

Manual No. YKR-F102-0408

Furnace Monitoring System



INSTALLATION & OPERATIONS MANUAL



Youngkook Electronics & Engineering

1. Specification	3
2. Components List & Description	4
3. Installation Manual	
① On the wall	5
② Observation hole	6
③ Assembly of Camera Part	7
④ Assembly of Local Panel	8
⑤ Air Connection	9
4. Operating instructions	
① Camera Flipped	10
② Camera Focus	11
③ Local panel	12
5. Maintenance instruction	13
6. Assembly drawing	18
7. Part List	
① Vision Tube	20
② Frame	21
③ Local panel	22
8. Spare Part List	23
9. Warranty	24

1. Specification

1. VISION TUBE	
Image Sensor	½" Interline Transfer CCD
Effective Pixel	752(H) x 582(V) pixels
Horizontal Resolution	520TV Lines (PAL)
Video Out	Composite Video, 1 Vp-p, 75 (Coaxial Cable)
Power Source	DC 12V ±10%
Power Consumption	Max 200mA
Field of View	80° H x 60° V x 100° D
Length	VT - 1250mm / Focus length - 4.6mm
2. WALL SLEEVE	
Length	550mm
Material	Special heat-resistant alloy
Diameter	Outer diameter : 76mm
	Inner diameter : 57mm
Air Inlet	NPT ½" / 0.3 Mpa

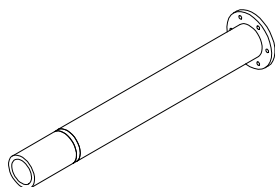
3. AUTO RETRACT	
Operating Distance	Max. 1,000mm
Operating Method	Cylinder
Piston Speed	50 ~ 500mm/s
Locking Device	Cylinder air
Automatic Retraction	When the air or power supply is blocked, or the air supplied is below its standard value, low pressure
4. CONTROL LOCAL PANEL	
Size (mm)	650(w) x 1265(h) x 400(d), SUS 304
Main Power Source	AC 230V
Camera Power Source	DC 12V
Solenoid Power for Retract	DC 24V
Air Tank	360(w) x 257(h) x 160(d)
Pressure Switch Range	0.1 ~ 0.7MPa
Air Sylinder	Max. 0.5MPa
Service Air	0.3 ~ 0.7 MPa
Power Cable	Silicone Multi Cable
Alarm	PLC -> DCS

2. Components List & Description

Camera components

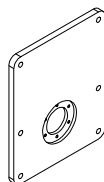
Wall sleeve

- It protects the tube from the flame.



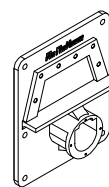
Wall bracket

- Bracket with wall sleeve attached beside wall



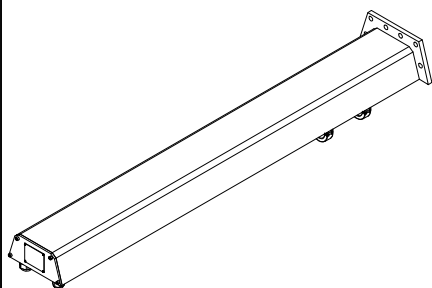
Frame bracket

- Bracket with frame attached wall bracket



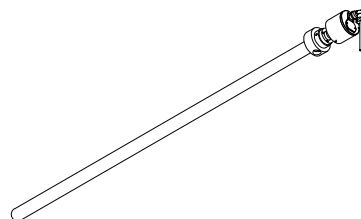
Main frame

- Frame for Vision tube



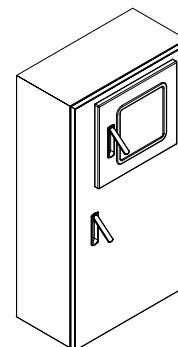
Vision Tube

- Camera with Relay lens



Local Panel

Air Purge system & Retract System



Washers and Bolts

Plane washer Spring washer Bolt



STS - M6 X 16
EACH 6EA

Plane washer Spring washer Bolt



STS - M10 X 35
EACH 6EA

Plane washer Spring washer Bolt

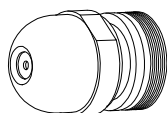


STS - M12 X 35
EACH 6EA

S
p
a
r
e
p
a
r
t
s

Front lens

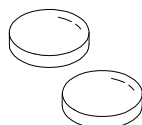
- Front lens is endured high temperature



1EA

ND filter

- ND filter is used for control image brightness



2EA

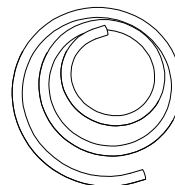
A
c
c
e
s
s
o
r
i
e
s

Terminals



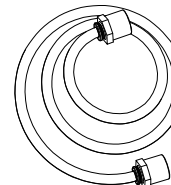
20EA

Power Cable



10M

Air hose



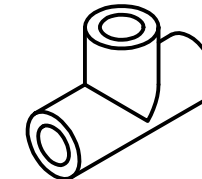
1/2' X 3M
4EA

Manual



1EA

Ttypes



1/2'
1EA

Hose connector

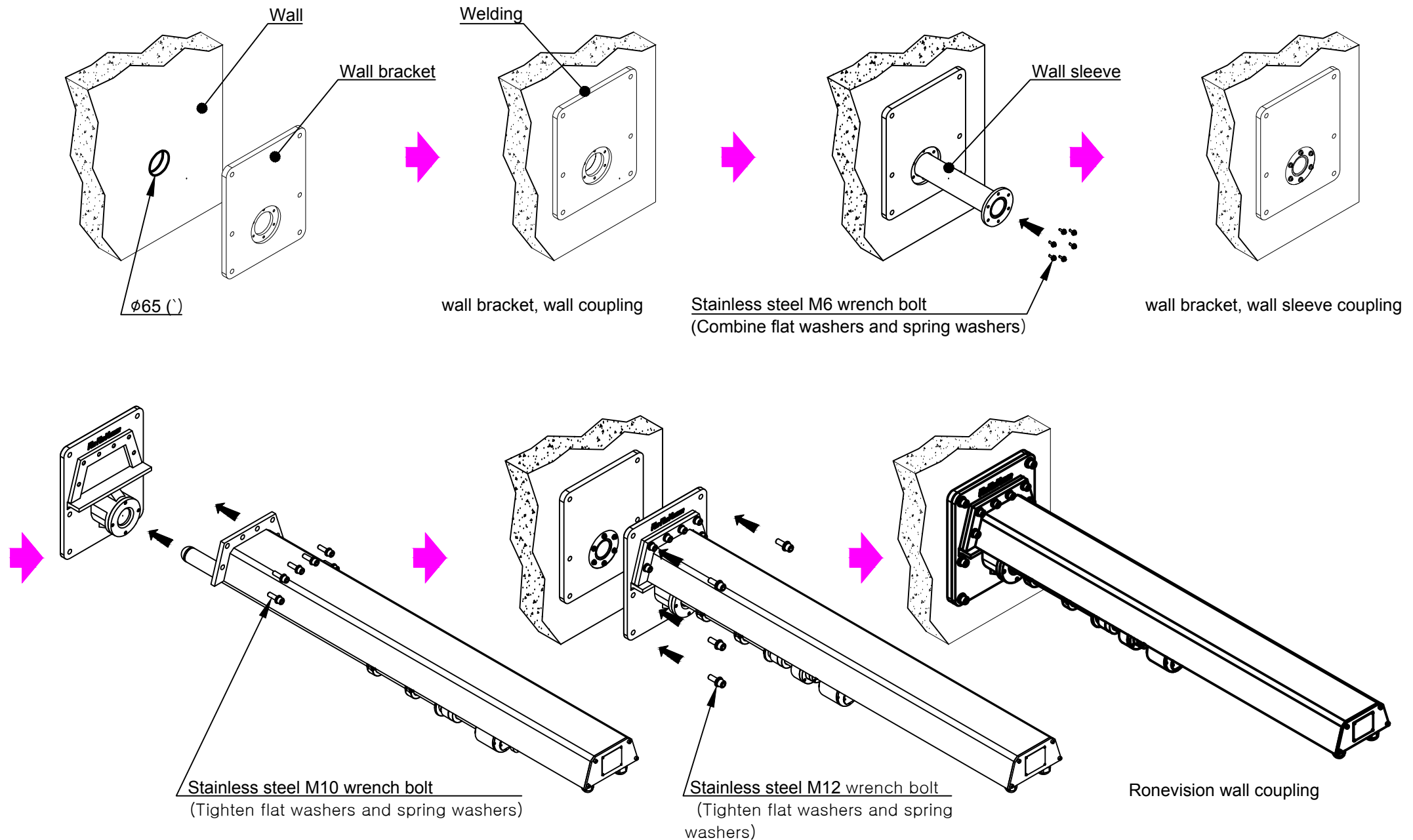


1/2'
5EA

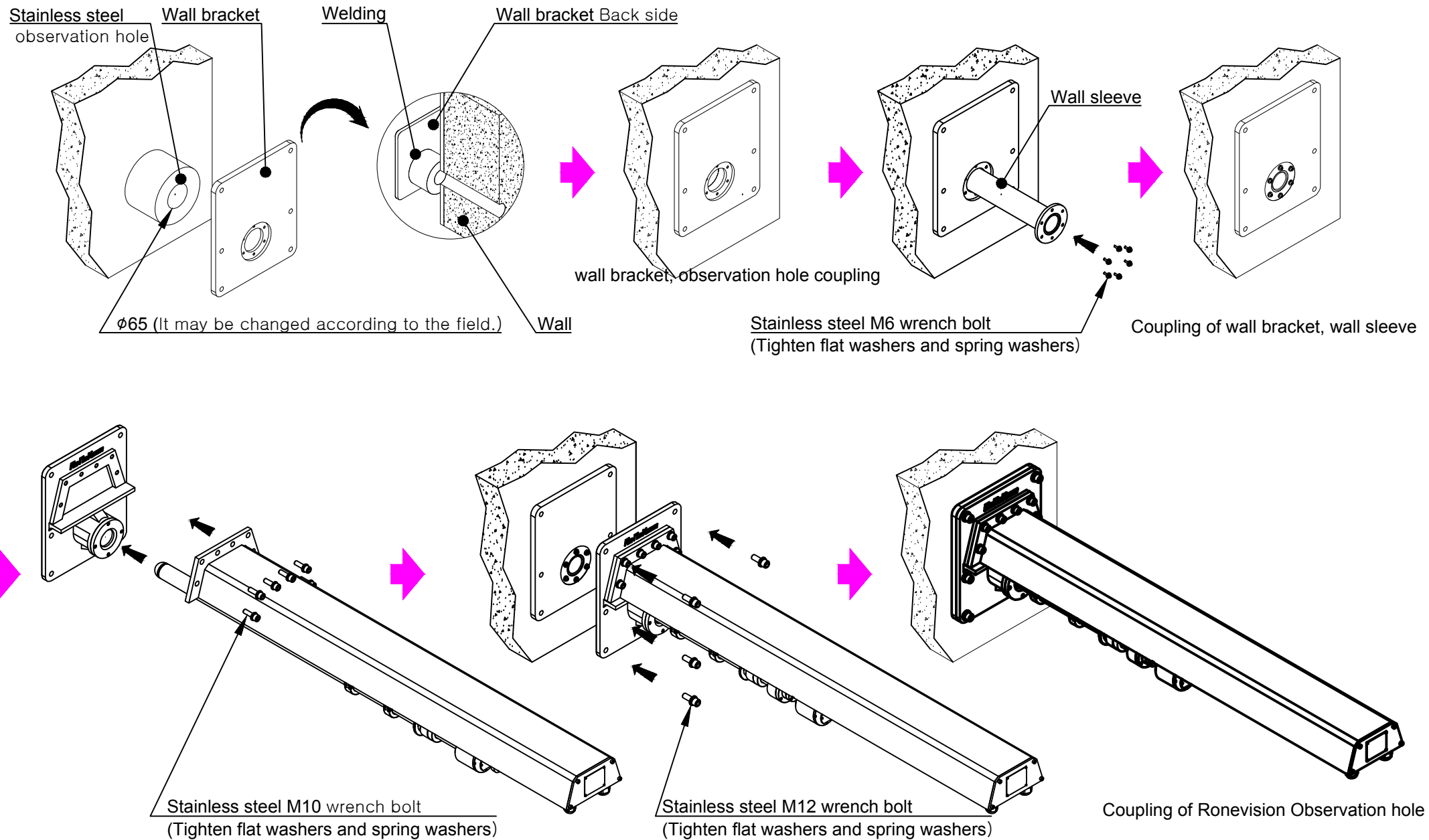
3. Installation - ① on the wall

Ro Ne Vision®

PRODUCT BY YOUNG KOOK ELECTRONIC



3. Installation - ② observation hole



3. Installation - ③ Assembly of Camera Part

RoNe Vision®

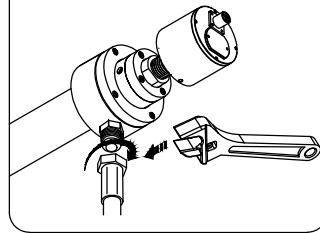
PRODUCT BY YOUNG KOOK ELECTRONIC

Assembling

1 → 2 → 3 •• 6

Please assemble parts by order.

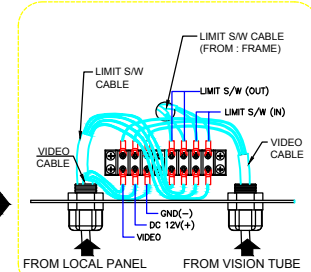
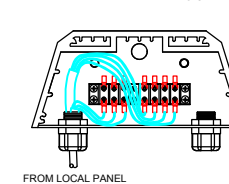
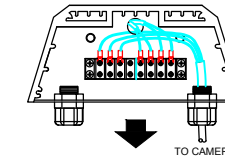
Connect the air hose.



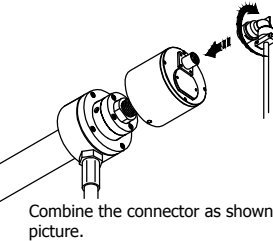
Connect all wires to terminal box.

CAUTION

Please be careful when wiring line with terminal box. May risk of electric shock will occur.



Connect the connector.



Combine the connector as shown as picture.

Fix the vision tube in the holder.

1. Loosen the fix bolts on vision tube holder as shown in picture 1, and open the camera fix guide as shown in picture 2.

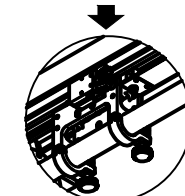
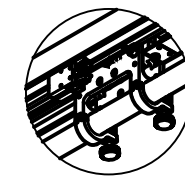
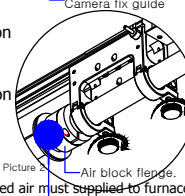
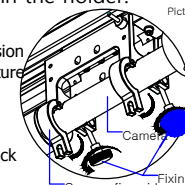
2. Loosen fix bolts on air block flange.

3. Pull retract spring on vision tube holder to solenoid lock.

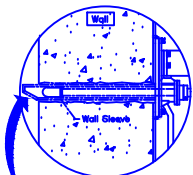
4. Pull retract spring on vision tube holder to solenoid lock.

CAUTION

When inserting vision tube, cooled air must be supplied to furnace.

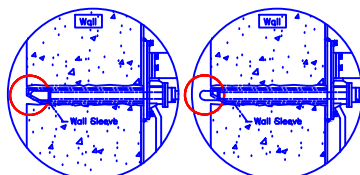


Assemble the wall bracket and frame bracket



Caution

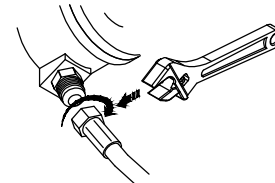
Install so that the wall sleeve doesn't protrude into the furnace wall. The vision tube should not protrude outside the wall sleeve as well



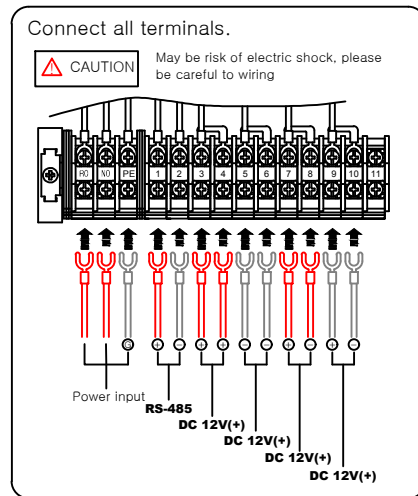
A bad example of installation

USER SCOPE

Connect the air hose.

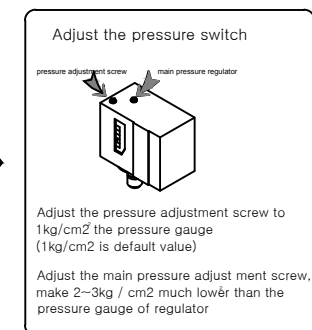
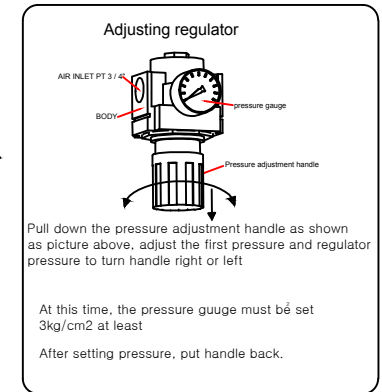
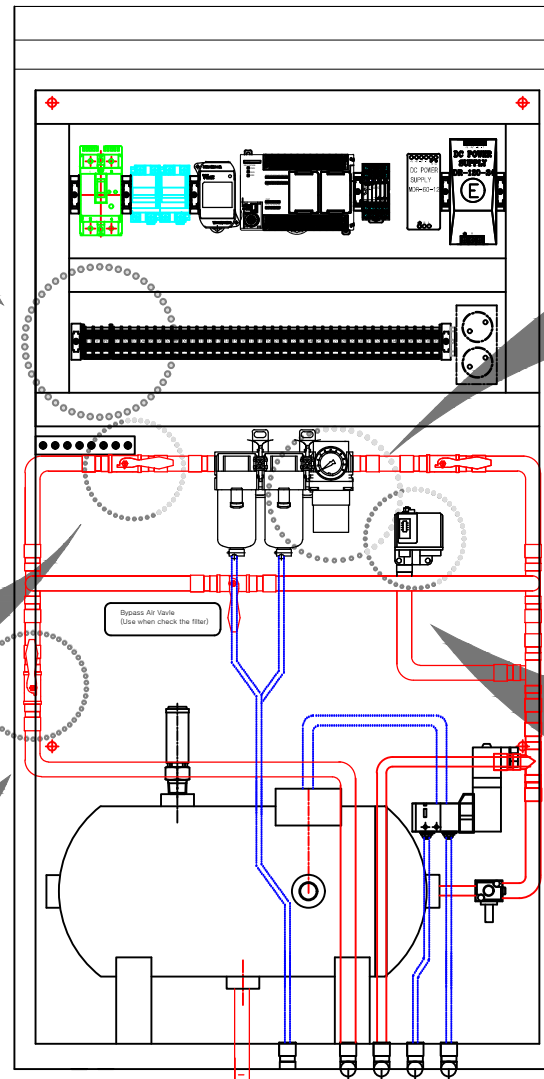


3. Installation - ④ Asseby of Local Panel



FILTER AIR VALVE
Through filter air valve supply air (usually bypass air valve must closed), when check valve and replace the filter, supply the air using bypass air valve, and closed filter air valve

ADVANCED MAIN AIR VALVE
Turn valve to supply air as shown as direction of picture

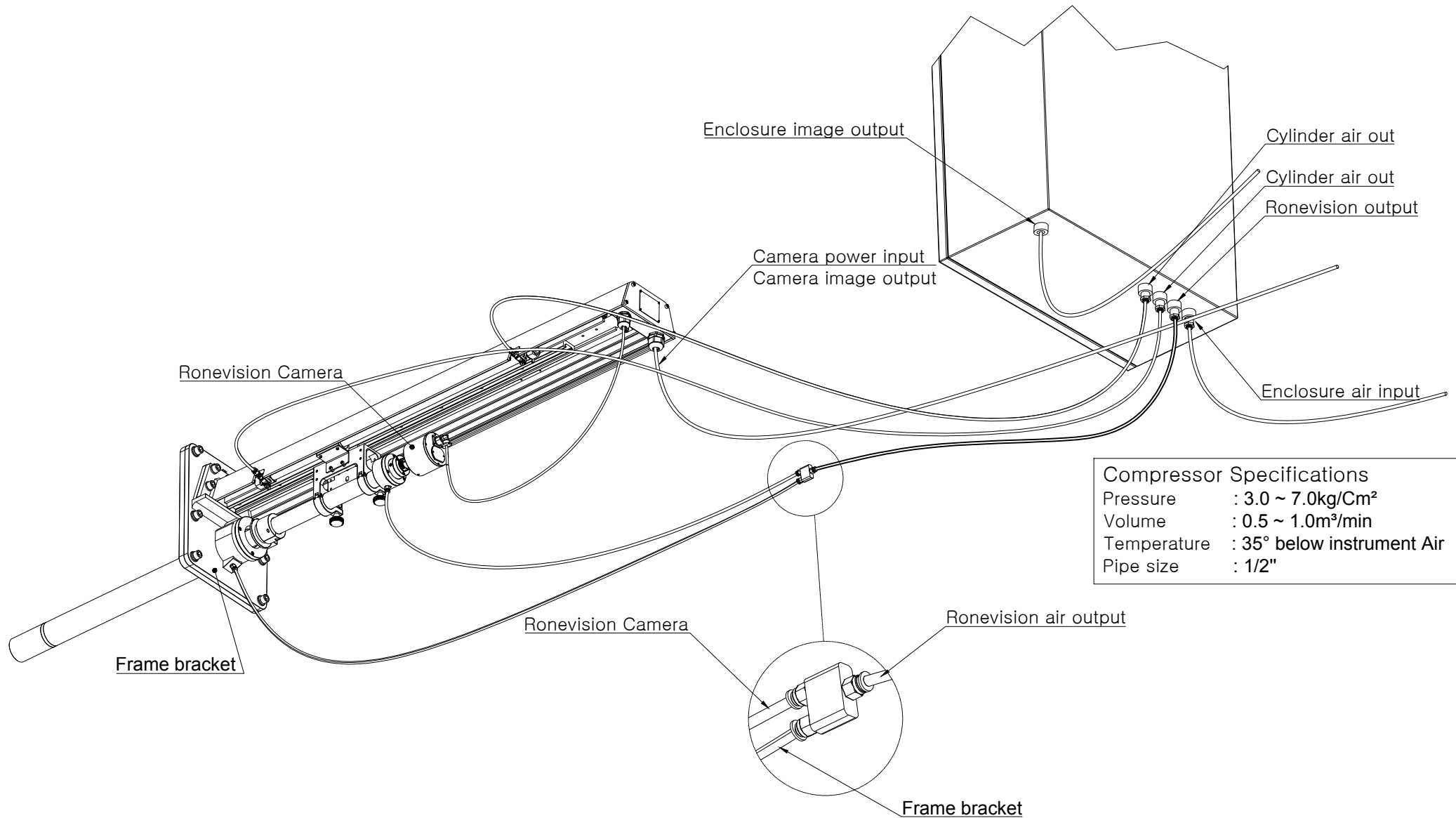


PT 1/2"
Connect the main Air
3Bar ↑

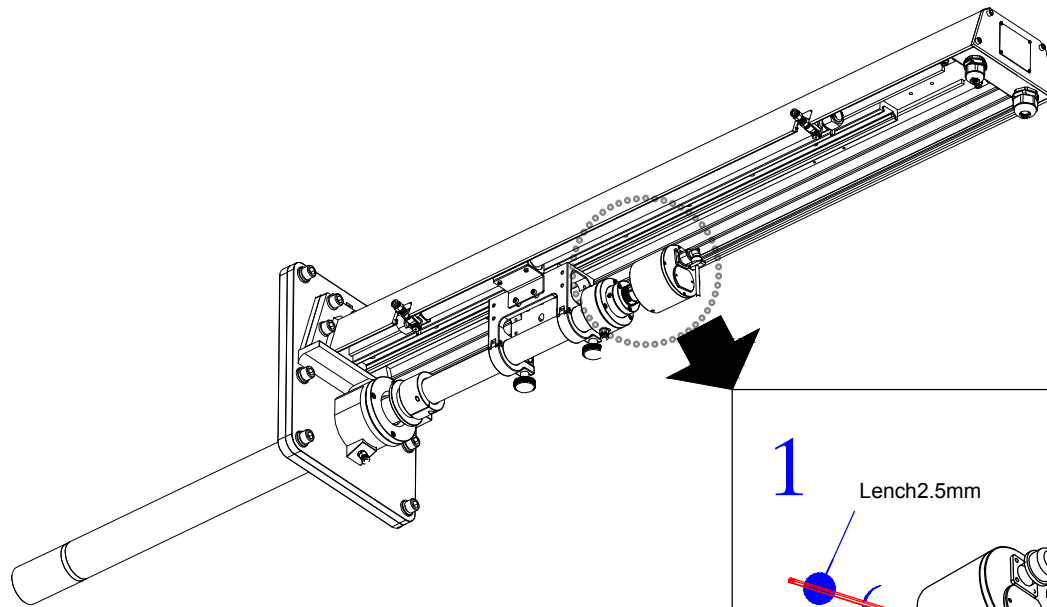
PT 1/2"
Camera Cooling Air

Sylinder control Air
(Camera In / Out)
Ø6 mm Hose

3. Installation - ⑤ Air connection



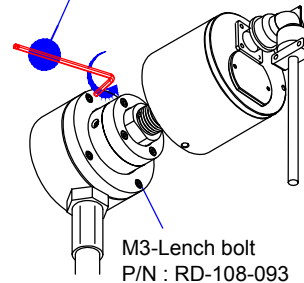
4. Operating instructions - ① Camera Flipped



If the image on the monitor reversed or tilted, the image can be corrected through adjusting end part of the vision tube.

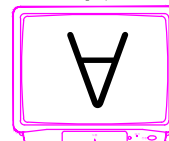
1

Lench2.5mm



M3-Lench bolt
P/N : RD-108-093

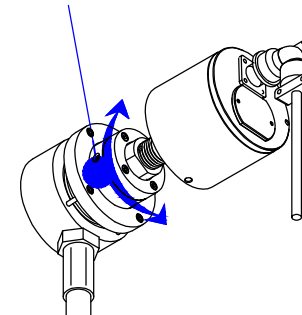
Loosen the bolts slightly with a wrench as shown as picture.
(Loosen the bolt with care to avoid falling.)



Flipped Image

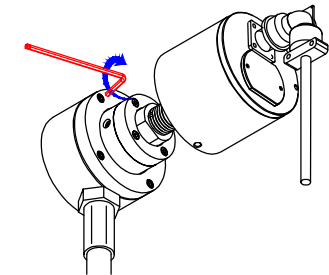
2

END MOUNTING CAP
P/N : RD-108-087

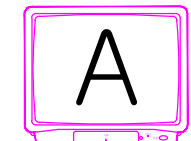


Rotated END MOUNTING CAP
left or right, corrects the image.

3



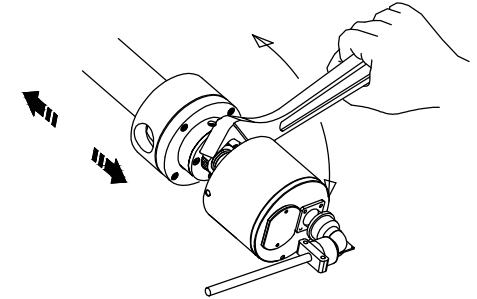
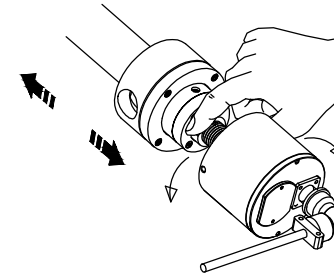
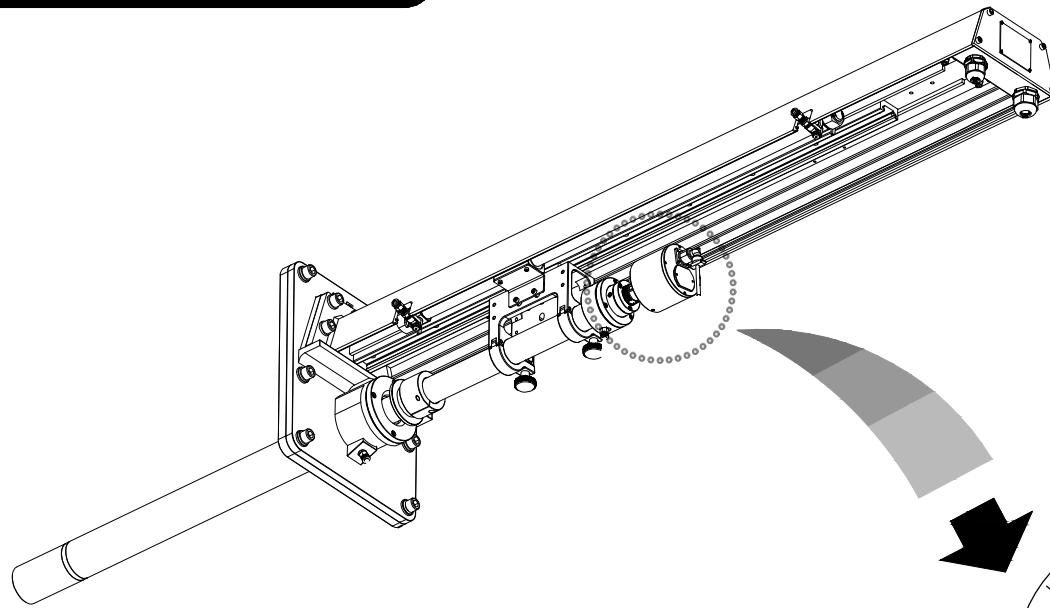
After adjustment of image,
tighten the bolts as shown in picture.



Right Image

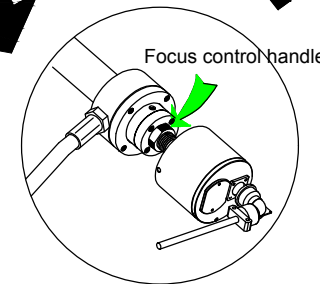
4. Operating instructions - ② Camera Focus

If the image is not clear, you can correct the focus as adjust the part of shown picture below.

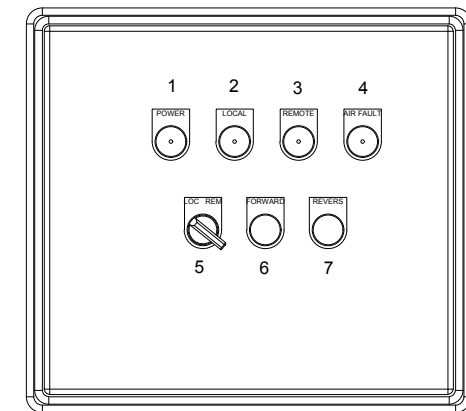
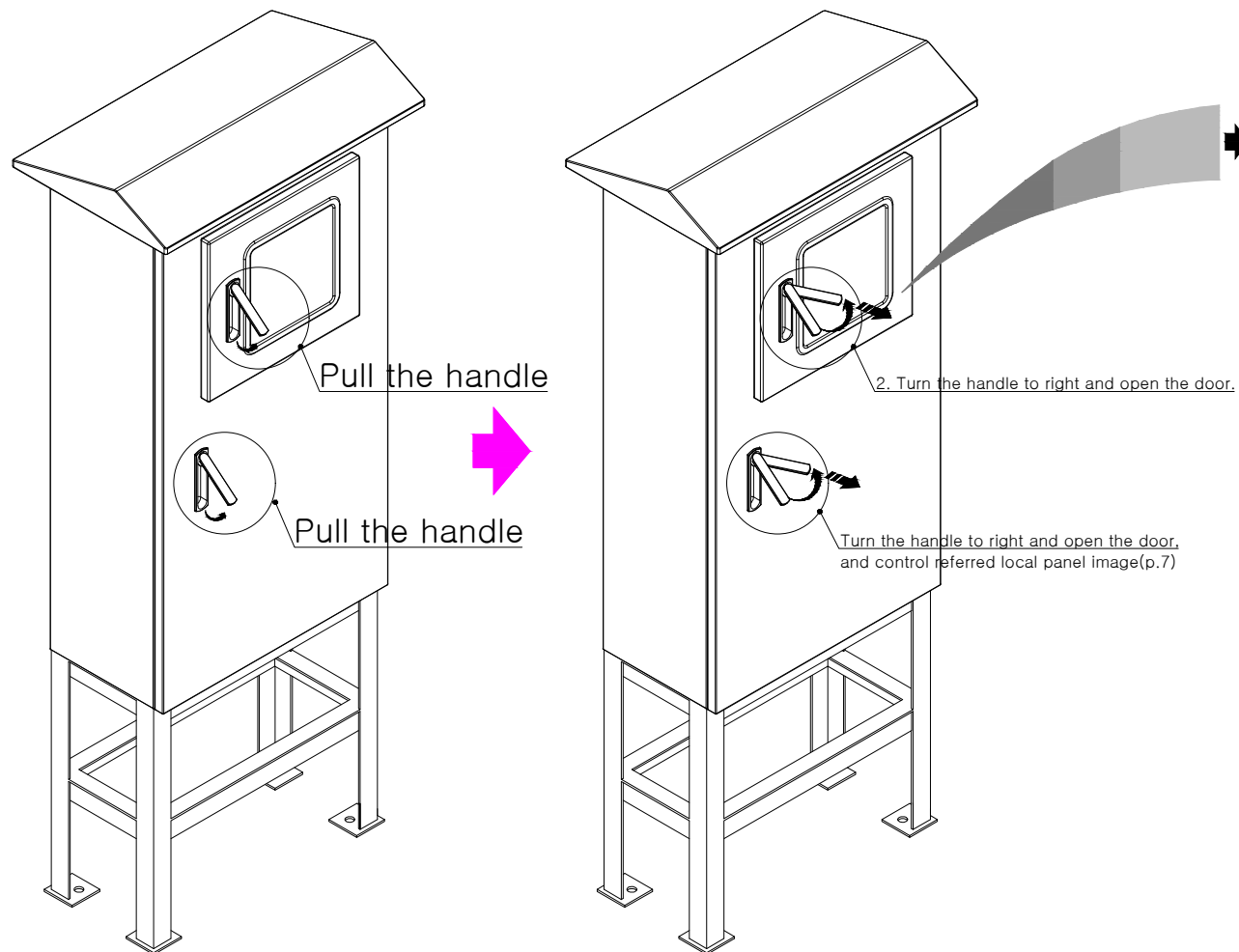


You can adjust focus of image while watching monitor. Turn focus adjustment handle with hand or wrench as shown as picture.

If turn camera focus adjustment handle clockwise, the camera focal length will far away, and if turn it counterclockwise, the focal length will closer.



4. Operating instructions - ③ Local panel

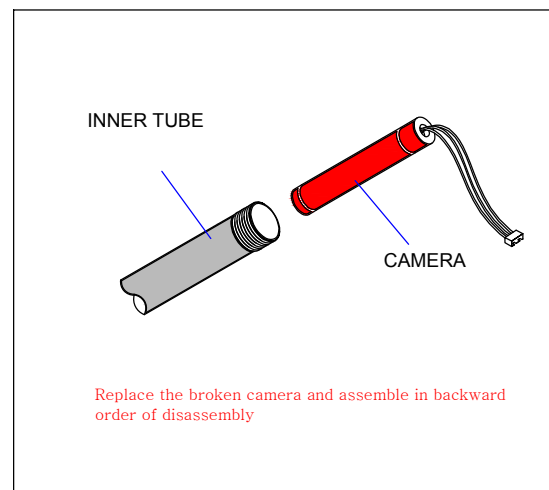
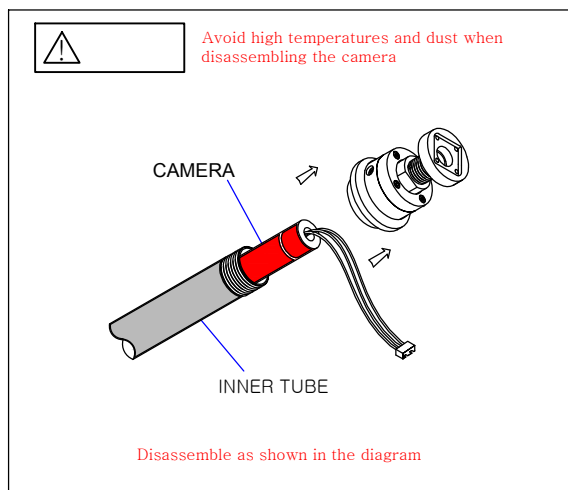
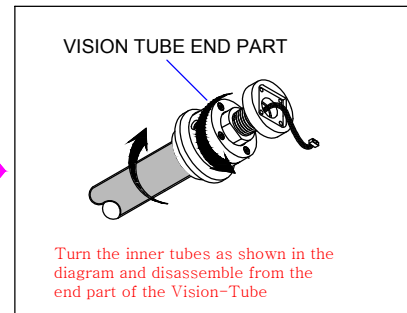
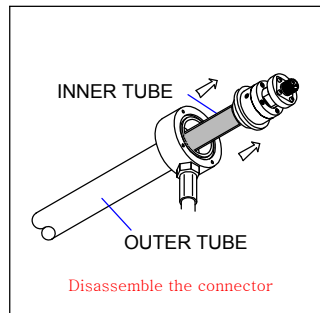
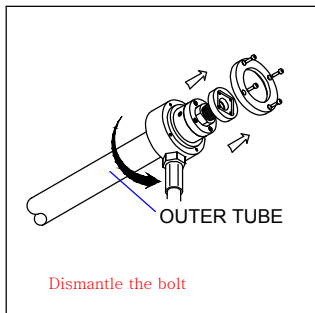
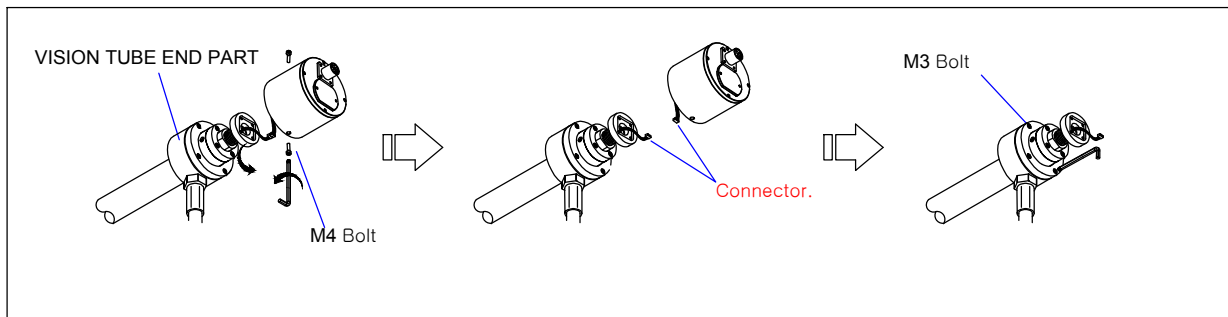
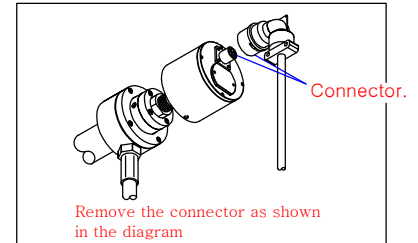
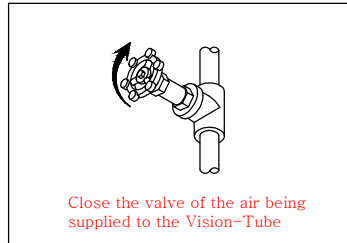
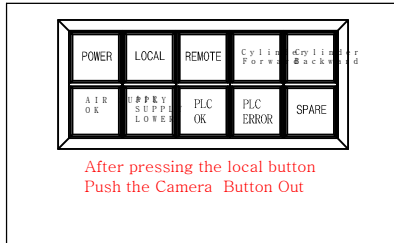


<Figure – Local Panel>

- 1. POWER : LED ON when Power supplied
- 2. LOCAL : LED ON when Panel Control Mode
- 3. REMOTE : LED ON When Panel hold mode
- 4. AIR FAULT : LED flickering when it has air problem.
- 5. REM:Panel hold mode / LOC:Panel Control Mode
- 6. Camera IN
- 7. Camera OUT

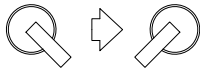
5. Maintenance instruction

When the camera is broken (How to replace the camera)

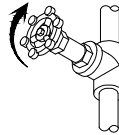


5. Maintenance instruction

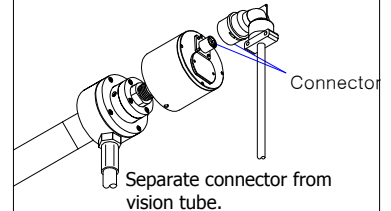
Replace the Front lens



Retract vision tube to turn select s/w to 'inspection'.

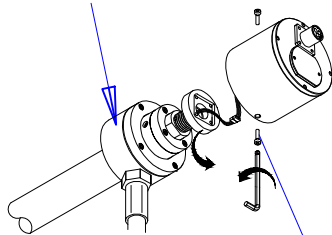


Close air valve of vision tube.



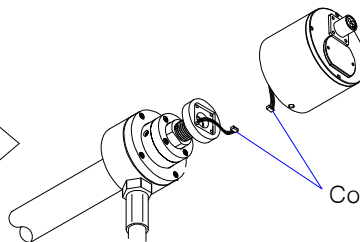
Separate connector from vision tube.

VISION TUBE END PART



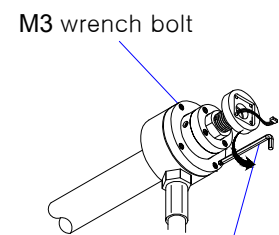
M4 wrench bolt

Disassemble bolts as shown as picture.



Connector

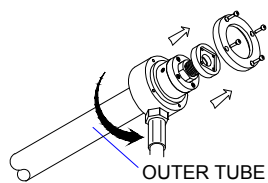
Separate the connector.



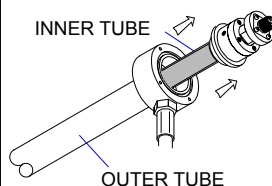
M3 wrench bolt

Wrench 2.5mm

Disassemble bolts as shown as picture.



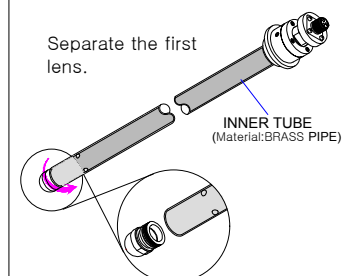
Disassemble bolts as shown as picture.



INNER TUBE

OUTER TUBE

Separate INNER TUBE from OUTER TUBE.



Separate the first lens.

INNER TUBE
(Material: BRASS PIPE)

CAUTION

Please keep clean environment and away from heat or dust during separate the front end lens.

5. Maintenance instruction

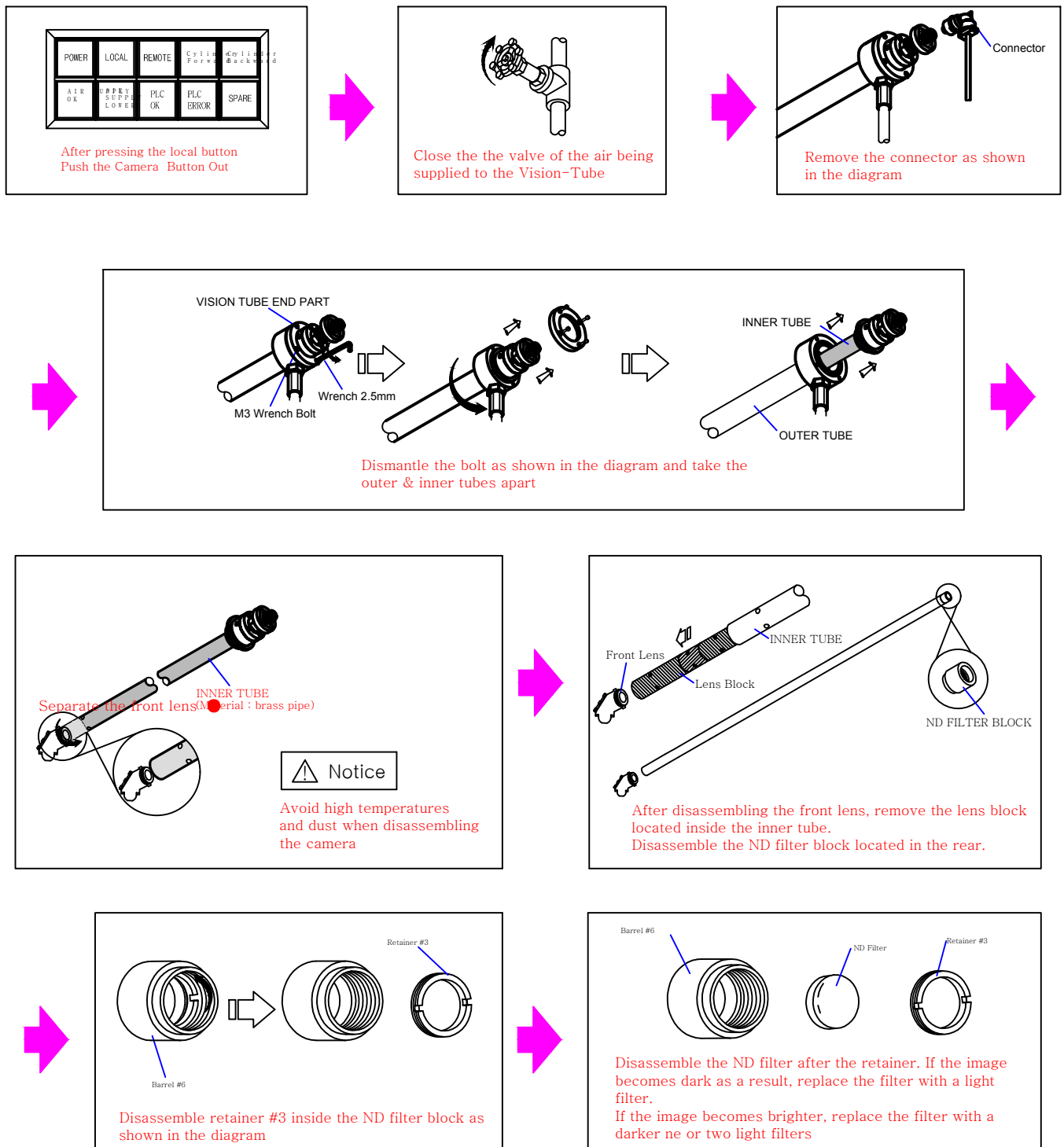
When the image is too dark or bright

Change the ND filter located inside the Vision-Tube.
Refer to the following instruction to change the ND filter

ND Filter

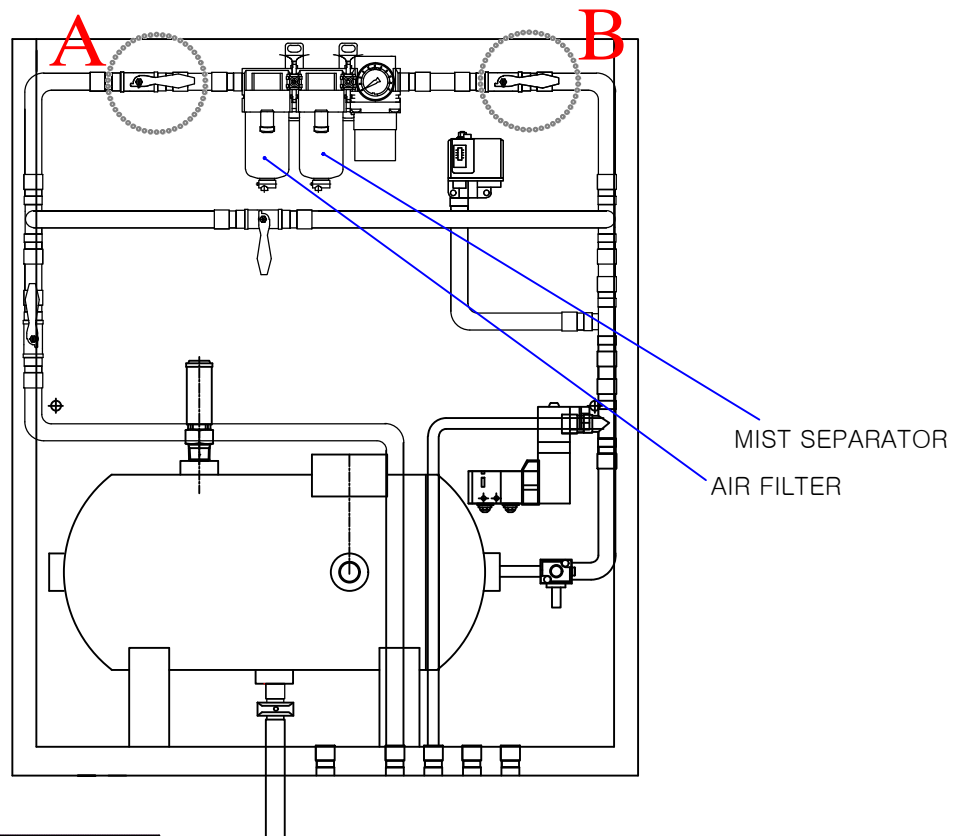
The ND filter is a optical filter that reduces brightness when inserting the vision-tube, the image is too bright or dark, the ND filter, which acts as an iris, must be replaced or added to achieve the wanted brightness.

Follow the order shown in the diagram below to change the ND filter

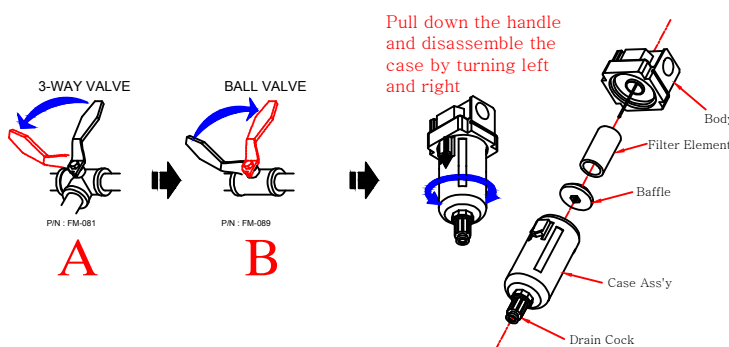


When replacing or cleaning the air filter

The air filter purifies the cooling air supplied into the vision-tube and wall sleeve. If this air filter becomes old or breaks down, moisture or oil will enter the air being supplied to the vision-tube. As a result, the front lens of the vision-tube will get contaminated and image will appear dim. Thus, it is important to regularly check or clean the filter so that clean air can be supplied at all times.



How to Disassemble



Close the valves of area A and B as shown in the diagram.

Disassemble the filter and clean or replace the filter element.

If the valve is closed during the process, the cooling air will be supplied without passing through the air filter. So unless in emergency cases, retract the vision-tube and stop supply of air before continuing with disassembly.

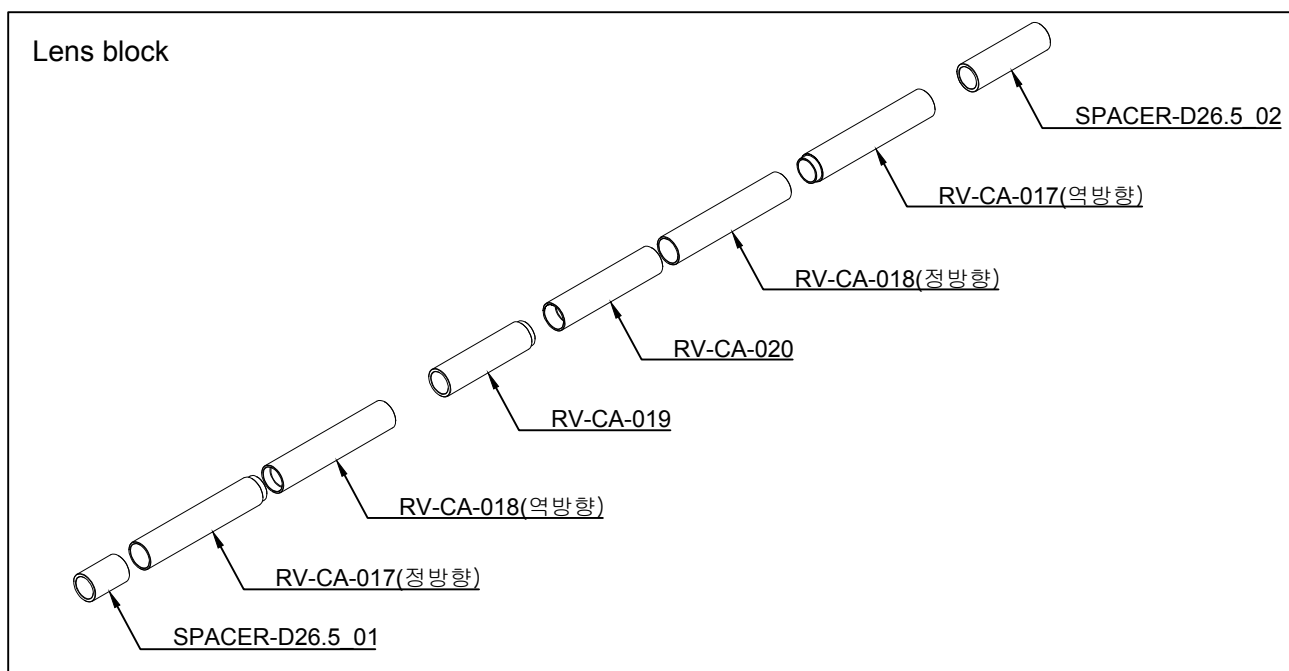
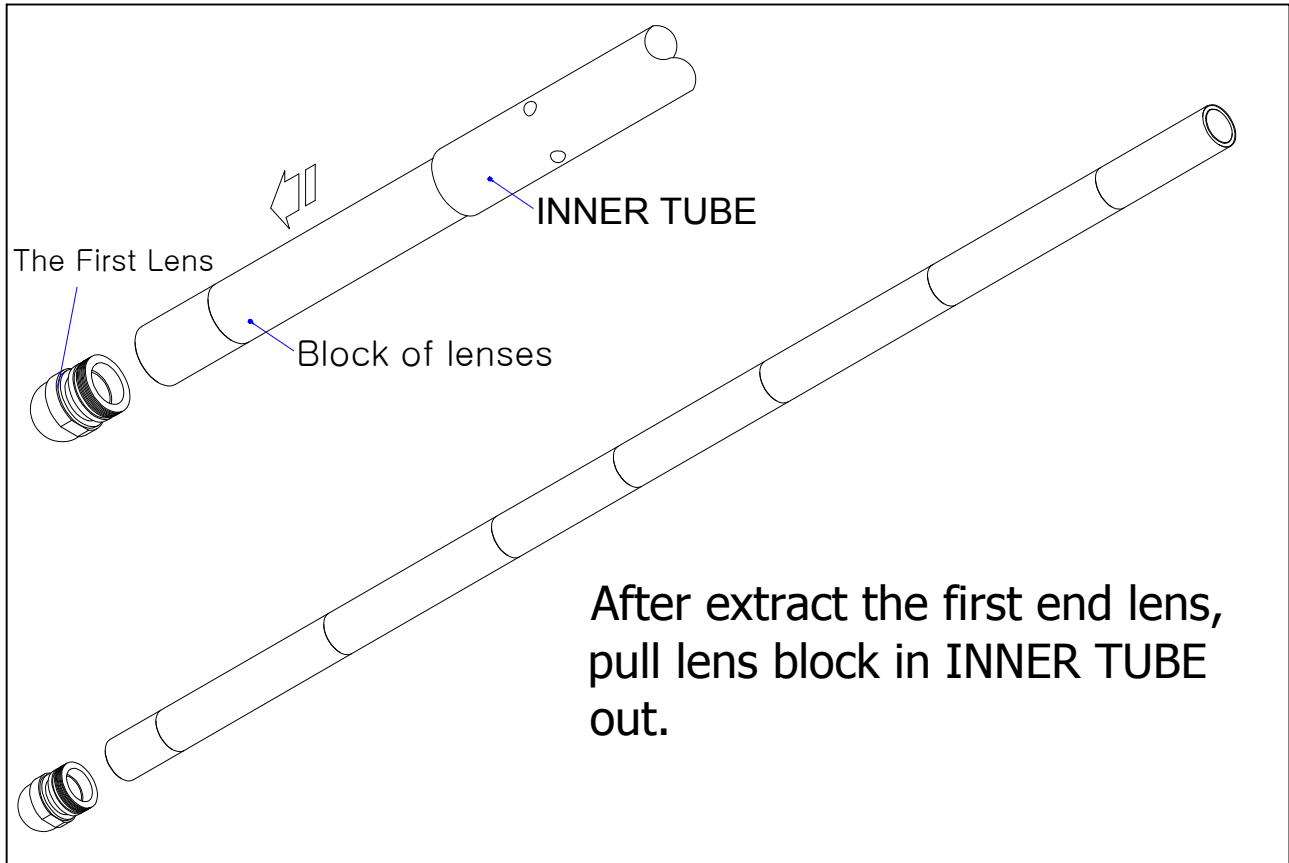
If this is not possible in emergency cases, disassembly must be done as rapidly as possible and then the valve should be returned to its normal position.

The disassembly method for the mist separator is same as that for the air filter

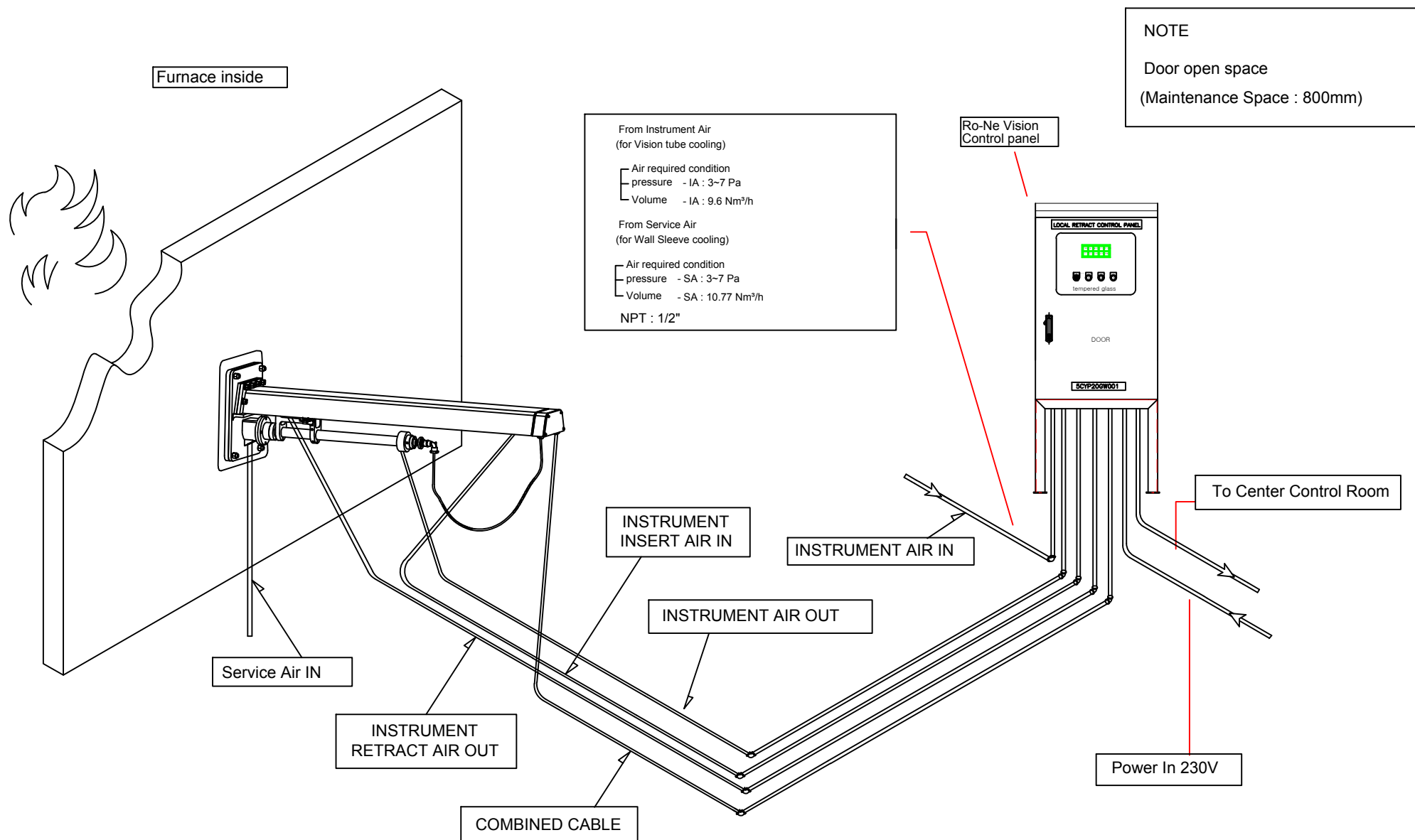
※ Assemble in reverse order.

Replace the Realy lens

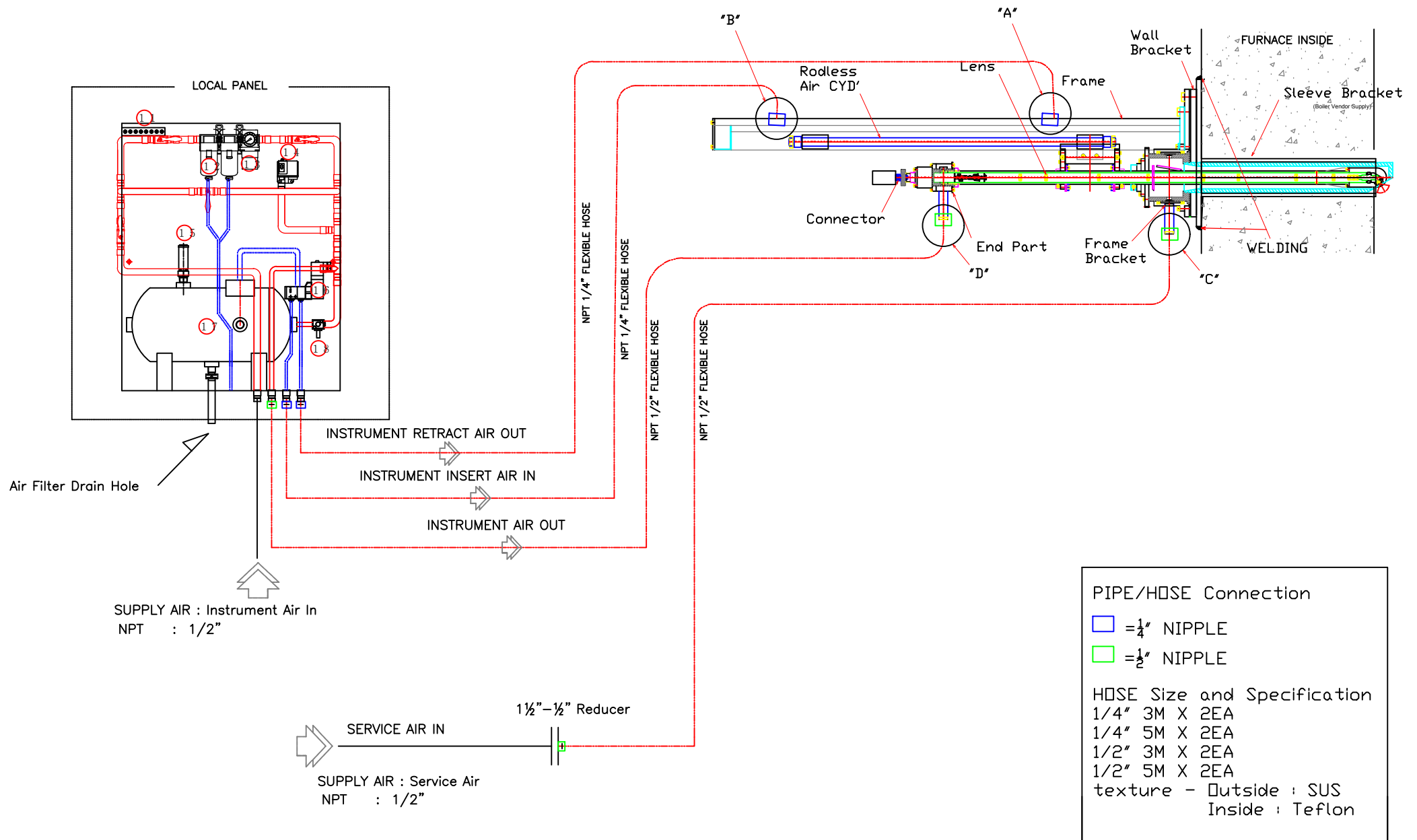
Replace the relay lens in the following procedure after removing the front lens (P.14 how to replace the front lens)



6. Assembly drawing



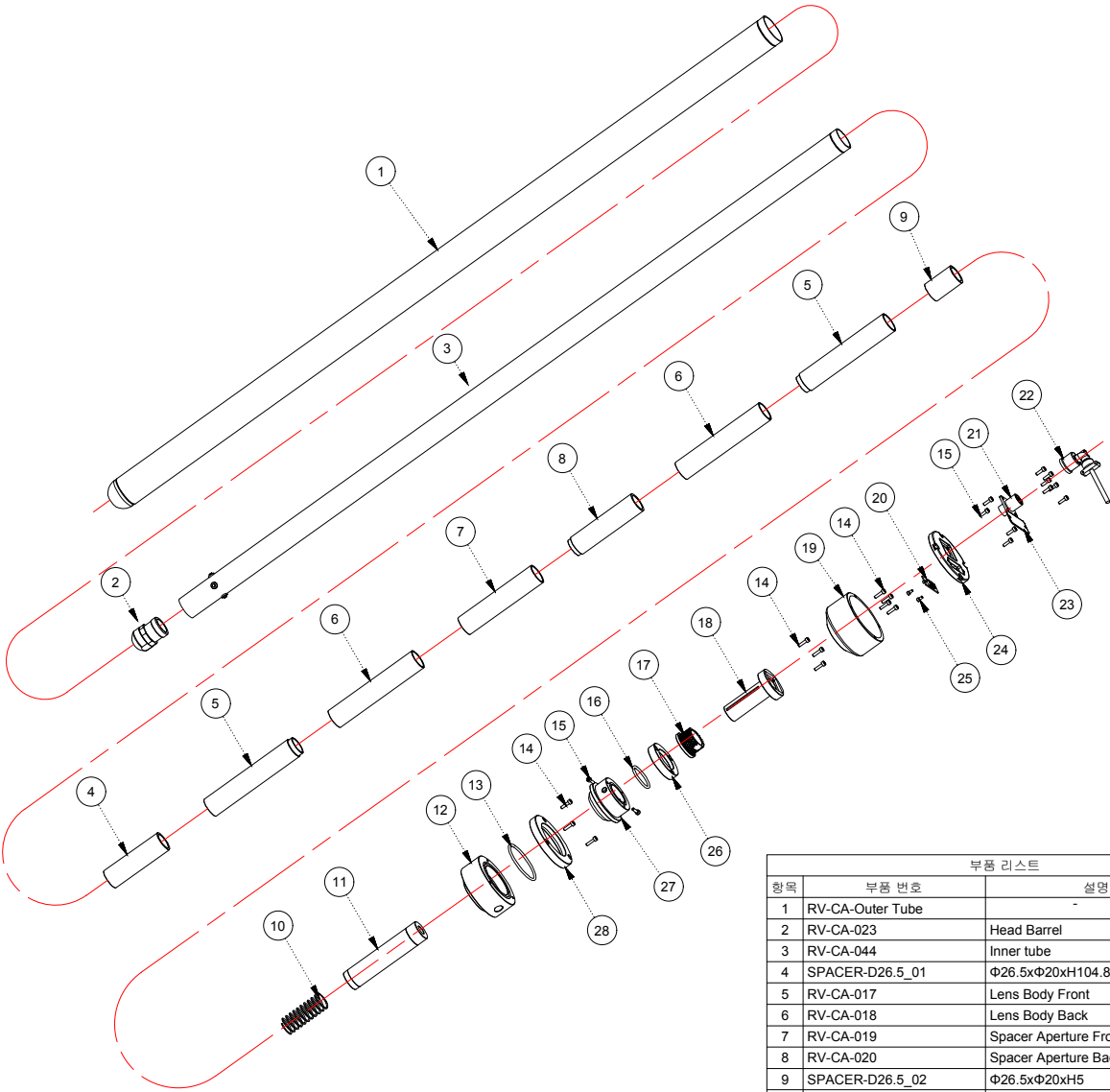
6. Assembly drawing



7. Part List - ① Vision Tube

VISION TUBE

VISION TUBE is a much smaller, lighter and low cost than existing product. Existing product is separate with lens tube and camera, however, this VISION TUBE has intergrated lens and camera internal, it is new type of furnace monitoring equipment.

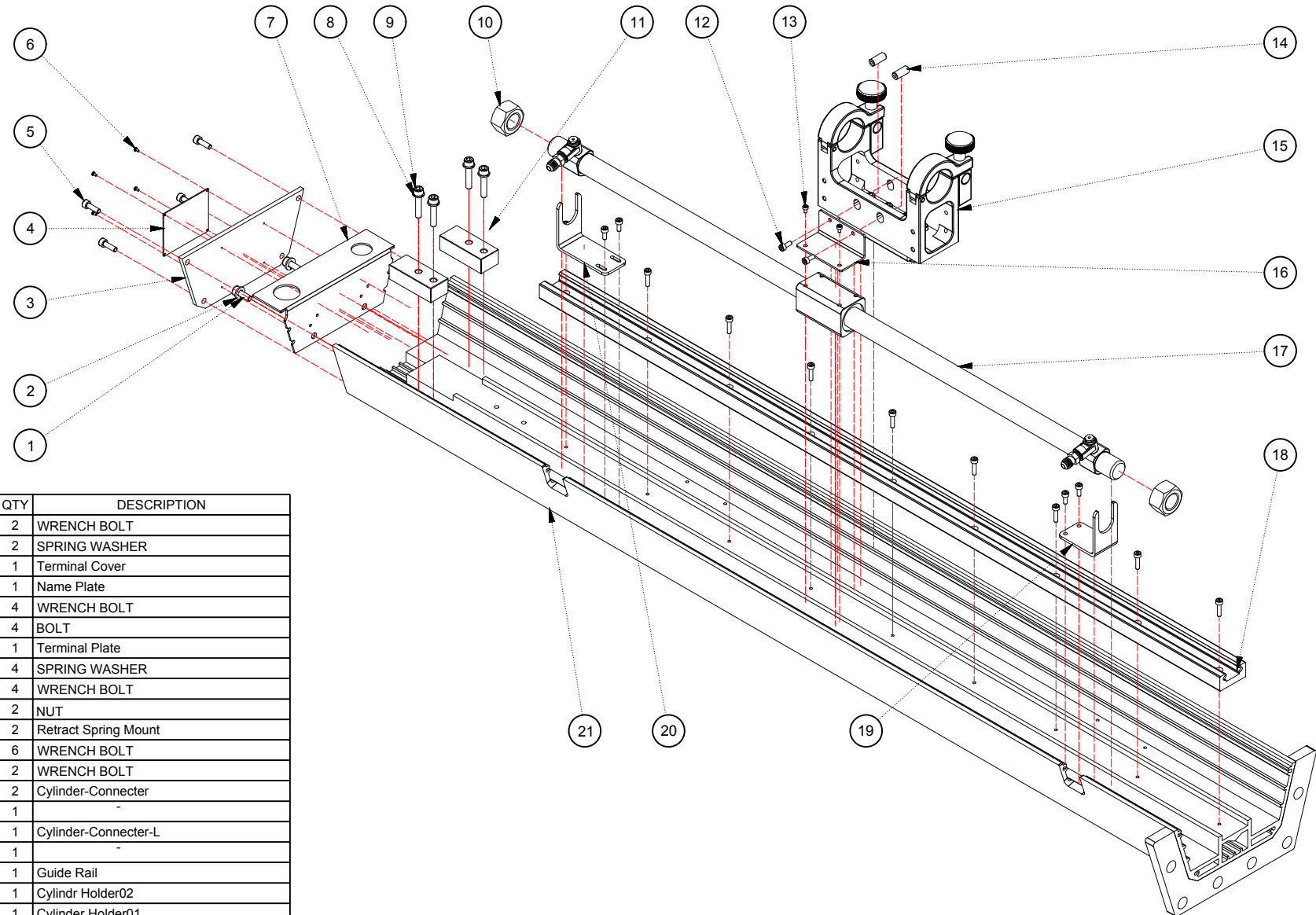


NOTE

The above picture has numbered in sequence of assembling. Please try in this sequence when you need to disassemble or assemble the vision tube.

부품 리스트			
항목	부품 번호	설명	수량
1	RV-CA-Outer Tube	-	1
2	RV-CA-023	Head Barrel	1
3	RV-CA-044	Inner tube	1
4	SPACER-D26.5_01	Φ26.5xΦ20xH104.84	1
5	RV-CA-017	Lens Body Front	2
6	RV-CA-018	Lens Body Back	2
7	RV-CA-019	Spacer Aperture Front	1
8	RV-CA-020	Spacer Aperture Back	1
9	SPACER-D26.5_02	Φ26.5xΦ20xH5	1
10	SPRING-21	Φ20.7x58	1
11	RV-CA-013	Camera Housing	1
12	RV-CA-001	Air Supply Chamber	1
13	RV-CA-060	ISO 3601-1 - B 0487 G	1
14	RV-CA-061	ISO 4762 - M3 x 12	10
15	RV-CA-062	ISO 4762 - M3 x 10	12
16	RV-CA-063	JIS B 2401 - B0280G	1
17	RV-CA-005	Focus Adjustment Handle	1
18	RV-CA-004	Focus Adjustment Handle Device	1
19	RV-CA-008	Camera Junction Box Front	1
20	RV-CA-064	Deep switch pcb	1
21	RV-CA-025	Lens Tube 01	1
22	RV-CA-065	Connector	1
23	RV-CA-009	Deep Switch Cap	1
24	RV-CA-007	Camera Junction Box Back	1
25	RV-CA-066	ISO 4762 - M2.5 x 5	2
26	RV-CA-006	Focus Adjustment Handle Fix Cap	1
27	RV-CA-002	Focus Adjustmen Handle	1
28	RV-CA-003	Inner Tube Fixed Cap	1

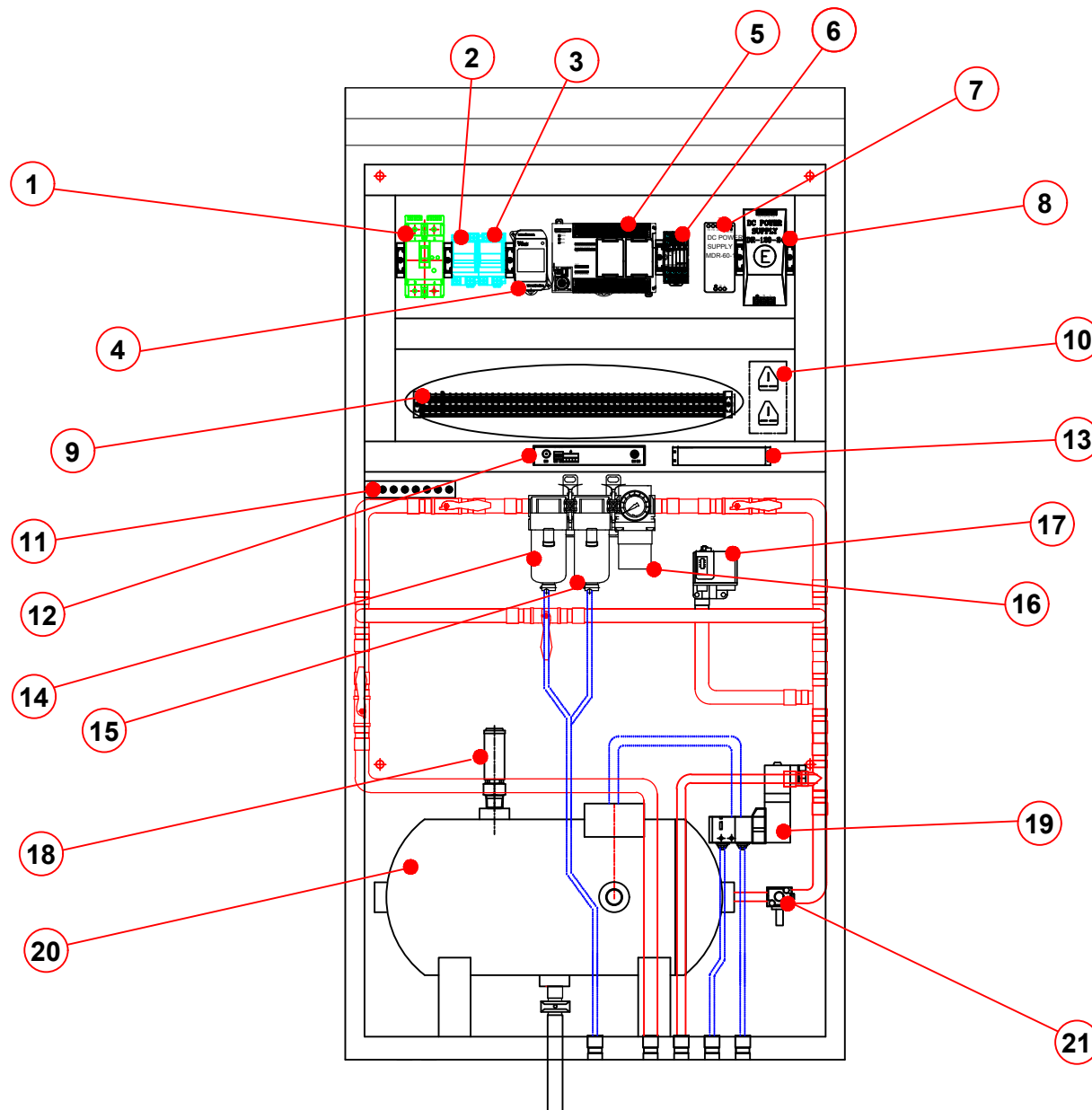
7. Part List - ② Frame



MATERIAL LIST

NO.	PART NAME/FILE NAME	QTY	DESCRIPTION
1	ISO 4762 - M6 x 16	2	WRENCH BOLT
2	JIS B 1251 - NO. 2 7	2	SPRING WASHER
3	RV-FR-007	1	Terminal Cover
4	RV-FR-026	1	Name Plate
5	ISO 4762 - M5 x 16	4	WRENCH BOLT
6	ISO 7045 - M2 x 4 - 4.8 - Z	4	BOLT
7	RV-FR-004	1	Terminal Plate
8	JIS B 1251 - NO. 2 6	4	SPRING WASHER
9	ISO 4762 - M6 x 30	4	WRENCH BOLT
10	ISO 4032 - M20	2	NUT
11	RV-FR-003	2	Retract Spring Mount
12	ISO 4762 - M4 x 10	6	WRENCH BOLT
13	ISO 4762 - M3 x 5	2	WRENCH BOLT
14	RV-FR-112	2	Cylinder-Connector
15	RV-FR-Vision tube holder-Cylinder	1	-
16	RV-FR-111	1	Cylinder-Connector-L
17	RV-FR-Cylinder	1	-
18	RV-FR-015	1	Guide Rail
19	RV-FR-108	1	Cylindr Holder02
20	RV-FR-107	1	Cylinder Holder01
21	RV-FR-Main Frame-Cylinder	1	-
25	ISO 4762 - M4 x 16	9	WRENCH BOLT

7. Part List - ③ Local Panel

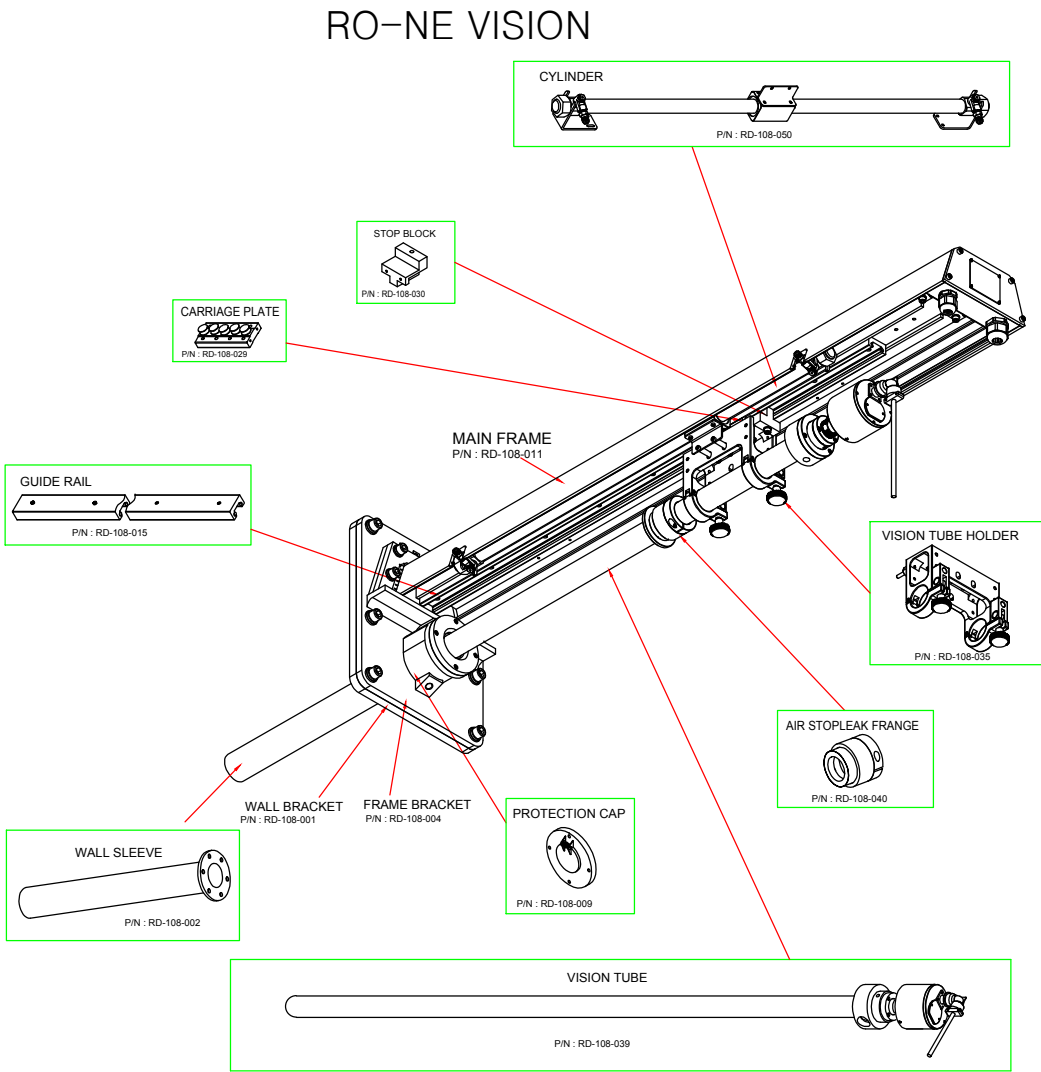


MATERIAL LIST

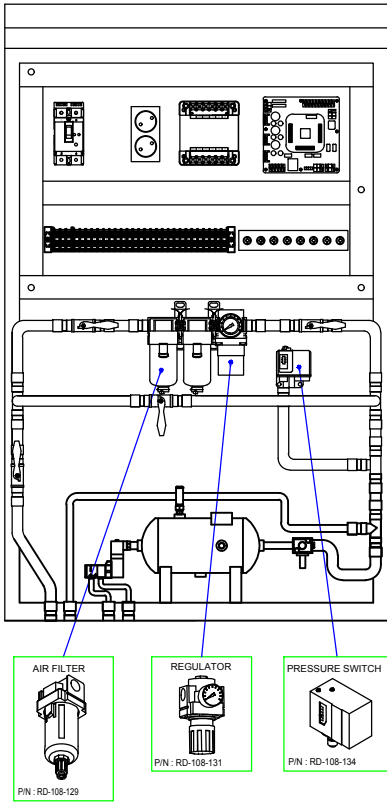
NO.	PART NUMBER	DESCRIPTION	Q'TY
1	NFB01	EBS 32Fb	1
2	LCP-01	BKM-b	1
3	LCP-02	BKM-b	1
4	NOISE FILTER	WYFS06TD	1
5	PLC	XBC-DR32H	1
6	RELAY	R4T-16P-S	1
7	SMPS	MDR-60-12	1
8	SMPS	DR-120-24	1
9	TERMINAL BLOCK	TB/15A	1
10	CONVENIENCE RECEPTACLE	AC220V	1
11	EARTHING BUSBAR (M10)	EARTH	1
12	OPTIC LINK	SFC-1100(1V,1D)	1
13	FIBER DISTRIBUTION FRAME	4 CORE	1
14	AIR FILTER	AF30-03D-A	1
15	MIST SEPARATOR	AFM30-03D-A	1
16	AIR Regulator	AR30-03G-A	1
17	Pressue S/W	IS3000-02	1
18	Safety Valve	VBA10A:0.2~6Mpa	1
19	Solenoid V/V	A240-4E1-PS-L	1
20	TANK	VBAT05A1-X101	1
21	Check Valve	VCHC40 0.05~5.0Mpa	1

8. Spare Part List

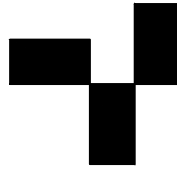
This drawing is stated the main spare part only.
Please refer to the whole drawing when you need the detail.



LOCAL PANEL



NO.	PART NO.	Description	Q'TY
1	RD-108-001	WALL BRACKET	1
2	RD-108-002	WALL SLEEVE	1
3	RD-108-004	FRAME BRACKET	1
4	RD-108-009	PROTECTION CAP	1
5	RD-108-129	AIR FILTER	1
6	RD-108-015	GUIDE RAIL	1
7	RD-108-029	CARRIGE PLATE	1
8	RD-108-030	STOP BLOCK	1
9	RD-108-131	REGULATOR	1
10	RD-108-134	PRESSURE SWITCH	1
11	RD-108-035	VISION TUBE HOLDER	1
12	RD-108-039	VISION TUBE	1
13	RD-108-040	AIR STOPLEAK FRANGE	1
14	RD-108-050	CYLINDER	1



Warranty of Ro-Ne Vision

About
the
service

- Youngkook Electronics and Engineering Co. LTD do not provide service to the product without serial number in product warranty card given with the RO-NE VISION product.
- Contact the Youngkook Electronics and Engineering Co. LTD service team when there is trouble in the product.

Name of Product	RO-NE VISION	Model	RNV-FM-SV 203
Installation date	AUG/20/2004	SERIAL NO	FM021, LP0408019

Service free of charge

- When trouble of product occurs by the defect in the product itself within 1(one) year after the shipping date service is provided free of charge.

Service of charge

1. Case when it is not a breakdown
 - Read this manual first when trouble occurs in the Ro-Ne Vision.
2. Case when it is the user's responsibility
 - When trouble of the Ro-Ne Vision occurs, due to the user's carelessness, or self-repairing, or self-reorganizing without permission
 - When trouble occurs using the supplies, parts or options that are not designated by the Youngkook Electronics and Engineering Co. LTD
 - When trouble occurs by other person other than the engineer of the Youngkook Electronic and Engineering Co. LTD trying to fix the product
3. Other cases
 - When trouble occurs by natural disasters (fire, salt damage, water damage)
 - When the life of supplies and parts ended (battery, fuse, air filter, lamp etc.)



young kook
ELECTRONICS & ENGINEERING

Address: #810, 1 Daewoo Frontier Valley, 16-25, Dongbaekjungang-ro 16
Giheung-gu, Yongin-si, Gyeonggi-do, Korea

Phone: +82-(0)70-4349-6160 Fax: +82-(0)70-4324-0343

www.youngkook.com