS0420	PMS, M4×20	1	
29			2	





30	HN04 SP0620	HN, M4 Spring Pin, 6×20	1	
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**1-1****STRAPPING HEAD GROUP****T5-1-10001****T5-1-10003**

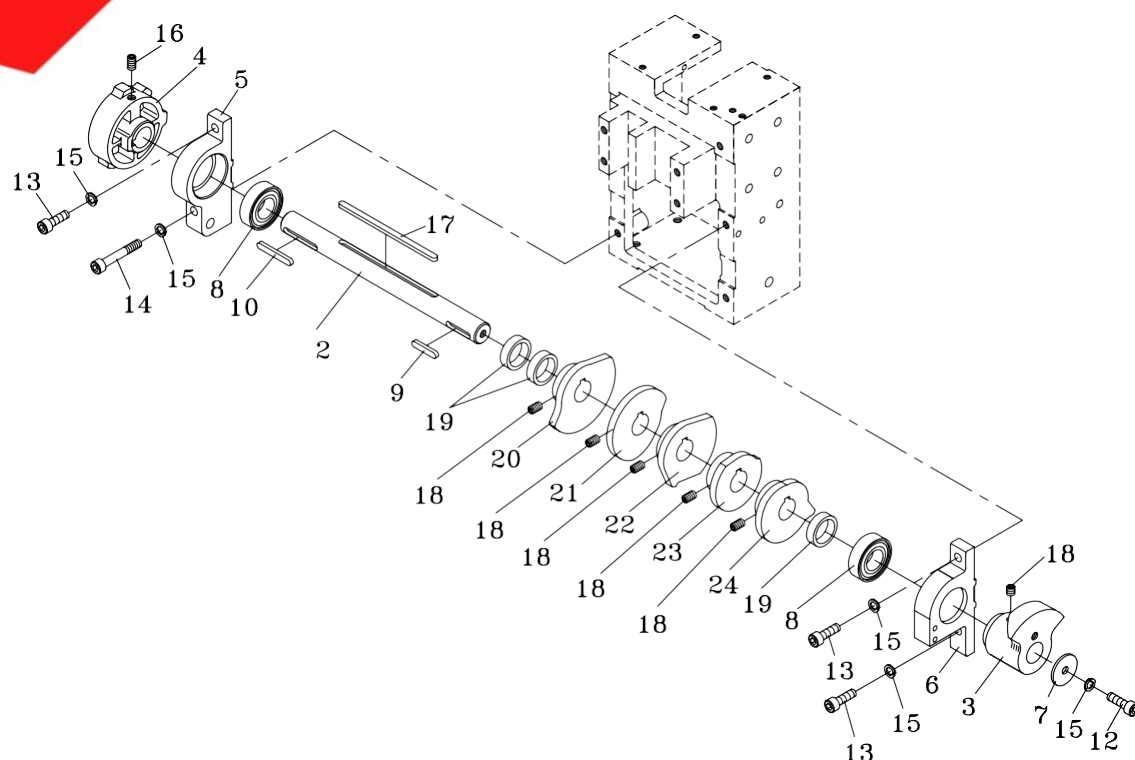
REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
31	HSS0606G	HSS, M6×6 (G)	2	
32	HN08	HN, M8	2	
33	SW08	SW, M8	1	
34	SW06	SW, M6	4	
35	SP0314	Spring Pin, 3×14	1	
36	HBS0505.2	HBS, M5×5.2	1	
37	HBS0425	HBS, M4×25	1	
38	HBS0516	HBS, M5×16	1	
39	HBS0510	HBS, M5×10	2	
41	T5-1-11000	Cam Group	1	SEE PAGE 5
42	T5-1-12001	Fan Ass'y Rear	1	SEE PAGE 6
43	T5-1-13000	Bar Ass'y	1	SEE PAGE 8
44	T5-1-14000	Press Bar Ass'y	1	SEE PAGE 9
45	T5-1-15000	Front Bar Ass'y	1	SEE PAGE 10
46	T5-1-30000	Transmission Group	1	SEE PAGE 19
47	T5-1-12004	Heater Ass'y	1	SEE PAGE 7
51	HBS0525H	HBS, M5×25 (H)	1	
52	PMS0320	PMS, M3×20	2	
53	TF-006	Micro Switch	3	
54	PW03	PW, M3	2	
55	SW03	SW, M3	6	
56	HN03	HN, M3	2	
57	PW04	PW, M4	3	
58	SW04	SW, M4	4	
59	PMS0412	PMS, M4×12	2	
60	ER03	Snap Ring, E-3	1	
65	TF-009	Switch Trigger	2	
66	PMS0335	PMS, M3×35	2	
67	T5-1-10770	Plate	1	
68	SP0512	Spring Pin, 5×12	2	





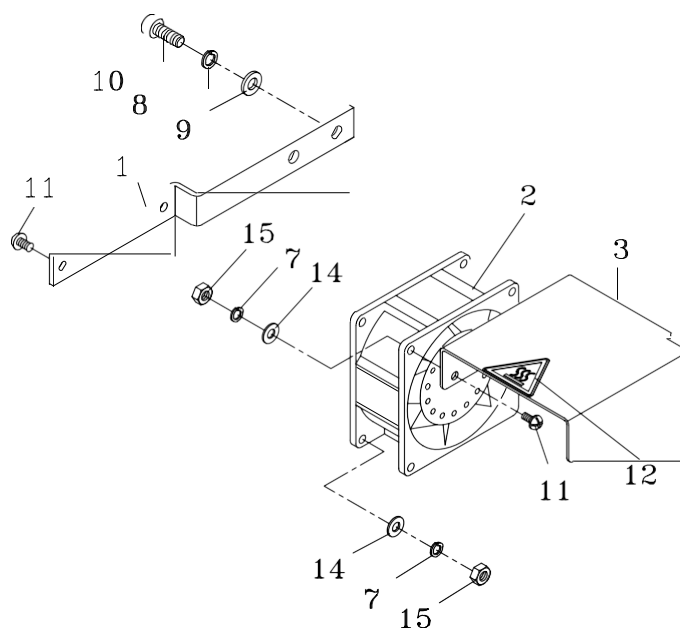
69	TA-089	Spring Hook	1
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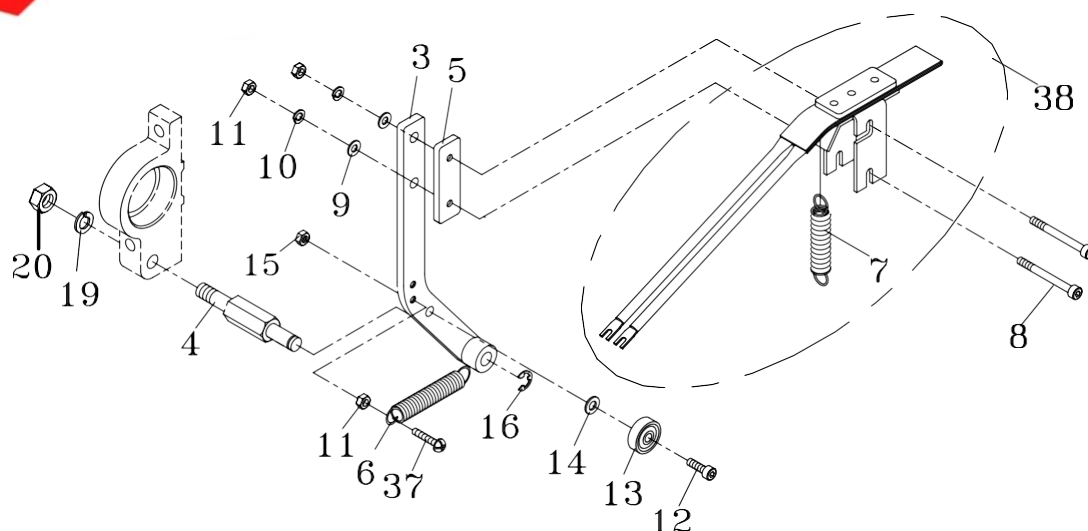


REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
2	T5-1-11121	Cam Shaft	1	
3	T5-1-11130	Tension Cam	1	
4	T5-1-11141	Limit Switch Contactor	1	
5	TA-008-2	Bearing Support (L)	1	
6	TA-017-2	Bearing Support (R)	1	
7	TB-223	Washer	1	
8	BR6003ZZ	Bearing, 6003ZZ	2	
9	KYA050520	Key, 5×5×20	1	
10	KYA050535	Key, 5×5×35	1	
12	HBS0616	HBS, M6×16	1	
13	HBS0620	HBS, M6×20	3	
14	HBS0645H	HBS, M6×45 (H)	1	
15	SW06	SW, M6	5	
16	HSS0610G	HSS, M6×10 (G)	1	
17	KYA0505101	Key, 5×5×101	1	
18	HSS0608G	HSS, M6×8 (G)	6	
19	TA-241	Spacer	3	
20	TA-015A	Rear Bar Cam	1	
21	TA-015B	Heater Cam	1	
22	TA-012A	Grip Cam	1	
23	TA-012B	Grip Cam	1	
24	TA-014	Separator Cam	1	



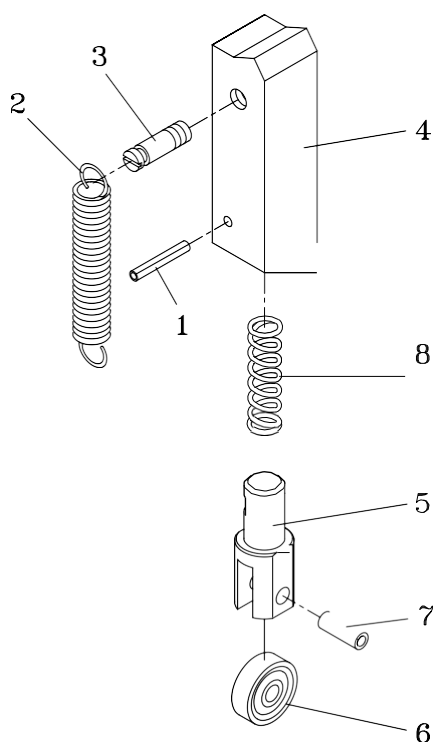


REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
1	T5-1-12360	Fan Support	1	
2	T5-1-12370	Fan	1	
3	T5-1-12380	Fan Cover	1	
7	SW04	SW, M4 SW,	4	
8	SW06	M6 PW, M6	2	
9	PW06A	(A)	2	
10	HBS0616	HBS, M6×16	2	
11	TMS0412	TMS, M4×12	4	
12	LA-40002	Label	1	
14	PW04	PW, M4	4	
15	HN04	HN, M4	4	

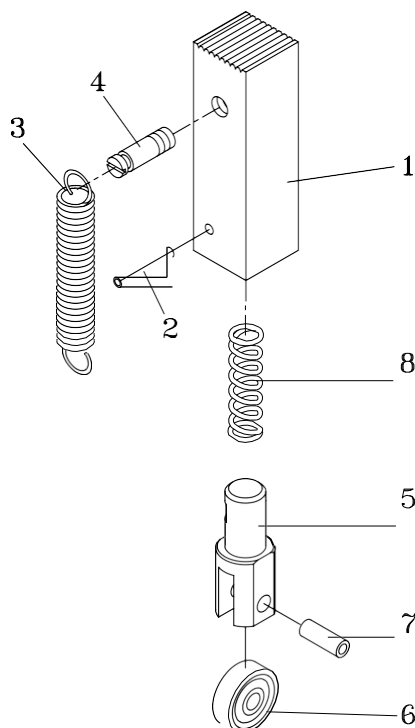


REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
3	TB-102	Heater Arm	1	
4	TB-103	Pin	1	
5	TB-107	Side Plate	1	
6	TB-114	Return Spring	1	
7	TB-115	Spring	1	
8	HBS0440H	HBS, M4×40 (H)	2	
9	PW04	PW, M4	2	
10	SW04	SW, M4	2	
11	HN04	HN, M4	3	
12	HBS0516	HBS, M5×16	1	
13	BR635ZZ	Bearing, 635ZZ	1	
14	PW05	PW, M5	1	
15	HN05	HN, M5	1	
16	ER06	Snap Ring, E-6	1	
19	SW08	SW, M8	1	
20	HN08	HN, M8	1	
37	PMS0412	PMS, M4×12	1	
38	TB-113	Heater Ass'y	1	

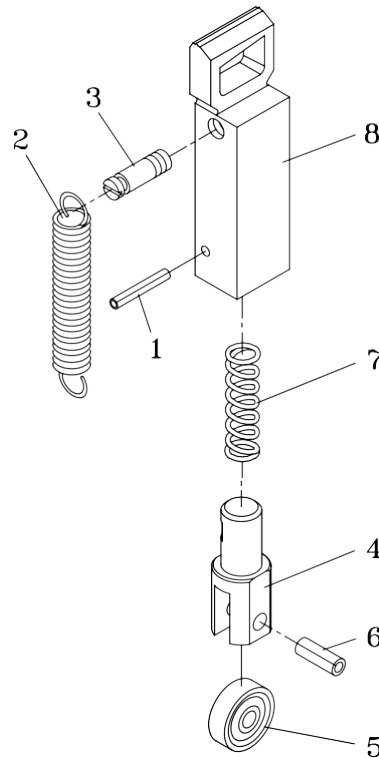




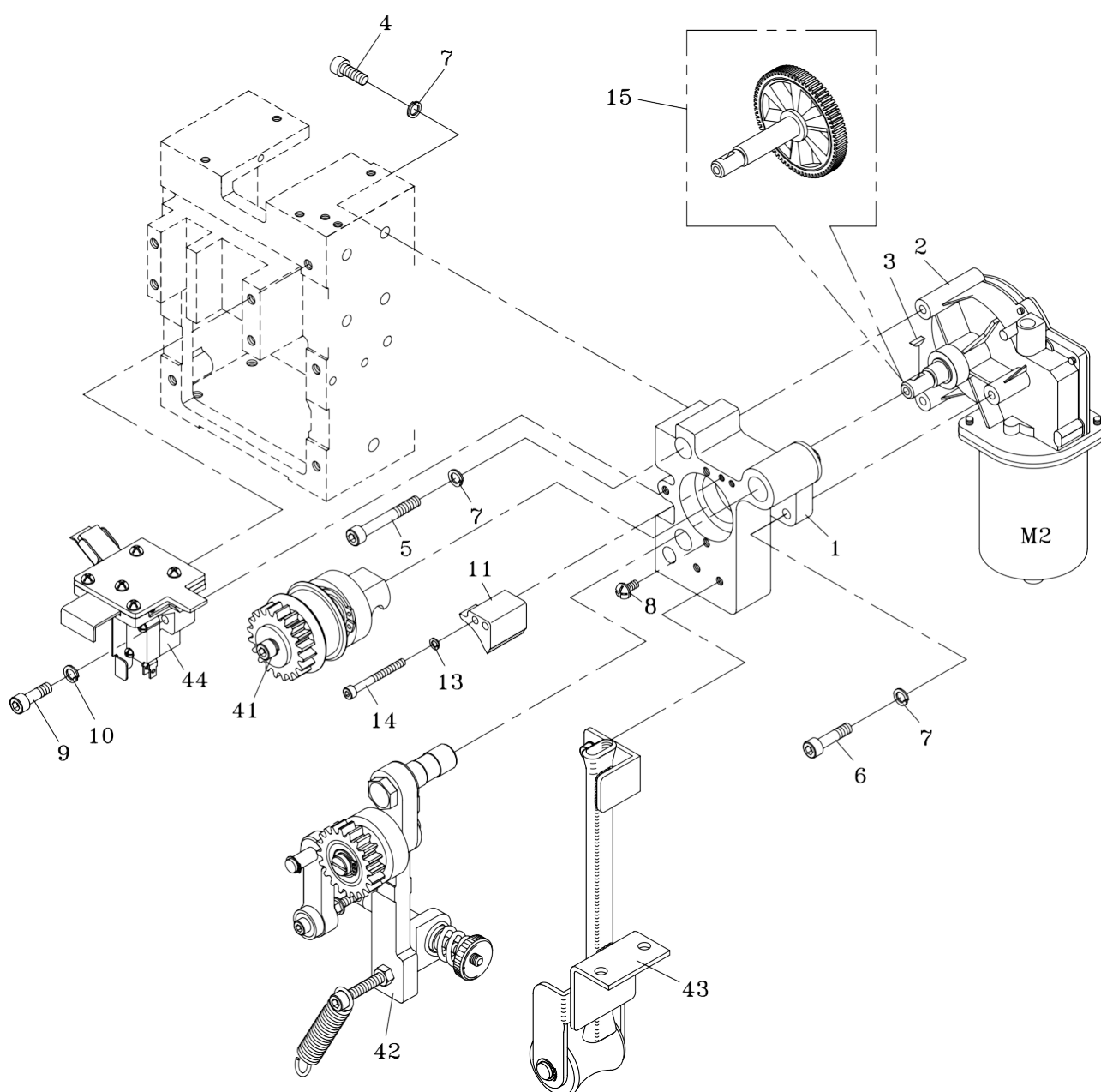
REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
1	SP0318	Spring Pin, 3×18	1	
2	TA-071	Return Spring	1	
3	TA-073	Spring Hook	1	
4	TA-074	Rear Bar	1	
5	TA-075	Plunger	1	
6	BR635ZZ	Bearing, 635ZZ	1	
7	SP0514	Spring pin, 5×14	1	
8	TA-078	Spring	1	



REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
1	TA-069	Press Bar	1	
2	SP0318	Spring Pin, 3×18	1	
3	TA-071	Return Spring	1	
4	TA-073	Spring Hook	1	
5	TA-075	Plunger	1	
6	BR635ZZ	Bearing, 635ZZ	1	
7	SP0514	Spring Pin, 5×14	1	
8	TA-078	Spring	1	



REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
1	SP0318	Spring Pin, 3×18	1	
2	TA-071	Return Spring	1	
3	TA-073	Spring Hook	1	
4	TA-075	Plunger	1	
5	BR635ZZ	Bearing, 635ZZ	1	
6	SP0514	Spring Pin, 5×14	1	
7	TA-078	Spring	1	
8	TA-079	Front Bar	1	





**1-2**

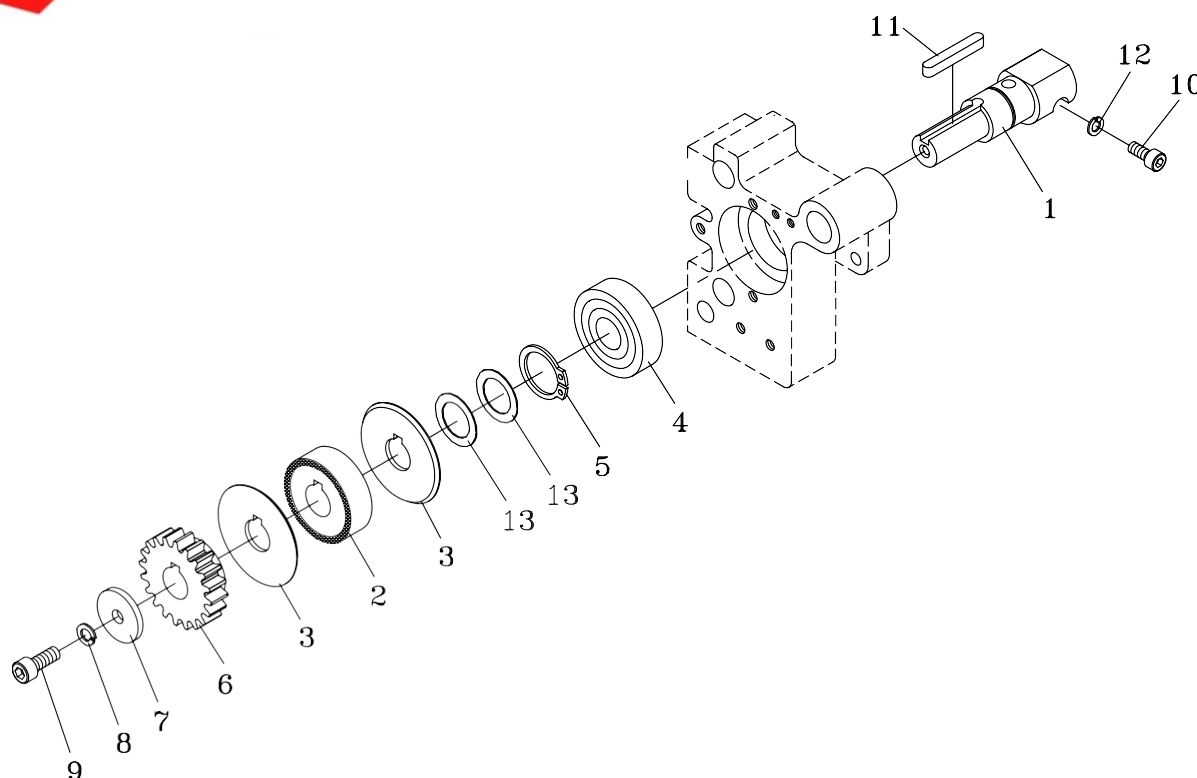
**FEED GROUP**

**T5-1-20002**

**T5-1-20004**

REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
	T5-1-20002	Feed Group (For 5~12mm)	1	
	T5-1-20004	Feed Group (For 12~15.5mm)	1	
1	T5-1-20110	Bracket	1	
2	T5-1-20120	Motor (M2)	1	
3	KYC0310	Key, 3×10	1	
4	HBS0620	HBS, M6×20	3	
5	HBS0650H	HBS, M6×50 (H)	2	
6	HBS0630H	HBS, M6×30 (H)	1	
7	SW06	SW, M6	6	
8	TMS0508	TMS, M5×8 HBS,	2	
9	HBS0525H	M5×25 (H) SW,	2	
10	SW05	M5	2	
11	T5-1-20210	Guide	1	
13	SW04	SW, M4	2	
14	HBS0440H	HBS, M4×40 (H)	2	
15	T5-1-20250	Worm Gear For M2 Motor	1	
41	T5-1-21000	Main Roller Ass'y (For 5~12mm)	1	SEE PAGE 13
	T5-1-21002	Main Roller Ass'y (For 12~15.5mm)	1	
42	T5-1-22003	Roller Arm Ass'y (For 5~12mm) Roller	1	SEE PAGE 14
	T5-1-22005	Arm Ass'y (For 12~15.5mm) Feed	1	
43	T5-1-23000	Shooter Ass'y (For 5~12mm) Feed	1	SEE PAGE 16
	T5-1-23003	Shooter Ass'y (For 12~15.5mm) Strap	1	
44	T5-1-24009	Guide Ass'y (For 5~12mm) Strap	1	SEE PAGE 17
	T5-1-24010	Guide Ass'y (For 12~15.5mm)	1	





REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
	T5-1-21000	Main Roller Ass'y (For 5~12mm)	1	
	T5-1-21002	Main Roller Ass'y (For 12~15.5mm)	1	
1	T5-1-21111	Main Roller Shaft	1	
2	T5-1-21120	Main Roller (For 5~12mm)	1	
	T5-1-21122	Main Roller (For 12~15.5mm)	1	
3	T5-1-21130	Side Plate	2	
4	BR6004-2RS	Bearing, 6004 2RS	1	
5	SR20	Snap Ring, S-20	1	
6	T5-1-21160	Gear	1	
7	TB-223	Washer	1	
8	SW06	SW, M6	1	
9	HBS0616	HBS, M6×16	1	
10	HBS0516	HBS, M5×16	1	
11	KYA050532	Key, 5×5×32	1	
12	SW05	SW, M5	1	
13	T7-5-42980	Washer (For 5~12mm)	2	

1-2-2

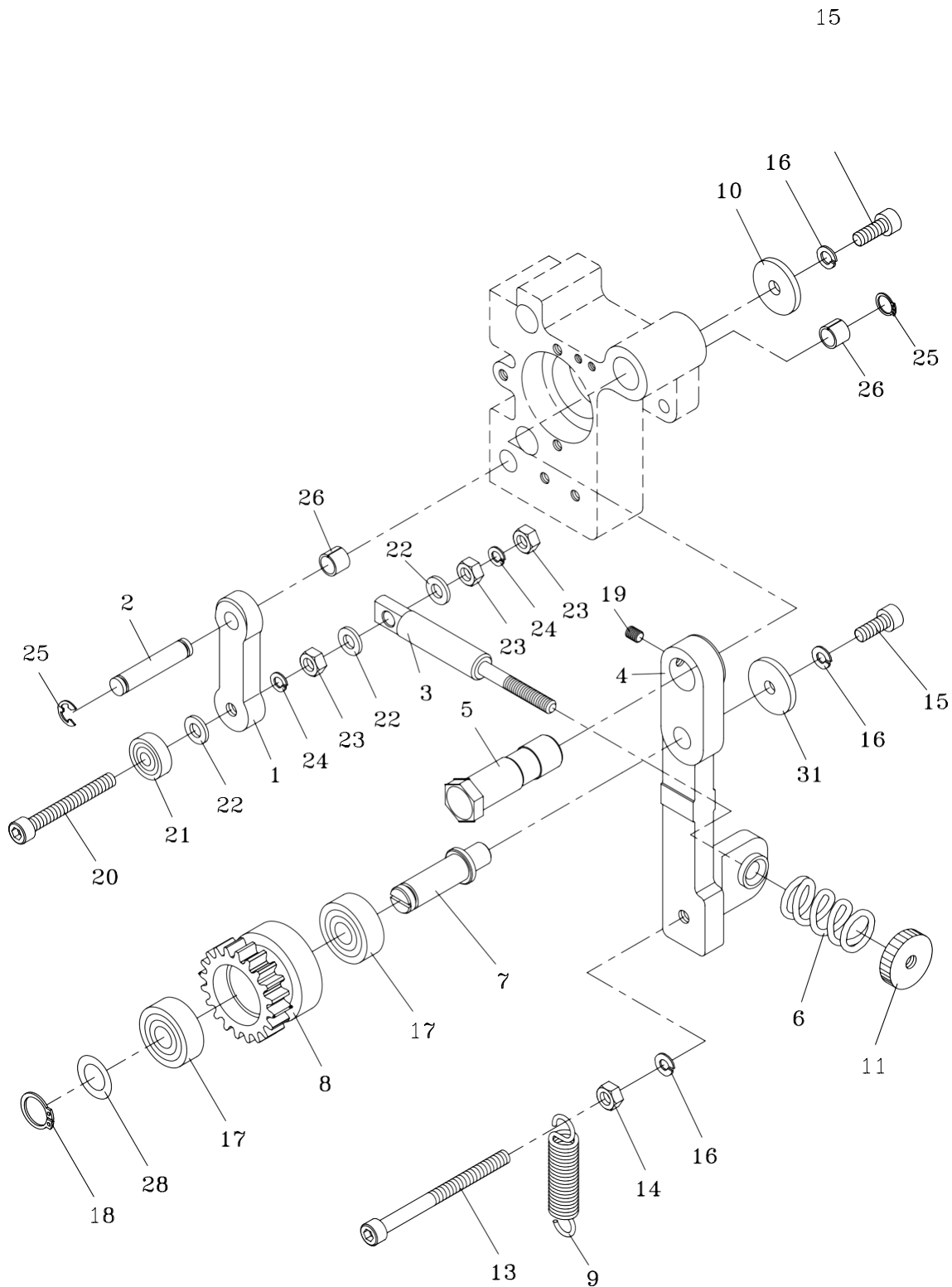
## ROLLER ARM ASS'Y



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**T5-1-22005**



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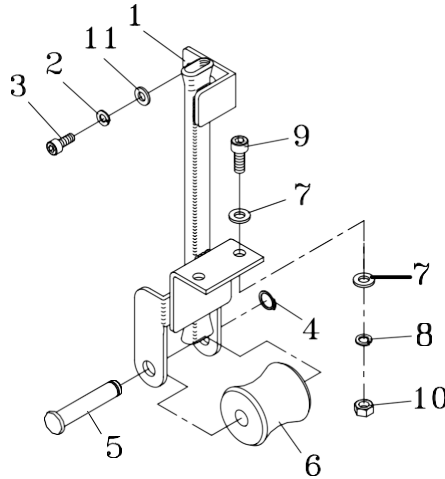
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**1-2-2****ROLLER ARM ASS'Y****T5-1-22003****T5-1-22005**

REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
	T5-1-22003	Roller Arm Ass'y (For 5~12mm)	1	
	T5-1-22005	Roller Arm Ass'y (For 12~15.5mm)	1	
1	T5-1-22110	Tension Arm	1	
2	T5-1-22120	Shaft	1	
3	T5-1-22130	Connecting Rod	1	
4	T5-1-22140	Roller Arm	1	
5	T5-1-22150	Shaft	1	
6	T5-1-22160	Spring	1	
7	T5-1-22170	Roller Shaft (For 5~12mm)	1	
	T5-1-22171	Roller Shaft (For 12~15.5mm)	1	
8	T5-1-22180	Roller (For 5~12mm)	1	
	T5-1-22182	Roller (For 12~15.5mm)	1	
9	T6-3-10120	Accumulator Balance Spring	1	
10	TB-223	Washer	1	
11	TB-133	Nut	1	
13	HBS0675H	HBS, M6×75 (H) HN,	1	
14	HN06	M6	1	
15	HBS0616	HBS, M6×16	2	
16	SW06	SW, M6	3	
17	BR6001ZZ	Bearing, 6001ZZ	2	
18	SR12	Snap Ring, S-12	1	
19	HSS0508G	HSS, M5×8 (G)	1	
20	HBS0540	HBS, M5×40	1	
21	BR635ZZ	Bearing, 635ZZ	1	
22	PW05	PW, M5	3	
23	HN05	HN, M5 SW,	3	
24	SW05 ER06	M5	2	
25	MB0808	Snap Ring, E-6 Metal	2	
26		Bushing, 0808	2	
	T5-1-22380			
28		Spacer	1	
	PW06C			
31		PW, M6 (C)	1	





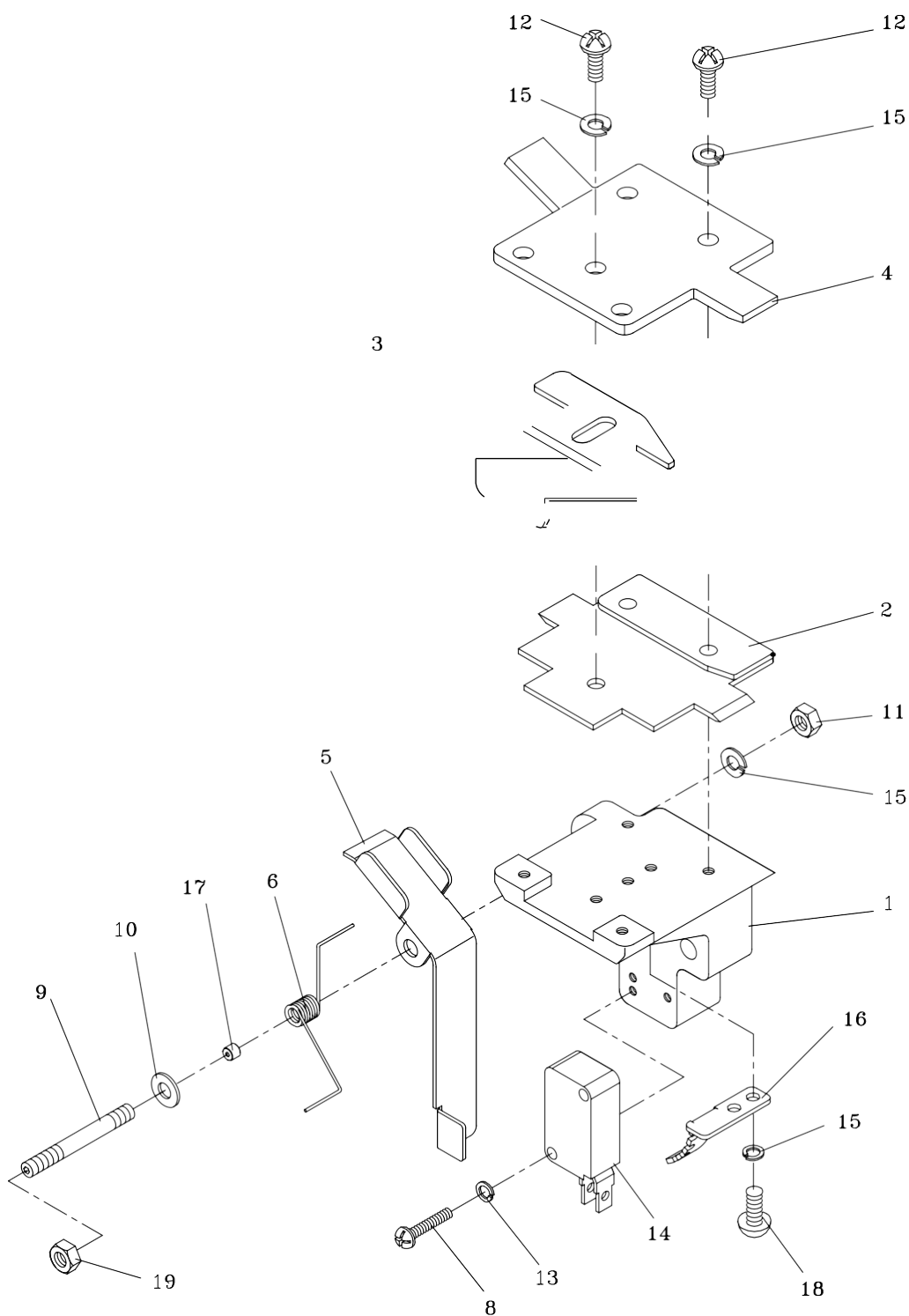
REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
1	T5-1-23000	Feed Shooter Ass'y (For 5~12mm)	1	
	T5-1-23003	Feed Shooter Ass'y (For 12~15.5mm)	1	
	T5-1-23110	Feed Shooter (For 5~12mm)	1	
	T5-1-23115	Feed Shooter (For 12~15.5mm)	1	
2	SW05	SW, M5	2	
3	HBS0512	HBS, M5×12	2	
4	SR10	Snap Ring, S-10	1	
5	TC-048	Shaft	1	
6	TC-049	Roller	1	
7	PW06A	PW, M6 (A)	4	
8	SW06	SW, M6 HBS,	2	
9	HBS0616	M6×16 HN,	2	
10		M6	2	
11	HN06		2	
	PW05	PW, M5		

1-2-4

## STRAP GUIDE ASS'Y



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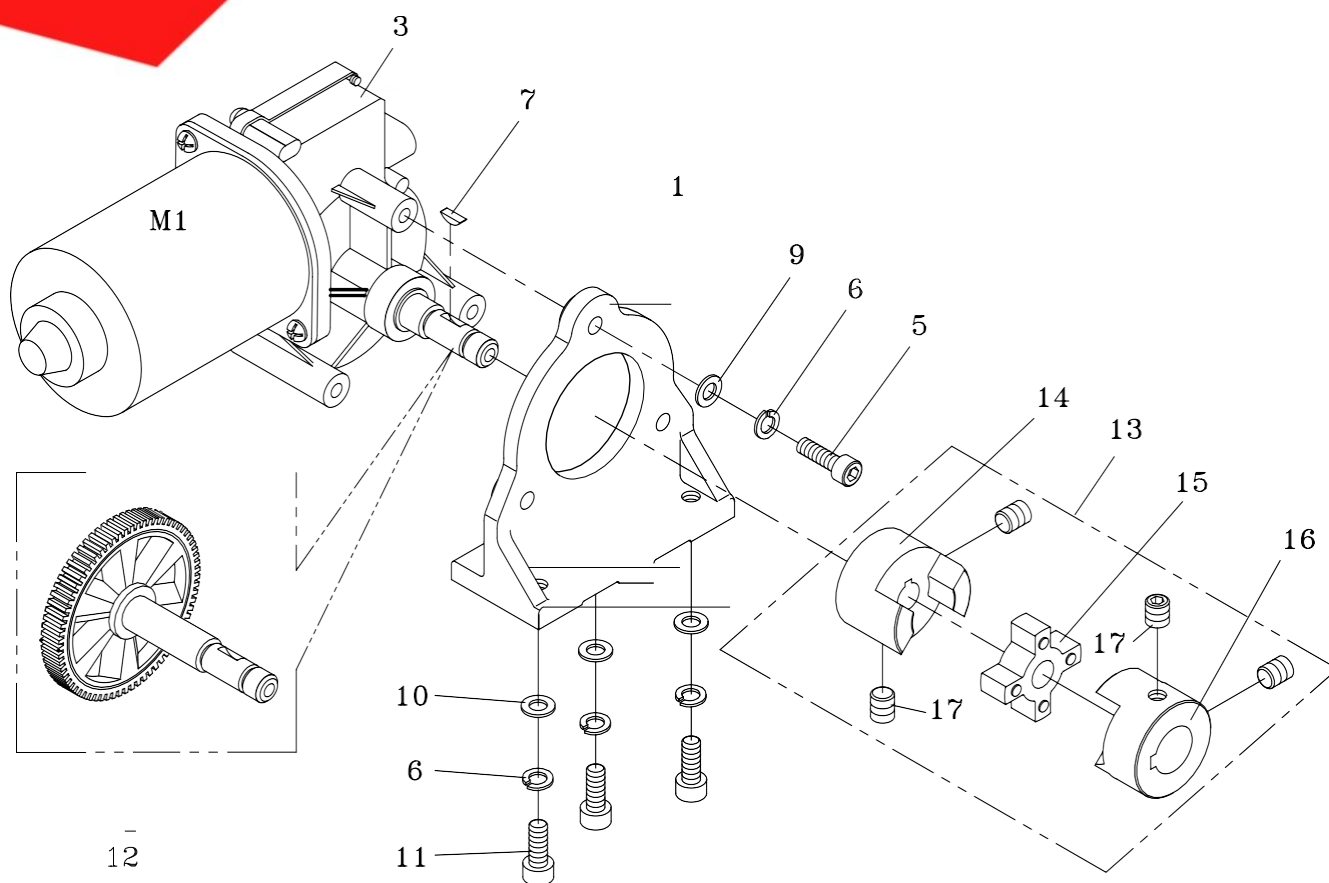


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**1-2-4****ROLLER ARM ASS'Y****T5-1-24009****T5-1-24010**

REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
	T5-1-24009	Strap Guide Ass'y (For 5~12mm)	1	
	T5-1-24010	Strap Guide Ass'y (For 12~15.5mm)	1	
1	T5-1-24110	Strap Guide Support	1	
2	T5-1-24120	Strap Guide (A)(For 5~12mm)	1	
	T5-1-24122	Strap Guide (A)(For 12~15.5mm)	1	
3	T5-1-24131	Strap Guide (B)(For 5~12mm)	1	
	T5-1-24132	Strap Guide (B)(For 12~15.5mm)	1	
4	T5-1-24143	Strap Guide Cover	1	
5	T5-1-24151	Strap Guide (C)(For 5~12mm)	1	
	T5-1-24152	Strap Guide (C)(For 12~15.5mm)	1	
6	T5-1-24182	Spring	1	
8	PMS0315	PMS, M3×15	2	
9	T5-1-24191	Spring Shaft	1	
10	PW04	PW, M4 HN,	1	
11	HN04	M4	1	
12	PMS0412	PMS, M4×12	5	
13	SW03	SW, M3	2	
14	TF-006	Micro Switch	1	
15	SW04	SW, M4	8	
16	T5-1-24260	Tension Socket	1	
17	T5-1-24270	Spring Bushing	1	
18	PMS0406	PMS, M4×6	2	
19	NTE04	NTE, M4	1	





REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
1	T5-1-30110	Main Motor Support	1	
3	T5-1-30130	Main Motor (M1)	1	
5	HBS0625	HBS, M6×25	3	
6	SW06	SW, M6	6	
7	KYC0310	Key, 3×10	1	
9	PW06A	PW, M6 (A)	3	
10	PW06C	PW, M6 (C)	3	
11	HBS0616	HBS, M6×16	3	
12	T5-1-30220	Worm Gear For M1 Motor	1	
13	T5-1-30230	Flexible Coupling	1	
14	T5-1-30240	Hub (L.H.)	1	
15	T5-1-30250	Flexible Spacer	1	
16	T5-1-30260	Hub (R.H.)	1	
17	HSS0608GN	HSS, M6×8 (G)(N)	4	

## 2 BODY FRAME UNIT

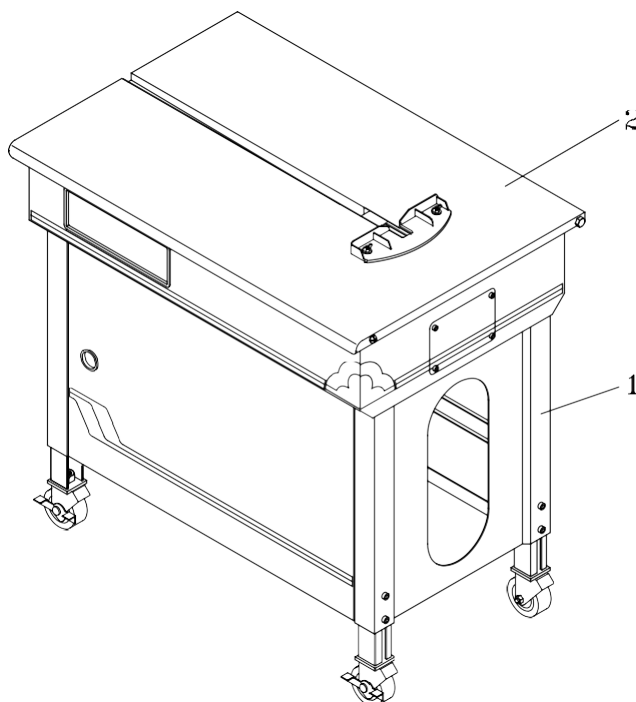


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T5-2-90004

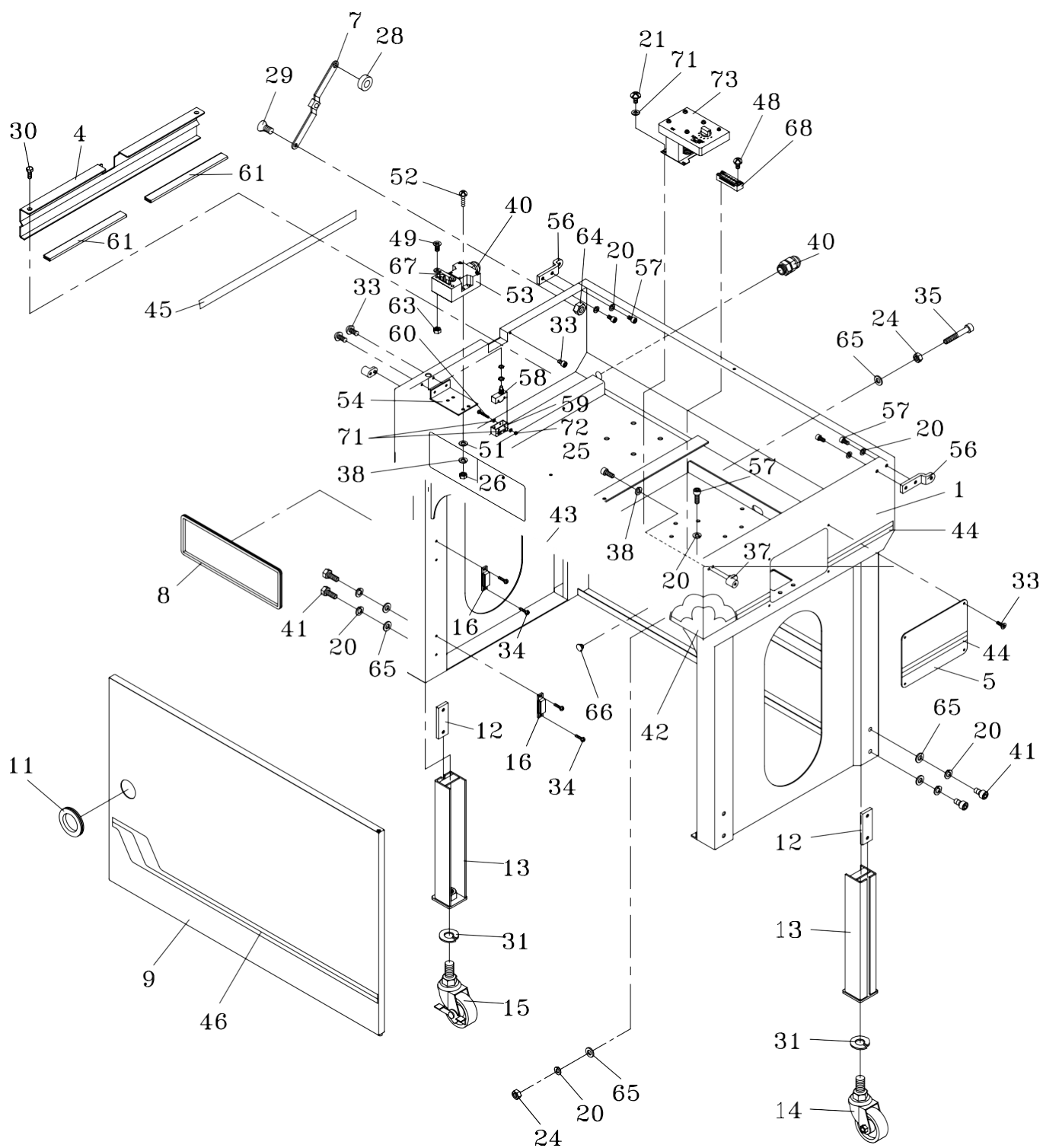
T5-2-90005



REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
1	T5-2-90004	Body Frame Unit (For TP-501/ TP-501-15, 110V)	1	
	T5-2-90005	Body Frame Unit (For TP-501/ TP-501-15, 220V/230V/240V)	1	
	T5-2-90006	Body Frame Unit (For TP-502/ TP-502-15, 110V)	1	
	T5-2-90007	Body Frame Unit (For TP-502/ TP-502-15, 220V/230V/240V)	1	
	T5-2-10005	Body Frame Group (For TP-501/501-15, 110V)	1	SEE PAGE 21
	T5-2-10006	Body Frame Group (For TP-501/501-15, 220V/230V/240V)	1	SEE PAGE 21
	T5-2-10007	Body Frame Group (For TP-502/502-15, 110V)	1	SEE PAGE 21
	T5-2-10008	Body Frame Group (For TP-502/502-15, 220V/230V/240V)	1	SEE PAGE 21
2	T5-2-20000	Table Top Group	1	SEE PAGE 24











REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
	T5-2-10005	Body Frame Group (For TP-501/TP-501-15, 110V)	1	
	T5-2-10006	Body Frame Group (For TP-501/TP-501-15, 220V/230V/240V)	1	
	T5-2-10007	Body Frame Group (For TP-502/TP-502-15, 110V)	1	
	T5-2-10008	Body Frame Group (For TP-502/TP-502-15, 220V/230V/240V)	1	
1	T5-2-10110	Body Frame (For TP-501/TP-501-15)	1	
	T5-2-10210	Body Frame (For TP-502/TP-502-15)	1	
4	T5-2-10140	Support	1	
5	T5-2-10150	Side Cover	1	
7	T5-2-10170	Hinge	1	
8	T5-2-10180	Grommet	1	
9	T5-2-10190	Front Door (For TP-501/TP-501-15)	1	
11	TE-010	Grommet (For TP-501/TP-501-15)	1	
12	TC-031	Fixing Plate	4	
13	T7-5-10160	Adjustable Leg	4	
14	TC-006	Caster (Free)	2	
15	TC-007	Caster (Brake)	2	
16	T6-5-10160	Magnet Catch (For TP-501/TP-501-15)	2	
20	SW06	SW, M6	10	
21	TMS0406	TMS, M4×6	4	
24	HN06	HN, M6 HBS,	1	
25	HBS0512	M5×12 HN,	4	
26	HN05	M5	6	
28	TC-068	Collar	1	
29	FMS0612	FMS, M6×12	1	
30	FMS0408	FMS, M4×8	2	
31	SW16	SW, M16	4	
33	TMS0408	TMS, M4×8	7	
34	TMS0308	TMS, M3×8 (For TP-501/TP-501-15)	4	
35	HBS0635	HBS, M6×35	1	
37	T5-2-10471	Collar	2	





38	SW05	SW, M5	8
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REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
40	T5-2-10500	Cable Gland (PG9)	1	
		Cable Gland (PG9)(Option )	2	
41	HB0616	HB, M6×16	8	
42	LA-10220	Colored Adhesive Tape (A) Colored	1	
43	LA-10072	Adhesive Tape (B) Colored	1	
44	LA-10073	Adhesive Tape (C) Colored	1	
45	LA-10074	Adhesive Tape (D) Colored	1	
46	LA-10075	Adhesive Tape (E)(For TP- 501/TP- 501-15)	1	
48	PMS0408	PMS, M4×8	2	
49	FMS0508	FMS, M5×8 (Option )	2	
51	PW05	PW, M5	4	
52	PMS0520	PMS, M5×20	4	
53	TK-035	Interlock Safety Switch (Option )	1	
54	T5-2-10640	Safety Switch Plate (Option )	1	
56	T5-2-10660	Table Top Holder	2	
57	HBS0612	HBS, M6×12	5	
58	TF-018	Safety Limit Switch (For CSA/UL) (Option )	1	
59	TF-031	Switch Cover (For CSA/UL)(Option )	1	
60	PMS0430	PMS, M4×30 (For CSA/UL)(Option )	2	
61	T5-2-10710	Cushion	2	
63	HN05	HN, M5 (Option ) NTE,	2	
64	NTE06	M6	1	
65	PW06A	PW, M6 (A)	10	
66	T7-5-20210	Rubber Plug (For TP-502/TP-502-15)	1	
67	T7-5-10210	Switch Actuator (Option)	1	
68	TF-015	Terminal Bracket	1	
71	PW04	PW, M4	8	
72	HN04	HN, M4	2	
73	TF-023A	Heater Transformer Ass'y (For 110V)	1	
		Heater Transformer Ass'y	1	

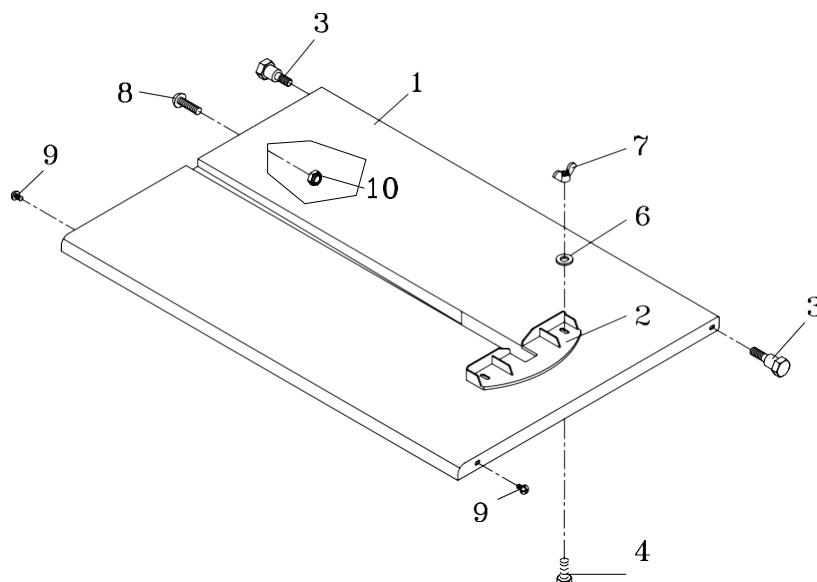




TF-023A-1

(For 220V/230V/240V)





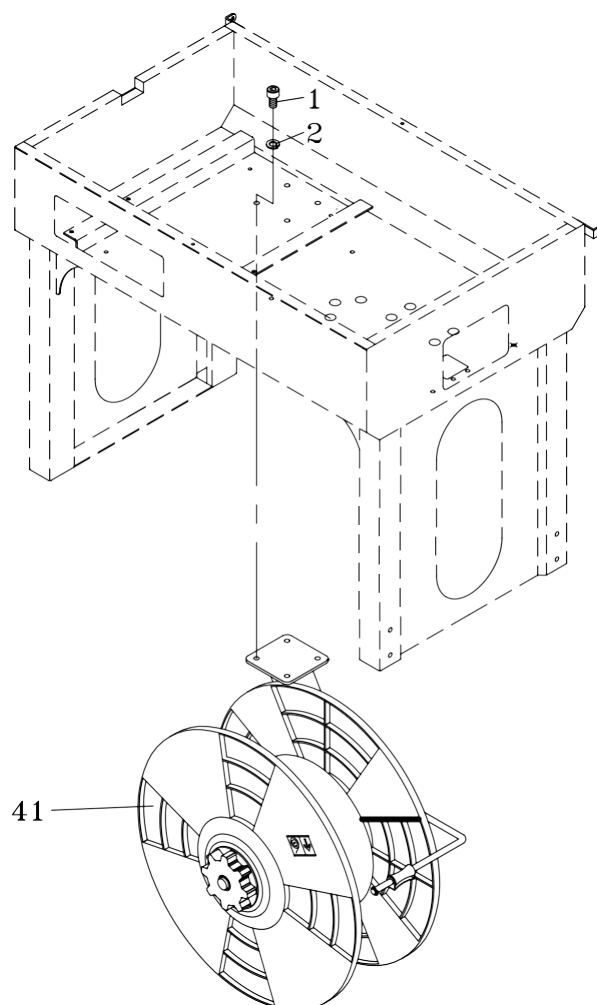
REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
1	T5-2-20110	Table Top	1	
2	TC-004	Package Guide	1	
3	TC-070	Shaft	2	
4	HB0612	HB, M6×12	2	
6	PW06B	PW, M6 (B)	2	
7	WN06	WN, M6	2	
8	TMS0612	TMS, M6×12	1	
9	TMS0508	TMS, M5×8	2	
10	NTE06	NTE, M6	1	

### 3 REEL UNIT



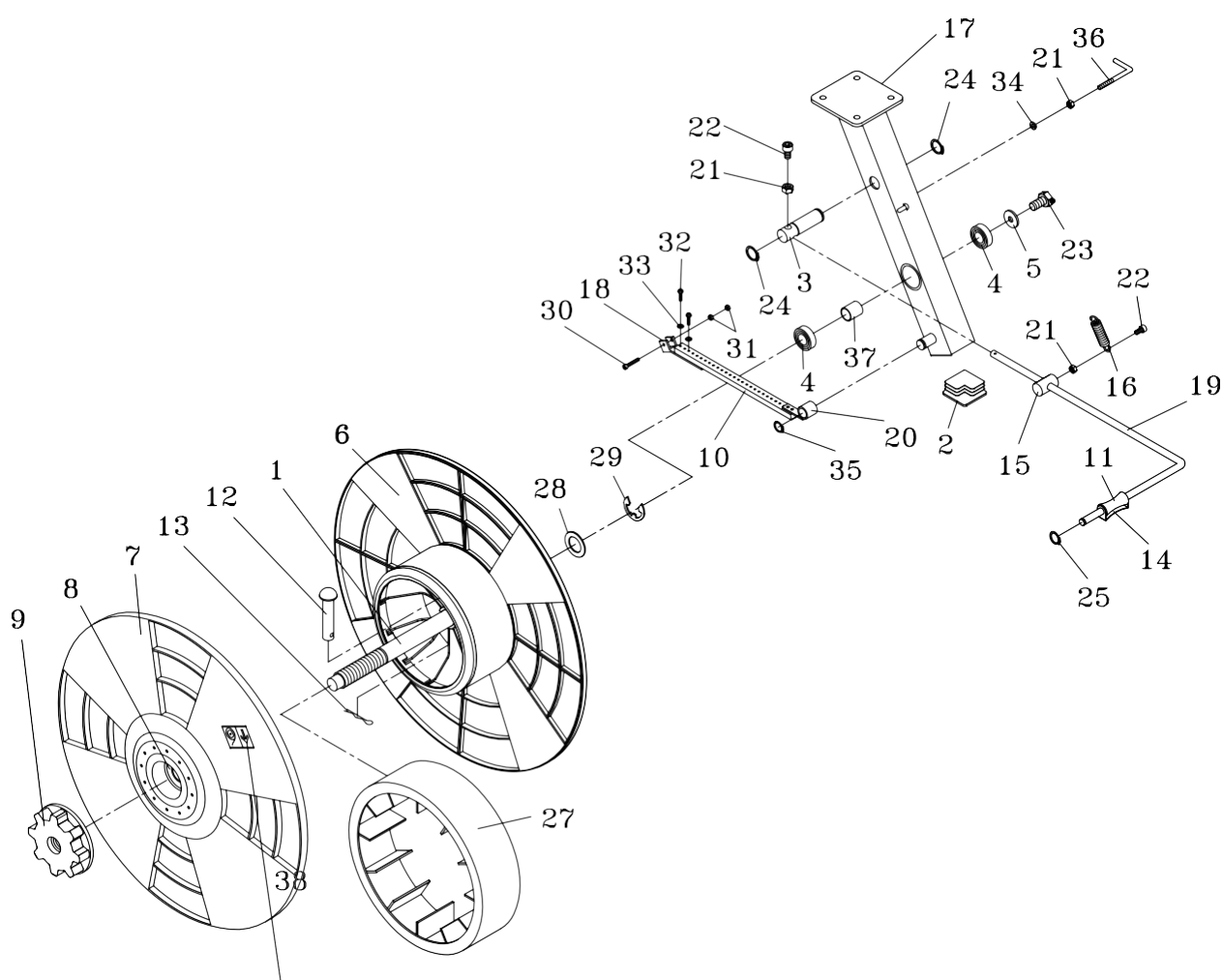
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**T5-3-90000**



REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
1	HB50816	HBS, M8×16	4	SEE PAGE 26
2	SW08	SW, M8	4	
41	T5-3-11000	Reel Control Group	1	







**3-1****REEL CONTROL GROUP****T5-3-11000**

REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
1	TC-003	Reel Shaft	1	
2	TC-005	Lid	1	
3	TC-009	Brake Shaft	1	
4	BR6003ZZ	Bearing, 6003ZZ	2	
5	TC-011	Washer	1	
6	T6-4-10570	Inner Flange	1	
7	TC-014	Outer Flange	1	
8	TC-015	Protector	1	
9	TC-016	Reel Nut Handle	1	
10	TC-026	Brake Belt	1	
11	TC-019	Roller	1	
12	TC-020	Pin	1	
13	TC-021	Split Pin	1	
14	TC-022	Roller Holder	1	
15	TC-024	Brake Adjuster	1	
16	TC-025	Spring	1	
17	TC-044	Reel Support	1	
18	TC-045-1	Fixing Brake Lining Bracket	1	
19	TC-046-1	Arm	1	
20	TC-050	Lining Holder	1	
21	HN06	HN, M6	3	
22	HBS0616	HBS, M6×16	2	
23	HB0816	HB, M8×16	1	
24	SR20	Snap Ring, S-20	2	
25	SR10	Snap Ring, S-10	1	
27	TC-075	Center Drum, 280mm	1	
28	TC-076	Washer	1	
29	ER19	Snap Ring, E-19	1	
30	HBS0425	HBS, M4×25	1	
31	HN04	HN, M4	2	
32	PMS0416	PMS, M4×16	4	
33	PW04	PW, M4	4	
34	SW06	SW, M6	1	
35	SR15	Snap Ring, S-15	1	
36	TC-092	Holder	1	
37	TC-094	Spacer	1	
38	LA-31010	Label	1	

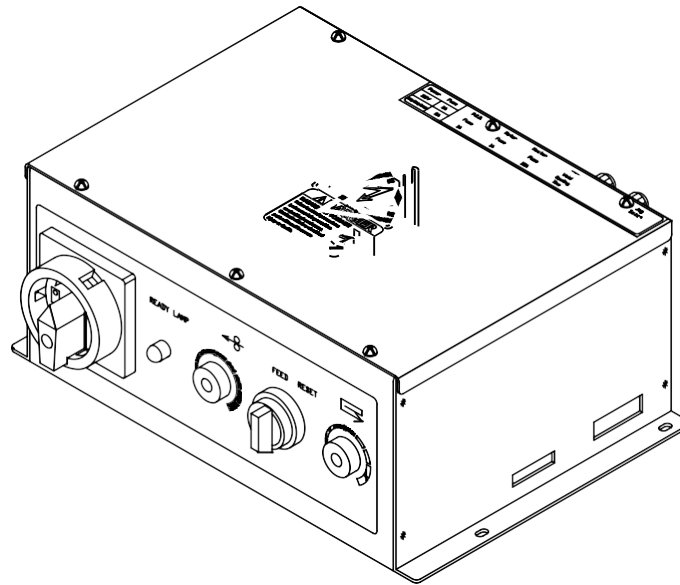




4 ELECTRIC CONTROL GROUP

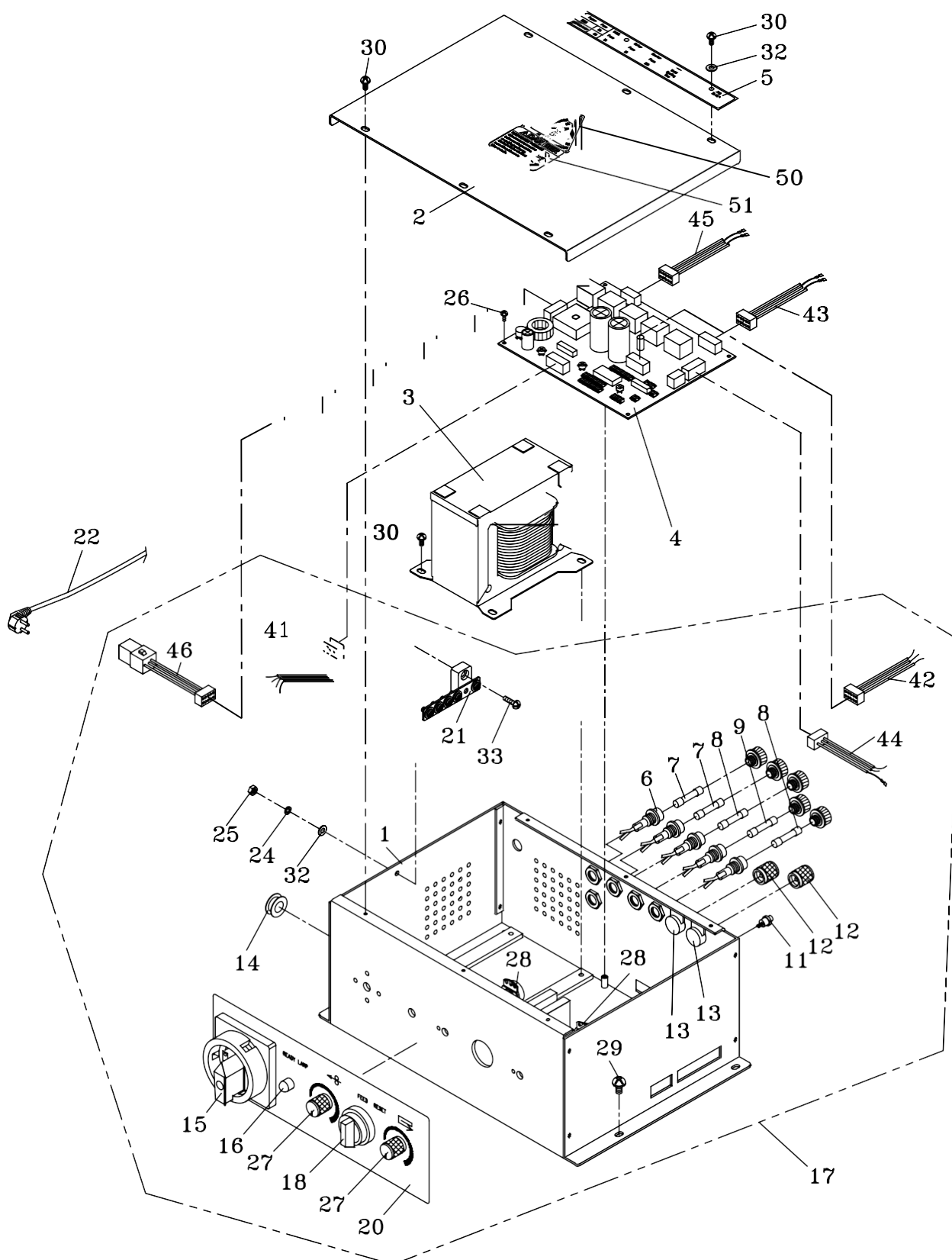
T5-4-10024

T5-4-10025



REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
	T5-4-10024	Electric Control Group (For 110V)	1	SEE PAGE 29
	T5-4-10025	Electric Control Group (For CSA-UL Version, 110V)	1	SEE PAGE 29
	T5-4-10026	Electric Control Group (For 220V/230V/240V)	1	SEE PAGE 29
	T5-4-10027	Electric Control Group (For CSA-UL Version, 220V/230V/240V)	1	SEE PAGE 29





**ELECTRIC CONTROL GROUP****T5-4-10024****T5-4-10025**

REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
	T5-4-10024	Electric Control Group (For 110V)	1	
	T5-4-10025	Electric Control Group (For CSA-UL Version, 110V)		
	T5-4-10026	Electric Control Group (For 220V/230V/240V)	1	
	T5-4-10027	Electric Control Group (For CSA-UL Version, 220V/230V/240V)	1	
1	T5-4-10111	Box	1	
2	T5-4-10120	Cover	1	
3	T5-4-10132	Transformer (For 220V/230V/240V)	1	
	T5-4-10133	Transformer (For 110V)	1	
4	T5-4-10143	P.C.Board	1	
5	LA-10240	Label	1	
6	T5-4-10160	Fuse Holder	5	
7	T6-6-30032	Fuse (3A) 30L (For 110V)	2	
	T6-6-30031	Fuse (2A) 30L (For 220V/230V/240V)	2	
8	T6-6-30036	Fuse (1A) 30L	2	
9	T6-6-30133	Fuse (10A) 30L	1	
11	T5-4-10210	Jog Switch	1	
12	T5-4-10221	Knob (Hole $\phi$ 3.2)	2	
13	T5-4-10231	Variable Resistor (5K)( $\phi$ 3.2)	2	
14	T5-4-10580	Grommet	2	
15	TK-001	Main Power Switch	1	
16	T5-4-10260	Ready Lamp	1	
17	T5-4-10090	Electric Control Group (For 110V)	1	
	T5-4-10091	Electric Control Group (For 220V/230V/240V)	1	
18	TG-036	Selector Switch (Feed/Reset)	1	
20	LA-10015	Label	1	
21	T5-4-10310	Earth Plate (5P)	1	
22	TG-019	Power Cord	1	
	T5-4-10323	Power Cord (For CSA/UL)	1	
24	SW04	SW, M4	1	
25	HN04	HN, M4	1	





**4-1**

**ELECTRIC CONTROL GROUP**

**T5-4-10024**  
**T5-4-10025**

REF. NO.	PART NO.	DESCRIPTION	Q'TY	REMARKS
27	T5-4-10222	Knob (Hole $\phi$ 6.0)	2	
28	T5-4-10232	Variable Resistor (5K)( $\phi$ 6.0)	2	
29	PMS0610	PMS, M6 $\times$ 10	4	
30	TMS0408	TMS, M4 $\times$ 8	10	
32	PW04	PW, M4	3	
33	TMS0412	TMS, M4 $\times$ 12	1	
41	T5-4-10510	Wire Ass'y X1 (Electric Group)	1	
42	T5-4-10520	Wire Ass'y X2 (Jog Switch/Weld Cooling Timer/Heater Temperature Adjustment)	1	
43	T5-4-10530	Wire Ass'y X3 (Micro Switch, SQ1/SQ2/SQ3)	1	
44	T5-4-10543	Wire Ass'y X4 (Heater/Fan)	1	
45	T5-4-10550	Wire Ass'y X5 (Motor M1/M2)	1	
46	T5-4-10561	Wire Ass'y X6 (Power)	1	
50	LA-40001	Label	1	
51	LA-40003	Label	1	

