



NZV-1500

Nozzle Type Vacuum Packaging Machine

Operation Manual

Version 6.9.1

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SAFETY RECOMMENDATION

Certain practices or minor modifications on the part of the user may increase the risk of damage and/or accidents.

In the interests of safe installation, handling and maintenance, the following recommendations should be strictly followed:

- 1) Never start or service the machine until all safety sections, installation instructions, operator's guide and maintenance procedures have been read and understood.
- 2) All adjustments and repairs must be carried out only by qualified technicians or maintenance personnel, also have to follow the instructions of this manual to commence.
- 3) The operator must keep hands out of the machine and never insert rags, etc. into machine while it is running.
- 4) Do not put tools, parts or other foreign objects on or into the machine.
- 5) Always keep the machine clean, lubricated and in good working condition.
- 6) To provide continuous protection against the risk of electrical shock, connect the power to proper outlet.
- 7) Always shut down the power (turn off the main power switch) as show on next page before removing service panel.

1. APPLICATIONS

This machine is applied for frozen food, sea food, prepared food, meat, soaked foods, herbal medicines, tea leaves, hardware parts, accessories and electronic products ... etc.

1.1 WHY WE NEED VACUUM PACKAGING

- Keep the freshness and flavor of food, preserve food and prevent from mold.
- Extend storage and shelf life of packed products.
- Prevent electronic and hardware parts from rust and moisture.

The vacuum packaging machines have been designed to guarantee the best preservation and to extend shelf life of any food product that requires protection against oxidation.

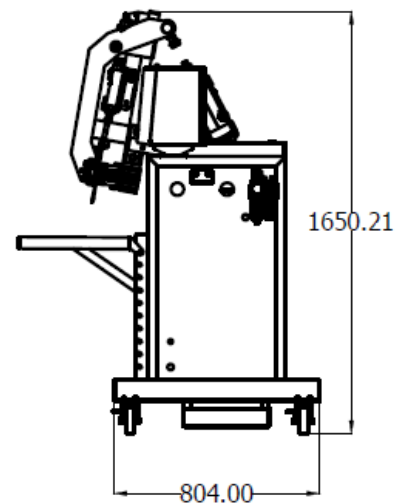
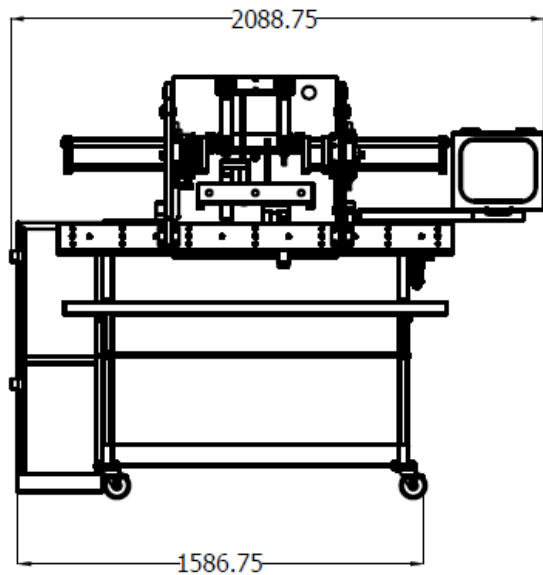
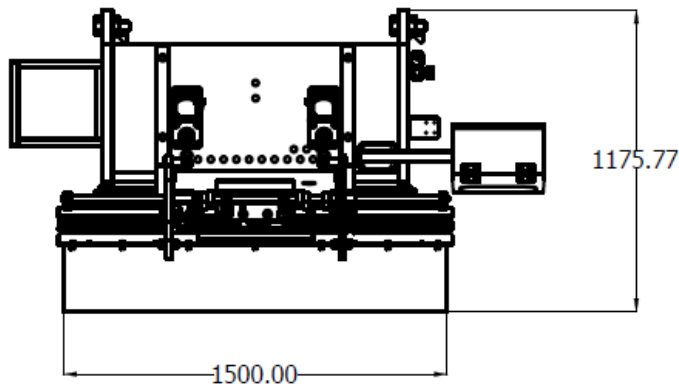
In food industry, these products are usually vacuum packed: meat, sausages, ham, bacon, fish, cheese, coffee, pizza, fresh pasta, olives, pickles and many other gastronomy products; and in other fields the following ones: chemical, pharmaceutical and cosmetic products, electronic parts, car spare parts etc.

The fresh meat sector is particularly advantaged by the vacuum technology. Vacuum packaging, in fact, greatly delays any deterioration caused by ambient air; it is an obstacle to the development of bacteria and moulds and markedly reduces the negative effects of temperature changes. Packaging in airless space also gives a slow ripening effect, thus protecting in the best way the organoleptic qualities of the meat.

1.2 RECOMMENDATION OF VACUUM POUCH

In order to have a perfect result after vacuum packaging and provide longer shelf life for packed products, we recommend using vacuum pouches made of NY/LDPE.

3. NZV-1500 SPECIFICATION



4. INSTALLATION

4.1 ENVIRONMENT REQUIREMENTS

The machine will be started difficultly if the air temperature is very low. Cause the oil will be stiffened and its viscosity will become higher in cold working environment. To prevent from this, please set up machine according to the installation checklist described as below :

- Temperature : around 5 ~ 40°C
- Working elevation : between 0 ~ 1000 meters
- Relative humidity : 30 ~ 95% RH
- During operating, heat is generated by the vacuum pump and vacuum process, so the machine temperature keeping around 70 ~ 80°C is normal. Also must have free air access for cooling.

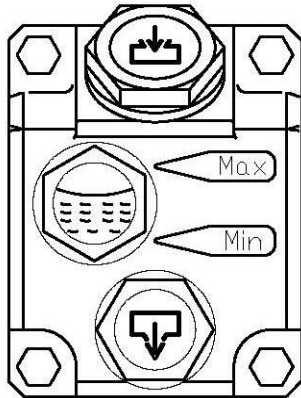
- A minimum distance from walls, other machines, etc. should be maintained, at least 20 cm for each side of machine for providing adequate ventilation.
- Main air supply pressure to operate the machine : 80 psi.

4.2 CHECK OIL LEVEL

Only check the oil level when the machine is not in operation and depressurized !
The oil might be hot ! Danger of scalding ! Do not spill oil ! Check for leakage !

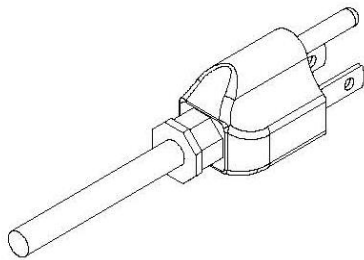
Check oil level

- Check the oil level after each stop and at regular intervals.
 - The max. oil level is in the upper oil level sight-glass, the min. oil level is in the lower.
- Ensure the oil level is between the upper and lower limits. If required, fill it up to the max. oil level.



4.3 POWER CONNECTION

Prior to connecting the power, please check the relative information at the back of machine, after make sure the required current, then connect the correct power to the pump and plug in the right outlet. The connection must be done by an authorized personnel. Consult the electrician if you have questions about the electrical supply in your facility.



5. OPERATION

5.1 VACUUM SETTING GUIDLINES

Products	Vacuum time/Sec.	Storage life when stored at 2 ~ 6 °C/day
Fresh meat	30	10
Pork	30	10
Beef	30	30
Meat with liquid	15 ~ 30	14
Pasta	3 ~ 9	21
Sliced sausage	15	10
Cold cuts	9	10 ~ 21

5.2 BASIC OPERATING INSTRUCTIONS

Turn on the main switch and the LED display shows the operation menu, at this time, machine is ready to operate.

Place the product to be packaged in a vacuum pouch. Place the bag in chamber with the open end of bag across the sealing bar. (With a package that doesn't completely fill the chamber, place provided flat plates in the chamber to shorten vacuum time.)

Close the lid to start the cycle, the lid will open automatically when cycle is completed.

Take out the sealed product from vacuum chamber. You are ready to start the next cycle.

After all packaging is completed, please let the vacuum pump run for about 15 minutes, then turn off the main switch to shut down the machine.

5.3 OPTIONAL DEVICE

5.3.1 GAS FLUSHING UNIT

If your machine is equipped with an optional gas flush system please note the following points.

Make sure you have connected a regulated gas source to the gas inlet fitting

Do not set your regulator for a pressure of greater than 40psi

Place the open end of your package in front of the gas inlet nozzles

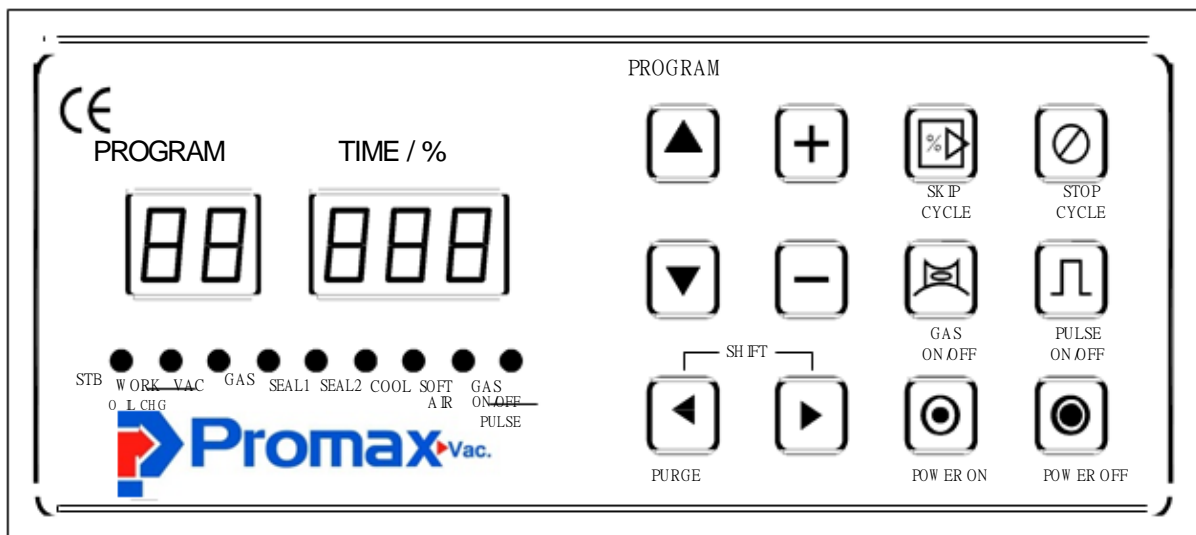
Do not tuck the bag under the gas nozzles

5.4 OPERATION OF THE PNC-01 DIGITAL CONTROL PANEL

5.4.1 Operation of the Model PNC-01 Digital Control Panel

When following the instructions for programming your machine please refer to Fig.5 below.

Figure 5



Standard Machine – Basic Instructions

- A. Press the **Main Power** switch located to the right of the control panel.
 1. The Main Power switch will **NOT** light up.
 2. The standby, **STB**, **LED** on the control panel will light up.
- B. Press the **Power ON** touch pad on the control panel.
 1. The **Program** display and the **Time/%** display will light up.
 2. The **Program** display will indicate what program the machine is running.
 3. The **Time/%** display will indicate the vacuum setting for that program.
- C. **Changing to a different program**
 1. Press either the **Up or the Down** arrow key on the control panel.
 2. You will see the number displayed in the **Program** display change.
 3. Select the program number before the one you want to move to
 4. Press the **Up** arrow key and hold it down for approximately 5 seconds.
 5. You will see the number in the **Program Display** begin to blink.
 6. Press the **Up** arrow key once and it will stop blinking.
 7. Using the **Up / Down** arrows go back to the program number you chose.
 8. **Important:** Cycle the machine 1 time to save program change.

D. Changing Program Settings

1. Choose the program number you wish to edit
2. Press and hold down the **Right Arrow** key for 3 seconds.
3. You will see the **Time / %** display begins to flash.
4. **Change the settings as indicated in steps E to J.**

Important Note: If your machine is equipped with the most recent version of the PNC-01 control you will not need to implement the instructions above in order to change program settings.

E. Vacuum

1. Make sure the **LED** above the word **VAC** is lighted.
2. Using the **Plus/Minus** keys increase or decrease the vacuum time.
3. Press the **Right Arrow** key to move to the next setting.

Important note: You may always use the left arrow key to go back to the previous setting.

F. Gas (Optional) See Optional Settings

1. Using the **Plus/Minus** keys set to 0.00
2. Press the **Right Arrow** key **3X** to move to the next setting.

G. Seal 1

1. Using the **Plus/Minus** keys increase or decrease the seal time.
2. Press the **Right Arrow** key to move to the next setting.
3. Maximum sealing time : 3 seconds.

H. Seal 2: Not used at this time.

I. Cool

1. Using the **Plus/Minus** keys increase or decrease the cooling time.
2. Press the **Right Arrow** key to move to the next setting.
3. Minimum cooling time : 3 -5 seconds.

J. Soft Air: This feature allows the chamber to partially vent in short pulses. Three separate settings are required to complete this operation.

1. The first setting is **Total Vent Time**. Using the **Plus/Minus** keys to set the amount of **Total Vent Time** you want.
2. Press the **Right Arrow** key to move to the next setting. You will see that the soft air LED remains on. However you are now setting the **Vent On time**.
3. Using the **Plus/Minus** keys set the amount of time you want the vent valve to open during each pulse.

Press the **Right Arrow** key to move to the next setting. The Soft Air LED will remain on. However you are now setting the **Vent Off time**.

4. Using the **Plus/Minus** keys set the amount of time you want the vent valve to remain closed between each vent pulse.

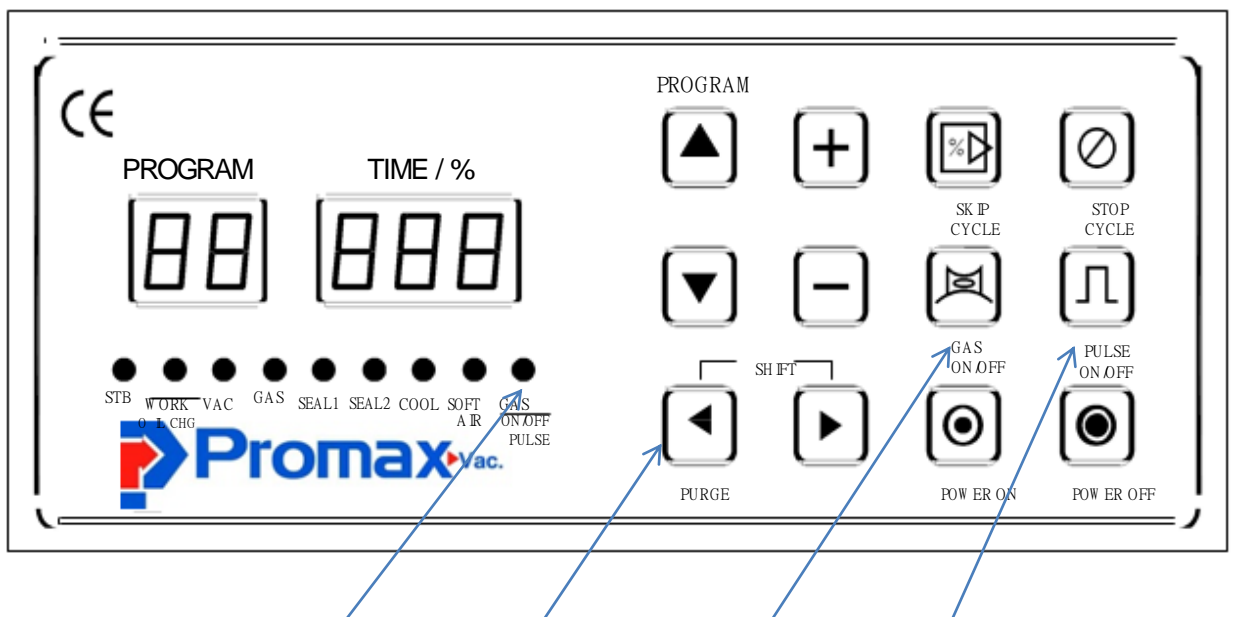
5. Press the **Up Arrow** key to return to normal operation mode.

5.4.2 Setting the Parameters for the Optional Settings

Important Note: These settings will only function if the options they pertain to were purchased.

Refer to figure 6 below to help you complete these settings.

Figure 6



Gas On / Off /Pulse LED

Purge

Gas On / Off Pulse On / Off

A. Gas Flush

1. Prepare to make changes as instructed in point D
2. Press the **Left Arrow** key until the **Gas LED** is lit.
3. Using the **Plus / Minus** keys set the amount of time you want gas to enter the chamber.

4. Press the **Left Arrow** key again you will see that the **Gas LED** remains lit. You will set a time value for the next two settings **only if you wish to use the PULSE GAS feature.**
5. Using the **Plus / Minus** keys set a **GAS ON** time
6. Press the **Left Arrow** key to move to the **GAS OFF** time setting.
7. Using the **Plus / Minus** keys set a **Gas Off** time.
8. Press the **Left Arrow** key to move to the next setting.

Important Note: Once you have returned the control to the normal operation mode you **MUST** turn the GAS Feature and the PULSE feature on for them to become part of the cycle. To do this Press the **Gas On / Off** key, indicated in **Figure 6** above. The **Gas On / Off / Pulse LED** will light up. This indicates that the gas flush system is engaged.

If you wish to engage the **PULSE** feature you must Press the **PULSE On/Off** touchpad indicated in **Figure 6** (on the previous page). The **Gas On / Off LED** will begin to blink. The gas pulse feature is now engaged.

B. Vacuum by Percentage: This option allows your machine to control the amount of vacuum achieved as a function of vacuum pressure instead of being time based. **Your machine must be equipped with the optional Sensor Control for this option to be used.**

1. Enter the Edit Mode (follow the instructions in point D on Pg.00)
2. Make sure the LED above the word VAC is on.
3. Press the **Minus** key repeatedly until you pass **-1**. You will see the Time / Percent display change to **99**.
4. Continue to Press the **Minus** key until you have reached the vacuum percentage you desire..
5. Press the **Left Arrow** key to move to the next setting.

C. Percentage + Time Vacuum: This setting will allow your machine to reach 99% then continue to vacuum for a set amount of time before moving to the next stage of the cycle.

1. Follow the instructions above to the point where the number 99 has appeared in the Time / Percent display.
2. Press the **Plus** key and you will see a 1 with what looks like a sideways T next to it appear.
3. Continue to Press the **Plus** key until you have set the amount of time you want the vacuum to continue after 99% has been achieved.
4. Press the **Left** arrow key to move to the next setting.

D. Pulse Vacuum: This feature allows you to set the vacuum to pulse on and off for a preset **Total Vacuum Time**. If this optional feature has been purchased you will notice that the VAC setting will require three (3) settings to complete.

1. The first setting will be **Total Vacuum Time**. Using the **Plus/Minus** keys set the total time you want the vacuum cycle to last.
2. Press the **Right Arrow** key to move to the next setting. The VAC LED will remain on. However you are now setting the **Vacuum On Time**.
3. Using the **Plus/Minus** keys set the amount of time you want each vacuum pulse to last.
4. Press the **Right Arrow** key to move to the next setting.
5. Using the **Plus/Minus** keys set the amount of time you want the vacuum to remain off between each vacuum pulse.
6. You have now completed setting for a Pulsed Vacuum.
7. Press the **Right Arrow** key to move to your next setting.

E. Multi Stage Vacuum / Gas: This function allows your machine to perform multiple vacuum and gas stages before moving onto the seal mode. Up to 10 vacuum / gas or gas / vacuum stages may be set.

1. With the machine in the normal operation mode Press the Purge key indicated in Figure 6. You will see a decimal point appear in the **Program Display**. The machine can now be set for multi-stage operations that begin with a Vacuum cycle. If you Press the Purge key once more the decimal point will begin to blink. The machine will now perform multi-stage functions beginning with Gas. **Note: The vacuum will engage for 2 seconds to hold the lid down before the first gas stage begins.**
2. Once you have engaged the Purge function then enter EDIT MODE (follow the instructions indicated in point D on page 00).
3. The **VAC LED** will be lit and you will see a number appear in the **Time / Percentage** display. This number indicates how many stages you wish to execute.
4. Press the **Plus / Minus** keys to set the number of stages you want.
5. Press the **Left Arrow** key. You will see that the LED above the word **VAC** stays on.
6. Press the **Plus / Minus** Key to set the amount of Vacuum time for all of the vacuum stages. **This second setting is ALWAYS the vacuum time.**
7. Press the **Left arrow** key. You will see that the LED above the work **VAC** remains on.
8. Using the **Plus / Minus** keys set the amount of Gas time for all gas cycles. Note: **This third setting is always the Gas time.**

Note: If you Press the Purge key a third time the decimal point will disappear. The Purge function is now OFF and your regular Vacuum & Gas settings will resume.

6.MAINTENANCE

6.1 Basic Maintenance

The following maintenance procedures should be followed no matter what model Promarks machine you own.

6.1.1 Daily Visual Inspection

Your machine should have the following items inspected daily. If this inspection is performed daily prior to the start of your days production you will find that your machine will always perform consistently, last longer and suffer less down time.

A. Teflon Covers

1. Clean if they have any foreign mater adhering to them
2. Look for any burned spots, cuts or tears. Replace if needed.

B. Vacuum Pump Oil

1. Check the oil level. Fill if below Minimum on the sight gauge. Refer to Fig. 1 on page 6.
2. Replace the oil after 500 hours of operating time.

C. Vacuum Chamber Lid Gasket

1. Check for general wear
2. Check for damage
3. Replace as needed.

D. **Pressure Bar Rubber:** On TC and some SC machines this is the rubber part found in the lid of your machine that meets with the seal bar when the machine is in operation. In other SC machines and in all DC machines this is the rubber part that is located on the chamber's base that meets with the seal bar when the machine is in operation.

- 1 Check for excessive wear.
2. Check for burnt spots, cuts and tears.
3. Replace as needed.

E. Vacuum Pump Motor Sound

1. Listen for the smooth, normal sound of your vacuum pump.
2. If any abnormal sounds are detected **TURN OFF YOUR MACHINE RIGHT AWAY** and perform a trouble shooting procedure.

6.1.2 Daily cleaning

Important Note: The following daily cleaning points are meant to help keep your machine in proper working order. They are in no way intended to provide the required level of sanitation needed for the packaging of food products. As noted earlier in this manual your company should consult with an expert in the sanitation field to design a robust sanitation routine when packaging food products.

1. Clean the seal bar's Teflon tape very carefully using a rag and a mild organic solvent. **DO NOT** directly wash down this area of the machine.
2. Clean the rubber pad in the seal pressure bar. Once again use a rag and a mild organic solvent. **DO NOT** directly wash down this area of the machine.
3. Wipe down the stainless steel housing using an approved stainless steel cleaner.
4. On machines with clear chamber lids or viewing windows clean them using a mild glass cleaner.
5. If your machine is an SC Series or a DC Series unit open the housing access door and visually check for oil or debris around the vacuum pump area. If you see anything that needs to be cleaned **DO NOT start cleaning until the machine is properly locked out and tagged out.**

6.2 VACUUM PUMP MAINTENANCE

For detailed information concerning maintenance and repair of your machine's vacuum pump please refer to the manufactures operating manual that was packaged with your new machine.

6.3 SEAL BAR MAINTENANCE

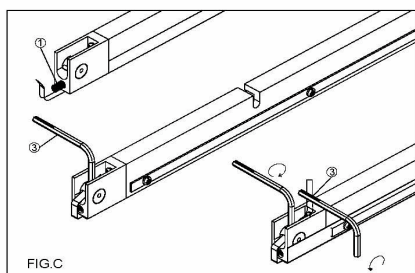
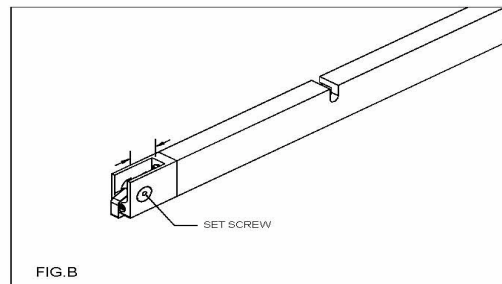
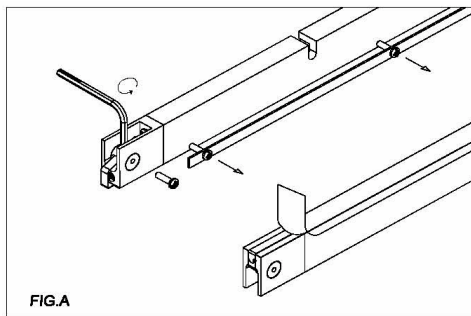
A. Replacing the Teflon Cover

1. Remove the seal bars from your machine.
 - a. Seal bars are located in the chamber on all TC Series machines and some smaller SC Series machines.

- b. Seal bars are located in the lid on larger SC Series machines and all DC Series machines.
2. Remove the screws that hold the Teflon holding strap in place. Refer to **Figure A on the next page.**
 3. Remove the old Teflon cover.
 4. Inspect the seal element.
 - a. Clean it off with lacquer thinner if needed.
 - b. Replace if broken or burnt badly. **Refer to the instructions under B below for replacement**
 5. Install the new Teflon cover and reinstall the seal bars.

B. Replacing the Seal Element

1. Using a hex wrench loosen the screws holding the seal element and remove it
2. Install the new seal element. **Refer to Figures B & C on the next page.**
 - a. Place the new element across the surface of the seal bar leave an excess of about 3/4" at each end.
 - b. Make sure you put the tension spring back in place.



6.4 MAINTENANCE INTERVALS AND CHECK ITEMS

Maintenance Intervals/ Check items	Daily	Bimonthly	Quarterly	Yearly	Biyearly	3 ~ 5 years	Note
Keep the vacuum lid open after finished working and let vacuum pump running about 15 minutes.	X						
Check the oil level	X						
Check the sound of motor	X						
Oil come out from exhaust cover or not	X						
Bottom sealing bar working normally or not	X						
Clean the exhaust filter		X					
Change vacuum oil		X					
Replace exhaust filter				X			
Replace Teflon tape				X			As request
Replace sealing Silicone rubber				X			As request
Replace lid gasket rubber				X			As request
Replace pressure bag					X		As request
Replace vanes						X	

Above-mentioned maintenance intervals are scheduled basically for 8 working hours per day.

Recommended oil : A. Grav. API 30.5
 Pour Pt. -15°C
 Flash Pt. 225°C
 Viscosity 32.05 CST@40°C
 Color Light Yellow
 V.I. 100

7. TROUBLESHOOTING

7.1 PROBLEMS AND CORRECTIONS

Problem and Corrections - Review installation procedure section to ensure the installation is correct. If correct, the troubleshooting chart below lists possible problems, causes, corrections, and reference guide.

Problem	Cause	Correction
Control panel is under normal function, but vacuum pump does not start.	The KM1, QM1, MCB1, MCB2 protectors are disconnected.	Check each part and turn on the switch, reconnect, if necessary.
Vacuum pump does not run.	The power supply is not corresponding with the power demand indicated on the back of machine.	Reconnect to correct power source.
Insufficient vacuum in chamber.	Low oil level in vacuum pump. Lid silicone rubber damaged.	Fill oil, if necessary. Stop machine immediately. Then alter the power connection and reconnect to correct ones. Replace.
Insufficient vacuum in bag. Note : Mostly insufficient vacuum in bag is due to leakage of bag, but not the fault of machine.	Bag is leaking. Sharp corners on wrapped product puncture the bag. Bag is too large.	Replace the bag. Replace the bag and use a thicker one. Replace with a smaller one.
Vacuum bag is easily pulled apart by hand.	Sealing time (temperature) is too short (low).	Adjust sealing time (temperature) to be longer (higher).
Sealing area has some burnt marks or bubbles appeared.	Sealing area stuffed with oil or meat juice or dirt. Sealing time (temperature) is too long (high).	Clean and remove them. Adjust sealing time (temperature) to be shorter (lower).
Lid does not open.	Vacuum valve is damaged.	Replace it.

Problem	Cause	Correction
No or improper sealing. NOTE : Please do not adjust sealing longer than regular time, or it will reduce the life of Teflon tape and silicone rubber.	Sealing wire is broken.	Replace it.
	Sealing wire is loose.	Tighten it.
	Insufficient pressure.	Pressure bar is damaged, replace it.
	Sealing transformer is damaged.	Replace it.
	Teflon tape or silicone rubber is damaged.	Replace it.
	Sealing time and cooling time are too short.	Adjust to proper time.
Lid does not close.	Sealing pressure is too low.	Replace the pressure bag.
	Vacuum valve is damaged.	Replace it.
	Limit switch is disconnected or damaged.	Reconnect or replace it.

7.2 25PIN D Type Terminal Wiring Connection Instructions

PIN NO	FUNCTION		PIN NO	FUNCTION	
1	AC24V Input — For Internal		13	External DC24V	Rectificated
2	AC24V Input — For Internal		14	External DC24V	Rectificated
3	AC24V Input — For External		15	Sealing Bar 2 Heat Contact	Relay Contact
4	AC24V Input — For External		16	Pulse Soft Air Contact	Relay Contact
5	Air Inlet Valve	Relay Contact	17	x	
6	Sealing Press Bar Gas Flushing	Relay Contact	18	x	
7	Sealing Bar 1 Heat	Relay Contact	19	x	
8	External Special Gas Valve	Relay Contact	20	x	
9	Vacuum Valve	Relay Contact	21	Over Relay Input Same As 25	External Input
10	COM	Relay Contact	22	Internal Grounding	External Input
11	Internal Grounding	External Input	23	COM point	Relay Contact
12	Vacuum Lid Signal Input	External Input	24	Vacuum Motor Contact	Relay Contact
			25	Over Relay Input Same As 21	External Input

6. MAINTENANCE

6.1 MACHINE MAINTENANCE

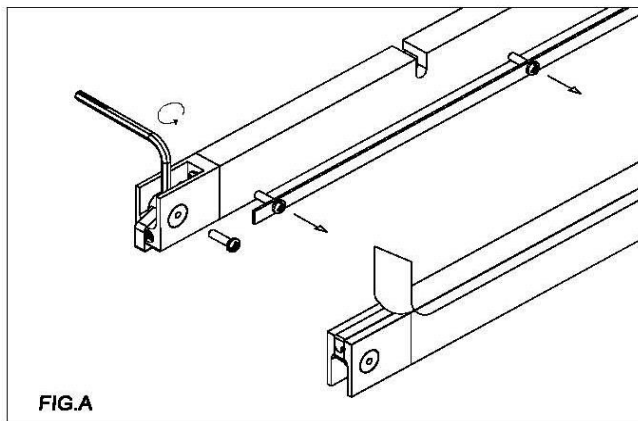
The NZ-1000 Table Top Vacuum Packaging Machine should be cleaned everyday. Clean the sealing bar and Teflon tape carefully. Suggest to use rag to wipe and clean the sealing bar and Teflon tape with mild organic solvent, then wipe again with clean water. Never wash down the machine directly.

6.2 VACUUM PUMP MAINTENANCE

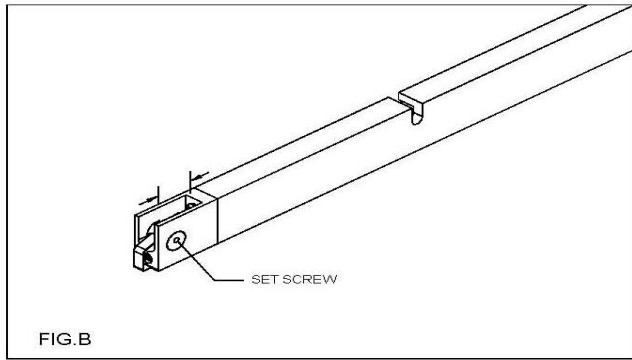
Please refer to the Pump Operation Manual (provided together with the machine).

6.3 REPLACE AND MAINTAIN THE SEALING BAR

- Remove sealing bar units from vacuum lid.
- Loose round screws from the side of sealing bar and take off the stainless steel compress plates.
- Remove the Teflon tape. Use a hex. key wrench to loose the screws on sealing bar.
- Then remove the heating band. Use rag to wipe and clean the Teflon tape adhesive residuum on sealing bar with mild organic solvent or equivalent. (Fig. A)



- If you just only replace the heating band and Teflon tape, please also check the spring. The spring must be loaded onto the end of sealing bar, otherwise the heating band will be easily broken during transmitting heat. (Fig. B)



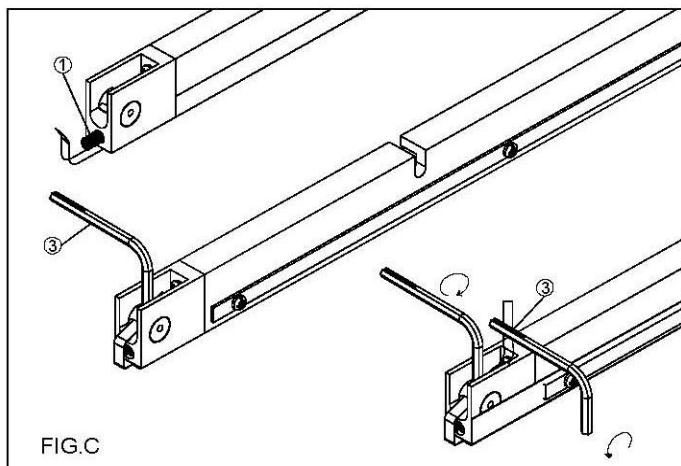
- Lay the new heating band on sealing bar, down across the end and face on the other side, leave about 3/4" (20mm) for excess, then tighten the securing screw of heating band at one end, let heating band reach to the other end of the sealing bar. Keep the compress plate screws loose. Pull the heating band until it becomes straight and tight, also locates it between the two side compress plates. Tighten the securing screw of heating band at the other end. Then tighten the compress plate screws.

The regular tension of heating band is while pulling it slightly, the distance between the top of sealing bar and the highest point of heating band should not exceed 3/6" (5 mm). So readjust, if necessary.

NOTE :

If the tension is not enough, the heating band will break easily.

To ensure the quality of sealing and have good effect on the surface, replace the Teflon tape at regular intervals.



6.4 MAINTENANCE INTERVALS AND CHECK ITEMS

Maintenance Intervals/ Check items	Daily	Bimonthly	Quarterly	Yearly	Biyearly	3 ~ 5 years	Note
Keep the vacuum lid open after finished working and let vacuum pump running about 15 minutes.	X						
Check the oil level	X						
Check the sound of motor	X						
Oil come out from exhaust cover or not	X						
Bottom sealing bar working normally or not	X						
Clean the exhaust filter		X					
Change vacuum oil		X					
Replace exhaust filter				X			
Replace Teflon tape				X			As request
Replace sealing Silicone rubber				X			As request
Replace lid gasket rubber				X			As request
Replace pressure bag					X		As request
Replace vanes						X	

Above-mentioned maintenance intervals are scheduled basically for 8 working hours per day.

Recommended oil : A. Grav. API 30.5
 Pour Pt. -15°C
 Flash Pt. 225°C
 Viscosity 32.05 CST@40°C
 Color Light Yellow
 V.I. 100

7. TROUBLESHOOTING

7.1 PROBLEMS AND CORRECTIONS

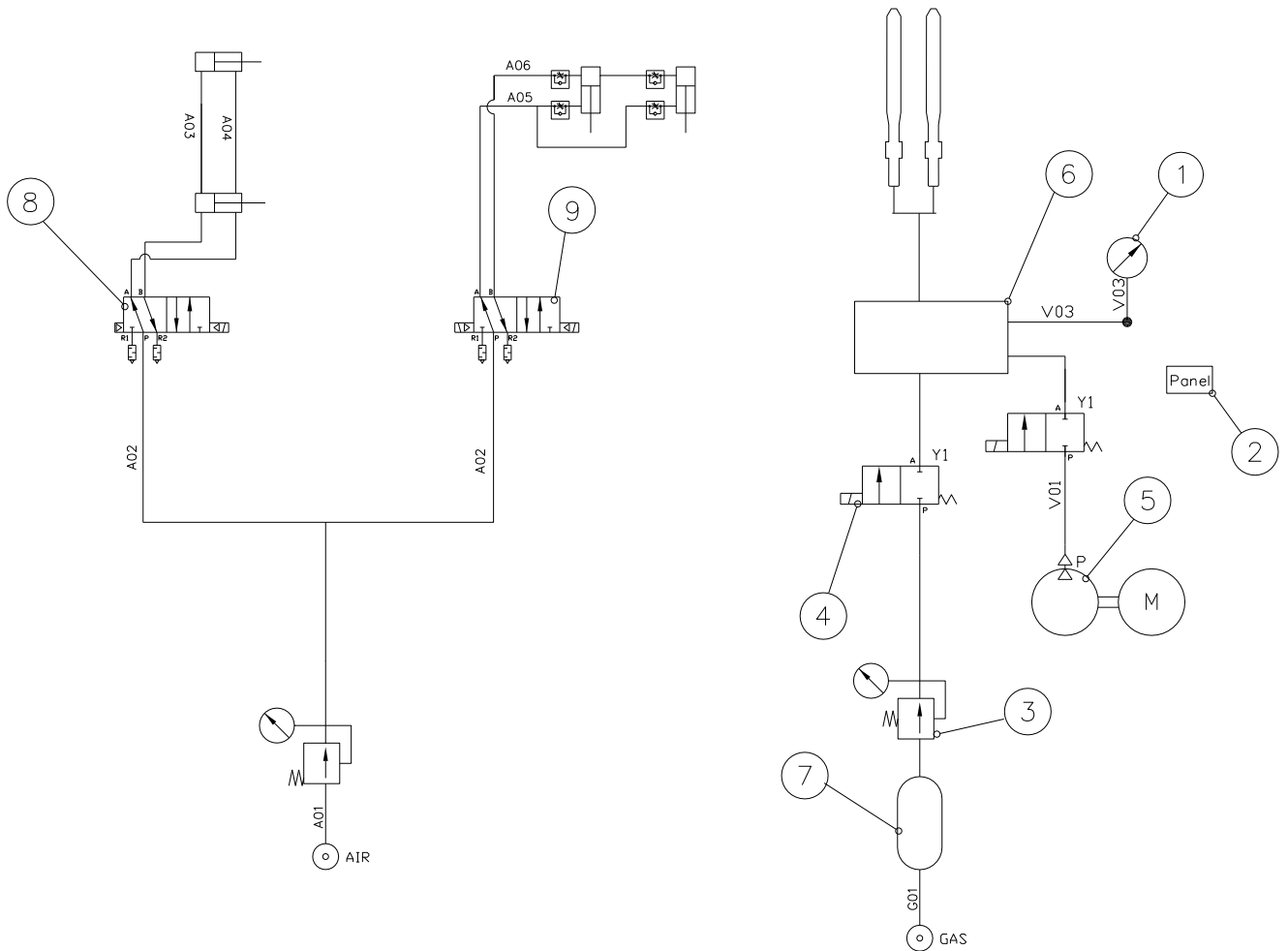
Problem and Corrections - Review installation procedure section to ensure the installation is correct. If correct, the troubleshooting chart below lists possible problems, causes, corrections, and reference guide.

Problem	Cause	Correction
Control panel is under normal function, but vacuum pump does not start.	The KM1, QM1, MCB1, MCB2 protectors are disconnected.	Check each part and turn on the switch, reconnect, if necessary.
Vacuum pump does not run.	The power supply is not corresponding with the power demand indicated on the back of machine.	Reconnect to correct power source.
Insufficient vacuum in chamber.	Low oil level in vacuum pump. Vacuum pump is rotating in wrong direction. Lid silicone rubber damaged.	Fill oil, if necessary. Stop machine immediately. Then alter the power connection and reconnect to correct ones. Replace.
Insufficient vacuum in bag. Note : Mostly insufficient vacuum in bag is due to leakage of bag, but not the fault of machine.	Bag is leaking. Sharp corners on wrapped product puncture the bag. Bag is too large.	Replace the bag. Replace the bag and use a thicker one. Replace with a smaller one.
Vacuum bag is easily pulled apart by hand.	Sealing time (temperature) is too short (low).	Adjust sealing time (temperature) to be longer (higher).
Sealing area has some burnt marks or bubbles appeared.	Sealing area stuffed with oil or meat juice or dirt. Sealing time (temperature) is too long (high).	Clean and remove them. Adjust sealing time (temperature) to be shorter (lower).
Lid does not open.	Vacuum valve is damaged.	Replace it.

Problem	Cause	Correction
<p>No or improper sealing.</p> <p>NOTE : Please do not adjust sealing longer than regular time, or it will reduce the life of Teflon tape and silicone rubber.</p>	<p>Heating band is broken.</p> <p>Heating band is loose.</p> <p>Insufficient pressure.</p> <p>Sealing transformer is damaged.</p> <p>Teflon tape or silicone rubber is damaged.</p> <p>Sealing time and cooling time are too short.</p> <p>Sealing pressure is too low.</p>	<p>Replace it.</p> <p>Tighten it.</p> <p>Pressure bar is damaged, replace it.</p> <p>Replace it.</p> <p>Replace it.</p> <p>Adjust to proper time.</p> <p>Replace the pressure bag.</p>
<p>Lid does not close.</p>	<p>Vacuum valve is damaged.</p> <p>Limit switch is disconnected or damaged.</p>	<p>Replace it.</p> <p>Reconnect or replace it.</p>

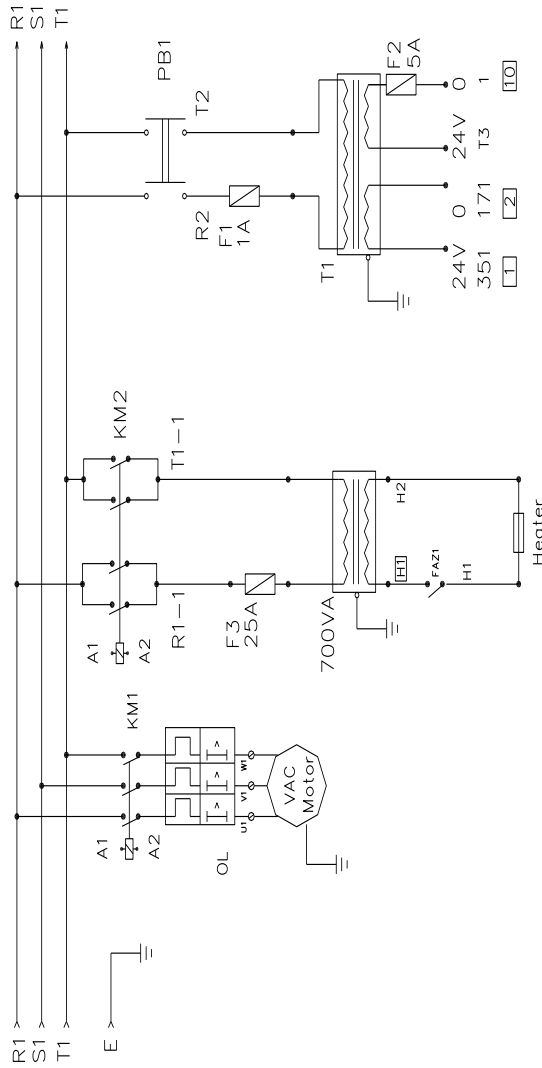
7.2 PNEUMATIC DIAGRAM

NO	DESCR	QTY	NOTE
1	Vacuum gauge	1	
2	Control panel	1	
3	Pressure control valve	2	
4	Gas valve	2	
5	Vacuum pump	1	
6	Distributing connector	1	
7	Reservoir air	1	
8	Valve	1	
9	Valve	1	

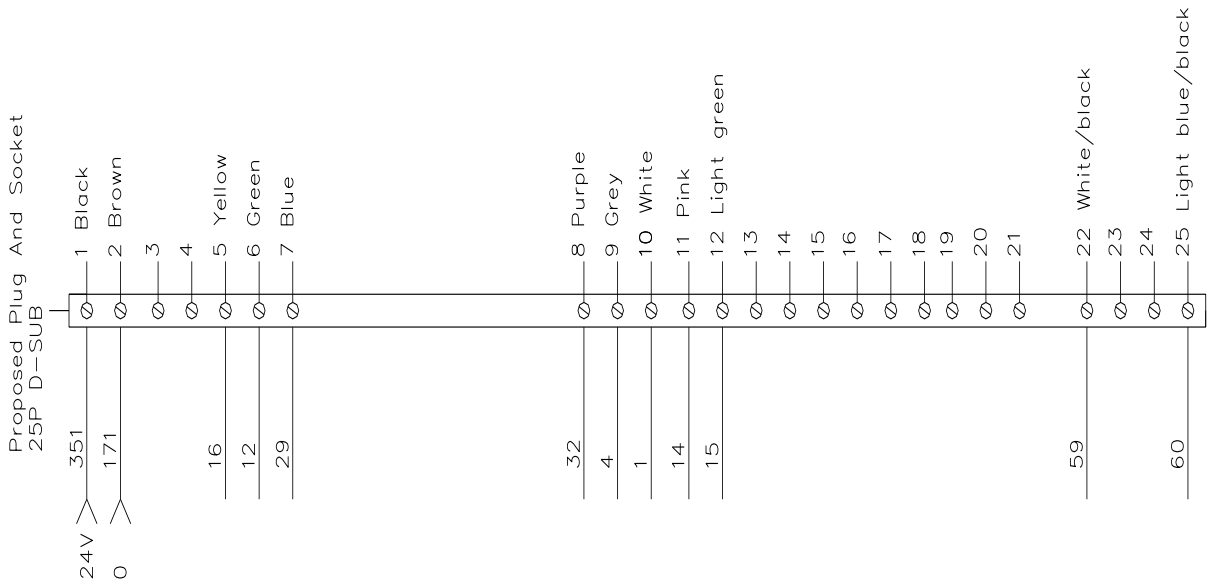


7.3 ELECTRICAL DIAGRAM

Electrical diagram
Biactive seal
PNC-01 Standard

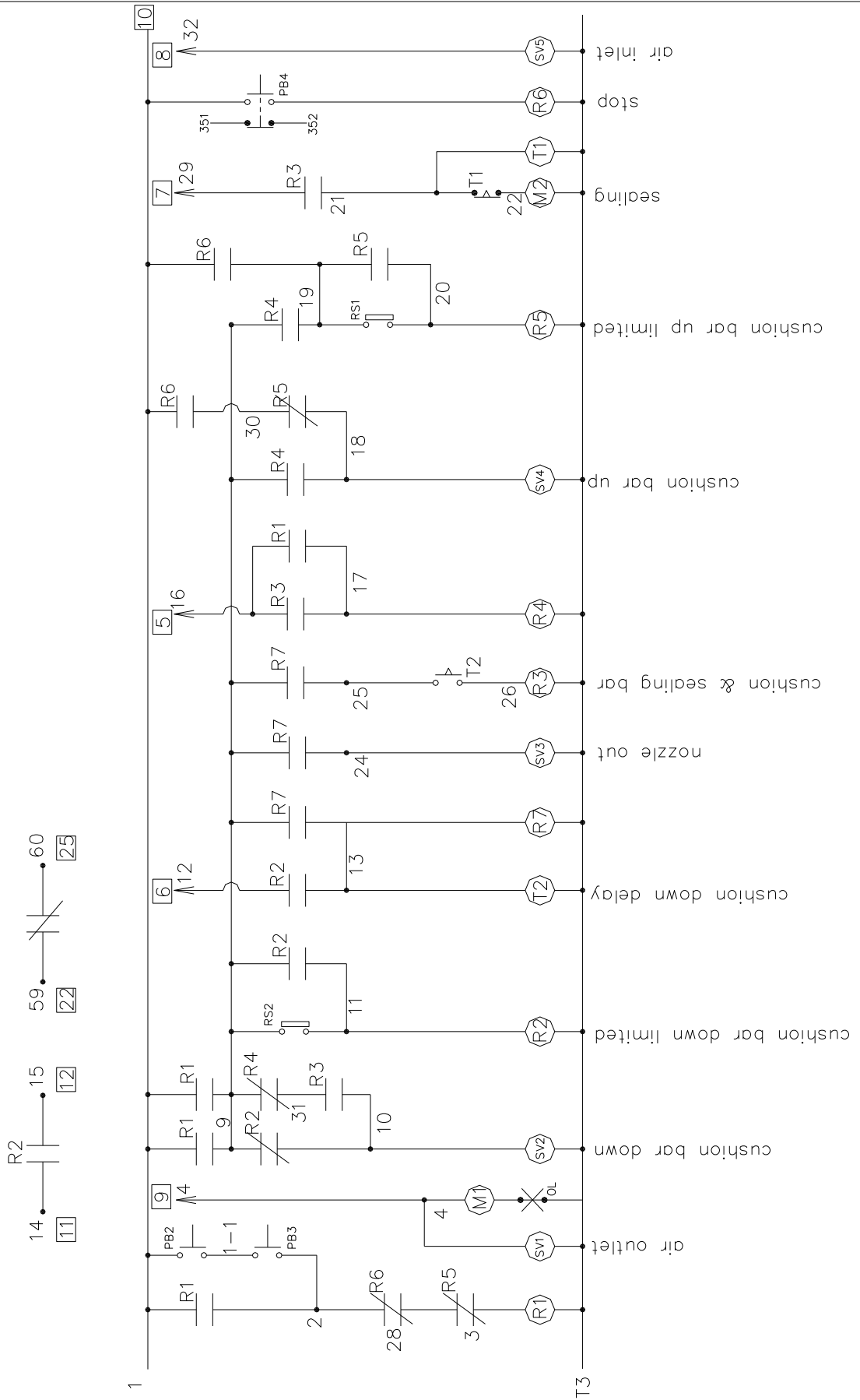


- T1 : Transformer (Control panel)
- KM1 : Contactor (Motor)
- OL : Over relay
- KM2 : Contactor (Sealing)
- F1(1A),F2(5A) : Fuse (Control panel)
- F4(25A) : Fuse (Sealing transformer (200~240V) or 110V)
- F4(15A) : Fuse (Sealing transformer (380~480V))
- FAZ1 :FAZ-C32/1
- PB1 : Power switch

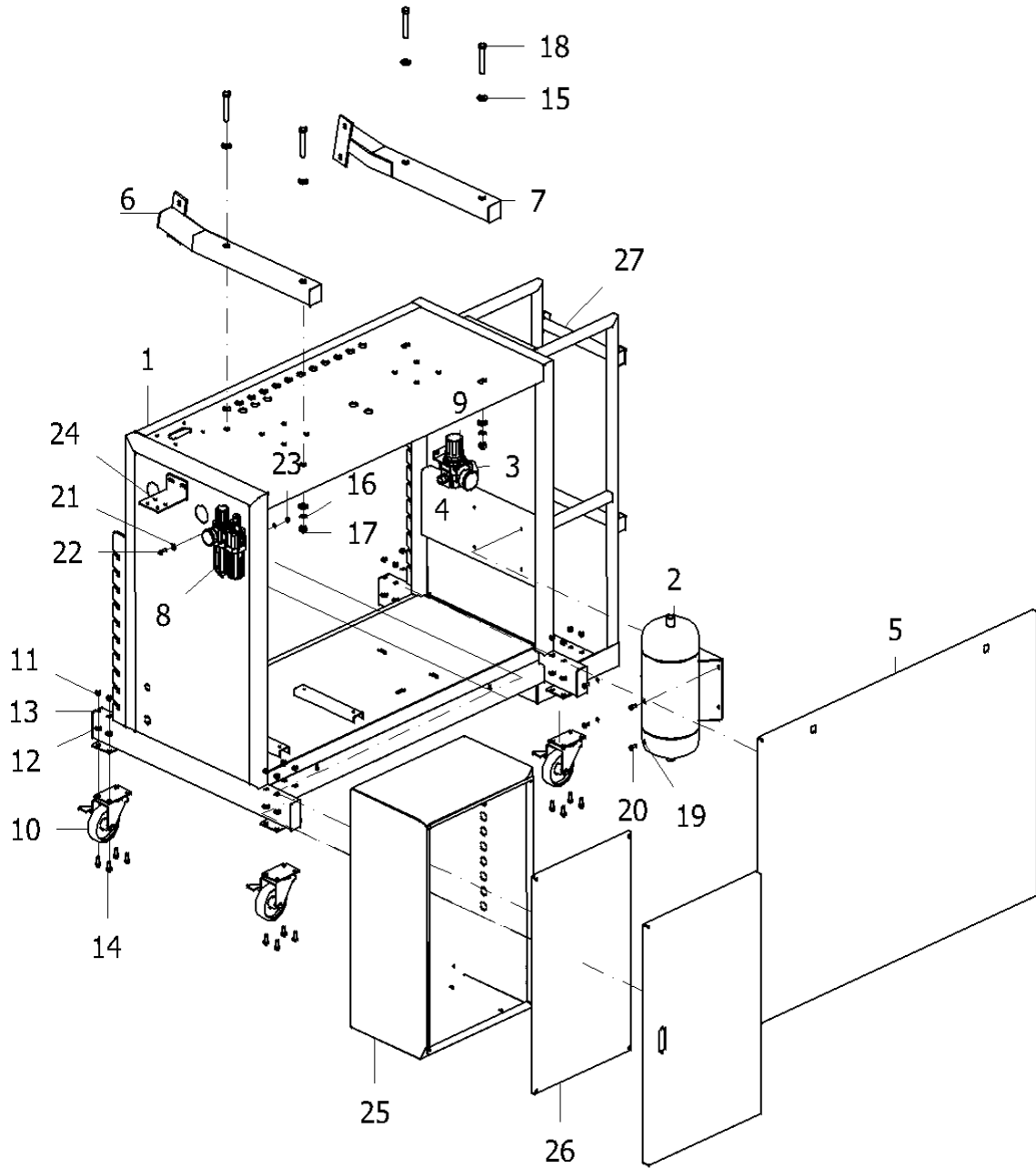


7.4 ELECTRICAL DIAGRAM

Electrical diagram
PNC-01 standard

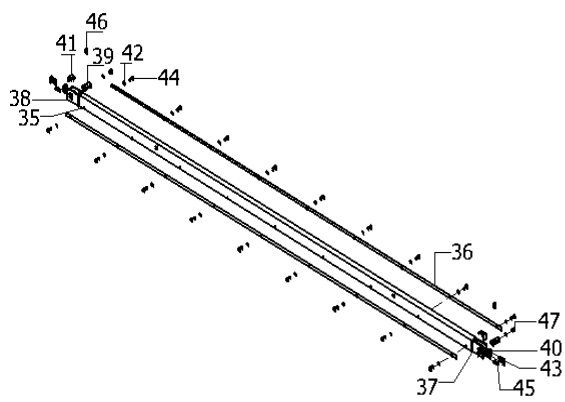
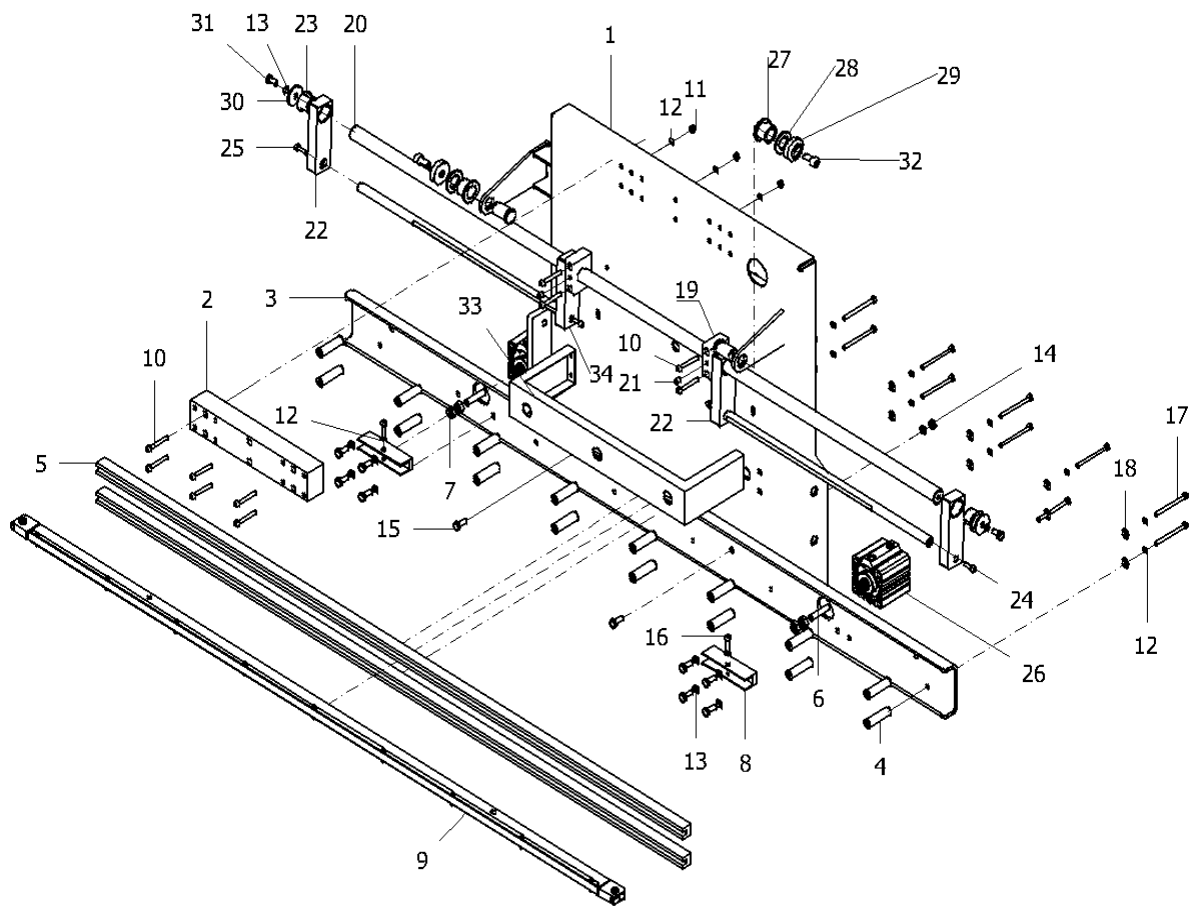


8.1 Body Diagram



NO.	PART NO.	DESCRIPTION	QTY	NOTES
1	NV15101000	FRAME	1	
2	NV15102000	GAS TANK	1	
3	27400066S	ELBOW, PT1/2", FEMALE THREAD, SUS304	1	
4	29093278	NIPPLE, 1/2"x30mm, SUS304	3	
5	NV15103000	REAR COVER	1	
6	NV15104000	ARM, HOLDER, LEFT, TOP FRAME	1	
7	NV15105000	ARM, HOLDER, RIGHT, TOP FRAME	1	
8	2910107	REGULATOR, AIR, mindman MACP 300-10A	1	
9	2910500	REGULATOR, AIR, MAR402-15A	1	
10	27121411	CASTOR, STAINLESS STEEL, 4"	4	
11	2707203	NUT, M8	16	
12	2705152	WASHER, FLAT, M8 ST	16	
13	2705301	WASHER, SPRING, M8	16	
14	2700408	Screw, Hex HD M8x20L (S)	16	
15	2705096	WASHER, M12	8	
16	2714813	SPRING WASHER, M12	4	
17	2707209	NUT, M12	4	
18	27000614	Screw, Hex HD M12x80L	4	
19	270461511	SPRING WASHER, M6	6	
20	2700415	SCREW, HEX HD M8x16	4	
21	27046151	FLAT WASHER, M6	2	
22	2701153	HEX SOCKET HEAD CAP SCREW, M6X20	2	
23	2707204	NUT, HEX HD M6	2	
24	NZ10113000	PLATE, MOUNTING, FILTER BOTTLE	1	
25	NV15106000	ELECTRICAL BOX	1	
26	NV15107000	CIRCUIT BOARD	1	
27	NV15108000	FRAME, HOLDER, F/AIR TANK	2	

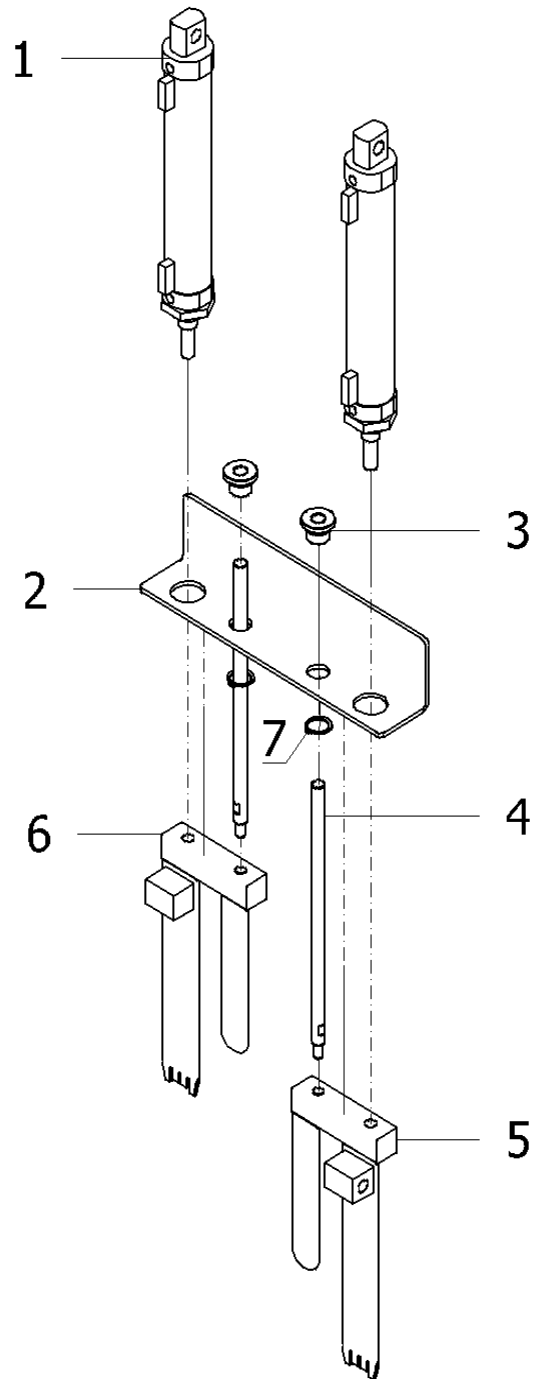
8.2 Frame, Top



NO.	PART NO.	DESCRIPTION	QTY	NOTES
1	NV15201000	FRAME, TOP	1	
2	NV15202000	BLOCK, NOZZLE CYLINDER	1	
3	NV15203000	HOLDER, SEAL BAR ASSEMBLY, BOTTOM	1	
4	NV15204000	SPACER, ψ 16x54	16	
5	NV15205000	BAR, BAG HOLDER	2	
6	NV15206000	ROD, THREADED, M10x1.5x46	2	
7	2707017	NUT, HEX, M10	4	
8	NV15207000	HOLDER, SEAL BAR	2	
9	NV15208000	SEAL BAR ASSEMBLY	1	
10	2701162	HEX SOCKET CAP SCREW M6x45	10	
11	2707204	NUT, HEX HEAD, M6	10	
12	270461511	SPRING WASHER, M6	28	
13	2705301	SPRING WASHER, M8	12	
14	2707203	NUT, M8	2	
15	2700408	SCREW, HEX HEAD, M8x20	10	
16	2701154	HEXAGON SOCKET CAP SCREW, M6X25	2	
17	27004101	SCREW, HEX HEAD M6x70	16	
18	27046151	FLAT WASHER, M6	16	
19	NV15209000	HOLDER, MAIN SHAFT	2	
20	NV15210000	MAIN SHAFT, FRAME, TOP	1	
21	2704618	SET SCREW, M8X10	2	
22	NV15211000	PLATE, MOUNTING, SHAFT AND ROD, LEFT/RIGHT	2	
23	272832522	BEARING, OILLESS BM2520FB	4	
24	NV15212000	ROD	2	
25	2701153	HEX SOCKET HEAD CAP SCREW, M6X20	4	
26	2927641	AIR CYLINDER, MCJA-12-63-30M-RCB-2	2	
27	NV15213000	BUSHING	2	
28	NV15214000	BUSHING	2	
29	NV15215000	SPACER	2	
30	NV15809000	SPACER	2	
31	2700415	SCREW, HEX HEAD M8x16	2	
32	2701159	SCREW, SOCKET HEAD M10x20	2	
33	NV15216000	BLOCK, SWITCH	1	
34	NV15217000	PLATE, MOUNTING, SHAFT AND ROD, MIDDLE	2	

35	NV15208010	MAIN SEAL BAR, ALUMINUM	1	
36	NV15208020	CLAMP, TEFLON, SEAL BAR	2	
37	D80K314000	INSULATOR, END BLOCK	2	
38	D80K315001	BLOCK, END, SEAL BAR	2	
39	D80K316000	HEATING BAND HOLDER, ψ 1/2"x20 (NOT H TYPE)	2	
40	D80K317000	BUSHING	4	
41	D80K375000	PLATE, L SHAPE, SPRING, F/SEAL BAR	2	
42	2705306	WASHER, SPRING, M4	20	
43	2703320	SCREW, ROUND HEAD, PHILLIPS, ST, M4X16	4	
44	2703307	SCREW, ROUND HEAD M4x10	18	
45	VA04277000	SPRING	2	
46	2704603	SCREW, SET, M6x10	2	
47	2703304	SCREW, ROUND HEAD M4x6	2	

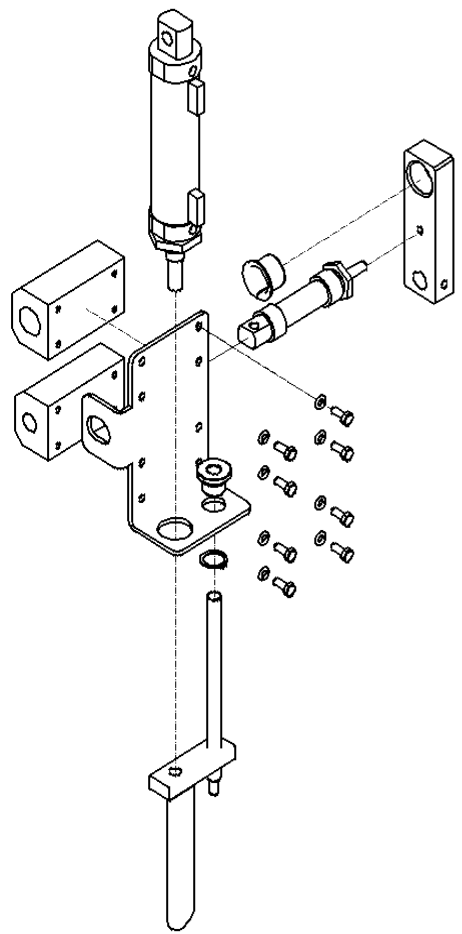
8.3 Nozzle



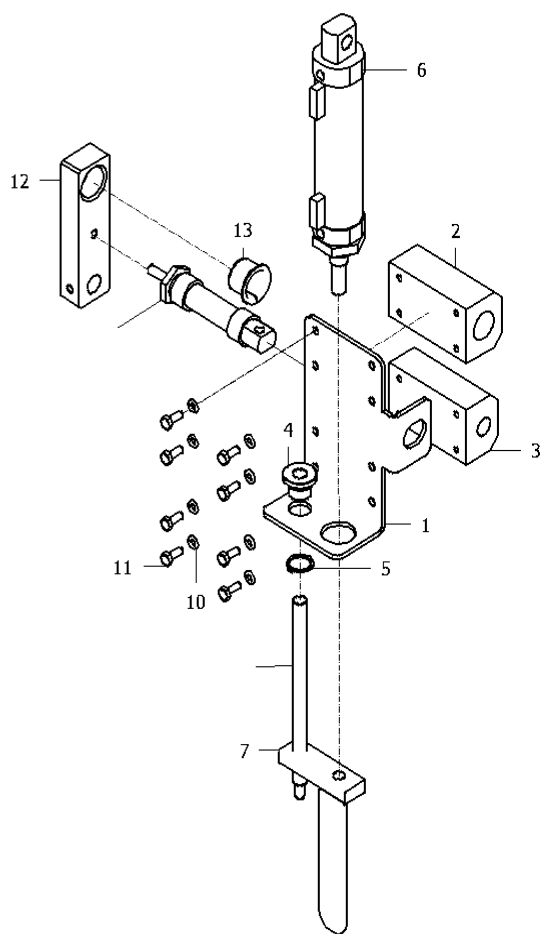
NO.	PART NO.	DESCRIPTION	QTY	NOTES
1	29276395	CYLINDER, AIR, MCMA-11-40-175-A-RCM1	2	
2	NV15301000	PLATE, MOUNTING, AIR CYLINDER	1	
3	NV15302000	BUSHING	2	
4	NV15303000	ROD, NOZZLE	2	
5	NV15305000	NOZZLE, RIGHT	1	
6	NV15304000	NOZZLE, LEFT	1	
7	27060151	SNAP RING S20	2	

8.4 Bag Holder

Bag Holder, Left

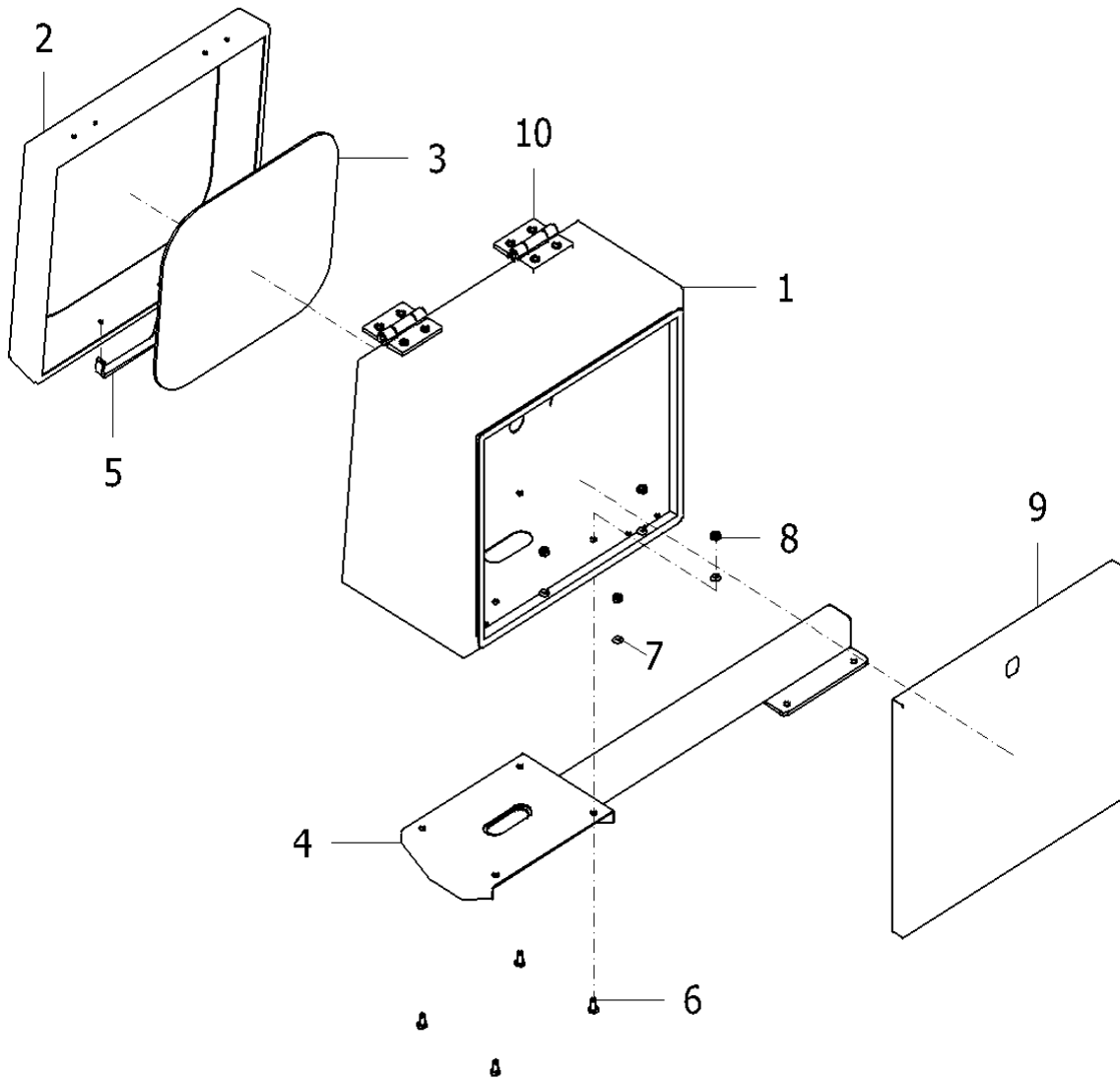


Bag Holder, Right



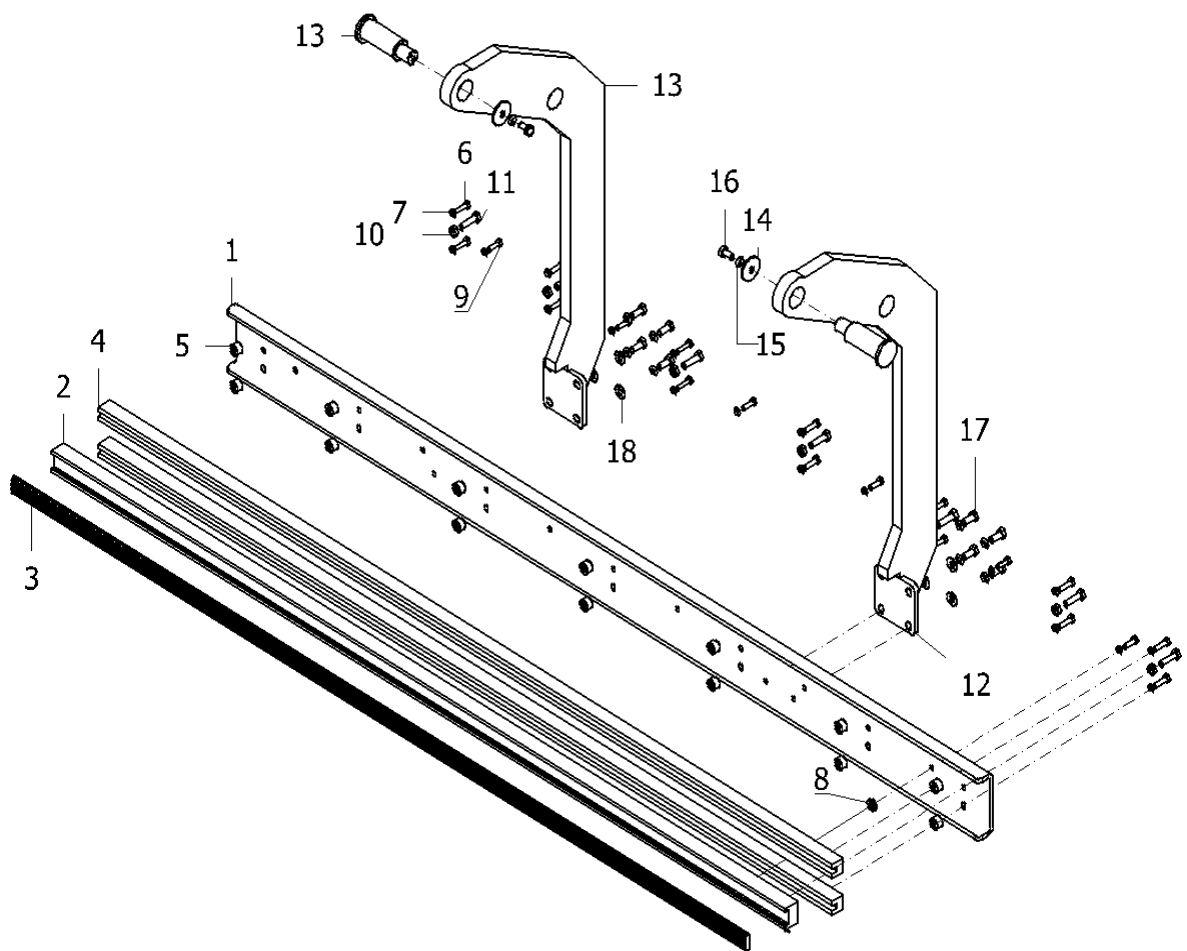
NO.	PART NO.	DESCRIPTION	QTY	NOTES
1	NV15403000	PLATE, MOUNTING, CYLINDER, BAG HOLDER	1	
2	NV15401000	BLOCK, RAIL, BAG HOLDER, TOP	1	
3	NV15402000	BLOCK, RAIL, BAG HOLDER, BOTTOM	1	
4	NV15302000	BUSHING	1	
5	27060151	SNAP RING S20	1	
6	29276396	CYLINDER, AIR, MCMA-11-40-100-A-RCM1	1	
7	NV15404000	BAG HOLDER, RIGHT	1	
8	NV15405000	ROD, BAG HOLDER	1	
9	29276397	CYLINDER, AIR, MCMA-11-20-15-A	1	
10	270461511	SPRING WASHER, M6	8	
11	2700415	SCREW, HEX HEAD M8x16	8	
12	NV15406000	BLOCK, CYLINDER	1	
13	272832522	BEARING, OILLESS BM2520F36	1	

8.5 Control Box



NO.	PART NO.	DESCRIPTION	QTY	NOTES
1	NV15701000	CONTROL BOX	1	
2	NV15702000	COVER, FRONT, CONTROL BOX	1	
3	NV15703000	WINDOW, PLASTIC, FRONT COVER	1	
4	NV15705000	HOLDER, CONTROL BOX	1	
5	2883343	HANDLE	1	
6	2700401	SCREW, HEX HEAD M6x12	4	
7	270461511	SPRING WASHER, M6	4	
8	2707204	NUT, HEX HEAD, M6	4	
9	NV15704000	COVER, REAR, CONTROL BOX	1	
10	28831391	HINGE, STAINLESS STEEL, CL-200-3	2	

8.6 Seal Bar Assembly



NO.	PART NO.	DESCRIPTION	QTY	NOTES
1	NV15801000	HOLDER, CUSHION BAR ASSEMBLY, TOP	1	
2	NV15802000	CUSHION BAR	1	
3	NV15803000	SILICONE, CUSHION BAR	1	
4	NV15804000	BAR, BAG HOLDER	2	
5	NV15805000	SPACER	14	
6	2700439	SCREW, HEX HEAD M6x25	14	
7	270461511	SPRING WASHER, M6	20	
8	NV15806000	SPACER	1	
9	27004011	SCREW, HEX HEAD M6x20	6	
10	2707203	NUT, M8	7	
11	2700427	SCREW, HEX HEAD M8x30	7	
12	NV15808000	ARM, LEFT, CUSHION BAR	1	
13	NV15807000	ARM, RIGHT, CUSHION BAR	1	
14	NV15809000	SPACER	2	
15	2705301	WASHER, SPRING, M8	10	
16	2700415	SCREW, HEX HEAD M8x16	2	
17	2700408	SCREW, HEX HEAD M8x20	8	
18	2705152	WASHER, FLAT, M8	8	

8. FABRICATION

