

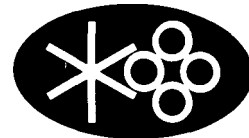
Worldwide Sales and Service

Operators Manual and Parts List

Manual Brought to You By: IndustrialAirPower.com

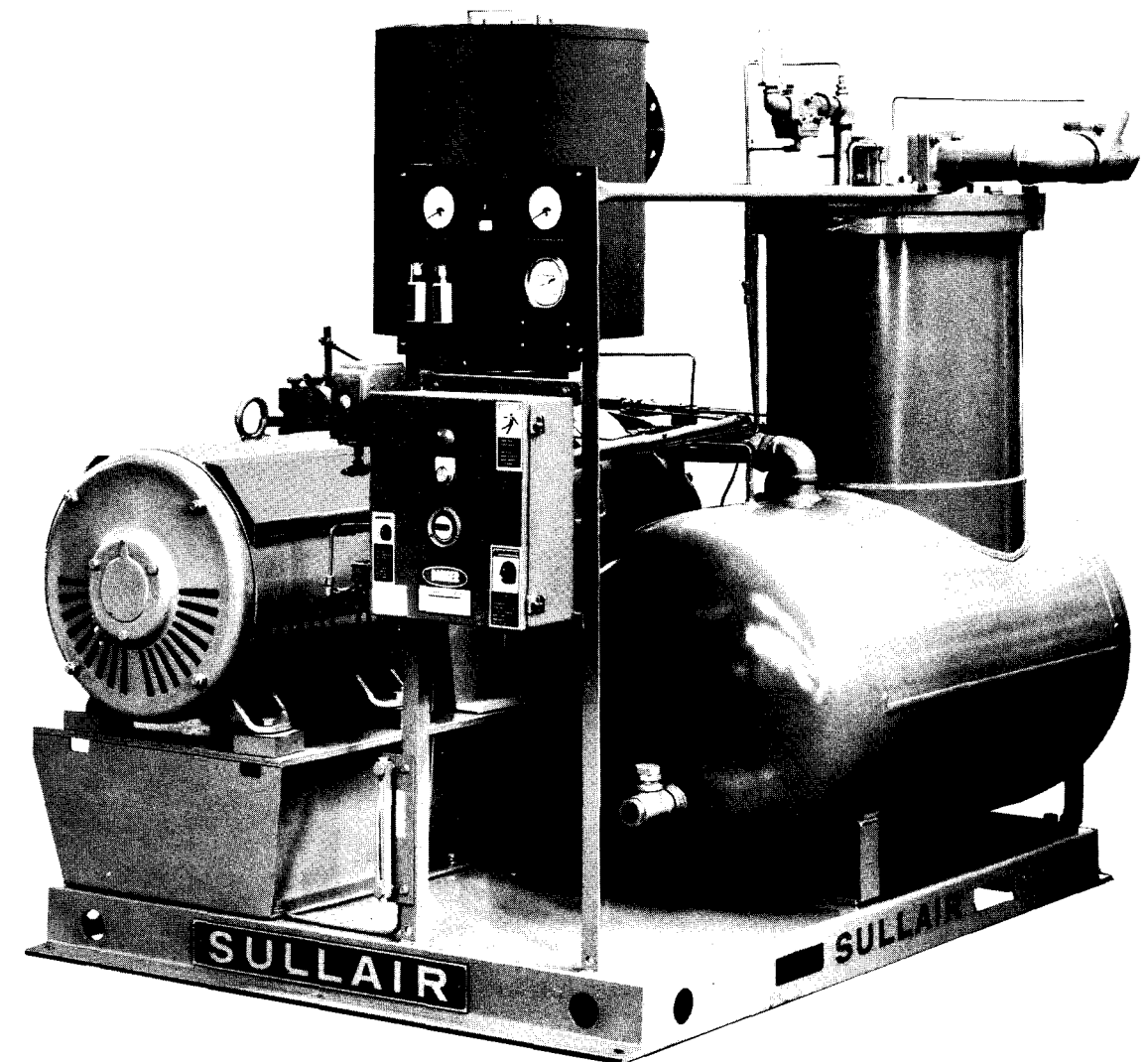
SULLAIR CORPORATION

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Sullair®
24KT Compressor

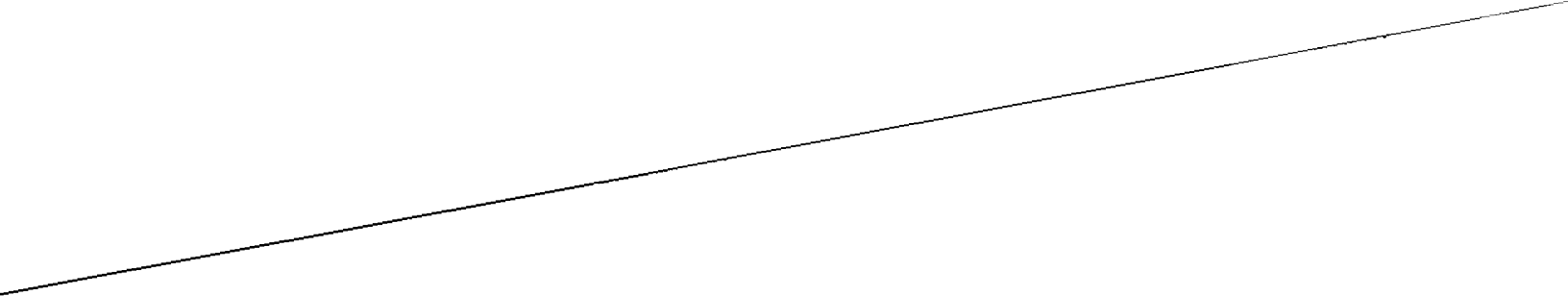
Series 32 200L and 250H Rotary Screw Air Compressor



Printed in U.S.A. Effective 6/79

Specifications subject to change
without prior notice

Form No. P00112



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TABLE OF CONTENTS

Section 1		
DESCRIPTION	1	1.1 INTRODUCTION
	1	1.2 DESCRIPTION OF COMPONENTS
	2	1.3 SULLISCREW® COMPRESSOR UNIT, FUNCTIONAL DESCRIPTION
	2	1.4 COMPRESSOR COOLING AND LUBRICATION SYSTEM, FUNCTIONAL DESCRIPTION
	3	1.5 COMPRESSOR DISCHARGE SYSTEM, FUNCTIONAL DESCRIPTION
	5	1.6 CONTROL SYSTEM, FUNCTIONAL DESCRIPTION
	6	1.7 AIR INLET SYSTEM, FUNCTIONAL DESCRIPTION
	6	1.8 INSTRUMENT PANEL GROUP, FUNCTIONAL DESCRIPTION
Section 2		
SPECIFICATIONS	1	TABLE OF SPECIFICATIONS
Section 3		
INSTALLATION	8	3.1 LOCATION OF COMPRESSOR
	8	3.2 VENTILATION AND COOLING
	9	3.3 SERVICE AIR PIPING
	9	3.4 COUPLING ALIGNMENT CHECK
	9	3.5 COOLANT FLUID LEVEL CHECK
	9	3.6 MOTOR ROTATION DIRECTION CHECK
	9	3.7 ELECTRICAL PREPARATION
Section 4		
OPERATION	10	4.1 GENERAL
	10	4.2 PURPOSE OF CONTROLS
	12	4.3 INITIAL STARTUP PROCEDURE
	12	4.4 SUBSEQUENT STARTUP PROCEDURE
	12	4.5 SHUTDOWN PROCEDURE
Section 5		
MAINTENANCE	13	5.1 GENERAL
	13	5.2 DAILY OPERATION
	13	5.3 MAINTENANCE AFTER INITIAL 50 HOURS OF OPERATION

TABLE OF CONTENTS
(CONTINUED)

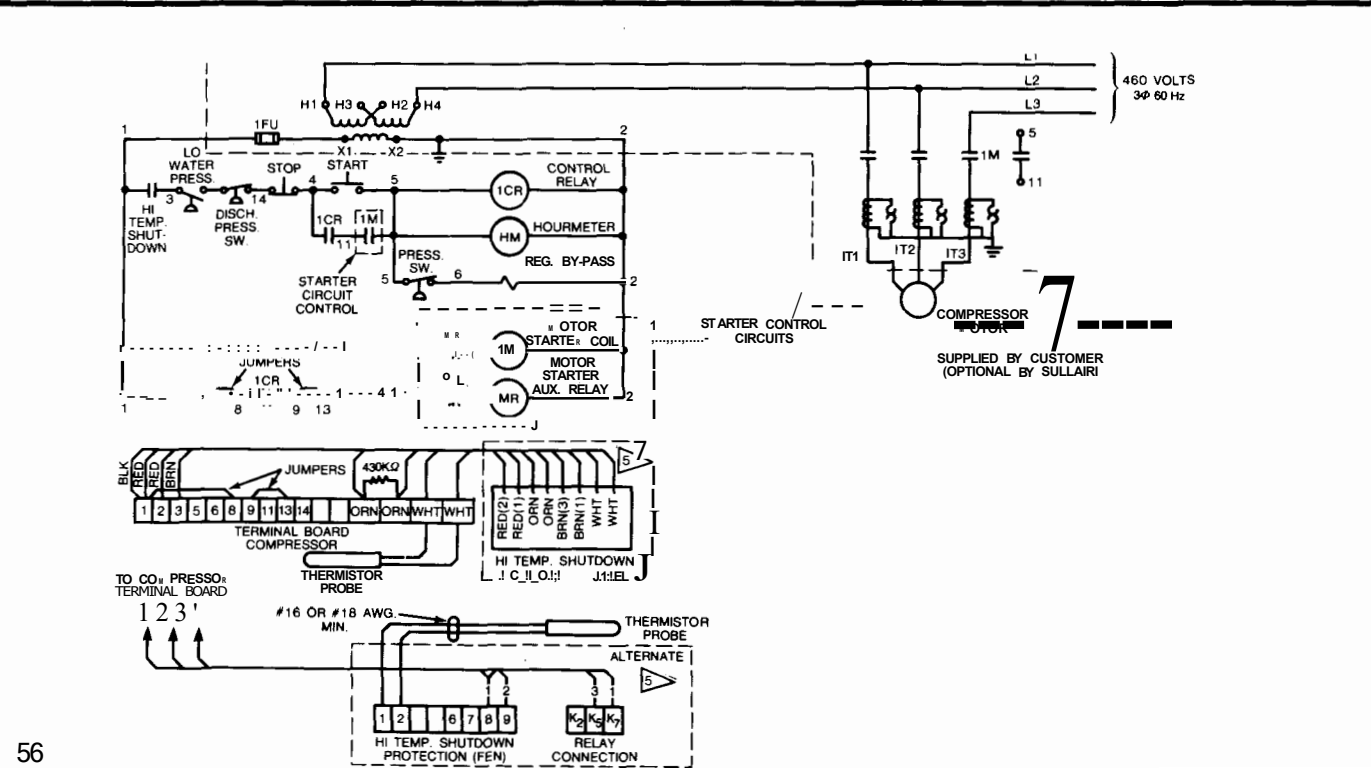
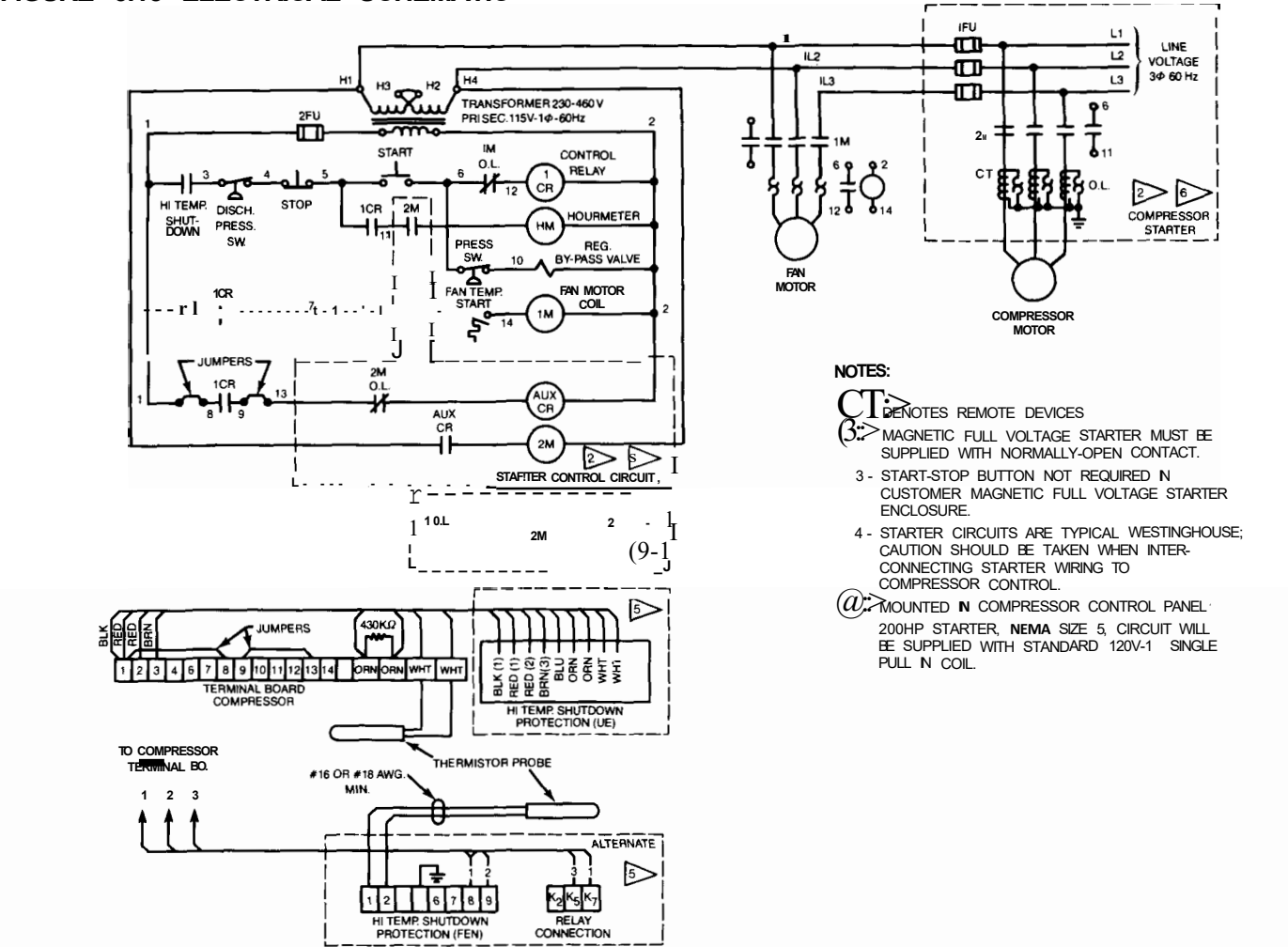
Section 5
MAINTENANCE

13	5.4 FILTER MAINTENANCE
13	5.5 SEPARATOR MAINTENANCE
13	5.6 PARTS REPLACEMENT AND ADJUSTMENT PROCEDURES
19	5.7 TROUBLESHOOTING

Section 6
ILLUSTRATIONS
and PARTS LISTS

23	PARTS ORDERING PROCEDURE
23	6.1 RECOMMENDED SPARE PARTS LIST
24	6.2 MOTOR, COMPRESSOR, FRAME, AND PARTS
26	6.3 COMPRESSOR AIR INLET SYSTEM
28	6.4 COMPRESSOR COOLING AND LUBRICATION SYSTEM - WATER COOLED
30	6.5 COMPRESSOR UNIT TUBING
34	6.6 COMPRESSOR COOLING AND LUBRICATION SYSTEM - AIR COOLED
38	6.7 COMPRESSOR DISCHARGE SYSTEM
42	6.8 ELECTRO-PNEUMATIC CONTROL SYSTEM
44	6.9 SULLICON CONTROL
46	6.10 INSTRUMENT PANEL ASSEMBLY
48	6.11 CONTROL BOX ASSEMBLY
50	6.12 WATER COOLED - AFTER COOLED OPTION (BASCO VERTICAL MTD.)
52	6.13 WATER COOLED - AFTER COOLED OPTION (ADAMS HORIZONTAL MTD.)
54	6.14 AIR COOLED - AFTER COOLED OPTION
56	6.15 ELECTRICAL SCHEMATIC

Section 6
ILLUSTRATIONS AND PARTS LISTS
FIGURE 6.15 ELECTRICAL SCHEMATIC



Section 1
DESCRIPTION

1.1 INTRODUCTION

Your new Su/air 24KT, a flood-lubricated rotary screw air compressor, will provide you with a unique experience in improved reliability and greatly reduced maintenance.

Compared to other compressors you may have known about, the Su/air Rotary Screw is unique in mechanical reliability, with "no-wear" and "no inspection" required of the working parts within the compressor unit. Operating problems (when they occurred) were often due to oil-related conditions. OIL IS NOT USED IN YOUR NEW SULLAIR 24KT COMPRESSOR.

The system is filled with a new, lifetime coolant, 24KT, that *does not oxidize and usually need never be changed.*

This coolant does not form abrasive percipitates or break down to shellac, varnish or sludge that would otherwise damage the compressor unit or cooling system.

Read Section 5 (Maintenance) to see how surprisingly easy it is to keep your 24KT in top operating condition.

1.2 DESCRIPTION OF COMPONENTS

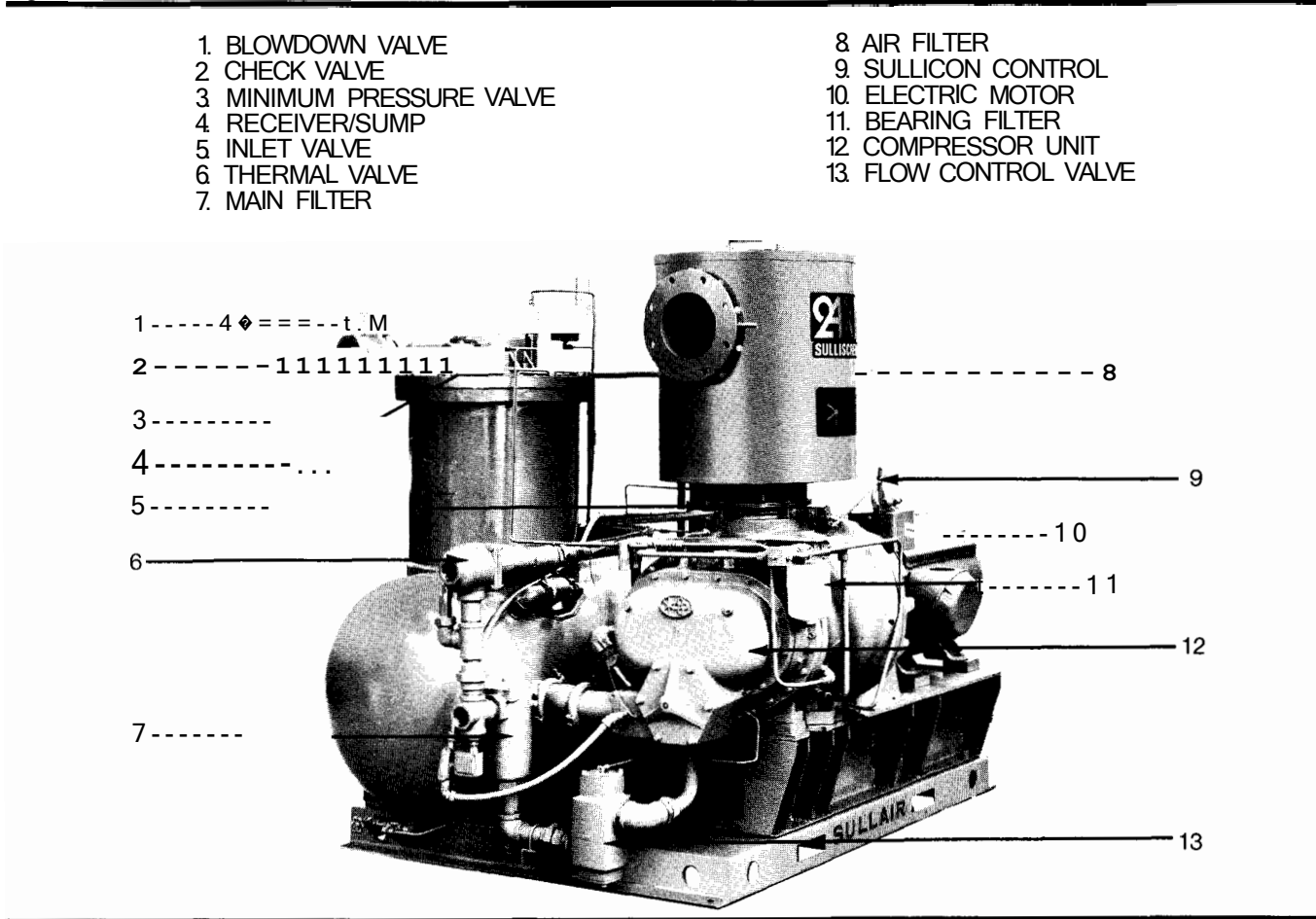
Refer to Figure 1-1. The components and assemblies of the 24KT air compressors are clearly shown. The complete package includes compressor, electric motor, starter, compressor inlet system, compressor discharge system, compressor lubrication and cooling system, capacity control system and instrument panel. Optional equipment such as aftercoolers and heavy gauge steel canopies, are also normally factory-installed.

On water-cooled models (available with a shell and tube heat exchanger) 24KT coolant fluid is piped into the four-pass exchanger where compression heat is removed from the coolant.

On 24KT Series 32 Air Cooled Models, a fan located on top of a specially designed cooler housing draws air through the cooler to remove heat of compression from the cooling fluid.

Both Air-Cooled and Water-Cooled Models provide easy access to such components as the coolant filters, control valves, and the air filter. There will be no problem in gaining access to any components in the event that they would require service.

Figure 1-1 Su/air 24KT Rotary Screw Compressor



1-3 SULLISCREW™ COMPRESSOR UNIT, FUNCTIONAL DESCRIPTION

The 24KT Sullair Air Compressor features the Sulliscrew compressor unit, a single-stage, positive displacement, flood-lubricated type compressor. This unit provides continuous pulse-free air compression to meet your needs. With a Sullair machine, no maintenance or internal inspection of the compressor unit is required.

24KT Coolant fluid is injected into the compressor unit in large quantities and mixes directly with the air, as the internal rotors turn compressing the air. The fluid has three primary functions:

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

After the air and coolant mixture has been discharged from the compressor, the coolant is separated from the air. At this time, the air flows to your service line and the fluid is cooled in preparation for reinjection.

1.4 COMPRESSOR COOLING AND LUBRICATION SYSTEM, FUNCTIONAL DESCRIPTION

Refer to Figure 1-2. The 24KT cooling system (water-cooled version) consists of a shell and tube heat exchanger, water-flow regulating valve, main line filter, extra fine bearing lube filter, thermal valve, flow control valve and inter connecting piping. Air-cooled

models are schematically the same as water-cooled models with the exceptions being a radiator-type cooler and a fan used in place of the shell and tube heat exchanger and the water flow regulating valve.

The pressure in the receiver/sump causes coolant fluid flow by forcing the coolant from the high pressure area of the sump to an area of lower pressure in the compressor unit.

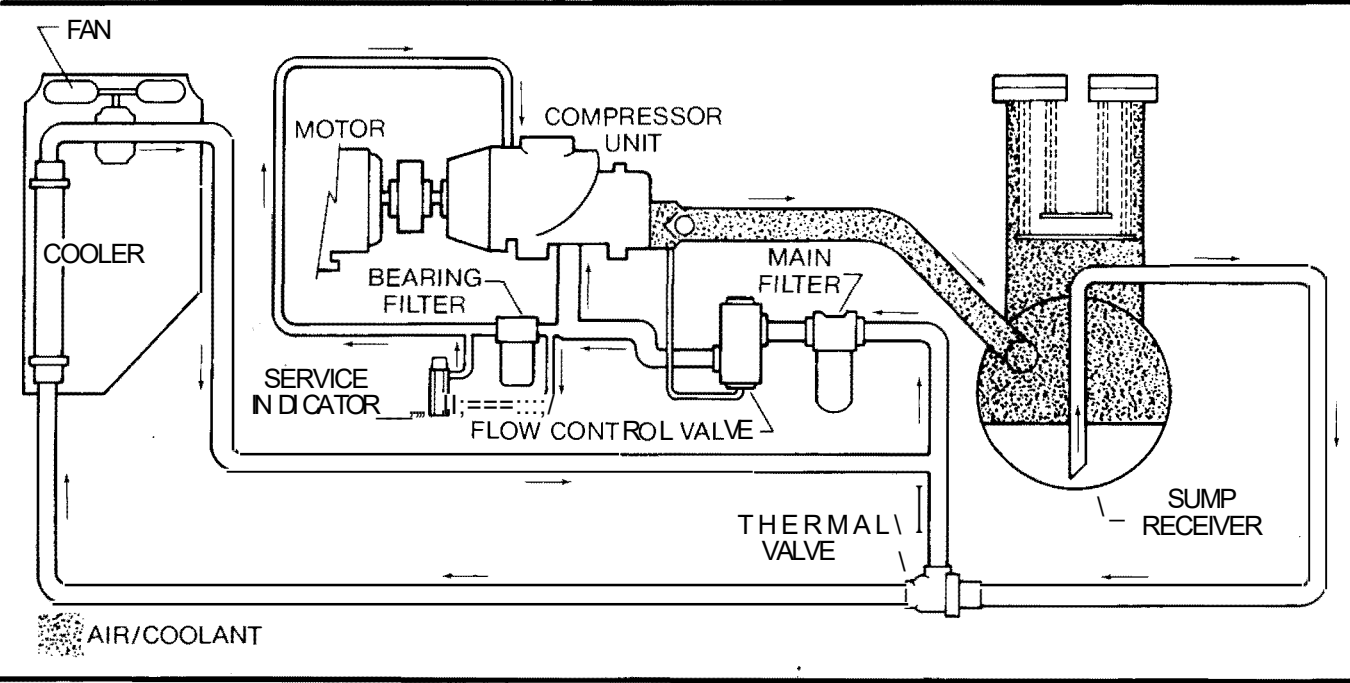
24KT coolant fluid flows from the bottom of the receiver/sump to the thermal valve. The thermal valve is fully open when the coolant temperature is below 190° F. The 24KT fluid passes through the thermal valve, the main filter and directly to the compressor unit where it lubricates, cools and seals the rotors and the compression chamber.

As the discharge temperature rises above 190° F, due to the heat of compression, the thermal valve begins to close and a portion of the coolant fluid then flows through the cooler. From the cooler the coolant flows to the main filter and on to the compressor unit.

A portion of the 24KT coolant fluid flowing to the compressor is routed to the anti-friction bearings which support the rotors inside the compressor unit. Prior to entering the compressor unit, this fluid is taken through an extra fine bearing filter, thus assuring properly filtered lubricant for bearing supply.

The bearing filter has a replacement element and an integral pressure by-pass valve. An associated service indicator shows red when the filter needs servicing.

Figure 1-2 Compressor Cooling and Lubrication System Diagram (Air-Cooled Shown)



6.14 AIR COOLED - AFTER COOLED OPTION

key number	description	part number	quantity
1	aftercooler	41807	1
2	capscrew, hex hd. 5/8"-11 x 3"	•	16
3	nipple, close 2"	•	2
4	elbow, 90° reducing 3 x 2"	•	2
5	washer, lock 5/8"	•	16
6	nut, hex 5/8"-11	•	16
7	clamp, muffler	43713	2
8	nipple, 3 x 32"	•	1
9	elbow, 90° 3"	•	1
10	nipple, 3 x 22"	•	1
11	flange, screwed 3"	42840	1
12	gasket, flange 3"	41530	1
13	separator*	41808	1
14	bushing, reducing 1 1/4" X 3/4"	•	1
15	elbow, 45° 3/4"	•	1
16	nipple, close 3/4"	•	3
17	union, 3/4"	•	1
18	trap, moisture**	42034	1
19	flange, adapter (on check valve)	12519	1
20	decals, "WARNING"	49346	1

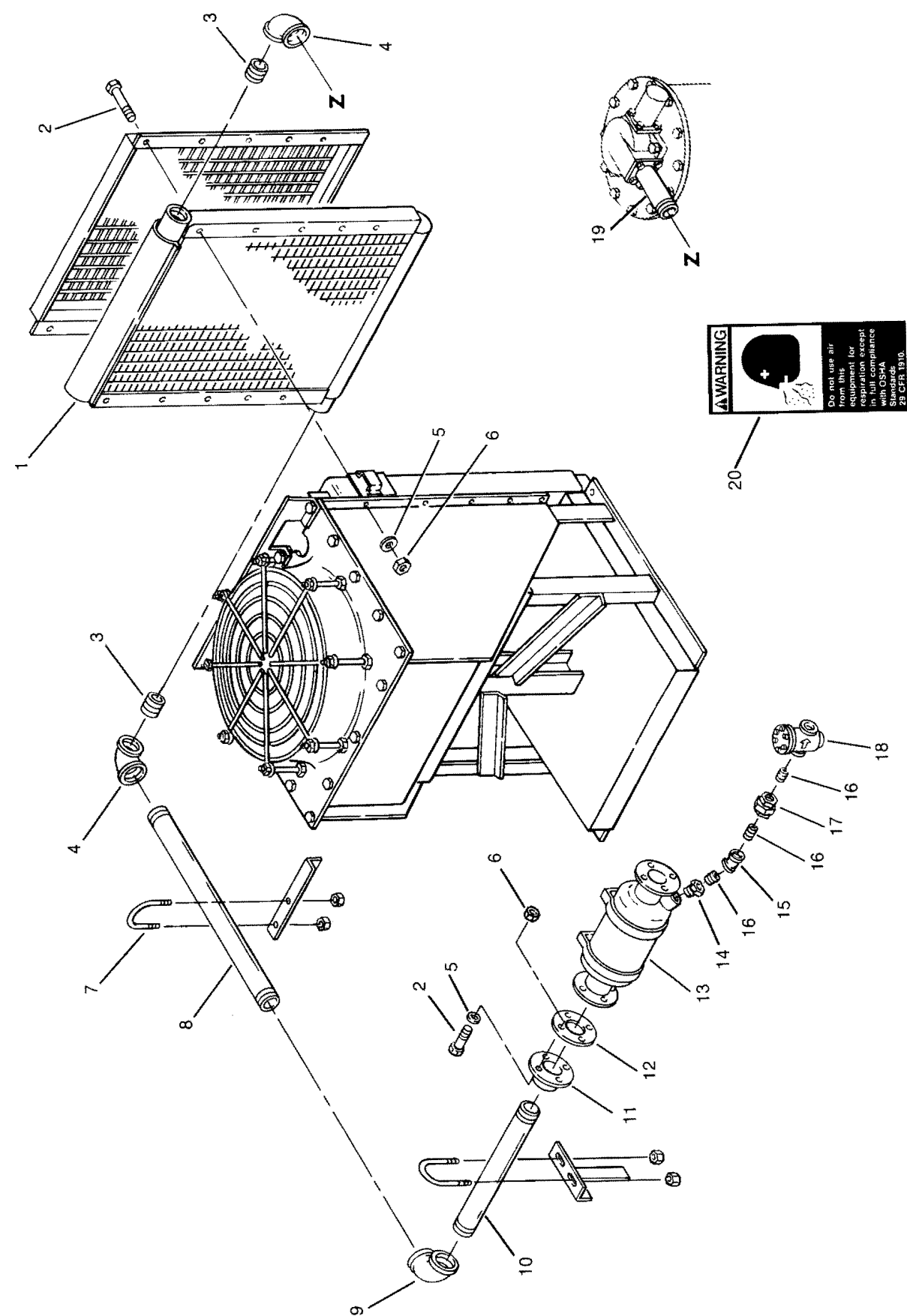
* Standard hardware item. purchase locally.

** Do not replace the separator or trap with a separator or trap which contains polycarbonate bowls.

NOTE: Port z connects to check valve on receiver cover, customer furnishes piping.

WHEN ORDERING PARTS, ALWAYS INDICATE SERIAL NUMBER OF MACHINE

Section 6
ILLUSTRATIONS AND PARTS LISTS
FIGURE 6.14 AIR COOLED - AFTER COOLED OPTION



Section 1
DESCRIPTION

This indicator has a pressure setting lower than that of the bypass valve. After the initial 50 hour filter change, the indicator will rarely signal red under normal operating conditions.

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

Water-cooled versions of the 24KT 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.

1.5 COMPRESSOR DISCHARGE SYSTEM, FUNCTIONAL DESCRIPTION

Refer to Figure 1-3. The 24KT compressor unit discharges the compressed air/coolant mixture through a discharge check valve into the combination

receiver-sump. The discharge check valve prevents air in the receiver from returning to the compression chamber after the machine has been shut down.

The receiver has three main functions:

- Acts as the primary coolant separator
- Serves as the compressor coolant sump
- Houses the final coolant separator element.

The compressed air/coolant mixture enters the receiver and is directed against the far end of the tank. Its direction of movement is changed and its velocity significantly reduced, causing the larger droplets of coolant to fall to the bottom of the receiver/sump. The fractional percentage of coolant remaining in the compressed air collects on the surface of the primary separator element as the compressed air flows through the separator. A secondary separator element is provided to stop any coolant from reaching the service air. A return line (or scavenge tube) leads from the bottom of each separator element to the inlet region of the compressor unit. Coolant collecting on the bottom of the separator elements is returned to the compressor by a pressure differential between the receiver and the compressor inlet. A visual sight glass is located in both return lines to observe this coolant flow. There is also an orifice in each return line

Figure 13 Compressor Discharge System Diagram

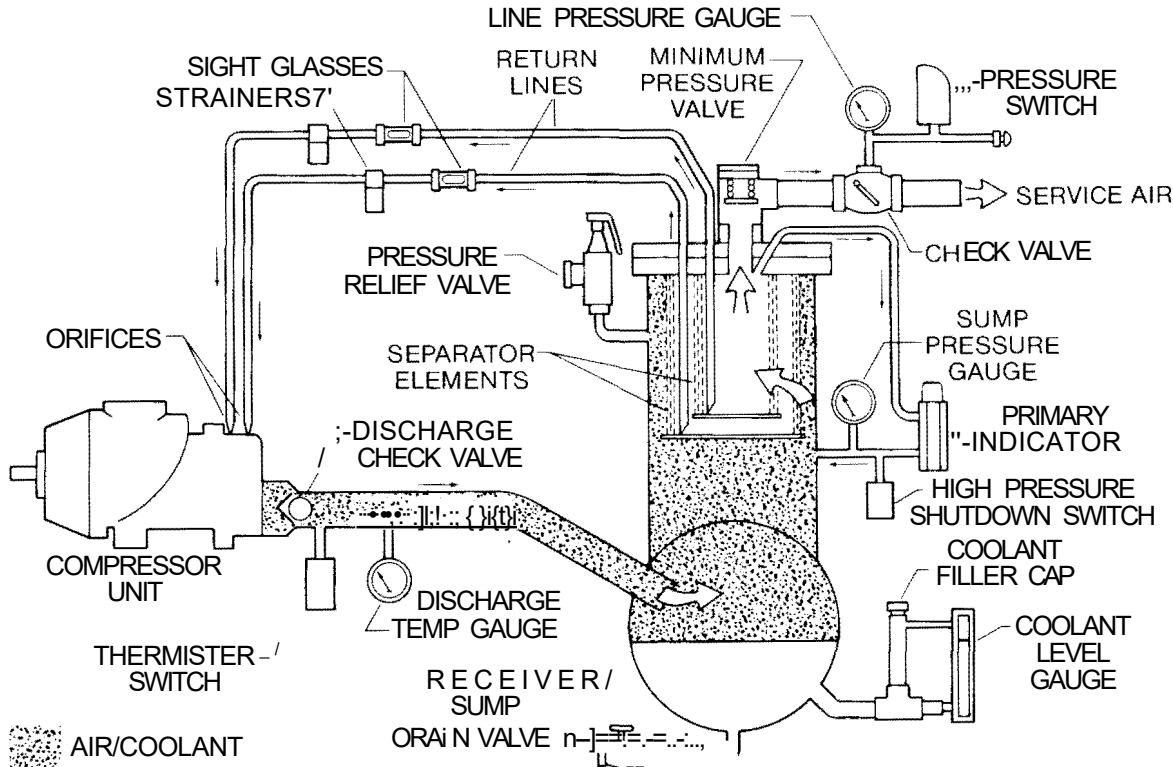
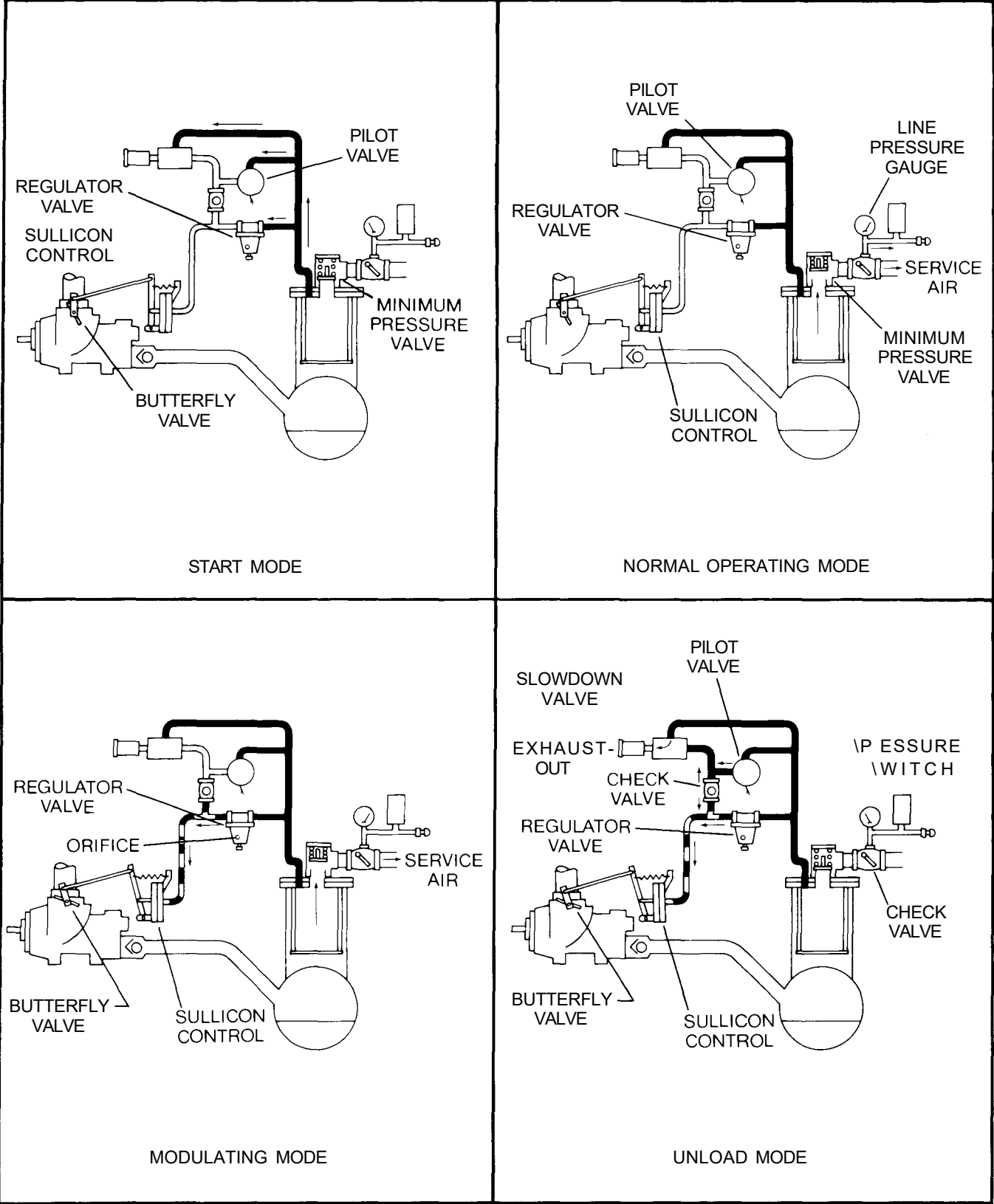


Figure 14 Control System, Sequence of Operation



6.13 WATER COOLED - AFTER COOLED OPTION (ADAMS HORIZONTAL MTD.)

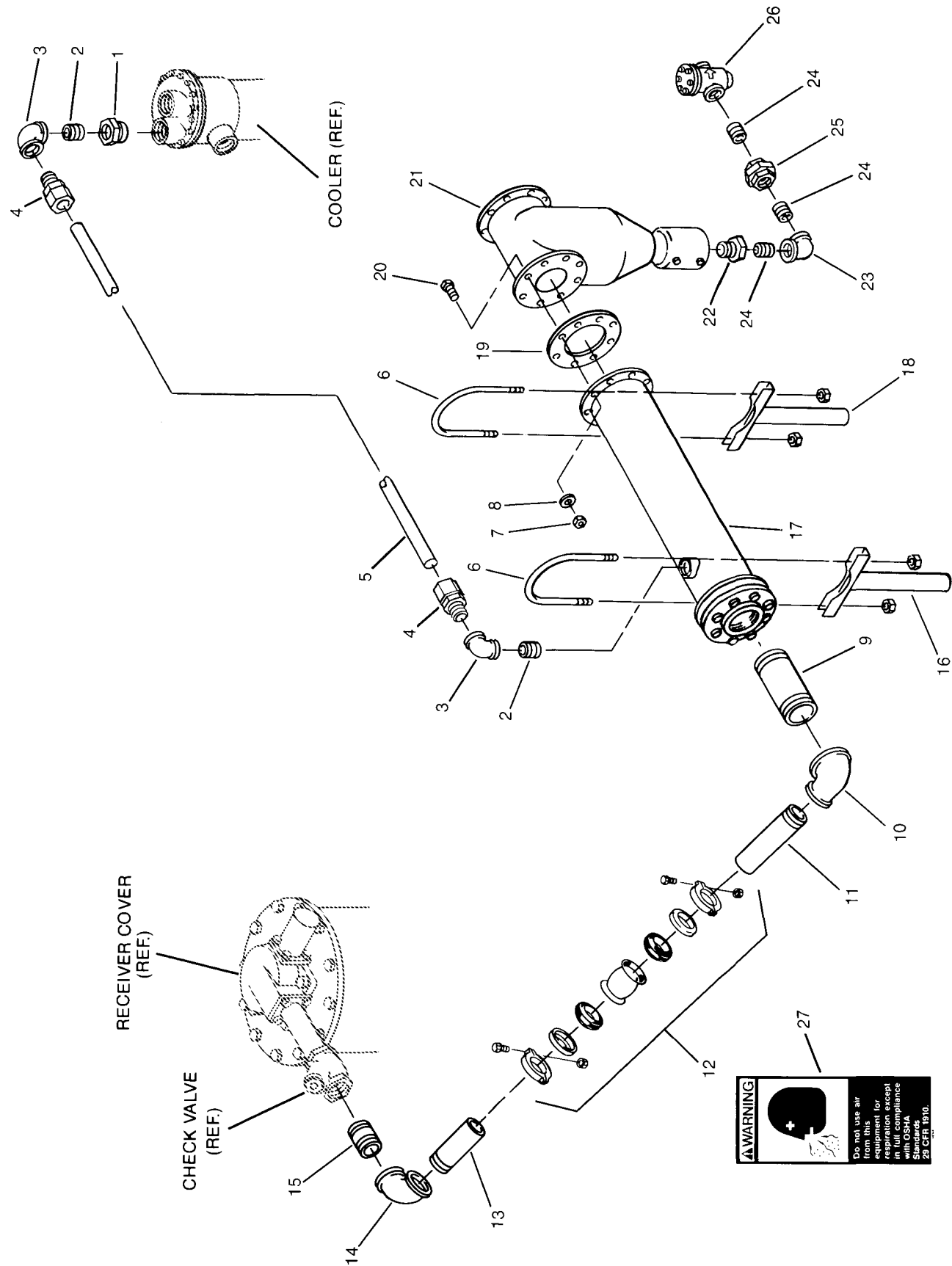
key number	description	part number	quantity
1	bushing, reducing 2 x 1 1/4"	•	1
2	nipple, close 1 1/4"	•	2
3	elbow, 90° 3/4"	•	2
4	connector, tube 1 1/4"t X 1 1/4"p	•	2
5	tube, cooler to aftercooler	221133	1
6	u bolt	43016	2
7	nut, hex 5/8"-11	•	8
8	washer, lock 5/8"	•	8
9	nipple, pipe 5 x 8"	•	1
10	elbow, 90° reducing 5 x 3"	•	1
11	nipple, half 3 x 11 1/2"	•	1
12	coupling, flexible pipe• 3"	40327	1
13	nipple, half 3 x 7 1/2"	•	1
14	elbow, 90° 3"	•	1
15	nipple, pipe 3 x 4"	•	1
16	support, inlet	12227	1
17	aftercooler	46467	1
18	support, outlet	12228	1
19	gasket, flange	42032	1
20	capscrew, hex 5/8"-11 x 3" gr5	•	
21	separator (Adams)*••	•	1
22	bushing, reducing 1 x 3/4"	•	1
23	elbow, 90° reducing 1 x 3/4"	•	1
24	nipple, close 3/4"	•	3
25	union, pipe 3/4"	•	1
26	trap, moisture• ••	42034	1
27	decal, "WARNING"	49346	1

* Standard hardware item, purchase locally.
** For replacement seals on 40327 flex coupling, order (2) no. 40523.
*** Do not replace the separator or trap with a separator or trap containing polycarbonate bowls.

WHEN ORDERING PARTS, ALWAYS INDICATE SERIAL NUMBER OF MACHINE

Section 6
ILLUSTRATIONS AND PARTS LISTS

FIGURE 6.13 WATER COOLED - AFTER COOLED OPTION (ADAMS HORIZONTAL MTD.)



Section 1
DESCRIPTION

START - 0 TO 40 PSI
When the compressor START button is depressed, the pressure will quickly rise from 0 to 40 PSI. During this period both the pressure regulator and the pilot 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 compressor air pressure is isolated from the service line in this phase by the minimum pressure valve, set at approximately 40 PSI.

NORMAL OPERATING MODE - 40 TO 100 PSI
When the compressed air pressure rises above 40 PSI, 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 pilot valve remain closed during this phase, keeping the Sullicon control inactive.

MODULATING MODE - 100 TO 110 PSI
If less than the rated capacity of compressed air is being used, the service line pressure will rise above 100 PSI. 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 100-110 PSI, 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. A 1/4" check valve prevents the regulator signal from opening the pneumatic blowdown valve.

UNLOAD - IN EXCESS OF 110 PSI 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 type pilot valve. At this time, the pilot valve allows dry sump tank air pressure to be applied directly to the control diaphragm, keeping the butterfly valve closed. Simultaneously, the pilot valve sends a pneumatic signal to the blowdown valve. The blowdown valve opens the sump to the atmosphere, reducing the sump pressure to approximately 40-55 PSI. 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 PSI on low pressure machines and 115 PSI on high pressure machines), the pressure switch closes, re-energizing the three-way pilot valve and allowing the blowdown

(protected by a strainer) to assure proper flow. An indicator, located adjacent to the instrument panel, signals red if abnormal pressure drop through the primary separator develops. At this time, separator element replacement is necessary.

The receiver is ASME Code rated at 150 PSIG working pressure. A minimum pressure valve, located downstream from the separator, assures a minimum receiver pressure of 40 PSIG during all conditions. This pressure is necessary for proper fluid/air separation and to assure proper fluid circulation.

A terminal check valve at the outlet of the receiver prevents 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 140 PSIG. A fast-acting thermistor-type temperature switch will shut down the compressor if the discharge temperature reaches 240 °F.

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

WARNING

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

Stop compressor and relieve all internal pressure before doing so.

24KT fluid is added to the sump via a capped coolant filler opening, placed low on the tank to prevent overfilling the sump. A sight-glass enables the operator to visually monitor the sump fluid level.

1.6 CONTROL SYSTEM, FUNCTIONAL DESCRIPTION

Refer to Figure 1-4. The purpose of the compressor control system is to regulate the compressor air intake to match the amount of compressed air being used. At a 0 to 10 percent air output, the control system will automatically blow down the machine and greatly reduce the unload power consumption. The Sullicon Control system consists of a Sullicon control, a butterfly valve (located on the compressor air inlet), a pressure regulator, pressure switch, pilot valve and blowdown valve. The functional description of the control system is described below in four distinct phases of compressor operation. The following descriptive text applies to all Series 32 24KT machines. For explanation purposes this description will apply to a machine with an operating pressure range of 100-110 PSI. A machine with any other pressure range would operate in the same manner excepting stated pressures.

Section 1
DESCRIPTION

valve to close. The re-energized pilot 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 machine with varied periods of time when there are no air requirements, a "Dual-Control" option is available. This option allows you to set the machine in an automatic position whereby the machine will shut down when no compressed air requirement is present and restart as compressed air is needed.

1.7 AIR INLET SYSTEM, FUNCTIONAL DESCRIPTION
Refer to Figure 1-5. The compressor inlet system consists of a dry-type air filter, a restriction gauge and an air inlet valve.

The restriction gauge, located on the compressor instrument panel, indicates the condition of the air filter by signaling 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 (par. 1.6).

1.8 INSTRUMENT PANEL GROUP, FUNCTIONAL DESCRIPTION
Refer to Figure 1-6 for specific location of parts described. The instrument panel group consists of a panel containing the line pressure and sump pressure gauges, the discharge temperature gauge, the air filter restriction gauge, and the maintenance indicators (one for the separator element and one for the bearing lube filter). Located on the electrical control box door are the stop and start push buttons and the hourmeter.

Figure 1-5 Compressor Air Inlet System

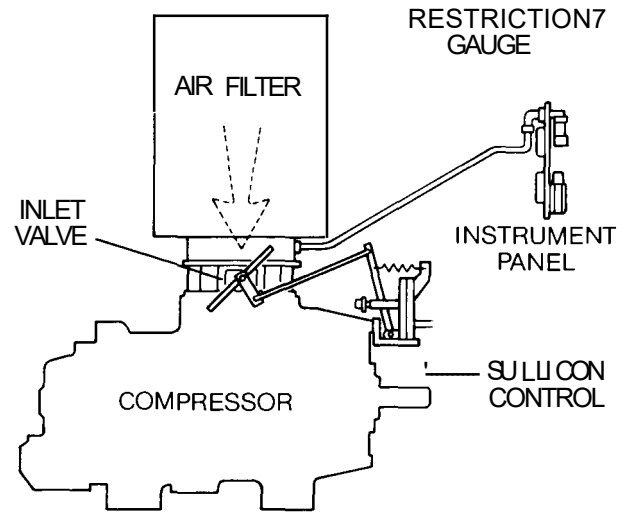
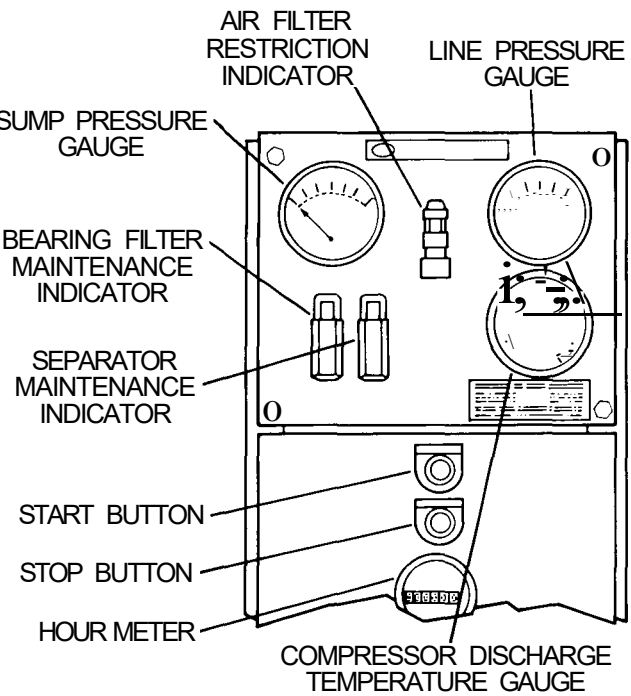


Figure 1-6 Instrument Panel Group



Refer to Figure 1-3 for functional locations of the following controls and indicators:

- The line (terminal) pressure gauge is connected to the dry side of the receiver downstream from the check valve and continually monitors this 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 190 °F.
- The air filter restriction gauge monitors the condition of the air intake filter and signals red when filter service is required. This restriction gauge must be reset manually (See Figure 1-5).
- The START pushbutton turns the compressor on (See Figure 1-6).
- The STOP pushbutton turns the compressor off.
- The hourmeter records accumulative hours of operation for the compressor and is useful for planning and logging service operations (See Figure 1-6).
- The separator maintenance indicator monitors the condition of the separator element and signals red when element restriction is excessive. This indicator is automatically reset after the element has been changed.
- The bearing lube filter maintenance indicator monitors the condition of the bearing lube filter element and signals red when the element should be changed. This indicator is also automatically reset (See Figure 1-2).

Section 6
ILLUSTRATIONS AND PARTS LISTS

6.12 WATER COOLED - AFTER COOLED OPTION (BASCO VETICAL MTD.)

key number	description	part number	quantity
1	bushing, reducing 2 x 1 1/2"	•	2
2	connector, tube 1 1/2"t x 1 1/2"p	•	1
3	tube, cooler/aftercooler	220839	1
4	aftercooler (Basco)	42541	1
5	nipple, half 3 x 11 1/2"	•	1
6	coupling, flexmaster•• - 3"	40327	1
7	nipple, half 3 x 14"	•	1
8	screw, whiz lock 5/16" x 3/4"	•	4
9	band, mounting	40598	2
10	clamp, exhaust	40284	1
11	nipple, pipe 3 x 5"	•	1
12	elbow, tube 1 1/2"t x 1 1/2"p	•	1
13	bracket	12056	1
14	trap, moisture•••	42034	1
15	nipple, close 3/4"	•	2
16	union, 3/4"	•	1
17	elbow, 3/4"	•	1
18	bushing, reducing 1 1/2" x 3/4"	•	1
19	separator, water•••	42430	1
20	nipple, close 3"	•	2
21	elbow, 3"	•	1
22	nut, whiz lock 5/16"	•	4
23	decals, "WARNING"	49346	1

* Standard hardware item, purchase locally.
** For replacement seals on 40327 flex coupling order (2) no. 40523.
*** Do not replace the separator or trap with a separator or trap containing polycarbonate bowls.

WHEN ORDERING PARTS, ALWAYS INDICATE SERIAL NUMBER OF MACHINE

FIGURE 6.12 WATER COOLED - AFTER COOLED OPTION (BASCO VERTICAL MTD.)



SULLAIR SERIES 32 24KT SPECIFICATIONS

Cooling	Model Series	Length		Width		Height		Weight	
		in	mm	in	mm	in	mm	lb	kg
Water	32-200L	87	2210	76	1930	77	1956	8800	3992
	32-250H	87	2210	76	1930	77	1956	8800	3992
Air	32-200L	88	2235	70	1778	77	1956	8600	3900
	32-250H	88	2235	70	1778	77	1956	8800	3990
Remote Air Cooler	32-200L	48	1219	49	1245	66	1676	1160	526
	32-250H	48	1219	49	1245	66	1676	1160	526

Type
Maximum Operating*
Bearing Type
Operating Temperature (Max) **
Cooling
Lubricant
Sump Capacity
Control

Rotary Screw
110 PSI (L), 125 PSI (H)
Anti-Friction
105 F (40 C)
Pressurized Coolant Fluid
24KT Coolant Fluid
50 Gallons (189 Liters)
Electro-Pneumatic

Make
Type

General Electric, Reliance, Westinghouse, Lincoln, or Equal
Open Dripproof, 460V, A.C., Three Phase, 60 Cycles,
40° C Maximum Ambient Temperature
Options available: 200-230 and 575 volt/T.E.F.C. also available.
200 and 250 HP
460V Full Voltage Magnetic
Options Available: 200-230 and 575 volt.
1770 RPM

* Special machines are available for operating at higher pressures.
** Special machines are available for operation in higher ambient temperatures.

Section 3
INSTALLATION

The following instruction is provided for proper installation.

3.1 LOCATION OF COMPRESSOR

The 24KT compressor package may be placed on any level surface able to support its weight. It is not necessary to bolt the unit down unless there is a possibility of externally applied forces or vibration which could disturb the piping or wiring.

3.2 VENTILATION AND COOLING

For water-cooled machines it is necessary to check cooling water supply. The proper water flow should be 34-44 G.P.M. on 200 HP machines; and 42-55 G.P.M. on 250 HP machines. These figures apply to 80°F cooling water on a machine running at full load with an aftercooler. For cooler water or a partially loaded machine, slightly less water is required; however, for hotter water the flow requirements are significantly higher.

For air-cooled compressors, select a location to permit sufficient unobstructed air-flow in and out of the compressor to keep the operating temperature stable. The minimum distance that the machine should be from the surrounding walls is three (3) feet. Hot fan air discharged from the top of the cooler package must be prevented from recirculating back to the cooler cores.

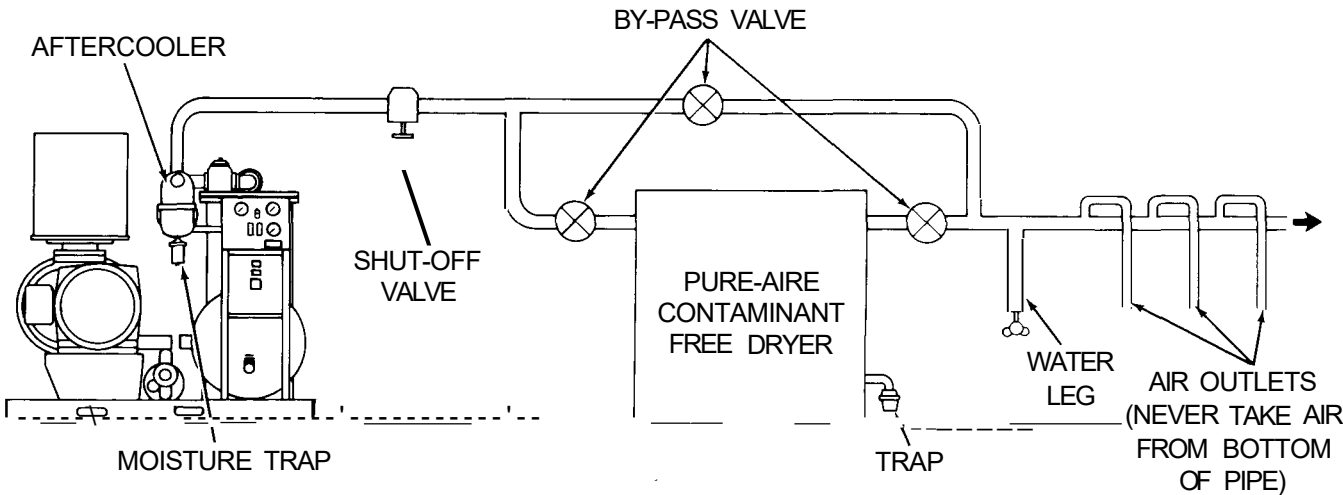
The table below indicates the ventilation requirements necessary to keep the machine running at a normal operating temperature. The fan air requirement is the volume of air which must flow through the machine for proper ventilation. The specified heat rejection requirement is the amount of heat that is radiated by the machine. This heat must be removed to assure a normal operating temperature. With air-cooled machines 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.

VENTILATION REQUIREMENTS

Cooling Type		Water-Cooled		Air-Cooled		Air-Cooled w/Aftercooler	
Motor	H.P.	200L	250H	200L	250H	200L	250H
Fan Air	C.F.M.	3,000*	3,000*	16,500*	16,500*	16,500*	20,000*
Heat Rejection	B.T.U./Hr.	48,000	60,000	534,000	667,500	685,000	856,000

*Applies to machines with canopy option only.

Figure 3-1 Service Air Piping with Optional Aftercooler



Section 6
ILLUSTRATIONS AND PARTS LISTS

5.11 CONTROL BOX ASSEMBLY

key number	description	air cooled	water cooled	quantity
1	control box (consisting of items 2 thru 12)	40689	40713	1
2	• duct & cover, plastic	41370	41370	2
3	• terminal & track (12 pt.)	41493	41493	1
4	• block, fuse	41147	41147	1
5	• fuse, 6 amp	43002	43002	1
6	• transformer, 230/460v	40618	40618	1
6a	• transformer, 575 V		40872	1
7	• starter, size 1	41966		1
7a	• starter, size 2 (aftercooled)	41141		1
8	• heaters, 460v	43220		3
8a	• heaters, 460v (aftercooled)	41857		3
9	• relay	42090	42090	1
9a	• relay, contacts	42091	42091	1
10	• hourmeter	42988	42988	1
11	• start push button	41967	41967	1
12	• stop push button	42235	42235	1
13	control card, thermistor	46869	46869	1
14	nut, hex #10-32	•	*	4
15	washer, lock 1/4"	•	*	4
16	screw, mach. rd. hd. #10-32 x 3/4"	•	*	4
17	decal, "Danger"	42218	42218	1
18	decal, "Warning"	42517	42517	1
19	unilet, w/cover 1/2"	•	•	2
	unilet, w/cover 1/2"		•	1
20	nut, conduit 1/2"	•	•	8
	nut, conduit 1/2"		•	10
21	elbow, 90° conduit 1/2"	*	•	1
22	conduit, 1/2"	*	•	7
	conduit, 1/2"		•	5
23	connector, conduit 1/2"	•	•	4
24	bushing, insulated 1/2"	•	*	6
	bushing, insulated 1/2"		*	4
25	switch, high pressure shut-down	46344	46344	1
26	elbow, tube 1/4"t x 1/8"p	•	*	1
27	decal, "Airanteed"	46420	46420	1
28	decal, "DANGER"	49850	49850	1
29	decal, "WARNING"	49852	49852	1

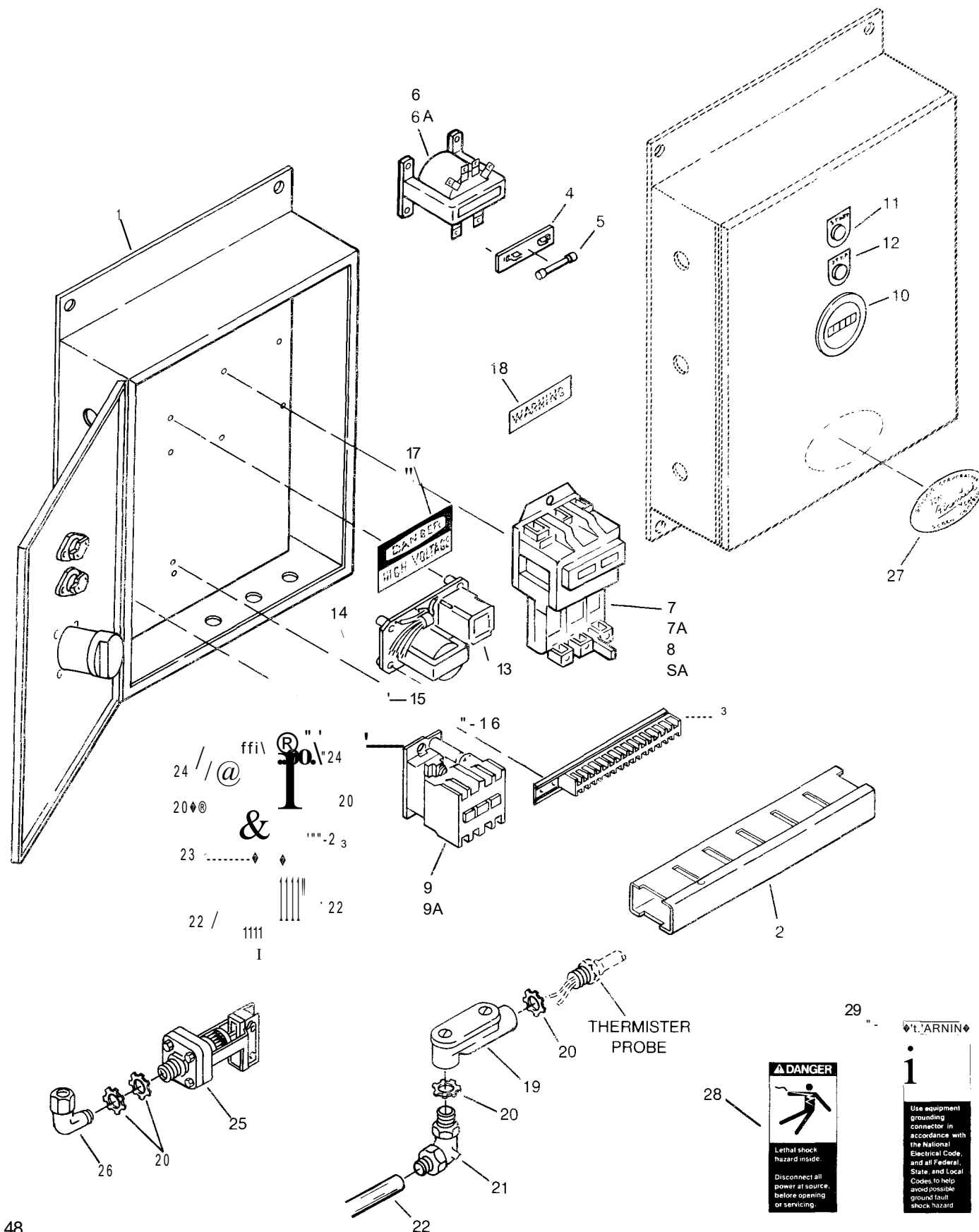
* Standard hardware item, purchase locally.

WHEN ORDERING PARTS, ALWAYS INDICATE SERIAL NUMBER OF MACHINE

Section 6

ILLUSTRATIONS AND PARTS LISTS

FIGURE 6.11 CONTROL BOX ASSEMBLY



Section 3

INSTALLATION

clockwise, disconnect the power to the starter and exchange any two of the three power input leads, then re-check rotation.

3.7 ELECTRICAL PREPARATION

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

ADANGER

Lethal shock hazard inside.

Disconnect all power at source, before opening or servicing.

1. Check incoming voltage. Be sure that the incoming voltage is the same voltage that the machine was wired for.
2. Check starter and overload heater sizes. (See instrument panel and electrical parts in Section 6.)
3. Check all electrical connections for tightness.
4. "DRY RUN" the electrical controls by disconnecting the three (3) motor leads from the starter. Energize the control circuits by pushing the start button and check all protective devices to be sure that they will de-energize the starter coil when activated.
5. Reconnect the three (3) motor leads and jog the motor for a direction of rotation check, as explained in Section 3.6.

3.3 SERVICE AIR PIPING

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

3.4 COUPLING ALIGNMENT CHECK

In preparation for the factory test, the coupling supplied with your machine is properly aligned for operation. However, due to shipping and handling, it is necessary to re-check the coupling alignment. Refer to coupling alignment procedure explained in the maintenance section of this manual.

3.5 COOLANT FLUID LEVEL CHECK

Your 24KT air compressor is also supplied with the proper amount of 24KT coolant fluid. However, it is necessary to check the fluid level at installation. The level is checked by looking at the sight glass located on the sump if the sump is properly filled, the coolant level should fall between the FULL and ADD marks on the side of the sight glass.

3.6 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-stop button on the instrument panel. When looking at the motor from the end opposite the compressor unit, the shaft should be turning clockwise. If your motor shaft is not turning

Section 4
OPERATION

4.1 GENERAL	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.
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	
4.2 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 accumulative hours of compressor operation; useful for planning and logging service schedules.
LINE PRESSURE GAUGE	Continually monitors service line air pressure. Located on dry side of receiver downstream from check valve.
SUMP PRESSURE GAUGE	Continually monitors receiver/sump pressure at various load and/or unloaded conditions.
DISCHARGE TEMPERATURE GAUGE	Monitors temperature of air leaving the compressor unit. For both air and water cooled compressors, normal reading is approximately 190° - 205° F.
BEARING FILTER MAINTENANCE INDICATOR	Indicates when a bearing filter element change is required. A red signal is indicated when the pressure drop through the filter is excessive.
SEPARATOR MAINTENANCE INDICATOR	Indicates when separator element change is required. A red signal is indicated when pressure drop through the separator is excessive. The separator must be replaced. Do not clean the separator elements.
COOLANT LEVEL SIGHT GLASS	Monitors 24KT coolant level in the sump. Proper level is to fall between the FULL and ADD marks located on the side of the sight glass. Check the level when the machine is shutdown. DO NOT OVER FILL.
SEPARATOR RETURN LINE SIGHT GLASSES	Used to indicate coolant flow in the return line. When the compressor is running at full load, coolant flow should be visible in this sight glass. There may be little or no flow when the compressor is running unloaded, but a sluggish flow from the primary return line at full load indicates a need to clean the return line strainer. There should be little or no flow through the secondary return line.

Section 6
ILLUSTRATIONS AND PARTS LISTS

6.10 INSTRUMENT PANEL ASSEMBLY

key number	description	part number	quantity
1	gauge, line pressure	46432	1
2	gauge, sump pressure	46432	1
3	gauge, temperature	40314	1
4	panel, instrument	29359	1
5	indicator, filter	40025	1
6	nameplate, serial number	46413	1
7	rivet, "pop" 1/16" x 3/8"	*	4
8	connector, 1/4"t x 1/8"p	*	3
9	indicator, bearing filter	46551	1
10	decal, bearing filter	46607	1
11	indicator, separator maintenance	42148	1
12	decal, separator	46608	1
13	tee, 1/4"t x 1/8"p	*	1
14	tube, 1/4"	*	1
15	cross, tube 1/4"t	*	1
16	nut, acorn 1/4"-20	*	4
17	isolator, vibration	40091	4
18	elbow, 1/4"t x 1/4"p	*	2
19	connector, 1/4"t x 1/4"p	*	1
20	control box assy. AC (see Fig. 6.11)	40689	1
20a	control box assy. WC (see Fig. 6.11)	40713	1
21	caps cw, whiz lock 3/8"-16 x 1"	*	6
22	washer, lock 3/8"	*	2
23	nut, hex 3/8"-16	*	6
24	nut, hex 1/4"-20	*	4
25	washer, lock 1/4"	*	4
26	support, instrument panel	13743	1

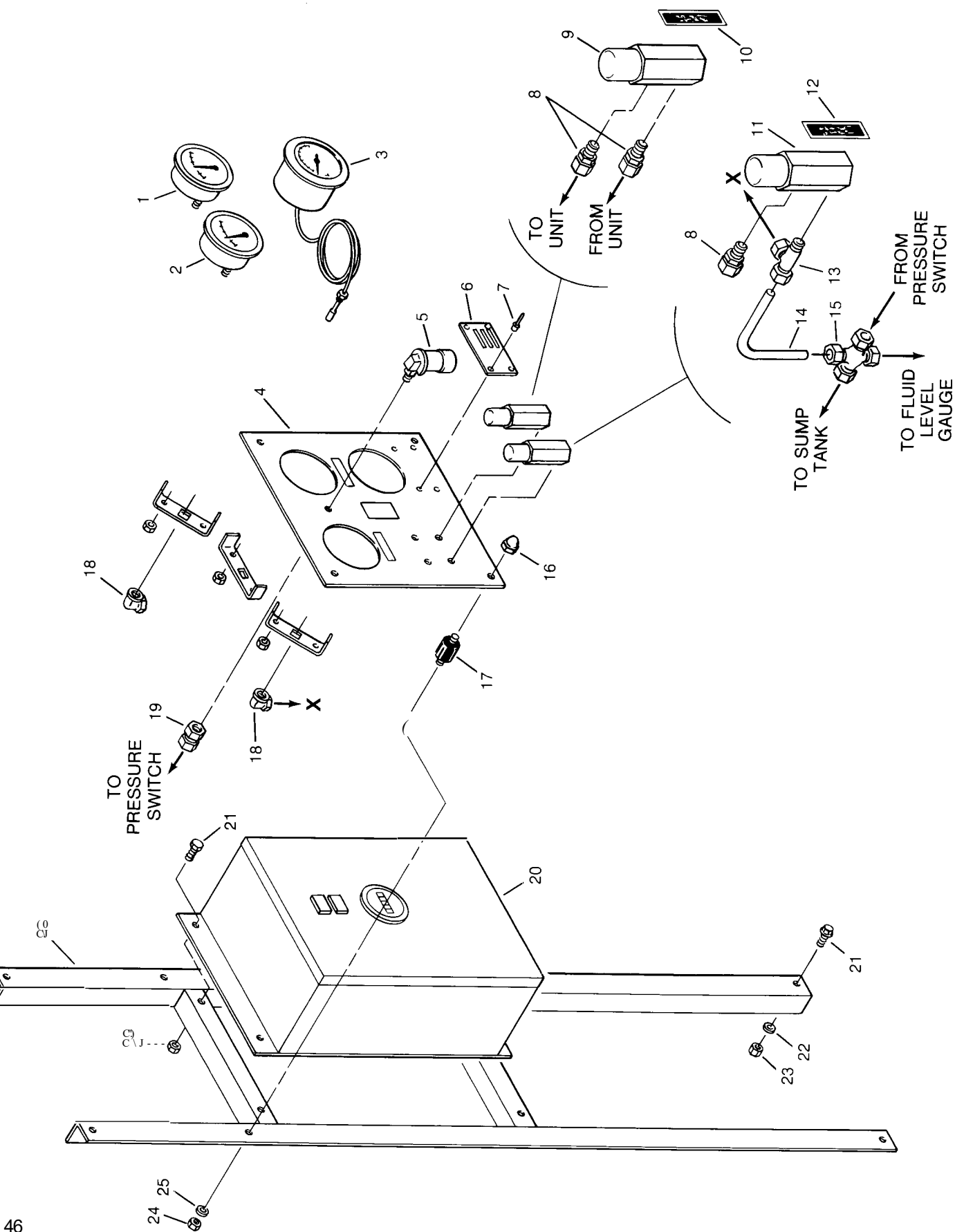
* Standard hardware item, purchase locally.

WHEN ORDERING PARTS, ALWAYS INDICATE SERIAL NUMBER OF MACHINE

Section 6

ILLUSTRATIONS AND PARTS LISTS

FIGURE 6.10 INSTRUMENT PANEL ASSEMBLY



Section 4

OPERATION

4.2 PURPOSE OF CONTROLS (continued)

Control or Indicator	Purpose
FLOW CONTROL VALVE	Cuts off flow of fluid to compressor unit at machine shutdown and allows flow of fluid to the unit on startup.
DISCHARGE CHECK VALVE	Cuts off the reverse flow of air/fluid mixture through compressor discharge system at compressor shutdown.
THERMAL VALVE	Regulates flow of fluid to and around the cooler. Designed to maintain a minimum operating temperature (180° F) ; used for fast warmup on startup.
MINIMUM PRESSURE VALVE	Maintains minimum of 40 PSI in compressor sump. Valve piston restricts receiver air discharge from the receiver I sump when the pressure falls to 40 PSI.
COMPRESSOR DISCHARGE TEMPERATURE SWITCH	Opens the electrical circuit to shut down the machine when the discharge temperature reaches 240° F (115° C).
HIGH PRESSURE SHUTDOWN SWITCH	An added feature designed to shut down the machine when the pressure becomes too high. This switch is set for shutdown at approx. 135 PSI.
PRESSURE RELIEF VALVE	Opens sump pressure to the atmosphere should pressure inside the sump become too high (140 PSI). Operation of this valve indicates that the high pressure switch is either faulty or out of adjustment.
LINE CHECK VALVE	Prevents line pressure backflow into the sump during unload conditions and after shutdown.
SULLICON CONTROL	Regulates the amount of air allowed to enter the air inlet valve. This regulation is determined by the amount of air being used at the service line.
PRESSURE REGULATOR	Opens a pressure line between the sump and Sullicon Control allowing the Sullicon Control to regulate air delivery to air demand.
PILOT VALVE	Bypasses the pressure regulator valve causing the Sullicon control to close the inlet valve when the machine reaches maximum operating pressure.

4.2 PURPOSE OF CONTROLS (continued)

Control or Indicator	Purpose
PRESSURE SWITCH	Senses service line pressure. When line pressure reaches maximum setting, the pressure switch signals the control valves to unload the machine.
SLOWDOWN 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 in the cooler to keep the machine running at a normal operating temperature.

4.3 INITIAL STARTUP PROCEDURE

The following procedure is to be used to make the initial startup of the machine:

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 your service line.
4. Start the machine 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 machine will unload at your desired unload pressure. If adjustments are necessary, see Control System Adjustments in the Maintenance Section of this manual.

7. Observe the operating temperature. If the operating temperature exceeds 210 F, your cooling system or installation environment should be checked.
8. Observe return line sight glass and maintenance indicators.
9. Open Shut-off valve to service line.
10. Reinspect the machine for temperature and leaks the following day.

4.4 SUBSEQUENT STARTUP PROCEDURE

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

4.5 SHUTDOWN PROCEDURE

To shutdown the machine simply press the stop button.

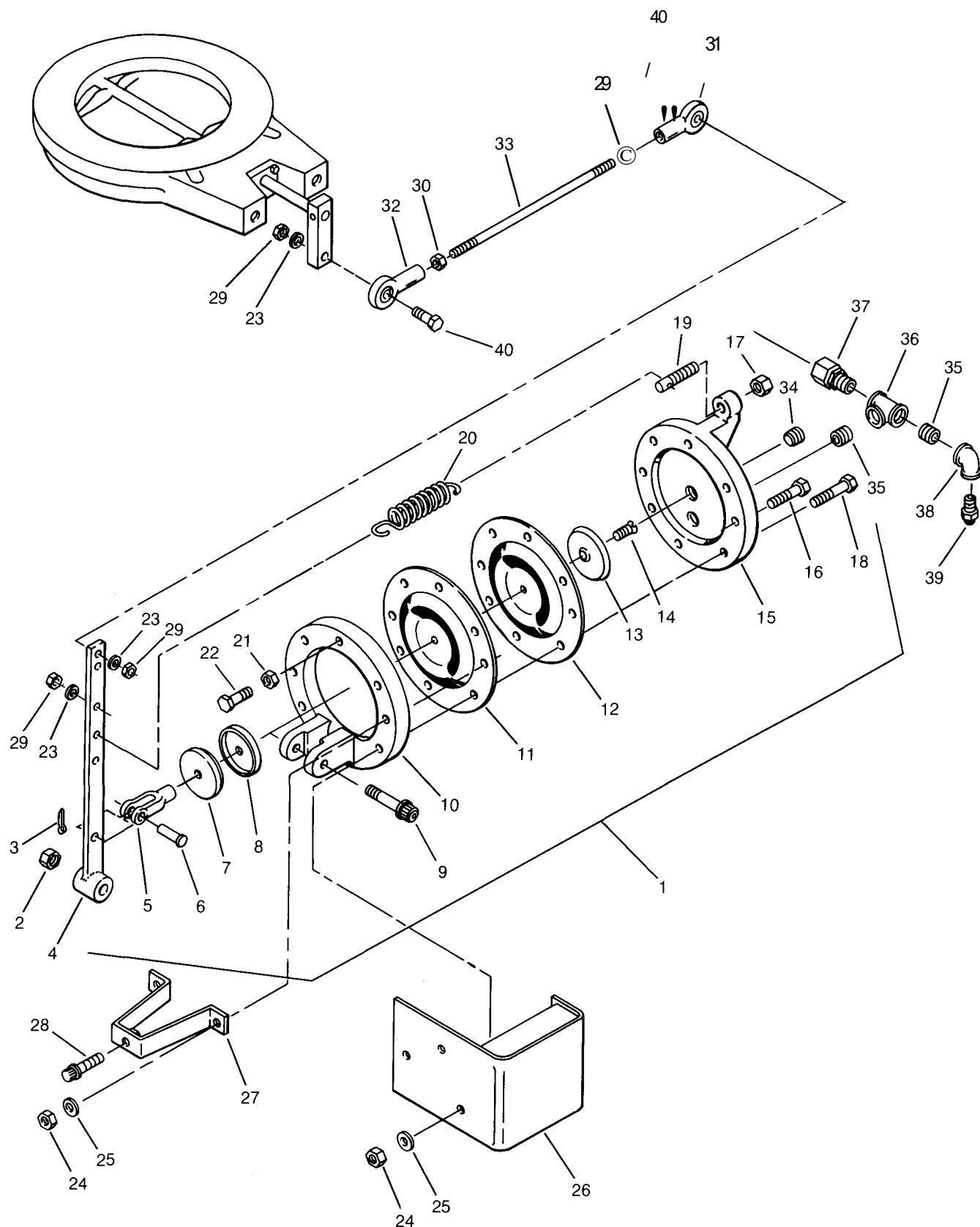
6.9 SULLICON CONTROL

key number	description	part number	quantity
1	Sullicon control (irtcludes items 2 thru 25) . .	11682	1
2	• nut, self-locking 5/16"-18	*	1
3	• cotter pin	*	1
4	• lever	11084	1
5	• yoke	40138	1
6	• yoke pin	40065	1
7	• plunger	20094	1
8	• cup, teflon	42538	1
9	• shoulder screw, socket head	*	1
10	• body	21635	1
11	• diaphragm, external	41269	1
12	• diaphragm, internal	41270	1
13	• washer, back up	21172	1
14	• screw, special sealing	41264	1
15	• cover	21654	1
16	• capscrew, 5/16"-18 x 2 1/2"	*	3
17	• nut, 3/8"-16	*	6
18	• capscrew, 3/8"-16 x 2 1/2"	*	4
19	• screw, spring adjusting	21636	1
20	• spring, (coded red)	41273	1
21	• nut, 5/16"-24	*	3
22	• machine screw, 5/16"-24 x 2"	*	1
23	• washer, lock 5/16"	*	3
24	• nut, 5/16"-18	*	3
25	• washer, lock 3/8"	*	4
26	bracket, control	12127	1
27	stop, control arm	20864	1
28	capscrew, ferry hd. 3/8"-16 x 2"	*	1
29	nut, hex jam 5/16"-24 (r.h.)	*	4
30	nut, hex jam 5/16"-24 (l.h.)	*	1
31	rod end, spherical (r.h.)	40136	1
32	rod end, spherical (l.h.)	42004	1
33	rod, control - compressor	22374	1
34	plug, pipe 1/4"	*	1
35	nipple, close 1/4"	*	2
36	tee, pipe 1/4"	*	1
37	connector, tube 1/4"t x 1/4"p	*	1
38	elbow, reducing 1/4" x 1/8"	*	1
39	valve, moisture bleed	41111	1
40	capscrew, hex 5/16"-24 x 1 1/2"	*	2

* Standard hardware item, purchase locally.
** For repair kit on 11862 Sullair control, order 11579.

WHEN ORDERING PARTS, ALWAYS INDICATE SERIAL NUMBER OF MACHINE

Section 6
ILLUSTRATIONS AND PARTS LISTS
FIGURE 6.9 SULLICON CONTROL



AWARNING

Do not remove caps, plugs, or other components when compressor is running or pressurized.

Stop compressor and relieve all internal pressure before doing so.

5.1 GENERAL
As you proceed in reading this Section, it will be easy to see that the Maintenance Program for your 24KT 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 indicator shows a red signal, maintenance for that specific item is required. See instructions for each item in Section 5.6 Parts Replacement and Adjustment procedures.

5.2 DAILY OPERATION
Prior to starting your machine, it is necessary to check the coolant level in the sump. Should the level be low, simply add the necessary amount. If the addition of coolant becomes too frequent, a simple problem has developed which is causing this excessive loss. See the Troubleshooting Section (5.7) under excessive coolant 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 readings for that particular phase of operation. After the machine has warmed up, it is recommended that a general check of the overall machine and instrument panel be made to assure that the compressor is running properly.

5.3 MAINTENANCE AFTER INITIAL 50 HOURS OF OPERATION
After the initial 50 hours of operation a few maintenance requirements are needed to rid the system of any foreign materials which may have accumulated during machine assembly. Perform the following maintenance operations to prevent unnecessary problems:

1. Clean return line strainer
2. Clean return line orifice
3. Clean compressor unit bearing and shaft seal orifices.

5.4 FILTER MAINTENANCE
Replace your bearing filter element every 4,000 hours or once a year, whichever comes first. This must be done even if the bearing filter indicator does not signal red. Also clean the main filter element and install a new gasket kit, at this time.

5.5 SEPARATOR MAINTENANCE
Replace your separator element when the separator maintenance indicator shows a red signal. The separator element must be replaced. Do not clean the dirty element.

Section 5
MAINTENANCE

5.6 PARTS REPLACEMENT AND ADJUSTMENT PROCEDURES
BEARING FILTER ELEMENT REPLACEMENT
Refer to Figure 5-1.

1. Using a strap wrench, remove the old element and gasket.
2. Clean gasket seating surface.
3. Apply a light film of 24KT fluid to the new gasket.
4. Hand tighten new element until new gasket is seated in the gasket groove.
5. Continue tightening element by hand an additional 1/2 to 3/4 turn.
6. Restart machine and check for leaks.

Figure 5-1 Bearing Filter



SERVICING THE MAIN FILTER
Refer to Figure 5-2. The main filter is located schematically in the coolant line between the receiver/sump and the compressor unit. The main filter element is a washable type element and should never require changing unless damage occurs. For installation of the Filter Seal Kit No. 1100, follow the procedure explained below.

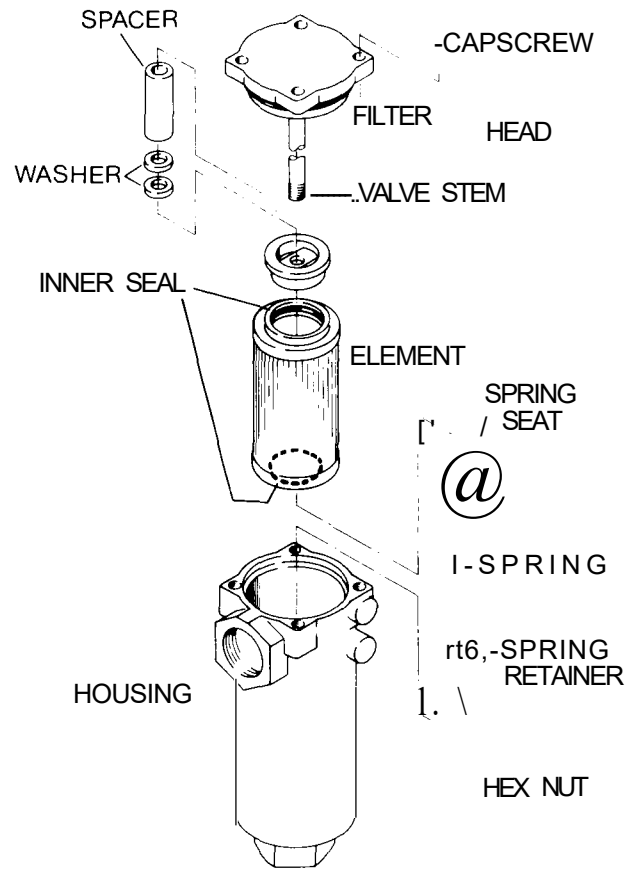
Disassembly

1. Disassemble the filter by removing four (4) capscrews and separate the filter head and element (as an assembly) from the housing.
2. Remove the hex nut (located inside the element) from the valve stem.
3. At this time, pull the element, spring, spring seat and spring retainer from the valve stem.
4. Remove the inner seals of the element and the filter head seal and discard.
5. Clean all parts of the filter thoroughly including the housing.

Reassembly

- 1. Lubricate the new inner seals and install in the ends of the clean element.
- 2. Place the filter element, spring seat, spring and spring retainer over the valve stem and secure with the hex nut.
- 3. Lubricate and install the new filter seal.
- 4. Install the filter head and element (as an assembly) in the filter housing. The element is to slide over the housing sleeve when properly installed.
- 5. Secure the filter head with four (4) capscrews.

Figure 5-2 Main Filter



AIR FILTER MAINTENANCE

Air filter maintenance should be performed when the maintenance indicator shows a red signal. The air filter supplied with your machine has a cleanable type element. Below you will find procedures on how to replace and how to clean the air filter element:

Air Filter Element Replacement.

- 1. Clean exterior of air filter housing.
- 2. Remove the air filter cover by loosening wing nuts securing the cover.

- 3. Remove the internal cover plate.
- 4. Remove element and clean the interior of the housing using a damp cloth. Do not blow dirt out with compressed air.
- 5. At this time clean or replace the element.
- 6. Reassemble in the reverse order of the disassembly.

Air Filter Element Cleaning.

The air filter element is cleanable by one of two methods. One method is by washing with a mild household detergent and water. The other method is cleaning with compressed air. The maximum amount of times that an element should be cleaned is six (6) times; however, the element should be used no longer than a period of one (1) year without changing.

Prior to cleaning an element, check the element for damage. Damaged elements are to be replaced.

When cleaning an element, never exceed the recommended maximum pressures for water (40 PSI) or compressed air (30 PSI).

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

Never "blow" dirt out of the interior of the filter housing. This may introduce dust downstream of the filter. Instead, use a clean damp cloth.

Do not oil the element.

Method 1: Cleaning the Element by Washing.

When washing the element, never use petroleum solutions or solvents. Also, never immerse a dirty element in water or cleaning solution. This will carry dust onto the "clean side" (inside surface) of the element. Instead, dust must be removed by reverse flushing the element. Use clean clear water with a garden hose at no more than 40 PSI. Direct the water up and down the pleats in the filter media from the "clean side," of the element until all dust is removed.

If, after washing as described above, the element is found to be contaminated with oil or greasy dirt, it should then be agitated in a solution of mild household detergent and water. Add 4 tablespoons of detergent to one gallon of lukewarm water and mix well. After a sufficient amount of agitation has been done, rinse thoroughly and carefully shake out excess water. Lay the element on its side and allow to dry before installation. The element should be protected from dirt and/or freezing while drying. Mechanical drying methods can be used; however, heated air must be well-circulated and must not be over 180 °F. Do not use a light bulb for drying. Also, compressed air must not be used for drying, as the pressure will rupture the element when wet. Regardless of the drying procedure, always inspect the element for damage prior to installation. (See element inspection.)

6.8 ELECTRO-PNEUMATIC CONTROL SYSTEM

key number	description	part number	quantity
1	bracket, mounting	25987	1
2	nut, whiz lock 3/8"-16	*	4
3	screw, whiz lock 3/8"-16 x 1"	*	1
4	locknut, conduit 1/2"	*	10
5	nipple, close 1/2"	*	2
6	switch, pressure ¹	40427	1
7	nipple, close 1/4"	*	5
8	tee, tube 1/4"t x 1/4"p	*	1
9	nipple, 1/4" x 3 1/2"	*	1
10	tee, 1/4"	*	3
11	bushing, reducing 1/4 x 1/8"	*	1
12	valve, moisture bleed	41111	1
13	decal, water drain	46417	1
14	valve, pilot air**	40528	1
15	connector, tube 1/4"t x 1/4"p	*	3
16	valve, regulator***	41517	1
17	tube, copper 1/4"	*	4
18	tee, tube 1/4"t x 1/4"p	*	1
19	valve, check	49905	1
20	elbow, tube 1/4"t x 1/4"p	*	2
21	bushing, reducing 1 x 3/4"	*	1
22	nipple, close 3/4"	*	1
23	elbow, 3/4"	*	1
24	silencer, air 3/4"	40758	1
25	valve, blowdown ²	47192	1
26	nipple, 1 x 5"	*	1
27	nipple, close 1"	*	2
28	union, 1"	*	1
29	tee, reducing 1 x 1/2 x 1	*	1
30	bushing, reducing 1/2 x 1/4"	*	1
31	union, tube 1/4"	*	1
32	decal, "DANGER"	49850	1

* Standard hardware item, purchase locally.

** For repair kit on 40528 pilot air valve order no. 42246.

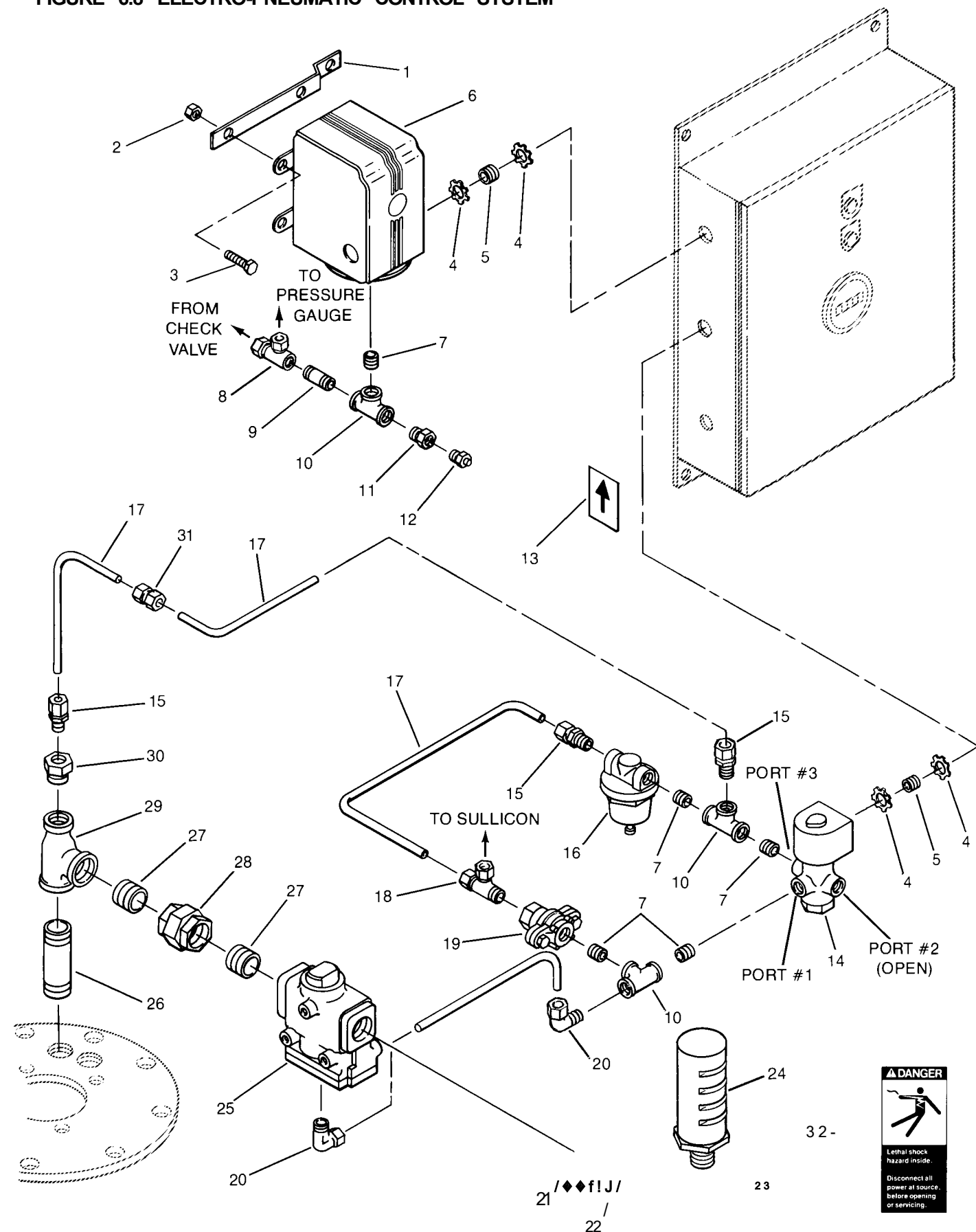
*** For repair kit on 41517 regulator valve order no. 41742.

¹ For diaphragm replacement kit on 40427 pressure switch order no. 41647, for point set order no. 41912.

² For repair kit for 47192 blowdown valve order no. 13708.

WHEN ORDERING PARTS, ALWAYS INDICATE SERIAL NUMBER OF MACHINE

Section 6
ILLUSTRATIONS AND PARTS LISTS
FIGURE 6.8 ELECTRO-PNEUMATIC CONTROL SYSTEM



Section 5
MAINTENANCE

Method 2 Cleaning the Element with Compressor Air. When cleaning the element with compressed air, never let the air pressure exceed 30 PSI. Reverse flush the element by directing the compressed air up and down the pleats in the filter media from the "clean side" of the element. Continue reverse flushing until all dust is removed. Should any oil or greasy dirt remain on the filter surface, the element should then be cleaned by Method Number 1. When the element is satisfactorily cleaned, inspect thoroughly prior to installation. (See element inspection.)

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, if necessary, all air inlet connections prior to resuming operation.

PRIMARY SEPARATOR REPLACEMENT

When the separator maintenance shows a red signal, separator replacement is necessary. Use primary separator replacement kit number 11173. Follow the procedure explained below for separator replacement.

1. Remove all piping connected to the sump cover to allow removal (return line, service line, etc.).
2. Remove cover bolts and lift cover from sump.
3. Remove separator element.
4. Scrape old gasket material from cover and flange on sump.
5. Install gaskets.
6. Install element.
7. Inspect secondary separator element and replace if necessary (see Secondary Separator Replacement).
8. Replace sump cover and bolts.
9. Reconnect all piping. Return line tube should extend to the bottom of the separator element or no more than 1/2" up from the bottom. This will assure proper coolant return flow.
10. Clean the return line strainer prior to re-starting the machine.

SECONDARY SEPARATOR REPLACEMENT

When replacing the primary separator, check the secondary separator for any holes or cracks that would allow fluid to flow through and replace if necessary. Use secondary separator replacement kit number 13631. Follow the procedure explained below for separator replacement.

1. Remove bolts holding separator to the sump cover.
2. Remove separator element.
3. Scrape old gasket from sump cover.
4. Install new gasket.
5. Place new separator on the sump cover.
6. Replace bolts.
7. Follow steps 8, 9 and 10 in primary separator replacement instructions.

CONTROL SYSTEM ADJUSTMENT

Refer to Figure 5-3 and 5-4. Prior to adjusting the Control System, it is necessary to determine the desired operating pressure range and also the maximum pressure at which your machine is to operate. (This pressure must not exceed the maximum operating pressure which is stamped on the machine serial no. nameplate.) The following explanation applies to a typical installation with a desired operating range of 100-110 PSI. This information will apply to a machine with any other operating range excepting the stated pressures.

Remove the appropriate panels and covers to the pressure switch, pressure regulator and Sullicon control. With the shut off valve closed or slightly cracked open, start the machine. Observe the line pressure gauge and pressure switch contacts. When the line pressure reaches 110 PSI, 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.

Adjust the pressure switch setting by turning the 9/16" nut (shown in Fig. 5-3) either clockwise to increase the pressure setting, or counterclockwise to decrease the setting.

After adjusting the desired maximum operating pressure, it is necessary to set the differential between the pressure at which the contact points of the pressure switch open (cut-out pressure 110 PSI), and the pressure at which they close (cut-in pressure 100 PSI). The standard pressure switch has a minimum differential of 7 PSI and a maximum of 26 PSI. Adjust the differential by turning the small slotted screw clockwise for differential increase and counterclockwise for decrease.

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 PSI. The regulator is adjusted by loosening the jam nut on the end of the cone shaped cover of the pressure regulator. When the jam nut is loose, turn the adjusting screw clockwise to increase the pressure setting or counterclockwise to decrease the setting. Above 100 PSI, the regulator should allow pressure to flow into the control chamber of the Sullicon Control. At this time, the Sullicon Control lever should start to move.

After the control pressures have been adjusted, the "unloaded" sump pressure must be adjusted. This is best done by physically propping the pressure switch contacts open at the plastic contract carrier board and turning the Sullicon Control stop screw, (see Figure 5-4), until the sump pressure gauge reads 40-55 PSI. The stop screw is turned clockwise to increase the pressure or counterclockwise to decrease the pressure.

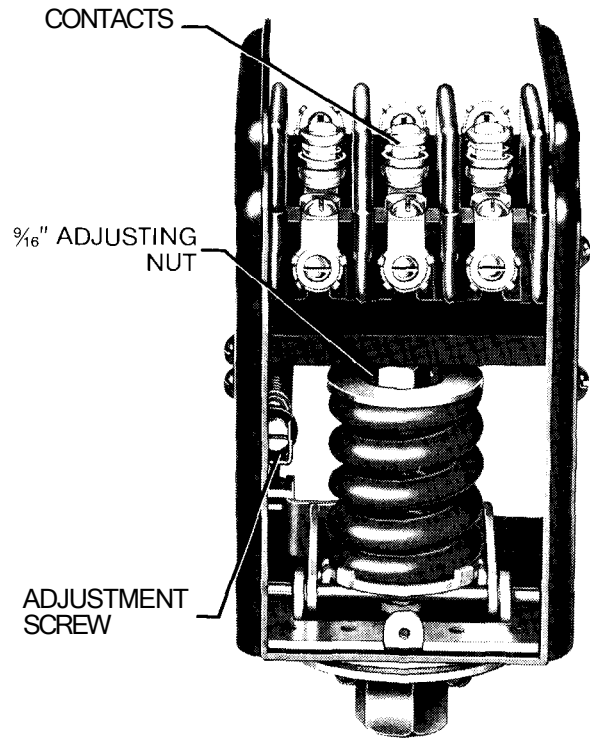
ADANGER

Lethal shock hazard inside.

Disconnect all power at source, before opening or servicing.

Cycle the Control System several times and recheck all pressure settings.

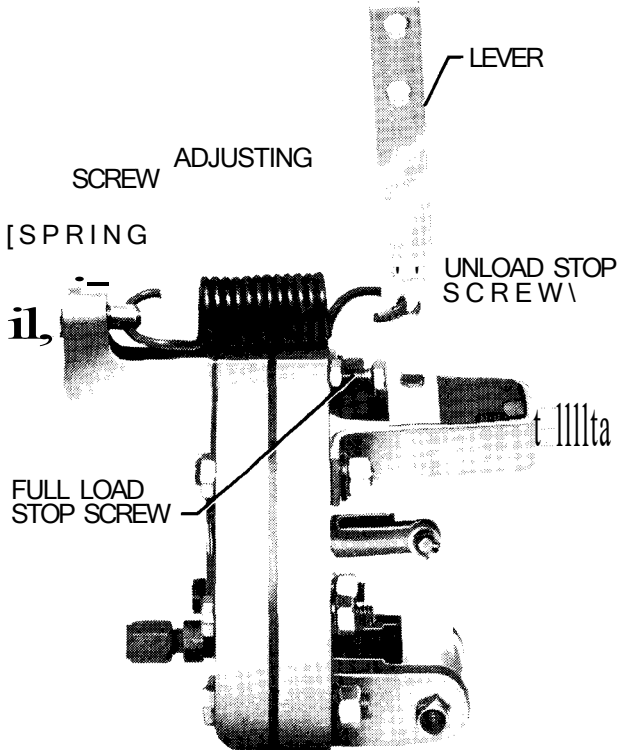
Figure 5-3 Pressure Switch



MINIMUM PRESSURE VALVE MAINTENANCE
Refer to Figure 5-5. Minimum Pressure Valve Maintenance is quite minimal. The only parts which normally require replacement are the seal ring on the piston rod and the "O" rings which seal the housing. Follow the procedure explained below for replacement of these parts.

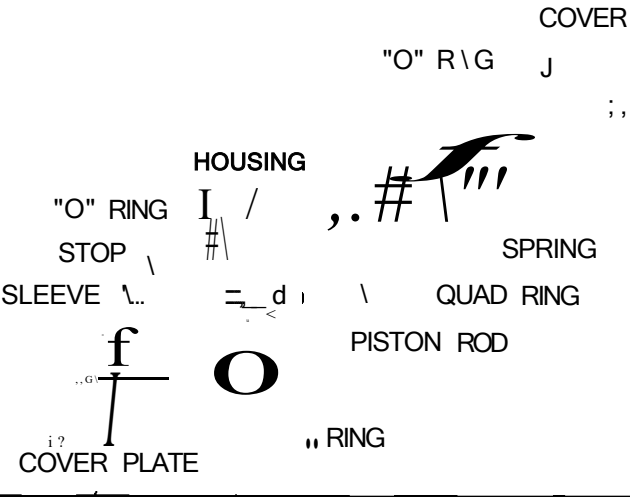
1. Evenly remove the four bolts securing the cover to the housing. CAUTION: This cover is spring loaded, remove carefully.
2. Remove cover and "O" ring.
3. Remove the spring.
4. Remove piston rod.
5. Remove quad ring.
6. Remove the cover plate and sleeve.
7. Discard the stop and cover plate "O" ring.
8. Clean all parts thoroughly including the cover bore, housing bore and sleeve.

Figure 5-4 Sul/icon Control



9. Replace the piston rod quad ring.
10. Coat the piston rod, cover bore, housing bore and sleeve with Parker Super "O" Lube or an equivalent quality grease.
11. Replace cover plate "O" ring.
12. Install stop and sleeve.
13. Replace cover plate.
14. Replace piston rod.
15. Install spring.
16. Replace cover "O" ring and cover (tighten bolts evenly).

Figure 5-5 Minimum Pressure Valve Actuator



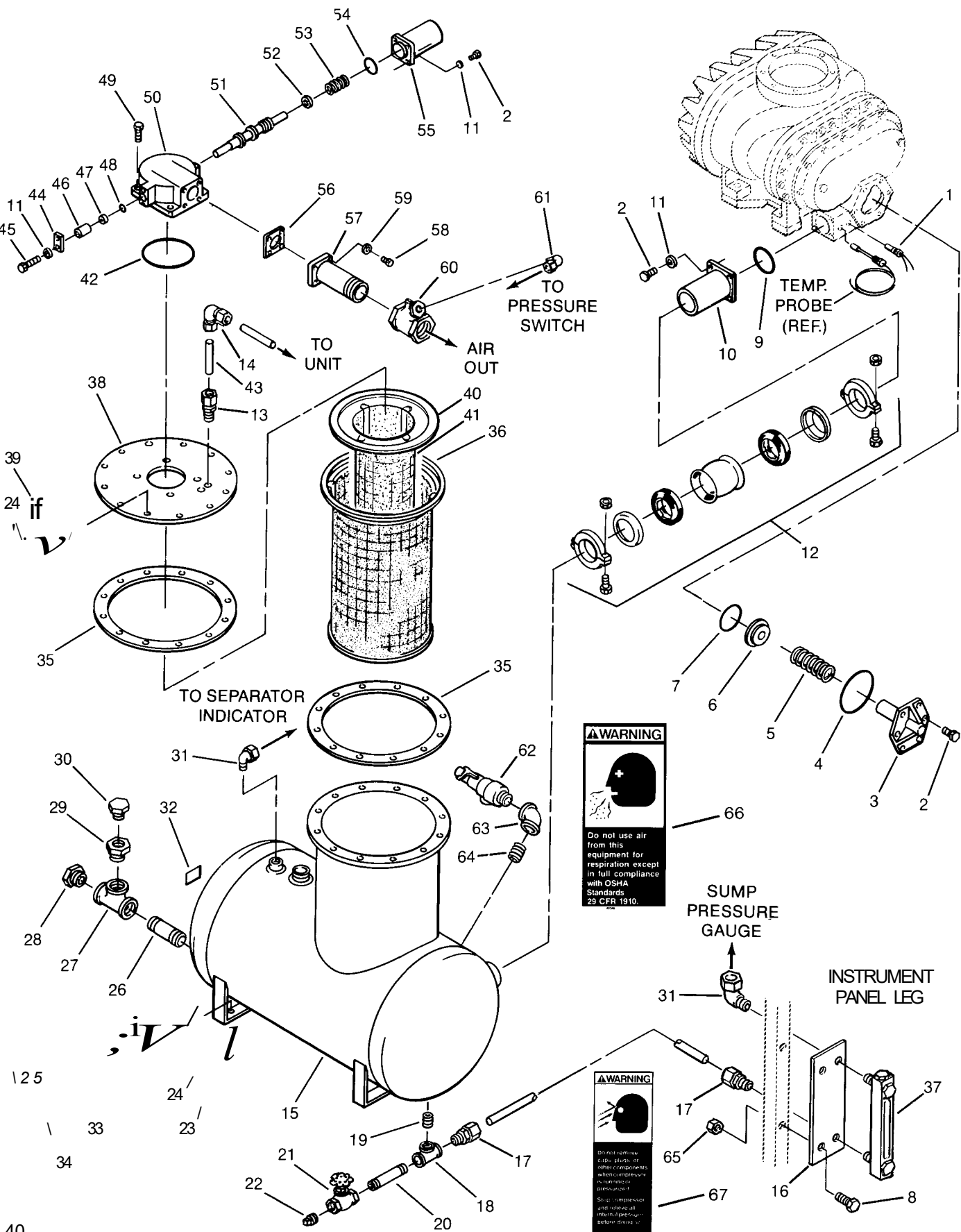
6.7 COMPRESSOR DISCHARGE SYSTEM (continued)

key number	description	part number	quantity
34	decal, Sulliscrew	46416	1
35	gasket, separator	40423	2
36	primary separator element* ••	40260	1
37	gauge, fluid level	46558	1
38	cover, sump	28566	1
39	capscrew, hex 3/4"-10 x 3 1/2" gr8	•	12
40	gasket, separator	28822	1
41	secondary separator element ¹	14365	1
42	o-ring, silicone 7" x 1/8"	826302-262	1
43	tube, steel 1/4"	•	2
44	cover, mpv	21998	1
45	capscrew, ferry hd 1/2" -13 x 1"	•	2
46	sleeve, mpv	21999	1
47	stop, piston mpv	41621	1
48	o-ring, silicone 1" x 3/32"	826302-120	1
49	capscrew, socket hd nylock 5/8-11 x 2 1/4"	•	5
50	housing, mpv	21450	1
51	piston rod, mpv	21452	1
52	quad ring, mpv	41619	1
53	spring, mpv	40633	1
54	o-ring, silicone 3 1/4" x 1/8"	826302-236	1
55	cover, mpv	21451	1
56	gasket, flange	22012	1
57	flange, air out	11582	1
58	capscrew, hex 5/8"-11 x 2"	•	4
59	washer, lock 5/8"	•	4
60	valve, check 3"	20759	1
61	elbow, tube 1/4"t x 1/8"p	•	1
62	valve, pressure relief	40276	1
63	elbow, 1 1/2"	•	1
64	nipple, close 1 1/2"	•	1
65	nut, whiz lock 5/16"	•	2
66	decal, "WARNING"	49346	1
67	decal, "WARNING"	49685	1

* Standard hardware item, purchase locally.
*** Replacement kit for no. 40260 primary separator element is no. 11173.
¹ Replacement kit for no. 14365 secondary separator element is no. 13631.

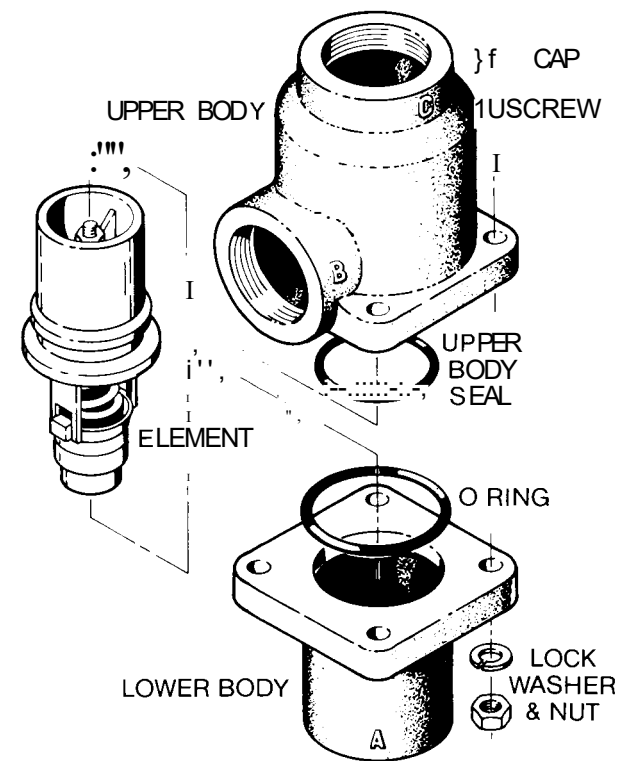
WHEN ORDERING PARTS, ALWAYS INDICATE SERIAL NUMBER OF MACHINE

Section 6
ILLUSTRATIONS AND PARTS LISTS
FIGURE 6.7 COMPRESSOR DISCHARGE SYSTEM



Section 5
MAINTENANCE

Figure 5-6 Thermal Valve



THERMAL VALVE MAINTENANCE
Refer to Figure 5-6. For thermal valve maintenance, use repair kit number 1084. Follow the procedure explained below for repair kit installation.

1. Remove appropriate piping for disassembly of the thermal valve housing.
2. Remove the four (4) capscrews which hold the housing together and pull the upper housing away from the lower housing.
3. Remove element.
4. Remove and replace the element seal in the upper housing.
5. Remove and replace the "O" ring between the upper and lower housings.
6. Replace element.
7. Reassemble the housing.

DRIVE COUPLING INSTALLATION AND ALIGNMENT
For coupling installation and alignment, the tools required will be a straight edge, a measuring scale, one set of f:0ier gauges, one set of standard alien wrenches, and one set of standard socket wrenches.

For installation and alignment of the drive coupling, follow the steps explained below.

STEP 1 MOUNT HUBS - Mount the motor hub and the compressor hub on its respective shaft.

STEP 2 OFFSET ALIGNMENT - Position hubs for approx. coupling gap and align shafts so that a straight edge will rest squarely (or within the 0.010 maximum limit shown above) on both flanges and at a point 90° away. The vertical offset alignment is adjusted by the addition or removal of motor mounting shims. Loosen the motor mounting bolts and slide the motor sideways to correct the horizontal offset.

STEP 3 COUPLING GAP AND ANGULAR ALIGNMENT - Position the hubs to establish the proper gap and angular alignment as indicated in Table 1. To determine the angular misalignment in inches, measure the maximum space between the hub flanges and the minimum space 180° away, and then subtract. To adjust the horizontal angular misalignment, loosen the motor mounting bolts and adjust the motor position until the angular alignment is within tolerance. Note: Do not upset the offset alignment or hub gap when adjusting motor position. When within the limits specified in Table 1, tighten the motor mounting bolts and recheck the offset and angular alignment. If the vertical angular alignment is not within the .010 tolerance, shim the front or rear of the motor separately to correct. Recheck the vertical offset.

STEP 4 INSTALL THE FLEXIBLE ELEMENT - Insert the flexible element between the two hubs. The element should be compressed prior to insertion. The element can be compressed by tightening a suitable sized radiator clamp around the outer edge of the element as shown in Fig. 5-8. Slide the hex head bolts with lockwashers through the holes in the hubs

Figure 5-7 Drive Coupling Shaft Alignment

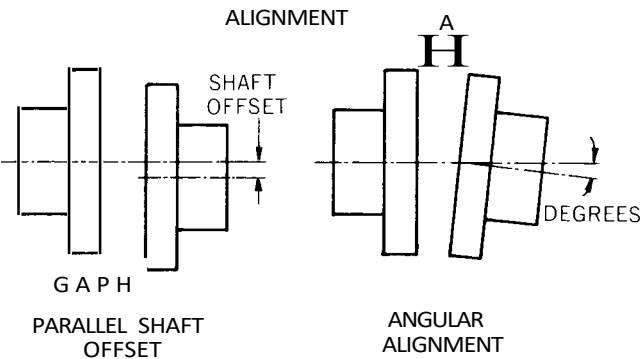
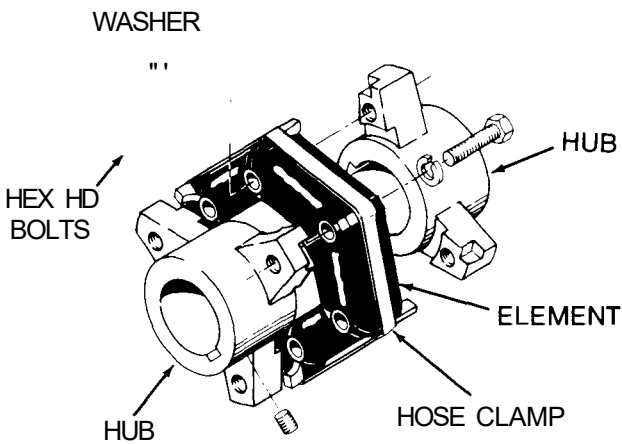


Figure 5-8 Coupling



DRIVE COUPLING DISASSEMBLY AND REMOVAL.
Disassembly and removal of the drive coupling is done in the following manner:

1. Place a suitable sized radiator hose clamp over the flexible element as shown in Fig. 5-8 and tighten a sufficient amount to compress the rubber.
2. Remove the hex head bolts from the hubs and element.
3. Rotate the element until the studs clear the hubs.
4. Remove the element from the hubs with the hose clamp still in place.
5. Loosen the shaft setscrews and remove the hubs.

TABLE 1
INSTALLATION DATA - Series 32 Couplings

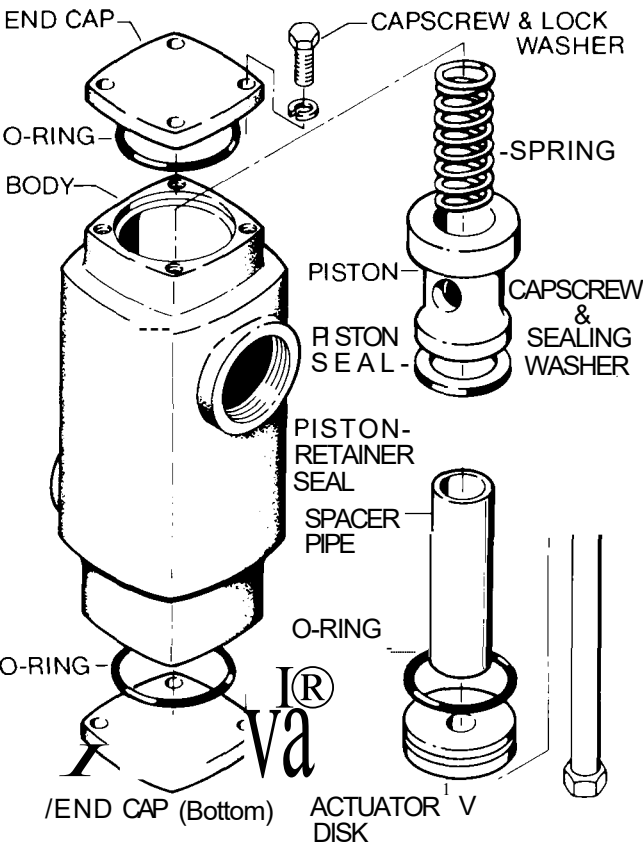
Cap Screw Tightening Torque ft.-lbs.	Coupling Gap Inches	Max Operating Misalignment	
		Parallel Offset Inches	Angular Inches*
200	2.969 ^{+0.30} / _{-.000}	.010	.010

*Angular misalignment in inches equals maximum A minus minimum B as shown in Figure 5-7 above. Do not exceed values in Table above.

FLOW CONTROL VALVE MAINTENANCE
Refer to Figure 5-9 when servicing Flow Control Valve Number 13544. Use Repair Kit Number 13671.

The following instructions are in accordance with Repair Kit Number 13671.

Figure 5-9 Flow Control Valve



1. For best results, remove the Flow Control Valve from the machine and service at a work bench.
2. Remove the end caps and "O" rings from both ends of the valve housing.
3. Remove the spring.
4. The next step is to remove the Nyloc Capscrew which holds the actuator disc and the piston together. To remove the capscrew, a rod of approximately 3/8" diameter must be placed through the hole in the side of the piston. The rod is put into place via the "in" port of the valve. (Rotate the piston if the hole in the piston does not line up with the "in" port.) Once the rod is in place, hold while removing the capscrew.
5. Remove the actuator disc and the piston and replace the seals on each.
6. Replace the actuator disc and piston. (Be sure that the spacer pipe is aligned perpendicular to the disc. This is to assure proper travel of the piston and disc.) Lastly, tighten the Nyloc Capscrew.
7. Install the spring.
8. Install the new end cap and "O" rings and replace the ends caps on both ends of the housing.

6.7 COMPRESSOR DISCHARGE SYSTEM

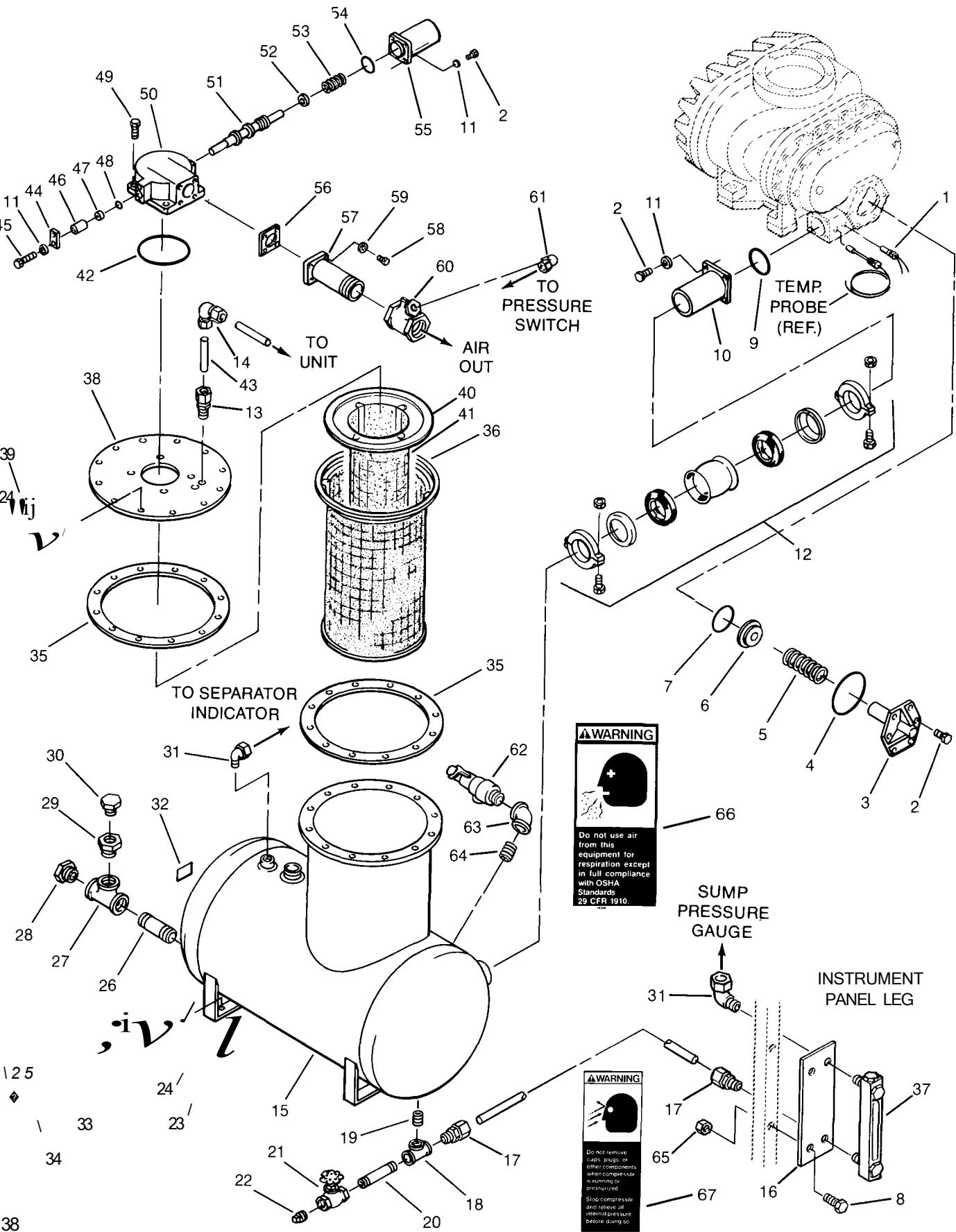
key number	description	part number	quantity
1	thermistor probe	46867	1
2	capscrew, 1/2"-13 x 1 1/2"	*	14
3	cover assy	18165	1
4	o-ring, viton 8 1/4" x 1/8"	826502-267	1
5	spring	41133	1
6	discharge valve assembly	18164	1
7	o-ring, buna n 5 5/8" x 3/16"	826102-358	1
8	capscrew, whiz lock 5/16" x 3/4"	*	2
9	o-ring, buna n 4 3/4" x 1/8"	826102-248	1
10	flange, discharge valve	11580	1
11	o-ring, buna n 4 3/4" x 1/8"	826102-248	1
12	coupling, flexmaster - 3 1/2"***	40356	1
13	fitting, flex 5/16"t x 1/4"p	20501	2
14	elbow, union 1/4"t	*	2
15	tank, sump/separator	41503	1
16	plate	222221	1
17	connector, tube 3/8"t x 1/4"p	*	2
18	tee 3/4" x 1/4" x 3/4"	*	1
19	nipple, close 3/4"	*	1
20	nipple, 3/4" x 7"	*	1
21	valve, drain	40520	1
22	plug, 3/4"	*	1
23	nut, hex lock 3/4"-10	*	4
24	washer, lock 3/4"	*	16
25	capscrew, hex 3/4"-10 x 2" gr5	*	4
26	nipple, close 1 1/2"	*	1
27	tee, 1 1/2"	*	1
28	glass, sight	40279	1
29	adapter, fluid fill	20044	1
30	cap, fluid fill	40029	1
31	elbow, tube 1/4"t x 1/4"p	*	2
32	decal, fluid fill	46540	1
33	decal, 24KT	46415	1

* Standard hardware item, purchase locally.
** Replacement seal ring for no. 40356 flex coupling is (2) no. 46991.

WHEN ORDERING PARTS, ALWAYS INDICATE SERIAL NUMBER OF MACHINE

(continued on next page)

Section 6
ILLUSTRATIONS AND PARTS LISTS
FIGURE 6.7 COMPRESSOR DISCHARGE SYSTEM



Section 5
MAINTENANCE

5.7 TROUBLESHOOTING
The information contained in the troubleshooting chart has been compiled from data gathered from field service reports and factory experience. It contains symptoms and usual causes for the service problems described, 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 machine.

1. Check for loose wiring.
2. Check for damaged piping.
3. Check for parts damaged by heat or high electrical power. Usually apparent by discoloration or burned odor.

Should your problem persist after making the recommended checks, consult your nearest Sullair office or the Sullair Corporation Service Department.

TRoubleshooting

SYMPTOM	PROBABLE CAUSE AND REMEDY
1. Machine will not start.	<ol style="list-style-type: none">1. Main disconnect switch open, close switch.2. Line fuse blown, replace fuse.3. Control transformer fuse blown, replace fuse.4. Motor starter overloads tripped, reset. Should trouble persist, check whether motor starter contacts are functioning properly.5. Low incoming line voltage, check voltage. Should voltage check low, consult your power company.6. Defective discharge temperature thermistor switch (see Symptom No. 2, Cause No. 4-i)
2. Machine shuts down with air demand present.	<ol style="list-style-type: none">1. Loss of control voltage, reset. If trouble persists, check that line pressure does not exceed max. operating pressure of your machine (specified on nameplate).2. Low incoming voltage, consult power company.3. Excessive operating pressure:<ol style="list-style-type: none">a. Defect in pressure switch, check pressure at which contact points open.b. Separator requires maintenance, check maintenance indicator under full load conditions.c. High pressure shutdown switch is adjusted too low, readjust.d. Defective pilot valve. Pilot valve should cause control lever to move to unload stop when the pressure switch contacts close. Repair if defective.e. Defective blowdown valve. Slowdown valve should exhaust sump pressure to the atmosphere when maximum operating pressure is reached.4. Discharge temperature thermistor switch open:<ol style="list-style-type: none">a. Cooling water temperature too high, increase water flow (water-cooled only).b. Cooling water flow insufficient, check water lines and valves (water-cooled only).c. Cooler plugged, clean tubes. If plugging persists, install water conditioner (water-cooled only).d. Cooling air flow restricted, clean cooler and check for proper ventilation.e. Ambient temperature is too high, provide sufficient ventilation.

TROUBLESHOOTING

SYMPTOM	PROBABLE CAUSE AND REMEDY
2. Machine shuts down with air demand present (continued)	<div>f. Low fluid level, add fluid.</div> <div>g. Clogged filter, clean the main filter element and change the bearing filter element if maintenance indicator shows a red signal.</div> <div>h. Thermal valve not functioning properly. Change element.</div> <div>i. Defective discharge temperature Thermistor Switch. Check for a short or open circuit to the probe and correct wiring, or also check for short or open circuit to control card. If current is not present, replace the control card. Should the above checkout normal, it is possible that the thermistor probe is defective.</div>
3. Machine will not build up full discharge pressure.	<div>1. Air demand too great.<div>a. Check service lines for leaks or open valves.</div></div> <div>2. Dirty air filter.<div>a. Check filter indicator and change or clean element if required.</div></div> <div>3. Pressure Regulator out of adjustment.<div>a. Adjust regulator according to control adjustment instructions in the Maintenance Section.</div></div> <div>4. Defective Pressure Regulator.<div>a. Check diaphragms and replace if necessary {kit available}.</div></div>
4. Line pressure rises above cut-out pressure setting on pressure switch.	<div>1. Leak in control system causing loss of pressure signals.</div> <div>2. Defective pressure switch.<div>a. Check that diaphragm and contacts are functioning properly and are not damaged. Repair or replace if necessary (kit available.)</div></div> <div>3. Defective Pilot Valve.<div>a. Check that Sullicon Control Lever is moved to unload stop when the Pressure Switch contacts close. Repair or replace if necessary (kit available).</div></div> <div>4. Defective Slowdown Valve.<div>a. Check that sump pressure is exhausted to the atmosphere when the pressure switch contacts close or repair or replace if necessary {kit available}.</div></div> <div>5. High Pressure Shutdown Switch is defective or adjustment is incorrect.<div>a. Re-adjust or replace.</div></div>
5. Excessive Coolant fluid consumption.	<div>1. Clogged return line strainer or orifice:<div>a. Clean strainer (screen replacement kit available).</div><div>b. Clean orifice.</div></div> <div>2. Separator element damaged or not functioning properly.<div>a. Change separator.</div></div> <div>3. Leak in lubrication system.<div>a. Check all pipes, connections and components.</div></div>

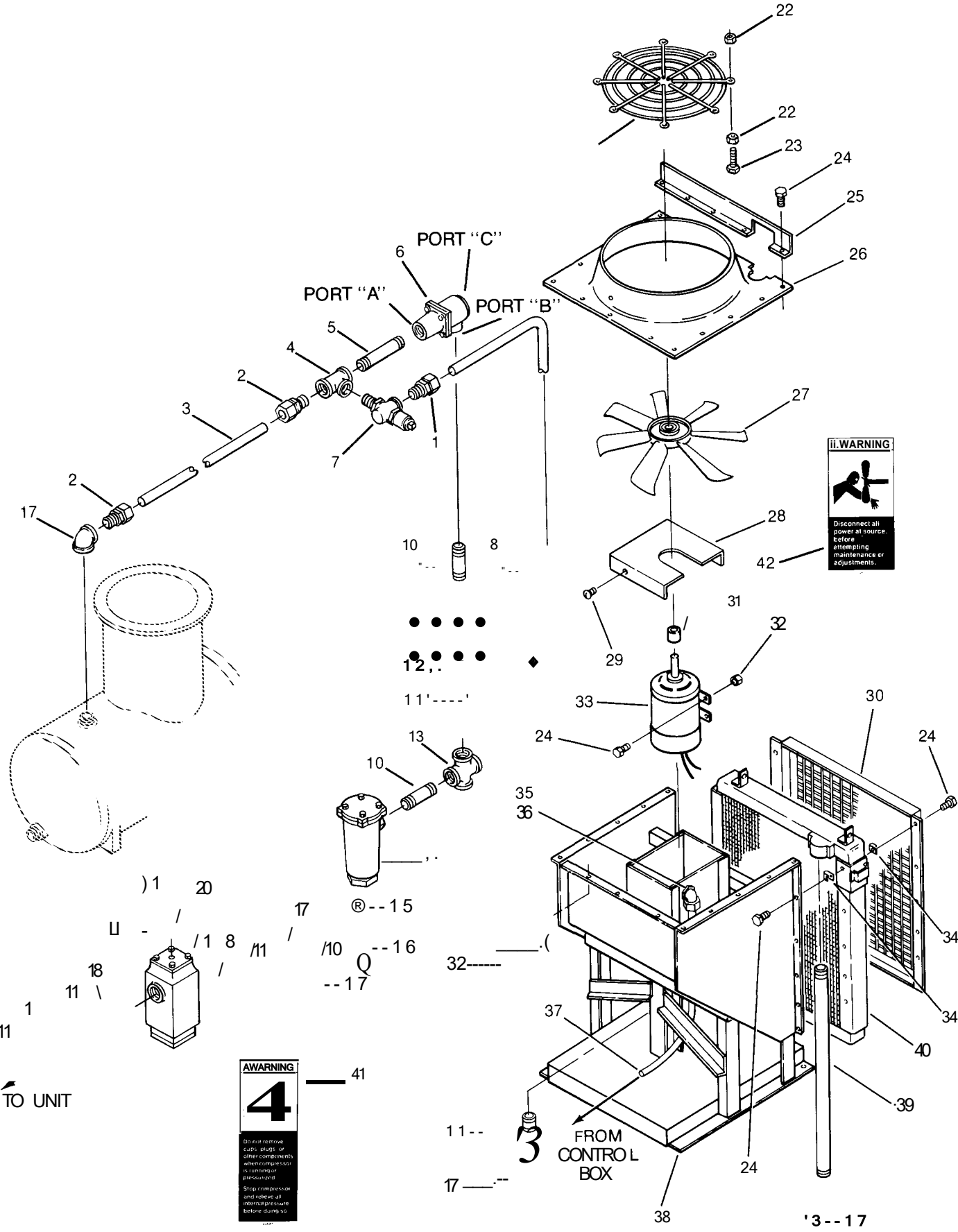
6.6 COMPRESSOR COOLING AND LUBRICATION SYSTEM - AIR COOLED {continued}

key number	description	part number	quantity
31	spacer	23100	1
32	nut, whiz lock 5/16"-18"	*	12
33	motor, fan	41798	1
34	nut, retainer	•	4
35	elbow, conduit 1/2"	•	2
36	nut, conduit 1/2"	•	4
37	conduit, 1/2"	*	1
38	up-draft assembly	11705	1
39	nipple, 2 x 54 1/2"	•	1
40	cooler	40961	1
41	decals, "WARNING"	49685	1
42	decals, "WARNING"	49855	1

* Standard hardware item, purchase locally.

WHEN ORDERING PARTS, ALWAYS INDICATE SERIAL NUMBER OF MACHINE

Section 6
ILLUSTRATIONS AND PARTS LISTS
FIGURE 6.6 COMPRESSOR COOLING AND LUBRICATION SYSTEM - AIR COOLED



Section 5
MAINTENANCE

TROUBLESHOOTING

SYMPTOM	PROBABLE CAUSE AND REMEDY
6. Pressure relief valve opens repeatedly.	1. High pressure shutdown switch is defective or out of adjustment: a. Re-djust below pressure relief valve setting or replace. 2. Defective Pressure Relief Valve: a. Replace Pressure Relief Valve

-NOTES-

6.6 COMPRESSOR COOLING AND LUBRICATION SYSTEM - AIR COOLED

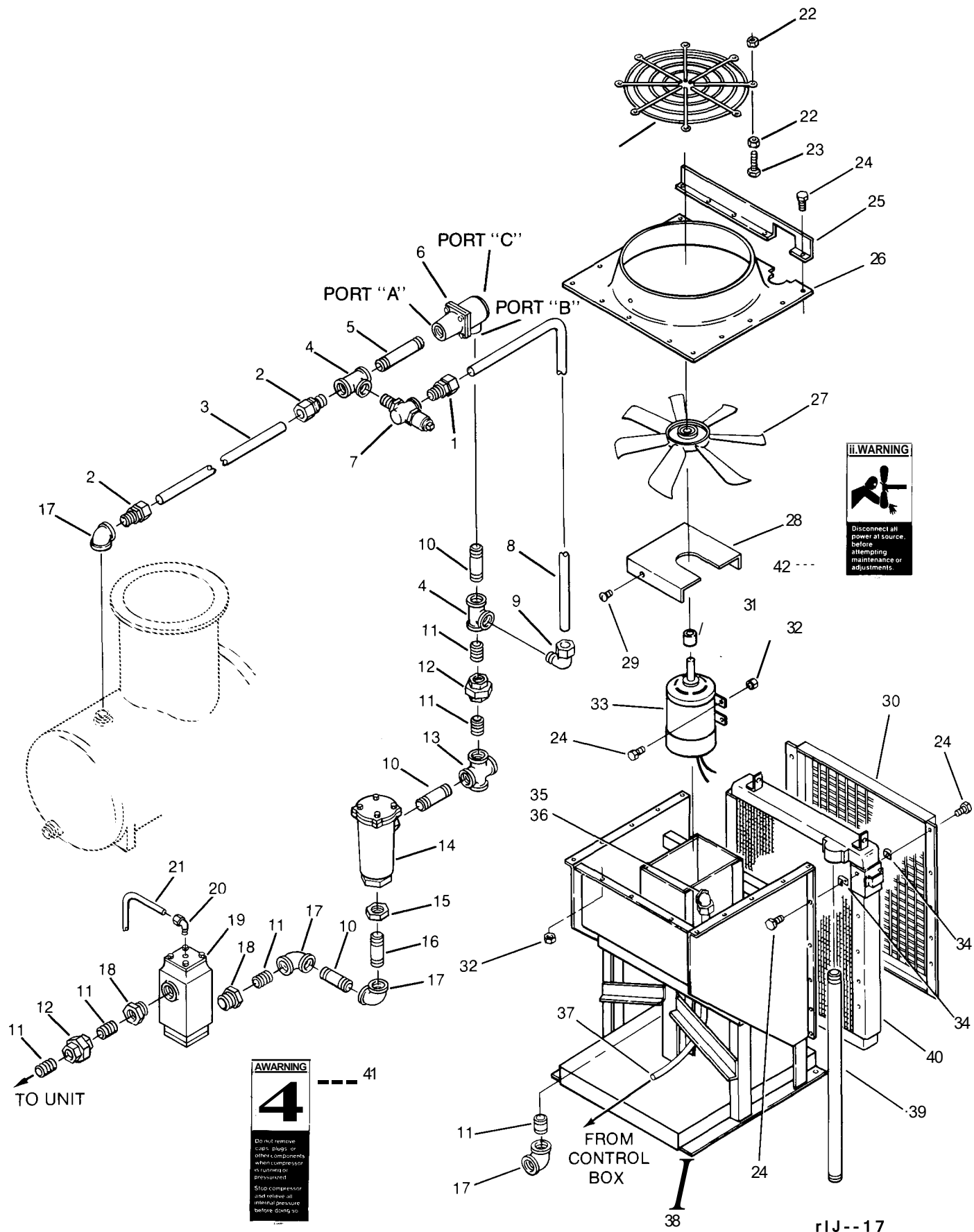
<i>key number</i>	<i>description</i>	<i>part number</i>	<i>quantity</i>
1	connector, tube 1 1/2"t x 1 1/2"p	*	1
2	connector, tube 2"t x 2"p	*	2
3	tube, 2"	*	1
4	tee, reducing 2 x 2 x 1 1/2"	*	2
5	nipple, 2 x 6"	*	1
6	valve, thermal*	41299	1
7	valve, by-pass	42989	1
8	tube, steel 1 1/2"	*	1
9	elbow, tube 1 1/2"t x 1 1/2"p	*	1
10	nipple, 2 x 4"		3
11	nipple, close 2"	*	6
12	union, 2"	*	2
13	cross, 2"	*	1
14	filter, main oil***	44286	1
15	nut, sealing 2"	*	1
16	nipple, 2 x 6"	*	1
17	elbow, 2"	*	5
18	bushing, reducing 2 1/2" x 2"	*	2
19	valve, flow control ¹	13544	1
20	elbow, tube 1/4"t x 1/8"p	*	1
21	tube, steel 1/4"	*	1
22	nut, hex 3/8"	*	16
23	capscrew, hex 3/8" x 3"	*	8
24	screw, whiz lock 5/16"-18 x 3/4"	*	36
25	brace	22426	1
26	venturi	41822	1
27	fan	41800	1
28	cover	23097	1
29	screw, tapping 1/4" x 3/4"	*	2
30	grille	11706	1

(Continued on next page)

* Standard hardware item, purchase locally.
** For replacement element for no. 41299 thermal valve order no. 1084.
*** For replacement seal kit for no. 44286 main filter order no. 1100.
¹ For replacement element for no. 13544 flow control valve order no. 13671.

WHEN ORDERING PARTS, ALWAYS INDICATE SERIAL NUMBER OF MACHINE

Section 6
ILLUSTRATIONS AND PARTS LISTS
FIGURE 6.6 COMPRESSOR COOLING AND LUBRICATION SYSTEM - AIR COOLED



Section 6
ILLUSTRATIONS AND PARTS LISTS

PROCEDURE FOR ORDERING PARTS

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

When ordering parts always indicate the **Serial Number** of the machine. This can be obtained from the Bill of Lading for the machine or from the Serial Number Plate located on the right end of the machine when facing the instrument panel.

Standard fasteners (capscrews, nuts, washers, etc.) tubing and fittings plus other standard hardware have not been included in the Parts List. Standard Pipe is 150# malleable. These are items which can be obtained quicker and more economically from local sources.

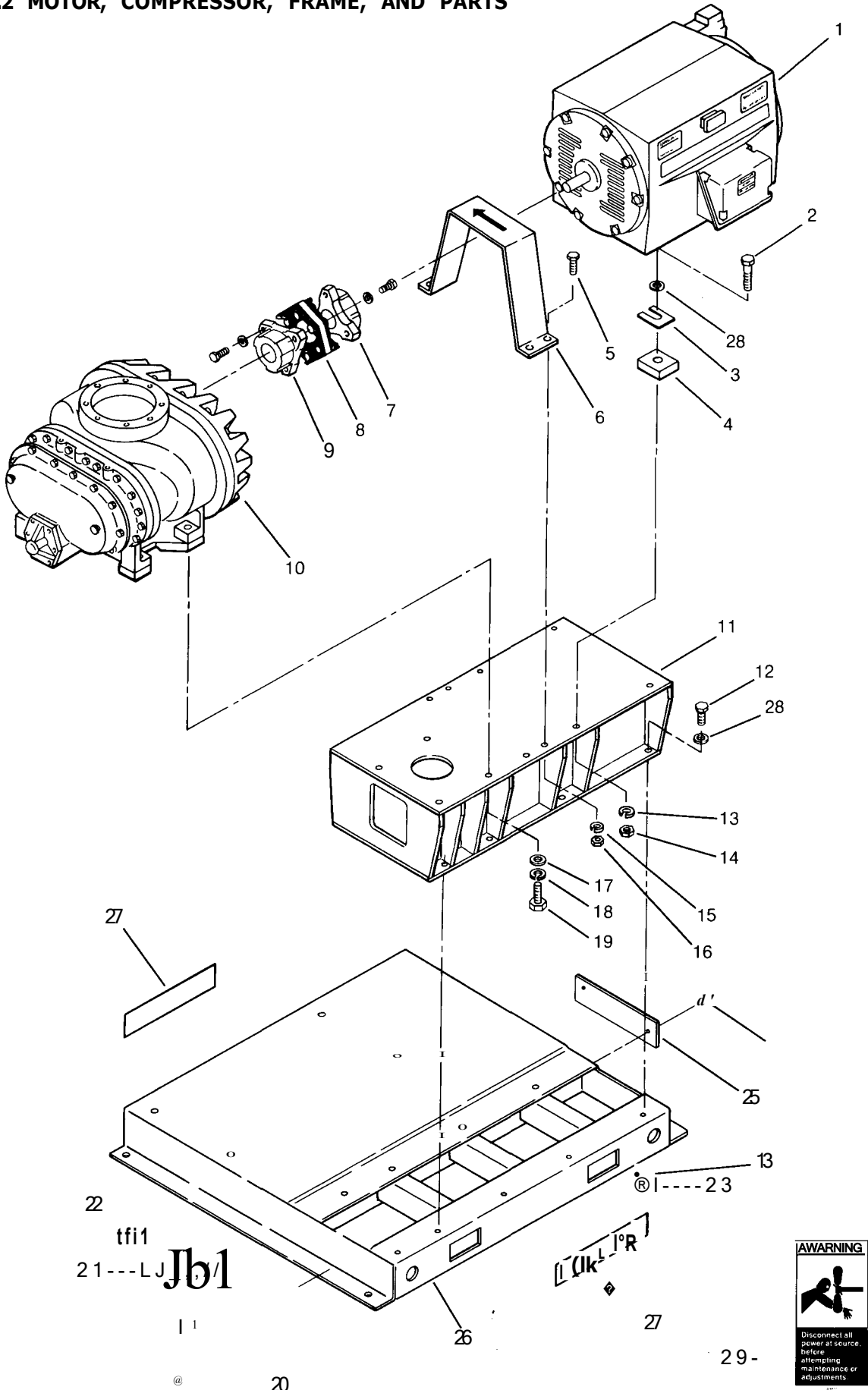
SULLAIR CORPORATION
3700 East Michigan Boulevard
Michigan City, Indiana 46360

Telephone (219) 879-5451
Telex: 258318

6.1 RECOMMENDED SPARE PARTS LIST

DESCRIPTION	PART NO.	QTY.
Replacement Element (Bearing Filter)	1085	2
Primary Separator Element Kit	11173	1
Secondary Separator Element Kit	13631	1
Air Filter Element	40402	1
Quad Ring, MPV	41619	2
"O"-Ring, MPV Cover Plate	826302-120	1
"O"-Ring, MPV Housing	826302-262	1
"O"-Ring, MPV Spring Cap	826302-236	1
"O"-Ring, Discharge Flange	826102-248	1
"O"-Ring, Discharge Cover	826502-267	1
Repair Kit, Pressure Regulator	41742	1
Repair Kit, Sullicon	11579	1
Control Spring	41273	1
"O"-Ring, Discharge Valve	826502-267	1
Repair Kit for Flow Control Valve, P/N 13544	13671	1
Service Kit, Return Line Strainer	1118	2
O-Ring, Fill Cap	40102	1
Seal Kit, Main Filter	1100	2
Repair Kit, Slowdown Valve	13708	1
24KT Coolant Fluid	46850	2
Seal, Main Filter	44258	1
Diaphragm, Pressure Switch	41647	1
Point Set, 40427 Pressure Switch	41912	1

WHEN ORDERING PARTS ALWAYS INDICATE SERIAL NUMBER OF MACHINE.

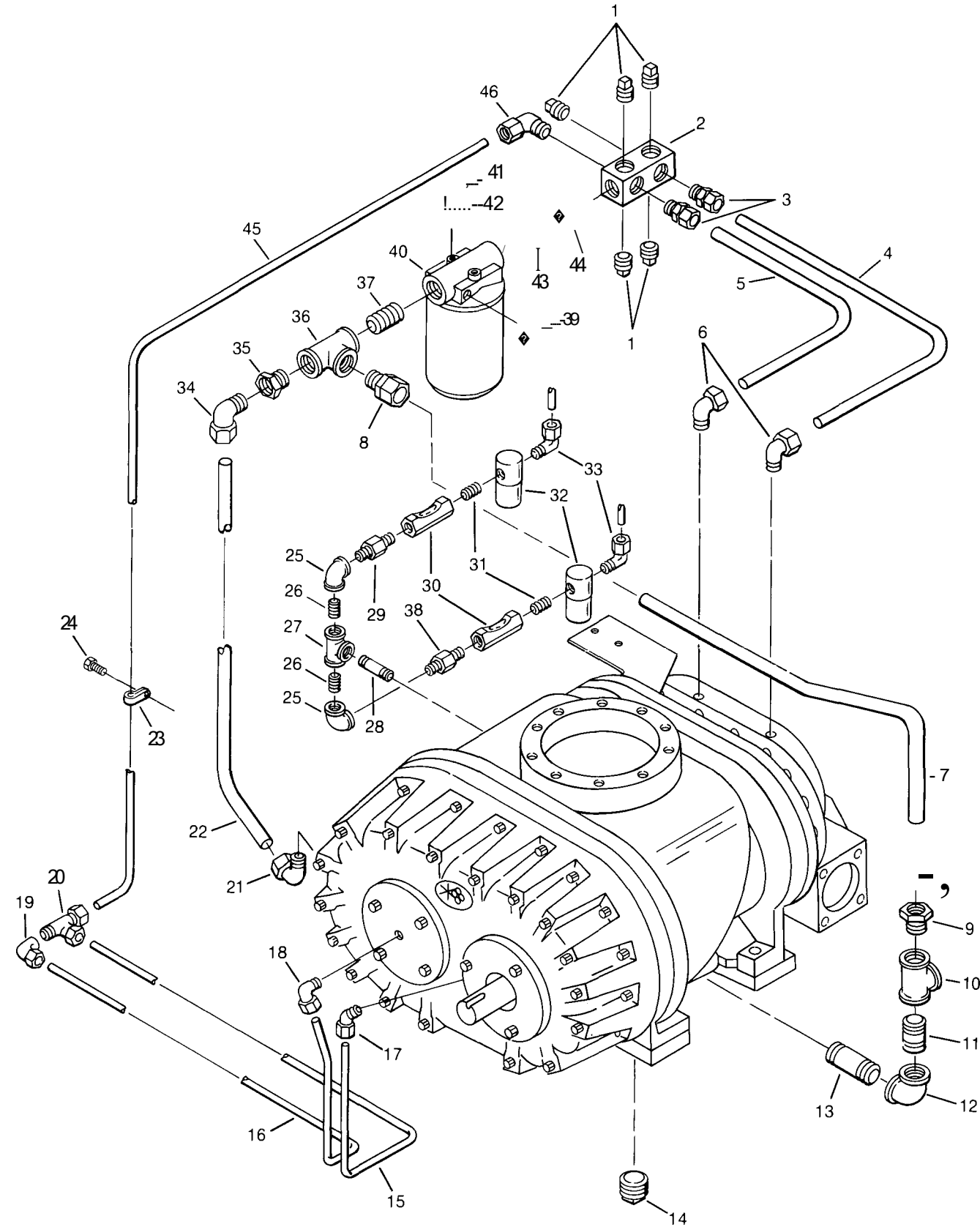


6.5 COMPRESSOR UNIT TUBING (continued)

key number	description	part number	quantity
32	strainer**	49704	2
33	elbow, tube 1/4"t x 1/4"p	*	2
34	elbow, tube 3/4"t x 3/4"p	*	1
35	bushing, reducing 1 1/4" x 3/4"	*	1
36	tee, 1 1/4"	*	1
37	nipple, close 1 1/4"	*	1
38	orifice, 1/32"	40381	1
39	connector, 1/4"t x 1/4"p	*	1
40	filter, bearing***	46967	1
41	capscrew, ferry hd. 5/16" x 5/8"	*	2
42	washer, flat 5/16"	*	2
43	bushing, reducing 1 1/4 x 1"	*	1
44	nipple, close 1"	*	1
45	tube, inlet bearing	222949	1
46	elbow, tube 1/2"t x 1/2"p	*	1

* Standard hardware item, purchase locally.
** For repair kit on strainer 49704 order no. 1118.
*** For replacement element kit on bearing filter no. 4ti967 order no. 1085.

WHEN ORDERING PARTS, ALWAYS INDICATE SERIAL NUMBER OF MACHINE



6.2 MOTOR, COMPRESSOR, FRAME, AND PARTS

key number	description	part number	quantity
1	motor, electric	••	1
2	capscrew, lfex hd. 3/4"-10 x 4 1/2" gr5	•	4
3	shim set	22031	8
4	block, motor	22216	4
5	capscrew, hex hd. 1/2"-13 x 2 1/4"	•	3
6	guard, coupling	28940	1
7	hub, motor	46996	1
8	element, coupling	46999	1
9	hub, compressor	46997	1
10	compressor unit	•••	1
11	support, motor & compressor	11653	1
12	capscrew, hex hd. 3/4"-10 x 2" gr5	•	8
13	washer, lock 3/4"	•	12
14	nut, lock 3/4"-10	•	4
15	washer, lock 1/2"	•	3
16	nut, hex 1/2"-13	•	3
17	washer, flat 7/8"	•	4
18	washer, lock 7/8"	•	4
19	capscrew, hex hd. 7/8"-9 x 4" gr5	•	4
20	nut, lock 3/8"-16	•	2
21	support, piping	22247	1
22	u-bolt	•	1
23	nut, hex 3/4"-10	•	8
24	rivet, pop 3/16" x 1/2"	•	2
25	nameplate	46470	1
26	main frame	11652	1
27	decal, "SULLAIR"	46422	2
28	washer, flat 3/4"	•	12
29	decal, "WARNING"	49855	1

* Standard hardware item, purchase locally.

** For part number on motor see specific machine sales order.

*** It is Sullair's policy not to sell or replace repair parts on the compressor unit. There is an exchange program whereby a reconditioned 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 distributor or the Sullair Corporation.

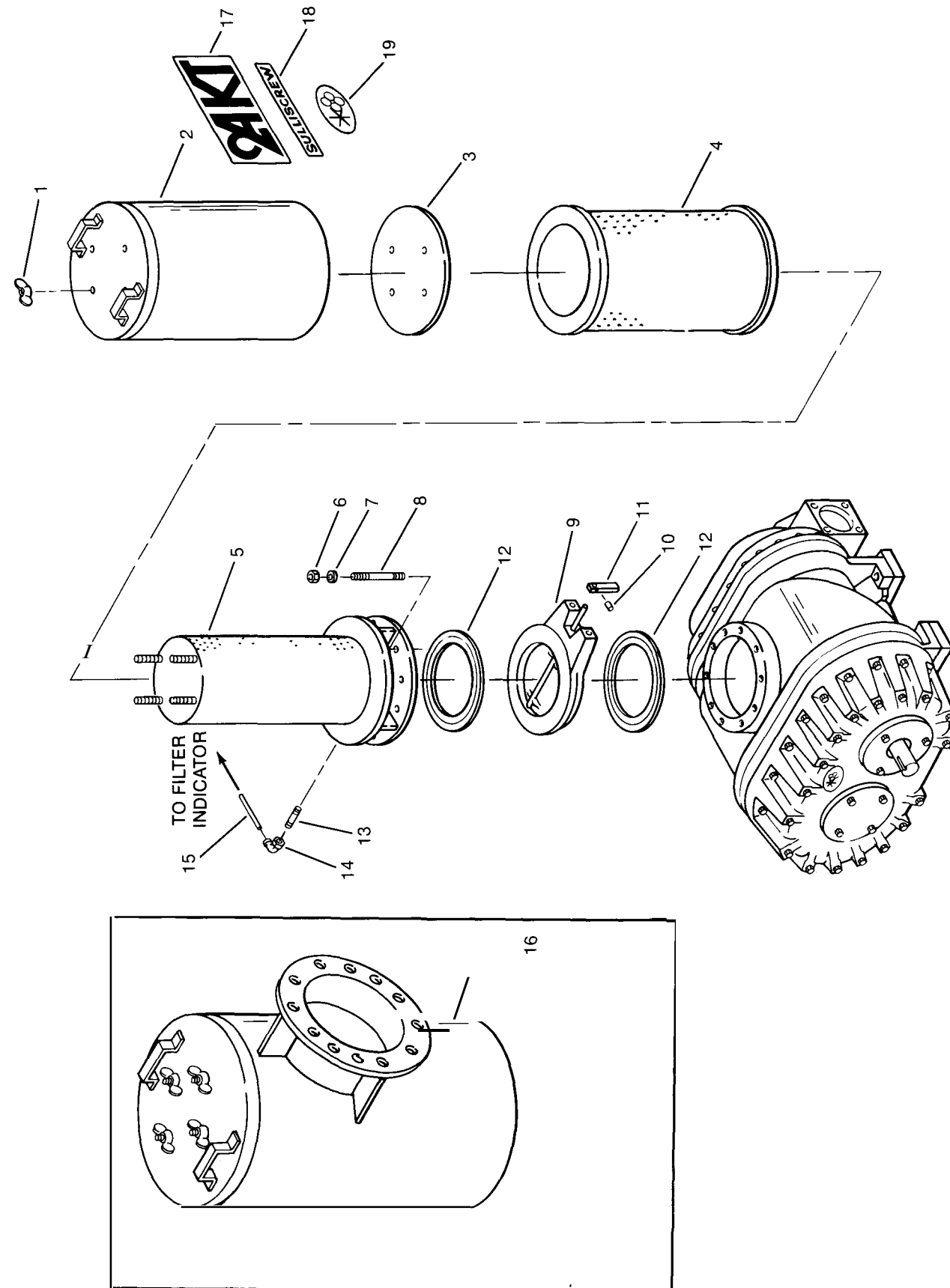
The shaft seal is not considered part of the compressor unit in regard to the 10 year warranty. The normal Sullair parts warranty applies. The shaft seal for your compressor unit is 18033.

WHEN ORDERING PARTS, ALWAYS INDICATE SERIAL NUMBER OF MACHINE

Section 6

ILLUSTRATIONS AND PARTS LISTS

FIGURE 6.3 COMPRESSOR AIR INLET SYSTEM



Section 6

ILLUSTRATIONS AND PARTS LISTS

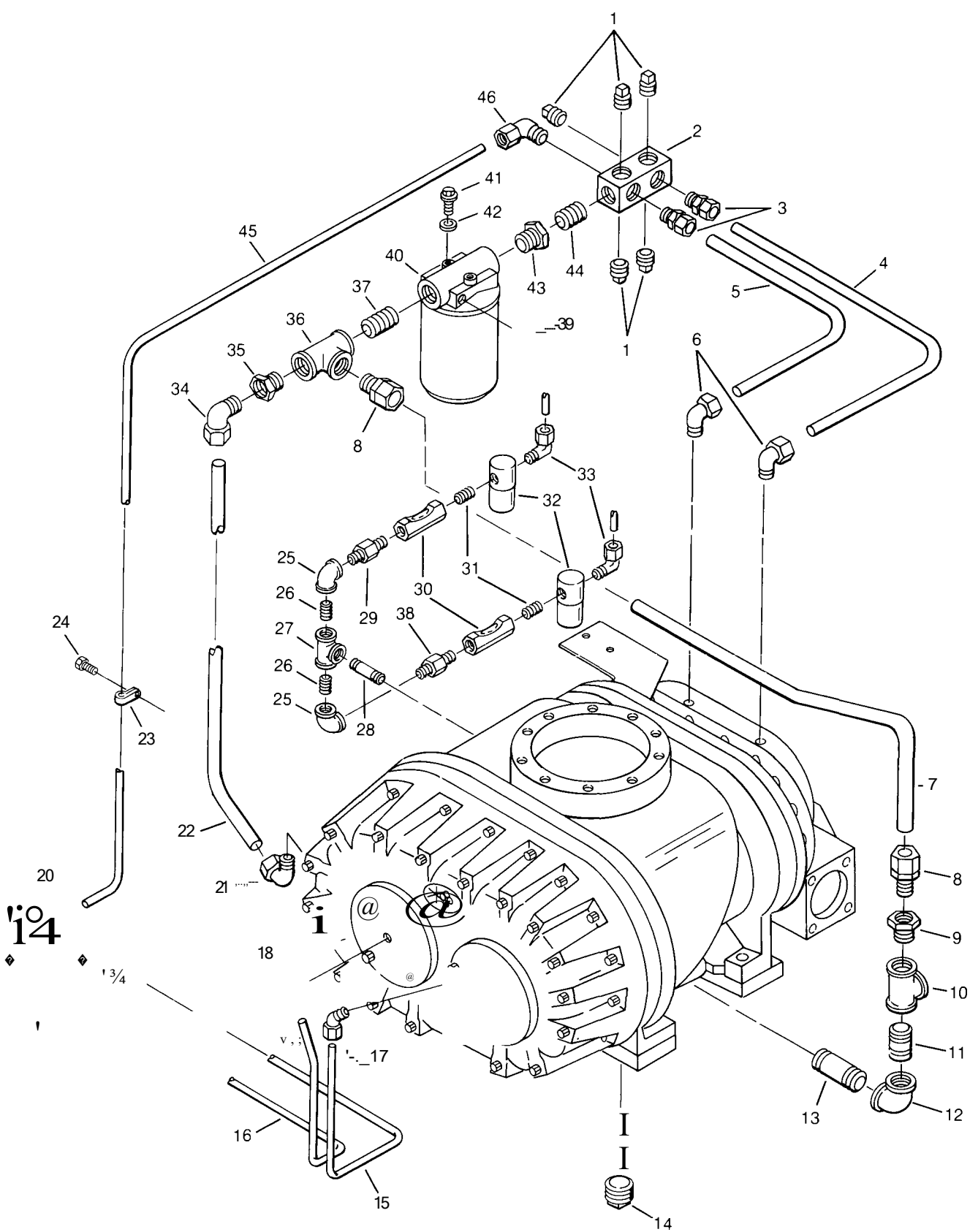
6.5 COMPRESSOR UNIT TUBING

key number	description	part number	quantity
1	plug, 1/2"	•	5
2	manifold	222915	1
3	connector, tube-5/8"t x 1/2"p	•	2
4	tube, outlet bearing	222924	1
5	tube, outlet bearing	222923	1
6	elbow, tube-5/8"t x 3/8"p	•	2
7	tube, bearing filter supply	223016	1
8	connector, tube 1 1/4"t x 1 1/4"p	•	2
9	bushing, reducing 2 x 1 1/4"	•	1
10	tee, 2"	•	1
11	nipple, 2 x 3"	•	1
12	elbow, 2"	•	1
13	nipple, 2 x 7 1/2"	•	1
14	plug, 2"	•	1
15	tube, male inlet bearing	222950	1
16	tube, female inlet bearing	222951	1
17	elbow, tube-45° 3/8"t x 1/4"p	•	1
18	elbow, tube 3/8"t x 1/4"p	•	1
19	elbow, tube 3/8"t x 3/8"p	•	1
20	tee, tube 3/4"t x 3/4"p	•	1
21	elbow, tube 3/4"t x 1/2"p	•	1
22	tube, bearing filter supply	223016	1
23	clamp, tube	241119	1
24	screw, hex tapping 1/4" x 3/4"	•	1
25	elbow, reducing 1/2" x 1/4"	•	2
26	nipple, close 1/2"	•	2
27	tee, 1/2"	•	
28	nipple, close 1/2"	•	2
29	orifice, 3/32"	22033	1
30	sight glass	46559	2
31	nipple, close 1/4"	•	2

(continued on next page)

* Standard hardware item, purchase locally.

WHEN ORDERING PARTS, ALWAYS INDICATE SERIAL NUMBER OF MACHINE



6.3 COMPRESSOR AIR INLET SYSTEM

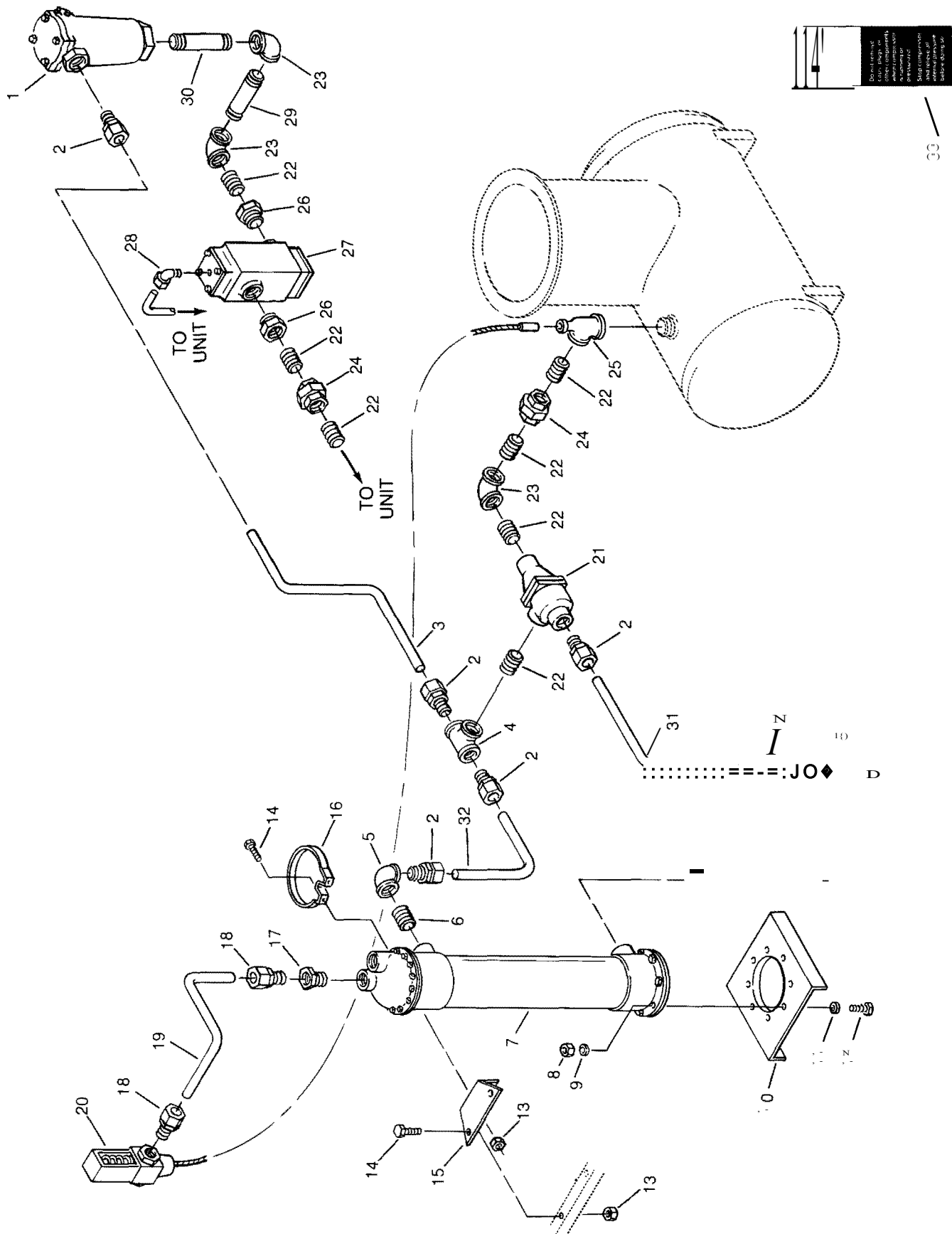
key number	description	part number	quantity
1	nut, wing 1/2"-13	•	4
2	housing, air filter	44418	1
3	plate, cover	24086	1
4	element, air filter	40402	1
5	base, air filter	43368	1
6	nut, hex 3/4"-10	•	4
7	washer, lock 3/4"	•	4
8	stud, 3/4"-10 x 4"	•	4
9	valve, inlet	40338	1
10	screw, set 5/16"-18 x 3/8"	•	1
11	lever, inlet valve	20687	1
12	gasket, inlet valve	40422	2
13	nipple, 1/8" x 2"	•	1
14	elbow, tube, 1/4"t x 1/8"p	•	1
15	tube, copper 1/4"	•	1
16	air filter (remote)*	12382	1
17	decal, "24KT"	46518	1
18	decal, "Sulliscrew"	46519	1
19	decal, "Trademark"	46414	1

* Standard hardware item, purchase locally.

** Optional - remote filter

WHEN ORDERING PARTS, ALWAYS INDICATE SERIAL NUMBER OF MACHINE

Section 6
ILLUSTRATIONS AND PARTS LISTS
FIGURE 64 COMPRESSOR COOLING AND LUBRICATION SYSTEM - WATER COOLED



Section 6
ILLUSTRATIONS AND PARTS LISTS

64 COMPRESSOR COOLING AND LUBRICATION SYSTEM - WATER COOLED

key number	description	part number	quantity
1	main filter**	44286	1
2	connector, tube 2"t x 2"p	*	6
3	tube, filter to thermal valve	220837	1
4	tee, 2"	*	1
5	elbow, reducing 3 x 2"	*	2
6	nipple, close 3"	*	2
7	heat exchanger	43031	1
8	nut, hex 3/8"-16	*	4
9	washer, lock 3/8"	*	4
10	support	24498	1
11	washer, flat 3/8"	"	4
12	capscrew, hex 3/8"-16 x 2 1/2"	"	4
13	nut, hex 1/2"-13	*	4
14	capscrew, hex 1/2"-13 x 1"	*	4
15	bracket	24499	1
16	band, mounting	40598	1
17	bushing, reducing 2 x 1 1/4"	*	1
18	connector, tube 1 1/4"t x 1 1/4"p	*	2
19	tube, 1 1/4" steel	220840	1
20	valve, water regulating	40692	1
21	valve, thermal**	41299	1
22	nipple, close 2"	*	7
23	elbow, 2"	"	3
24	union, 2"	"	2
25	tee, reducing 2 x 3/4" x 2"	*	1
26	bushing, reducing 2 1/2" x 2"	*	2
27	valve, flow control ¹	13544	1
28	elbow, tube 1/4"t x 1/4"p	*	1
29	nipple, 2 x 3"	"	1
30	nipple, 2 x 5"	*	1
31	tube, thermal valve to -cooler bottom	220836	1
32	tube, thermal valve to cooler top	220838	1
33	decal, "WARNING"	49685	1

* Standard hardware item, purchase locally.
** For replacement element for no. 44286 main filter order no. 44241.
For replacement seal kit for no. 44286 main filter order no. 1100.
*** For replacement element for no. 41299 thermal valve order no. 1084.
¹ For replacement element for no. 13544 flow control valve order no. 13671.

WHEN ORDERING PARTS, ALWAYS INDICATE SERIAL NUMBER OF MACHINE