

Sullivan

Palatek®

OPERATING AND PARTS MANUAL

INDUSTRIAL ELECTRIC AIR COMPRESSORS

MODELS

15D, 20D, 25D, 25D4, 30D7, AND 40D

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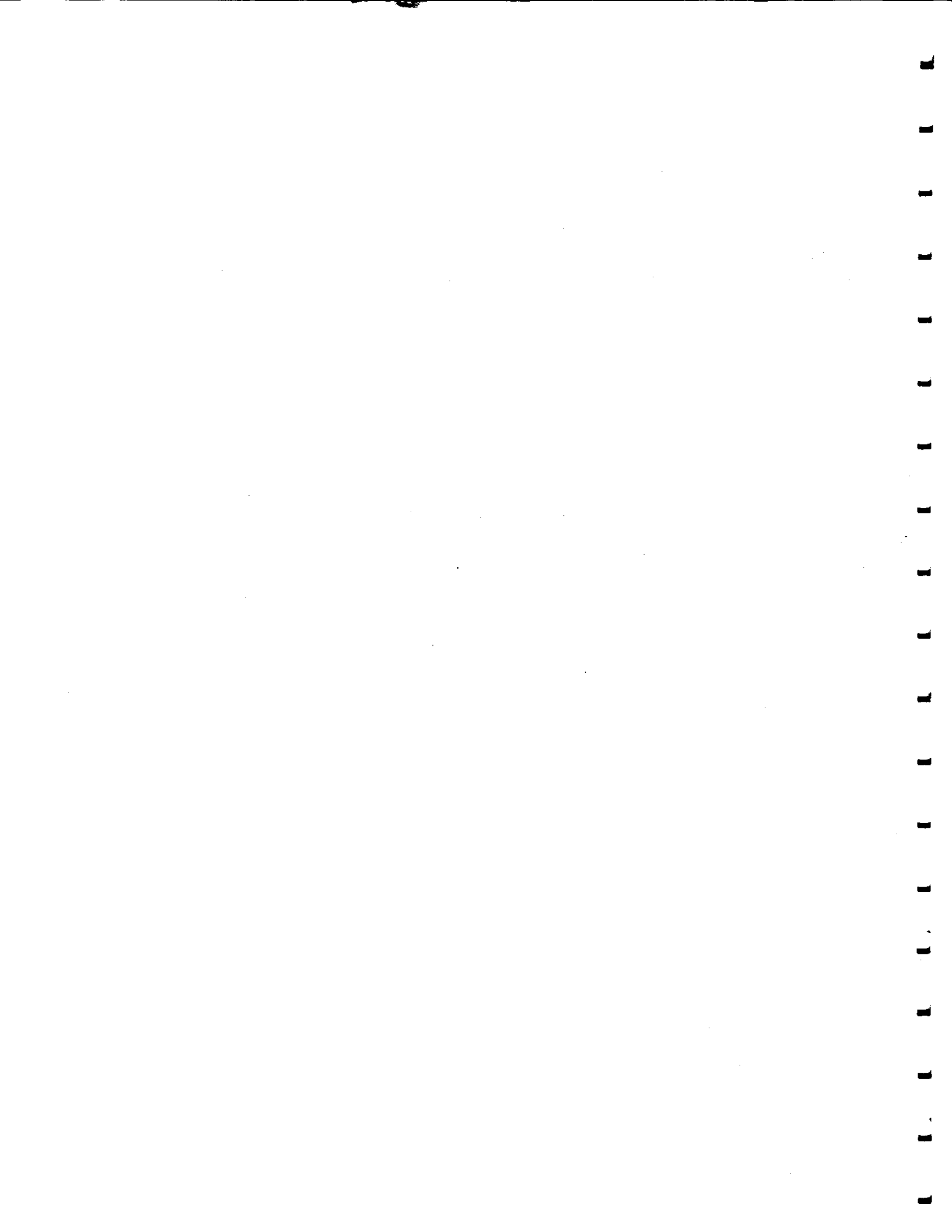


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SECTION 1 - SAFETY

1.1 GENERAL

SULLIVAN-PALATEK, INC. designs all its compressors so they can be operated safely despite the fact that operating a motor driven air compressor is inherently hazardous. Responsibility for continued safe operation rests with those who install, use and maintain the equipment. The precautions offered in this section will minimize the inherent hazards and reduce the likelihood of accidental damage and injuries.

The operation of air compressors should be limited to personnel who have been so trained and specifically assigned to do so, and who have read and understand this operator's manual. Failure to follow the instructions and safety precautions in this manual may increase the possibility of accidents or injuries. Never start this compressor unless it is safe to do so. Do not attempt to operate the air compressor with an unsafe condition relative to the compressor, the electrical system, the air piping, filtering, regulating, preparation, conditioning, valving, hosing or components. Open the main disconnect switch or circuit breaker, then lock it out and tag it to prevent anyone else from starting the compressor until the unsafe condition has been corrected. Operate compressors only in full compliance with all applicable Federal, State and Local codes and requirements such as OSHA, NEC, NFPA, CSA, etc. Do not modify this compressor without specific written approval from the factory.

1.2 PRESSURE RELEASE

Open the pressure relief valve(s) periodically to be sure there is no blockage, obstruction, or inability to operate.

Shut machine off, open and lock-out disconnect switch and vent all pressure before opening or removing any filter element, line, tube, fitting, valve, plug, cover, connection or any other component on the air compressor or in the plant's compressed air system. Remove oil filler cap only when compressor has been turned off, the disconnect switch locked open, and there is no pressure in the oil separation tank. Bleed off any residual pressure by opening the pressure relief valve. **REMEMBER**, compressors may re-start **AUTOMATICALLY** if not properly taken off the power line!

Do not use accessories such as tools, valves, filters, hoses, piping, dryers, etc. that are rated lower than the maximum pressure or temperature rating of this compressor. Do not exceed the accessory component manufacturers rated safe, continuous working pressure or temperature.

Install appropriate velocity-limiting valves (rated by pipe size and CFM) whenever air hose larger than ½ inch (102.5 mm) inside diameter is used anywhere in the system to reduce pressure in case of hose or connection failure. Install additional velocity limiting valves, in series, whenever 75 feet (22.8 m) of hose length is exceeded. These valves must comply with pertinent OSHA requirements.

Do not use air pressure greater than 30 PSI (207 kPa) for blow-off or cleaning purposes, and then only with effective chip guarding and personal protective equipment as may be required by OSHA.

Compressed air filters or lubricators with plastic bowls may be affected by the lubricant used. Steel bowls are recommended.

Keep personnel out of line with, and away from, the discharge opening of airlines, or tools, or other areas of direct, or deflected, compressed air discharge.

Do not allow anyone to engage in horseplay with air hoses as serious bodily injury or death may result.

Do not substitute bolts with material or markings different from original equipment.

Do not over-tighten any bolt, nut, fitting, connection, or spin-on filter element.

1.3 FIRES / EXPLOSIONS

Clean up any spilled oil or oil leakage and repair oil leaks as soon as they are discovered.

Do not allow oil to accumulate on, in, or around acoustic noise material. Immediately replace any oil-soaked material after cleaning enclosure surface with nonflammable solvent.

Do not operate compressor when there is a possibility of its ingesting flammable, toxic or explosive fumes, mists or particulates.

Do not operate compressor with its temperature switch or any of three pressure switches inoperative or incorrectly connected.

Keep conductive objects away from explosive live electrical parts such as terminals to avoid sparks that might serve as a source of ignition.

Replace the air/oil separator element only with factory original equipment replacement parts to be certain that anti-static provisions are present.

Ground the machine in accordance with National Electrical Code (NEC) requirements.

Do not use plastic pipe for compressed air.

1.4 MOVING PARTS

Do not operate the compressor with its fan guard removed.

Keep clothing, hands, arms, and other parts of the body, away from the fan and drive coupling.

Wear snug-fitting protective clothing (no neckties) and confine long hair when working around compressor.

1.5 PHYSICAL DANGERS

Wear OSHA approved personal protective gear including gloves, safety shoes, safety glasses, head covering and ear protection when working on or around the compressor.

Avoid bodily contact with hot oil, hot surfaces, sharp edges and corners. Keep all parts of the body away from all potential points of air discharge, including pressure relief valve ports.

Keep an adequate first-aid kit nearby. Obtain medical assistance promptly in case of injury. Do not ignore small cuts, burns or minor eye injuries as they may lead to infection.

Perform repairs and maintenance only in clean, dry conditions in a well-lighted and ventilated area.

Operate the compressor only in open or well-ventilated areas.

Monitor the point-of-use location for adequate ventilation.

1.6 TOXICITY

Carefully analyze the compressor inlet conditions to be certain that no dangerous levels of contaminants are being ingested by the compressor. Do not use air from this compressor for breathing, as it may contain colorless, odorless yet lethal gases. Severe injury or death may result within a few seconds. Do not permit air from this compressor to contact foodstuff except in compliance with FDA Standard 21 CFM 178.3570 and all other applicable regulations. (Use food grade lubricant for such applications.)

1.7 ELECTRIC SHOCK

Keep all parts of the body as well as any tools or other conductive objects away from exposed live parts of the electrical system. Maintain dry footing, stand on insulating surfaces and do not contact any other portion of the compressor when making adjustments.

Be certain that the equipment is properly grounded in accordance with NEC.

Initial installation and wiring must be done by a trained and qualified electrician and be in accordance with all Federal, State and Local codes, standards and regulations. Improper installation or unsafe servicing could result in serious bodily injury or death.

If a fuse should blow for any reason, replace it with a fuse of the same size, type and ampere rating. Doing otherwise may result in an unsafe condition.

1.8 LIFTING

Lift or move the compressor only with equipment of sufficient load capacity which has been inspected and is in good condition.

Use extreme care when moving tank-mounted compressors because of the high center of gravity.

Firmly restrain the compressor to prevent tipping or rolling.

Keep personnel out from under and away from the area when lifting or moving the compressor.

Lift no higher than necessary. Carry as low as possible when moving.

Keep lifting operator in attendance whenever the compressor is suspended.

Set compressor down only on level surface capable of supporting several times the machine's weight.

Do not lift entire machine by motor lifting eyes, as they are intended only for lifting the motor.

Drain condensate from Auxiliary Air Receiver prior to lifting.

1.9 AUTOMATIC START

Do not assume that any air compressor is ready for maintenance, service, or troubleshooting if it is not running. It may be in the "Automatic-Start" mode of its dual-control system and suddenly re-start, thereby creating a hazardous condition!

Close discharge air valves and shut machine off. Open main disconnect; lock it out and tag it to prevent others from inadvertently re-closing it.

1.10 NOISE

Working near an open-air compressor (or an enclosed machine with doors and/or access panels open or removed), can prove hazardous even during short-term exposure. The noise may interfere with hearing verbal warnings or other sounds of impending dangers. For prolonged exposure to machinery noise, hearing protection is recommended and may be required by OSHA.

1.11 HAZARD WARNING SIGNS

SULLIVAN-PALATEK, INC. compressors are all equipped with brightly colored, weather-resistant, pictorial/verbal self-adhesive decals. These are designed to warn the operator against potential hazards in order to minimize risk of property damage, bodily injury or death. All operators must be aware of the Warning Signs and follow the instructions thereon.

If any Warning Signs are missing, damaged or painted over, or located in such a position as to be unreadable in a given installation, new Warning Signs must be ordered. Be sure they are properly positioned and installed correctly. If any operators are not fully conversant with the English language and/or cannot comprehend the intended pictorial warnings, it becomes incumbent upon the owner, lessor or other responsible administrator to be sure the operator is properly trained and also made aware of, and understands, the meaning of all Warning Signs.

SIGN	LOCATION
WARNING SIGN	MOTOR STARTER
HIGH VOLTAGE/MOVING PARTS	MOTOR STARTER
WARNING SIGN	INSTRUMENT PANEL
COMPRESSED AIR	INSTRUMENT PANEL
WARNING SIGN	SEPARATOR TANK
HOT OIL/PRESSURIZED AIR	SEPARATOR TANK

SULLIVAN-PALATEK, INC. reserves the right to change the design or construction of the above compressors, or to offer them with options which will cause the subject equipment to differ from the above specifications, without reference to any descriptions in this manual.

SECTION 2 - SPECIFICATIONS

MODEL	15D	20D	25D	25D4	30D7	40D
AIR DELIVERY @ 125PSIG	55	80	95	110	115	166
MAX. FULL LOAD PRESSURE	175	175	175	175	175	175
MIN. FULL LOAD PRESURE	60	60	60	60	60	60
OIL CAPACITY	2.5	2.5	2.5	2.5	2.5	3.5

2.1 LUBRICATION GUIDE

SULLIVAN-PALATEK, INC. recommends using Palasyn 45, a synthetic lubricoolant for normal plant-air service. For compressors running two or three shift operations extended life lubricants such as Pallube 32p or AFX 32 are offered as factory fill. For extreme environments (i.e. fine particulate, caustic, acidic, or oxidant atmospheres) contact the factory for lubricant recommendations. Also for such conditions we would suggest oil analysis every 1000 hours. Mixing of these or any other type of oil or synthetic fluid will void the 5-year compressor unit warranty and could result in greatly increased maintenance and service expenses.

2.2 APPLICATION GUIDE

Ambient Temperature Range: +35 to +104° F (+1 to 40° C). The lower temperature limit is to prevent freeze-up of condensate in the aftercooler and/or control lines. When operating these compressors for plant air in food or beverage processing industries, contact the factory for a Lubricoolant that is FDA approved for "incidental contact with foodstuffs". For instrument-grade air, contact the factory for recommendations related to specialized compressed air preparation accessories. Contact the factory for heat-recovery equipment, or any other specialized compressor-related accessories. Whenever a SULLIVAN-PALATEK, INC. rotary screw air compressor is installed in parallel with a reciprocating type compressor, it is imperative that the SULLIVAN-PALATEK, INC. be the "lead" machine and the reciprocating the "lag" machine. That is, the SULLIVAN-PALATEK, INC. machine should be the first to start and the last to stop when being operated in the "automatic stop/start" mode; or the first to load and the last to unload, when in the "continuous run" mode. This will result in extending the life of the reciprocating machine, with no adverse effect on the life of the rotary. It should also require the least electrical power consumption for the combination.

SECTION 3 - DESCRIPTION

3.1 INTRODUCTION

SULLIVAN-PALATEK, INC. Plant Air Compressors are electric motor driven, single-stage rotary screw type, continuous-duty compressors. The compressor's design and construction offer the greatest value and lowest life-cycle cost of operation. The compressor package includes a direct connected electric motor driven compressor, air intake capacity control system air cooled cooling system, including a standard air cooled aftercooler, discharge system, instrument panel and electrical system. They are available base mounted or tank mounted with or without enclosures. These machines are intended for indoor installation, or protected outdoor operation in moderate climates.

For outdoor operation, contact your nearest SULLIVAN-PALATEK, INC. distributor or the factory for specific options.

3.2 COMPRESSOR UNIT

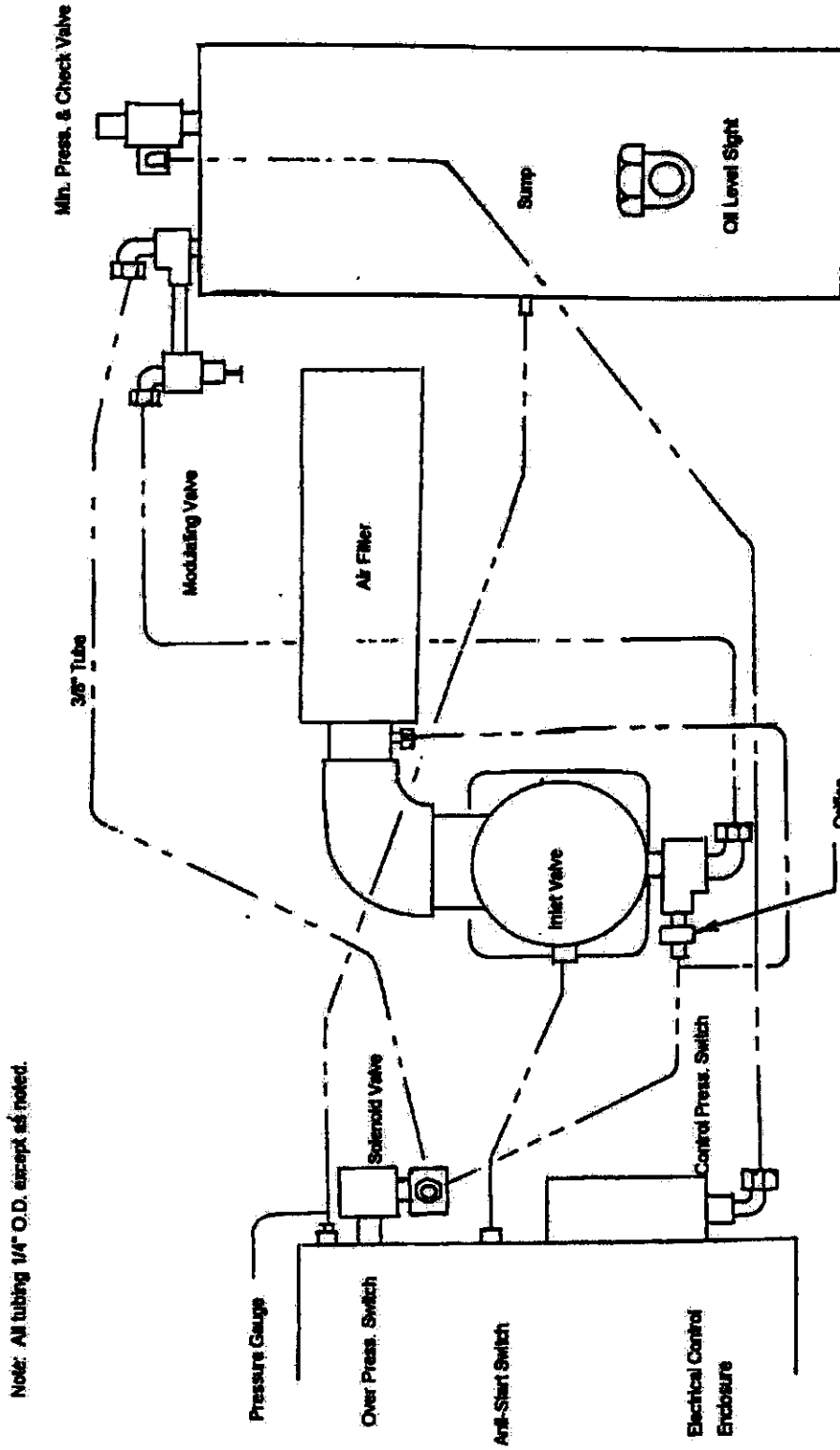
All SULLIVAN-PALATEK, INC. compressors feature direct connected, single stage, positive displacement, flood lubricated rotary screw air compressor units with heavy duty long life tapered roller bearings. The lubricoolant fluid is injected directly into the compressor unit and mixes with the air as it is compressed by the rotors. The lubricoolant lubricates the rotors, bearings and shaft seal; cools the compressor by absorbing much of the heat of compression and acts to block slippage of compressed air through the compressor's internal clearances.

3.3 MOTOR

The electric motor used to power each SULLIVAN-PALATEK, INC. D-Series 15, 20, 25, 30 and 40 horsepower compressor is a standard three phase 60 Hertz AC induction type motor, fitted with a C-face register at the compressor drive end to assure proper coupling alignment at all times and double-extended to provide a simple, reliable fan drive without an additional fan motor, starter or wiring. The standard motor is connectable for 230 or 460 volts and satisfactory for use at 208 volts. (200/400 volt motors available on request) Contact the factory for any other requirements.

Maximum number of starts per hour:

MOTOR HP	15	20	25	30	40
STARTS/HR	6	6	6	4	4



Note: All tubing 1/4" O.D. except as noted.

Sullivan-Palatek, Inc.
Control Schematic, 15-40 H.P.

3.5 INTAKE/CONTROL SYSTEM

The intake/control system consists of an air filter, connecting rubber sleeve, clamps, a combination compressor inlet valve/reverse-flow check valve, control signal regulator valve, solenoid control/blowdown valve, and a control pressure switch. (See Intake Control Schematic.) The air filter is a multi-stage dry-type with a high efficiency cleanable/replaceable element. The element should be cleaned periodically, depending upon the amount of particulates in the air, and replaced annually. This filter is adequate for areas of high air-borne dust concentrations and has a tubular intake to facilitate remote intake connection to cooler, cleaner air and/or for reduced noise level.

The intake valve controls the capacity or air delivery of the compressor in direct response to the plant air system demand via a varying signal from the control regulator valve. During periods of very low or zero air usage the inlet valve is held shut by an air signal from the solenoid control/blowdown valve. This air signal simultaneously reduces the pressure in the oil separation tank, allowing the compressor to run unloaded with minimum power consumption. Upon shutdown the intake valve checks shut to eliminate blowback.

Control operation - start mode: When the compressor is turned on, or starts automatically, the pressure will quickly rise to 60 psi (415 kPa), which is the setting of the minimum pressure valve. The control regulator and solenoid valve are both closed; therefore, the compressor inlet valve is wide open. The compressor is then drawing in its full rated capacity, but the air is held back by the minimum pressure valve. Upon reaching 60 psig the minimum pressure valve opens allowing the compressor to deliver its full rated capacity to the plant air piping system.

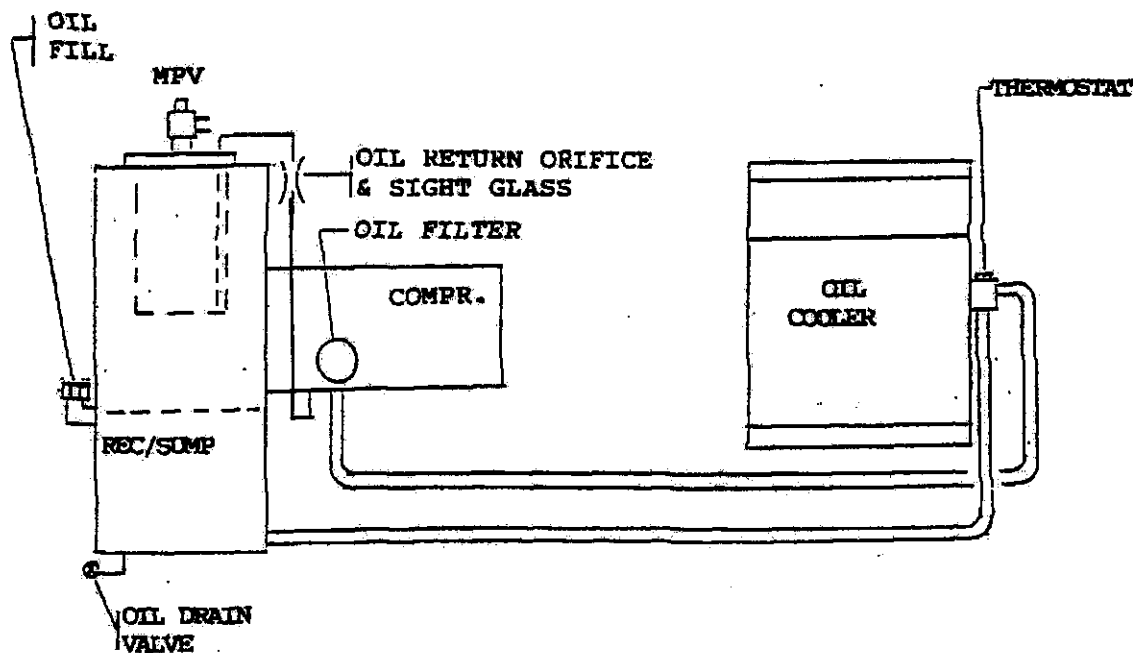
Modulating mode: Whenever less than the rated capacity of the compressor is being used, the service air pressure will continue to rise until the control regulator gradually opens. This applies pressure to the inlet valve piston, thus partially closing the inlet valve disc reducing the amount of air entering the compressor air inlet until it matches the amount of air being used. The control will function continually in this manner between the adjustable limits of 115 to 125 psi (750 to 860 kPa) in response to varying demands of the plant air system. The control regulator has an orifice in the controller piston, which vents a small amount of control air whenever it is sending a pressure signal to the intake controller capacity control. This orifice is vital to the smoothness of the control operation, and must not be restricted.

Unloaded/Shutdown modes: When little or no air is being used, the service line pressure will rise to the "cut-out" setting of the control pressure switch. This opens the control solenoid, which sends a pressure signal directly to the inlet valve piston. The inlet valve is held shut, while air is vented through an orifice fitting which reduces the pressure in the separation tank. With the selector switch in the "Run" position, the compressor runs unloaded until air demand increases. With the resumption of plant air usage, the line pressure signal is reduced to the "cut-in" setting of the control pressure switch where it closes. Then control air signal to the inlet valve will be dissipated allowing the inlet valve to reopen. The compressor returns to normal full load operation. Selecting the "Auto" position on the selector switch allows the motor to shut off whenever the "cut-out" pressure setting of the control pressure switch is reached. It remains in this "unloaded" mode for 10 minutes before shutting off. The compressor will restart whenever the line pressure drops to the "cut-in" pressure.

3.6 COMPRESSOR LUBRICATION/COOLING SYSTEM

The cooling system consists of a fan, finned-tube radiator-type fluid cooler, thermal valve to accelerate warm-up, a full-flow filter, an oil drain valve and interconnecting tubing. Pressure in the oil separation tank causes the lubricoolant to flow from this region of relatively high pressure, through the system to an area of lower pressure at the compressor unit. Fluid flows from the oil separation tank to the cooler, from the cooler to the filter, and from the filter to the compressor. During cold starts, the fluid will by-pass the oil cooler and go directly to the filter. While warming gradual change occurs where the fluid flow is split, partial flows being shared by both the oil cooler and by-pass through the thermal valve. When fully warmed up, the thermal valve is closed and all the lubricoolant flows through the cooler. The fluid filter is of the spin-on replacement element type. The element should be changed in accordance with the Maintenance Schedule on page 22. A drain valve is provided to drain the lubricoolant at change-out time.

COOLING SYSTEM SCHEMATIC



3.7 COMPRESSOR DISCHARGE SYSTEM

The compressor unit discharges a mixture of compressed air and lubricoolant directly into the oil separation tank where it accomplishes the following three functions:

- A) Primary Separation - by change of direction and reduction of velocity, which allow the heavier droplets of lubricoolant to fall.
- B) Serves as the lubricoolant sump - by collecting the hot lubricoolant, prior to re-circulation through the cooling system.
- C) Houses the final oil separation element - a replaceable, multi-layered, multi-media coalescing element with pleated initial stage for reduced velocity, improved separation performance and extended service life. Separated oil is returned to the compressor oil system via a small diameter return line, or scavenger tube.

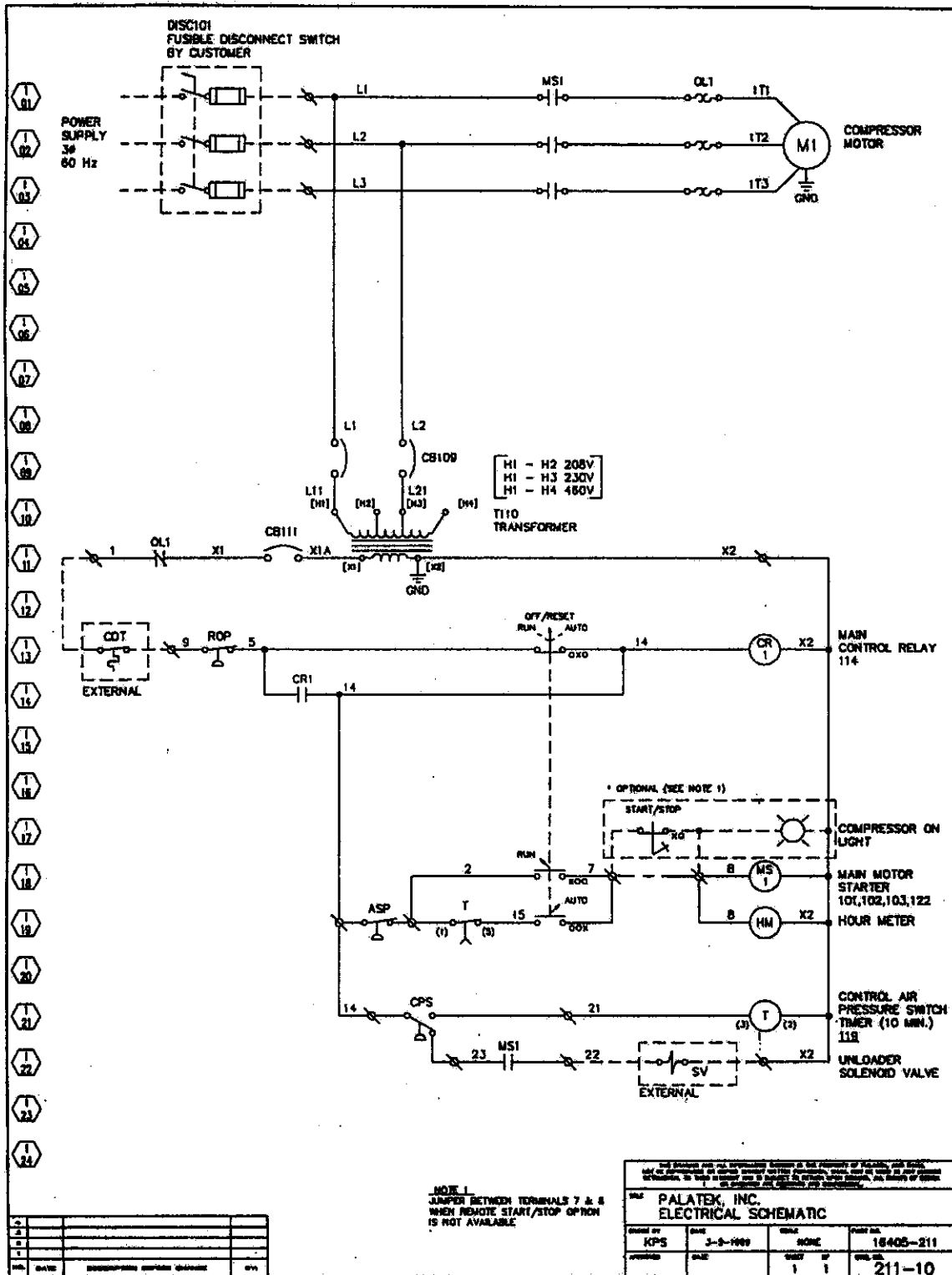
A sight gauge is provided to monitor the lubricoolant level in the oil separation tank. A capped oil fill port is provided to keep the oil at the proper level and to refill the system after changing the lubricoolant.

WARNING: Do not remove caps, plugs or other components or connections while the compressor is running or pressurized. Shut compressor off, open and lock electrical disconnect, and relieve all sump pressure before doing so.

The oil separation tank is ASME rated for 200 psi (1379 kPa) maximum working pressure. A combination minimum- pressure/check valve in the separator cover assures a minimum pressure of 60 psig (415 kPa) for proper lubricoolant circulation and separation. It prevents reverse flow of compressed air from the auxiliary air receiver and/or the plant air system back through the compressor at shutdown or during periods of unloaded operation. A pressure relief valve (located upstream, or on the "wet" side of the separator) is set to open if a control malfunction would allow the pressure to exceed 150 psig (1035 kPa). (High-pressure units can be set to operate at control pressures from 175 to 190 psig.) However, since the opening of this valve is noisy and results in hot oil being expelled, a receiver over pressure switch has been installed to shut the motor off at 140 psig (190 psi on high pressure units.).

The panel-mounted pressure gauges show the pressure in the oil separation tank and line pressure. The compressor discharge temperature gauge is also panel-mounted for ease of record keeping and trouble-shooting. Normal discharge temperature should be approximately 180-220° F (82-105° C), or about 100° F (55° C above ambient). A C.D.T. switch is provided to shut the motor off if the compressor discharge temperature exceeds 240° F (115° C) in the event of gradual reduction in cooling system efficiency coupled with unattended operation. The reaction time of the switch is, however, not rapid enough to stop the compressor in the event of a sudden or complete loss of lubricoolant.

Additionally, differential pressure gauges showing the pressure drop across the oil filter and the separator element are supplied as an assist to proper maintenance of these elements.



WIRING DIAGRAM, FULL VOLTAGE STARTER (STANDARD)

3.9 STARTER AND ELECTRICAL PARTS

The three-phase electric motor starter supplied with the SULLIVAN-PALATEK, INC. Plant Air Compressor has a NEMA-1 rated enclosure. This is also the location of: the control power transformer, the Run-On-Off-Reset, Auto Start selector switch, a control relay, the control pressure switch, the over-pressure shutdown switch and the anti-restart pressure switch. The starter contactor is amp-rated to match the motor power at 230 volts for the 15, 20, and 25 hp machines and 460 volts for the 30 and 40 HP. Overloads must be selected and set to match the motor voltage/full load amp rating, and in the case of 200 volt operation (and 230 volts for the 30 and 40 HP), a larger contactor must be specified. The selector switch allows the operator to select "Run" for continuous operation mode, where the motor runs continuously while the compressor loads and unloads, as required, to match air demand. This mode is generally used only if one wants to minimize motor starts.

The "Off-Reset" position is used to shut the compressor off and to reset the electrical control system following an automatic shutdown due to an over-temperature or over-pressure condition.

The "Auto-Start" position allows the compressor to shut down automatically whenever the auxiliary air receiver or plant air system pressure reaches the top ("Cut-out") setting of the control air pressure switch. This relays a signal to the control relay, initiating a 10-minute timer, which then releases the motor starter pull-in coil stopping the motor. The motor will restart as soon as the plant air pressure drops to the "cut-in" setting on the pressure switch, provided that the oil separation tank pressure has been relieved via the blowdown valve. The compressor is prevented from starting under pressure by the anti-restart switch is in its normally closed mode. (This control mode saves power during periods of little or no air usage, and a timer is utilized to limit motor starts.) The maximum number of starts for the 15 HP, 20 HP, and 25 HP is 6 per hour, 4 per hour for the 30 HP and 40 HP.

The over-pressure shutdown switch acts to stop the compressor in the event of control malfunction or improper adjustment in order to prevent the pressure relief valve on the oil separation tank from suddenly opening.

The control power transformer converts power from one phase of the incoming motor power to a lower voltage for activation of control features. The primary (high voltage) incoming power and the secondary (control voltage) circuits are both provided with breakers to minimize the potential for damage due to overloading or short-circuit faults.

3.10 INSTRUMENTATION

Each SULLIVAN-PALATEK, INC. Plant Air Compressor is equipped with two pressure gauges: one to monitor the sump tank pressure, another reading line pressure. There is a temperature gauge which senses compressor discharge temperature. In addition, there are two differential pressure gauges sensing the pressure drop across the oil filter and the separator element. It is recommended that the separator is changed when 5psid is reached, and the oil filter is changed when 15psid is reached. The compressor hour meter is located in the electrical box or on its door.

SECTION 4 - INSTALLATION**4.1 RECEIVING**

Carefully inspect for any signs of possible shipping damage.

4.2 LOCATION

The compressor is designed for indoor operation or protected outdoor site with an ambient temperature range of 35 to 104° F (1 to 40° C). It is important that there be sufficient unobstructed ventilation airflow to prevent re-circulation of hot air. The compressor should be in a clean, dry and well-lighted area with ample space for maintenance and servicing. Duct the hot air outside if necessary to prevent excessively high ambient temperatures. Below is a listing of heat loads and fan air volumes that must be accommodated to keep machines operating normally. It is possible to utilize this heat for space heating, combustion air pre-heating, product drying, etc., - providing that no additional restriction is imposed upon the compressor cooling fan. Consult the factory for assistance if heat recovery is desired, or if other ambient temperatures are present.

MODEL	15D	20D	25D	25D4	30D7	40D
AIR FLOW (CFM)	1000	2200	2600	2250	2600	5000
HEAT REJECTION BTU/HR	34,700	51,600	68,500	59,200	71,600	106,000

Locate compressor as close as practical to where the compressed air is to be utilized. This saves piping and reduces power requirements necessary to transmit compressed air long distances.

4.3 SUPPORT

The compressor may be mounted on any level surface capable of supporting its weight. It is recommended that the machine be mounted on isolation pads and secured to prevent movement.

4.4 ELECTRICAL CONNECTIONS

Electrical wiring to the motor starter must be done by a qualified electrician in accordance with all pertinent Federal, State and Local codes concerning isolation switches, short circuit protection, grounding, etc. Under no circumstances is any welding to be performed on compressor without proper grounding. Serious damage to compressor components can occur which will void warranties.

Check all electrical connections for tightness!

Check incoming voltage to be sure the motor is properly connected to match the starter and the overloads are properly set.

When power wiring has been installed, engage disconnect and "bump" compressor by turning to "Run" and then back to "Off." Check for compressor proper rotation by: a.) Observing coupling rotation, b.) Observing pressure build up on sump gauge. If rotation is incorrect switch any two of the incoming lines after opening disconnect. Once re-energized the compressor should be ready to turn on.

4.5 DIRECTION OF ROTATION

Once the control circuit has been checked, all piping installed, and the compressor lubricant level has been checked - reconnect the three motor leads by momentarily moving the selector switch to the "Run" position and then back to the "Off/Reset" position to check for correct compressor rotation. Rotation should be as follows when viewed from the motor (i.e. looking in at compressor shaft)

<u>Counter - Clockwise</u>	<u>Clockwise</u>
20D	15D
25D4	H15D
H25D	H20D
40D	25D
	H30D7
	30D7
	H40D

Note: In all cases, the fan air should blow out, away from the motor.

4.6 COMPRESSED AIR PIPING

Connect the compressor to the plant air system with a flexible connector rated for at least 200 psi (1400 kPa) and 275° F (135° C). Support the piping to insure that no pipe stress is transmitted to any compressor component. Piping should be as large as possible to provide extra air storage capacity and minimize transmission losses. Air dryers and filters may be required. Piping should be in a "closed loop" configuration, sloping to drain points, with service air outlets taken from the side, or preferably, the top of the pipe. Point-of-use filters, coalescers, regulators and/or lubricators are often required. (Note: never use plastic air piping or plastic bowls on filters or lubricators. See Section 1.) Inspect piping and air hoses frequently for leaks.

4.7 ADDITIONAL HELP

By supplying the cleanest, coolest air available to the compressor inlet, maintenance and power consumption will be minimized. The heavy-duty air filter is locally mounted with provision for remote connection. Use a flexible connector at the filter inlet. (15, 20, 25, 30 and 40 = 3" diameter.) Keep the piping as short and as straight as possible. Intake duct must be the same size as filter inlet, or larger, to accommodate long runs and several bends. Support intake ducting properly to prevent its weight being transmitted to the compressor air filter.

For multiple machine installation, contact the factory for special sequencing controls that can reduce power cost during part-load operation. Fan air ducted outside will reduce the machine noise somewhat, but care must be taken not to impose additional restriction to the fan airflow. With proper attention to the ducting, this fan air can also be utilized for heating purposes.

SECTION 5 - OPERATION

5.1 INTRODUCTION

Read this entire Operator's Manual to familiarize yourself with the SULLIVAN-PALATEK, INC. Plant Air Compressor, giving special attention to the SECTION 1 - SAFETY.

5.2 INITIAL START

1. Open main disconnect to be sure there is no power to the compressor.
2. Review all the steps covered in Section 4 - INSTALLATION to be certain all instructions have been complied with.
3. Inspect for any visible signs of damage that could have occurred during installation.
4. Check lubricoolant level. Tighten oil-fill cap.
5. Close main disconnect.
6. Jog motor (move selector switch to the "Run" position momentarily, then immediately back to "Off/Reset") to check direction of rotation - looking at the fan from the tank end, rotation should be as indicated on page 18. If rotation is wrong, open main disconnect and then exchange any two of the three incoming leads L1, L2 or L3.

CAUTION: Reverse rotation will cause damage that is not covered by warranty. Rotation must be checked whenever the compressor has been moved to a new location, or after any change or reconnection of the main electrical wiring.

7. After closing the starter cover door, close the main disconnect and start the compressor in either the "Run" or "Auto Start/Stop mode.
8. With service air valve closed, allow machine to pump up to normal operating pressures and observe operation of automatic controls, and check for any possible leaks.
9. Open service air valve, check operation throughout a range of pressures and observe operating temperatures.
10. Turn selector switch to "Off-Reset" and check lubricoolant level after it has been allowed to settle for a few minutes. If it is necessary to add lubricoolant, be sure to relieve all oil separation tank pressure prior to removing fill cap.
11. If unloaded pressure is incorrect, re-adjust pressure switch settings as required.

5.3 NORMAL OPERATION

1. Open and lock out main power disconnect.
2. Check lubricoolant level. Refill if necessary.
3. Reclose disconnect switch.
4. Start machine in either "Run" or "Auto Start/Stop" mode.
5. Fully open service air valve.
6. Observe pressures and temperature. If unloading pressure is incorrect, re-adjust pressure switch. If temperature is incorrect, refer to Section 6.7 - TROUBLE SHOOTING.

5.4 SHUTDOWN

To stop compressor, move selector switch to "Off-Reset" position. If motor does not stop, open disconnect switch, then repair as necessary.

5.5 RESTARTS

After a power failure, open and lock out the main disconnect, check all fuses and move selector switch to "Off-Reset" position. Close disconnect switch and follow Normal Operation start-up procedure.

Following a shutdown caused by either of the protective switches (i.e. cdt, or rop), open and lock out the main disconnect switch. Correct the cause of shutdown and reset electrical controls. Then close the disconnect and follow Normal Operation start-up procedure.

If the overload has tripped the motor off, first open and lock out the disconnect, then push the starter overload reset button and check to be sure it is set properly and correctly adjusted. **NOTE:** Never adjust the overload higher than indicated by starter manufacturer to match motor nameplate amperage rating; an unsafe operating condition will result!

SECTION 6 - MAINTENANCE

6.1 SCHEDULE

Daily -

1. Check lubricoolant level prior to start-up.
2. Drain condensate from auxiliary receiver, if so equipped.
3. Observe the instrument panel gauges.
4. Keeping a daily log of all operating parameters is recommended.

First 50 hours-

Change compressor lubricoolant filter.

Every 1000 hours -

1. Change compressor lubricoolant filter.
2. Take sample of lubricoolant and submit for analysis if operating in severe environment. (Ex: chemical fumes, oxidizing elements, fine dust)

When using Palasyn 45: Every 4000 hours or once a year, whichever occurs first -

Drain lubricoolant and replace with a fresh charge. Inspect interior of tank. Clean tank if any build-up of deposits is present. This may have to be done sooner depending upon results of lubricoolant analysis. Replace air/oil separator element and the air filter element.

When using Pallube 32p: Every 8,000 hours -

Change Pallube 32p lubricoolant and inspect tank interior. Replace air/oil separator element. Replace air and oil filter.

When using AFX 32: Every 10,000 hours-

Change AFX 32 and inspect tank interior. Replace air/oil separator, as well as air and oil filter element.

Note: Oil Sump capacity: 15-30, 2.5 gal.; 40, 3.5 gal.

As Required -

1. Clean or replace air filter element #00521-060 for 15 to 40 HP.
2. Clean exterior surfaces of oil cooler/aftercooler.
3. Clean and grease MPV. (Must use high temperature lube)

6.2 OIL FILTER (1000 hours)

1. Open and lockout main disconnect.
2. Relieve all internal system pressure.
3. Using a strap wrench, remove spin-on oil filter element.
4. Spread a thin film of grease on the gasket.
5. Install element by hand until gasket touches the filter head.
6. Tighten 2/3 to one more turn.
7. Check for leaks after compressor is up to temperature.

6.3 AIR FILTER

1. Open and lock out main disconnect.
2. Remove end cover by operating snap-catch to release cover.
3. Remove air filter element, taking care to prevent dirt, which has collected on the outer surface of the element from falling into the open compressor inlet. Wipe dust from inside of housing. **NOTE:** To minimize downtime, it is recommended that a spare element be kept on hand. Check model and serial number for proper element number.
4. Replace element as needed. When reinstalling the element, be sure it is seated squarely against both the base and the lid so that dust cannot bypass the filter media.
5. Snap the end cover back on once the filter element has been replaced.

6.4 AIR/OIL SEPARATOR

1. Open and lock out main disconnect.
2. Disconnect main air line to aftercooler.
3. Disconnect control air. Pick up line @ MVP.
4. Disconnect oil return scavenge line.
5. Unbolt cover in a diagonal criss-cross pattern.
6. Remove cover and separator element.
7. Drain lubricoolant and clean interior of oil separation tank if element appears dirty.
8. Clean flange and cover surfaces. (If rusty, clean thoroughly and paint with high temperature paint.
9. Coat surfaces of gasket lightly with lithium grease.
10. Install new separator element. (Check to make sure the metal flange is grounded to the tank via the clips on the separator)
11. Replace cover.
12. Tighten all cover bolts progressively in a diagonal criss-cross pattern until all bolts are properly torque to 50ft lbs for 3/8" bolts and 125 ft-lbs for 1/2" bolts. These separator cover bolts are a special high-strength alloy, designated "SAE GRADE 8." Only grade 8 bolts are allowed. No substitutions!
13. Reconnect all tubing.

6.5 BOLT TORQUE SPECS

TORQUE SPECIFICATIONS:

GRADE 8 BOLTS 3/8" 50 ft. lb.

GRADE 8 BOLTS 1/2" 125 ft. lb.

6.6 PRESSURE ADJUSTMENT

Two capacity control features are incorporated in the Sullivan-Palatek compressors. The control pressure switch (CPS) will cycle the compressor between loaded and unloaded operation. This switch should be set so that the compressor loads when the line pressure falls to the lowest pressure required to operate plant equipment, and unloads the compressor at some higher pressure (normally about 10 psi above load pressure.) The other means of controlling compressor out-put is by means of the modulating or regulating valve. The modulating valve will proportionally pinch shut the inlet valve depending upon the existing line pressure.

To set the compressor controls, follow the following steps:

1. Turn in on modulating valve adjusting screw about one turn (this is to remove this control while setting the CPS).
2. Adjust the cut-out pressure by turning the top adjusting screw (1/4" flat) (CW to raise the pressure, CCW to lower).
3. Adjust the cut-in pressure by turning the red knob (very sensitive). CW to decrease the cut-in; CCW to increase the cut-in pressure.
4. One the CPS has been set to the desired valves, the modulating valve must be reset. Loosen the adjusting screw until air is being vented from regulator at a pressure about 5 psi below the set cut-out pressure of the CPS. Lock adjusting screw in place.

Note that the selector switch on the electrical box has three settings; 'Run', "Off/Reset", and 'Auto'. In the 'Auto' position the compressor will shut off after running unloaded for 15 minutes. In the 'Run' mode the compressor motor is never shut off. For maximum efficiency of operation, if it is intended to operate the compressor in the 'Auto' mode, the pressure settings should have as large a differential as practical to allow the compressor to time out and shut off (consult factory for other optional energy saving options.)

6.7 TROUBLESHOOTING

SYMPTOM	PROBABLE CAUSES AND REMEDY
A. Machine will not start	1. Main disconnect switch open. Close switch.
	2. Line fuse(s) blown. Replace fuse(s).
	3. Control Circuit breaker tripped. Reset breaker.
	4. Motor starter overload tripped. Reset. Should trouble persist, check sizing and adjustment of overloads. Also check motor starter contacts for fitting.
	5. Low incoming line voltage. Check all voltages. Should voltage check low, or be imbalanced, Consult your power company.
	6. Open discharge temperature switch. See section B.
	7. Defective control relay. Replace

TROUBLESHOOTING, CONT

	8. Faulty selector switch. Replace.
	9. Power failure; see start-up.
	10. Unit locked up: <ul style="list-style-type: none"> a. Filled with oil: Inlet valve is leaking. Replace inlet valve. b. Unit failure- replace unit.

SYMPTOM	PROBABLE CAUSE AND REMEDY
B. Machine shuts down with air demand Present	1. Loss of control voltage. Reset breakers. If trouble persists, check transformer voltages.
	2. Low incoming voltage. Consult power company.
	3. Excessive operating pressure. (trips, O.L.)
	<ul style="list-style-type: none"> a. Improperly adjusted or defective pressure switch. Readjust or replace. Check pressure at which pressure switch opens. b. Separator requires maintenance. Check restriction under full load conditions. ΔP should be < 10 psi. c. High-pressure shutdown switch (ROP) is set too Low. Adjust or replace switch. d. Defective blowdown valve. Blowdown valve should exhaust when maximum operating pressure is reached. Replace or clean valve.

SYMPTOM	PROBABLE CAUSES AND REMEDY
B. Machine shuts down with air demand present	<p>4. Discharge temperature switch open Monitor temperature gauge readings: normal operating pressure discharge temperature should be 160-220° F (100 F above ambient). Switch is set to trip at 235-245° F</p> <ul style="list-style-type: none"> a. Cooling airflow restricted. Clean cooler and check for proper ventilation. b. Ambient temperature is too high. Provide sufficient ventilation. c. Low lubricoolant level. Add lubricoolant. d. Clogged oil filter. Change the oil filter element. e. Cooler thermostat not functioning properly. Replace thermostat. f. Defective discharge temperature switch. Replace.

TROUBLESHOOTING, CONT

SYMPTOM	PROBABLE CAUSES AND REMEDY
C. Machine will not build up full discharge pressure	1. Air demand is too great. Repair system air leaks. Add compressor capacity to satisfy demand.
	2. Dirty air filter. Clean or change element as required.
	3. Control pressure regulator out of adjustment. Adjust regulator by loosening lock nut and turning screw in 1/2 to 1 turn.
	4. Defective control regulator. Check diaphragm and replace if necessary.
	5. Blowdown valve open. Repair or replace.
	6. Faulty over pressure switch. Adjust or replace.

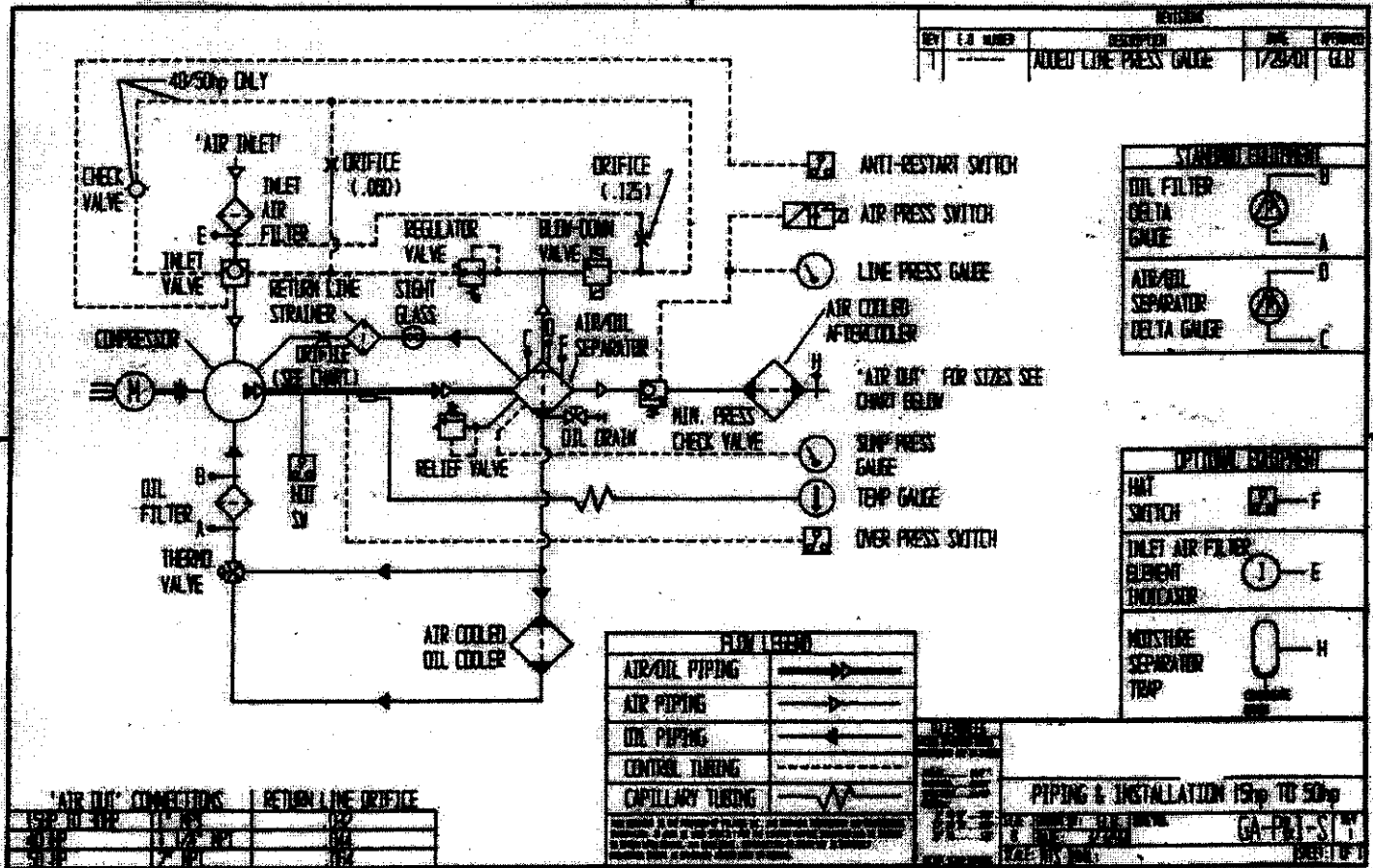
SYMPTOM	PROBABLE CAUSE AND REMEDY
D. Line pressure rises above cut-out pressure	1. Leak in control system tubing causing loss of pressure signals.
	2. Improperly adjusted or defective pressure switch. Readjust or replace switch.
	3. Defective solenoid valve. Readjust or replace if necessary.
	4. High pressure shutdown switch is defective. Replace.
	5. Faulty inlet valve. Repair or replace.

SYMPTOM	PROBABLE CAUSE AND REMEDY
E. Excessive lubricoolant consumption	1. Clogged separator oil return line. Check for line blockage. Clean orifice and strainer located in oil return sight glass assembly.
	2. Separator element damaged, needs service. Change separator.
	3. Leak in lubrication system. Check all pipes, connections and components.
	4. Operating pressure below 60 psig. Repair minimum pressure valve.

TROUBLESHOOTING, CONT

SYMPTOM	PROBABLE CAUSE AND REMEDY
F. Pressure Relief Valve Opens Repeatedly	1. Control pressure switch is misadjusted or faulty. Adjust or replace.
	2. Incorrect control settings. Readjust or replace modulating valve.
	3. High pressure shutdown switch is defective. Adjust or replace.
	4. Faulty Pressure Relief Valve. Replace.

SYMPTOM	PROBABLE CAUSE AND REMEDY
G. Receiver Pressure Venting Through Blowdown	1. Defective Check Valve portion of Minimum Pressure/Check Valve. Repair or replace check valve.



PARTS LISTING

SCREW COMPRESSOR AIR-END EXCHANGE PROGRAM

After the warranty period has expired a factory re-manufactured air-end can be purchased on an exchange basis. All bearings and seals have been replaced. All other parts not meeting our quality standards are also replaced. The air end is then factory tested prior to shipment. A re-manufactured air-end has a warranty which is 24 months from start up date or 27 months from date of shipment in accordance with the terms set forth in the new air-end warranty found on page 42.

SECTION 7 - PARTS LISTING

7.1 PARTS ORDERING

Parts should be ordered from the nearest full-service Distributor or Factory Authorized Compressor Center. If parts cannot be obtained locally, contact the factory.

SULLIVAN-PALATEK, INC.
3501 W. Dunes Hwy.
Michigan City, IN 46360
Telephone: 219-874-2497 FAX: 219-872-5043
E-mail: pal@mail.netnitco.net

When ordering parts, be prepared to indicate the MODEL and SERIAL NUMBER of the machine(s). This can be obtained from the Bill of Lading or the Serial Number Plate. Standard commercial hardware items such as fasteners or fittings may not be listed since it is usually more convenient and economical to obtain such items locally.

7.2 RECOMMENDED SPARE PARTS

DESCRIPTION	PART NO.	QUANTITY (AK HRS./YR.)
**Element, Air Filter	00521-060 (082)	2
If oil filter is horizontal	00520-017	3
Element, Air/Oil Separator (15-30D7)	08000-019	1
Element, Air/Oil Separator (40D)	08000-009	1
Valve, Sol, 2 way, 115 vac	40529-010	1
Valve, Control Regulator	09661-002	1
Valve, Pressure Relief, 150 psi (200psi)	03100-001(008)	1
O Ring, Inlet to Stator	90660-344	1
MPV (Repair Kit) 15 hp	17701-002	1
MPV (Repair Kit) (20,25,30, 40)	17701-001	1
Switch, Compressor Temperature	00438-008	1
Switch, Pressure Anti-Restart	09344-001	1
Switch, Control Pressure	09345-006	1
Switch, Compressor Overpressure	09344-003	1
Seal, Shaft Assembly (15,25, &30D)*	K09147-251	1
Seal, Shaft Assembly (20,25D4,40)*	K09147-252	1
Timer, Solid State, 10 minutes	69500-210	1
Element Thermostat (Higher Temp)	09505-004 (-006)	1
***Palasyn 45 Lubricoolant (5 Gal)	00061-005A	1
***Pallube 32 Lubricoolant (5 Gal)	00064-005A	1
***AFX Ideal 32 Lubricoolant (5 Gal)	00051-005A	1

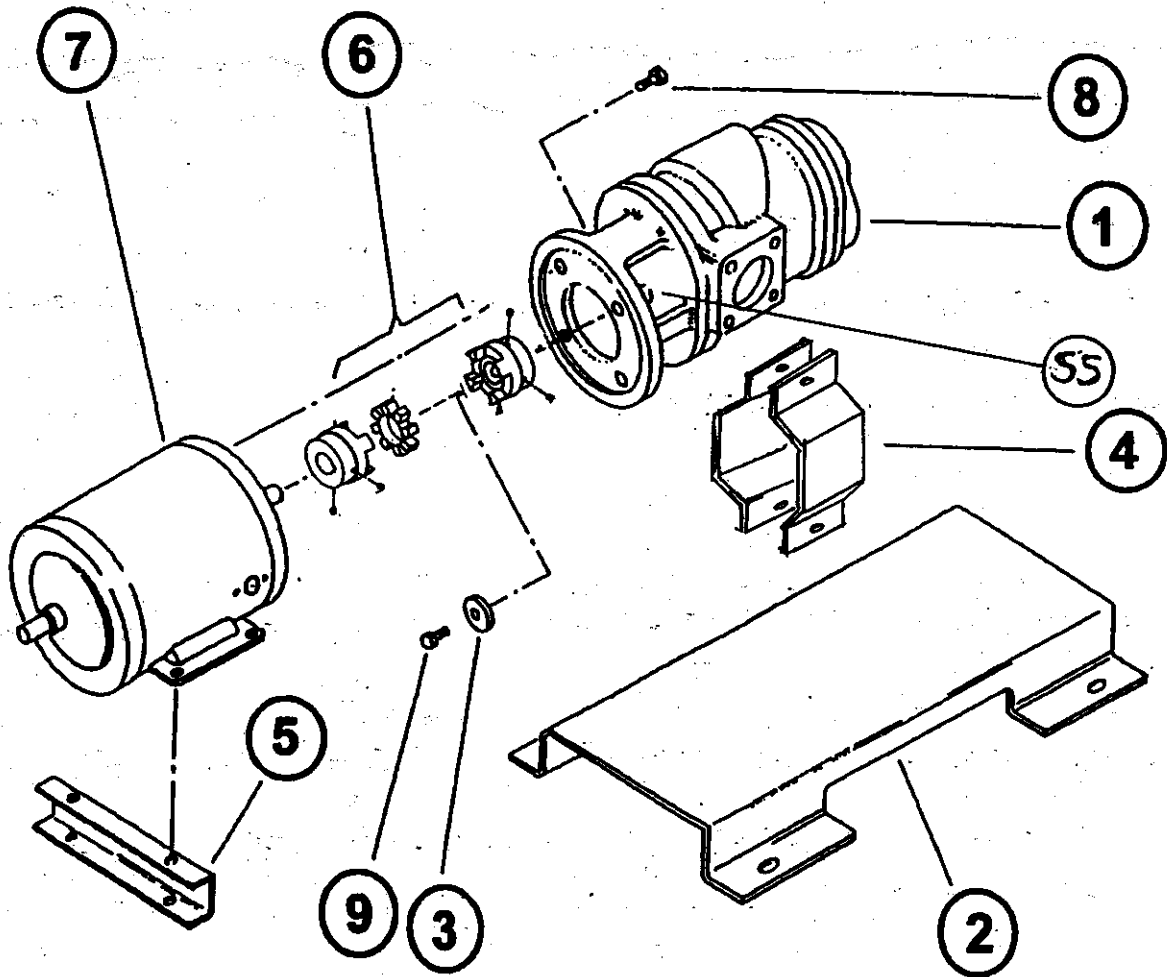
*NOTE: TO CHANGE SHAFT SEAL TOOL KIT K09147-001 IS REQ'D.

7.3 MOTOR, COMPRESSOR AND MOUNTING PARTS ~ BASE MOUNTED

KEY	DESCRIPTION	QTY	MODEL 15D	MODEL 20D	MODEL 25D	MODEL 25D4	MODEL 30D7	MODEL 40D
1	COMPRESSOR	1	50000-725	50000-720	50000-725	50000-727	50000-735	50000-740
1A	SEAL REPAIR KIT*	1	K09147-251	K09147-252	K09147-251	K09147-252	K09147-251	K09147-252
2	BASE	1	00144-025	00144-025	00144-025	00144-025	00144-025	00144-025
3	RETAINER	1	01208-005	01208-005	01208-005	01208-005	01208-005	01208-005
4	COUPLING GUARD	2	00697-010	00697-010	00697-010	00697-009	00697-009	00697-009
5	SUPPORT, MOTOR	1	18339-008	18339-008	18339-008	18339-004	18339-004	08339-001
6	COUPLING	1	18516-076	18516-025	18516-025	18516-025	18516-025	18516-025
6A	COUPLING ELEMENT	1	08516-080	08516-052	08516-052	08516-052	08516-052	08516-052
7	MOTOR 230/460	1	08741-015	08741-020	08741-025	08741-425	08741-230	08741-040

NOTE: IN ORDER TO CHANGE THE SHAFT SEAL, THE TOOL KIT K09147-001 IS REQUIRED.

7.3 MOTOR, COMPRESSOR, AND MOUNTING PARTS - BASE MOUNTED



SULLIVAN-PALATEK

7.4 LUBRICATION & COOLING SYSTEM

KEY	DESCRIPTION	QTY	MODEL 15D	MODEL 20D	MODEL 25D	MODEL 25D4	MODEL 30D7	MODEL 40D
1	FAN, COOLING	1	08080-016	08080-017	08080-025	08080-018	08080-031	08080-042
2	OIL COOLER/ AFTERCOOLER	1	07711-202	07711-202	07711-202	07711-202	07711-202	07711-203
3	'O' RING, VITON	2	90659-121	90659-121	90659-121	90659-121	90659-121	90659-121
4	THERMOSTAT * (Higher Temp. -180° F)	1	09505-006	09505-006	09505-006	09505-006	09505-006	09505-004 09505-006
5	HOUSING, THERMOSTAT	1	08207-055	08207-055	08207-055	08207-055	08207-055	08207-055
6	'O' RING, 7/8 VITON	4	00660-010	00660-010	00660-010	00660-010	00660-010	00660-010
7	TUBE SUMP TO THERMOSTAT	1	09612-015	09612-020	09612-025	09612-026	09612-025	09612-042
8	CONN., TUBE, SUMP	1	80120-010	80120-010	80120-010	80120-010	80220-010	80220-012
9	'O' RING, 1" VITON	1	00660-010	00660-010	00660-010	00660-010	00660-010	00660-012
10	TUBE, THERMOSTAT TO UNIT	1	09612-016	09612-021	09612-027	09612-027	09612-043	09612-043
12	CONN., UNIT	1	80120-012	80120-012	80120-012	80120-012	80120-012	80220-012
13	HEAD, OIL FILTER+	1	08415-003	08415-003	08415-003	08415-003	08415-003	08415-003
14	ELEMENT, OIL FILTER	1	00520-017	00520-017	00520-017	00520-017	00520-017	00520-017
19	SPACER, FAN	1	00418-002	00418-002	00418-006	N/A	00418-003	N/A
20	HUB, FAN	1	00851-001	00851-001	00851-001	00851-002	00851-002	00851-002
21	KEY, FAN	1	90947-252	90947-252	00858-001	00858-001	00858-001	00858-001
22	SHROUD	1	13400-104	13400-104	13400-104	13400-104	13400-104	13400-102
23	GUARD, FAN	1	03216-104	03216-104	03216-104	03216-104	03216-104	

N/A NOT APPLICABLE

+ If equipped with oil filter head (#08415-003), use oil filter #00520-012.3

*NOTE: Prior to 8/1/99 all thermostat elements were 09505-004 (165°)

Water Cooled Machines:

15 hp Thru 30 hp

Oil Cooler #00549-001

After Cooler #00549-001

Water Reg. Valve #18338-008

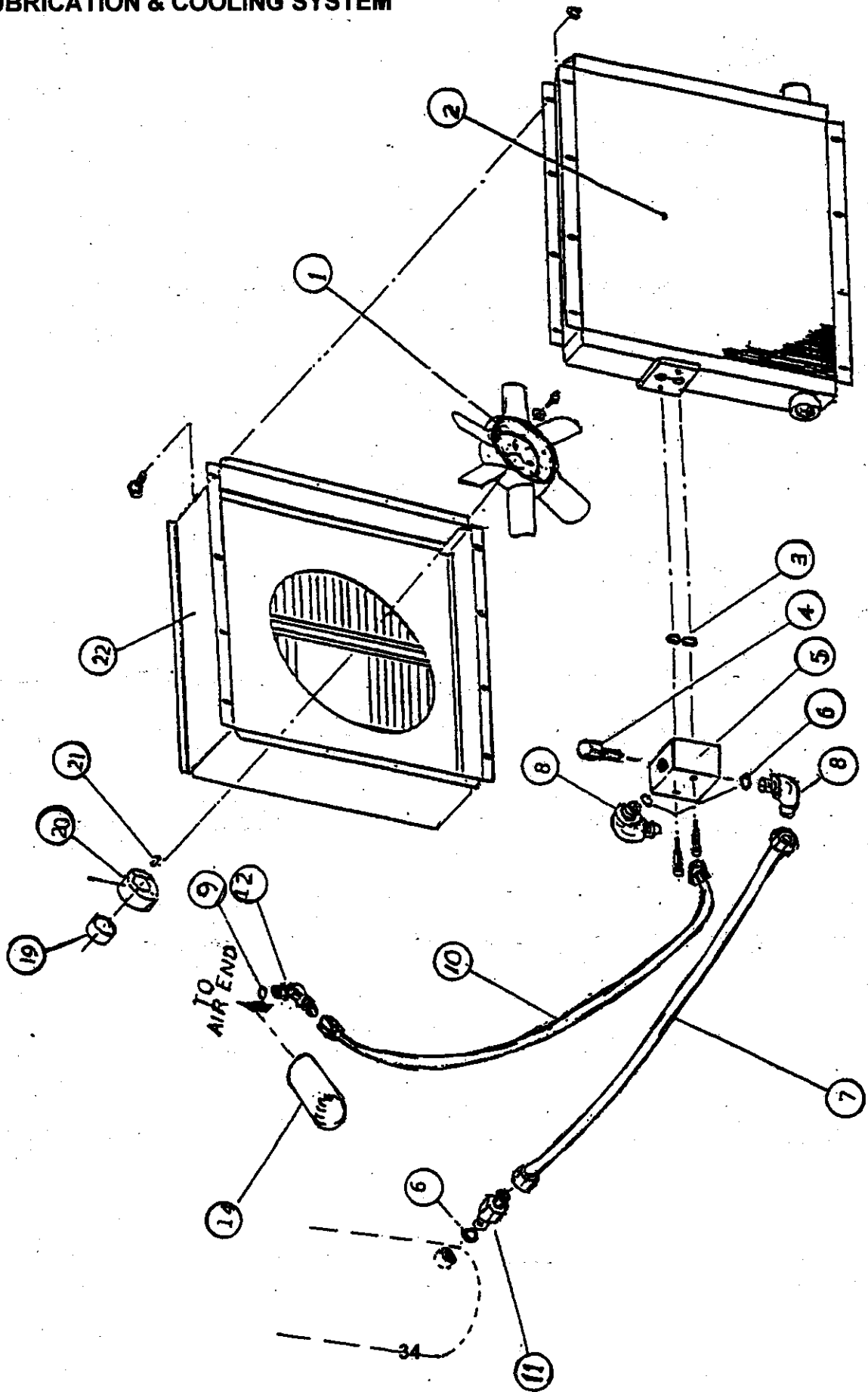
40 hp Model

Oil Cooler #00549-003

After Cooler #00549-002

Water Reg. Valve #18338-012

LUBRICATION & COOLING SYSTEM



SULLIVAN-PALATEK

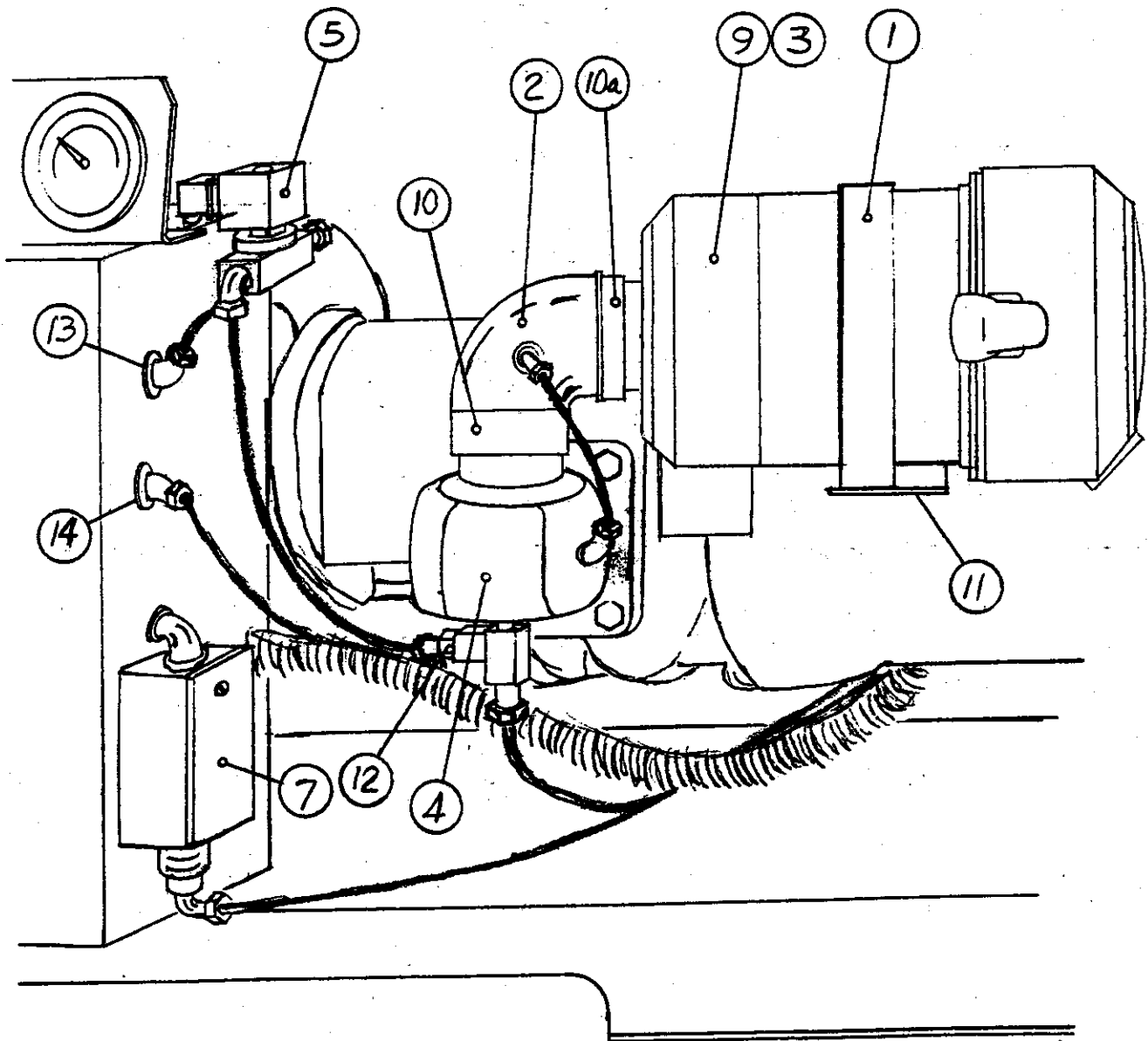
7.5 INTAKE AND CAPACITY CONTROL SYSTEM

ITEM	DESCRIPTION	QTY	MODEL 15D	MODEL 20D	MODEL 25D	MODEL 25D4	MODEL 30D7	MODEL 40D
1†	BAND, MOUNTING	1	00131-060	00131-060	00131-060	00131-060	00131-060	00131-082
2†	ELBOW, RUBBER	1	00047-253	00047-253	00047-253	00047-253	00047-253	00077-350
3†	ELEMENT, AIR FILTER	SP	00521-060	00521-060	00521-060	00521-060	00521-060	00521-082
4	VALVE, INTAKE	1	09790-007	09790-007	09790-007	09790-007	09790-007	09790-007
5	VALVE, BLOWDOWN	1	40529-010	40529-010	40529-010	40529-010	40529-010	40529-011
6	VALVE, REGULATOR (N.I.)	1	09661-002	09661-002	09661-002	09661-002	09661-002	09661-002
6A	KIT, REPAIR	1	17701-006	17701-006	17701-006	17701-006	17701-006	17701-006
7	CONTROL PRESS.	1	09345-006	09345-006	09345-006	09345-006	09345-006	09345-006
9†	ASSEMBLY, FILTER, AIR	1	28174-060	28174-060	28174-060	28174-060	28174-060	28174-080
10†	CLAMP, HOSE	1	92320-128	92320-128	92320-128	92320-128	92320-128	92320-128
10A	CLAMP, HOSE	1	92320-080	92320-080	92320-080	92320-080	92320-080	92320-128
11†	BRACKET	1	00216-045	00216-045	00216-045	00216-046	00216-045	00216-047
12	ORIFICE	1	03001-063	03001-063	03001-063	03001-063	03001-063	03001-063
13	SWITCH ROP	1	09344-003	09344-003	09344-003	09344-003	09344-003	09344-003
14	SWITCH ASP	1	09344-001	09344-001	09344-001	09344-001	09344-001	09344-001

NOTE: Prior to 01/10/01, the following numbers apply

1	Band	1	00131-065	00131-065	00131-065	00131-065	00131-065	00131-065
2	Elbow, Rubber	1	91411-005	91411-005	91411-005	91411-005	91411-005	91411-005
3	Element, Air Filter	1sp	00521-065	00521-065	00521-065	00521-065	00521-065	00521-065
5	Valve, Solenoid Blowdown	1	40529-002	40529-002	40529-002	40529-002	40529-002	40529-002
9	Assembly, Air Filter	1	28174-065	28174-065	28174-065	28174-065	28174-065	28174-065
10	Clamp, Hose	2	92320-128	92320-128	92320-128	92320-128	92320-128	92320-128
11	Bracket	1	00216-014	00216-014	00216-014	00216-014	00216-014	00216-014

INTAKE AND CAPACITY CONTROL SYSTEM



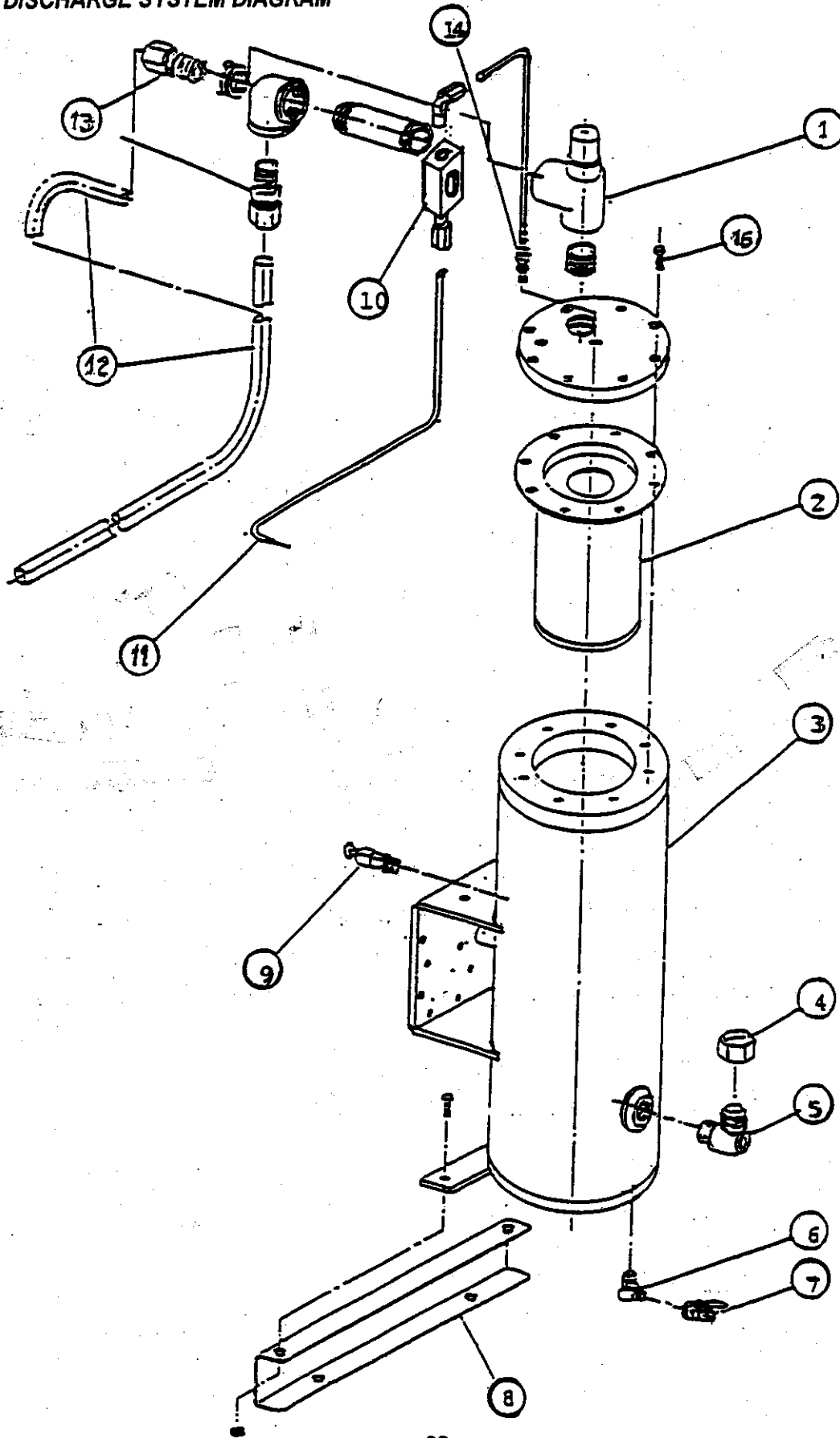
SULLIVAN-PALATEK

7.6 DISCHARGE SYSTEM

KEY	DESCRIPTION	QTY	MODEL 15D	MODEL 20D	MODEL 25D	MODEL 25D4	MODEL 30D7	MODEL 40D
1	VALVE, MINIMUM PRESSURE	1	09610-002	09610-001	09610-001	09610-001	09610-001	09610-001
2 †	SEPARATOR	1	08000-019	08000-019	08000-019	08000-019	08000-019	08000-009
3 †	TANK, SUMP DISCH.-SUMP GASKET	1	03448-028 00633-001	03448-028 00633-001	03448-028 00633-001	03448-028 00633-001	03448-028 00633-001	03448-043 00633-001
4	CAP, VENTED	1	07255-016	07255-016	07255-016	07155-016	07255-016	07255-016
5	ELBOW, OIL SIGHT	1	17254-016	17254-016	17254-016	17254-016	17254-016	17254-016
6	ELBOW, 1/2" MALE	1	96399-004	96399-004	96399-004	96399-004	96399-004	96399-004
7	VALVE, OIL DRAIN	1	95784-004	95784-004	95784-004	95784-004	95784-004	95784-004
8	SPACER CHANNEL	1	N/A	08399-002	N/A	08399-002	N/A	N/A
9	VALVE, RELIEF 150 PSI	1	03100-001	03100-001	03100-001	03100-001	03100-001	03100-001
9A	VALVE, RELIEF 175 PSI	1	03100-003	03100-001	03100-003	03100-003	03100-003	03100-003
9B	VALVE, RELIEF 200 PSI	1	03100-008	03100-008	03100-008	03100-008	03100-008	03100-008
10	KIT-OIL RETURN SIGHT GLASS	1	29349-041	29349-041	29349-064	29349-064	29349-064	29349-064
10A	ORIFICE, OIL RETURN	1	03001-041	03001-041	03001-064	03001-064	03001-064	03001-064
10B	STRAINER	1	18577-001	18577-001	18577-001	18577-001	18577-001	18577-001
10C	SIGHT GLASS	1	09349-001	09349-001	09349-001	09349-001	09349-001	09349-001
10D	ADAPTER	1	00023-001	00023-001	00023-001	00023-001	00023-001	00023-001
11	TUBE, OIL RETURN	1	09602-013	09602-013	09602-013	09602-014	09602-013	09602-015
12	TUBE, MINIMUM PRESSURE VALVE TO AFTERCOOLER	1	09600-126	09600-112	09600-122	09616-254	09600-122	09600-048
13	CONNECTOR	1	96363-160	96363-161	96363-161	96363-161	96363-161	96363-202
14	FITTING, SIPHON	1	03286-003	03286-003	03286-003	03286-003	03286-003	03286-003
14A	GROMMET	1	00547-001	00547-001	00547-001	00547-001	00547-001	00547-001
15	ELBOW, AC (N.I.)	1	96390-160	96390-161	96390-161	96390-161	96390-161	96390-202
16	BOLT, GRD 8	8	3/8 X 1 1/4	3/8 X 1 1/4	3/8 X 1 1/4	1/2 X 1 1/2	1/2 X 1 1/2	1/2 X 1 1/2

† For high-pressure compressors (above 130psi) consult factory for correct element as per machine serial number.

7.6 DISCHARGE SYSTEM DIAGRAM



SULLIVAN-PALATEK

7.7 GAUGE PANEL & ELECTRICAL PARTS

KEY	DESCRIPTION	QTY	MODEL 150	MODEL 200	MODEL 250	MODEL 250A	MODEL 3007	MODEL 400
1	GAUGE, TEMPERATURE	1	08312- 025g	08312-025g	08312-025g	08312-025g	08312-025g	08312-025g
2	GAUGE, PRESS	2	09174-325	09174-325	09174-325	09174-325	09174-325	09174-325
3	GAUGE, DELTA -P SEPARATOR	1	09175-001	09175-001	09175-001	09175-001	09175-001	09175-001
3A	GAUGE, DELTA -P OIL FILTER	1	09175-030	09175-030	09175-030	09175-030	09175-030	09175-030
4	SWITCH 3-POSITION	1	00701-795	00701-795	00701-795	00701-795	00701-795	00701-795
5	HOURLY METER, AC 120V	1	00735-120	00735-120	00735-120	00735-120	00735-120	00735-120
6	SWITCH, CONTROL PRESSURE †	1	09345-013	09345-013	09345-013	09345-013	09345-013	09345-013
7	PANEL 15 GAUGE	1	00944-007	00944-007	00944-007	00944-007	00944-007	00944-007
8*	INDICATOR, AIR FILTER	1	07103-015	07103-015	07103-015	07103-015	07103-015	07103-015
9	SWITCH, PRESSURE ANTI-START	1	09344-001	09344-001	09344-001	09344-001	09344-001	09344-001
10	SWITCH, OVER PRESSURE	1	09344-003	09344-003	09344-003	09344-003	09344-003	09344-003
11	SOLENOID VALVE	1	40529-010	40529-010	40529-010	40529-010	40529-010	40529-010
12	SWITCH, CDT (NI)	1	00438-008	00438-008	00438-008	00438-008	00438-008	00438-008

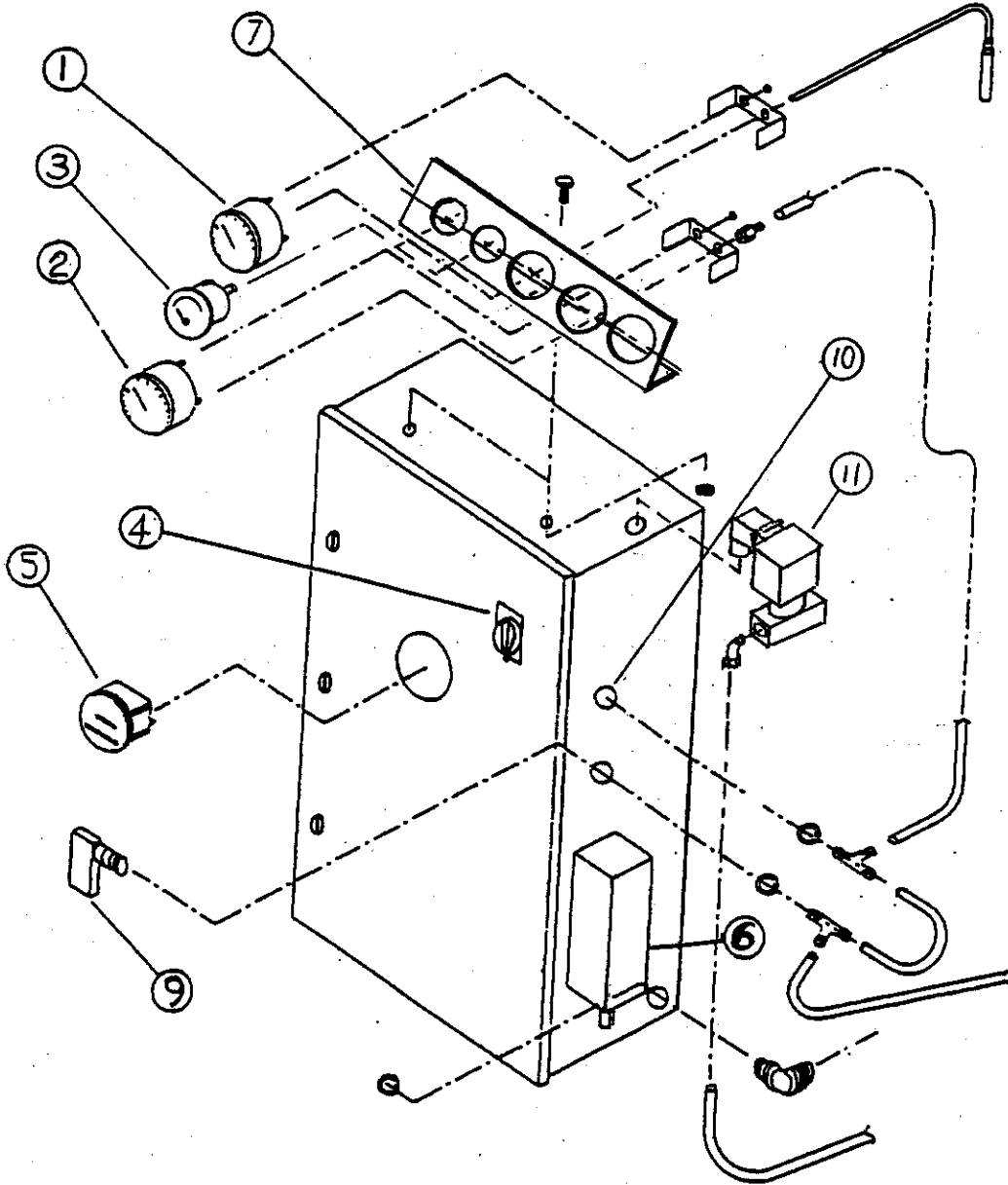
* OPTIONAL GAUGES: #8 AIR FILTER INDICATOR

COMPRESSORS BUILT PRIOR TO 2001 USED THE FOLLOWING:

- 1) GAUGE, TEMP. 08312-001 (2" GAUGE)
- 2) GAUGE, PRES. 09174-020 (2 GAUGE)
- 3) SOLENOID VALVE 40529-002

† Prior to 8/01/01 switch 09345-007 was used.

GAUGE PANEL & ELECTRICAL PARTS



SULLIVAN-PALATEK

7.8 DECAL & IDENTIFICATION

KEY	DESCRIPTION	QTY	MODELS 15D, 20D, 25D, 2504, 30D7	MODEL 40D
1	PLATE, NAME S/N	1	03832-043	03832-043
2	DECAL, VOLTAGE 208	1	08377-033	08377-033
3	DECAL, VOLTAGE 230	1	08377-022	08377-022
4	DECAL, VOLTAGE 480	1	08377-001	08377-001
5	DECAL, WARNING	1	08377-043	08377-043
6	DECAL, WARNING	1	08377-045	08377-045
7	DECAL, WARNING	1	08377-046	08377-046
8	DECAL, 3 POSITION SWITCH	1	08378-048	08378-048
9	DECAL, INSTRUCTIONS	1	08379-002	08379-003
10	DIAGRAM, WIRING	1	12288-001	12288-001
11	DECAL, WARNING	1	08378-065	08378-065
12	DECAL, ROTATION ARROW	1	NPN	NPN
13	LOGO, SULLIVAN-PALATEK, INC. 3.5X7	1	00447-001	00447-001
14	LOGO, SULLIVAN-PALATEK, INC. 8.5X17.5	1	00447-002	00447-002
15	OPERATOR MANUAL AND PARTS LIST (SHIP LOOSE)	1	OMP235E108	OMP235E108

SECTION 8 - WARRANTY

SULLIVAN-PALATEK, Inc.

Rotary Screw Air Compressor Warranty

SULLIVAN-PALATEK, INC., warrants that the rotary screw compressor, stator, rotor and bearing assembly will be free from defects in material and workmanship, and a loss of capacity for a period of five years (60 months) from the date of initial start-up or 66 months from the date of shipment, whichever period first expires, when continuously operated with SULLIVAN-PALATEK, INC. approved lubricoolant. All other components of SULLIVAN-PALATEK, INC.'s design and manufacture will be free from defects in material or workmanship for a period of twelve months from the date of initial start-up or eighteen months from the date of shipment, whichever period first expires. In cases where a machine is in Distributor stock and start-up is beyond six months from shipment from the factory, it will be necessary for the Distributor to certify satisfactory condition to initiate warranty from the date of start-up. Any work or parts necessary to restore the unit to satisfactory condition prior to start-up will be at the Distributor's expense. If within such periods, SULLIVAN-PALATEK, INC. receives from the Buyer written notice of any alleged defect in or non-conformance of the compressor, and if in SULLIVAN-PALATEK, INC.'s judgment the compressor does not conform or is found to be defective in material or workmanship, SULLIVAN-PALATEK, INC. will at its option either: (a) furnish a Service Representative to correct defect, or (b) upon return of the component, FOB SULLIVAN-PALATEK, INC.'s designated location, repair, or replace the component or issue credit for the replacement part ordered by Buyer, or (C) refund the full purchase price for the compressor without interest. Deterioration or wear occasioned by chemical and/or abrasive action or excessive heat, or any other form of abuse, shall not constitute warrantable defects. Possible oil leaks will be covered under warranty for a period of 60 days from start up, but not longer than 90 days after shipment.

SULLIVAN-PALATEK, INC.'s sole responsibility and Buyer's exclusive remedy hereunder is limited to such repair, replacement, or repayment of the purchase price. Component parts or assemblies not of SULLIVAN-PALATEK, INC.'s manufacture are warranted only to the extent that they are warranted by the original manufacturer. SULLIVAN-PALATEK, INC. shall have no responsibility for any cost or expense incurred by Buyer from SULLIVAN-PALATEK, INC.'s inability to repair under said warranty when such inability is beyond the control of SULLIVAN-PALATEK, INC. or caused solely by Buyer or his agent or agents.

THERE ARE NO OTHER WARRANTIES, EXPRESS, STATUTORY OR IMPLIED, INCLUDING THOSE OF MERCHANTABILITY AND OF FITNESS FOR PURPOSE; NOR ANY AFFIRMATION OF FACT OR REPRESENTATION, WHICH EXTENDS BEYOND THE DESCRIPTION ON THE FACE HEREOF.

This warranty shall be void and SULLIVAN-PALATEK, INC. shall have no responsibility to repair, replace, or repay the purchase price of defective or damaged parts or components resulting directly or indirectly from the use of repair or replacement parts not of SULLIVAN-PALATEK, INC. manufacture or approved by SULLIVAN-PALATEK, INC. or from buyer's failure to store, install, maintain, and operate the compressor according to the recommendations contained in the Operator's Manual and in accordance with accepted industry practice.

DISC101
FUSIBLE DISCONNECT SWITCH
BY CUSTOMER

POWER SUPPLY
3ø
60 Hz

MS1

OL1

1T1

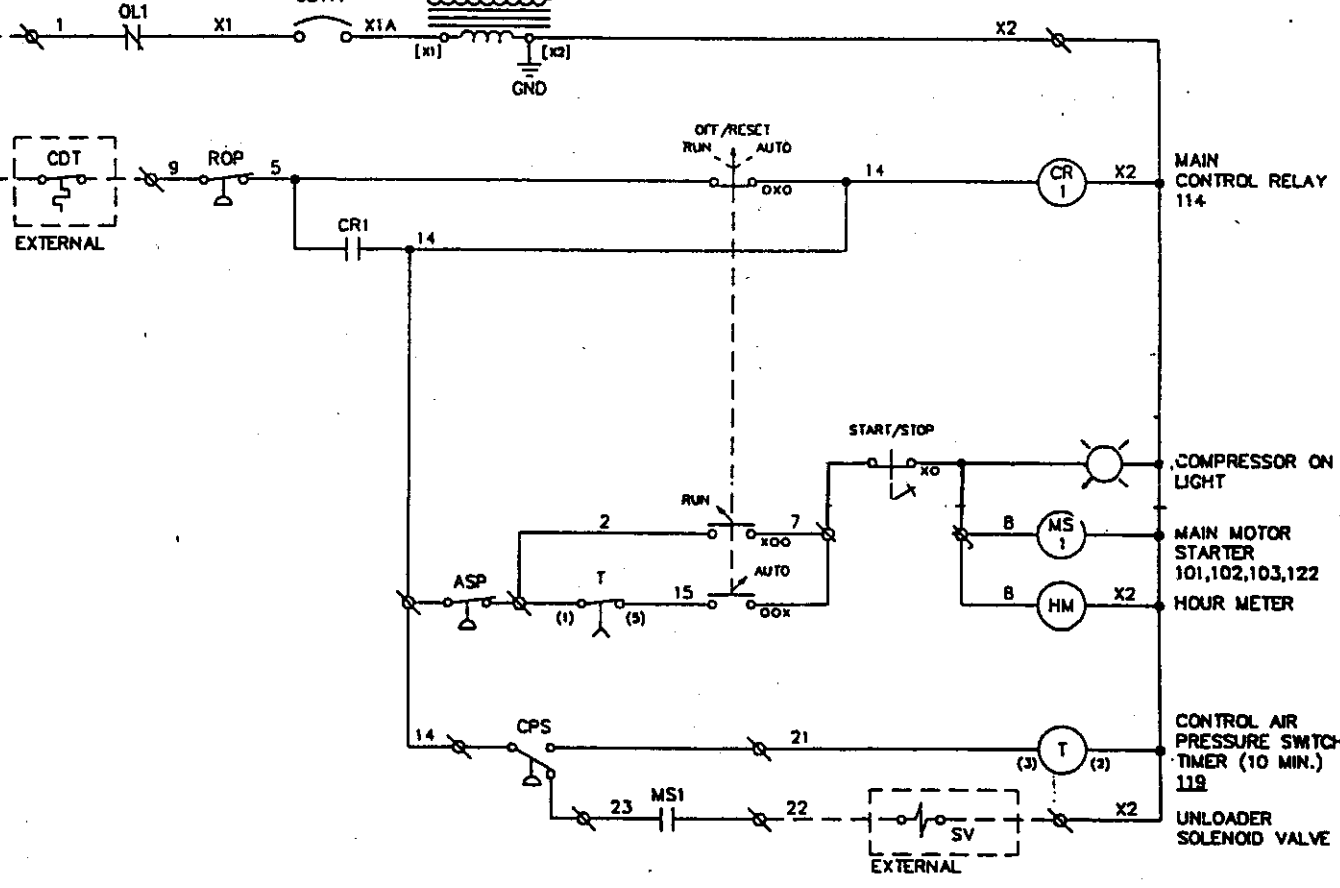
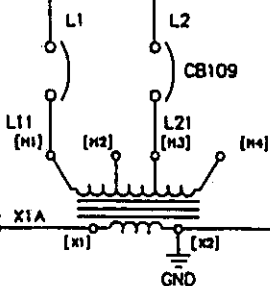
1T2

1T3

GND

COMPRESSOR MOTOR
M1

[H1 - H2 208V
H1 - H3 230V
H1 - H4 480V]
T110
TRANSFORMER



- 1 01
- 1 02
- 1 03
- 1 04
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NO.	DATE	DESCRIPTION BEFORE CHANGE	BY

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ELECTRICAL SCHEMATIC			
<i>Bucky Box</i>			
DRAWN BY KPS	DATE 3-2-1999	SCALE NONE	PART NO. 18405-211
APPROVED	DATE	SHEET OF 1 1	REV. NO. 211-108B

BASE MOUNTED

DIMENSION

MODEL

A (LENGTH)	15D	20D	25D	25D4	30D7	40D
B (WIDTH)	55	56	55	59	57	60
C (HEIGHT)	28	28	28	28	34	34
D (MTG.)	34	38	35	38	35	37
E (MTG.)	40	40	40	40	40	40
	21.38	21.38	21.38	21.38	21.38	21.38

TANK MOUNTED

DIMENSION

MODEL

H (LENGTH)	15D	20D	25D	25D4	30D7	40D
B (WIDTH)	69	69	69	69	72	72
J (HEIGHT)	28	28	28	28	34	34
K (MTG.)	59	63	60	63	68	70
L (MTG.)	42	42	42	42	42	42
	18.5	18.5	18.5	18.5	24	24

