6000 cyclon **SERIES**

CompAir

LUBRICATED ROTARY SCREW COMPRESSORS

COMPAIR KELLOGG
MODELS
6125C - 6150C

OPERATING/MAINTENANCE MANUAL AND PARTS LIST

IMPORTANT NOTE:
THIS MANUAL SHOULD BE READ AND FULLY UNDERSTOOD PRIOR TO COMPRESSOR START-UP OR OPERATION. ALL SAFETY PRECAUTIONS SHOULD BE IMPLEMENTED!

Limited Warranty

All new equipment supplied by **CompAir Kellogg** is warranted against defects in material and workmanship under normal use and service. The period of warranty is twelve (12) months from installation or eighteen (18) months from shipment from the factory, whichever occurs first, except as follows:

New Rotary Screw Air Ends — when supplied with a packaged unit — an additional 12 month warranty will apply provided the warranty registration card is on file at **CompAir Kellogg**, and the specified oil is used.

Any parts supplied as replacement including, but not limited to: tanks, valves, switches and gaskets are warranted for a maximum of ninety (90) days from shipment.

CompAir Kellogg reserves the right to extend warranty upon review of written request, and the obligation of **CompAir Kellogg**, whether on warranty, contract or otherwise, is limited to repair or replacement of any defective material without charge, FOB its plant or nearest authorized distributor.

This warranty does not apply to any equipment which has been subject to misuse, neglect, or accident; nor does it apply to any equipment previously repaired or altered without permission from **CompAir Kellogg.**

CompAir Kellogg makes no other warranties of any kind whatsoever, express or implied, including warranties of merchantability or fitness for a specific purpose are hereby excluded and disclaimed. In no event shall **CompAir Kellogg** be liable for incidental or consequential damages.

CompAir Kellogg CompAir Broomwade CompAir Hydrovane CompAir Reavell

FORWARD

This manual is provided to assist the customer in the installation, operation, and maintenance of the CompAir Kellogg 6000 Series rotary screw compressors. These machines have been designed and assembled to provide years of reliable performance. Regularly scheduled preventive maintenance will assist in keeping the compressor performing as it was designed and intended. Prior to installing, operating, or servicing the machine, the operators and maintenance personnel should thoroughly familiarize themselves with the contents of this manual.

WARNING

HIGH VOLTAGE MAY CAUSE SEVERE INJURY OR DEATH. DISCONNECT ALL POWER SUPPLIES BEFORE OPENING THE ELECTRICAL ENCLOSURE FOR SERVICING.

WARNING

WHEN PERFORMING MAINTENANCE ON THE COMPRESSOR, THE COMPRESSOR SHOULD BE SHUT DOWN AND ISOLATED BOTH ELECTRICALLY AND MECHANICALLY BY MEANS OF A DISCHARGE ISOLATION VALVE TO PREVENT PRESSURIZING FROM AN EXTERNAL SOURCE. DO NOT RELY UPON CHECK VALVES TO PROVIDE COMPLETE PROTECTION FROM THE AIR SYSTEM WHEN MORE THAN ONE COMPRESSOR IS INSTALLED IN THE AIR SYSTEM.

WARNING

NEVER BYPASS OR TAMPER WITH THE DISCHARGE TEMPERATURE SWITCH. FAILURE TO PROVIDE THIS SAFETY FEATURE MAY CAUSE SEVERE PERSONAL INJURY, DEATH, AND PROPERTY DAMAGE. IF THE COMPRESSOR SHUTS DOWN DUE TO HIGH DISCHARGE TEMPERATURE, CONTACT A QUALIFIED SERVICEMAN IMMEDIATELY.

WARNING

THIS MANUAL CONTAINS VITAL INFORMATION FOR THE SAFE USE AND EFFICIENT OPERATION OF THIS UNIT. CAREFULLY READ THE OPERATOR'S MANUAL BEFORE STARTING THE UNIT. FAILURE TO ADHERE TO THE INSTRUCTIONS COULD RESULT IN SERIOUS BODILY INJURY OR DEATH.

CAUTION

THE USE OF PLASTIC BOWLS ON LINE FILTERS WITHOUT METAL GUARDS CAN BE HAZARDOUS. THEIR SAFETY CAN BE AFFECTED BY EITHER SYNTHETIC LUBRICANTS OR THE ADDITIVES USED IN MINERAL OILS. FROM A SAFETY STANDPOINT, METAL BOWLS SHOULD BE USED ON ANY PRESSURIZED SYSTEM. REVIEW OF YOUR PLANT AIR LINE SYSTEM IS RECOMMENDED.

WARNING

THIS MACHINE WAS THOROUGHLY TESTED AT THE FACTORY PRIOR TO SHIPMENT. DEVIATION FROM THE RECOMMENDED OPERATING PARAMETERS WILL SUBJECT THE MACHINE TO CONDITIONS BEYOND ITS DESIGN. IMPROPER OPERATION MAY RESULT IN MACHINE FAILURE, PERSONAL INJURY OR DEATH.

CAUTION

THE USE OF REPAIR PARTS OTHER THAN THOSE INCLUDED WITHIN THE COMPAIR KELLOGG COMPANY APPROVED PARTS LIST MAY CREATE HAZARDOUS CONDITIONS OVER WHICH COMPAIR KELLOGG HAS NO CONTROL. SUCH HAZARDOUS CONDITIONS CAN LEAD TO ACCIDENTS THAT MAY BE LIFE-THREATENING, CAUSE SUBSTANTIAL BODILY INJURY, OR RESULT IN DAMAGE TO THE EQUIPMENT. THEREFORE, COMPAIR KELLOGG CAN BEAR NO RESPONSIBILITY FOR EQUIPMENT IN WHICH NON-APPROVED REPAIR PARTS ARE INSTALLED

SPARE PARTS

CompAir Kellogg maintains replacement parts for our compressors. A parts listing is included in this manual for the standard compressors. Order parts from your authorized CompAir Kellogg distributor. Use only genuine CompAir Kellogg replacement parts. We assume no responsibility for parts not authorized by CompAir Kellogg

NOTE 1

Every effort has been taken to ensure correct and complete instructions have been included in this manual at the time of printing. However, possible product upgrades may have occurred since this printing. CompAir Kellogg reserves the right to change specifications without incurring any obligation for equipment previously or subsequently sold.

Table of Contents

GENERAL INFORMATION AND DESCRIPTION

The 6000 series compressor is an electric motor driven, single-stage screw compressor, complete with accessories piped, wired, and mounted on a base plate. It is a totally self-contained air compressor package, containing the following:

Inlet Air Filter
Compressor and Motor
Oil Reservoir
Air and Oil Cooler
Oil Filter
Control and Instrumentation
Safety Provisions

Compression in the rotary screw compressor occurs in the volume created in the mesh area between the rotating male and female rotors. The compressor casing is coupled to a steel oil tank, which contains the separator element, safety valve, and minimum pressure check valve.

Lubricant passes from the reclaimer tank through hoses to the oil cooler. A thermostatic bypass valve directs oil through the oil cooler passages when the minimum oil temperature is exceeded. Below that temperature, oil is diverted to the cooler outlet in order to maintain the oil at the proper temperature range for efficient operation. Oil is then passed to an oil filter prior to being injected back into the compressor where it is used to cool, seal, and lubricate the compressor.

Air is removed from the air/oil mixture by the separator element within the oil tank, passes through the minimum pressure valve and is directed through the air side of the cooler, where heat is removed from the air to help remove the condensed water before it is discharged to the customer's air system piping.

The air cooled unit's fan provides sufficient cooling air flow to reduce the discharge air temperature to within 15° of the ambient air temperature.

Compressor protection is provided in the event of excessive discharge temperature by the high temperature switches which will shut the compressor down at a preset temperature (approximately 225° F). One switch is located in air end discharge piping and the second switch is mounted in the separator tank cover plate. Overload relays for the main motor and fan motor provide for over-current protection on the motors. A safety valve protects the pressure vessel from excessive pressure, below the design pressure of the tank and cooler.

An acoustic cabinet is provided to reduce noise, and to house the electrical control and instrument panel.

Specifications

MODEL NUMBER	MOTOR HP	MIN. CUT IN PRESSURE psig	MAX. CUT OUT PRESSURE psig MODULATION	MAX. CUT OUT PRESSURE psig ON LINE/OFF LINE
6125L	125	100	120	110
6125H		115	135	125
6125HH		140	160	150
6150L	150	100	120	110
6150H		115	135	125
6150HH		140	160	150

Compressor Model	6125C	6150C
Weight (unenclosed) lbs.	4600	4800
Weight (enclosed) lbs.	5200	5400
Length (inches)	94.5	94.5
Width (inches)	55.13	55.13
Height (inches)	75.63	75.63
Discharge Air Conn. Size	2½" NPT	2½" NPT
Heat Rejected Oil (BTU/hr)	298,000	357,000
Heat Rejected Air (BTU/hr)	53,000	63,000
Fan Capacity (CFM) @ 1.40" static	12,600	12,600
Fan Motor HP	5.0 HP	5.0 HP
*Ambient Temp. Range (° F)	32° - 115°	32° - 115°
Minimum Operating Pressure(psig)	75	75
Oil Capacity (CS200) U.S. gal.	24	24
Normal Oil Temp. (F)	175° - 190°	175° - 190°
Control Circuit Voltage	115VAC	115VAC

Water Cooled Models	6125C	6150C
Water Conn. Size	1" NPT	1" NPT
Water Flow GPM @ 85° Inlet	25	28

*Consult Factory for Ambients below 32° F

INSTRUMENT PANEL

- **DISCHARGE TEMPERATURE GAUGE** — shows discharge temperature from the airend. Normally, this will read approximately 80-100° F greater than ambient temperature during operation.

- **LINE PRESSURE GAUGE** — shows discharge pressure at the outlet of the aftercooler, where it enters the customer air supply piping.

- **SUMP PRESSURE GAUGE** — shows pressure in the oil tank. During unloaded operation, a minimum pressure of about 30psi is needed to circulate oil through the lubrication system to provide adequate oil flow to the compressor bearings and compression chamber. When the compressor is loaded, the gauge reading would be approximately 6-8psi greater than line pressure. If the difference is excessive, it would indicate that the separator element would require changing.

- **AIR FILTER INDICATOR** — shows pressure drop across the intake air filter. When an excessive pressure drop is present, the indicator will rise, showing red, this indicates filter cleaning or replacement is necessary.

- **OIL FILTER INDICATOR** — shows pressure drop across the oil filter. It is used to determine oil filter change intervals. When red appears, high pressure drop across filter is indicated and indicates replacement of filter element is required.

- **OIL LEVEL GAUGE** — shows oil level in the separator tank. In operation, the oil level should be within the range of the sight glass.

! DANGER !

WHEN ADDING OIL TO THE COMPRESSOR, THE COMPRESSOR SHOULD BE SHUT DOWN, ISOLATED, AND DEPRESSURIZED. DO NOT REMOVE THE FILLER PLUG UNDER PRESSURE AS SEVERE PERSONAL INJURY OR DEATH MAY RESULT.

- **OIL DRAIN VALVE** — is used to drain compressor oil for sampling or oil change.

! DANGER !

DURING OPERATION, A PLUG IS PROVIDED TO PREVENT INADVERTENT DRAINING OF THE COMPRESSOR OIL.
DO NOT OPERATE THE COMPRESSOR WITHOUT THE DRAIN PLUG INSTALLED, SINCE HOT OIL DISCHARGED UNDER PRESSURE MAY RESULT IN SEVERE EQUIPMENT DAMAGE, PERSONAL INJURY AND EVEN DEATH.

CONTROL PANEL

The following devices are located on the instrument panel; a brief description of their purposes is included.

- **HOURMETER** — indicates extent of operation. It is used to determine and schedule maintenance.

- **SELECTOR SWITCH** —
  Manual — will allow the compressor to run continuously, modulationing air flow to match demand

  Off — will shut the compressor down

  Auto — allows the compressor to shut off automatically when there is insufficient demand for air. Recommended interval for the run on time to shut the unit down is approximately 30 minutes without air demand for across line starting, and 10-15 minutes for Star/Delta starting

- **FAULT RESET** — lighted pushbutton to indicate a fault condition. The pushbutton resets the fault relay.

- **INDICATOR LIGHTS** —

  Power On (Amber) — indicates that electrical power has been turned on from the disconnect switch or breaker to the compressor.

WARNING

ALWAYS CHECK THE POWER SUPPLY DISCONNECT, SINCE THE POWER ON LIGHT MAY BE INOPERABLE.

STANDARD CONTROLS WARNING & PROTECTION DEVICES

- **SAFETY VALVE** — is fitted to the reclaimer pressure vessel to protect against excessive pressure.

  If the pressure in the vessel reaches the safety valve setting (11.4 bar 165 psi) the valve opens and discharges to atmosphere

  The valve is not connected to the fault circuit and the unit must be stopped by selecting the "off" on the mode selector switch.

- **BLOW DOWN VALVE** — vents to atmosphere all pressurized air in the reclaimer when the unit stops

  This allows the motor to start or restart against the minimum torque

- **MINIMUM PRESSURE/NON RETURN VALVE** — will prevent oil in the reclaimer from being carried into the discharge air and prevent discharge air passing into the reclaimer when the unit is stopped or running off load.

- **SCAVENGE OIL SIGHT GLASS** — allows a visual check of the scavenge oil flow from the reclaimer to the airend

CONTROL EQUIPMENT

- **AIR PRESSURE SWITCH** —

  Function —

  This switch de-energizes the unloader solenoid valve when system pressure exceeds a preset value. When running in AUTO mode it initiates the run-on timer and re-energizes the valve when the pressure drops

  It is a bellows operated microswitch set to break on rising air pressure operated directly by users pressure.

  The operating pressure range and differential settings are fully adjustable.

Adjustments —

The range (cut-out) and the differential (cut-in) pressures are adjustable. The differential is the difference between the cut-out pressure and the cut-in pressure.

Set the cut-out pressure by turning the range adjustment screw clockwise to increase and anti-clockwise to decrease

The differential will remain unaltered at approximately 0.6 bar(10 ps

■ PROPORTIONAL REGULATOR —

Function —

This monitors the discharge air pressure in the suction regulator diaphragm chamber and controls the position of the intake valve when CONTINUOUS mode is selected.

It is a diaphragm operated, negative acting valve which passes full discharge air pressure up to the adjustable set point

The output of this valve is then reduced to zero in proportion with further pressure rise

Adjustment —

To alter the pressure setting, turn the adjusting knob clockwise to increase the pressure and anti-clockwise to decrease

Set to the pressure required at zero air flow condition (suction regulator valve closed

The differential will remain the same regardless of the pressure setting

■ UNLOADER SOLENOID VALVE (N C) —

Function —

This valve connects and disconnects the control air pressure to the suction regulator diaphragm chamber via the proportional regulator when the unit is running in the AUTO mode

It is energized and de-energized by an electrical signal from the air pressure switch

■ **FLOW CONTROL BLEED VALVE —**

Function —

This reduces the pressure in the reclaimer to approximately 1.5 - 1.72 bar (22-25 psi) and maintains it at this pressure during the unloaded cycle when the compressor operates in the AUTO mode.

No adjustment should be made to this valve

■ **SUMP BLOWDOWN SOLENOID VALVE (N/O) —**

Function —

This valve together with the Flow Control Bleed Valve is mounted on the reclaimer lid and is wired in the pressure switch circuit

In the AUTO mode during the unloaded cycle, it operates the Flow Control Bleed Valve to reduce pressure in the reclaimer down to 1.5 - 1.72 bar (22-25 psi) and to maintain oil pressure in the compressor system.

■ **DRAIN COCK SOLENOID VALVE FILTER** — This is used to drain the control air system pressure when the unit is stopped and the gate valve in the distribution pipework is closed.

■ **PRESSURE GAUGES** — One gauge registers the pressure in the discharge main downstream of the minimum pressure valve non return valve the other registers the separator tank pressure

■ **MINIMUM PRESSURE VALVE/NON RETURN VALVE —**

Function —

At start-up it is closed to prevent high velocity low pressure air/oil from entering the main distribution pipework and to ensure rapid pressure build up in the reclaimer

CONTROL SYSTEM

There are two (2) methods of control: AUTOMATIC START/STOP or CONTINUOUS (load/unload).

Automatic Start/Stop

On-load and off-load running is controlled by an air pressure switch, an unloader solenoid valve, a dump solenoid valve, and a flow control bleed valve. During steady on-load running, air pressure passes to the suction regulator diaphragm chamber to hold the air intake valve open.

When discharge air pressure reaches the cut-out setting of the air pressure switch, the switch will operate. The unloader solenoid valve closes and the run-on timer (located in the motor control box) is activated. Air pressure to the suction regulator is shut-off, the intake valve is closed, and the unit runs off-load. The dump solenoid valve operates and the reclaimer pressure is reduced to 1.5 - 1.72 bar (22-25 psi) via the flow control bleed valve.

If the unit runs off-load for the preset time delay (normal setting 15 minutes), it will stop and pressure in the reclaimer will vent to atmosphere through the blowdown valve. When discharge pressure reduces to the cut-in setting of the air pressure switch, the unit will restart automatically.

When discharge air pressure reduces to the cut-in setting of the air pressure switch, the switch will operate, the unloader solenoid valve opens, the dump solenoid closes and the timer is reset. Discharge air pressure passes to the suction valve and the unit reverts to on-load running.

When the unit is running in this mode the intake valve will be either open or closed depending on demand. It will not take up any intermediate position.

Continuous (Load/Unload)

On-load and off-load running is controlled by the negative regulator. During steady on-load running, discharge air pressure passes to the suction regulator diaphragm chamber to hold the air intake valve open.

On reduction of system demand the discharge pressure rises and the suction regulator intake valve is adjusted by the negative regulator to the position necessary to match the unit out-put to demand. If the intake valve closes, the unit runs off-load.

As demand fluctuates, the control system will respond to move the intake valve to any position between closed and fully open.

WARNING

WHEN PERFORMING MAINTENANCE ON THE COMPRESSOR, THE COMPRESSOR SHOULD BE SHUT DOWN AND ISOLATED BOTH ELECTRICALLY AND MECHANICALLY BY MEANS OF A DISCHARGE ISOLATION VALVE TO PREVENT PRESSURIZING FROM AN EXTERNAL SOURCE. DO NOT RELY UPON CHECK VALVES TO PROVIDE COMPLETE PROTECTION FROM THE AIR SYSTEM WHEN MORE THAN ONE COMPRESSOR IS INSTALLED IN THE AIR SYSTEM.

Pressure Settings

- AUTOMATIC START/STOP MODE — The air pressure switch settings are as follows:

UNIT DISCHARGE AIR PRESSURE	SETTINGS	
	CUT-IN	CUT-OUT
110 PSI (7.6 bar)	100 PSI (6.9 bar)	110 PSI (7.6 bar)
125 PSI (8.4 bar)	115 PSI (7.9 bar)	125 PSI (8.4 bar)
150 PSI (10.3 bar)	140 PSI (9.7 bar)	150 PSI (10.3 bar)

Range and Differential Adjustment procedures are shown inside the switch cover.

- CONTINUOUS RUN MODE — The proportional Regulator settings are as follows:

UNIT DISCHARGE AIR PRESSURE	SETTINGS	
	AT FULL AIR FLOW	AT ZERO AIR FLOW
110 PSI (7.6 bar)	110 PSI (7.6 bar)	120 PSI (8.3 bar)
125 PSI (8.4 bar)	125 PSI (8.4 bar)	135 PSI (9.3 bar)
150 PSI (10.3 bar)	150 PSI (10.3 bar)	160 PSI (11 bar)

To alter the pressure setting, turn the proportional regulator adjusting knob clockwise to increase the pressure and vice versa. Set to pressure required at zero air flow condition (with the suction regulator valve closed). The differential remains at 0.6 bar (8.7 psi) irrespective of alteration to the pressure setting. ISOLATE THE POWER SUPPLY and set the pressure switch to cut-out 0.6 bar (8.7 psi) below the zero flow setting of the proportional regulator by means of the internal adjusters. The pressure reducing valve is preset at 4.0 bar (58.0 psi) and should not require adjustment.

LUBRICATION

Lubricant

In the rotary screw compressor, the lubricant serves a three fold purpose: bearing lubrication, seal the compression chamber, and remove the heat generated in the compression process.

The compressor oil used in the compressor has been specially formulated to provide excellent performance in the above three areas. The synthetic blend's qualities greatly exceed those of petroleum distillate oils, as well as those of the early synthetic blends. It is suitable for use throughout the ambient range which the compressor has been designed to operate within.

Due to the large volume of flow of the coolant and its direct contact with the air being compressed, foaming during the blowdown or other pressure change conditions has been a problem with some coolant lubricants. The CS200 installed at the factory has rapid air release characteristics and minimum air entrainment. For that reason, foaming has generally been eliminated as an operating problem.

Since the diester oil used is not compatible with all air system sealing materials, there are other satisfactory oils that may be used. Contact **CompAir Kellogg** for specifications and recommendations for other suitable lubricants.

Filtration

The full flow hydraulic filter installed in the compressor has a replacement spin-on element. The filter is located between the separator tank and air end assembly. The element is rated at 10 microns.

A filter maintenance indicator which senses the pressure drop across the filter warns the operator that filter fouling is occurring when the floating piston passes entirely into the RED.

During start-ups in a cold ambient condition, this may also occur. Such a condition is normal, and the indicator will return into the green region as compressor lubricant temperature increases.

In any event, the oil filter should be changed after approximately the first 200 hours of operation. Thereafter, the filter should be changed in accordance with the preventive maintenance schedule located in the maintenance section of the manual.

Drive Motor Lubrication

The induction-type squirrel cage motor has anti-friction roller bearings at both the front and rear. At extended intervals, they require lubrication. The intervals between lubrication times vary depending on the severity of service under which the motor operates. Generally, the following table would apply:

SERVICE CONDITION	
Severe Duty	*Normal*
Dirty	Clean
Abrasive	Dry
Corrosive	Industrial
2000 hrs running	4000 hrs running
or	or
3 months	6 months

At these intervals, add approximately 0.2 oz. of Shell Dolium A grease or equal using a hand grease gun.

CAUTION

A MAJOR CAUSE OF BEARING FAILURE IS OVERGREASING. CONTROL AND MONITOR THE QUANTITY OF GREASE INSTALLED.

WARNING

GREASE SHOULD ONLY BE ADDED WHEN THE MOTOR IS STOPPED AND POWER DISCONTINUED. FAILURE TO HEED THIS WARNING COULD RESULT IN SERIOUS INJURY OR DEATH.

INSTALLATION DETAILS

General

When you receive the compressor, please inspect it closely for any visible signs of damage that may have occurred in shipment. Any indication of mishandling by the carrier should be noted on the delivery receipt, especially if the compressor will not be immediately uncrated and installed. Obtaining a signed notification by the delivery person acknowledging noted damages will expedite any future insurance claims. After uncrating the compressor, check inside the unit for any concealed damage. If any is found, notify the carrier within 15 days of delivery. The carrier would then prepare a damage report. Itemized supporting documents are required when filing a claim. Report all shipping damage to carrier, since unit shipping terms are FOB factory.

Unpacking and Handling

The compressor package has been mounted on a wooden pallet with provisions for forklift handling. Care in positioning the forklift is very important since the center of gravity location is greatly affected by the weight and position of the major components in the package.

Slings may be used to handle the crate the compressor is shipped in, but the use of spreader bars is mandatory to prevent the slings from exerting a force on the sides of the crate and resulting in sheet metal damage to the compressor.

CAUTION

IMPROPER LIFTING CAN RESULT IN COMPONENT OR SYSTEM DAMAGE AND POSSIBLE PERSONAL INJURY. FOLLOW PROPER SAFETY PROCEDURES AND COMMON SENSE WHEN MOVING THE COMPRESSOR.

Location in the Plant

Locate the compressor on a level surface that is well-lighted, clean, dry, and well-ventilated. Sufficient space (a minimum of three feet on all sides and above) to allow for adequate ventilation and maintenance access must be provided. The compressor base should be supported over its entire length. Ambient temperature in this area should not exceed 105° F, as that is the limiting criteria set forth by the motor manufacturer. Excessive ambient temperature may result in premature motor failure while elevated temperatures could cause high air temperature shutdowns. Ambient temperature less than 32° F should also be avoided. Proper ventilation is necessary to prevent heat build-up that may cause high air temperature shutdowns.

In high humidity areas, excessive condensation may cause oil contamination. Monitor oil condition and change oil and air filters on more frequent intervals.

Piping in the air system should be of sufficient size to minimize pressure drops to points of use. The system should contain filtration to further reduce the probability of oil carryover and air system contamination. It is recommended that an air receiver of sufficient volume be included in air systems with compressors having load/no load controls in order to reduce the cycling of the solenoid valves in the compressor.

Isolation valves should be included in the piping so that maintenance can be performed in a safe manner.

Operation and Compressor Start-up

Prior to first putting the air compressor into operation, perform the following:

1. Close the isolation valve leading to the air system.

2. Inspect and confirm that the air system integrity is tight up to the discharge connection of the compressor.

3. Verify that the main power disconnect switch to the compressor is in the off position.

4. Confirm that the line voltage supply matches the compressor nameplate voltage. Ensure that the electrical connections to the compressor are tightly connected.

5. Inspect the control system wiring and motor wiring for tightness and integrity.

6. Confirm that the initial fill of lubricant is still in the unit.

7. Close the main disconnect for electrical power to the compressor, check that the "power on" light comes on.

8. Place the 3-position selector switch in either manual or auto.

9. Check the compressor rotation is correct by starting the compressor momentarily and immediately turning the 3-position selector switch to the "off" position. Rotation is clockwise, looking from motor end per rotation arrow on gear box casting. Cooling fan must blow air across cooler and out top of enclosure.

CAUTION

TO CHECK THE DIRECTION OF ROTATION, THE MOTOR JOGGING MUST BE AS SHORT AS POSSIBLE. OPERATION IN THE WRONG DIRECTION WILL CAUSE DAMAGE TO THE COMPRESSOR.

WARNING

AFTER RESTORING THE MAIN DISCONNECT SWITCH TO THE OFF POSITION, IF THE DIRECTION OF ROTATION IS STILL NOT CORRECT, INTERCHANGE ANY OF THE TWO LINE CONNECTIONS (L1, L2, OR L3) AT THE STARTER.

FAILURE TO HEED THIS WARNING MAY RESULT IN MACHINE DAMAGE, PERSONAL INJURY AND POSSIBLY DEATH.

10. Verify that the lubricant level is at the mid point of the sight glass. Add CS-200 lubricant as required.

11. Restart the compressor and allow it to run for a few minutes to circulate the coolant. Check for any leaks and correct them as necessary. Re-check the lubricant level, shut off the compressor, depressurize the system and add compressor oil as necessary. During operation, the oil level should be within the sight glass.

WARNING

CONFIRM THAT ALL PRESSURE IS RELIEVED FROM THE SYSTEM AND THAT ELECTRICAL POWER IS REMOVED PRIOR TO REMOVING THE OIL SYSTEM FILL PLUG.

FAILURE TO DO THIS MAY RESULT IN PERSONAL INJURY OR DEATH.

12. Open the isolation valve and allow air to pass into the air system.

13. Place the mode selector switch in the desired position and restart the compressor.

14. Check the discharge temperature after a few minutes of operation. The minimum oil temperature should read above 160°F. Normal discharge temperature of the air compressor will read between 175°F and 190°F, sensed at the discharge of the compressor airend. Generally, 100°F above ambient is considered normal. If the discharge temperature is too high, check for cooling system obstruction or fouling. Cooling air flow should pass out the exhaust duct.

MAINTENANCE PROCEDURES

Replacing the Air Filter Element

1. Remove the inlet filter cover assembly.

2. Remove filter element from housing.

3. Carefully clean out filter housing taking care not to dislodge dirt which may fall into compressor suction box.

4. Install new filter element.

5. Open filter cover assembly and clean out dust and dirt. Wipe off parts and reassemble cover.

Replacing the Air Filter Element *(continued)*

6. Replace cover on filter housing ensuring that dirt collecting opening is oriented in "up" position.

7. Return the unit to service.

Note: It may be easier to remove the air filter to change the element on an enclosed unit

Changing the Oil Filter

1. Turn off the compressor and de-energize power to the machine

2. Using a suitable oil filter wrench, loosen the filter from its housing. Use a drain pan to catch any oil leaking during the removal of the element. Discard the old oil filter in an environmentally safe manner

3. Wipe off the sealing surface of the housing with a clean, lint-free rag. Inspect the sealing surface for any nicks or galls.

4. Apply a small amount of clean oil on the rubber seal of the new filter.

5. Screw the new element on until the seal fully contacts the sealing surface. Tighten approximately another half turn

6. Restore power to the compressor, restart it and check for leaks

Replacing the Separator Element

The separator element should be replaced when sump pressure exceeds line pressure by more than 15psi during normal operation. Below are the steps to follow in order to change the separator element:

1. Shut down the compressor and disconnect electrical power from the unit.

2. Close the isolation valve and remove any pressure from the compressor system.

! DANGER !

WHEN ADDING OIL TO THE COMPRESSOR, THE COMPRESSOR SHOULD BE SHUT DOWN, ISOLATED, AND DEPRESSURIZED. DO NOT REMOVE THE FILLER PLUG UNDER PRESSURE AS SEVERE PERSONAL INJURY OR DEATH MAY RESULT.

3. Disconnect the discharge hose from the minimum pressure valve.

4. Disconnect all control lines after noting their original connection points. Tag all lines if necessary.

5. Using the proper size wrench, unbolt the separator cover and remove it

6. Carefully lift out the element with both gaskets from the sump.

7. Clean the gasket surfaces on both the tank and cover, taking care to prevent pieces of the old gasket and any debris from falling into the sump

8. Do not remove the staples from the gaskets on the separator element. Its purpose is to prevent static electrical charge that may possibly ignite a fire in the separator

9. Check the receiver area to be certain that no foreign material has been allowed to fall into the receiver. Install the replacement element into the receiver

10. Place the separator cover back into its original position and reinstall the hold down bolts. Tighten the bolts in a cross pattern to prevent overtightening one side of the cover. Torque the bolts to 125 ft. lbs.

11. Reinstall the control lines into their original position.

12. Reconnect the air discharge hose to the minimum pressure valve

13. Reenergize the compressor, check for leaks (correct if necessary), and place the compressor back into service.

Troubleshooting the Compressor

Symptom	Possible Fault
COMPRESSOR FAILS TO START	No power to the compressor or Blown fuse at transformer
REDUCED AIR CAPACITY	Clogged intake filter or System leaks
REDUCED AIR PRESSURE	Excessive demand on air system or Pressure switch setting too low (do not exceed pressure rating of drive system, excessive motor power may be the result)
HIGH DISCHARGE TEMPERATURE	Low oil level or Insufficient coolant flow or Fouled cooler surface or blocked cooling air flow or High ambient air temperature or Failure of thermal bypass valve or Excessive discharge pressure or Plugged scavenge line orifice
HIGH OIL CONSUMPTION	Fouled separator element or Clogged scavenge line orifice or Excessive air demand
HIGH LINE CURRENT	Unbalanced phase current or Higher pressure demand than designed or Fouled separator element resulting in excessive sump pressure

Preventive Maintenance

WARNING

BEFORE BEGINNING ANY DISASSEMBLY ON THE AIR COMPRESSOR, COMPLETELY ISOLATE ALL ELECTRICAL POWER FROM THE UNIT. CLOSE THE ISOLATION VALVE AND DEPRESSURIZE THE UNIT COMPLETELY. FAILURE TO DO THIS MAY RESULT IN SERIOUS BODILY INJURY OR DEATH.

Regular recording of pressures and temperatures will enable variations to be noted and assist in anticipating maintenance requirements.

Maintenance should be carried out when indicated on the Service indicators or according to hours run on the Hour meter.

MAINTENANCE SCHEDULE

Service	Daily	Weekly	First 200 Hrs.	Monthly	1000 Hrs	2000 Hrs	4000 Hrs	8000 Hrs	16000 Hrs
Check Oil Level	X								
Check Flow in Scavenge Line	X								
Check Condensate Drain	X								
Drain Control Line Filter		X							
Replace Cabinet Filter*				X					
Clean Air Filter				X					
Blow Dust From Cooler				X					
Change Oil Filter			X			X			
Change Air Filter						X			
Change Separator Element								X	
Change Oil**							X		
Lubricate Motor Bearings							X		
Overhaul Inlet Valve									X
Overhaul Minimum Pressure Valve									X

* ENCLOSED UNITS

** OIL CHANGE INTERVAL IS DEPENDENT UPON (1) OPERATING CONDITIONS (change oil more frequently under severe conditions) (2) USING COMPAIR KELLOGG CS LUBRICANTS (consult factory when using other lubricants)

Preventive Maintenance Parts

RECOMMENDED SPARE PARTS FOR 2 YEARS (16000 HOURS) OPERATION		
Quantity	Part Number	Description
8	0262075	Oil Filter Element
4	0159954	Air Filter Element
2	53050	Separator Element
1	0259006	Minimum Pressure Valve Overhaul Kit
32	0260871	Cabinet Filter Element


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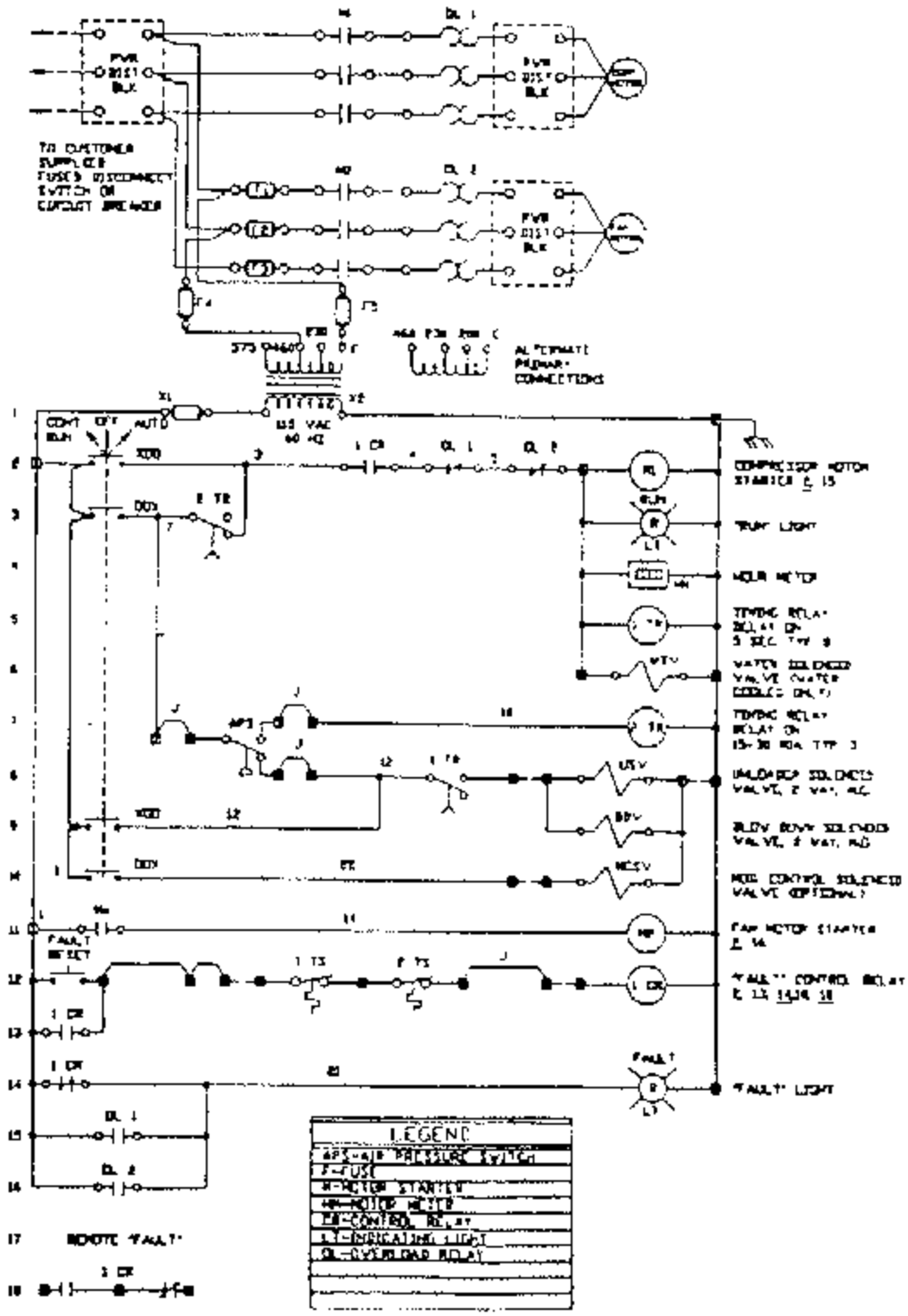
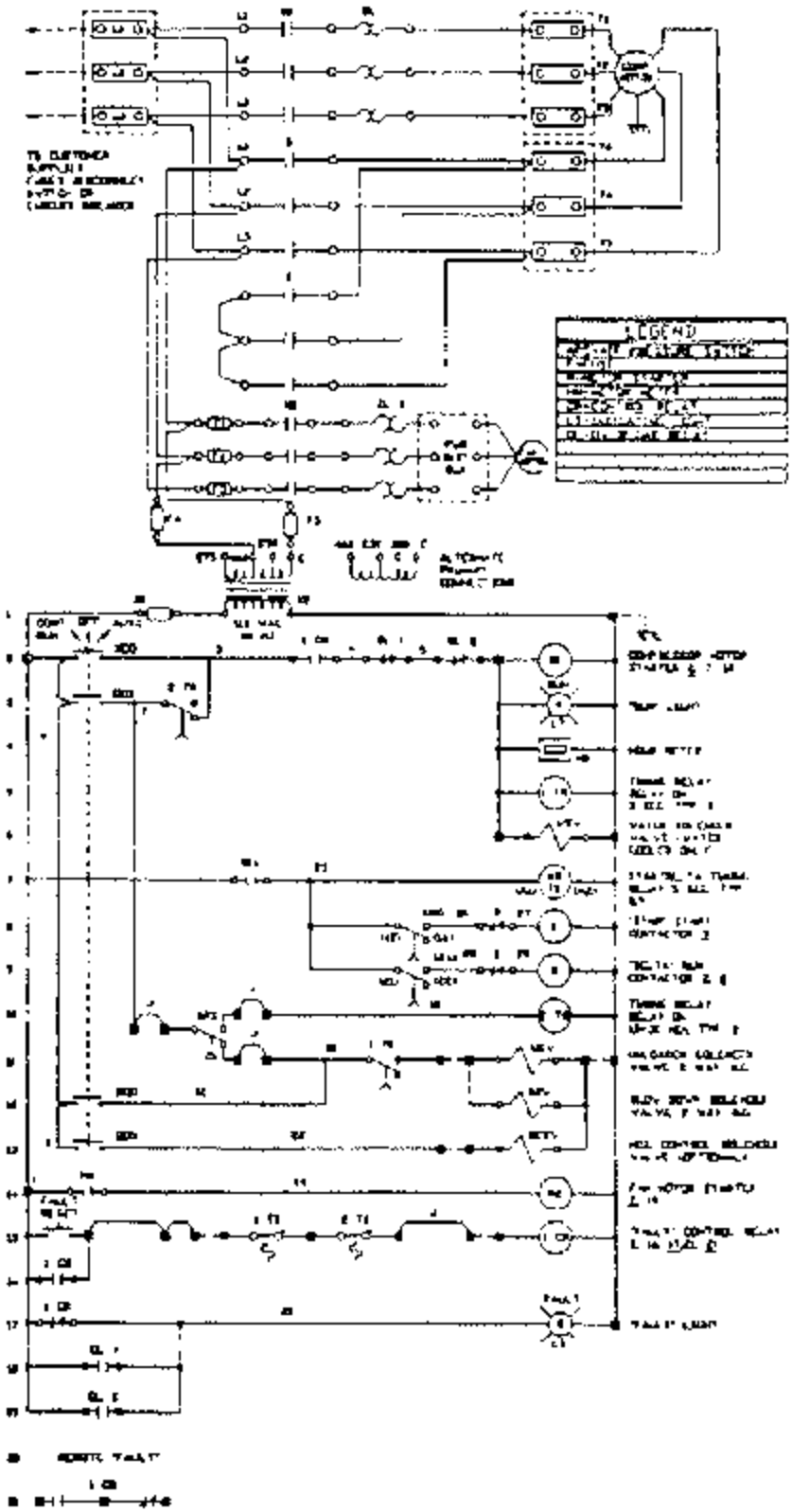
WIRING DIAGRAMS

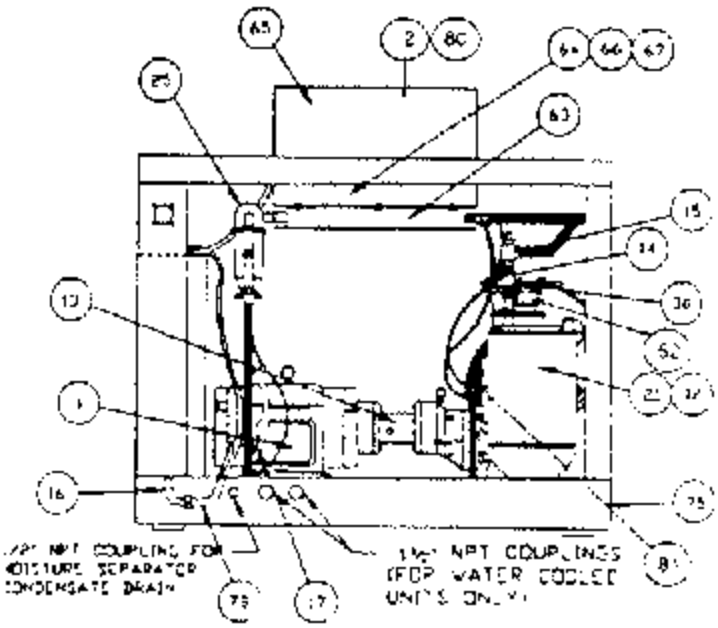
Across Line Starting

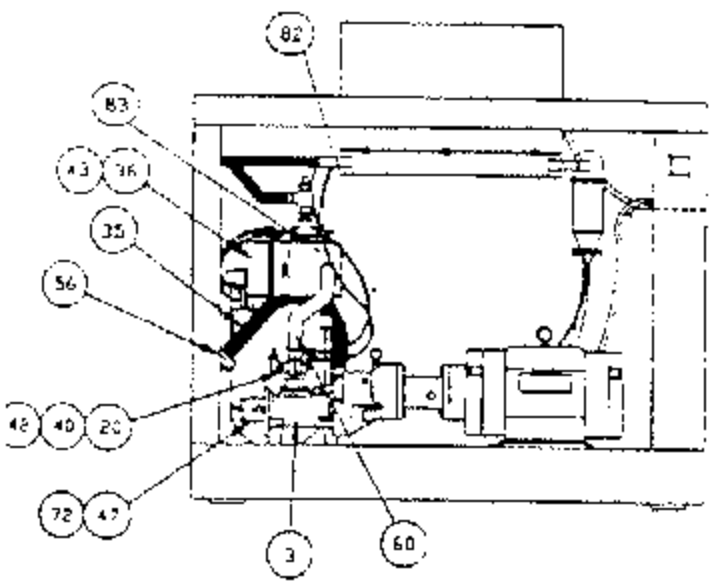


Star Delta Starting



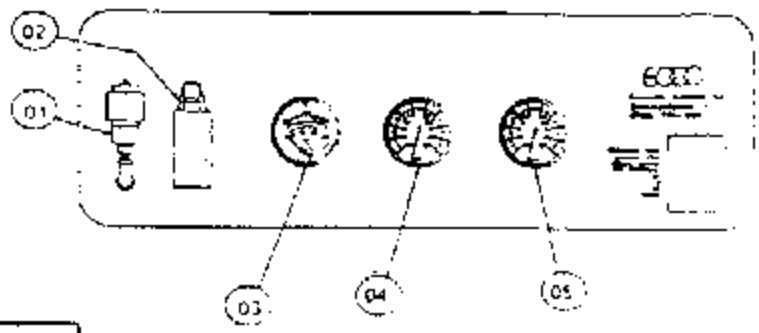
PARTS



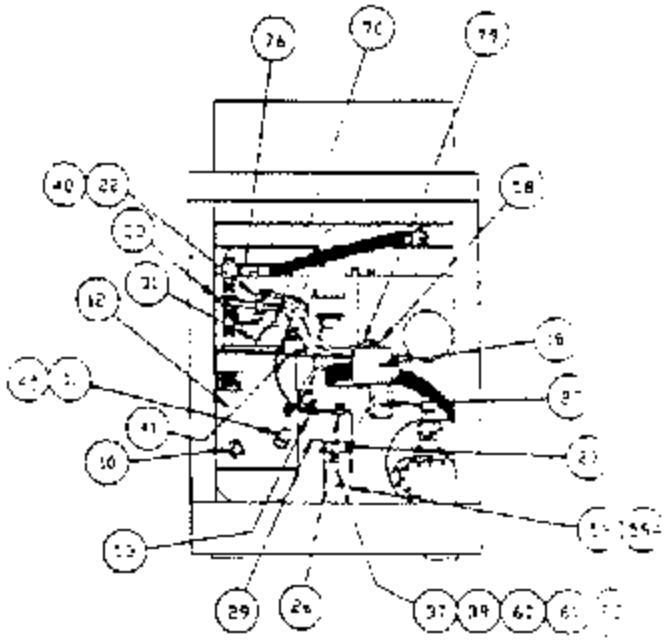


ITEM	PART NUMBER	DESCRIPTION	QTY
1	0100014 0100015 0100016 0100017	Motor 125HP 460V ODP Motor 125HP 575V ODP Motor 150HP 460V ODP Motor 150HP 575V ODP	1
2	0029013 0029014 0028998 0028999	Motor 5 HP 208 230/460V Motor 5 HP 575 Motor 5 HP 208 230 460 Motor 5 HP 575	1
3	0359566 0359568 0359570 0359572 0359574 0359576	Airend Ass'y 125HP 110PSI Airend Ass'y 125HP 125 PSI Airend Ass'y 125HP 150 PSI Airend Ass'y 150HP 110PSI Airend Ass'y 150HP 125 PSI Airend Ass'y 150HP 150 PSI	1
12	0159801	Receiver Air Oil	1
13	0259862 0159612	6150 - Bell Housing 6125 - Bell Housing	1
14	0260664	Valve Safety 165 PSI 3/4"NPT	1
15	0159619	Valve Min Pressure/Check	1
16	0049465 0260166	Conn Conduit - Nema 1 Conn Sealtite Nema 4	1
17 17A	0049466 0260165	Connector Conduit 2" Str NI Connector Sealtite 2" Str Na	1
21	53050	Element Air/Oil Separator	1
25	0159818	Separator Moisture 2" c Auto Drain	1
36	0159446	Fig Cross 1" c	1
35	0159811	Hose Ass'y S" St	1
36	0159808	Filter Ass'y Air	1
40	0262079	Valve Quick Exhaust	1
42	0159623	Valve Flow Control	1
43	0261489	Bracket Air Filter	1
47	0261655	Gasket Delivery Flange	1
52	0054992	Valve Blowdown	1
63	0261089	Cooler Air/Oil 6125 50	1
64	0261434 0261435	Fan Guard Ass'y	2 3
65	0261109	Exhaust Duct Box Ass'y	1
66	0260485	Fan 32-912-4ZL-200 3HP/1800RPM	1
67	261103 261105	Fan Cowl Ass'y	1
68	7200943	Tube Alum Duct 5"	2 ft

72	262008	Pipe Air Delivery Delivery	1
75	261732	Base Ass'y Weldment	1
76	2800023 2800035	Conduit Flex 2" (ft) Conduit Sealtite 2" (ft)	2

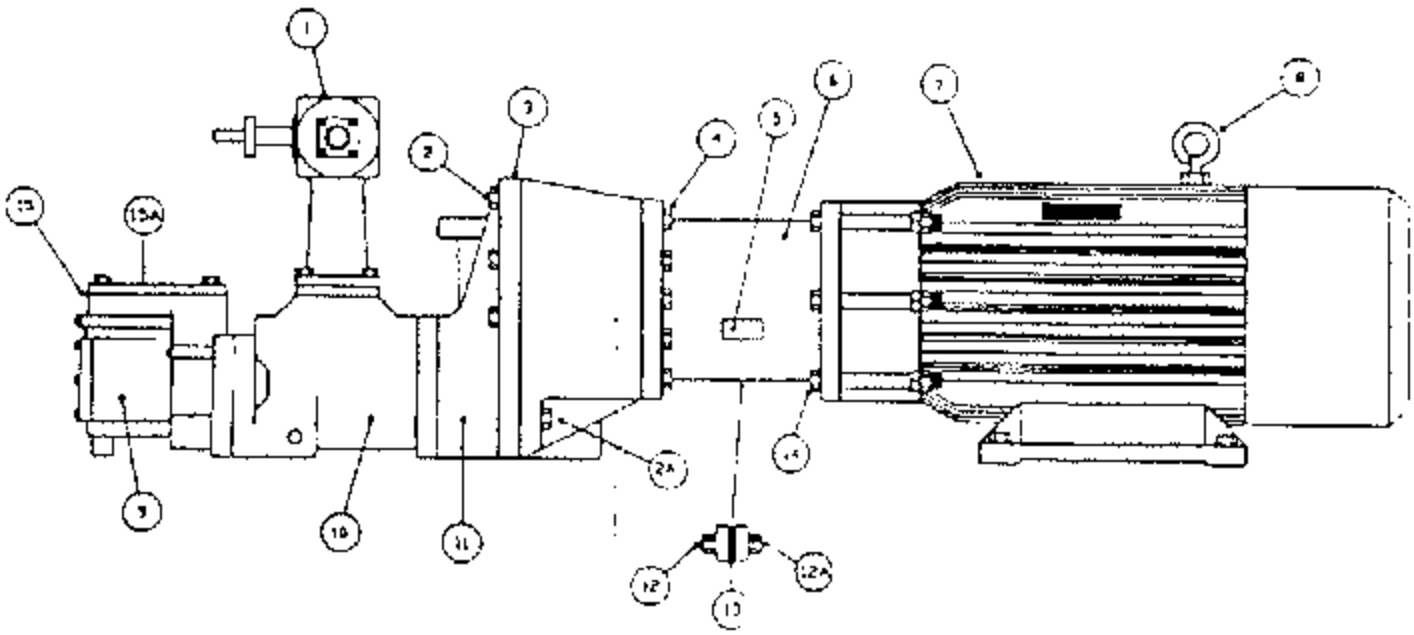


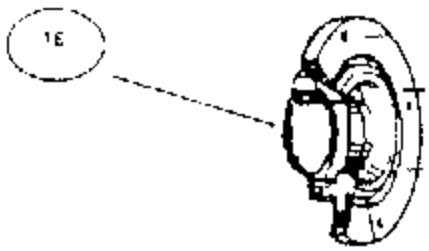
ITEM	PART NUMBER	DESCRIPTION	QTY
01	0053064	Air Filter Restriction	1
02	0260879	Oil Filter Restriction	1
03	0261556	Temp Air Discharge Gauge	1
04	0260674	Line Air Pressure Gauge	1
05	0260674	Air Separator Pressure Gauge	1
10	0051035	Gauge Oil Sight Level 1"MNPT	1
11	0051725	Plug Fill	1
18	0051499 0259916	Box Conduit 4x4x2 Nema 1 Box Conduit 4x4x2 Nema 4	1 4
22	0259315	Connection Sealtite ½" Str	2
23	0261647	Valve Thermo-Control 1½"	1
24	0067777	Oil CS200 (Gal)	24
26	0159294	Regulator Press Modulation P2N	1
27	0159365 0159530	Switch Pressure 0-150# Nema 1 Switch Pressure 0-150# Nema 4	1
29	0262096	Bracket Ass'y Filter	1
31	0261567	Scavenge Line Ass'y	1
33	0159462	Switch Temp	2
37	0262059	Adapter Fig SAE 20 x 1¼ BSP	4
39	0159631	Adapter Fig TEE	1
41	0159562	Separator Valve Auto Drain	1
53	0259903	Valve Solenoid ¼" 2-way N C	1
56	0260170	Connector Sealtite for 90 Deg	7
59	0262077	Filter Ass'y Oil	1
59A	0262078	Filter Element	1
60	0262840	Adapter Fig	1
61	0259303	Adapter Fig	2
70	0261584	Gauge Oil Sight Flow Scavenge	1
76	0262155	Adapter Fig.	2
79	2800027	Conduit Sealtite ½" (ft)	20
80	0260999	Fan 18-8-3-30D ½HP/1800	1



0159535	Hose Ass'y 1¼ x 29 Filter to Aremd	1
0159816	Hose Ass'y 1¼ x 42 Filter to Cooler	1
0159814	Hose Ass'y 1¼ x 58 Filter to Sump	1
0159886	Hose Ass'y 1¼ x 47 Cooler to Sump	1

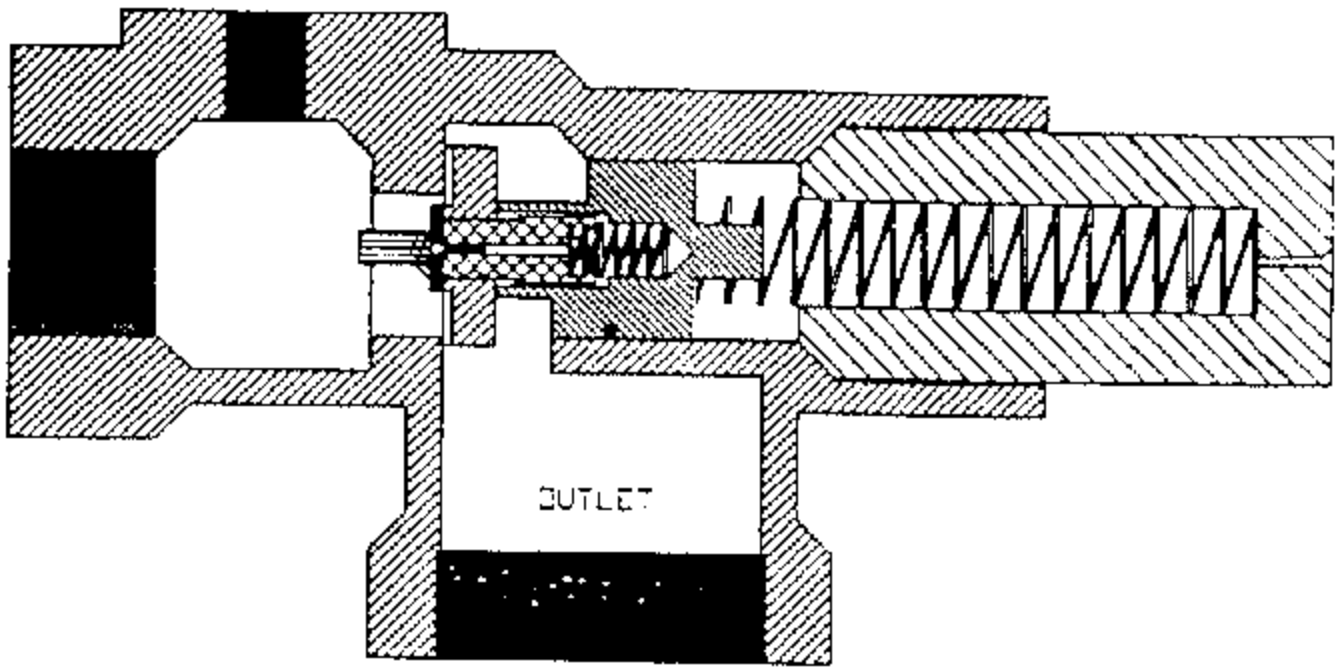
Motor/Air End Assembly





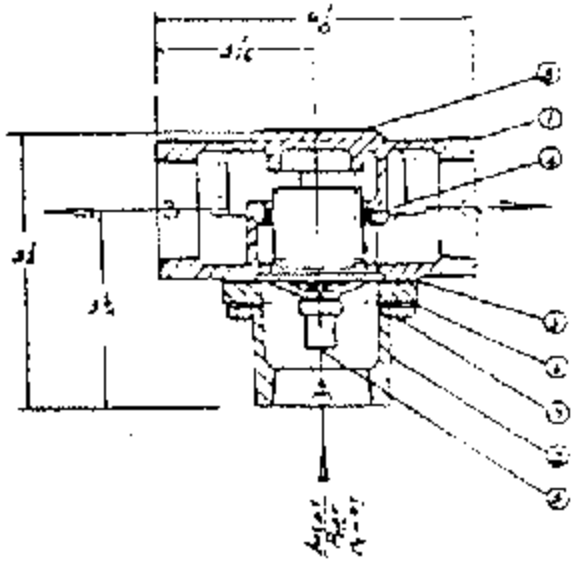
ITEM	PART NUMBER	DESCRIPTION	QTY
1		Suction Regulator Assembly (for parts breakdown see page 32-33)	1
2	0261703	Gearbox Assembly Bolt M12 x 60 mm	6
2A	0261702	Gearbox Assembly Bolt M12 x 130 mm	6
	0059556	Washer M12	12
	0260831	Dowel	2
3	0261683	Adaptor, Gear Box	1
4	0059417	Adaptor Housing Screw Compressor End M16 x 45 mm	8
	0059423	Lockwasher M16	8
5	0259783	Inspection Cover	1
6	0259862 0159612	6150 Compressor Bell Housing Adaptor 6125 Compressor Bell Housing Adaptor	1
7	See Pg. 26	Electric Motor 6100	1
8	Supplied w/Mtr	Lifting Ring	1
9		Compressor Delivery Bearing Housing	1
10		Compressor Rotor Casing	1
11		Inlet Bearing Housing	1
12	026034[illegible]	Drive Coupling - Compressor Half	1
12A	02[illegible]115	[illegible] - Motor Half	1
13	0259530	Coupling Insert (Set)	1
14	02600[illegible]	Adaptor Housing Screw, Motor End [illegible] -10 x 3	4
	0037510	Nut [illegible] -10	4
15	0261655	Gasket	1
16	02610[illegible]	Rotary Shaft Seal	1
		Air End Assembly c/w Gearbox	
		Air End Assembly c/w Gearbox	
		Air End Assembly c/w Gearbox	
		Air End Less Gearbox	

Minimum Pressure/Non Return Valve
P/N 0159619



ITEM	PART NUMBER	DESCRIPTION	QTY
*	0259005	Supplied as Repair Kit only CV Assembly 'O' Rings Springs	1

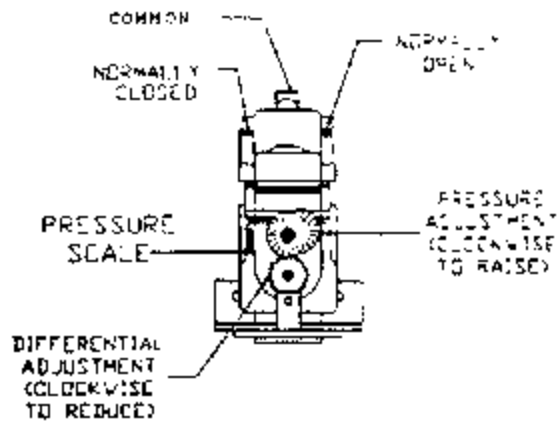
Thermostatic Valve P/N 0261647



PORT	CONN.
A	Separator Tank
B	By Pass
C	Cooler

ITEM	PART NUMBER	DESCRIPTION	QTY
*	0262127	Items 3-5 Supplied as Repair Kit	1
3		Gasket or "O" Ring	1
4		Lip Seal (Teflon	1
5		Element	*

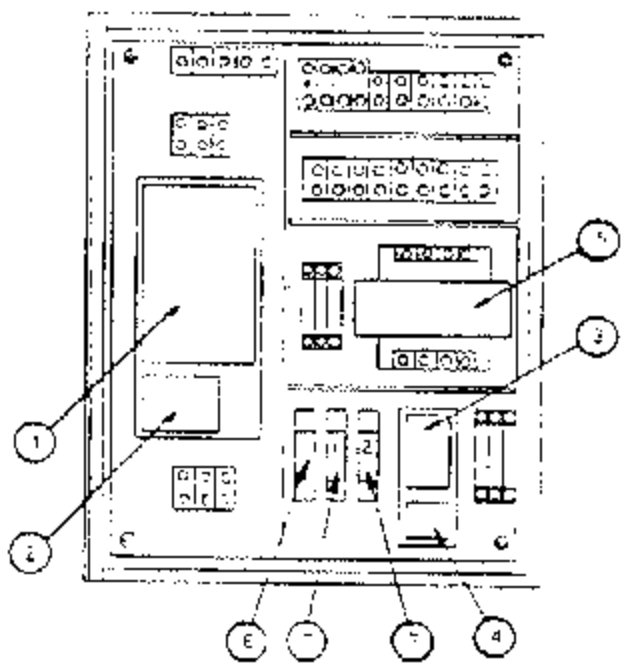
Pressure Switch

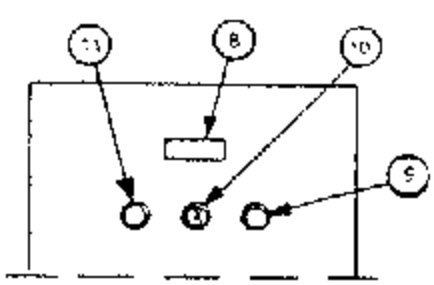


ITEM	PART NUMBER	DESCRIPTION	QTY
	0159360	Nema 1	1
	0159520	Nema 4	

Electrical Components Across the Line

HP	VOLTAGE	CONTACTOR				OVERLOAD			
		ITEM #1		ITEM #3		ITEM #2		ITEM #4	
		QTY	MAIN MOTOR	QTY	FAN MOTOR	QTY	MAIN MOTOR	QTY	FAN MOTOR
150	460	1	0261437	1	0260523	1	0260447	1	0261442
	575	1		1		1		1	0261441

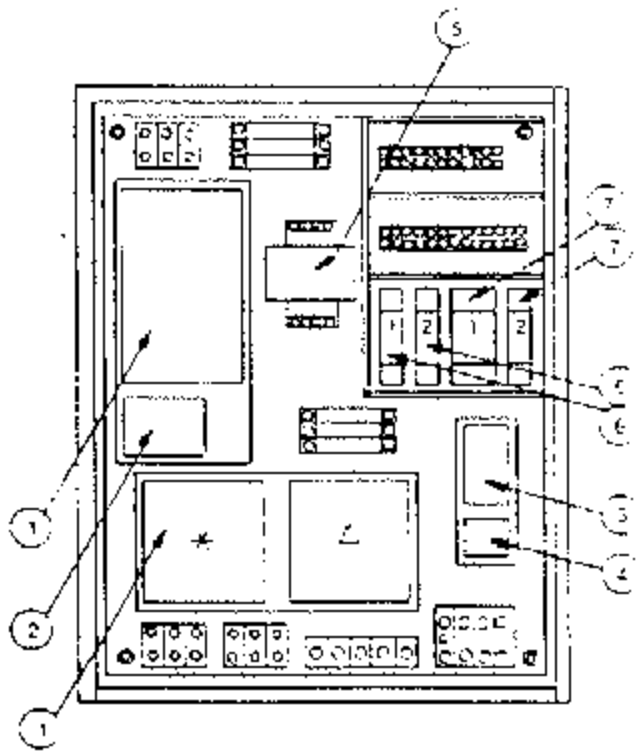




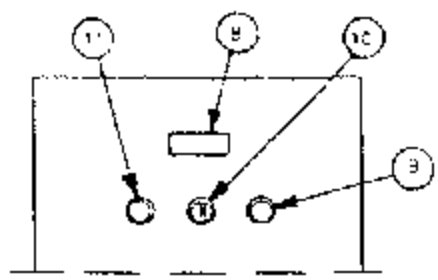
ITEM	PART NUMBER	DESCRIPTION	QTY
5	0261476 0261473	Trans 460/575V 208/230V	1 -
6	0260194 0260195	Relay Control 2 PDT Relay Control 3 PDT	-
7	0260071	Relay Timing	2
8	0262161	Hourmeter	1
9	0159460	Fault Reset Button	1
10	0059955	Cont.-Off-Auto Switch	1
11	0159459	Run Light	1

Electrical Components
Star Delta

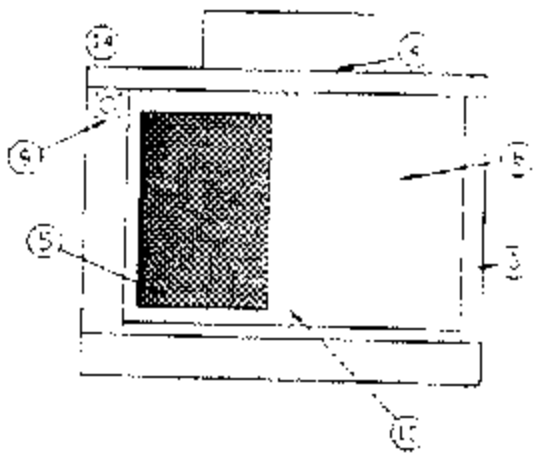
HP	VOLTAGE	CONTACTOR				OVERLOAD			
		ITEM #1		ITEM #3		ITEM #2		ITEM #4	
		QTY	MAIN MOTOR	QTY	FAN MOTOR	QTY	MAIN MOTOR	QTY	FAN MOTOR
150	460	3	0260446	1	0260825	1	0260447	1	0261442
	575	3	5701932	1		1	5701931	1	0261441

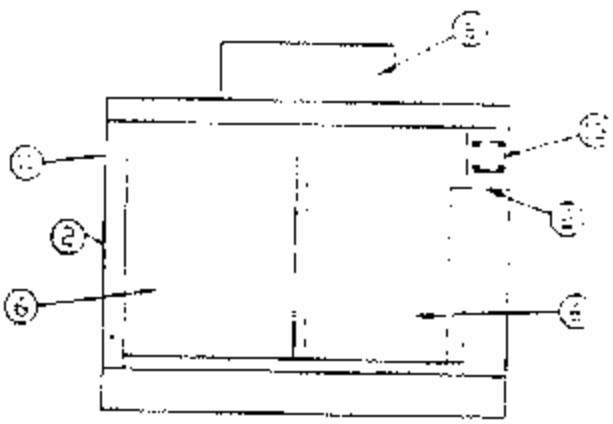


ITEM	PART NUMBER	DESCRIPTION	QTY
5	0261476 0261473	Trans 460/575V 208/230V	1 1
6	0260194 0260195	Relay Control 2 PDT Relay Control 3 PDT	1
7	0260071	Relay Timing	2
8	0262161	Hourmeter	1
9	0159460	Fault Reset Button	1
10	0059959	Cont.-Off-Auto Switch	1
11	0159458	Run Light	1



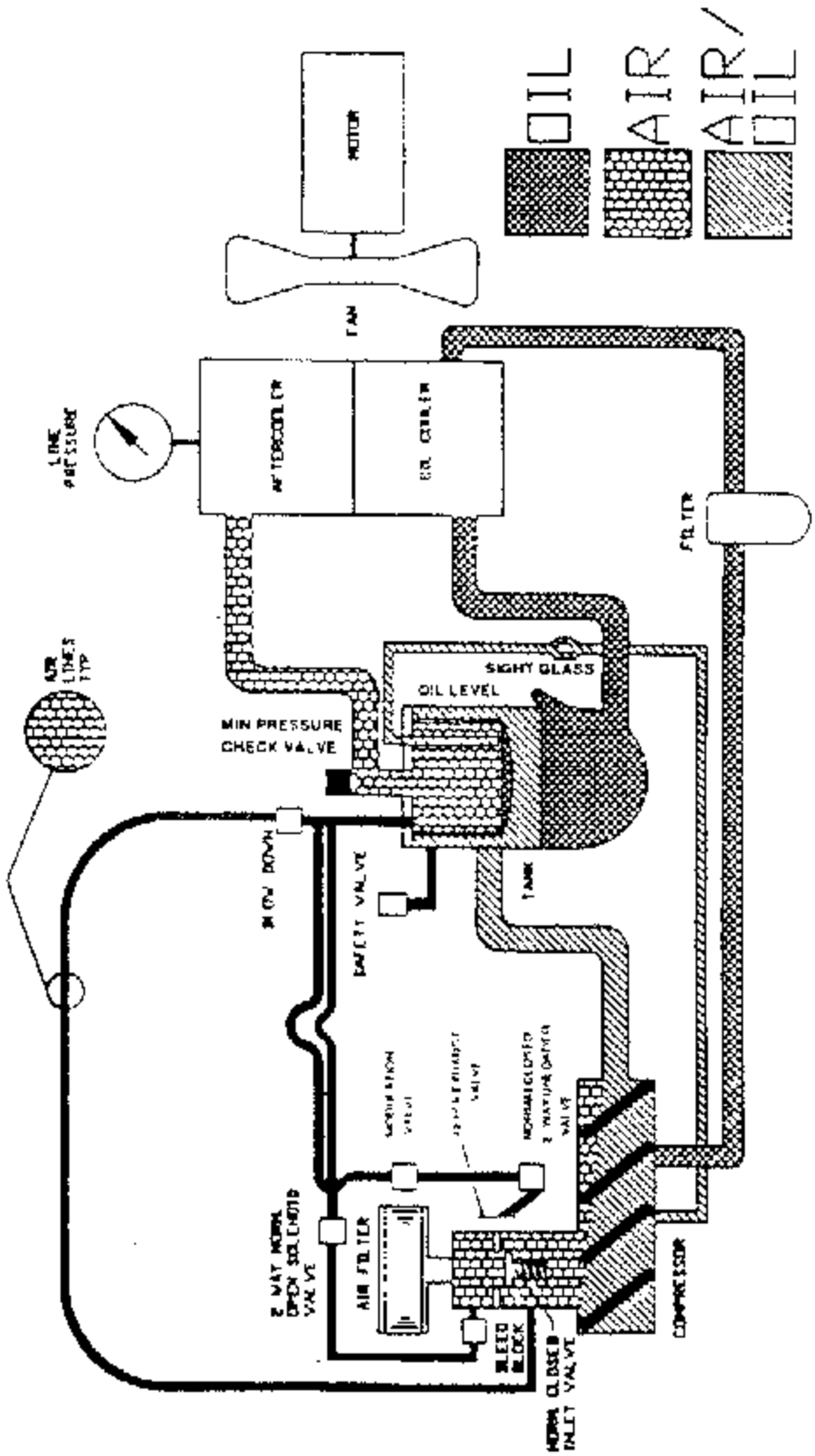
Enclosure Assembly





ITEM	PART NUMBER	DESCRIPTION	QTY
1	0259950	Strip Gasket-Rubber 1"W x 1/4"	60 feet
2	0260345	Box Starter Panel Holder 30 x 36	1 each
3	0359450	Panel End Blank w/ Latch	1 each
4	0359600	Panel Roof Wide A C	1 each
5	0359455	Panel side Air Intake	1 each
6	0359645	Panel Side Blank	2 each
7	0359941	Enclosure Frame Assy 5125 50	1 each
8	0261109	Exhaust Duct Box	1 each
9	0261664	Air Discharge Plate Assembly	1 each
10	0359439	Post Side Removable	2 each
11	0260545	Logo Decals Assy	1 set
12	9000274	Strip Gasket w seal	3 feet
13	0260495	Plate Blank Elect Cover	1 each
14	0359603	Panel Roof Narrow A C	1 each
15	0359454	Panel Side Blank	1 each
	0260177	Screw Al. Hd 1/4 - 20 x 2.5	3 each
	0078225	Collar Capscrew	6 each

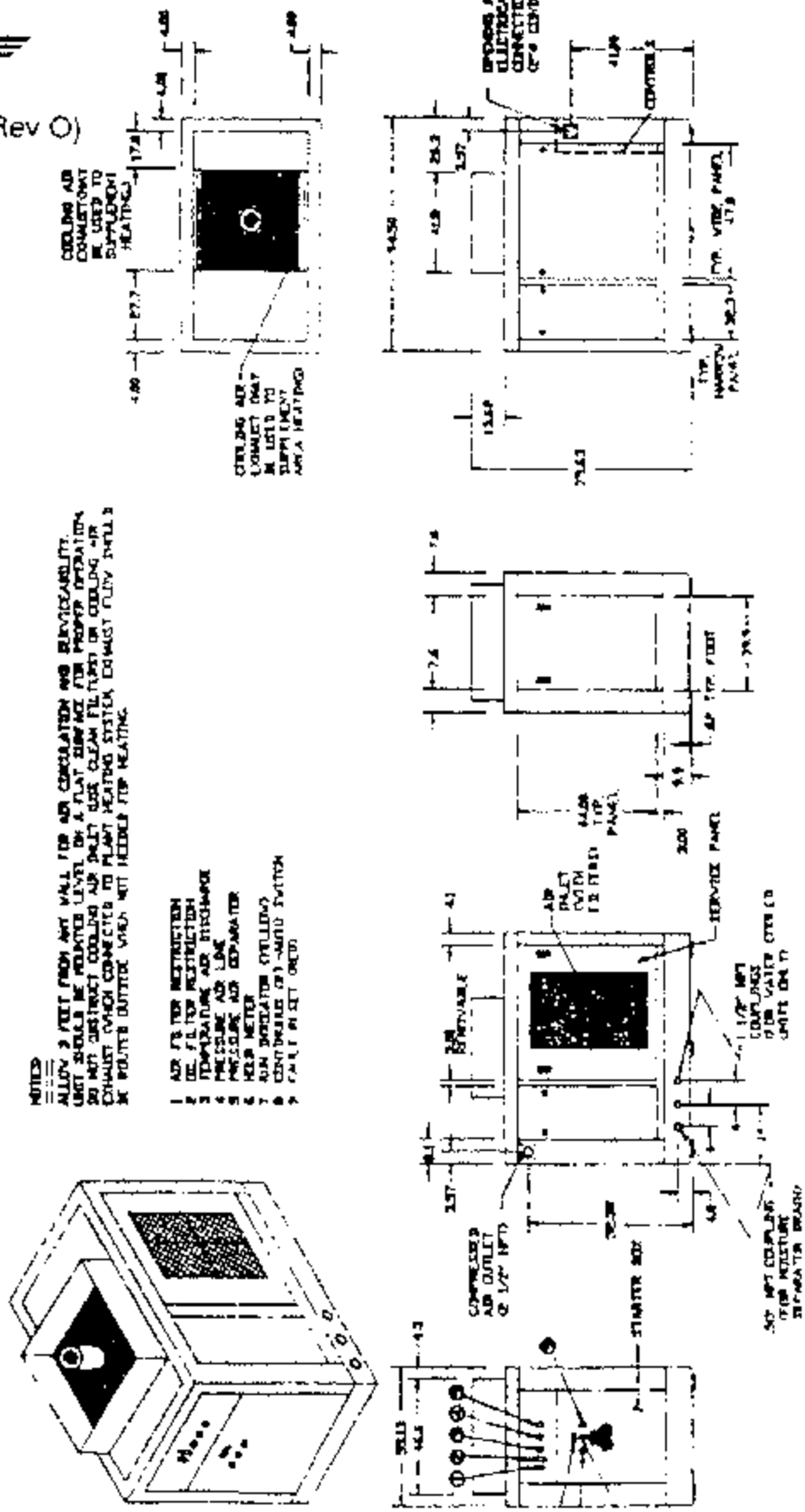
CONTROL SYSTEM DRAWING



GENERAL ARRANGEMENT DRAWINGS

Air Cooled Units

Drawing #0366126-D (Rev O)



Water Cooled Units

Drawing #0366127-D (Rev O)

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P/N 0262446
October 1993
6125 First Edition