Discontinue

CKD Corporation

SM-7654-A

INSTRUCTION MANUAL

SELEX DRYER
(Air Cooled Type)

RD - 300E
RD - 360E
RD - 450E

[EM2-0FC01]

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FOR SAFETY USE

The product is intended for use solely in industrial systems and NOT intended for consumer use or application.

Do not attempt to use, apply, install and repair the product unless you are trained in the proper techniques for working on electric, fluid power and refrigeration systems.

Inappropriate or improper use, application, installation and servicing of the product may or could create a danger or hazard to personnel and/or equipment.

PRODUCT SAFETY SIGN

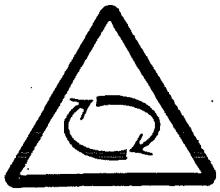
SIGNAL WORD : The word or words that designate a degree or level of safety alerting.

WARNING : Indicates a potentially hazardous situation, if not avoided, could result in death or serious injury.

CAUTION : Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or property damage.

WARNING

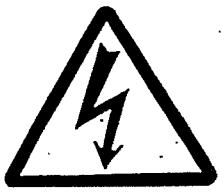
★Hazardous fan will cause severe injury.



- Keep hands away from moving parts.
- Turn off power before servicing.

WARNING

★Harzrdous voltage can shock, burn or cause death.



- Turn off power before opening cover.

CAUTION

★Hot surface can cause burn.

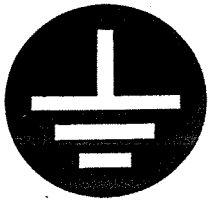
- Turn off power and cool down before servicing.

CAUTION

★Fall points can cause severe injury.

- Do not ride on here.

★Connect a grounding wire to prevent electric shock.



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Thank you for adopting our quality product "SELEX Dryer".

This manual has been edited to provide you such fundamental articles as concerning Installation, Operation and Maintenance of SELEX Dryer. Read it well and fully understand its content so as to make you enjoy its performance to the full extent.

Keep it, always, available to operators and/or technicians not only for ready reference of operation and maintenance but also for retaining safe operation through correct handling

Note in advance that there will be a few discrepancies between contents of this manual and real product due to improvement of specifications.

NOTE : Letters & figures enclosed within Gothic style bracket (examples such as [C2-4PP07] · [V2-503-B] etc.) are editorial symbols being unrelated with contents of the book.

Discontinue

INDEX

RD-300E, RD-360E, RD-450E
Selex Dryer (Air Cooled Type)
SM 7654-A

1. PRODUCT

1-1. Specifications

Model No. / Item			RD-300D	RD-360D	RD-450D
Connection Port Dia. (FLG), Air Outlet and Inlet			4	4	6
Standard Treated Air Output	Volume of Air(m^3/min. Atmospheric	50Hz	44.2	56.1	72.3
		60Hz	52	66	85
	Air Temperature at Inlet (°C)		40		
	Air Pressure at Inlet(kgf/cm2){MPa}		7 {0.7}		
	Ambient Temperature (°C)		32		
	Air Dew Point at Outlet (°C)		10 (Under Pressure)		
Service Condition	Media used		Compressed Air		
	Air Temperature at Inlet (°C)		2~50		
	Ambient Temperature (°C)		2~40		
	Max. Working Pressure (kgf/cm^2) {MPa}		9.9 {0.99}		
Electric Specification	Source of Power (V)		3-Phase AC200V 50/60Hz		
	Inlet Power (kW)		5.4/6.2	7.3/8.4	9.6/10.8
	Current (A)		20.3/21.0	25.9/27.2	37.3/35.8
	Crankcase Heater (W)		40×2		
System Details	Condenser		Fin and Tube type, Forced Air Circulating System		
	Refrigerant Control System		Automatic Expansion Valve, Thermal type		
	Temperature Control System		Self Operated Capacity Regulating Valve Fleon R22		
	Refrigerant				
Weight of Product (kgf)			850	900	930
Type of Drain Discharging Valve			Solenoid valve (AB41-03-3-AC200V)		
Dia. of Drain Port (Rc)			1/2		

Remarks:

1) Calculate out the Volume of treated air, applying multiplier factor out of Multiplier Factor Table below, in the event when Air Treatment Condition deviates the condition as shown above.
2) FLG denotes JIS Flange for 10kgf/cm^2.

MULTIPLIER FACTOR TABLES

Ⓐ Multiplier, Pressure Dew Point

Pressure Dew Point	Multiplier
15°C	1.1
10°C	1.0
5°C	0.7

Ⓑ Multiplier, Air Inlet Temperature

Temperature at Air Inlet	Multiplier
30°C	1.68
35°C	1.27
40°C	1.00
45°C	0.80
50°C	0.65

© Multiplier, Ambient Temperature

Ambient Temperature	Multiplier
25°C	1.11
30°C	1.04
32°C	1.00
35°C	0.94
40°C	0.84

Ⓓ Multiplier, Pressure

Inlet Pressure (kgf/cm^2)	2	3	4	5	6
Multiplier	0.65	0.72	0.79	0.86	0.94
Inlet Pressure (kgf/cm^2)	7	8	9	9.9	
Multiplier	1.0	1.03	1.05	1.07	

Discontinue

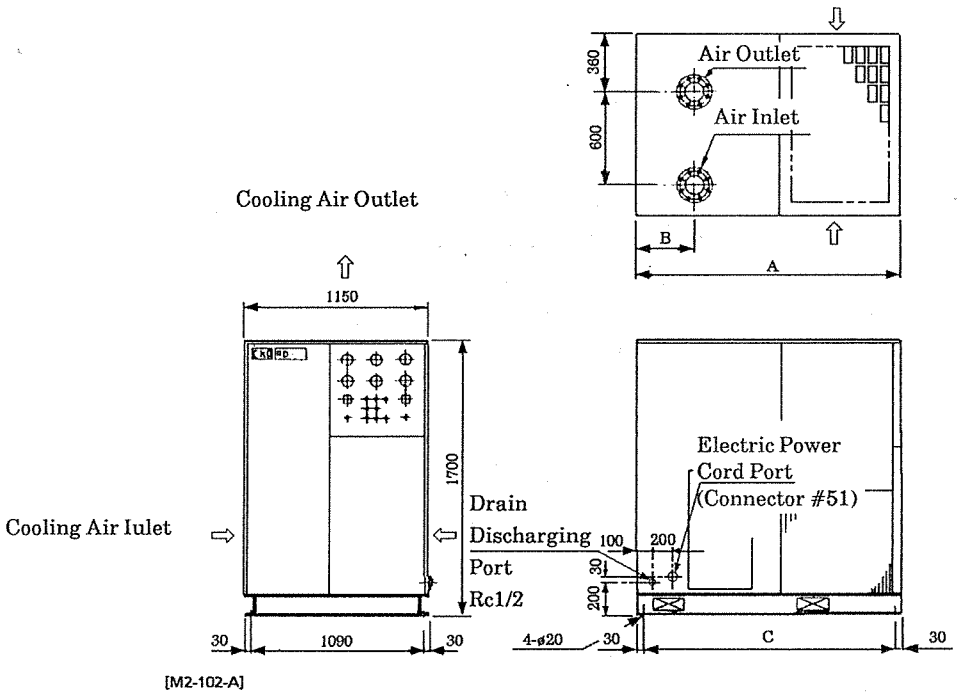
1 PRODUCT

Calculation of Treated Air Volume

Standard Volume, Treated Air	×	Ⓐ Pressure Dew Point Multiplier	×	Ⓑ Multiplier, Air Inlet Temp.ture	×	Ⓒ Multiplier, Ambient temp.	×	Ⓓ Multiplier, Pressure

= Treated Air Volume (m^3 / min. Atmospheric conversion)

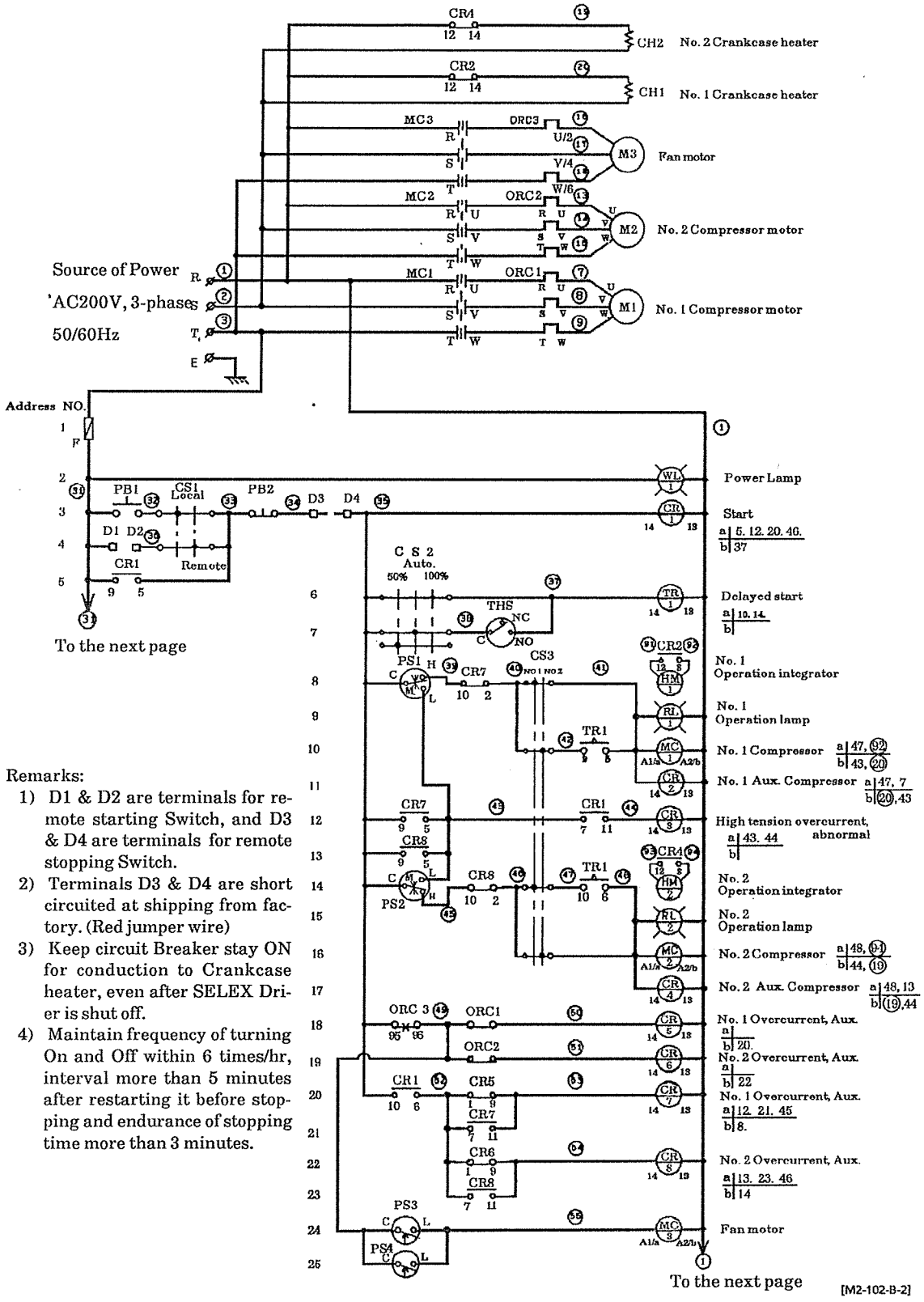
1-2. External Dimensions



Marking / Model No.	A	B	C	Dia. of Air Connection
RD-300E	1750	335	1690	FLG-4
RD-360E	1900	370	1840	FLG-4
RD-450E	1950	370	1890	FLG-6

Note: 1. Flange mounting bolts and gasket for Air outlet and Air inlet are delivered together with Unit.
2. Provide clearance of 600mm between wall and each side of Unit, right, left and top side.
3. Outlet and Inlet of Treated Air are flush to top surface of Unit.

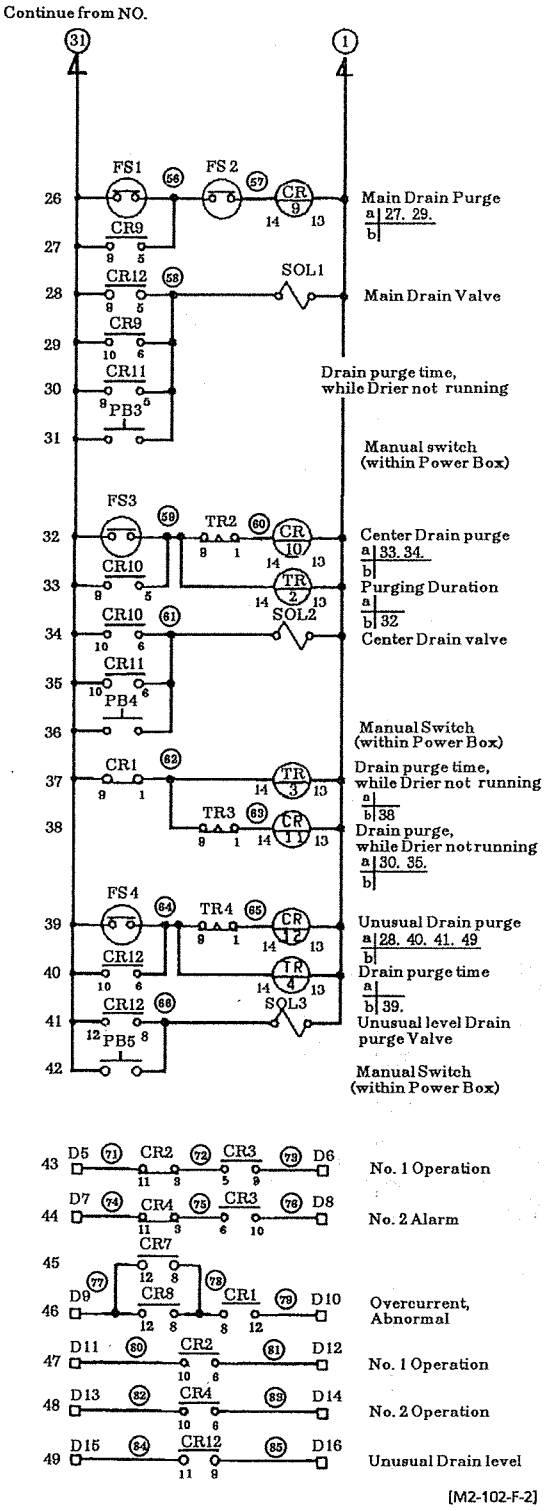
1-3. Electric Wiring Diagram



[M2-102-B-2]

Remarks:

1) D1 & D2 are terminals for remote starting Switch, and D3 & D4 are terminals for remote stopping Switch.
2) Terminals D3 & D4 are short circuited at shipping from factory. (Red jumper wire)
3) Keep circuit Breaker stay ON for conduction to Crankcase heater, even after SELEX Drier is shut off.
4) Maintain frequency of turning On and Off within 6 times/hr, interval more than 5 minutes after restarting it before stopping and endurance of stopping time more than 3 minutes.



[M2-102-F-2]

1) Parts list

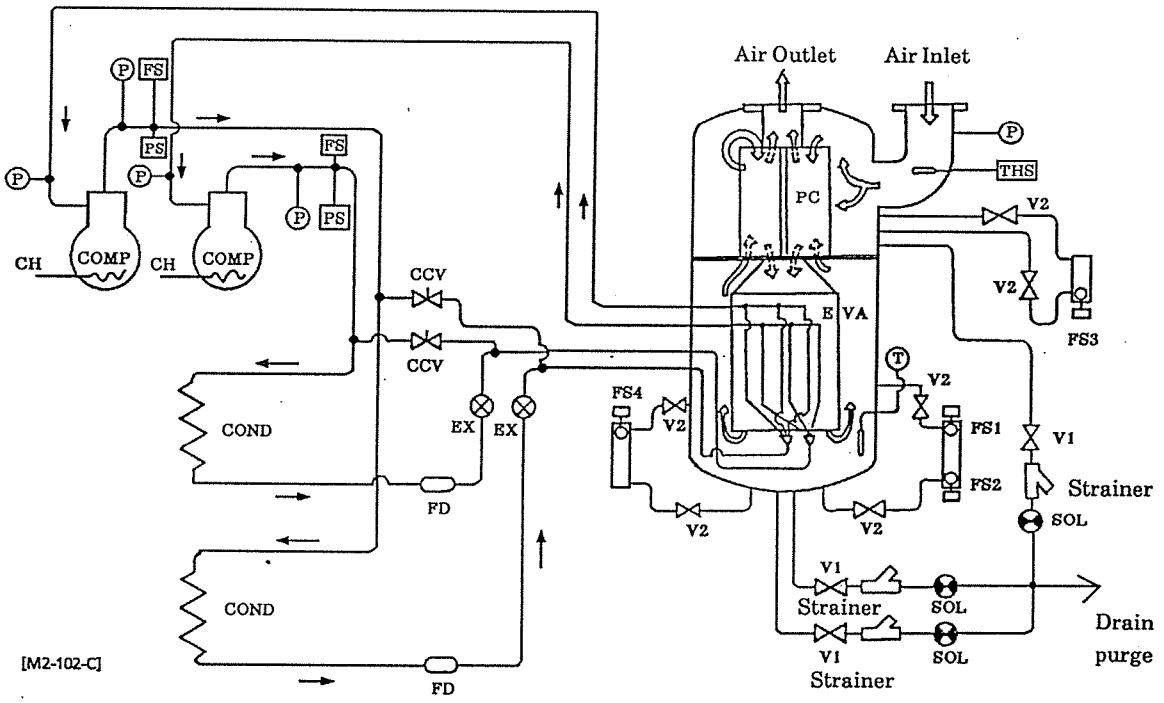
Item No.	Parts	Qty.	Manufacturer
ORC1	Overcurrent Relay	1	Hitachi seisakusho Co., Ltd.
ORC2	Overcurrent Relay	1	Hitachi seisakusho Co., Ltd.
MC1	Electromagnetic Contactor	1	Mitsubishi Denki Co., Ltd.
MC2	Electromagnetic Contactor	1	Mitsubishi Denki Co., Ltd.
M1	No. 1 Compressor motor	1	Hitachi seisakusho Co., Ltd.
M2	No. 2 Compressor motor	1	Hitachi seisakusho Co., Ltd.
SOL1~3	Drain purge solenoid Valve	3	CKD AB41-03-3
RL2	Running Lamp (Red)	1	Maruyasu Co., Ltd. LP-200RE
CR1~12	Aux. Relays	12	Omron Co., Ltd.
CH1	Crankcase Heater No. 1	1	Hitachi seisakusho Co., Ltd. 40W
CH2	Crankcase Heater No. 2	1	Hitachi seisakusho Co., Ltd. 40W
F	Fuse	1	Sato Parts Co., Ltd. 3A
WL1	Power Lamp (White)	1	Maruyasu Co., Ltd. LP-200WE
RL1	Running Lamp (Red)	1	Maruyasu Co., Ltd. LP-200RE
PB1	Starting Switch	1	Izumi Denki Co., Ltd. ABS-110N
PB2	Stopping Switch	1	Izumi Denki Co., Ltd. ABS-110N
PB3~5	Drain purging, Manual switches	3	Matsushita Denko Co., Ltd. AB532177
CS1	Local- Remote Select Control Switch	1	Izumi Denki Co., Ltd. ABS-211N
CS2	Capacity Select Control Switch	1	Izumi Denki Co., Ltd. ASS33SN-B-243
CS3	Starting Order Select Control Switch	1	Izumi Denki Co., Ltd. ASS222N-B
PS1	High Pressure switch	1	Saginomiya Co., Ltd. FTB-Z314
PS2	High Pressure switch	1	Saginomiya Co., Ltd. FTB-Z314
FS1~4	Drain Level Sensors	4	Kimura Co., Ltd. KS-2
HM1	No. 1 Hour Meter	1	Omron Co., Ltd. H7ET-BM
HM2	No. 2 Hour Meter	1	Omron Co., Ltd. H7ET-BM
THS	Inlet Air Temperature Switch	1	Saginomiya Co., Ltd. TNSC1034C
TR1	Timer (Compressors simultaneous start prevention)	1	Omron Co., Ltd. H3Y-4
TR2	Timer (Drain purging time)	1	Omron Co., Ltd. H3Y-4
TR3	Timer (Drain purging)	1	OmronCo., Ltd. H3Y-4
TR4	Timer (Unusual level Drain purging time)	1	Omron Co., Ltd. H3Y-4
PS3, 4	Fan Control Switch	2	Saginomiya Co., Ltd. ACB-IA02
M3	Fan Motor	1	Hitachi seisakusho Co., Ltd.
MC3	Electromagnetic Switch	1	Mitsubishi Denki Co., Ltd.
ORC3	Overcurrent Relay	1	Mitsubishi Denki Co., Ltd.

2) Set Value of Each Equipment

Symbol	Contents		
PS1, 2	Cut. Out 28kgf/cm^2; Manually Resetting		
PS3, 4	Cut. In 17kgf/cm^2, Cut. Out 12kgf/cm^2		
THS	Cut. In 28°C; Cut. Out 26°C		
TR1	On after 5 sec.		
	RD-300E	RD-360E	RD-450E
TR2	(53 sec.)	(76 sec.)	(70 sec.)
TR3	(80 sec.)	(90 sec.)	(90 sec.)
TR4	(140 sec.)	(160 sec.)	(160 sec.)
ORC1, 2	17A	25A	32A
ORC3	4A	4A	4.4A

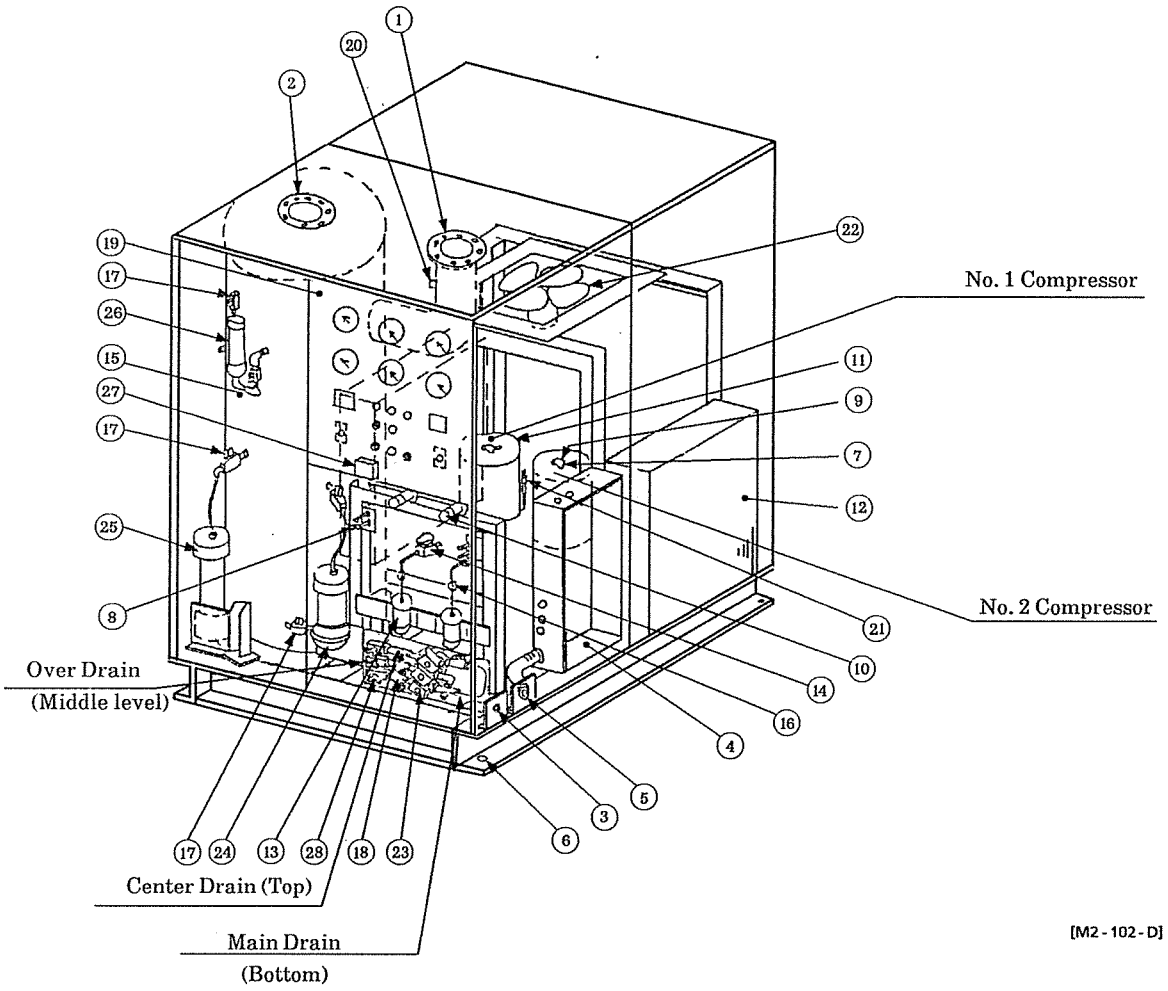
(Value) is reference value.

1-4. System Diagram



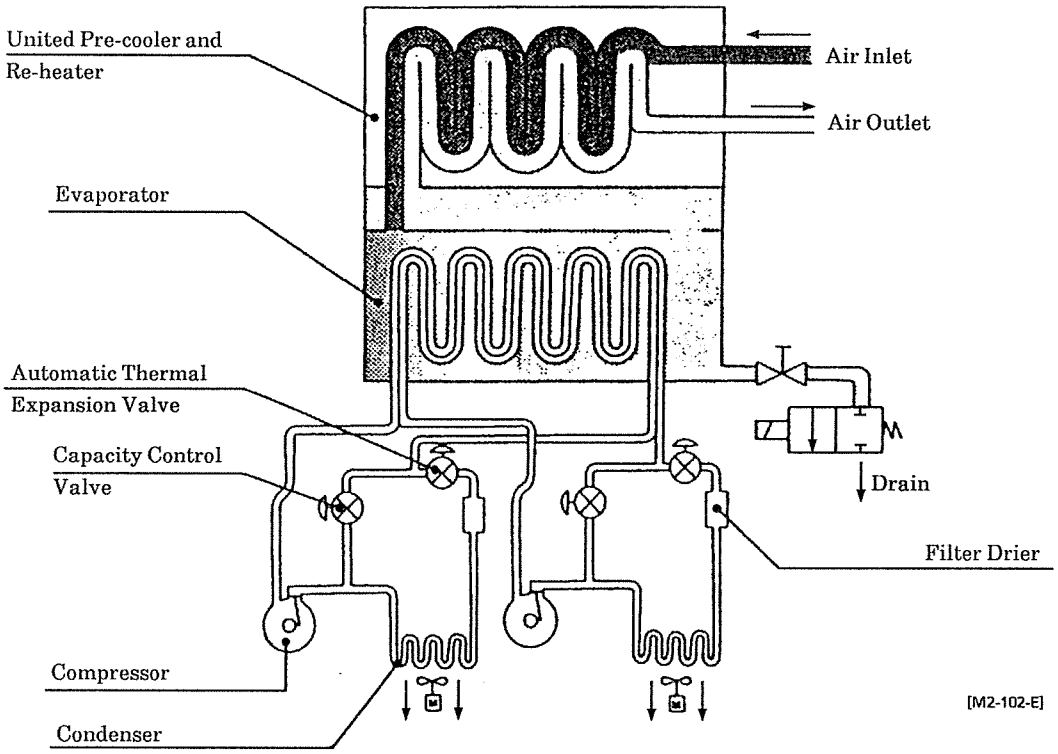
Marking	Parts	Qty.	RD-300E	RD-360E	RD-450E
COMP	Compressor	2	305FH2 Hitachi	402FH2 Hitachi	505FH2 Hitachi
P	Pressure Gauge or Combination type	5			
PS	Pressure Switch	2	FTB-Z314 Saginomiya		
CH	Crankcase Heater	2			
COND	Condenser	2			
EX	Automatic Expansion Valve, Thermal type	2	TEX2-3 Danphose	TEX5-3 Danphose	TEX5-4.5 Danphose
FD	Filter Dryer	2	EK-163S Alco	EK-304S Alco	
CCV	Capacity Control Valve	2	CTX-12330DH Saginomiya		CTX-12500DH
PC	United Pre-cooler & Re-heater				
EVA	Evaporator	1			
THS	Thermal Switch	1	TNSC1034C Saginomiya		
T	Dew Point Thermometer	1	50B-2 Okaya Keiki		
SOL	Solenoid Valve	3	AB41-03-3 CKD		
V1	Manual Stop Valve	3	1/2" Onda		
FS	Fan Control Switch	2	ACB-IA02 Saginomiya		
FS1	Main Drain Level Switch	1	KS-2 Kimura seisakusho Co., Ltd.		
FS2	Main Drain Level Switch	1	KS-2 Kimura seisakusho Co., Ltd.		
FS3	Center Drain Level Switch	1	KS-2 Kimura seisakusho Co., Ltd.		
FS4	Over Drain Level Switch	1	KS-2 Kimura seisakusho Co., Ltd.		
V2	Ball Valve	6	1/2" Onda		

1-5. Major Components of Unit



No	Parts	Qty.	No	Parts	Qty.
1	Air Inlet	1	15	Heat Exchanger	1
2	Air Outlet	1	16	Sight Glass	2
3	Drain Outlet	1	17	Ball Valve	6
4	Electric Wire Box	1	18	Strainer	3
5	Electric Wiring Port	1	19	Gauge Panel	1
6	Anchor Bolt Hole	4	20	Thermo Sensor Port	1
7	Charge Valve (High pressure side)	2	21	Fan control Switch	2
8	Charge Valve (Low pressure side)	2	22	Fan Motor	1
9	Check Point (Compressor suction port)	2	23	Solenoid Valve	3
			24	Main Drain	1
10	Capacity control Valve	2	25	Over Drain	1
11	Compressor	2	26	Center Drain	1
12	Condensor	2	27	Thermo Switch	1
13	Filter Dryer	2	28	Manual Stop Valve	3
14	Thermostatic Expansion Valve	2			

1-6. Function



1) Air Circuit

Warm and humid compressed air, as it goes through pre-cooler, is pre-cooled by compressed air, chilled and dehumidified through evaporator. The humid compressed air coming into evaporator is chilled by fleon gas down to 10°C (Minimum 5°C). Humidity within compressed air then condenses to the form of drain (drops of water) and stagnates in a bottom tray of heat exchanger. Floating switch then actuates , as the water level rises, to make solenoid valve open for purging the accumulated water.

The compressed air, chilled and dehumidified as it goes by evaporator, is lead through re-heater duct where warm and humid compressed air is guided through the other side of duct wall. The treated air, being heated up, finally comes out of air outlet in the form of dried and warm air.

2) Refrigerant Circuit

Overheated fleon gas being compressed by compressor to high temperature and high pressure is condensed, while going through condensor to the form of warm liquid refrigerant with high pressure. Being segregated from drain and dust as going through filter drier, it changes its form to low temperature, low pressure liquid while going through thermal automatic expansion valve.

Gaining heat by means of heat exchanging with warm and humid air, as going through evaporator, evaporates and gasifies while taking heat away from compressed air going through evaporator tube. Gasified refrigerant gas comes back to compressor.

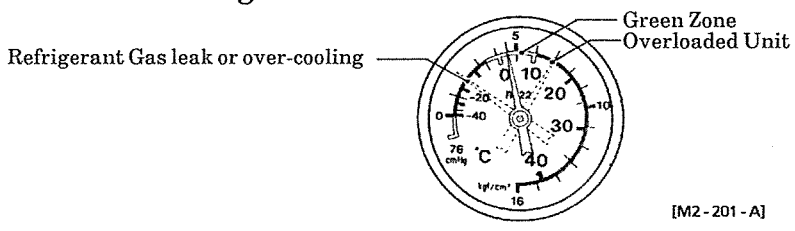
Capacity Control Valve opens to adjust thermal balance of refrigerant when heat calorie of incoming compressed air is low. Two independent refrigeration circuits are provided for the purpose of conserving running energy by shifting the switch to 50% capacity when either volume of incoming air is small or air temperature is low.

2. CAUTION

2-1. Operational Caution

1) Turn power ON four hours in advance prior to starting scheduled operation. It is for the purpose of making Crankcase Heater preheating the unit to avoid the phenomenon of Oil-foaming at starting unit due to refrigerant solved into oil in compressor. The capacity of Crankcase heater is so designed to prevent overheating even while current is charged continuously.
   Current to it during operation of the unit is shut off owing to NC contact on Aux. Relays.
2) Confirm it prior to operation system that pressure indication values by both gages No. Ⅰ and No. Ⅱ are almost alike and near by ambient temperature Repair the leakage and recharge refrigerant to specified level as it indicates a leakage of refrigerant when indication value is lower than ambient temperature.
3) It is recommended not to build in a Water Sensing Relay for the purpose of shutting off the Unit through its signal. (There are possible cases of Erroneous generated due to some types of water regulating valves allowing almost nil of water.)
4) Drain water out of drain port when intending to stop operation of the Unit for a certain length of period during winter season for the purpose of preventing damage due to frozen water. Similar type of care is also recommended, even the stopping for short duration, when ambient temperature dropping is expected to become below 0°C, freezing point.
5) It indicates that Unit is being overloaded, in majority occasions, when Indicator needle of Refrigerant Pressure Gage stays above green zone.
   Inspect the conditions of such items as follows:
   Inlet temperature of Compressed Air, Temperature of Coolant Water
   Volume of Coolant Water Volume of Treated Air
   Clogged Condenser tubes with dusts and foreign particles.
   Voltage of Source of Power
6) Carefully avoid sticking hands or any other items through air outlet of this unit to eliminate injury or malfunction of unit.

Refrigerant Pressure Gauge



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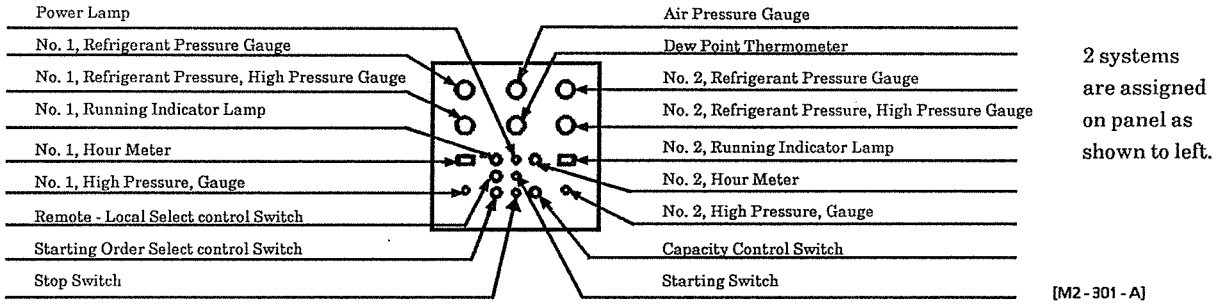
3. OPERATION

3-1. Operational Sequence

Gage panel arrangement



1) Turn power ON four hours in advance prior to Starting operation.
2) Select the first starting unit by means of Starting Order Select Control Switch. Set the Select Control Switch while Unit is not running, not during operation.
3) Set Capacity Control Switch appropriately in compliance with expected volume of Treated Air. Set the Switch while Unit is not running, not during operation.
   (Capacity Control Switch).
   There are three graduations such as 50% , Automatic and 100%.
   - 50%: Only one Compressor runs. (First starting side.)
   - Automatic : First starts with 50% load. Then controls the number of units to be engaged in operation depending upon Inlet Temperature of Air.
     Inlet Air Temperature is above 28°C Two compressors
     Inlet Air Temperature is below 26°C One Compressor
     Eliminate setting it automatic and leave it as is when an automatic control causes frequent ON and OFF (such as 5 ~10 times/hour)
   - 100% : Both compressors are to be engaged in operation.
4) Confirm the Power Lamp is on before pressing Starting Switch.
5) Running Lamps are lit in sequence of Ⅰ and Ⅱ (or reversal of Ⅱ and Ⅰ) in 5 seconds time difference then Compressors start accordingly. (This is the case of setting to 100%.)
6) Indicator needle of Refrigerant Pressure Gauge becomes stable at about bottom of green zone.

7) Make Compressed Air start to flow through at approx. 5 minutes after Unit starting. Otherwise excessive drain will be generated due to initial damp Air flow.
8) Drain starts to be purged through Solenoid Valve out of drain port at the bottom of Heat Exchanger. (Opening and closing of Solenoid valve is regulated by Float Switch.)
9) Press Stop Switch to stop operation. Note that there will be last purge of residual drain after Unit stopping as Solenoid Valve is kept open for approx. 80 ~ 90 seconds.

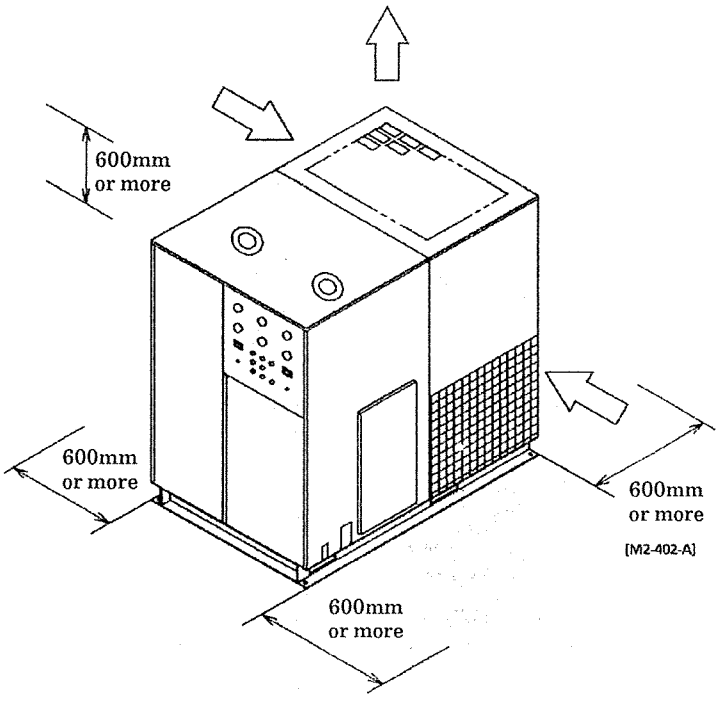
4. INSTALLATION

4-1. Items to be confirmed prior to Installation

1) See if both No. 1 and No. 2 Refrigerant Pressure Gauges indicate equal value and it is approx. corresponding value to ambient temperature. Also confirm no leakage of oil. It is to assure no leakage of Refrigerant gas.
2) See if there are Mating Flange and Gasket tentatively mounted on the Air Outlet Flange.

4-2. Concerning Location of Installation

1) Select a solid and horizontal floor with least amount of vibration.
2) Retain ample air circulation space as illustrated. Install the Unit in the area of good air circulation as this model is with Air Cooling System.
3) Select the place of clean air with the least amount of dust and foreign particles.
4) Avoid near-by location to heat generating equipment.
5) In case of installation outdoor, keep it from direct sun ray and cover it from falling rain.
6) Pay the second consideration against environmental condition during winter and summer season. (2~40°C)
7) Choose the location where plumbing or maintenance work are easily serviceable.



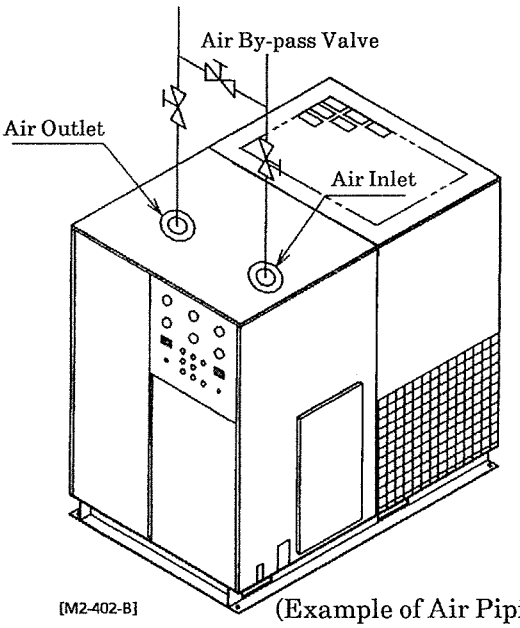
(Maintenance Space)

4-3. Installation Procedures

1) Provide foundation work where basic ground is weak.
2) Make use of those four each of anchor bolt holes. Refer to external dimension drawing as for mounting sizes.

4-4. Air Piping

1) Be sure to provide a by-pass circuit to Air Piping.
2) Be sure to avoid overburden total weight of piping to Unit.
3) Lay pipes so as to cur transmission of vibration from air tail compressor
4) Give flushing to pipes prior to building system to eliminate dust or foreign particle from falling into air pipes.
5) Use galvanized pipes.
6) So joint pipes from Drain port to gutter as to lead Drain up to gutter.
7) Make use the bolts attached to the Unit.



[M2-402-B] (Example of Air Piping)

4-5. Electric Wiring

1) Be sure to provide independent wiring system.
2) Be sure to provide Circuit Breakers (such as Overload protector serving together as Residual Current operated Breaker) etc. Refer the following Table as for capacity of related breaker.
3) Be sure to provide Grounding wire to avoid Electrocution. Terminal marked "E" is for it.
4) Connect Source of Power to terminals provided within Power Box
5) Consider the direction of air circulation. Alter connection of 2 out of 3 wires from Source of Power if Fan rotates against natural circulation and restart it, as the fan motor is that of 3-phase.

Model No.	Source of Power	Capacity of Breaker (A)	Capacity of Transformer (kVA)
RD-300E	3-phase AC200V	35	12
RD-360E	3-phase AC200V	40	16
RD-450E	3-phase AC200V	50	20

5. MAINTENANCE

5-1. Periodic Inspection

Provide the following periodic inspections to enjoy its best performance and prevent any mechanical difficulties in advance.

Inspection Item	Standard		Inspection Period			
			Daily	Weekly	Monthly	Every 6 months
Ambient Temperature	2~40°C		○			
Operation Voltage	AC200V±10%, Uneven ratio between each phase to be within 3%.					○
Operation Current	Comply with Specification					○
Inlet Air Pressure	9.9kgf/cm² or less				○	
Inlet Air Temperature	2~50°C				○	
Dew Point	0~15°C		○			
Refrigerant Pressure	During Halt	Pressure value corresponding to ambient temperature	○			
	During Running	3.5~6 kgf/cm²				
Refrigerant High Pressure	During Halt	Pressure value corresponding to ambient temperature	○			
	During Running	11 ~ 18kgf/cm²				
Power Lamp	Lit		○			
Running Lamp	Lit		○			
Compressor	No unusual noise		○			
Condenser	No stain or clogged fins			○		○ Clean
Cooling Fan Motor	Should revolve smooth and no abnormal noise		○			
Drain Leveler	Main	Water level to be lower than upper float switch of each leveler.	○		○ Clean Strainer	○ Clean Drain Leveler
	Center					
	Unusual Level					
Air Leakage	No leakage				○	
Gas Leakagetem	No Compressor oil stain at Joints of Refrigerant Piping.				○	
	Color through sight glass to be green ~ white.		○			

5-2. Trouble Shooting

Should there be any mechanical trouble, refer the following table and give appropriate remedies accordingly. Contact us, either the dealer you have purchased, branch office or field office of our company, in the event that it does not help you to cure the situation.

The information such as follows will help us to detect troubles when you are to contact us. i.e.,

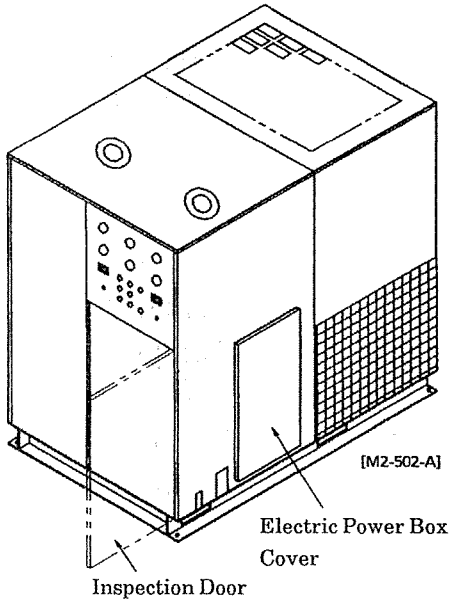
- Model No., Serial No.
- Date of Installation
- Name of Dealer (where your purchase was made.)
- State of Unusual (Provide us as much details as possible.)

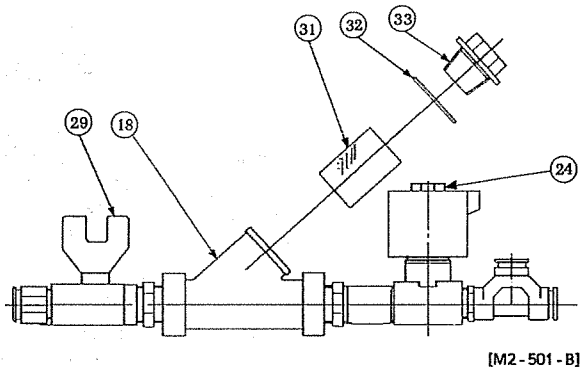
Condition	Causes	Remedies
1.Running Lamp is not lit although Starting Button is pressed.	1)Power was not turned on. 2)Broken circuit 3)Bad contact 4)Burnt out light bulb	Turn Power on } Inspect the condition using Tester and give corrective work appropriately.
2.Indicator needle of Refrigerant Pressure Gauge stays above Green Zone.	1)Overloaded a. Air inlet temperature is excessively high. b. Excessive Ambient temper ature. c. Fan Motor does not run. d. Clogged Fins of Condensor. e. Capacity Control Switch is set at 50%. f. Setting of Treated Air Volume is set excessively high. g. Voltage of Source of Power is abnormal.	Remove cause.
3.Indicator needle of Refrigerant Pressure Gauge stays below Green Zone.	1)Volume of Treated Air is small. 2)Ambient temperature or Cooling Air temperature is low. 3)There is a flow of cold air to condenser. 4)Bad Fan Control Switch Fan is revolving with lower than 11kgf/cm^2, (High pressure side) 5)Refrigerant Gas leaked.	Set the Capacity Control switch at 50%. (Keep it within operational range.) Block the wind from hitting condenser directly. Replace the fan control switch. Charge refrigerant gas again up to specified pressure after repairing gas leakage.
4.Water is discharged from the last equipment of system.	1)Examine the cause of 2. above. 2)Floats of both Main Drain Leveler and Unusual Drain Leveler are submerged.	Remove any cause. Clean out Strainer and Drain Leveler.
5.Fan motor does not start	1)High pressure side Refrigerant if lower than 18kgf/cm^2. 2)Electromagnetic switch is open	That represent reasonably normal condition Reset the switch after thoroughly cleaning Condenser.

Condition	Causes	Remedies
6.Air outlet pressure of Drier drops.	1)Ambient temperature is too low. 2)Air consumption rate is too high.	Raise the ambient temperature above 2°C Squeeze Air consumption rate.
7.During operation: 1)High pressure was cut off. 2)Overcurrent ran. 3)Fuse in control circuit burnt off. 4)Instantaneously power failed.	1)Caused by one of reasons described 2. above. 2)Caused by one of reasons described 2. above. 3)Short circuited	} Remove any cause as described in 2. above. Repair circuit and Replace Fuse with new one. Restart.
8.Drain is not purged.	1)Mechanical trouble of Drain Solenoid Valve 2)Clogged Strainer 3)Clogged Drain pipes 4)Mechanical trouble of Float Switch	Replace Solenoid Valve. Clean out Strainer. Clean out pipes. Replace Float Switch.

5-3. Cleaning Strainer

1) Open Inspection Door (refer the illustration at right.)
   (Due to installation of only a set of Magnet catcher, finger tips can easily swing open the door to right.)
   There are three system drain pipings provided as per illustrated to the right bottom which are for Cewnter, Over and Main drain.
2) Remove Cover of Electric Power Box.
3) Shut off Manual Stop Valve (29) at entrance to each Drain system.
4) Purge residual pressure by means of pressing Manual Switches PB3, PB4 and PB5 within Electric Power Box. (Do so while it is running as for Drier.)
5) Remove Cap (33) (24mm spanner) of Strainer (18). Carefully keep the Gasket (32) from loosing.
6) Wash Filter (31) after taking it out of Strainer. Replace it with new one in the event that it is excessively clogged.





7) Install cleaned Strainer Filter (31), Gasket (32) and Cap (33), then open Manual Stop Valve (29).
8) Confirm normal purging of Drain by pressing Manual Switches PB3, PB4 and PB5.

5-4. Cleaning Drain Leveler

As for large size SELEX Drier models such as RD-300E, RD-360E, and RD-450E, float type Level Switch is built in to purge Drain only upon sensing the water level accumulated within Heat Exchanger for the purpose of eliminating discharging unnecessary volume of Air for the sake of conserving energy.

1) Function

(1) Main Drain Leveler (FS1 & FS2)

It certainly purges Drain only without discharging any Air at all by actuating Solenoid Valve (Sol 1) upon sensing Drain Water level within Evaporator with floating type upper Level Switch and lower Level Switch as well.

(2) Center Drain Leveler (FS3)

It purges Drain by actuating Solenoid Valve (Sol 2) in duration of time set on Timer (TR2) by sensing Drain Water level within Pre-cooler & Re-heater unit with floating type Upper Level switch.

It purges Drain by actuating Solenoid Valve (Sol 3) in duration of time set on Timer (TR4) by sensing abnormal Drain Water level with floating type Upper Level switch, in the event that some abnormal rise of water level occurs by mechanical trouble of Main Drain Leveler.

(3) Over Drain (Abnormal Drain) Leveler (FS4)

(4) Manual Purging Push Button (PB3, PB4 & PB5)

There are Manual Drain Switches built in the Electric Power Box for each float type Level Switch, respectively. Make use of these in the event of conducting inspection of each Drain Leveler.

PB3: Main Drain Manual Switch

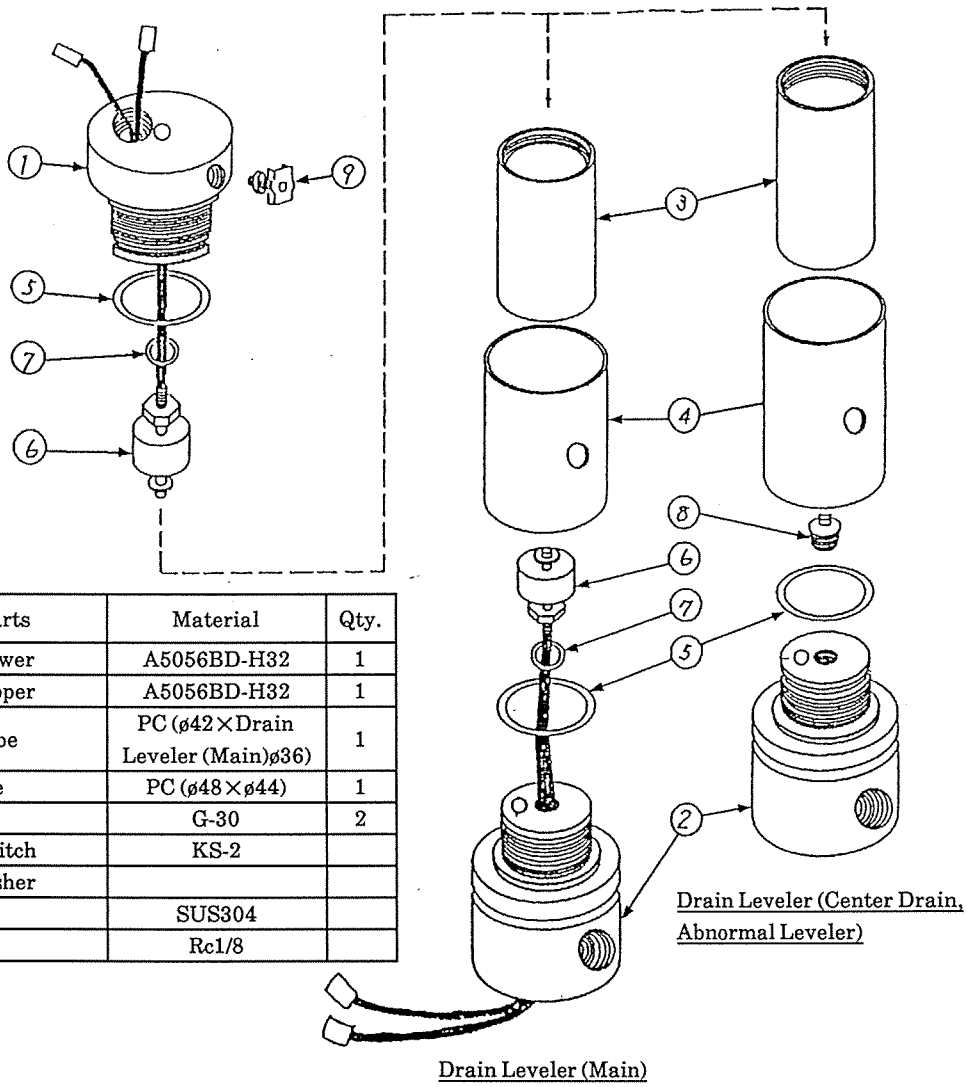
PB4: Center Drain Manual Switch

PB5: Abnormal Water Level Drain Manual Switch

(5) On stopping Unit, Main Drain Purging Solenoid Valve as well as Center Drain Purging Solenoid Valve keep open simultaneously in duration of time set on Timer (TR3) for the purpose of purging residual water in Unit.

Model of Drier	Length of Time, setting on Timer (Reference value)		
	(Center (TR 2))	Stopping (TR 3)	Abnormal Level (TR 4)
RD-300E	Off after 53 seconds	Off after 80 seconds	Off after 140 seconds
RD-360E	Off after 76 seconds	Off after 90 seconds	Off after 160 seconds
RD-450E	Off after 70 seconds	Off after 90 seconds	Off after 160 seconds

2) Internal Structure of Drain Leveler



No.	Parts	Material	Qty.
1	Body, Lower	A5056BD-H32	1
2	Body, Upper	A5056BD-H32	1
3	Main Tube	PC (ø42×Drain Leveler (Main)ø36)	1
4	Sub Tube	PC (ø48×ø44)	1
5	O ring	G-30	2
6	Float Switch	KS-2	
7	Seal Washer		
8	Plug	SUS304	
9	Petcock	Rc1/8	

3) Sequence of Disassembling

(1) Close Ball valves at Out port and In port of Drain Leveler.

(2) Purge residual pressure out of Leveler by opening Petcock (9) in upper part of Drain Leveler.

(3) Disconnect the wiring by means of butt joint terminal after removing one touch tubes of Drain Leveler, outport and inport as well.

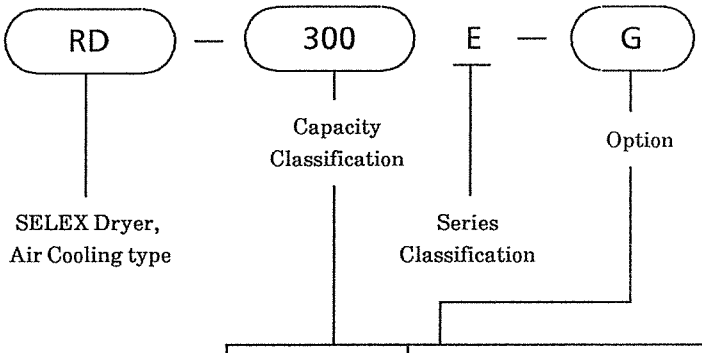
(4) Disassemble body of Drain Leveler (note its construction being threaded joint) referring ilustration above. Then wash and clean it with neutral detergent.

(5) Follow the reversed sequence of disassembling to construct it back. Be sure to apply a film of grease over O ring (5) prior to assembling it.

5-5. Cleaning Condenser

1) Be sure to top running of Unit by shutting off power.
2) Remove lower panel on rear side of Unit.
3) Blow away dusts using air-gun from inside as well as outside of Condenser.
   (Carefully handle portion of fins of condenser to avoid it from being bent easily as those are fabricated with thin aluminum sheets.)
4) Remove dusts sticking on fan, also.
5) Mount panel back in position. (Unit will cause High pressure cut when making it run without mounting panel back and also causes injury hazard because of fan revolving while being exposed.)

6. MODEL CODING

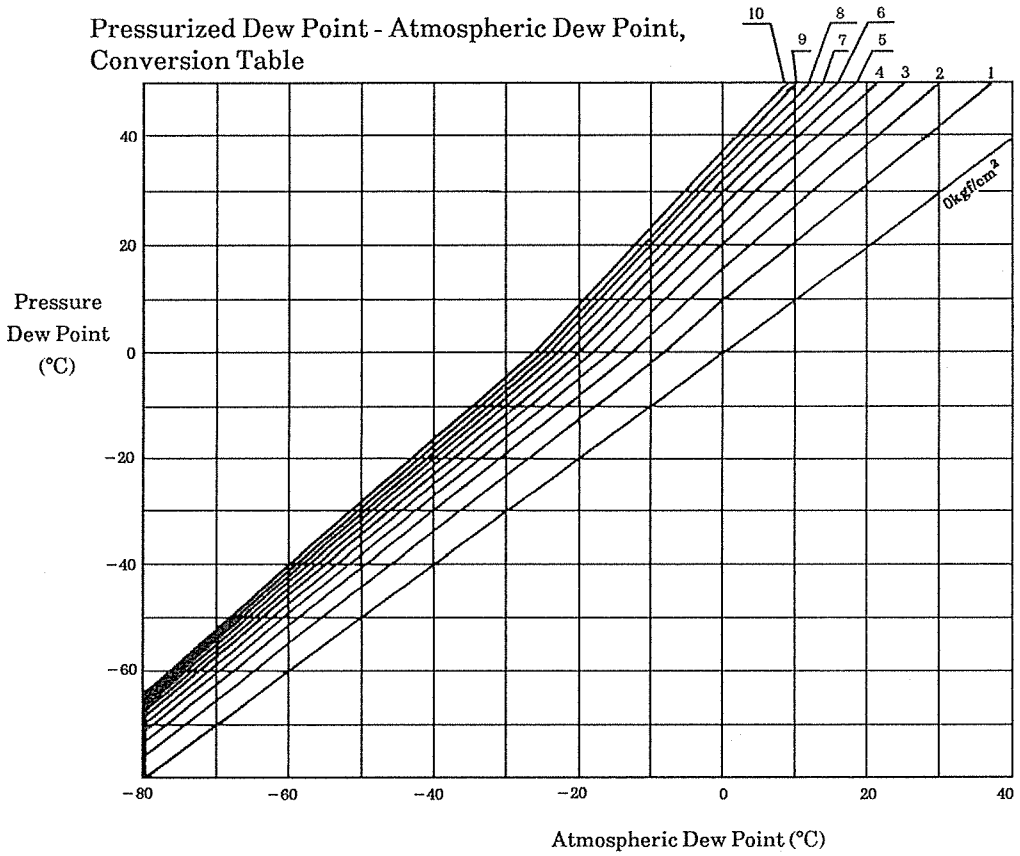


Capacity Classification	Option	
300	G	Specified Paint Color
360	F	Other Voltage than Specified
450	H	Exporting Specification
	L	Anchor Bolts attached
	O	Outdoor Specification
	T	w/digital type Dew-point meter and Thermometer
	(S)	Specific Specification

Numerical Value: Specify Output kW of Corresponding Air Compressor.

7. REFERENCE DATA

Pressurized Dew Point - Atmospheric Dew Point, Conversion Table

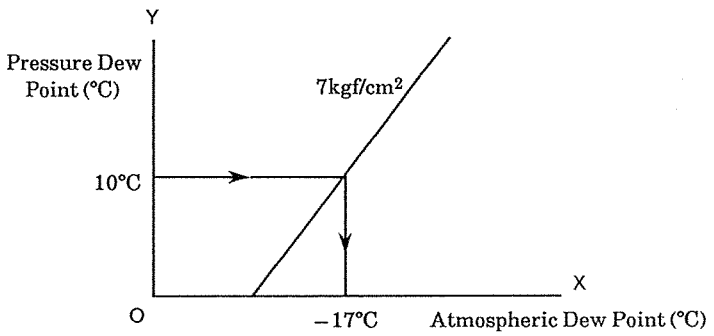


[M2-7

READING THE CONVERSION TABLE

Refer this table when conversion is required between Pressure Dew Point and Atmospheric Dew Point.

(Example) Conversion from Pressure Dew Point 10°C under the pressure of 7kgf/cm² to Atmospheric Dew Point.



Find the dew point of 10°C on Y axis. Move parallel to X axis until hitting the graph line of 7kgf/cm², then come down parallel to Y axis until hitting X axis. Read the graduation on axis X, then. which is −17°C.