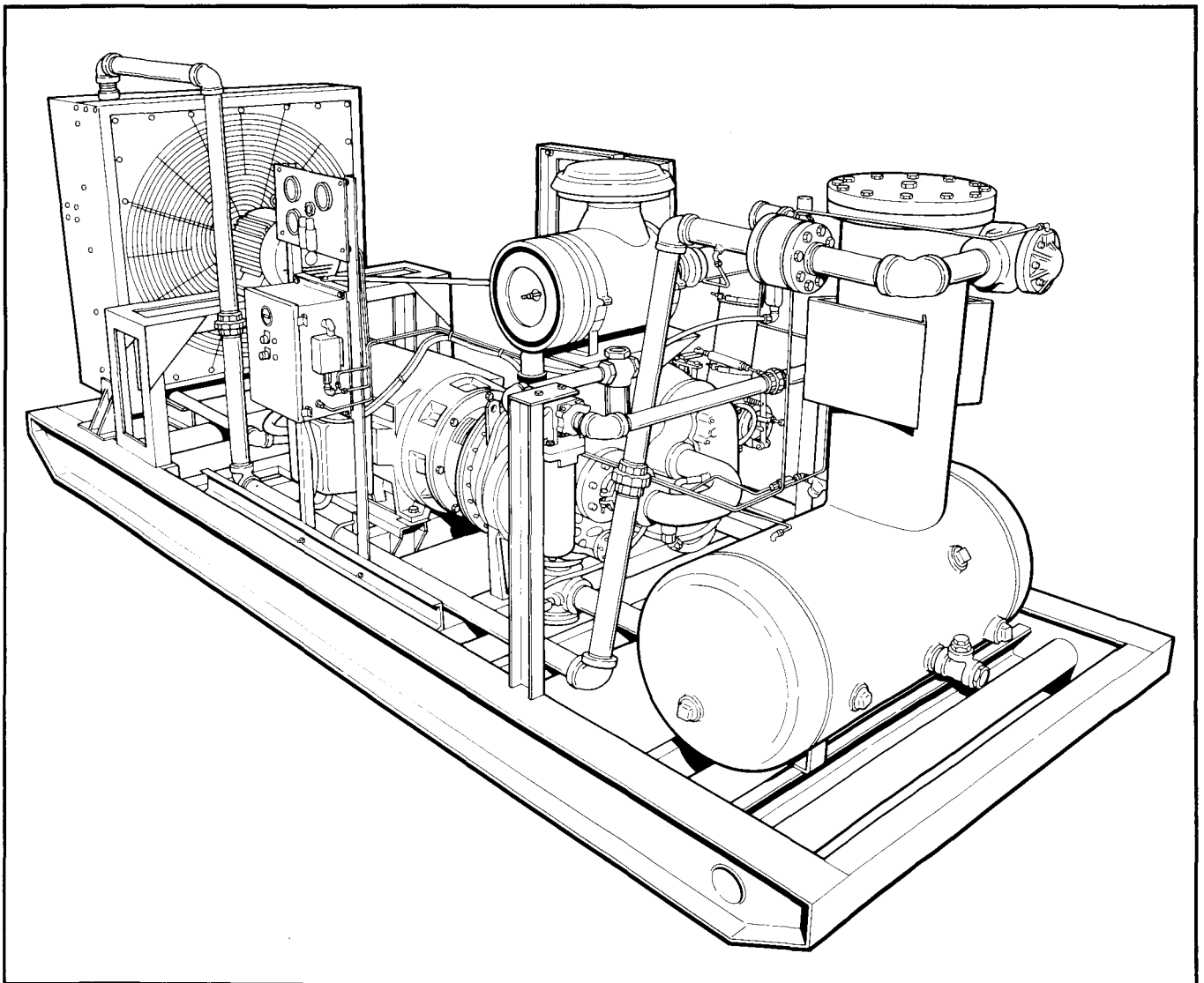


# Operator's Manual and Parts List

# SULLAIR<sup>®</sup> COMPRESSOR

20/12 200-400HP (Air-Cooled)  
Industrial Rotary Screw Air Compressor



# STATEMENT OF WARRANTY

Sullair Corporation ("Sullair") warrants that, under normal use and service, if properly stored, handled, installed, operated and maintained, its portable and stationary air compressors ("Compressors") shall, for a period of twelve (12) months ("Warranty Period") (1) beginning at machine start-up if the registration card is returned within ten (10) days after start-up and the start-up occurs within twelve (12) months after shipment by Sullair from the factory, or (2) if not, beginning thirty (30) days after shipment by Sullair from the factory, be free of defects in materials and workmanship, under normal use and service; and that its rotary screw air-end ("Air-end") utilized in Compressors, shall, for a period of twenty-four (24) months ("Warranty Period"), (1) beginning at machine start-up if the registration card is returned within ten (10) days after start-up and the start-up occurs within twelve (12) months after shipment by Sullair from the factory, or (2) if not, beginning thirty (30) days after shipment by Sullair from the factory, be free of defects in materials and workmanship, under normal use and service. Should any such defect become apparent within such time, and written notice of each and every such defect is promptly provided to Sullair, and Sullair reasonably determines that any such Product is defective in material or workmanship, Sullair will, at its option, replace or repair such Product. Sullair's obligation with respect to such Product shall be limited to repair or replacement, F.O.B. Sullair's place of business, without any further expense to Sullair, and except as expressly provided herein, Sullair shall not in any event be liable for any other labor, transportation, installation, adjustment or other expenses which may arise in connection with such Product. Any misuse or abuse of the Product(s) voids this limited warranty.

The Sullair warranty does not extend to Products not assembled by Sullair. As to Products assembled by others including the driver (whether engine, turbine or electric motor), Purchaser shall be entitled to proceed only upon the terms of that particular manufacturer's warranty. The Sullair warranty does not apply to defects in materials provided by Purchaser or design stipulated by Purchaser.

Used Products, and Products not assembled by Sullair, are sold AS IS with no representation or warranty, and ALL WARRANTIES OF QUALITY, WRITTEN, ORAL OR IMPLIED, other than may be expressly agreed to by Sullair in writing, INCLUDING WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS, ARE HEREBY DISCLAIMED.

IN NO EVENT SHALL SULLAIR BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES however arising whether in warranty, strict liability, contract, tort, negligence or otherwise, including but not limited to loss of profits of revenue, loss of total or partial use of the Products, facilities or services, downtime costs, or claims of Purchaser for such or other damages whether on account of Products furnished hereunder or delays in delivery thereof of services performed upon or with respect to such Products. Sullair's liability on any claim whether in warranty, strict liability, contract, tort, negligence or otherwise for any loss or damage arising out of, connected with, or resulting from this warranty or the performance or breach thereof, or from the design, manufacture, sale, delivery, resale, repair, replacement, installation, technical direction of installation, inspection, servicing, operation or use of any Product covered by or furnished under this warranty shall in no case exceed the purchase price allowable to the Product or part thereof which give rise to the claim. Notice of claims against Sullair hereunder for any reason, including breach of warranty, must be made to Sullair in writing within forty-eight (48) hours of discovery to afford Sullair an opportunity to make a prompt investigation of surrounding facts and mitigate any damage which might ensue, should it be determined to be Sullair's responsibility. Failure to give such notice to Sullair shall constitute a waiver by Purchaser of any right later to assert such a claim.

Any cause of action against Sullair arising out of or relating to the warranty or the performance hereof shall expire unless brought within one (1) year of the time of accrual thereof.

THE FOREGOING LIMITED WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

**SULLAIR CORPORATION**  
A Subsidiary Of Sundstrand Corporation  
Michigan City, Indiana 46360



Sullair Corporation  
Subsidiary of Sundstrand Corporation  
3700 E. Michigan Blvd.  
Michigan City, IN 46390-9990

Phone (219) 879-5451  
Telex 4946922

## PRODUCT SAFETY POLICY

MAY 15, 1984

It is Sullair Corporation's policy to produce and market the best product available commensurate with safety and health needs of the customer.

Sullair's objective is to furnish a product that is safe for its designed and intended use. It is Sullair's corporate desire that no Sullair product be the direct cause of an accident when used for its intended application.

Product safety shall be assured through systematic application of sound engineering and management principles in the conception, design, development, testing, manufacturing, sale and servicing of all products.

Adequate instructions and cautionary labels shall be utilized.

This is a reaffirmation of a policy existing at Sullair since its origin.

A handwritten signature in cursive script that reads 'R. T. Bloomberg'.

Robert T. Bloomberg  
President and Chief  
Executive Officer

## **AIR CARE SEMINAR TRAINING**

Sullair Air Care Seminars are 3-day courses that provide hands-on instruction in the proper operation, maintenance and service of Sullair equipment. Individual seminars on Industrial compressors and compressor electrical systems are presented at regular intervals throughout the year at a dedicated training facility at Sullair's corporate headquarters in Michigan City, Indiana.

Instruction includes discussion of the function and installation of Sullair service parts, troubleshooting of the most common problems, and actual equipment operation. The seminars are recommended for maintenance and service personnel.

For detailed course outlines, schedule and cost information contact:

Sullair Corporate Training Department  
1-800-348-2722 or (219) 879-5451

- Or Write -

Sullair Corporation  
3700 E. Michigan Blvd.  
Michigan City, IN 46360  
Attn: Service Training Department

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## 1.1 GENERAL

Sullair® Corporation and its subsidiaries design and manufacture all of its products so they can be operated safely. However, the responsibility for safe operation rests with those who use and maintain these products. The following safety precautions are offered as a guide which, if conscientiously followed, will minimize the possibility of accidents throughout the useful life of this equipment.

The compressor should be operated only by those who have been trained and delegated to do so, and who have read and understood this Operator's Manual. Failure to follow the instructions, procedures and safety precautions in this manual can result in accidents and injuries.

**NEVER** start the compressor unless it is safe to do so. **DO NOT** attempt to operate the compressor with a known unsafe condition. Tag the compressor and render it inoperative by disconnecting and locking out all power at source or otherwise disabling its prime mover so others who may not know of the unsafe condition cannot attempt to operate it until the condition is corrected.

Install, use and operate the compressor only in full compliance with all pertinent OSHA regulations and all applicable Federal, State, and Local codes, standards and regulations.

**DO NOT** modify the compressor and/or controls in any way except with written factory approval.

While not specifically applicable to all types of compressors with all types of prime movers, most of the precautionary statements contained herein are applicable to most compressors and the concepts behind these statements are generally applicable to all compressors.

## 1.2 PERSONAL PROTECTIVE EQUIPMENT

Prior to installing or operating the compressor, owners, employers, and users should become familiar with, and comply with, all applicable OSHA regulations and any applicable Federal, State and Local codes, standards, and regulations relative to personal protective equipment, such as eye and face protective equipment, respiratory protective equipment, equipment intended to protect the extremities, protective clothing, protective shields and barriers and electrical protective equipment, as well as noise exposure administrative and/or engineering controls and/or personal hearing protective equipment.

## 1.3 PRESSURE RELEASE

A. Install an appropriate flow limiting valve between the service air outlet and the shut-off (throttle) valve, either at the compressor or at any other point along the air line, when an air hose exceeding  $\frac{1}{2}$ " inside diameter is to be connected to the shut-off (throttle) valve, to reduce pres-

sure in case of hose failure, per OSHA Standard 29 CFR 1926.302(b) (7).

B. When the hose is to be used to supply a manifold, install an additional appropriate flow limiting valve between the manifold and each air hose exceeding  $\frac{1}{2}$ " inside diameter that is to be connected to the manifold to reduce pressure in case of hose failure.

C. Provide an appropriate flow limiting valve at the beginning of each additional 75 feet of hose in runs of air hose exceeding  $\frac{1}{2}$ " inside diameter to reduce pressure in case of hose failure.

D. Flow limiting valves are listed by pipe size and rated CFM. Select appropriate valves accordingly, in accordance with their manufacturer's recommendations.

E. **DO NOT** use air tools that are rated below the maximum rating of the compressor. Select air tools, air hoses, pipes, valves, filters, and other fittings accordingly. **DO NOT** exceed manufacturer's rated safe operating pressures for these items.

F. Secure all hose connections by wire, chain or other suitable retaining devices to prevent tools or hose ends from being accidentally disconnected and expelled.

G. Open fluid filter cap only when compressor is **not running and is not pressurized**. Shut down the compressor and bleed the sump (receiver) to zero internal pressure before removing the cap.

H. Vent all internal pressure prior to opening any line, fitting, hose, valve, drain plug, connection or other component, such as filters and line oilers, and before attempting to refill optional air line anti-icer systems with antifreeze compound.

I. Keep personnel out of line with and away from the discharge opening of hoses or tools or other points of compressed air discharge.

J. Use air at pressures less than 30 PSIG (207kPa) for cleaning purposes, and then only with effective chip guarding and personal protective equipment per OSHA Standard 29 CFR 1910.242 (b).

K. **DO NOT** engage in horseplay with air hoses as death or serious injury may result.

## 1.4 FIRE AND EXPLOSION

A. Clean up spills of lubricant or other combustible substances immediately, when such spills occur.

B. Shut off the compressor and allow it to cool. Then keep sparks, flames and other sources of ignition away and **DO NOT** permit smoking in the vicinity when checking or adding lubricant or when refilling air line anti-icer systems with antifreeze compound.

C. **DO NOT** permit fluids, including air line anti-icer system antifreeze compound or fluid film to

## Section 1 SAFETY

accumulate on, under, or around acoustical material, or on any external surfaces of the air compressor or on internal surfaces of the enclosure. Wipe down using an aqueous industrial cleaner or steam clean as required. If necessary, remove acoustical material, clean all surfaces and then replace acoustical material. Any acoustical material with a protective covering that has been torn or punctured should be replaced immediately to prevent accumulation of liquids or fluid film within the material. **DO NOT** use flammable solvents for cleaning purposes.

**D.** Disconnect and lock out all power at source prior to attempting any repairs or cleaning of the compressor or of the inside of the enclosure, if any.

**E.** Keep electrical wiring, including all terminals and pressure connectors in good condition. Replace any wiring that has cracked, cut abraded or otherwise degraded insulation, or terminals that are worn, discolored or corroded. Keep all terminals and pressure connectors clean and tight.

**F.** Keep grounded and/or conductive objects such as tools away from exposed live electrical parts such as terminals to avoid arcing which might serve as a source of ignition.

**G.** Remove any acoustical material or other material that may be damaged by heat or that may support combustion and is in close proximity, prior to attempting weld repairs.

**H.** Keep suitable fully charged Class BC or ABC fire extinguisher or extinguishers nearby when servicing and operating the compressor.

**I.** Keep oily rags, trash, leaves, litter or other combustibles out of and away from the compressor.

**J.** **DO NOT** operate the compressor without proper flow of cooling air or water or with inadequate flow of lubricant or with degraded lubricant.

**K.** **DO NOT** attempt to operate the compressor in any classification of hazardous environment unless the compressor has been specially designed and manufactured for that duty.

### 1.5 MOVING PARTS

**A.** Keep hands, arms and other parts of the body and also clothing away from couplings, fans and other moving parts.

**B.** **DO NOT** attempt to operate the compressor with the fan, coupling or other guards removed.

**C.** Wear snug fitting clothing and confine long hair when working around this compressor, especially when exposed to hot or moving parts.

**D.** Keep access doors, if any, closed except when making repairs or adjustments.

**E.** Make sure all personnel are out of and/or clear of the compressor prior to attempting to start or operate it.

**F.** Disconnect and lock out all power at source and verify at the compressor that all circuits are de-energized to minimize the possibility of accidental start-up or operation, prior to attempting repairs or adjustments. This is especially important when compressors are remotely controlled.

**G.** Keep hands, feet, floors, controls and walking surfaces clean and free of fluid, water, or other liquids to minimize the possibility of slips and falls.

### 1.6 HOT SURFACES, SHARP EDGES AND SHARP CORNERS

**A.** Avoid bodily contact with hot fluid, hot coolant, hot surfaces and sharp edges and corners.

**B.** Keep all parts of the body away from all points of air discharge.

**C.** Wear personal protective equipment including gloves and head covering when working in, on or around the compressor.

**D.** Keep a first aid kit handy. Seek medical assistance promptly in case of injury. **DO NOT** ignore small cuts and burns as they may lead to infection.

### 1.7 TOXIC AND IRRITATING SUBSTANCES

**A.** **DO NOT** use air from this compressor for respiration (breathing) except in full compliance with OSHA Standards 29 CFR 1910 and any other Federal, State or Local Codes or regulations.

#### DANGER

Death or serious injury can result from inhaling compressed air without using proper safety equipment. See OSHA standards on safety equipment.

**B.** **DO NOT** use air line anti-icer systems in air lines supplying respirators or other breathing air utilization equipment and **DO NOT** discharge air from these systems in unventilated or other confined areas.

**C.** Operate the compressor only in open or adequately ventilated areas.

**D.** Locate the compressor or provide a remote inlet so that it is not likely to ingest exhaust fumes or other toxic, noxious or corrosive fumes or substances.

**E.** Coolants and lubricants used in this compressor are typical of the industry. Care should be taken to avoid accidental ingestion and/or skin contact. In the event of ingestion, seek medical treatment promptly. Wash with soap and water in the event of skin contact.

**F.** Wear goggles or a full face shield when adding antifreeze compound to air line anti-icer systems.

**G.** If air line anti-icer system antifreeze compound enters the eyes or if fumes irritate the eyes, they should be washed with large quantities of clean water for 15 minutes. A physician, preferably an eye specialist, should be contacted immediately.

**H. DO NOT** store air line anti-icer system antifreeze compound in confined areas.

**I.** The antifreeze compound used in air line antifreeze systems contains methanol and is toxic, harmful, or fatal if swallowed. Avoid contact with the skin or eyes and avoid breathing the fumes. If swallowed, induce vomiting by administering a tablespoon of salt, in each glass of clean, warm water until vomit is clear, then administer two teaspoons of baking soda in a glass of clean water. Have patient lay down and cover eyes to exclude light. Call a physician immediately.

### 1.8 ELECTRICAL SHOCK

**A.** This compressor should be installed and maintained in full compliance with all applicable Federal, State and Local codes, standards and regulations, including those of the National Electrical Code, and also including those relative to equipment grounding conductors, and only by personnel that are trained, qualified and delegated to do so.

**B.** Keep all parts of the body and any hand-held tools or other conductive objects away from exposed live parts of electrical system. Maintain dry footing, stand on insulating surfaces and **DO NOT** contact any other portion of the compressor when making adjustments or repairs to exposed live parts of the electrical system. Make all such adjustments or repairs with one hand only, so as to minimize the possibility of creating a current path through the heart.

**C.** Attempt repairs in clean, dry and well lighted and ventilated areas only.

**D. DO NOT** leave the compressor unattended with open electrical enclosures. If necessary to do so, then disconnect, lock out and tag all power at source so others will not inadvertently restore power.

**E.** Disconnect, lock out, and tag all power at source prior to attempting repairs or adjustments to rotating machinery and prior to handling any ungrounded conductors.

### 1.9 LIFTING

**A.** If the compressor is provided with a lifting bail, then lift by the bail provided. If no bail is provided, then lift by sling. Compressors to be air lifted by

helicopter must not be supported by the lifting bail but by slings instead. In any event, lift and/or handle only in full compliance with OSHA standards 29 CFR 1910 subpart N.

**B.** Inspect points of attachment for cracked welds and for cracked, bent, corroded or otherwise degraded members and for loose bolts or nuts prior to lifting.

**C.** Make sure entire lifting, rigging and supporting structure has been inspected, is in good conditions and has a rated capacity of at least the weight of the compressor. If you are unsure of the weight, then weigh compressor before lifting.

**D.** Make sure lifting hook has a functional safety latch or equivalent, and is fully engaged and latched on the bail or slings.

**E.** Use guide ropes or equivalent to prevent twisting or swinging of the compressor once it has been lifted clear of the ground.

**F. DO NOT** attempt to lift in high winds.

**G.** Keep all personnel out from under and away from the compressor whenever it is suspended.

**H.** Lift compressor no higher than necessary.

**I.** Keep lift operator in constant attendance whenever compressor is suspended.

**J.** Set compressor down only on level surfaces capable of safely supporting at least its weight and its loading unit.

**K.** When moving compressors by forklift truck, utilize fork pockets if provided. Otherwise, utilize pallet if provided. If neither fork pockets or pallet are provided, then make sure compressor is secure and well balanced on forks before attempting to raise or transport it any significant distance.

**L.** Make sure forklift truck forks are full engaged and tipped back prior to lifting or transporting the compressor.

**M.** Forklift no higher than necessary to clear obstacles at floor level and transport and corner at minimum practical speeds.

**N.** Make sure pallet mounted compressors are firmly bolted or otherwise secured to the pallet prior to attempting to forklift or transport them. **NEVER** attempt to forklift a compressor that is not secured to its pallet, as uneven floors or sudden stops may cause the compressor to tumble off, possibly causing serious injury or property damage in the process.

# Section 1

## **SAFETY**

### **1.10 ENTRAPMENT**

**A.** If the compressor enclosure, if any, is large enough to hold a man and if it is necessary to enter it to perform service adjustments, inform other personnel before doing so, or else secure and tag the access door in the open position to avoid the possibility of others closing and possibly latching the door with personnel inside.

**B.** Make sure all personnel are out of compressor before closing and latching enclosure doors.

## Section 2 DESCRIPTION

### 2.1 INTRODUCTION

Your new Sullair electric 2-stage motor driven air compressor offers superior performance and reliability requiring a minimal amount of maintenance.

Your compressor is equipped with a 2-stage Sullair rotary screw air compressor. Compared to other compressors, the Sullair is unique in mechanical reliability, with virtually no wear or loss of performance. With a Sullair compressor, there is no inspection required of the working parts within the compressor unit.

As you will see in the following pages, it is very easy to care for, and/or, to maintain a Sullair compressor. By careful and step-by-step adherence to the guidelines and procedure, operator(s) will be able to keep the compressor in top operational condition.

### 2.2 DESCRIPTION OF COMPONENTS

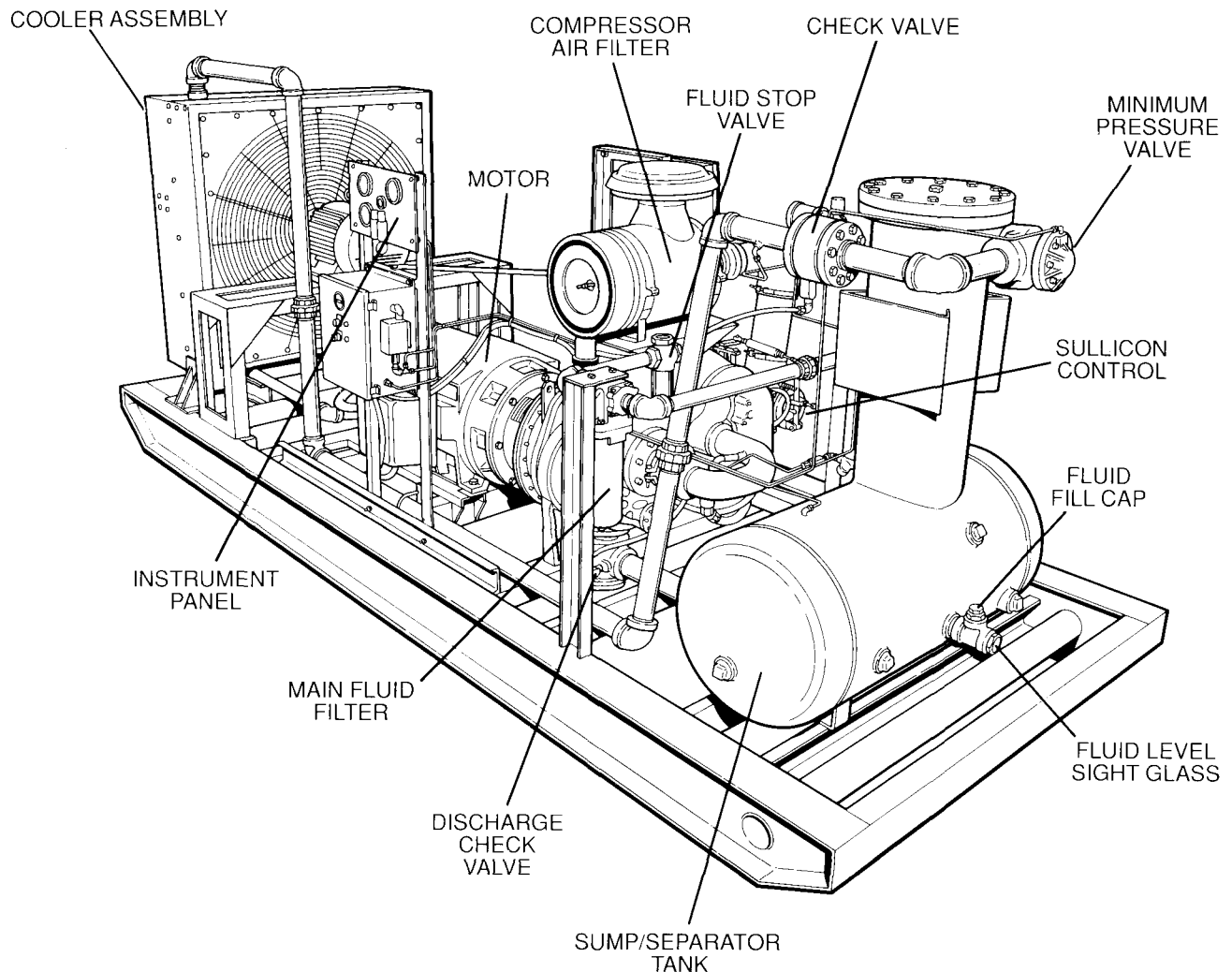
Refer to Figure 2-1. The components of the Sullair 2-stage electric compressor include **compressor unit, electric motor, cooling and lubrication system, air inlet system, compressor discharge system, capacity control system and instrument panel.**

The 2-stage Sullair compressor unit is driven by an industrial motor designed to provide enough horsepower for more than adequate reserve at rated conditions.

On air-cooled models, a separate motor driven fan forces air through the cooler, thereby removing the compression heat from the cooling fluid.

Provisions are made for easy access to such components as the fluid filters, control valves and the air filter. There will be no problem in gaining

Figure 2-1 Sullair 20/12 Rotary Screw Air Compressor



## Section 2 DESCRIPTION

access to any components in the event they require service.

### 2.3 SULLAIR COMPRESSOR UNIT, FUNCTIONAL DESCRIPTION

The compressor unit supplied with your compressor is a 2-stage, positive displacement, flood lubricated-type rotary screw air compressor.

As the rotors turn, air is drawn into the compressor unit at the first stage inlet. At the outlet of the first stage the air is compressed and discharged into the second stage where it is recompressed to obtain a higher pressure.

Lubricating fluid is injected into the compressor unit at each stage and mixes directly with the air as the rotors turn, compressing the air. The fluid flow has three basic functions:

1. As coolant, it controls the rise of air temperature normally associated with the heat of compression.
2. It seals the leakage paths between the rotors as well as between the rotors and stators.
3. It acts as a lubricating film between the rotors allowing the male rotors to directly drive the female rotors (which are idlers).

After the air has been compressed in both stages of the compressor unit, it is discharged in the form of an air/fluid mixture. This mixture is routed through the discharge system where the fluid is separated from the air. At this time, the air flows to your service line and the fluid is directed through the cooling and lubrication system in preparation for reinjection.

### 2.4 COMPRESSOR COOLING AND LUBRICATION SYSTEM, FUNCTIONAL DESCRIPTION

Refer to Figures 2-2 and 2-3. The compressor cooling and lubrication system is designed to provide adequate lubrication as well as maintain the proper operating temperature of the compressor. The system is comprised of a finned tube exchanger, main line filter, extra-fine bearing lube filter, thermal valve, fluid stop valve and interconnecting piping.

Fluid is used in the system as a coolant and lubricant and is housed in the receiver/sump (from this time forward, the receiver sump will be referred to as the sump). Fluid circulation is achieved by forcing the fluid from the higher pressure area of the sump to lower pressure regions at the compressor unit.

Fluid flows from the bottom of the receiver/sump to the thermal valve. The thermal valve is fully open when the fluid temperature is below 220°F (155°C). The fluid passes through the thermal valve, the main filter and directly to the compressor unit where it lubricates, cools and seals the rotors and the compression chamber.

After the fluid passes through the thermal valve, it is then directed through the fluid filter. There the fluid is filtered in preparation for injection into the compression chambers. This filter has a cleanable element and built-in bypass which allow some fluid to flow even when the filter becomes plugged and requires changing, or when the viscosity of the fluid is too high for adequate flow. After the fluid is properly filtered, it then flows to the fluid stop valve and on to the bearing filter.

The fluid stop valve prevents the fluid from filling the compressor unit when it is shut down. When the compressor is in operation, the fluid stop valve is held open by air pressure from the compressor unit allowing a free flow of fluid from the sump back to the compressor unit. On shutdown, the compressor unit pressure is reduced causing the fluid stop valve to close and isolate the unit from the cooling system. The fluid stop valve pilot valve also opens to assist in relieving the stop valve pilot signal pressure and shutdown.

A portion of the fluid flowing to the compressor is routed to the anti-friction bearings which support the rotors inside the compressor unit. Prior to entering the compressor unit, this fluid is taken through an extra-fine bearing filter, thus assuring properly filtered fluid for bearing supply.

The bearing filter has a replacement element and an integral pressure bypass valve. An associated service indicator shows red when the filter needs servicing. This indicator has a pressure setting lower than that of the bypass valve. After the initial 50 hour filter change, the indicator will rarely show red under normal operating conditions.

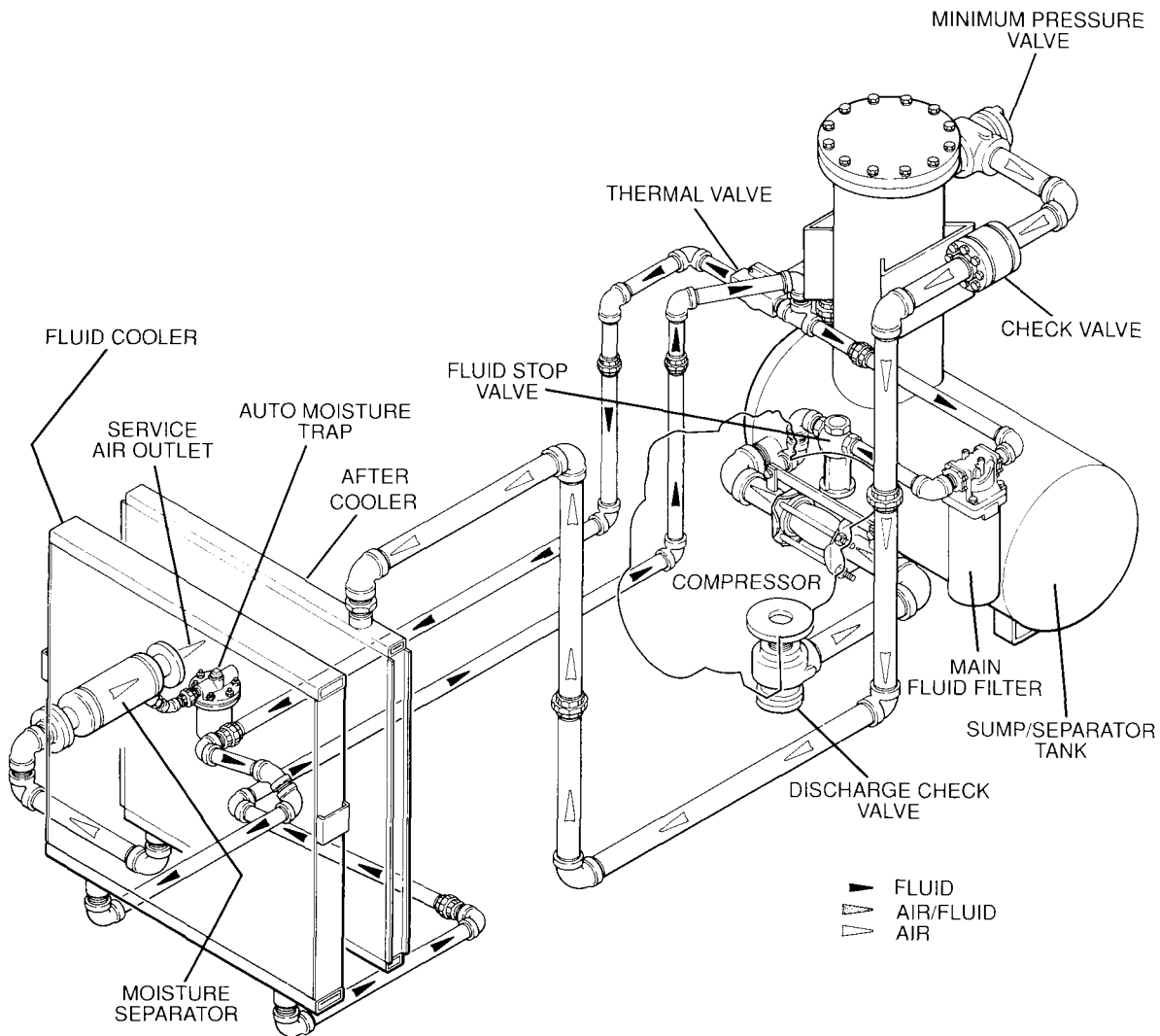
### 2.5 COMPRESSOR DISCHARGE SYSTEM, FUNCTIONAL DESCRIPTION

Refer to Figure 2-3 and 2-4. The Sullair compressor unit discharges the compressed air/fluid mixture through a discharge check valve into the combination receiver/sump. The discharge check valve prevents air in the sump from returning to the compression chamber after the compressor has been shut down. The receiver has three basic functions:

1. It acts as a primary fluid separator.
2. It serves as the compressor fluid sump.
3. It houses the final fluid separator element.

The compressed air/fluid mixture enters the receiver and is directed against the wall of the tank. By change of direction and impingement action, the larger droplets of fluid fall to the bottom of the sump. The fractional percentage of fluid remaining in the compressed air collects on the surface of the final separator element as the air flows through the separator. As more and more fluid collects on the surface of the element, the fluid descends to the bottom of the separator, where the return line (scavenge tube) leads from the bottom of the separator element to the compressor unit. Fluid collected at the bottom of the ele-

Figure 2-2 Compressor Cooling and Lubrication System



ment is returned to the compressor unit by a pressure difference between the area surrounding the separator element and the compressor. An orifice (protected by a strainer) is inserted in the return line to assure proper flow.

The sump is ASME code rated at 400 PSIG (2756kPa) working pressure. A minimum pressure valve, located downstream from the separator, assures a minimum receiver pressure of 160 PSIG (1103kPa), which is maintained during all conditions. This pressure is necessary for proper fluid circulation and air/fluid separation.

A pressure relief valve (located on the wet side of the separator) is set to open if the sump pressure exceeds 375 PSIG (2584kPa). Also a temperature switch will shut down the compressor when the discharge temperature reaches 265°F (130°C) on first stage or 265°F (130°C) on second stage.

All Sullair compressor models are equipped with a high pressure shutdown switch to shut down the compressor at 365 PSIG (2515kPa). This prevents the pressure relief valve from opening under routine conditions, thereby preventing fluid loss through the pressure relief valve.

Fluid is added to the sump via a capped fluid filler opening, placed low on the tank to prevent overfilling. A sight glass enables the operator to visually monitor the sump fluid level.

### **⚠ WARNING**

**DO NOT** open the fluid filler cap when the compressor is pressurized. Shut down the compressor and bleed the sump to 0 PSIG before removing the cap.

A check valve is also provided to prevent air in the service line from bleeding back into the sump at

# Section 2 DESCRIPTION

Figure 2-3 Piping and Instrumentation

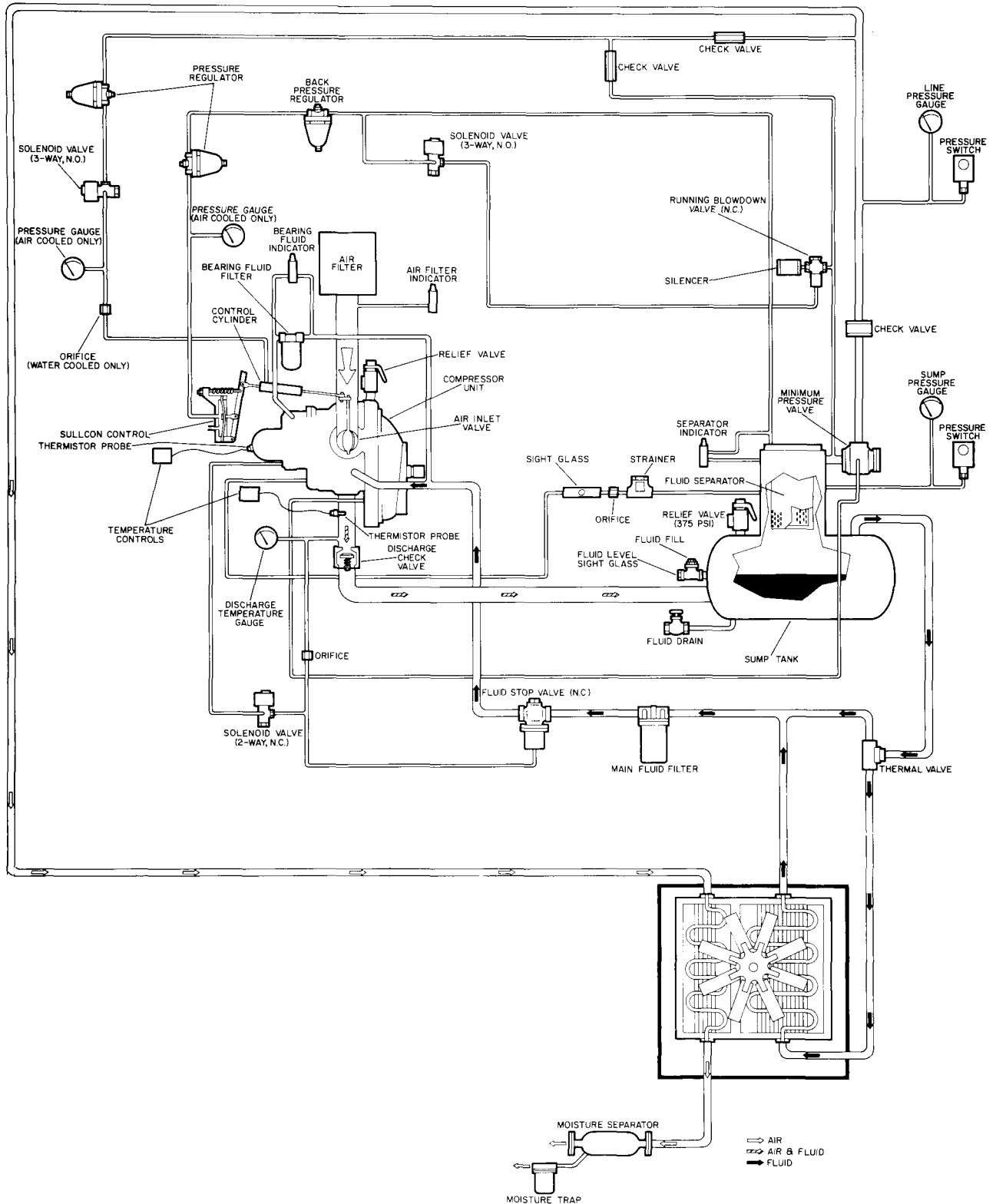
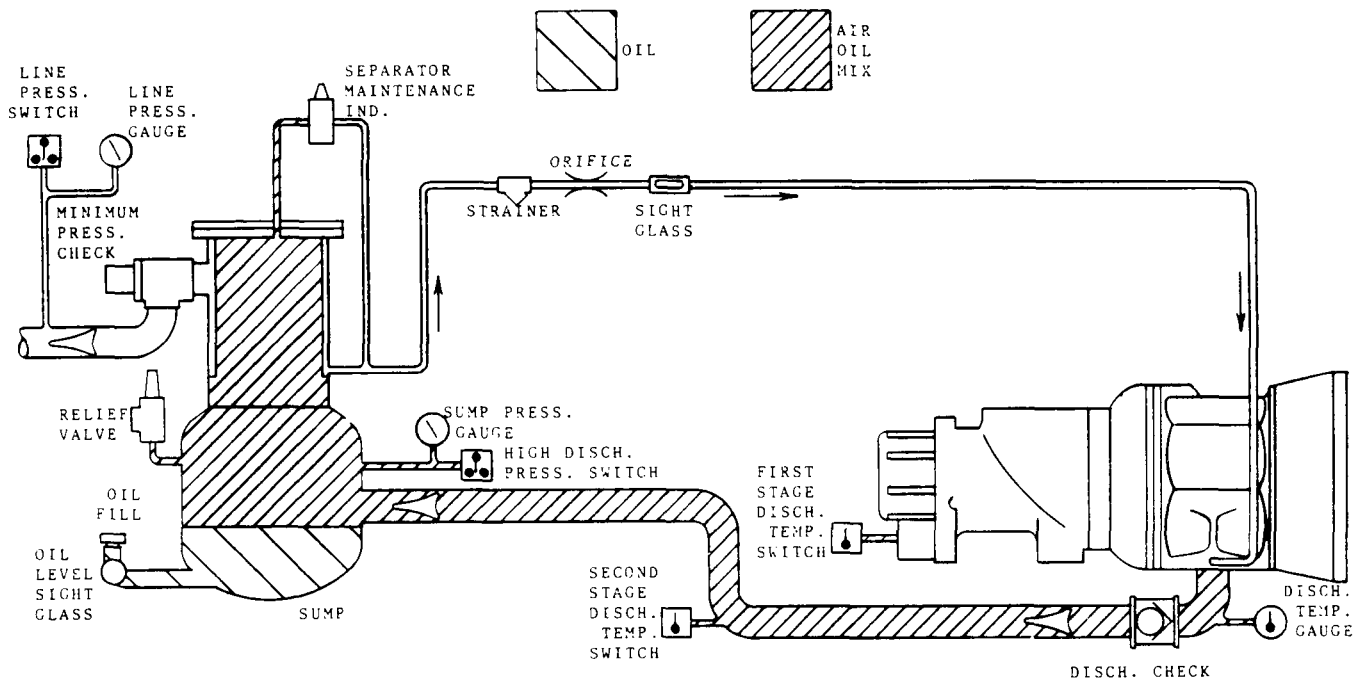


Figure 2-4 Compressor Discharge System (Typical)



shutdown or when the compressor is being run in parallel with other compressors tied to a large system. It is recommended that an optional gate-type service valve be used downstream of the check valve before the point at which service lines and hoses are connected.

An indicator, located on the instrument panel, signals red if abnormal pressure drop through the separator develops. At this time, separator element replacement is necessary.

## 2.6 CAPACITY CONTROL SYSTEM, FUNCTIONAL DESCRIPTION

Refer to Figures 2-5 and 2-6. The purpose of the compressor control system is to regulate the compressor air intake to match the amount of compressed air being used. At a 0 to 10 percent air output, the control system will automatically blow down the compressor and greatly reduce the unload power consumption.

The Control System consists of a **pneumatic actuator cylinder**, a **butterfly valve** (located on the compressor air inlet), a **pilot pressure regulator valve**, a **solenoid pilot valve**, **closed inlet solenoid valve**, **Sullicon Control** and a **blowdown valve**.

The functional description of the Control System is described below in five distinct phases of compressor operation. For explanation purposes, this

description will apply to compressors with an operating pressure range of 340 to 360 PSIG (2344 to 2482kPa). A compressor with any other pressure range would operate in the same manner except for the stated pressures.

### START MODE - 0 TO 160 PSIG (0 TO 1103kPa)

When the compressor START button is depressed, the pressure will quickly rise from 0 to 160 PSIG (0 to 1103kPa). During this period, both the pressure regulator and the pilot valve are closed and the inlet cylinder is inoperative. Until the closed inlet timer is satisfied, the inlet cylinder section remains withdrawn holding the inlet butterfly valve closed (start Mode A). When the timer is satisfied, the closed inlet solenoid valve opens allowing the cylinder to extend, opening the butterfly valve fully and the compressor then pumps at full rated capacity (start Mode B). The rising compressed air pressure is isolated from the service line in this phase by the minimum pressure valve, set at approximately 160 PSIG (1103kPa).

### NORMAL OPERATING MODE - 160 TO 340 PSIG (1103 TO 2344kPa)

When the sump pressure rises above 160 PSIG (1103kPa), the minimum pressure valve opens and delivers compressed air to the service line. From this point on, the line air pressure is continually monitored by a line pressure gauge. The pilot pressure regulator and the pilot valve remain

# Section 2 DESCRIPTION

Figure 2-5 Capacity Control System (Typical)

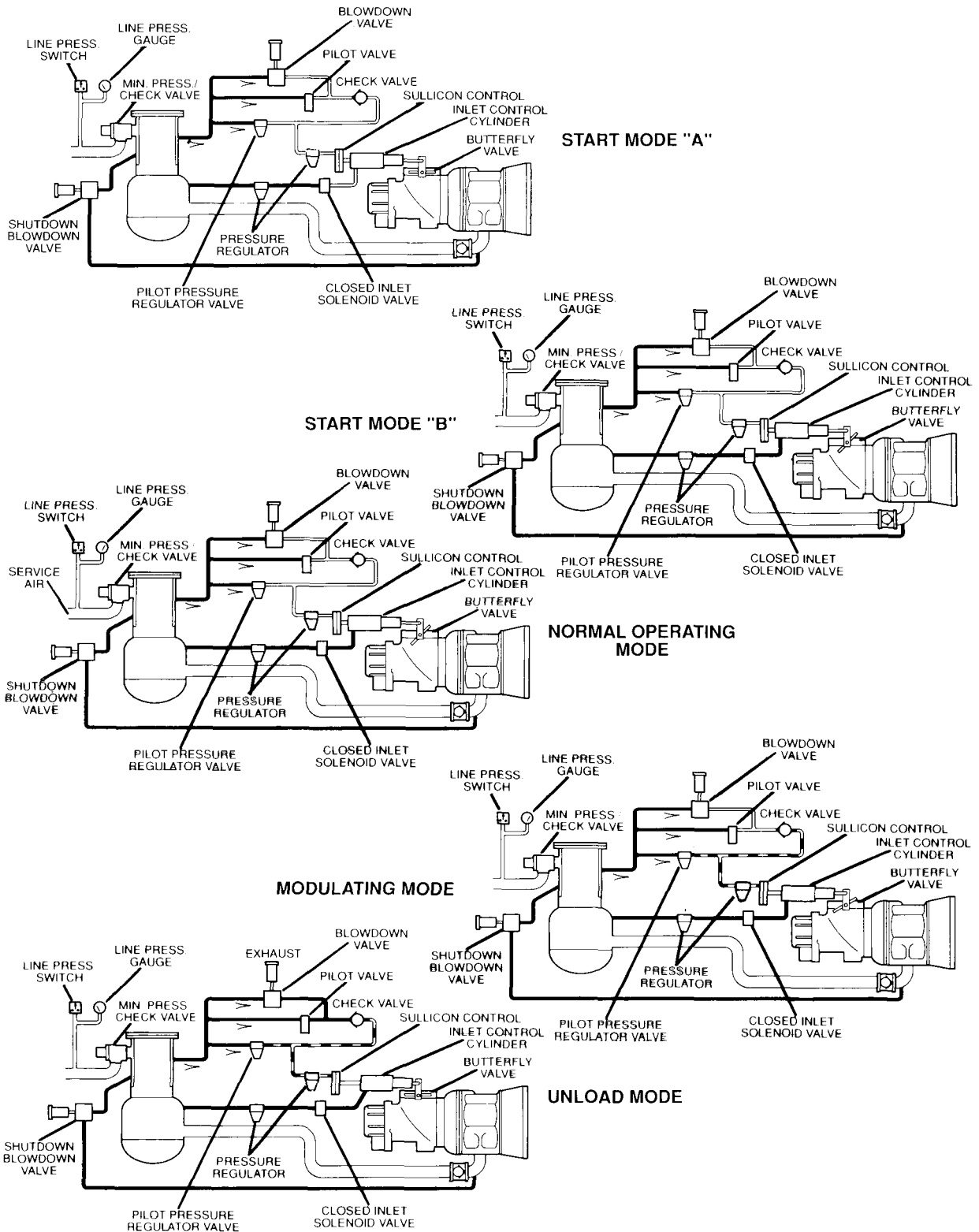
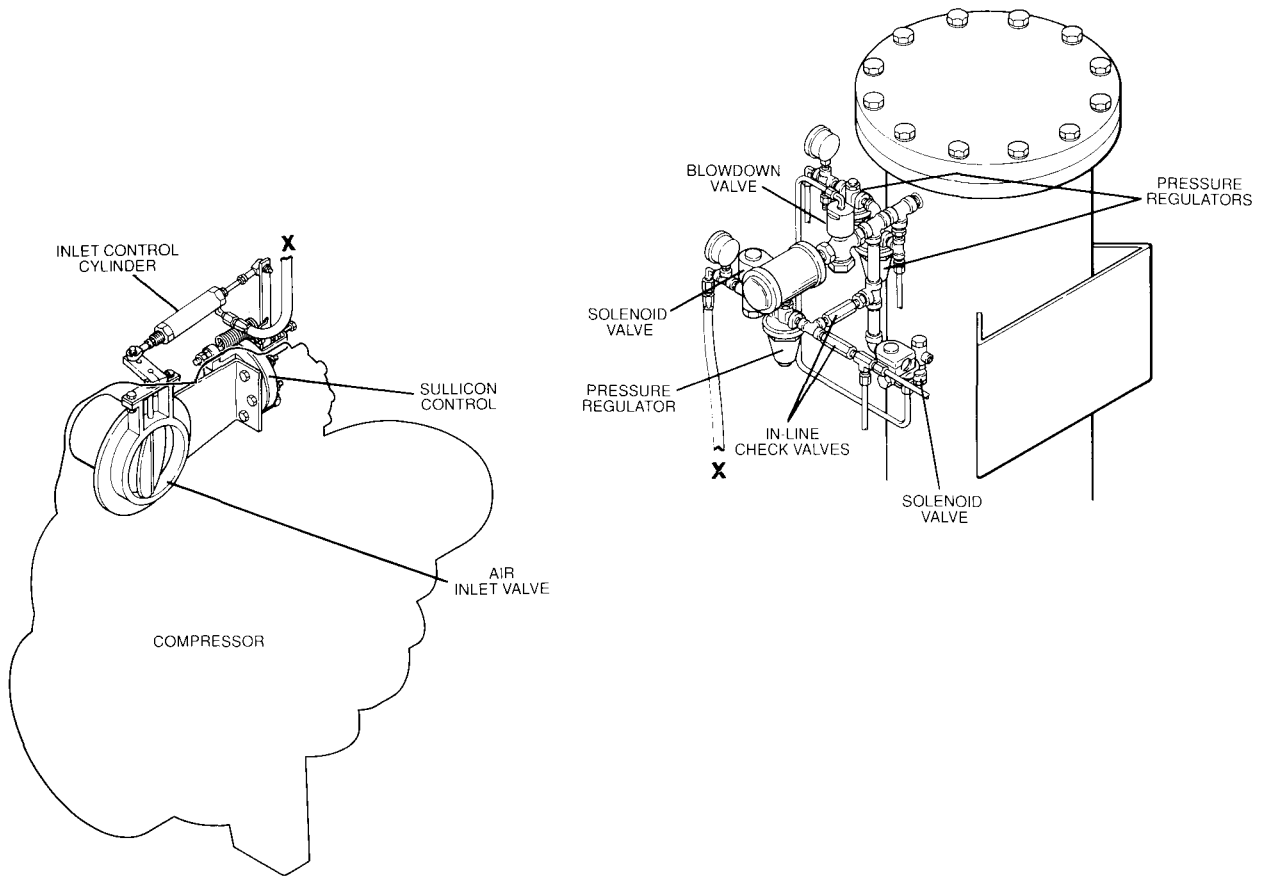


Figure 2-6 Control System



closed during this phase, keeping the Sullicon Control inactive.

**MODULATING MODE – 340 TO 360 PSIG (2344 TO 2482kPa)**

If less than the rated capacity of compressed air is being used, the service line pressure will rise above 340 PSIG (2344kPa). The pilot pressure regulator valve gradually opens, applying air pressure to the Sullicon Control which partially closes the butterfly valve on the compressor air inlet reducing the amount of air entering the compressor until it matches the amount of air being used. The Control System functions continually in this manner, between the limits of 340 to 360 PSIG (2343 to 2481kPa), in response to varying demands from the service line.

The pilot pressure regulator has an orifice which vents a small amount of air to the atmosphere when the pressure regulator controls the butterfly valve.

**UNLOAD MODE – IN EXCESS OF 360 PSIG (2482kPa) LINE PRESSURE**

When a relatively small amount, or no air is being used, the service line pressure rises to the setting

(cut-out pressure) of the pressure switch. The pressure switch opens, interrupting the electrical power to the solenoid-type pilot valve. At this time, the pilot valve allows dry sump tank air pressure to be applied directly to the Sullicon Control keeping the butterfly valve closed. Simultaneously, the pilot valve sends a pneumatic signal to the blowdown valve. The blowdown valve opens the sump to the atmosphere, reducing the sump pressure to approximately 160 to 180 PSIG (1103 to 1241kPa).

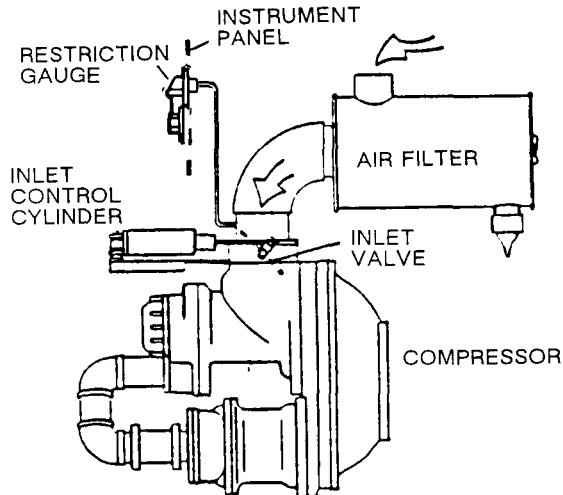
The check valve in the air service line prevents the pressure from returning to the sump.

When the line pressure drops back to the low setting (cut-in pressure) of the pressure switch (usually 340 PSIG [2344kPa]), the pressure switch closes, re-energizing the three-way pilot valve and allowing the blowdown valve to close. The re-energized pilot valve again prevents line pressure from reaching the Sullicon Control. Should the pressure begin to rise, the pilot pressure regulator will resume its normal function as previously described.

For a compressor with varied periods of time when there are not air requirements, a “Dual

## Section 2 DESCRIPTION

Figure 2-7 Air Inlet System (Typical)



Control" option is available. This option allows you to set the compressor in an automatic position whereby the compressor will shut down (time delayed) when no compressed air requirement is present and restart as compressed air is needed.

### 2.7 AIR INLET SYSTEM, FUNCTIONAL DESCRIPTION

Refer to Figure 2-7. The compressor inlet systems consists of a dry-type air filter, a restriction gauge, inlet cylinder, Sullicon Control and an air inlet valve.

The restriction gauge, located on the compressor instrument panel, indicates when air filter maintenance is required.

The butterfly-type air inlet valve directly controls the amount of air intake to the compressor in response to the operation of the Sullicon Control (Section 2.6). The inlet cylinder holds the butterfly valve closed during the compressor start mode.

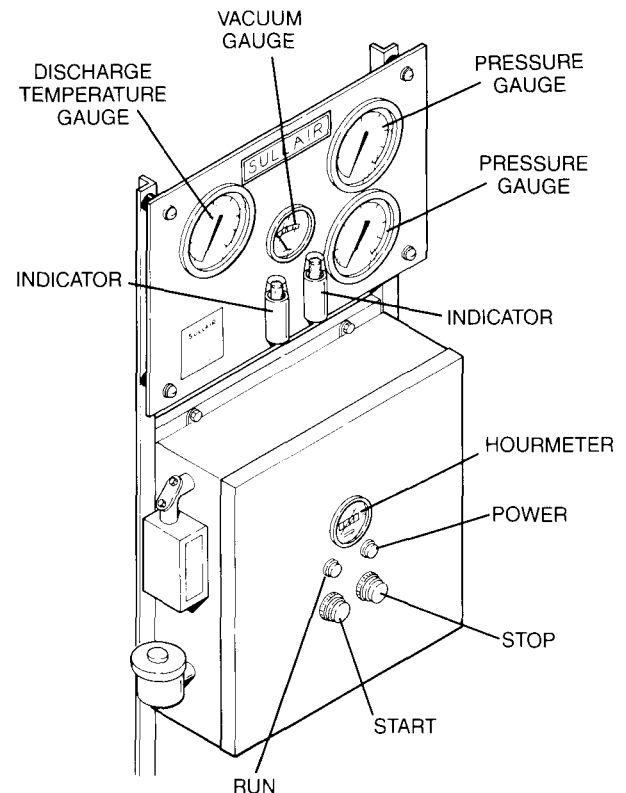
### 2.8 INSTRUMENT PANEL GROUP, FUNCTIONAL DESCRIPTION

Refer to Figure 2-8 for specific location of parts described. The instrument panel group consists of a **line pressure gauge**, **air filter maintenance gauge**, **sump pressure gauge**, **compressor discharge temperature gauge** and **maintenance indicators** for the **separator element** and **bearing filter** all located on a heavy gauge instrument panel. Located on the electric control panel are **START**, **STOP** and **RESET** pushbuttons, power and run indicators, an hourmeter, plus various (optional) fault indicator lights (see Figure 2-7).

Refer to Figure 2-3 for functional locations of the following indicators and controls:

- The **line (terminal) pressure gauge** is connected to the dry side of the receiver downstream from the check valve and continually monitors the air pressure.
- The **sump pressure gauge** continually monitors the sump pressure at the various load and/or un-load conditions.
- The **discharge temperature gauge** monitors the temperature of the air leaving the compressor unit. The normal reading for the compressor is 230°F (110°C).
- The **START pushbutton** turns the compressor on.
- The **STOP pushbutton** turns the compressor off.
- The **RESET pushbutton** clears the protective shutdown interlocks after a fault has been corrected.
- The **hourmeter** records the cumulative hours of operation for the compressor and is useful for planning and logging service operations.
- The **separator maintenance indicator** monitors the condition of the separator element and shows red when the element restriction is excessive.
- The **bearing lube filter maintenance gauge** monitors the condition of the bearing filter element and shows red when the element should be changed. This indicator is automatically reset.

Figure 2-8 Instrument Panel



# Section 3 SPECIFICATIONS

## SPECIFICATIONS

<u>Model Series</u>	<u>DIMENSIONS WITHOUT ENCLOSURE</u>							
	<u>Length</u>		<u>Width</u>		<u>Height</u>		<u>Weight</u>	
	<u>in</u>	<u>mm</u>	<u>in</u>	<u>mm</u>	<u>in</u>	<u>mm</u>	<u>lb</u>	<u>kg</u>
<b>20/12 500 CFM</b>	<b>143.5</b>	3645	<b>64</b>	1626	<b>71.5</b>	1816	<b>6000</b>	2722
<b>20/12 630 CFM</b>	<b>143.5</b>	3645	<b>64</b>	1626	<b>71.5</b>	1816	<b>6000</b>	2722
<b>20/12 750 CFM</b>	<b>143.5</b>	3645	<b>64</b>	1626	<b>71.5</b>	1816	<b>6000</b>	2722
<b>20/12 800 CFM</b>	<b>186</b>	4724	<b>82</b>	2083	<b>80.5</b>	2045	<b>9400</b>	4264
<b>20/12 960 CFM</b>	<b>186</b>	4724	<b>82</b>	2083	<b>80.5</b>	2045	<b>9600</b>	4354

### COMPRESSOR:

Type Maximum Full Load Operating Pressure Bearing Type Cooling Lubricant Sump Capacity Control	2-Stage Oil Flooded Rotary 350 PSIG (2413kPa) Anti-Friction Pressurized Compressor Fluid Sullube 32 35 U.S. Gallons (132 Liters) Electro-Pneumatic
--	--

### MOTOR:

Type Size Speed	O.D.P., 460V, A.C., Three Phase, 60 Cycles See Model Series above. 1200 RPM and 1800 RPM
-----------------------	--

### LUBRICATION GUIDE

Sullair standard compressors are filled with Sullube 32 fluid as factory fill. **MIXING OF OTHER FLUIDS WITHIN THE COMPRESSOR WILL VOID ALL WARRANTIES.**

Sullube 32 fluid should be changed every 1800 hours or once a year, whichever comes first. The fluid should be changed more frequently under severe operating conditions, such as high ambient temperatures coupled with high humidity, or

when high particulate level, corrosive gases or strong oxidizing gases are present in the air.

Maintenance of all other components is still recommended as indicated in the Operator's manual.

Sullair encourages the user to participate in a fluid analysis program with the fluid suppliers. This could result in a fluid change interval differing from that stated in this manual. Contact your Sullair Representative for details.

## Section 4 INSTALLATION

### 4.1 MOUNTING OF COMPRESSOR

A foundation or mounting capable of supporting the weight of the compressor, and rigid enough to maintain the compressor frame level and the compressor in alignment is required. The compressor frame must be leveled and secured with foundation bolts, and full uniform contact must be maintained between the frame and foundation. No piping loads shall be transmitted to the compressor at the external connections.

### 4.2 SERVICE AIR PIPING

Service air piping should be installed as shown in Figure 4-1. A shut-off valve should be installed to isolate the compressor from the service line if required. Also notice that the service line should be equipped with water legs and condensate drains throughout the system.

#### NOTE

Under certain conditions for inside installations, it may be desirable to pipe the relief valves to the outside of the building.

### 4.3 COUPLING ALIGNMENT CHECK

In preparation for the factory test, the coupling supplied with your compressor is properly aligned for operation. The motor is flange-mounted to the compressor unit. Therefore it is not necessary to recheck this alignment.

### 4.4 FLUID LEVEL CHECK

The 2-stage air compressor is also supplied with the proper amount of fluid. However, it is necessary to check the fluid level at installation. The level is checked by looking at the sight glass located near the sump. If the sump is properly filled, the fluid level should be visible in the sight glass.

### 4.5 MOTOR ROTATION DIRECTION CHECK

After the electrical wiring has been done, it is necessary to check the direction of the motor rota-

tion. This can be done by jogging the START and STOP buttons on the instrument panel. When looking at the motor from the end opposite the compressor unit, the shaft should be turning clockwise. If the motor shaft is not turning clockwise, disconnect the power to the starter and exchange any two of the three power input leads, then re-check rotation.

### 4.6 ELECTRICAL PREPARATION

Interior electrical wiring is performed at the factory. Required customer wiring is minimal, but should be done by a qualified electrician in compliance with OSHA, National Electrical Code, and any other applicable local electrical code concerning isolation switches, fused disconnects, etc. Sullair provides a wiring diagram for use by the installer.

A few electrical check should be made to help assure that the first start-up will be trouble free.

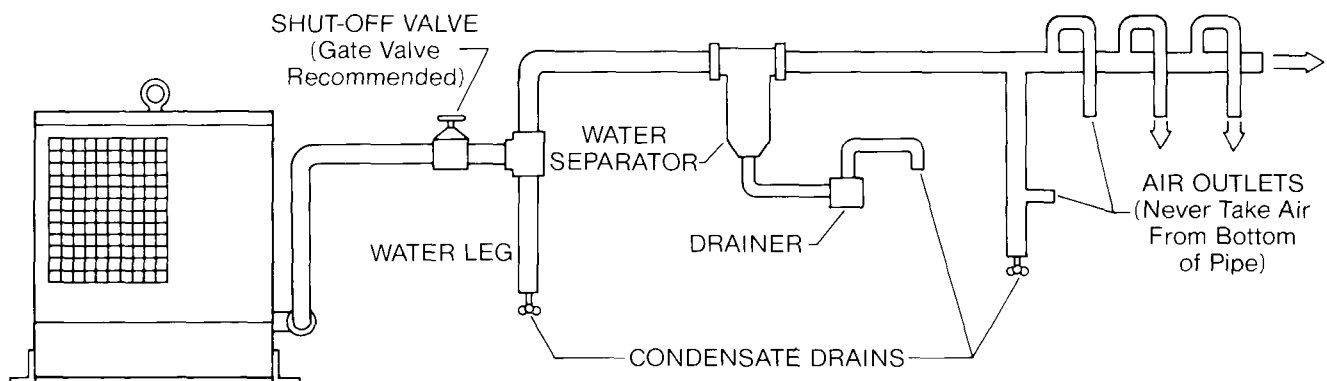
#### ⚠ DANGER

Lethal shock hazard inside.

Disconnect all power at source, before opening or servicing.

1. Check incoming voltage. Be sure that the incoming voltage is the same voltage that the compressor was wired for.
2. Check starter and overload heater sizes (see instrument panel and electric control box in Parts List).
3. Check all electrical connections for tightness.
4. "DRY RUN" the electrical controls by disconnecting the three (3) motor leads from the starter. Energize the control circuits by pushing the START button and check all protective devices to be sure that they will de-energize the starter coil when activated.
5. Reconnect the three (3) motor leads and jog the motor for a direction of rotation check, as explained in Section 4.5.

Figure 4-1 Service Air Piping



## 5.1 GENERAL

While Sullair has built into this compressor a comprehensive array of controls and indicators to assure you that it is operating properly, you will want to recognize and interpret the reading

which will call for service or indicate the beginning of a malfunction. Before starting your Sullair compressor, read this section thoroughly and familiarize yourself with the controls and indicators – their purpose, location and use.

## 5.2 PURPOSE OF CONTROLS

CONTROL OR INDICATOR	PURPOSE
START PUSHBUTTON	Depress to turn the compressor ON.
HOURLY METER	Records the cumulative hours of compressor operation; useful for planning and logging service schedules.
LINE PRESSURE GAUGE	Continually monitors service line air pressure. Located on dry side of receiver downstream from check valve.
SUMP PRESSURE GAUGE	Continually monitors receiver/sump pressure at various load and/or unloaded conditions.
DISCHARGE TEMPERATURE GAUGE	Monitors temperature of the air leaving the compressor unit. The normal reading should be approximately 230°F (110°C).
BEARING FILTER MAINTENANCE INDICATOR	Indicates when a bearing filter element change is required. Shows red when the pressure drop through the filter is excessive.
SEPARATOR MAINTENANCE INDICATOR	Indicates when separator element change is required. Shows red when the pressure drop through the filter is excessive. The separator must be replaced. <b>DO NOT CLEAN.</b>
FLUID LEVEL SIGHT GLASS	Monitors fluid level in the sump. Proper level is to fill the sight glass.
FLUID RETURN LINE SIGHT GLASS	Used to indicate fluid flow in the return line. When the compressor is running at full load, fluid flow should be visible in this sight glass. There may be little or no flow when the compressor is running unloaded, but a sluggish flow at full load indicates a need to clean the return line strainer.
FLUID STOP VALVE	Cuts off flow of fluid to compressor unit at compressor shutdown, and allows flow of fluid to unit on start-up.
DISCHARGE CHECK VALVE	Cuts off the reverse flow of air/fluid mixture through compressor discharge system at compressor shutdown.
THERMAL VALVE	Regulates flow of fluid to and around the cooler. Designed to maintain a maximum operating compressor discharge temperature of 230°F (110°C). Used for fast warmup on start-up.
HIGH PRESSURE SHUTDOWN SWITCH	Designed to shut down the compressor when the pressure becomes too high. This switch is set for 365 PSIG (2515kPa).

## Section 5 OPERATION

### 5.2 PURPOSE OF CONTROLS

CONTROL OR INDICATOR	PURPOSE
PRESSURE RELIEF VALVE (Sump)	Opens sump pressure to the atmosphere should pressure inside the sump become too high (375 PSIG [2584kPa]).
PRESSURE RELIEF VALVE (Interstage)	Opens inner stage to atmosphere should the pressure become too high (140 PSIG [965kPa]).
<b>NOTE</b>	
Under certain conditions, it may be desirable to pipe the relief valve to the outside of the building for inside installation.	
TERMINAL CHECK VALVE	Prevents line pressure backflow into the sump during unload conditions and after shutdown.
SULLICON CONTROL	Regulates the amount of air allowed to enter the air inlet valve. This regulation is determined by the amount of air being used at the service line.
PILOT PRESSURE REGULATOR	Opens a pressure line between the sump and Sullicon Control allowing the actuator to regulate air delivery to air demand.
PILOT VALVE	Bypasses the pressure regulator valve causing the Sullicon Control to close the inlet butterfly valve when the compressor reaches maximum operating pressure.
BLOWDOWN VALVE	Vents sump pressure to the atmosphere during unload conditions and shutdown.
PRESSURE SWITCH	Senses service line pressure. When line pressure reaches maximum operating pressure, the pressure switch signals the pilot valve to unload the compressor.
MINIMUM PRESSURE/CHECK VALVE	Maintains a minimum pressure of 160 PSIG (1103kPa) in the sump. This valve restricts air discharge from the sump when the pressure falls to 160 PSIG (1103kPa). However, full flow is allowed at normal operating pressures.
HIGH DISCHARGE TEMPERATURE SWITCH	Shuts the compressor down if the discharge temperature from the first stage exceeds 265°F (130°C) or the second stage exceeds 265°F (130°C).
LOW FLUID PRESSURE SWITCH	Shuts the compressor down if the fluid pressure downstream of the bearing filter drops below 90 PSIG (621kPa).
INLET CYLINDER	Holds butterfly valve closed during start mode.
CLOSED INLET SOLENOID VALVE	Prevents the inlet cylinder from opening the inlet butterfly valve during start-up.
FLUID STOP VALVE PILOT VALVE	Vents the fluid stop valve pilot signal upon shutdown of the compressor.

### 5.3 INITIAL START-UP PROCEDURE

The following procedure should be used to make the initial start-up of the compressor:

1. Read the preceding pages of this manual thoroughly.
2. Be sure that all preparations and checks described in the Installation section have been made.
3. Crack open the shut off valve to the service line.
4. Start the compressor by pushing the START button.
5. Check for possible leaks in piping.
6. Slowly close the shut-off valve and check that the setting on the pressure switch is set correctly. If set correctly, the compressor will unload at the desired unload pressure. If adjustments are necessary, see Control System Adjustments in the Maintenance Section of the manual.
7. Observe the operating temperature. If the operating temperature exceeds 230°F (129°C),

the cooling system or installation environment should be checked.

#### **NOTE**

High inlet air temperatures will result in high discharge air temperatures.

8. Observe return line sight glass and maintenance indicators.
9. Open shut-off valve to service line.
10. Reinspect the compressor for temperature and leaks the following day.

### 5.4 SUBSEQUENT START-UP PROCEDURE

On subsequent start-ups, check that the proper level is visible in the fluid sight glass and simply press the START button. When the compressor is running, observe the instrument panel and maintenance indicators.

### 5.5 SHUTDOWN PROCEDURE

To shut the compressor down, simply press the STOP button.

# Section 6 MAINTENANCE

## 6.1 GENERAL

A good maintenance program is the key to long compressor life. Below is a program that when adhered to should keep your compressor in top running condition. Included in this program are routine service operations for every major serviceable component of the compressor. See Section 6.6 for instructions on Parts Replacement and Adjustment Procedure.

### **⚠ WARNING**

**DO NOT** remove caps, plugs, and/or other components when compressor is running or pressurized.

Stop compressor and relieve all internal pressure before doing so.

## 6.2 DAILY OPERATION

Prior to starting the compressor it is necessary to check the fluid level in the sump. Should the level be low, simply add the necessary amount. If the addition of fluid becomes too frequent, a simple problem has developed which is causing this excessive loss. See the Troubleshooting Section (6.8) under Excessive Fluid Consumption for a probable cause and remedy.

After a routine start has been made, observe the instrument panel gauges and be sure they indicate the correct readings for that particular phase of operation. After the compressor has warmed up, it is recommended that a general check on the overall compressor and instrument panel be made to assure that the compressor is running properly.

## 6.3 MAINTENANCE AFTER INITIAL 50 HOURS OF OPERATION

After the initial 50 hours of operation, a few maintenance requirements are needed to rid the system of any foreign materials. Perform the following maintenance operations to prevent unnecessary problems.

1. Clean the return line strainer.
2. Clean the return line orifice.
3. Clean the compressor unit gear housing, bearing and shaft seal orifices.
4. Change the bearing filter element.
5. Clean the main strainer elements.

## 6.4 MAINTENANCE AS REQUIRED BY LUBRICATION GUIDE (SECTION 3)

1. Drain the sump and change the compressor fluid.
2. Replace the bearing filter element.
3. Clean the return line strainer.
4. Lubricate the inlet cylinder linkage.

## 6.5 FILTER MAINTENANCE

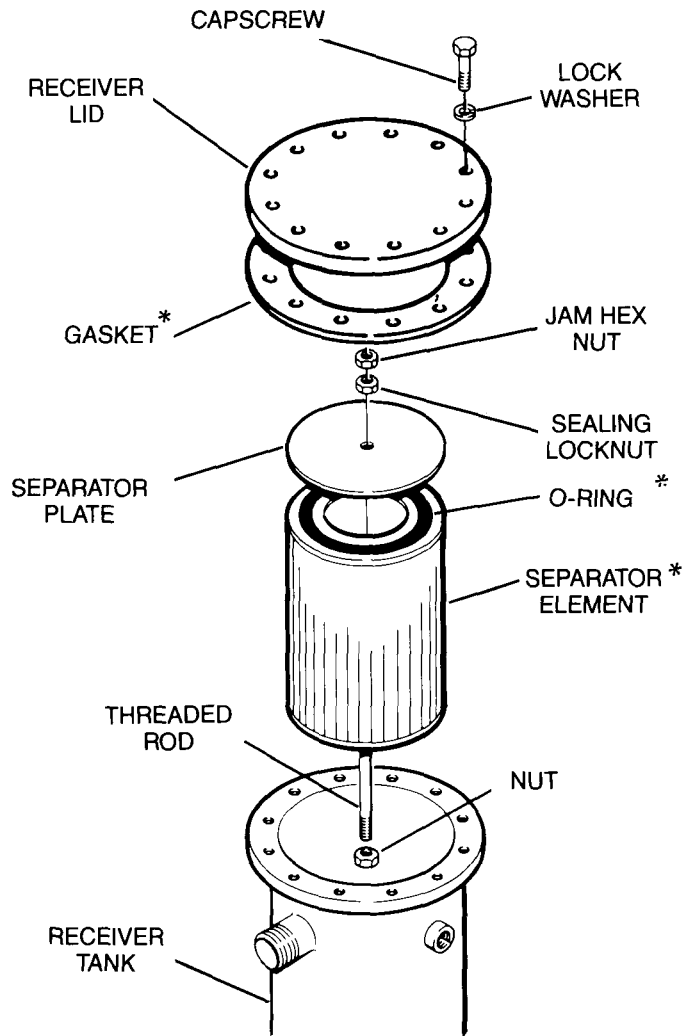
Replace your bearing filter element when the maintenance indicator shows red, or at every lubricant change (6 months). This must be done even if the bearing filter indicator does not show red. Also clean the main filter element and install a new gasket kit at this time.

## 6.6 PARTS REPLACEMENT AND ADJUSTMENT PROCEDURES

### SEPARATOR MAINTENANCE

Refer to Figure 6-1. When the need for a separator element replacement is indicated by the maintenance indicator (usually mounted to the air receiver/separator tank but can also be remote mounted), use the following procedure for separator replacement.

Figure 6-1 Separator Element (PIN 409805-006)



\* Repair Kit P/N 250028-166

## Section 6 MAINTENANCE

1. Remove the air receiver/separator tank lid by removing the twelve (12) hex head capscrews.

### NOTE

To assist with the removal of the tank lid, Sullair has provided a 1"-8 nut to the top lid so it can be removed by a 1"-8 eye bolt (which is available from Sullair) or a similar type of lifting device.

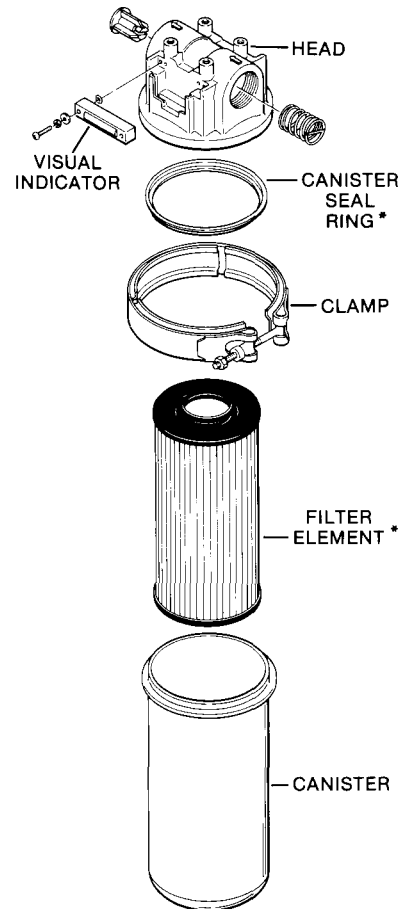
2. Remove the  $\frac{3}{4}$ "-10 jam nut and sealing hex nut from the  $\frac{3}{4}$ "-10 separator hold down rod.
3. Remove the round separator cover plate from the top of the separator element.
4. Remove the old separator element and discard.
5. Scrape the old gasket material from the tank lid mounting surface and the flanges mounting surface on the tank. Be sure to keep all scrapings from falling back inside of the tank.
6. Before installing the new separator element, make sure to lubricate both sealing o-rings on the element with a lubricating compound (i.e. Silglyde). Now install the new separator element, the cover plate, the new  $\frac{3}{4}$ "-10 sealing hex nut, and the  $\frac{3}{4}$ "-10 jam hex nut. Torque the sealing hex nut to 85 to 90 ft./lbs. (115 to 122 Nm). **DO NOT** overtighten, as damage to the separator element can result.
7. Next, install the tank flange gasket that is provided. Before installing, lubricate both sides of the gasket (i.e. Silglyde). Reinstall the tank lid. Install the capscrews finger tight, then gradually tighten in a crisscross pattern in 4 to 5 steps. Always tighten the capscrews alternately at opposite sides of the cover. Lube torque capscrews to 200 ft./lbs. (271Nm).
8. Clean or replace fluid return line strainer.
9. Clean the fluid return line orifice installed in the side of the compressor unit air end.
10. After assembly is complete, check for continuity between the separator flange and the lid and tank flange with an ohmmeter.

### SERVICING THE BEARING FLUID FILTER

Refer to Figure 6-2. When a need for a fluid filter element (P/N 250019-296) replacement is indicated by the maintenance indicator located on the filter head, use the following instructions.

1. When servicing is required, the compressor system must be shutdown to be sure no positive pressure remains on the lubricant in the filter.
2. To remove the canister, loosen band nut on the band that holds canister to filter head, then gently pull down canister. Filter element sits freely in canister.
3. Remove filter element and gasket seal ring and discard.
4. Install new fluid filter element in canister and install the gasket seal ring to the canister flange.

Figure 6-2 Bearing Filter (P/N 250019-296)



\* Element Repair Kit P/N 602568-001

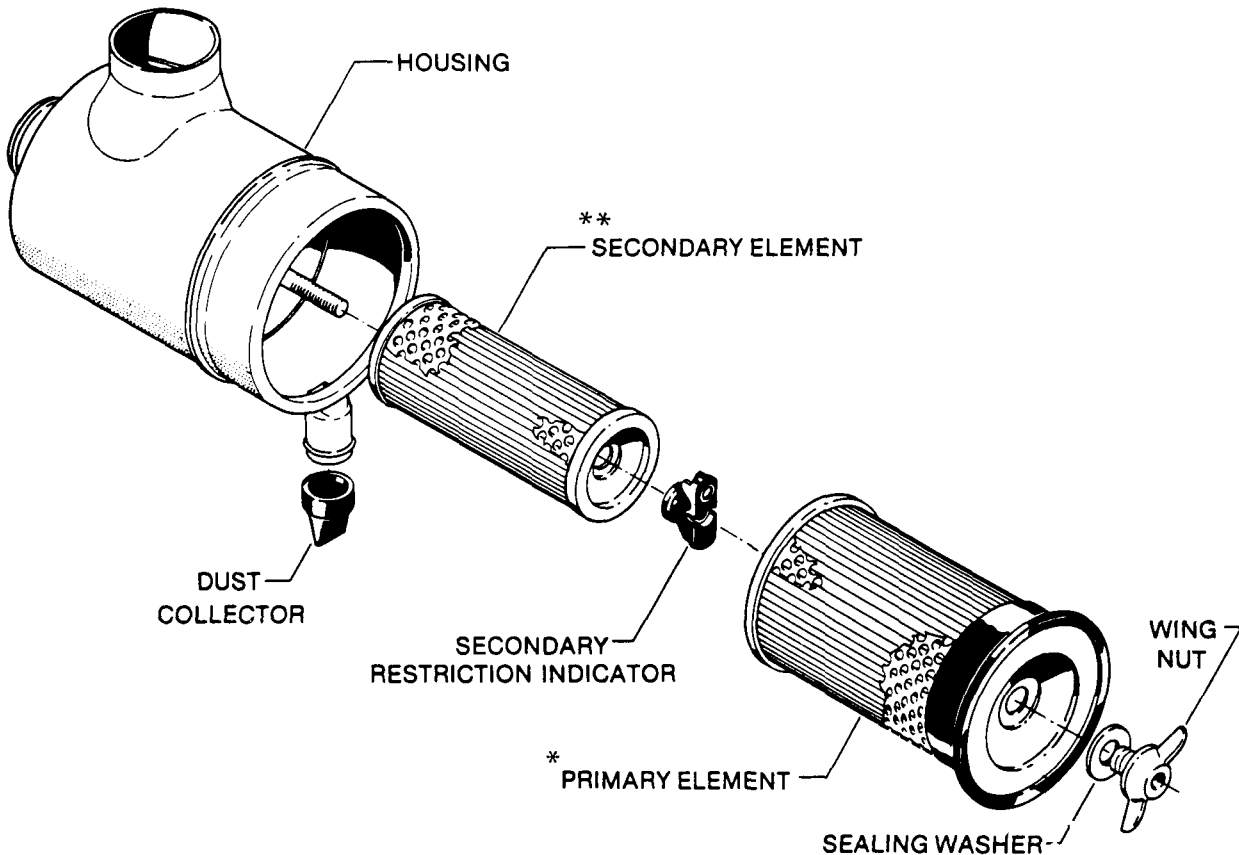
5. Before reinstalling the canister to the filter head, make sure mounting surface on filter head is clean and free of dirt.
6. Apply a film of fluid to the gasket seal ring and then install the canister to the filter head. Reinstall band and tighten band nut to 200 in/lbs (271Nm).

### AIR FILTER MAINTENANCE

Refer to Figure 6-3. Air filter maintenance should be performed when air filter restriction gauge reads 20 inches water column. The air filter is equipped with a primary element and a secondary element. As previously stated, the restriction indicator will alert you as to when the primary element maintenance is necessary. When removing the primary element, always check the secondary element restriction indicator to see if it shows red. The secondary element must be replaced at this time. The secondary element must be changed after every sixth primary element cleaning. However, the secondary element is designed for replacement only. **DO NOT** clean the secondary element.

## Section 6 MAINTENANCE

Figure 6-3 Air Filter



	500-630 CFM	750 CFM	800-960CFM
Filter Part Number	046956	046020	048456
Element Repair Kit Part Number (primary)	046968	046299	048462
Element Repair Kit Part Number (secondary)	046981	047523	048463

### AIR FILTER ELEMENT REMOVAL

1. Clean exterior of air filter housing.
2. Remove the cover/element assembly by loosening the wingnut securing it.
3. Pull the cover/element assembly out of the housing.
4. On the inside of the element, you will notice a lock ring which fastens the cover to the element. Remove the lock ring and pull the cover and element apart.
5. Clean the interior of the housing by using a damp cloth. **DO NOT** blow dirt with compressed air.
6. Inspect the secondary element and replace if necessary. This element is **NOT** cleanable.

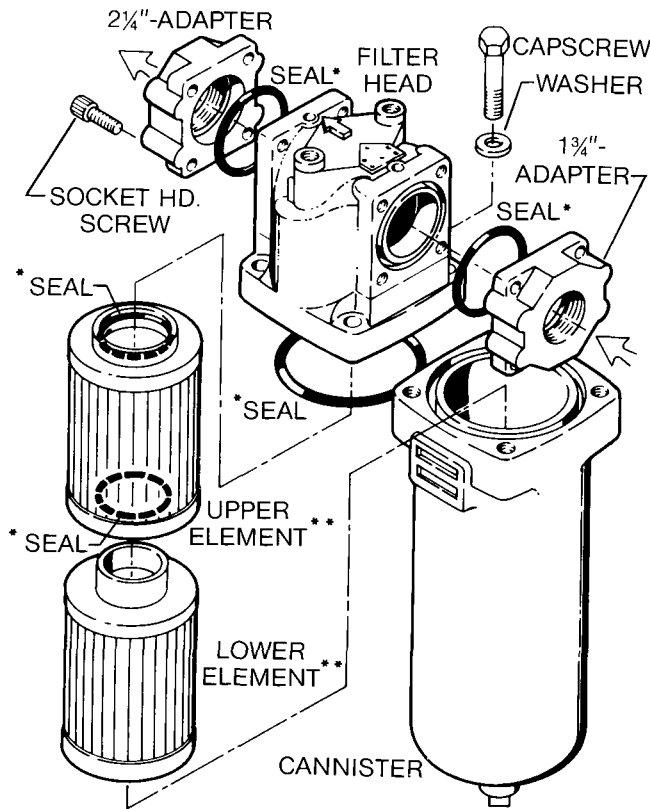
7. To remove the secondary element, unscrew the secondary restriction indicator from the threaded rod running through the element. Pull the element out of the housing.
8. Install the new secondary element and replace the restriction indicator.
9. With the secondary element in place, clean or replace the primary element. Cleaning instructions follow.

### ELEMENT INSPECTION

1. Place a bright light inside the element to inspect for damage or leak holes. Concentrated light will shine through the element and disclose any holes.

## Section 6 MAINTENANCE

Figure 6-4 Main Fluid Filter (P/N 045111)



\* Seal Repair Kit P/N 001132

\*\* Element Repair Kit P/N 001094

2. Inspect all gaskets and gasket contact surfaces of the housing. Should faulty gaskets be evident, correct the condition immediately.
3. If the clean element is to be stored for later use, it must be stored in a clean container.
4. After the element has been installed, inspect and tighten all air inlet connections prior to resuming operation.

### PRIMARY ELEMENT REPLACEMENT

1. Place the element in position on the cover and replace the locking to secure the cover and element.
2. Install the cover/element assembly and replace the wingnut. Tighten the wingnut so to seat the element gasket fully.

### SERVICING THE MAIN FLUID FILTER

Refer to Figure 6-4. The main fluid filter (P/N 045111) is located schematically between the sump and the fluid stop valve. When servicing the main fluid filter, shut down the compressor and use seal kit No. 001132 and follow the instruction

below. For element replacement, order kit No. 001094.

1. Remove the four (4) capscrews which secure the filter head to the canister.
2. Pull the canister away from the filter head. The filter elements will be attached to the head.
3. Separate the elements from the filter head (the elements will pull apart).
4. Remove the seals from both ends of the upper element. Remove the canister seal.
5. Thoroughly clean the elements, filter head and canister in solvent.
6. Lubricate the new seals with the same type of fluid used in the compressor and position each seal in its appropriate place.
7. Carefully push the upper element back into the position on the filter head. The element will protrude from the bottom of the head (approximately 5") when properly seated.
8. Carefully push the lower element into position under the upper element.
9. Hold the canister in position under the housing and replace the capscrews, securing the canister and filter head.

### CONTROL SYSTEM ADJUSTMENT

Refer to Figures 6-5 and 6-6. Prior to adjusting the Control System, it is necessary to determine the desired operating pressure range and also the maximum pressure at which your compressor is to operate. The pressure must not exceed the maximum operating pressure which is stamped on the compressor serial number nameplate. The following explanation applies to a typical installation with a desired operating range of 250 to 260 PSIG (1724 to 1793kPa). This information will apply to a compressor with any other operating range except for the stated pressures.

With the shut-off valve closed (or slightly cracked open) start the compressor. Observe the line pressure gauge and pressure switch contacts. When the line pressure reaches the desired pressure, the pressure switch contacts should open. If the pressure switch contacts do not open or they open prior to the desired pressure, the pressure switch setting will require adjustment (refer to Figure 6-5).

### FOR PRESSURE RANGE ADJUSTMENT:

1. Remove cover to pressure switch.
2. Turn the range adjusting screw to the high pressure setting. Turning the screw counterclockwise lowers both the high and low pressure equally.

### FOR DIFFERENTIAL ADJUSTMENT:

Differential is the difference between the high and low pressure settings (10 PSIG [7kPa]) typical.

Turn the differential adjusting screw to the lower (reset) setting. Turning the screw counterclockwise widens the differential by lowering the reset (lower) setting only.

## Section 6 MAINTENANCE

Figure 6-5 Pressure Switch (P/N 245753)

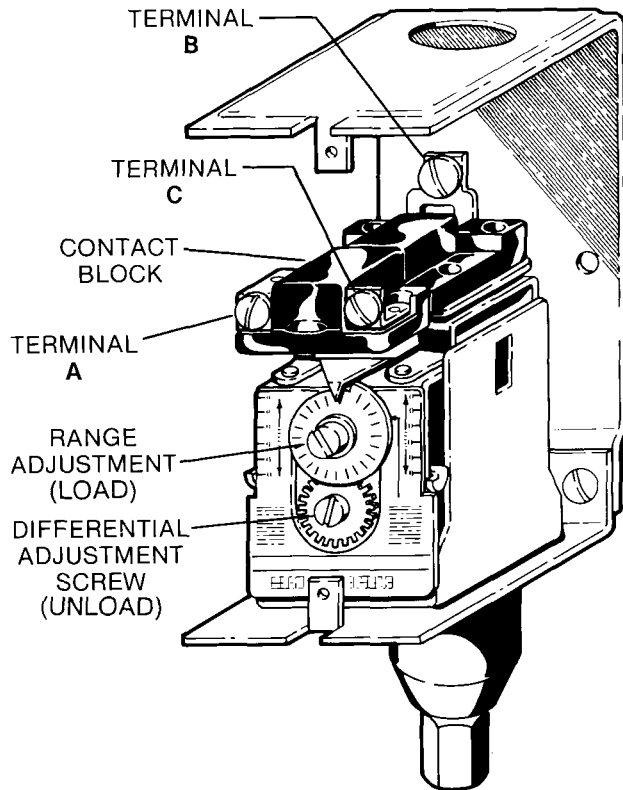
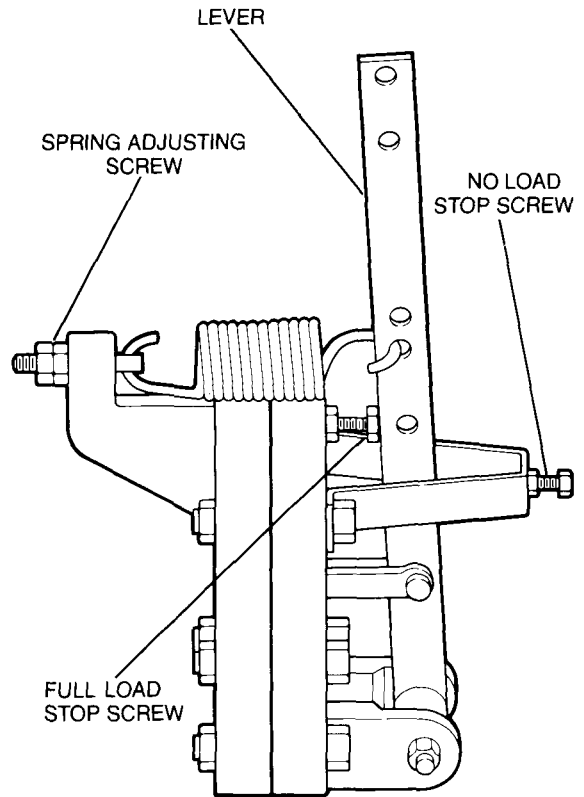


Figure 6-6 Sullicon Control (P/N 011682-003)



\* Repair Kit P/N 250020-353

When the pressure switch adjustment is complete, the pressure regulator should be adjusted for the pressure at which modulation of air delivery should begin. In this case, that pressure will be 250 PSIG (1724kPa). The regulator is adjusted by loosening the jam nut on the end of the cone shaped cover of the pilot pressure regulator (refer to Figure 6-7 for the location). When the jam nut loosened, turn the adjusting screw clockwise to increase or counterclockwise to decrease the setting.

Once the pressure rises above 260 PSIG (1793kPa), a factory set pilot valve opens allowing pressure to flow into the Sullicon Control. At this time the Sullicon Control should be full stroked.

### **⚠ WARNING**

**DO NOT touch the electrical contacts of the pressure switch with any metallic object. Severe electrical shocks may occur. Cycle the Control System several times and re-check all the pressure settings.**

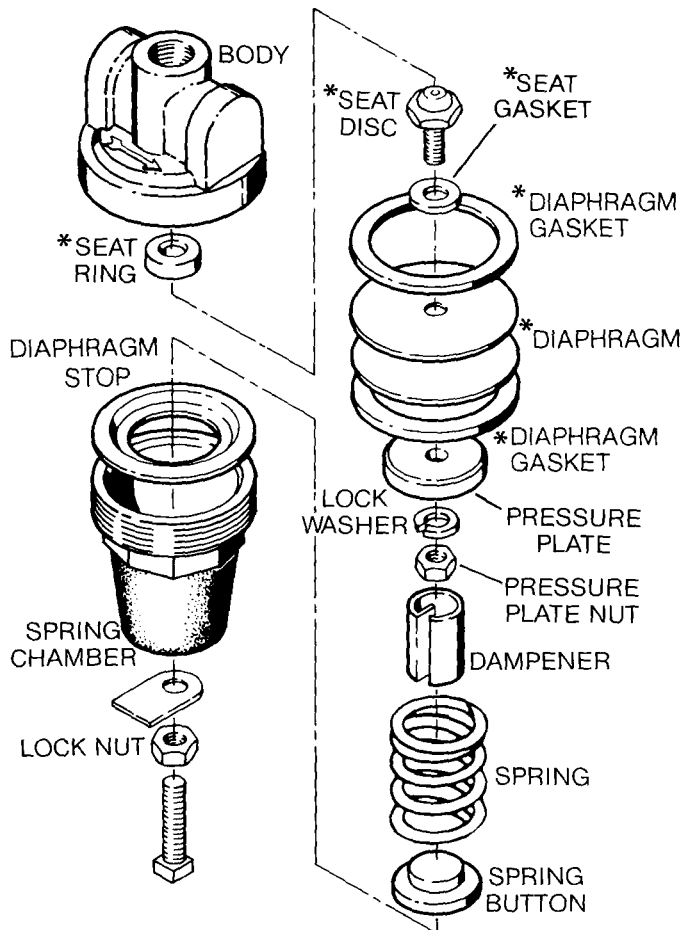
### **PRESSURE REGULATOR VALVE MAINTENANCE**

Refer to Figure 6-7. Pressure regulator valve (P/N 048059) maintenance normally requires the replacement of the internal diaphragm. Use repair kit No. 048409 and follow the procedure below for proper installation

1. Loosen the locknut and turn the adjusting screw counterclockwise until the inner spring tension is relieved. The adjusting screw should turn freely when the spring tension is relieved.
2. Remove the spring chamber from the body to allow access to internal parts.
3. Next, remove the spring button and the spring. The dampener will stay inside the spring as it is removed. Leave the dampener inside the spring as there is no need to remove it.
4. After removing the spring, remove the diaphragm stop.
5. At this time, remove the pressure plate nut and disassemble the pressure plate, diaphragm, diaphragm gasket (rubberized asbestos), seat disc and seat gasket.
6. Remove and discard the seat ring.

## Section 6 MAINTENANCE

Figure 6-7 Pressure Regulator Valve  
(P/N 048059)



\* Repair Kit P/N 048409

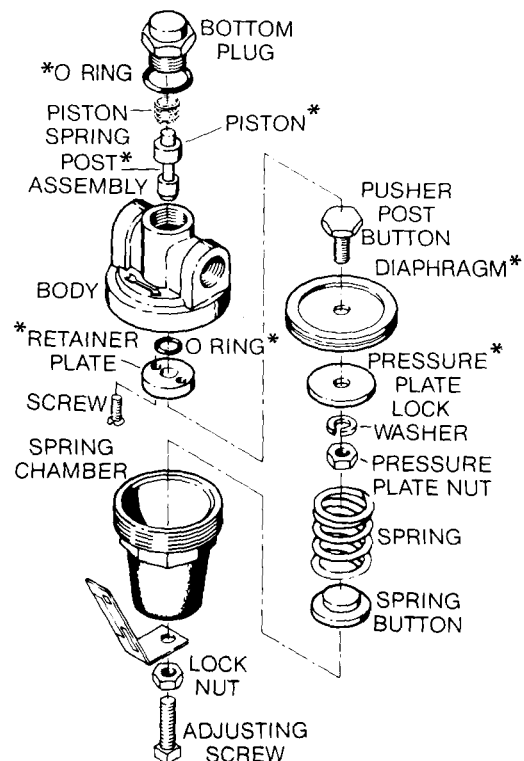
7. The next step is to reassemble the regulator using the new parts provided in the repair kit.
8. Reassemble the diaphragm, pressure plate, diaphragm gasket, seat disc and seat disc gasket and tighten the nut. All of these parts with the exception of pressure plate are provided in the repair kit.
9. Replace the seat ring with the new seat ring provided.
10. Replace the existing diaphragm stop.
11. Next, place these parts in their proper place on the body and replace the spring as it was prior to disassembly.
12. Place the spring button over the spring as shown.
13. With all parts in order, replace the spring chamber and tighten.
14. Tighten the adjusting screw until tension is realized.
15. At this time, refer to Control System Adjustment Procedure to readjust the control regulator.

### CONTROL PRESSURE REGULATOR VALVE

Refer to Figure 6-8. Maintenance for the control pressure regulator valve (P/N 048354) normally requires the replacement of the internal diaphragm. Use repair kit no. 048410, and follow the procedure below for proper installation.

1. Loosen the locknut and turn the adjusting screw counterclockwise until the inner spring tension is relieved. The adjusting screw should turn freely when the spring tension is relieved.
2. Remove the spring chamber from the body to allow access to internal parts.
3. Next, remove the spring button and spring.
4. At this time, remove the pressure plate nut and disassemble the pressure plate, diaphragm, diaphragm gaskets (rubberized asbestos), seat disc and seat gasket.
5. Remove the body plug from the body to allow access to the post assembly. Remove and discard the o-ring on the plug.
6. Extract the piston spring, piston and pusher post from the valve body.
7. Turn the body over and remove the retainer plate by extracting the retainer plate screws. This will allow access to the o-ring and seals the pusher post.
8. Remove and discard the o-ring.

Figure 6-8 Control Pressure Regulator  
(P/N 048354)



\* Repair Kit P/N 048410

## Section 6 MAINTENANCE

9. The next step is to reassemble the regulator using the new parts provided in the repair kit.
10. Reassemble the diaphragm, pressure plate diaphragm gasket, pusher post button, seal disc gasket and tighten the nut. All of these parts with the exception of the pressure plate are provided in the repair kit.
11. Replace the pusher post o-ring with the new one provided in the kit. Also place the new o-ring on the body plug.
12. Replace the retainer plate.
13. Screw the pusher post into the piston and replace them as shown in the body.
14. Replace the body plug.
15. Next, place these parts in their proper place on the body and replace the spring as it was prior to disassembly.
16. Place the spring over the spring button as shown.
17. With all parts in order, replace the spring chamber and tighten.
18. Tighten the adjusting screw until tension is realized.
19. At this time, refer to the Control System Adjustment Procedure to readjust the control pressure regulator valve.

### FLUID STOP VALVE

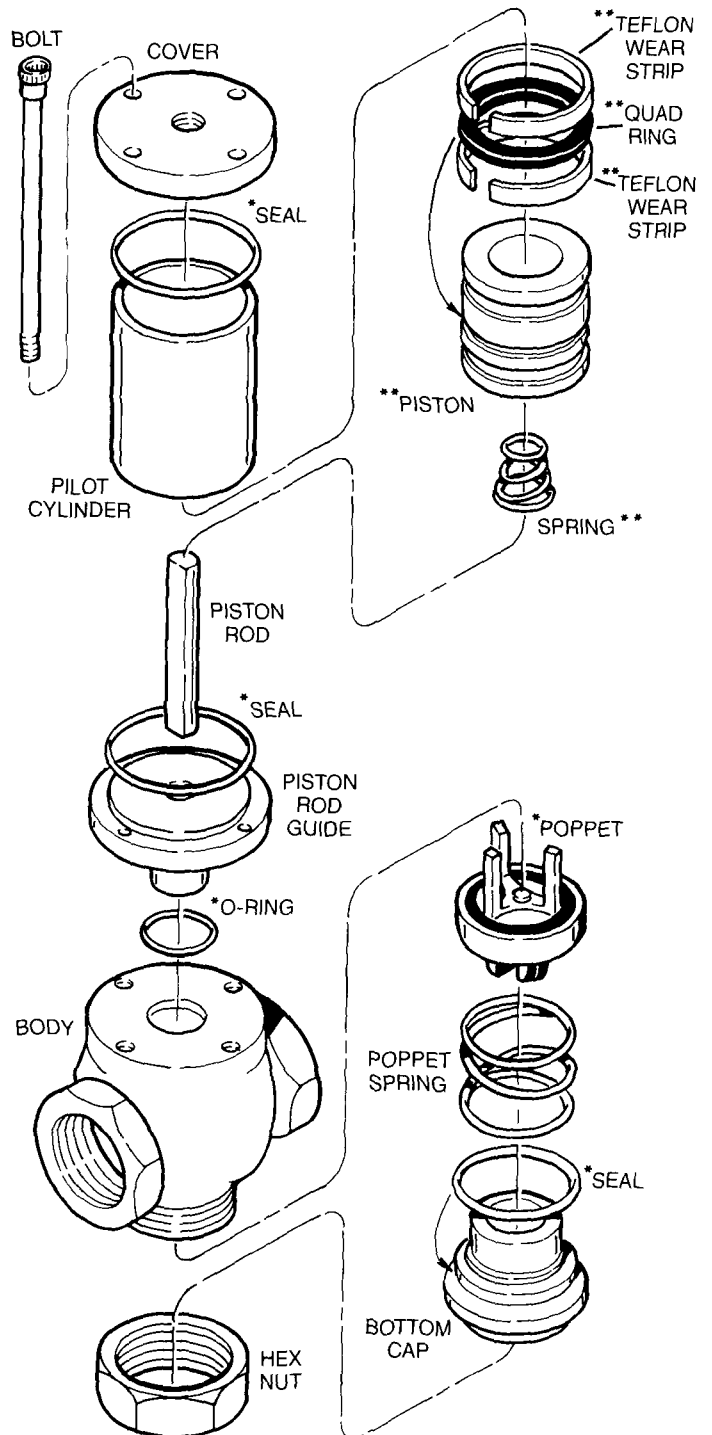
Refer to Figure 6-9. When servicing the fluid stop valve (P/N 250038-489) use repair kit numbers 250038-490 and 250038-494. Use all parts provided in the kit. The valve may be serviced without removing it from its associated piping if it is accessible.

#### NOTE

Repair kit P/N 250038-490 is to update valve P/N 250028-140. It does not contain lower poppet assembly.

1. Remove the large hex nut on the bottom of the valve. Be careful not to lose the parts restrained by the nut as they are under light spring pressure.
2. Remove the bottom cap, poppet spring, and poppet assembly. Discard spring and poppet assembly.
3. Remove seal from bottom cap and discard. Install new seal provided in kit.
4. Install new poppet assembly and spring. Install bottom cap.
5. Replace large hex nut and tighten securely.
6. Remove the four (4) bolts and cylinder cover on the top of the valve. Restrain cover as it is under light spring tension.
7. Remove seal from cover and discard. Install new seal.
8. Remove pilot cylinder. Remove piston from cylinder.
9. Remove the quad ring and wear strips from piston and discard. If you are installing the piston

Figure 6-9 Fluid Stop Valve (P/N 250038-489)



- \* Repair Kit P/N 250038-494 (o-rings & poppet)
- \*\* Repair Kit P/N 250038-490 (piston & parts)

## Section 6 MAINTENANCE

- repair kit (P/N 250038-490), discard piston also.
10. Remove piston rod.
  11. Remove piston rod guide. Remove cylinder seal and o-ring from guide and discard.
  12. Check operation of new poppet assembly installed in lower body assembly.
  13. Clean all parts thoroughly before reassembling valve.
  14. Install piston rod guide with new o-ring installed.
  15. Install piston rod if provided.
  16. Install the spring onto the piston rod guide with large side down.
  17. Install the quad ring and the two (2) Teflon rings onto the piston. Coat the quad ring with Parker Super "O" ring seal or equivalent quality silicone grease.
  18. Install the piston into the pilot cylinder.

### NOTE

Cylinder is chamfered on one end. Install from this side.

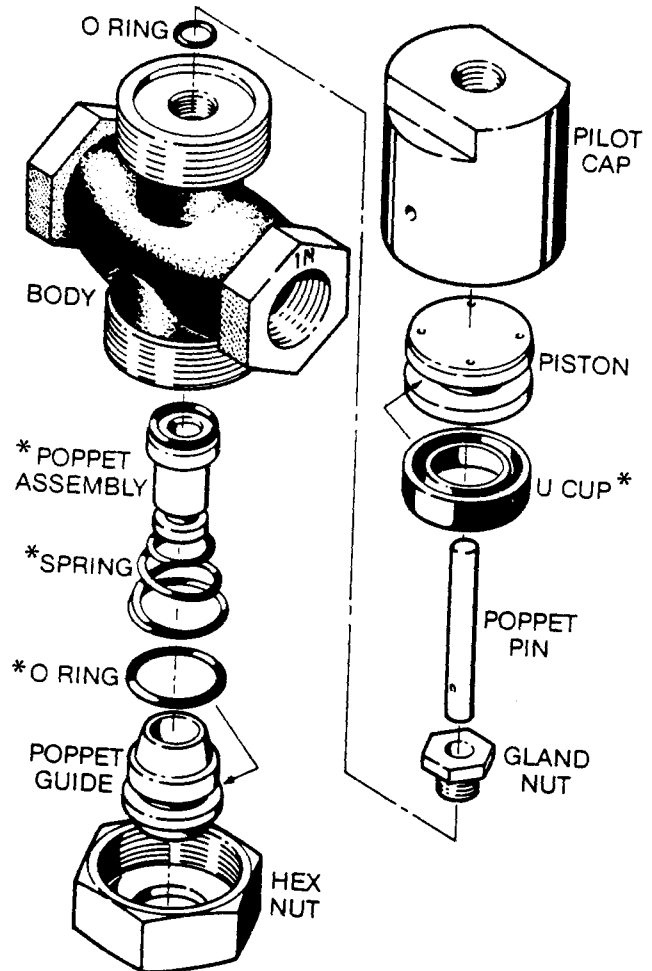
19. Install the two (2) seals; one into the cover and the other onto the piston rod guide.
20. Place cylinder over pilot guide.
21. Replace the cover and the four (4) nuts onto the cover. Tighten nuts alternately at opposite sides of the cover in a crisscross pattern. Check to see that cylinder is seated on seals on both ends.

### RUNNING BLOWDOWN VALVE MAINTENANCE

Refer to Figure 6-10. When it is necessary to repair the running blowdown valve (P/N 045116), use repair kit no. 047524, and follow the instructions provided below.

1. Remove the hex nut from the bottom of the valve. The poppet guide which is secured by the hex nut is under slight spring tension.
2. Remove the poppet guide, poppet assembly and spring from the valve body.
3. Remove and discard the old o-ring on the poppet guide and replace it with the new o-ring provided in the kit. Be sure to lubricate the o-ring with a silicone base lubricant such as Parker Super "O" lube or an equivalent quality grease.
4. Place the new spring and poppet assembly in the valve body as shown. Then place the poppet guide (with the o-ring in position) over the poppet assembly.
5. Push the hex nut down over the poppet guide and compress the spring while turning the hex nut until tight. Tighten securely with a wrench.
6. Remove the pilot cap from the top of the valve body and pull the piston out of the cap.
7. Remove the U-cup from the piston and replace it with the new one provided in the kit. The U-cup should be lubricated with a silicone base lubricant also.

Figure 6-10 Running Blowdown Valve  
(P/N 045116)



\* Repair Kit P/N 047524

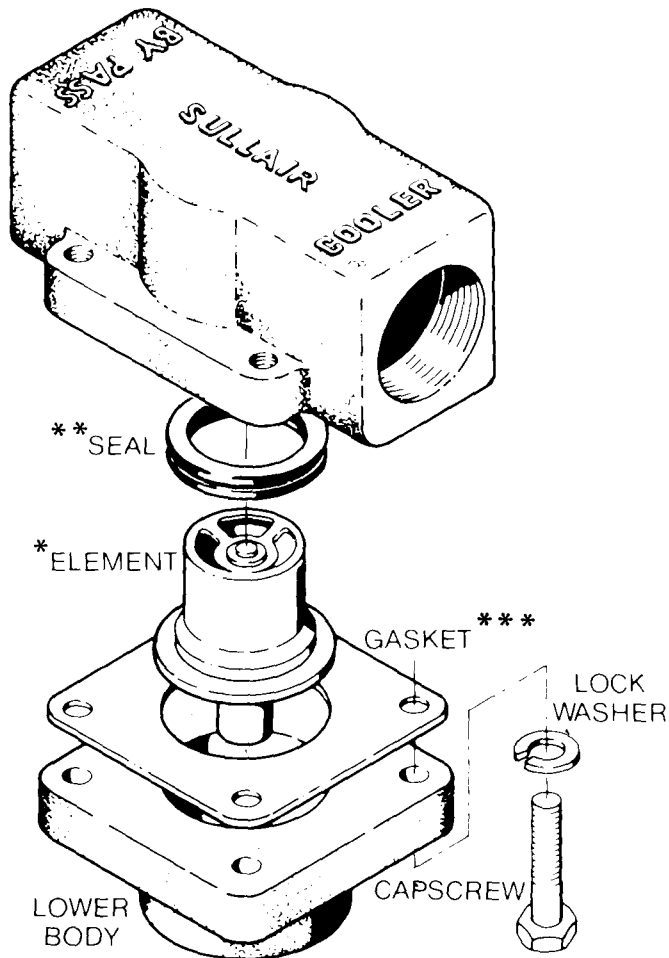
8. Remove the gland nut from the valve body and pull the poppet pin out to allow access to the small o-ring in the top of the body.
9. Remove the small o-ring and replace it with the new one provided in the kit. The o-ring must be lubricated with a silicone base lubricant.
10. Replace the poppet pin and gland nut.
11. Place the piston with the new U-cup in position back in the pilot cap with the recessed side showing at the valve body end of the cap.
12. Replace the pilot cap and tighten securely with a wrench. As this time the running blowdown valve is ready to be installed for operation.

### THERMAL VALVE MAINTENANCE

Refer to Figure 6-11. For thermal valve (P/N 250001-456) maintenance, order the following Sullair parts: one (1) quad ring (P/N 046425), one (1) gasket (P/N 049812) and if necessary, thermal

## Section 6 MAINTENANCE

Figure 6-11 Thermal Valve (P/N 250001-456)



- \* Element Replacement Kit P/N 250001-349
- \*\* Quad Ring Seal Replacement Kit P/N 046425
- \*\*\* Gasket Replacement Kit P/N 049812

element P/N 250001-349. Follow the procedure explained below for installation.

### DISASSEMBLY

1. Remove the appropriate piping from the thermal valve before starting disassembly.
2. Remove the four (4) cap screws holding the housing together and separate the upper housing from the lower housing.
3. Pull firmly on the thermal element and remove.

### NOTE

There will be a slight resistance from the seal ring centered in the lower housing.

4. Remove the seal ring from the lower housing and discard.

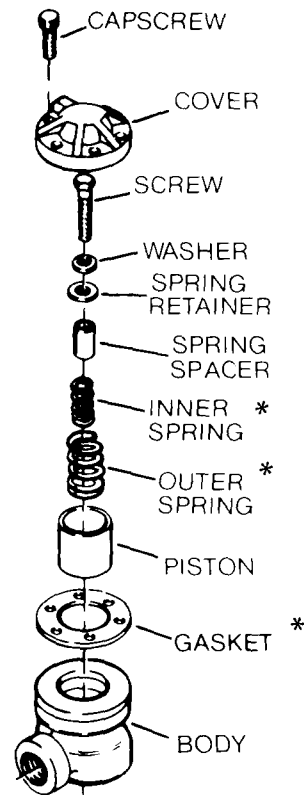
### REASSEMBLY

1. Grease and replace the gasket in the center of the lower housing.
2. Reinsert the thermal element by pushing down until the brass ring is flush with the surface of the lower housing.
3. Position a new quad ring over the thermal element.
4. Place the upper housing on the lower housing and retighten the cap screws.
5. Replace all piping connected to the thermal valve.

### MINIMUM PRESSURE/CHECK VALVE MAINTENANCE

Refer to Figure 6-12. Minimum pressure/check valve (P/N 018498A) maintenance is quite minimal. The only part which normally requires replacement is the seal ring on the piston. To re-

Figure 6-12 Minimum Pressure / Check Valve (P/N 018498A)



- \* Repair Kit P/N 018514A

## Section 6 MAINTENANCE

place this ring, order seal repair kit No. 018514A and follow the procedure explained below.

### **⚠ WARNING**

**Before performing maintenance on the valve, be sure that all pressure has been relieved in the compressor sump, and all downstream pressure has been vented to the atmosphere. Also be sure that the components of the compressor are cool to the touch.**

1. Unscrew the minimum pressure/check valve (P/N 018498A) from the receiver cover.
2. Remove the hexagonal retaining cover from the main body.
3. Remove the flat washer and heavy spring from the main body.
4. Tap the piston assembly (with a screwdriver) from the bottom of the main body and remove. The seal ring will now be seen easily.
5. Remove the seal ring and discard.
6. Clean piston assembly and valve thoroughly.
7. Replace seal ring and coat the piston and seal with Parker Super "O" Ring Seal or an equivalent quality grease.

### **⚠ WARNING**

**Extreme caution should be used when removing the cap from the body because there is spring tension on the cap.**

8. Reset piston assembly into the main body and reposition spring and flat washer.
9. Replace retaining cap.
10. Reattach valve to receiver cover and reconnect all piping.

### **PILOT VALVE MAINTENANCE**

Refer to Figure 6-13. Pilot valve (P/N 407390) maintenance is quite minimal but a periodic cleaning is desirable. The time between cleanings will vary depending on operating conditions. In general, if the voltage to the coils is correct, sluggish valve operating or excessive leakage will indicate that cleaning is required. If so, order repair kit no. 042246 and follow the procedure explained below.

### **⚠ WARNING**

**Turn off all power, relieve the pressure and disconnect coil lead wire to the valve before making repairs.**

It is necessary to remove the valve from the pipe line for repairs.

### **PILOT VALVE DISASSEMBLY FOR GENERAL CLEANING AND INSPECTION**

Refer to Figure 6-13. Depressurize valve and turn off electrical power supply. It is strongly recom-

mended that the valve be removed from the pipe line for ease of maintenance. It is not practical to remove the valve from the pipe line, and resetting of strokes is required if a new Spare Parts kit is to be installed; consult factory for special bonnet tools which are available. When consulting the factory, be sure to include the valve catalog number and serial number from the nameplate on the valve.

1. Disassemble valve in an orderly fashion paying careful attention to the exploded view provided for identification of parts.
2. Remove retaining cap or clip and slip the entire solenoid enclosure off the solenoid base sub-assembly.

### **⚠ CAUTION**

**When metal retaining clip disengages, it will spring upward.**

For explosion-proof/watertight enclosure, refer to Installation and Maintenance Instructions Sheet, Form No. V-5381.

3. Unscrew solenoid base sub-assembly and remove bonnet gasket. For explosion-proof/watertight enclosure, a special bonnet adapter wrench is available. Order No. 102-649-1.
4. Unscrew disc guide caps (both ends) and remove disc guide cap gaskets, upper and lower springs, and discs.

### **⚠ CAUTION**

**Tag springs and discs as they are not interchangeable and must be returned to the original location. Tag upper and lower for ease of identification.**

5. Remove end cap, end cap gasket and slip core/spring assembly (A-C Construction) or core (D-C Construction) off the end of the valve lever and lift it out through solenoid base sub-assembly opening.
6. Inspect upper and lower valve seats but **DO NOT** remove from valve body unless installing a complete Spare Parts Kit.
7. Clean all parts thoroughly and replace worn or damaged parts with a complete Spare Parts kit. If a Spare Parts kit is required, refer to the section on Installation of New Spare Parts Kit for complete rebuild.

### **⚠ CAUTION**

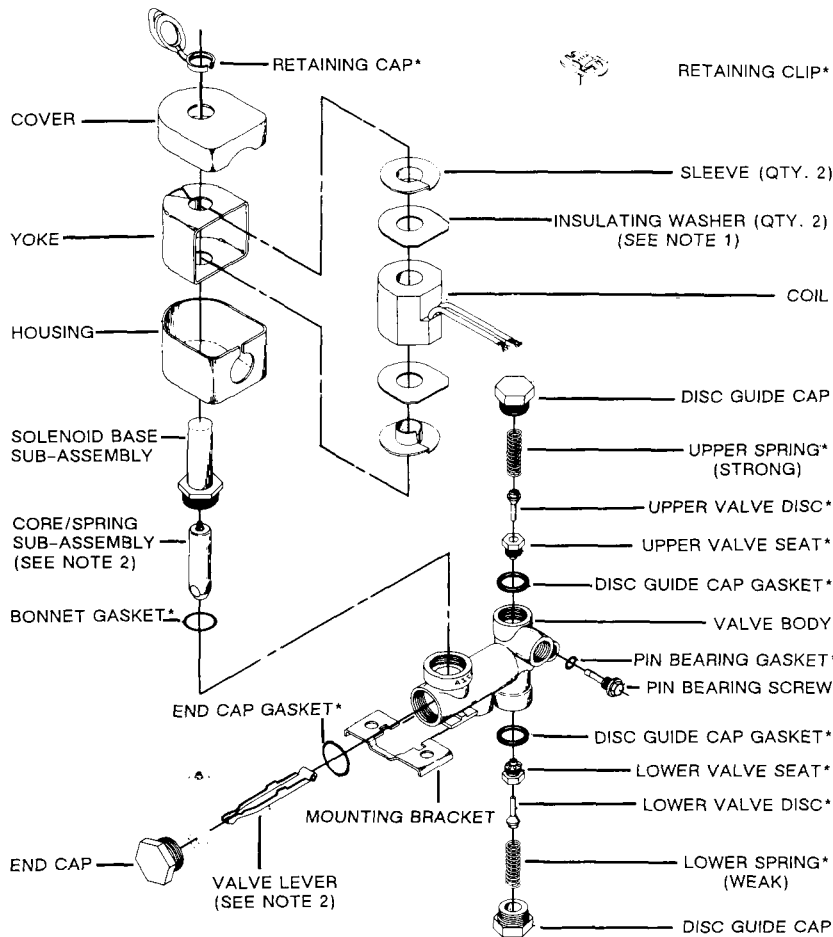
**Install all new parts. DO NOT retain any old parts when rebuilding valve. If only partial installation is made, valve malfunction may occur.**

### **VALVE ASSEMBLY**

1. Reassemble in reverse order of disassembly paying careful attention to exploded view provided for identification and placement of parts.

# Section 6 MAINTENANCE

Figure 6-13 Pilot Valve (PIN 407390)



**NOTE:**

1. INSULATING WASHERS (2) ARE OMITTED WHEN A MOLDED COIL IS USED.
2. INSERT CORE/SPRING SUB-ASSEMBLY THRU UPPER BODY OPENING. ENGAGE IN END OF VALVE LEVER.
3. A - C (ALTERNATING CURRENT) CONSTRUCTION SHOWN.
4. TAG PARTS AS THEY ARE REMOVED.

PART NAME	TORQUE VALUE INCH-POUNDS	TORQUE VALUE NEWTON METERS
PIN BEARING SCREW	55 ± 5	6.2 ± .6
SOLENOID BASE SUB-ASSEMBLY	175 ± 25	19.8 ± 2.8
VALVE SEATS (UPPER&LOWER)	80 ± 8	9.0 ± .9
DISC GUIDE CAPS (UPPER&LOWER)	180 ± 15	20.3 ± 1.7
END CAP	FOOT-POUNDS 55 ± 5	74.6 ± 6.8

\* Repair Kit P/N 042246

2. Lubricate all gaskets with Dow Corning's Valve Seal silicone lubricant or equivalent high grade silicone grease.
3. Replace core/spring sub-assembly (A-C Construction or core (D-C Construction) through solenoid base sub-assembly opening and engage with lever.
4. Install end cap gasket and end cap. Torque end cap to 55 ± 5 ft./lbs. (75 ± 7Nm).
5. Replace bonnet gasket and solenoid base sub-assembly. Torque solenoid base sub-assembly to 175 ± in./lbs. (20 ± 3 Nm).
6. Replace solenoid enclosure and retaining cap or clip.
7. Install valve discs. If lapping is required, refer to the Lapping Seats and Discs section.
8. For stroke setting requirements (adjustment of valve discs), refer to the New Seat and Disc Installation paragraphs of New Spare Parts Kit Section.
9. Install upper and lower springs. Refer to the New Spring Installation section.
10. Replace disc guide cap gaskets and disc guide caps (both ends). Torque disc guide caps to 180 ± 15 in./lbs (20 ± 2 Nm).
11. After maintenance, operate the valve a few times to be sure of proper opening and closing. A metallic click signifies that the solenoid is operating.

## Section 6

# MAINTENANCE

### NEW SPRING INSTALLATION

When it is desired to change to a different form of flow or operating conditions, new upper and lower springs corresponding to the new requirements must be installed. Depressurize valve and turn off electrical supply. Remove the two (2) disc guide caps and old springs.

Install new springs in their proper locations as indicated on the factory labeled tags. Replace disc guide caps and torque to  $180 \pm$  in./lbs. ( $20 \pm 2$  Nm). The smaller diameter end of the Type "38" body springs faces the discs.

#### NOTE

The lower spring is always the weaker of the two and should always be located at the bottom. If the springs are installed in the wrong position, the valve will not function properly.

A method to determine which spring is the weaker is by placing the two springs on the shaft of a screwdriver or similar tool and compressing them. The spring which compresses to the "L" dimen-

sion first is the weaker of the two springs and should be placed on the bottom.

### 6.7 TROUBLESHOOTING

The information in the Troubleshooting Chart is based upon both the tests conducted at the factory and the applied situations in the field. It contains symptoms and usual causes for the described problems, however **DO NOT** assume that these are the only problems that may occur. All available data concerning the trouble should be systematically analyzed before undertaking any repairs or component replacement procedures.

A detailed visual inspection is worth performing for almost all problems and may avoid unnecessary additional damage to the compressor. Always remember to:

- Check for loose wiring.
- Check for damaged piping.
- Check for parts damaged by heat or an electrical short circuit, usually apparent by discoloration or a burnt odor.

Should your problem persist after making the recommended check, consult your nearest Sullair representative or the Sullair Corporation factory toll free at 1-800-348-2722.

# Section 6 MAINTENANCE

## TROUBLESHOOTING

SYMPTOM	PROBABLE CAUSE	REMEDY
COMPRESSOR WILL NOT START	Main Disconnect Switch Open	Close switch.
	Line Fuse Blown	Replace fuse.
	Control Transformer Fuse Blown	Replace fuse.
	Motor Starter Overloads Tripped	Reset. Should trouble persist, check whether motor starter contacts are functioning properly.
	Low Incoming Line Voltage	Check voltage. Should voltage check low, consult power company.
	Defective Discharge Temperature Thermistor Switch	Replace probe and/or board.
COMPRESSOR SHUTS DOWN WITH AIR DEMAND PRESENT	Loss of Control Voltage	Reset. If trouble persists, check that line pressure does not exceed maximum operating pressure of the compressor (specified on nameplate).
	Low Incoming Voltage	Consult power company.
	Excessive Operating Pressure	Defect in pressure switch; check pressure at which contact points open. Separator requires maintenance; check maintenance indicator under full load conditions. High pressure shutdown switch is adjusted too low; readjust. Defective pilot valve; pilot valve should cause Sullicon Control to close the inlet butterfly when the pressure switch contacts open. Repair if defective. Defective blowdown valve; blowdown valve should exhaust sump pressure to the atmosphere when maximum operating pressure is reached.
	Discharge Temperature Thermistor Switch Open	Cooling air flow restricted; clean cooler and check for proper ventilation. Ambient temperature is too high; provide sufficient ventilation. Low fluid level; add fluid. Clogged filter; change the fluid filter element and change the bearing filter element if maintenance indicator shows red. Thermal valve not functioning properly; replace element. Defective discharge temperature thermistor switch; check for a short or open circuit to probe and correct wiring, or also check for short or open circuit to the control card. If current is not present, replace the control card. Should the above check out normal, it is possible that the thermistor probe is defective.
	Low Fluid Pressure	Clogged filter; clean main fluid filter element or change bearing filter element.

## Section 6 MAINTENANCE

### TROUBLESHOOTING (continued)

SYMPTOM	PROBABLE CAUSE	REMEDY
COMPRESSOR WILL NOT BUILD UP FULL DISCHARGE PRESSURE	Air Demand is Too Great	Check service lines for leaks or open valves.
	Dirty Air Filter	Check the filter indicator and change or clean element if required.
	Pilot Pressure Regulator Out of Adjustment	Adjust regulator according to control adjustment instructions in the Maintenance section.
	Defective Pilot Pressure Regulator	Check diaphragm and replace if necessary (kit available).
	Defective Minimum Pressure Valve	Check that the piston is moving freely.
	Inlet Valve Not Opening Completely	Check and readjust control linkage. Broken spring in Sullicon Control. Inlet cylinder not extended.
	Defective Closed Inlet Solenoid Valve	Repair or replace.
	Defective Closed Inlet Solenoid Valve Timer	Replace.
LINE PRESSURE RISES ABOVE CUT-OUT PRESSURE SETTING ON PRESSURE SWITCH	Leak In Control System Causing Loss of Pressure Signals	Check for leaks.
	Defective Pressure Switch	Check that diaphragm and contacts are functioning properly and are not damaged. Repair or replace if necessary (kit available).
	Defective Pilot Valve	Check that Sullicon Control lever is moved to a completely stroked position when the pressure switch contacts close. Repair or replace if necessary (kit available).
	Defective Blowdown Valve	Check that sump pressure is exhausted to the atmosphere when the pressure switch contacts close or repair or replace if necessary (kit available).
	High Pressure Shutdown is Defective or Adjustment is Incorrect	Readjust or replace.
EXCESSIVE COMPRESSOR LUBRICANT CONSUMPTION	Clogged Return Line or Orifice	Clean strainer (screen and o-ring replacement kit available). Clean orifice.
	Separator Element Damaged or Not Functioning Properly	Change separator.
	Leak in the Lubrication System	Check all pipes, connections and components.
PRESSURE RELIEF VALVE OPENS REPEATEDLY.	High Pressure Shutdown Switch is Defective or Out of Adjustment	Readjust below pressure relief valve setting or replace.
	Defective Pressure Relief Valve	Replace pressure relief valve.
	Defective Pressure Gauge	Replace.
	Defective Minimum Pressure Valve	Repair or replace.
	High Separator Differential	Replace separator.

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**MAINTENANCE**

**TROUBLESHOOTING (continued)**

SYMPTOM	PROBABLE CAUSE	REMEDY
PRESSURE RELIEF VALVE OPENS REPEATEDLY (cont'd.)	Defective Blowdown Valve	Repair or replace.
	Defective Muffler	Replace.
	Defective Pressure Switch	Repair or replace.
	Defective Pilot Valve	Repair or replace.
	Defective Sullicon Diaphragm	Replace diaphragm.
	Incorrect Unload Stop Screw Position	Reposition and tighten.
	Incorrect Inlet Butterfly Position	Reposition and tighten.
	Inlet Butterfly Loose	Reposition and tighten.
	Plugged Frozen Control Lines	Replace or thaw as needed.
	Defective Shaft Seal	Replace shaft seal.

## Section 7

# ILLUSTRATIONS AND PARTS LIST

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### 7.1 PROCEDURE FOR ORDERING PARTS

Parts should be ordered from the nearest Sullair Representative or the Representative from whom the compressor was purchased. If for any reason parts cannot be obtained in this manner, contact the factory directly at the address below.

When ordering parts always indicate the **Serial Number** of the compressor. This can be obtained from the Bill of Lading for the compressor or from the Serial Number Plate located on the compressor.

**SULLAIR CORPORATION**  
 Subsidiary of Sundstrand Corporation  
 3700 East Michigan Boulevard  
 Michigan City, Indiana 46360

Telephone: (219) 879-5451  
 See Toll-free Numbers Below  
 Telex: 4946922  
 FAX: (219) 874-1273

**SULLAIR CORPORATION**  
 Parts Distribution Division and Service Department  
 1625 E. Second Street  
 Michigan City, Indiana 46360

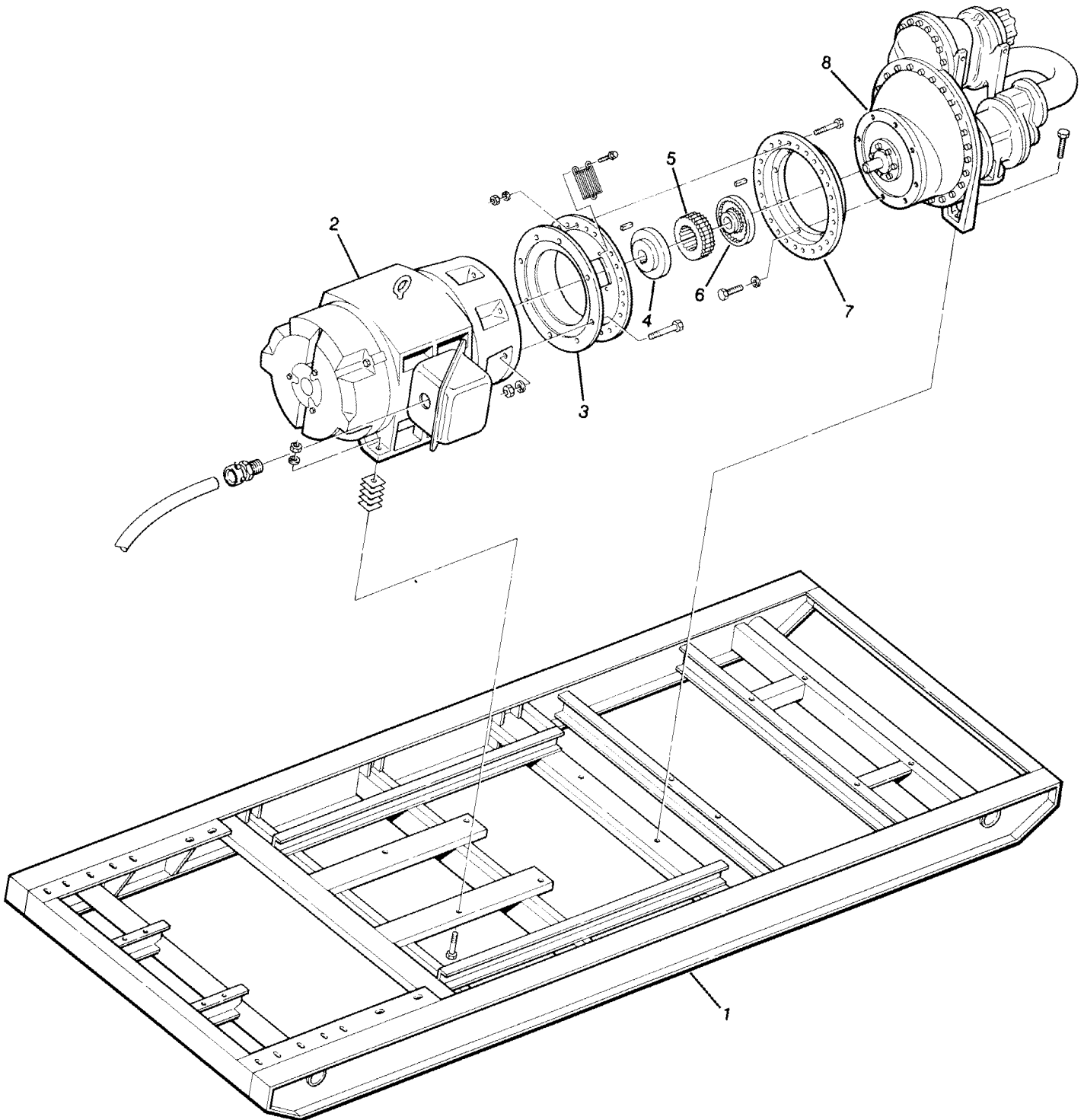
Telephone: (219) 879-5451 or  
 1-800-348-2722 (United States)  
 1-800-525-5506 (Canada)  
 Telex: 4320147  
 FAX: (219) 874-1835 (Parts)  
 FAX: (219) 874-1805 (Service)

### 7.2 RECOMMENDED SPARE PARTS LIST

DESCRIPTION	KIT NUMBER	QUANTITY
replacement element for separator 409805-006	250028-166	2
replacement element for main fluid filter 045111	001094 (element)	2
	001132 (seal)	2
replacement element for air filter 046956 (500-630 CFM)	046968 (primary)	1
replacement element for air filter 046956 (500-630 CFM)	046981 (secondary)	1
replacement element for air filter 046020 (750 CFM)	046299 (primary)	1
replacement element for air filter 046020 (750 CFM)	047523 (secondary)	1
replacement element for air filter 048456 (800-960 CFM)	048462 (primary)	1
replacement element for air filter 048456 (800-960 CFM)	048463 (secondary)	1
repair kit for fluid stop valve 250038-489	250038-490 (piston and parts)	1
	250038-494 (o-rings & poppet)	1
replacement element for bearing filter 250019-296	602568-001	2
repair kit for shaft seal	001811A	1
repair kit for blowdown valve 045116	047524	1
repair kit for regulator valve 048059	048409	1
repair kit for pressure regulator 048354	048410	1
repair kit for air cylinder 250016-990	250014-573	1
repair kit for solenoid valve 250038-755	250038-676	1
	250038-730 (coil)	1
repair kit for Sullicon Control 011682-003	250020-353	1
repair kit for valve assembly 016732B	606208-001	1
repair kit for minimum pressure/check valve 018498A	018514A	1
repair kit for thermal valve 250001-456	250001-349 (element)	1
	046425 (quad ring seal)	1
	049812 (gasket)	1
repair kit for solenoid valve 407390	042246	1
y-line strainer ¼" 240686	240686	1
Sullube 32 lubricant (5 gallon container)	250022-669	1
Sullube 32 lubricant (55 gallon drum)	250020-670	1

Section 7  
**ILLUSTRATIONS AND PARTS LIST**

7.3 MOTOR, FRAME, COMPRESSOR AND PARTS



## Section 7

# ILLUSTRATIONS AND PARTS LIST

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### 7.3 MOTOR, FRAME, COMPRESSOR AND PARTS

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	frame	250000-620	1
2	motor, 200HP (1200 RPM)	250027-586	1
	• motor, 200HP (1800 RPM)	250038-314	1
	• motor, 250HP	050999	1
	• motor, 300HP	250028-724	1
	• motor, 350HP	050780	1
	• motor, 400HP	250006-218	1
3	adapter, motor/compressor	013702	1
4	hub, motor (200HP)	049923	1
	• hub, motor (300HP thru 400HP)	047568	1
5	sleeve, drive (200HP thru 350HP)	047142	1
	• sleeve, drive (400HP)	250006-267	1
6	hub, compressor (200HP thru 350HP)	047141	1
	• hub, compressor (400HP)	250006-266	1
7	adapter	026974	1
8	compressor unit <b>(I)</b>	-	1

**(I)** There is an exchange program whereby a remanufactured compressor unit can be obtained from Sullair distributors or the factory at less cost than the owner could repair the unit. For information regarding the unit exchange program, contact your nearest Sullair representative or the Sullair Corporation.

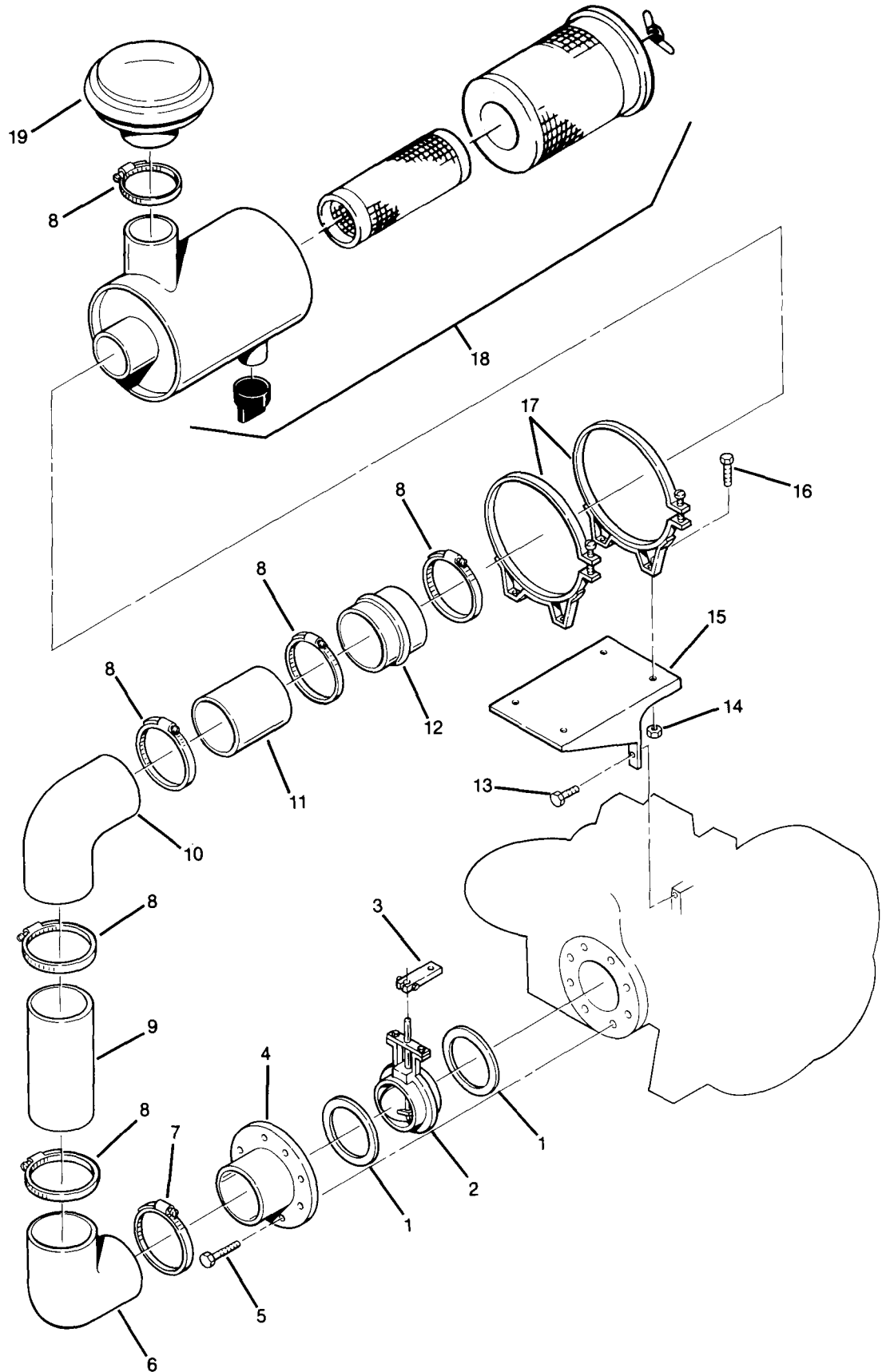
The shaft seal is not considered part of the compressor unit in regard to the 2 year warranty, but the normal Sullair parts warranty applies. For shaft seal repairs, order shaft seal repair kit No. 01811A.

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**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**

# Section 7 ILLUSTRATIONS AND PARTS LIST

## 7.4 AIR INLET SYSTEM



## Section 7

# ILLUSTRATIONS AND PARTS LIST

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### 7.4 AIR INLET SYSTEM

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	gasket, 8½" x 10½" x ½"	040422	2
2	valve, butterfly 8" (500–750 CFM)	040336	1
	• valve, butterfly 8" (800–960 CFM)	040338	1
3	lever, inlet valve	250026–787	1
4	adapter, air inlet (500–750 CFM)	012897	1
	• adapter, air inlet (800–960 CFM)	250001–083	1
5	capscrew, hex gr5 ¾"–10 x 3"	828612–300	8
6	elbow, rubber 90° reducing 8" x 7"	245796	1
7	clamp, hose 8"	043598	1
8	clamp, hose 7"	041992	6
9	duct, air inlet aluminum 7" x 46"	250020–994	1
10	elbow, rubber 90° x 7"	046078	1
11	duct, aluminum 7"od x 9"	232591	1
12	hose, hump 7"	041917	1
13	capscrew, hex gr5 5/16"–18 x 1½"	828605–150	1
14	nut, hex ¾"–16	824206–337	4
15	support, air inlet filter	250000–826	1
16	capscrew, hex gr5 3/8"–16 x 1"	828606–100	4
17	band, mounting 16"	044248	2
18	filter, air assembly (500–630 CFM) <b>(I)</b>	046956	1
	• filter, air assembly(800–960 CFM) <b>(II)</b>	048456	1
	• filter, air assembly (750 CFM) <b>(III)</b>	046020	1
19	cap, air inlet 7"	046307	1

**(I)** For maintenance on air filter no. 046956 (500–630 CFM) order replacement element no. 046968 (primary), and 046981 (secondary).

**(II)** For maintenance on air filter no. 048456 (800–960 CFM) order replacement element no. 048462 (primary), and 048463 (secondary).

**(III)** For maintenance on air filter no. 046020 (750 CFM) order replacement element no. 046299 (primary), and 047523 (secondary).

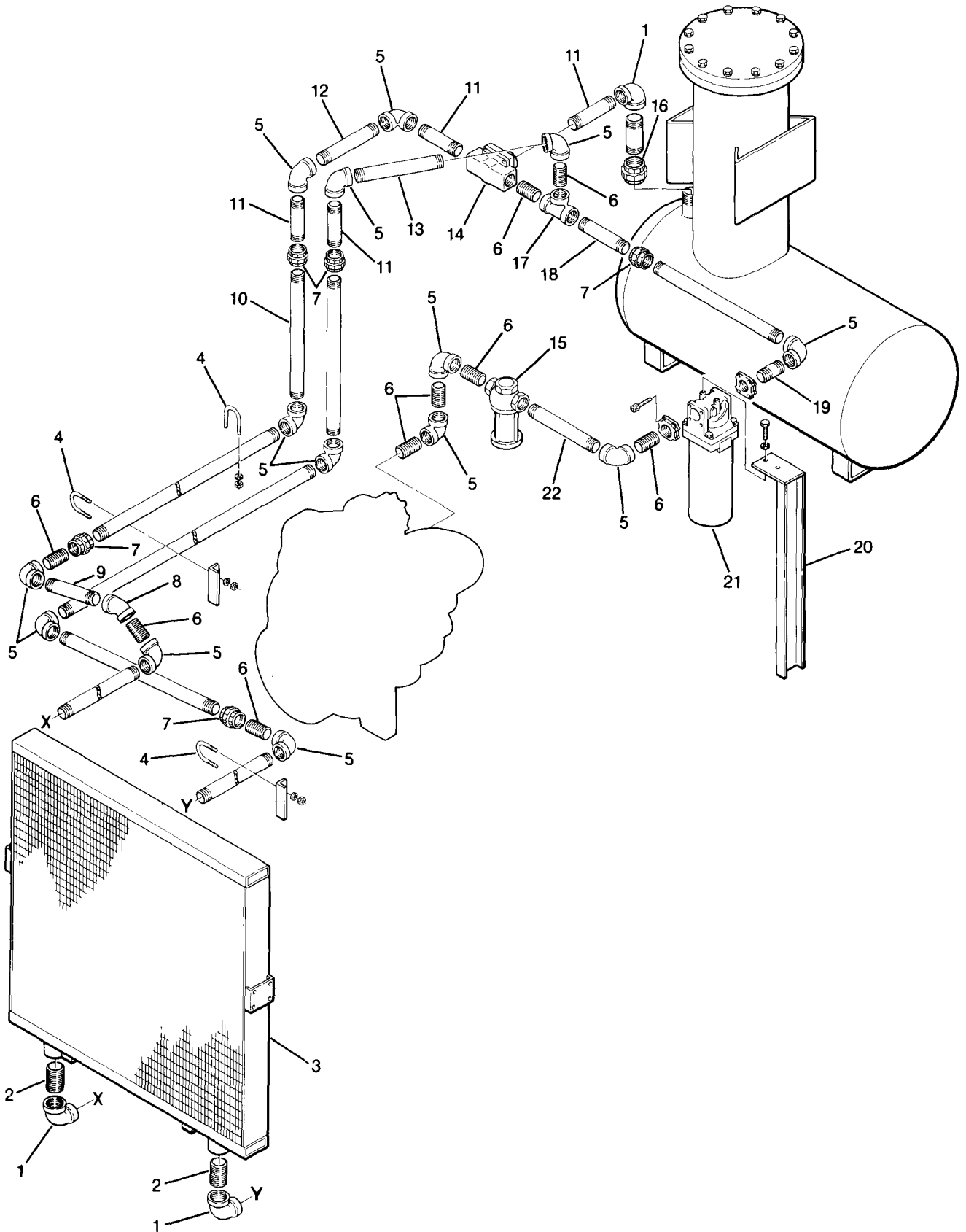
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**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**

Section 7

# ILLUSTRATIONS AND PARTS LIST

## 7.5 COOLING AND LUBRICATION SYSTEM



## Section 7

# ILLUSTRATIONS AND PARTS LIST

---

### 7.5 COOLING AND LUBRICATION SYSTEM

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	elbow, reducing 2" x 1½"	806808-150	3
2	nipple, pipe 2" x close	822232-000	2
3	cooler, fluid (200HP thru 300HP) • cooler, fluid (350HP thru 400HP)	048085 408368	1 1
4	u-bolt, ⅜" x 2" pipe	829006-200	4
5	elbow, pipe 90° 1½"	806530-060	17
6	nipple, pipe 1½" x close	822224-000	6
7	union, pipe 1½"	805730-060	5
8	elbow, pipe 45° 1½"	806430-060	1
9	nipple, pipe 1½" x 10"	822224-100	1
10	nipple, pipe 1½" x 21½"	822224-215	1
11	nipple, pipe 1½" x 7"	822224-070	3
12	nipple, pipe 1½" x 12"	822224-120	1
13	nipple, pipe 1½" x 13½"	822224-135	1
14	valve, thermal (I)	250001-456	1
15	valve, fluid stop (II)	250038-489	1
16	union, pipe 2"	805730-080	1
17	tee, pipe 1½"	806630-060	1
18	nipple, pipe 1½" x 9"	822224-090	1
19	nipple, pipe 1½" x 3½"	822224-035	1
20	bracket, fluid filter support	250002-445	1
21	filter, fluid - main (III)	045111	1
22	nipple, pipe 1½" x 14½"	822224-145	1

(I) For maintenance on thermal valve no. 250001-456, order repair kit no. 250001-349 (element), quad ring seal replacement no. 046425, and gasket replacement no. 049812.

(II) For maintenance on fluid stop valve no. 250038-489, order repair kit no. 250038-494 (o-rings and poppet) and repair kit no. 250038-490 (piston and parts).

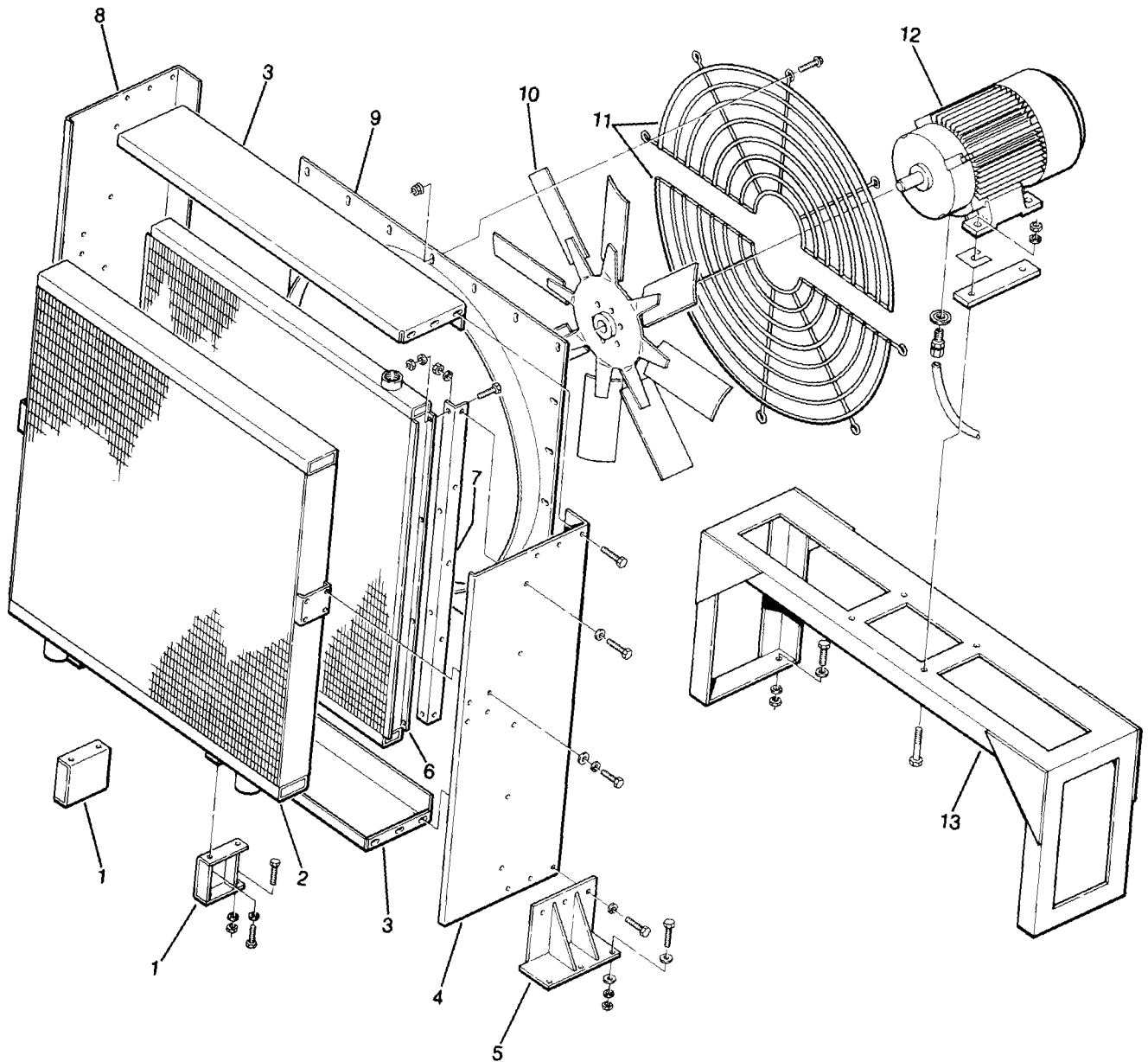
(III) For maintenance on main fluid filter no. 045111, order replacement kit no. 001094 (element), and replacement kit no. 001132 (seal).

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**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**

Section 7  
**ILLUSTRATIONS AND PARTS LIST**

7.6 COOLER ASSEMBLY



## Section 7

# ILLUSTRATIONS AND PARTS LIST

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### 7.6 COOLER ASSEMBLY

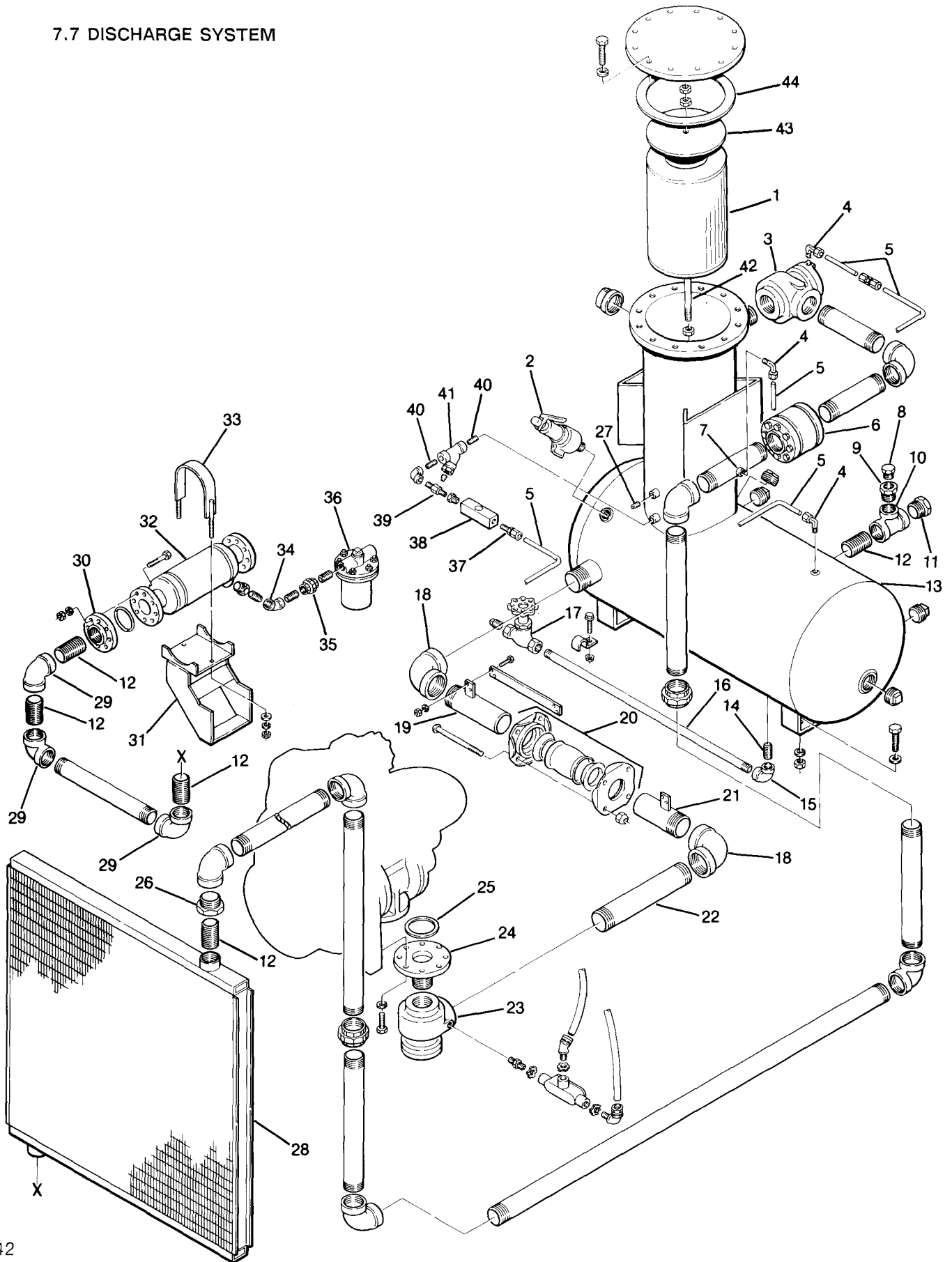
<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	support, cooler	250020-736	2
2	cooler, fluid (200HP thru 300HP) • cooler, fluid (350HP thru 400HP)	048085 408368	1 1
3	panel, top/bottom	250020-738	2
4	panel, cooler side - left hand	250020-740	1
5	bracket, cooler - left hand • bracket, cooler - right hand	250021-004 250021-003	1 1
6	aftercooler, (200HP thru 300HP) • aftercooler, (350HP thru 400HP)	250008-938 406722	1 1
7	angle, aftercooler support	250020-737	4
8	panel, cooler side - right hand	250020-739	1
9	panel, Venturi 42" (200HP thru 300HP) • panel, Venturi 48" (350HP thru 400HP)	250001-202 049998	1 1
10	fan, 42" (200HP thru 300HP) • fan, 48" (350HP thru 400HP)	250004-688 049986	1 1
11	guard, fan 42" • guard, fan 48"	241283 241347	1 1
12	motor, 15HP (200HP thru 300HP) • motor, 20HP (350HP thru 400HP)	050387 050428	1 1
13	support, fan motor	250000-825	1

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**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**

Section 7  
**ILLUSTRATIONS AND PARTS LIST**

7.7 DISCHARGE SYSTEM



## Section 7

**ILLUSTRATIONS AND PARTS LIST****7.7 DISCHARGE SYSTEM**

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	element, separator (I)	409805-006	1
2	valve, relief 1"	245766	1
3	valve, minimum press 100PSIG (689kPa) (II)	018498A	1
4	elbow, tube-m ¼" x ¼"	810504-025	5
5	tubing, steel ¼" (ft.)	841115-004	20 feet
6	valve, check 2½"	240182	1
7	threadolet, pipe ¼"	808100-025	1
8	cap, fluid fill	048063	1
9	adapter, fluid fill	223061	1
10	tee, reducing 2" x 2" x 1½"	806708-086	1
11	glass, sight fluid level 2"	048046	1
12	nipple, pipe 2" x close	822232-000	5
13	receiver, air/fluid separator	047571	1
14	nipple, pipe ½" x close	822208-000	1
15	elbow, pipe 90° ½"	806530-020	1
16	nipple, pipe ½" x 12"	822208-120	1
17	valve, shut off ½"	045626	1
18	elbow, pipe 90° 3"	806530-120	2
19	nipple, half 3" x 10"	822448-100	1
20	coupling, flexible 3"	046817	1
21	nipple, half 3" x 8"	822448-080	1
22	nipple, pipe 3" x 17"	822248-170	1
23	valve, disch check 2½" (500-750 CFM)	014424	1
	valve, disch check 3" (800-960 CFM) (III)	016732B	1
24	adapter, valve discharge	250002-048	1
25	gasket, 2½" flange	046061	3
26	bushing, reducing 2½" x 2"	807610-080	1
27	plug, pipe ¼"	807800-010	1
28	aftercooler, (200HP thru 300HP)	250008-938	1
	• aftercooler, (350HP thru 400HP)	406722	1
29	elbow, pipe 90° 2"	806530-080	3
30	flange, threaded 2"	820330-032	2

(continued on Page 45)

(I) For maintenance on separator element no. 409805-006, order repair kit no. 250028-166.

(II) For maintenance on minimum pressure valve no. 018498A, order repair kit no. 018514A.

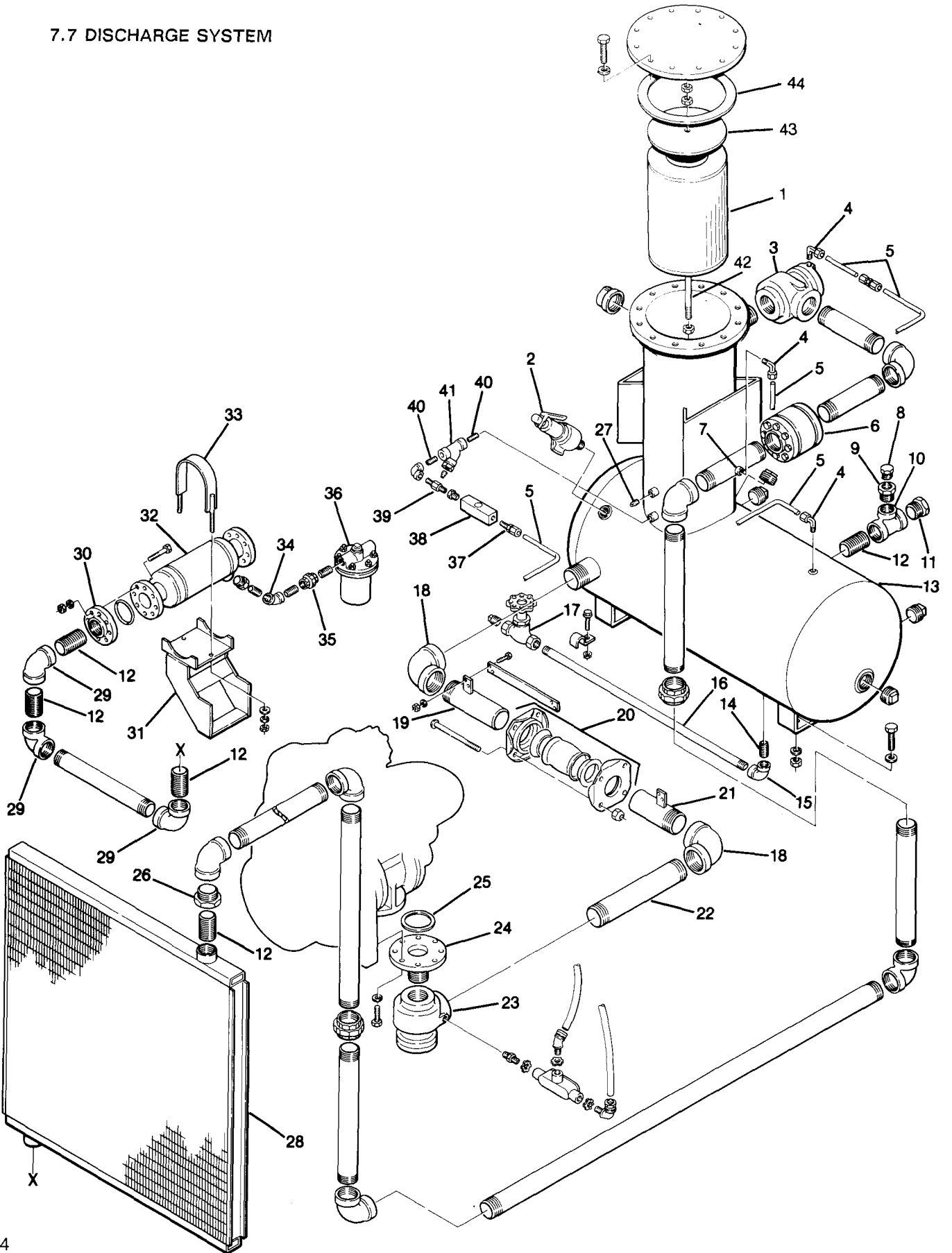
(III) For maintenance on discharge check valve no. 016732B, order repair kit no. 606208-001.

**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**

Section 7

# ILLUSTRATIONS AND PARTS LIST

## 7.7 DISCHARGE SYSTEM



## Section 7 ILLUSTRATIONS AND PARTS LIST

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### 7.7 DISCHARGE SYSTEM (continued)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
31	support, water separator	250000-844	1
32	separator, water	406746	1
33	strap, separator	016586	1
34	elbow, pipe 45° ¾"	806430-030	1
35	union, pipe ¾"	805730-030	1
36	trap, auto ¾"	250006-639	1
37	connector, tube-m ¼" x ¼"	810204-025	4
38	glass, sight	046559	1
39	orifice	022033	1
40	nipple, pipe ¼" x close	822204-000	2
41	strainer, y-line ¼" (IV)	240686	1
42	rod, threaded ¾"-10 x 36"	222918	1
43	plate, separator	223337	1
44	gasket, receiver/separator cover 15½" • gasket, receiver/separator cover 16"	223509 250006-536	1 1

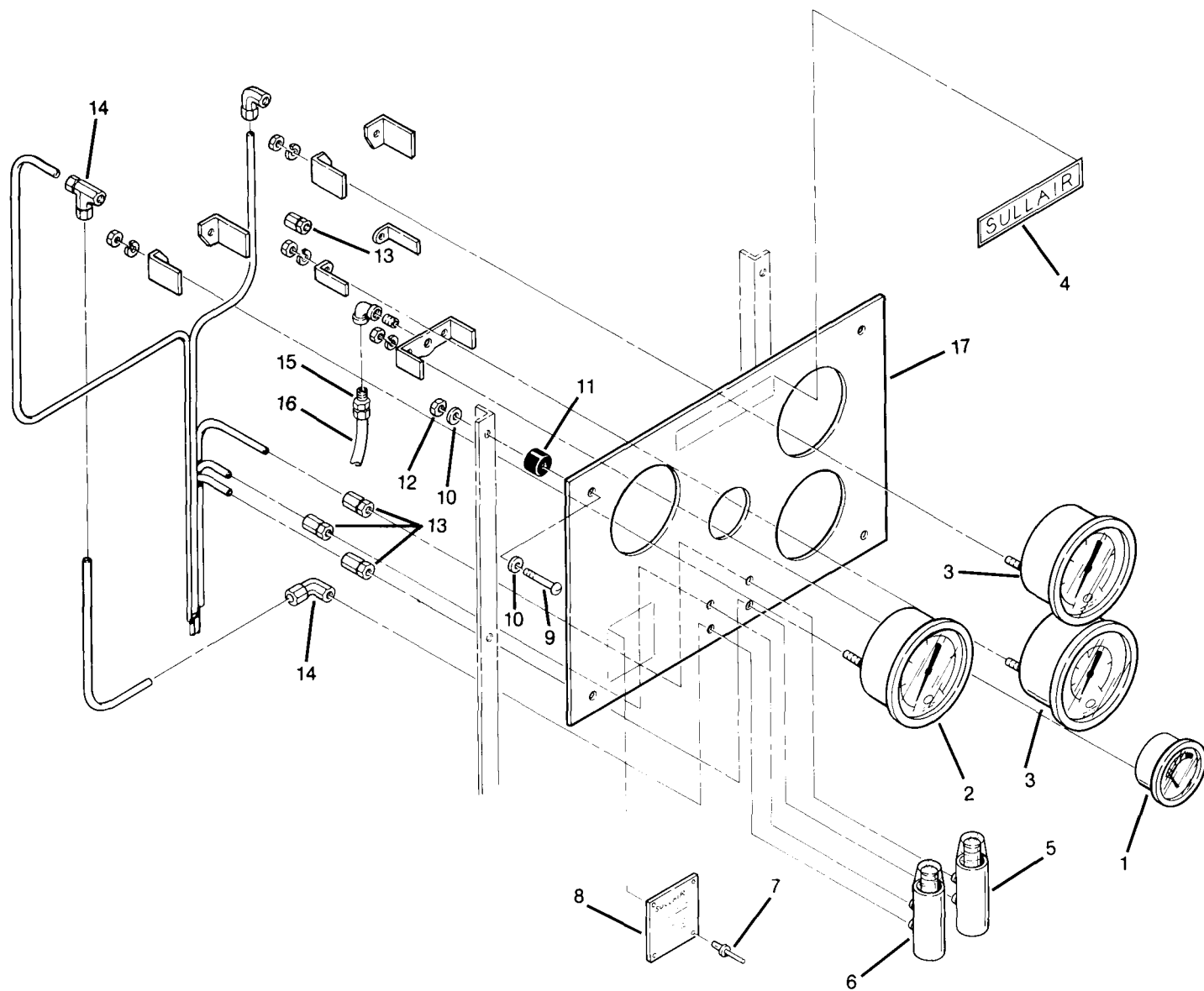
(IV) For maintenance on y-line strainer no. 240686, order repair kit no. 240686.

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PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR

# Section 7 ILLUSTRATIONS AND PARTS LIST

## 7.8 INSTRUMENT PANEL AND PARTS



## Section 7 ILLUSTRATIONS AND PARTS LIST

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### 7.8 INSTRUMENT PANEL AND PARTS

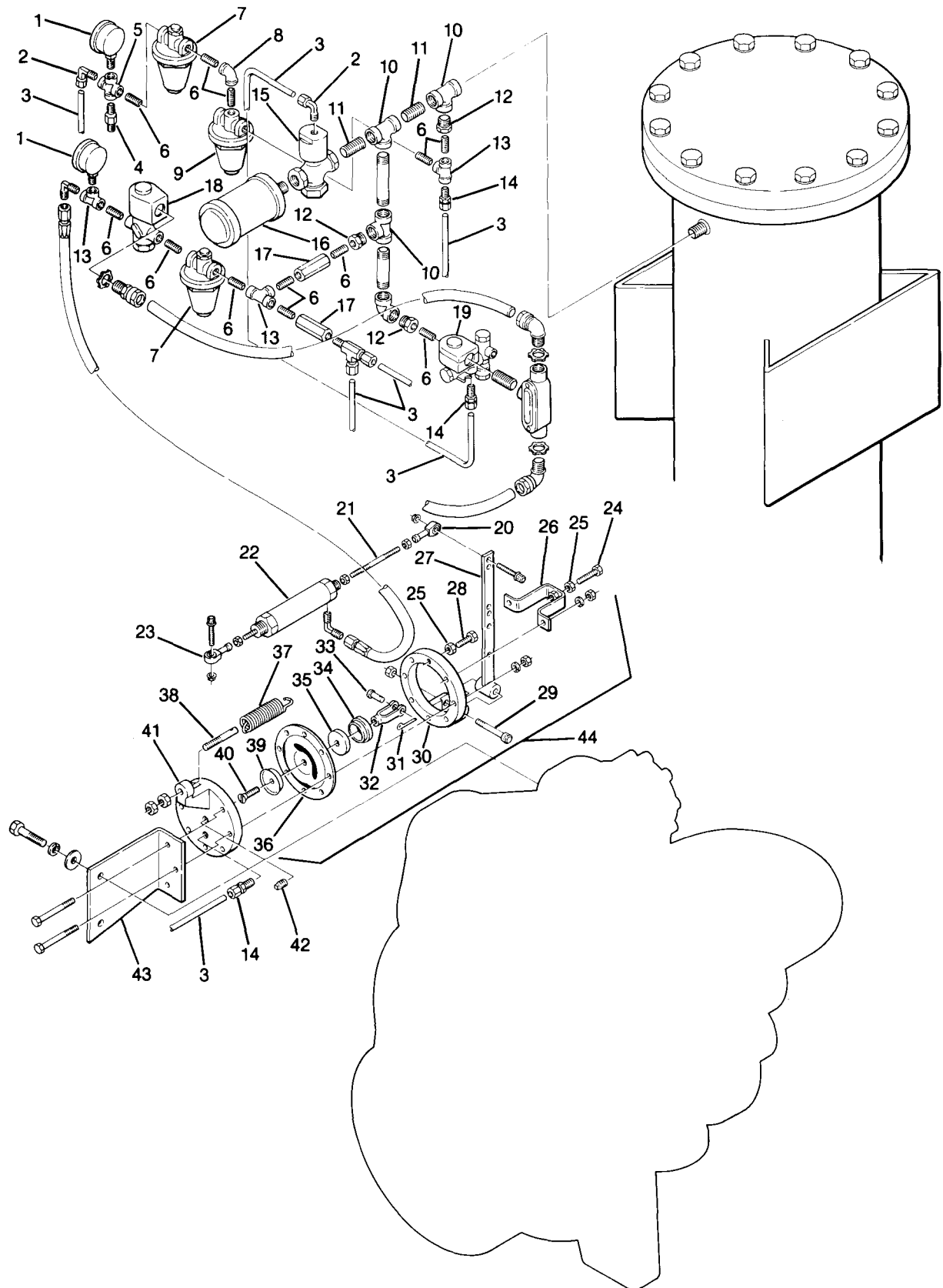
<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	gauge, vacuum	250003-797	1
2	gauge, temperature	045858	1
3	gauge, pressure	048061	2
4	nameplate, Sullair	250035-063	1
5	indicator	046551	1
6	indicator, differential pressure	042148	1
7	fastener, suregrip	041516	4
8	nameplate, Sullair	040052	1
9	capscrew, hex gr5 $\frac{3}{8}$ "-16 x $1\frac{1}{2}$ "	828606-150	4
10	washer, springlock $\frac{3}{8}$ "	837606-125	8
11	isolator, vibration	040091	4
12	nut, hex $\frac{3}{8}$ "-16	828206-337	4
13	connector, tube-f $\frac{1}{4}$ " x $\frac{1}{4}$ "	810104-012	4
14	tee, tube $\frac{1}{4}$ " x $\frac{1}{8}$ "	811004-012	1
15	connector, tube-m $\frac{1}{4}$ " x $\frac{1}{8}$ "	813604-125	1
16	hose, nylon $\frac{1}{4}$ " (ft.)	842215-004	7 feet
17	panel, instrument	250006-975	1

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**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**

# Section 7 ILLUSTRATIONS AND PARTS LIST

## 7.9 CONTROL SYSTEM



## Section 7

# ILLUSTRATIONS AND PARTS LIST

---

### 7.9 CONTROL SYSTEM

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	gauge, pressure 2"	250005-185	2
2	elbow, tube-m ¼" x ¼"	810504-025	10
3	tubing, steel ¼" (ft.)	841015-004	25 feet
4	orifice, pipe plug ¼"	232874	1
5	cross, pipe ¼"	806330-010	1
6	nipple, pipe ¼" x close	822204-000	12
7	valve, pressure regulator (I)	048354	2
8	elbow, pipe 90° ¼"	806530-010	1
9	valve, regulator 400 PSIG (2758kPa) (II)	048059	1
10	tee, pipe ½"	806630-020	3
11	nipple, pipe ½" x close	822208-000	2
12	bushing, reducing ½" x ¼"	807602-010	2
13	tee, pipe ¼"	806630-010	2
14	connector, tube-m ¼" x ¼"	810204-025	10
15	valve, pneumatic (III)	045116	1
16	silencer, air ½"	250023-532	1
17	valve, in-line check	045244	3
18	valve, solenoid 3-way (IV)	250038-666	1
19	valve, solenoid 3-way (V)	407390	1
20	rod end, spherical 5/16" - left hand	042004	1
21	rod, Sullicon Control	250028-170	1
22	cylinder, air control (VI)	250016-990	1
23	rod end, spherical 5/16" - right hand	040136	1
24	screw, machine hex 3/8"-16 x 2"	830106-200	1
25	nut, hex 3/8"-16	824206-337	7
26	bracket, control stop	020864	1
27	lever, control	011084	1

(continued on Page 51)

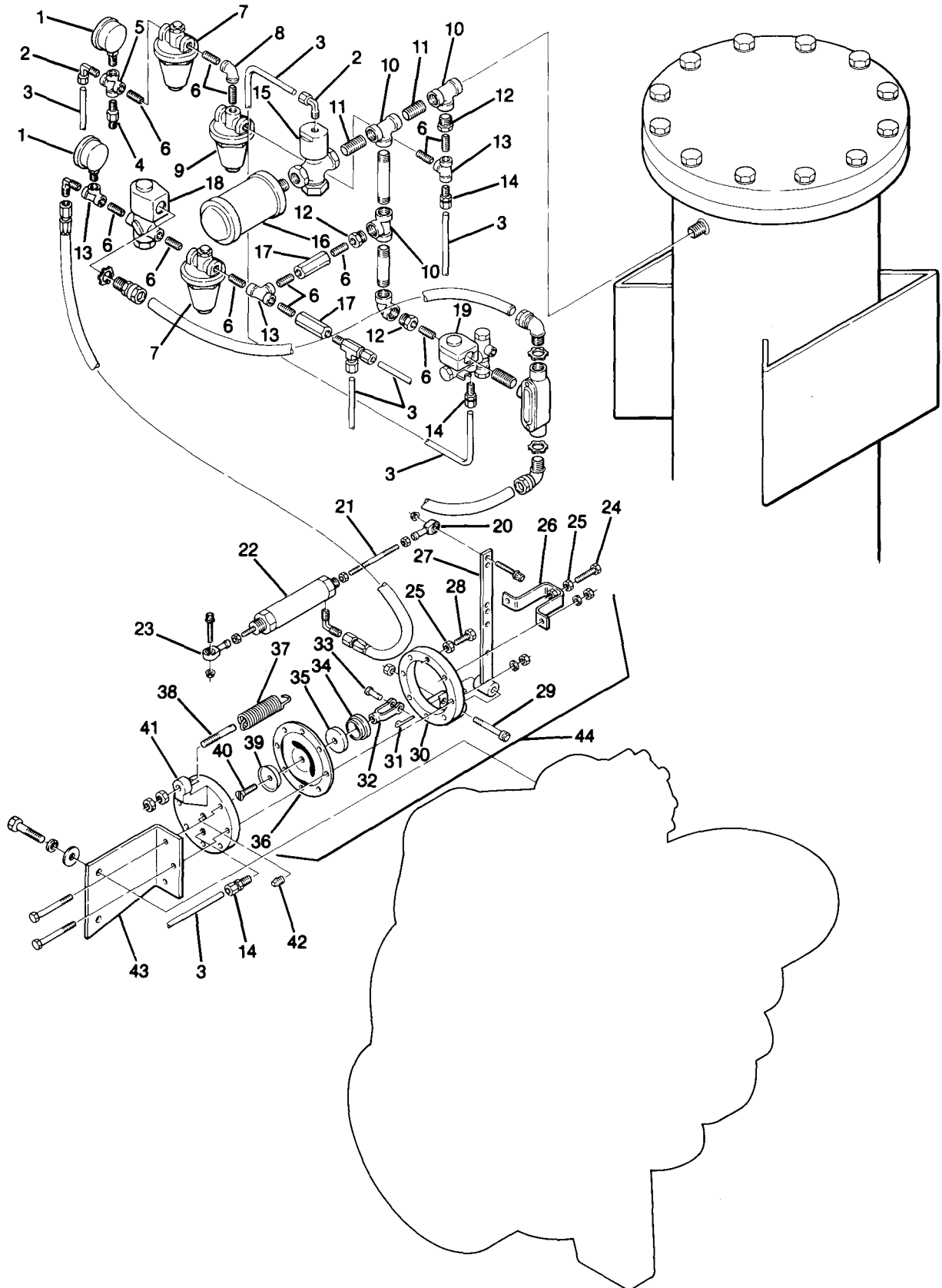
- (I) For maintenance on pressure regulator valve no. 048354, order repair kit no. 048410.
- (II) For maintenance on regulator valve no. 048059, order repair kit no. 048409.
- (III) For maintenance on pneumatic valve no. 045116, order repair kit no. 047524.
- (IV) For maintenance on solenoid valve no. 250038-755, order repair kit no. 250038-676, and coil replacement no. 250038-730.
- (V) For maintenance on solenoid valve no. 407390, order repair kit no. 042246.
- (VI) For maintenance on air control cylinder no. 250016-990, order repair kit no. 250014-573.

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PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR

# Section 7 ILLUSTRATIONS AND PARTS LIST

## 7.9 CONTROL SYSTEM



## Section 7

**ILLUSTRATIONS AND PARTS LIST****7.9 CONTROL SYSTEM (continued)**

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
28	screw, machine hex $\frac{5}{16}$ " - 24 x 2"	831105-200	1
29	screw, machine shoulder $\frac{3}{8}$ "-16 x 2"	830506-200	1
30	body, control	021635	1
31	pin, cotter $\frac{1}{16}$ " x $\frac{3}{4}$ "	827101-075	1
32	yoke, rod end $\frac{1}{4}$ "-28	040138	1
33	pin, yoke $\frac{1}{4}$ "	040065	1
34	plunger	020094	1
35	seal, cup	042538	1
36	diaphragm, Sullicon	250020-028	1
37	spring, control	250006-526	1
38	bolt, adjusting Sullicon spring	250009-134	1
39	washer, back-up	021172	1
40	screw, sealing $\frac{1}{4}$ "-28 x $\frac{3}{4}$ "	041264	1
41	cover, control	021654	1
42	plug, pipe $\frac{1}{4}$ "	807800-010	1
43	bracket, Sullicon (6" inlet)	250031-765	1
	• bracket, Sullicon (8" inlet)	250031-766	1
44	control, Sullicon (less bracket) (VII)	011682-003	1

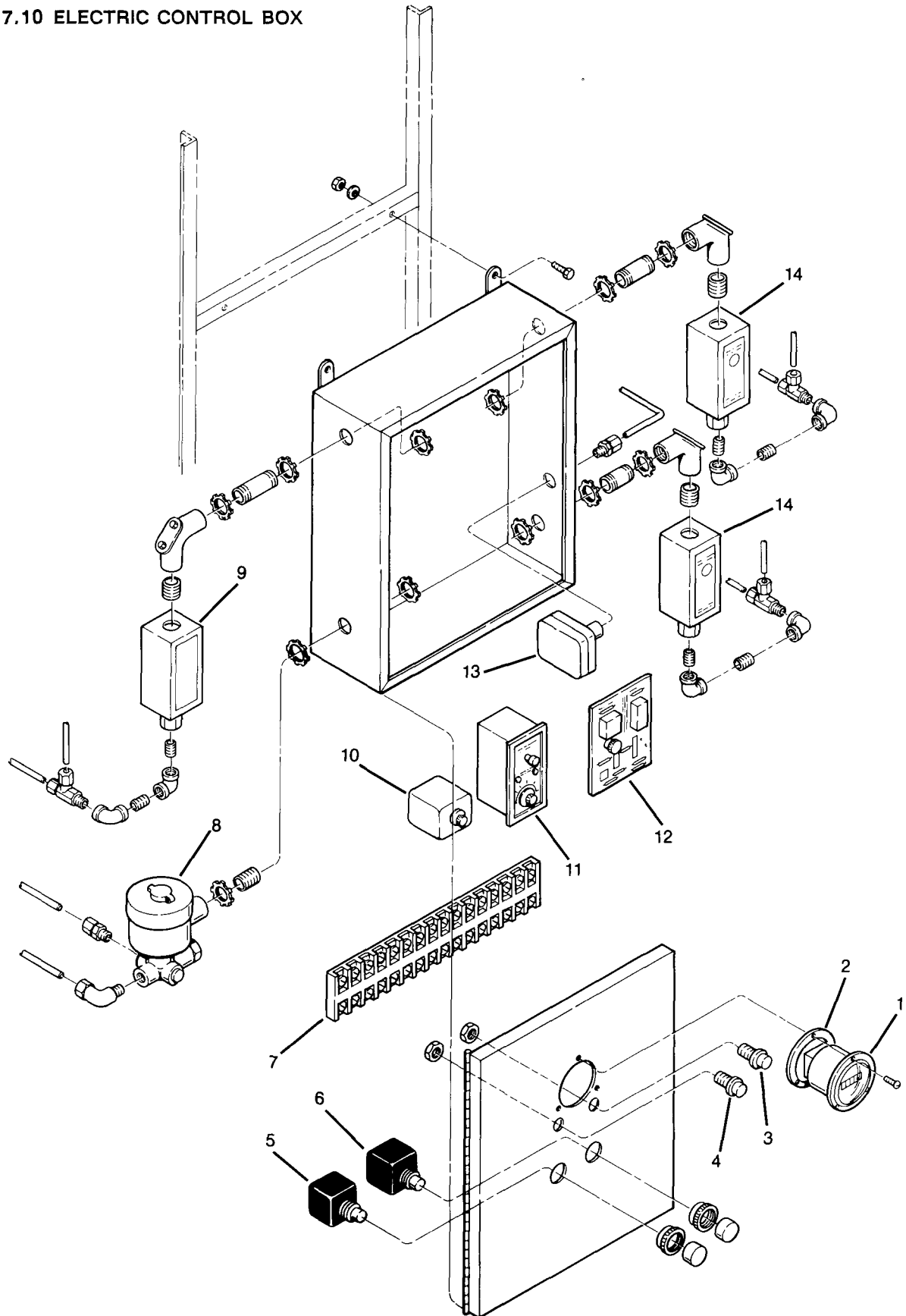
(VII) For maintenance on Sullicon Control 011682-003, order repair kit no. 250020-353.

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**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**

# Section 7 ILLUSTRATIONS AND PARTS LIST

## 7.10 ELECTRIC CONTROL BOX



## Section 7

# ILLUSTRATIONS AND PARTS LIST

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### 7.10 ELECTRIC CONTROL BOX

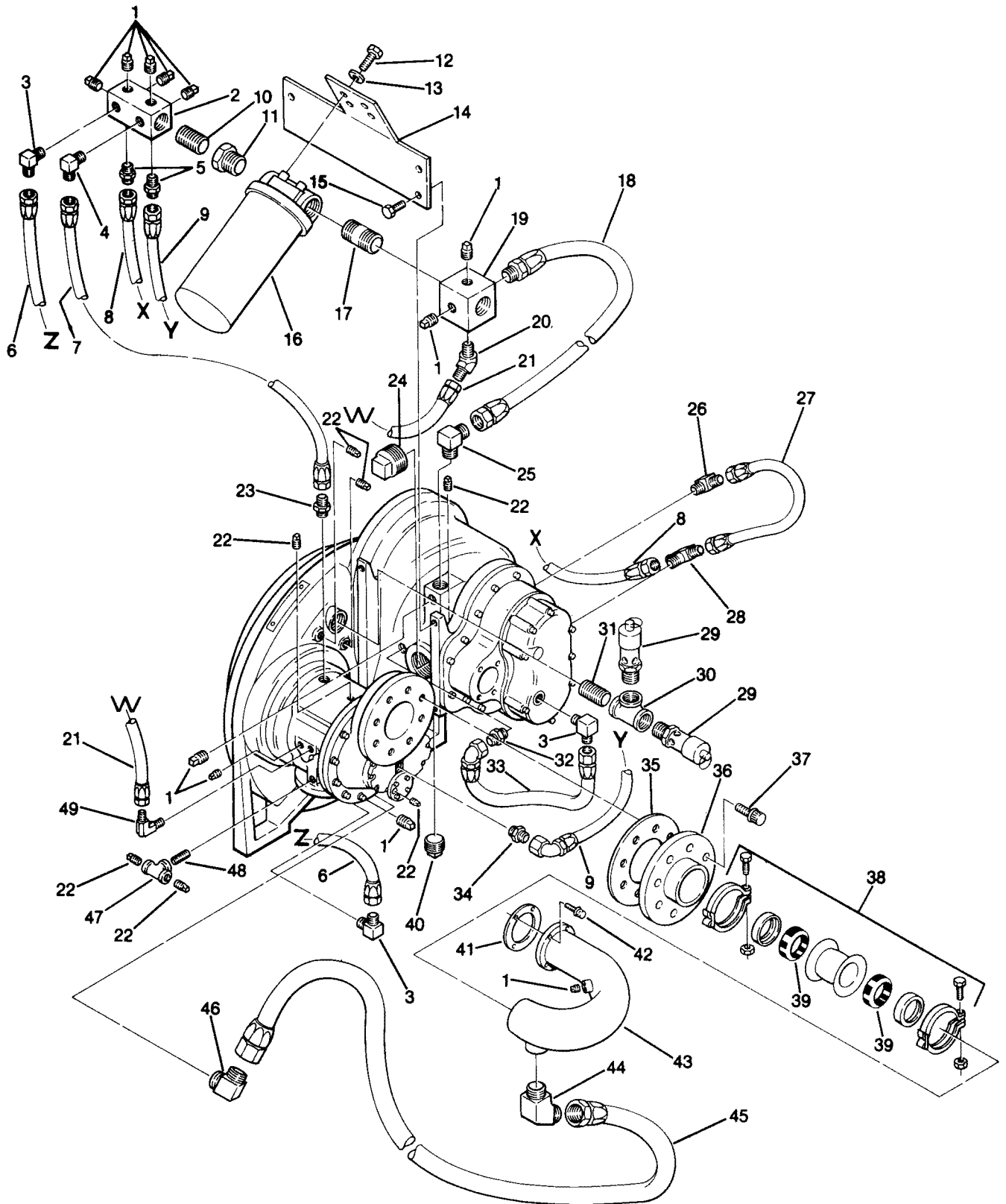
<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	hourmeter, 2½"	042988	1
2	gasket, hourmeter	410353	1
3	holder, lamp	043383	1
	• lens, green	043385	1
	• bulb	043386	1
	• gasket, lamp holder	241808	1
	• gasket, lens	241809	1
4	holder, lamp	043383	1
	• lens, red	043384	1
	• bulb	043386	1
	• gasket, lamp holder	241808	1
	• gasket, lens	241809	1
5	pushbutton, START	041967	1
6	pushbutton, STOP	042235	1
7	block, terminal and track	041493	1
8	valve, solenoid	250038-846	1
9	switch, pressure	040694	1
10	timer, relay	250016-013	1
11	timer	250007-255	1
12	control, temperature	250029-084	1
13	switch, pressure	043428	1
14	switch, pressure	245753	2

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PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR

# Section 7 ILLUSTRATIONS AND PARTS LIST

## 7.11 UNIT TUBING



## Section 7 ILLUSTRATIONS AND PARTS LIST

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### 7.11 UNIT TUBING

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	plug, pipe ½"	807800-020	11
2	manifold, bearing	227238	1
3	elbow, hose-m ½" x ½"	860208-050	3
4	elbow, hose-m ⅝" x ½"	860210-050	1
5	connector, hose ⅜" x ½"	860106-050	2
6	hose, hydraulic ½" x 32"	249608-008	1
7	hose, hydraulic ⅝" x 11"	249610-005	1
8	hose, hydraulic ⅜" x 40"	249606-006	1
9	hose, hydraulic ⅜" x 33"	249606-005	1
10	nipple, pipe 1" x close	822216-000	1
11	bushing, reducing 1¼" x 1"	807605-040	1
12	capscrew, hex ⅜" x ¾"	828205-075	4
13	washer, regular ⅝"	837205-071	4
14	bracket, filter	017211	1
15	capscrew, hex ⅝" x 1½"	828210-150	3
16	filter, bearing (I)	250019-296	1
17	nipple, close 1¼" x 3½"	822220-035	1
18	hose, hydraulic ½" x 13"	249608-006	1
19	manifold, injection	227239	1
20	elbow, hose 45° ½" x ½"	860008-050	1
21	hose, hydraulic ½" x 24"	249608-005	1
22	plug, pipe ¼"	807800-015	5
23	connector, hose ⅝" x ⅜"	860110-038	1
24	plug, pipe 2½"	807800-100	1
25	elbow, hose ½" x ¾"	860208-075	1
26	elbow, hose ⅜" x ¼"	860206-025	1
27	hose, hydraulic ⅜" x 13"	249606-007	1
28	tee, hose ⅜" x ¼"	861706-025	1
29	valve, pressure relief	040647	2
30	tee, pipe reducing 1¼" x 1" x 1"	806705-044	1
31	nipple, pipe 1¼" x close	822220-000	1
32	connector, hose ½" x ¼"	860108-025	1
33	hose, hydraulic ½" x 29"	249608-007	1
34	connector, hose ⅜" x ¼"	860106-025	1

(continued on Page 59)

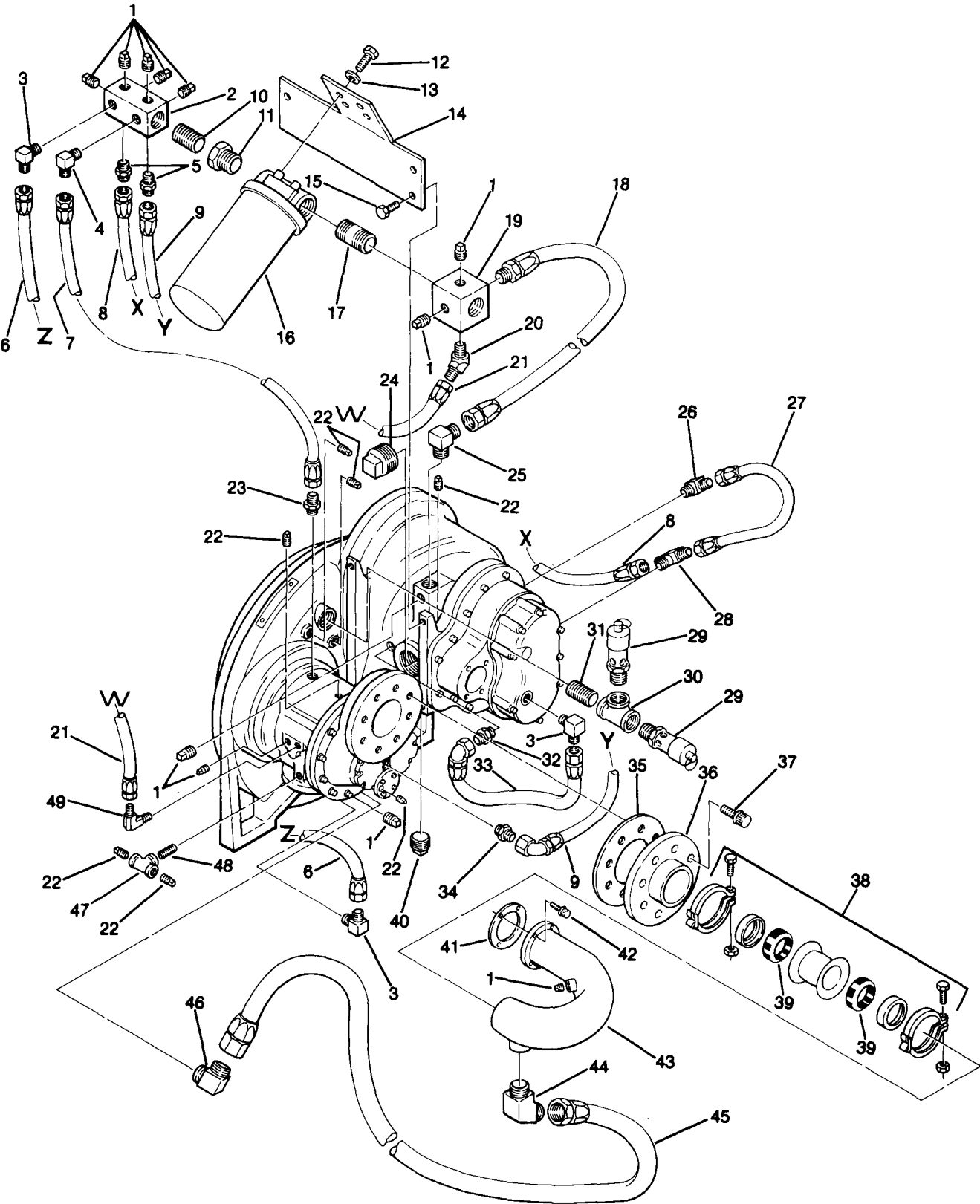
(I) For maintenance on bearing filter no. 250019-296, order repair kit no. 602568-001.

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**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**

# Section 7 ILLUSTRATIONS AND PARTS LIST

## 7.11 UNIT TUBING



## Section 7

# ILLUSTRATIONS AND PARTS LIST

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### 7.11 UNIT TUBING (continued)

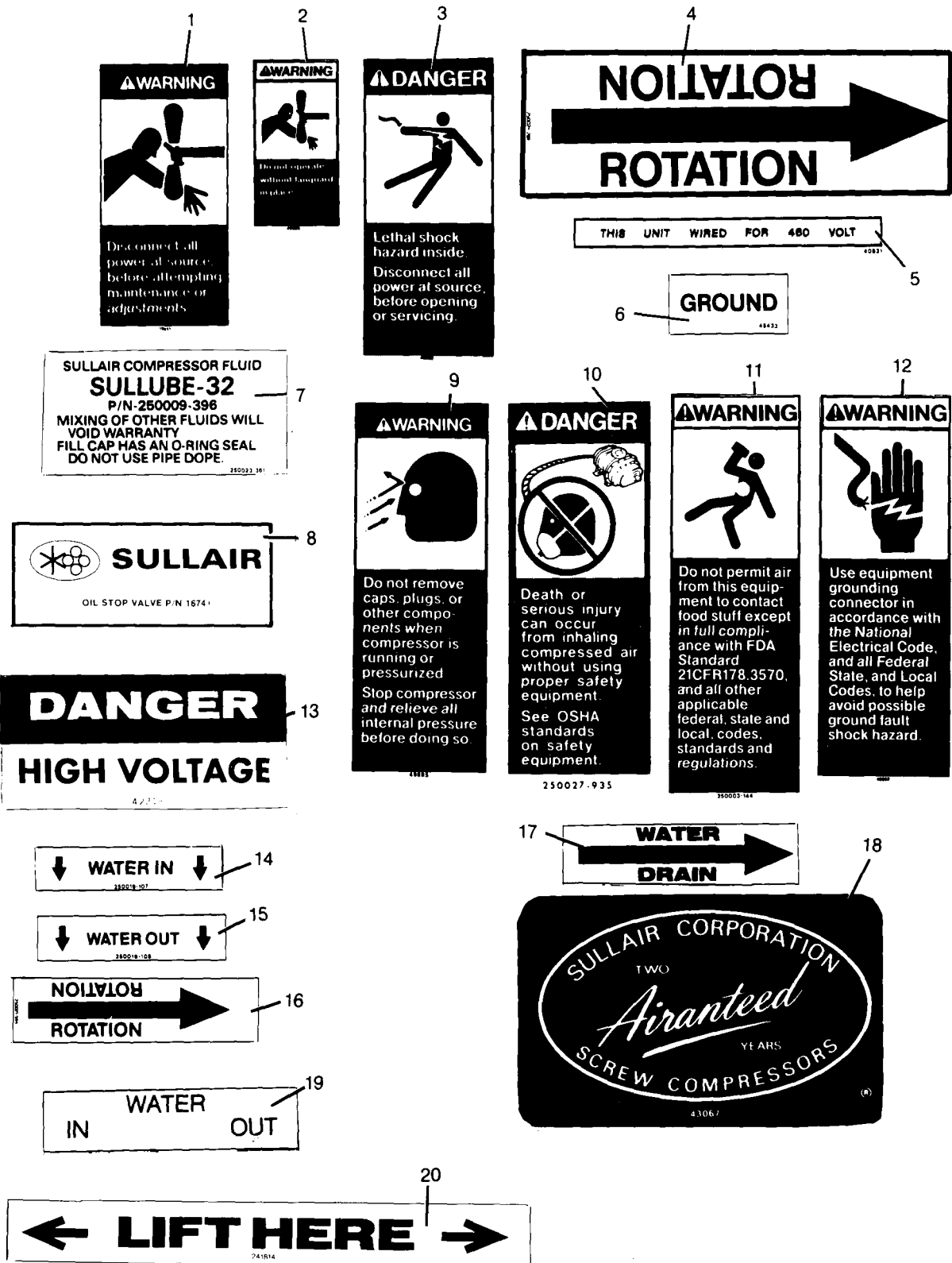
<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
35	gasket, air inlet	028078	1
36	adapter, air inlet	013410	1
37	capscrew, ferry head gr8 $\frac{3}{4}$ " x $1\frac{1}{2}$ "	828412-150	8
38	coupling, flexible $3\frac{1}{2}$ "	040356	1
39	gasket, flexible	040771	2
40	plug, pipe 1"	807800-040	1
41	gasket, air outlet	028077	1
42	capscrew, ferry head gr8 $\frac{3}{8}$ " x $\frac{1}{2}$ "	828406-150	4
43	adapter, air outlet	250022-747	1
44	elbow, 45°	860020-100	1
45	hose, hydraulic 1" x 38"	249610-005	1
46	elbow, 90°	860220-100	1
47	tee, pipe $\frac{1}{4}$ "	806630-010	1
48	nipple, pipe $\frac{1}{4}$ " x close	822204-000	1
49	elbow, 90° $\frac{1}{2}$ " x $\frac{1}{4}$ "	860208-025	1

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PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR

# Section 7 ILLUSTRATIONS AND PARTS LIST

## 7.12 DECAL GROUP



## Section 7 ILLUSTRATIONS AND PARTS LIST

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### 7.12 DECAL GROUP

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	sign, warning sever fan	049855	2
2	sign, warning sever fan port	049965	1
3	sign, danger electrocution	049850	1
4	decal, rotation	250021-286	1
5	decal, 460 volt	040631	1
6	decal, grounding lug	045433	1
7	decal, compressor fluid Sullube 32	250023-361	1
8	decal, fluid stop valve P/N 016742	410239	1
9	sign, warning compressor fluid fill cap	049685	1
10	sign, danger air breathing	250027-935	1
11	sign, warning "food grade" lube	250003-144	1
12	sign, warning ground fault	049852	1
13	decal, danger high voltage	042218	1
14	decal, water in	250019-107	1
15	decal, water out	250019-108	1
16	decal, rotation	250021-564	1
17	decal, water drain	250022-310	1
18	decal, airanted 2 year - white	043067	1
19	decal, water inlet/outlet	250022-810	1
20	decal, fork lifting	241814	4

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**PLEASE NOTE: WHEN ORDERING PARTS, INDICATE SERIAL NUMBER OF COMPRESSOR**





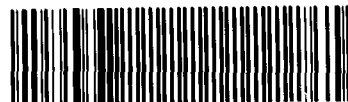
# WORLDWIDE SALES AND SERVICE

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## SULLAIR CORPORATION

A SUBSIDIARY OF SUNDSTRAND CORPORATION

3700 E. Michigan Blvd. Michigan City, Indiana 46360-9990  
Telephone (219) 879-5451 Telex 4946922



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