ANEST IWATA

INSTRUCTION MANUAL

■ OIL-FREE SCROLL COMPRESSOR

SLE-10/10H
SLE-15/15H
SLE-20/20H

Thank you for purchasing our oil-less scroll air compressor.

- Before operation, be sure to read this instruction manual thoroughly for safe and efficient use for a long operating lifetime.
- After reading it, store in a convenient place for immediate and future reading.

Before use, be sure to fill in the blank spaces below for future repair and after service.

MODEL	
SERIAL No.	
Purchased from	
Date of purchase	
Date of use	

Important information and Safety precautions

▪ Important information

Read all important information and safety precautions before use. The operator shall be fully knowledgeable of the requirements stated within this instruction manual, including important warnings, cautions and operation. **Read manual before performing any maintenance**.

 Keep this booklet in an appropriate place for immediate reference.

- Indications of warnings and cautions

 WARNING	May cause injury or death.
 CAUTION	May result in injury or property damage.

- Examples of warnings and cautions

	**May cause electric shock.**
	**Do not touch.**
	**Must be grounded.**

∗ Supplier is not responsible for any injuries or damages caused by disregard of warnings, operating instruction specifications or maintenance schedules.

Important	Indicates important notices you must observe. They are helpful to achieve top performance and functions of the equipment.

Important information and Safety precautions

- **Safety precautions**

⚠WARNING

Install in a safe area.

To prevent a fire or explosion, install in an area free of flammable gases or organic solvents.

Never install outdoors.

To prevent fire or electric shock, never install outdoors.

Turn off the main electric source.

To prevent electric shock or serious injury, always turn off the main electric source before inspecting or wiring the unit.

Ask a qualified electrician.

Only a qualified electrician should perform maintenance on the unit.

Be sure to ground.

Unit must be grounded to prevent electric shock.

Never use to compress anything other than air.

Unit must only be used to compress air.

Do not use with respiratory equipment, which could cause serious injury or death.

Important information and Safety precautions

⚠WARNING

Not for use as life support.

Serious bodily injury and/or death may occur. Unit must only be used to compress air.

Do not touch.

Keep hands and fingers away from fans, pulleys and belts while the power is on.
Serious injury, including entanglement of fingers or hands can occur.

Release pressure.

Release pressure from unit before conducting maintenance and/or inspection.
Failure to do so may cause serious injury.

Conduct maintenance and inspection.

Conduct maintenance and inspection according to this manual to prevent unit failure.

Important information and Safety precautions

⚠CAUTION

Use at ambient temperatures of 36°F to 104°F.

Drain will freeze at less than 36°F and will cause unit failure.
Using over 104°F will cause a shorter lifespan or unit damage.

Use in an area free of dirt and dust.

Failure to do so may result in equipment failure.

Use in an area free of corrosive gas.

Failure to do so may result in equipment failure.

Only qualified personnel should perform repairs to prevent electric shock or fire.

Keep Away.

Keep away from the compressor while it is operating, and allow it to cool before servicing.
Failure to do so may result in serious burns and or bodily harm.

Never alter the compressor

Fire and or electric shock may occur if unit is altered and warranty will be void.

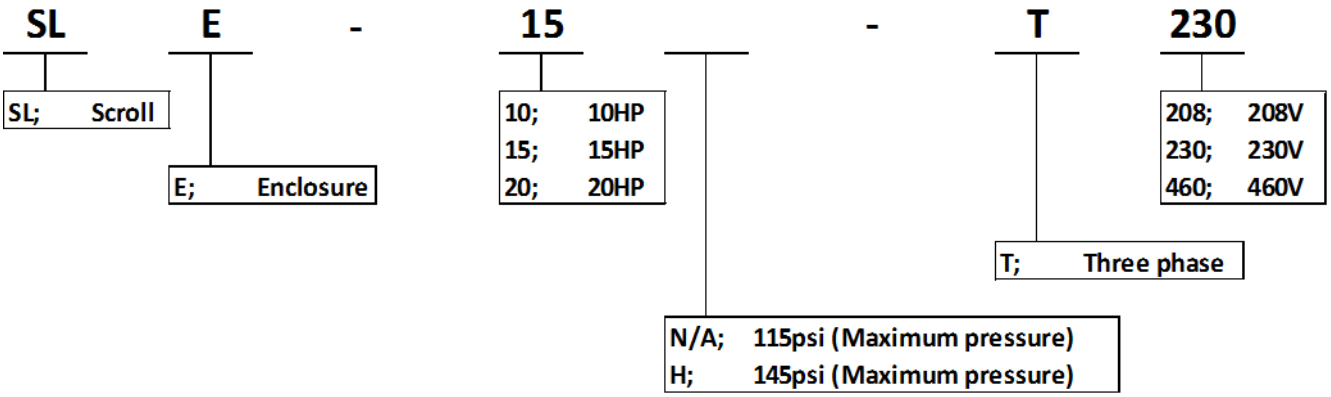
Use genuine parts

Be sure to use only genuine parts during maintenance.
Failure to do so may result in equipment failure.

Contents

Before use

- **Inspect the product**
  - Inspect the product to be sure you have the model you ordered.



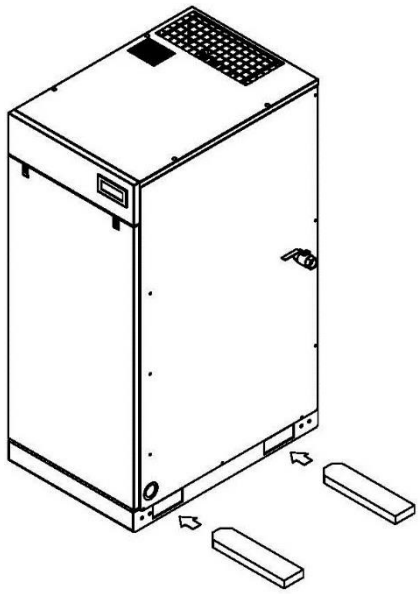
  - Check that there is no deformity or damage which occurred during transportation. Any shipping damage must be immediately filed with the freight carrier.
  - Check that the following accessories are included.
    - Compressor instruction manual
    - Pump instruction manual
    - Rubber mat x 4
    - Ball valve

Before use

▪ Transportation

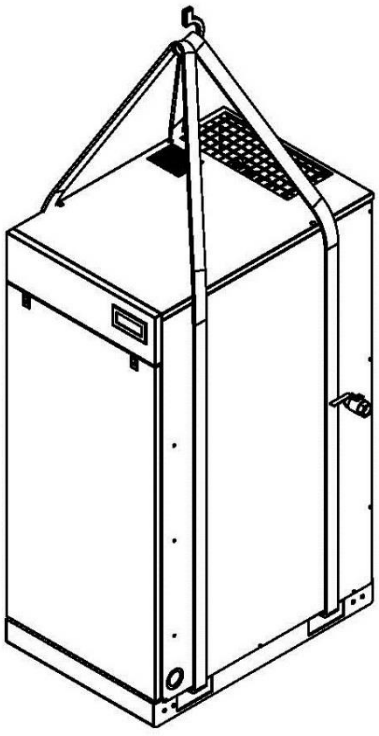
- Transportation by forklift
  Use holes for forklift on both sides of compressor.

⊘	Do not puncture panel with tips of forklift.



- Transportation by crane
  Use holes for forklift as illustrated and lift up by wire.

⊘	Be sure to use pads in order to protect panels.

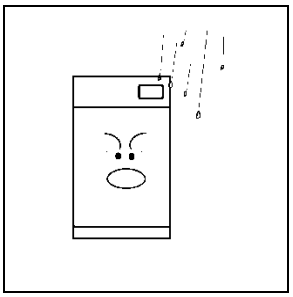


Installation

▪ **Precautions about installation**

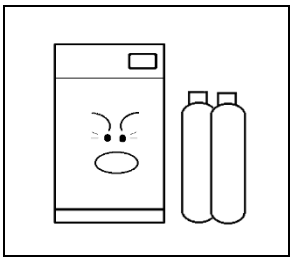
Do not install

Do not use in an area which is exposed to rain, steam or high humidity.
High humidity can cause electric shock or fire.
Do not install in an area with corrosive gas (ammonia, acid, ozone gas and sulfur dioxide) to prevent a shorter lifespan.



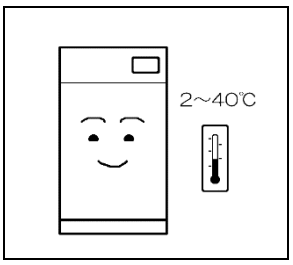
Do not install

To prevent an explosion or fire, install in an area free of flammable gases or organic solvents.



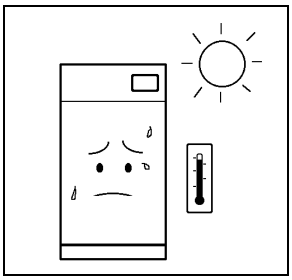
Ambient temperature

Use at ambient temperatures of 36°F to 104° F.
Using less than 36°F will cause unit failure or freezing.
Using over 104°F will cause a shorter lifespan or unit damage.



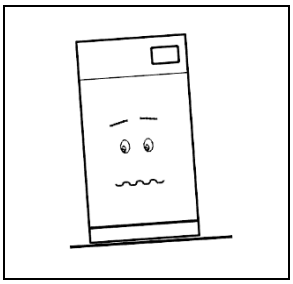
Do not install

Do not install the unit where it will be exposed to sunshine.
Increased inside temperature can cause unit failure.



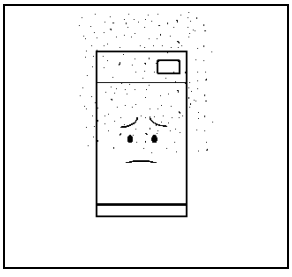
Install the unit on a level floor

An uneven floor can cause abnormal vibration, noise or failure.



Do not install

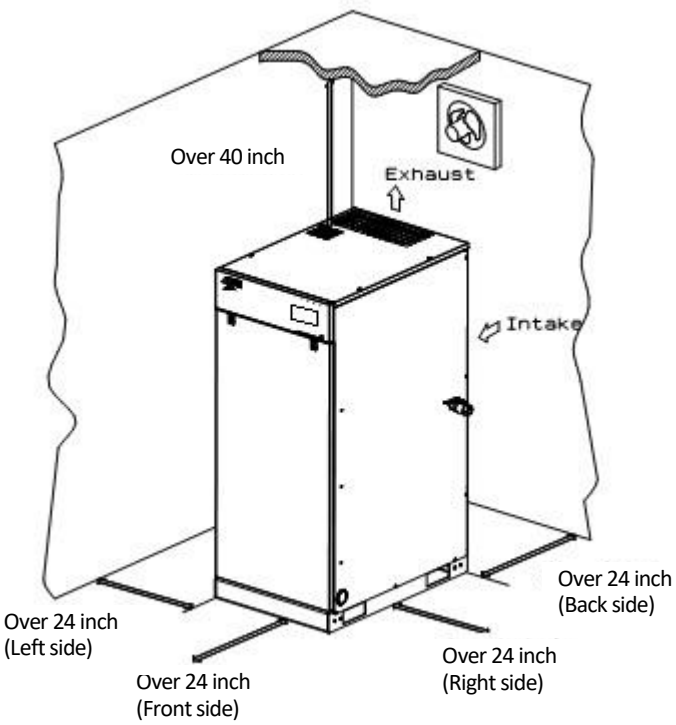
Do not install where there is dust, dirt or debris.
Dust can increase the temperature and wear, resulting in a shorter lifespan and unit failure.



Installation

- **Installation space**

Secure the space around compressor as illustrated.

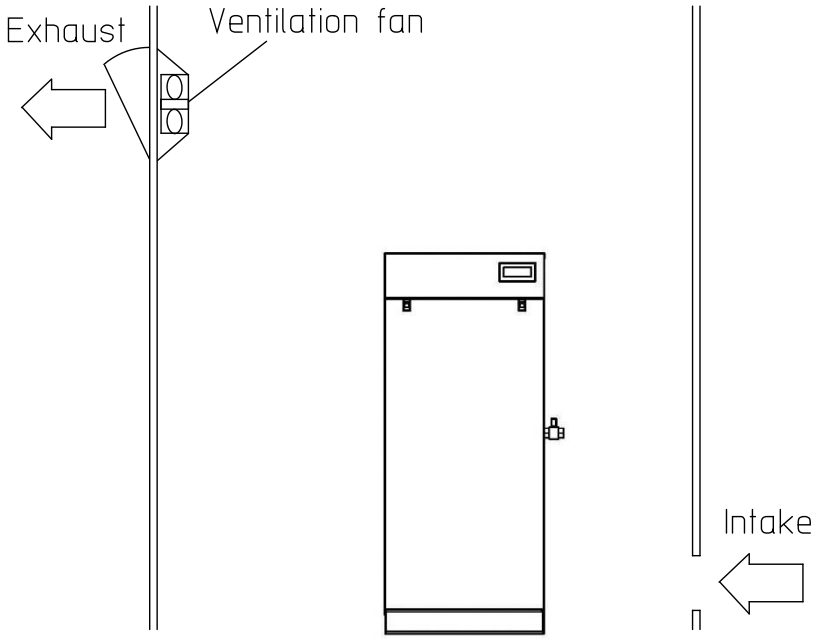


- **Ventilation**

• Overall exhaust

The following ventilation volume is necessary in order to keep temperature increase inside room to 9°F above room temperature. When the static pressure is zero, select the actual figure larger than the figures in the chart below.

Model	SLE-10 SLE-10H	SLE-15 SLE-15H	SLE-20 SLE-20H
Ventilation volume (cfm)	2470	3885	5300

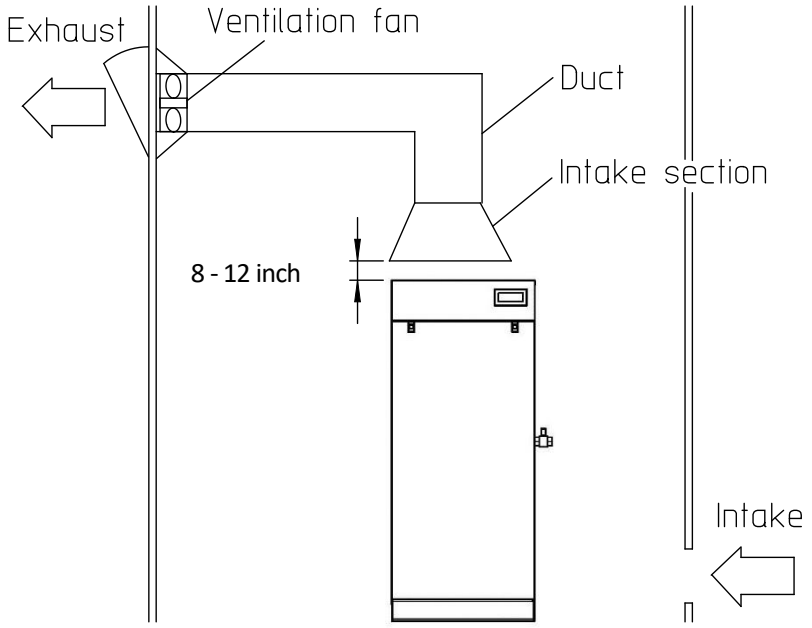


Installation

- Local exhaust

When installing the exhaust duct, take precautions to minimize pressure loss of duct, and attach the ventilation fan at the exhaust section. Keep distance between the duct inlet and exhaust of the compressor to 8 - 12 inches for easy maintenance.

Model	SLE-10 SLE-10H	SLE-15 SLE-15H	SLE-20 SLE-20H
Ventilation volume (cfm)	1345	1415	1485



Do not fit exhaust duct directly to the compressor.

Leave an 8-12 inch gap between the exhaust section of the compressor and duct.

Installation

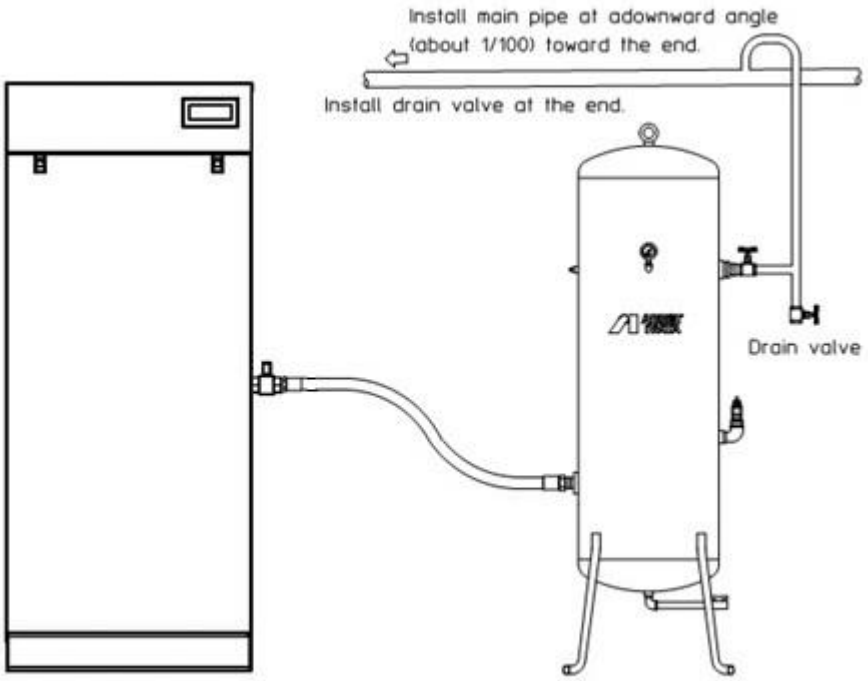
- **Piping**

(1) Take pressure loss into consideration and decide the piping diameter of the exhaust piping.

(2) Connect the outlet of the compressor and piping by using a rubber hose and flexible tube.
Direct connection to a steel pipe can transfer vibration of the compressor to the pipe causing issues for the print board of the compressor. Only use a rubber hose for the oil-free compressor.

(3) When there is a riser or concave section in the piping, be sure to install a drain valve at the low end.
Install a drain valve at the low end of the main piping as well.

(4) Installing an air receiver is optional.
When purchasing an air receiver, select a receiver larger than the following capacity.
SLE-10, SLE-10H; 80 Gallon
SLE-15, SLE-15H; 80 Gallon
SLE-20, SLE-20H; 120 Gallon



Installation

- **Electrical wiring**

  ❖ Precautions about wiring

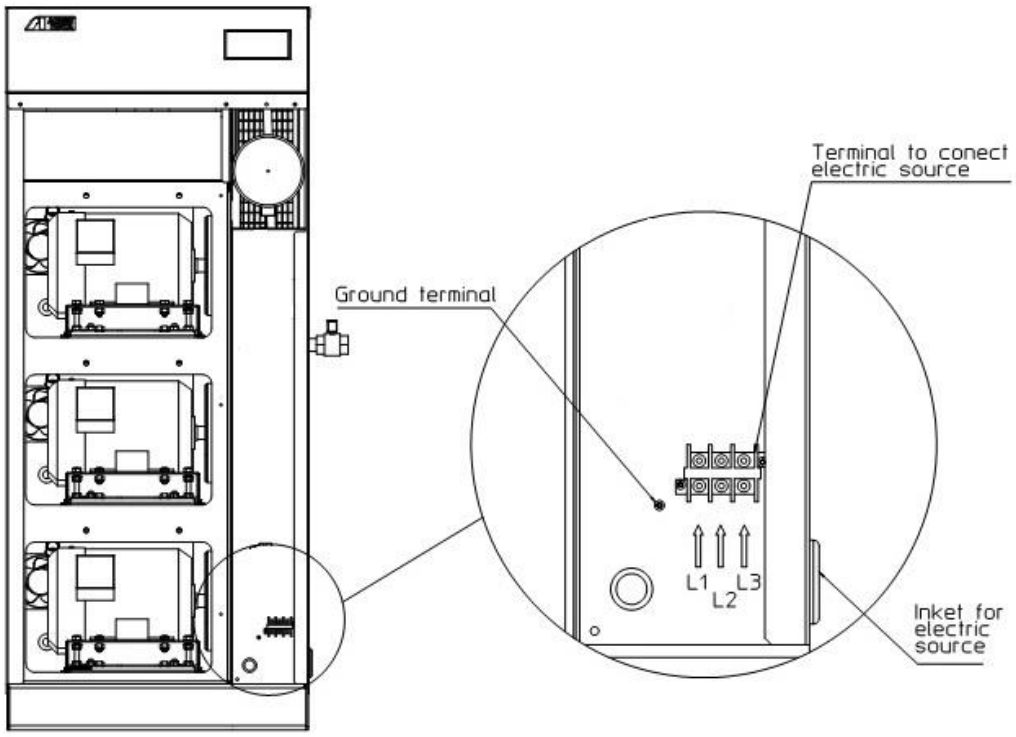
Turn off main electric source before inspecting or wiring. Deviation from this instruction can cause electric shock or serious bodily injury.
Only a qualified electrician should perform repairs to prevent electric shock or fire.
Use a proper wire size. Using a cable of less than designated size can cause a fire.
Be sure to ground the unit when wiring to avoid electric shock or fire.

  ❖ How to run the wire

  (1) Remove the door panel.

  (2) Remove the lid of control box on the right.

  (3) Be sure to securely connect the electric source （L1, L2, L3） and ground.



Installation

❖ Wiring material

Use the correct size of cable and applicable breaker shown in the chart below.

208-230V

Model	Load specifications		Circuit protection Max Size		
	Motor load each (FLA)	Unit load total (FLA)	Non-time delay fuse (A)	Time delay fuse (A)	Inverse time circuit breaker (A)
SLE-10 SLE-10H	16.7 - 15.2	40 - 37	100 - 100	80 - 70	100 - 100
SLE-15 SLE-15H	16.7 - 15.2	57 - 52	150 - 150	100 - 100	150 - 150
SLE-20 SLE-20H	16.7 – 15.2	74 - 67	200 - 175	150 - 125	200 - 175

460V

Model	Load specifications		Circuit protection Max Size		
	Motor load each (FLA)	Unit load total (FLA)	Non-time delay fuse (A)	Time delay fuse (A)	Inverse time circuit breaker (A)
SLE-10 SLE-10H	7.6	20	50	35	50
SLE-15 SLE-15H	7.6	26	70	50	70
SLE-20 SLE-20H	7.6	35	90	70	90

Test operation

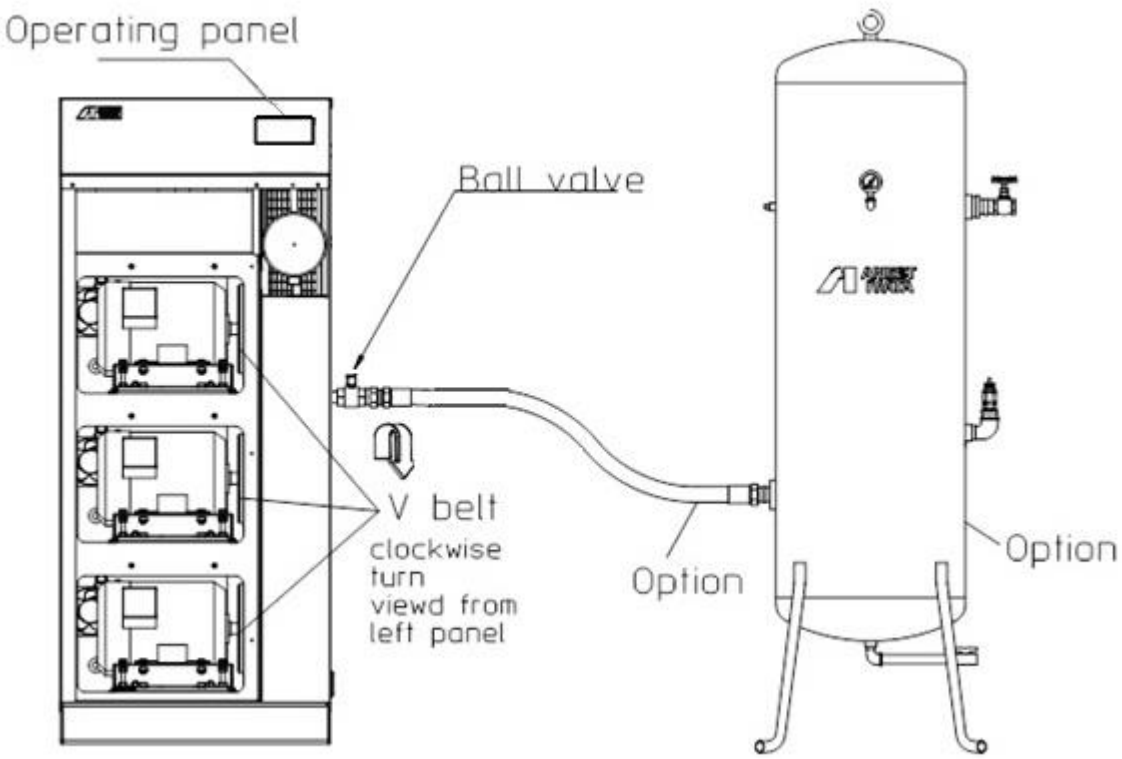
- **Operation**

  ❖ Preparation

  (1) Check to be sure the air receiver piping has been firmly connected.

  (2) Open the ball valve of the compressor air outlet.

  (3) Turn on the main electric source and be sure the display section of the operating panel lights up.



Test operation

❖ Operation

Push the operating switch to start the compressor.

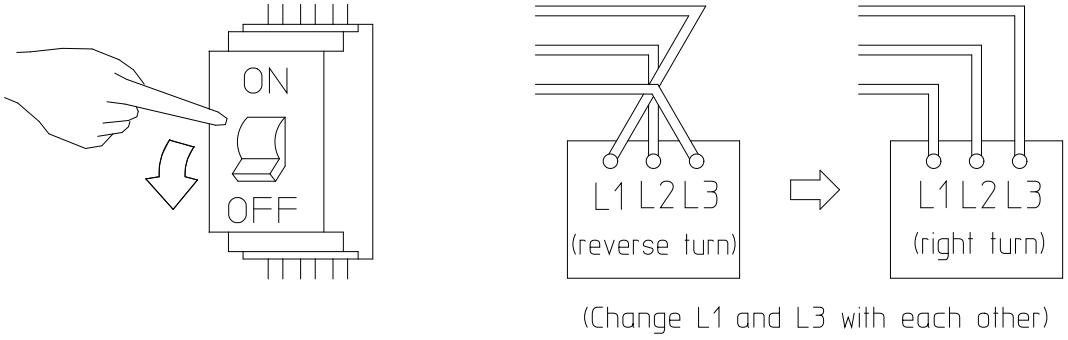
❖ Check pressure increase

Be sure the pressure increases when the compressor starts.

⚠CAUTI0N

If the pressure does not increase and an abnormal sound is heard during reverse rotation, stop the compressor. Turn off the main electric source and then change two out of the three phases to get the correct rotation.

Be sure to push the stop switch to stop the compressor and cut the leak breaker to avoid electric shock.



❖ Check maximum control pressure

Operate the unit while the ball valve of the air receiver is closed.

Be sure the compressor stops at the pressure shown below.

Model	Max. pressure (psi)
SLE-10, SLE-15, SLE-20	116
SLE-10H, SLE-15H, SLE-20	145

❖ Check minimum control pressure

When maximum pressure is reached and compressor stops, open outlet valve and gradually reduce pressure.

Check that compressor restarts at below pressures.

Model	Min. pressure (psi)
SLE-10, SLE-15, SLE-20	101
SLE-10H, SLE-15H, SLE-20	130

* In case the minimum pressure is changed to 101/130 psi, the volume of the air receiver must be 1.5 times larger than the recommendation at 94/123 psi.

❖ Stop

Push the stop switch and stop the compressor.

After the test operation ends, open the stop valve of the air outlet.

Test operation

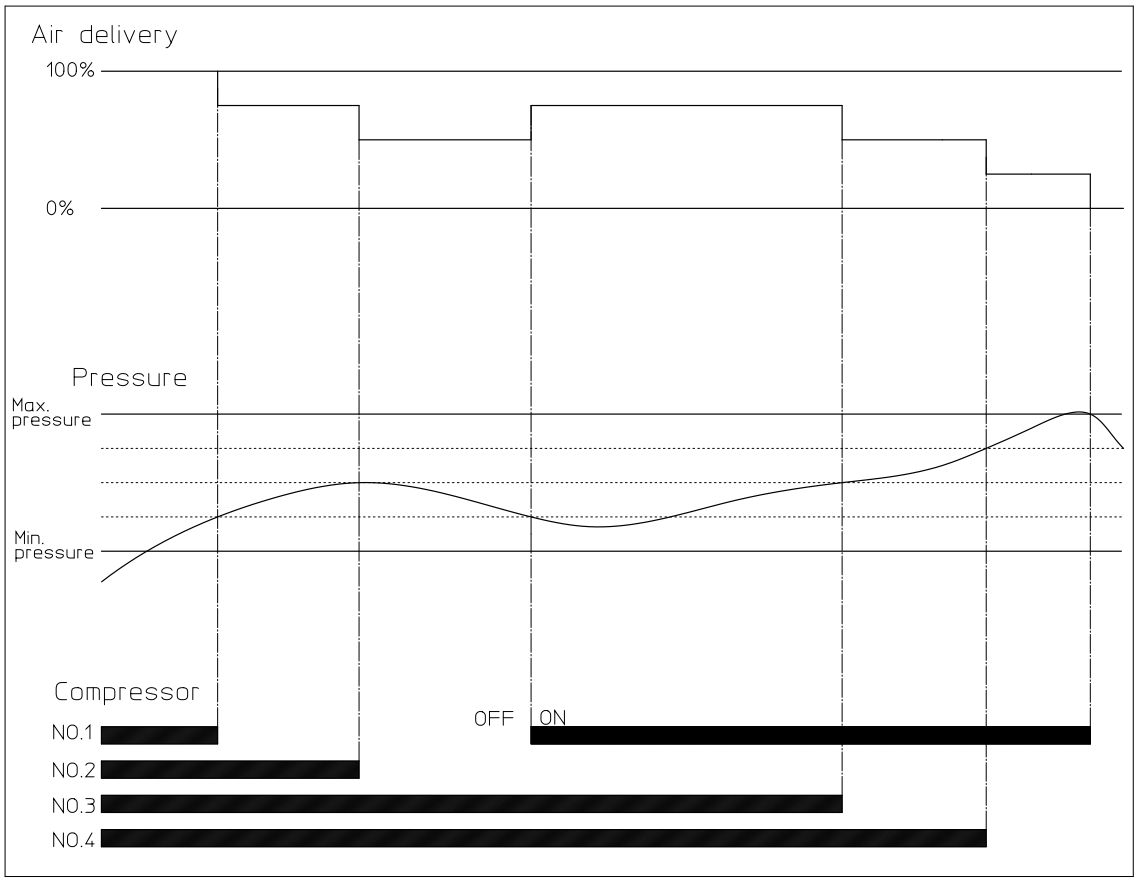
▪ Check control

This compressor uses plural air ends and employs multi-stage control. It can start and stop each air end according to pressure and air consumption. It automatically selects the number of air ends, in accordance with air consumption, and achieves optimum and uniform operation at all times, as well as energy-saving and labor-saving operations.

(1) Multi-stage control

Among air ends, which are operating under group control, it stops the air end which has been operating for a longer time and restarts the air end whose operating time has been shorter. This results in equalization of operating time of each air end and operation with a minimum quantity of air ends, in accordance with air consumption and energy-saving operation, by eliminating waste of electricity.

Multi-stage control



❖ This figure is an example of the operation of SLE-20 and SLE-20H.
SLE-10 and SLE-10H operate 2 air ends.
SLE-15 and SLE-15H operate 3 air ends.

(2) Prevention of long-term operation

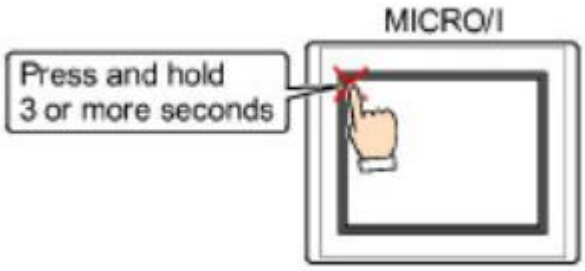
When the operating time of the an air end exceeds the set time, it changes operation from that air end to the one which has stopped, preventing long-term operation of one air end. This lengthens the lifetime of air ends and equalizes the operating time.

Operating panel

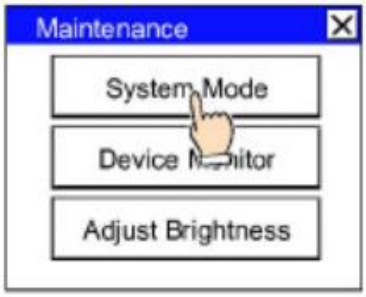
▪ Changing the HMI Internal Clock

The HMI system clock is set to default by the manufacturer. During an alarm event the alarm log screen displays occurrence time and date as well as alarm message. The occurrence time and date correspond to the HMI system time and date, therefore it is recommended to change the HMI system clock to correspond to the local time zone. Follow the steps below to set the HMI system clock:

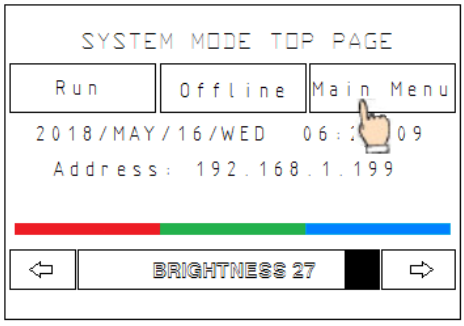
1. With HMI ON press and hold the left top corner of the operational screen



2. Maintenance popup screen will appear
   Select System mode

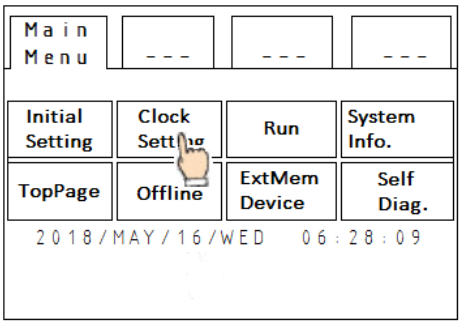


3. Go to Main Menu

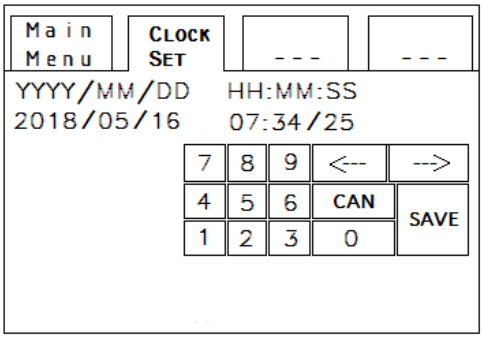


Operating panel

4. Go to Clock Setting

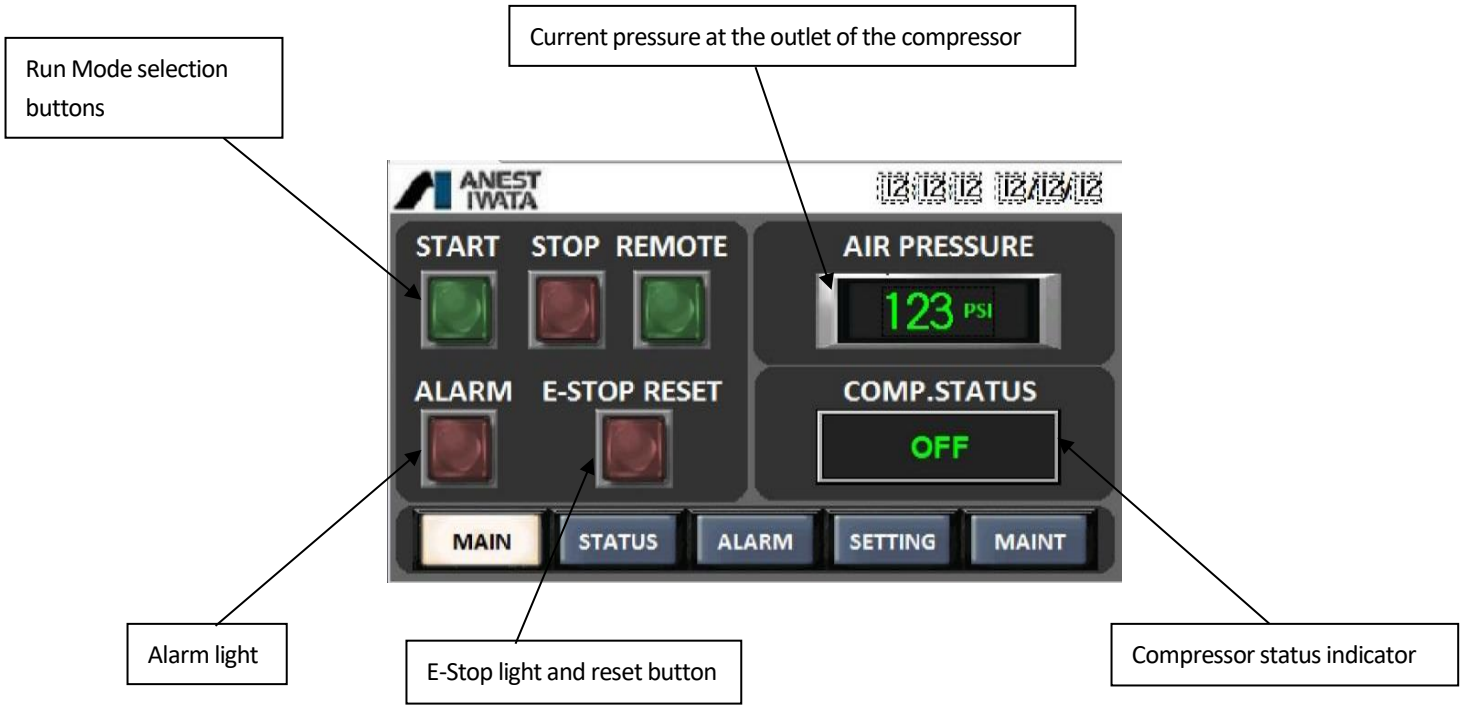


5. Set date and time to correspond to the local time zone



Operating panel

- **Main Screen**



- **Operation and stop**

  - ❖ Operation

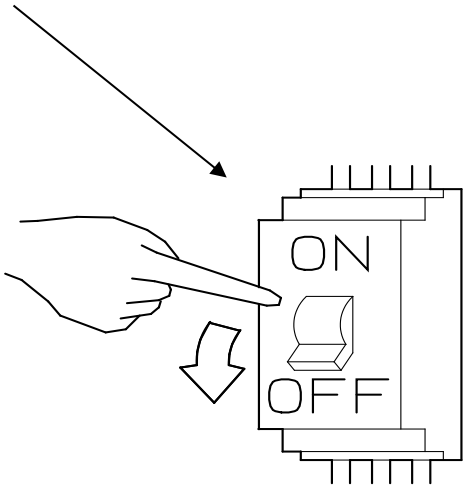
    Press the ON switch so the compressor operating lamp lights up and compressor immediately starts.

  - ❖ Stop

    Press the off switch so that compressor operating lamp goes off and compressor immediately stops.

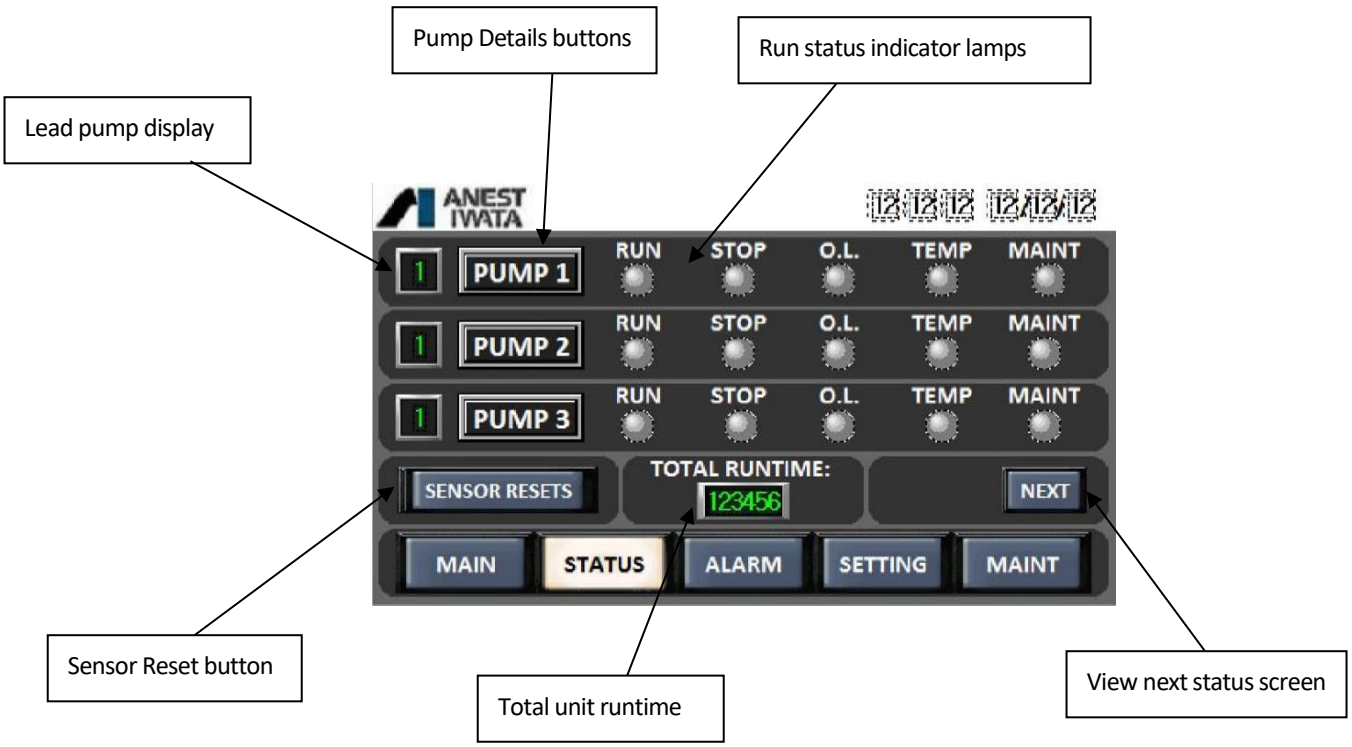
    When job ends, be sure to cut leak breaker.

Main disconnect supplied by customer in the field.



Operating panel

- **Status Screen**

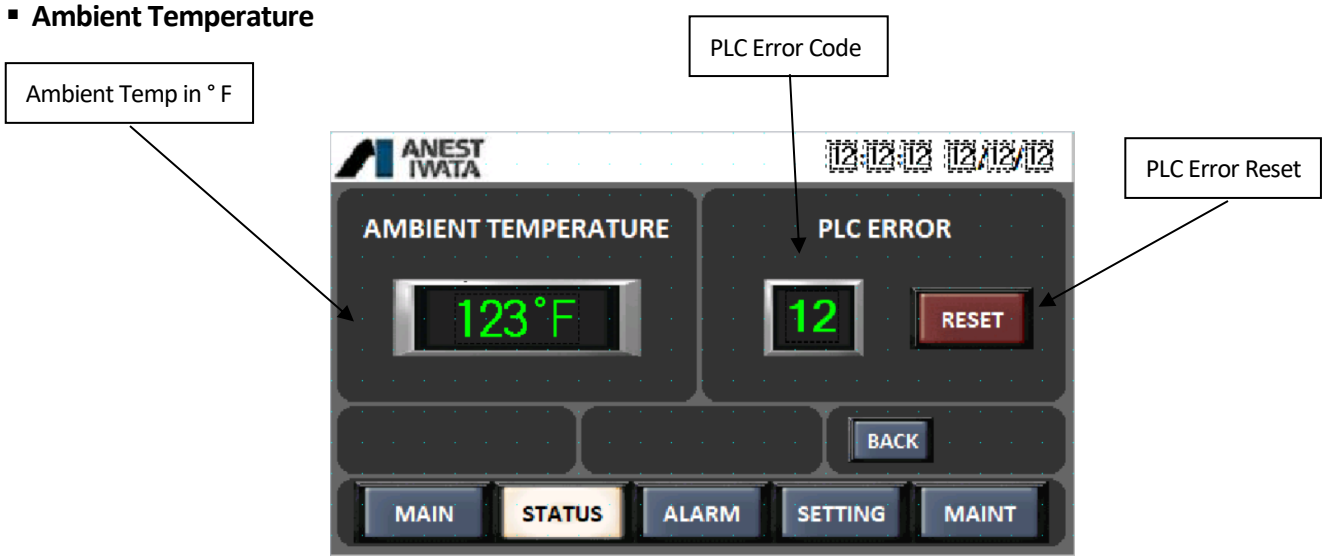


- **Run status indicator lamps**

  - RUN
    Lamp is green when pump is running and gray when pump or compressor is off.
  - STOP
    Lamp is blue when compressor is on but the pump is off and gray when the compressor is off.
  - O.L.
    Lamp is green when status is ok, red when the overload has tripped, and gray when the compressor is off.
  - TEMP
    Lamp is green when status is ok, yellow when temp hits warning level, red when temp hits shutdown level, and gray when the compressor is off.
  - MAINT
    Lamp is green when maintenance is not needed, yellow when maintenance is due, red when lack of maintenance has caused shutdown, and gray when the compressor is off.

Operating panel

▪ Ambient Temperature



The compressor is equipped with an ambient temperature sensor located on the back of the unit, For efficiency and durability, the ambient temperatures of the compressor must fall between 36°F & 104° F. Operating in less than 36°F will cause unit failure or freezing, while operating in over 104°F will cause a shorter lifespan or unit damage.

The maintenance interval is based on conditions where ambient temperature is at around 86°F. If your location is warmer or running condition is severe, maintain at a shorter period. 30% shorter from our recommendation at every 9 °F. If the operating hour is over 15 hours per day, please shorten 30% from our recommended maintenance period.

▪ PLC Error

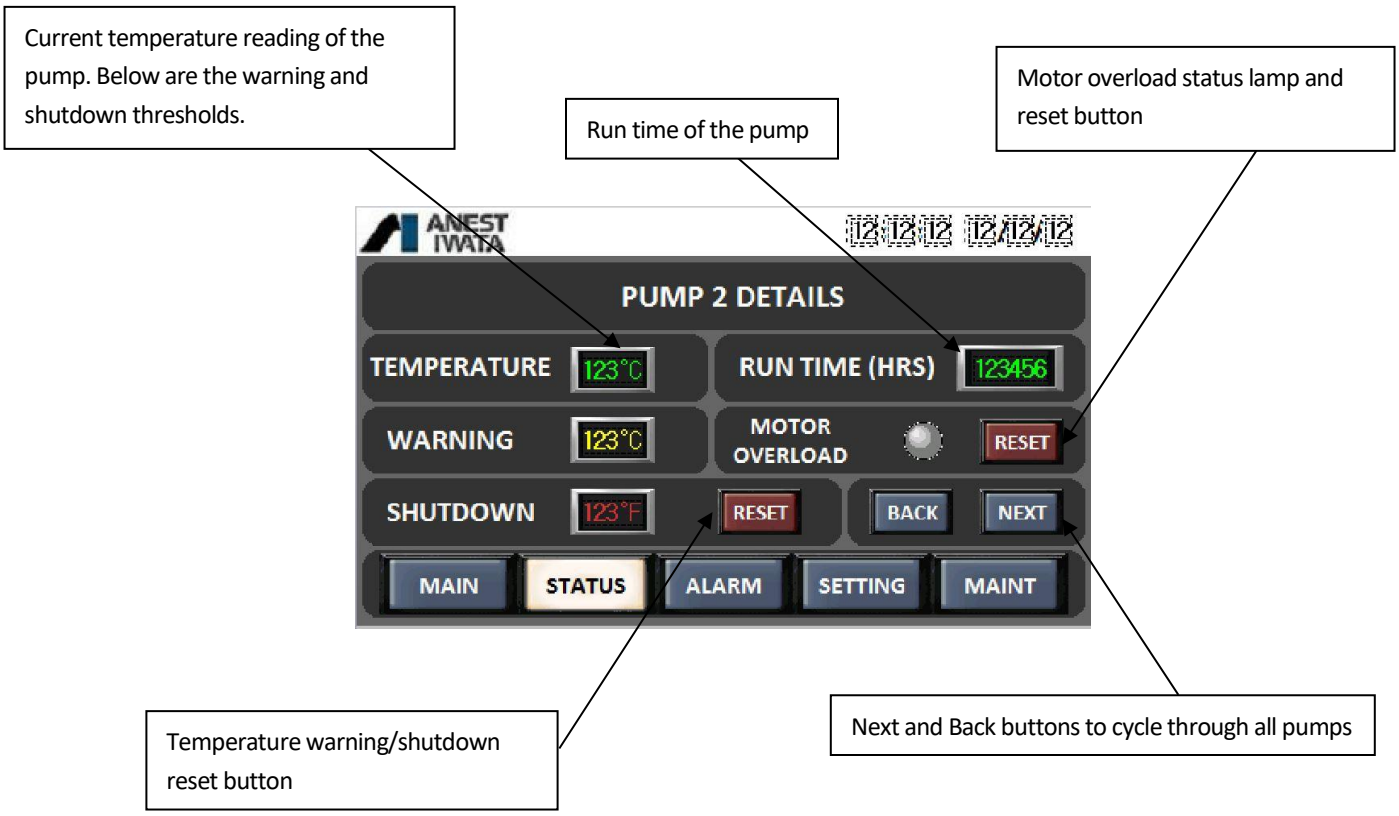
PLC errors may occur due to variety of reasons such as low PLC battery, data loss or program execution error. The error message with be displayed in the alarm screen, for further details the PLC error section above will display the error code if applicable. Press RESET button to clear the PLC Error.

The table below represents operating Status, output, and ERR LED during errors

Error Items	Operating Status	Output	Error LED [ERR]	Checked at
Watchdog timer error	Stop	OFF	ON	Any time
Data link connection error	Stop	OFF	ON	initializing the data link
User program ROM sum check error	Stop	OFF	ON	Starting operation
TIM/CNT preset value sum check error	Maintained	Maintained	ON	When checking a change in timer/counter settings
Keep data error	Stop	OFF	OFF	Turning power on
User program syntax error	Stop	OFF	ON	Downloading program
User program writing error	Stop	OFF	ON	Downloading program
System error	Stop	OFF	ON	Turning power on
SD memory card transfer error	Stop	OFF	ON	Turning power on
User program execution error	Maintained	Maintained	ON	Executing program
SD memory card access error	Maintained	Maintained	ON	SD memory card is inserted
Expansion Card Initialization Error	Maintained	Maintained	ON	Turning power on

Operating panel

- **Pump Details Screen**



- **Reset buttons**

❖ Motor Overload

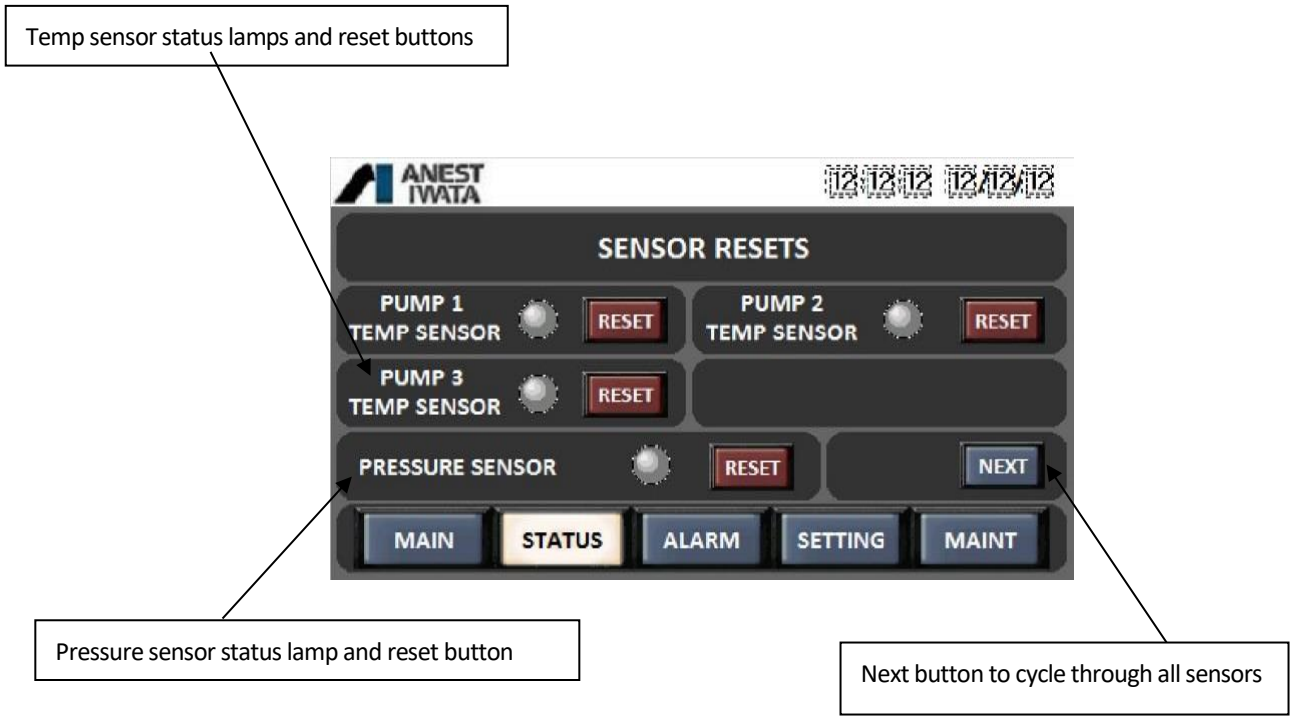
Lamp is green when status is ok, red when the overload has tripped, and gray when the compressor is off. If red, reset the physical overload switch then press this reset button.

❖ Temperature

If temperature exceeds the warning (157 °F/69 °C) or shutdown (167 °F/75 °C) thresholds, allow temperature to fall below these levels then press this reset button.

Operating panel

- **Sensor Resets Screen**



- **Reset buttons**

❖ Temp Sensors

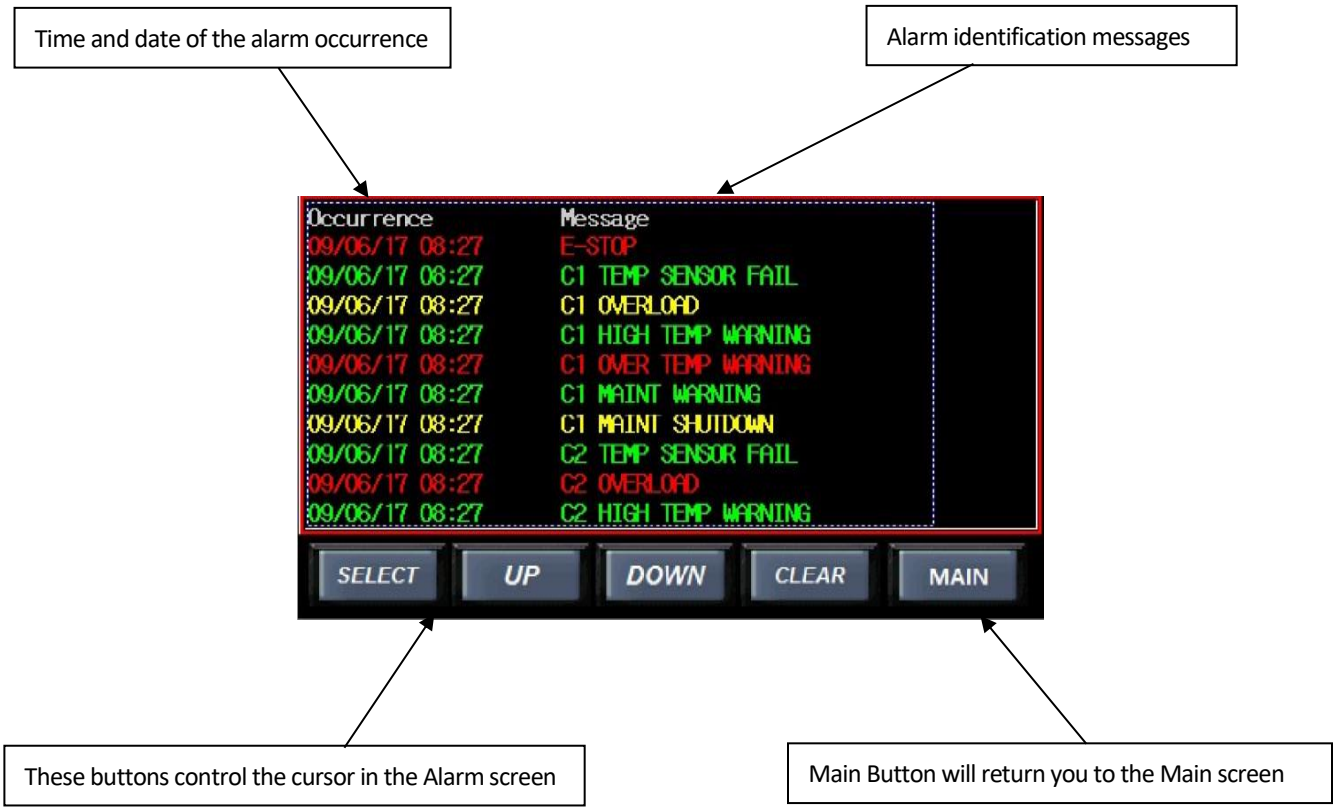
Lamp is green when status is ok, red when the sensor has failed, and gray when the compressor is off. If red, check wiring or replace the sensor then press this reset button.

❖ Pressure Sensor

Lamp is green when status is ok, red when the sensor has failed, and gray when the compressor is off. If red, check wiring or replace the sensor then press this reset button.

Operating panel

- **Alarm Screen**

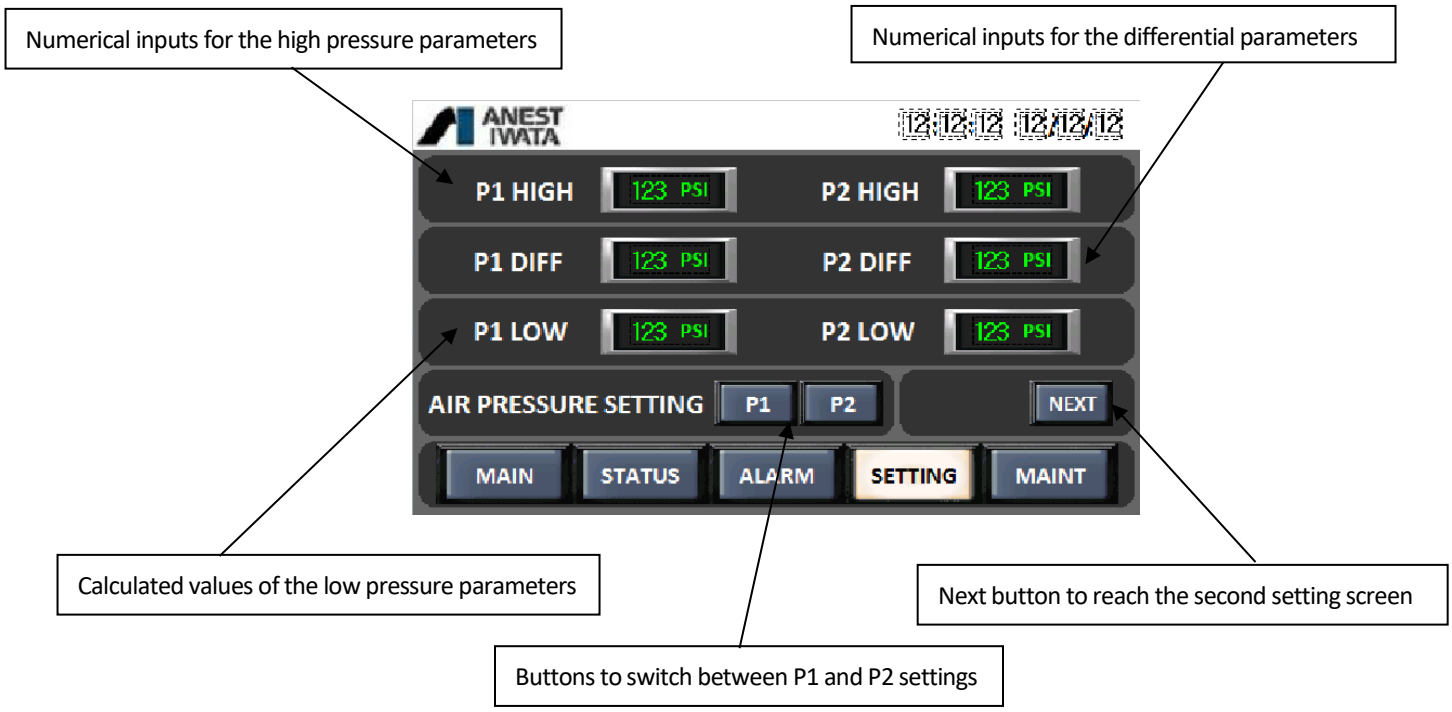


- **Alarm Screen control buttons**

  - ❖ SELECT
    This button makes the cursor appear and disappear.
  - ❖ UP
    This button moves the cursor up the list.
  - ❖ DOWN
    This button moves the cursor down the list.
  - ❖ CLEAR
    This button deletes the inactive alarms (yellow) from the list, but active alarms (red) remain.

Operating panel

- **Settings Screen**



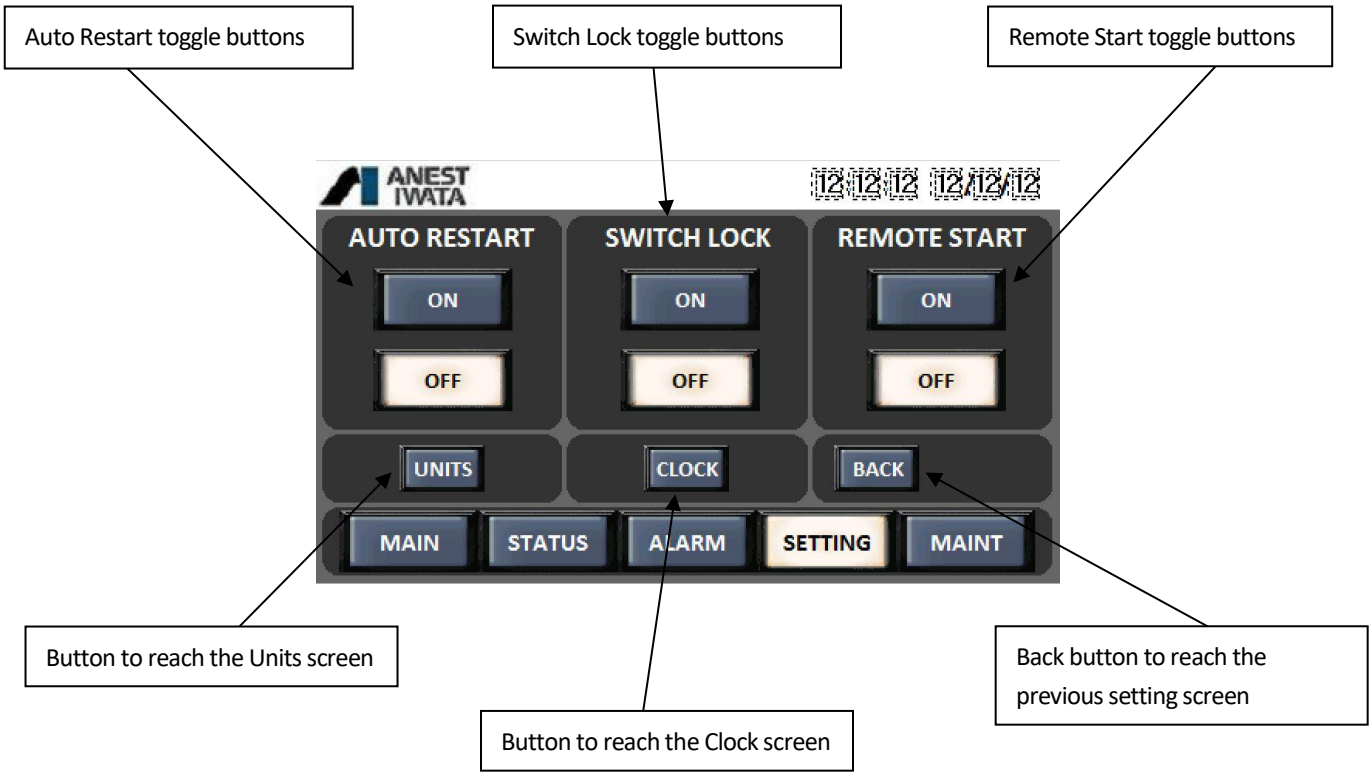
Note:

The compressor will use either the P1 settings or P2 settings based on which one is selected.

The respective setting must be selected to adjust its parameter values.

Operating panel

- **Settings screen**

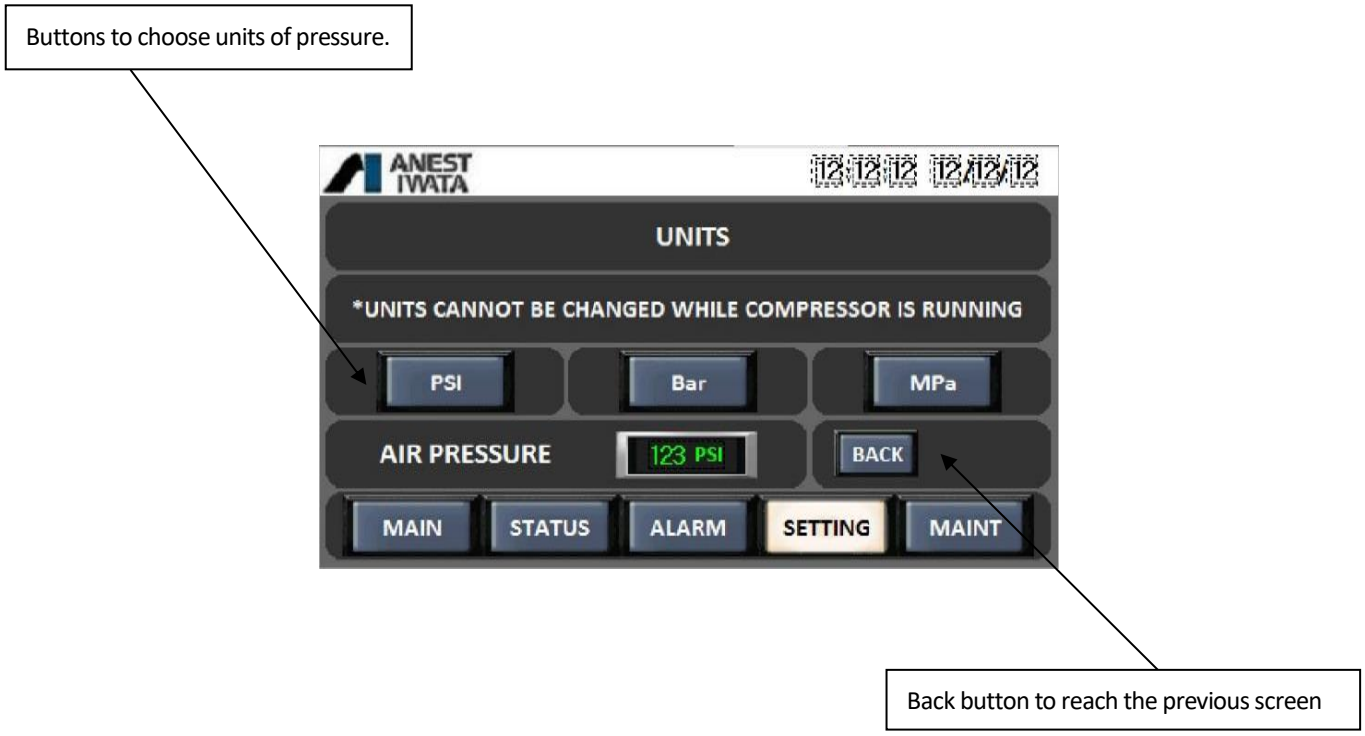


- **Settings Screen toggle buttons**

  - ❖ Auto Restart
    When On, the compressor will resume operation after a power cycle.
  - ❖ Switch Lock
    When On, the Start button on the Main screen will be disabled.
  - ❖ Remote Start
    When On, the Remote control function is enabled.

Operating panel

- **Units screen**

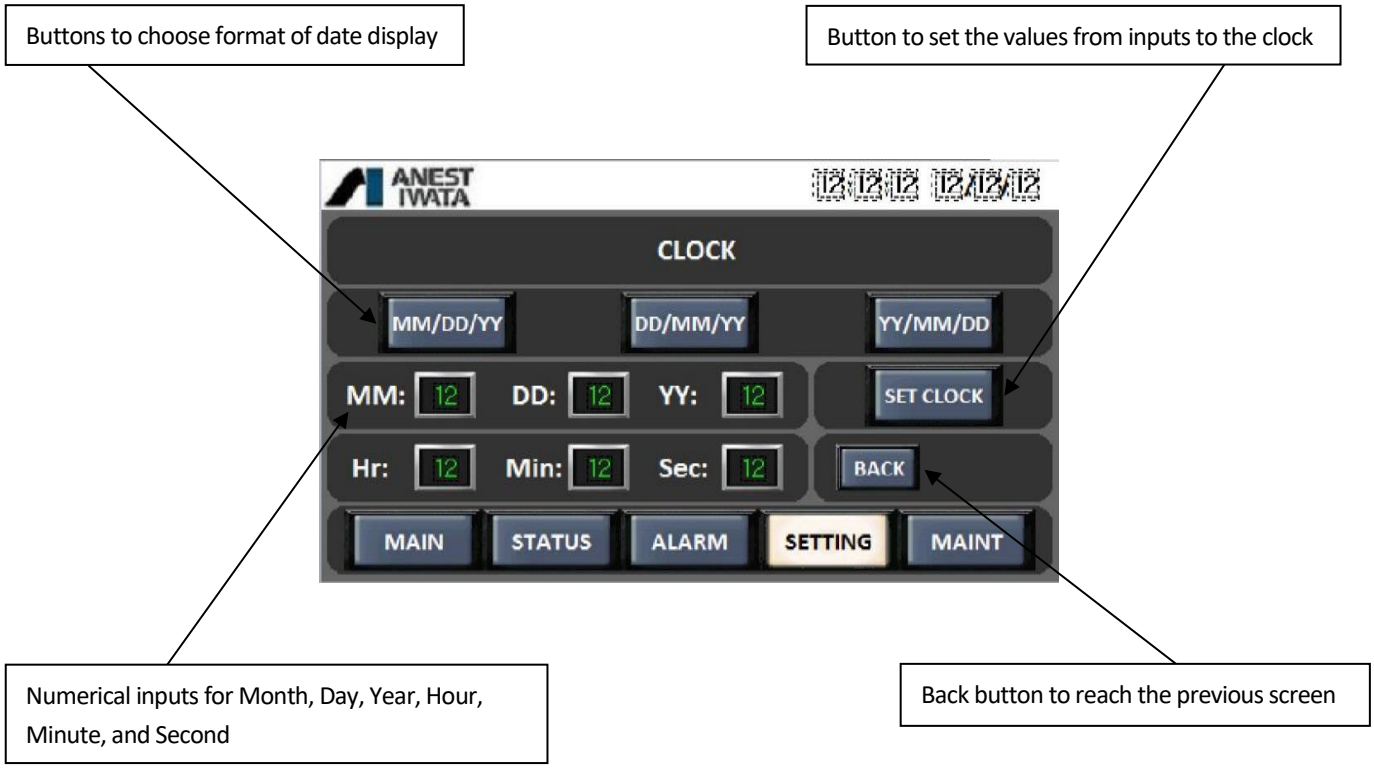


Note:

The compressor must be turned off before converting units of pressure.

Operating panel

- **Clock screen**



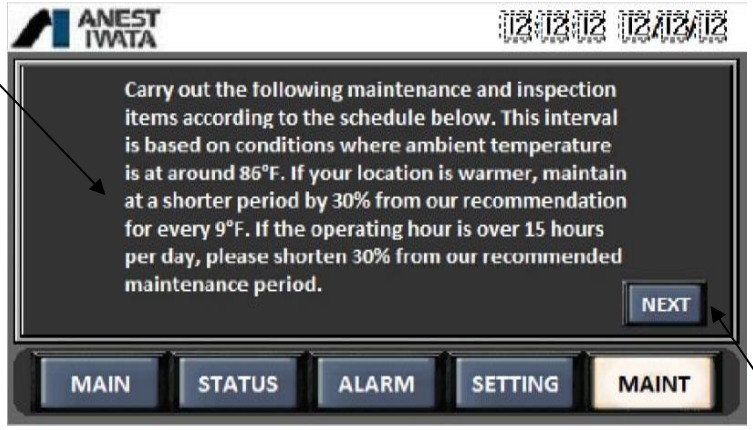
Note:

All 6 numerical inputs must have the desired values entered before pressing Set Clock.

Operating panel

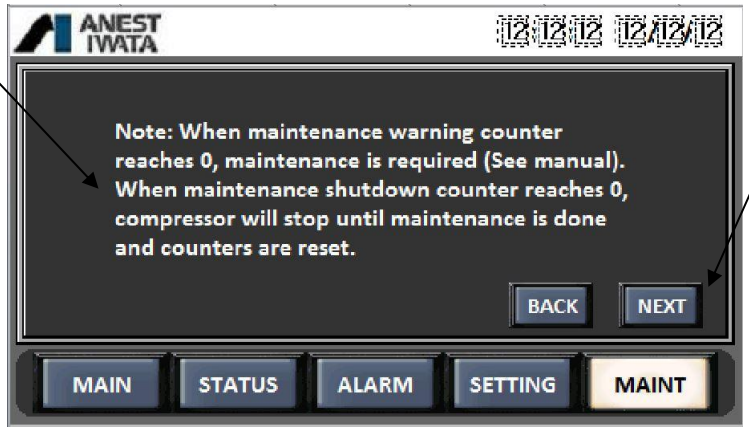
- **Maintenance Note screens.**

Note explaining maintenance schedule



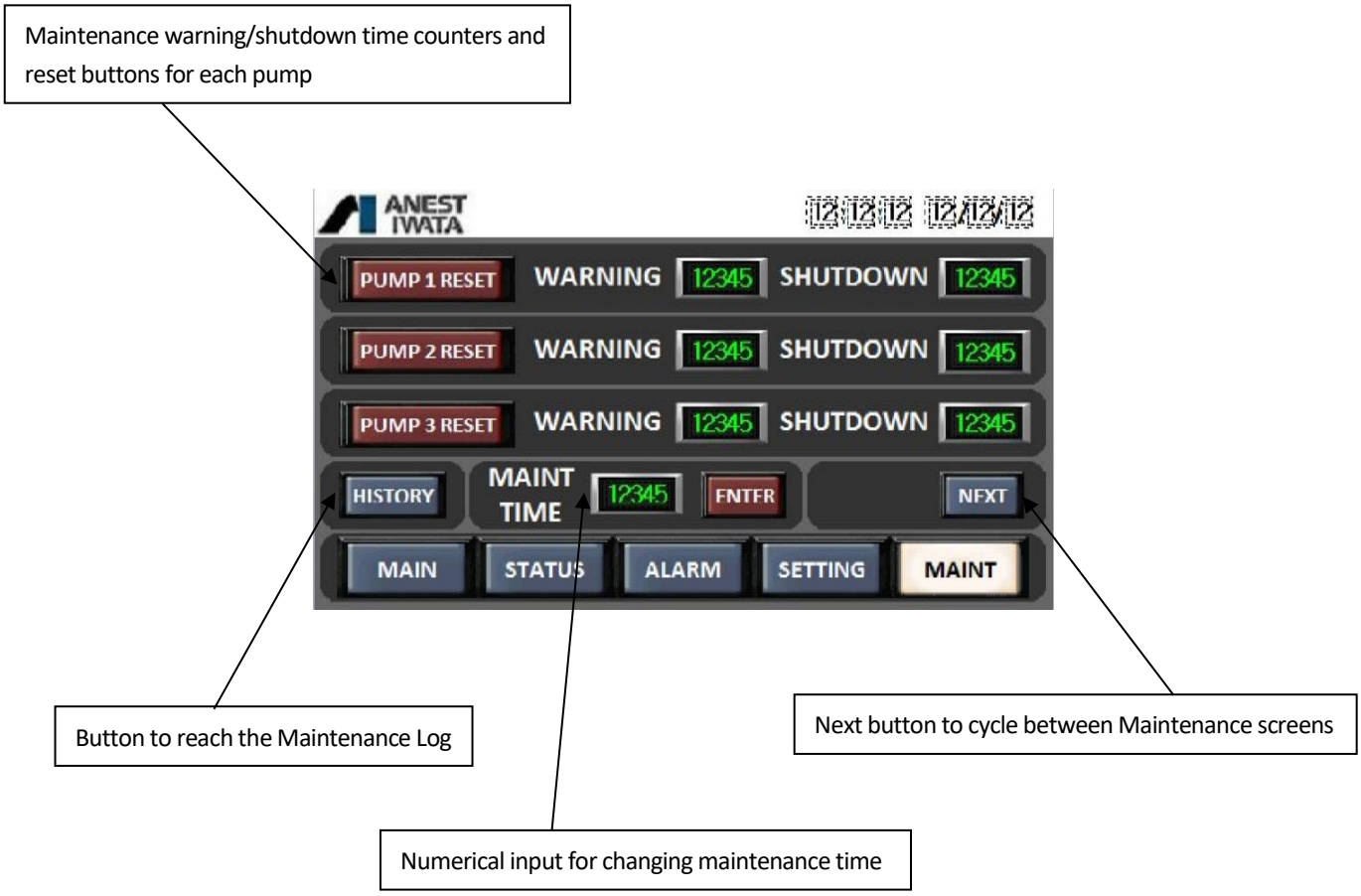
Next and Back buttons to cycle between the Note Screens and the Maintenance screens

Note explaining the maintenance time counters



Operating panel

- **Maintenance screen**

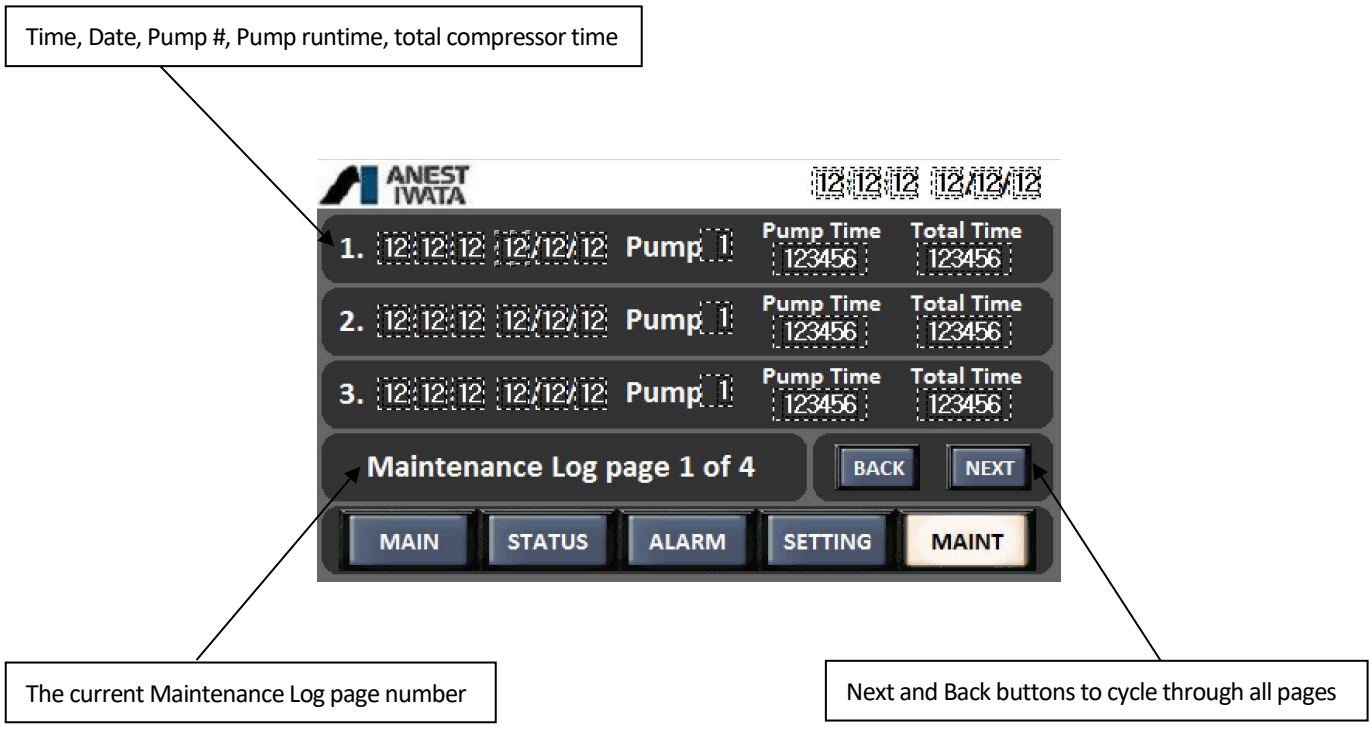


Note:

Pump reset buttons and maintenance time input are locked by a password

Operating panel

- **Maintenance Log screen**

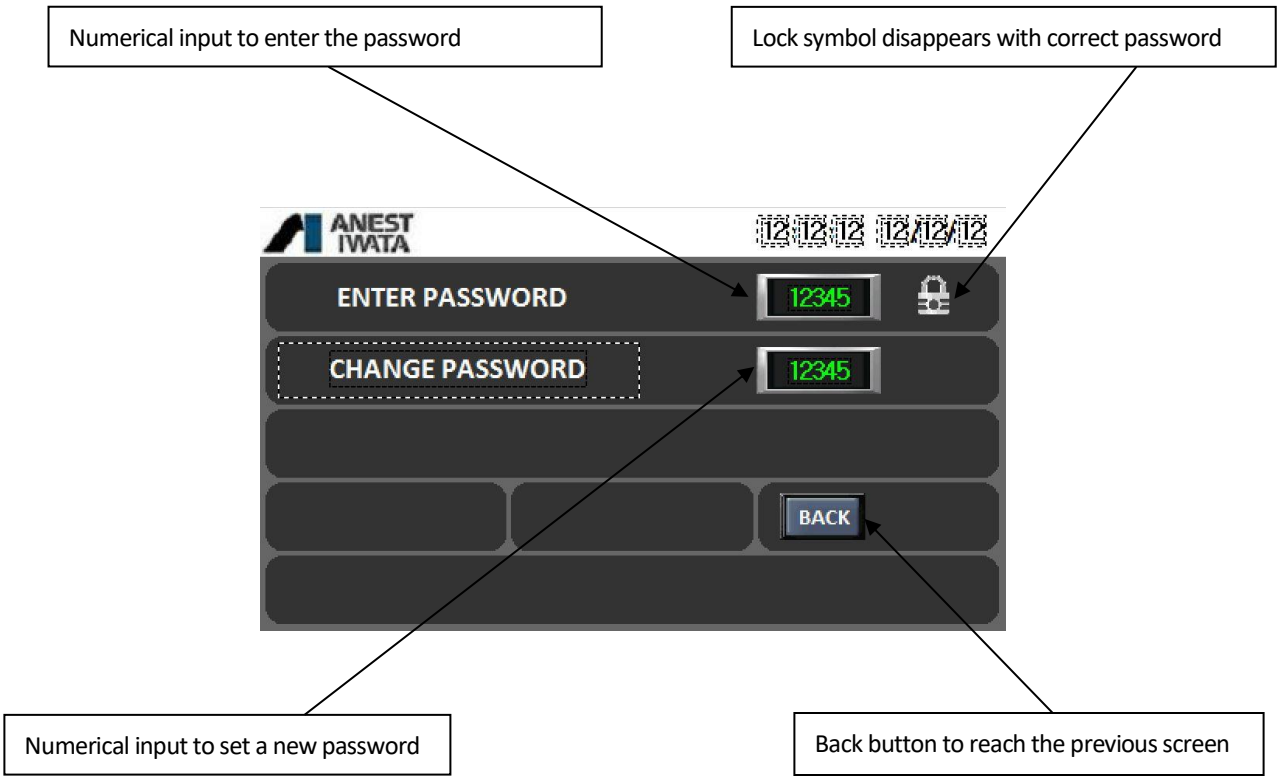


Note:

The previous 12 pump reset occurrences are kept in the Maintenance Log. After that, older entries are deleted.

Operating panel

- **Password screen**



Note:

The default password is: 45011

To bring up the change password field, enter: 45211

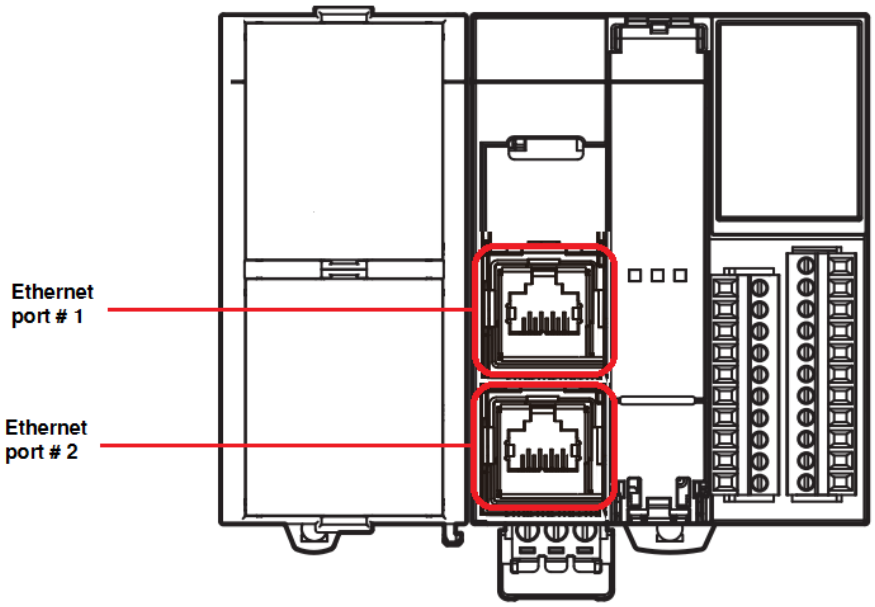
Communication

Additional to alarm and data log our SLE compressor is supporting a various communication protocols, such as Modbus TCP, BACnet/IP and a local webpage.

▪ BACnet/IP

➢ Introduction

BACnet/IP Communication is available through ethernet port # 1, Customers can connect their BACnet system to our compressor using Ethernet cable.



A convenient front panel ethernet plug is optional (contact ANEST IWATA AIR ENGINEERING for more info)

Communication

➢ Object List

Our Compressor can deliver a various Status and Alarm to BACnet/IP network, the object lists are divided into two main sections Analog Input Objects and Binary Input Objects.

Note : All objects are read only, and no data can be written to the PLC

The Analog Input Objects are the analog values collected from the compressor and sent to the network with values and Units :

- ✓ Air Pressure
- ✓ Compressor Runtime
- ✓ Pumps Runtime
- ✓ Pumps Time till Maintenance
- ✓ Pumps Temperature

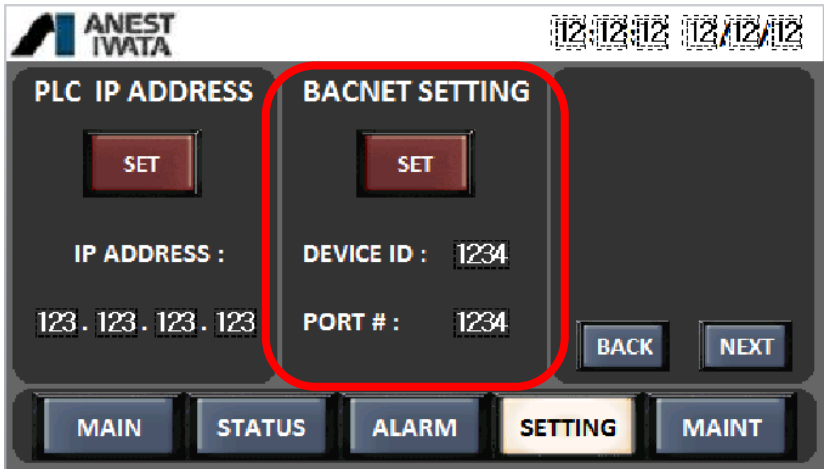
The Binary Input Objects are the binary values describing the health and status of the compressor whereas 0 = inactive, 1 = Active:

- ✓ E-Stop Alarm
- ✓ Pump Run Status
- ✓ Pumps Temperature sensor Failure
- ✓ Motor Overload
- ✓ Pumps High Temperature Warning
- ✓ Pumps Over Temperature Warning
- ✓ Maintenance Warning
- ✓ Maintenance Shutdown
- ✓ Pressure sensor Failure
- ✓ Low PLC Backup Battery
- ✓ Exhaust Fan Failure (if Applicable)
- ✓

The HMI Setting screen demonstrate the BACnet setting such as device ID, Port number and status :

Default Device ID : 1
Default Port # : 1

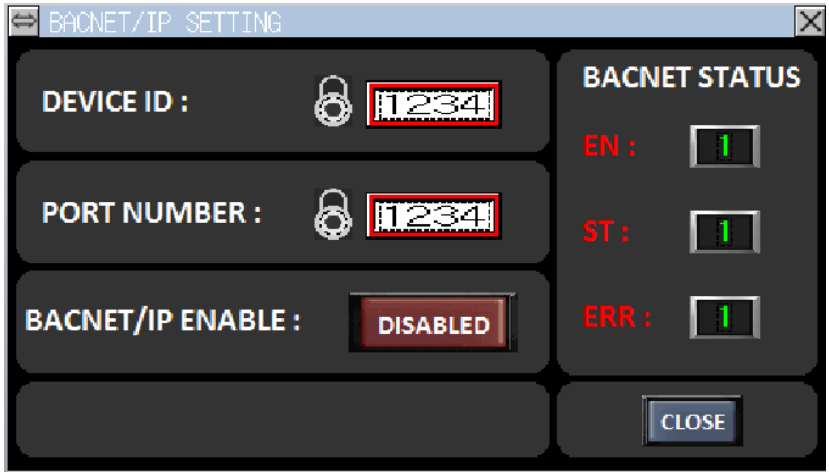
Communication



To change the BACnet setting:

1- Press SET and a BACnet setting Screen will Popup
2- First disable BACnet
3- Change Device ID and Port number
4- Enable BACnet

Note: BACnet setting cannot be modified without disabling the Communication

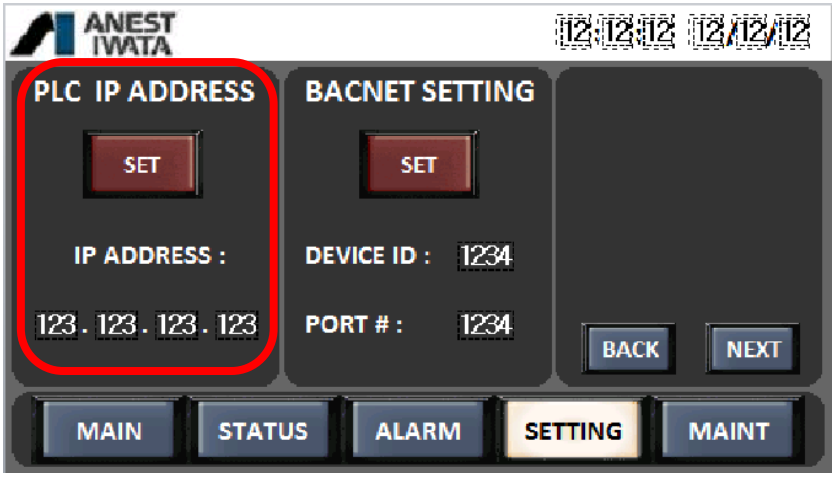


Communication

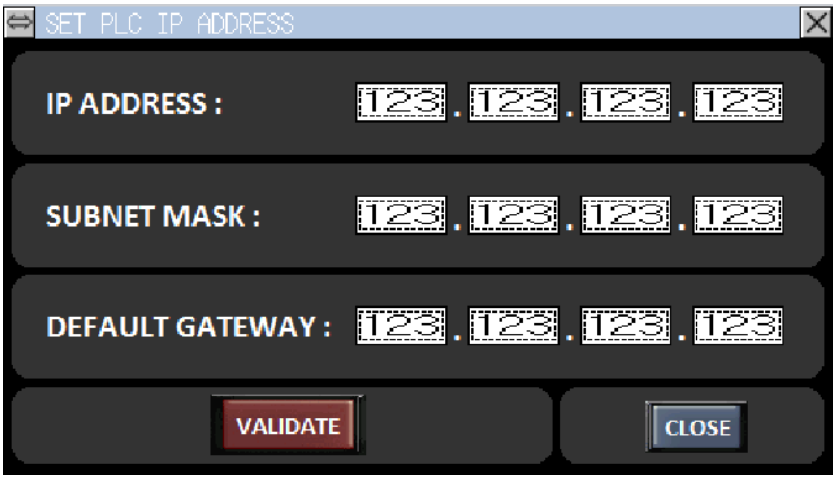
The BACnet status section demonstrate the system health, the table below summarize all possible status values:

Status	Description	
EN	BACnet Communication Status	0 : BACnet Prohibited
		1 : BACnet Permitted
ST	BACnet Operation Status	0 : Stopped
		1 : Ready
		2 : Operating
		3 : Stopped by Error
ERR	BACnet Error Status	0 : No Error
		1 : Invalid device ID
		2 : Invalid IP address
		3 : Invalid BBMD IP address
		4 : BBDM registration failure

The PLC IP address section show the current IP Address of ethernet port # 1
Default IP Address: 192.168.1.5
Default Subnet Mask: 255.255.255.0
Default gateway: N/A



Communication



To change the PLC IP address:

1- Press SET and an IP setting Screen will Popup
2- Enter the desired IP address, subnet mask and default gateway if applicable
3- Press validates

Note : The new IP address will NOT take effect without validating the changes

- **Modbus**

Our compressor supports Modbus TCP communication protocol through ethernet port # 1, Operators can connect their Modbus TCP to the compressor using an ethernet cable. The PLC is configured as Modbus TCP server with the host port # : 502

Default IP Address : 192.168.1.5
Default Subnet Mask : 255.255.255.0
Default gateway: N/A

Note : To change the PLC IP Address please follow the steps above (BACnet section)
To view all Modbus addresses, please contact ANEST IWATA AIR ENGINEERING for the Modbus addressing table

Problems and remedies

▪ Caution displays

(1) When the caution flashes on the display screen, the compressor will stop.
When the caution stops, the display will keep flashing until the caution is reset.
(2) Check the caution display mode.
(3) When a caution starts, cut off the leak breaker, solve the issue and turn on the electric source. Reset the caution.
(4) Refer to the chart below:

- Temperature of the air end is too high.
  When the temperature of an air end becomes high, the caution display will flash.
  Causes for this caution is as follows:

Items	Possible causes
Ambient temperature	Ambient temperature is high.
Cooling	1. Intake metal wire is clogged. 2. Exhaust outlet is clogged. 3. Fins of after cooler are clogged. 4. Ventilation fan fails and intake hose is damaged. 5. Cooling passage of compressor is clogged. 6. High exhaust pressure.

- Temperature sensor fails.
  Causes are considered as shown below:

Items	Possible causes
Sensor	1. Temperature sensor cord is not properly contacted. 2. Temperature sensor cord is disconnected. 3. Temperature sensor fails.
Ambient temperature	When temperature is less than 33°F.

- Intermediate maintenance
  It shows that maintenance time is less than 200 hours. Refer to the maintenance screen for details.

  If it is time for greasing or replacing the tip seal, then contact our distributor and ask them for intermediate maintenance and inspection.

❖ Be sure intermediate maintenance is done in accordance with the maintenance standards.

Important	Be sure to contact our distributor and ask for intermediate maintenance.

Problems and remedies

If you have any problems, please refer to the chart below.
If the (*) marked items are difficult for you to fix, please contact the shop you purchased it from.

- Compressor

Problems		Causes	Remedies
It does not operate	No display on HMI panel	• Electric source is not turned on.	• Turn on electric source.
		• Comm. cable unplugged	• Check cable
		• Electric source is not correctly connected.	• Connect it correctly.
		• Failure of HMI	• Inspect, repair or replace. *
	It does not operate despite display.	• Failure or wiring failure of magnetic switch	• Inspect, repair or replace *
		• HMI Failure	• Inspect, repair or replace *
		• Motor failure	• Inspect, repair or replace *
		• Low voltage	• Check electric source capacity, size of electric source cable and change to proper one.
	Maint. is displayed.	• Intermediate maintenance time has elapsed.	• After maintenance, push reset switch to cancel. *
It starts but then stops	Caution is displayed	• High ambient temperature, bad ventilation	• Improve installation environment and ventilation.
		• Clogging of fins of after cooler or intake metallic wire	• Clean
		• Failure of ventilating fan	• Inspect
		• Damage to intake hose	• Replace *
		• Cooling passage of air end clogs.	• Inspect *
		• High exhaust pressure.	• Inspect *
	Condition is displayed.	• Low voltage	• Check electric source capacity, size of electric source cable and change to proper one.
		• Motor failure	• Inspect, repair or replace *
		• Air end failure	• Disassemble, inspect or repair *
		• Loosened wiring screw	• Tighten
		• Pressure increases higher than designated one.	• Readjust
		• Failure of thermal relay.	• Replace *
Exhaust pressure does not increase.		• Air leaks from air piping.	• Inspect or repair
		• Reverse revolution	• Change phases.
		• Failure of pressure setting	• Readjust *
		• Clogged intake filter	• Clean or replace
		• Failure of pressure sensor	• Replace *
Safety valve activates.		• Failure of safety valve	• Replace *
		• Failure of pressure setting	• Readjust *
		• Failure of pressure sensor	• Replace *
Abnormal sound		• Reverse revolution	• Check revolving direction and change phases.
		• Air end failure	• Inspect, repair or replace *
		• Belt slips.	• Check tension and readjust
		• Motor failure	• Inspect, repair or replace *
		• Cooling fan contacted	• Inspect and repair
		• Loosened bolts	• Inspect and tighten

Maintenance and inspection

Carry out the following maintenance and inspection items according to the schedule below.

This interval is based on conditions where ambient temperature is at around 86°F. If your location is warmer or running condition is severe, maintain at a shorter period. 30% from our recommendation at every 9 degree F.

If the operating hour is over 15 hours per day, please shorten 30% from our recommended maintenance period.

- Compressor maintenance standards (SLE - 10, 15 and 20)

  Inspect and check operational hours or number of years, whichever comes first.

Items	Contents	Maintenance time							Remarks
	Operational hours	Daily	Every 400hrs, Every 2 months	Every 2,500hrs, Every 1 year	Every 5,000hrs, Every 2 years	Every 10,000hrs Every 4 years	Every 20,000hrs Every 8 years	Every 30,000hrs Every 12years	
	Period								
(Drain)	Drain air receiver	○							
abnormal sound/ vibration		○							
Ventilation fan	Smooth rotation			○					Replace if abnormal.
Intake filter			○	●					Replace when it is dirty.
Intake metal wire	Clean		○						Clean when it is dirty.
Safety valve	Check operation		○						
Belt	Inspect, replace		○ Initial only	○		●☆			No looseness, no abnormal sound
Intake hose Nylon pipe	Inspect, replace				○☆				Replace if there are cracks or hardening
Magnet switch	Inspect, replace				○☆	●☆			
Motor insulation	Check insulation				○☆				Replace if abnormal.
Motor	Inspect, replace						●☆		
Pulley	Check groove.					○☆			Replace if abnormal.
Temperature sensor	Measure resistance					○☆			Replace if abnormal.
Pressure sensor	Check operation					○☆			Check display figure. Replace if abnormal.
After cooler	Clean outside					○☆			Replace if abnormal.
O rings	Replace					●☆			
Check valve	Replace					●☆			
Air end seal parts, Re-grease	Inspect, replace					●☆			Use Iwata genuine grease.
Air end fan FS・OS fins	Clean					○☆			Replace when it is dirty.
Air end	Replace							●☆	

○ Inspect, ● Replace ☆ Consult with distributor who sold it to you.

Air intake filters are not covered under warranty. You may want to keep extra filters on hand.

Maintenance and inspection

- Compressor maintenance standards (SLE - 10H, 15H and 20H)

  Inspect and check operational hours or number of years, whichever comes first.

Items	Contents	Maintenance time							Remarks
	operational hours	daily	Every 400hrs, Every 2 months	Every 2,500hrs, Every 1 year	Every 5,000hrs, Every 2 years	Every 10,000hrs, Every 4 years	Every 15,000hrs, Every 6 years	Every 20,000hrs, Every 8 years	
	period								
(Drain)	Drain air receiver	○							
abnormal sound/ vibration		○							
Ventilation fan	Smooth rotation			○					Replace if abnormal.
Intake filter			○	●					Replace when it is dirty.
Intake metal wire	Clean		○						Clean when it is dirty.
Safety valve	Check operation		○						
Belt	Inspect, readjust, replace		○ Initial only	○		●☆			No looseness, no abnormal sound
Intake hose Nylon pipe	Inspect, replace				○☆				Replace if there are cracks or hardening
Magnet switch	Inspect, replace				○☆	●☆			
Motor insulation	Check insulation				○☆				Replace If abnormal.
Motor	Inspect, replace							●☆	
Pulley	Check groove.					○☆			Replace if abnormal.
Temperature sensor	Measure resistance					○☆			Replace if abnormal.
Pressure sensor	Check operation					○☆			Check display figure. Replace if abnormal.
After cooler	Clean outside					○☆			Replace if abnormal.
O rings	Replace					●☆			
Check valve	Replace					●☆			
Air end seal parts, Re-grease	Inspect, replace				●☆				Use Iwata genuine grease.
Air end fan FS・OS fins	Clean				○☆				Replace when it is dirty.
Air end	Replace						●☆		

○ Inspect, ● Replace ☆ Consult with distributor who sold it to you.

Air intake filters are not covered under warranty. You may want to keep extra filters on hand.

Maintenance and inspection

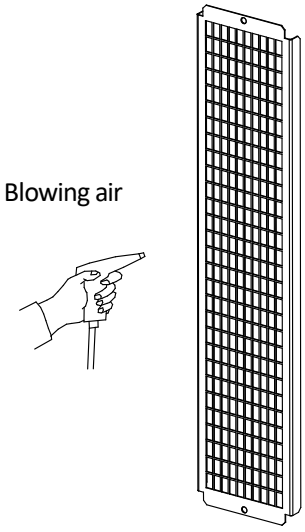
To keep your compressor in good condition for a long time, you must conduct proper inspection and maintenance. Consider periodic inspection as a minimum standard, shortening the time if necessary.

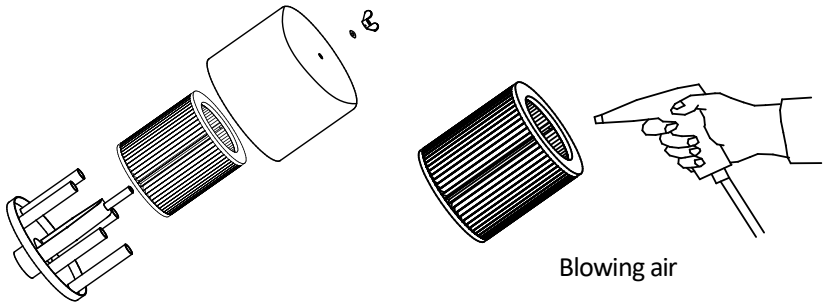
▪ Daily

- Drain the condensate from the air receiver.
  Activate the drain valve of air receiver before releasing compressed air in air receiver, and Drain condensate from air receiver.
- Check history of emergency stops and cautions by viewing the operating panel on the compressor

▪ Every 400 hours or every 2 months

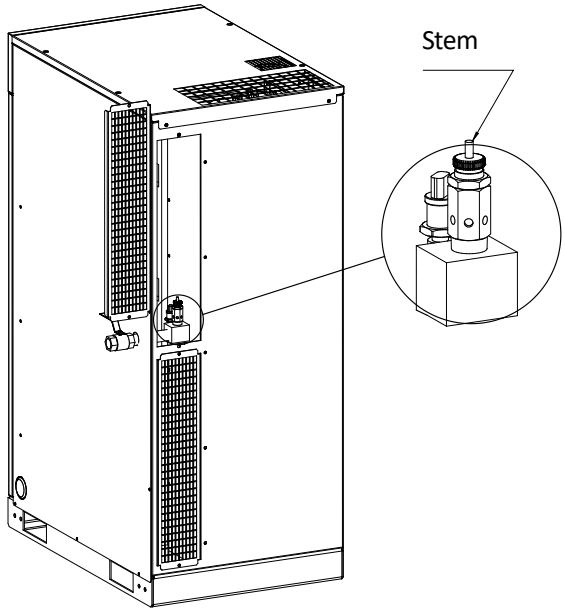
- Clean the intake metal wire.
  (1) Remove the intake metal wire from the rear of compressor.
  (2) Clean the metal wire with blow air and a clean rag.
- Check V belt
  Check if the V belt makes a slipping sound at the startup or during operation, due to decrease of V belt tension.
- Clean and replace intake filter.
  (1) Open the intake metal wire from rear of compressor and remove lid from the air intake portion.
  (2) Remove the intake filter and clean it by blowing air through it.
  (3) If the intake filter is dirty then replace it.



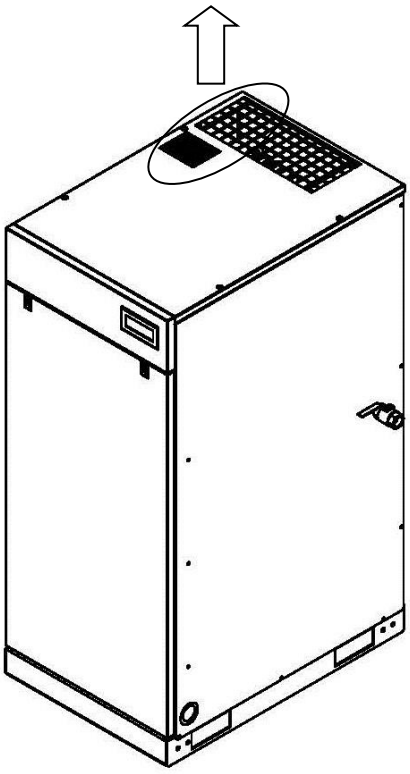


Maintenance and inspection

- Safety valve
  Lift the stem of the safety valve at about maximum pressure and blow it off. Then push the stem down.



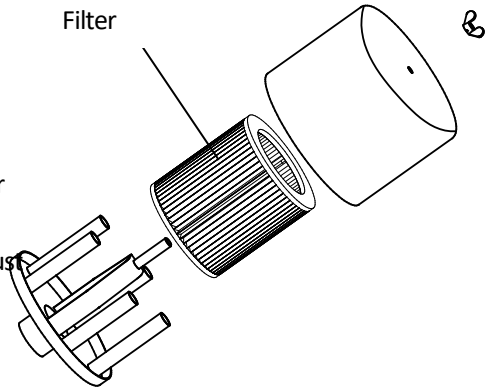
- Check ventilation fan
  Check the ventilation fan to see if it rotates correctly and exhausts air during compressor operation.



Maintenance and inspection

- **Every 2500 hours or yearly**

  - Replace the intake filter.



  - Check the belt tension.
    See if the V belt makes a slipping sound at the startup, due to decrease of the V belt tension. If so, readjust the belt tension or replace it.
    If the belt tension is less than the figure in the chart below, adjust the belt tension again.
    An exclusive tool is necessary to measure belt tension.
    Ask our distributor to readjust the belt tension when needed.

Model	Readjustment standard load / Hz	Readjustment target load / Hz Tolerance ±5	Replacement new belt target load / Hz Tolerance ±5
SLE - 10 / 10H SLE - 15 / 15H SLE - 20 / 20H	75	98	105

  - Check leakage
    Close the stop valve at the air receiver outlet and push the operating switch of the compressor to operate. When all compressors stop operation at maximum pressure, push the stop switch and check the air pressure of the operating panel. If pressure greatly decreases, then air is most likely leaking from the piping. Pinpoint where the air is leaking and stop it by tightening or replacing parts.

- **Every 5000 hours or 2 years**

- **Every 10000 hours or every 4 years**

- **Every 20000 hours or every 8 years**

- **Every 22500 hours or every 9 years (In case of SLE - 10H / 15H / 20H)**

- **Every 30000 hours or every 12 years(In case of SLE - 10 / 15 / 20)**

  Your compressor needs inspection and maintenance by experienced service person.
  Consult with our distributor who sold it to you.

Specifications

▪ Compressor specifications

- 10 HP

	Item \ Model	SLE-10	SLE-10H
Compressor	Pump model	SL-165E x 2	SL-1651E x 2
	Control system	Multi-stage (Pressure start-stop detected by sensor)	
	Discharge pressure (psi)	94 to 116	123 to 145
	Air delivery (cfm)	*1 29.6	*1 23.4
	Air end revolution (rpm)	3200 (each pump)	3050 (each pump)
	Driving system	V-belt	
	Discharge air temperature (degree F)	Intake temperature + less than 52	Intake temperature + less than 52
	Air outlet	NPT 1" (Ball valve)	
	Air receiver (GAL)	more than 80 (recommendation)	more than 80 (recommendation)
	Noise level at 4.9 ft from front (dB A)	*2 53	
	Ground vibration (dB)	*3 less than 45	
Motor	Motor (each)	5 HP, 208-230V / 460V, 60Hz, 3phase, TEFC, 4-pole, F class insulation	
	Output (HP)	10HP (5HP x 2)	
	Starting system	direct on-line start with magnetic contactor (serial start)	
Protection	Over temperature	equipped （with advance caution）	
	Over current	equipped （thermal relay）	
Others	Dimensions (W × L × H) (inch)	*4 26 × 38 × 62	
	Approx. mass (Lbs.)	690	690

Note

*1) Air delivery means average discharge air volume at 94 psi / 123 psi (maximum operating pressure) converted into atmospheric pressure. It is not a warranted figure.

*2) Noise level is measured in an anechoic room.

*3) The ground vibration is measured at the position of 0.4 inch from compressor side. (The ground vibration changes by the ground condition. This data is a reference value when compressor is left on a usual concrete floor.

*4) Dimensions are outer dimensions excluding extruding parts.

Specifications

- 15 HP

Item \ Model		SLE-15	SLE-15H
Compressor	Pump model	SL-165E x 3	SL-1651E x 3
	Control system	Multi-stage (Pressure start-stop detected by sensor)	
	Discharge pressure (psi)	94 to 116	123 to 145
	Air delivery (cfm)	*1 44.4	*1 35.1
	Air end revolution (rpm)	3200 (each pump)	3050 (each pump)
	Driving system	V-belt	
	Discharge air temperature (degree F)	Intake temperature + less than 52	Intake temperature + less than 52
	Air outlet	NPT 1" (Ball valve)	
	Air receiver (GAL)	more than 80 (recommendation)	more than 80 (recommendation)
	Noise level at 4.9 ft from front (dB A)	*2 56	
	Ground vibration (dB)	*3 less than 45	
Motor	Motor (each)	5 HP, 208-230V / 460V, 60Hz, 3phase, TEFC, 4-pole, F class insulation	
	Output (HP)	15HP (5HP x 3)	
	Starting system	direct on-line start with magnetic contactor (serial start)	
Protection	Over temperature	equipped （with advance caution）	
	Over current	equipped （thermal relay）	
Others	Dimensions (W × L × H) (inch)	*4 26 × 38 × 62	
	Approx. mass (Lbs.)	875	875

Note

*1) Air delivery means average discharge air volume at 94 psi / 123 psi (maximum operating pressure) converted into atmospheric pressure. It is not a warranted figure.

*2) Noise level is measured in an anechoic room.

*3) The ground vibration is measured at the position of 0.4 inch from compressor side. (The ground vibration changes by the ground condition. This data is a reference value when compressor is left on a usual concrete floor.

*4) Dimensions are outer dimensions excluding extruding parts.

Specifications

- 20 HP

Item \ Model		SLE-20	SLE-20H
Compressor	Pump model	SL-165E x 4	SL-1651E x 4
	Control system	Multi-stage (Pressure start-stop detected by sensor)	
	Discharge pressure (psi)	94 to 116	123 to 145
	Air delivery (cfm)	*1 59.2	*1 46.8
	Air end revolution (rpm)	3200 (each pump)	3050 (each pump)
	Driving system	V-belt	
	Discharge air temperature (degree F)	Intake temperature + less than 63	Intake temperature + less than 63
	Air outlet	NPT 1" (Ball valve)	
	Air receiver (GAL)	more than 120 (recommendation)	more than 120 (recommendation)
	Noise level at 4.9 ft from front (dB A)	*2 58	
	Ground vibration (dB)	*3 less than 45	
Motor	Motor (each)	5 HP, 208-230V / 460V, 60Hz, 3phase, TEFC, 4-pole, F class insulation	
	Output (HP)	20HP (5HP x 4)	
	Starting system	direct on-line start with magnetic contactor (serial start)	
Protection	Overheat switch	equipped （with advance caution）	
	Over current switch	equipped （thermal relay）	
Others	Dimensions (W × L × H) (inch)	*4 26 × 38 × 62	
	Approx. mass (Lbs.)	1060	1060

Note

*1) Air delivery means average discharge air volume at 94 psi / 123 psi (maximum operating pressure) converted into atmospheric pressure. It is not a warranted figure.

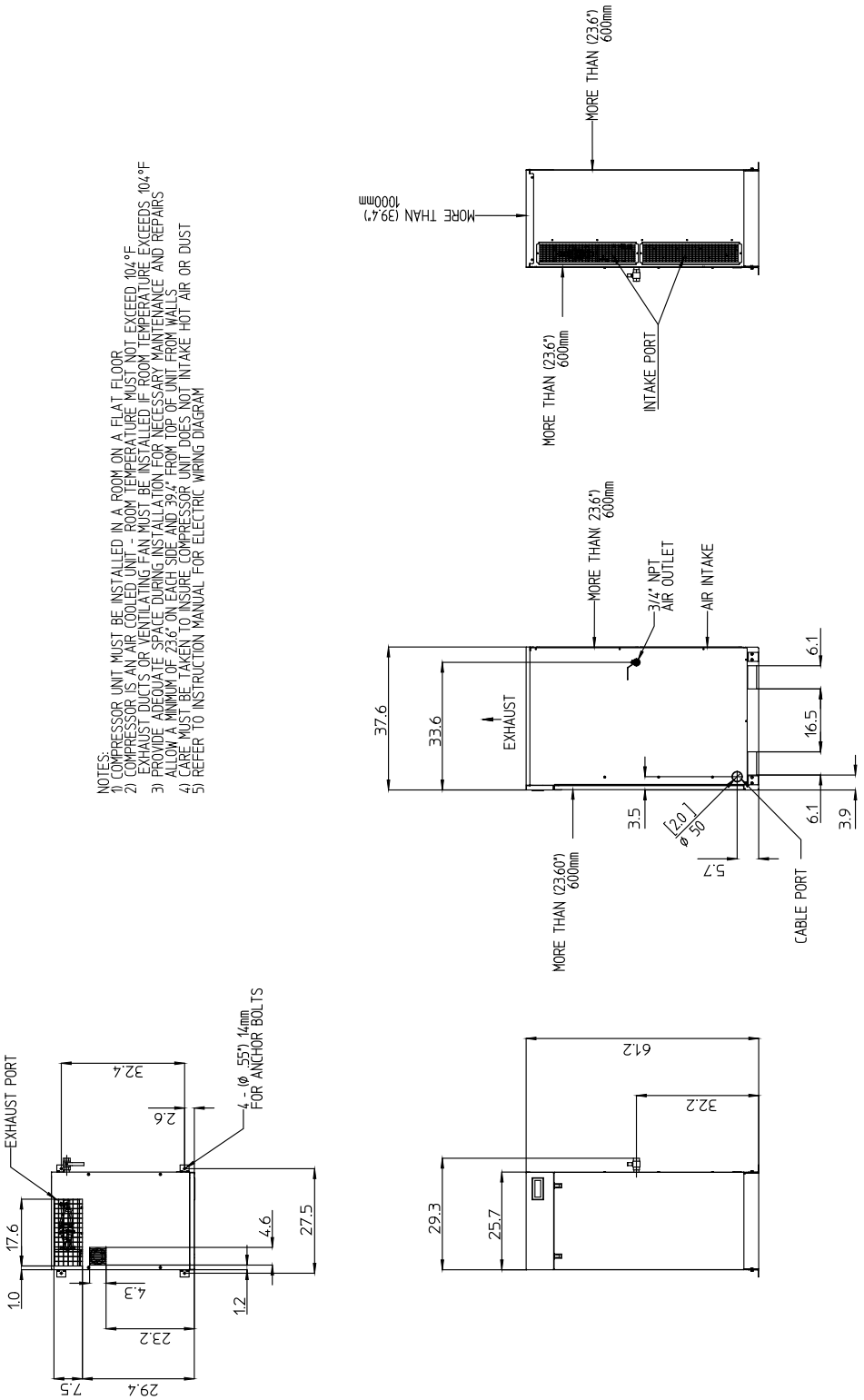
*2) Noise level is measured in an anechoic room.

*3) The ground vibration is measured at the position of 0.4 inch from compressor side. (The ground vibration changes by the ground condition. This data is a reference value when compressor is left on a usual concrete floor.

*4) Dimensions are outer dimensions excluding extruding parts.

Appendix

- **Outer dimensions**
  - SLE-10/10H, SLE-15/15H and SLE-20/20H



Appendix

▪ Circuit diagram

Please refer to the attached circuit diagram.

▪ HMI setting

Item[*1]	Minimum	Factory setting	Maximum
Upper Pressure (psi) (SLE-10 / SLE-15 / SLE-20)	86	116	116
Differential (psi) (SLE-10 / SLE-15 / SLE-20)	15[*2]	22	45
Lower Pressure (psi) (SLE-10 / SLE-15 / SLE-20)	41	94	101
Upper Pressure (psi) (SLE-10H / SLE-15H / SLE-20H)	86	145	145
Differential (psi) (SLE-10H / SLE-15H / SLE-20H)	15[*2]	22	45
Lower Pressure (psi) (SLE-10H / SLE-15H / SLE-20H)	41	123	130
Maintenance Warning (Hrs.) (SLE-10 / SLE-15 / SLE-20)	-	9800	-
Maintenance Shutdown (Hrs.) (SLE-10 / SLE-15 / SLE-20)	-	10000	-
Maintenance Warning (Hrs.) (SLE-10H / SLE-15H / SLE-20H)	-	4800	-
Maintenance Shutdown (Hrs.) (SLE-10H / SLE-15H / SLE-20H)	-	5000	-
Temperature Warning (°F)	-	157	-
Temperature Shutdown (°F)	-	167	-

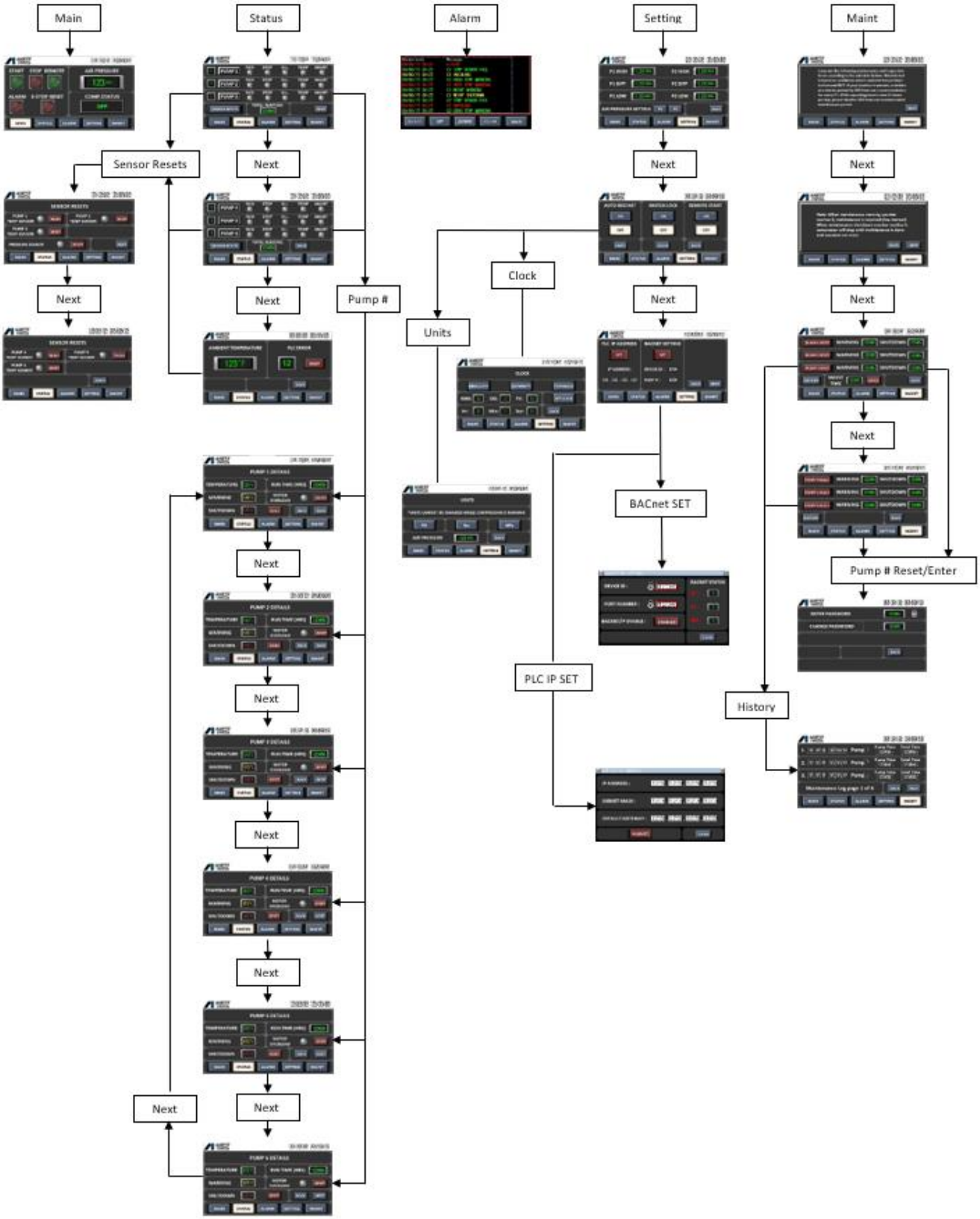
Note:

*1; Only Pressure can be changed, Maintenance and Temperature can only be reset

*2; In case the differential is changed to 15 psi, the volume of the air receiver must be 1.5 times larger than the recommendation at 22 psi.

Appendix

- **Menu flow chart**



Warranty

▪ Warranty and Remedies

(a) **General. Anest Iwata - Air Engineering warrants each Compressor System, Compressor Air-End, or Anest Iwata branded accessory (collectively "products", individually each a "product") to be free from defects in material and workmanship ("Defects") at the date of shipment. EXCEPT AS SET FORTH BELOW, NO OTHER WARRANTY, WHEATHER EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABLILITY OR FITNESS FOR A PARTICULAR PURPOSE, SHALL EXIST IN CONNECTION WITH THE SALE OR USE OF SUCH PRODUCTS. TO THE EXTENT PERMITTED BY LAW ANY AND ALL IMPLIED WARRANTIES ARE EXCLUDED. All claims under this warranty must be made in writing and delivered to Anest Iwata Air Engineering, or such claim shall be barred. Upon timely receipt of a claim, Anest Iwata Air Engineering shall inspect the product claimed to have a defect, and Anest Iwata Air Engineering shall repair, or, at its option, replace, free of charge, any product which it determines to have had a defect at the time of shipment from Anest Iwata Air Engineering; provided, however, that if circumstances are such as to preclude the remedying of defect by repair or replacement, Anest Iwata Air Engineering shall, upon return of the product, refund to buyer any part of the purchase price of such products paid to Anest Iwata Air Engineering. Freight for the returning products to Anest Iwata Air Engineering for inspection shall be paid by buyer. The warranties and remedies herein are the sole and exclusive remedy for any breach of warranty or for any other claim based on any defect, or non-performance of the products, whether based upon contract, warranty or negligence.**

(b) **Initial period of warranty – Parts and Labor.** Anest Iwata Air Engineering warrants and represents all products shall be free from defects for the first twelve (12) months from the date of shipment by Anest Iwata Air Engineering, or five thousand (5,000) hours of use, whichever occurs first. During such warranty period, Anest Iwata Air Engineering shall be fully liable for all defects in the products (the "product defects"), i.e., all costs of repair or replacement, which may include "in and out" charges, so long as the products are located in the continental United States, and the products are reasonably located and accessible by service personnel for removal. "In and out" charges include the costs of removing a product from buyer's equipment for repair or replacement.

(c) **Additional period of Warranty – Parts Only (No Labor).** In addition to the above, Anest Iwata Air Engineering warrants each Anest Iwata branded compressor air-end, shall be free of defects for a period of eighteen months from the date of shipment of product, or 10,000 hours of use, whichever occurs first. Supplier's repair or replacement of any product shall not extend the period of any warranty of any product. This warranty applies to the exchange of part(s) found to be defective by an authorized Anest Iwata service center only.

(d) **Coverage.** The above mentioned warranty applies to Anest Iwata Air Engineering manufactured units or systems only.

(e) **Exceptions.** Notwithstanding anything to the contrary herein, Anest Iwata Air Engineering shall have no warranty obligations with respect to products:

- **(i)** That have not been installed in accordance with Anest Iwata Air Engineering's Written specifications and instructions;
- **(ii)** That have not been maintained in accordance with Anest Iwata Air Engineering's written instructions;
- **(iii)** that have been materially modified without the prior written approval of Anest Iwata Air Engineering; or
- **(iv)** That experience failures resulting from operation, either intentional or otherwise, in excess of rated capacities or in an otherwise improper manner.

(f) The warranty provided herein shall not apply to: (i) any defects arising from corrosion, abrasion, use of insoluble lubricants, or negligent attendance to or faulty operation of the products; (ii) ordinary wear and tear of the products; or (iii) defects arising from abnormal conditions of temperature, dirt or corrosive matter; (iv) any OEM component which is shipped by Anest Iwata Air Engineering with the original manufacturer's warranty, which shall be the sole applicable warranty for such component.

Limitation of liability. TO THE EXTENT ALLOWABLE UNDER APPLICABLE LAW, NOT WITHSTANDING ANYTHING TO THE CONTRARY HEREIN, UNDER NO CIRCUMSTANCES SHALL ANEST IWATA AIR ENGINEERING BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTAL, PUNITIVE, SPECULATIVE OR INDIRECT LOSSES OR DAMAGES WHAT SO EVER ARISING OUT OF OR IN ANY WAY RELATED TO ANY OF THE PRODUCTS OR GOODS SOLD OR AGREED TO BE SOLD BY ANEST IWATA AIR ENGINEERING TO BUYER. TO THE EXTENT ALLOWABLE UNDER APPLICABLE LAW, ANEST IWATA AIR ENGINEERING'S LIABLITY IN ALL EVENTS IS LIMITED TO AND SHALL NOT EXCEED THE PURCHASE PRICE PAID.

Warranty Disclaimer. Anest Iwata Air Engineering has made a diligent effort to illustrate and describe the products in this literature accurately; however, such illustrations and descriptions are for the sole purpose of identification, and do not express or imply a warranty that the products are merchantable, or fit for a particular purpose, or that the products will necessarily conform to the illustrations or descriptions.

Product Suitability. Many jurisdictions have codes and regulations governing sales, construction, installation, and/or use of products for certain purposes, which may vary from those in neighboring areas. While Anest Iwata Air Engineering attempts to assure that its products comply with such codes, it cannot guarantee compliance, and cannot be responsible for how the product is installed or used. Before purchase and use of a product, please review the product applications, and national and local codes and regulations, and be sure that the product, installation, and use will comply with them.

Claims. Claims pertaining to the products, with the exception of warranty claims, must be filed with Anest Iwata Air Engineering within 6 months of the invoice date, or they will not be honored. Prices, discounts, and terms are subject to change without notice or as stipulated in specific product quotations. All agreements are contingent upon strikes, accidents, or other causes beyond our control. All shipments are carefully inspected and counted before leaving the factory. Please inspect carefully any receipt of products noting any discrepancy or damage on the carrier's freight bill at the time of delivery. Discrepancies or damage which obviously occurred in transit are the carrier's responsibility and related claims should be made promptly directly to the carrier. Returned products will not be accepted without prior written authorization by Anest Iwata Air Engineering and deductions from invoices for shortage or damage claims will not be allowed. **UNLESS OTHERWISE AGREED TO IN WRITING, THESE TERMS AND CONDITIONS WILL CONTROL IN ANY TRANSACTION WITH ANEST IWATA AIR ENGINEERING** Any different or conflicting terms as may appear on any order form now or later submitted by the buyer. All orders are subject to acceptance by Anest Iwata Air Engineering.

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