



INDUSTRIAL AIR COMPRESSOR

**LS-12 & LS-16
40, 50, 60, 75 & 100HP
(30, 37, 45, 55 & 75KW)
STANDARD & 24 KT
(U.S.A.)**

**OPERATOR'S
MANUAL AND
PARTS LIST**

**KEEP FOR
FUTURE
REFERENCE**

Part Number 02250058-882
eSullair Corporation

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1.1 GENERAL

Sullair Corporation and its subsidiaries design and manufacture all of their 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. Read this manual prior to startup.

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 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 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 1/2" (13mm) inside diameter is to be connected to the shut-off (throttle) valve, to reduce

pressure in case of hose failure, per all applicable Federal, State and Local codes, standards and regulations.

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 1/2" (13mm) 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 (23m) of hose in runs of air hose exceeding 1/2" (13mm) 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 filler 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 (2.1 bar) for cleaning purposes, and then only with effective chip guarding and personal protective equipment.

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

L. DO NOT tamper with sump and unit (if provided) relief valves. Check the relief valve as recommended in the Maintenance Section of this manual or at a minimum of at least weekly to make sure it is not blocked, clogged, obstructed or otherwise disabled. **DO NOT** change the factory setting of the relief valve.

M. If the compressor is installed in an enclosed area, it is necessary to vent the relief valve to the outside of the structure or to an area of non-exposure.

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1.4 FIRE AND EXPLOSION

WARNING

When installing a Base Load Transfer (BLT) System, remove jumpers between 16–17 & 18–19 (Dual Control Compressors) so the other compressor does not backfeed defeating the shut-down circuitry.

A. Clean up spills of lubricant or other combustible substances immediately, if 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 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 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 any Federal, State or Local Codes or regulations.

DANGER

Death or serious injury can result from inhaling compressed air without using proper 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. Consult the compressor operator's manual lubrication section for information pertaining to compressor fluid fill.

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.

F. Dry test all shutdown circuits prior to starting the compressor after installation.

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 Federal, State and Local codes.

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 condition 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 a level surface 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 fully 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

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cause the compressor to tumble off, possibly causing serious injury or property damage in the process.

O. DO NOT use the lifting eye bolt on the compressor motor, if supplied, to lift the entire compressor package.

1.10 ENTRAPMENT

A. If the compressor enclosure is large enough to hold a person and if it is necessary to enter it to per-

form 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.

2.1 INTRODUCTION

Your new Sullair flood-lubricated rotary screw air compressor will provide you with a unique experience in improved reliability and greatly reduced maintenance.

Compared to other types of compressors, the Sullair rotary screw is unique in mechanical reliability, with "no wear" and "no inspection" required of the working parts within the compressor unit.

Read Section 6 (Maintenance) to see how surprisingly easy it is to keep your air compressor in top operating condition.

2.2 DESCRIPTION OF COMPONENTS

Refer to Figures 2-1 and 2-2. The components and assemblies of the air compressor are clearly shown. The complete package includes **compressor, electric motor, starter, compressor inlet system, compressor discharge system, compressor lubrication and cooling system, capacity control system, instrument panel, aftercooler**

and a **combination separator and trap**, all mounted on a heavy gauge steel frame.

On air-cooled models, a fan draws air over the motor and forces it out through the combined aftercooler and fluid cooler thereby removing the compression heat from the compressed air and the cooling fluid.

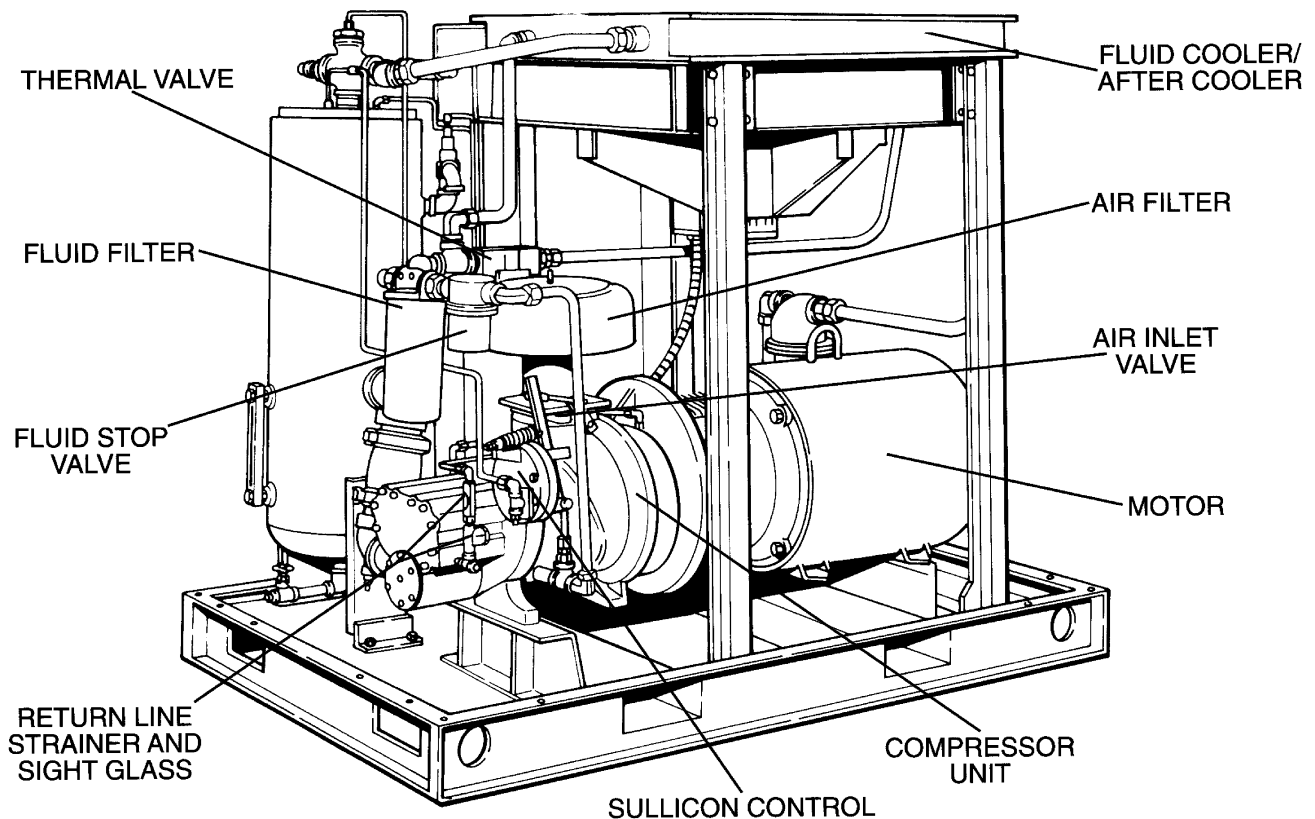
On water-cooled models, a shell and tube heat exchanger is mounted on the compressor frame. Fluid is piped into the heat exchanger where compression heat is removed from the fluid. Another similar heat exchanger cools the compressed air.

Both air-cooled and water-cooled versions have easily accessible items such as the fluid filter and control valves. The inlet air filter is also easily accessible for servicing.

2.3 SULLAIR COMPRESSOR UNIT, FUNCTIONAL DESCRIPTION

Sullair air compressors feature the Sullair compressor unit, a single-stage, positive displacement, flood lubricated-type compressor. This unit pro-

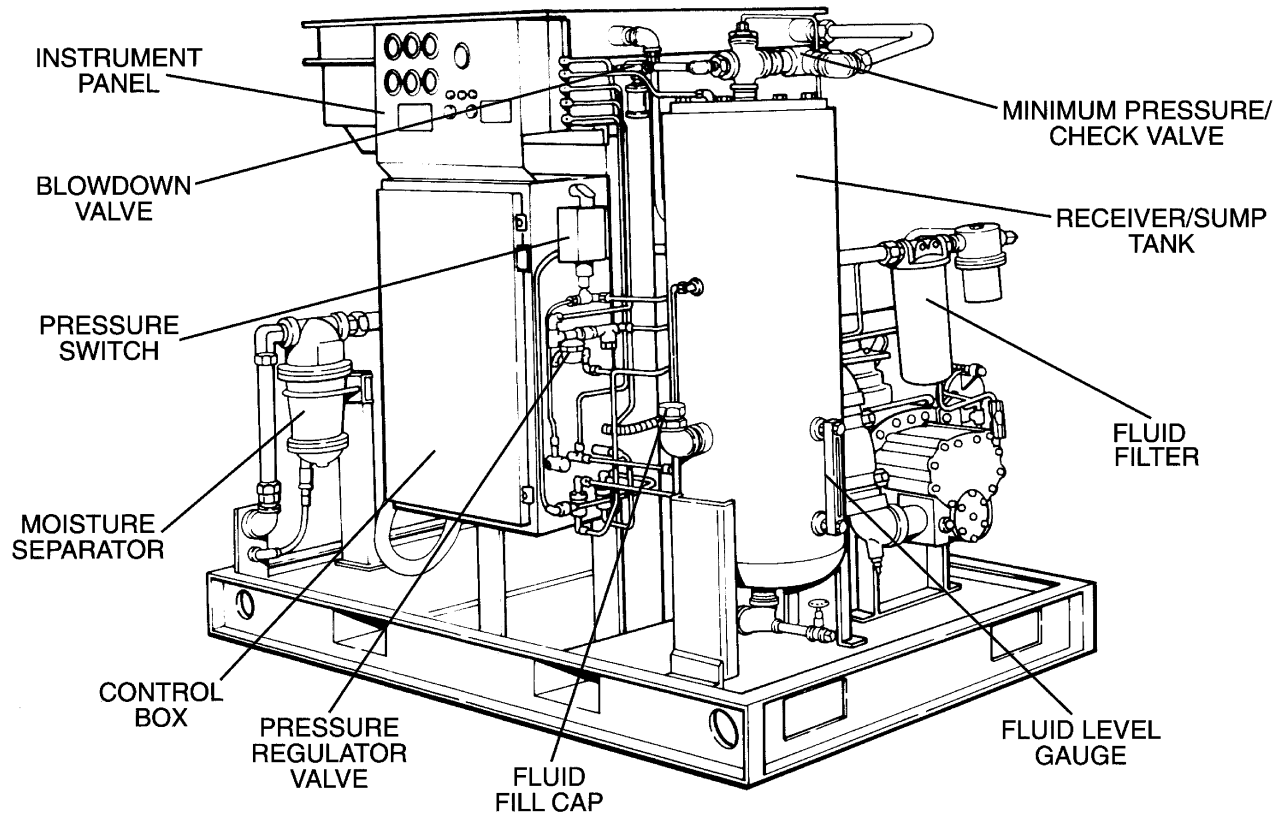
Figure 2-1 Sullair Rotary Screw Air Compressor



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Figure 2–2 Sullair Rotary Screw Air Compressor (Typical Air–cooled Compressor Shown)



vides continuous pulse–free compression to meet your needs. With a Sullair compressor, there is no maintenance or inspection of the internal parts of the compressor unit permitted in accordance with the terms of the warranty.

Sullair 24KT compressors are filled with a fluid which rarely needs to be changed. In the event a change of fluid is required, use only Sullair 24KT fluid. **MIXING OF OTHER LUBRICANTS WITHIN THE COMPRESSOR UNIT WILL VOID ALL WARRANTIES!**

Sullair recommends that a 24KT sample be taken at the first filter change and sent to the factory for analysis. This is a free service. The sample kit with instruction and self–addressed container is to be supplied by your Sullair dealer at start–up. The user will receive an analysis report with recommendations.

Fluid is injected into the compressor unit in large quantities and mixes directly with the air as the ro-

tors turn, compressing the air. The fluid flow has three basic functions:

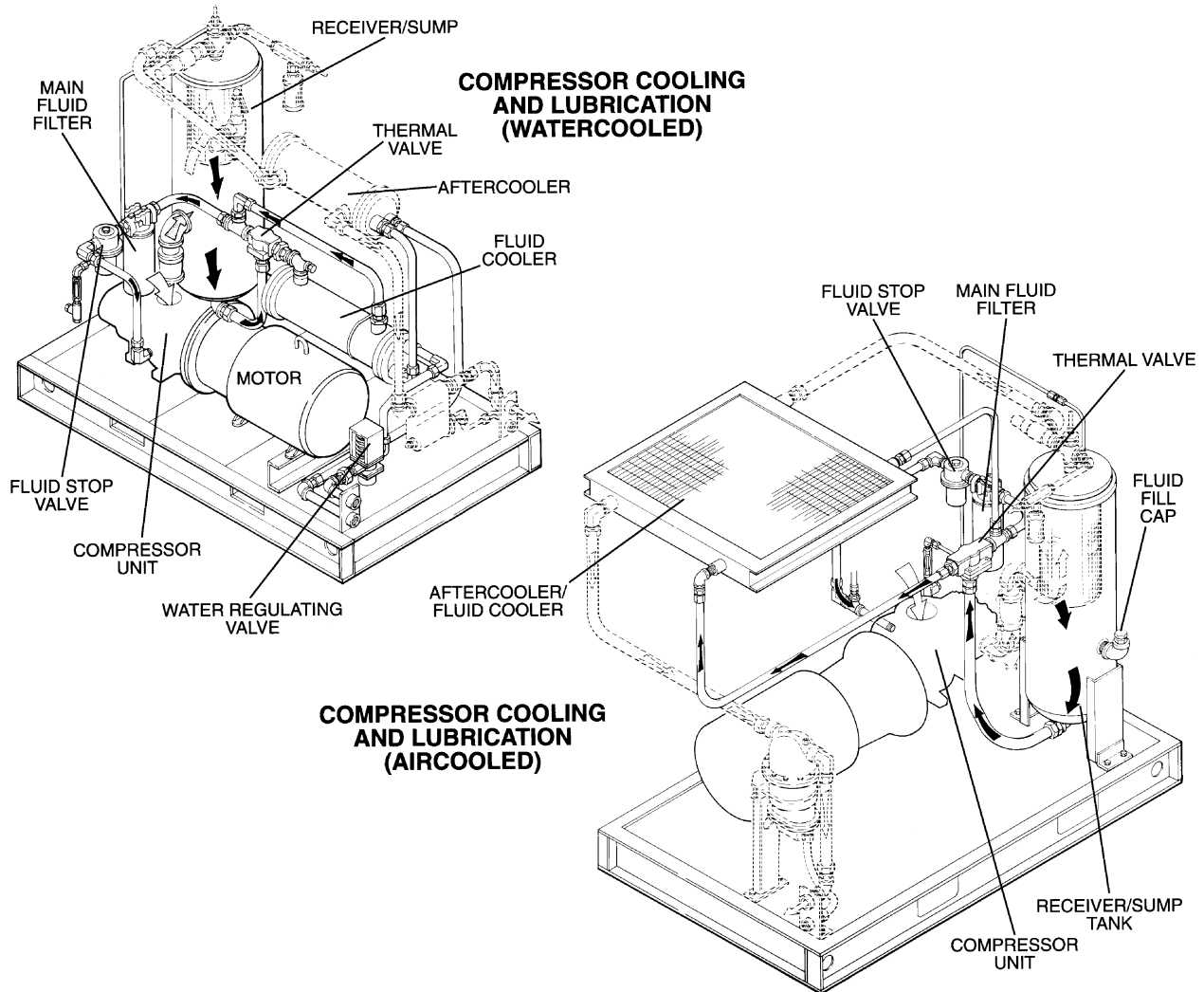
1. As coolant, it controls the rise of air temperature normally associated with the heat of compression.
2. Seals the leakage paths between the rotors and the stator and also between the rotors themselves.
3. Acts as a lubricating film between the rotors allowing one rotor to directly drive the other, which is an idler.

After the air/fluid mixture is discharged from the compressor unit, the fluid is separated from the air. At this time, the air flows through an aftercooler and separator, then to your service line while the fluid is being cooled in preparation for reinjection.

2.4 COMPRESSOR COOLING AND LUBRICATION SYSTEM, FUNCTIONAL DESCRIPTION

Refer to Figure 2–3. The **cooling system** (air–cooled version) consists of a **fan, fan motor, radiator–type aftercooler/fluid cooler, full flow fluid filter, thermal valve, fluid stop valve and inter-**

Figure 2–3 Compressor Fluid Cooling and Lubrication System



connecting piping and tubing. For water–cooled models, two shell and tube heat exchangers and a water–flow regulating valve are substituted for the radiator–type coolers listed above.

The pressure in the receiver/sump causes fluid flow by forcing the fluid from the high pressure area of the sump to an area of lower pressure in 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 170_F (77_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.

As the discharge temperature rises above 170_F (77_C), due to the heat of compression, the ther-

mal valve begins to close and a portion of the fluid then flows through the cooler. From the cooler the fluid flows to the main filter and then on to the compressor unit.

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 the fluid filter, thus assuring properly filtered lubricant for bearing supply.

The fluid filter has a replacement element and an integral pressure bypass valve. A gauge on the instrument panel shows red when the filter needs servicing. This gauge has a pressure setting lower than that of the bypass valve. After the initial 50 hour filter change, the gauge will rarely show red under normal operating conditions.

The fluid stop valve prevents fluid from filling the

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compressor unit when the compressor is shut down. When the compressor is operating, the fluid stop valve is held open by air pressure from the compressor unit allowing a free flow of fluid from the receiver/sump back to the compressor unit. On shutdown, the compressor unit pressure is reduced, causing the fluid stop valve to close and isolate the compressor unit from the cooling system.

Water-cooled versions of the compressor have a water-flow regulating valve (not shown) which operates to conserve water during periods of varying load on the compressor. This same valve automatically shuts off the water supply when the compressor is shut down. In addition, water-cooled models have a water pressure switch to prevent opera-

tion with inadequate water pressure.

2.5 COMPRESSOR DISCHARGE SYSTEM, FUNCTIONAL DESCRIPTION.

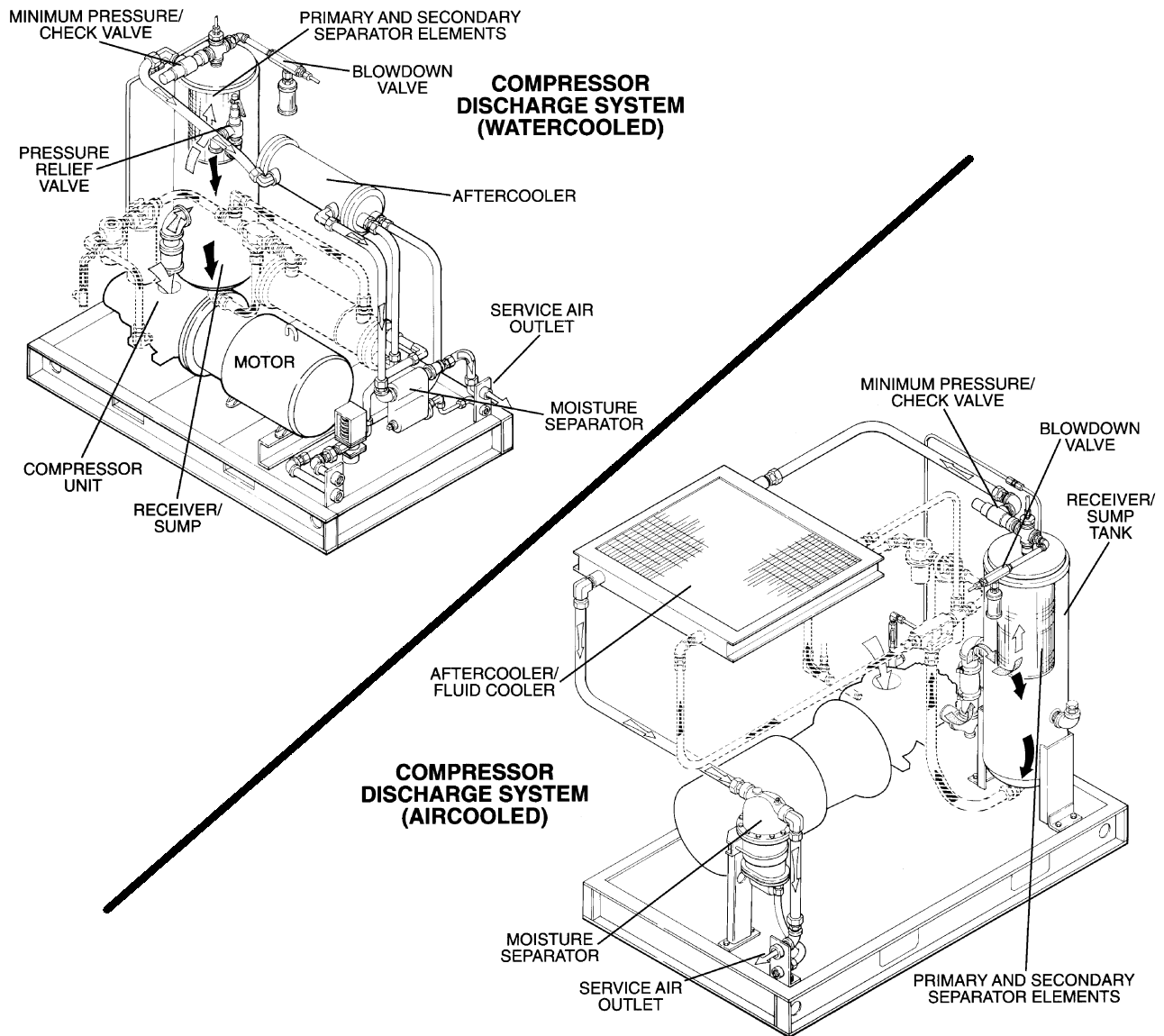
Refer to Figure 2-4. The compressor unit discharges the compressed air/fluid mixture into the combination receiver/sump. The discharge check valve prevents air in the receiver from returning to the compression chamber after the compressor has been shut down.

The receiver has three basic functions:

1. It acts as a primary fluid separator.
2. Serves as the compressor fluid sump.
3. Houses the final fluid separator.

The compressed air/fluid mixture enters the receiver-

Figure 2-4 Compressor Discharge System (Typical)



er and is directed towards the bottom of the separator element. The direction of movement is changed and its velocity significantly reduced, thus causing large droplets of fluid to separate and fall to the bottom of the receiver/sump. The fractional percentage of fluid remaining in the compressed air collects on the surface of the separator element as the compressed air flows through the separator. Return lines (or scavenge tubes) lead from the bottom of the separator's elements to the inlet region of the compressor unit. Fluid collecting on the bottom of the separator is returned to the compressor by a pressure differential between the receiver and the compressor inlet. Visual sight glasses are located on the return lines to observe the fluid flow. There are also orifices in the return line (protected by strainers) to assure proper flow. A gauge, located on the instrument panel, shows red if abnormal pressure drop through the separator develops. At this time, separator element replacement is necessary.

The receiver is ASME code rated at 175 psig (12.1 bar) working pressure. A minimum pressure/check valve, located downstream from the separator, assures a minimum receiver pressure of 55 psig (3.8 bar) during all conditions. This pressure is necessary for proper air/fluid separation and proper fluid circulation.

A terminal check valve is incorporated into the minimum pressure/check valve to prevent compressed air in the service line from bleeding back into the receiver on shutdown and during operation of the compressor in an unloaded condition.

A pressure relief valve (located on the wet side of the separator) is set to open if the sump pressure exceeds 175 psig (12.1 bar). A temperature switch will shut down the compressor if the discharge temperature reaches 235_F (113_C).

All compressor models are equipped with a high pressure shutdown switch to shut down the compressor at 135 psig (9.3 bar). This prevents the pressure relief valve from opening under routine conditions, thereby preventing fluid loss through the pressure relief valve.

⚠ 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.

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

2.6 CONTROL SYSTEM, FUNCTIONAL DESCRIPTION

Refer to Figure 2-5. The purpose of the compressor control system is to regulate the compressor air intake to match the amount of compressed air being used. The **control system** consists of a **Sullicon control**, a **butterfly valve** (located on the compressor air inlet), a **pressure switch**, a **solenoid valve** and **pressure regulator**. The functional description of the control system is described below in four distinct phases of compressor operation. The following descriptive text applies to all 12 and 16 Series compressors. For explanatory purpose this description will apply to a compressor with an operating pressure range of 100 to 110 psig (6.9 to 7.6 bar). A compressor with any other pressure range would operate in the same manner except for the stated pressures.

START MODE – 0 TO 55 PSIG (0 TO 3.8 BAR)

When the compressor START button is depressed, the sump pressure will quickly rise from 0 to 55 psig (0 to 3.8 bar). During this period both the pressure regulator and the solenoid valve are closed and the Sullicon Control is inoperative. The spring on the control holds the butterfly valve fully open and the compressor pumps at full rated capacity. The rising compressed air pressure is isolated from the service line in this phase by the minimum pressure valve, set approximately at 55 psig (3.8 bar).

NORMAL OPERATION MODE – 55 TO 100 PSIG (3.8 TO 6.9 BAR)

When the compressor air pressure rises above 55 psig (3.8 bar), 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 pressure regulator and the solenoid valve remain closed during this phase, keeping the Sullicon Control inactive.

MODULATING MODE – 100 TO 110 PSIG (6.9 TO 7.6 BAR)

If less than the rated capacity of compressed air is being used, the service line pressure will rise above 100 psig (6.9 bar). The pressure regulator valve gradually opens, applying air pressure to the diaphragm chamber of 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 100 to 110 psig (6.9 to 7.6 bar), in response to varying demands from the service line.

The pressure regulator has an orifice which vents a small amount of air to the atmosphere when the pressure regulator controls the butterfly valve. The orifice also bleeds any accumulated moisture from the Sullicon Control.

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Figure 2-5A Control System, Sequence of Operation (Typical)

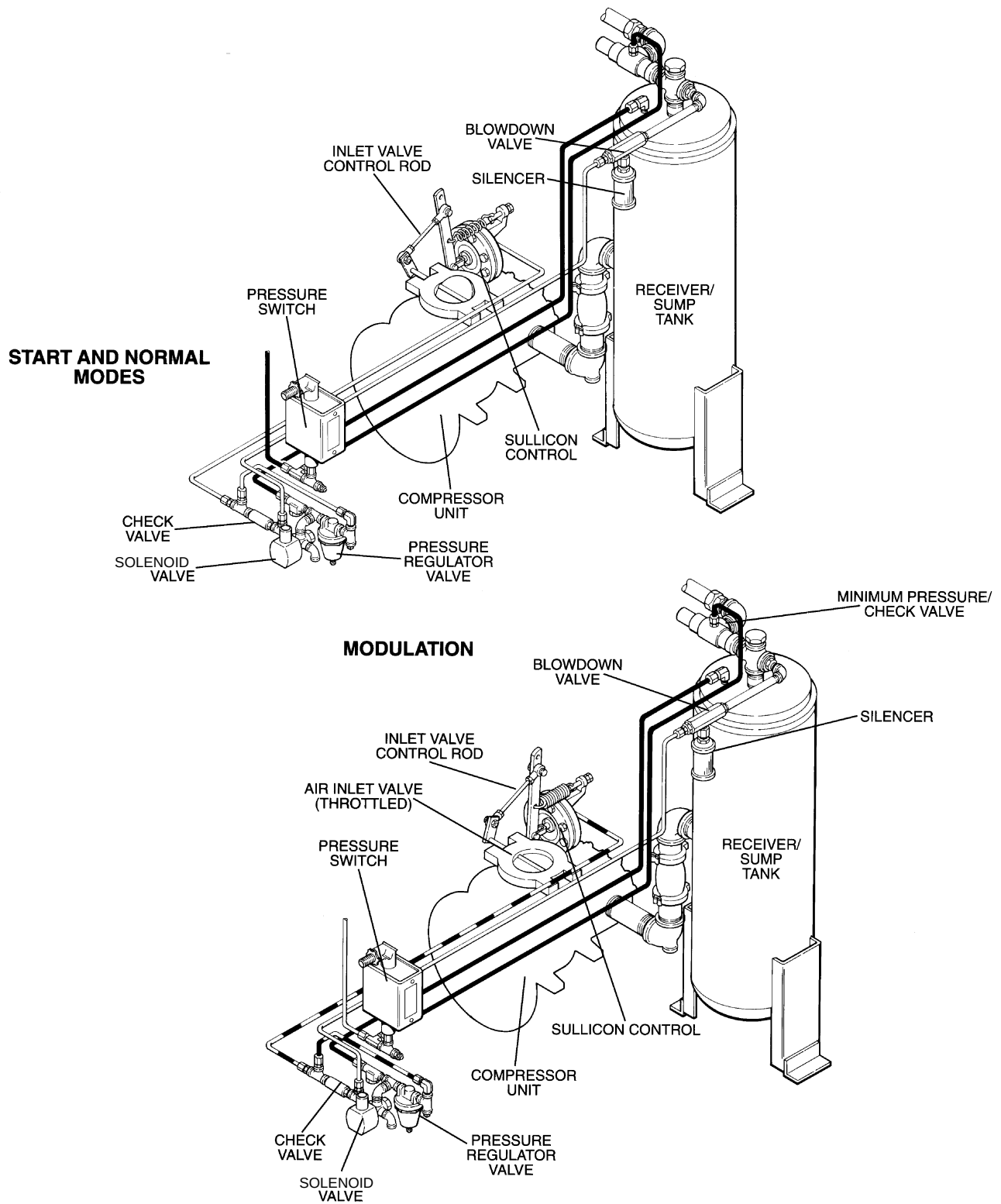
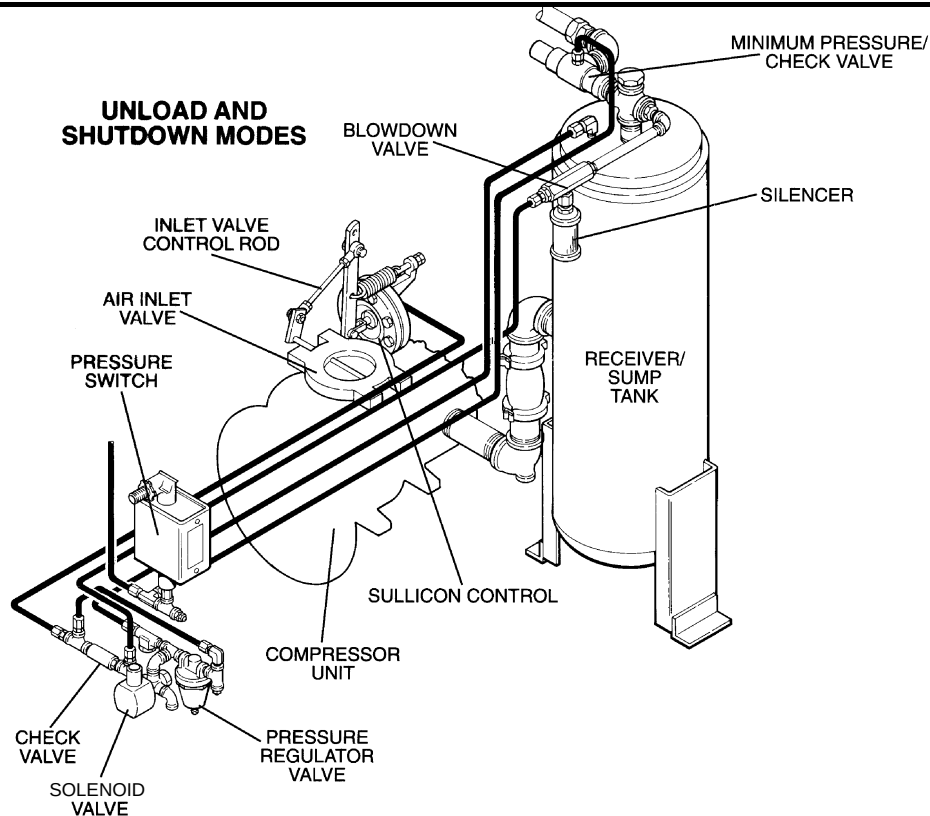


Figure 2–5B Control System, Sequence of Operation (Typical)



UNLOAD – IN EXCESS OF 110 PSIG (7.6 BAR) LINE PRESSURE

When 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 valve. At this time, the solenoid valve allows dry sump tank air pressure to be applied directly to the control diaphragm, keeping the butterfly valve closed. Simultaneously, the solenoid valve sends a pneumatic signal to the blowdown valve. The blowdown valve opens the sump to the atmosphere, reducing the sump pressure to approximately 40 to 50 psig (2.8 to 3.8 bar). The check valve in the air service line prevents line pressure from returning to the sump.

When the line pressure drops to the low setting (cut–in pressure) of the pressure switch (usually 100 psig [6.9 bar] on low pressure compressors and 115 psig [7.9 bar] on high pressure compressors), the pressure switch closes, re–energizing the three–way solenoid valve and allowing the blowdown valve to close. The re–energized solenoid valve again prevents line pressure from reaching the Sullicon Control. Should the pressure begin to rise, the pressure regulator will resume its normal function as previously described.

For a compressor with varied periods of time when there are no air requirements, a “dual control” op-

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

2.7 AIR INLET SYSTEM, FUNCTIONAL DESCRIPTION

Refer to Figure 2–6. The **compressor inlet system** consists of a **dry–type air filter**, a **restriction gauge** and a **control valve**.

The restriction gauge, located on the compressor instrument panel, indicates the condition of the air filter by showing red when 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 (see [Section 2.6, Control System](#)).

See Section 6 for Air Filter Maintenance Procedures.

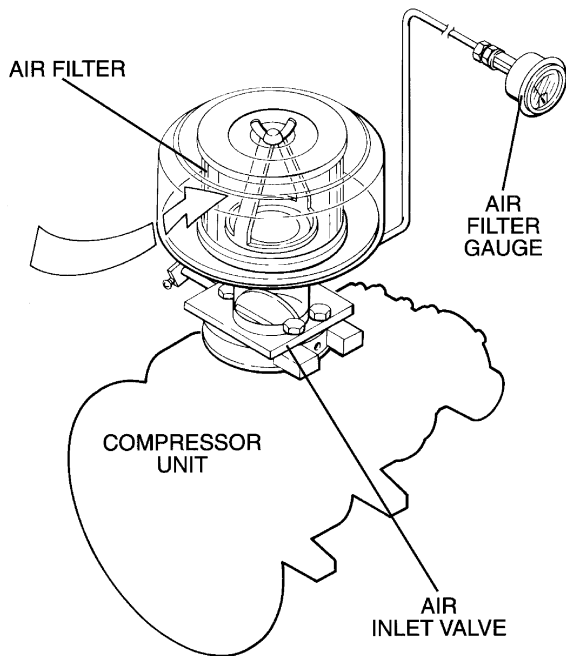
2.8 INSTRUMENT PANEL GROUP, FUNCTIONAL DESCRIPTION

Refer to Figure 2–7 for specific location of parts described. The **instrument panel group** consists of a panel containing the **line pressure**, **sump pressure** and **discharge temperature gauges**, the **air filter**, the **separator element** and the **fluid filter**,

Section 2

DESCRIPTION

Figure 2–6 Compressor Air Inlet System



restriction gauges, along with **START** and **STOP** pushbuttons and an **hourmeter**.

Refer to Figure 2–7 for locations of the following indicators and controls:

§ and 100HPThe **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 unload conditions.

§ The **discharge temperature gauge** monitors the temperature of the air leaving the compressor unit. For both air-cooled and water-cooled compressors the normal reading is approximately 180_F (82_C) when the ambient temperature is less than 80_F (27_C).

§ The **air filter restriction gauge** monitors the condition of the air intake filter and shows in the red zone (20" to 30" water [51 to 76 cm]) when filter service is required (see Figure 2–6).

§ The **START** pushbutton turns the compressor on.

§ The **STOP** pushbutton turns the compressor off.

§ The **hourmeter** records cumulative hours of operation for the compressor and is useful for planning and logging service operations.

§ The **separator maintenance gauge** monitors the condition of the separator elements and shows in the red zone when the element restriction is excessive.

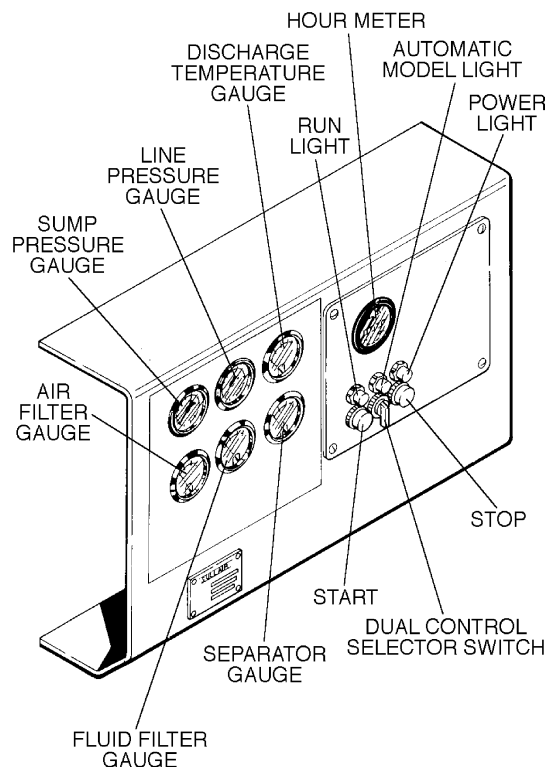
§ The **fluid filter maintenance gauge** monitors the condition of the bearing filter element and shows in the red zone when the element should be changed.

§ The **red light** on the instrument panel indicates when power to the compressor is supplied.

§ The **green light** indicates when the compressor is running.

§ The optional **dual control package** is supplied with an amber auto mode indicator light to indicate that the unit is running in the automatic mode. A position selector switch provides selection between hand operation and automatic control.

Figure 2–7 Instrument Panel Group



Section 3 SPECIFICATIONS

3.1 TABLE OF SPECIFICATIONS

LS-12 60 HZ (AIR- OR WATER -COOLED) (I)								
MODEL	HP/KW	CAPACITY (ACFM/M ³ /MIN)	LENGTH (IN/MM)	WIDTH (IN/MM)	HEIGHT (VI) (IN/MM)	WEIGHT (VI) (LB/KG)	dBA (VII) w/ encl. / w/o encl. (air-cooled)	dBA (VII) w/encl. / w/o encl. (water-cooled)
L (II)	40/30	90/5.38	72/1830	48/1220	60/1524	2060/934	83/89	77/82
	50/37	235/6.65	72/1830	48/1220	60/1524	2060/934	84/89	76/83
H (III)	40/30	175/4.96	72/1830	48/1220	60/1524	2060/934	83/89	84/89
	50/37	215/6.09	72/1830	48/1220	60/1524	2060/934	84/89	76/83
	60/45	260/7.36	72/1830	48/1220	60/1524	2350/1066	85/90	77/84
LS-16 60 HZ (AIR- OR WATER -COOLED) (I)								
MODEL	HP/KW	CAPACITY (ACFM/M ³ /MIN)	LENGTH (IN/MM)	WIDTH (IN/MM)	HEIGHT (IN/MM)	WEIGHT (LB/KG)	dBA w/ encl. / w/o encl. (air-cooled)	dBA w/encl. / w/o encl. (water-cooled)
L	60/45	300/8.5	72/1829	48/1219	60/1524	2350/1066	84/89	82/89
	75/55	370/10.4	72/1829	48/1219	60/1524	2680/1216	84/89	82/89
	100/75	475/13.5	72/1830	48/1220	62.5/1588	2750/1247	84/89	83/85
H (II)	60/45	280/7.93	72/1830	48/1220	60/1524	2590/1175	84/89	82/89
	75/55	330/9.34	72/1830	48/1220	60/1524	2680/1216	84/89	82/89
	100/75	475/13.5	72/1830	48/1220	62.5/1588	2750/1247	84/89	83/85
ENCLOSURE (OPT) (IV)			72/1829	48/1220	62/1588	500/227		
EES PACKAGE (OPT) (IV)			89/2262	48/1220	130/2618	510/259		

(I) Includes standard and 24KT. New series pressure range designations appearing after model number are as follows:

“L” – 7.0 to 7.5 bar “H” – 8.0 to 8.5 bar

(II) Model L Maximum Pressure: 110 psig/7.6 bar

(III) Model H Maximum Pressure: 125 psig/8.6 bar

(IV) The weights shown for the Enclosure and EES packages does not include the weight of the compressor package.

(V) An additional length of 4 in./102mm is needed for servicing the separator; 9 in./229mm for enclosure models.

(VI) Add 1450 lbs/658 kg for enclosure models.

(VII) Ratings for dBA at one meter.

COMPRESSOR:

Type:

Standard Operating Pressure (II):

Bearing Type:

Ambient Temperature (Max.) (III):

Cooling:

Compressor Fluid:

Sump Capacity:

Control:

24KT MODELS

Rotary Screw

100 psig (6.9bar) (L)

115 psig (7.9bar) (H)

Anti-Friction

105_F (41_C)

Pressurized Fluid

Sullair 24KT Coolant Fluid

9.0 U.S. gallons (34 liters)

(40 and 50HP)

10.0 U.S. gallons (38 liters)

(60 and 75HP)

Electro-Pneumatic

STANDARD MODELS

Rotary Screw

100 psig (6.9bar) (L)

115 psig (7.9bar) (H)

Anti-Friction

105_F (40_C)

Pressurized Fluid

SRF1/4000 (12 & 16 Series

[60 & 75HP])

Sullube 32 (16 Series

[100HP])

9.0 U.S. gallons (34 liters)

(40 and 50HP)

10.0 U. S. gallons (38 liters)

(60 and 100HP)

Electro-Pneumatic

Section 3

SPECIFICATIONS

3.1 TABLE OF SPECIFICATIONS (continued)

MOTOR: (60 Cycle Compressors)

	24KT MODELS	STANDARD MODELS
Size:	40,50,60, 75HP	40,50,60, 75 & 100 HP
Type:	C–Flanged, Open Dripproof, 460V, A.C., Three Phase, 60 Cycles 40_C Maximum Ambient Temperature Options Available: 200V, 230V and 575V T.E.F.C. Also Available	C–Flanged, Open Dripproof, 460V, A.C., Three Phase, 60 Cycles 40_C Maximum Ambient Temperature Options Available: 200V, 230V and 575V T.E.F.C. Also Available
Starter:	460V Full Voltage Magnetic Options Available: 200V, 230V and 575V	460V Full Voltage Magnetic Options Available 200V, 230V and 575V
Speed:	1770 RPM	1770RPM and 3550RPM (100HP)

3.2 LUBRICATION GUIDE–STANDARD COMPRESSORS (All 12 Series; 16 Series – 60 and 75HP)

Sullair standard compressors are filled with SRF 1/4000 fluid factory fill.

⚠ WARNING

Mixing of other lubricants within the compressor unit will void all warranties!

SRF 1/4000 fluid should be changed every 4000 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 particle level, corrosive gases or strong oxidizing gases are present in the air.

For extended life synthetic lubricants contact the nearest Sullair representative.

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

3.3 LUBRICATION GUIDE – STANDARD COMPRESSORS (16 Series – 100HP)

Sullair standard compressor are filled with Sullube 32 fluid as factory fill.

⚠ WARNING

Mixing of other lubricants within the compressor unit will void all warranties!

Sullube 32 fluid should be changed every 8000 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.

⚠ WARNING

"The Plastic Pipe Institute recommends against the use of thermoplastic pipe to transport compressed air or other compressed gases in exposed above ground locations, e.g. in exposed plant piping." (1)

Sullube 32 should not be used with PVC piping systems. It may affect the bond at cemented joints. Certain other plastic materials may also be affected.

(1) Plastic Pipe Institute, Recommendation B, Adopted January 19, 1972.

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

3.4 LUBRICATION GUIDE–24KT COMPRESSORS

Sullair 24KT compressors are filled with a lubricant which rarely needs to be changed. In the event a change of fluid is required, use only Sullair 24KT fluid.

⚠ WARNING

Mixing of other lubricants within the compressor unit will void all warranties!

Sullair recommends that a 24KT sample be taken at the first filter change and sent to the factory for analysis. This is a free service. A sample kit with instructions and self-addressed container is to be supplied by your Sullair Representative at start-up. The user will receive an analysis report with recommendations.

APPLICATION GUIDE

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 the manual. Contact your Sullair dealer for details.

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 VENTILATION AND COOLING

For air-cooled compressors, select a location to permit sufficient unobstructed air flowing in and out to the compressor to keep the operating temperature stable. The minimum distance that the compressor should be from surrounding walls is three (3) feet (0.9 m). To prevent excessive ambient temperature rise, it is imperative to provide adequate ventilation.

For water-cooled compressors, it is necessary to check the cooling water supply. The water system must be capable of supplying the following flows:

TABLE 1 – WATER FLOW REQUIREMENTS

	WATER TEMP. AT 70_F (21_C) in GPM (LPM)	WATER FLOW AT 80_F (27_C) in GPM (LPM)
40HP	6 (22.7)	8 (30.3)
50HP	7 (26.5)	10.5 (39.75)
60HP	9 (34.1)	11.5 (44.5)
75HP	10.5 (39.75)	14 (53)
100HP	11.75 (44.5)	15.75 (59.6)
(water pressure should be between 25 and 75 psig (1.7 and 5.2 bar).)		

The proper water flow as indicated in Table 1 must be maintained at all times. These figures apply to a compressor running at full load with an aftercooler. For cooler water or a partially loaded compressor, slightly less water is required. However, for hotter water the flow requirements are significantly greater.

Table 2 shows the ventilation requirements necessary to keep the compressor running at a normal operating temperature. The fan air requirement is the volume of air which must flow through the compressor for proper ventilation. The specified heat rejection requirement is the amount of heat that is radiated by the compressor. This heat must be removed to assure a normal operating temperature. With air-cooled compressors it is possible to use this heat for space heating, providing no additional pressure drop is created across the fan. Consult a Sullair office for assistance in utilizing this heat.

DO NOT install a water-cooled or an air-cooled/aftercooled compressor where it will be exposed to temperatures less than 32_F(0_C).

4.3 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.

⚠ WARNING

“The Plastic Pipe Institute recommends against the use of thermoplastic pipe to transport compressed air or other compressed gases in exposed above ground locations, e.g. in exposed plant piping.” (I)

Sullube 32 should not be used with PVC piping systems. It may affect the bond at cemented joints. Certain other plastic materials may also be affected.

(I) Plastic Pipe Institute, Recommendation B, Adopted January 19, 1972.

4.4 COUPLING ALIGNMENT CHECK

No coupling alignment is required.

4.5 FLUID LEVEL CHECK

The 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 at the normal reading.

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

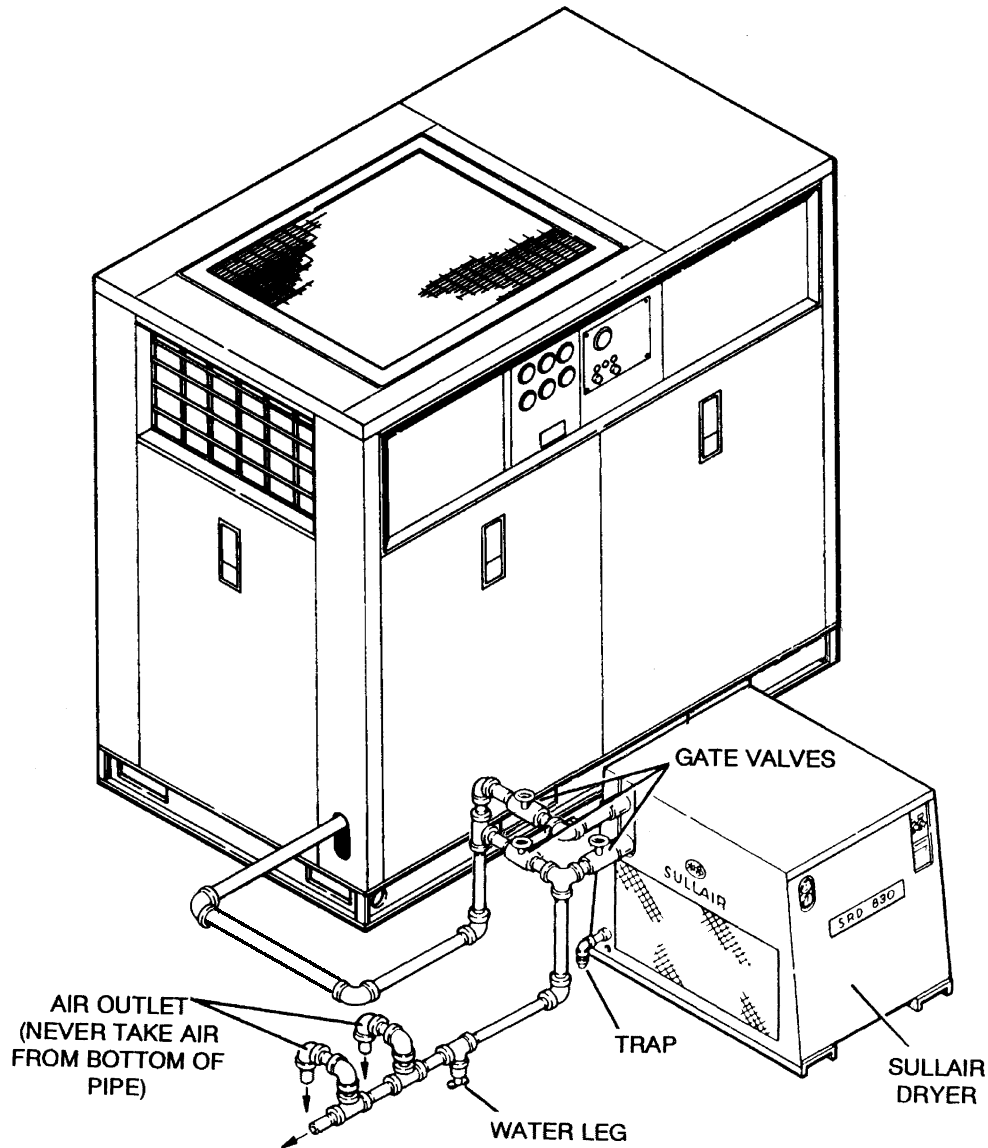
TABEL 2– VENTILATION REQUIREMENTS

Cooling Type	Air-cooled w/Aftercooler					Water-cooled				
Motor HP	40	50	60	75	100	40	50	60	75	100
Fan Air CFM (I)	6,000	6,000	7,500	7,500	7,500	1,440	1,440	2,845	2,845	2,845
Heat Rejection BTU/Hour	123,250	153,360	183,800	229,800	302,410	11,200	13,300	15,800	19,800	22,410

(I) Applies to compressors with canopy only (vent fan).

Section 4 INSTALLATION

Figure 4–1 Service Air Piping with Aftercooler and Optional Air Dryer (Typical)



applicable local electrical code concerning isolation switches, fuse disconnects, etc. Sullair provides a wiring diagram for use by the installer.

A few electrical checks 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 the starter panel.

NOTE

Customer must provide electrical supply power disconnect within sight of machine.

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 electrical parts in Parts Manual).
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 checking all protective de-

vices 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 4.7](#).

4.7 MOTOR ROTATION DIRECTION CHECK

After the electrical wiring has been done, it is necessary to check the direction of the motor rotation. 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. A "Direction of Rotation" decal is located on the adapter between the motor and compressor to show proper motor/compressor rotation.

NOTES

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.
STOP PUSHBUTTON	Depress to turn the compressor OFF.
HOURLMETER	Records cumulative hours of compressor operation; useful for planning and logging service schedules.
LINE PRESSURE GAUGE	Continually monitors service line air pressure. It is 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. For both air and water-cooled compressors, the normal reading should be approximately 180_F to 205_F (82_C to 96_C).
AIR FILTER RESTRICTION GAUGE	Indicates when the air filter element change is required. The gauge shows in the red zone when pressure drop through the filter is excessive.
FLUID FILTER MAINTENANCE GAUGE	Indicates when a fluid filter element change is required. It shows red when the pressure drop through the filter is excessive.
SEPARATOR MAINTENANCE GAUGE	Indicates when separator element change is required. Shows red when the pressure drop through the filter is excessive.
"POWER ON" LIGHT (RED)	Indicates when the starter is receiving power.
"RUNNING" LIGHT (GREEN)	Indicates when compressor is in operation.
FLUID LEVEL SIGHT GLASS	Monitors fluid level in the sump. The fluid must be visible between the 'full' and 'add' markings. Check the level when the compressor is shut down. DO NOT FILL ABOVE THE 'FULL' LINE.
SEPARATOR RETURN LINE SIGHT GLASSES	Used to indicate fluid flow in the return lines. When the compressor is running at full load, fluid flow should be visible in the sight glasses. 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 strainers.
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.

Section 5

OPERATION

5.2 PURPOSE OF CONTROLS

CONTROL OR INDICATOR	PURPOSE
THERMAL VALVE	Regulates flow of fluid to and around the cooler. It is designed to maintain a minimum operating temperature of 180_F (82_C); use for fast warm-up on start-up.
MINIMUM PRESSURE/CHECK VALVE	Maintains minimum of 55 psig (3.8bar) in the compressor sump. Valve piston restricts receiver air discharge from receiver/sump when pressure falls to 55 psig (3.8bar). Also prevents backflow into the sump during unload conditions and after shutdown.
COMPRESSOR DISCHARGE TEMPERATURE SWITCH	Designed to shut the compressor down when the discharge temperature reaches 235_F (113_C).
HIGH PRESSURE SHUTDOWN SWITCH	An added protective device designed to shut down the compressor when the pressure becomes too high. This switch is set for shutdown at approximately 135 psig (9.3bar).
WATER PRESSURE SWITCH (water-cooled compressors only)	It prevents operation when water pressure of compressor is inadequate.
PRESSURE RELIEF VALVE	Opens sump pressure to the atmosphere should pressure inside the sump become too high (175 psig [12.1bar]). Operation of this valve indicates that the high pressure switch is either faulty or out of adjustment.
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.
PRESSURE REGULATOR	Allows a pressure signal to reach the engine speed control cylinder and the air inlet valve to control air delivery according to demand.
SOLENOID VALVE	Bypasses the pressure regulator valve causing the Sullicon Control to close the inlet valve when the compressor reaches maximum operating pressure.
PRESSURE SWITCH	Senses service line pressure. When line pressure reaches maximum setting the pressure switch signals the solenoid valve to unload the compressor.
BLOWDOWN VALVE	Vents sump pressure to the atmosphere during unload conditions and shutdown.
WATER REGULATING VALVE (water-cooled only)	Regulates the amount of cooling water used to keep the compressor running at a normal operating temperature.

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 Adjustment in the Maintenance Section of the manual.

7. Observe the operating temperature. If the operating temperature exceeds 200_F (93_C), the cooling system or installation environment should be checked.
8. Observe return line sight glasses 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

As you proceed in reading this section, it will be easy to see that the Maintenance Program for the air compressor is quite minimal. The use of the service indicators provided for the bearing filter, air filter and fluid separator, will alert you when service maintenance is required. When the maintenance gauge shows red, maintenance for that specific item is required. See instructions for each item in [Section 6.7, Parts Replacement and Adjustment Procedures](#).

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 monitor the correct reading for their 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.

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.

6.3 MAINTENANCE AFTER INITIAL 50 HOURS OF OPERATION

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

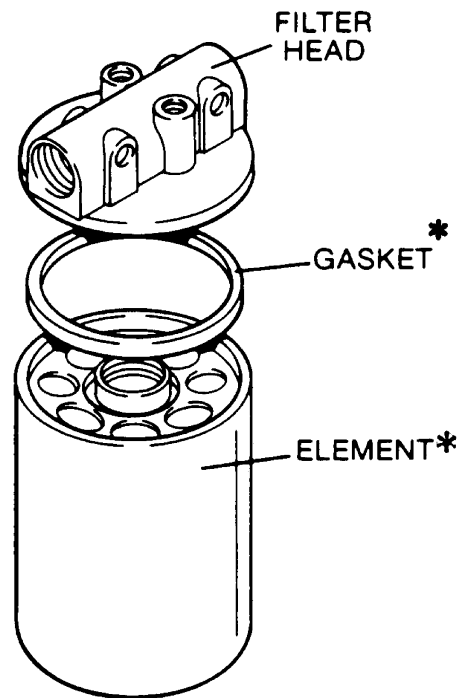
1. Clean the return line strainers.
2. Clean the return line orifices.

6.4 MAINTENANCE EVERY 4000 HOURS

After 4000 hours of operation, it will be necessary to perform the following:

1. Clean the return line strainers.
2. Lubricate the Sullicon Control linkage.
3. Replace the fluid filter element and gasket.
4. **STANDARD COMPRESSORS ONLY!** Drain the sump and change the compressor fluid.

Figure 6-1 Fluid Filter (P/N 250025-522)



* Repair Kit P/N 250025-526 (40-75HP)
Repair Kit P/N 250025-524 (100HP)

6.5 FILTER MAINTENANCE

Replace your fluid filter element and the gasket under any of the following conditions, whichever occurs first:

1. As indicated by the maintenance gauge.
2. Every 1000 hours.
3. Every 6 months.
4. **STANDARD COMPRESSORS ONLY!** Every fluid change.

6.6 SEPARATOR MAINTENANCE

Replace the separator elements when your separator maintenance gauge shows red or after one (1) year, whichever comes first. The separator elements must be replaced. **DO NOT** clean the separator elements.

6.7 PARTS REPLACEMENT AND ADJUSTMENT PROCEDURES

FLUID FILTER ELEMENT REPLACEMENT

Refer to Figure 6-1.

1. Using a strap wrench, remove the old element and gasket.
2. Clean gasket seating surface.
3. Apply a light film of fluid to the new gasket.
4. Hand-tighten new element until new gasket is seated in the gasket groove. Avoid any nicks, cuts or pinches to the gasket.

5. Continue tightening element by hand an additional 1/2 to 3/4 turn.
6. Restart compressor and check for leaks.

⚠ CAUTION

To minimize the possibility of filter element rupture, it is important that **ONLY** replacement elements identified with the Sullair name, logo and appropriate part number be used and that substituted elements not be used, due to the fact that such filters may have inadequate or questionable working pressure ratings.

AIR FILTER MAINTENANCE

Refer to Figure 6-2. Air filter maintenance should be performed when the maintenance gauge shows red or once a year, whichever comes first. If the filter needs to be replaced, order element kit no. 040899. Following you will find procedures on how to replace the air filter element.

AIR FILTER ELEMENT REPLACEMENT

1. Clean exterior of air filter housing.
2. Remove the air filter cover by loosening the wingnut securing the cover.
3. Remove element and clean interior of housing using a damp cloth. **DO NOT** blow dirt out with compressed air.
4. At this time replace the element.
5. Reassemble in the reverse order of the disassembly.

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.
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.

HEAVY DUTY AIR FILTER MAINTENANCE

Refer to Figures 6-3 and 6-4. Air filter maintenance should be performed when the maintenance gauge shows red or once a year, whichever comes first. Following you will find procedures on how to replace the heavy duty air filter element(s).

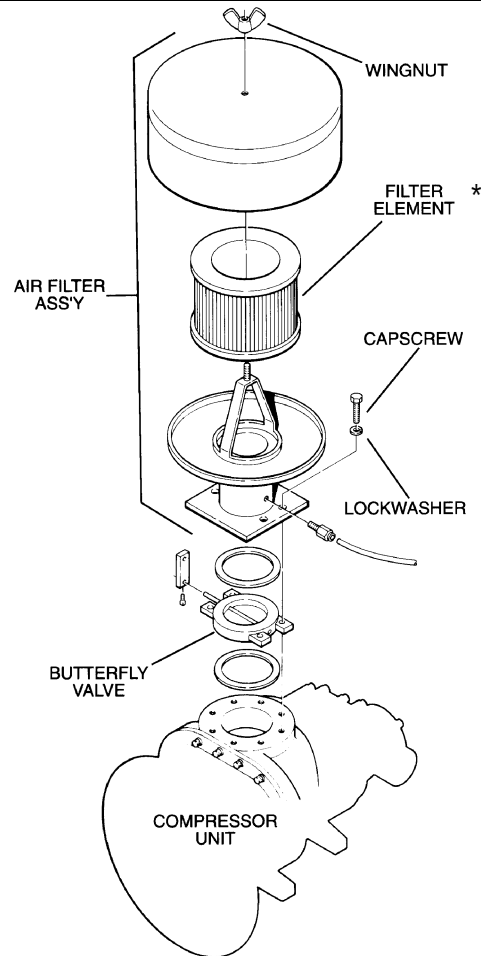
⚠ CAUTION

Do not strike the element against any hard surface to dislodge dust. This will damage the sealing surfaces and possibly rupture the element.

AIR FILTER ELEMENT REPLACEMENT – LS-12

1. Clean exterior of air filter housing.
2. Release tension on cover clamp assembly.

Figure 6-2 Air Filter Replacement
(P/N 250020-315)



* Replacement Element Kit P/N 040899

3. Remove air filter element (P/N 049301) by loosening the wingnut securing the element.
4. Remove element and clean interior of housing using a damp cloth. **DO NOT** blow dirt out with compressed air.
5. At this time replace the element.
6. Reassemble in the reverse order of the disassembly.

AIR FILTER ELEMENT REPLACEMENT – LS-16 60-75HP

1. Clean exterior of air filter housing.
2. Remove wingnut and cover.
3. Remove primary element (P/N 047542) and secondary element (P/N 047543).
4. Clean interior of housing using a damp cloth. **DO NOT** blow dirt out with compressed air.
5. Replace elements and reassemble in reverse order of disassembly.

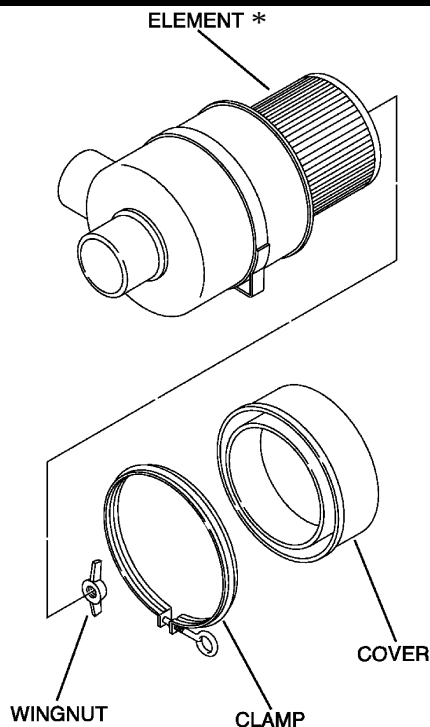
AIR FILTER ELEMENT REPLACEMENT – LS-16 100HP

Refer to Figure 6-4.

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Figure 6-3 Air Filter Replacement
(P/N 049103 - LS-12)
(P/N 047274 - LS-16 60-75HP)



* LS-12 Replacement Element Kit P/N 049301
* LS-16 Replacement Element (primary) P/N 047542
* LS-16 Replacement Element (secondary) P/N 047543

The automatic dust unloader should be inspected on a regular basis.

1. Clean exterior of air filter housing.
2. Remove wingnut and cover.
3. Remove wingnut assembly and washer.
4. Remove primary element (P/N 02250045-012) and secondary element (P/N 02250045-013).
5. Loosen and remove the hex nut securing the secondary element. Remove the secondary element.
6. Inspect the secondary element and replace if necessary.
7. Clean the interior of the housing by using a damp cloth. **DO NOT** blow dirt out with compressor air.
8. Install the new secondary element and replace the sealing washer and hex nut.
9. With the secondary element in place, replace the primary element.
10. Secure cover tightly.

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.
2. Inspect all gaskets and gasket contact surfaces of the housing. Should faulty gaskets be evident, correct the condition immediately.

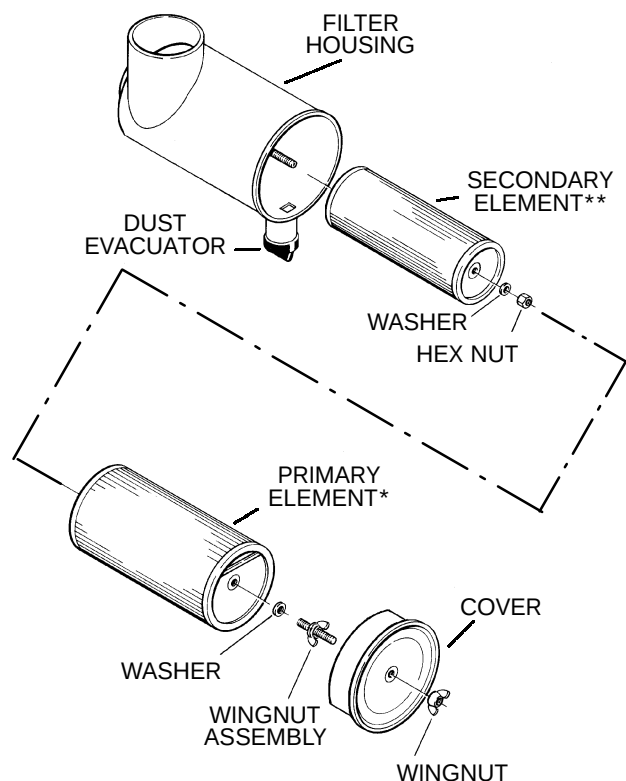
3. If the clean element is to be stored for later use, it must be stored in a clean container.
4. After the element has been installed, inspect and tighten all air inlet connections prior to resuming operation.

SEPARATOR ELEMENT REPLACEMENT

Refer to Figure 6-5. The separator elements must be changed when the maintenance gauge shows red, or once a year whichever occurs first. Order separator element numbers 250034-116 (primary) and 250042-862 (secondary). Follow the procedure explained below for separator element replacement.

1. Relieve all pressure from the sump tank and all compressor lines.
2. Disconnect all piping connected to the sump cover to allow removal (return lines, service lines, etc.).
3. Loosen and remove the eight (8) hex head cap-screws (5/8" x 2") from the cover plate.
4. Lift the cover plate from the sump.
5. Remove the primary (250034-116) and secondary (250042-862) elements.
6. Inspect the receiver/sump tank for rust, dirt, etc.

Figure 6-4 Air Filter Replacement
(P/N 02250045-855) (LS-16 100HP)



*Primary Replacement Element P/N 02250045-012

**Secondary Replacement Element P/N 02250045-013

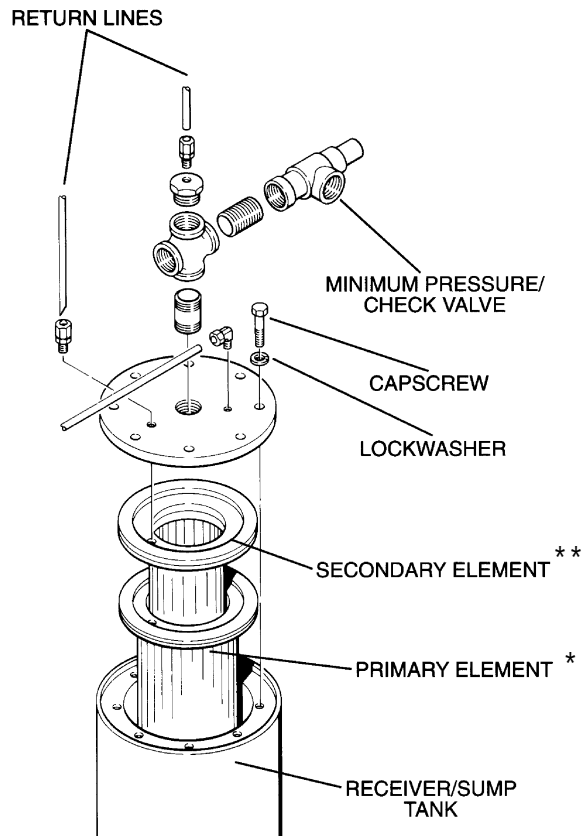
Section 6 MAINTENANCE

7. Scrape the old gasket material from the cover and flange on the sump. Be careful not to let the scraps fall in the sump.
8. Insert the new separator elements (P/N's 250034-116 and 250042-862) into the sump taking care not to dent them against the tank opening.
9. Clean the underside of the receiver/sump tank cover and remove any rust. Paint surface with an epoxy paint. **DO NOT REMOVE GASKET STAPLES.**
10. Replace the cover plate, washers and capscrews. Torque to 55 ft.-lbs. (75 Nm).
11. Reconnect all piping making sure return line tubes extend to the bottom or 1/4" (6mm) above the bottom of the separator element. This will assure proper fluid return flow to the compressor.
12. Clean both return line strainers before restarting the compressor.

CONTROL SYSTEM ADJUSTMENT

Refer to Figures 6-6 and 6-7. Prior to adjusting the control system, it is necessary to determine the de-

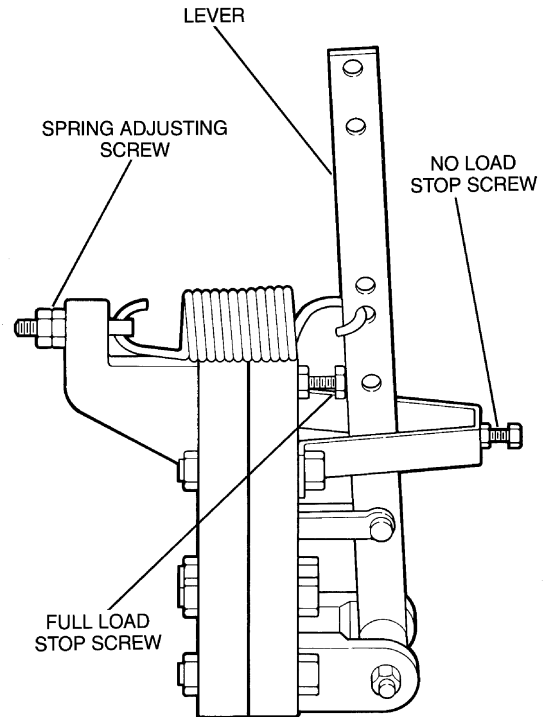
Figure 6-5 Separator Element Replacement



* Replacement (primary) element
P/N 250034-116

** Replacement (secondary) element
P/N 250042-862

Figure 6-6 Sullicon Control



* Repair Kit P/N 250020-353

sired 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 100 to 110 psig (6.9 to 7.6 bar). This information will apply to a compressor with any other operating range except for the stated pressures.

Remove the pressure switch cover. 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 6-7).

⚠ DANGER

DO NOT touch the electrical contacts, terminal or leads with any metallic object. Severe electrical shock may occur.

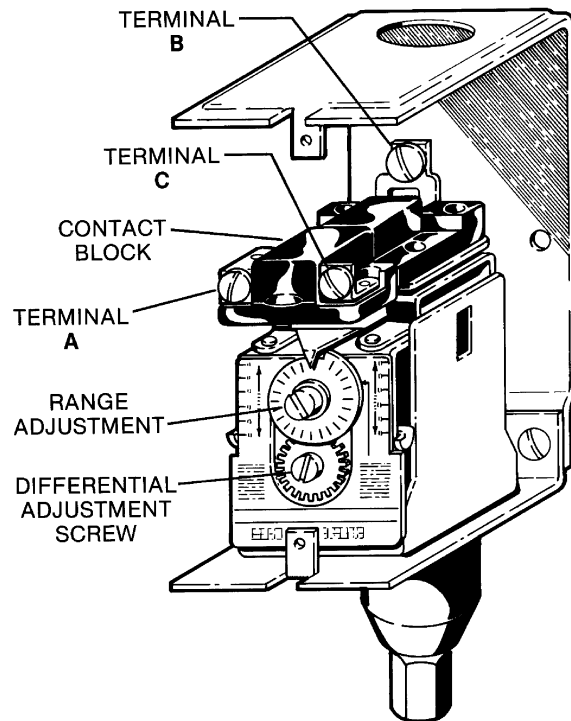
FOR PRESSURE RANGE ADJUSTMENT:

1. Remove cover to pressure switch.

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MAINTENANCE

Figure 6–7 Pressure Switch (P/N 040694)



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 (0.7 bar) is 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.

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 100 psig (6.9 bar). The regulator is adjusted by loosening the jam nut on the end of the cone shaped cover of the pressure regulator. With the jam nut loose, turn the adjusting screw clockwise to increase or counterclockwise to decrease the setting.

Above 100 psig (6.9 bar), the regulator should allow pressure to flow into the control chamber of the Sullicon Control. The Sullicon Control lever should start to move at this time.

Cycle the control system several times and recheck all pressure settings.

6.8 TROUBLESHOOTING

The information contained in the Troubleshooting chart has been compiled from field report data and factory experience. 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:

1. Check for loose wiring.
2. Check for damaged piping.
3. 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.

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.
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).

TROUBLESHOOTING (CONTINUED)

SYMPTOM	PROBABLE CAUSE	REMEDY
COMPRESSOR SHUTS DOWN WITH AIR DEMAND PRESENT (continued)	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 to 135 psig (9.3 bar). Defective solenoid valve; solenoid valve should cause control lever to move to unload stop when the pressure switch contacts open. Repair if defective. Defective blowdown valve; blowdown valve should exhaust sump pressure to 40 to 55 psig (2.8 to 3.8 bar) when maximum operating pressure is reached. Repair if defective.
	Discharge Temperature Switch Open	Cooling water temperature too high; increase water flow (water-cooled only). Cooling water flow insufficient; check water lines and valves (water-cooled only). Cooler plugged; clean tubes. If plugging persists, install water conditioner (water-cooled only). 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 (air-cooled only). Water flow regulating valve not functioning properly; change (water-cooled only). Defective discharge temperature switch; check for a short or open circuit to probe and correct wiring.
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 element if required.
	Pressure Regulator Out Of Adjustment	Adjust regulator according to control adjustment instructions in the Maintenance section.
	Defective Pressure Regulator	Check diaphragm and replace if necessary (kit available).
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 not damaged. Replace if necessary.

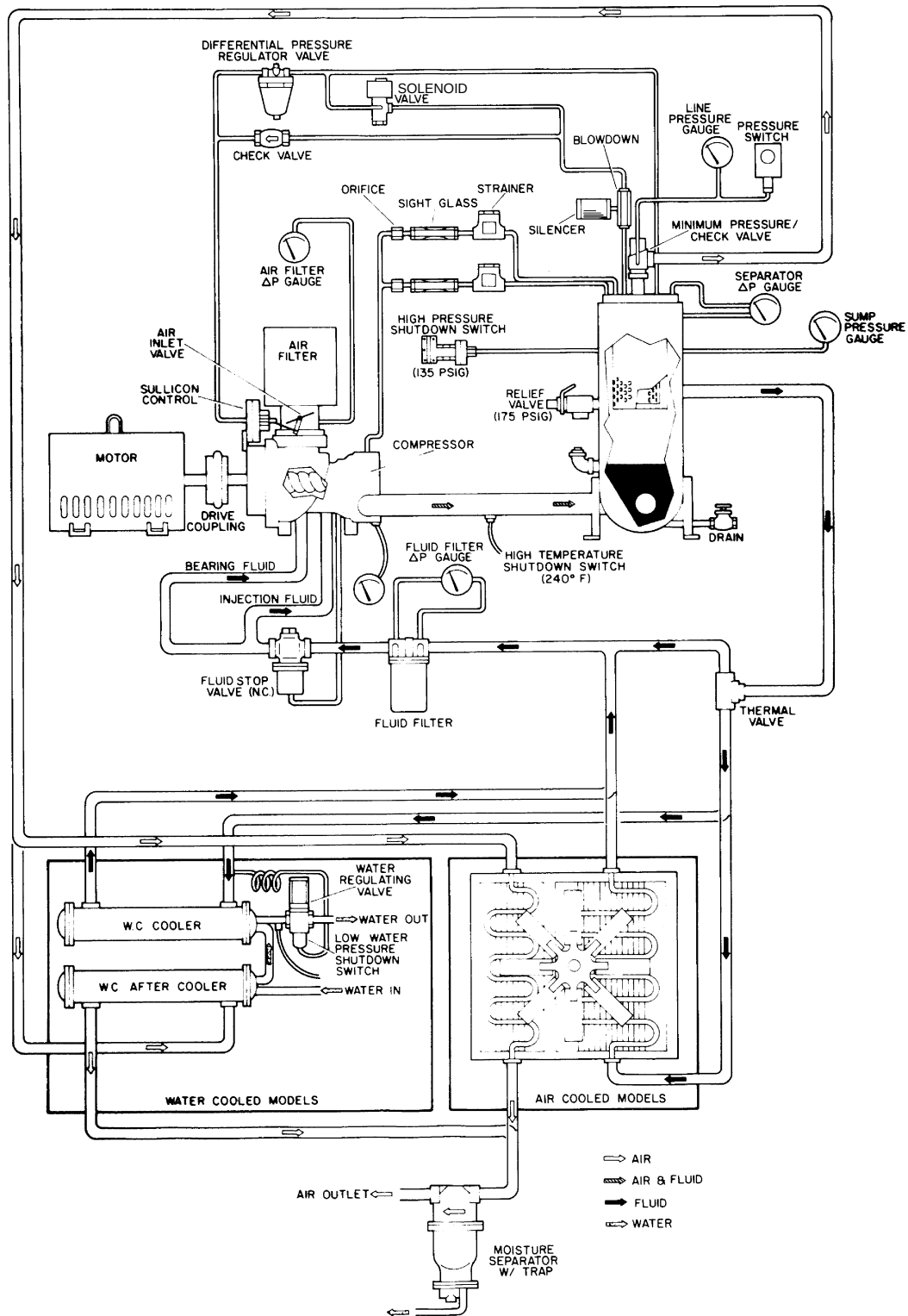
Section 6

MAINTENANCE

TROUBLESHOOTING (CONTINUED)

SYMPTOM	PROBABLE CAUSE	REMEDY
LINE PRESSURE RISES ABOVE CUT-OUT PRESSURE SETTING ON PRESSURE SWITCH (continued)	Defective Solenoid Valve	Check that Sullicon Control lever is moved to unload, stop when the pressure switch contacts open. Repair or replace if necessary (kit available).
	Defective Blowdown Valve	Check that sump pressure is exhausted to the atmosphere when the pressure switch contacts open. Repair or replace if necessary (kit available).
	High Pressure Shutdown Switch Is Defective Or Incorrectly Adjusted	Readjust or replace.
EXCESSIVE COMPRESSOR FLUID 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.
	Excess Fluid Foaming	Drain and change.
	Fluid Level Too High	Drain excess fluid.
PRESSURE RELIEF VALVE OPEN REPEATEDLY	High Pressure Shutdown Switch Is Defective Or Out Of Adjustment (135 psig [9.3bar]).	Readjust below pressure relief valve setting (175 psig [12.1bar]).
	Defective Pressure Relief Valve	Replace.
	Plugged Separator Elements	Check separator differential.

Figure 6-8 Piping and Instrumentation Diagram



Section 7

ILLUSTRATIONS AND PARTS LIST

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 or phone numbers 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 U.S.A.
 Telephone: 1-800-SULLAIR or
 1-219-879-5451
 Fax: (219) 874-1273
 Fax: (219) 874-1835 (Parts)
 Fax: (219) 874-1805 (Service)

SULLAIR ASIA, LTD.
 ROOM 2304A
 Shartex Plaza Ctr.
 No. 88 Zun Yi Nan Rd.
 Shanghai, P.R.C.
 Telephone: 21-2192066
 Fax: 21-2196568

SULLAIR EUROPE, S.A.
 Chemin de Genas BP 639
 69800 Saint Priest, France
 Telephone: 33-72232425
 Fax: 33-78907168

7.2 RECOMMENDED SPARE PARTS LIST

DESCRIPTION	KIT NUMBER	QUANTITY
element for compressor fluid filter 250025-522 (40-75 HP)	250025-526	1
element, compressor fluid filter (100 HP)	250025-524	1
element for standard air filter 250020-315	040899	1
element for heavy duty air filter 049103 (12 Series)	049301	1
element for heavy duty primary air filter 047274 (16 Series 60-75HP)	047542	1
element for heavy duty secondary air filter 047274 (16 Series 60-75HP)	047543	1
element for heavy duty primary air filter 02250045-855 (16 Series 100HP)	02250046-012	1
element for heavy duty secondary air filter 02250045-855 (16 Series 100HP)	02250046-013	1
primary element for separator 250034-115	250034-116	1
secondary element for separator 250042-861	250042-862	1
repair kit for minimum pressure/check valve 241581 (12 Series)	250026-758	1
repair kit for minimum pressure/check valve 250016-618 (16 Series)	250019-444	1
repair kit, cap for minimum pressure/check valve 250016-618 (16 Series)	02250046-396	1
repair kit, o-ring for minimum pressure/check valve 250016-618 (16 Series)	02250048-363	1
repair kit, piston for minimum pressure/check valve 250016-618 (16 Series)	02250051-337	1
repair kit for thermal valve 014512	001168	1
repair kit for fluid stop valve 016741	001684	1
repair kit for pressure regulator 406929	041742	1

(Continued on page 33)

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

ILLUSTRATIONS AND PARTS LIST

7.2 RECOMMENDED SPARE PARTS LIST (CONTINUED)

DESCRIPTION	KIT NUMBER	QUANTITY
repair kit for blowdown valve 250030–276	02250045–132	1
repair kit for solenoid valve 250038–674	250038–673	1
replacement kit for solenoid valve coil 250038–674	250031–738	1
repair kit for flexible gasket 040648 (Std.)	040649	2
repair kit for flexible gasket 250007–563 (KT)	250007–564	2
replacement kit for Sullicon Control	250020–353	1
Sullicon spring	250006–526	1
repair kit for v–type strainer 241771	241772	1
repair kit for shaft seal (12 Series 40 and 50HP)	02250050–363	1
repair kit for shaft seal (12 Series 60HP; 16 Series 60–100HP)	02250050–364	1
repair kit for shaft seal installation	602542–001	1
repair kit for combination separator/trap 250018–041	250033–038	1
fluid, SRF 1/4000 (Std. 12 Series; Std. 16 Series 60 and 75HP) (5 gallons)	250019–662	(I)
lubricant, Sullube 32 (Std. 16 Series 100HP) (5 gallons)	250022–669	(I)
lubricant, 24KT (5 gallons)	046850–001	(I)

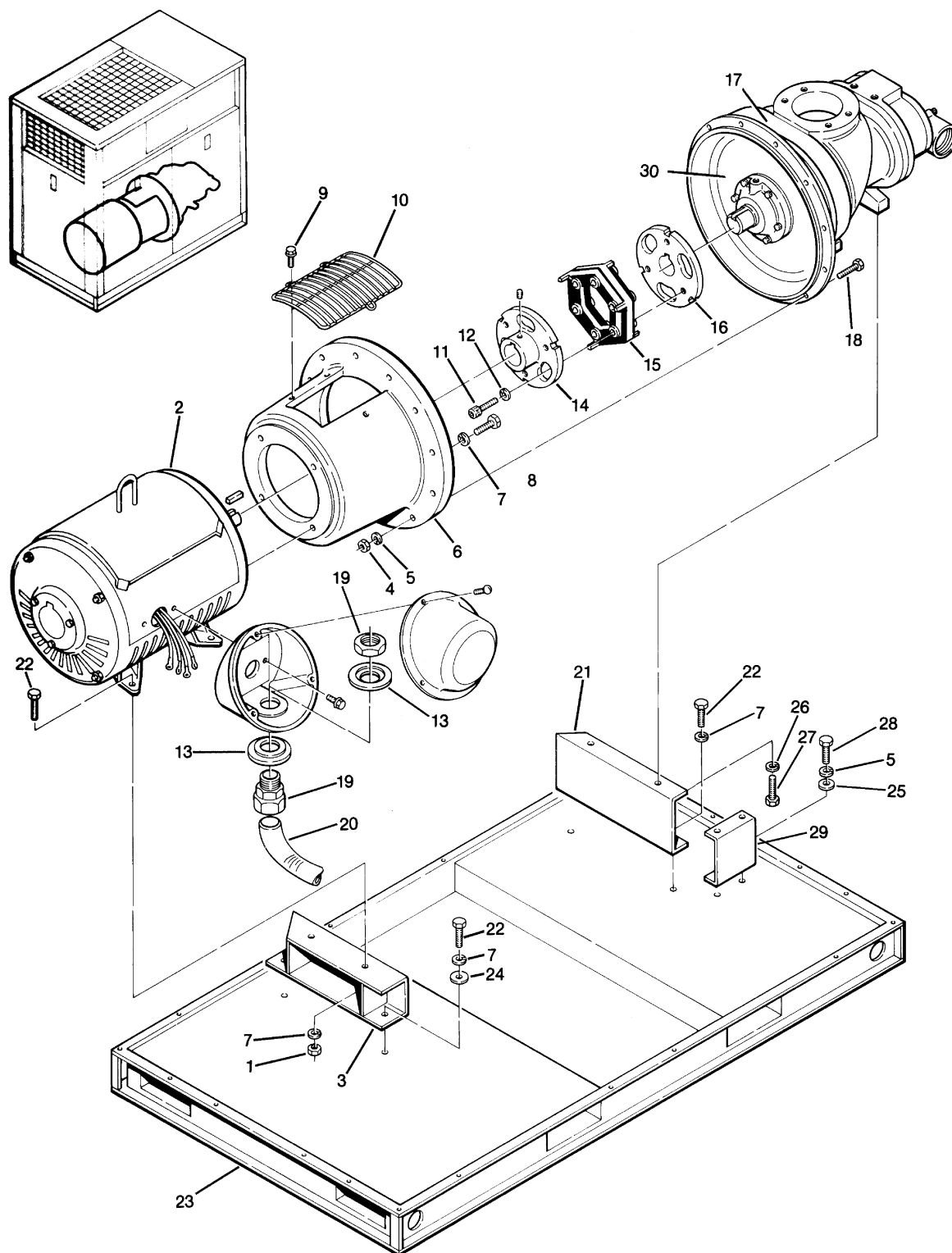
(I) For proper amount of fluid fill, please consult [Lubrication Guide in Section 3, Specifications](#).

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

ILLUSTRATIONS AND PARTS LIST

NOTES

7.3 MOTOR, FRAME, COMPRESSOR AND PARTS (LS-12 SERIES)



ILLUSTRATIONS AND PARTS LIST

7.3 MOTOR, FRAME, COMPRESSOR AND PARTS (LS-12 SERIES)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	nut, hex 5/8"	824210-559	2
2	motor, 40HP (230/460V)	250016-692	1
	Smotor, 50HP (230/460V)	250016-693	1
	Smotor, 60HP (230/460V)	250016-694	1
3	support, motor (60HP)	250018-536	1
	Ssupport, motor (40 and 50HP)	250017-490	1
4	nut, hex 3/8"-16	824206-337	12
5	washer, springlock 3/8"	837506-094	14
6	adapter, motor/compressor	250014-882	1
7	washer, springlock 5/8"	837510-156	10
8	capscrew, hex 5/8"-11 x 1 1/2"	828610-150	4
9	screw, hex serrated washer 5/16" x 3/4"	829705-075	3
10	guard, coupling	250018-412	1
11	capscrew, ferry 1/2"-13 x 2 1/2" (40 and 50HP)	828408-250	6
	Scapscrew, ferry 5/8"-11 x 2 3/4" (60HP)	828410-275	6
12	washer, springlock 1/2" (40 and 50HP)	837508-125	6
	Swasher, springlock 5/8" (60HP)	837510-156	6
13	washer, conduit reducing 3" x 1 1/2"	847012-060	2
14	hub, coupling (40 and 50HP)	250018-005	1
	Shub, coupling (60HP)	250018-008	1
15	element, coupling (40 and 50HP)	250004-641	1
	Selement, coupling (60HP)	250018-551	1
16	hub, coupling (40 and 50HP)	250004-642	1
	Shub, coupling (60HP)	250018-006	1
17	compressor unit (I)	Consult Factory	1
18	capscrew, hex 3/8"-16 x 2 1/4	828606-225	12
19	grip, cord	250014-557	1
20	wire, type g-gc 4 ga	250014-306	4 ft.
21	support, compressor	250017-489	1
22	capscrew, hex 5/8"-11 x 1 1/4"	828610-125	6
23	frame, main	250015-817	1

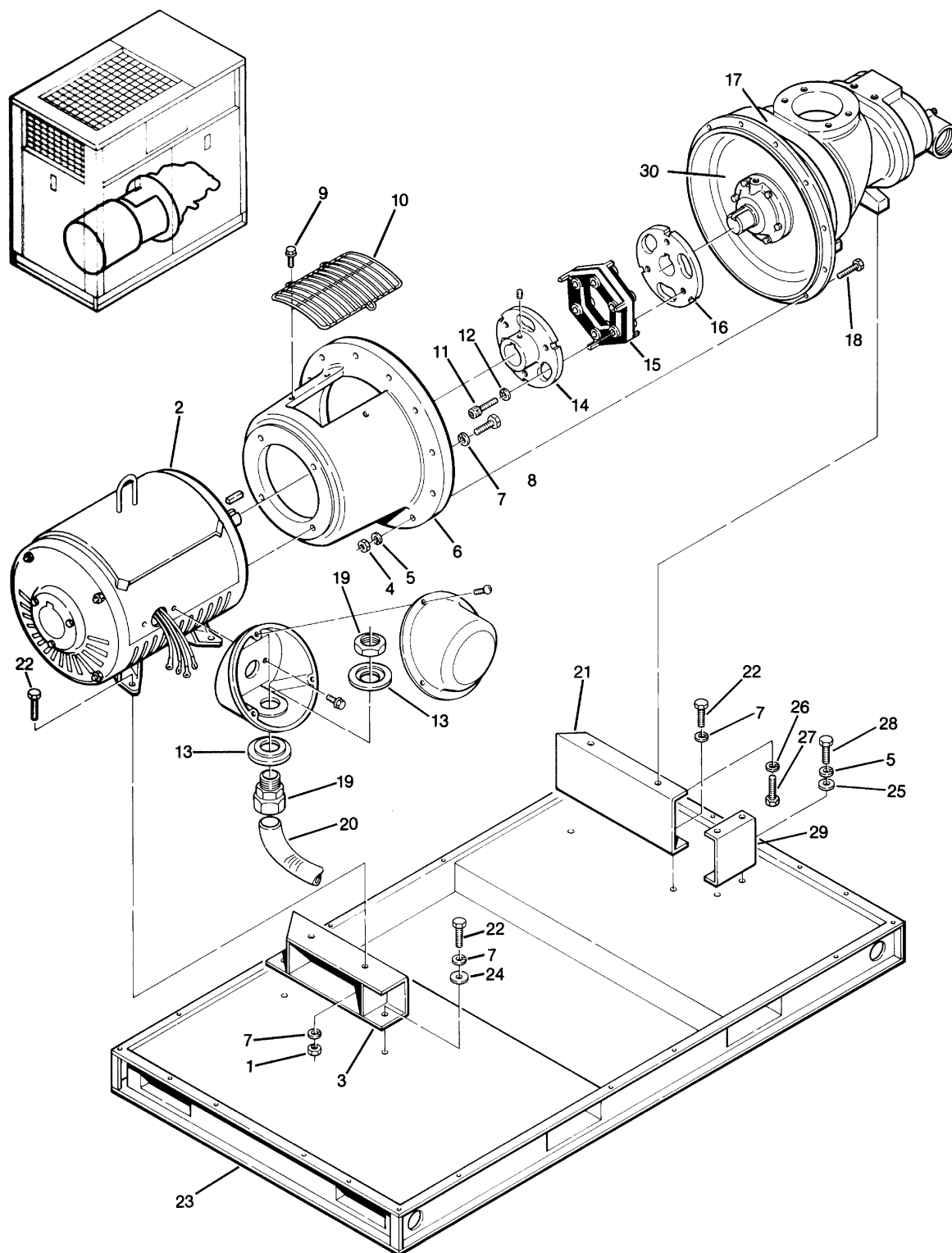
(Continued on page 37)

(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. 02250050-363 (12 Series 40 and 50HP) or kit no. 02250050-364 (12 Series 60HP), and seal tool kit no. 602542-001.

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

7.3 MOTOR, FRAME, COMPRESSOR AND PARTS (LS-12 SERIES)



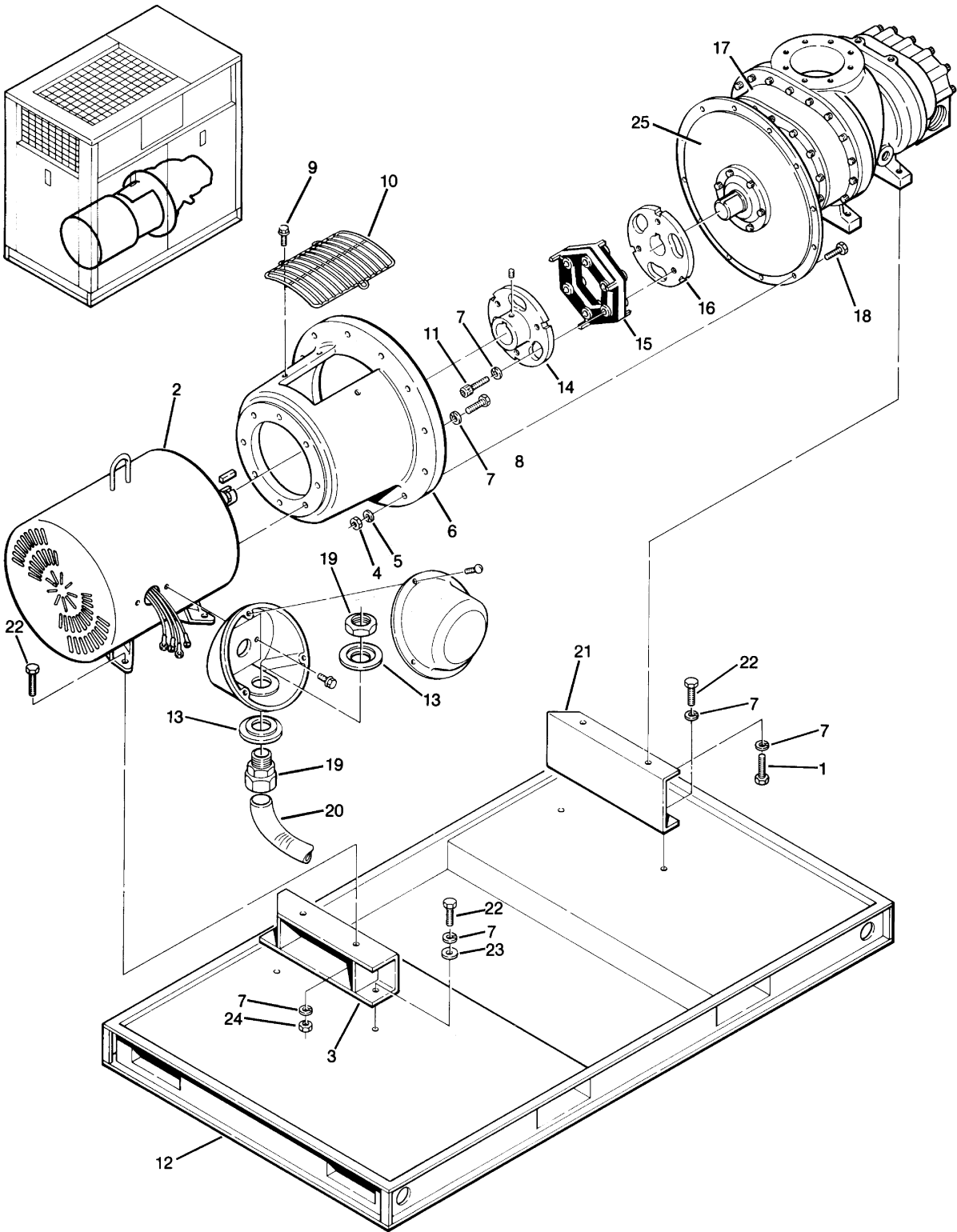
ILLUSTRATIONS AND PARTS LIST

7.3 MOTOR, FRAME, COMPRESSOR AND PARTS (LS-12 SERIES) (CONTINUED)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
24	washer, pl-b regular unfinished 5/8"	837210-112	2
25	washer, pl-b regular unfinished 3/8"	837206-071	2
26	washer, springlock regular 1/2"	837508-125	8
27	capscrew, hex 1/2"-13 x 1 1/2"	828608-150	2
28	capscrew, 3/8" x 1"	828606-100	2
29	bracket, discharge piping	250018-433	1
30	adapter, SAE flange	250016-605	1

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

7.4 MOTOR, FRAME, COMPRESSOR AND PARTS (LS-16 SERIES 60-75HP)



Section 7

ILLUSTRATIONS AND PARTS LIST

7.4 MOTOR, FRAME, COMPRESSOR AND PARTS (LS-16 SERIES 60-75HP)

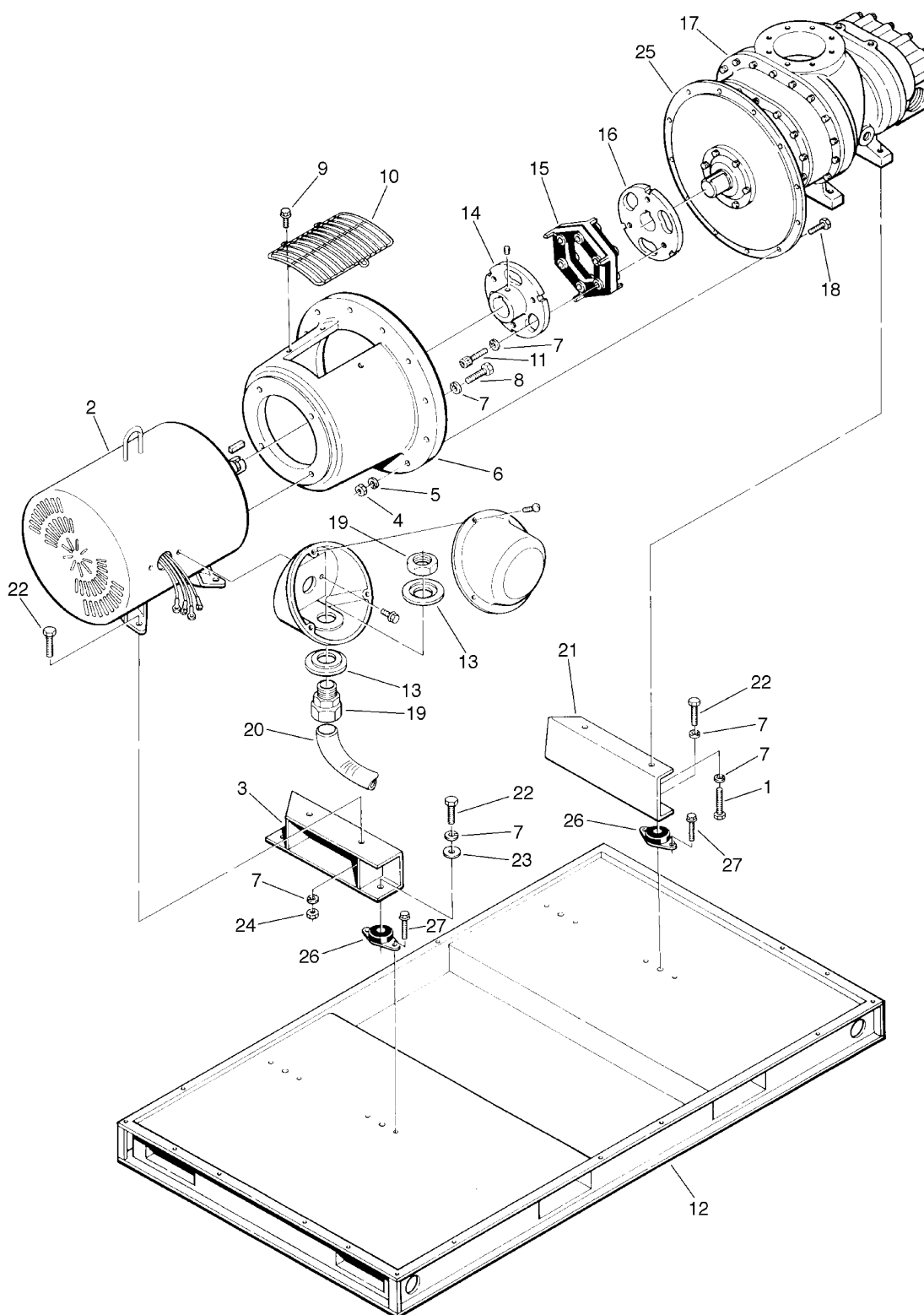
<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	capscrew, hex 1/2"–13 x 1 1/2"	828608–150	2
2	motor, 60HP (230/460V)	250016–694	1
	S motor, 75HP (230/460V)	250016–695	1
3	support, motor	250017–492	1
4	nut, hex 3/8"–16	824206–337	12
5	washer, springlock 3/8"	837506–094	12
6	adapter, motor/compressor	250014–883	1
7	washer, springlock 5/8"	837510–156	24
8	capscrew, hex 5/8"–11 x 1 1/2"	828610–150	8
9	screw, hex serrated washer	829705–075	3
10	guard, coupling	250018–412	1
11	capscrew, ferry 5/8"–11 x 2 3/4"	828410–275	6
12	frame, main	250015–817	1
13	washer, conduit reducing 3" x 1 1/2"	847012–060	2
14	hub, coupling	250018–006	1
15	element, coupling (less hardware)	250018–551	1
16	hub, coupling	250018–007	1
17	compressor unit (I)	Consult Factory	1
18	capscrew, hex 3/8"–16 x 2 1/4"	828606–225	12
19	grip, cord #2 (75HP)	250014–559	2
	Sgrip, cord #2 (60HP)	250014–557	2
20	wire, type g–gc (75HP)	250014–308	4 ft.
	Swire, type g–gc (60HP)	250014–306	4 ft.
21	support, compressor	250017–491	1
22	capscrew, hex 5/8"–11 x 1 1/4"	828610–125	6
23	washer, 5/8"	837210–112	2
24	nut, hex 5/8"–11	824210–559	2
25	adapter, SAE flange	250016–611	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 two year warranty, but the normal Sullair parts warranty applies. For shaft seal repairs, order shaft seal repair kit no. 02250050–364, and seal tool kit no. 602542–001.

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

7.5 MOTOR, FRAME, COMPRESSOR AND PARTS (LS-16 100 SERIES)



Section 7

ILLUSTRATIONS AND PARTS LIST

7.5 MOTOR, FRAME, COMPRESSOR AND PARTS (LS-16 100 SERIES)

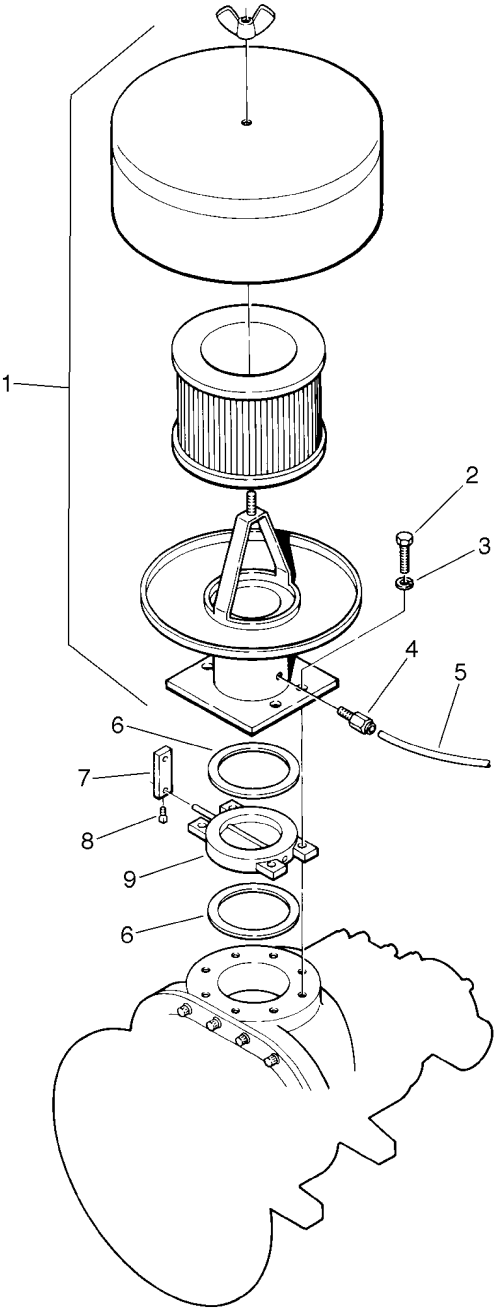
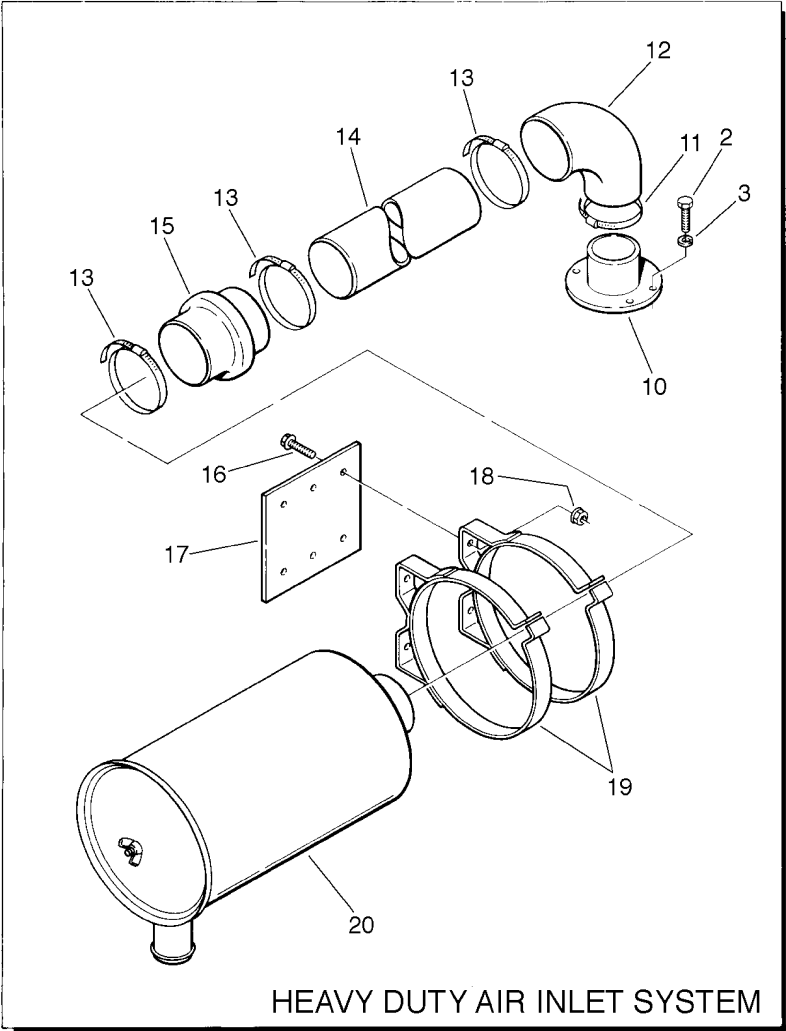
<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	capscrew, hex 1/2"–13 x 1 1/2"	828608–150	2
2	motor, 100HP (230/460V)	02250043–064	1
3	support, motor	250017–492	1
4	nut, hex 3/8"–16	824206–337	12
5	washer, springlock 3/8"	837506–094	12
6	adapter, motor/compressor	250014–883	1
7	washer, springlock 5/8"	837510–156	16
8	capscrew, hex 5/8"–11 x 1 1/2"	828610–150	8
9	screw, hex serrated washer 5/16" x 3/4"	829705–075	4
10	guard, coupling	250018–412	1
11	capscrew, ferry 5/8"–11 x 2 3/4"	828410–275	6
12	frame, main	250015–817	1
13	washer, conduit reducing 3" x 1 1/2"	847012–060	2
14	hub, coupling	250018–006	1
15	element, coupling (less hardware)	250018–551	1
16	hub, coupling	250018–007	1
17	compressor unit (I)	Consult Factory	1
18	capscrew, hex 3/8"–16 x 2 1/4"	828606–225	12
19	grip, cord #1	250014–500	2
20	wire, type g–gc	02250045–799	4 ft.
21	support, compressor	250017–491	1
22	capscrew, hex 5/8"–11 x 1 1/4"	828610–125	6
23	washer, 5/8"	837210–112	2
24	nut, hex 5/8"–11	824210–559	2
25	adapter, SAE flange	250016–611	1
26	mount, vibration	02250045–677	1
27	capscrew, thrd form type C 3/8" x 3/4"	049821	8

(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 two year warranty, but the normal Sullair parts warranty applies. For shaft seal repairs, order shaft seal repair kit no. 02250050–364, and seal tool kit no. 602542–001.

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

7.6 AIR INLET SYSTEM (LS-12 AND LS-16 SERIES)



ILLUSTRATIONS AND PARTS LIST

7.6 AIR INLET SYSTEM (LS-12 AND LS-16 SERIES)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	filter, assembly air (with flanged base) (I)	250020-315	1
2	capscrew, hex 1/2" - 13 x 2 1/2"	828608-250	4
3	washer, springlock 1/2"	837508-125	4
4	connector, tube-straight 1/8"npt x 1/4"t	813604-125	1
5	tubing, thermoplastic 1/4"od	250024-745	7 ft.
6	gasket, 1/32" x 5 1/4"od x 4 1/8"id	040708	2
7	lever, inlet valve	020687	1
8	screw, set 5/16" - 18 x 3/4"	408383	1
9	valve, butterfly 4"	040640	1
10	adapter, compressor inlet assy	02250046-257	1
11	clamp, hose	040642	1
12	elbow, rubber reducing 4" x 5"	047275	1
13	clamp, hose 6"	408153	3
14	tube, aluminum 5" x 23"	02250046-003	1
15	hose, hump 5"	02250045-989	1
16	screw, hex serrated wash 5/16" x 3/4"	829705-075	
17	support, bracket filter	02250046-997	1
18	nut, hex flanged 5/16" - 18	825305-283	1
19	band, mounting 12"	040081	2
20	filter, assy air (16 Series 100HP) (II)	02250045-855	1
	Sfilter, assy air (12 Series 40 and 50HP) (III)	049103	1
	Sfilter, assy air (12 Series 60HP; 16 Series 60 and 75HP) (IV)	047274	1

(I) For maintenance on air filter assembly no. 250020-315, order element no. 040899.

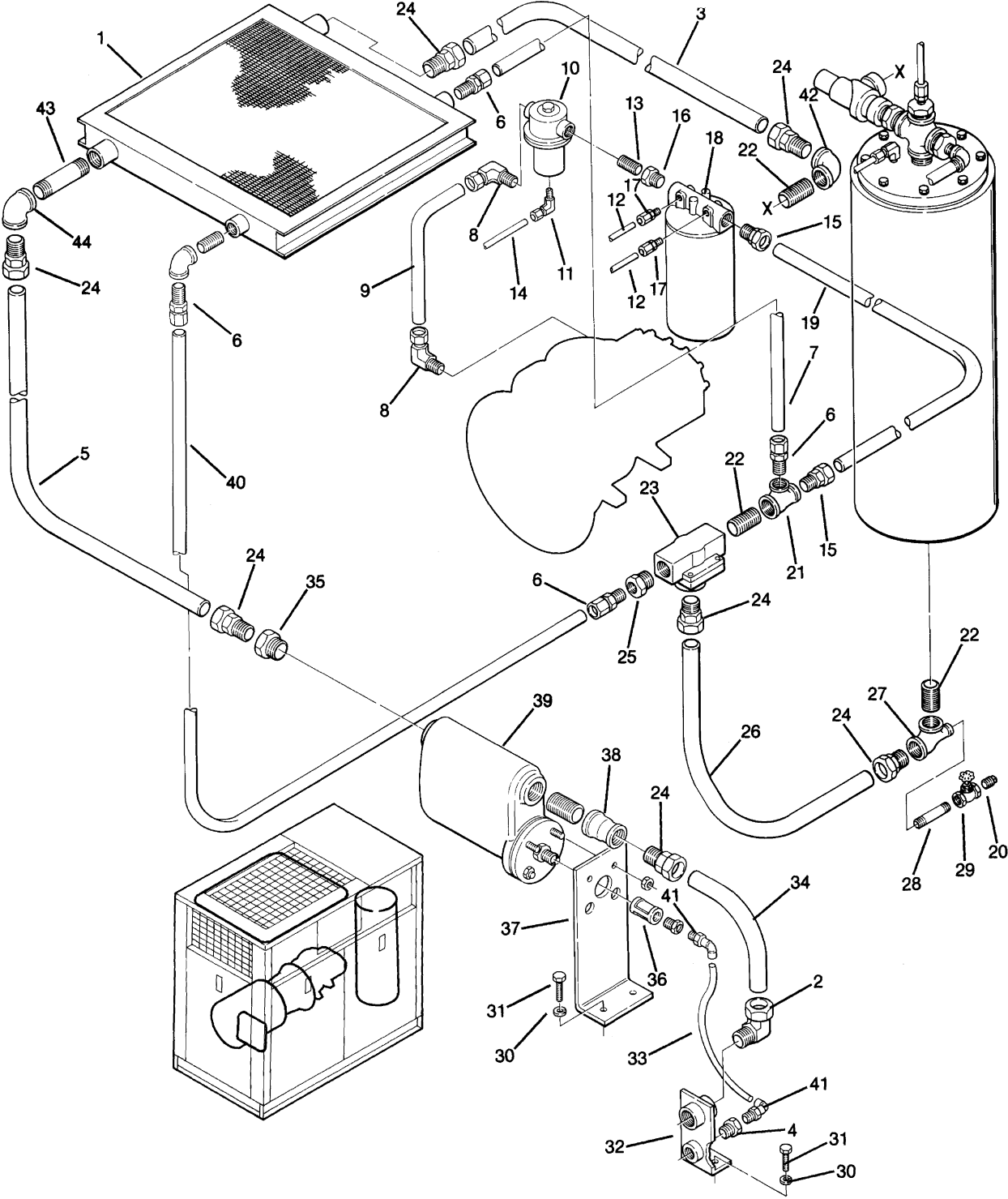
(II) For maintenance on air filter assy no. 02250045-855, order primary element no. 02250046-012, and safety element no. 02250046-013.

(III) For maintenance on air filter assembly no. 049103, order element no. 049301.

(IV) For maintenance on air filter assembly no. 047274, order primary element no. 047542 and safety element no. 047543.

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

7.7 COMPRESSOR COOLING AND LUBRICATION SYSTEM (AIR-COOLED, LS-12 SERIES 40 AND 50HP)



Section 7

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7.7 COMPRESSOR COOLING AND LUBRICATION SYSTEM (AIR-COOLED, LS-12 SERIES 40 AND 50HP)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	cooler, fluid and aftercooler assembly	250038-657	1
2	elbow, tube-m 1 1/2" x 1 1/2"	810524-150	1
3	tube, 1 1/2"	250018-259	1
4	bushing, reducing 3/4" x 1/2"	802103-020	1
5	tube, 1 1/2"od	250018-251	1
6	connector, tube 1" x 1"	810216-100	3
7	tube, 1"	250039-986	1
8	elbow, tube 1" x 1"	810516-100	3
9	tube, 1"	250038-497	1
10	valve, fluid stop 1" (I)	016741	1
11	elbow, tube 5/16" x 1/4"	810505-025	1
12	tubing, 1/4"	841015-004	10 ft.
13	nipple, pipe 1" x close	822216-000	3
14	tubing, 5/16" stainless steel	841215-005	2.7 ft.
15	connector, tube-m 1 1/4" x 1 1/4"	810220-125	2
16	bushing, reducing 1 1/4" x 1"	802105-040	1
17	connector, tube-m 1/4" x 1/4"	810204-025	2
18	filter, fluid (II)	250025-522	1
19	tube, 1 1/4"	250018-246	1
20	plug, pipe 1/2"	807800-020	1
21	tee, reducing 1 1/2" x 1 1/4" x 1"	802206-054	1
22	nipple, pipe 1 1/2" x close	822224-000	2
23	valve, thermal (III)	014512	1
24	connector, tube-m 1 1/2" x 1 1/2"	810224-150	7
25	bushing, reducing 1 1/2" x 1"	802106-040	1
26	tube, 1 1/2"	250018-376	1
27	tee, reducing 1 1/2" x 1/2" x 1 1/2"	802206-026	1
28	nipple, pipe 1/2" x 4"	822108-040	1
29	valve, globe 1/2"	041007	1
30	washer, springlock 1/2"	837508-125	3
31	capscrew, hex 1/2"-13 gr5	828608-150	3
32	bracket, air connector and condenser drain	250017-233	1

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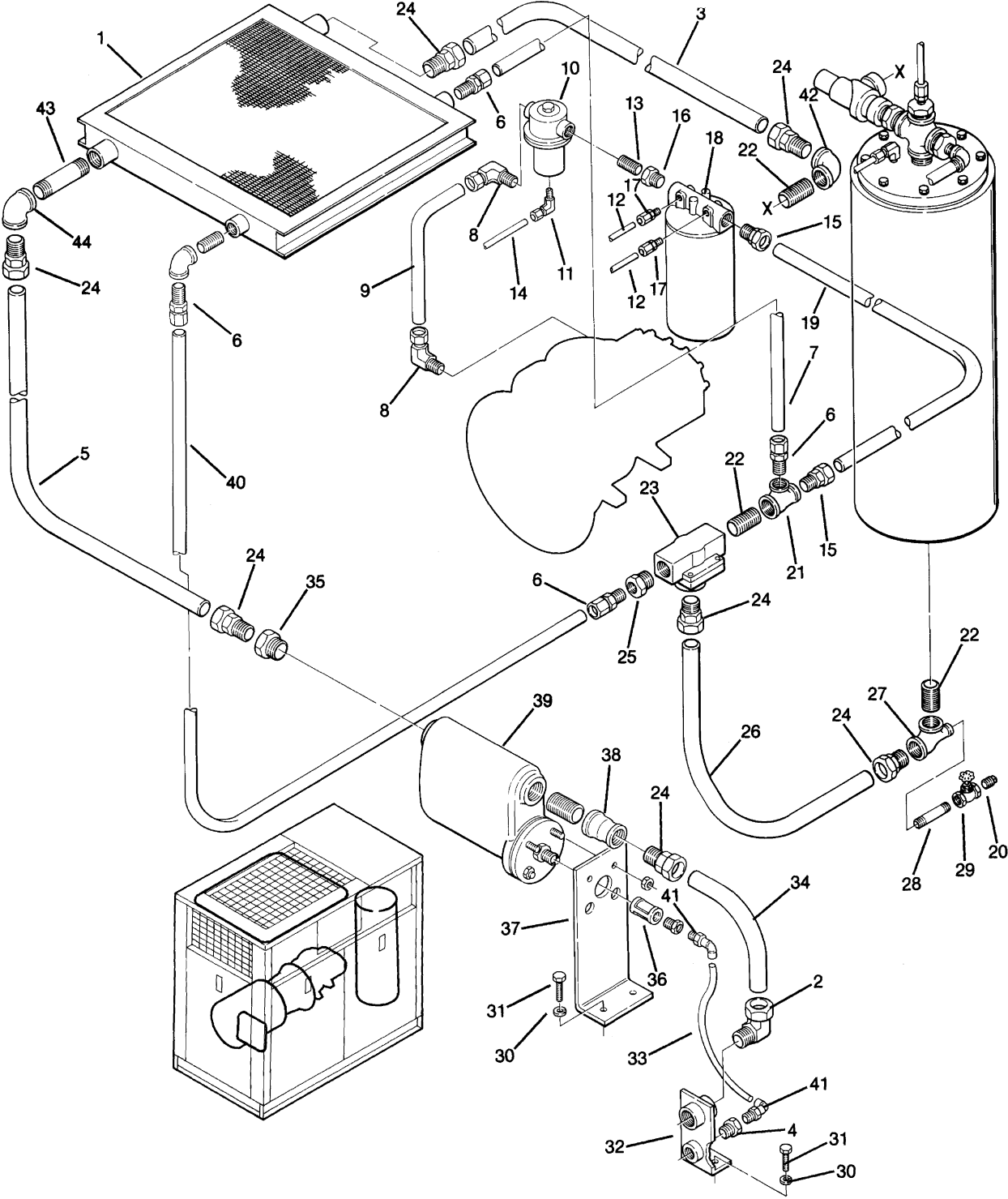
(I) For maintenance on fluid stop valve no. 016741, order repair kit no. 001684.

(II) For maintenance on fluid filter no. 250025-522, order repair kit no. 250025-526.

(III) For maintenance on thermal valve no. 014512, order repair kit no. 001168.

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

7.7 COMPRESSOR COOLING AND LUBRICATION SYSTEM (AIR-COOLED, LS-12 SERIES 40 AND 50HP)



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ILLUSTRATIONS AND PARTS LIST

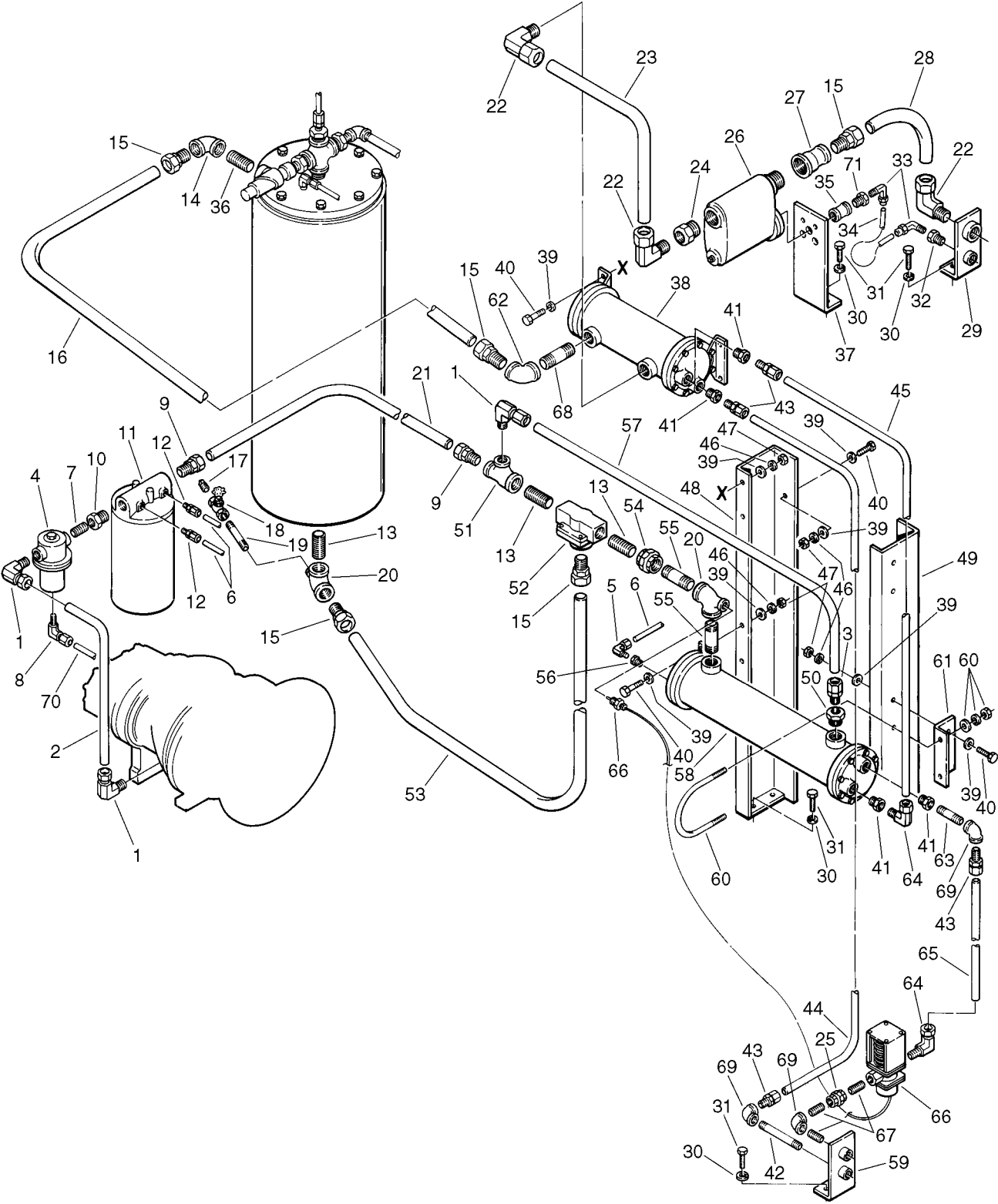
7.7 COMPRESSOR COOLING AND LUBRICATION SYSTEM (AIR-COOLED, LS-12 SERIES 40 AND 50HP) (CONTINUED)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
33	tubing, thermosplastic 3/8"od	250024-746	1 ft.
34	tube, 1 1/2"	250018-252	1
35	bushing, reducing 2" x 1 1/2"	802108-060	1
36	coupling, pipe 1/2"	801215-020	1
37	bracket, separator trap	250018-378	1
38	coupling, reducing 2" x 1 1/2"	801016-012	1
39	separator/trap (IV)	040847	1
40	tube, 1"	250018-245	1
41	connector, tube elbow 3/8"tube x 1/2"npt	813706-375	2
42	elbow, 1 1/2" x 1 1/4" reducing	801606-050	1
43	nipple, pipe 1 1/2" x 7 1/2"	822124-075	1
44	elbow, pipe 90_ 1 1/2"	801515-060	1

(IV) For maintenance on separator/trap no. 040847, order separator kit no. 044374.

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

7.8 COMPRESSOR COOLING AND LUBRICATION SYSTEM (WATER-COOLED, LS-12 SERIES 40 AND 50HP)



Section 7

ILLUSTRATIONS AND PARTS LIST

7.8 COMPRESSOR COOLING AND LUBRICATION SYSTEM (WATER-COOLED, LS-12 SERIES 40 AND 50HP)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	elbow, tube—m 1" x 1"	810516-100	3
2	tube, 1"	250032-112	1
3	connector, tube 1"	810216-100	1
4	valve, fluid stop (I)	016741	1
5	elbow, tube—m 1/4" x 1/4"	810504-025	1
6	tube, 1/4"	841015-004	3 ft.
7	nipple, pipe xs 1" x close	822216-000	1
8	elbow, tube—m 5/16" x 1/4"	810505-012	1
9	connector, tube 1 1/4" x 1 1/4"	810220-125	2
10	bushing, reducing 1 1/4" x 1	802105-040	1
11	filter, fluid (II)	250025-522	1
12	connector, tube 1/4"	810204-025	2
13	nipple, pipe 1 1/2" x close	822224-000	3
14	elbow, reducing 1 1/2" x 1 1/4"	801606-050	1
15	connector, tube—m 1 1/2" x 1 1/2"	810224-150	5
16	tube, 1 1/2"	250018-400	1
17	plug, pipe 1/2"	807800-020	3
18	valve, globe 1/2"	041007	1
19	nipple, pipe 1/2" x 4"	822108-040	1
20	tee, reducing 1 1/2" x 1/2" x 1 1/2"	802206-026	2
21	tube, 1 1/4"	250018-246	1
22	elbow, tube—m 1 1/2" x 1 1/2"	810524-150	3
23	tube, 1 1/2"	250018-401	1
24	bushing, reducing 2" x 1 1/2"	802108-060	1
25	union, pipe 3/4"	802515-030	1
26	separator/trap (III)	040847	1
27	coupling, reducing 2" x 1 1/2"	801016-012	1
28	tube, 1 1/2"	250018-252	1
29	bracket, air connector and condenser drain	250017-233	1
30	washer, springlock 1/2"	837508-125	8
31	capscrew, hex 1/2"—13 x 1 1/2" gr5	828608-150	8
32	bushing, reducing 3/4" x 1/2"	802103-020	1
33	elbow, tube—el 3/8" mnpt x 3/8" t	813706-375	2

(Continued on page 51)

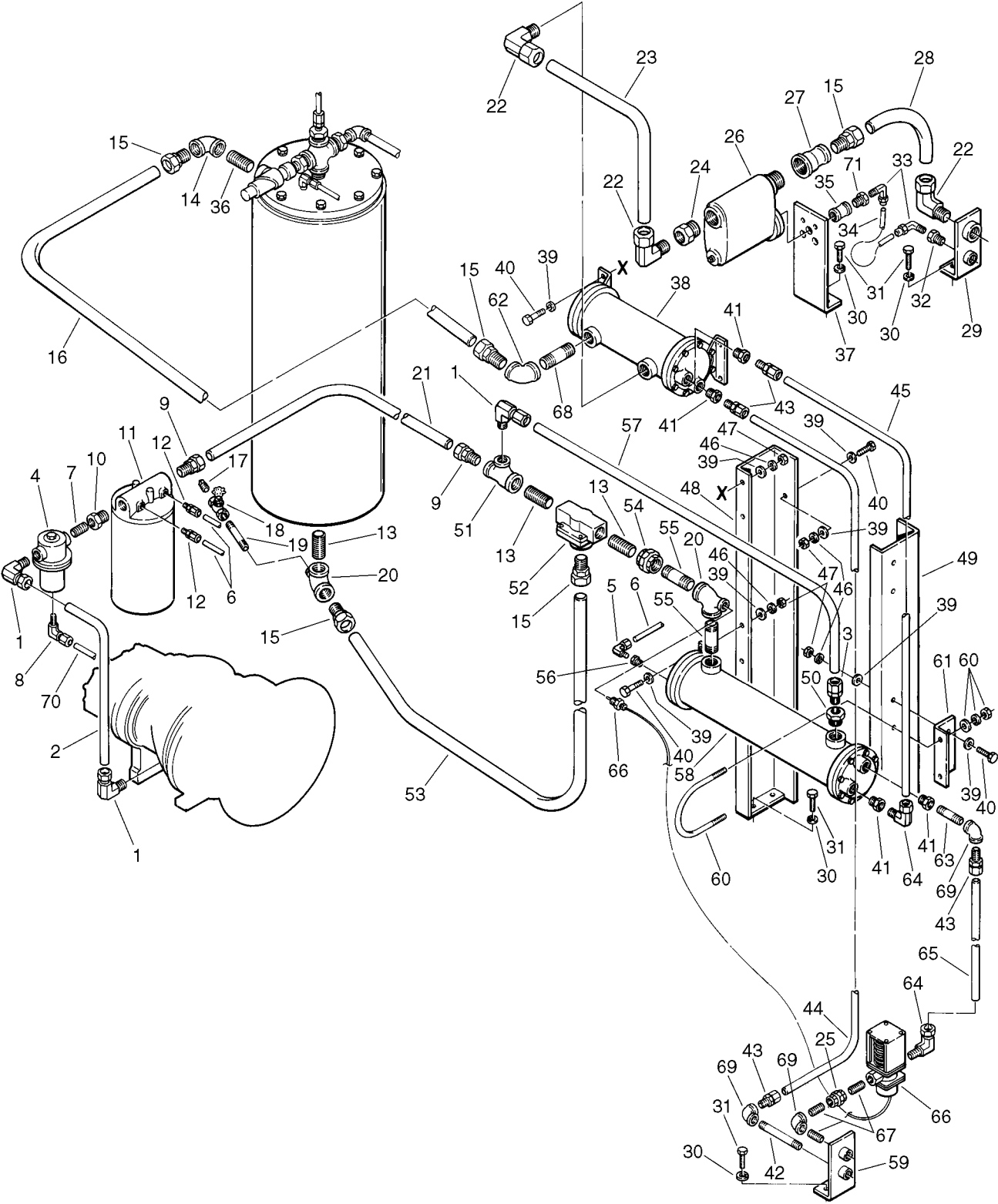
(I) For maintenance on fluid stop valve no. 016741, order repair kit no. 001684.

(II) For maintenance on fluid filter no. 250025-522, order repair kit no. 250025-526.

(III) For maintenance on separator/trap no. 040847, order separator kit no. 044374.

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

7.8 COMPRESSOR COOLING AND LUBRICATION SYSTEM (WATER-COOLED, LS-12 SERIES, 40 AND 50HP)



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ILLUSTRATIONS AND PARTS LIST

7.8 COMPRESSOR COOLING AND LUBRICATION SYSTEM (WATER-COOLED, LS-12 SERIES 40 AND 50HP) (CONTINUED)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
34	tubing, thermoplastic 3/8" od	250024-746	1 ft.
35	coupling, pipe 1/2"	801215-020	1
36	nipple, 1 1/4" x close	822220-000	1
37	bracket, separator/trap	250018-378	1
38	aftercooler	250017-527	1
39	washer, regular 3/8"	838206-071	20
40	capscrew, 3/8" x 1 1/4"	828606-125	12
41	bushing, reducing hex 1" x 3/4"	802104-030	4
42	nipple, pipe 3/4" x 5" (40 and 50HP)	822112-050	1
43	connector, tube-m 3/4"	810212-075	4
44	tube, water aft clr 3/4"	250018-407	1
45	tube, clr/clr water 3/4"	250018-403	1
46	washer, springlock regular 3/8"	837506-094	14
47	nut, hex 3/8"-16	825006-337	14
48	support, starter box - right hand	250017-977	1
49	support, starter box - left hand	250017-978	1
50	bushing, reducing hex 1 1/2" x 1"	802106-040	1
51	tee, reducing 1 1/2" x 1 1/4" x 1 1/2"	802206-054	1
52	valve, thermal (IV)	014512	1
53	tube, 1 1/2"	250018-376	1
54	union, pipe 1 1/2"	802515-060	1
55	nipple, pipe 1 1/2" x 2 1/2"	822124-025	2
56	bushing, reducing 3/8" x 1/4"	807601-010	1
57	tube, 1"	250018-398	1
58	cooler, fluid	040680	1
59	bracket, water connector	250017-234	1
60	clamp, 5"	043364	1
61	bracket, cooler support	250019-027	1
62	elbow, pipe 1 1/2"	801515-060	1
63	nipple, pipe 3/4" x 2 1/2"	822112-025	1
64	elbow, tube-m 3/4" x 3/4"	810512-075	2
65	tube, 3/4"	250018-405	1
66	valve, water regulating 3/4"	047398	1
67	nipple, pipe 3/4" x close	822212-000	3
68	nipple, pipe 1 1/2" x 3"	822124-030	1
69	elbow, pipe 3/4"	801515-030	3
70	tube, 5/16" stainless steel	841215-005	2.7 ft.
71	bushing, reducing hex 1/2" x 3/8"	802102-015	1

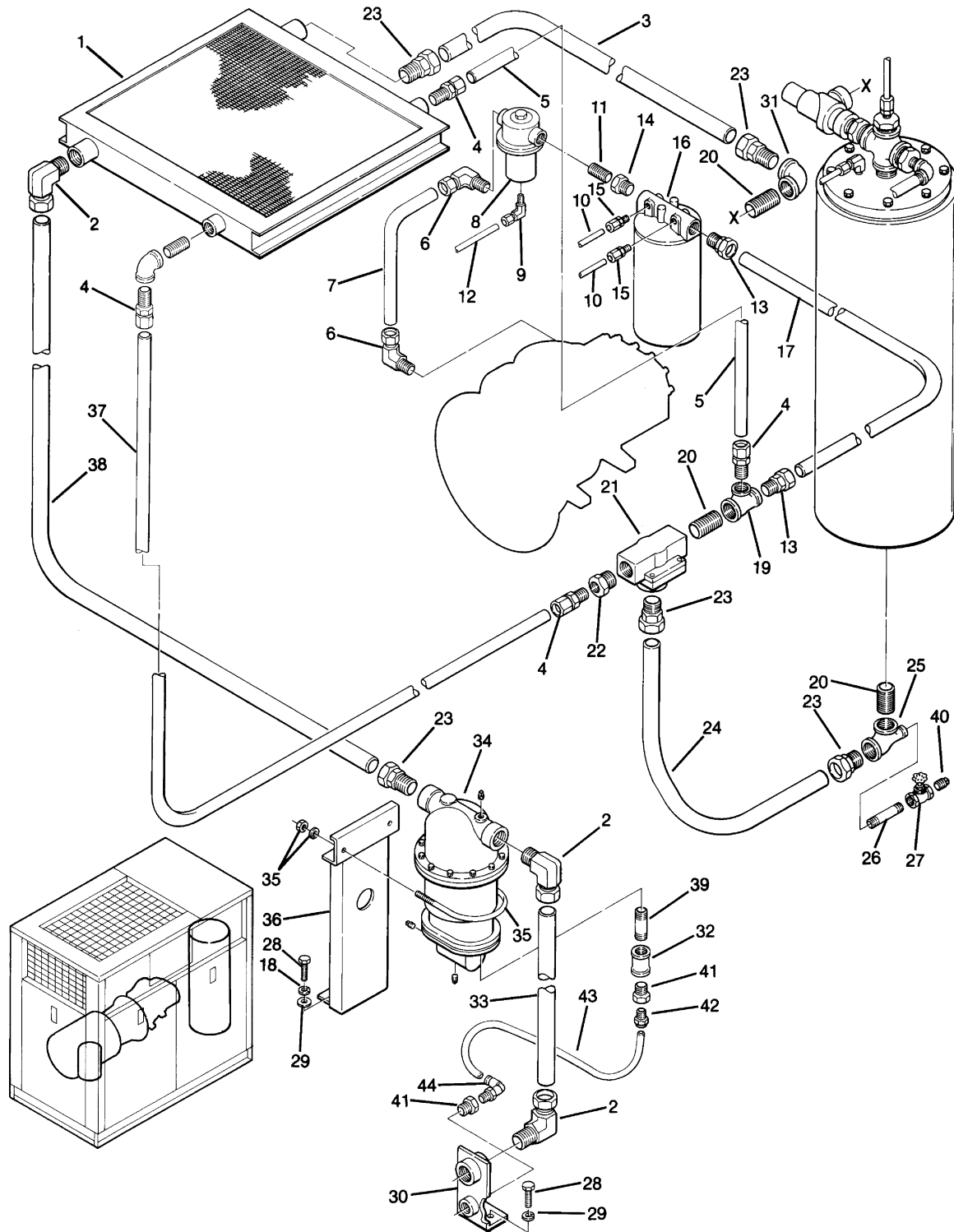
(IV) For maintenance on thermal valve no. 014512, order repair kit no. 001168.

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

Section 7

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7.9 COMPRESSOR COOLING AND LUBRICATION SYSTEM (AIR-COOLED, LS-12 SERIES 60HP, AND LS-16 SERIES 60-75HP)



Section 7

ILLUSTRATIONS AND PARTS LIST

7.9 COMPRESSOR COOLING AND LUBRICATION SYSTEM (AIR-COOLED, LS-12 SERIES 60HP, AND LS-16 SERIES 60-75HP)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	cooler, fluid and aftercooler assembly	250038-658	1
2	elbow, tube-m 1 1/2" x 1 1/2"	810524-150	3
3	tube, 1 1/2"	250018-259	1
4	connector, tube-m 1" x 1"	810216-100	3
5	tube, 1"	250039-987	1
6	elbow, tube-m 1" x 1"	810516-100	3
7	tube, 1" (12 Series 60HP) Stube, 1" (16 Series (60 and 75HP)	250038-497 250032-112	1 1
8	valve, fluid stop (I)	016741	1
9	elbow, tube-m 5/16" x 1/4"	810505-025	1
10	tubing, 1/4"	841015-004	10 ft.
11	nipple, pipe 1" x close	822216-000	3
12	tubing, 5/16" stainless steel	841215-005	2.7 ft.
13	connector, tube-m 1 1/4" x 1 1/4"	810220-125	2
14	bushing, reducing 1 1/4" x 1"	802105-040	1
15	connector, tube-m 1/4"	810204-025	2
16	filter, fluid (II)	250025-522	1
17	tube, 1 1/4" (12 Series 60HP) Stube, 1 1/4" (16 Series (60 and 75HP)	250018-246 250018-255	1 1
18	washer, springlock 1/2"	837508-125	2
19	tee, reducing 1 1/2" x 1 1/4" x 1"	802206-054	1
20	nipple, pipe 1 1/2" x close	822224-000	2
21	valve, thermal (III)	014512	1
22	bushing, hex 1 1/2" x 1"	802106-040	1
23	connector, tube-m 1 1/2" x 1 1/2"	810224-150	5
24	tube, 1 1/2"	250018-376	1
25	tee, reducing 1 1/2" x 1/2" x 1 1/2"	802206-026	1
26	nipple, pipe 1/2" x 4"	822108-040	1
27	valve, globe 1/2"	041007	1
28	capscrew, hex 1/2"-13 x 1 1/2"	828608-150	3
29	washer, pl-b regular unfinished 1/2"	837208-112	2
30	bracket, air connector and condenser drain	250017-233	1

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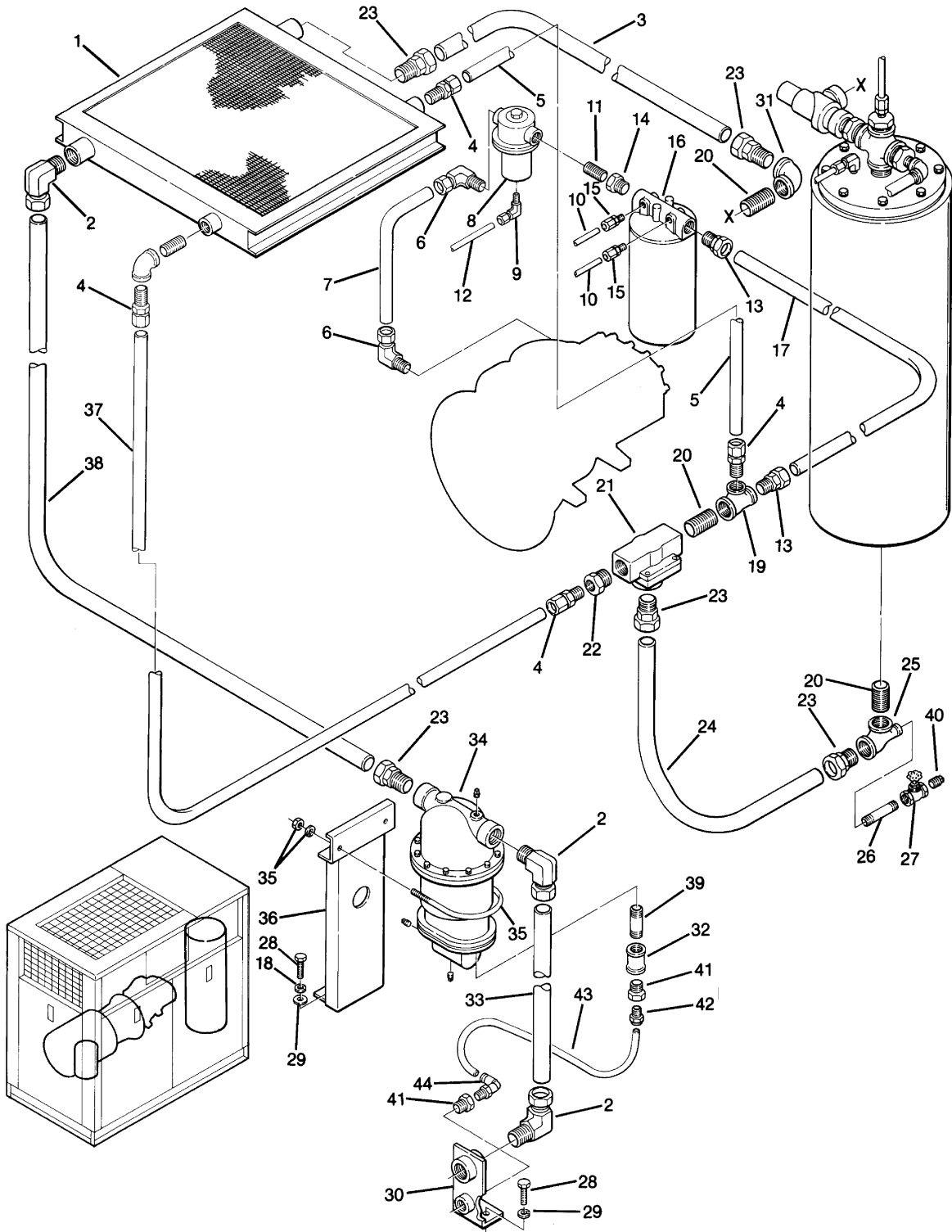
(I) For maintenance on fluid stop valve no. 016741, order repair kit no. 001684.

(II) For maintenance on fluid filter no. 250025-522, order repair kit no. 250025-526.

(III) For maintenance on thermal valve no. 014512, order repair kit no. 001168.

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

7.9 COMPRESSOR COOLING AND LUBRICATION SYSTEM (AIR-COOLED, LS-12 SERIES 60HP, AND LS-16 SERIES 60-75HP)



Section 7

ILLUSTRATIONS AND PARTS LIST

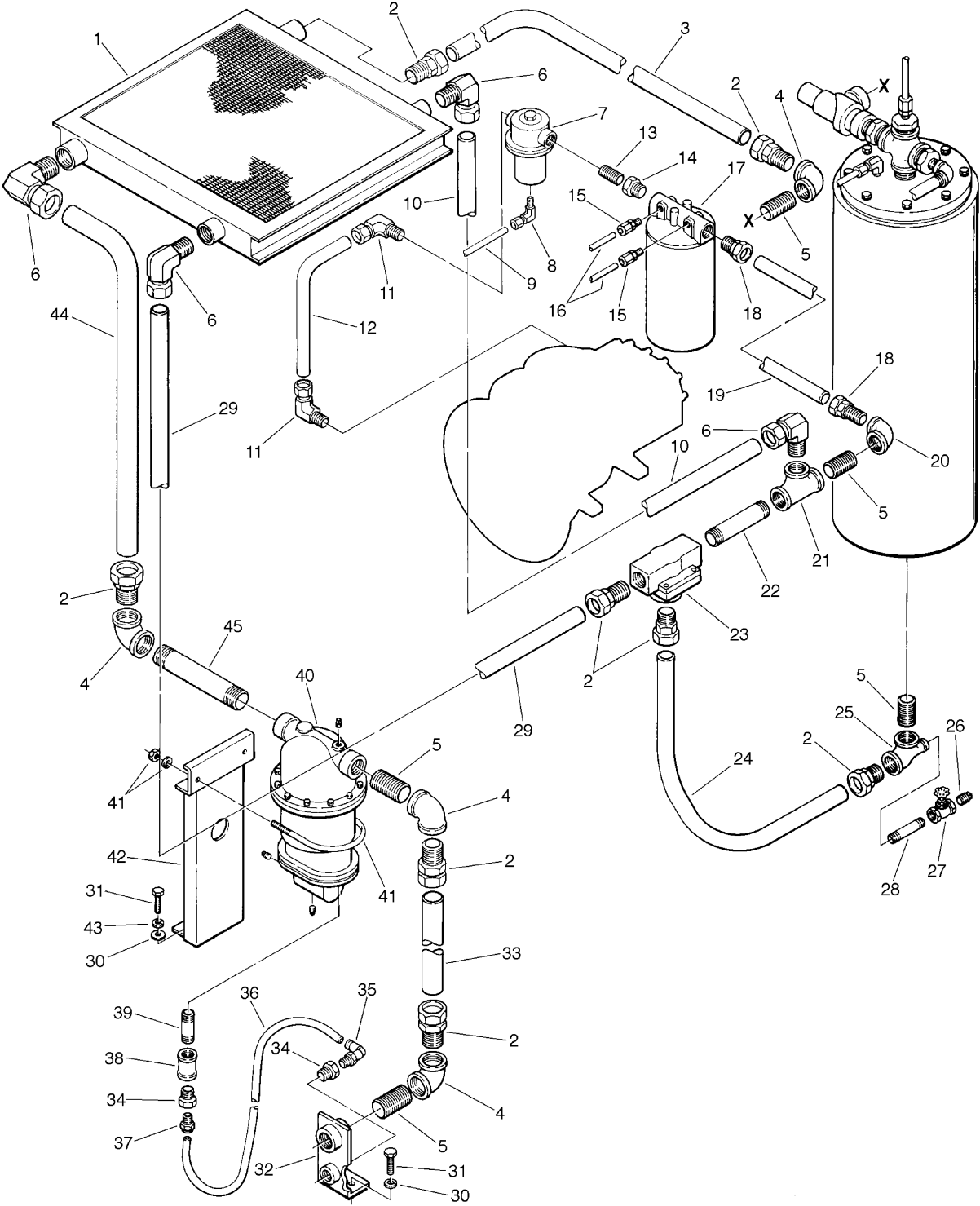
7.9 COMPRESSOR COOLING AND LUBRICATION SYSTEM (AIR-COOLED, LS-12 SERIES 60HP, AND LS-16 SERIES 60-75HP) (CONTINUED)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
31	elbow, pipe 90_ 1 1/2"	801515-060	1
32	coupling, pipe 3/4"	801215-030	1
33	tube, separator air connector 1 1/2"	250018-260	1
34	separator, combination trap (IV)	250018-041	1
35	u-bolt, 1/2" x 5"	829008-500	1
36	support, moisture separator and trap	250018-160	1
37	tube, 1"	250018-254	1
38	tube, 1 1/2"	250018-375	1
39	nipple, pipe 3/4" x 2 1/2"	822112-025	1
40	plug, pipe 1/2"	807800-020	1
41	bushing, reducing 3/4" x 1/2"	802103-020	2
42	connector, tube straight 1/2"mnpt x 3/8" reducing	813606-375	1
43	tubing, thermoplastic 3/8"od	250024-746	1 ft.
44	connector, tube-el 1/2"mnpt x 3/8"t	813706-375	1

(IV) For maintenance on combination trap separator no. 250018-041, order repair kit no. 250033-038.

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

7.10 COMPRESSOR COOLING AND LUBRICATION SYSTEM (AIR-COOLED, LS-16 SERIES 100HP)



Section 7

ILLUSTRATIONS AND PARTS LIST

7.10 COMPRESSOR COOLING AND LUBRICATION SYSTEM (AIR-COOLED, LS-16 SERIES 100HP)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	cooler, fluid and aftercooler assembly	250038-658	1
2	connector, tube-m 1 1/2" x 1 1/2"	810224-150	8
3	tube, 1 1/2"	250018-259	1
4	elbow, pipe 90° 1 1/2"	801515-060	1
5	nipple, pipe 1 1/2" x close	822224-000	5
6	elbow, tube-m 1 1/2" x 1 1/2"	811615-150	4
7	valve, fluid stop (I)	016741	1
8	elbow, tube-m 5/16" x 1/4"	810505-025	1
9	tubing, 5/16" stainless steel	841215-005	2.7 ft.
10	tubing, 1 1/2"	02250060-824	1
11	elbow, tube-m 1" x 1"	810516-100	3
12	tube, 1"	250032-112	1
13	nipple, pipe 1" x close	822216-000	3
14	bushing, reducing hex 1 1/4" x 1"	802105-040	1
15	connector, tube-m 1/4"	810204-025	2
16	tubing, 1/4"	841015-004	10 ft.
17	filter, fluid (II)	250025-522	1
18	connector, tube-m 1 1/4" x 1 1/4"	810220-125	2
19	tube, 1 1/4"	02250045-595	1
20	elbow, pipe 90° 1 1/2" x 1 1/4"	801606-050	1
21	tee, pipe 1/2"	802415-060	1
22	nipple, pipe 1 1/2" x 8 1/2"	822124-085	1
23	valve, thermal (III)	014512	1
24	tube, 1 1/2"	250018-376	1
25	tee, reducing 1 1/2" x 1/2" x 1 1/2"	802206-026	1
26	pipe, plug 1/2"	807800-020	1
27	valve, globe 1/2"	041007	1
28	pipe, nipple 1/2" x 4"	822108-040	1
29	tube, 1 1/2"	02250060-826	1
30	washer, reg unfinished 1/2"	837208-112	2

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(I) For maintenance on fluid stop valve no. 016741, order repair kit no. 001684.

(II) For maintenance on fluid filter no. 250025-522, order repair kit no. 250025-526.

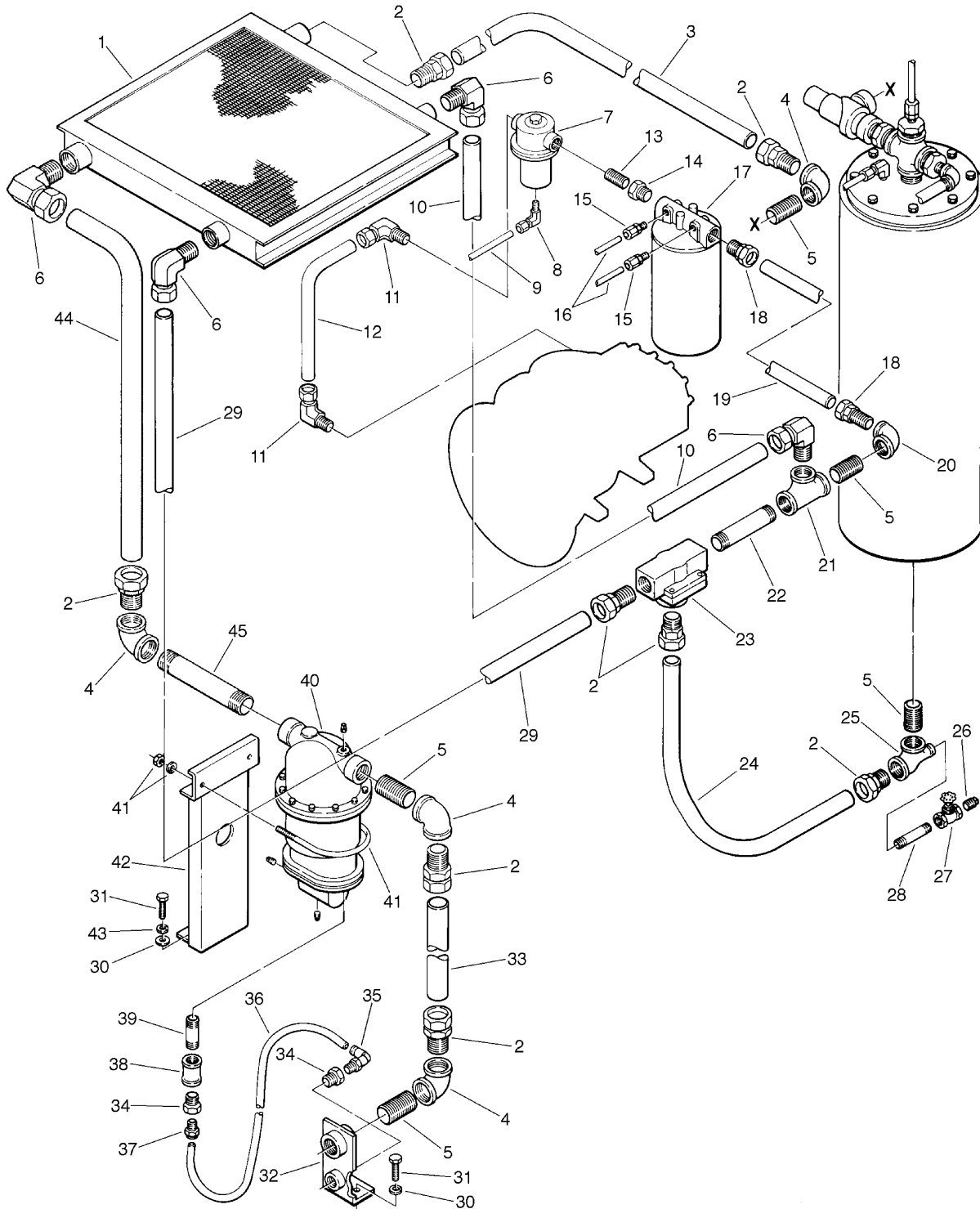
(III) For maintenance on thermal valve no. 014512, order repair kit no. 001168.

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

Section 7

ILLUSTRATIONS AND PARTS LIST

7.10 COMPRESSOR COOLING AND LUBRICATION SYSTEM (AIR-COOLED, LS-16 SERIES 100HP)



ILLUSTRATIONS AND PARTS LIST

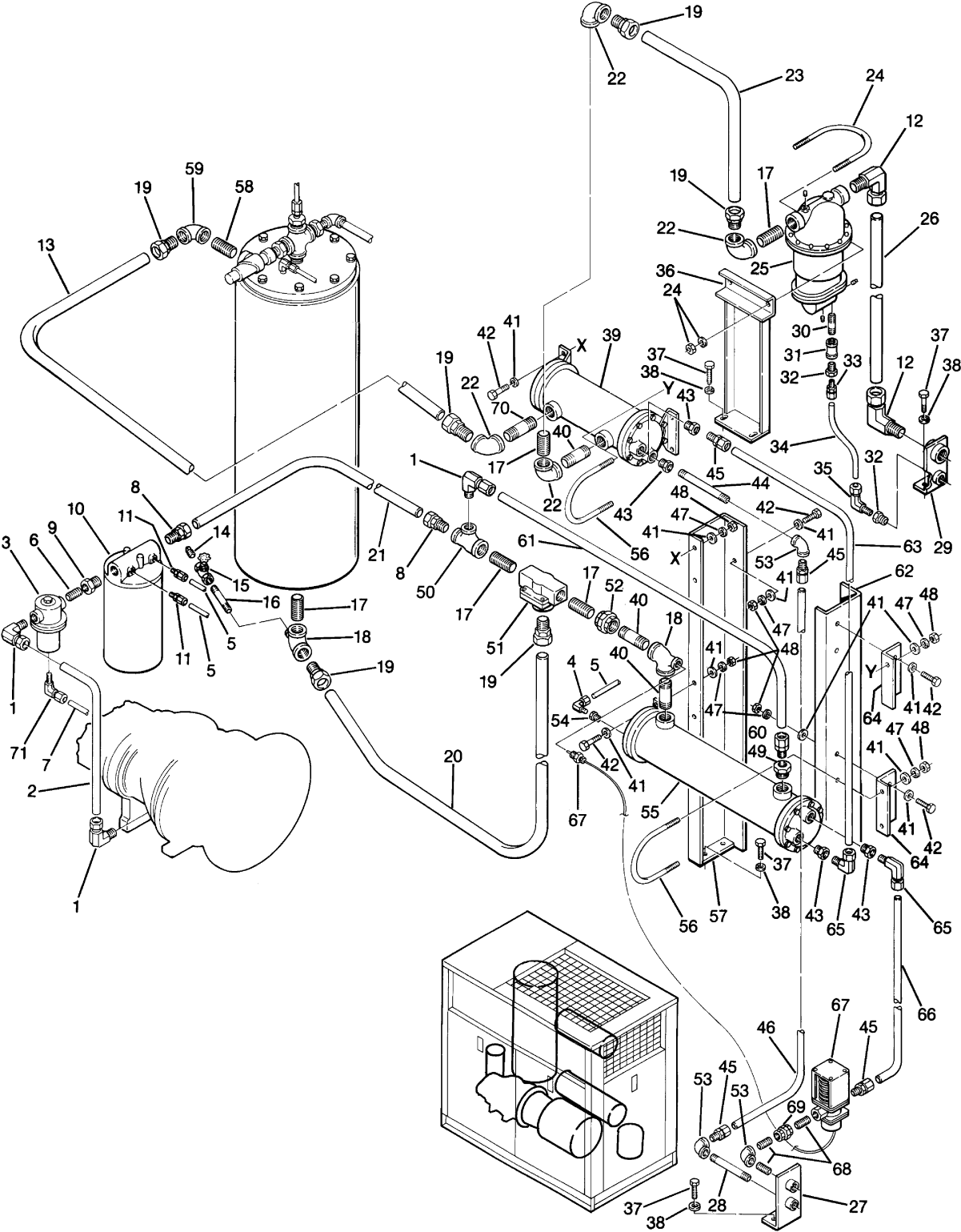
7.10 COMPRESSOR COOLING AND LUBRICATION SYSTEM (AIR-COOLED, LS-16 SERIES 100HP)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
31	capscrew, hex 1/2"–13 x 1 1/2"	828608–150	3
32	bracket, air connector & condenser drain	250017–233	1
33	tube, 1 1/2"	02250045–594	1
34	bushing, reducing 3/4" x 1/2"	802103–020	2
35	connector, tube elbow 1/2" mnpt x 3/8"t	813706–375	1
36	tubing, thermoplastic 3/8"	250024–746	1 ft.
37	connector, tube straight 1/2" mnpt x 3/8"t	813606–375	1
38	coupling, pipe 3/4"	822112–025	1
39	nipple, pipe 3/4" x 2 1/2"	822112–025	1
40	separator, combination trap (IV)	250018–041	1
41	u-bolt, 1/2" x 5"	829008–500	1
42	support, moisture separator and trap	250018–160	1
43	washer, springlock 1/2"	837508–125	2
44	tube, 1 1/2"	250018–375	1
45	nipple, pipe 1 1/2"	822124–085	1

(IV) For maintenance on combination trap separator no. 250018–041, order repair kit no. 250033–038.

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

7.11 COMPRESSOR COOLING AND LUBRICATION SYSTEM (WATER-COOLED, LS-12 SERIES 60HP, AND LS-16 SERIES 60-75HP)



Section 7

ILLUSTRATIONS AND PARTS LIST

7.11 COMPRESSOR COOLING AND LUBRICATION SYSTEM (WATER-COOLED, LS-12 SERIES 60HP, AND LS-16 SERIES 60-75HP)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	elbow, tube-m 1" x 1"	810516-100	3
2	tube, 1" (12 Series 60HP)	250038-497	1
	Stube, 1" (16 Series 60 and 75HP)	250032-112	1
3	valve, fluid stop (I)	016741	1
4	elbow, tube-m 1/4" x 1/4"	810504-025	1
5	tube, 1/4"	841015-004	10 ft.
6	nipple, pipe 1" x close	822216-000	1
7	tube, 5/16" ss	841215-005	2.7ft.
8	connector, tube-m 1 1/4" x 1 1/4"	810220-125	2
9	bushing, reducing 1 1/4" x 1	802105-040	1
10	filter, fluid (II)	250025-522	1
11	connector, tube-m 1/4"	810204-025	2
12	elbow, tube-m 1 1/2" x 1 1/2"	810524-150	2
13	tube, 1 1/2"	250018-400	1
14	plug, pipe 1/2"	807800-020	3
15	valve, globe 1/2"	041007	1
16	nipple, pipe 1/2" x 4"	822108-040	1
17	nipple, pipe 1 1/2" x close	822224-000	5
18	tee, reducing 1 1/2" x 1/2" x 1 1/2"	802206-026	2
19	connector, tube-m 1 1/2" x 1 1/2" (12 Series 60HP)	810224-150	5
	Sconnector, tube-m 1 1/2" x 1 1/2" (16 Series 60 and 75HP)	810224-150	6
20	tube, 1 1/2"	250018-376	1
21	tube, 1 1/4" (12 Series 60HP)	250018-246	1
	Stube, 1 1/4" (16 Series 60 and 75HP)	250018-255	1
22	elbow, pipe 1 1/2" (12 Series 60HP)	801515-060	3
	Selbow, pipe 1 1/2" (16 Series 60 and 75HP)	801515-060	5
23	tube, 1 1/2"	250018-375	1
24	u-bolt, 1/2" x 5" pipe	829008-500	1
25	separator, combination trap (III)	250018-041	1
26	tube, 1 1/2"	250018-260	1
27	bracket, water connector 3/4" npt	250017-234	1
28	nipple, pipe 3/4" x 7"	822112-070	1

(Continued on page 63)

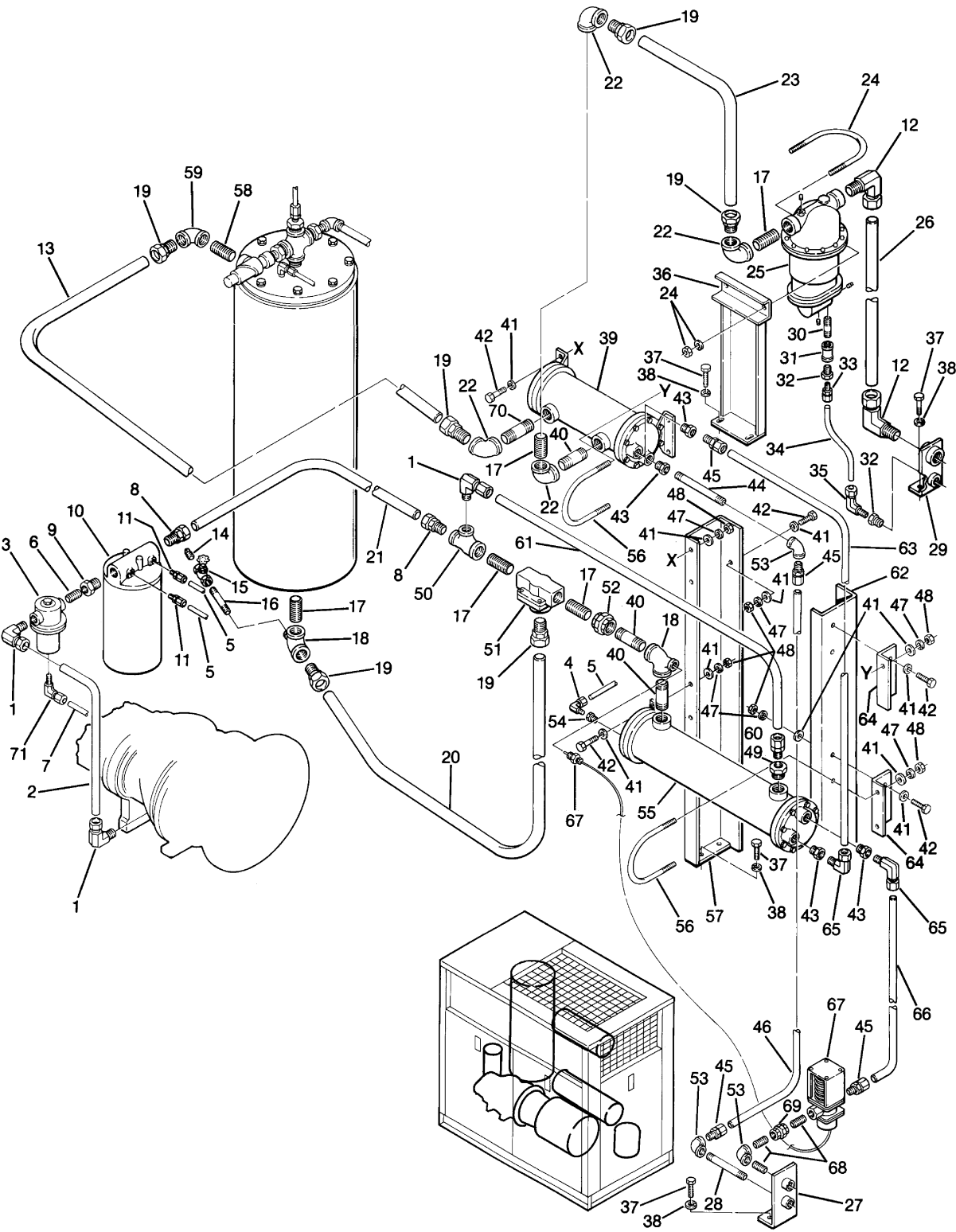
(I) For maintenance on fluid stop valve no. 016741, order repair kit no. 001684.

(II) For maintenance on fluid filter no. 250025-522, order repair kit no. 250025-526.

(III) For maintenance on combination trap separator no. 250018-041, order repair kit no. 250033-038.

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

7.11 COMPRESSOR COOLING AND LUBRICATION SYSTEM (WATER-COOLED, LS-12 SERIES 60HP, AND LS-16 SERIES 60-75HP)



Section 7

ILLUSTRATIONS AND PARTS LIST

7.11 COMPRESSOR COOLING AND LUBRICATION SYSTEM (WATER-COOLED, LS-12 SERIES 60HP, AND LS-16 SERIES 60-75HP) (CONTINUED)

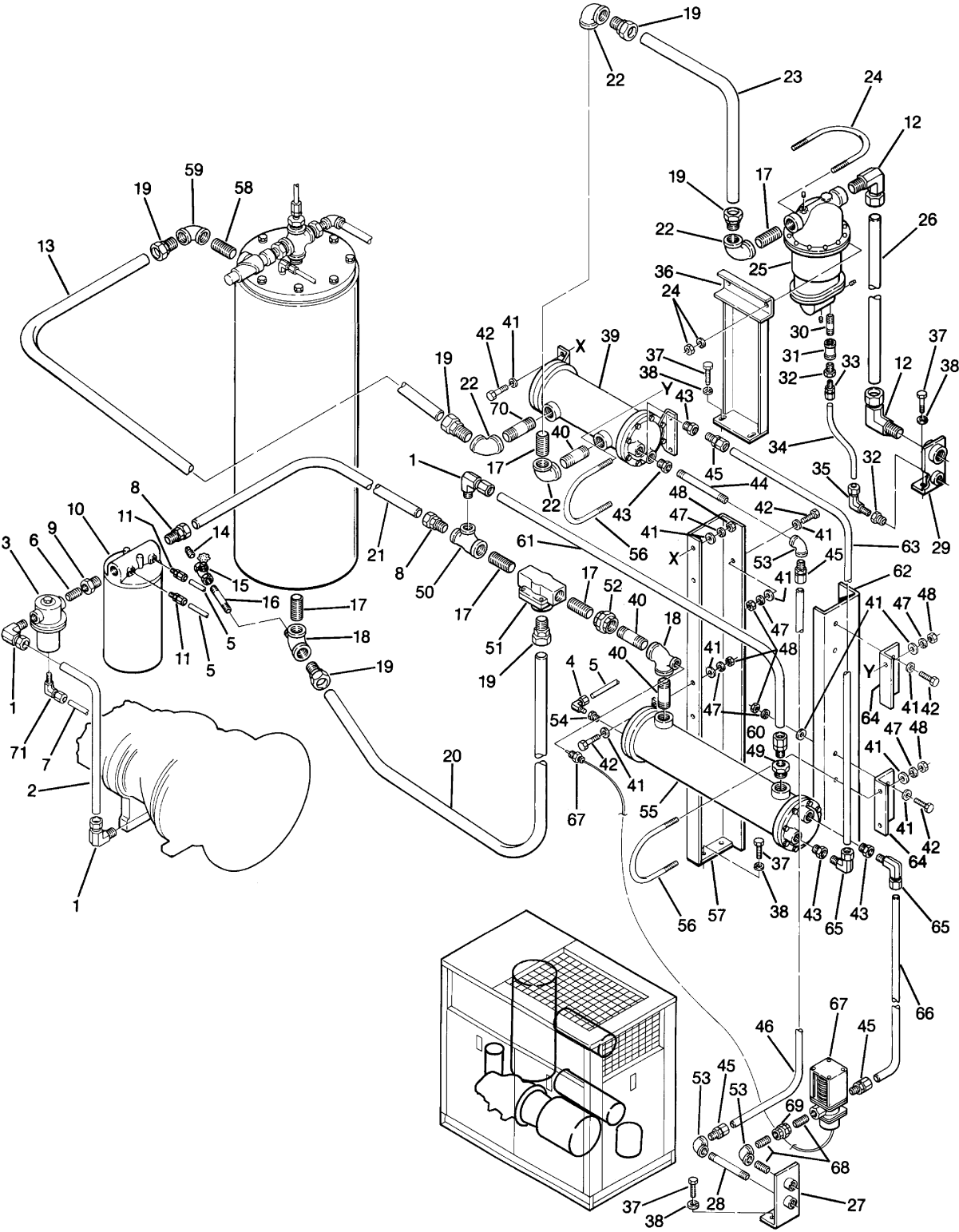
<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
29	bracket, air connector and condenser drain	250017-233	1
30	nipple, pipe 3/4" x 2 1/2"	822112-025	1
31	coupling, pipe 3/4"	801215-030	1
32	bushing, reducing 3/4" x 1/2"	802103-200	2
33	connector, tube straight 1/2" mnpt x 3/8" t reducing	250024-692	1
34	tubing, thermoplastic 3/8"od	250024-746	1 ft.
35	connector, tube-el 1/2" mnpt x 3/8" t	813706-375	1
36	support, moisture separator and trap	250018-160	1
37	capscrew, 1/2" x 1 1/2" gr5	828608-150	8
38	washer, springlock regular 1/2"	837508-125	8
39	aftercooler	040680	1
40	nipple, pipe 1 1/2" x 2 1/2"	822124-025	3
41	washer, regular 3/8"	838206-071	22
42	capscrew, hex head 3/8"-16 x 1 1/4"	828606-125	16
43	bushing, reducing hex 1" x 3/4"	802104-030	4
44	nipple, pipe 3/4" x 6"	822112-060	1
45	connector, tube-m 3/4"	810212-075	2
46	tube, 3/4"	250018-408	1
47	washer, springlock regular 3/8"	837506-094	16
48	nut, hex 3/8"-16	825006-337	16
49	bushing, reducing hex 1 1/2" x 1"	802106-040	1
50	tee, reducing 1 1/2" x 1 1/4" x 1"	802206-054	1
51	valve, thermal (IV)	014512	1
52	union, pipe 1 1/2"	802515-060	1
53	elbow, pipe 3/4"	801515-030	3
54	bushing, reducing 3/8" x 1/4"	807601-010	1
55	cooler, fluid	041015	1
56	clamp, 5"	043364	1
57	support, starter box - right hand	250017-977	1
58	nipple, pipe xs 1 1/4" x close	822220-000	1
59	elbow, reducing 1 1/2" x 1 1/4"	801606-050	1
60	connector, tube-m 1" x 1"	810216-100	1
61	tube, 1"	250018-399	1
62	support, starter box - left hand	250017-978	1
63	tube, 3/4"	250018-404	1

(Continued on page 65)

(IV) For maintenance on thermal valve no. 014512, order repair kit no. 001168.

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

**7.11 COMPRESSOR COOLING AND LUBRICATION SYSTEM (WATER-COOLED, LS-12 SERIES 60HP,
AND LS-16 SERIES 60-75HP)**



Section 7

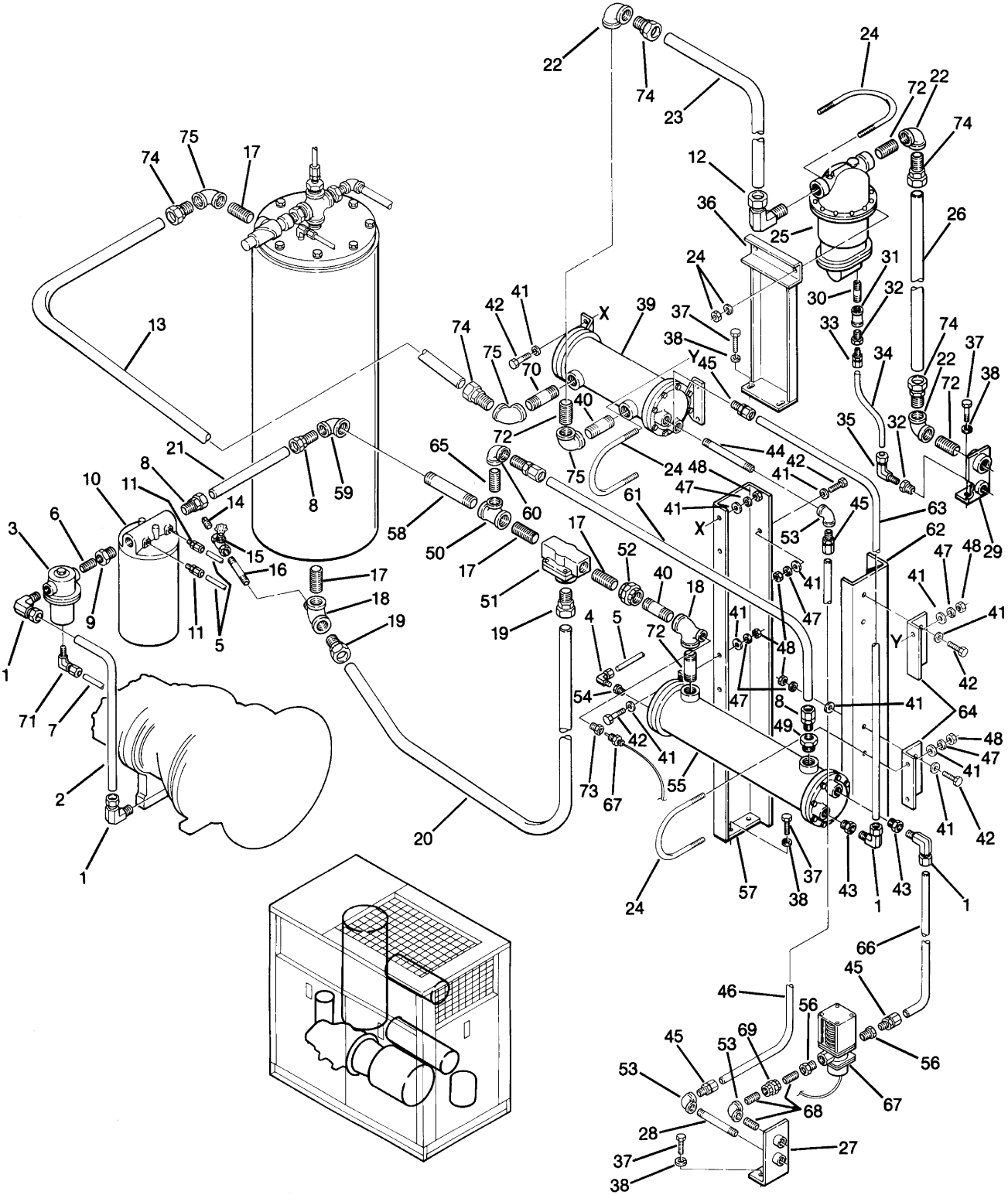
ILLUSTRATIONS AND PARTS LIST

7.11 COMPRESSOR COOLING AND LUBRICATION SYSTEM (WATER-COOLED, LS-12 SERIES 60HP, AND LS-16 SERIES 60-75HP) (CONTINUED)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
64	bracket, cooler 6"	250019-027	2
65	elbow, tube-m 3/4" x 3/4"	810512-075	2
66	tube, 3/4"	250018-406	1
67	valve, water regulating 3/4"	047398	1
68	nipple, pipe 3/4" x close	822212-000	3
69	union, pipe 3/4"	802515-030	1
70	nipple, pipe 1 1/2" x 3"	822124-030	1
71	elbow, tube-m 5/16" x 1/4"	810505-025	1

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

7.12 COMPRESSOR COOLING AND LUBRICATION SYSTEM (WATER-COOLED, LS-16 SERIES 100HP)



Section 7

ILLUSTRATIONS AND PARTS LIST

7.12 COMPRESSOR COOLING AND LUBRICATION SYSTEM (WATER-COOLED, LS-16 SERIES 100HP)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	elbow, tube—m 1" x 1"	810516-100	4
2	tube, 1"	02250046-592	1
3	valve, fluid stop (I)	016741	1
4	elbow, tube—m 1/4" x 1/4"	810504-025	1
5	tube, 1/4"	841015-004	10 ft.
6	nipple, pipe 1" x close	822216-000	1
7	tube, 5/16" ss	841215-005	2.7 ft.
8	connector, tube—m 1 1/4" x 1 1/4"	810220-125	4
9	bushing, reducing 1 1/4" x 1	802105-040	1
10	filter, fluid (II)	250025-522	1
11	connector, tube—m 1/4"	810204-025	2
12	elbow, tube—m 2" x 2"	810532-200	1
13	tube, 2"	02250046-584	1
14	plug, pipe 1/2"	807800-020	3
15	valve, globe	041007	1
16	nipple, pipe 1/2" x 4"	822108-040	1
17	nipple, pipe 1 1/2" x close	822224-000	4
18	tee, reducing 1 1/2" x 1 1/2" x 2"	802206-068	1
19	connector, tube—m 1 1/2" x 1 1/2"	810224-150	2
20	tube, 1 1/2"	02250046-590	1
21	tube, 1 1/4"	02250045-595	1
22	elbow, pipe 2"	801515-080	3
23	tube, 2"	02250046-585	1
24	u-bolt, 1/2" x 6" pipe	829008-600	2
25	separator, combination trap	410143	1
26	tube, 2"	02250045-594	1
27	bracket, water connector 1" npt	02250046-573	1
28	nipple, pipe 1" x 7"	822116-070	1
29	bracket, air connector and condenser drain	02250045-613	1
30	nipple, pipe 3/4" x 2 1/2"	822112-025	1
31	coupling, pipe 3/4"	801215-030	1

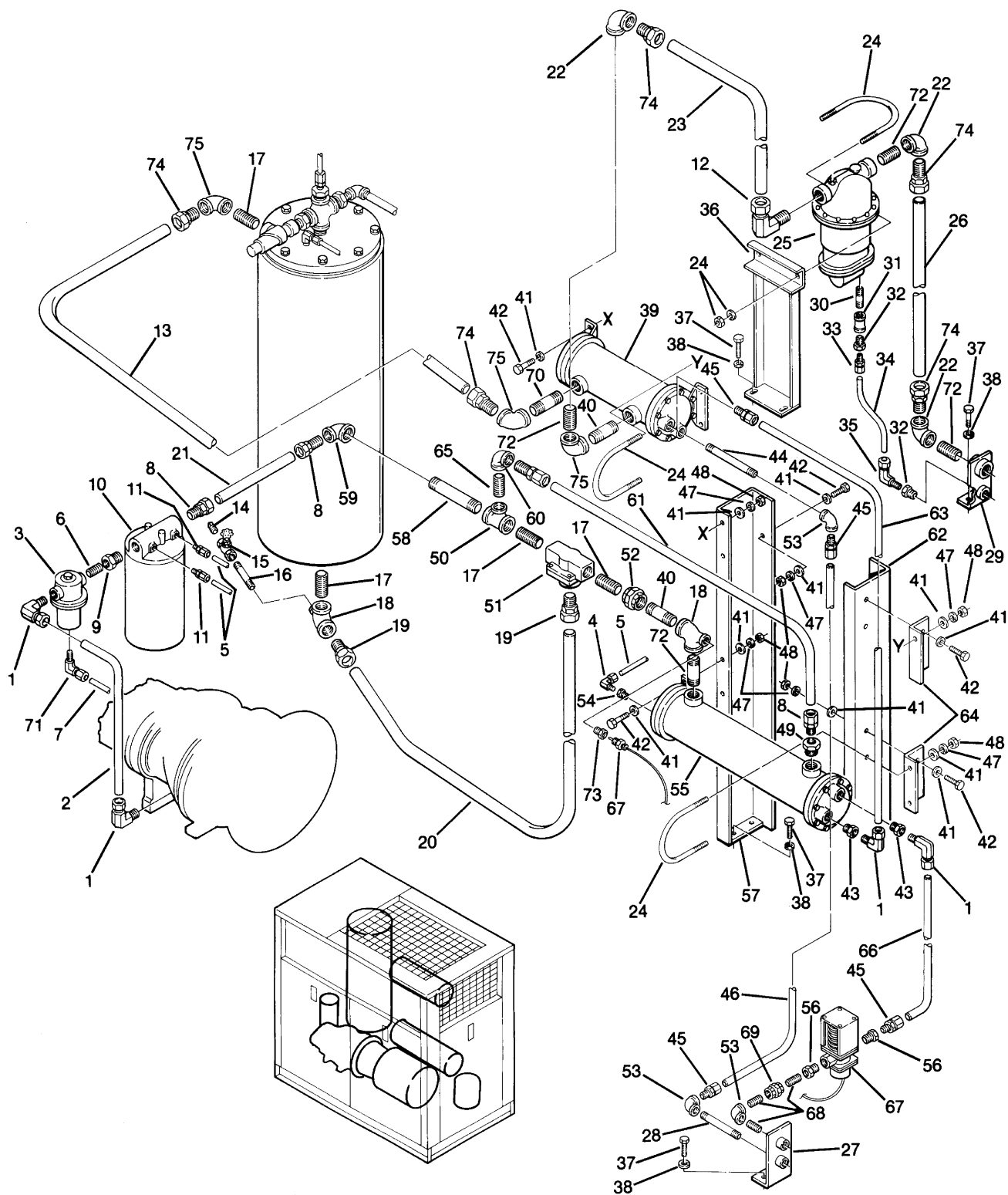
(Continued on page 69)

(I) For maintenance on fluid stop valve no. 016741, order repair kit no. 001684.

(II) For maintenance on fluid filter no. 250025-522, order replacement element no. 250025-526.

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

7.12 COMPRESSOR COOLING AND LUBRICATION SYSTEM (WATER-COOLED, LS-16 SERIES 100HP)



Section 7

ILLUSTRATIONS AND PARTS LIST

7.12 COMPRESSOR COOLING AND LUBRICATION SYSTEM (WATER-COOLED, LS-16 SERIES 100HP) (CONTINUED)

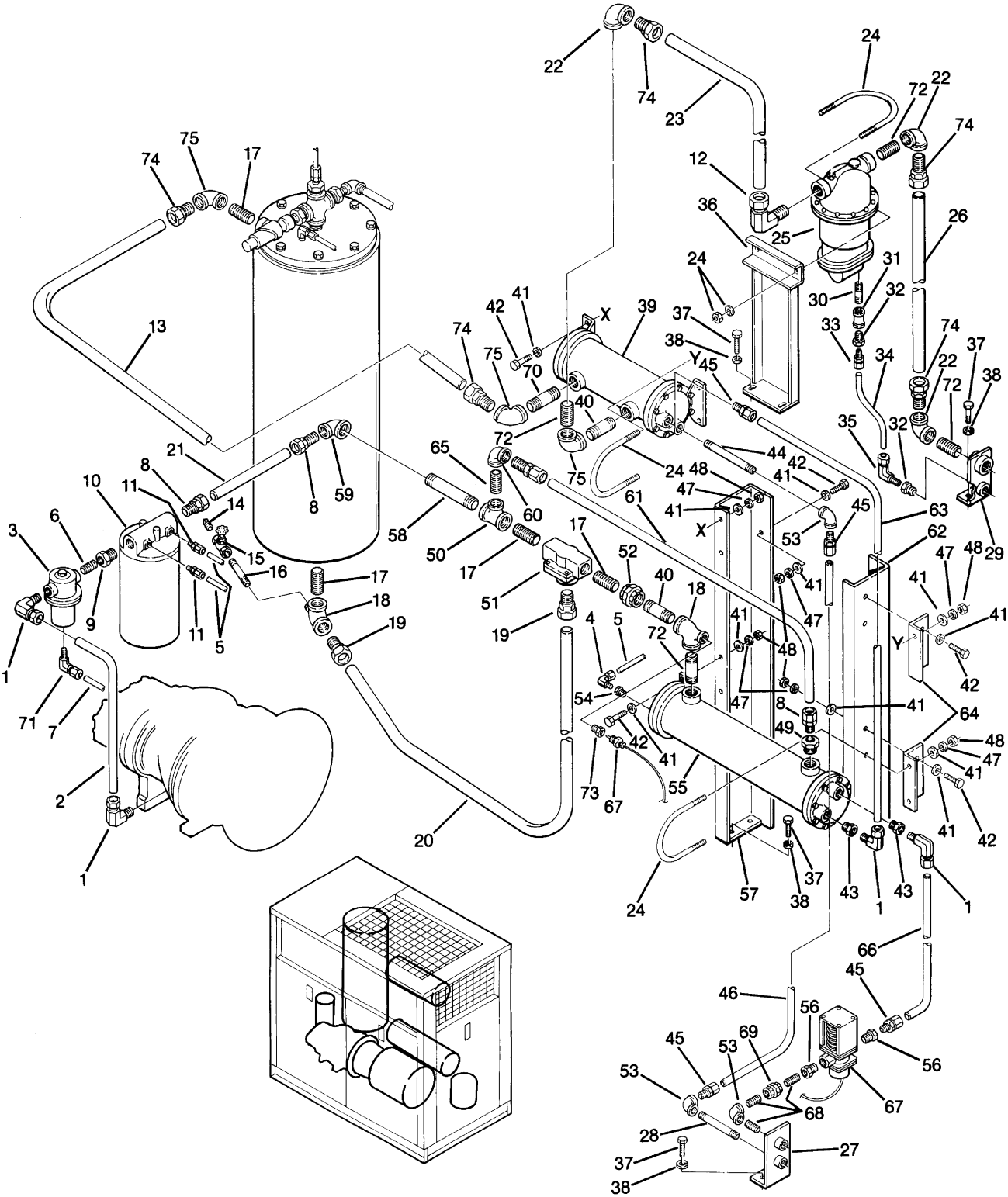
<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
32	bushing, reducing 3/4" x 1/2"	802103-200	2
33	connector, tube straight 1/2" mnpt x 3/8" t reducing	250024-692	1
34	tubing, thermoplastic 3/8"od	250024-746	1 ft.
35	connector, tube-el 1/2" mnpt x 3/8" t	813706-375	1
36	support, moisture separator and trap	250018-160	1
37	capscrew, 1/2" x 1 1/2" gr5	828608-150	8
38	washer, springlock regular 1/2"	837508-125	8
39	aftercooler	040680	1
40	nipple, pipe 1 1/2" x 2 1/2"	822124-025	2
41	washer, regular 3/8"	838206-071	22
42	capscrew, hex head 3/8"-16 x 1 1/4"	828606-125	16
43	bushing, reducing hex 1 1/2" x 1"	802106-040	2
44	nipple, pipe 1" x 61/2"	822116-065	1
45	connector, tube-m 1" x 1"	810216-100	4
46	tube, 1"	02250046-581	1
47	washer, springlock regular 3/8"	837506-094	16
48	nut, hex 3/8"-16	825006-337	16
49	bushing, reducing hex 2" x 1 1/4"	802108-050	1
50	tee, reducing 1 1/2" x 1 1/2" x 1 1/4"	802206-065	1
51	valve, thermal (III)	014512	1
52	union, pipe 1 1/2"	802515-060	1
53	elbow, pipe 1"	801515-040	3
54	bushing, reducing 3/8" x 1/4"	807601-010	1
55	cooler, fluid	250018-411	1
56	bushing, reducing hex 1 1/4" x 1"	802105-040	2
57	support, starter box - right hand	02250046-739	1
58	nipple, pipe 1 1/2" x 6"	822124-060	1
59	elbow, reducing 1 1/2" x 1 1/4"	801606-050	1
60	elbow, pipe 1 1/4"	801515-050	1
61	tube, 1 1/4"	02250046-583	1
62	support, starter box - left hand	02250046-741	1
63	tube, 1"	02250046-582	1
64	bracket, cooler 6"	250019-027	2
65	nipple, pipe 1 1/4" x 3"	822120-030	1
66	tube, 1"	02250046-581	1

(Continued on page 71)

(III) For maintenance on thermal valve no. 014512, order separator kit no. 001168.

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

7.12 COMPRESSOR COOLING AND LUBRICATION SYSTEM (WATER-COOLED, LS-16 SERIES 100HP)



Section 7

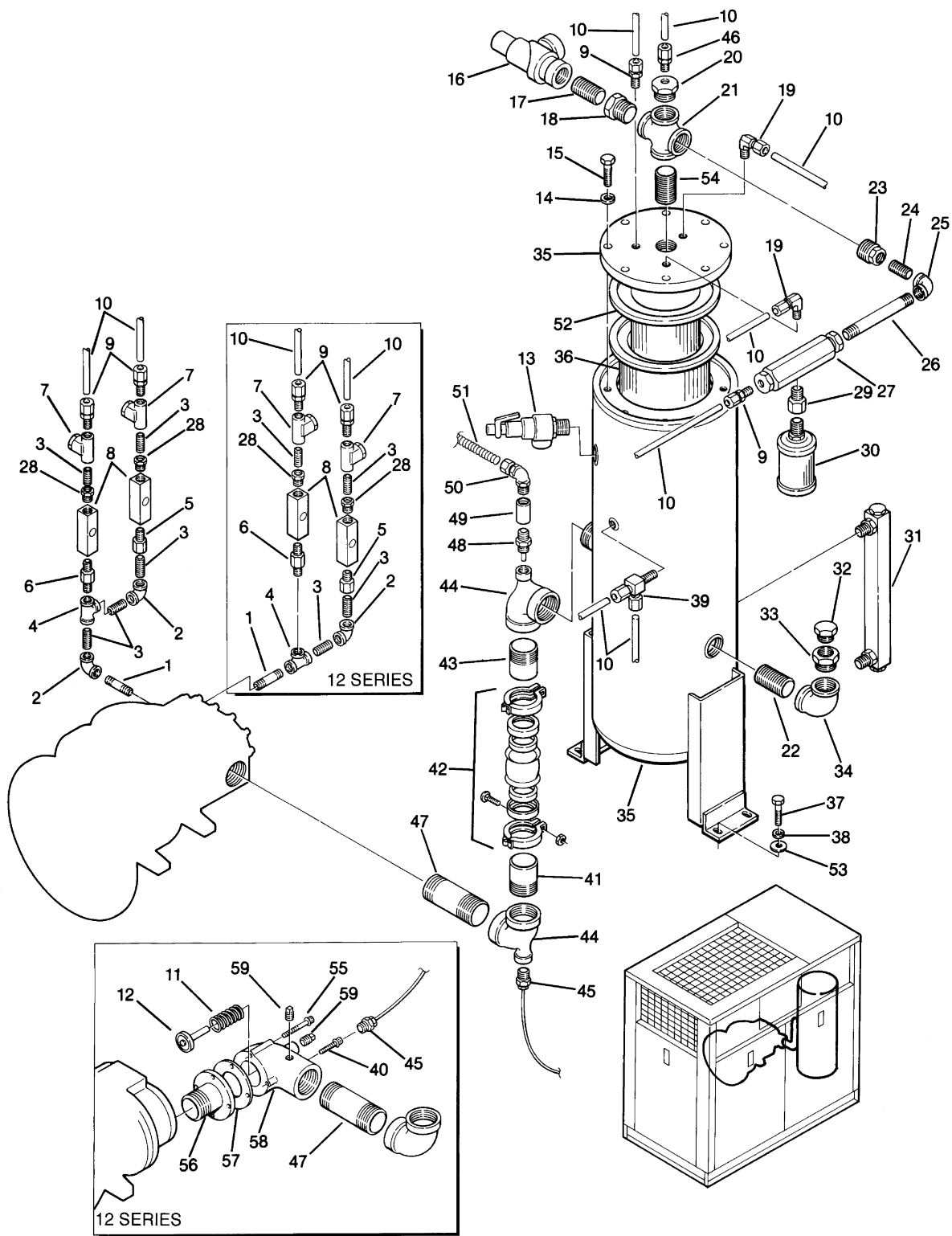
ILLUSTRATIONS AND PARTS LIST

7.12 COMPRESSOR COOLING AND LUBRICATION SYSTEM (WATER-COOLED, LS-16 SERIES 100HP) (CONTINUED)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
67	valve, water regulating 1 1/4"	049474	1
68	nipple, pipe 1" x close	822216-000	3
69	union, pipe 1"	802515-040	1
70	nipple, pipe 1 1/2" x 5"	822124-050	1
71	elbow, tube-m 5/16" x 1/4"	810505-025	1
72	nipple, pipe xs 2" x close	822232-000	4
73	bushing, reducing hex 1 1/2" x 1/2"	802106-020	1
74	connector, tube-m 2" x 2"	810232-200	5
75	elbow, reducing 2" x 1 1/2"	801608-060	3

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

7.13 COMPRESSOR DISCHARGE SYSTEM (LS-12 AND LS-16 SERIES)



ILLUSTRATIONS AND PARTS LIST

7.13 COMPRESSOR DISCHARGE SYSTEM (LS-12 AND LS-16 SERIES)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	nipple, pipe 1/4" x 2" (12 Series)	823104-020	1
	Snipple, pipe 1/4" x 1 1/2" (16 Series)	823104-015	1
2	elbow, pipe 90_ 1/4"	801515-010	2
3	nipple, pipe xs 1/4" x close	823204-000	5
4	tee, pipe galvanized 1/4"	804415-010	1
5	orifice, secondary 1/32"	040381	1
6	orifice, primary 3/32"	022033	1
7	strainer, v-type (I)	241771	2
8	glass, sight	046559	2
9	connector, tube 1/4" x 1/4"	810204-025	3
10	tube, 1/4"	841015-004	10.5 ft.
11	spring, discharge valve	233615	1
12	disc, discharge valve	013549	1
13	valve, relief 175 psig (12.1 bar)	248344	1
14	washer, springlock regular 5/8"	837510-156	8
15	capscrew, hex 5/8"-11 x 2" gr8	828210-200	8
16	valve, minimum pressure/check (12 Series) (II)	241581	1
	Svalve, minimum pressure/check (16 Series) (III)	250016-618	1
17	nipple, pipe xs 1 1/4" x close (12 Series)	822220-000	1
	Snipple pipe xs 1 1/2" x close (16 Series)	822224-000	1
18	bushing, reducing hex 1 1/2" x 1 1/4" (12 Series only)	802106-050	1
19	elbow, tube-m 1/4" x 1/4"	810504-025	3
20	bushing, reducing hex 1 1/2" x 1/4"	802106-010	1
21	cross, pipe 1 1/2"	801315-060	1
22	nipple, pipe 1 1/2" x close	822224-000	1
23	bushing, reducing hex 1 1/2" x 1/2"	802106-020	1
24	nipple, pipe 1/2" x close	822208-000	1
25	elbow, pipe 90_ 1/2"	801515-020	2
26	nipple, pipe 1/2" x 7"	822108-070	1
27	valve, blowdown 1/2" npt (IV)	250030-276	1
28	bushing, reducing 1/2" x 1/4"	802102-010	2

(Continued on page 75)

(I) For maintenance on v-type strainer no. 241771, order repair kit no. 241772.**(II)** For maintenance on minimum pressure/check valve no. 241581, order repair kit no. 250026-758.**(III)** For maintenance on minimum pressure/check valve no. 250016-618, order repair kit no. 250019-444.**(IV)** For maintenance on blowdown valve no. 250030-276, order repair kit no. 02250045-132.

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

This diagram illustrates the exploded view of a 12 Series industrial unit, showing the main vertical assembly, a top section, a bottom section, and a control cabinet. The parts are numbered 1 through 60. The main vertical assembly consists of a central column with various components attached. The top section shows a complex arrangement of pipes and fittings. The bottom section shows a series of stacked components. The control cabinet is shown on the right, with a cutout for the unit. A cloud-shaped cutout is shown on the left side of the main assembly.

ILLUSTRATIONS AND PARTS LIST

7.13 COMPRESSOR DISCHARGE SYSTEM (LS-12 AND LS-16 SERIES) (CONTINUED)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
29	orifice, 1/2"m x 1/2"f x .156	234125-156	1
30	silencer, air 1/2"	041006	1
31	gauge, fluid level without ball check	046558	1
32	plug, o-ring boss sae 1 1/4"	040029	1
33	adapter, filler	020044	1
34	elbow, pipe 1 1/2"	801515-060	1
35	tank, receiver separator	250015-284	1
36	element, separator (primary) (V)	250034-115	1
37	capscrew, 1/2 hex " -13 x 1 1/2"	828608-150	4
38	washer, springlock regular 1/2 "	837508-125	4
39	tee, tube-m 1/4" x 1/4"	810904-025	1
40	capscrew, ferry 3/8" -16 x 1"	828406-100	1
41	nipple, half 2 1/2" x 3"	822840-030	1
42	coupling, flexible 2 1/2" (STD) (VI)	040648	1
	Scoupling, flexible 2 1/2" (KT) (VII)	250007-563	1
43	nipple, half 2 1/2" x 4"	822840-040	1
44	tee, reducing 2 1/2" x 1/2" x 2 1/2" (12 Series)	802210-020	2
	Stee, reducing 2 1/2" x 1/2" x 2 1/2" (16 Series)	802210-020	2
45	gauge, temperature 2"	042582	1
46	connector, flex 1/4"t x 1/4"p	020169	1
47	nipple, pipe 2 1/2" x 6" (12 Series)	822140-060	1
	Snipple, pipe 2 1/2" x 5 1/2" (16 Series)	822140-055	1
48	switch, temperature 240_F nc	040588	1
49	coupling, conduit rigid 1/2"	250007-179	1
50	elbow, 90_ lg-tite 1/2"	846600-050	1
51	conduit, csa flex 1/2"	846315-050	2 ft.
52	element, separator (secondary) (VIII)	250042-861	1
53	washer, pl-b regular unfinished 1/2"	837208-112	4
54	nipple, pipe 1 1/2" x 3"	822124-030	1
55	capscrew, ferry 3/8"-16 x 3 1/4"	828406-325	3
56	adapter, discharge (12 Series only)	012883	1
57	gasket, discharge valve (12 Series only)	040541	1
58	body, discharge valve assembly (12 Series only)	013605	1
59	plug, pipe 1/2"	807800-020	2

(V) For maintenance primary separator element no. 250034-115, order repair kit no. 250034-116.

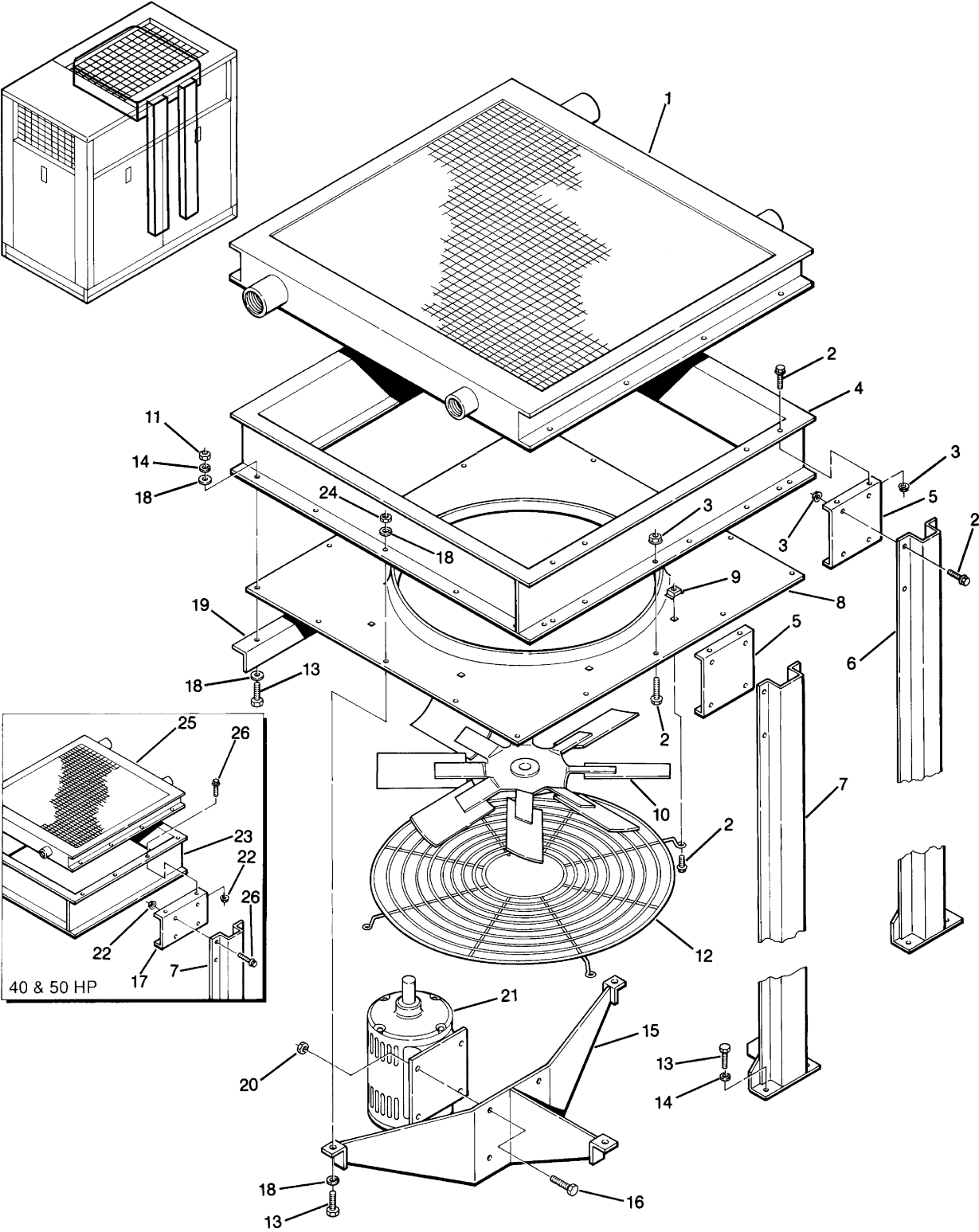
(VI) For maintenance on flexible coupling no. 040648, order repair kit no. 040649 (2 required).

(VII) For maintenance on flexible coupling no. 250007-563, order repair kit no. 250007-564 (2 required).

(VIII) For maintenance on secondary separator element no. 250042-861, order repair kit no. 250042-862.

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

7.14 AIR-COOLED COOLING ASSEMBLY (LS-12 AND LS-16 SERIES)



ILLUSTRATIONS AND PARTS LIST

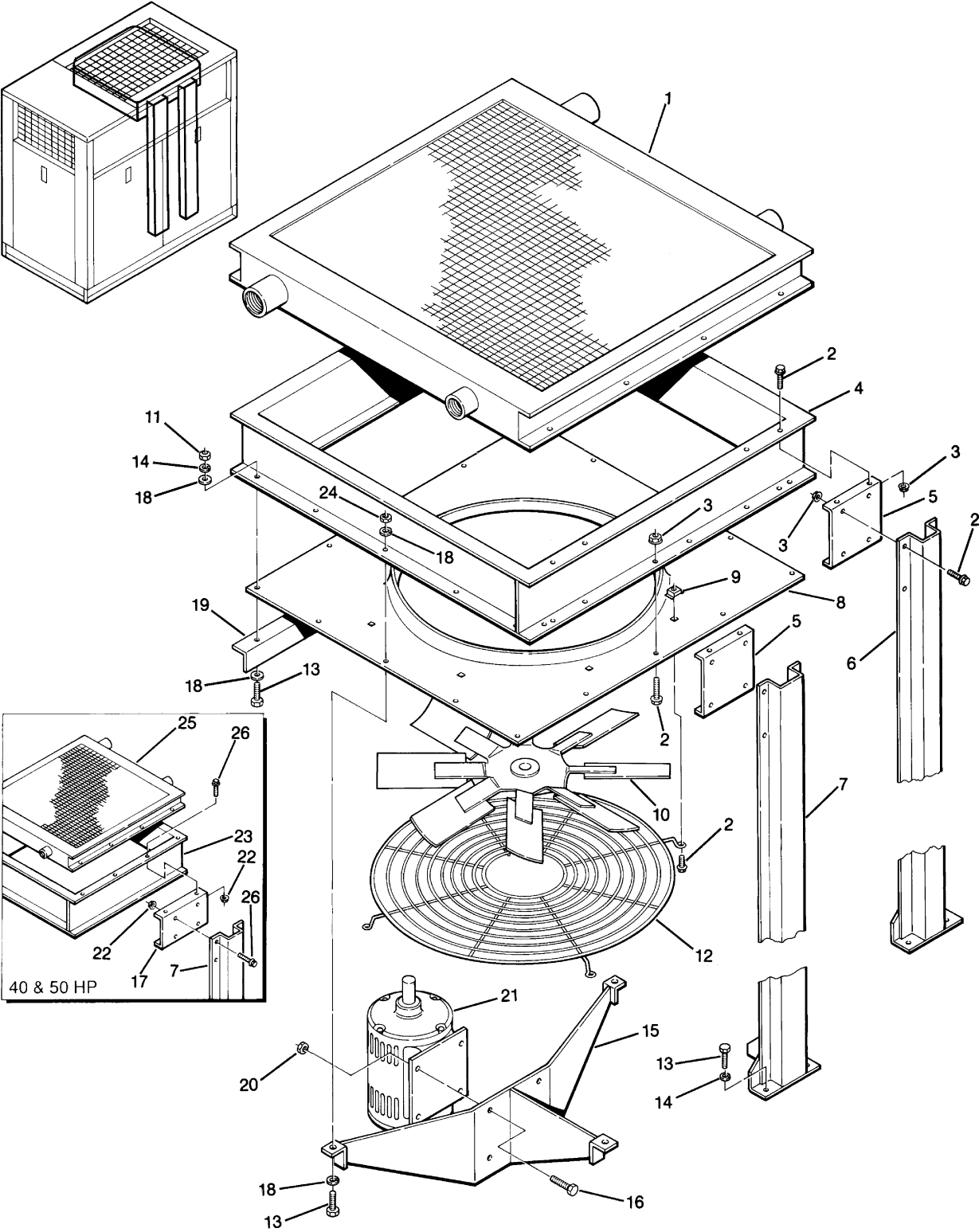
7.14 AIR-COOLED COOLING ASSEMBLY (LS-12 AND LS-16 SERIES)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	cooler, fluid aftercooler assembly		
	S12 Series 40HP	250038-657	1
	S12 Series 50 and 60HP; 16 Series 60 and 75 HP	250038-658	1
	S16 Series 100HP	02250053-915	1
2	screw, hex serrated washer		
	S12 Series 60HP	829705-075	39
	•16 Series 60, 75 and 100HP	829705-075	43
3	nut, hex flanged plated washer 5/16"-18		
	•12 Series 60HP	825305-283	37
	•16 Series 60, 75 and 100HP	825305-283	41
4	adapter, venturi		
	•12 Series 40 and 50HP	250017-271	1
	•12 Series 60HP; 16 Series 60 and 75 HP	250017-270	1
	•16 Series 100HP	02250043-113	1
5	bracket, cooler support		
	•12 Series 60HP; 16 Series 60 and 75 HP	250018-002	2
	•16 Series 100HP	02250043-127	2
6	support, cooler 54 1/4"	250017-631	1
7	support, cooler 54 1/4"		
	12 Series 60HP; 16 Series 60, 75 and 100HP	250017-630	1
8	panel, venturi		
	•12 Series 40 and 50HP	250017-494	1
	•12 Series 60HP; 16 Series 60, 75 and 100HP	250017-495	1
9	nut, retainer 5/16"-18	861405-092	4
10	fan, 22"		
	•12 Series 40 and 50HP	241390	1
	•12 Series 60HP; 16 Series 60, 75 and 100HP	049971	1
11	nut hex 3/8"-16	824206-337	8
12	guard, fan 24"		
	•12 Series 40 and 50HP	241501	1
	•12 Series 60HP; 16 Series 60, 75 and 100HP	241079	1
13	capscrew, hex 3/8" x 1 1/4" gr5		
	•12 Series 40 and 50HP	828606-125	7
	•12 Series 60HP; 16 Series 60, 75 and 100HP	828606-125	9

(Continued on page 79)

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

7.14 AIR-COOLED COOLING ASSEMBLY (LS-12 AND LS-16 SERIES)



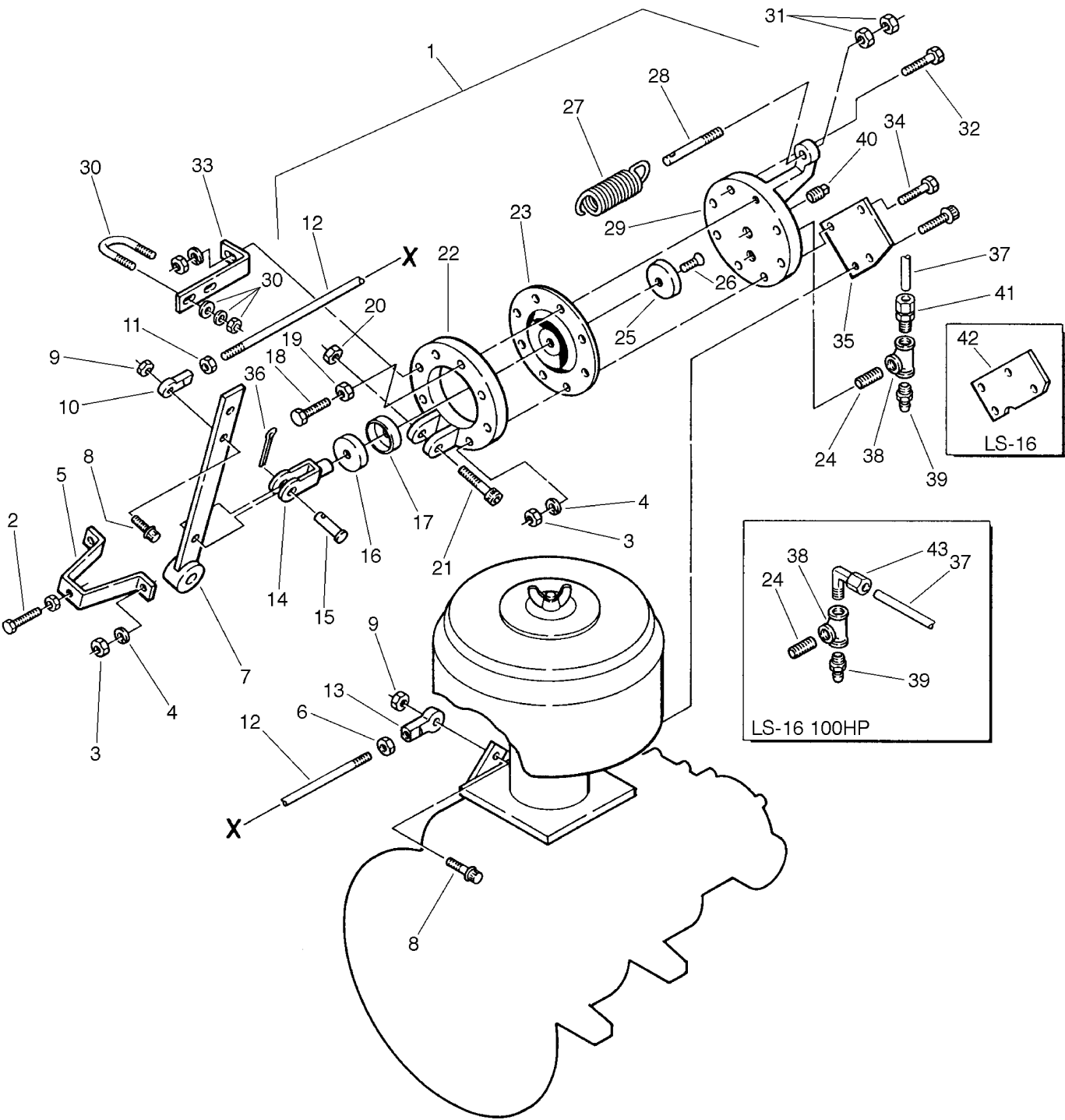
ILLUSTRATIONS AND PARTS LIST

7.14 AIR-COOLED COOLING ASSEMBLY (LS-12 AND LS-16 SERIES) (CONTINUED)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
14	washer, springlock regular 3/8"		
	•12 Series 40 and 50HP	837506-094	11
	•12 Series 60HP; 16 Series 60, 75 and 100HP	837506-094	13
15	support, fan motor		
	•12 Series 40 and 50HP	250017-499	1
	•12 Series 60HP; 16 Series 60, 75 and 100HP	250017-502	1
16	capscrew, hex 5/16"-18 x 1" gr5		
	•12 Series 40 and 50HP	828605-100	7
	•12 Series 60HP; 16 Series 60, 75 and 100HP	828606-100	3
17	bracket, cooler support		
	12 Series 40 and 50HP	250018-114	1
18	washer, pl-b regular 3/8"		
	•12 Series 40 and 50HP	838206-071	11
	•12 Series 60HP; 16 Series 60, and 75HP	838206-071	16
	•16 Series 100HP	838206-071	23
19	angle, cooler support		
	•12 Series 40 and 50HP	250018-121	1
	•12 Series 60HP; 16 Series 60, 75 and 100HP	250017-996	1
20	nut, hex locking plated 5/16"-18	825505-166	4
21	motor, 2HP		
	12 Series 40 and 50HP	041034	1
	•motor, 3HP		
	12 Series 60HP; 16 Series 60, 75 and 100HP	041035	1
22	nut, hex flanged plated 5/16"-18		
	12 Series 40 and 50HP	825305-283	29
23	adapter, venturi		
	12 Series 40 and 50HP	250017-271	1
24	nut, hex locking plated 3/8"-1		
	12 Series 60HP; 16 Series 60, 75 and 100HP	825506-198	7
25	cooler, fluid aftercooler assembly		
	12 Series 40 and 50HP	250038-657	1
26	screw, hex serrated washer 5/16" x 3/4"		
	12 Series 40 and 50HP	829705-075	31

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

7.15 CAPACITY CONTROL SYSTEM (LS-12 AND LS-16 SERIES)



Section 7

ILLUSTRATIONS AND PARTS LIST

7.15 CAPACITY CONTROL SYSTEM (LS-12 AND LS-16 SERIES)

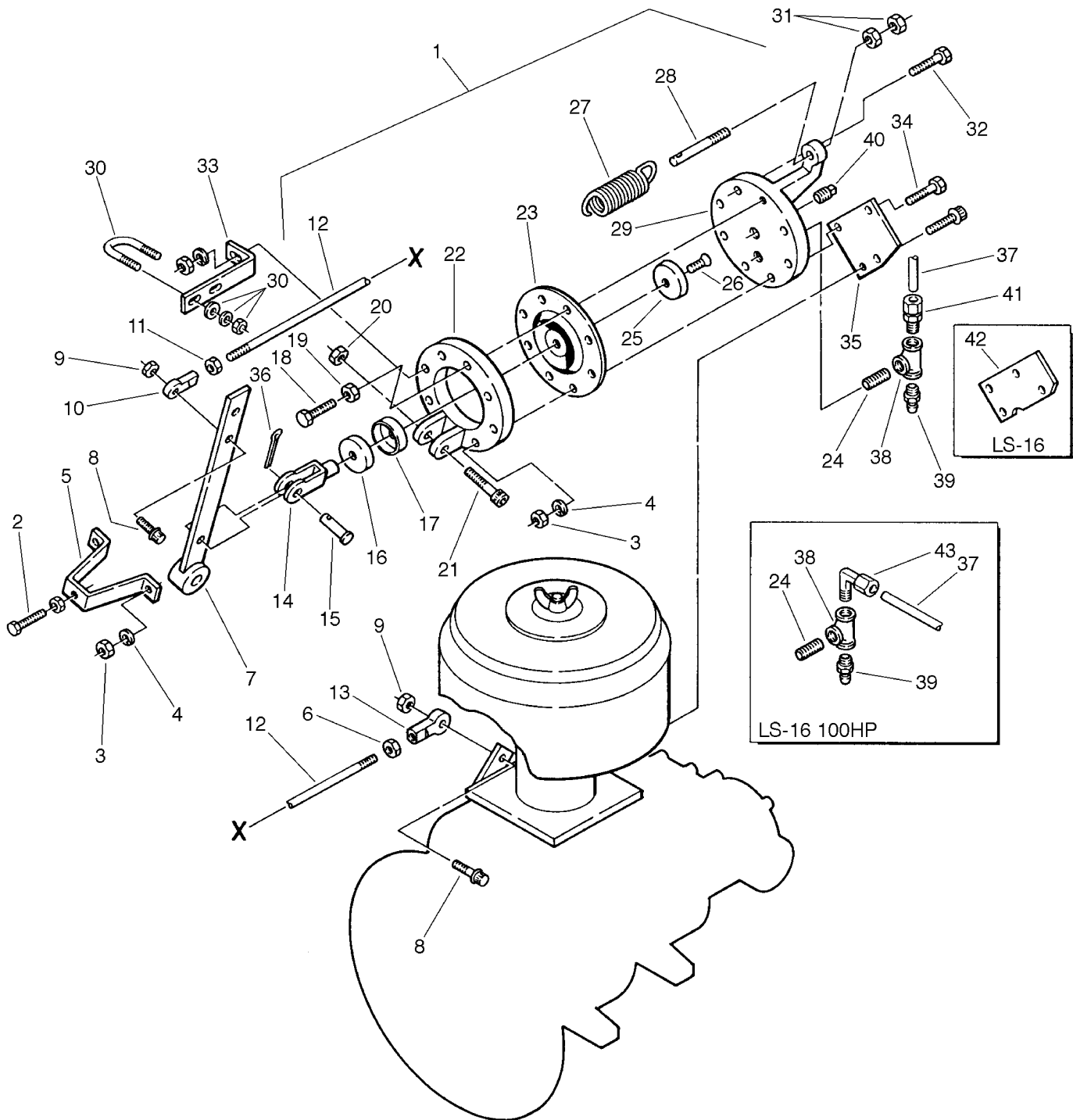
<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	control, Sullicon (12 Series) (I)	250026-010	1
	Scontrol, Sullicon (12 Series) (I)	250026-011	1
2	capscrew, hex 3/8"-16 x 2" gr5	828606-200	1
3	nut, hex 3/8"-16	824206-337	7
4	washer, springlock regular 3/8"	837506-094	4
5	bracket, cont. stop	020864	1
6	nut, hex jam - left hand 5/16"	824705-195	1
7	lever, control	011084	1
8	capscrew, ferry head 5/16" x 1 1/2"	828405-150	1
9	nut, hex 5/16"-18	824205-273	3
10	rod end, spherical 5/16" - right hand	040136	1
11	nut, hex jam unfinished 5/16"-24 - right hand	824605-195	1
12	rod end (12 Series)	250002-552	1
	Srod end (16 Series)	020685	1
13	rod end, spherical 5/16" - left hand	042004	1
14	yoke, rod end 1/4"-28	040138	1
15	pin, yoke 1/4"	040065	1
16	plunger	020094	1
17	seal, cup	042538	1
18	screw, machine hex head 5/16"-24 x 2"	831105-200	1
19	nut, hex jam unfinished 5/16"-24 - right hand	824605-195	1
20	nut, hex locking plated 3/8"-16	825506-166	1
21	screw, machine shoulder 3/8" x 2"	830506-200	1
22	body, control	021635	1
23	diaphragm, Sullicon	250020-028	1
24	nipple, galvanized 1/4" x 1 1/2" (12 Series only)	823204-015	1
	Snipple, galvanized 1/4" x close xs (16 Series only)	823204-000	1
25	washer, backup	021172	1
26	screw, sealing 1/4"-28 x 3/4" nf	041264	1
27	spring, control light	250006-526	1
28	bolt, adjusting Sullicon spring	250009-134	1
29	cover, control	021654	1
30	u-bolt, 1/2" x 3/4" pipe	829004-075	1
31	nut, hex unfinished 3/8"-16	824206-337	2

(Continued on page 83)

(I) For maintenance on Sullicon Control no.'s 250026-010 and 250026-011, order repair kit no. 250020-353.

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

7.15 CAPACITY CONTROL SYSTEM (LS-12 AND LS-16 SERIES)



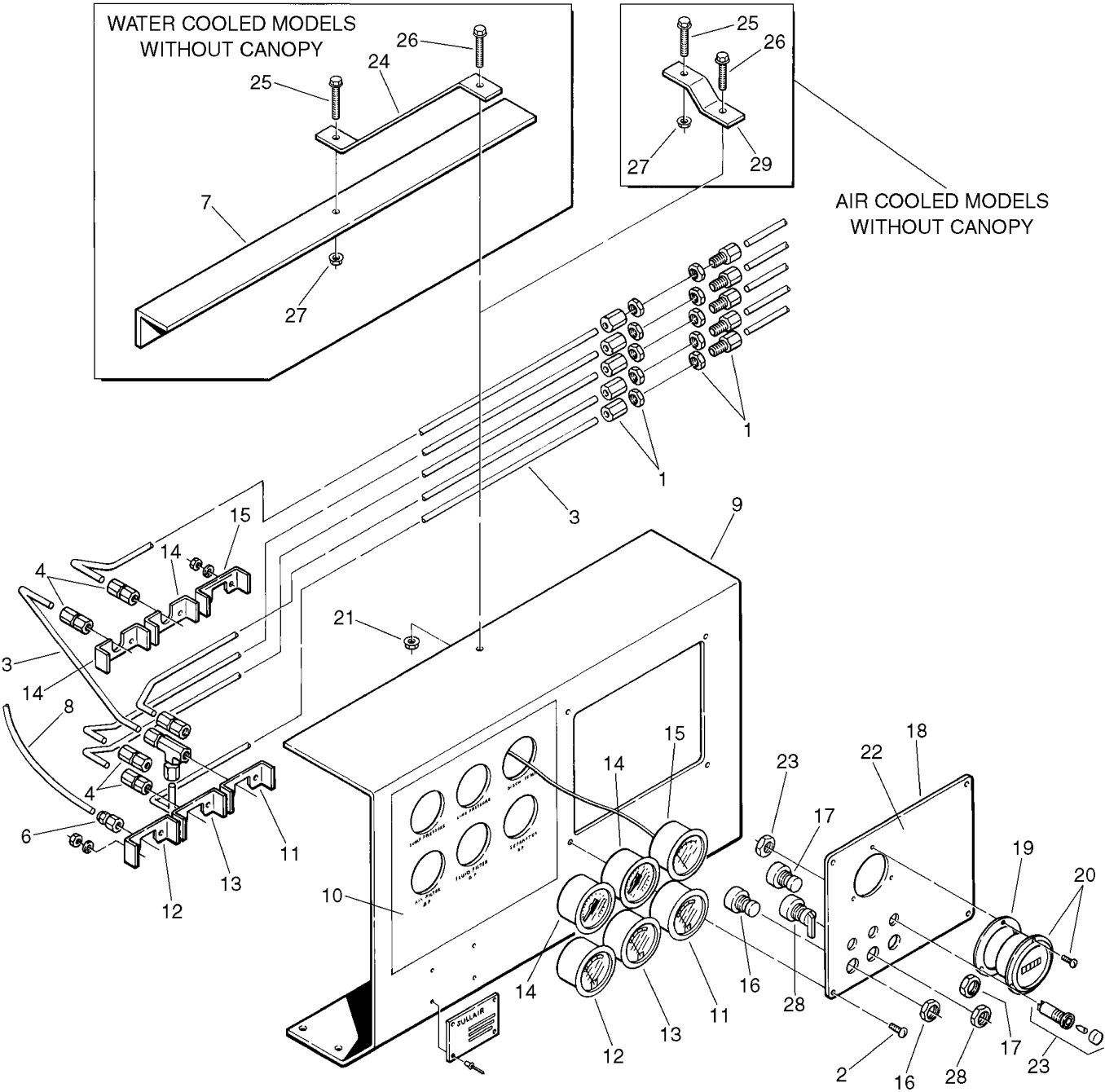
ILLUSTRATIONS AND PARTS LIST

7.15 CAPACITY CONTROL SYSTEM (LS-12 AND LS-16 SERIES) (CONTINUED)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
32	capscrew, hex 5/16"–18 x 2 1/2" gr5	828605–250	2
33	bracket, (12 Series only)	250039–115	1
	Sbracket, (16 Series only)	250039–114	1
34	capscrew, hex 3/8"–16 x 2 1/2" gr5	828606–250	3
35	bracket, control (12 Series only)	223681	1
36	pin, cotter 1/16" x 3/4"	827101–075	1
37	tubing, 1/4"	841015–004	12 ft.
38	tee, pipe galvanized 1/4"	804415–010	1
39	valve, drain self–close 1/8"npt	041111	1
40	plug, pipe 1/4"	807800–010	1
41	connector, tube–m 1/4" x 1/4" (12 Series)	810204–025	1
42	bracket, control (16 Series only)	234217	1
43	elbow, tube–m 1/4" x 1/4" (16 Series)	810504–025	1

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

7.16 INSTRUMENT PANEL AND PARTS (LS-12 AND LS-16 SERIES)



Section 7

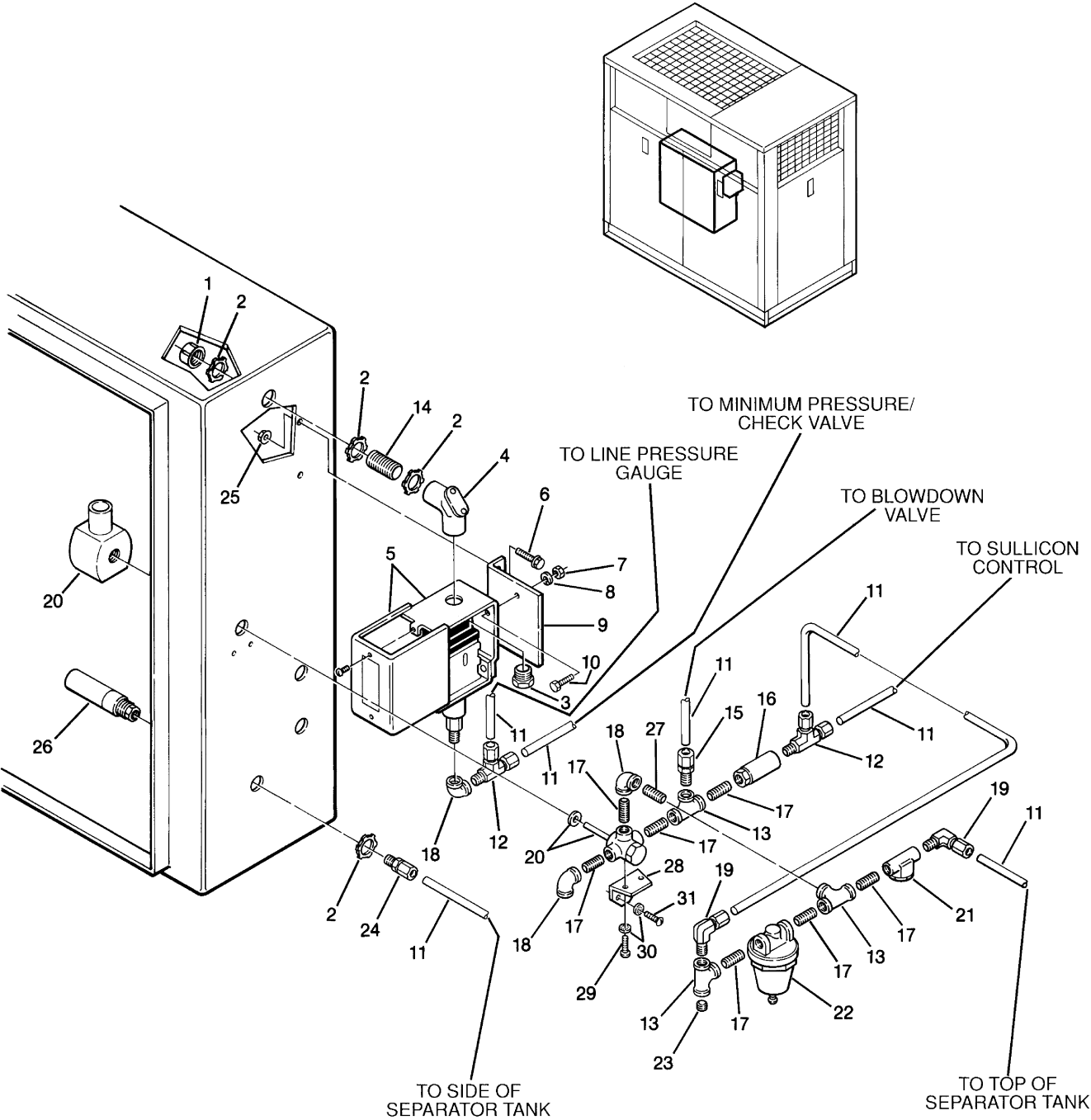
ILLUSTRATIONS AND PARTS LIST

7.16 INSTRUMENT PANEL AND PARTS (LS-12 AND LS-16 SERIES)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	union, tube 1/4" x 1/4"	811104-025	5
2	screw, tc-f pan #8-32 x 1/2"	835601-050	4
3	tubing, 1/4"	841015-004	10 ft.
4	connector, tube-f 1/4" x 1/8"	810104-012	5
5	tee, tube-f 1/4" x 1/8"	811004-012	1
6	connector, tube-f 1/4" x 1/8"	250025-327	1
7	angle, instrument panel	02250044-407	1
8	hose, nylon 1/4"	842215-004	6 ft.
9	panel, instrument	250019-481	1
10	decal, instrument panel	02250051-301	1
11	gauge, differential pressure 0-30 psi (0-2.1 bar)	250003-799	1
12	gauge, vacuum 0-30 water	250003-797	1
13	gauge, differential pressure 0-15 psi (0-1 bar)	250003-798	1
14	gauge, pressure 2" diameter	250005-185	2
15	gauge, temperature 2"	042582	1
16	switch, pushbutton START	250016-351	1
17	switch, pushbutton STOP	250016-350	1
18	panel, electrical	250015-471	1
19	gasket, hourmeter	410353	1
20	hourmeter, 60 Hz	250015-715	1
	Shourmeter, 50 Hz	250042-010	1
21	nut, hex washer 1/4"	825304-236	1
22	decal, electrical panel	02250051-388	1
23	holder, pilot lamp	043383	1
	Slens, green	043385	1
	Slens, red	043384	1
	Slens, amber	047016	1
	Sbulb, pilot lamp	043386	1
24	support, instrument panel	02250044-405	1
25	screw, hex ser washer 5/16" x 3/4"	829705-075	1
26	screw, hex ser washer 1/4" x 3/4"	829704-075	1
27	nut, hex washer 5/16"	825305-283	1
28	switch, sel 2 pos	250016-352	1
29	support, inst panel	250038-097	1

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

7.17 ELECTRO-PNEUMATIC CONTROL SYSTEM (LS-12 AND LS-16 SERIES)



ILLUSTRATIONS AND PARTS LIST

7.17 ELECTRO-PNEUMATIC CONTROL SYSTEM (LS-12 AND LS-16 SERIES)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	bushing, conduit plastic 1/2"	848815-050	1
2	locknut, conduit 1/2"	847200-050	4
3	nipple, chase conduit 1/2"	847815-050	1
4	elbow, 90_ 1/2"	846915-050	1
5	switch, pressure 0-150# Ni	040694	1
6	capscrew, hex serrated washer 5/16" x 3/4"	829705-075	2
7	nut, hex plated #10-32	825801-130	2
8	washer, springlock regular #10	838502-047	2
9	bracket, pressure switch support	250018-146	1
10	screw, machine rd head #10-32 x 1/2"	831702-050	2
11	tubing, 1/4"	841015-004	60 ft.
12	tee, tube-m 1/4" x 1/4" x 1/4"	810904-025	2
13	tee, pipe galvanized 1/4"	804415-010	3
14	nipple, conduit 1/2" x 1 1/2"	250007-169	1
15	connector, tube-m 1/4" x 1/4"	810204-025	1
16	valve, check 1/4"	049905	1
17	nipple, pipe galvanized xs 1/4" x close	823204-000	7
18	elbow, pipe galvanized 90_ 1/4"	803515-010	3
19	elbow, tube-m 1/4" x 1/4"	810504-025	2
20	valve, solenoid 1/4" 3-way 150# (I)	250038-674	1
21	strainer, v-type (II)	241771	1
22	valve, differential pres regulator 1/4"npt (III)	406929	1
23	orifice, pipe plug 1/4"	232874	1
24	connector, tube-m 1/4" x 1/8"	810204-012	1
25	nut, hex flanged plated 5/16"-18	825305-283	2
26	switch, high discharge pressure 135 psi nc	250017-991	1
27	nipple, galvanized xs 1/4" x 1 1/2"	823104-015	1
28	bracket, valve support	250030-037	1
29	screw, pan hood #8-32 x 3/8"	835601-038	2
30	washer, lock int tooth #10	838402-025	4
31	screw, self tap #10-24 x 1/2"	835602-050	2

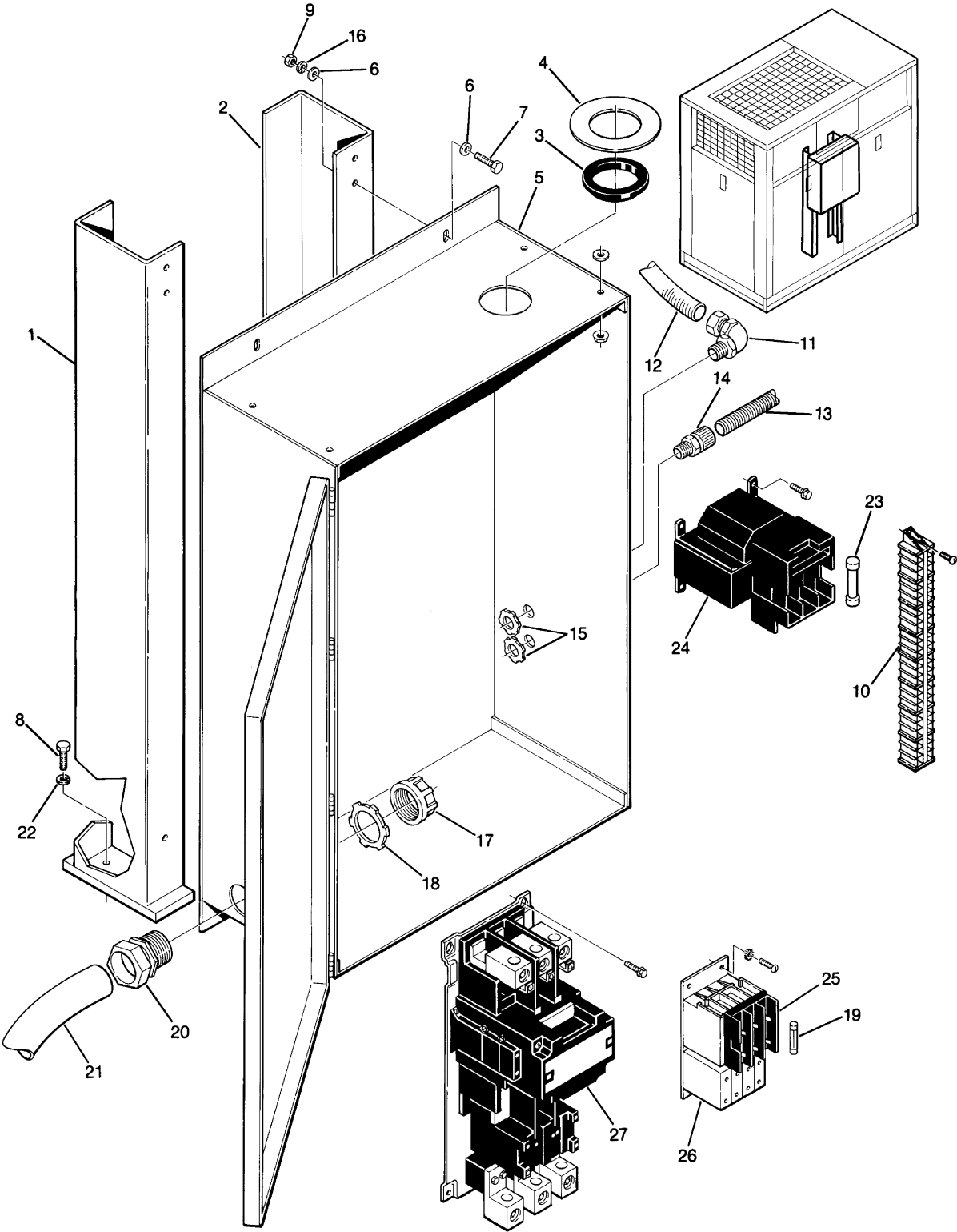
(I) For maintenance on solenoid valve no. 250038-674, order repair kit no. 250038-673 (valve) or no. 250031-738 (coil).

(II) For maintenance on v-type strainer no. 241771, order repair kit no. 241772.

(III) For maintenance on pressure regulator no. 406929, order repair kit no. 041742.

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

7.18 ELECTRIC CONTROL BOX ASSEMBLY (LS-12 AND LS-16 SERIES)



ILLUSTRATIONS AND PARTS LIST

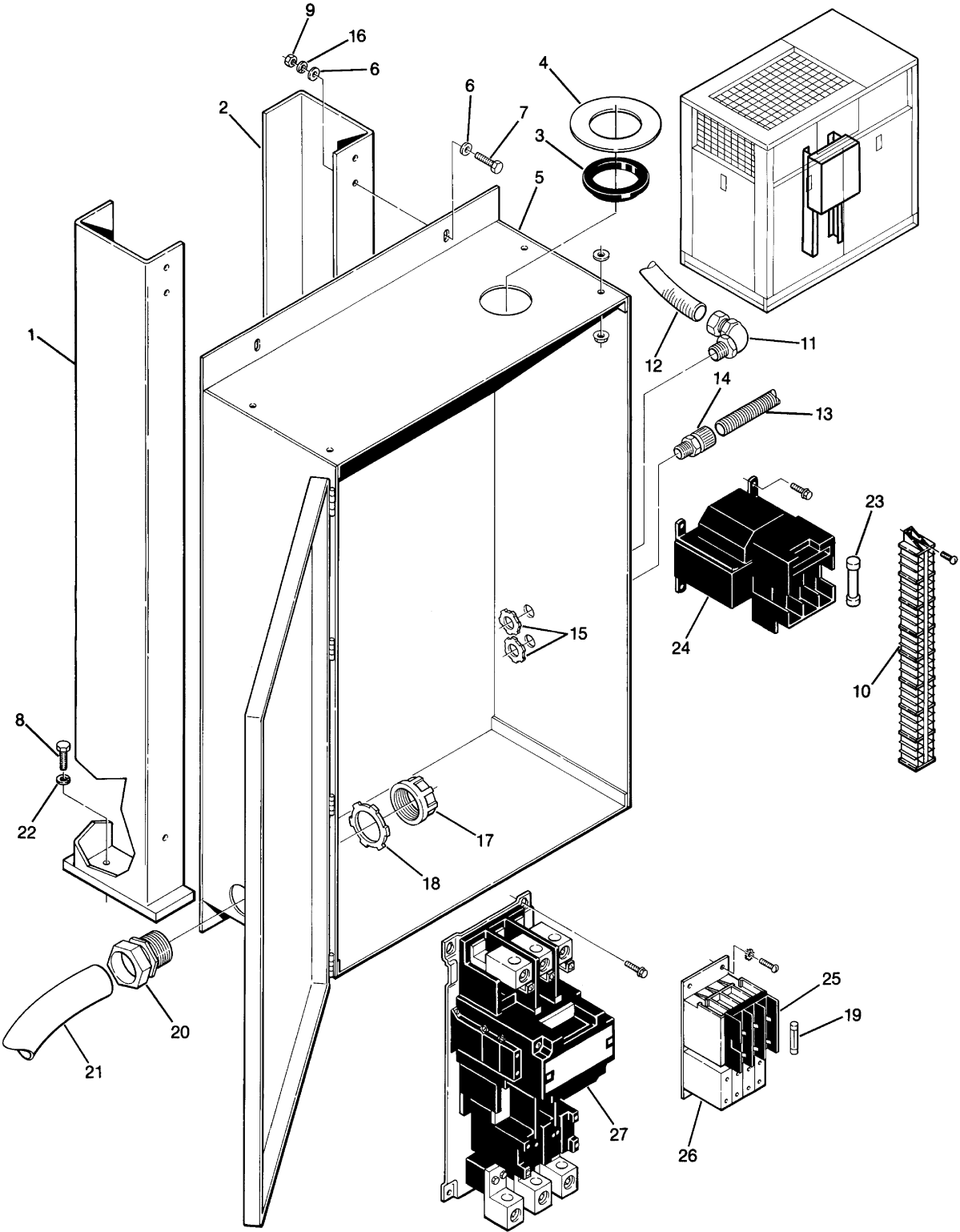
7.18 ELECTRIC CONTROL BOX ASSEMBLY (LS-12 AND LS-16 SERIES)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	support, starter – left hand	250017-978	1
2	support, starter – right hand	250017-977	1
3	bushing, snap	250042-243	1
4	gasket	250019-557	1
5	MFV starter, assembly Size 3 N12	250038-564	1
	SMFV starter, assembly Size 4 N12	250038-565	1
	SMFV starter, assembly Size 5 N12	250038-566	1
6	washer, plain steel 3/8"	837206-071	8
7	capscrew, hex head 3/8"-16 x 1 1/4" gr8	828606-125	4
8	capscrew, hex gr5 1/2"-13 x 1 1/2"	828608-150	11
9	nut, hex 3/8"-16	824206-337	4
10	block, terminal	250041-102	10
	Sblock, end adapter	250041-103	1
11	elbow, 45_ conduit	846500-050	1
12	conduit, csa flex 1/2"	846315-050	2 ft.
13	wire, neoprene so #12-4	850604-012	6 ft.
14	grip, cord for so 12/4	250018-497	2
15	locknut, conduit 1/2"	847200-050	1
16	washer, springlock regular 3/8"	837506-094	4
17	bushing, 1 1/2"	848815-150	1
18	locknut, 1 1/2"	847200-150	1
19	fuse	Consult Factory	
20	grip, cord for g-gc #4	250014-557	1
	Sgrip, cord for g-gc	250014-559	2
21	cord, type g-gc #4ga	250014-306	4 ft.
	Scord, type g-gc #2 ga	250014-308	4 ft.
22	washer, springlock 1/2"	837508-125	11
23	fuse, primary 208V (starter size 3)	250026-649	2
	Sfuse, primary 208V (starter size 4 & 5)	250006-652	2
	Sfuse, primary 230V (starter size 3)	250026-649	2
	Sfuse, primary 230V (starter size 4 & 5)	250026-651	2
	Sfuse, primary 460V (starter size 3)	250026-644	2
	Sfuse, primary 460V (starter size 4 & 5)	250026-648	2
	Sfuse, primary 575V (starter size 3)	250026-643	2
	Sfuse, primary 575V (starter size 4 & 5)	250026-646	2
	Sfuse, secondary 115V (starter size 3)	250026-644	1
	Sfuse, secondary 115V (starter size 4 & 5)	250026-650	1

(Continued on page 91)

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

7.18 ELECTRIC CONTROL BOX ASSEMBLY (LS-12 AND LS-16 SERIES)



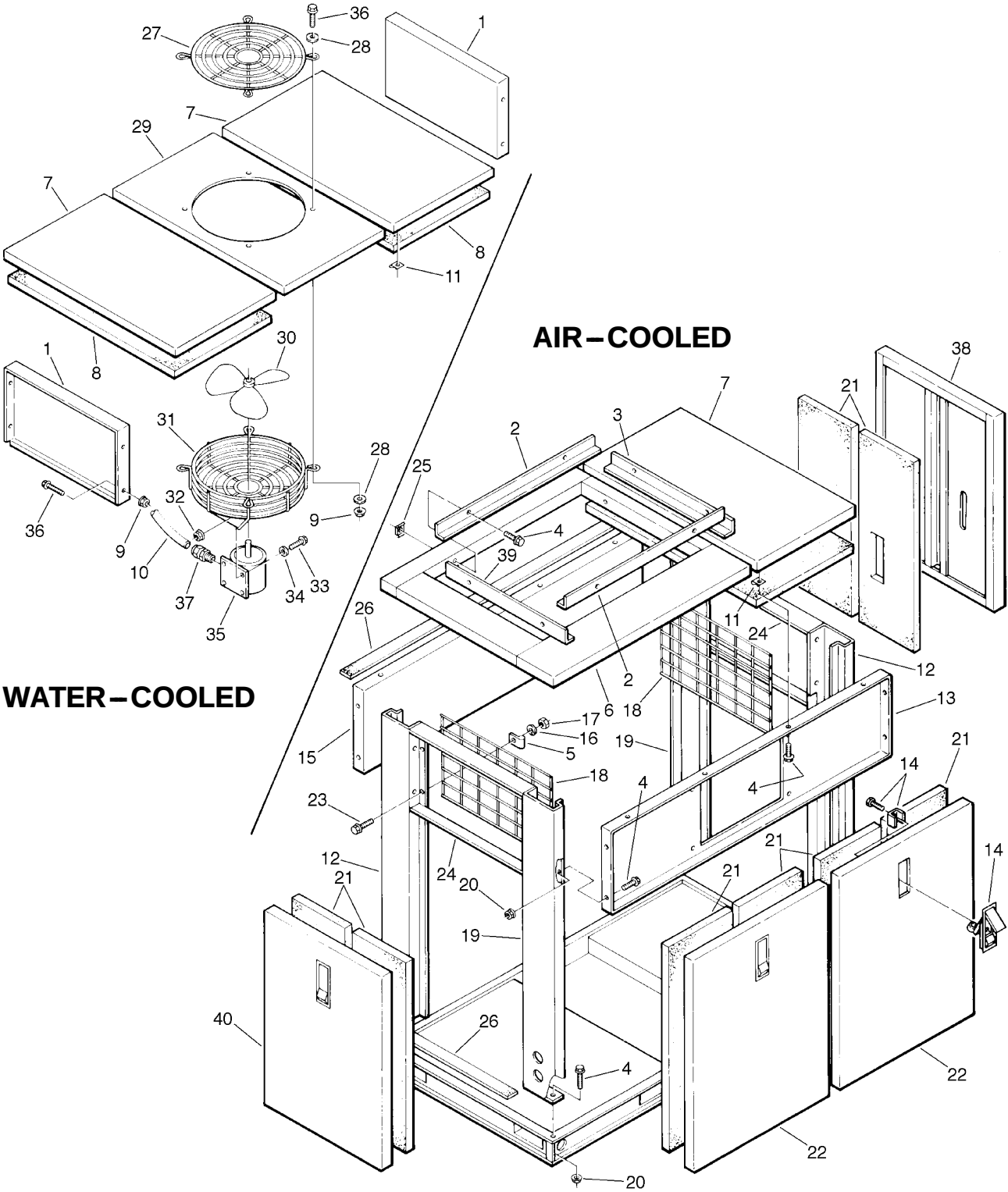
ILLUSTRATIONS AND PARTS LIST

7.18 ELECTRIC CONTROL BOX ASSEMBLY (LS-12 AND LS-16 SERIES) (CONTINUED)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
24	transformer, 240/480-120V (starter size 3)	250040-184	1
	S transformer, 240/480-120V (starter size 4 & 5)	250040-185	1
	Stransformer, 208-120V (starter size 3)	250040-184	1
	Stransformer, 208-120V (starter size 4 & 5)	250040-185	1
	Stransformer, 575-120V (starter size 3)	250040-184	1
	Stransformer, 575-120V (starter size 4 & 5)	250040-185	1
25	fuseholder	250023-290	1
26	starter, open replacement, (size 0)	250021-835	1
	Sstarter, open replacement (size 1)	250021-836	1
	Srelay, overload replacement (size 0)	250021-692	1
	Srelay, overload replacement (size 1)	250021-693	1
27	starter, open replacement (size 3)	250021-838	1
	Sstarter, open replacement (size 4)	250021-839	1
	Sstarter, open replacement (size 5)	250038-284	1
	Scoil, starter replacement (size 3)	250038-578	1
	Scoil, starter replacement (size 4)	250038-579	1
	Scoil, starter replacement (size 5)	250038-579	1
	Srelay, overload replacement (size 3)	250040-076	1
	Srelay, overload replacement (size 4)	250040-077	1
	Srelay, overload replacement (size 5)	250021-692	1

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

7.19 CANOPY ENCLOSURE AND PARTS (LS-12 AND LS-16 SERIES)



Section 7

ILLUSTRATIONS AND PARTS LIST

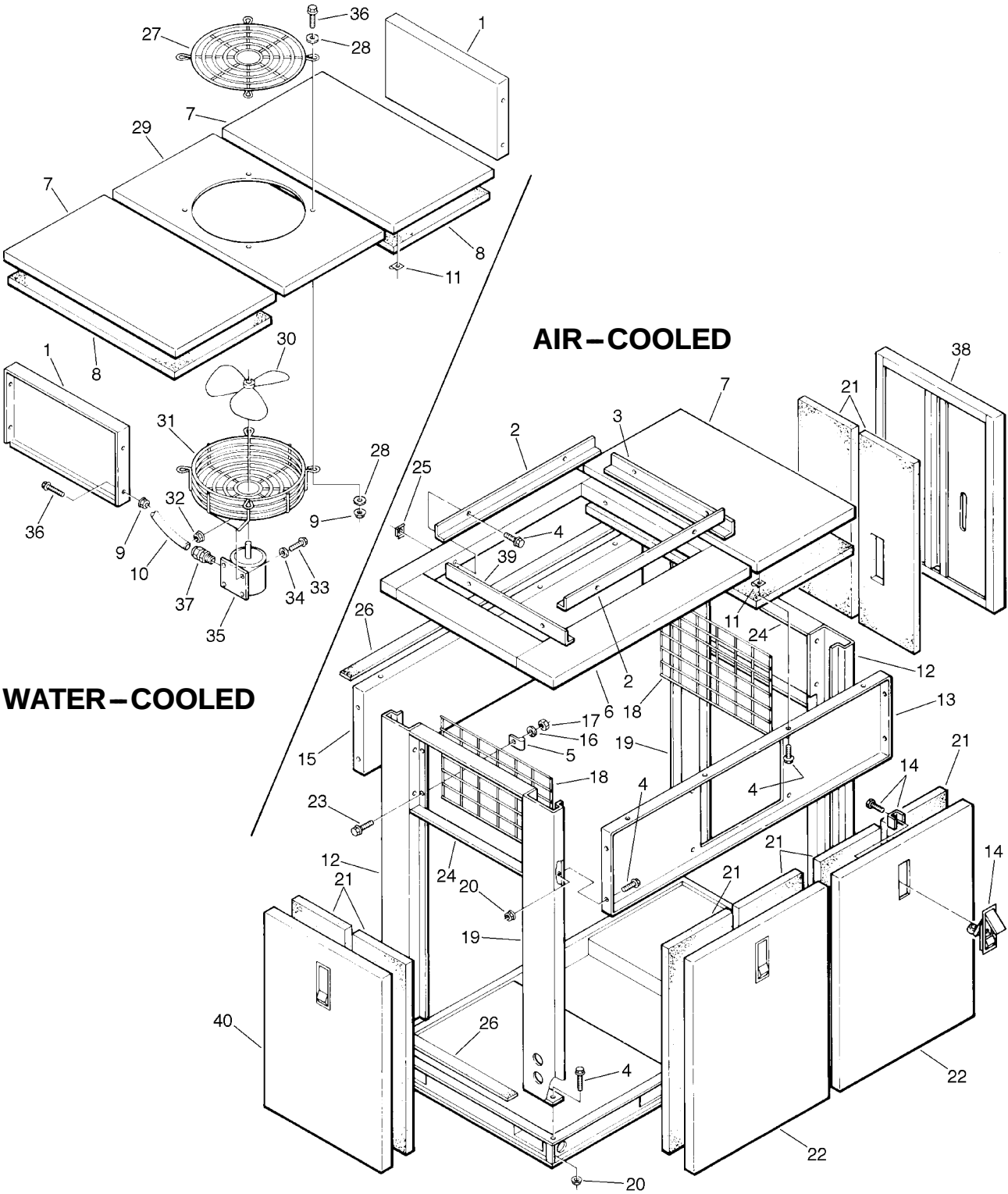
7.19 CANOPY ENCLOSURE AND PARTS (LS-12 AND LS-16 SERIES)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	panel, enclosure end (water-cooled)	250018-647	2
	Sgrille, cooler (60 and 75HP)	250018-296	1
2	angle, seal (40 and 50HP)	250018-291	2
	Sangle, seal (60 and 75HP)	250018-106	2
	Sangle, seal (100HP)	02250060-870	2
3	angle, seal (40 and 50HP)	250018-291	1
	Sangle, seal (60 and 75HP)	250034-881	1
	Sangle, seal (100HP)	02250060-871	2
4	screw, hex serrated washer 5/16"-18 (water-cooled)	829705-075	44
	Sscrew, hex serrated washer 5/16"-18 (air-cooled)	829705-075	40
5	clamp, wire (air-cooled)	043194	16
6	frame, roof (40 and 50HP)	250018-268	1
	Sframe, roof (60 and 75HP)	250017-865	1
	Sframe, roof (100HP)	02250043-154	1
7	panel, access roof	250017-309	1
8	panel, fiberglass roof	250020-012	1
9	nut, hex flange 5/16" (air-cooled)	825305-283	4
	Snut, hex flange 5/16" (water-cooled)	825305-283	12
10	wire, neoprene #16-4	850604-016	8
11	nut, retainer 5/16"-18	861505-140	16
12	panel, corner - right hand	250018-609	2
13	panel, front side	250017-311	1
14	latch, adjustable trigger lock	049764	6
15	panel, back side	250017-312	1
16	washer, springlock 1/4"	837504-062	12
17	nut, hex 1/4"	824204-226	12
18	grille, enclosure end (air-cooled)	250018-667	2
19	panel, corner - left hand	250018-610	2
20	nut, hex flanged 5/16" (water-cooled)	825305-283	16
	Snut, hex flanged 5/16" (air-cooled)	825305-283	20
21	panel, fiberglass door	250020-015	12
22	panel, access side	250017-310	4
23	capscrew, hex 1/4"-20	829104-100	8
24	panel, end	250018-646	2
25	nut, retainer 5/16"-18	861405-092	8
26	felt, weatherstrip	043502	92 ft.
27	guard, fan 20"	241137	1
28	washer, plain 5/16"	838205-071	8
29	panel, access roof	250017-308	1

(Continued on page 95)

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

7.19 CANOPY ENCLOSURE AND PARTS (LS-12 AND LS-16 SERIES)



Section 7

ILLUSTRATIONS AND PARTS LIST

7.19 CANOPY ENCLOSURE AND PARTS (LS-12 AND LS-16 SERIES) (CONTINUED)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
30	fan, vent 18"	410358	1
31	guard, exhaust fan	410179	1
32	nut, hex flange 5/16"	825305-283	4
33	screw, hex serrated washer 5/16" x 3/4"	829705-075	4
34	washer, plain 5/16"	838205-071	4
35	motor, 25HP (230, 460V)	250000-031	1
36	screw, hex serrated washer 5/16" x 3/4"	829705-075	4
37	grip, cord 1/2"	250021-321	1
38	panel, access side special (air-cooled)	250021-260	1
	Spanel, access side special (water-cooled)	250034-296	1
39	angle, seal (40 and 50 HP)	250034-939	1
	Sangle, seal (60 and 75 HP)	250034-881	1
40	panel, access side (air-cooled)	250017-310	1
	Spanel, access side (water-cooled)	250034-297	1

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

7.20 DECAL GROUP



GENUINE

SULLAIR®

SERVICE PARTS

MODEL:
LS-12 40, 50 & 60HP

DESCRIPTION:	P/N
• ELEMENT, AIR FILTER STD.	040899
ELEMENT, FLUID FILTER (FG.)	250025-526
ELEMENT, PRIM. SEPARATOR	250034-116
ELEMENT, SEC. SEPARATOR	0220042-932
KIT, FLUID RETURN LINE	241772
KIT, SULLICON CONTROL	250020-353
SPRING, SULLICON CONTROL	250006-526

• • STD. COMPRESSOR FLUID OPTIONS:

SRF 1/4000 FLUID (5 GAL.)	250019-662
SULLUBE 32 FLUID (5 GAL.)	250022-669
24KT FLUID (5 GAL.)	046850-001

• • SEE COMPR. FILL DECAL FOR CORRECT FLUID

• HEAVY DUTY FILTER OPTION

ELEMENT, PRIM. AIR FILTER	049301
ELEMENT, SEC. AIR FILTER	049302

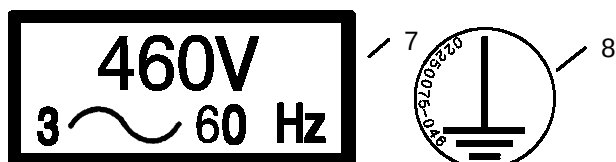
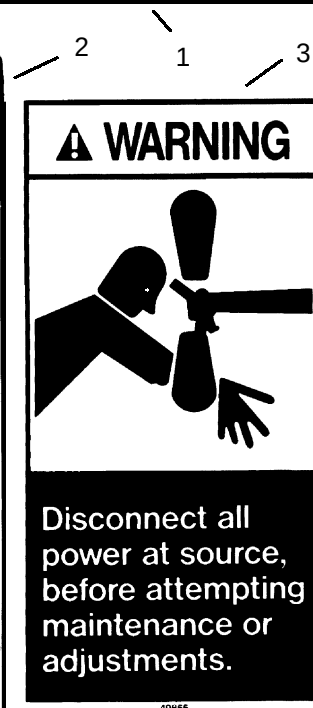
THE ABOVE PARTS MAY ALSO BE ORDERED AS AN ANNUAL MAINTENANCE KIT:

LS-12 W/STD. AIR FILTER	250027-932
LS-12 W/H.D. AIR FILTER	250027-933

THE ABOVE PARTS SHOULD BE ORDERED FROM A LOCAL SULLAIR DISTRIBUTOR. FOR INFORMATION REGARDING THE LOCATION OF YOUR NEAREST SULLAIR DISTRIBUTOR CONTACT:

SULLAIR CORPORATION	TEL. (219) 874-1800
PARTS DIVISION	800 348-2722
1625 E. SECOND ST.	
MICHIGAN CITY, IN. 46360	

250034-137



ILLUSTRATIONS AND PARTS LIST

7.20 DECAL GROUP

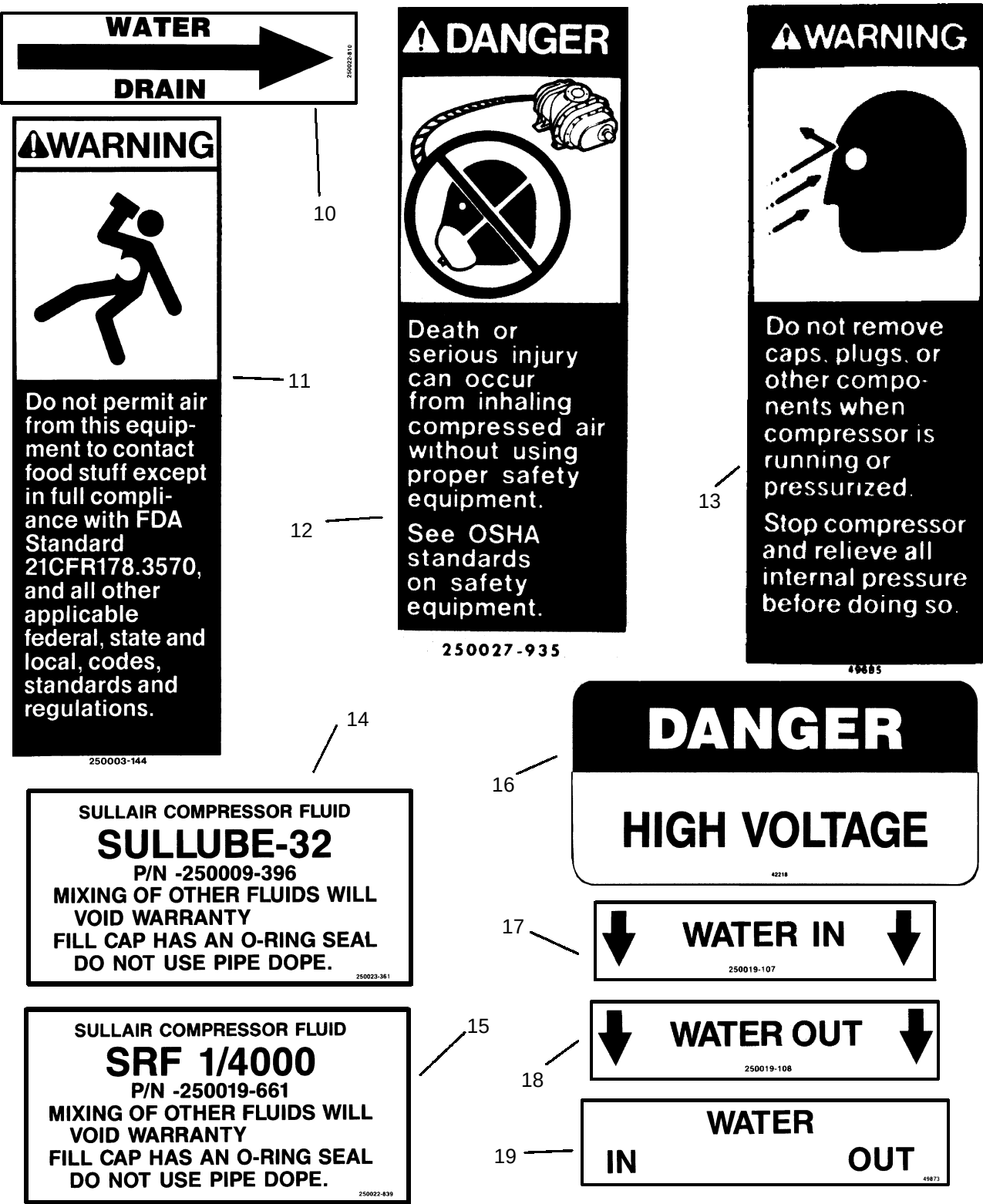
<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	decal, fork lifting	241814	4
2	decal, 12BS maintenance kit (40,50,60HP)	250034–137	1
3	sign, warning sever fan	049855	2
4	sign, warning sever fan port	049965	1
5	sign, danger electrocution	049850	1
6	decal, rotation	250021–286	1
7	decal, 460 voltage international (I)	02250069–399	1
8	decal, earth ground	02250075–046	1
9	decal, warning ground fault	049852	1

(Continued on page 99)

(I) Compressor voltage may vary. Consult Factory with machine serial number.

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

7.20 DECAL GROUP



ILLUSTRATIONS AND PARTS LIST

7.20 DECAL GROUP (CONTINUED)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
10	decal, water drain	250022-810	1
11	sign, warning "food grade" lube	250003-144	1
12	sign, danger air breathing	250027-935	1
13	sign, warning compressor fluid fill cap	049685	1
14	decal, compressor fluid Sullube 32	250023-361	1
15	decal, SRF 1/4000 fluid	250022-839	1
16	decal, danger high voltage	042218	1
17	decal, "water in"	250019-107	1
18	decal, "water out"	250019-108	1
19	decal, water inlet/outlet	049873	1

(Continued on page 101)

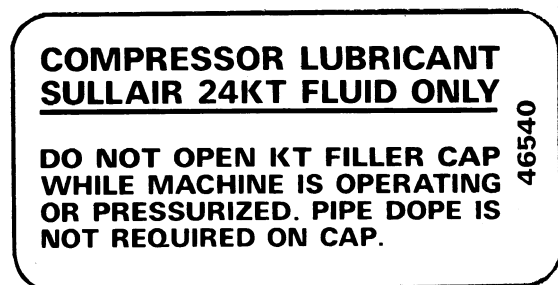
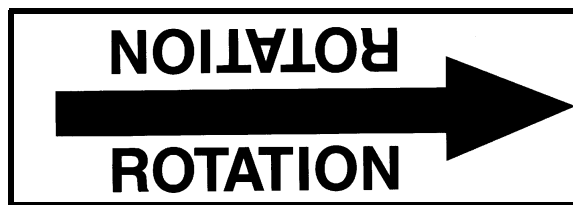
PLEASE NOTE: WHEN ORDERING PARTS, ALWAYS INDICATE SERIAL NUMBER OF COMPRESSOR.

Section 7 ILLUSTRATIONS AND PARTS LIST

7.20 DECAL GROUP



20
21



22
23
24

**GENUINE
SULLAIR®
SERVICE PARTS**

MODEL:
LS-16 60, 75 & 100HP

DESCRIPTION:	P/N
• ELEMENT, AIR FILTER STD.	040899
ELEMENT, FLUID FILTER (FG.)	250025-526
ELEMENT, PRIM. SEPARATOR	250034-116
ELEMENT, SEC. SEPARATOR	250042-862
KIT, FLUID RETURN LINE	241772
KIT, SULLICON CONTROL	250020-353
SPRING, SULLICON CONTROL	250006-526

•• STD. COMPRESSOR FLUID OPTIONS:

SRF 1/4000 FLUID (5 GAL.)	250019-662
SULLUBE 32 FLUID (5 GAL.)	250022-669
24KT FLUID (5 GAL.)	046850-001

•• SEE COMPR. FILL DECAL FOR CORRECT FLUID

• HEAVY DUTY FILTER OPTION

ELEMENT, PRIM. AIR FILTER	047542
ELEMENT, SEC. AIR FILTER	047543

THE ABOVE PARTS MAY ALSO BE ORDERED AS AN ANNUAL MAINTENANCE KIT:

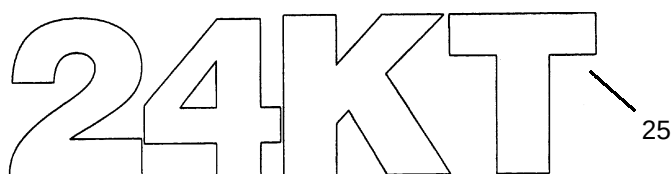
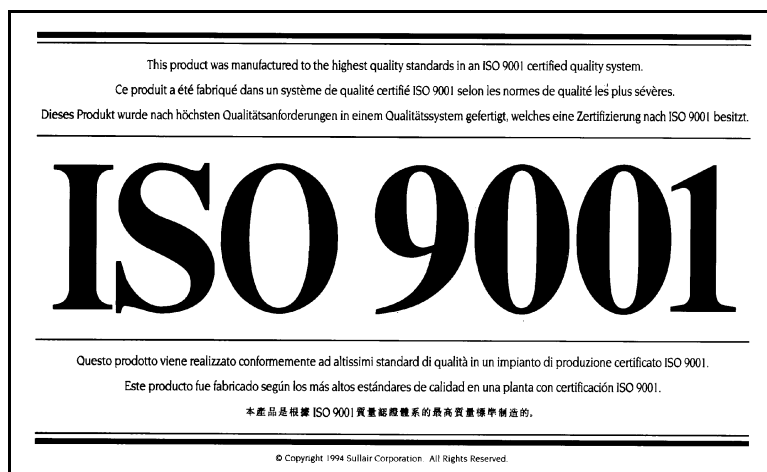
LS-16W/STD. AIR FILTER	250027-932
LS-16W/H.D. AIR FILTER	250027-934

THE ABOVE PARTS SHOULD BE ORDERED FROM A LOCAL SULLAIR DISTRIBUTOR. FOR INFORMATION REGARDING THE LOCATION OF YOUR NEAREST SULLAIR DISTRIBUTOR CONTACT:

**SULLAIR CORPORATION
PARTS DIVISION
1625 E. SECOND ST.
MICHIGAN CITY, IN. 46360**

TEL. (800)-SULLAIR

250034-138



26
25

ILLUSTRATIONS AND PARTS LIST

7.20 DECAL GROUP (CONTINUED)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
20	decal, oil stop valve P/N 016741	410238	1
21	decal, rotation	250021–564	1
22	decal, SRF 1/4000 logo	250021–483	1
23	decal, compressor lubricant	046540	1
24	decal, ISO 9001	02250057–624	1
25	decal, 24 KT	02250061–016	1
26	decal, maintenance LS–16	250034–138	1

(Continued on page 103)

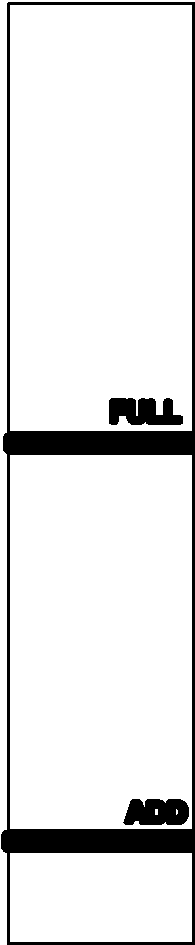
PLEASE NOTE: WHEN ORDERING PARTS, ALWAYS INDICATE SERIAL NUMBER OF COMPRESSOR.

7.20 DECAL GROUP



LS-12

MACH. S/N _____ MODEL # _____
CUST. NAME _____
ADDRESS _____
CITY / STATE _____ ZIP _____
CUST. PRODUCT _____
BRAND OF FLUID _____
HOURS ON MACH. _____ FLUID _____
DATE SAMPLE TAKEN: _____
DISCHARGE TEMP. _____ °F
AMBIENT TEMP. _____ °F
FLUID USAGE RATE - GAL / MO. _____
SAMPLE TAKEN FROM: _____
COMMENTS: _____



250038-457	1 CR	1 TR	LINE PRESS	INLET
	2 CR	2 TR	DISCH PRESS	T1
	3 CR	3 TR	WATER PRESS	T2
	4 CR	4 TR	SEPARATOR	T3
	5 CR	1 M	SPIRAL VALVE	T4
	6 CR	2 M	INLET VALVE	T5
	1 FU	3 M	CIS VALVE	T6
	2 FU	4 M	OIL PRESS	T3
	3 FU	HCR	OIL FILTER	T4

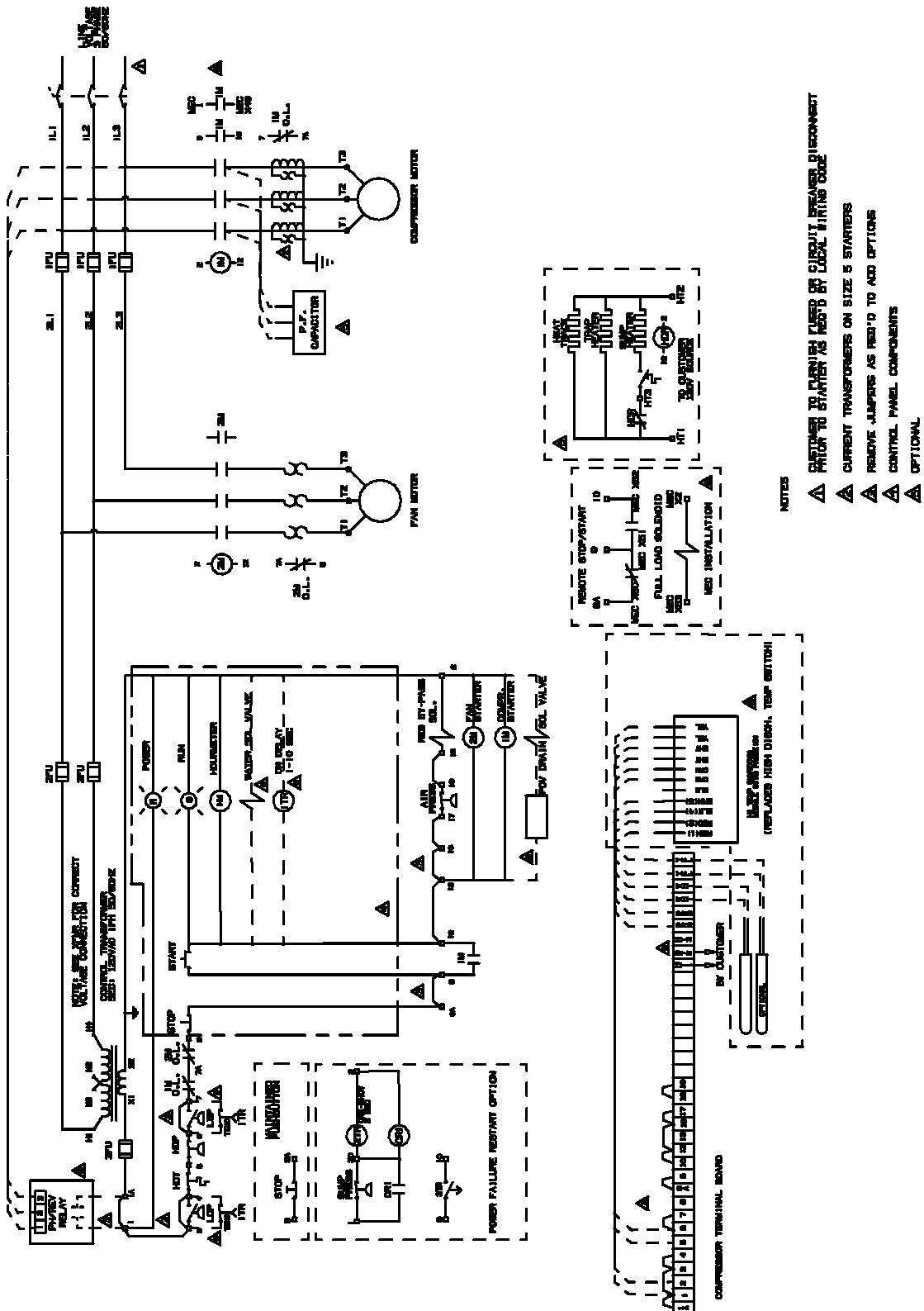
ILLUSTRATIONS AND PARTS LIST

7.20 DECAL GROUP (CONTINUED)

<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
27	decal, Sullair	02250059-054	2
28	decal, LS-12	02250061-165	1
	Sdecal, LS-16 (not shown)	02250061-170	1
29	decal, fluid sample	250022-675	1
30	decal, gauge fluid level	250020-730	1
31	decal, electrical component	250038-457	1
32	decal, instrument pnl universal (not shown)	02250051-301	1
33	decal, instument pnl universal (not shown)	02250051-303	1
34	decal, instrument pnl universal-dual cntrl (not shown)	02250059-410	1

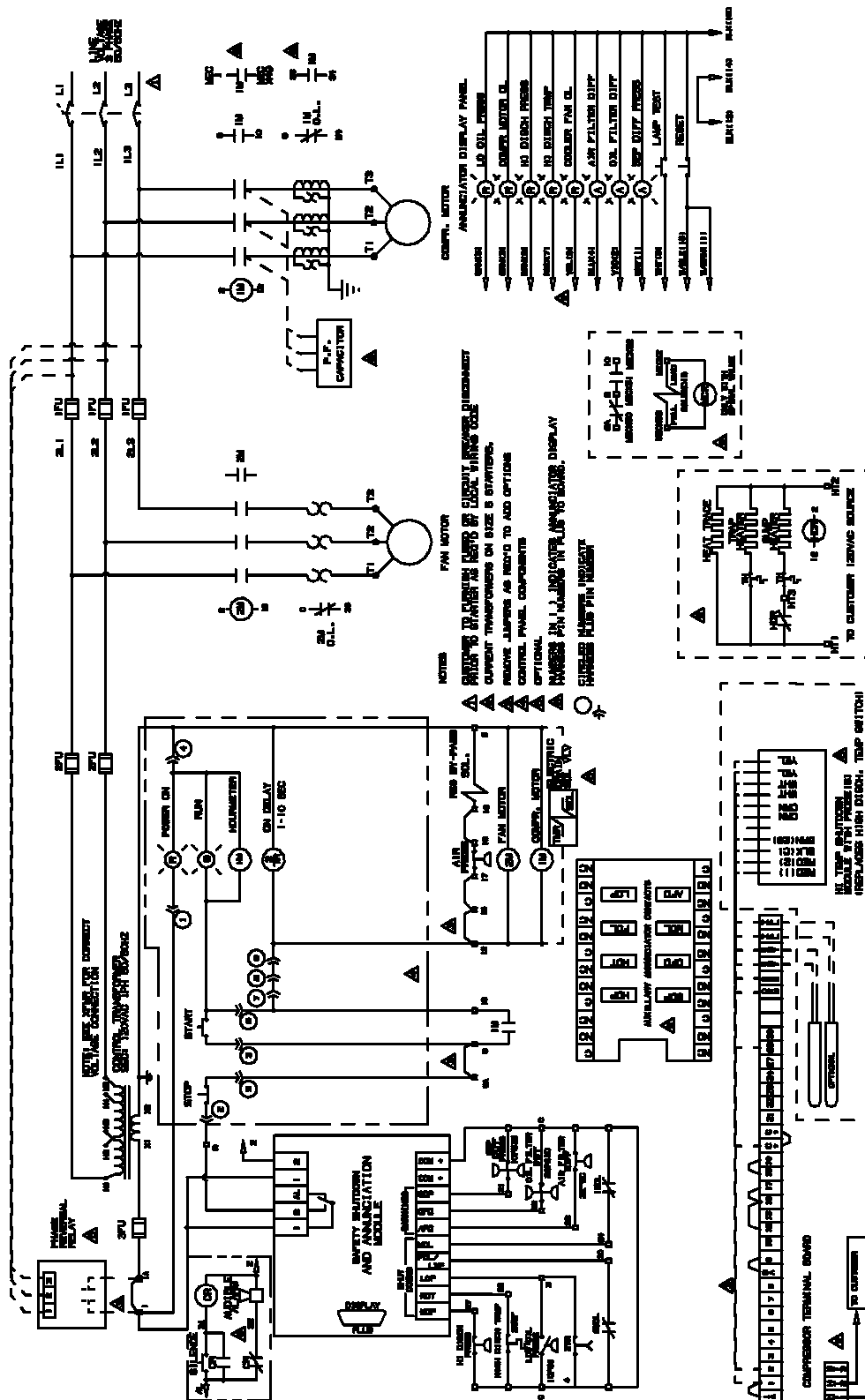
PLEASE NOTE: WHEN ORDERING PARTS, ALWAYS INDICATE SERIAL NUMBER OF COMPRESSOR.

7.21 WIRING DIAGRAM – SINGLE CONTROL

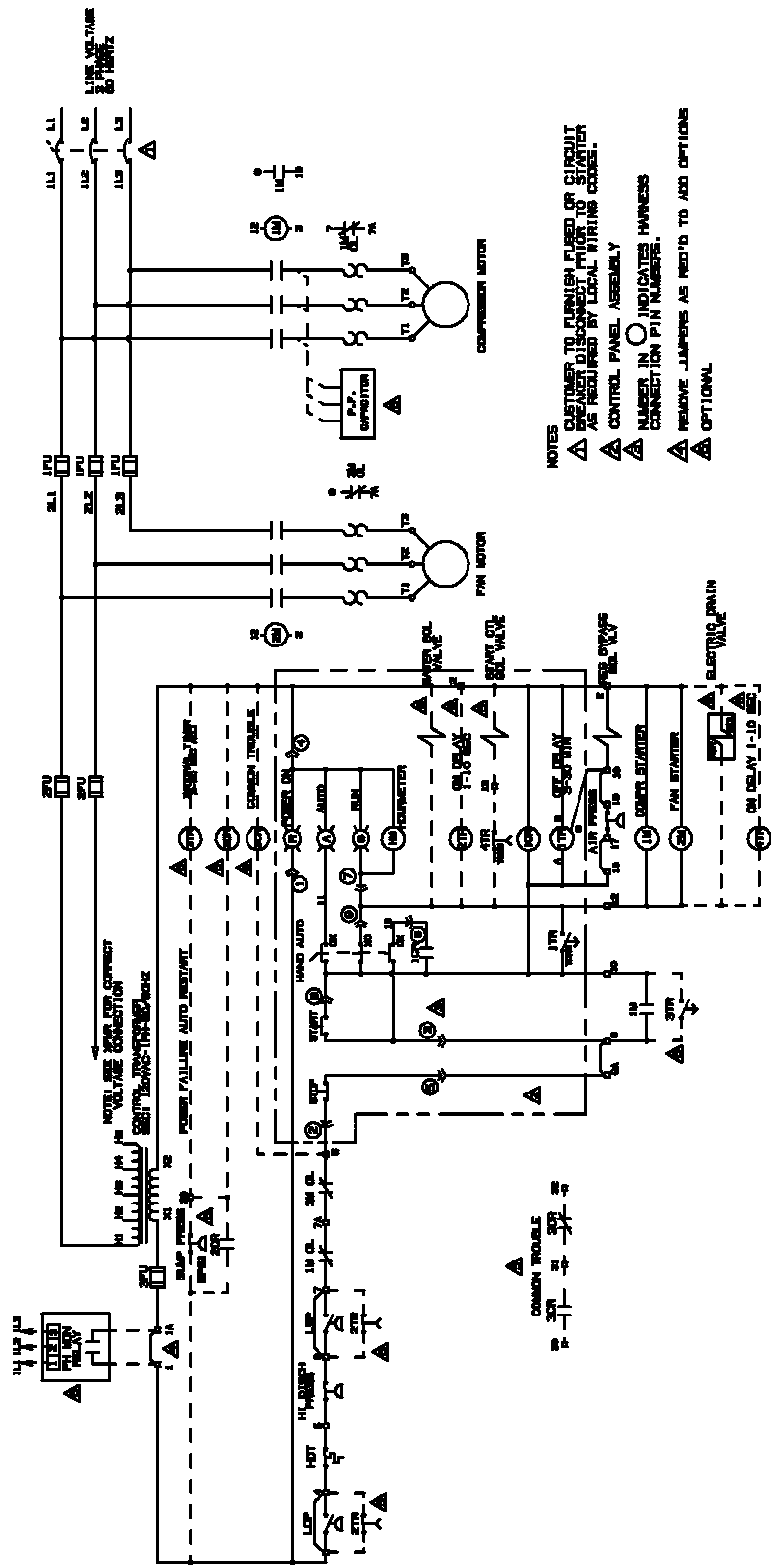


ILLUSTRATIONS AND PARTS LIST

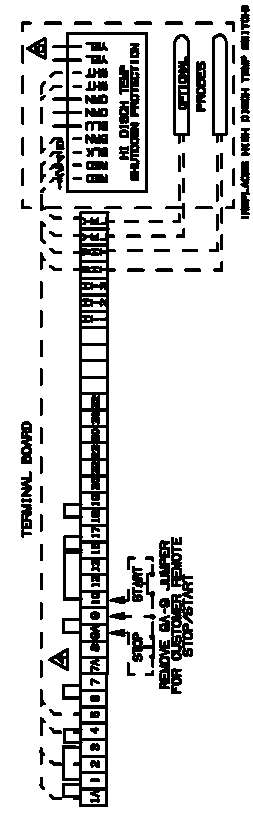
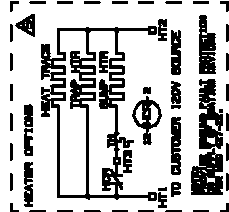
7.22 WIRING DIAGRAM – SINGLE CONTROL WITH ANNUNCIATOR



7.23 WIRING DIAGRAM – DUAL CONTROL

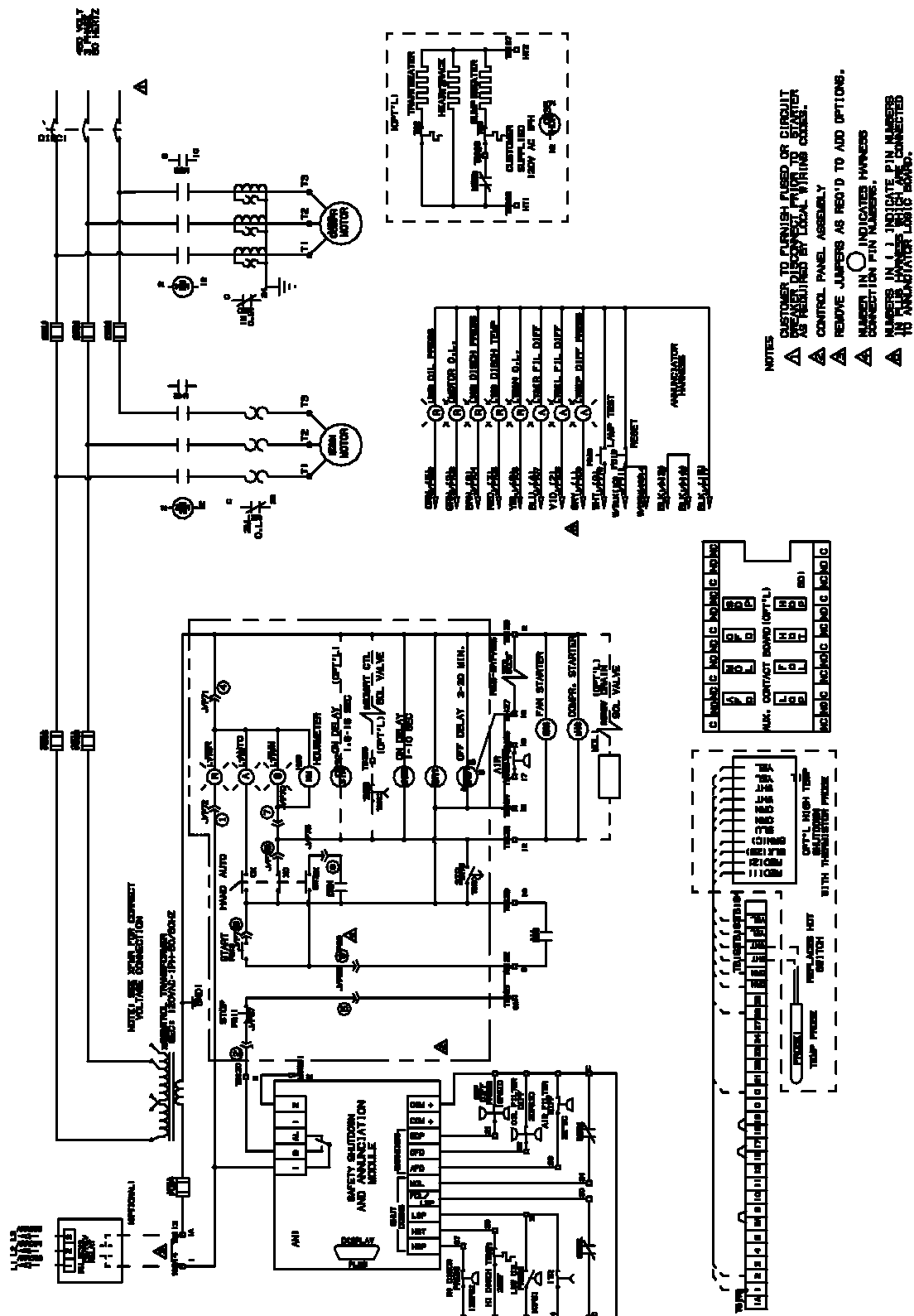


- NOTES
- △ CUSTOMER TO FURNISH FUSED OR CIRCUIT BREAKER DISCONNECT PRIOR TO STARTER AS REQUIRED BY LOCAL WIRING CODES.
 - △ CONTROL PANEL ASSEMBLY
 - △ NUMBER IN ○ INDICATES HARNESS CONNECTION PIN NUMBERS.
 - △ REMOVE JUMPERS AS NOTED TO AND OPTIONS
 - △ OPTIONAL

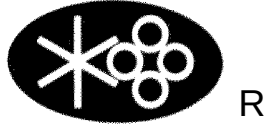


ILLUSTRATIONS AND PARTS LIST

7.24 WIRING DIAGRAM – DUAL CONTROL WITH ANNUNCIATOR



WORLDWIDE SALES AND SERVICE



SULLAIR ASIA, LTD.

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Shartex Plaza Ctr.
No. 88 Zun Yi Nan Rd.
Shanghai, P.R.C.
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Fax: 21-2196568

SULLAIR EUROPE, S.A.

Chemin de Genas BP 639
69800 Saint Priest, France
Telephone: 33-72232425
Fax: 33-78907168

SULLAIR CORPORATION

Subsidiary of Sundstrand Corporation
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Telephone: 1-800-SULLAIR (U.S.A. Only) or
1-219-879-5451
Fax: (219) 874-1273
Fax: (219) 874-1835 (Parts)
Fax: (219) 874-1805 (Service)

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Change Without Prior Notice