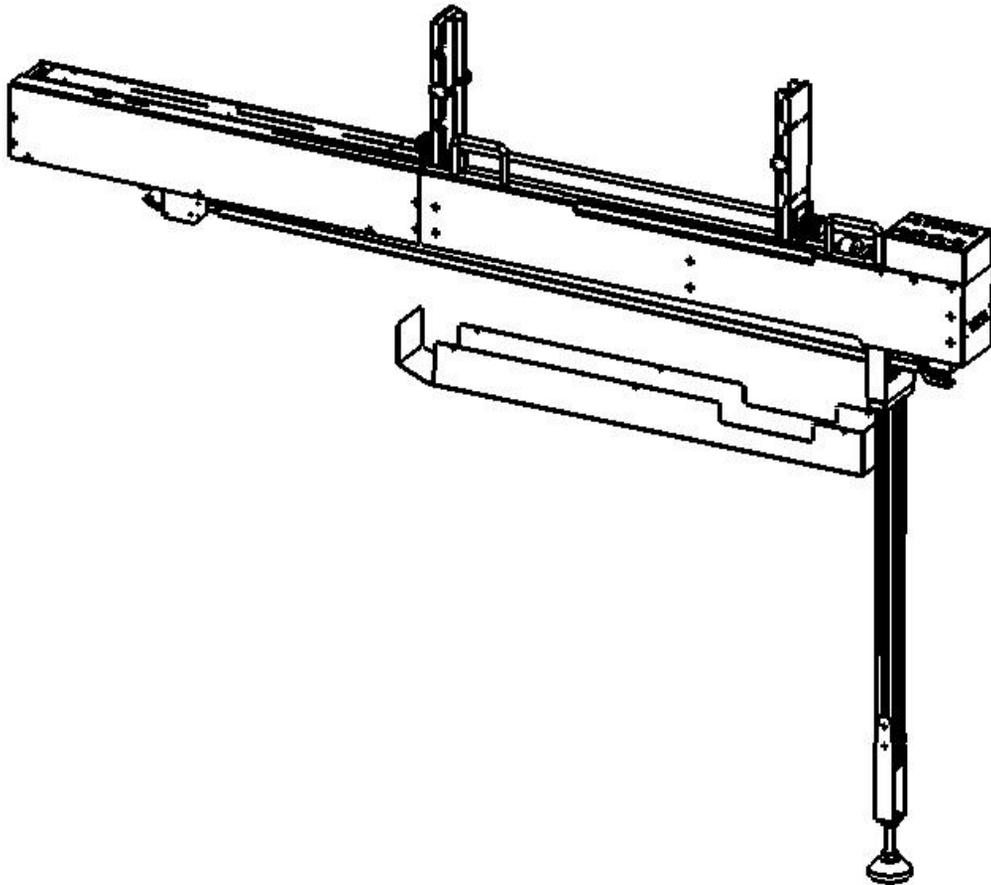




# Stacked Tube Feeder Operation Instruction



Build No: 20180901A03



# Instructions

- This feeder is designed according to the requirements of your company and the performance of the machine. It is non-standard feeder.
- Feeder is powered by DC24, and cannot use too high or too low voltage, resulting in burn damage to control panels.
- It require the Air pressure  $> 0.6\text{mpa}$ . When it is less than  $0.6\text{mpa}$ , the component will not put on the right position.
- Do not short circuit 24V and 0V connections, which will burn out all electrical components.
- Feeder can be carried out with the host. If communication is not conducted, the host may not be able to get components, and causing alarm ring out. When it connect(communicates) with the mounter ,it must offered 0V(GND).
- When feeder pushing the spring, the spring must be loaded with component or tube. It is not allowed that pushing spring by air, which will cause the spring bend.
- Feeder fiber head should be regularly cleaned with detergent (alcohol) to prevent dust.
- Feeder must be firmly installed, fly dhaka tightly locked lock after installed on the host.



# Contents

**Chapter 1: Feeder basic parameters, usage range, connector definition**

**Chapter 2: Spare Parts List**

**Chapter 3: Installed way**

**Chapter 4: Operation way**

**Chapter 5: Adjustment method**

**Chapter 6: Treatment of feeder faults**

**Chapter 7: Definition list of IO List & wiring**

**Chapter 8: Attachment--Instructions for use of fiber optic amplifier**

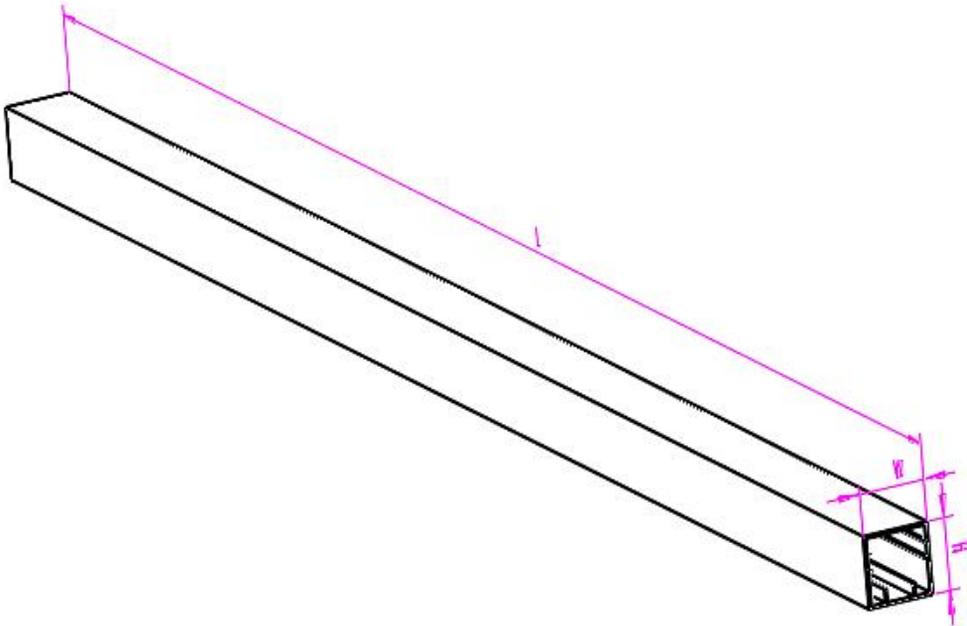


# Chapter 1: Feeder basic parameters, usage range, connector definition

1: Feeder can adapt to the tube size specification:

min: LxWxH 300mmx6mmx10mm.

Max: LxWxH 600mmx30mmx30mm.



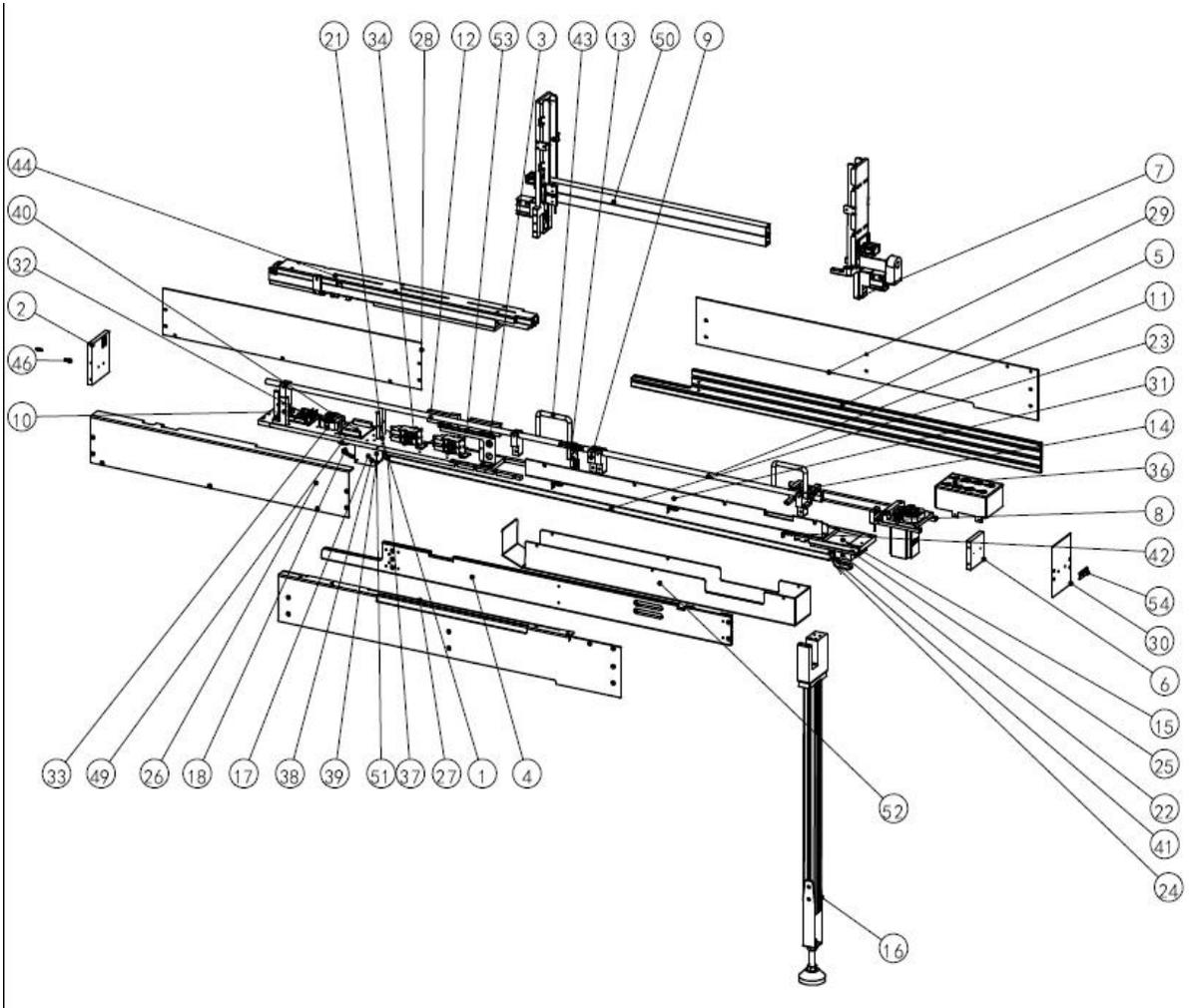
2: Voltage: DC24V.

3: Air pressure >0.6Mpa.

4: Signal communication: Pin 4 component in position



# Chapter 2: Spare Parts List



Item No.	Part No.	Description	Qty
1	001	New Feeder floor	1
2	002	New vertical plate	1
3	003	Material tray support column	6
4	004	10*70 profile	1
5	005	10*70 profile -A	1
6	006	tube plug after loading fly up	1
7	007	ACTC6R tube mounted Feeder rear vertical plate assembly	1
8	008	Motor driven spring assembly	4
9	009	Mounting bracket for spring collecting tube	1
10	010	New spring support assembly	1

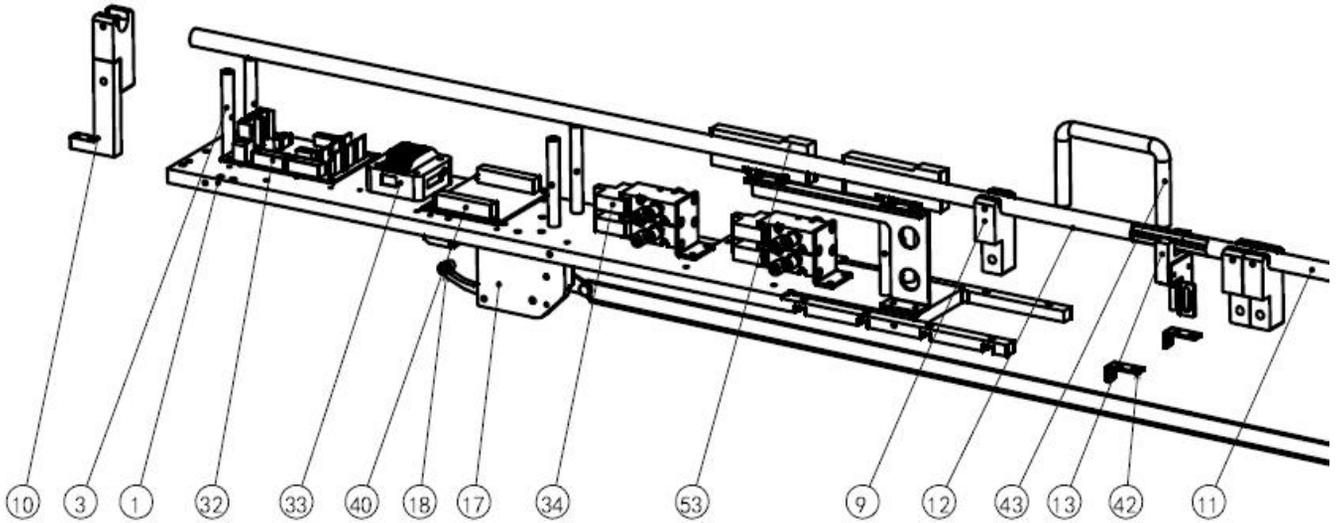


## Chapter 2: Spare Parts List

11	011	Spring feeding tube A	1
12	012	Spring feeding tube B	1
13	013	Change tube inductor assembly	2
14	014	Spring guide seat assembly	1
15	015	Support foot mounting seat	1
16	016	30 profile support pin assembly	1
17	017	Compacting seat	1
18	018	Hinge A components	1
19	019	Hinges B	1
20	020	Hinge connecting shaft	1
21	021	Hinges C	1
22	022	Toggle handle holder	1
23	023	Long connecting rod	1
24	024	Dial the handlebar	1
25	025	Toggle seat locking block	1
26	026	Tube left front sheet metal	1
27	027	Pipe rear left metal sheet	1
28	028	Pipe fitting right front sheet metal	1
29	029	Tube rear right sheet metal	1
30	030	Feida plug sheet metal	1
31	031	Grooves	1
32	032	Control board	1
33	033	MPD006P6 driver	2
34	034	Solenoid valve assembly	1
35	035	KQ2E06-00	1
36	036	Button box assembly	2
37	037	Hinge connecting shaft A	1
38	038	Pin 4*20	1
39	039	Spring pull column	2
40	040	Single chip microcomputer wiring board	6
41	041	Handle pin	2
42	042	Zipper seat	1
43	043	80-50 hand	1
44	044	ACTC6R material assembly	1
45	045	RS-S latest positioning key	2
46	046	RS-1 locating pin	2
47	047	Feida baffle	1
48	048	Tail locating post	2
49	049	Rear end Feida pad	1
50	050	ACT6R pipe mounted Feida's vertical plate	1
51	051	Tightening screw	1
52	052	Tube box	1
53	053	Fiber amplifier module A	1
54	054	ACTC6RA18C marking board	1



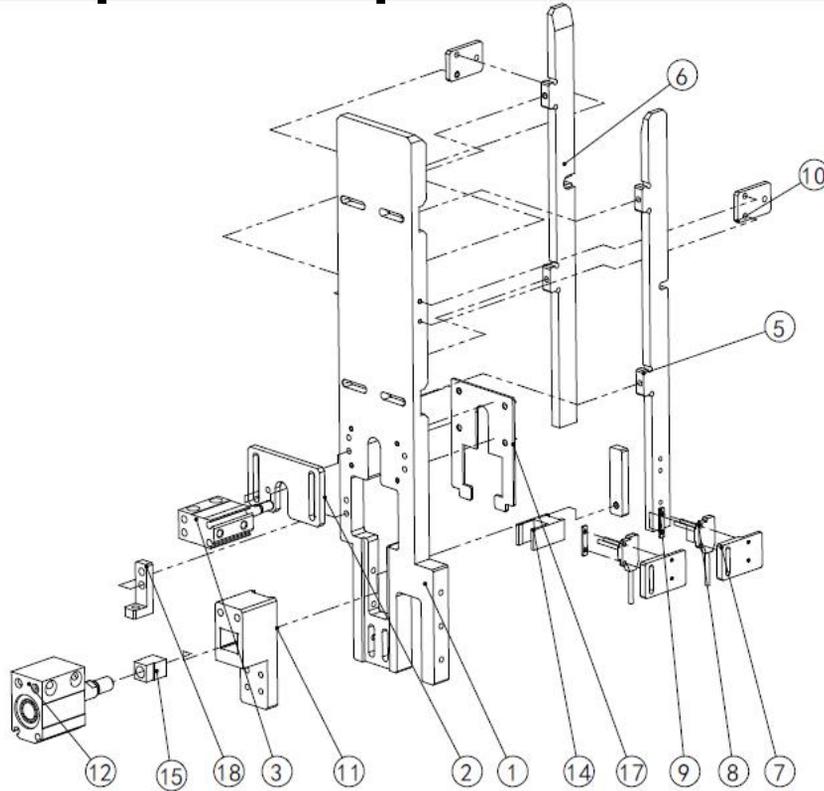
# Chapter 2: Spare Parts List



Item No.	Description	Part No.	Qty
1	Feeder bottom plate-now	001	1
3	Support Prop of feed plate	003	6
9	Spring receiving tube mount bracket	009	4
10	Load spring bracket assembly	010	1
11	Spring collecting tube A	011	1
12	Spring collecting tube B	012	1
13	Change the tube sensor assembly	013	1
17	clamp base	017	1
18	chain assembly A	018	1
32	control panel	032	1
33	MPD006P6 Driver	033	1
34	solenoid valve group	034	2
40	MCU terminal board	040	1
42	Lanyards base	042	6
43	80-50 puller	043	2
53	Fiber amplifier assembly A	053	1



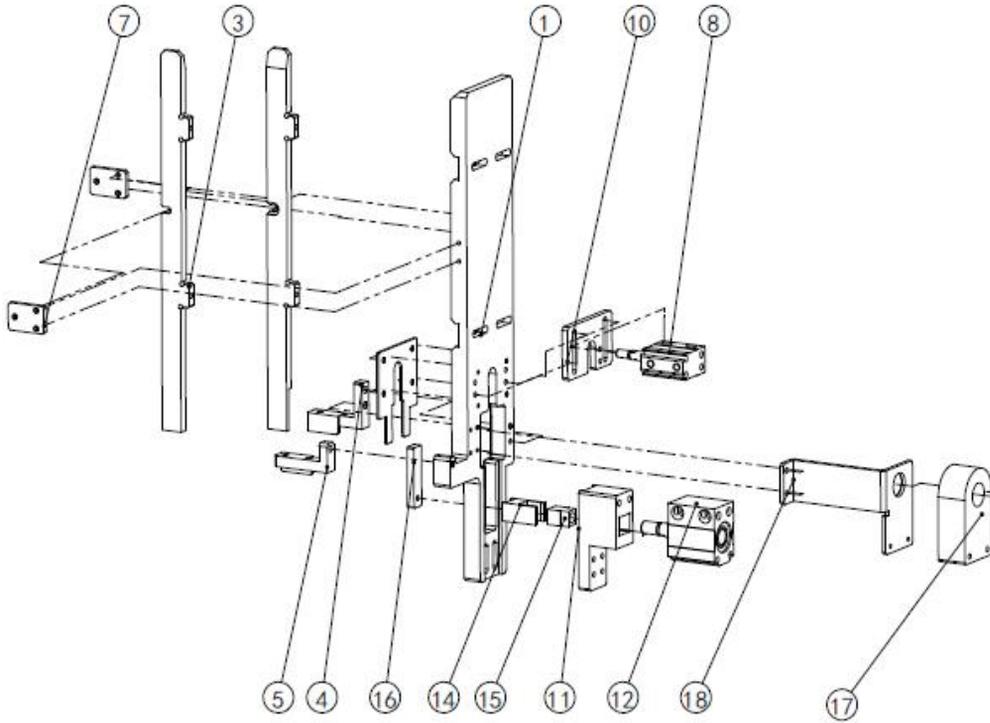
# Chapter 2: Spare Parts List



Item No.	Part No.	Description	Qty
1	2001	Tube mounted fly up front vertical plate	1
2	2002	Pre managed cylinder mounting plate	1
3	2003	MU12X10S_body	1
4	2005	Feeder tube edge A	1
5	2006	Feeder tube edge B	1
6	2007	EX-14A mounting base	2
7	2008	EX-14A sensor	2
8	2009	Inductor locking plate	2
9	2010	Adjusting special board	2
10	2011	Rear lower cylinder mounting base	1
11	2012	MU20X10S_body	1
12	2014	Lower managed support block	1
13	2015	Floating joint	1
14	2016	Lower managed support block	1
15	2017	ACT6R front baffle plate	1
16	2018	Front vertical plate reinforcing block	1



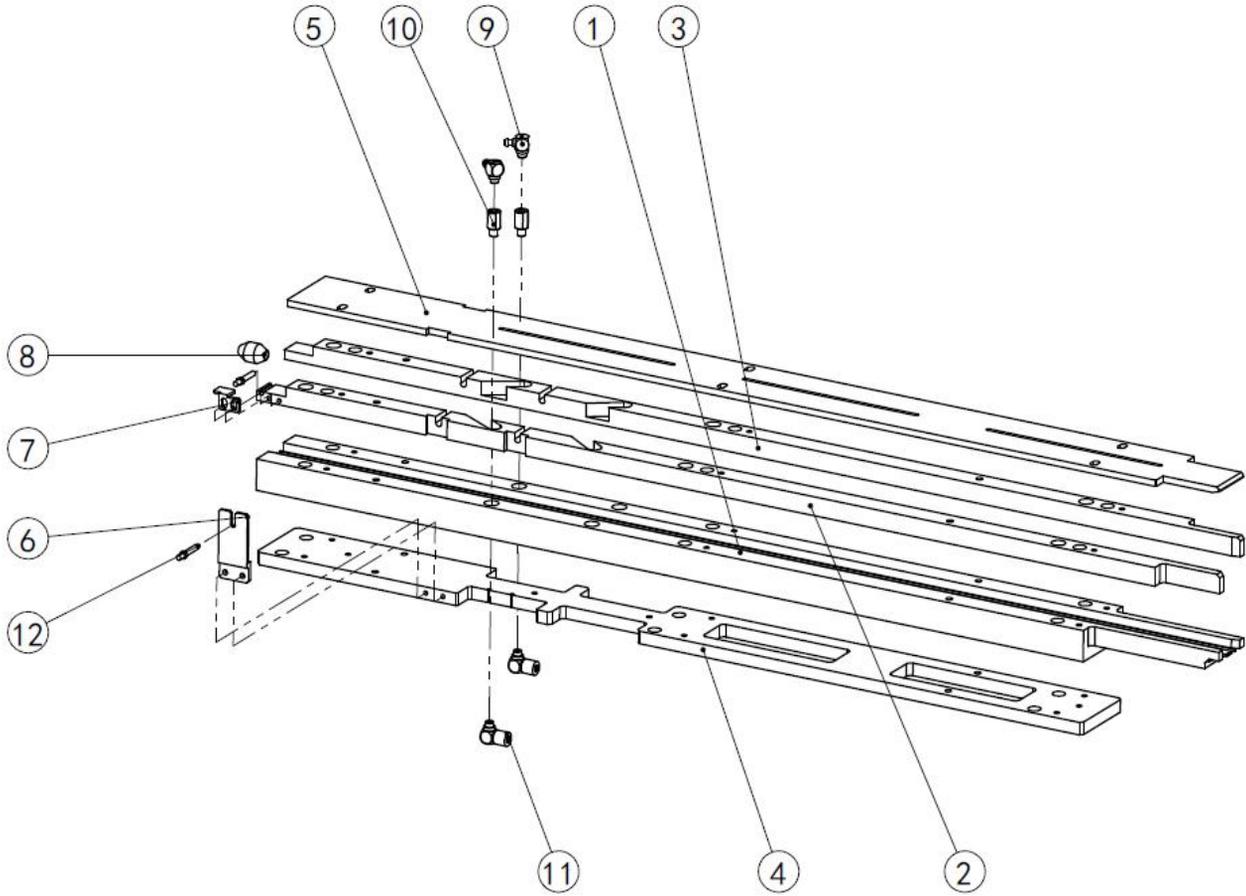
# Chapter 2: Spare Parts List



Item No.	Part No.	Description	Qty
1	3001	Stacked Tube Feeder back vertical plate	1
2	3002	Feeder tube edge C	1
3	3003	Feeder tube edge D	1
4	3004	tube vertical plate fixed corner A	1
5	3005	Fixed angle of tube plate	1
6	3006	ACTC6R rear baffle plate	1
7	2010	Adjusting special board	2
8	2003	MU12X10S_body	1
9	3010	Managed cylinder mounting plate	1
10	2011	Rear lower cylinder mounting base	1
11	2012	MU20X10S_body	1
12	2014	Lower managed support block	1
13	2015	Floating joint	1
14	2016	Lower managed strut	1
15	3012	DNA15- Dao Chuan	1
16	3013	Single tube inductor installation version	1



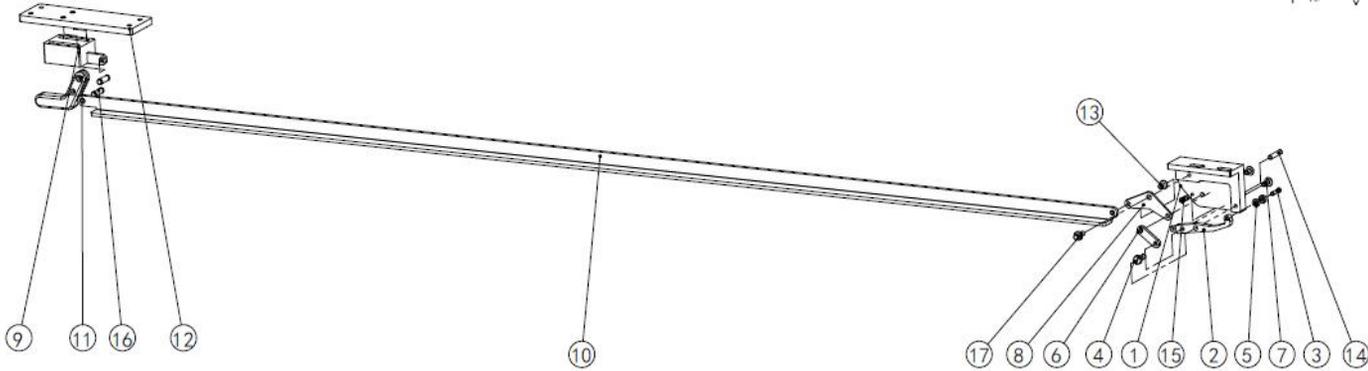
# Chapter 2: Spare Parts List



Item No.	Part No.	Description	Qty
1	4001	ACTC6R track	1
2	4002	ACTC6R material path A	1
3	4003	ACTC6R material path edge	1
4	4004	Bottom plate installation	1
5	4005	New material cover	1
6	4006	Pushing fiber	1
7	4007	Fiber-optic plate	1
8	4008	ACTc6R pushing head	1
9	4009	M-5ALN-6	2
10	4010	Ventilatory mouth	2
11	4011	M-5HL-6	2
12	4012	310 optical fiber	2



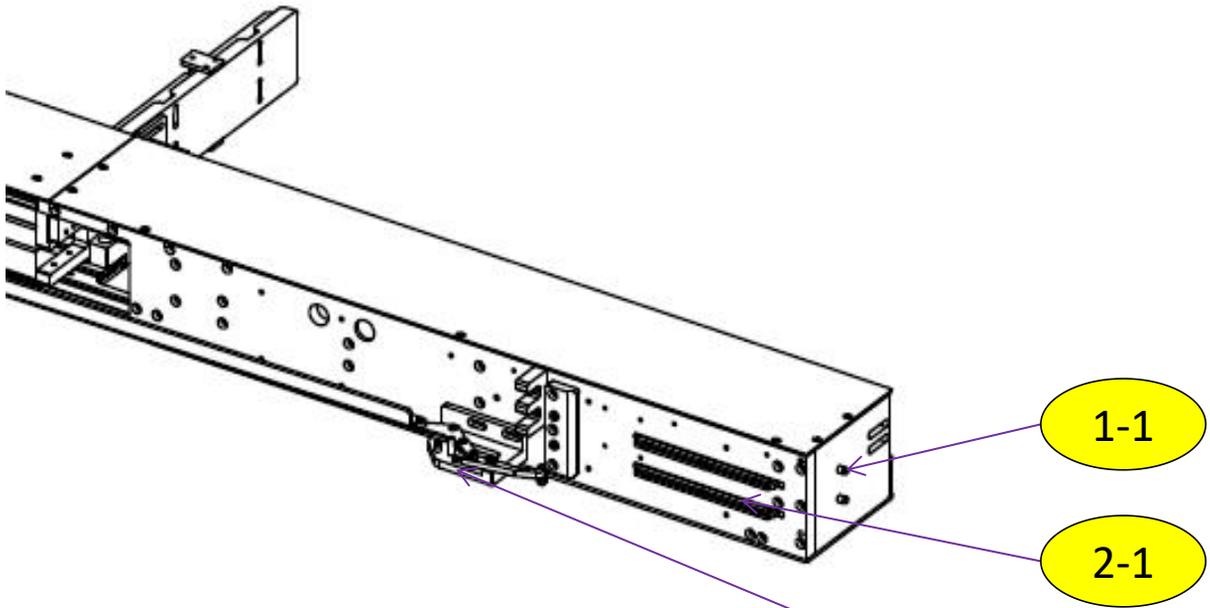
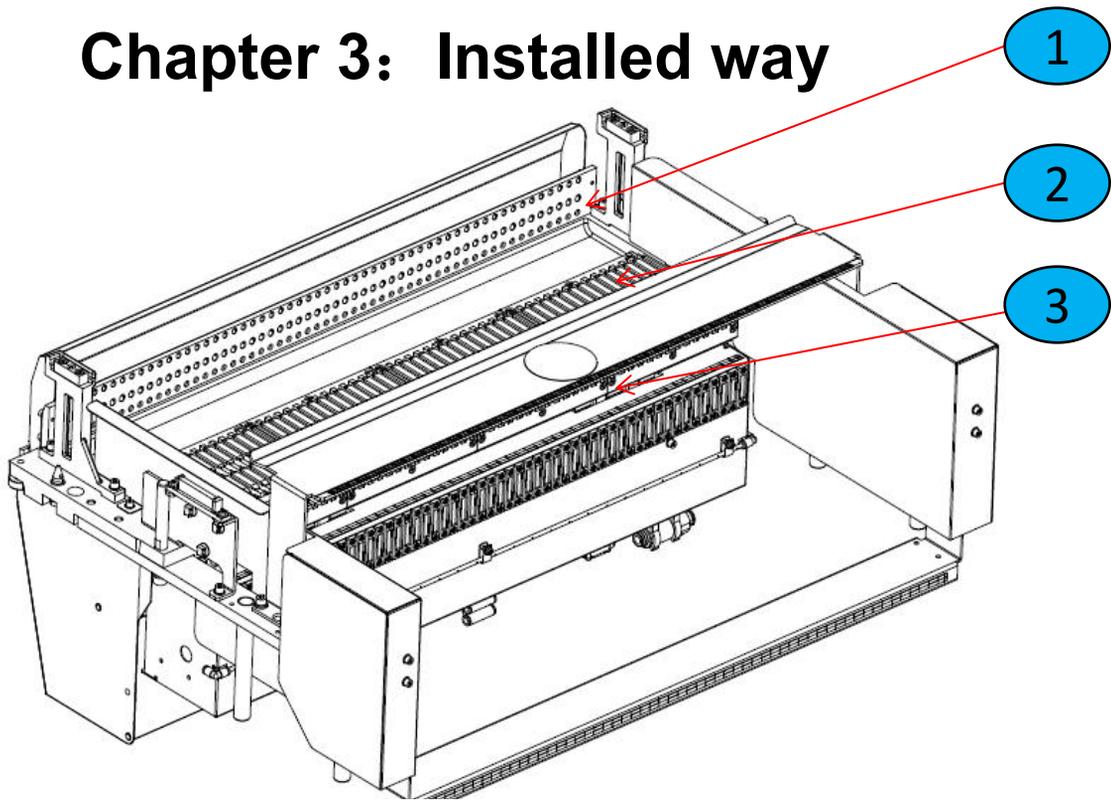
# Chapter 2: Spare Parts List



Item No.	Part No.	Description	Qty
1	017	Compacting seat	1
2	5001	Hinges A-B	1
3	5002	Bearing rotating shaft	1
4	5003	Rotary locking screw	1
5	5004	683ZZ	2
6	019	Hinges B	1
7	020	Hinge connecting shaft	1
8	021	Hinges C	1
9	022	Toggle handle holder	1
10	023	Long connecting rod	1
11	024	Move the handle	1
12	025	Toggle seat locking block	1
13	037	Hinge connecting shaft A	2
14	038	Pin 4 x 20	1
15	039	Spring pull column	1
16	041	Handle pin	2
17	051	Tightening screw	1



# Chapter 3: Installed way

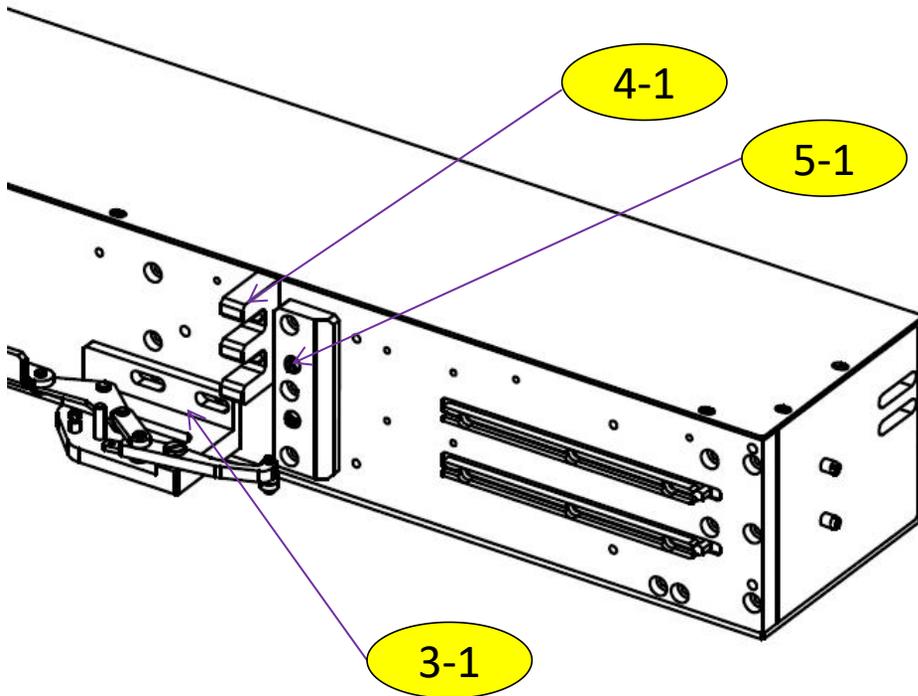


Fitting instruction:

- 1: Align the feeders 1-1 with the feeders 1, pin hole location mounting.
- 2: Aim the position key of feidong 2-1 at the position slot of feeder plate.
- 3: Pull the 3-1 clip tightly to the 3 position of the reach board.



## Chapter 3: Installed way



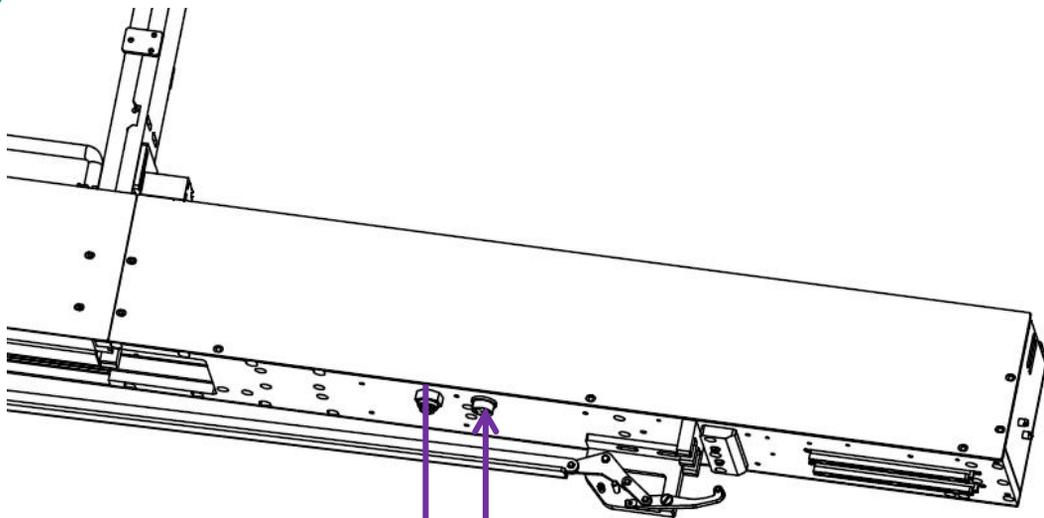
4: When the feeder-lock position lock is not tight: loosen two screws at 3-1 and move forward or backward, so that the round bearing at the front is stuck to the v-groove of feeder-plate 3, which is in contact with the cutting surface, and then tighten the screw.

5: The front and rear limit plate 4-1 is used to limit the front and rear position.

6: The positioning pin 5-1 at the back end of the feeder is used for positioning the back end of the feeder to prevent the left and right yaw of the feeder and ensure the vertical mounting position of the feeder.



# Chapter 4: Operation way

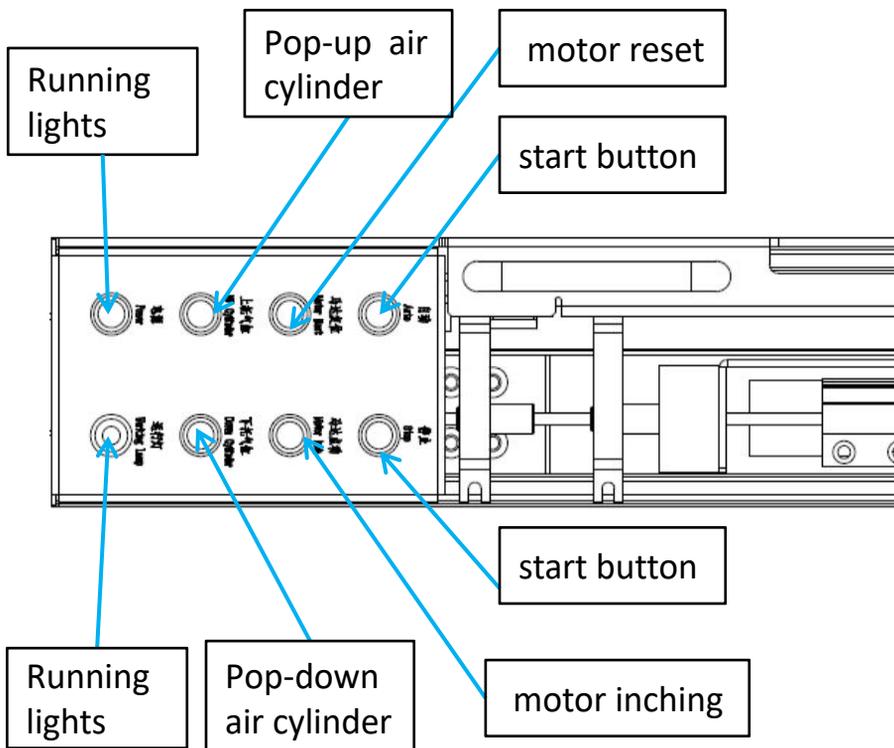


Air pressure  
>0.6Mpa

Pin 1: 24V  
Pin 2: GND  
Pin 4: component in position

(一): First lug in 24V, then Connect air supply.

(二): Put the component into the loading area.





## Chapter 4: Operation way

(三): Press the power switch, and if the switch become cool, it means the whole Feeder is charged with electricity.

(四): Pressing the start button until running light is green, which means feeder can deliver the component automatically.

(五): When it is connected with the mounter is successful, if there have component in the front-end it will send a signal to the mounter, and then pick the component.

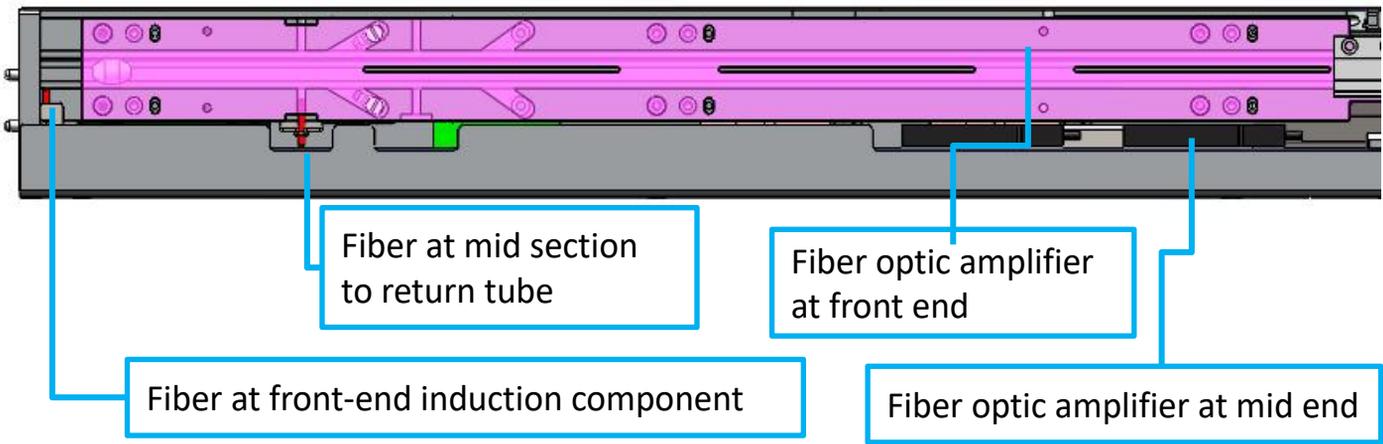
(六) : Press the stop button until the device changes from the automatic state to the stop state.

(七) : When the running light of the device keeps flashing, it means an alarm, and then press the stop button for a long time until the running light stops flashing.



# Chapter 5: Adjustment method

## (一) : Optical fiber adjustment --Induction component



(1) : When the component at front end is in the right position but the lamp does not light up, then should increase the threshold by pressing "+" sign.As shown in A

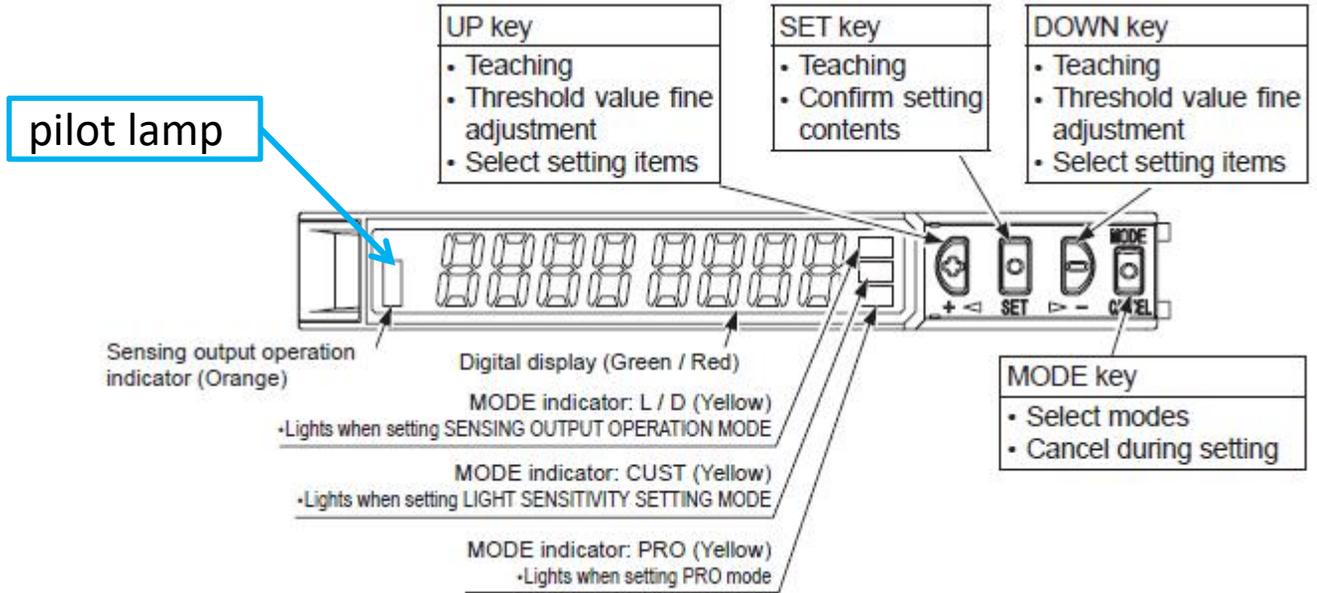
(2) : When the component at mid end is picked and the indicator of the amplifier has not been extinguished,then should decrease the threshold by pressing " - " sign.As shown inA

(3) : When the component at mid end is removed away and the indicator of the amplifier has not been extinguished,then should decrease the threshold by pressing " - " sign.As shown inA

(4) : When the component at mid end is in the right position but the lamp does not light up, then should increase the threshold by pressing "+" sign..As shown in A



# Chapter 5: Adjustment method





## Chapter 5: Adjustment method

### (二) : Position adjustment of upper and lower managed cylinders

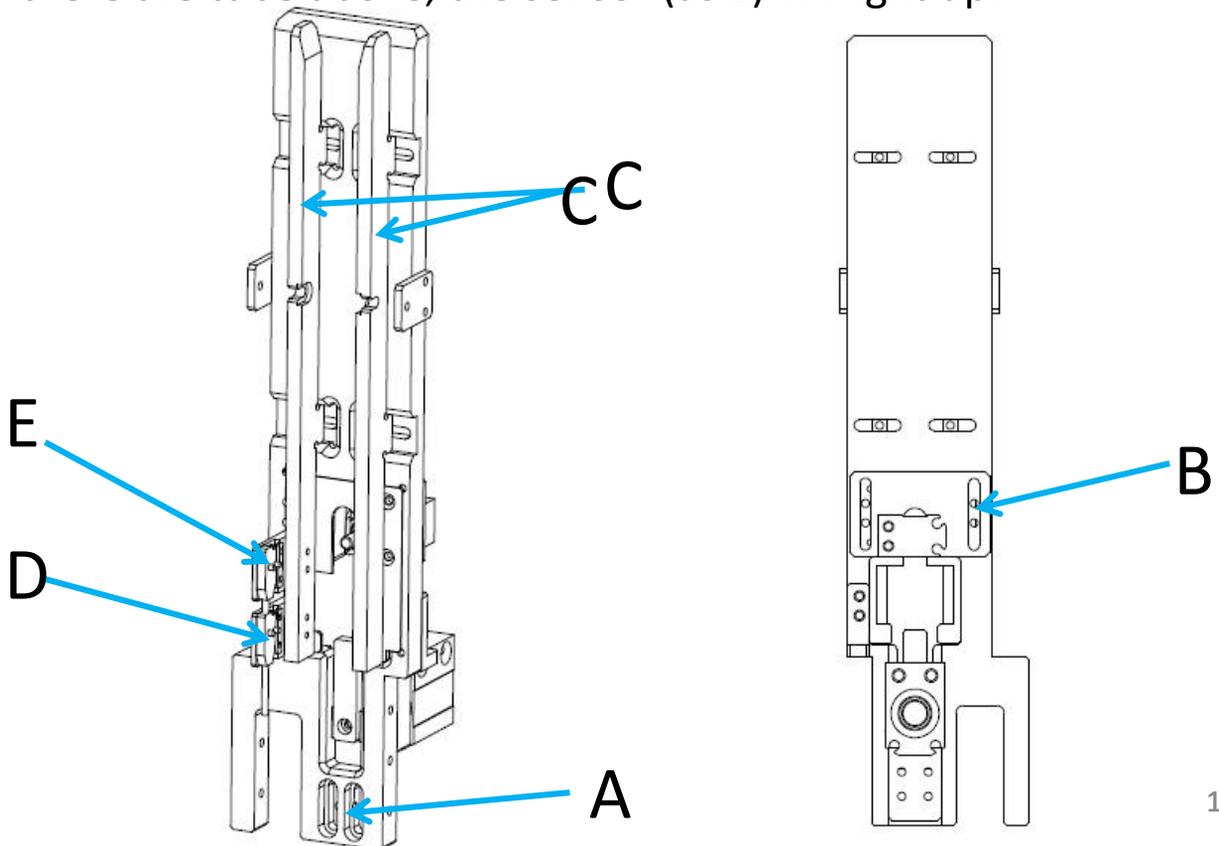
1: When the components are easy to jam when entering the tubeline, the bottom cylinder should be adjusted upward or downward. As shown in A.

2: When the inside air cylinder fails to push the component, modify lightly the upper and lower positions of prop air cylinder. As shown in B.

3: When the empty tube is fall down not fluent, adjust the width of the baffle plate on the left and right sides bigger a little. As shown in C.

4: When there have tube at the bottom and the tube is till continue falling out, instead of the bar draw back, then adjust the position of sensor (as D), placing the right position of tube, before that the indicator light of the sensor is on.

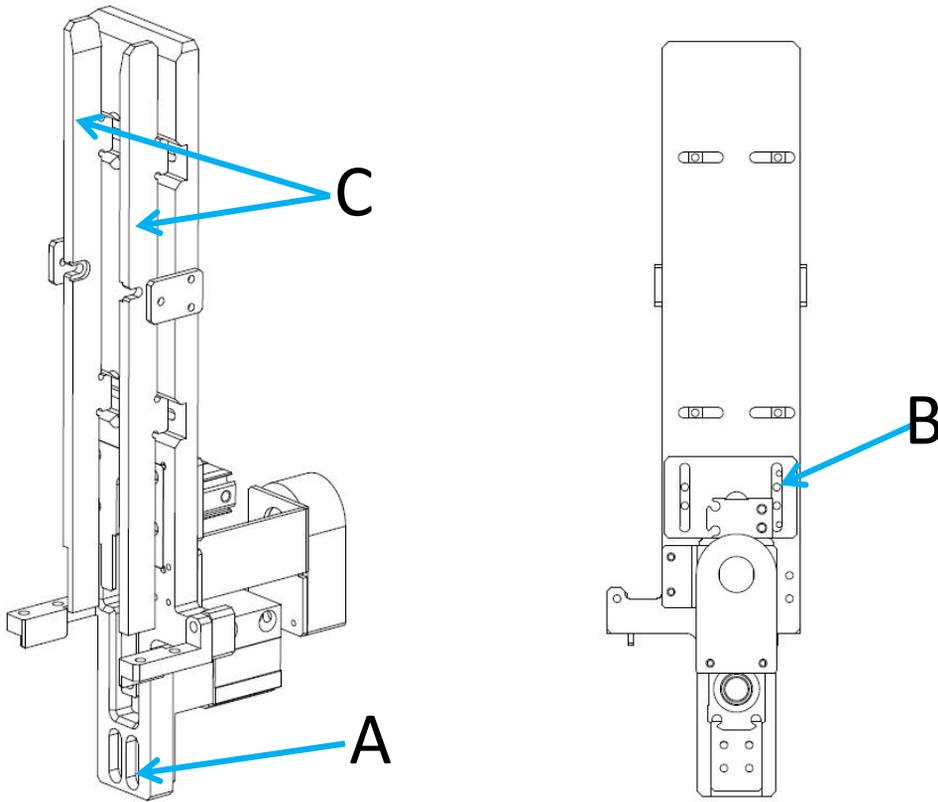
6: When there are many tube in the back-end charging place, but each feed spring will push the component to the bottom, then the position of the sensor (as E) will be adjusted. Then when there are tube above, the sensor (as E) will light up.



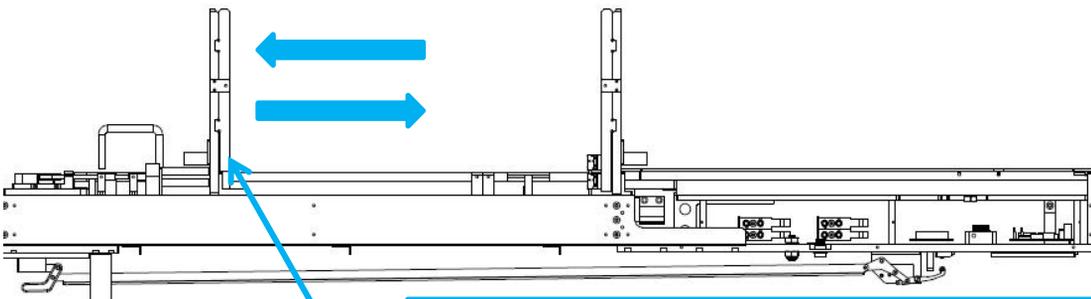


# Chapter 5: Adjustment method

(二) : Position adjustment of upper and lower managed cylinders



(三) : When the length of the tube changes, adjust the back and forth spacing of the vertical plate.



Loosen the screws of the vertical plate after opening and tightening, change the position of the rear vertical plate before and after, adjust to the appropriate position, and tighten the screws

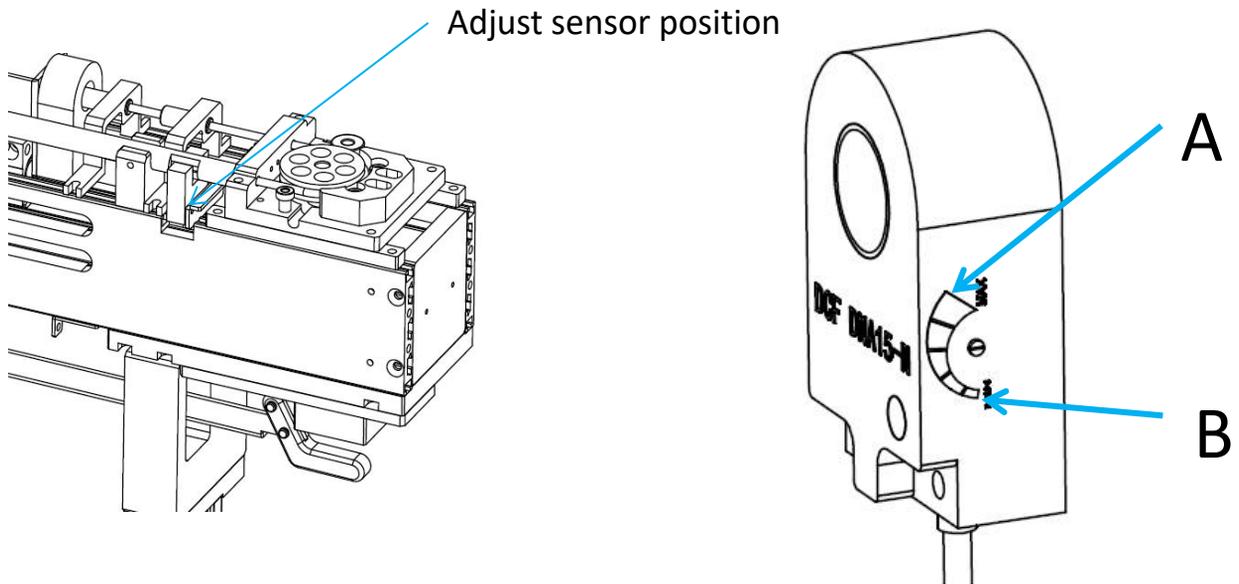


## Chapter 5: Adjustment method

### (四) : Adjustment method of push spring inductor

(1) When the spring does not leave the ring sensor, the light of the ring sensor should be on. If it is not on, turn the knob in the direction of Max. As shown in A.

(2) When the spring leaves the ring sensor, the light of the ring sensor is still on, and the knob is turned in the direction of Min.



### (五) : Adjustment method of limit inductor for push spring

(1) : When the spring moves inside the inductor, the light of the inductor is not on, the position of the inductor should be adjusted so that the light of the inductor is on when the spring is inside.

(2): 当弹簧离开感应器时，感应器应该灭灯，如果没有灭灯，则要上下调节感应器位置



## Chapter 6: Treatment of feeder faults

一： the front end and the middle section fiber are adjusted according to the 5-1 debugging method, if the fiber amplifier is always on or often

If above parts are damaged, the following problems will occur:

(1) : Material has reached the feeding position is, but never back to the spring, has been to resist the material, the horse in the rotation. Or front not material, but not pushing spring action.

(2) : The material is pushed by the pushing spring every time before changing the tube.

二： After the sensor of the induction tube is adjusted according to 5-2-5, 5-5-6, if the sensor is still on or off, the sensor is damaged and a new sensor is replaced.

If above parts are damaged, the following problems will occur:

(1) : The damage of the lower sensor will appear: there is no material tube, the equipment does not alarm, the feed spring is always acted, or the tube change operation is always performed.

(2) : The damage of the upper sensor will appear: the material of each tube will be pushed to the bottom, and the tube change operation will be carried out all the time.

三： Magnetic switch for cylinder:

When the cylinder is in motion, the magnetic light is extinguish always, which means that the magnetic switch has been damaged and needs to be replaced a new one.

If above parts are damaged, the following problems will occur:

(1) : Feeder is in automatic operation, but it can not automatically replace the component tube.

(2) : When the air cylinder completes the operation of a replacement a empty tube, it does not operate at the second time.



## Chapter 6: Treatment of feeder faults

### 四： Solenoid valve break down:

The cylinder does not move when the device is running automatically. In the manual state, press the button of the cylinder up and down, the cylinder does not move, you need to replace the solenoid valve.

### 五： Motor or drive break down:

The device is automatic, the motor does not perform the feeding action, press the motor on the panel to jog or the motor to reset. If the motor does not operate, replace the motor and the motor driver.

### 六： Spring origin sensor break down :

The device returns to the original position and continues to run backwards until the spring is stuck, or the spring does not return to the original position, then the origin sensor is replaced.

### 七： Spring limit sensor break down:

When the spring reaches the limit position and the motor still does not stop, the limit sensor needs to be replaced.

### 八： The control board is broken or the IO board is break down:

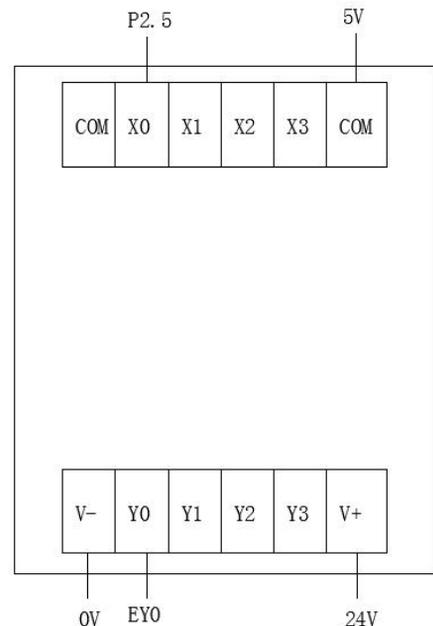
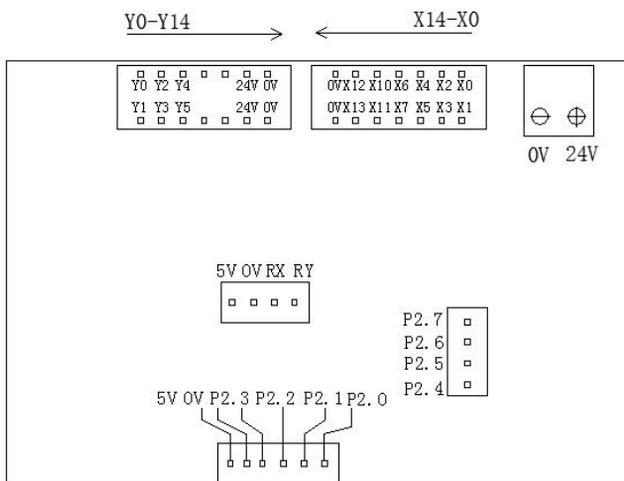
After the device is powered on, there is no action, the operation panel does not respond, and all the sensors are not lit, then the control panel needs to be replaced.



# Chapter 7: Definition list of IO List & wiring

- X0:Fiber of front end of component in position
- X1:Upper tube sensor
- X2:Lower tube sensor
- X3:Origin point of fron & Pop-up air cylinder
- X4:Mid-end Fiber
- X5:Stop button
- X6:Switch of Spring origin groove
- X7:Origin point of back & Pop-up air cylinder
- X10:前下托气缸动点
- X11:后下托气缸动点
- X12:弹簧极限槽型开关
- X13:换管子槽型开关
- P2.0:Automatic button
- P2.1: Motor reset button
- P2.2: Pop-up air cylinder button
- P2.3: Pop-down air cylinder button
- P2.4: motor inching button

- Y0:Pulse Motors
- Y1:马达方向
- Y2: Solenoid valve of Pop-up air cylinder
- Y3:Solenoid valve of Pop-down air cylinder
- Y4:Out put of component in position
- Y5:Running lights
- EY0:Air-blown electromagnetic valve(P2.5)
- EY1:压管气缸电磁阀(P2.7)
- Communication port:
  - 1: (DC+24V)
  - 2: (GND)
  - 4: (OUT)





**Panasonic** INSTRUCTION MANUAL  
Digital Fiber Sensor Amplifier FX-551 Series

ME-FX551 No.0058-72V

Thank you very much for purchasing Panasonic products.  
Please read this Instruction Manual carefully and thoroughly for the correct and optimum use of this product.  
Kindly keep this manual in a convenient place for quick reference.

**WARNING**

- Never use this product as a sensing device for personnel protection.
- In case of using sensing devices for personnel protection, use products which meet laws and standards, such as OSHA, ANSI or IEC etc., for personnel protection applicable in each region or country.

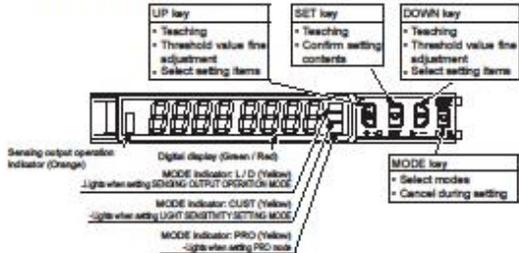
This product is not equipped with an automatic interference prevention function. By setting different frequencies, interference can be prevented for up to four units. For the setting method, refer to <PRO> in **PRO MODE**.

### 1 INTENDED PRODUCTS FOR CE MARKING

- This product complies with the following standards / regulations.
- <EU Directive>  
EMC Directive



### 2 PART DESCRIPTION

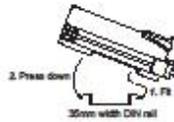


**Reference**  
Pressing down SET key + MODE key for 3 sec: Set key lock or release key lock

### 3 MOUNTING

#### How to mount

- Fit the rear part of the mounting section of the amplifier on a DIN rail.
- Press down the rear part of the mounting section of the unit on the DIN rail and fit the front part of the mounting section to the DIN rail.



#### How to remove

- Push the amplifier forward.
- Lift up the front part of the amplifier to remove it.



#### How to connect the fiber cable

- Mount the fiber cables in the state power is not supplied.
- Be sure to fit the attachment to the fibers first before inserting the fibers to the amplifier. For details, refer to the instruction manual enclosed with the fibers.
- Insert the fiber cables slowly into the inlets until they stop. Excessive force may damage the product.

- Snap the fiber lock lever down till it stops completely.
- Insert the fiber cables slowly into the inlets until they stop. (Note)
- Return the fiber lock lever to the original position till it stops.



Note: With the coaxial reflective type fiber, insert the single core fiber cable into the beam-emitting inlet "P" and the multi-core fiber cable into the beam-receiving inlet. If they are inserted in reverse, the sensing performance will deteriorate.

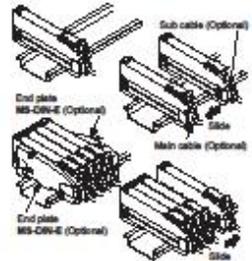
### 4 INSTALL MORE AMPLIFIER OF SERIES CONNECTION TYPE (Connection type only)

- Make sure that the power supply is OFF while adding or removing the series connection type.
- This product is not equipped with an automatic interference prevention function. By setting different frequencies, interference can be prevented for up to four units. For the setting method, refer to <PRO> in **PRO MODE**.
- In case 2 or more the series connection types are connected in cascade, make sure to mount them on a DIN rail.
- In case installing additional amplifier of series connection type, the maximum 15 the series connection types using sub cables (optional) can be added to an amplifier using a main connection cable (optional).
- When connecting 2 or more the series connection types in cascade, use the sub cable (optional) for the second series connection type onwards.

For mounting and removing the amplifier, refer to **MOUNTING**.

#### How to cascade

- Mount the amplifiers, one by one, on the DIN rail.
- Slide the amplifiers next to each other, and connect the quick-connection cables.
- Mount the end plates MS-DIN-E (optional) at both the ends to hold the amplifiers between their flat sides.
- Tighten the screws to fix the end plates.

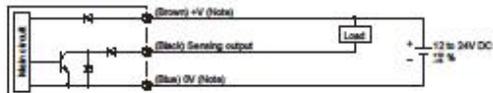


#### How to Remove

- Loosen the screws of the end plates.
- Remove the end plates.
- Slide the amplifiers and remove them one by one.

### 5 I/O CIRCUIT DIAGRAMS

#### <NPN output type>

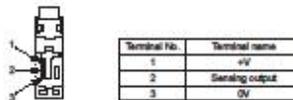


#### <PNP output type>



Note: The quick-connection sub cable does not incorporate +V (brown) and 0V (blue). The power is supplied from the connector of the main cable.

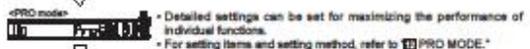
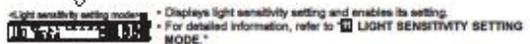
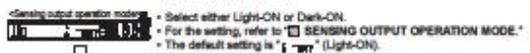
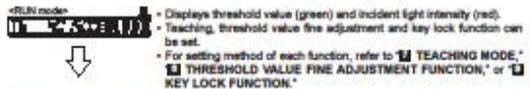
#### <FX551 terminal arrangement>



### 6 OPERATION PROCEDURE

The changed settings are not stored if turning the power OFF while setting. Therefore, confirm the settings by pressing the SET key before turning the power OFF.

- When turning ON the power, RUN mode is displayed and the digital display shows the threshold value (green) and the incident light intensity (red).



<RUN mode>