
Semi-auto strapping machine

Operator manual and spare parts list

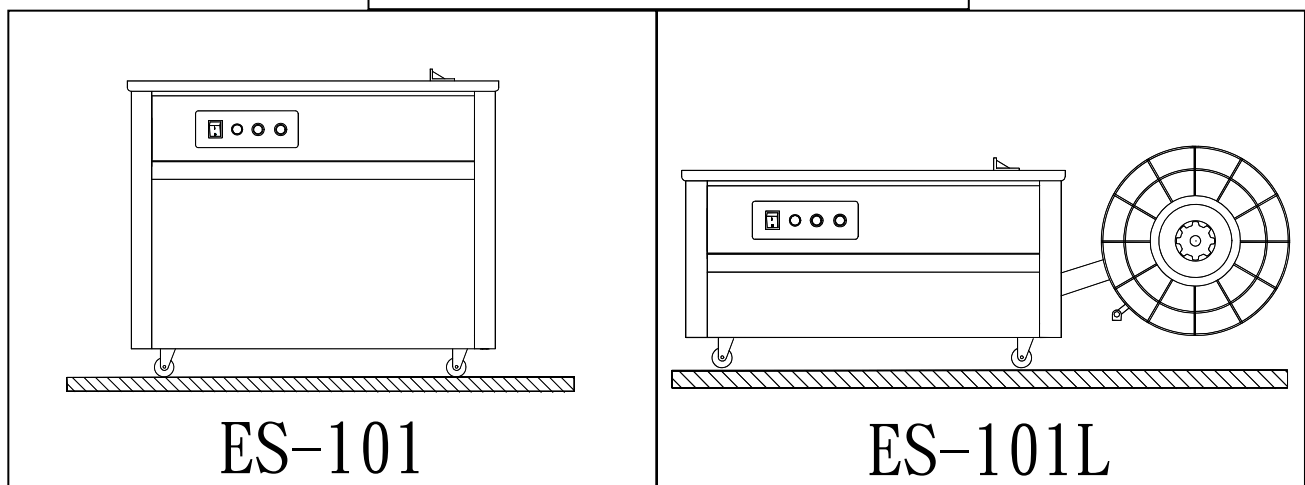
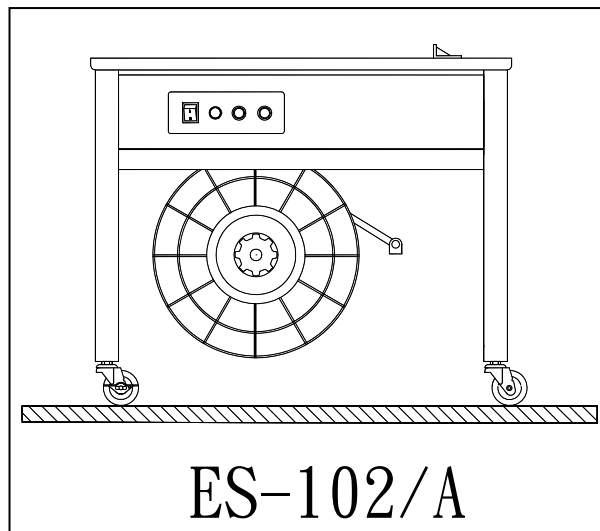


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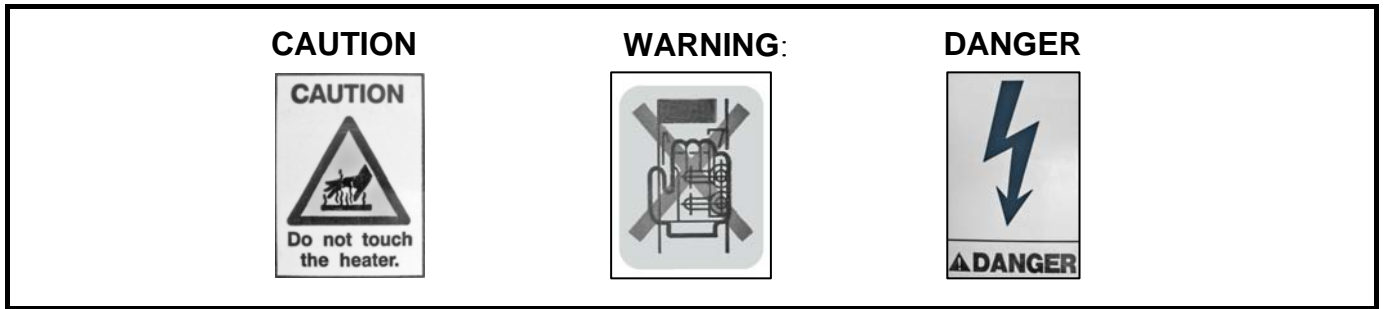
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1. SAFETY PRECAUTIONS




– 1.1 Introduction

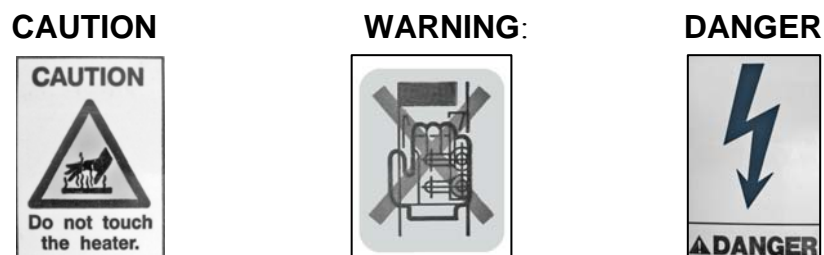
 *The strapping machine has been designed to provide safe, efficient and trouble-free service for many years. Component design and material selection have been carefully considered to ensure operator safety, easy operation and machine longevity. Our engineering and manufacturing procedures are designed to ensure consistent high quality. However, there is a risk of damage or injury if appropriate precautions are not taken.*

Carefully read and understand the safety section and safety precautions in other sections of the Operation and Maintenance manuals before installation. The safety section details inherent risks and general safety considerations associated with the operation and maintenance of the strapping machine. Failure to follow the precautions could result in equipment damage, personnel injury or loss of life. All operating and maintenance personnel must be trained in the proper handling, operation, and maintenance of the strapping machine.

– 1.2 Safety Warnings

 *Warning labels found in this manual and on the strapping machine.*

Indicate situations that require extra attention during installation, operation and maintenance of the strapping machine. Observe the associated precautions carefully as they indicate a potentially hazardous situation. The different safety labels are:



1. SAFETY PRECAUTIONS


– 1.3 Personal Safety Provisions

 *Be familiar with the Operator's Manual and observe its safety precautions!*

The strapping machine is an semi-auto machine. Make sure the machine operated by trained persons. Any inattention while close to the strapping machine could result in a mishap. All personnel working on or around the strapping machine during installation, such as an operator, or in a maintenance capacity, must be qualified for their position.

Carefully read and thoroughly understand the following safety precautions before setting up, operating, or un-installing the strapping machine, Failure to follow these precautions may result in personal injury and/or equipment damage.

– 1.4 Mechanical Safety


 *The following safety precautions **must be observed** when using or working on the machine.*

1. Keep working area safety and clean before operating.
2. Work on or operate the machine only in good status
3. If machine malfunction, please had the machine repaired by the trained and experienced engineers.
4. Before doing the maintenance or moving the machine, make sure to disconnect the power supply first.
5. Make sure to tighten all contact or connection after performing the maintenance.
6. Appropriate footwear is required when moving the strapping machine.
When using a lift or forklift, make sure work with adequate capacity.
7. The using of suitable eye and ear protection is required while operating the machine or performing the maintenance.
8. Don't put unnecessary parts, tools, food or drinks on the table top.
9. Don't try to stand or sit on the table top.

- See Section 3, [OPERATING INSTRUCTIONS](#), Section 4, [ADJUSTMENTS](#), Section 5, [PREVENTIVE MAINTENANCE](#), Section 7 [SAFETY DURING INSTALLATION](#), and Section 8 [SAFETY DURING DE-INSTALLATION](#) for additional safety information..

1. SAFETY PRECAUTIONS

– 1.5 Electrical Safety

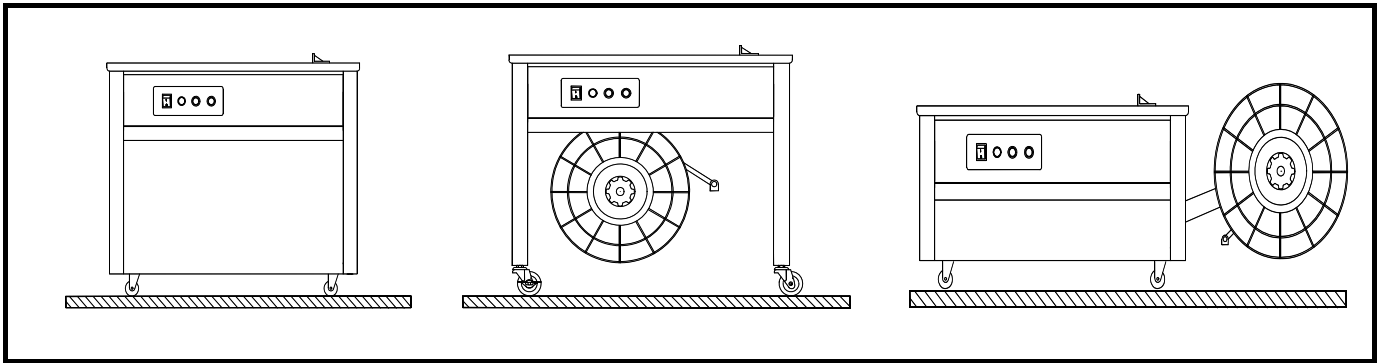
 *The following safety precautions **must be observed** when using or working on the machine.*

1. Strapping machine need to be grounded to avoid the risk of electric shock.
Single phase machine is equipped with an electric plug including green earth (E).
make sure the electric plug connect to the grounded socket to meet local electrical regulation
2. Before turning on the power, make sure the machine configured for the right phase and voltage.
3. Only experienced and qualified electricians can perform on the electric works.
4. Regular inspect and make sure tighten all contacts and wires after doing the maintenance.

– 1.6 Environment safety

1. Environmental temperature 0~50°C.
2. Environmental humidity 20%~85% RH.
3. Operation under high pollution environment, such as flying dust, salt and caustic gas, should be avoided.
4. Avoid working in a dim light. Providing sufficient light is necessary.
5. Working place should equip with fire extinguisher.
6. Don't expose the machine in rain or damp environment.
7. The exhaust system shall be installed in order to prevent possible harmful gases, fumes or dust generated during heating.

2. INTRODUCTION



– 2.1 Purpose Of The Strapping Machine

☞ The strapping machine has been designed to strap individual bundle with PP strapping. The strap is securely heat sealed, and severed from the strap supply.

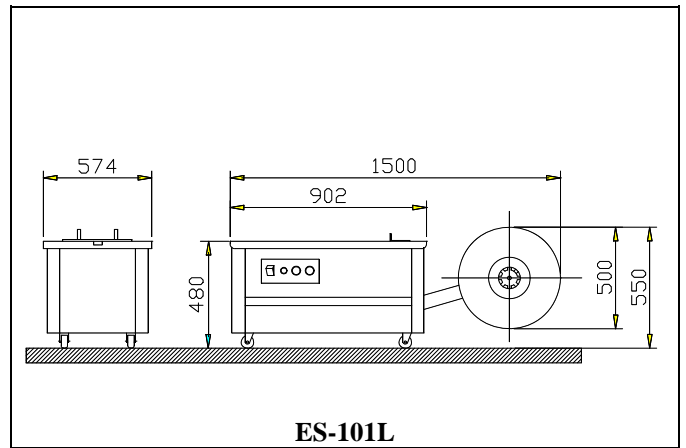
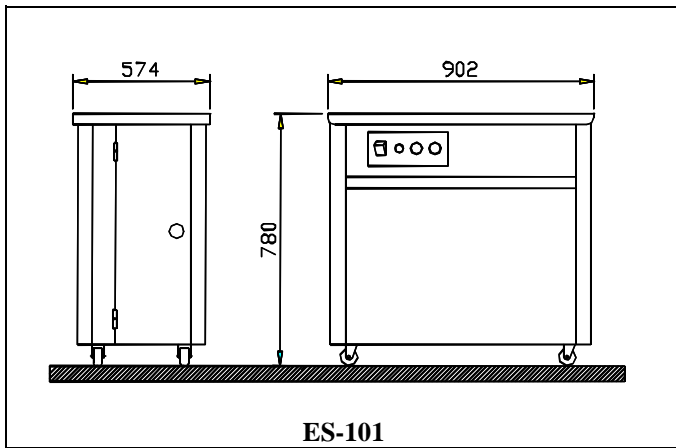
Use of the strapping machine, for any purpose other than described in this publication or expressly approved by the manufacturer prior to implementation should be avoided. The strapping machine must be shut down for all maintenance procedures for which operation is not required.

– 2.2 Purpose Of This Manual

☞ The purpose of this manual is to:

1. Explain the operating principles.
2. Outline the maintenance and operating procedures.
3. Detail recommended adjustments of the strapping machine.

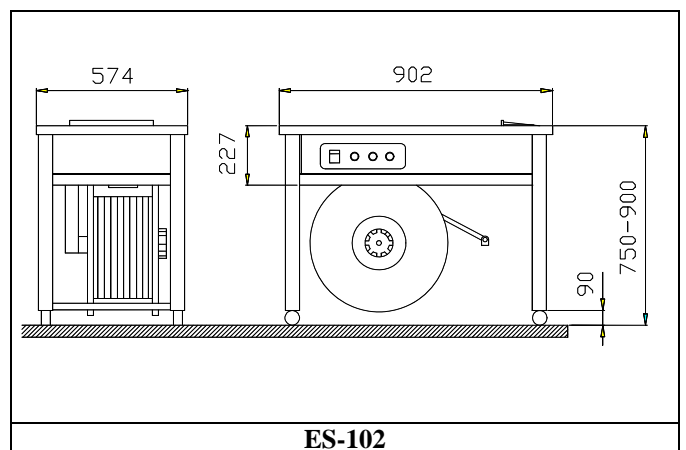
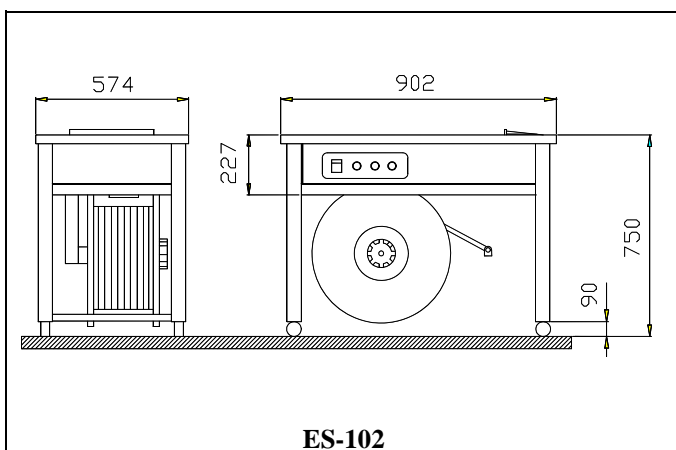
2. INTRODUCTION



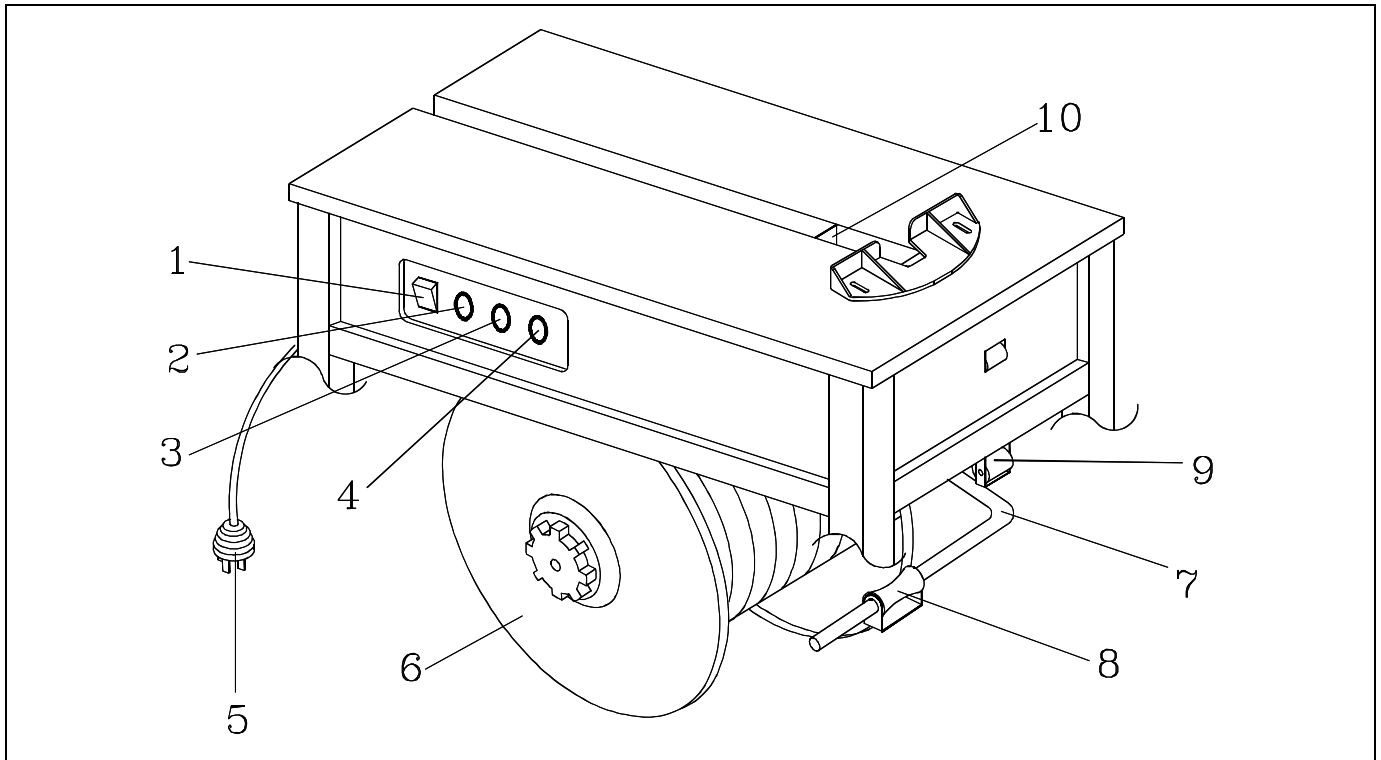
– 2.3 Semi-automatic strapping Machine Technical Specifications



- Capacity: approx. 12 strapping/minute
- Min. package size: 60 x 30 mm
- Max. package size: any size
- Strap tension: 150 - 450 N
- Strap width: (6, 9), 12 and 15.5 mm
- Strap dispenser: Inside diameter of coil 200, 230 and 280 mm
- Perceived noise level: approx. 70dBA
- Power consumption: approx. 0.4kW
- Power connection: 110V/60Hz/1Ph
230V/50Hz/1Ph
- Dimensions: (see drawing)



2. INTRODUCTION



– 2.4 Operator Controls And Indicators

- 1. Main switch**
“1” Power ON.
“0” Power OFF
- 2. Length knob**
Set up the strap feeding length.
- 3. Reset push button**
Press the button, PP strap would continuously roll back. The strap is cut off as the button is released.
- 4. Feed push button**
If PP strap length is insufficient, press the button to feed more strap.
- 5. Power plug**
when connect to power supply, make sure to connect right voltage of the strapping machine..
- 6. Strap dispenser**
Strap band is installed here.
- 7. Brake arm**
When the arm is pulled by the strap, the brake is released, so the coil could rotate to feed the strap.
- 8. Strap guide for brake**
The strap is threaded through this guide
- 9. Idle strap guide**
The strap is passed through this guide
- 10. Strap insertion inlet**
Free end of the strap should be inserted here to initiate one strapping cycle.

3. OPERATING INSTRUCTIONS

– 3.1 Starting the strapping machine



- 3.1.1 Ensure the electrical power supply is set properly and connected to the strapping machine (see Strapping Machine Technical Specifications.)
- 3.1.2 Ensure the strapping machine is properly installed.
- 3.1.3 Load one strapping roll into the dispenser and thread the strap.
- 3.1.4 Turn the main switch to ON position.
- 3.1.4 Allow approximately 30 seconds for the heater blade getting hot.
- 3.1.5 Turn the length dial to choose suitable strap length for next cycle supplied. Timer setting is provided from 0 to 6 seconds. Strap feeding length in one second is approx. one meter, depending on PP strapping quality.

– 3.2 Operating the strapping machine



1. Put the box on the table top.
2. Pull the strapping around the package
3. Insert the leading end of the strapping into the strapping inlet until the leading end is detected by the metal spring of micro switch (LS1).
4. Tightening process starts right after the micro switch is illuminated. Heat sealing process automatically takes place after completion of tightening.
5. After these processes have been completed, a pre-set length of PP strap is dispensed automatically. This is one complete cycle.
6. Motor will turn off automatically if strapping cycle is not initiated within a given time (default is about 30 sec.).
7. Be sure to turn off the main power switch after operation is completed for the day.

4. ADJUSTMENT

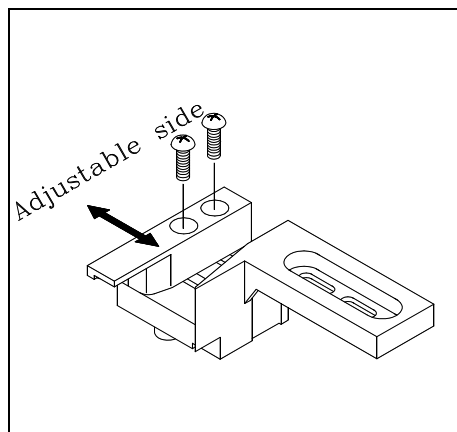


Fig. 4.1

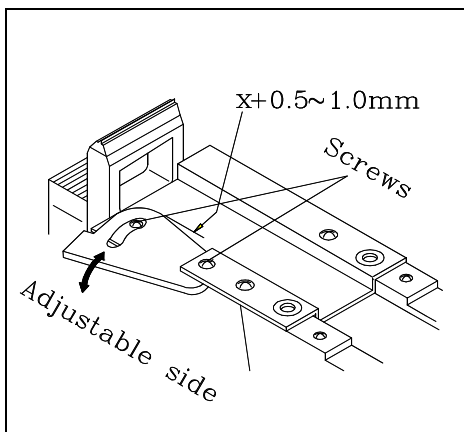


Fig. 4.2

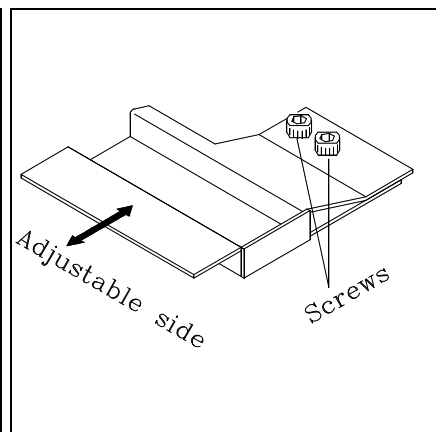


Fig. 4.3

• 4.1 Strap width

First loose two screws on the adjustable plate (refer to above Fig.4.1),put one strap on the rear end guide and make sure a gap between strap and guide about 0.5 to 1.0 mm. then tighten the screws.

Second, loose the screws on the band adjustable plate and outlet cover (refer to Fig 4.2).Make sure strap and guide gap about 0.5~1 mm by moving the band plate and outlet cover, then tighten screws.

Last, loose two screws on the adjustable plate (refer to Fig.4.3).

Make sure strap and guide gap about 0.5 mm, tighten screws. Note: A Philips screwdriver is for adjusting strap width.

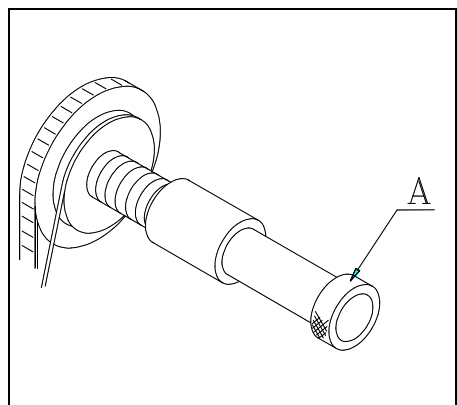


Fig. 4.4

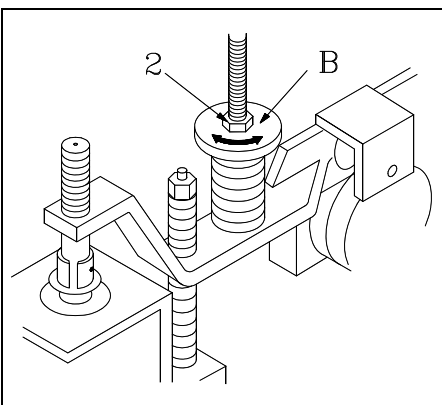


Fig. 4.5

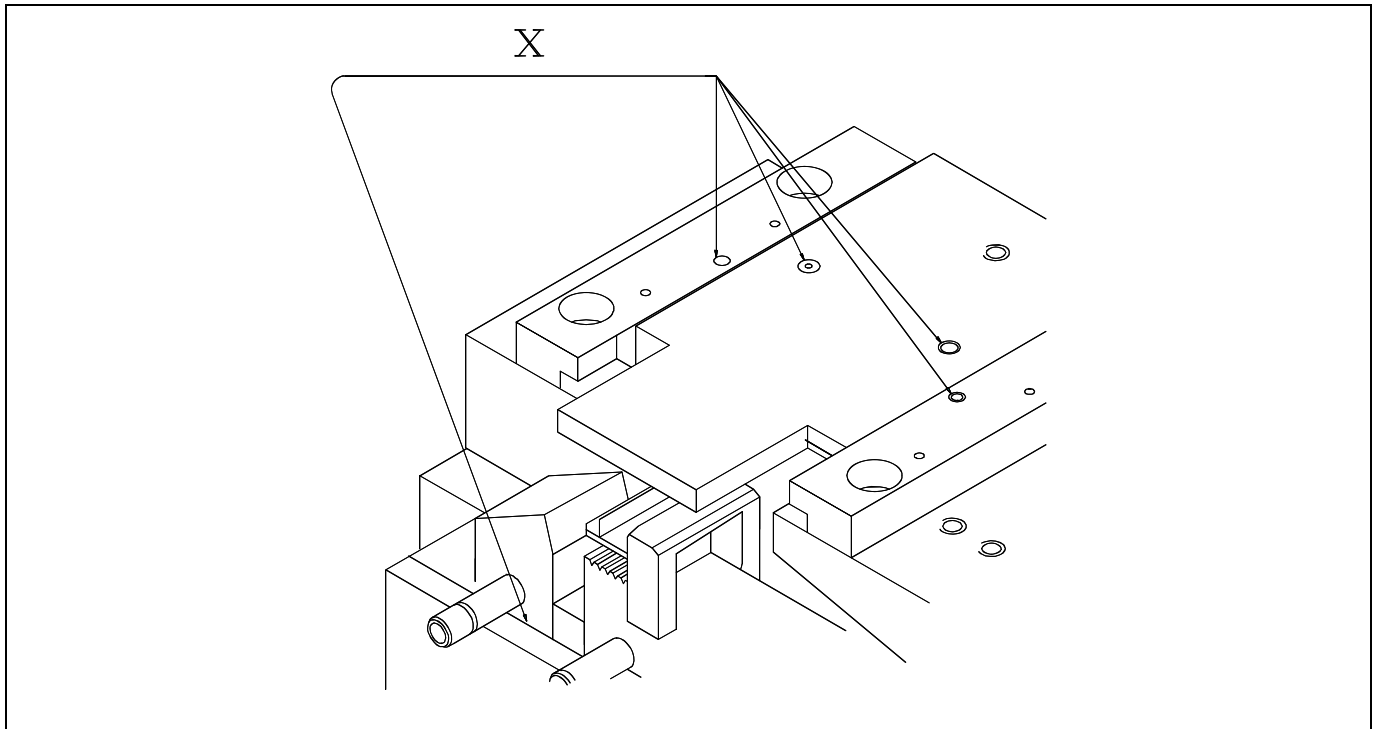
• 4.2 Strap tension

Strap tension increase or decrease by turning outside tension bar (A) clockwise or anti-clockwise.(refer to Fig.4.4)

If strap thickness is 0.5 mm below or thicker over 0.8 mm. then need to adjust spring retainer (B) (refer to Fig.4.5) by turning clockwise or ant-clockwise to increase strap pressing force.

Attention: Adjustment B(Fig.4.5) is fixed by a lock nut (2).

5. MAINTENANCE



Lubricate 5 spots which mark as above drawing.

– 5.1 General Maintenance



General

1. Maintenance job need to be performed by trained and authorized persons.
2. Turn off power switch when perform maintenance work.
3. Pull the strap out and wind it back to the dispenser.
4. Keep the machine clean.

Regularly air blow the interior of the machine to clean strap debris or dust, especially the surrounding of rear clamp bar, press bar, front clamp bar and fan closed to the heater.

Cautious! While working, heater temperature goes up very high about 280° C (540° F). Please absolutely make sure the heater is already cool down. If careless about the temperature, it's very dangerous and cause people burnt or injured.



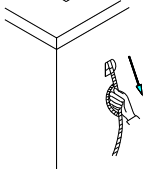
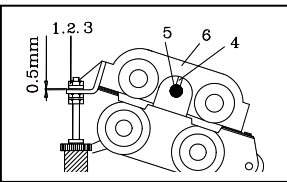






Lubrication

- Apply a few drops of light lubricant (Mechanic oil or equivalent) to oil holes and on sliding parts (see above diagram) once per week.
- Change the oil of the gearbox once per year. 150 ml of Daphne oil or its equivalent should be used.

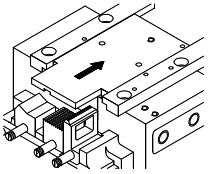

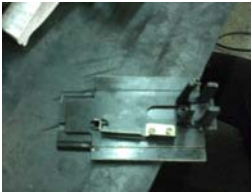







Attention:

Be sure that the machine is disconnected from the power source during the maintenance.

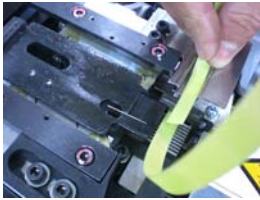


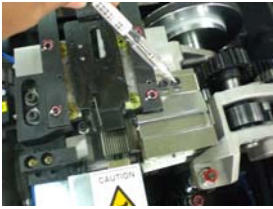
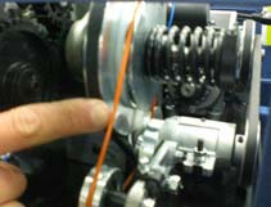



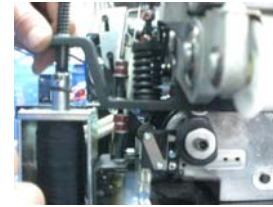
6. TROUBLE SHOOTING

No.	Problem	Cause	photo	Solution
1	Strap won't feed out.	1.1. Strap jam in the strap guide.	 <p>(Fig.7.1)</p>	1.1 Turn off the power. Manually pull the strap out (refer to fig.7.1) and re-thread the strap again.
		1.2. Thread wrong size of strap	 <p>(Fig.7.2)</p>	1.2 Strap width is adjustable. However, if need to use different size of strap. Please do necessary adjustment. (refer to Adjustment for strap width change)
	<p>1.3. Strap jam between upper and lower roller brackets</p> <p style="text-align: center;">Fig.7.4</p>  <p style="text-align: center;">Fig.7.6</p> 	<p>Fig.7.3</p>  <p style="text-align: center;">Fig.7.5</p>  <p style="text-align: center;">Fig.7.7</p> 	<p>1.3 First loose hexagon nut, spring washer (as Fig 7.2-mark 1.2.3 & Fig.7.3). then loose 2 set screws (as Fig.7.4), Push the shaft out (as Fig. 7.5) Take upper roller bracket out (as Fig.7.6)</p> <p>Strap jam between upper & bottom roller bracket (as Fig.7.7). Pull the strap out.</p> <p>Reverse above procedure to assemble back.</p>	
	1.4 Strap jam at band adjustable plate	1.4 Strap jam at band adjustable plate	<p>Fig.7.8</p> 	1.4 Refer to Fig.7.8 loose the screws on the band adjustable plate and outlet cover (refer to Fig 5.2).Make sure strap and guide gap about 0.5~1 mm by moving the band plate and outlet cover, then tighten screws.



6. TROUBLE SHOOTING

No.	Problem	Cause	photo	Solution
2	<p>Front clamp bar goes up and stop at the top position</p> <p>LS1</p>  <p>Fig.7.10</p> 	<p>2.1 Switch lever activate LS1 too much.</p> <p>Fig.7.11</p>  <p>Fig.7.13</p> 	<p>Fig.7.9</p>  <p>Fig.7.12</p>  <p>Fig.7.14</p> 	<p>2.1 Remove and reverse slide table. Remove separator from slide table. (as Fig.7.9 & 7.10 & 7.11) Pick up separator with switch lever, try to adjust switch lever at right angle. (as Fig.7.12 & 7.13)</p> <p>Install slide table back. Bend down your body, Visually make sure switch lever close to sensitive bar of LS1. (as Fig.7.14)</p>
3.	<p>Strap peel off or deform, curl or strap alignment not well.</p>	<p>3.1 Heater temperature too low or high. If too low may cause strap welding not well and peel off. If too high cause strap deformed or curled.</p>	<p>Fig.7.15</p> 	<p>3.1 Normally temperature controller sets up at ST(standard) refer to Fig.7.15. if heater is too low, please turn controller to 5. If too high, turn to 3.</p>
		<p>3.2 heater position isn't in right position. It'll cause welding not well and peel off.</p>	<p>Fig.7.16</p>  <p>Fig.7.17</p> 	<p>3.2 Heater position should be lower than separator which is attached to slide table. (as Fig.7.16)</p> <p>Moreover, heater position couldn't over press bar (as Fig.7.17).</p>

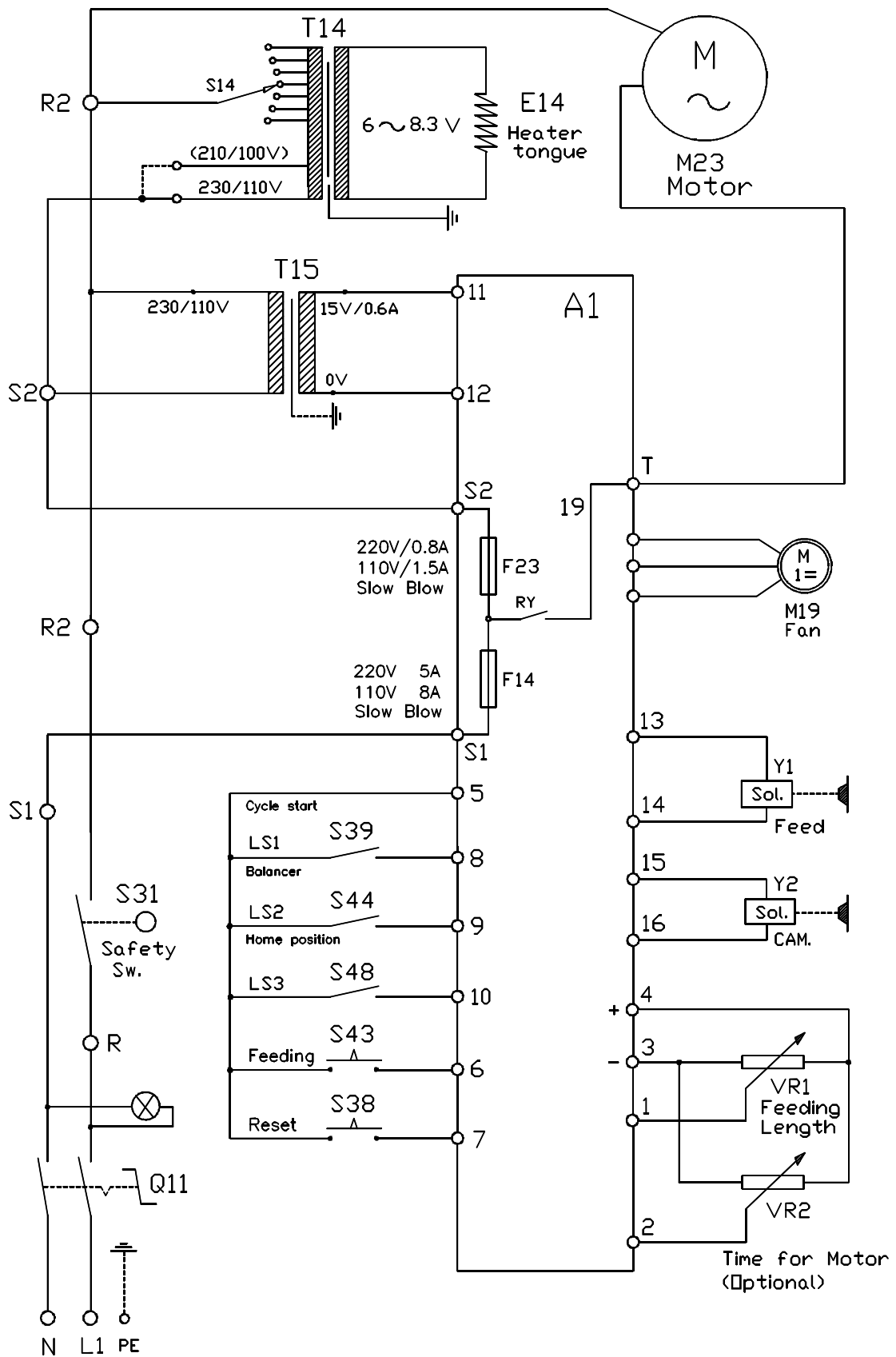
6. TROUBLE SHOOTING

No.	Problem	Cause	photo	Solution
	<p>Fig.7.19</p> 	<p>3.3 Strap width change doesn't adjust well. It'll cause strap alignment not well.</p> <p>Fig.7.20</p> 	<p>Fig.7.18</p>  <p>Fig.7.21</p> 	<p>3.3 Strap cycle at the adjustable plate should be match together. (as Fig.7.18) If strap cycle matches no good, it'll cause strap alignment too much. (as Fig.7.19) Loose two screws on the adjustable plate (refer to Fig.7.20 & 7.21). Make sure strap and guide gap about 0.5 mm, tighten screws.</p>
4	Strap won't reverse for tensioning the package.	<p>4.1 Round belt is with too much oil. This will cause drive device going into a slide.</p>	<p>Fig.7.22</p> 	<p>4.1 Wipe extra oil out. (As Fig.7.22)</p>
		<p>4.2 Tension is too small.</p>		<p>4.2 Adjust for suitable tension.</p>
		<p>4.3 LS2 is out of order. Swing arm won't activate. (as Fig.7.23)</p> <p>Fig.7.23</p> 	<p>Fig.7.24</p> 	<p>4.3 LS2 is out of order (as Fig.7.23). swing arm won't activate in normal.(as Fig.7.24) Replace a new LS2.</p>
		<p>4.4 Re-tracking roller force is not enough.</p> <p>Fig.7.25</p> 	<p>Fig.7.26</p> 	<p>4.4 Press Reset button, then turn off the power. Manually shake the feed back arm, normally it should be tight and then turn on the power, shake the feed back arm again. It should be loose (as Fig.7.25 & 7.26).</p>

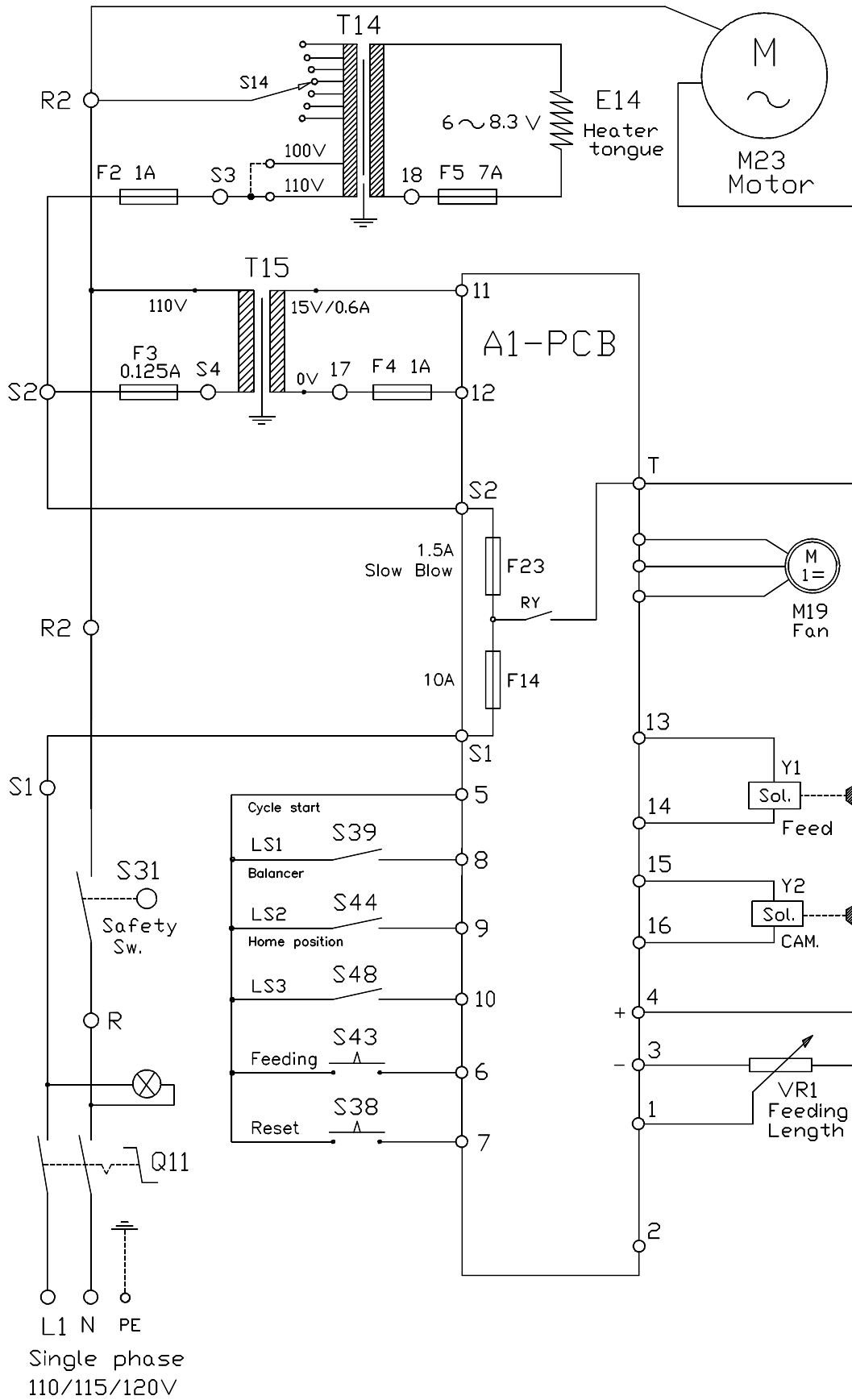
6. TROUBLE SHOOTING

		<p>4.4 Re-tracking roller force is not enough.</p>	<p>Fig.7.27</p>  <p>Fig.7.28</p> 	<p>If testing result like above, then re-tracking force is enough.</p> <p>If not, loose upper nut (as Fig.7.27, lower nut goes up (as Fig 7.28). And then tighten nuts._</p>
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7. ELECTRICAL DIAGRAM



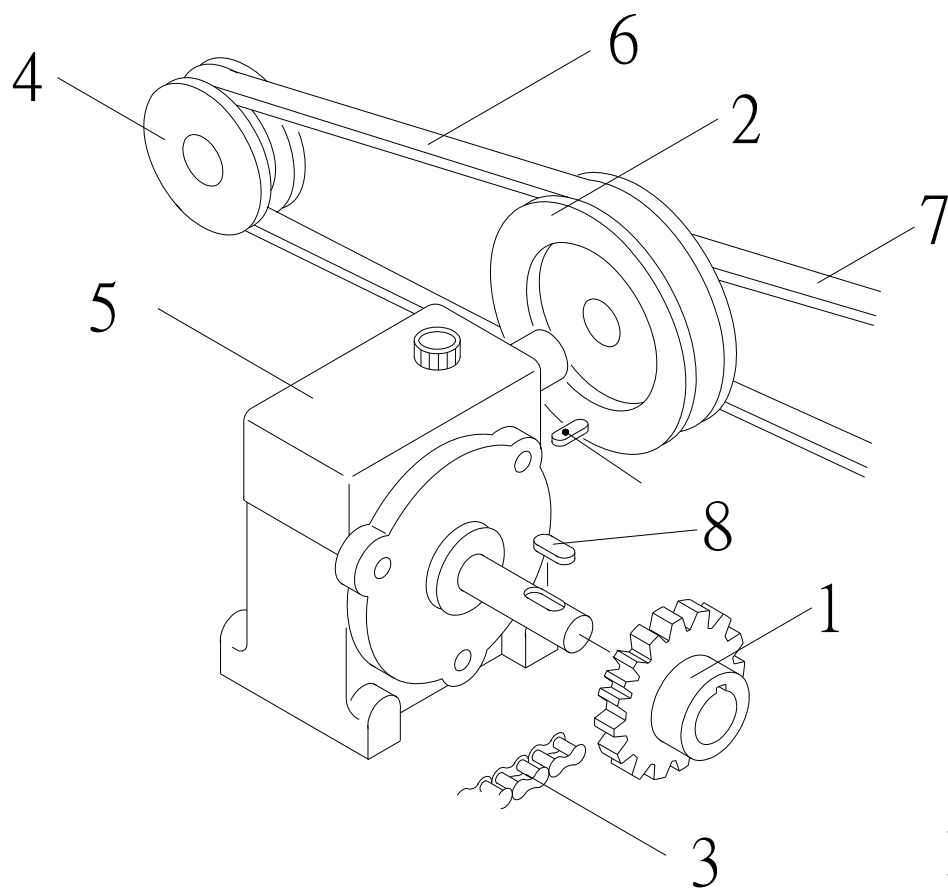
7. ELECTRICAL DIAGRAM



Spare parts list

ES-101/ES-101L/

10.1 Cam/Clutch Unit

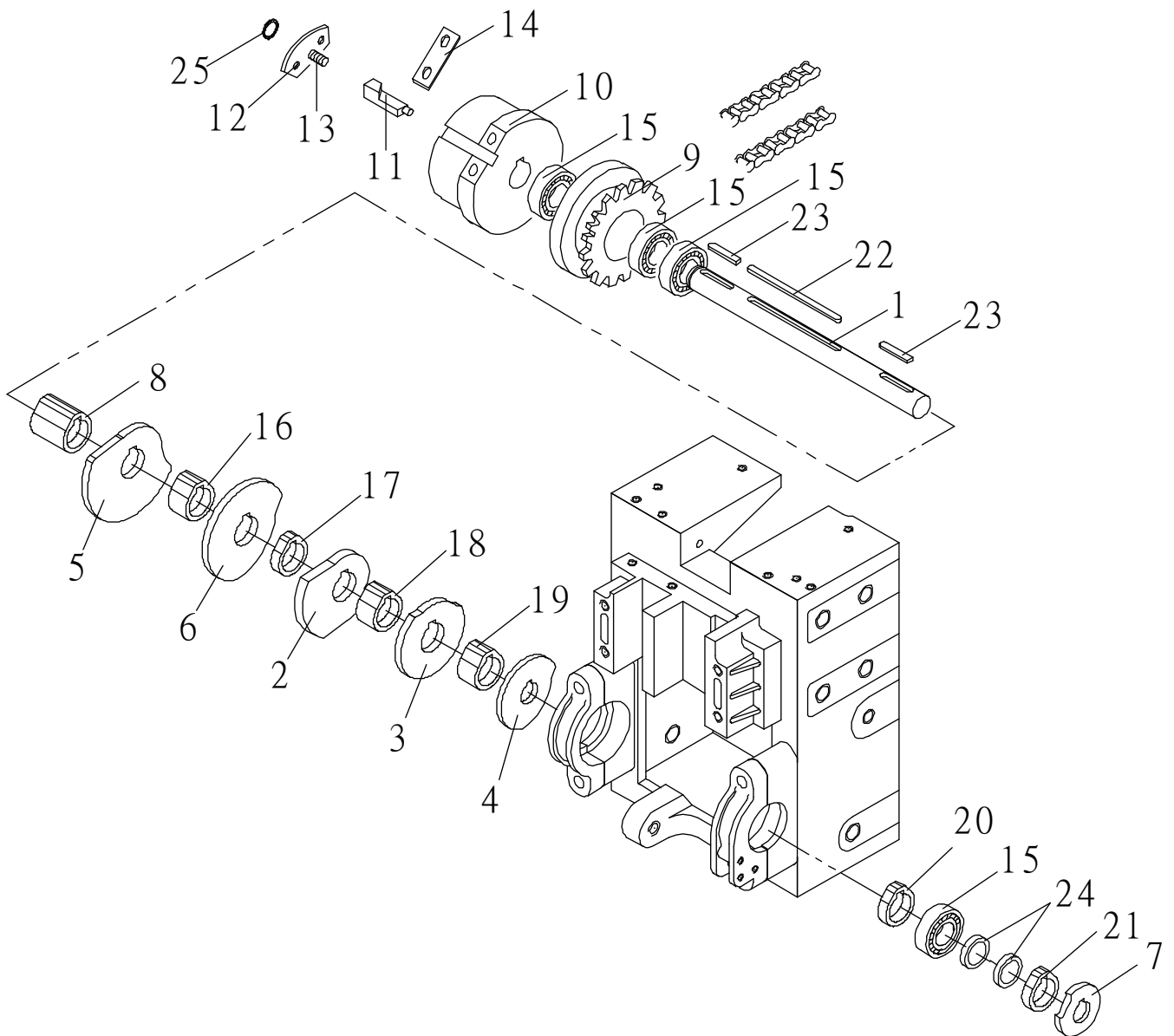


ES101-01P

10.1 Cam/Clutch Unit

No	Part No	Description	Qty
1	S13-110003	Sprocket	1
	W02-210508	HSS M5 x 8	1
	W02-210506	HSS M5 x 6	1
2	S13-110004-02	Pulley (A)#18	1
	W02-210610	HSS M6 x 10	2
3	S13-110005	Chain 35 x 44 L	1
4	S13-110010-3	Pulley (B)#20	1
	W02-210610	HSS M6 x 10	1
5	S13-113000	Reduction Gear Box	1
	W01-210820	HBS M8 x 20	4
	W19-010108-9	PW M8 x 23 x 3t	4
	W19-020108	SW M8	4
6	G16-010021	V-Belt, M-21	1
7	G16-070021	V-Belt, K-21	1
8	W35-050525	Parallel Key(5 x 5 x 5)	2

10.2 Cam/Clutch Unit



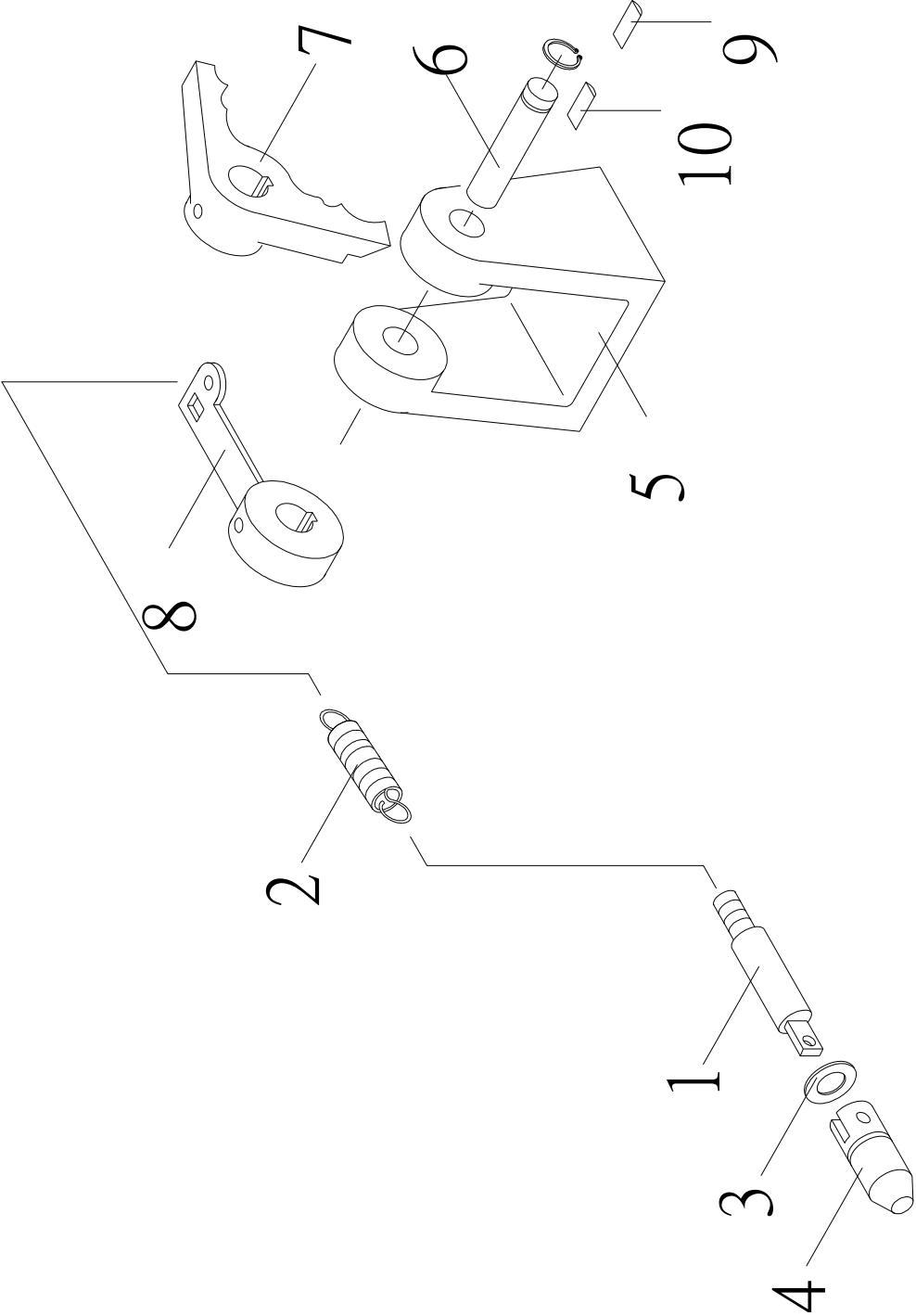
ES101-002P

10.2 Cam/Clutch Unit

No	Part No	Description	Qty
1	S13-121003-1	Cam Shaft	1
	W01-210620	HBS M6 x 20	1
	W19-020106	SW M6	1
	W19-010106-3	PW M6 x 16 x 2t	2
2	S13-121203	Press Grip Cam	1
3	S13-1221204-1	Front Grip Cam	1
4	S13-121205	Separate Cam	1
5	S13-121201-1	Rear Grip Cam	1
6	S13-121202	Heater Cam	1
7	S13-121206	Feed Back Cam	1
8	S13-121207	Collar	1
9	S13-121029	Drive Sprocket	1
10	S13-121101	Clutch Housing	1
11	S13-121102	Clutch Pin	1
12	S13-121103	Spring Holder	1
	W01-210410	HBS M4 x 10	2
	W19-020104	SW M4	2
13	S13-121104	Spring	1
14	S13-121105	Guide	1
	W01-210410	HBS M4 x 10	2
	W19-020104	SW M4	2
15	G04-116003	Bearing, 6003Z	2
16	S13-121208	Cam Shaft	1
17	S13-121209	Collar	1
18	S13-121210	Collar	1
19	S13-121211	Collar	1
20	S13-121212	Collar	1
21	S13-121213	Collar	1
22	W35-0505101	Parallel Key	1
23	W35-050516	Parallel Key	1
24	S13-121908-1	Collar	1
	W33-020170	Ring	1

10.3 Clutch Unit

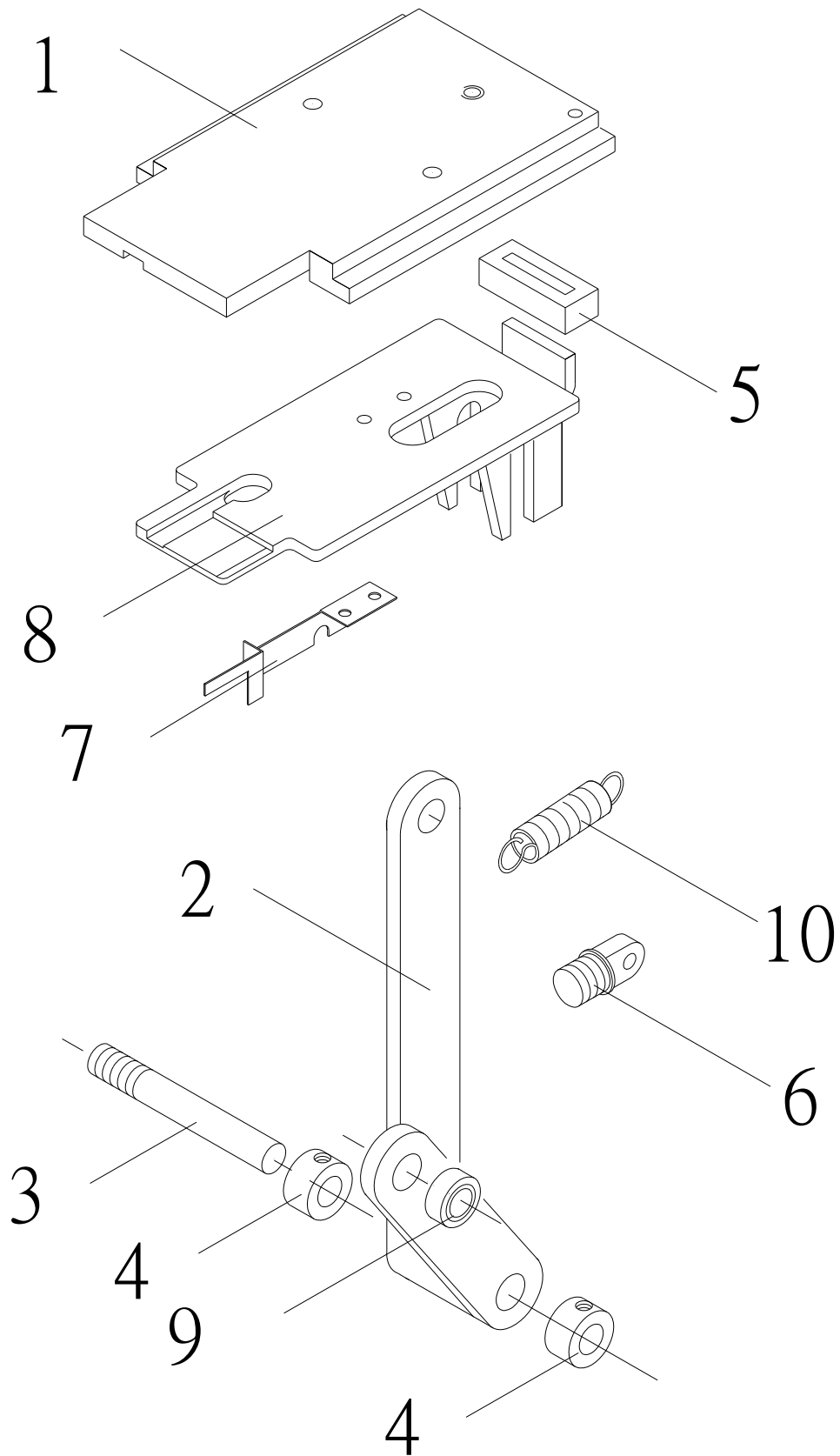
ES101-03P



10.3 Clutch Assembly

No	Part No	Description	Qty
1	S13-110001	Pull Shaft	1
	W15-110600	HN M6	2
	W19-020106	SW M6	2
	W19-010106	PW M6 x 13 x 1t	1
2	S13-110002	Spring#227	1
	W15-110400	HN M4	2
	W09-110420	PMS M4 x 20	2
	W19-020104	SW M4	1
	W19-010104-1	PW M4 x 10 x 1t	2
3	S13-110008	O-Ring	1
4	S13-110009	Solenoid Shaft	1
	W01-210420	HBS M4 x 20	1
	W17-210400	HN M4	1
5	S13-112001	Clutch Support	1
	W01-210620	HBS M6 x 20	4
	W19-020106	SW M6	4
	W19-010106-3	PW M6 x 16 x 2t	4
6	S13-112003	Shaft #35	1
	W33-030120	E-12	1
7	S13-112008	Stop Arm	1
	W02-210608	HSS M6 x 8	1
8	S13-112150	Clutch Arm	1
	W02-210608	HSS M6 x 8	1
9	W35-050515	Parallel Key 5 x 5 x 15	1
10	W35-050520	Parallel Key 5 x 5 x 20	1

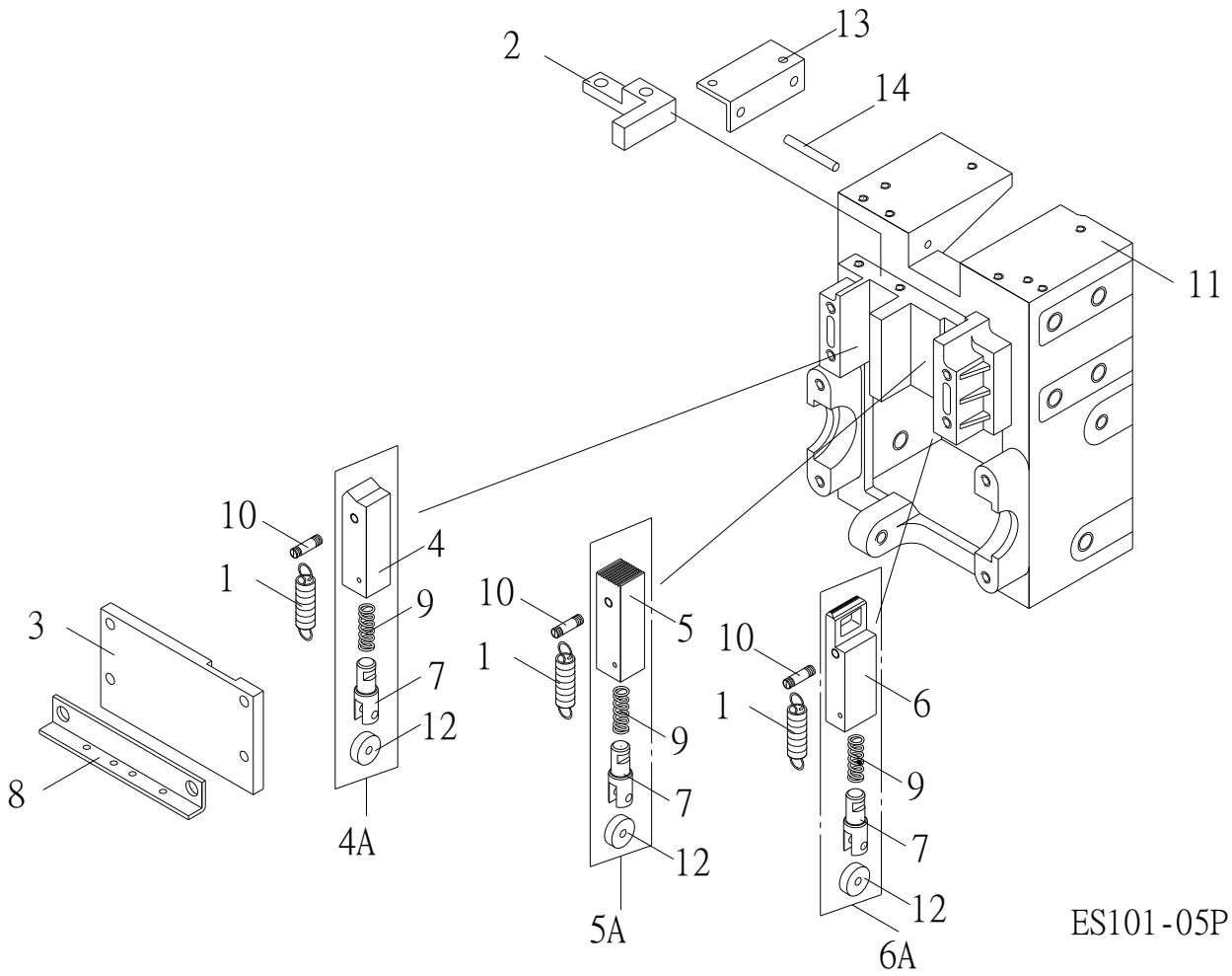
10.4 Slide Table Unit



10.4 Slide Table Unit

No	Part No	Description	Qty
1	S13-122001	Slide Table	1
	W01-210505	HBS M5 x 5	1
	W31-104016	Spring Pin 4×16	1
2	S13-122002	Separator Arm	1
	W31-106020	Spring Pin 6 x 20	1
	W09-110420	PMS M4 x 20	1
	W15-110400	HN M4	1
3	S13-122003	Pin	1
	W15-110800	HN M8	2
	W19-020108	SW M8	1
4	S13-122005	Collar	2
	W02-210606	HSS M6 x 6	2
5	S13-122007	Gum	1
6	S13-122008	Spring Hook	1
7	S35-122012	Switch Lever	1
	W09-110304	PMS M3 x 4	2
	W19-020103	SW M3	2
8	S35-122150	Separator	1
9	G04-210635	Bearing, 635ZZ	1
	W01-210525	HBS M5 x 25	1
	W15-110500	HN M5	2
	W19-020105	SW M5	1
10	S13-122009	Slide Table Spring	1

10.5 Cutter Unit

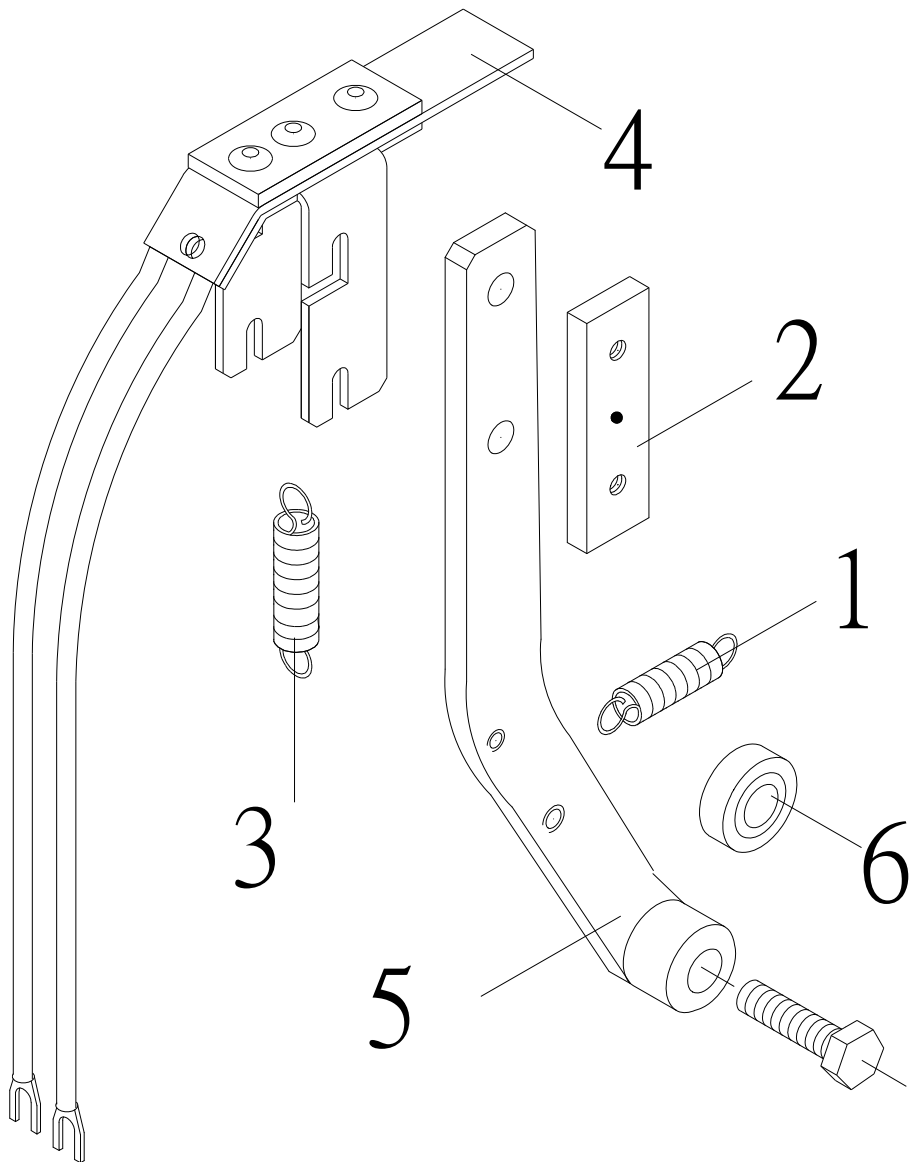


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10.5 Cutter Unit

No	Part No	Description	Qty
1	S13-122006	Spring#71	3
2	S13-123002	Cutter Holder	1
	W01-210520	HBS M5 x20	1
	W19-020105	SW M5	2
	W19-010105-9	PW M5 x 10 x 0.8t	2
	W01-230530	HBS M5 x 30	1
3	S13-123003	Clamp Bar Guide Lid	1
	W01-210625	HBS M6 x 25	2
	W19-020106	SW M6	2
4	S13-130004	Rear Clamp Bar	1
	W31-103018	Spring Pin3 x 18	1
5	S13-123201	Press Bar	1
	W31-103018	Spring Pin3 x 18	1
6	S13-123101	Front Clamp Bar	1
	W31-103020	Spring Pin3 x 20	1
7	S13-123103	Plunger	3
	W31-105015	Spring Pin5 X 16	3
8	S13-123008	Spring Hook	1
	W01-210625	HBS M6 x 25	2
	W19-020106	SW M6	2
9	S13-123102	Plunger Spring	3
10	S13-123105	Spring Hook	3
11	S35-125001	Cam Bracket	1
	W01-210620	HBS M6 x 20	4
	W19-020106	SW M6	4
	W19-010106-3	PW M6 x 10 x 2t	4
12	G04-210635	Bearing, 635ZZ	3
13	S35-125010	Limit Switch Bracket	1
	W01-210410	HBS M4 x 10	2
	W19-010104-3	PW M4 x 10 x 0.8t	2
14	S35-125004	Switch Pin	1
	W33-030040	E-4	1
4A	S13-13004A	Rear Clamp Bar Set	1
5A	S13-123200	Press Bar Set	1
6A	S13-123100	Front Clamp Bar Set	1

10.6 Sealing Head Unit

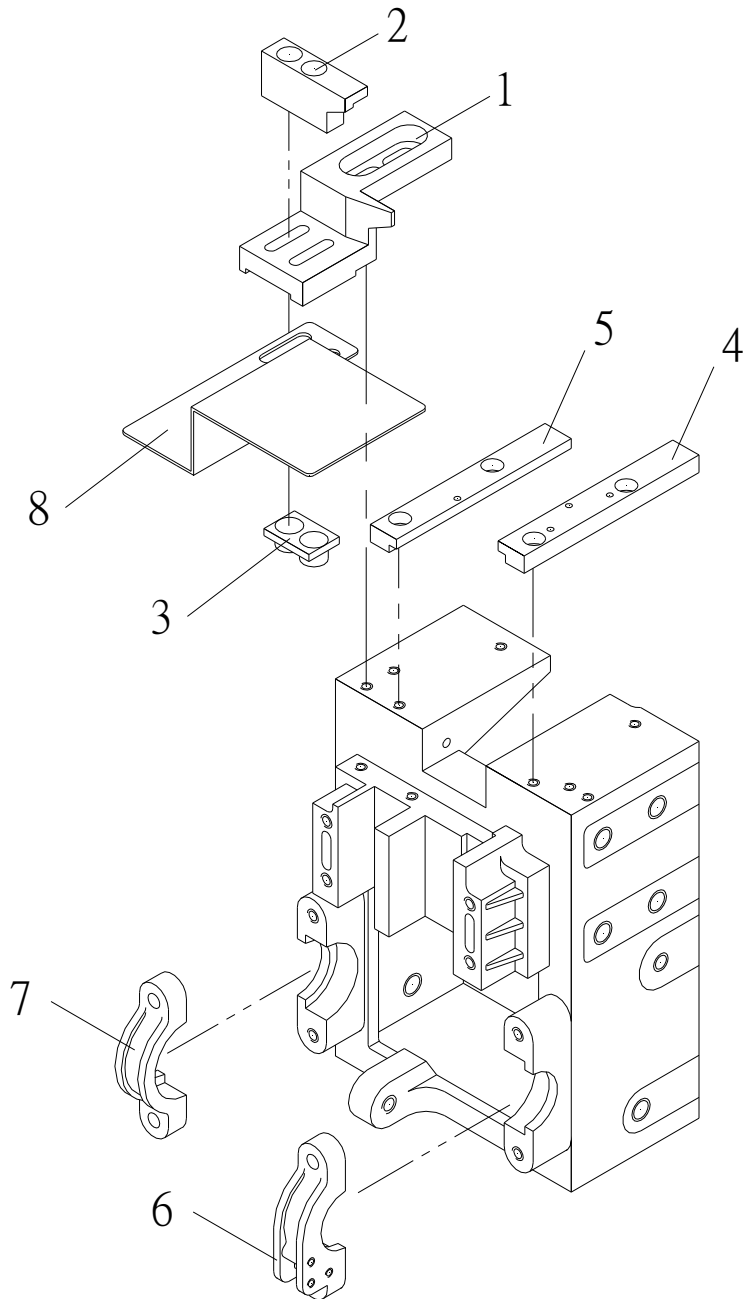


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10.6 Sealing Head Unit

No	Part No	Description	Qty
1	S13-122006	Spring#71	1
2	S13-124001	Plate	1
	W01-230440-1	HBS M4 x 40	2
	W15-110400	HN M4	2
	W19-020104	SW M4	2
	W19-010104-5	PW M4 x 12 x 1t	2
3	S13-124004	Spring	1
4	S13-124100-3	Heater Assembly	1
5	S13-124250	Heater Arm Assembly	1
	W09-110412	PMS M4 x 12	1
	W15-110400	HN M4	1
	W01-230840	HBS M8 x 40	1
	W15-110800	HN M8	1
	W19-020108	SW M8	1
6	G04-210635	Bearing, 635ZZ	1
	W12-110512	M5 x 12	1
	W19-010105	PW M5 x 12 x 1t	1

10.7 Cam Bracket Unit

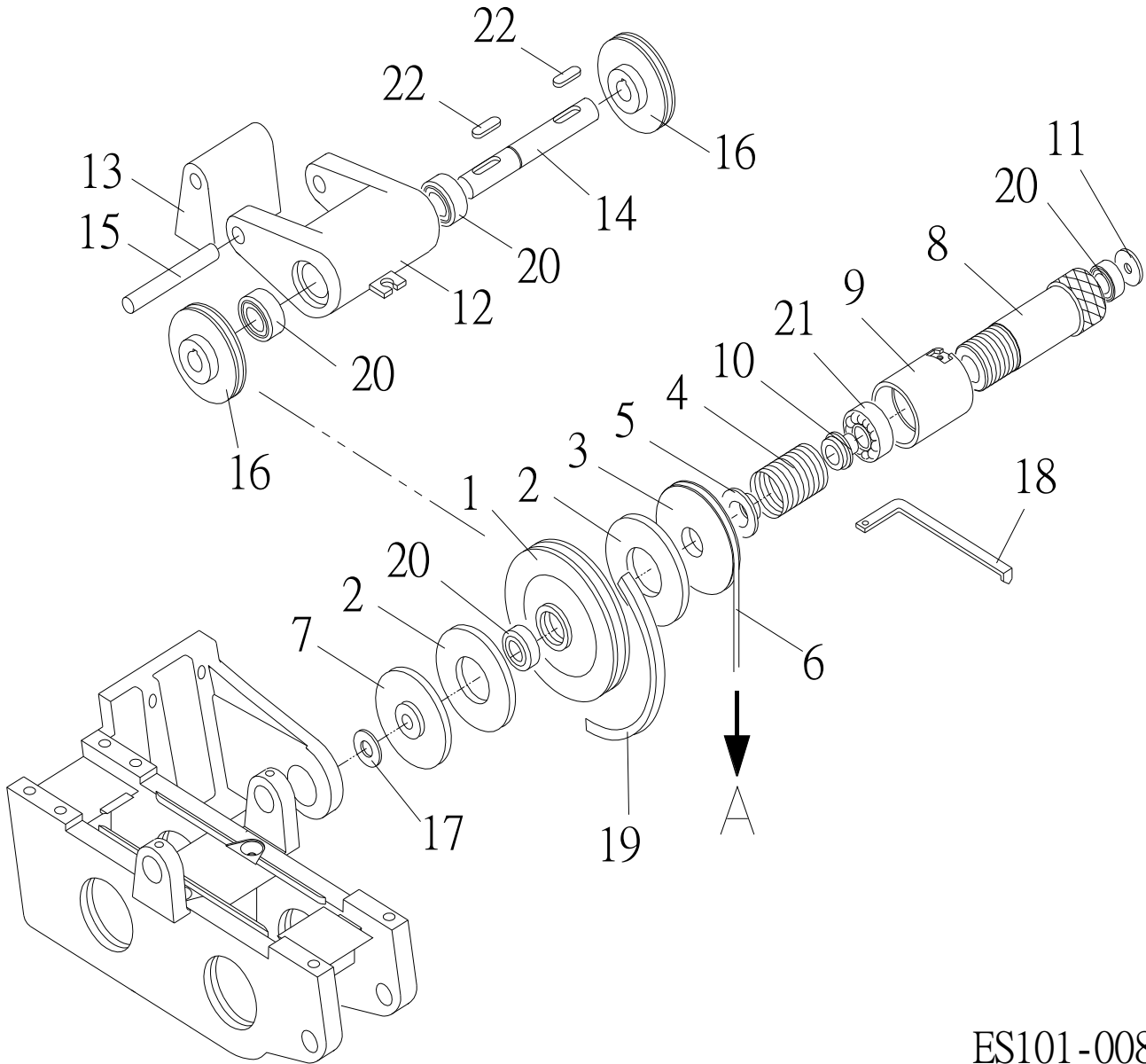


ES101-007P

10.7 Cam Bracket Unit

No	Part No	Description	Qty
1	S35-125011	Rear End Guide	1
	W01-210512	HBS M5 x 12	2
	W19-010105	PW M5 x 12 x 1t	2
2	S35-125008	Strap Guide Adjustment Plate	1
	W07-110425	TMS M4 x 25	2
3	S35-125009	Strap Guide Fixed Plate	1
4	S13-125002	Base Guide(A)	1
	W01-210516	HBS M5 x 16	2
	W31-103018	Spring Pin 3 X 18	2
5	S13-125003	Base Guide (B)	1
	W01-210516	HBS M5 x 16	2
6	S35-125005	Bearing Cover	1
	W01-210625	HBS M6 x 25	2
	W19-020106	SW M6	2
7	S35-125006	Bearing Cover	1
	W01-210625	HBS M6 x 25	2
	W19-020106	SW M6	2
8	S35-215001-1	Cover	1

10.8 Tension Unit

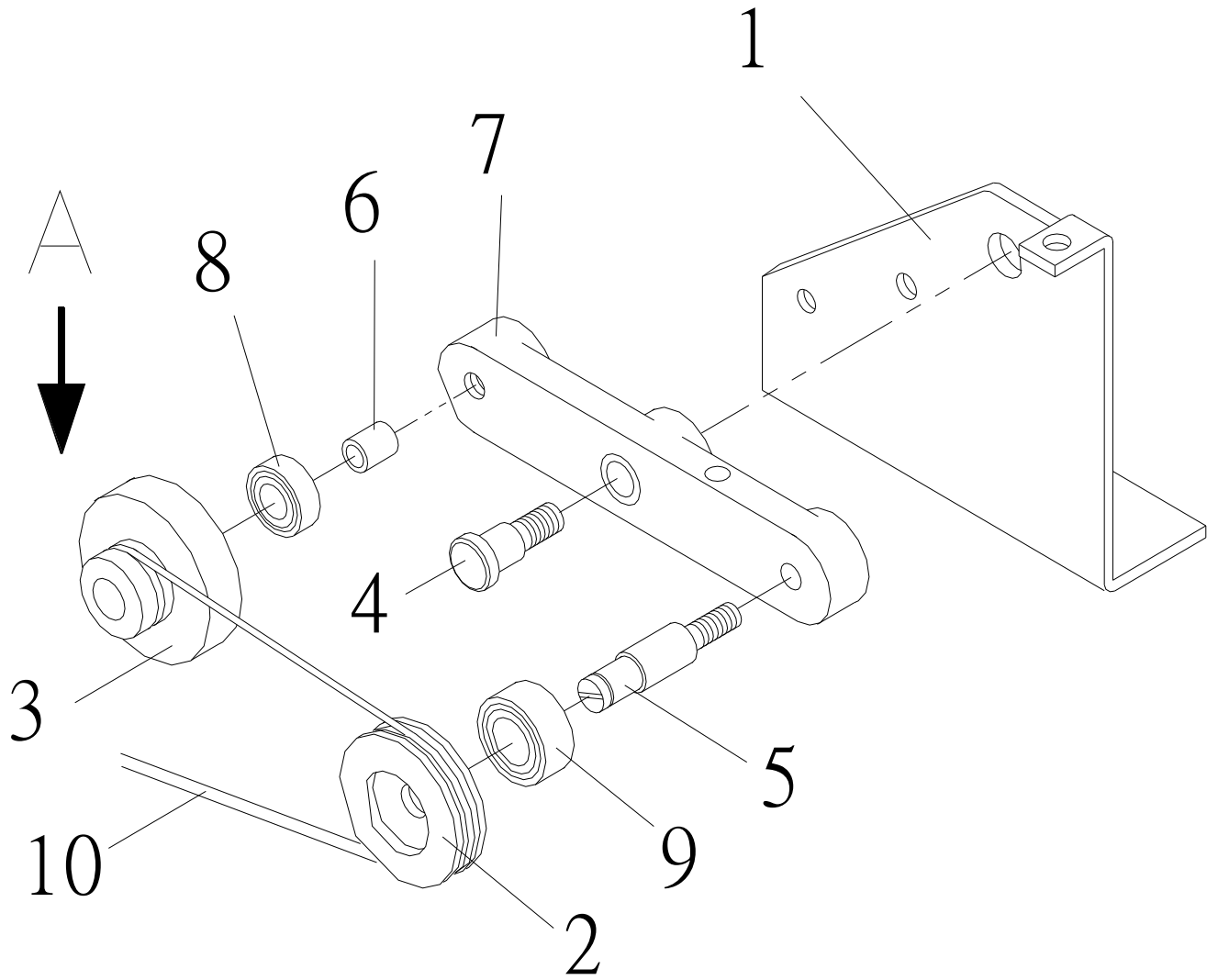


ES101-008P

10.8 Tension Unit

No	Part No	Description	Qty
1	S13-16001-02	Pully #170	1
	W33-050320	RTW-32	2
2	S13-160002	Friction Disc	2
	W33-050220	RTW-22	1
3	S13-160003N	Clutch Plate (R)	1
4	S13-160004	Spring	1
5	S13-160006	Spring Retainer	1
6	S13-16007-2	Round Belt	1
7	S13-160009N	Clutch Plate (L)	1
8	S13-161101	Rotating Tube	1
9	S13-161102	Fixed Tube	1
10	S13-161005	Spring Retainer	1
11	S13-161006	Washer	1
	W01-210512	HBS 5*12	1
12	S13-162001	Pulley Bracket	1
	W01-230660-1	HBS M6*60	1
	W19-010106-2	PW M6*13*2t	2
	W19-020106	SW M6	1
	W15-110600	HN M6	2
13	S13-162002	Hinge Bracket	1
	W01-210616	HBS M6*16	2
	W19-010106	PW M6*16*2t	2
	W19-020106	SW M6	2
14	S13-162003	Counter Shaft #137	1
15	S13-0162004	Hinge Pin	1
16	S13-162005-02	Pulley #141	1
	W02-210508	HSS M5*8	2
17	S13-171033-01	Collar	1
18	S13-160011-1	Fixed Arm For Close Type	1
	W01-210508	HBS M5*8	1
	W19-010105	PW M5*12*1t	1
	W19-020105	SW M5	1
19	G16-070019	V-belt, K-19	1
20	G04-216002	Bearing, 6002ZZ	4
21	G04-216005	Bearing, 6005ZZ	1
22	W35-050515	Parallel Key (5*5*15)	2

10.9 Micro Switch (LS2) Unit

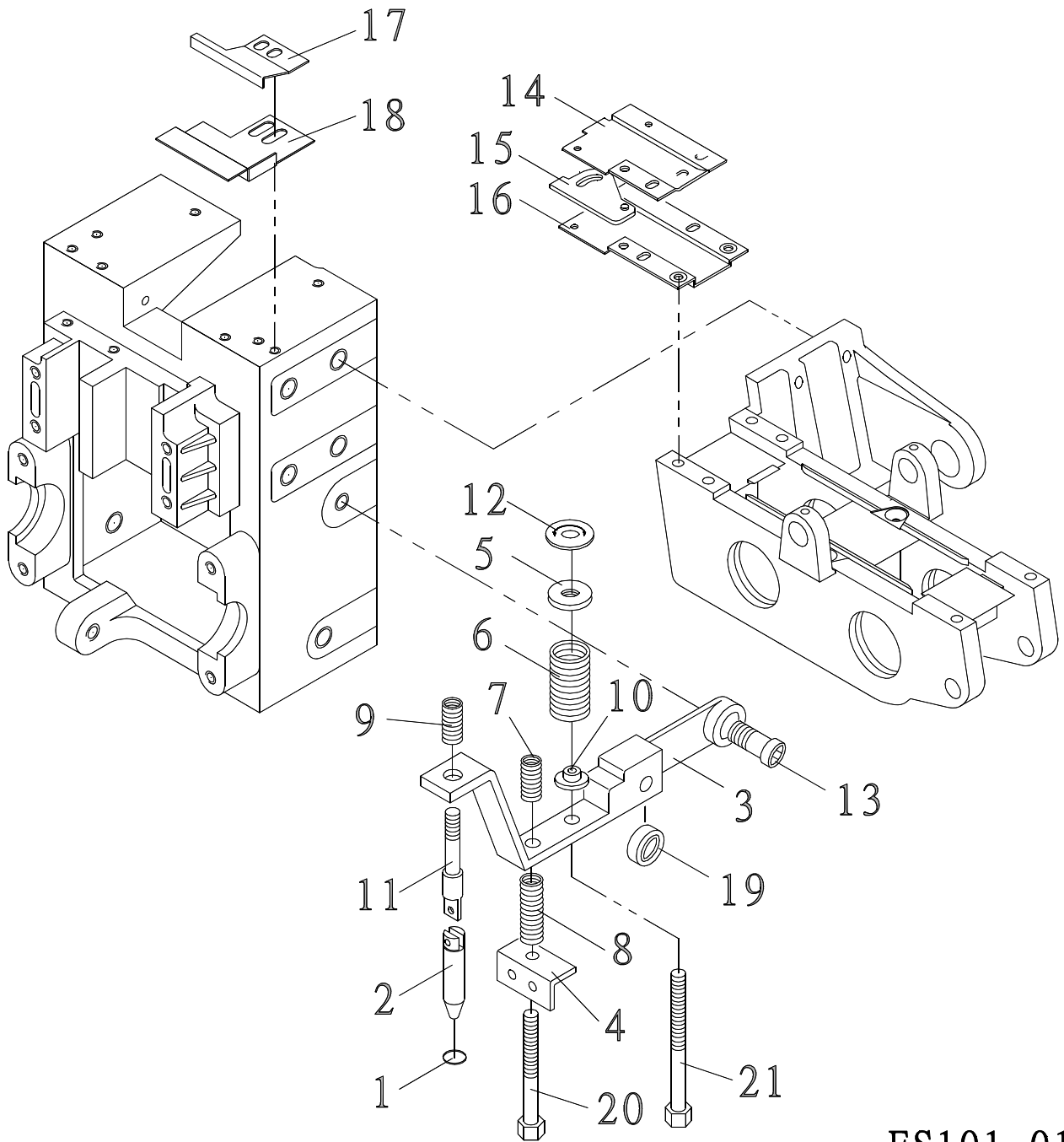


ES101-009P

10.9 Micro Switch (LS2) Unit

No	Part No	Description	Qty
1	S13-163001-1	Bracket	1
	W19-010106	PW M6*13*1t	2
	W01-210620	HBS M6*20	2
	W19-010106-3	PW M6*16*2t	2
	W19-020106	SW M6	2
	W15-110600	HN M6	2
	W15-110400	PMS M4*12	1
	W09-110412	HN M4	1
2	S13-163003	Pulley #139	1
3	S13-163004	Pulley #210	1
	W01-210530	HBS M5*30	1
	W15-110500	HN M5	1
	W33-050160	RTW-16	1
4	S13-163005	Pin #152	1
	W15-110600	HN M6	1
	W19-020106	SW M6	1
5	S13-163006	Shaft #144	1
	W33-030060	ETW-6	1
	W15-110600	HN M6	1
6	S13-163013	Collar #215	1
7	S13-163050	Arm #146	1
8	G04-210635	Bearing, 635ZZ	1
9	G04-210608	Bearing, 608ZZ	1
10	S13-160007-2	Round Belt	1

10.10 Feed Back Arm Unit

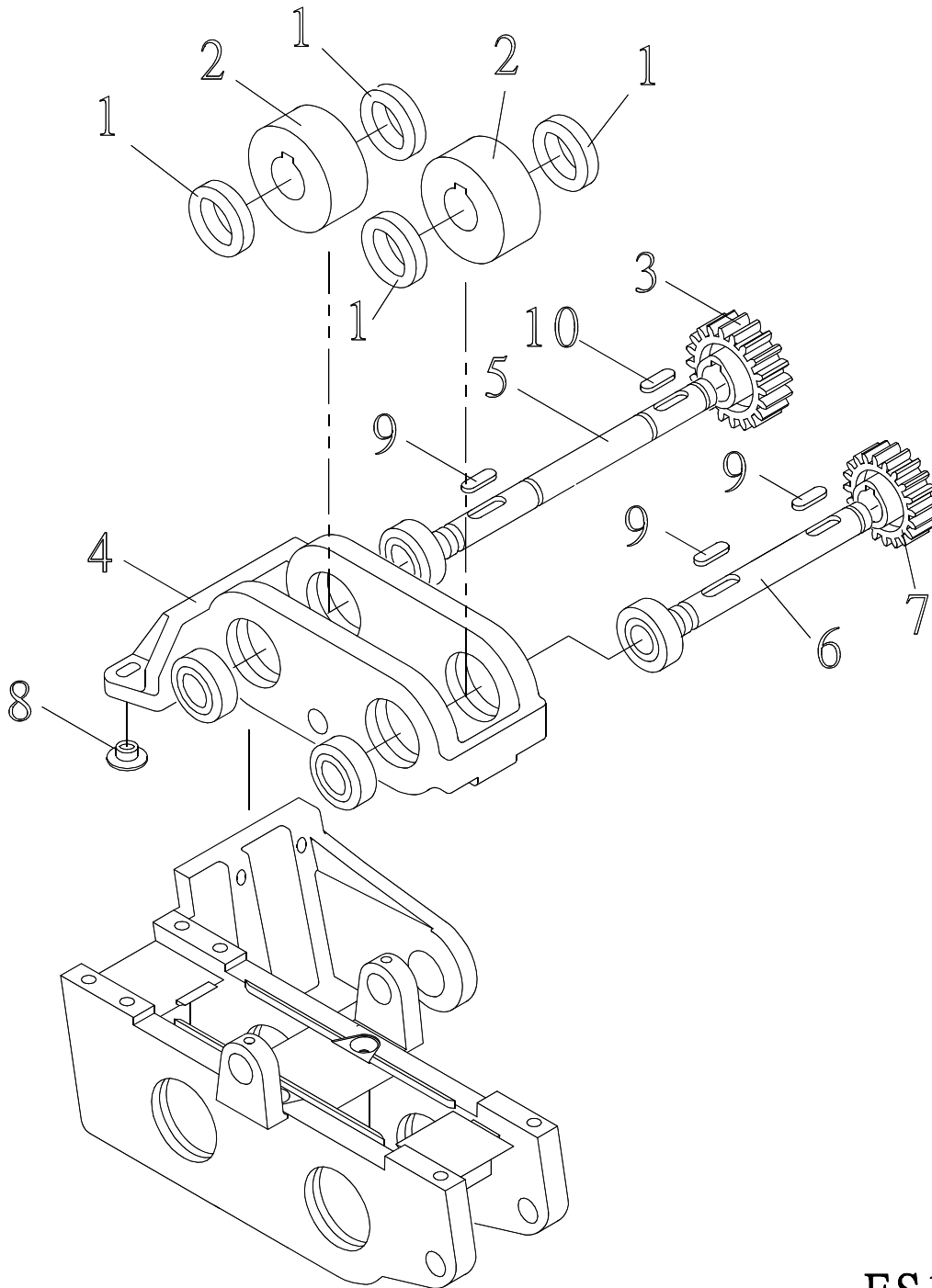


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10.10 Feed Back Arm Unit

No	Part No	Description	Qty
1	S13-110008	O-Ring	1
2	S13-110009	Solenoid Shaft	1
	W01-210425	HBS M4*25	1
	W17-210400	HN M4	1
3	S13-164001	Feed Back Arm	1
4	S13-164002	Stopper Bracket	1
	W01-210512-1	HBS M5*12	2
5	S13-164003	Adjustment Nut	1
6	S13-164004	Spring #130	1
7	S13-164005	Spring #187	1
8	S13-164006	Spring #186	1
9	S13-164007	Spring #183	1
10	S13-164009	Spring Retainer #130-1	1
11	S13-164012	Pull Shaft	1
	W15-110600	HN M5*12	2
	W19-010106	PW M6*13*1t	2
	W19-020106	SW M6	1
12	P08-213006	Label (Tension)	1
13	S13-164015	Feed Back Arm Pin	1
14	S13-171021-01	Outlet cover #215	1
	W09-110410	PMS M4*10	5
	W19-050504	TW M4	3
	W19-010104-1	PW M4*10	2
	W19-020104	SW M4	2
15	S13-171022	Band Adjustment Plate	1
16	S13-171023-01	Outlet cover #216	1
17	S13-172029	Front End Guide	1
	W01-210516	HBS M5*16	2
18	S13-172030	Front End Adjustment Plate	1
19	G04-210635	Bearing, 635ZZ	1
	W31-105016	SP ϕ 5*16	1
20	W03-110680	Hex Head Screw M6*80	1
	W15-110600	HN M6	4
	W19-010106	PW M6*13*1t	4
	W19-020106	SW M6	2
21	W03-110698	Hex Head Screw M6*100	1
	W15-110600	HN M6	5
	W19-010106	PW M6*13*1t	2
	W19-020106	SW M6	2

10.11 Upper Feed Roller Unit

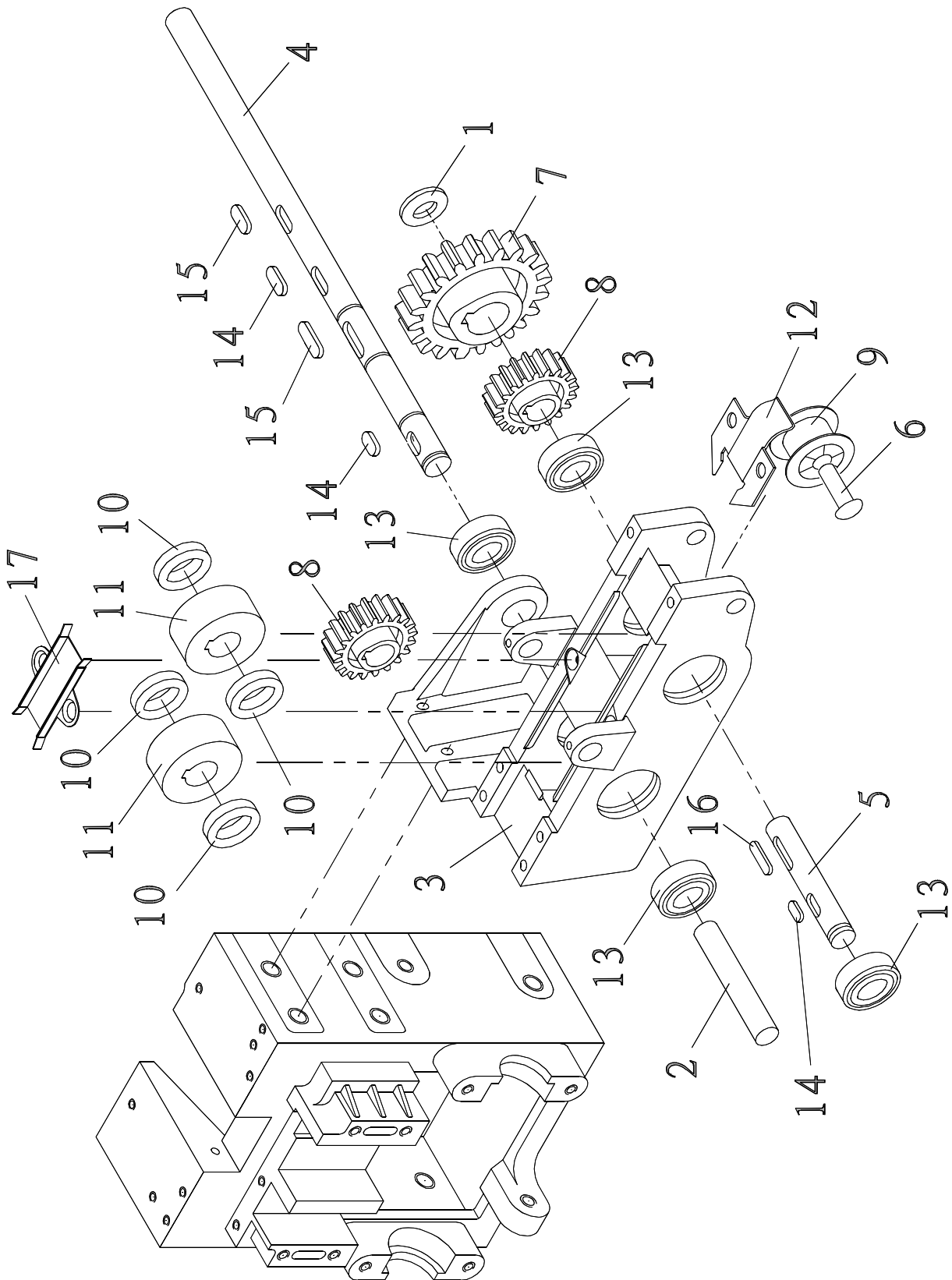


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10.11 Upper Feed Roller Unit

No	Part No	Description	Qty
1	S13-171017	Collar (A)	3
2	S13-171019	Roller #16	2
3	S13-171009N	Gear	1
4	S13-172002-01	Shaft Holder	1
5	S13-172005N	Feed Roller Shaft	1
	W33-020150-1	STW-15	4
6	S13-172006N	Roller Shaft	1
	W33-020150-1	STW-15	2
7	S13-172014-01	Gear	1
8	S13-164001-01	Washer #223	1
9	W35-050515	Parallel Key (5*5*15)	3
10	W35-050520	Parallel Key (5*5*20)	1

10.12 Down Feed Roller Unit

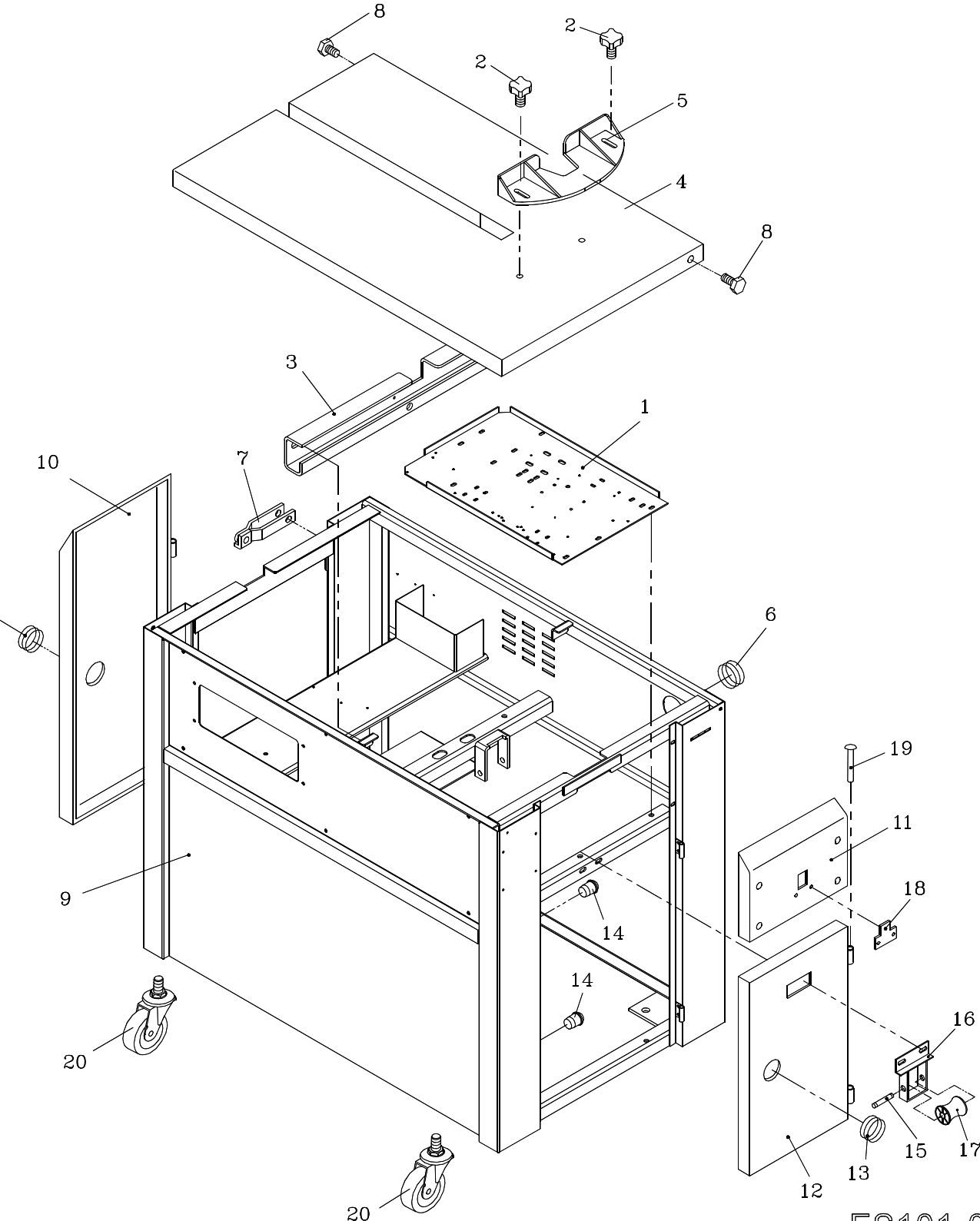


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10.12 Down Feed Roller Unit

No	Part No	Description	Qty
1	S13-161006	Washer	1
2	S13-170001-01	Pin #221	1
3	S13-171001-2	Roller Bracket	1
	W02-210510	HSS M5*10	2
4	S13-171003N-01	Feed Roller Shaft	1
	W33-020150-1	STW-15	4
5	S13-171004N	Roller Shaft	1
	W33-020150-1	STW-15	1
6	S13-171007-01	Pin #209	1
	W33-020100	STW-10	2
7	S13-171008N	Feed Back Gear	1
8	S13-171009N	Gear	2
9	S13-171012	Roller #192	1
10	S13-171017	Collar (A)	4
11	S13-171019	Roller #116	2
12	S13-171026-01	Inlet Cover #212	1
	W09-110410	PMS M4*10	2
	W19-050504	TW M4	2
13	G04-216002	Bearing 6002ZZ	4
14	W35-050515	Parallel Key (5*5*15)	3
15	W35-050520	Parallel Key (5*5*20)	2
16	W35-050538	Parallel Key (5*5*38)	1
17	S13-171023R1	Inner Guide	1
	W07-110406	TMS M4*6	2

11. Frame Unit



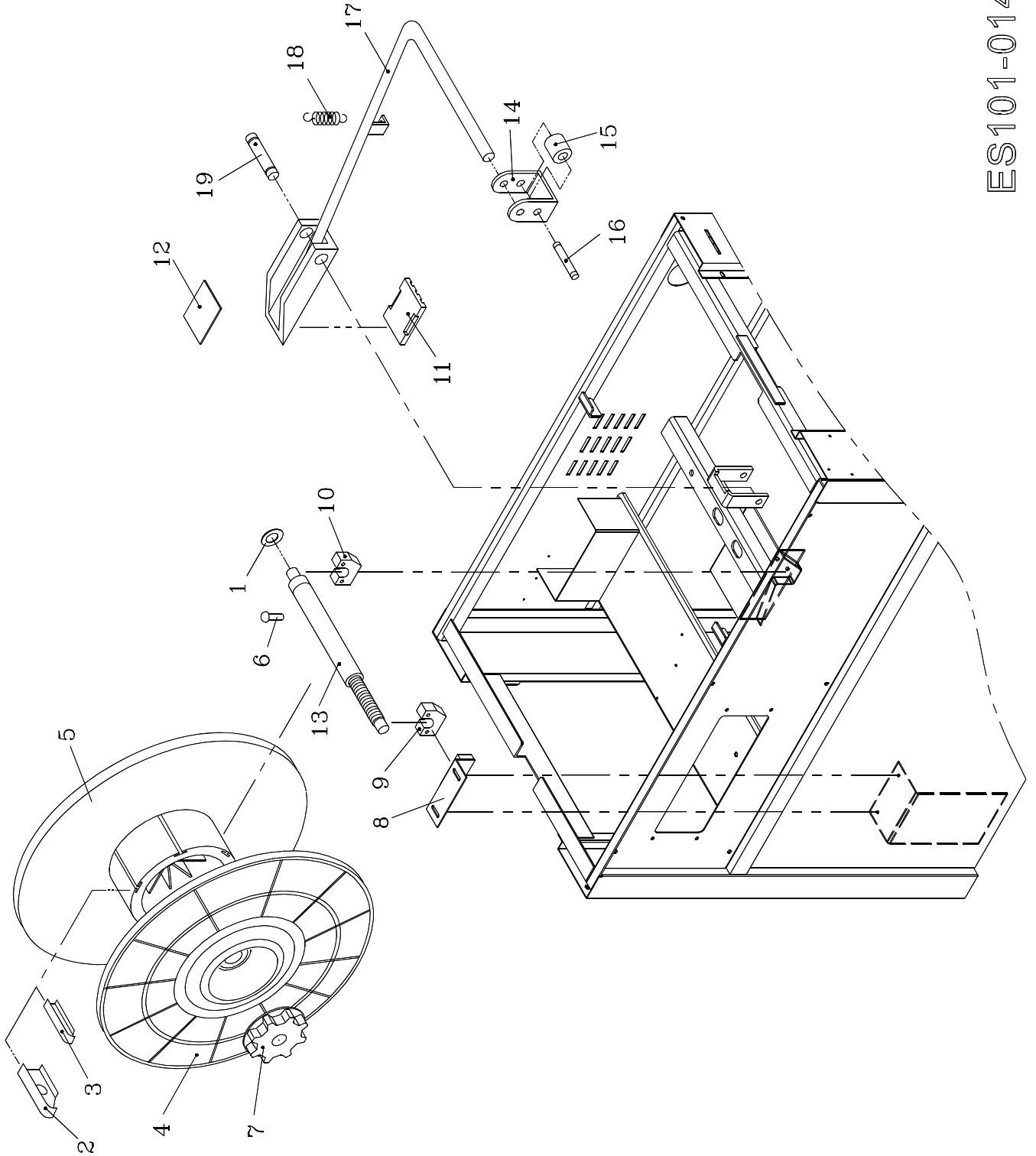
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11. Frame Unit

No	Part No	Description	Qty
1	S13-300015-1	Bracket	1
	W03-110620	HB M6*20	5
	W19-010106-3	PW M6*16*2t	10
	W19-020106	SW M6	5
	W15-110600	HN M6	5
2	S13-300009	Knob	2
3	S13-350001-0	Support	1
	W01-210620	HBS M6*20	2
	W19-010106-3	PW M6*16*2t	2
	W15-110600	HN M6	2
4	S23-330050R2	Top Plate (Hinge Type)	1
5	S13-300008R2	Package Guide	1
6	S13-300016	Plastic Lid	1
7	S13-390050R1	Support Rod	1
	W05-110615	FMS M6*15	1
	W17-210600	M6	1
	W01-210608	HBS M6*8	1
8	S23-330001-1	Screw	2
9	S13-370050-2	Frame	1
10	S13-330050R1	Side Door (L)	1
11	S14-300001R1	Protection Cover	1
	W09-110525	PMS M5*25	4
	W19-010105	PW M5*12*1t	2
	W19-020105	SW M5	4
	W15-110500	HN M5	4
12	S13-340050R1	Side Door (R)	1
13	S13-300010	Plastic Lid	2
14	S13-330053	Ball Look	4
15	S13-423001-2	Shaft	1
	W33-020100	S-10	1
16	S13-423150	Band Guide bracket	1
	W03-110616	HB M6*16	2
	W19-010106-2	PW M6*13*1.5t	2
	W19-010106-3	PW M6*16*2t	2
	W19-020106	SW M6	2
	W15-110600	HN M6	2
17	S23-424001	Roller	1
18	S13-171026-3	Inlet Cover	1
	W07-110408	TMS M4*8	2
	W15-110400	HN M4	2
19	S13-300013	Lock Pin	4
20	S23-300011	Caster W/O Brake	4
	W19-020116	SW M16	4

12. Reel Unit

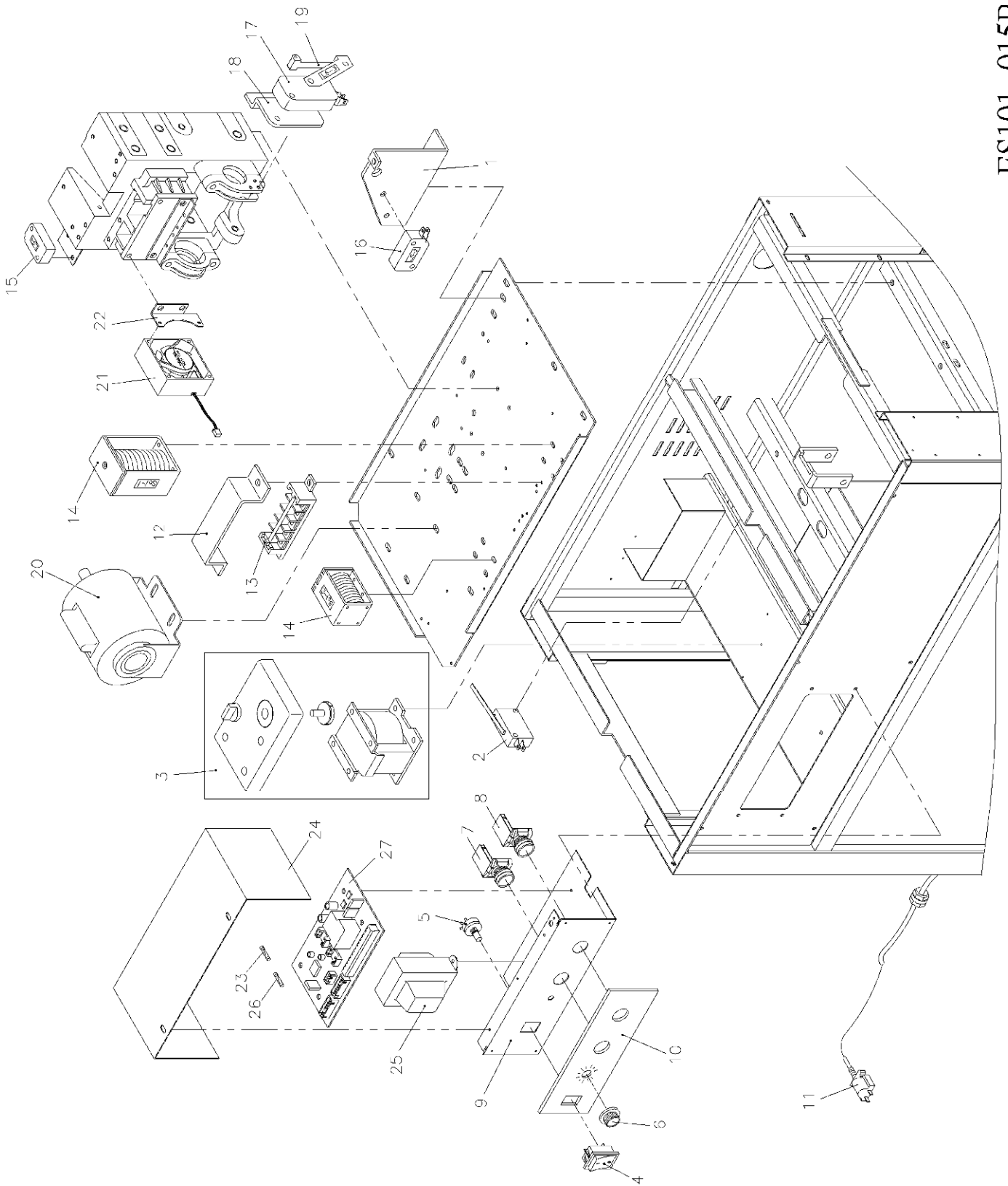
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12. Reel Unit

No	Part No	Description	Qty
1	A20-630007	Washer	1
2	S13-450002	Block for Reel 280mm	6
3	S13-450003	Block for Reel 230mm	6
4	S23-430003-120	Reel Out Circular	1
5	S13-451050-120	Reel In Circular	1
6	S13-410006	Pin	1
	W31-208000	SSP-8	1
7	S13-450001	Reel Nut Handle	1
8	S13-312150	Reel Bracket (R)	1
	W01-210616	HBS M6*16	2
	W19-010106-3	PW M6*16*2t	2
	W19-020106	SW M6	2
9	S13-440002	Support Pad (R)	1
	W01-210616	HBS M6*16	4
10	S13-430002	Support Pad (L)	1
	W01-210616	HBS M6*16	4
11	S13-420004-1	Rubber Stop	1
	W14-310415	M4*15	2
12	S13-420007	Rubber Pad	1
13	S13-450005	Shaft	1
	W33-030190	E-19	1
14	S13-422001	Roller Holder	1
15	S13-422002	Roller	1
16	S13-422003	Shaft	1
	W33-030040	E-4	2
17	S13-421050	Brake Assembly	1
	W33-020100	S-10	1
18	S13-420005	Brake Spring	1
19	S13-420001	Block Lock	1
	W33-020100	S-10	2

13. Electric Control Unit



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13. Electric Control Unit

No	Part No	Description	Qty
1	S13-163001-1	Bracket	1
	W01-210620	HBS M6*20	2
	W19-010106	PW M6*13*1t	2
	W19-010106-3	PW M6*16*2t	2
	W19-020106	SW M6	2
	W15-110600	HN M6	2
2	E07-040036	Micro Switch V3-25S-0101	1
	W09-110315	PMS M3*15	2
3	S13-212100	Transformer Set 96V-145V/0.6A/6V-8.8V/DA	1
	S13-213100	Transformer Set 200V-290/3A/6V-8.8V/7A	1
	W07-110406	TMS M4*6	4
4	E07-050027	Power Switch T120-10(4)/250	1
5	E13-020014	Variable Resister B2K/0.25W	1
6	E07-070002	Knob RN-99D	1
7	E07-020027	Push Button Switch ABFB-W	1
8	E07-020028	Push Button Switch ABFB-G	1
9	S13-222001-1	Switch Box	1
10	S13-221003	Control Plate	1
11	E61-125327	American Power Cord	1
	E55-030002	SR-6R1	1
12	S13-201602	Cover	1
	W07-110408	TMS M4*8	2
13	E53-112506	Terminal Bracket (6P/15A)	1
	W07-110408	TMS M4*8	2
14	E21-040003	Solenoid 110V (260Ω/13W)	2
	W01-210512-1	HBS M5*12	8
15	E07-040005-R1	Micro Switch (LS-1) VMN-06D-00D0-B-Z	1
	W09-110315	PMS M3*15	1
	W09-110320	PMS M3*20	1
	W19-010103	PW M3*8*0.8t	1
	W19-020103	SW M3	1
	W15-110300	HN M3	1
16	E07-040005	Micro Switch (LS-2) VMN-06D-00N0-B-Z	1
	W09-110315	PMS M3*15	2
17	E07-040004R1	Micro Switch (LS-3) VK-06H-00D1-Z	1
18	S13-210002-1	Micro Switch Bracket LS-3	1
	W09-110408	PMS M4*8	2
	W19-020104	SW M4	2
19	S13-210009	Switch Trigger LS-3 AA2501	1
	W09-110315	PMS M3*15	2
	W19-020103	SW M3	2
	W15-110300	HN M3	2
20	E01-010215	Motor (115V/60Hz)	1
	W03-110620	HB M6*20	4
	W19-010106-3	PW M6*16*2t	6
	W19-020106	SW M6	4
	W19-010106-2	PW M6*13*1.5t	2
	W15-110600	HN M6	4
21	E01-040018-2	Fan AD0612MS-A76GL DC12V	1

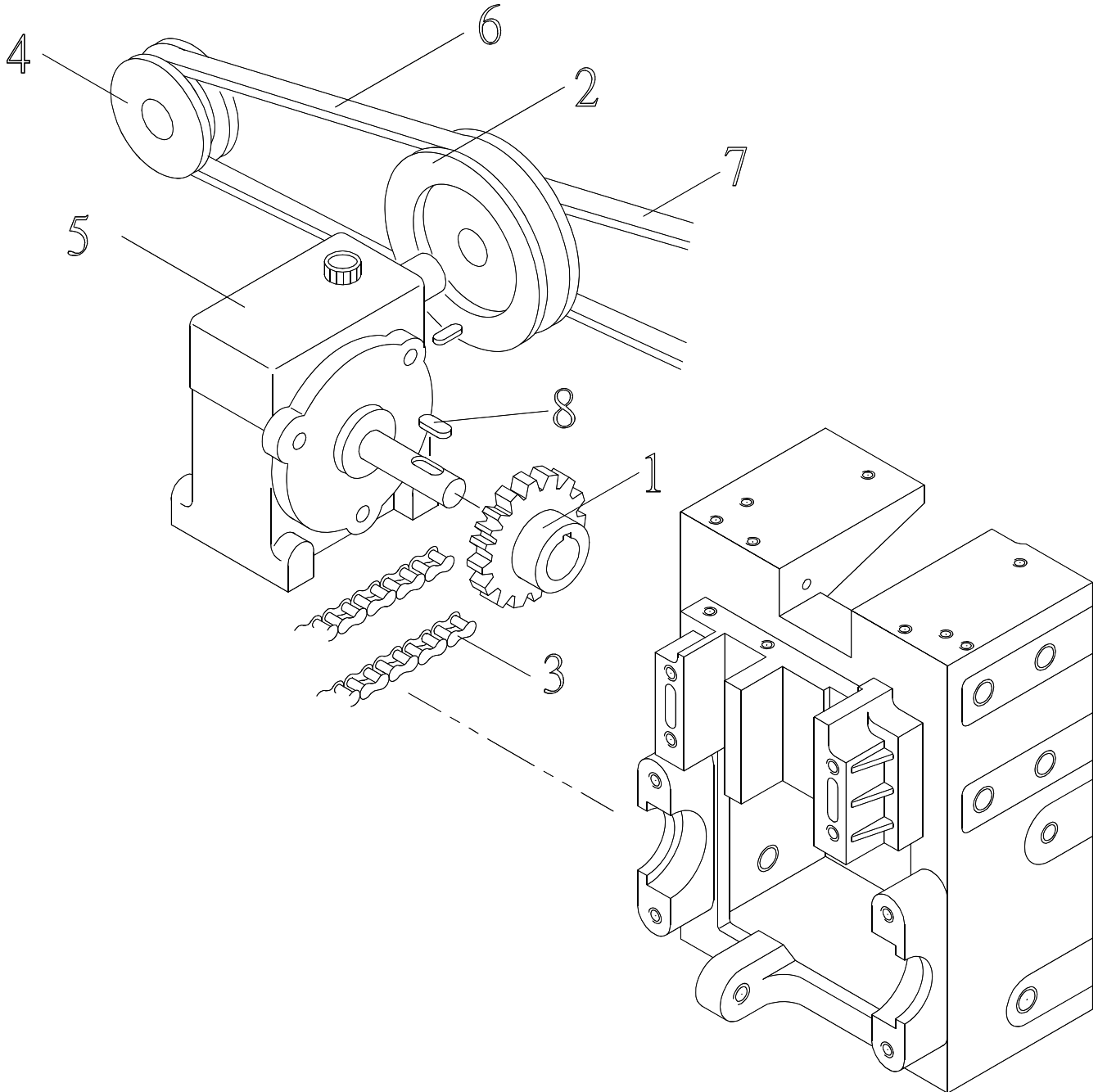
13. Electric Control Unit

No	Part No	Description	Qty
22	S13-223003-0	Fan Support	1
	W01-230430-1	HBS M4*30	2
	W19-010104-1	PW M4*10*1.0t	2
	W01-210625	HBS M6*25	2
	W19-010106-2	PW M6*13*1.5t	1
	W19-020106	SW M6	2
23	E23-010043	Fuse 5*20/1.5A Slow Blow Type (110V/F23)	1
24	S13-222002-1	Switch Cover	1
	W07-110408	TMS M4*8	2
25	E17-010013	Transformer (110V/230V/15V/0.6A)	1
	W07-110408	TMS M4*8	2
26	E23-010019	Fuse 5*20/8A Slow Blow Type (110V/F14)	1
27	E25-101095-2	P.C. Board	1

Spare parts list

ES-102/A

14.1 Cam/Clutch Unit

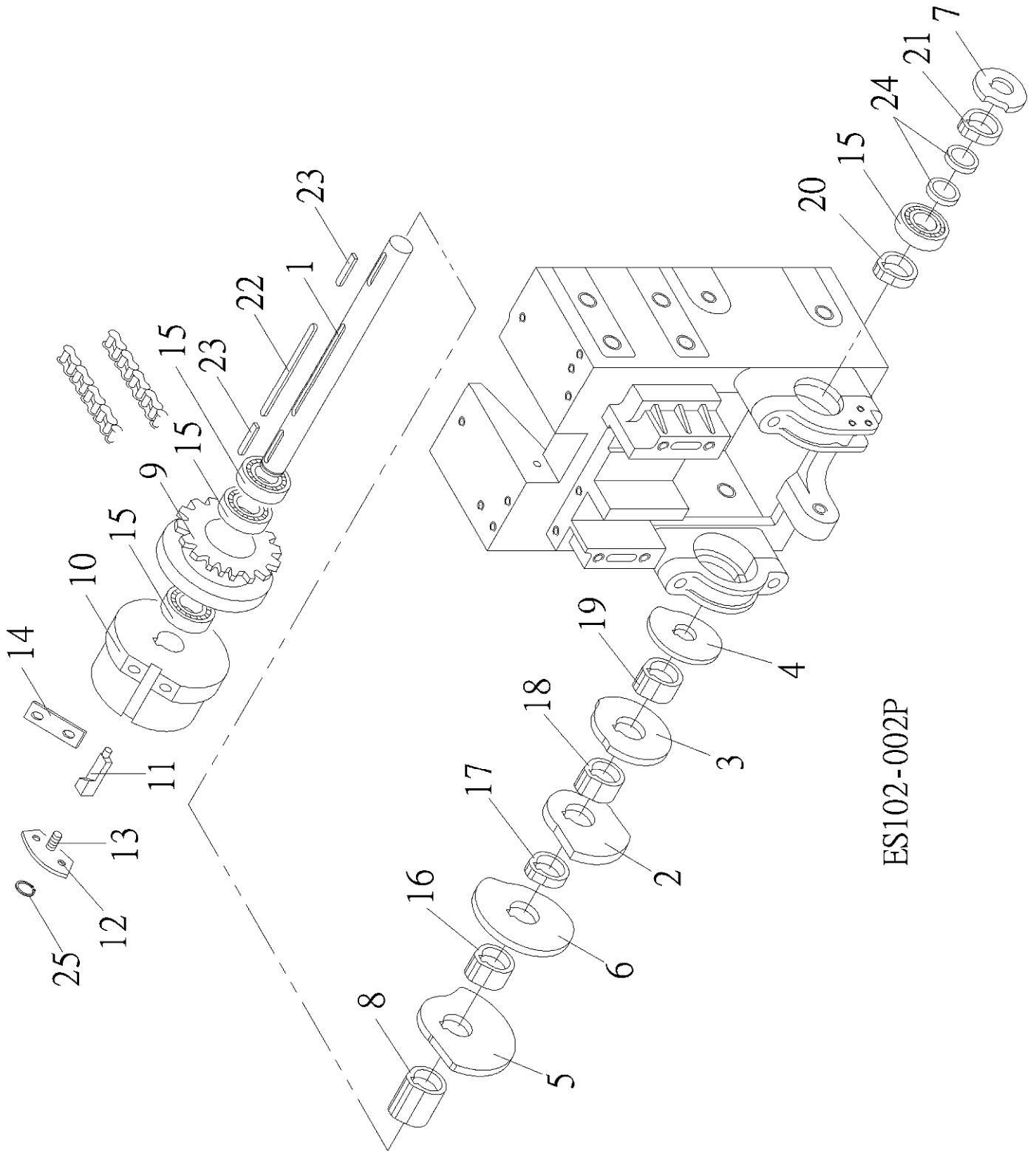


ES102-001P

14.1 Cam/Clutch Unit

No	Part No	Description	Qty
1	S13-110003	Sprocket	1
	W02-210508	HSS M5 x 8	1
	W02-210506	HSS M5 x 6	1
2	S13-110004-02	Pulley (A)#18	1
	W02-210610	HSS M6 x 10	2
3	S13-110005	Chain 35 x 44 L	1
4	S13-110010-3	Pulley (B)#20	1
	W02-210610	HSS M6 x 10	1
5	S13-113000	Reduction GearBox	1
	W01-210820	HBS M8 x 20	4
	W19-010108-9	PW M8 x 23 x 3t	4
	W19-020108	SW M8	4
6	G16-010021	V-Belt, M-21	1
7	G16-070021	V-Belt, K-21	1
8	W35-050525	Parallel Key(5 x 5 x 5)	2

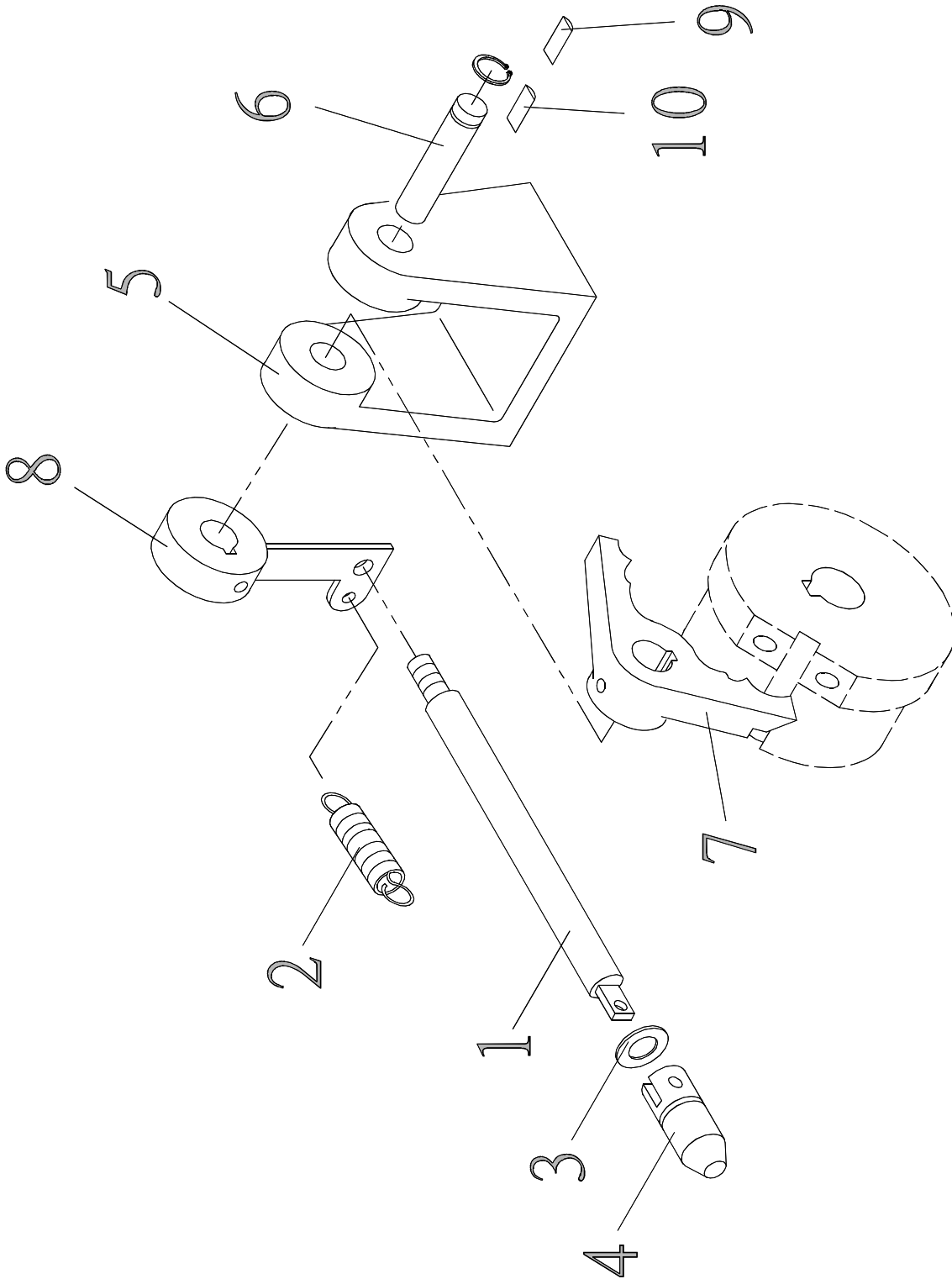
14.2 Cam/Clutch Unit



ES102-002P

14.2 Cam/Clutch Unit

No	Part No	Description	Qty
1	S13-121003-1	Cam Shaft	1
	W01-210620	HBS M6 x 20	1
	W19-020106	SW M6	1
	W19-010106-3	PW M6 x 16 x 2t	2
2	S13-121203	Press Grip Cam	1
3	S13-1221204-1	Front Grip Cam	1
4	S13-121205	Separate Cam	1
5	S13-121201-1	Rear Grip Cam	1
6	S13-121202	Heater Cam	1
7	S13-121206	Feed Back Cam	1
8	S13-121207	Collar	1
9	S13-121029	Drive Sprocket	1
10	S13-121101	Clutch Housing	1
11	S13-121102	Clutch Pin	1
12	S13-121103	Spring Holder	1
	W01-210410	HBS M4 x 10	2
	W19-020104	SW M4	2
13	S13-121104	Spring	1
14	S13-121105	Guide	1
	W01-210410	HBS M4 x 10	2
	W19-020104	SW M4	2
15	G04-116003	Bearing, 6003Z	2
16	S13-121208	Cam Shaft	1
17	S13-121209	Collar	1
18	S13-121210	Collar	1
19	S13-121211	Collar	1
20	S13-121212	Collar	1
21	S13-121213	Collar	1
22	W35-0505101	Parallel Key	1
23	W35-050516	Parallel Key	1
24	S13-121908-1	Collar	1
	W33-020170	Ring	1

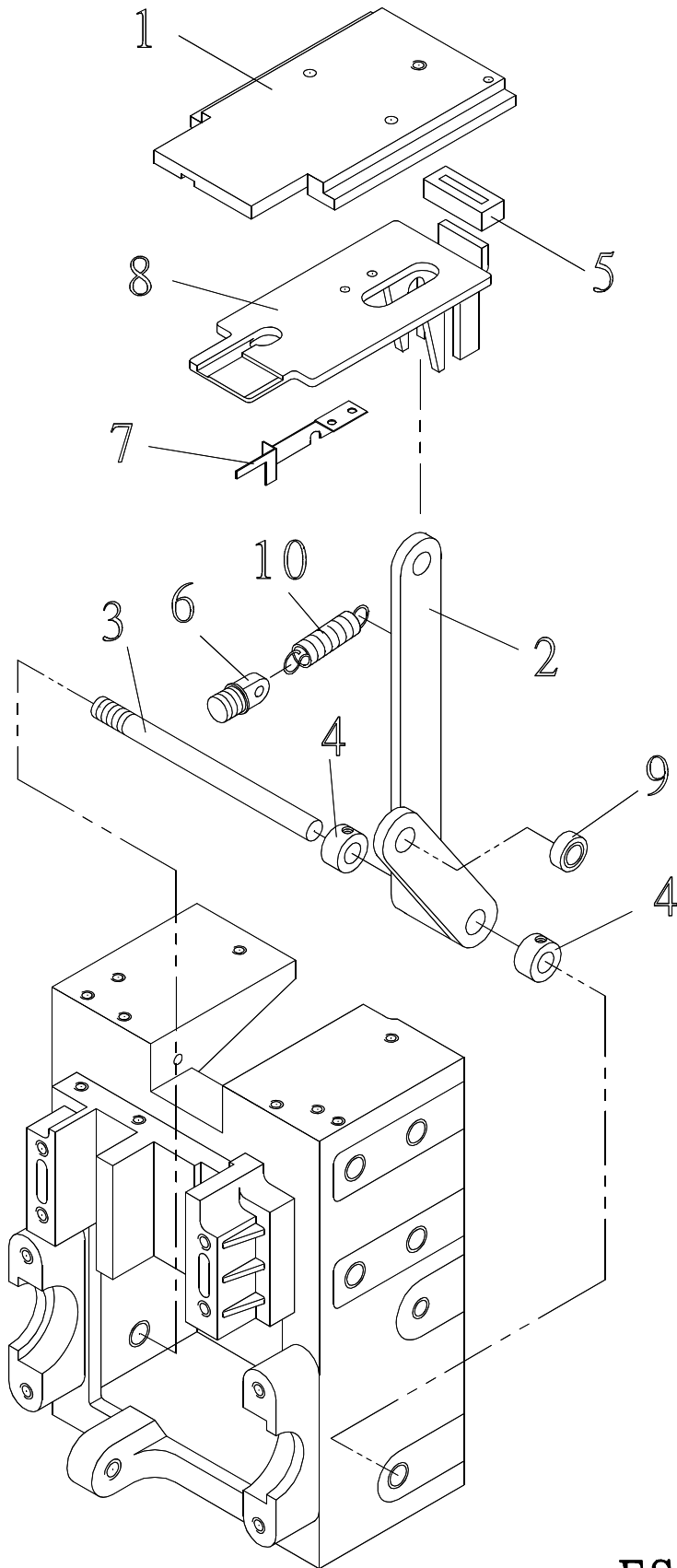


ES102-003P

14.3 Clutch Unit

No	Part No	Description	Qty
1	S13-110001	Pull Shaft	1
	W15-110600	HN M6	2
	W19-020106	SW M6	2
	W19-010106	PW M6 x 13 x 1t	1
2	S13-110002	Spring#227	1
	W15-110400	HN M4	2
	W09-110420	PMS M4 x 20	2
	W19-020104	SW M4	1
	W19-010104-1	PW M4 x 10 x 1t	2
3	S13-110008	O-Ring	1
4	S13-110009	Solenoid Shaft	1
	W01-210420	HBS M4 x 20	1
	W17-210400	HN M4	1
5	S13-112001	Clutch Support	1
	W01-210620	HBS M6 x 20	4
	W19-020106	SW M6	4
	W19-010106-3	PW M6 x 16 x 2t	4
6	S13-112003	Shaft #35	1
	W33-030120	E-12	1
7	S13-112008	Stop Arm	1
	W02-210608	HSS M6 x 8	1
8	S13-112150	Clutch Arm	1
	W02-210608	HSS M6 x 8	1
9	W35-050515	Parallel Key 5 x 5 x 15	1
10	W35-050520	Parallel Key 5 x 5 x 20	1

14.4 Slide Table Unit



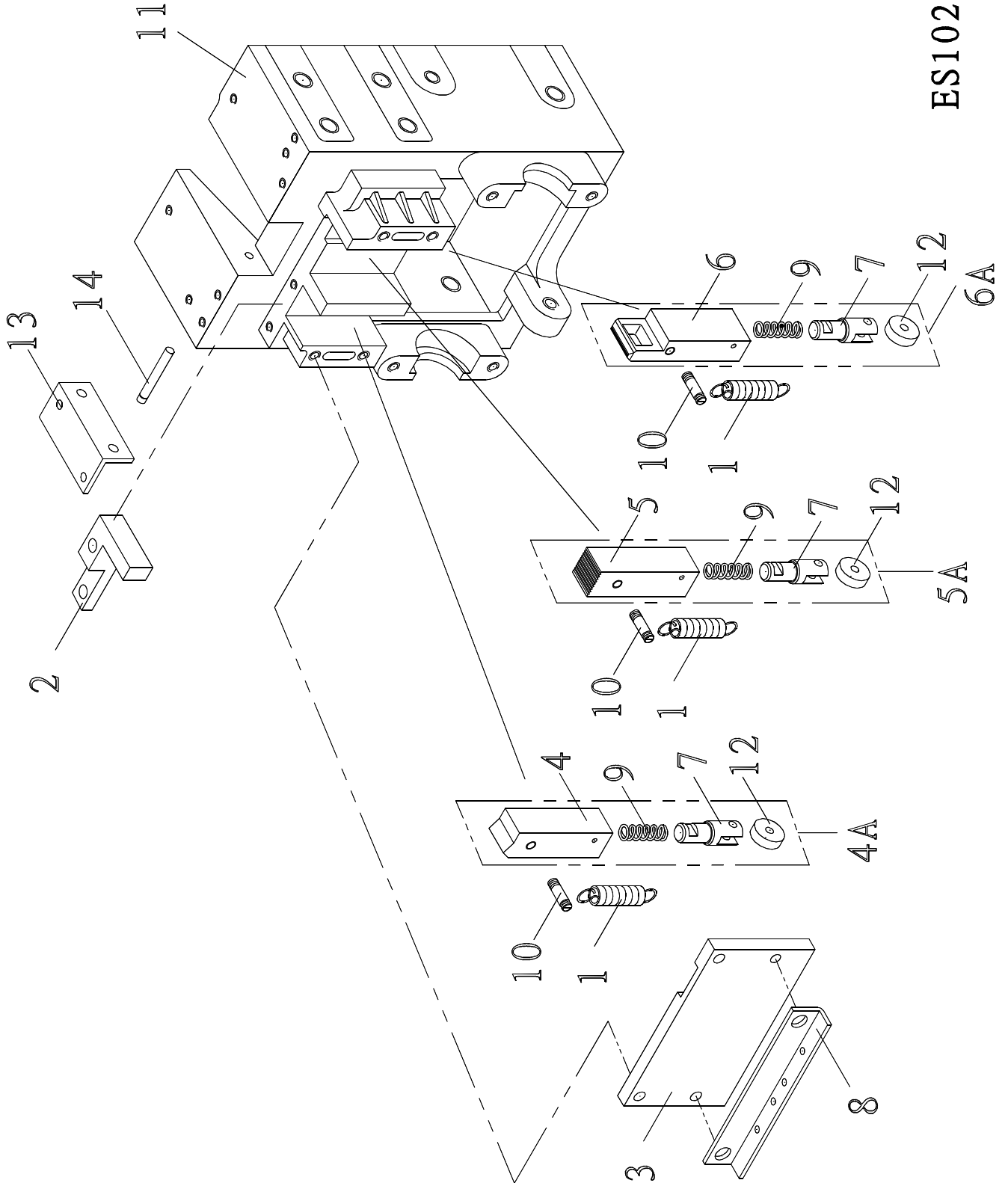
ES102-004P

14.4 Slide Table Unit

No	Part No	Description	Qty
1	S13-122001	Slide Table	1
	W01-210505	HBS M5 x 5	1
	W31-104016	Spring Pin 4 x 16	1
2	S13-122002	Separator Arm	1
	W31-106020	Spring Pin 6 x 20	1
	W09-110420	PMS M4 x 20	1
	W15-110400	HN M4	1
3	S13-122003	Pin	1
	W15-110800	HN M8	2
	W19-020108	SW M8	1
4	S13-122005	Collar	2
	W02-210606	HSS M6 x 6	2
5	S13-122007	Gum	1
6	S13-122008	Spring Hook	1
7	S35-122012	Switch Lever	1
	W09-110304	PMS M3 x 4	2
	W19-020103	SW M3	2
8	S35-122150	Separator	1
9	G04-210635	Bearing, 635ZZ	1
	W01-210525	HBS M5 x 25	1
	W15-110500	HN M5	2
	W19-020105	SW M5	1
10	S13-122009	Slide Table Spring	1

14.5 Cutter Unit

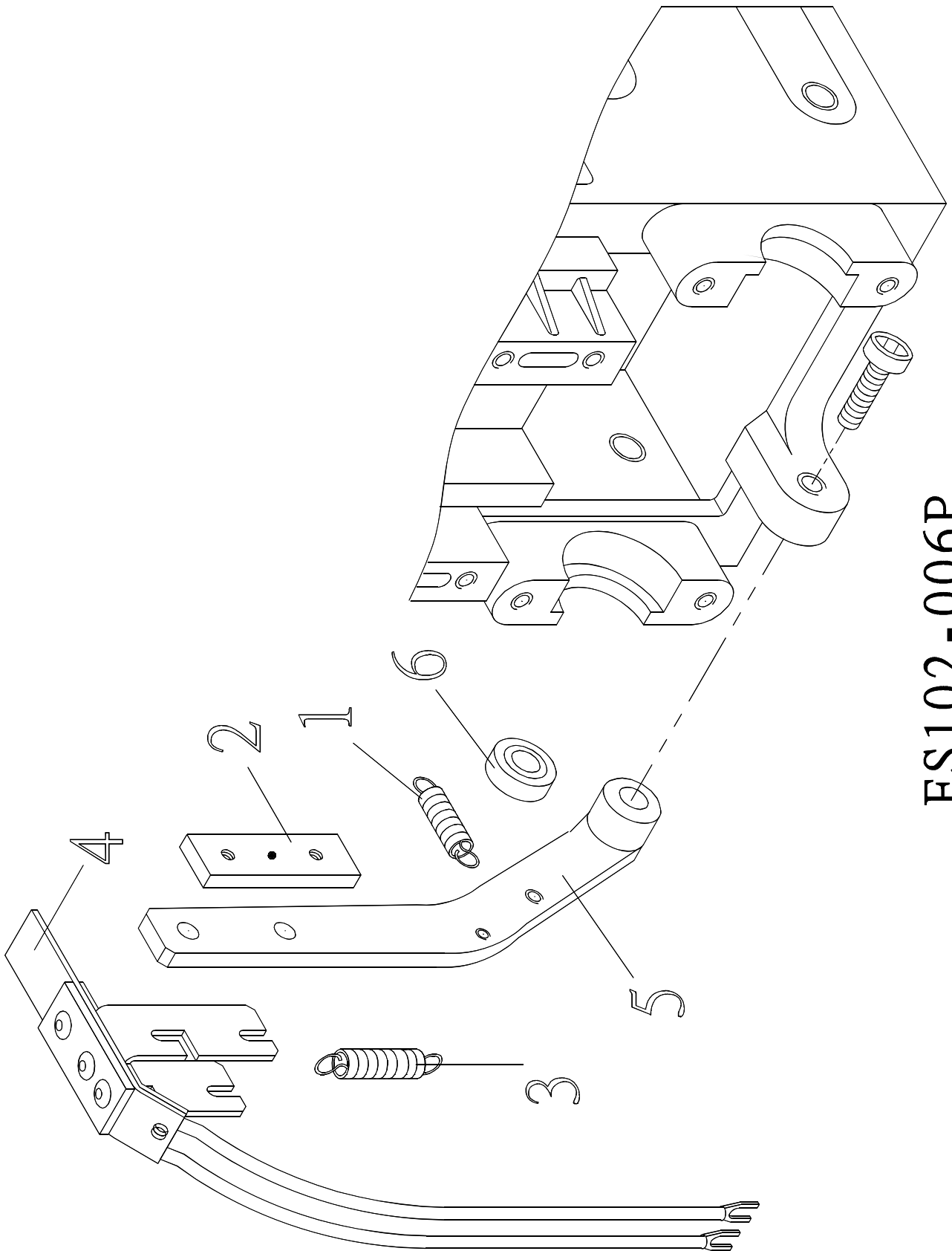
ES102-005P



14.5 Cutter Unit

No	Part No	Description	Qty
1	S13-122006	Spring#71	3
2	S13-123002	Cutter Holder	1
	W01-210520	HBS M5 x20	1
	W19-020105	SW M5	2
	W19-010105-9	PW M5 x 10 x 0.8t	2
	W01-230530	HBS M5 x 30	1
3	S13-123003	Clamp Bar Guide Lid	1
	W01-210625	HBS M6 x 25	2
	W19-020106	SW M6	2
4	S13-130004	Rear Clamp Bar	1
	W31-103018	Spring Pin3 x 18	1
4A	S13-13004A	Rear Clamp Bar Set	1
5	S13-123201	Press Bar	1
	W31-103018	Spring Pin3 x 18	1
5A	S13-123200	Press Bar Set	1
6	S13-123101	Front Clamp Bar	1
	W31-103020	Spring Pin3 x 20	1
6A	S13-123100	Front Clamp Bar Set	1
7	S13-123103	Plunger	3
	W31-105015	Spring Pin5 X 16	3
8	S13-123008	Spring Hook	1
	W01-210625	HBS M6 x 25	2
	W19-020106	SW M6	2
9	S13-123102	Plunger Spring	3
10	S13-123105	Spring Hook	3
11	S35-125001	Cam Bracket	1
	W01-210620	HBS M6 x 20	4
	W19-020106	SW M6	4
	W19-010106-3	PW M6 x 10 x 2t	4
12	G04-210635	Bearing, 635ZZ	3
13	S35-125010	Limit Switch Bracket	1
	W01-210410	HBS M4 x 10	2
	W19-010104-3	PW M4 x 10 x 0.8t	2
14	S35-125004	Switch Pin	1
	W33-030040	E-4	1

14.6 Sealing Head Unit

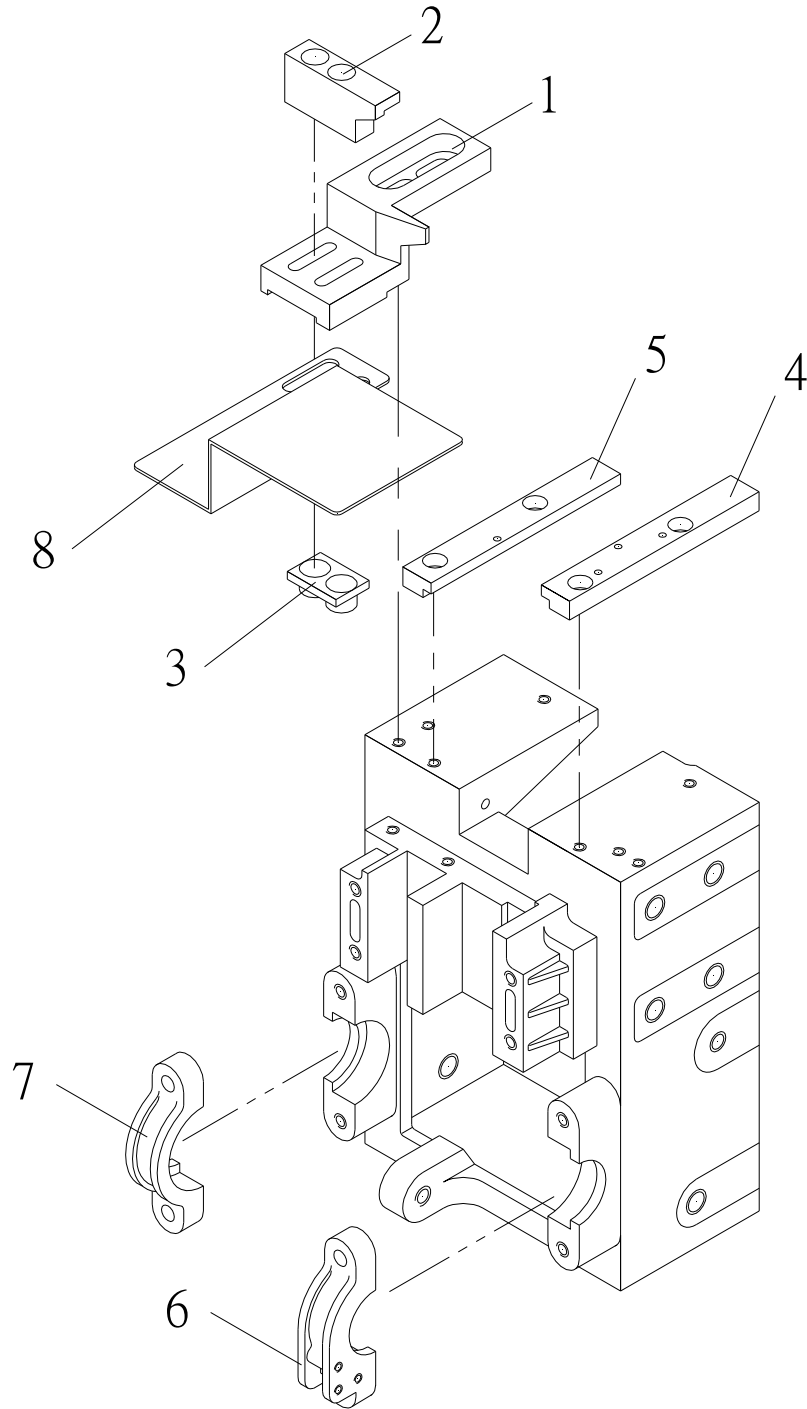


ES102-006P

14.6 Sealing Head Unit

No	Part No	Description	Qty
1	S13-122006	Spring#71	1
2	S13-124001	Plate	1
	W01-230440-1	HBS M4 x 40	2
	W15-110400	HN M4	2
	W19-020104	SW M4	2
	W19-010104-5	PW M4 x 12 x 1t	2
3	S13-124004	Spring	1
4	S13-124100-3	Heater Assembly	1
5	S13-124250	Heater Arm Assembly	1
	W09-110412	PMS M4 x 12	1
	W15-110400	HN M4	1
	W01-230840	HBS M8 x 40	1
	W15-110800	HN M8	1
	W19-020108	SW M8	1
6	G04-210635	Bearing, 635ZZ	1
	W12-110512	M5 x 12	1
	W19-010105	PW M5 x 12 x 1t	1

14.7 Cam Bracket Unit

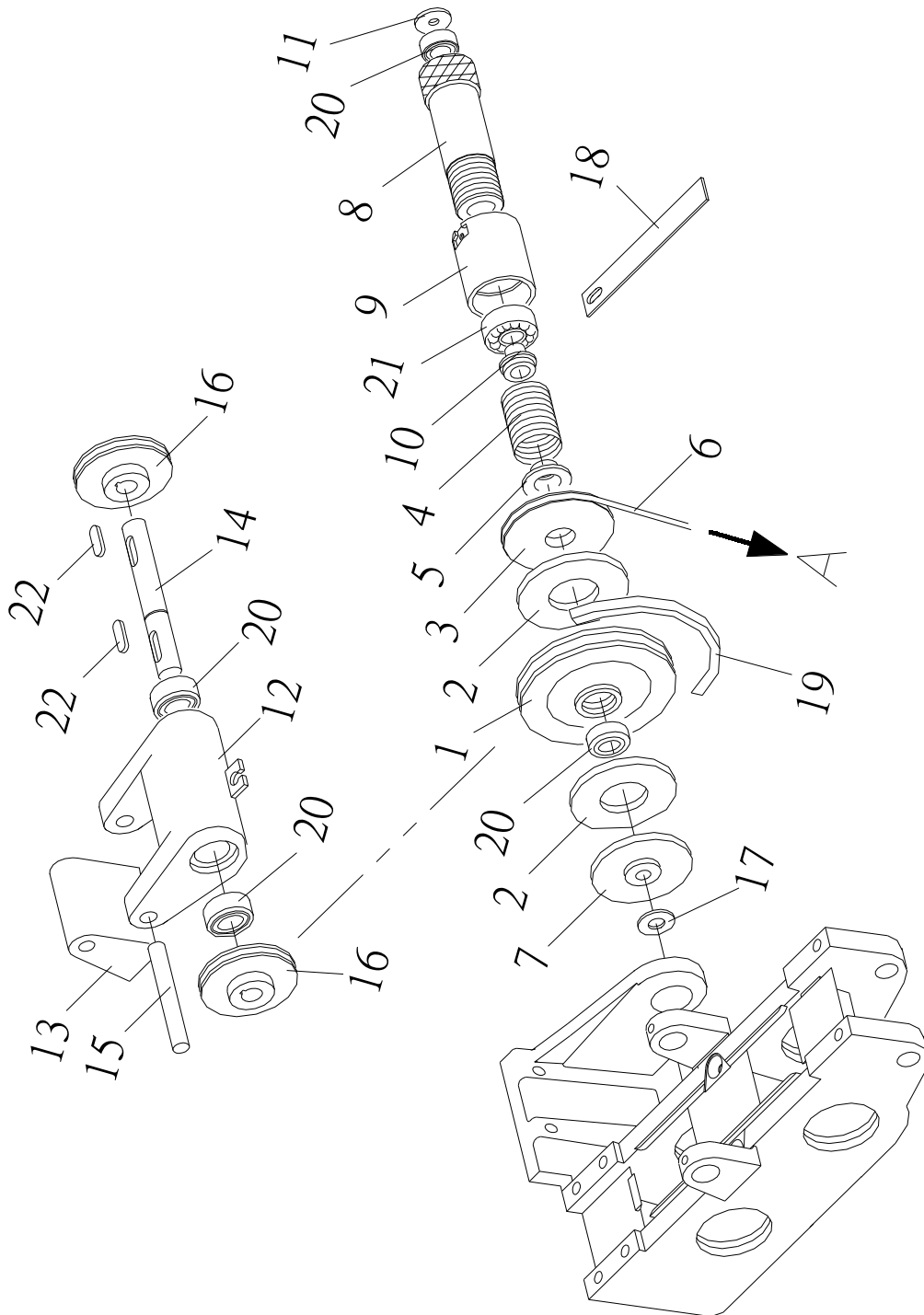


ES102-007P

14.7 Cam Bracket Unit

No	Part No	Description	Qty
1	S35-125011	Rear End Guide	1
	W01-210512	HBS M5 x 12	2
	W19-010105	PW M5 x 12 x 1t	2
2	S35-125008	Strap Guide Adjustment Plate	1
	W07-110425	TMS M4 x 25	2
3	S35-125009	Strap Guide Fixed Plate	1
4	S13-125002	Base Guide(A)	1
	W01-210516	HBS M5 x 16	2
	W31-103018	Spring Pin 3 X 18	2
5	S13-125003	Base Guide (B)	1
	W01-210516	HBS M5 x 16	2
6	S35-125005	Bearing Cover	1
	W01-210625	HBS M6 x 25	2
	W19-020106	SW M6	2
7	S35-125006	Bearing Cover	1
	W01-210625	HBS M6 x 25	2
	W19-020106	SW M6	2
8	S35-215001-1	Cover	1

14.8 Tension Unit

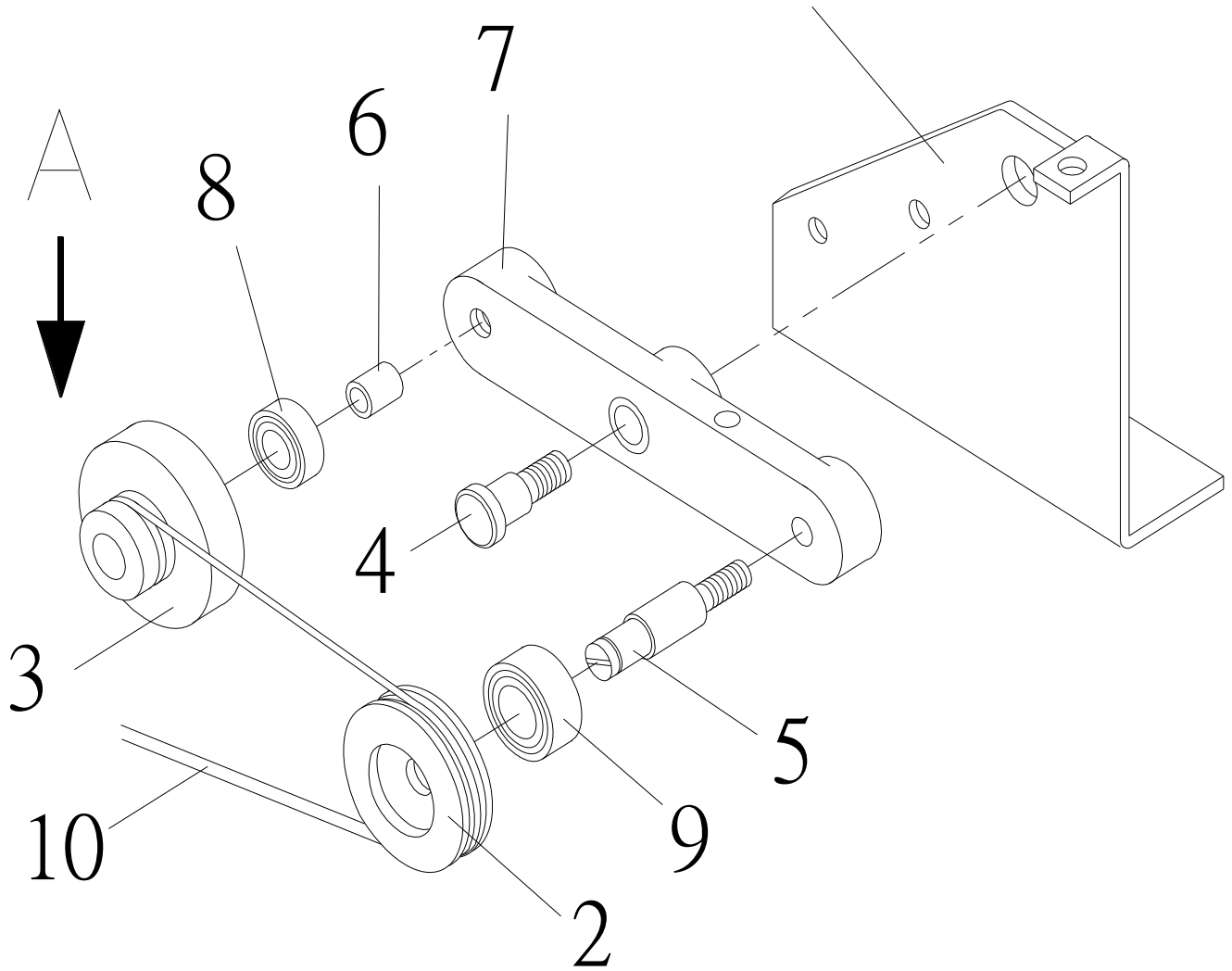


ES102-008P

14.8 Tension Unit

No	Part No	Description	Qty
1	S13-16001-02	Pully #170	1
	W33-050320	RTW-32	2
2	S13-160002	Friction Disc	2
	W33-050220	RTW-22	1
3	S13-160003N	Clutch Plate (R)	1
4	S13-160004	Spring	1
5	S13-160006	Spring Retainer	1
6	S13-16007-2	Round Belt	1
7	S13-160009N	Clutch Plate (L)	1
8	S13-161101	Rotating Tube	1
9	S13-161102	Fixed Tube	1
10	S13-161005	Spring Retainer	1
11	S13-161006	Washer	1
	W01-210512	HBS 5*12	1
12	S13-162001	Pulley Bracket	1
	W01-230660-1	HBS M6*60	1
	W19-010106-2	PW M6*13*2t	2
	W19-020106	SW M6	1
	W15-110600	HN M6	2
13	S13-162002	Hinge Bracket	1
	W01-210616	HBS M6*16	2
	W19-010106	PW M6*16*2t	2
	W19-020106	SW M6	2
14	S13-162003	Counter Shaft #137	1
15	S13-0162004	Hinge Pin	1
16	S13-162005-02	Pulley #141	1
	W02-210508	HSS M5*8	2
17	S13-171033-01	Collar	1
18	S23-160012-2	Fixed Arm For Close Type	1
	W01-210508	HBS M5*8	1
	W19-010105	PW M5*12*1t	1
	W19-020105	SW M5	1
19	G16-070019	V-belt, K-19	1
20	G04-216002	Bearing, 6002ZZ	4
21	G04-216005	Bearing, 6005ZZ	1
22	W35-050515	Parallel Key (5*5*15)	2

14.9 Micro Switch (LS2) Unit

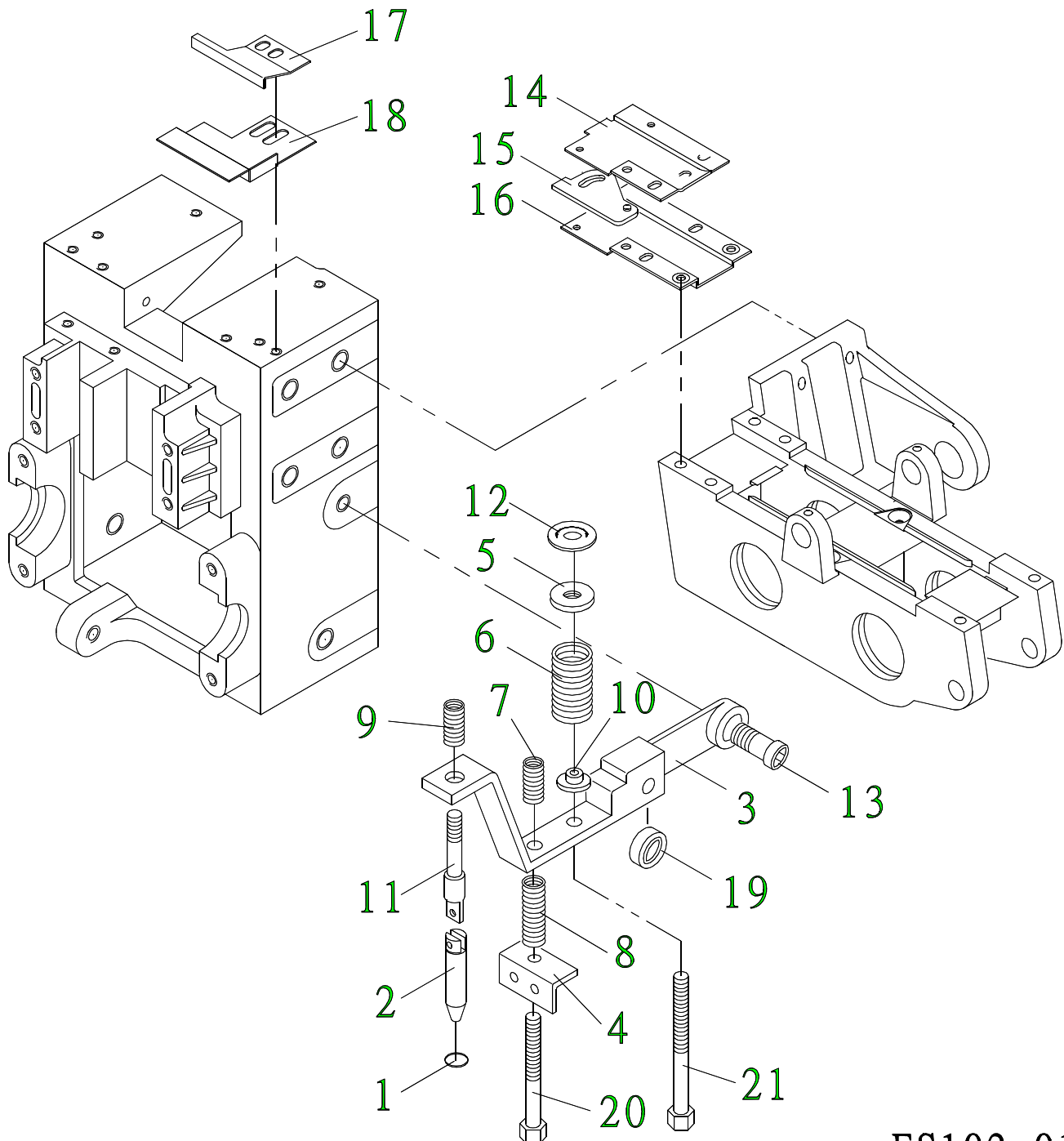


ES102-009P

14.9 Micro Switch (LS2) Unit

No	Part No	Description	Qty
1	S13-163001-1	Bracket	1
	W19-010106	PW M6*13*1t	2
	W01-210620	HBS M6*20	2
	W19-010106-3	PW M6*16*2t	2
	W19-020106	SW M6	2
	W15-110600	HN M6	2
	W15-110400	PMS M4*12	1
	W09-110412	HN M4	1
2	S13-163003	Pulley #139	1
3	S13-163004	Pulley #210	1
	W01-210530	HBS M5*30	1
	W15-110500	HN M5	1
	W33-050160	RTW-16	1
4	S13-163005	Pin #152	1
	W15-110600	HN M6	1
	W19-020106	SW M6	1
5	S13-163006	Shaft #144	1
	W33-030060	ETW-6	1
	W15-110600	HN M6	1
6	S13-163013	Collar #215	1
7	S13-163050	Arm #146	1
8	G04-210635	Bearing, 635ZZ	1
9	G04-210608	Bearing, 608ZZ	1
10	S13-160007-2	Round Belt	1

14.10 Feed Back Arm Unit

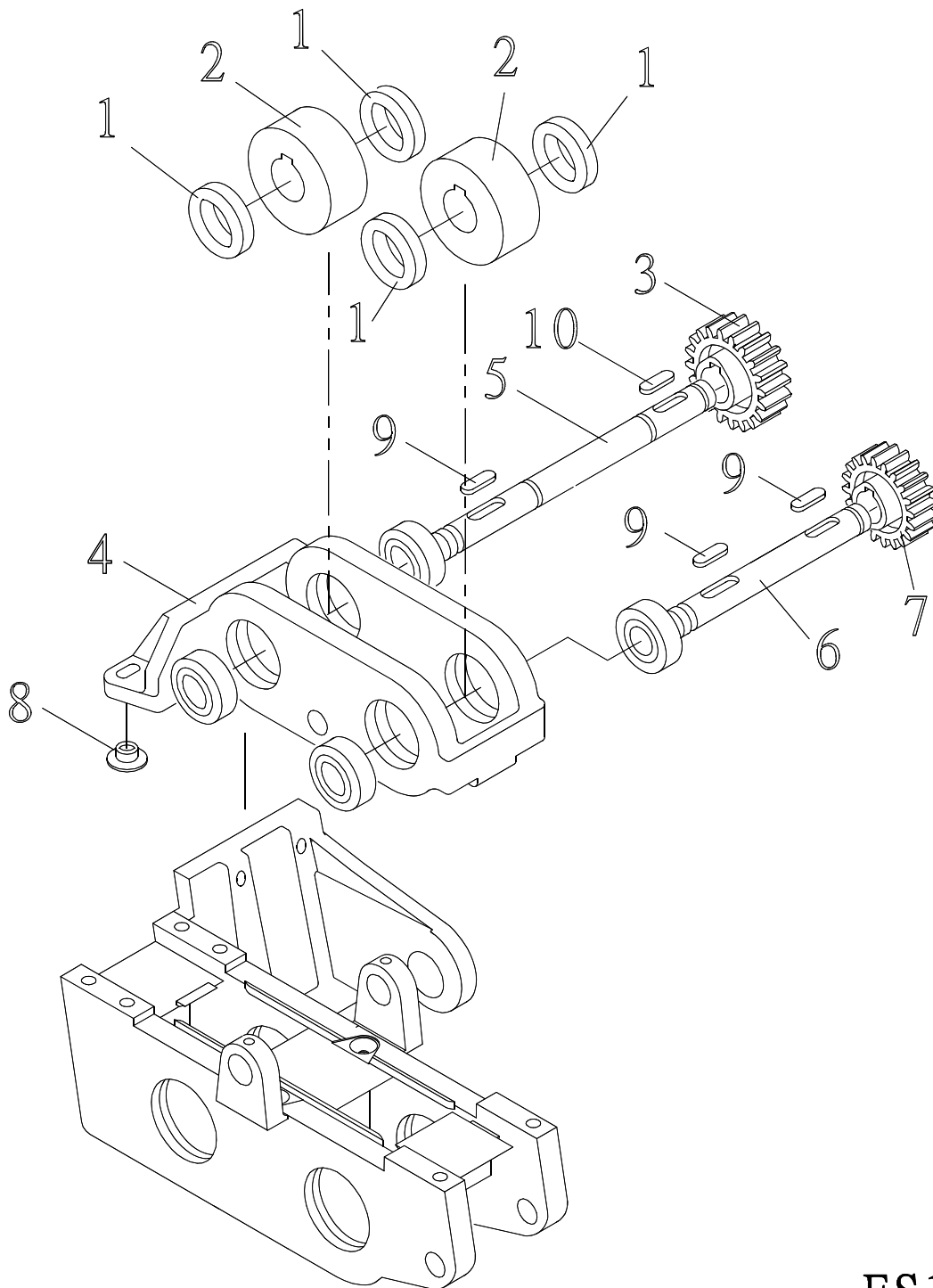


ES102-010P

14.10 Feed Back Arm Unit

No	Part No	Description	Qty
1	S13-110008	O-Ring	1
2	S13-110009	Solenoid Shaft	1
	W01-210425	HBS M4*25	1
	W17-210400	HN M4	1
3	S13-164001	Feed Back Arm	1
4	S13-164002	Stopper Bracket	1
	W01-210512-1	HBS M5*12	2
5	S13-164003	Adjustment Nut	1
6	S13-164004	Spring #130	1
7	S13-164005	Spring #187	1
8	S13-164006	Spring #186	1
9	S13-164007	Spring #183	1
10	S13-164009	Spring Retainer #130-1	1
11	S13-164012	Pull Shaft	1
	W15-110600	HN M5*12	2
	W19-010106	PW M6*13*1t	2
	W19-020106	SW M6	1
12	P08-213006	Label (Tension)	1
13	S13-164015	Feed Back Arm Pin	1
14	S13-171021-01	Outlet cover #215	1
	W09-110410	PMS M4*10	5
	W19-050504	TW M4	3
	W19-010104-1	PW M4*10	2
	W19-020104	SW M4	2
15	S13-171022	Band Adjustment Plate	1
16	S13-171023-01	Outlet cover #216	1
17	S13-172029	Front End Guide	1
	W01-210516	HBS M5*16	2
18	S13-172030	Front End Adjustment Plate	1
19	G04-210635	Bearing, 635ZZ	1
	W31-105016	SPφ5*16	1
20	W03-110680	Hex Head Screw M6*80	1
	W15-110600	HN M6	4
	W19-010106	PW M6*13*1t	4
	W19-020106	SW M6	2
21	W03-110698	Hex Head Screw M6*100	1
	W15-110600	HN M6	5
	W19-010106	PW M6*13*1t	2
	W19-020106	SW M6	2

14.11 Upper Feed Roller Unit



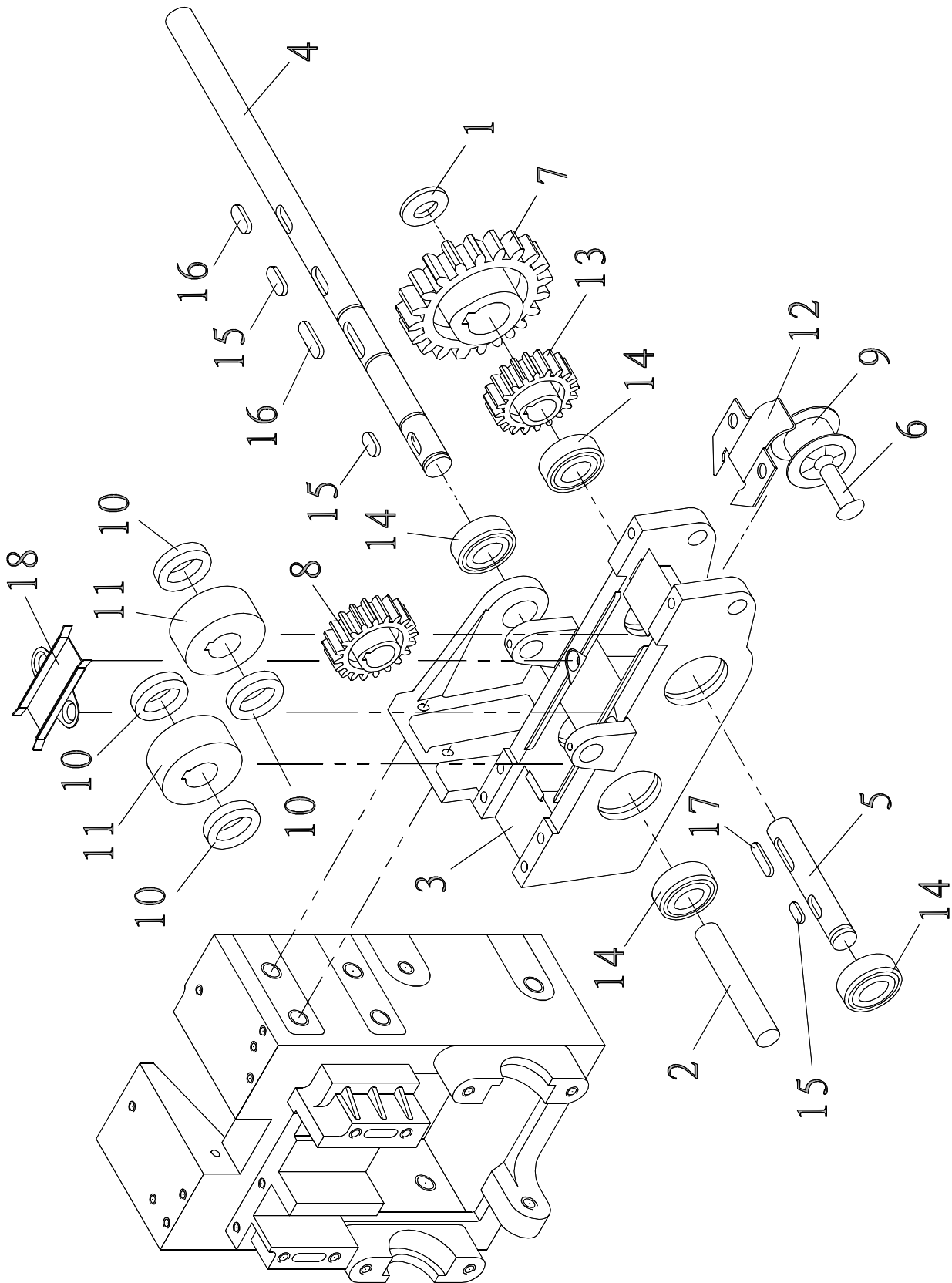
ES102-011P

14.11 Upper Feed Roller Unit

No	Part No	Description	Qty
1	S13-171017	Collar (A)	3
2	S13-171019	Roller #16	2
3	S13-171009N	Gear	1
4	S13-172002-01	Shaft Holder	1
5	S13-172005N	Feed Roller Shaft	1
	W33-020150-1	STW-15	4
6	S13-172006N	Roller Shaft	1
	W33-020150-1	STW-15	2
7	S13-172014-01	Gear	1
8	S13-164001-01	Washer #223	1
9	W35-050515	Parallel Key (5*5*15)	3
10	W35-050520	Parallel Key (5*5*20)	1

14.12 Down Feed Roller Unit

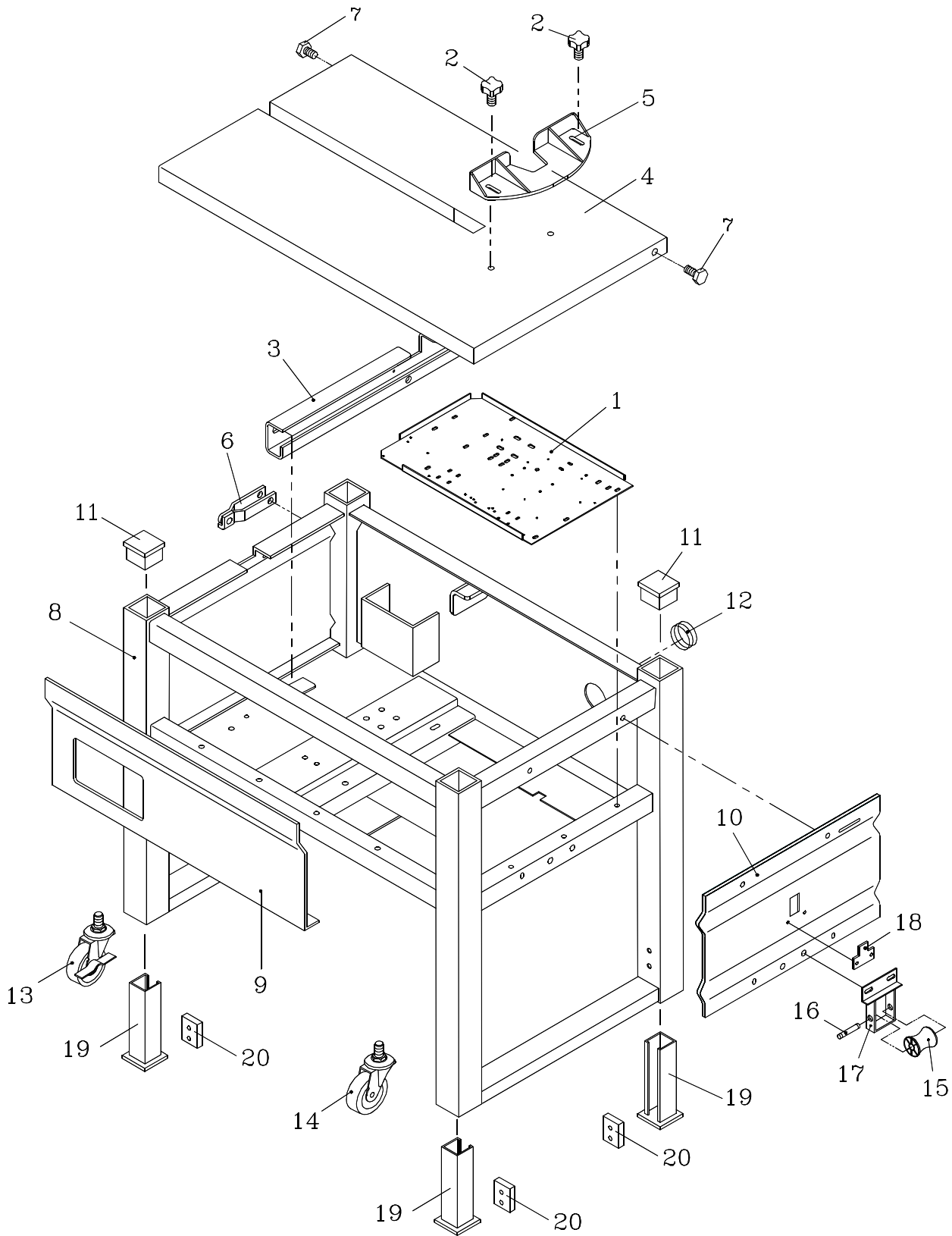
ES102-012P



14.12 Down Feed Roller Unit

No	Part No	Description	Qty
1	S13-161006	Washer	1
2	S13-170001-01	Pin #221	1
3	S13-171001-2	Roller Bracket	1
	W02-210510	HSS M5*10	2
4	S13-171003N-01	Feed Roller Shaft	1
	W33-020150-1	STW-15	4
5	S13-171004N	Roller Shaft	1
	W33-020150-1	STW-15	1
6	S13-171007-01	Pin #209	1
	W33-020100	STW-10	2
7	S13-171008N	Feed Back Gear	1
8	S13-171009N	Gear	2
9	S13-171012	Roller #192	1
10	S13-171017	Collar (A)	4
11	S13-171019	Roller #116	2
12	S13-171026-01	Inlet Cover #212	1
	W09-110410	PMS M4*10	2
	W19-050504	TW M4	2
13	G04-216002	Bearing 6002ZZ	4
14	W35-050515	Parallel Key (5*5*15)	3
15	W35-050520	Parallel Key (5*5*20)	2
16	W35-050538	Parallel Key (5*5*38)	1
17	S13-171023R1	Inner Guide	1
	W07-110406	TMS M4*6	2

15. Frame Unit

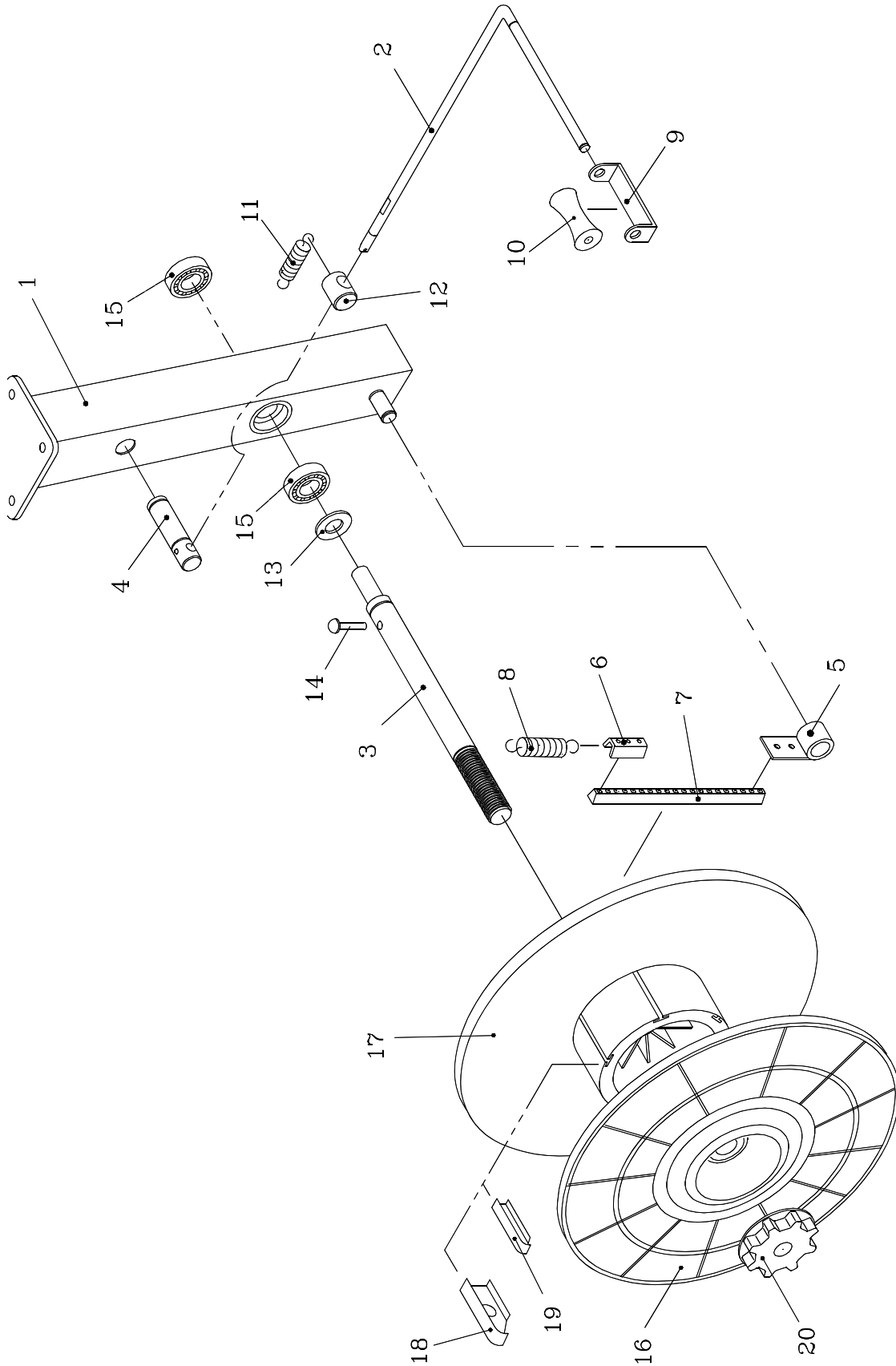


ES102-013P

15. Frame Unit

No	Part No	Description	Qty
1	S13-300015-1	Bracket	1
	W03-110620	HB M6*20	5
	W19-020106	SW M6	5
	W19-010106-3	PW M6*16*2t	10
	W15-110600	HN M6	5
2	S13-300009	Knob	2
3	S23-320050R2	Support	1
	W01-210620	HBS M6*20	2
	W19-010106-3	M6*16*2t	2
	W15-110600	M6	2
4	S23-330050R2	Top Plate (Hinge Type)	1
5	S13-300008R2	Package Guide	1
6	S13-390050R1	Support Rod	1
	W05-110615	FMS M6*15	1
	W17-210600	M6	1
	W01-210608	M6*8	1
7	S23-330001-1	Screw	2
8	S23-380150-0	Frame	1
	S23-380150A-0	Frame (CSA)	1
9	S34-311051	Front Panel	1
	W05-110508-1	TMS M5*8	4
	W09-110525	PMS M5*25	3
	W15-110500	HN M5	3
10	S23-300013	Protection Cover	4
	W05-110408	PMS M4*8	4
11	S23-300005-1	Lid	1
12	S13-300016	Plastic Lid	2
13	S23-300012	Caster with Brake	2
	W19-020116	SW M16	4
14	S23-300011	Caster W/O Brake	1
	W19-020116	SW M16	4
15	S23-424001	Roller	1
16	S13-423001-2	Shaft	1
	W33-020100	S-10	1
17	S13-423150	Band Guide Bracket	1
	W03-110616	HB M6*16	2
	W19-010106-2	PW M6*13*1.5t	2
	W19-010106-3	PW M6*16*2t	2
	W19-020106	SW M6	2
	W15-110600	HN M6	2
18	S13-171026-2	Inlet Cover (8-12.5mm)	1
	S13-171026-3	Inlet Cover (15mm)	4
	W07-110408	TMS M4*8	2
	W15-110400	HN M4	2
19	S25-313151	Adjustment Legs	4
20	S25-313152	Fix Blocks	4
	W01-210816	HBS M6*16	8
	W19-020108	SW M8	8

16. Reel Unit

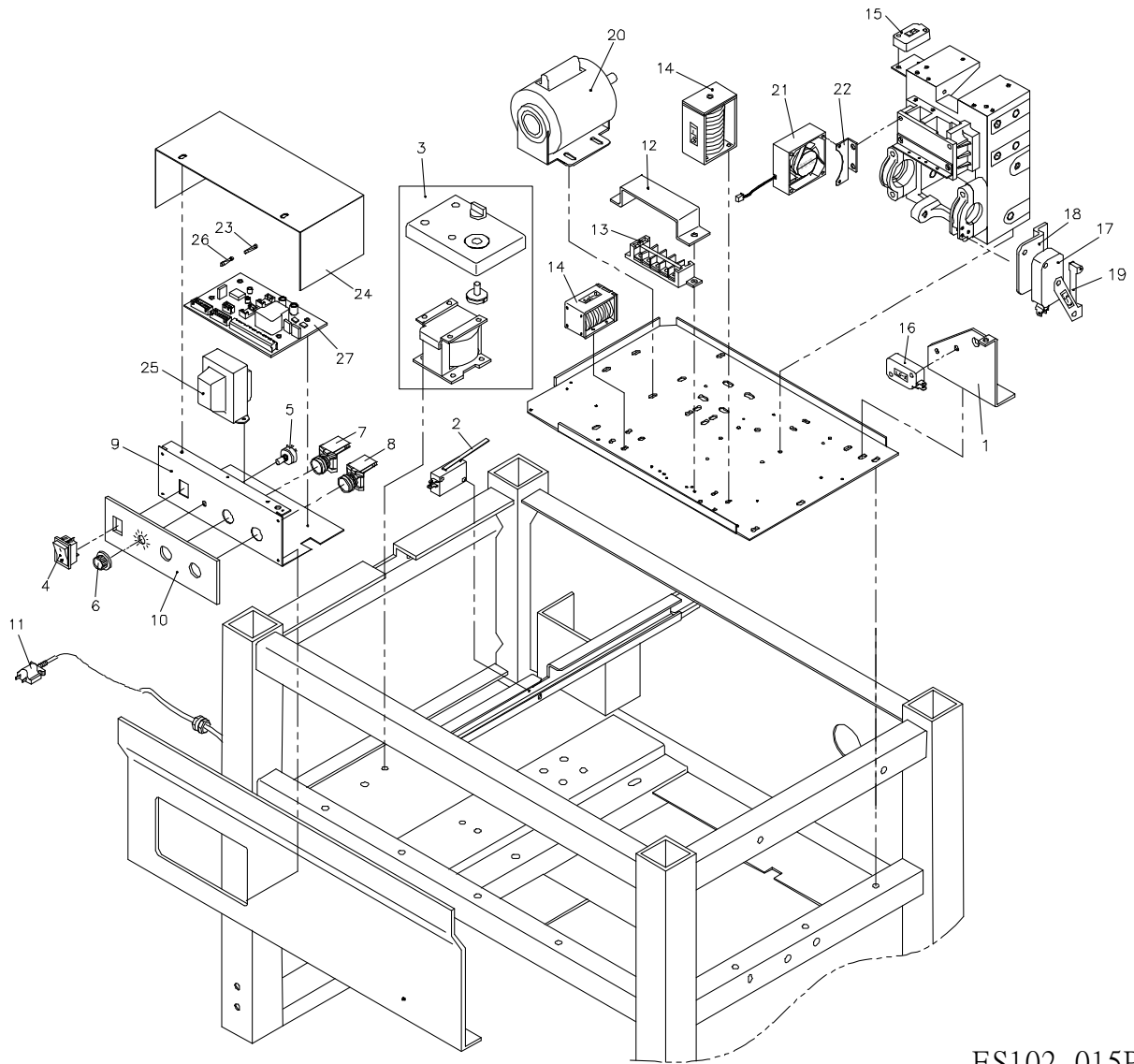


ES102-014P

16. Reel Unit

No	Part No	Description	Qty
1	S23-421350-0	Reel Support	1
	W01-210816	HBS M8*16	4
	W19-020108	SW M8	4
2	S23-423001	Arm	1
	W33-020100	S-10	2
3	S23-430002	Reel Shaft	1
	W33-030190	E-19	1
	W01-210820	HBS M8*20	1
	W19-010108-1	PW M8*23*2t	1
4	S23-420003-0	Brake Shaft	1
	W33-020200	S-20	2
	W01-210616	HBS M6*16	1
	W15-110600	HN M6	1
5	S23-422150-1	V-Belt Holder	1
	W33-030120	E-12	1
	W14-310415	M4*15	2
6	S14-422002	V-Belt Fixed Bracket	1
	W14-310415	M4*15	2
7	S14-422001	Brake Lining	1
8	S14-422003	Spring	1
9	S14-423001	Roller Holder	1
10	S14-423002	Roller	1
11	S23-423003	Spring	1
12	S23-423005	Brake Adjuster	1
	W01-210616	HBS M6*16	1
	W15-110600	HN M6	1
13	A20-630007	Washer	1
14	S13-410006	Pin	1
	W31-208000	SSP-8	1
15	G04-116003	Ball Bearing, 6003Z	2
16	S23-430003-120	Reel Out Circular	1
17	S23-431050-120	Reel In Circular	1
18	S13-450002	Block for Reel 280mm	6
19	S13-450003	Block for Reel 230mm	6
20	S13-450001	Reel Nut Handle	1

17. Electric Control Unit



ES102-015P



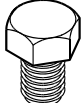
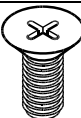







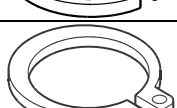
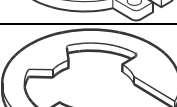

17. Electric Control Unit

No	Part No	Description	Qty
1	S13-163001-1	Bracket	1
	W01-210620	HBS M6*20	2
	W19-010106	PW M6*13*1t	2
	W19-010106-3	PW M6*16*2t	2
	W19-020106	SW M6	2
	W15-110600	HN M6	2
2	E07-040036	Micro Switch V3-25S-0101	1
	W09-110315	PMS M3*15	2
3	S13-212100	Transformer Set 96V-145V/0.6A/6V-8.8V/DA	1
	S13-213100	Transformer Set 200V-290/3A/6V-8.8V/7A	1
	W07-110406	TMS M4*6	4
4	E07-050027	Power Switch T120-10(4)/250	1
5	E13-020014-1	Variable Resister 24KNP-15RE-2K	1
6	E07-070002	Knob RN-99D	1
7	E07-020027	Push Button Switch ABFB-W	1
8	E07-020028	Push Button Switch ABFB-G	1
9	S13-222001-1	Switch Box	1
	W07-510408	TMS M4*8	4
	W07-110406	TMS M4*6	1
	W19-050504	TW M4	1
10	S13-221003	Control Plate	1
11	E61-125327	American Power Cord	1
	E55-030002	SR-6R1	1
12	S13-201602	Cover	1
	W07-110408	TMS M4*8	2
13	E53-112506	Terminal Bracket (6P/15A)	1
	W09-110408	PMS M4*8	2
14	E21-040003	Solenoid 110V (260Ω/13W)	2
	W01-210512-1	HBS M5*12	8
15	E07-040005-R1	Micro Switch (LS-1) VMN-06D-00D0-B-Z	1
	W09-110315	PMS M3*15	1
	W09-110320	PMS M3*20	1
	W19-010103	PW M3*8*0.8t	1
	W19-020103	SW M3	1
	W15-110300	HN M3	1
16	E07-040005-R1	Micro Switch (LS-2) VMN-06D-00D0-B-Z	1
	W09-110315	PMS M3*15	2
17	E07-040004-R1	Micro Switch (LS-3) VK-06H-00D1-Z	1
18	S13-210002-1	Micro Switch Bracket LS-3	1
	W09-110408	PMS M4*8	2
	W19-020104	SW M4	2
19	S13-210009	Switch Trigger LS-3 AA2501	1
	W09-110315	PMS M3*15	2
	W19-020103	SW M3	2
	W15-110300	HN M3	2

17. Electric Control Unit

No	Part No	Description	Qty
20	E01-010025	Motor (115V/60Hz)	1
	W03-110620	HB M6*20	4
	W19-010106-3	PW M6*16*2t	6
	W19-020106	SW M6	4
	W19-010106-2	PW M6*13*1.5t	2
	W15-110600	HN M6	4
21	E01-040018-2	Fan AD0612MS-A76GL DC12V	1
	E01-040038	Fan DC12V / 0.32A 60CM(2P)	
22	S13-223003-0	Fan Support	1
	W01-230430-1	HBS M4*30	2
	W19-010104-1	PW M4*10*1.0t	2
	W01-210625	HBS M6*25	2
	W19-010106-2	PW M6*13*1.5t	1
	W19-020106	SW M6	2
23	E23-010043	Fuse 5*20/1.5A Slow Blow Type (110V/F23)	1
	E23-010019-1	Fuse 5*20/0.8A Slow Blow Type (220V/F23)	1
24	S13-222002-1	Switch Cover	1
	W07-110408	TMS M4*8	2
25	E17-010013	Transformer (110V/230V/15V/0.6A)	1
	W07*110408	TMS M4*8	2
26	E23-010019	Fuse 5*20/8A Slow Blow Type (110V/F14)	1
	E23-010017	Fuse 5*20/5A Slow Blow Type (220V/F14)	1
	W01-210620-1	HBS M6*20	4
27	E25-101095-2	P.C. Board	1

18. Screw Classification List

Shape	Classification	Name	Specification
	HBS	Hexagon Bot Screw	HBS M___*___
	HSS	Headless Set Screw	HSS M___*___
	HB	Hex.hd Blot	HB M___*___
	FMS	Flat M/C Screw	FMS M___*___
	TMS	Truss hd.M/C Screw	TMS M___*___
	PMS	Pan M/C Screw	PMS M___*___
	PW	Plain Washer	PW M___
	HN	Hex.Nut	HN M___
	WN		WN M___
	TW		TW M___
		Stop Ring	H-___
		Stop Ring	S-___
		Stop Ring	E-___
		Spring Pin	SP Ø___

