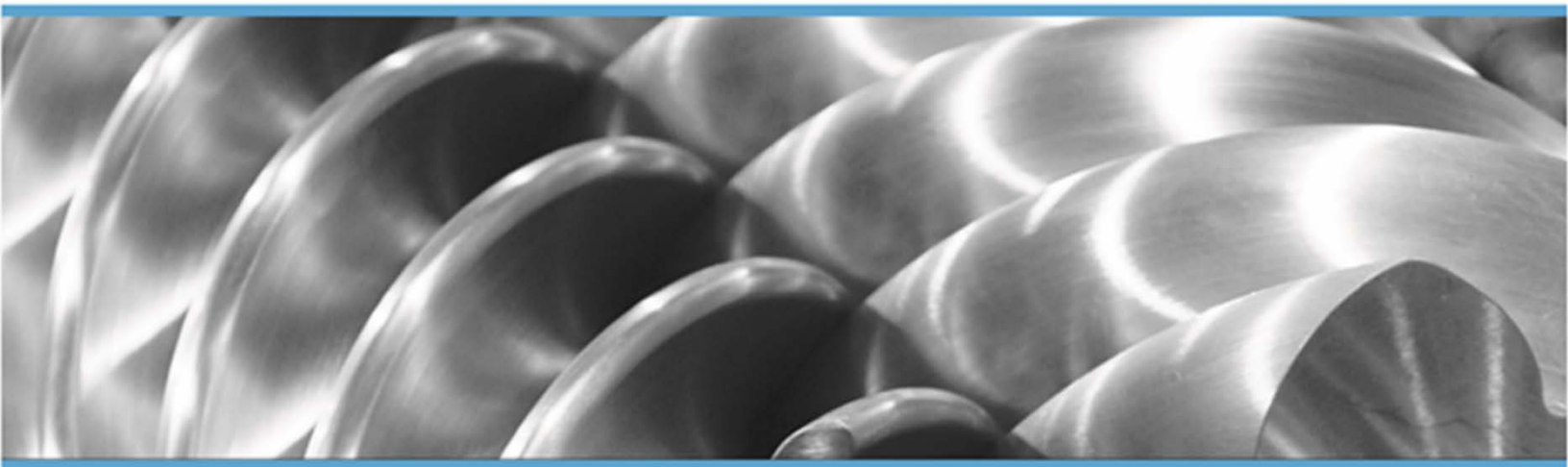
ROGERS®

Rotary Screw Air Compressors

ECOPAK



INSTALLATION, OPERATION AND MAINTENANCE MANUAL

Model #: _____ **Serial #:** _____

KI & KIV Series

Fixed Speed or Variable Speed ■ Lubricant-Injected
■ Single-Stage ■ 10 – 100 HP ■ Air-Cooled ■ 100 – 175 PSIG

rogers-kseries.com

KI-KIV_IOM_0_REV1
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WARNING SUMMARY

Read and understand the contents of this manual and the Operation, Display and Controls Manuals for your compressor before installing, operating, or maintaining the compressor. Failure to follow these instructions may result in serious injury or death.

Electricity and compressed air are dangerous. Whenever performing maintenance or compressor service work, ensure all electrical supply power is disconnected and mechanically locked out. Beware of multiple power sources. Ensure all power sources are isolated before working on this equipment. Failure to follow these instructions may result in serious injury or death.

The (customer furnished) discharge air line service valve must be closed, and the compressor relieved of all internal pressure. DO NOT rely on the discharge air line check valve for isolation. Failure to follow these instructions may result in serious injury or death.

Never use compressed air from this unit for breathing or food processing without adequate filtering and monitoring to meet OSHA 29 CFR 1910 or FDA 21 CFR 178.3570. Failure to follow these instructions may result in serious illness or death.

When operating, the compressor may have hot metal surfaces that could burn flesh on contact. Shut down compressor and allow to cool before performing checks, services, and maintenance. Failure to comply may cause serious injury or death.

When testing or operating the compressor, hearing and eye protection is required. Failure to comply can cause hearing loss and serious eye damage or vision loss.

Do not allow flammable, toxic or corrosive gases to enter the air inlet system or electrical devices. Failure to comply with this warning can result in personal injury or death and damage to equipment.

Never attempt to service or perform maintenance on your compressor, remove guards, panels, covers, shields or other protective devices, while the compressor is in operation. Failure to comply with these instructions may result in serious injury or death.

After each compressor servicing or maintenance, confirm that all safety and shutdown devices operate properly. Failure to routinely test safety devices may result in serious injury or death.

Never override or bypass any safety or shutdown device installed on your compressor. Doing so can result in personal injury or death and damage to equipment.

Make certain all associated piping and equipment installed beyond your compressor are compatible with maximum pressures and temperatures to be encountered during operation of the compressor. Failure to comply with these instructions may result in serious injury or death.

Never use plastic pipe in the compressed air system. Failure to comply with these instructions may result in serious injury or death.

Keep doors closed during normal operation. The noise level inside cabinet may exceed 90 decibels (dBA) and the operating temperature of some components is enough to burn skin on contact. Failure to follow these instructions may result in serious injury.

WARNING SUMMARY – Continued.

Never assume it is safe to work on your compressor because it is not operating. Many systems have automatic start/stop controls, which means the compressor may start at any time. Failure to comply with these instructions may result in serious injury or death.

Facility personnel using the compressor equipment must thoroughly read, understand and comply with all posted WARNING, CAUTION and DANGER placards placed on the K Series compressor system. This equipment contains many possibilities for injury or death to personnel if care is not taken while working on or near moving parts or electrical connections.

The following labels are used on the K Series compressor in conjunction with warnings used throughout this manual, so that you do not miss important information. These labels are not meant to be a substitute for reading the WARNING STATEMENT, but they give graphic descriptions of danger.

PREFACE AND MANUAL OVERVIEW

Rogers KI and KIV Series rotary screw air compressors are designed for efficiency and longevity. Their professional engineering, rugged design and quality construction will provide many years of trouble-free operation if proper temperatures and lubrication are maintained.

The control panel provides visual indicators and audible alarms to inform you when attention is required for proper care. Regular monitoring of these instruments will assist you with maintaining your preventive maintenance program.

The KI/KIV Series electrical system communicates to the control panel providing ALERT and ALARM signals. An ALERT notification indicates the compressor needs attention but has not shut down. For example, a High Temperature Alert would indicate the compressor could be running hot and shut down is imminent. Alerts are also used to notify you that service is required. A control panel ALARM indicates the compressor has shut down and needs immediate attention. Refer to the CDP controller FAULT HISTORY and the Description of Operation, Display and Controls Manual.

A list of replacement, service and repair parts are listed in the Parts List manual specific to the model of your compressor. Contact your Rogers factory representative for more information.

The instructions contained in this manual cover compressor cleanliness of air and lubricant systems and maintaining acceptable operating temperatures.

Detailed information regarding the compressor control panel is covered in the KI/KIV Description of Operations / Display and Controls manual. Contact Rogers Machinery at 360-736-9356 for manual information.

The warranty is a statement of value and confidence, and it is contingent upon proper maintenance and attention

MODEL AND SERIAL NUMBERS

We recommend you take a moment to locate the Rogers Machinery ID Nameplate rivetted on every compressor. Please write the MODEL and SERIAL numbers stamped on your compressor's nameplate in the space provided on the front cover of this manual. This way your compressor's information will be at hand if you need to speak with a Rogers Machinery representative.

The ID nameplate will look like this sample and will have your specific MODEL and SERIAL # stamped on it.

TABLE OF CONTENTS

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KI & KIV Series
Rotary Screw Air Compressors

CHAPTER 1

GENERAL INFORMATION

1.0 GENERAL

1.1 Description

The Rogers KI-Series air compressors are designed to deliver compressed air at an average volume equal to demand by loading and unloading within a pressure range. Maximum pressure capability is generally limited by compressor drive motor horsepower.

The Rogers KIV Series air compressors are virtually identical to the KI Series except the primary control flow control is accomplished by motor speed control through a VFD (Variable Frequency Drive). The compressor and motor speed up and slow down within a range to adjust its output to match demands. At demands lower than the minimum speed compressor output, pressure will rise, and the compressor will unload.

The basic compressor is a single-stage, positive displacement, lubricant injected twin screw unit. The motor, compressor, associated equipment and components are mounted on a fabricated steel base within a sound-attenuating enclosure. Air-cooled coolers dissipate heat of compression from the lubricant and air using an independent cooling fan with motor. Controls and indicators pertaining to the compressor are grouped on a common control panel. There are belt-driven units (10-50 HP) and direct-driven units (60-100 HP) in the KI(V) Series.

Detailed discussion of the control systems is located in the Description of Operations / Display and Controls manuals.

1.2 Principles of Compressor Operation

NOTE

The cycle of intake, compression, and discharge occurs five times during each 360-degree rotation of the cambered rotor.

As shown in Figure 1, the compressor consists of two rotors within a casing. The male rotor (motor driven rotor) is provided with five lobes and meshes with the female rotor which contains six grooves. Both rotors are housed in a casing with two bores.

The casing is provided with an inlet port at the front (power input end of the compressor) and a discharge port at the rear of the compressor opposite the compressor's drive shaft. Both rotors are mounted on single-row roller bearings at the inlet end and on tapered roller bearings at the discharge end. As the rotors turn, air is drawn into the casing through the inlet port, trapping a fixed volume of air as the rotor lobes move past the inlet port area.

This volume of air extends the entire length of the two rotors initially and is prevented from escaping by the un-ported area of the cylinder rear wall. Oil is injected into the compression chamber during the compression cycle as described in section 1.4.

As rotation continues, each lobe on the male rotor enters a groove in the female rotor, thus reducing the volume of trapped air and resulting in continuous compression. Compression continues as the rotors mesh together until the lobe and groove pair passes the discharge port.

At this point, the compressed air is released into the discharge line leading to the separator tank. Note that the cycle of intake, compression, and discharge occurs five times during each 360 degree rotation of the male rotor.

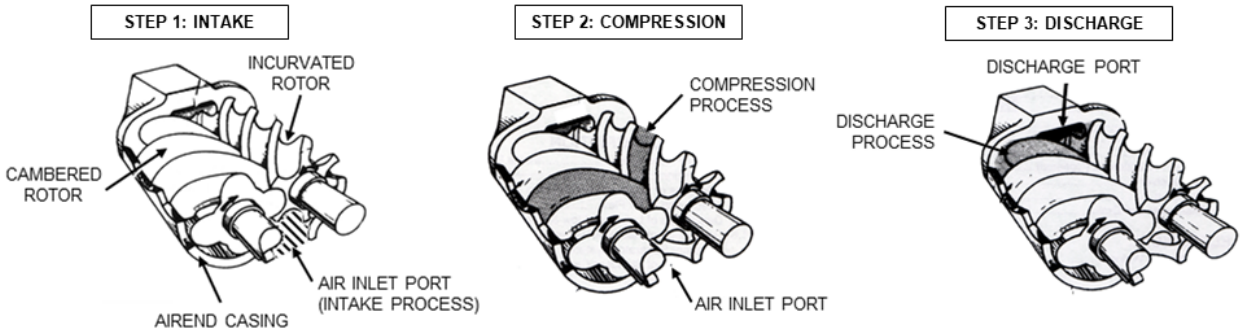

Figure 1. KI and KIV Compressor Identification (Typical).

1.3 Description of Air Flow

This manual covers several different models. Figures 2 and 3 show a conceptual representation of component layout within the compressor package and may not depict a component's exact location.

With the motor running and compressor operating, under loaded conditions, low pressure (slight vacuum) is achieved at the compressor inlet. Ambient air, entering via the compressor inlet air filter, flows through the inlet valve into the screw compressor, is compressed and discharged into the separator tank. The air discharged from the compressor contains lubricant which is removed as the air passes through the lubricant separator in the separator tank.

The compressed air then passes through the discharge element, minimum pressure check valve and the aftercooler into the system. A separately-mounted optional moisture separator and drain are available to remove liquid condensate from the air after it leaves the compressor assembly. An air receiver with an effective drain valve can also serve this purpose.

The quantity of air entering the compressor is regulated by the inlet valve located between the air filter and the compressor casing's inlet port. The position of the inlet valve is automatically controlled during normal operation by system air pressure, as briefly described in Section 1.6 of this manual and in more detail in the Description of Operations / Display and Controls manual.

For all KI and KIV compressors the air inlet valve serves as a check valve when the unit is shut down. This prevents air and lubricant from flowing backwards in the inlet filter during shut down.

The separator tank is equipped with an ASME safety relief valve and high pressure shut down to protect the equipment in the event of a malfunction in the capacity and pressure control system.

Air pressure in the separator tank is continuously indicated by a pressure gauge located on the tank and digital readout on the Control Display Panel (CDP). Maximum operating pressure is limited by compressor drive motor horsepower, the ASME safety relief valve setting, or electrical supply capability.

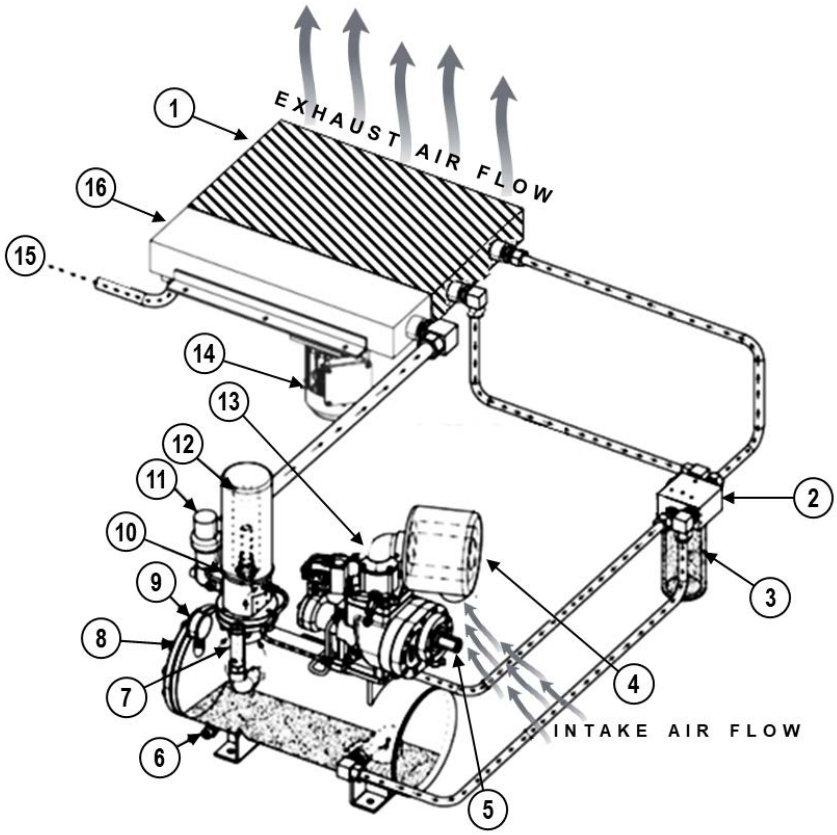

Figure 2. KI/KIV 10 through 20 Horsepower Air Flow Diagram.

Table 1. KI/KIV 10 through 20 Horsepower Air Flow Components.

ITEM NO.	DESCRIPTION
1	Oil Cooler
2	Oil Filter Head and Temperature Control Valve
3	Oil Filter Element
4	Intake Air Filter (Ambient Air)
5	Drive Shaft
6	Oil Drain Valve
7	ASME Safety Relief Valve
8	Oil Level Gauge (Not Shown)
9	Pressure Gauge
10	Separator Scavenging Tube
11	Minimum Pressure Check Valve
12	Spin-On Air Lubricant Separator Element
13	Inlet Check and Unloading Valve
14	Cooling Fan Motor
15	Discharge Air to Plant Systems
16	Air Cooler

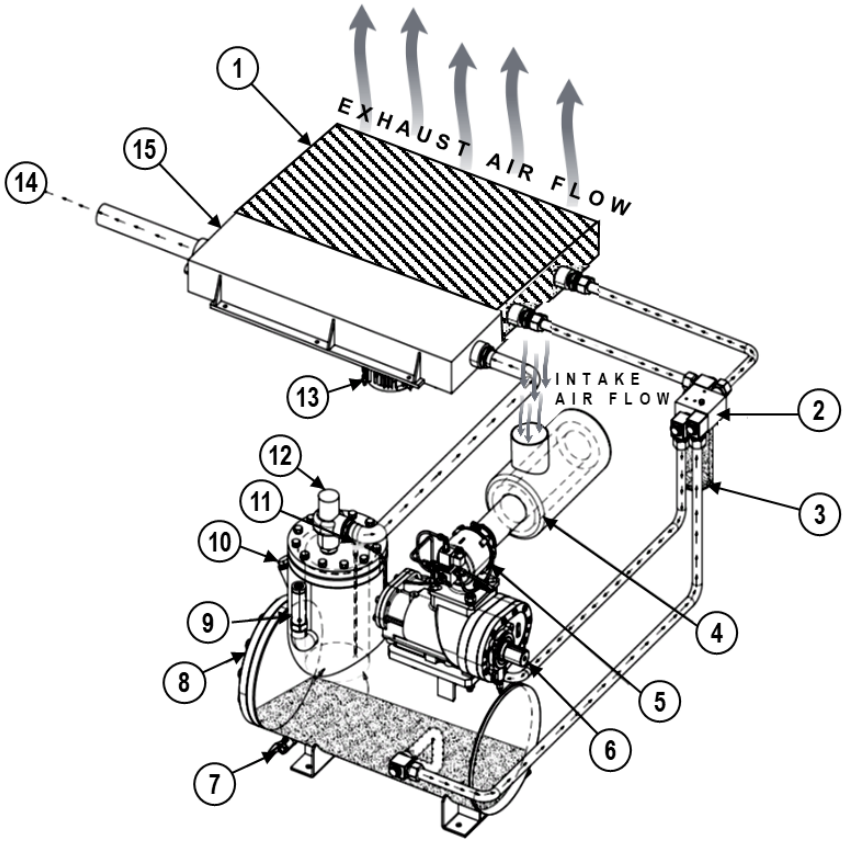

Figure 3. KI/KIV 25 through 100 Horsepower Air Flow Diagram.

Table 2. KI/KIV 25 through 100 Air Flow Components.

ITEM NO.	DESCRIPTION
1	Oil Cooler
2	Oil Filter Head and Temperature Control Valve
3	Oil Filter Element
4	Intake Air Filter (Ambient Air)
5	Inlet Check and Unloading Valve
6	Drive Shaft
7	Oil Drain Valve
8	Oil Level Gauge (Not Shown)
9	ASME Safety Relief Valve
10	Oil Filler Port
11	Separator Scavenging Tube
12	Minimum Pressure Check Valve
13	Cooling Fan Motor
14	Discharge Air to Plant Systems
15	Air Cooler

1.4 Description of Lubricant Flow and Cooling System

A diagram of the compressor lubricant system is shown in Figure 2 and 3. When the compressor operates, lubricant from the reservoir of the separator tank is circulated through the lubricant cooler and lubricant filter and injected into the compressor casing by differential pressure.

In the compressor housing, a lubricant gallery distributes lubricant to the front and rear rotor bearings of both the male and female rotor and the compression chamber to seal the internal clearances, lubricate the rotors and absorb most of the heat generated during compression of the air.

The lubricant and compressed air mixture is discharged from the compressor housing into the separator tank via the discharge line or flanged connection.

1.4.1 Spin-On Filter Element

A spin-on type lubricant filter element is incorporated for ease of maintenance (Figure 4). All lubricant passes through the lubricant filter before entering the compressor. This filter contains a quality, high-efficiency filter element.

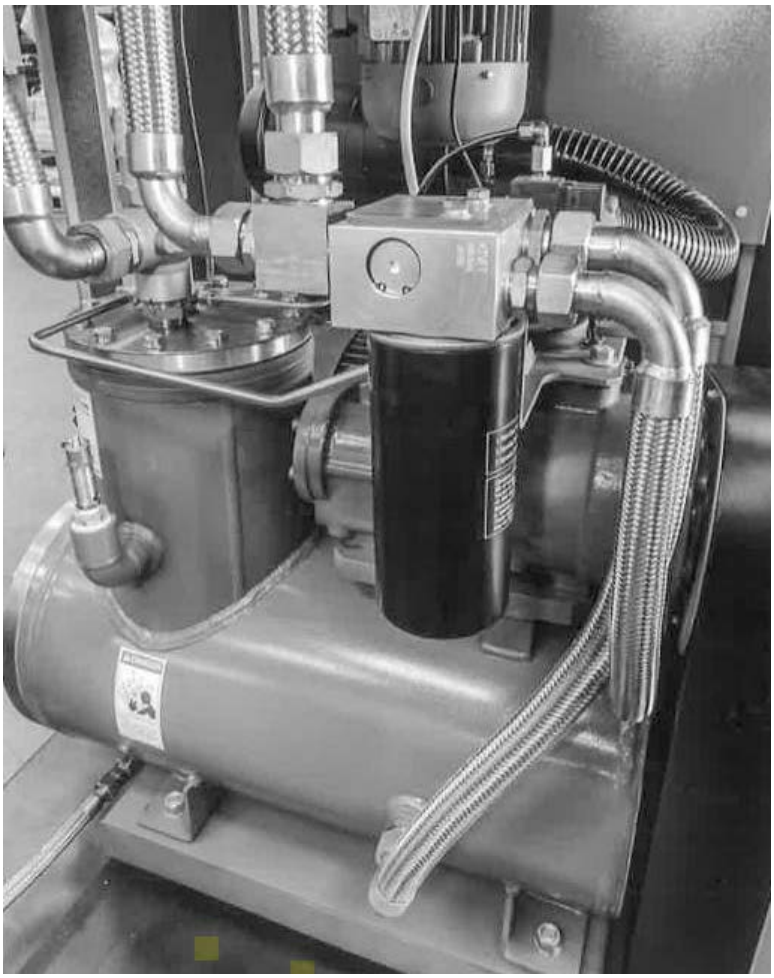

Figure 4. Typical Spin-on Oil Filter Location.

1.4.2 Air-Cooled Coolers

The combination air-cooled lubricant cooler/aftercooler is comprised of two aluminum bar and plate construction heat exchangers. A cooling fan blows cooling air across both coolers to reject heat from both the compressor lubricant and the compressed air.

The fan is driven by an independent cooling fan motor.

1.4.3 Temperature Regulating Valve

The operating temperature of the machine is controlled by an automatic temperature regulating valve which determines the proportion of lubricant that passes through the lubricant cooler versus bypassing the cooler. The valve is integrated into the lubricant filter head which also includes the thermal control element and bypass connection (see Figure 5). The function of the bypass is to maintain a minimum temperature level to prevent excessive condensation from forming within the machine. The temperature regulation is automatic and only adjustable by changing the thermal control element.

When the lubricant temperature is low, the lubricant enters the valve at port 1 (marked “IN”, from sump) and flows partially to the cooler core via port 2 (marked “TC”, to cooler) and partially through an internal bypass valve within the filter head. The oil from the cooler returns to the filter head via port 3 (marked “FC” , from cooler) and mixes with lubricant from the internal bypass before flowing through the filter element and to the air end via port 5 (marked “OUT”, to air end). See Figure 5.

As the compressor oil reaches operating temperature the bypass begins to close thus forcing more oil through the lubricant cooler.

If the oil temperature is above the operating temperature the bypass will be fully closed and all the compressor lubricant travels through the cooler directly.

In all cases the lubricant from the cooler and the bypass rejoin in the filter head before passing through the spin-on oil filter. All oil is filtered before returning to the air end.

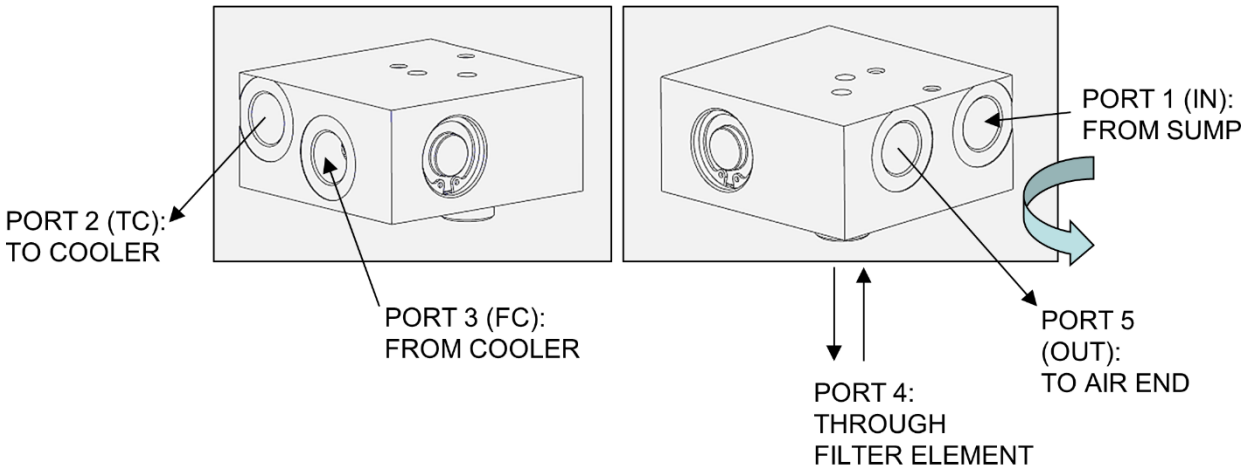

Figure 5. Typical Oil Filter Head and Temperature Control Valve Location.

1.5 Description of Air and Lubricant Separator System

1.5.1 Air / Lubricant Separator Reservoir

The air / lubricant separator reservoir is an ASME coded pressure vessel which serves as a fluid reservoir and provides mechanical separation of the lubricant and air. The air / lubricant reservoir should not be welded on or modified in any way.

The discharge line from the compressor enters the reservoir above the lubricant level. A lubricant level gauge is provided in the reservoir as a visual means to observe lubricant level during operation. An ASME rated safety relief valve is located on the "wet" side before the lubricant separator element to prevent the ASME rated separator tank from being over pressurized.

This is the “safety of last resort” and should not be used to control the air compressor. If this valve opens to vent pressure, shut the compressor down and investigate the cause.

1.5.2 Separator Element, 10 and 15 HP

KI and KIV 10 through 20 HP units utilize an external spin-on separator element which is mounted immediately downstream of the separator tank. Bulk lubricant separation occurs in the separator reservoir mechanically and by gravity before coalescing filtration removes oil vapor from the air in the separator element media. A scavenging tube returns separated lubricant to a low pressure area of the compressor. See Figure 2.

1.5.3 Separator Element, 25 to 100 HP

KI and KIV 25 through 100 HP units are equipped with an internal separator element often referred to as a “Top Hat” style separator system. The lubricant separator reservoir contains an air/lubricant separator element beneath the tank’s lid. As air/lubricant mixture enters the reservoir, most of the lubricant separates from the air and falls toward the bottom of the reservoir.

As the air passes through the lubricant separator element, lubricant coalesces on the separator element. The lubricant which collects on the outside of the filter element drips into the bottom of the lubricant reservoir. The lubricant that migrates to the inside of the separator element drains by gravity to the bottom of the inside of the element where it is siphoned off via the scavenging return tube to a low pressure area of the compressor. See Figure 3.

The minimum operating pressure on a standard machine is 80 PSIG. Operating below this pressure may cause excessive carry-over of lubricant through the lubricant separator and high lubricant consumption

1.6 Description of Standard Capacity Control System

CAUTION

Care must be taken when working on or removing the inlet on a KI or KIV compressor to prevent loose parts from being inadvertently dropped into the compressor inlet during inspection and repair.

The KI and KIV series of air compressors (10 – 100 HP) use four (4) different inlet valves. Refer to the Description of Operation, Display and Controls manual for detailed information about your compressor capacity control system. The information in section 1.6 is general in nature.

The inlet valve is a combination modulating valve/check valve. Regardless of control pressure or valve position, the valve fully closes on shutdown. This action limits back spinning and stops lubricant flow.

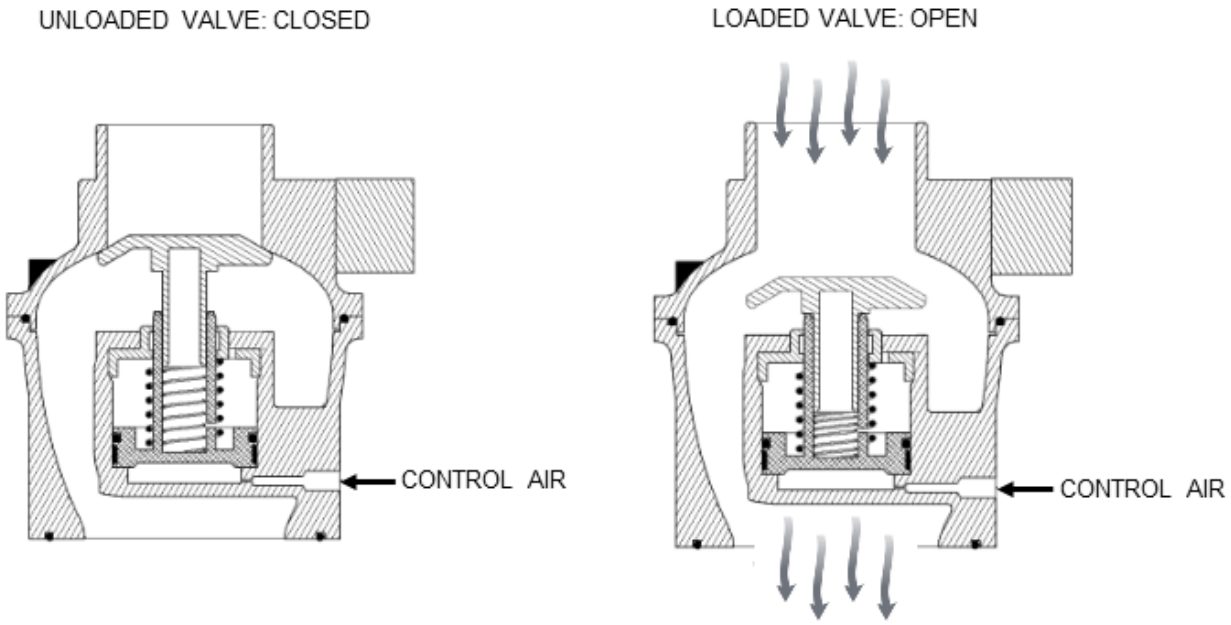

Figure 6. Typical Inlet Valve.

1.6.1 KI Series Standard Control, (10 – 100 HP), Load Unload Operation

The standard operating mode of the KI 10-100 HP unit is load / unload. The load and unload set points are set in the controller and are adjustable (see Description of Operations / Display and Controls manual).

The operation of the inlet valve is controlled by the internal springs and control air. When control air pressure is present the actuator / inlet valve piston moves and closes the inlet valve (unloads compressor). When the control air signal is removed, the inlet valve opens, and the compressor is loaded.

When the compressor is unloaded, the control solenoid is de-energized and the control air valve is open, allowing control air to close the inlet valve.

When the compressor is loaded, the control solenoid is energized and the control air valve is closed, bleeding off the control air allowing the inlet valve to open.

The KI-100 also has a differential pilot and has the ability to control the compressor with upper end modulation before unloading. See Description of Operations / Display and Controls manual.

1.6.2 KIV Series (10-100 HP), VFD Control and Load / Unload

The standard operating mode of the KIV-10 through 100 HP units is VFD speed control. The compressor has a target set pressure which adjusts the speed of the motor and thus the compressor outlet flow.

The controller also has LOAD and UNLOAD PRESSURE SET POINTS which will unload the compressor typically when the unit is at minimum speed. See Description of Operations / Display and Controls manual for additional details.

1.6.3 Standby Delay

All KI and KIV units have a standby delay timer which will shut the compressor off if it has been operating unloaded for a set period of time. The unload timer is adjustable. See Description of Operations / Display and Controls manual to set this timer.

1.7 Maximum Operating Pressure with Standard Motor

CAUTION

DO NOT exceed motor nameplate Service Factor amps at 100% capacity. Failure to follow this caution may result in damage to the drive motor.

Maximum operating pressure is limited by available motor power and the safety valve setting. Because of the many available air end, sheave and motor combinations it is not practical to define all combinations. When resetting operating pressures adjust pressure upward while observing an ammeter reading on all phases compared to motor nameplate limits. See Table 3.

Table 3. Maximum Operating Pressure with Standard Motor.

MODEL	STANDARD MOTOR HP	MAXIMUM PRESSURE (PSIG)
KI/KIV-10-100	10	110
KI/KIV-10-125	10	135
KI/KIV-10-150	10	160
KI/KIV-15-100	15	110
KI/KIV-15-125	15	135
KI/KIV-15-150	15	160
KI/KIV-20-100	20	110
KI/KIV-20-125	20	135
KI/KIV-20-150	20	160
KI/KIV-25-100	25	110
KI/KIV-25-125	25	135
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KI/KIV-50-100	50	110
KI/KIV-50-125	50	135
KI/KIV-50-150	50	160
KI/KIV-60-100	60	110
KI/KIV-60-125	60	135
KI/KIV-75-100	75	110
KI/KIV-75-125	75	135
KI/KIV-100-100	100	110
KI/KIV-100-125	100	135

KI & KIV Series

Rotary Screw Air Compressors

CHAPTER 2

INSTALLATION INSTRUCTIONS

2.0 INSTALLATION

2.1 General

On receipt of unit, check for any damage received in transit. If damage or missing parts are noted, report immediately to the delivering carrier. Care should be exercised when transporting the compressor to avoid damage to the components.

Check the compressor and motor base for support brackets which are painted red (see Chapter 6). These brackets should be removed after installation. Their purpose is solely to prevent damage during transport.

NOTE

KI(V)-10 units do not have these shipping brackets.

2.2 Location

The unit should be installed in a clean, well ventilated area with adequate service clearance on all sides of the machine. (Refer to the compressor assembly drawing) Select a location that will provide a clean, cool, dry source of air for the inlet and compressor ventilation.

It may be necessary to install an outside source of clean air to the machine for cooling and for the inlet air. The motor must not operate at full load for prolonged periods in ambient temperatures greater than 104 °F (40 °C). If ambient temperatures falls below 36 °F (2 °C), consult your Rogers factory representative for recommendations on how to protect the machine from cold conditions.

Air-cooled units require large quantities of cooling air to remove the heat from compression. Obstruction of the cooling air inlet and outlet areas of the compressor cabinet will negatively affect the reliability and performance of the compressor.

Ideally the cooling air is ducted directly outside the compressor room rather than having the cooling air discharged into the compressor room. Dilution cooling requires much higher volumes of cooling air to be ventilated out of the compressor room.

2.3 Foundation

The air compressor unit does not require a heavy foundation. However, to maintain drive alignment and prevent potentially damaging vibrations, the unit must be evenly supported. Mounting bolts, if used, must be carefully secured such that the compressor base is not distorted. Do not weld on compressor unit or base as damage to the bearings and or controls can occur. Do not use the wooden shipping pallet as a permanent base.

2.4 Compressor Rotation

Rotary screw compressors require rotation in the correct direction to prevent damage to the bearings and rotor clearances. It is critical that the rotation be established correctly during start up procedures and any time that the motor leads or supply power phasing may have been changed. Examples include during component replacement such as a motor, contactor or power supply components. Table 8 below states the correct rotation for each model. The compressor casings are marked for correct rotation. It can be noted that correct rotation will have the rotors separating from each other at the inlet.

Table 1. Compressor Rotation.

UNIT	DRIVE	DIRECTION
KI(V) 10 - 30	Belt	Clockwise
KI(V) 40 and 50	Belt	Counter Clockwise
KI(V) 60	Direct	Counter clockwise
KI(V) 75	Direct	Clockwise
KI(V) 100	Direct	Counter clockwise

Belt Drive units - Viewed when facing compressor shaft and belt sheave.
Direct Drive units – Viewed when standing behind the motor facing compressor shaft

2.5 V-Belt Drive System (10-50 HP)

2.5.1 V-Belt Tension Adjustment

The KI-Series and KIV-Series compressors (belt driven 10 through 50 HP) are equipped with an automatic belt-tensioning device and requires no adjustments between belt replacements. Belt tension is established by springs between the compressor assembly base and the motor mounting plate.

By compressing the springs, additional tension is created on the belts. Spring compression dimensions are listed Table 2 below:

Table 2. Spring Height Dimensions.

UNIT	DRIVE	DIMENSIONS
KI(V) 10 - 50	Belt	2.125 to 2.250 in (5.4 to 6.4 cm)

When a spring is relaxed it should have a dimension of 2.375 in (6 cm).

Measurements should be made from the face of the drive mounting plate to the top of the washer under the lock nuts. See Figure 1.

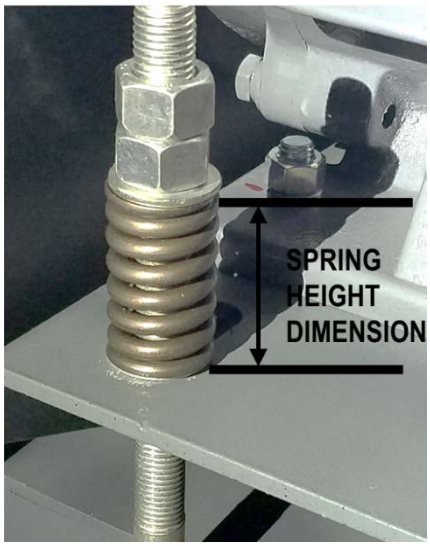

Figure 1. V-Belt Tension Spring Height Measurement.

2.5.2 Belt Alignment

Examples of poor belt alignment are shown in Figure 2.

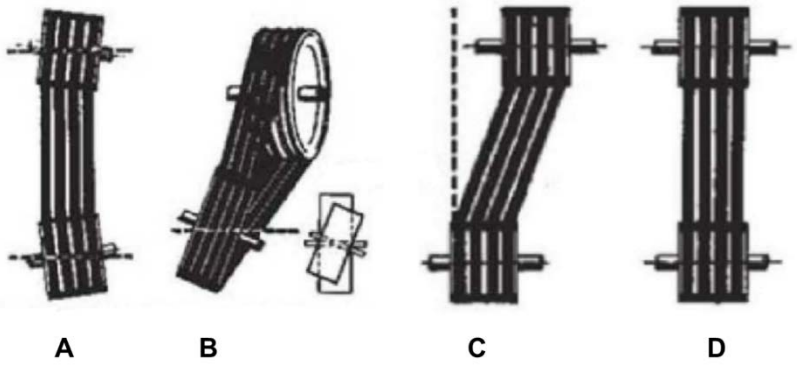

Figure 2. V-Belt Alignment.

a. Drive and driven shafts are not in alignment.

b. Driven shaft has angular misalignment.

c. Sheave locations are not inline.

d. Correct location of sheaves, belts are inline and parallel.

2.5.3 V-Belt Inspection

Remove belt guard and inspect belt condition during the 6,000 hour service or whenever conditions indicate there may be a problem.

Check sheave grooves for nicks, scratches and wear. Belts should be inspected for unusual wear or cracks. Thoroughly inspect the bore of the sheave and surface of the bushing.

Any paint, dirt, metal chips, fluid or grease MUST be removed. It is important to note that sheave condition and alignment are vital to V-belt life and performance. Sheaves should be carefully checked whenever V-belts are replaced. Mount the sheaves close to the compressor and motor housing to reduce strain on bearings from side-load.

2.6 D-Face Mounted Drive System (60 to 100 HP)

Once the motor is bolted into the compressor's D-Face mount at the factory, alignment is insured. However, the coupling halves should be loosened and retracted during start up to insure the air end rotates freely and motor rotation can be checked.

Once motor rotation is verified, the coupling halves may be pushed together with the coupling element sandwiched between them. Do not force the hubs together or leave a gap between the hubs and element. Simple contact of the hubs with the element is sufficient.

Do not operate the compressor without the element. Tighten the set screws on the coupling hubs to secure them and the key to the shaft. The motor feet and compressor are supported by flexible vibration isolating mounts to minimize transmission of vibration energy into the assembly base.

Coupling element and hubs should be inspected during the 6,000 hour service or annually for wear and replaced as necessary if corrosion, indentation, twisting or other deformation or degradation of materials is noted.

2.7 Cooling

Air compressors generate substantial quantities of waste heat. Careful consideration should be given to the placement of the air compressor and the handling of the waste heat.

Install compressor so that there is no obstruction to air flow into and out of the cooler. Be especially careful to avoid circumstances that allow hot air to re-circulate (such as near walls and ceilings), inadequate room ventilation or placing the unit too close to other heat sources. See section 4.4 for cooling data.

Maintain coolers free of dust, dirt, and foreign debris by choosing a location that minimizes exposure. Ducting from discharge of air cooled coolers and require special design considerations to maintain sufficient air flow for ventilation. Additional assist fan(s) may be necessary. Contact your Rogers factory representative for assistance.

WARNING

Do not spray water on coolers during operation. Injury or death may result due to electrocution. Damage to electrical components may also occur.

Lockout/Tagout the compressor when cleaning coolers. When cleaning is necessary, if possible, remove shroud for best results. Vacuum or blow out large, loose debris.

For more extensive cleaning, protect electrical components such as the motor and starter and pressure wash cooler cores from both sides, taking care to avoid damage to aluminum fins and fan blades. Wipe all fan blades clean. Replace shroud. Ensure coolers are dry prior to returning to service.

Additional panel filters can be mounted on the exterior of the compressor cabinet to filter cooling air as it enters the compressor cabinet. Contact your Rogers factory representative for assistance.

2.8 Blowdown

NOTE

Maintenance of the aftercooler is the same as the lubricant cooler and can be performed at the same time.

An aftercooler is installed between the combination minimum pressure / check valve and the compressor package discharge. The aftercooler is mounted alongside of the lubricant cooler and utilizes the same cooling fan for air flow. The aftercooler reduces the discharge air temperature often below the pressure dewpoint temperature of the compressed air.

Condensation will occur is this situation and liquid moisture will need to be removed. An optional moisture separator may have been purchased with your compressor to remove bulk moisture from the air stream.

2.9 Optional Moisture Separator and Drain

An optional moisture separator and automatic drain may have been purchased with your air compressor. If so, it should be mounted in the discharge piping shortly after leaving the compressor cabinet. The moisture separator removes the condensed moisture by mechanical separation, gravity and centrifugal action. The water is then expelled from the system to drain by a float type automatic drain.

Small amounts of lubricant may be present in the condensate and must be disposed of properly. A wet (control) air receiver can also perform the moisture removal function provided the compressed air flows through the receiver. Additional air treatment may be needed for your application to meet the requirements for higher quality air. Air dryers, filters and receivers are available. Contact the factory for further information.

2.10 Package Discharge Service Valve

A customer supplied package discharge service valve must be installed immediately following the compressor assembly or moisture separator (if supplied) and before connection to downstream air treatment devices, air receiver and compressed air system header. This valve will provide maximum safety and flexibility for servicing the air compressor. The valve should be a full port design to reduce pressure loss during operation.

2.11 Air Piping

WARNING

DO NOT use plastic pipe or rubber hose(s) in any part of the main air distribution system. Doing so may result in serious injury to personnel and damage to equipment.

The maximum recommended CFM free air for schedule 40 steel pipe is tabulated below. This is based on 1/2 PSI pressure drop per 100 feet of pipe at 100 PSIG operating pressure.

Table 3. Maximum CFM for Schedule 40 Pipe.

PIPE DIA.	MAX CFM
1/2 IN	10 CFM
3/4 IN	20 CFM
1 IN	40 CFM
1-1/4 IN	100 CFM
1-1/2 IN	150 CFM
2 IN	300 CFM
2-1/2 IN	450 CFM
3 IN	800 CFM

Care must be taken to avoid placing a strain or bind in the piping when connecting to the compressor. Flexible connections are strongly recommended when connecting to plant piping to minimize vibration and avoid piping strain.

CAUTION

Failure to drain moisture away from the compressor may result in damage from contamination of the lubricant. Contaminated lubricant can damage equipment and failure.

Air piping should be level with or have a drop in elevation at the package outlet in order to drain the moisture in a tank or moisture separator. See the Compressor assembly drawing for additional information.

2.12 Air Receiver

An auxiliary air receiver is necessary for most applications. Contact your Rogers factory representative for proper sizing of a receiver for your application. Do not connect a rotary screw compressor on the same air line with a reciprocating unit before the air receiver. The pulsating pressure generated by the reciprocating compressor may cause erratic operation of the rotary screw compressor.

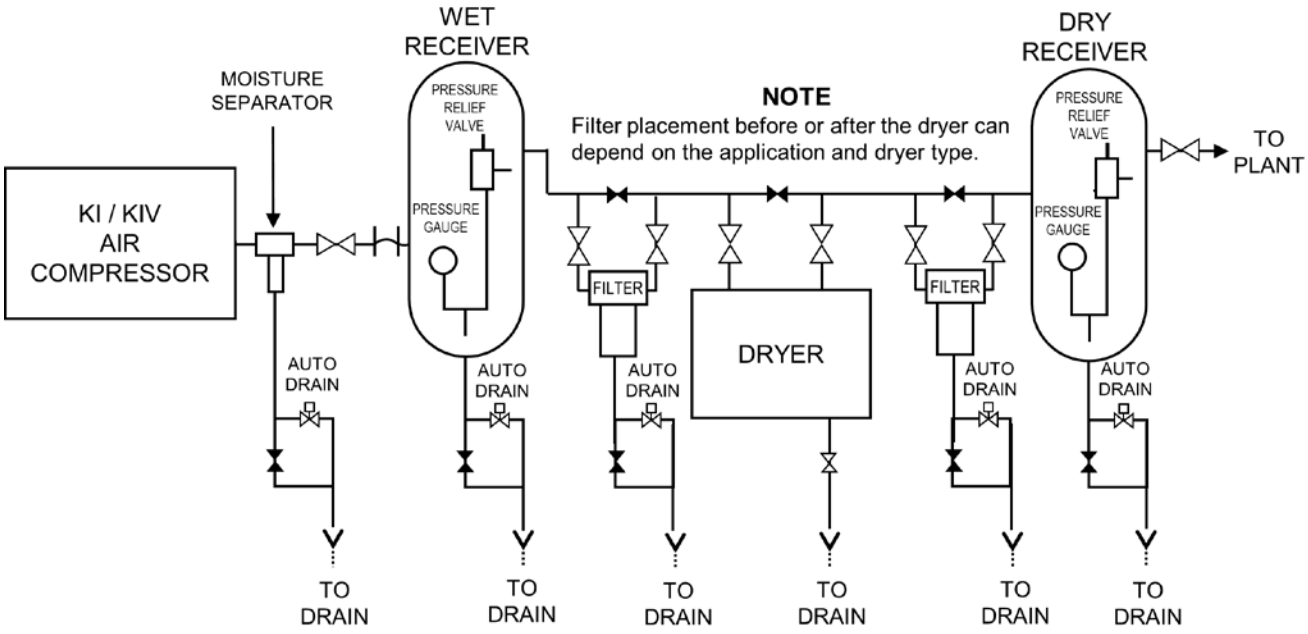

Figure 3. Typical Installation.

KI & KIV Series

Rotary Screw Air Compressors

CHAPTER 3

ELECTRICAL INFORMATION

3.0 ELECTRICAL

3.1 Starter and Wiring

The separator wiring diagram furnished with the starter should be followed. See Description of Operations / Display and Control manual for typical schematics. The control panel is pre-wired and receives control power from terminals on the line side of the motor starter. The control transformer, located in the control panel, is sized for the compressor controls only. Do not connect additional loads to this transformer. During initial set up check to see if transformer primary is wired for proper voltage.

3.1.1 Voltage

KI-Series (10 – 50 HP) are configured so that the operating voltage can be changed to suit typical power supply voltages in North America. It will be necessary to change several wiring connections on compressor components and control settings to properly convert a machine from one voltage configuration to another, as follows:

1. Main Motor – Wiring connection change
2. Fan Motor – Wiring connection change
3. Control Voltage Transformer – Wiring connection change
4. Main Motor Overload setting – Control Panel Setting Change
5. Fan Motor Overload setting – Control Panel Setting Change

The KI (60-100 HP) and all KIV compressors are 460 volt only.

3.1.2 Steps for Voltage Conversion

WARNING

The following procedures must be performed by qualified personnel. Failure to do so may result in death or personnel due to electrocution.

Changing the voltage connections for the KI (10-50 HP), should follow these generalized steps:

1. Main Motor – the main motor wiring connection diagrams for each supply voltage are supplied on the electrical schematic for the machine. Change the connection wires to the desired configuration in the main motor at the starter on the load side of the main motor contactors or terminal blocks, according to the electrical schematic.
2. Fan motor - the fan motor wiring connection diagrams for each supply voltage are supplied on inside the fan motor junction box and on the electrical schematic for the machine. Change the connection wires to the desired configuration in the main motor at the fan motor conduit box for 10 – 30 HP units and at the starter box terminal connections for 40 – 50 HP units, according to the electrical schematic.
3. Control Voltage Transformer - the transformer has multiple input tap connection points for various voltages. Connect the input wires according to the supplied voltage.

4. Main Motor Overloads - the main motor overload can be changed in the menu of the controller. It will be necessary to power the machine back up to make these changes. Power up the machine, but do not start it. See Description of Operations / Display and Control manual for overload setting screen.

5. Fan Motor Overloads – the fan motor overload can be changed in the menu of the controller. It will be necessary to power the machine back up to make these changes. Power up the machine, but do not start it. See Description of Operations / Display and Control manual for overload setting screen.

3.2 Motor Rotation

WARNING

Double check the wiring connections to make certain they are secure and properly made. Incorrect connections could cause equipment damage, injury or death.

WARNING

It is critical that the rotation be established correctly during start up procedures and any time that the motor leads or supply power phasing may have been changed.

An electronic phase monitor is supplied within the CDP controller. Connecting the machine to power should indicate on the compressor CDP controller's display whether the rotation is correct or needs to be reversed, due to incoming supply power phasing.

The Display will read, 'FAULT – TRIP: PHASES REVERSED' when the rotation is incorrect.
Rotation must be checked for both the main motor and the fan motor before the machine is placed into service. Rotation can be changed by switching any two of the three electrical supply leads with each other in the main connection terminal. See table 8 for correct rotation of various models.

3.3 Blowdown Valve

The sump blowdown valve (sometimes called control air solenoid) is a normally open solenoid valve that is incorporated into the inlet valve control system and vents pressure from the separator tank back to the compressor inlet downstream of the inlet filter. The purpose of this valve is to relieve separator tank pressure when the machine is unloaded or turned off.

When unloaded, the blowdown valve relieves pressure in the separator tank to 30 - 40 psig. This reduces power consumption by reducing the back pressure on the compressor while unloaded. The residual sump pressure also provides the motive force to move the oil through the oil cooler, thermo mixing valve, oil filter, and finally back into the compressor.

When the compressor is turned off, the compressor unloads and the STOP DELAY TIMER starts counting down. When the STOP DELAY TIMER reaches zero the compressor motor stops. The RE-START TIME DELAY now begins another count down to zero before the compressor can be restarted. This allows sufficient time for the separator tank to blowdown to zero psig before attempting to re-start. See Description of Operations / Display and Control manual for complete details.

3.4 Compressor Drive Motor

CAUTION

Incoming voltage must be within 10% of drive motor nameplate voltage, when the motor is operating at full load. Operating the unit out of the 10% range will damage the drive motor and associated components.

3.4.1 General

Motors of various makes are used on Rogers KI and KIV Series units. Check motor connections for proper voltage at the motor terminals.

3.4.2 Motor Lubrication

Refer to motor manufacturer's operating instructions for lubrication data. Care should be exercised when lubricating.

3.5 Local Display

See KI and KIV Series Description of Operations / Display and Controls manual for a full description of features, parameters and navigation.

3.6 Electrical Schematic

The specific schematic for your compressor assembly is located in Chapter 6 of this manual and inside the electrical panel door. It is critically important that the schematic be used.

KI & KIV Series

Rotary Screw Air Compressors

CHAPTER 4

COMPRESSOR LUBRICANT

4.0 COMPRESSOR LUBRICATION

4.1 General

Unless otherwise specified, the compressor is initially filled with Rogers CLS46 Synthetic Lubricant. Consult your Rogers factory representative before changing lubricants.

Ensure bulk storage of lubricant and lubricant handling tools (i.e., pumps, hoses) are isolated from contamination such as other lubricants, rain, sleet, humidity, dust, sand, etc.

The use of improper lubricant or extended lubricant change intervals will result in one or more of the following:

1. Excessive lubricant consumption
2. Heavy varnish deposits
3. Heavy sludge deposits
4. Premature bearing failure
5. Rotor damage
6. Lubricant separator damage
7. Overheating
8. Clogged lubricant filters

4.2 Lubricant Service Intervals

WARNING

You must stop the compressor and relieve pressure from the unit before adding lubricant. Not doing so may result in death or injury to personnel and damage to equipment.

NOTE

Alternative lubricants may have different change intervals, contact you Rogers factory representative for assistance before changing to alternative lubricants..

The standard factory lubricant fill is Rogers CLS-46. At 1,000 hour intervals, submit a lubricant sample to Rogers factory for analysis. Change lubricant every 6,000 hours for clean environments and operating temperatures below 190 °F (88 °C).

Change lubricant every 3,000 hours if compressor is operating in dirty environment or air discharge temperature is above 190 °F (88 °C).

Lubricant testing results may dictate change intervals sooner than 3,000 hours if harsh environmental conditions exist, but otherwise expect lubricant testing results to suggest a change interval between 3,000 and 6,000 hours of operation.

4.3 Lubricant Level Check

Check lubricant level in reservoir daily. Lubricant level must be checked with unit running at a consistent pressure and loaded. The lubricant level should always be visible in the sight glass and never higher than the run zone as indicated on the unit.

4.4 Lubricant System / Cooling Data

Table 1. Lubricant / Cooling Data.

MODELS	SYSTEM CAPACITY GAL (L)	FAN HP	COOLING AIR (CFM)	LUBRICANT COOLER HEAT REJECTION (BTU/MIN)	BLOWDOWN HEAT REJECTION (BTU/MIN)
KI/KIV-10	2 (7.5)	0.5	1,800	351	88
KI/KIV-15	3 (11.3)	0.5	1,800	537	134
KI/KIV-20	3 (11.3)	0.5	1,800	792	198
KI/KIV-25	4.25 (16)	1.0	3,600	976	244
KI/KIV-30	4.25 (16)	1.0	3,600	1,209	302
KI/KIV-40	7.5 (28)	1.0	3,600	1,463	373
KI/KIV-50	7.5 (28)	1.0	3,600	1,775	444
KI/KIV-60	8 (28.3)	1.0	3,600	1,880	470
KI/KIV-75	10 (37.8)	1.5	5,500	2,603	651
KI/KIV-100	12 (45.4)	3.0	8,900	3,257	814

4.5 Special Maintenance of Compressor Lubricant System

4.5.1 Deposits

Because the lubricant system operates under conditions of elevated temperature and pressure, solid or semi-solid deposits may occur. However, proper installation, maintenance and filtration and lubricant change intervals will greatly reduce the possibility of deposit formation.

Such deposits can interfere with operation of valves, filters and related cooling system equipment. Minor deposits may be removed by flushing the system with an approved cleaning agent. Consult with you Rogers factory representative for recommendations.

Completely drain lubricant while hot from every component that contains lubricant:

1. Replace lubricant filter and separator.
2. Fill machine with a factory-approved cleaning agent.
3. Operate the machine according to the cleaning agent manufacturer’s instructions, typically after 500 hours of operation.
4. Completely drain cleaning agent while hot from every component that contains lubricant.

A second flush may be required, as determined with laboratory testing.

1. Replace lubricant filter and separator.
2. Fill machine with new, clean lubricant.

3. Operate the machine for 15 minutes and then collect a lubricant sample for laboratory analysis.

The first lubricant change interval may need to be shortened to allow for complete removal of the cleaning agent and contaminants.

The laboratory results will indicate the extent which cleaning agent and contaminants are still in the system and determine when the pre-emptive lubricant change interval should occur.

Disassembly and mechanical cleaning will be required for removal of major semi-solid deposits or solid deposits. It is therefore important that the lubricant system be properly maintained, and that lubricant grades, types or brands not be mixed.

4.5.2 Long Term Storage

When starting a unit which has been idle for several months, it is recommended that the connection above the inlet valve be removed and compressor lubricant be poured into the unit through the intake. Add 1/2 cup of lubricant for every 10 HP of compressor size rating. Care must always be exercised when working with inlet air and lubricant lines to keep foreign matter from entering the system. The air compressor rotors run at close clearances and could be severely damaged by foreign material.

4.5.3 Changing Lubricants

When changing lubricant, always drain all components as thoroughly as possible to prevent contamination of fresh lubricant. Drain when lubricant is hot to help prevent varnish deposits and to carry away impurities. Completely drain lubricant system, including reservoir, air end, cooler(s) and piping.

4.5.4 Obtain Sample

Preferred sampling location is at the fluid filter during element change interval. If unable to use this point, proceed as follows:

1. Shutdown and lockout compressor.
2. Relieve pressure in reservoir.
3. Remove plug from reservoir drain line.
4. Drain water from reservoir and discard in approved manner.
5. Fill sample bottle with lubricant.
6. Close valve and replace plug in drain line.
7. Return compressor to service and check fluid level during operation.

4.5.5 Lubricant Sample Kit

A fluid analysis kit containing a sample bottle, labels and instructions are available from Rogers Machinery Company, Inc. Contact the Service Department to request part number CLS46-TESTKIT.

Collect a sample from the oil filter element or from the lubricant drain line supplied on the separator tank, after removing any liquid water and disposing.

Provide all the information shown on the left-hand label in Figure 1. Be sure to provide all information of possible hazards related to a given sample. If a noteworthy situation exists, all information shall be clearly marked on the sample bottle label.

Tightly close the bottle and attach the information label on the side of the bottle. Place the labeled bottle in the mailer. Attach the shipping label (right-hand label in Figure 2) to the outside of the mailer and place it in the mail.

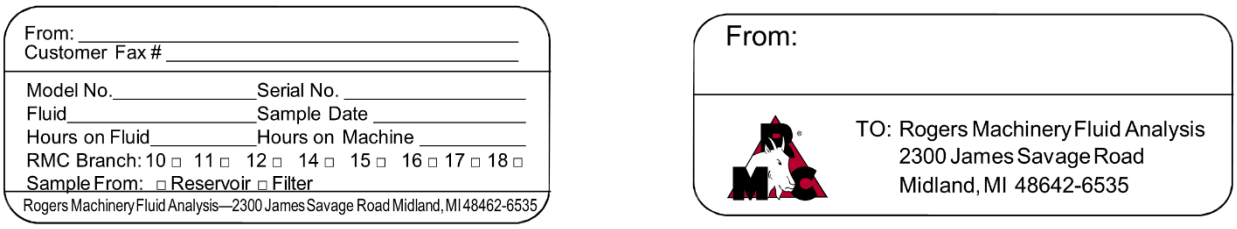

Figure 1. Lubricant Test Labels.

4.6 Lubricant Filter

The lubricant filter, shown below, is a spin on full-flow type, having a quality, high-efficiency element. The lubricant filter's purpose is to protect the close tolerances of the compressor and its bearings from damage from foreign material and capture particulate in the lubricant stream to prolong the life of the separator elements.

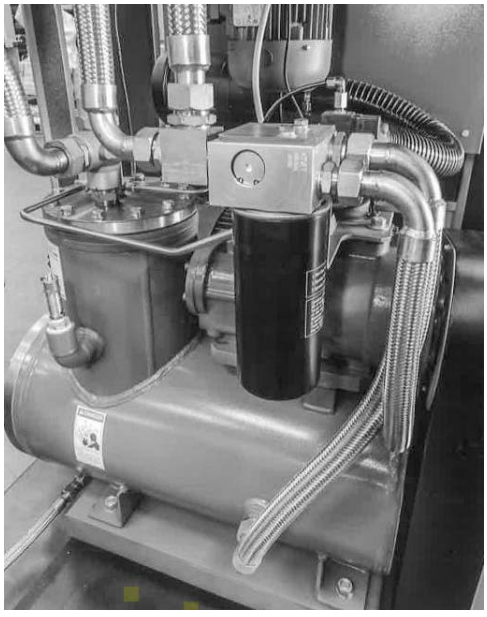

Figure 2. Spin-On Oil Filter.

4.6.1 Lubricant Filter Change Intervals

Lubricant filter elements should be changed every 1,000 hours.

4.7 Separator Element Replacement

4.7.1 Spin-On Style, 10 – 20 HP

NOTE

Each lubricant separator element is of one piece construction. Due to the nature of the unit it is not cleanable. Care should be taken in handling the element to avoid damage.

Replace the lubricant separator elements after every 3,000 hours of operation.

KI/KIV-10 and KI/KIV-15 units are supplied with a spin-on separator element, which threads on to the separator tank by an adapter and should not be mistaken for the lubricant filter. To replace the separator element:

1. Lock-Out/Tag Out the Equipment and ensure that the service valve at the discharge of the compressor has been closed. Vent the air between the service valve and the compressor check valve prior to proceeding.
2. Prepare area for collecting any residual lubricant that would escape.
3. Remove the lubricant separator element with a strap wrench.
4. Inspect lubricant head sealing surfaces and scavenging line.
5. Install new gasket or O-ring onto head.
6. Hand tighten element.
7. Secure element an additional 1/2 to 3/4 turn with strap wrench.
8. Re-tighten element after it has been heated and pressurized.

4.7.2 Top Hat Style, 25 – 100 HP

Figure 3. KI Top Hat Style Separator / Reservoir.

WARNING

A potential fire hazard exists if static electricity is allowed to build on the separator tank element. The staples are used to ground the separator element to the separator tank and prevent the buildup of static electricity. Failure to follow this warning may result in serious injury or death.

WARNING

Do not operate the equipment if electrical continuity cannot be registered between the separator element and the tank and lid. Failure to follow this warning may result in serious injury or death.

NOTE

Each element is of one piece construction. Due to the nature of the unit it is not cleanable. Care should be taken in handling the elements to avoid damage. DO NOT remove the ground staples in the gaskets for safety reasons.

Replace the lubricant separator elements after every 3,000 hours of operation.

KI/KIV-25 to 100 units are equipped with a top-hat style element which is contained within the separator tank and must be accessed through a bolt-on lid and the air outlet plumbing must be removed.

The system utilizes a scavenging line to remove lubricant that has been filtered and return it to the air end at a low pressure location. To replace the separator element:

1. Lock-Out/Tag Out the Equipment and ensure that the service valve at the discharge of the compressor has been closed. Vent the air between the service valve and the compressor check valve prior to proceeding.

2. Prepare area for collecting any residual lubricant that would escape.

3. Disconnect pressure transmitter and high temperature switch. Remove lubricant and scavenging line (steel tubes) from the fittings at the top of the reservoir cover plate. Disconnect air discharge plumbing at check valve. Carefully remove, deflect and tie the free ends of all remaining tubing away from reservoir flange without causing permanent set or deformation.

4. Take out cap screws which secure flange to reservoir. Lift cover off and place out of way.

5. Lift out lubricant separator elements and clean gasket sealing surfaces and tank internal surfaces, as required, to remove residual material.

6. Insert new lubricant separator elements and reassemble by reversing the above removal procedure. Ensure lubricant separators are centered in the reservoir access hole (not centered on bolts). Be sure to use new gaskets with metal staples in each. The purpose of the staple is to ground the separator element to prevent electrostatic buildup.

7. Inspect bolts for proper thread engagement. A short bolt can be identified as a bolt having less than one bolt diameter worth of thread engagement. A long bolt will bottom out without providing proper clamping force. Tighten all bolts by hand prior to using a wrench.

8. Tighten bolts evenly by proceeding around reservoir cover multiple times, using a cross pattern and not exceeding 1/6 turn (1 Flat) per bolt. This ensures even compression of gasket for proper sealing.

9. Reinstall scavenging tubes.

10. Check separator element to flange for electrical continuity with the tank and lid with an ohm meter. If continuity is not registered on the meter, disassemble and inspect the metal staples on the gaskets. Replace the gaskets, if necessary.

4.8 Lubricant Scavenging System

Figure 4. Scavenging Line Sight Glass.

Lubricant from inside the lubricant separator elements is returned to the inlet valve or air end by way of a scavenger tube positioned inside the lubricant separator element and via a tube to the compressor or inlet valve.

Cleaning of the scavenging system should be performed.

1. When no lubricant is seen moving through the sight glass(es). (See Figure 4)
2. When excessive lubricant carry-over is detected.
3. When separator elements are changed.

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KI & KIV Series

Rotary Screw Air Compressors

CHAPTER 5

AIR INLET FILTER INFORMATION

5.0 AIR INLET FILTER

CAUTION

Never service the air inlet filter while the unit is running. Doing so may cause damage to equipment.

Figure 1. KI and KIV Air Inlet Filter Housing (typical).

5.1 Air Inlet Filter Service

The multi-stage dry type air filter is designed to keep foreign material from entering the compressor. A pleated cellulose element within the filter housing should be changed every 1,000 hours. In a dirty

environment, the element can be blown out more frequently with dry compressed air, but should never be cleaned with water, cleaners or solvents.

While servicing, it is important to prevent dirt from entering the downstream side of the element. It is necessary to periodically inspect the air filter and inlet duct for leaks.

Figure 2. KI and KIV Air Inlet Filter Removal.

Service air filter (only with compressor shut down) as follows:

1. Lock out / Tag out the compressor before starting any service. Verify that the discharge service valve (customer supplied) is closed and that air pressure in the compressor has been drained to zero (0) psig. An open vent or drain will verify compressor pressure is zero (0) psig.

2. Remove cover from filter housing, unscrew element retaining nuts and withdraw element.

3. Before reinserting filter elements, carefully wipe dust out of inside of filter housing. Also check that housing is in good condition (no serious dents or open seams).

4. Reinsert filter elements, secure with retaining wing nuts, and replace housing cover.

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KI & KIV Series

Rotary Screw Air Compressors

CHAPTER 6

COMPRESSOR OPERATIONS

6.0 OPERATIONS

6.1 Initial Start-Up Procedures

CAUTION

Care must always be exercised when working with inlet air filter and lubricant lines to keep foreign matter from entering the system. Failure to do so may result in equipment damage.

It is the user's responsibility to correctly install and connect the unit. It is the responsibility of the person performing the start-up to read and understand the contents of this Operations and Maintenance Manual along with the Description of Operations / Display and Controls Manual.

If starting a unit that has been idle for several months, it is recommended that the connection above the inlet valve be removed and compressor lubricant be poured into the unit through the intake. Add 4 U.S. fluid ounces (118 mL) of lubricant for every 10 HP of rated motor for the unit.

Before the machine is started, check the following:

1. Machine is intact with no visible damage due to transit.
2. Remove shipping straps and orange/red brackets. Except on the KI/KIV-10.
3. Compressor unit is set flat on a firm surface and evenly supported on all mounting pads. Do not use the wooden shipping pallet as a permanent mounting base.
4. Ample cooling air and ventilation is provided.
5. Verify proper lubricant level in sight tube.
6. Verify air end turns over by hand freely. This may require that the belt guard or coupling guard be removed.
7. Verify V-belt tension and alignment on belt driven compressors.
8. Verify motor coupling alignment on direct driven compressors.
9. Verify unit is supplied with proper voltage and wiring connections are properly made.
10. Check all electrical connections for tightness.
11. Power up equipment to determine if phase protection fault is shown. Correct as necessary.
12. Momentarily start motor (jog) and observe rotation. The KI and KIV units are equipped with phase protection which will not allow the unit to start. If the unit does not start when "jogged" check phase monitor and phase protection. The unit must not be operated in reverse rotation for more than a few rotations or serious damage can occur.
13. Verify correct fan rotation such that fan is pushing air through cooler. Cooling air should enter the cabinet, pass through the fan, the cooler cores, and finally exit the compressor cabinet.

Once the above pre-start check list is complete it is permissible to start and operate the unit, by:

1. Start compressor; look for excessive vibration, lubricant leaks, proper operating temperatures and pressures.

2. Observe operating temperature until stabilized. If the air temperature continues to rise above 180 °F (*82 °C), shut down the compressor and investigate the cause.

3. Maximum pressure is limited by available power. Do not exceed motor name plate rating for service factor amps or safety valve setting.

4. Completely fill out the daily record card (example shown in Addendum 1). Be sure to take voltage and amperage readings at constant pressure and with the compressor loaded. A separate start-up form is provided with each new air compressor. The form needs to be completely filled out and sent back to the factory for warranty purposes.

5. Test high temperature safety shutdown for proper operation by lowering the trip setting in the CDP controller until the compressor shuts down. Compare the CDP setting with the oil temperature. They should be similar values.

6. Another method for testing the high temperature shut down would be to raise the fan temperature turn on set point to 237 °F (114 °C). The fan will not start until this temperature is reached. If the high temperature shut down is working properly the compressor will shut down at 235 °F (113 °C). RESET THE FAN TEMPERATURE TURN ON SET POINT BACK TO FACTORY SETTINGS (60 °F (16 °C)).

6.2 Starting Unit (After Initial Start Up)

1. Ensure lubricant is present in lubricant sight tube.

2. Press start button.

3. Watch operating temperature while unit pressure rises.

4. Observe operating parameters, check readings against normal operating ranges.

5. Check for lubricant leaks.

6. Make notations on Daily Record Card as indicated.

7. KI and KIV units are equipped with a restart delay initially set at 30 seconds. The unit will not restart until this timer has counted down to zero after the previous stop.

6.3 Stopping Unit (Normal Shut Down)

1. Press stop button on the controller. The blow-down valve will automatically depressurize the reservoir. The machine will continue to run for a pre-determined time (stop delay – initially set at 45 seconds) to stabilize unloaded operation before it shuts down the main motor. Once stopped the restart delay counter will begin its countdown. The unit cannot start until this counter has reached zero.

2. Do not use the Emergency Stop Button to shut the unit down under normal conditions. The Emergency Stop Button is intended for use during emergency only. Emergency Stop is a harsh and abrupt stop. While intermittent use of this feature should not significantly damage the compressor, repeated use increases the risk of damage to the compressor.

6.4 Service Intervals

6.4.1 Daily Checks—Unit Running at Operating Conditions

1. Check lubricant level.
2. Check for existing alarms.
3. Check operating temperatures.
4. Check air-cooled cooler operation.
5. Observe capacity control system for proper operation (See Description of Operations / Display and Control manual).
6. Check for lubricant or air leaks.
7. Check next service intervals.
8. Fill in daily record card (See Section 8.0).

6.4.2 When Required by Indicators and Gauges

1. Add lubricant.
2. Change filter elements (air, lubricant, separator.)
3. Perform any prescribed service intervals indicated by the controller.

6.4.3 Monthly

1. Test high temperature safety devices.
2. Mail daily record card to factory.

6.4.4 Every 1,000 Hours

1. Change lubricant filter element.
2. Change inlet air filter element.
3. Submit lubricant sample for testing.
4. Test high temperature trips.

6.4.5 Every 3,000 Hours

1. Perform 1,000 hour interval service items.
2. Change lubricant (earlier if indicated by a testing program).
3. Change separator elements.
4. Clean differential pilot valve, if equipped.

5. Inspect drains and air-cooled coolers. Clean if necessary.

6.4.6 Every 6,000 Hours

1. Perform 3,000 hour service items.
2. Change lubricant,
3. Inspect blowdown valve.
4. Inspect V-belts and sheaves on 10-50 HP units. Replace as necessary.
5. Inspect drive coupling element on 60-100 HP units. Replace as necessary.
6. Manually test reservoir relief valve (while depressurized).
7. Check all electrical connections for tightness.
8. Check and clean scavenging line and sight glass, if necessary.

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KI & KIV Series

Rotary Screw Air Compressors

CHAPTER 7

TROUBLESHOOTING

7.0 TROUBLESHOOTING GUIDE

7.1 FAILURE TO START

POSSIBLE CAUSE	CORRECTION
Power not turned “ON”.	Turn “ON” by closing the main disconnect.
Blown control circuit fuse.	Find and correct cause. Replace fuse on transformer or power supply.
Blown 460 volt Phase Protector fuse (s)	Find and correct cause. Replace fuse(s).
High air temperature switch open. (see “High Discharge Air Temperature”, Section 7.9)	See Description of Operation for verification of input LED condition.
Overload relays tripped.	Correct the cause of the overload condition reset; the overload and press the reset keypad. See Description of Operation / Display and Controls manual.
Faulty starter contactor.	Check the contactor for malfunction, burnt contacts, or loose connections.
Power failure.	Check incoming power supply.
Defective sensor.	Check pressure switch, temperature switch or remote device. See Description of Operation.
Loose wire connections.	Check all wiring terminals for contact and tightness.
Faulty power supply.	Check 120 VAC and 24 VDC power.
Alarm not reset.	Correct fault and reset alarm.
Start Delay Timer is still counting down.	Wait for counter to reach zero.

7.2 UNSCHEDULED SHUTDOWN

POSSIBLE CAUSE	CORRECTION
High air discharge temperature (see “High Discharge Air Temperature”, Section 7.9)	Check Compressor Display and see Description of Operation for verification.
Thermal overload relays tripping.	See “Overload Relay Tripping”, Section 7.3.
Power failure.	Check incoming power supply.
Defective sensor.	Check pressure switch, temperature switch or remote device. See Description of Operation.
Loose wire connections.	Check all wiring terminals for contact and tightness.
High reservoir pressure.	See “High Reservoir Pressure”, Section 7.8.
Faulty Compressor Control Display.	See Description of Operations. Replace as necessary.

7.3 OVERLOAD RELAY TRIPPING

POSSIBLE CAUSE	CORRECTION
Excessive discharge pressure.	Lower full load pressure setting at pilot valve and/or at Compressor Display panel.
Low voltage and/or power factor and/or voltage imbalance.	Check voltage, amperages and power factor while operating the unit at full load and full pressure.
Incorrect overload setting.	Check motor name plate and compare to overload setting within Compressor Control panel.
Faulty motor.	Remove motor and have tested at motor manufacturer repair center.

POSSIBLE CAUSE	CORRECTION
Loose motor or starter wiring.	Check all wiring terminals for contact and tightness.

7.4 EXCESSIVE LUBRICANT CONSUMPTION

POSSIBLE CAUSE	CORRECTION
Ruptured lubricant cooler.	Check cooler for leaks. Replace cooler, if required.
Leak in lubricant tubing and connections.	Check for leaks and repair. See Section 4.0. Check for proper lubricant.
Seal failure.	Replace seal. Check for proper lubricant. Contact your Rogers factory representative.
Incorrect or contaminated lubricant.	Use recommended lubricants only. — See Section 4.0
Lubricant Carry-over	See “Excessive Lubricant Carry-over” see section 7.5.
Faulty or damaged separator element.	Replace air/lubricant separator element per Section 4.7.
Leaks from lubricant filter gaskets.	Inspect and replace gasket as necessary. See Section 4.6.
Leaks from reservoir cover.	Inspect and replace gasket as necessary. See Section 4.7

7.5 EXCESSIVE LUBRICANT CARRY-OVER

POSSIBLE CAUSE	CORRECTION
Lubricant level too high in reservoir.	Lower lubricant level to recommended level by draining the sump after depressurization. Check drainage for condensation.
Cycling between load and unload excessively.	See “Excessive Cycling Between Load and Unload”, Section 7.11.
Plugged or broken scavenging lines.	Check scavenging system. Clean or replace as required.
Excessive lubricant foaming.	Water in lubricant. Change lubricant and/or increase operating temperature.
Low reservoir pressure.	Reservoir pressure should not fall below 80 PSIG when running loaded.
Improper adjustment of scavenging line.	Adjust per Section 4.8

7.6 FREQUENT AIR / LUBRICANT SEPARATOR CLOGGING

POSSIBLE CAUSE	CORRECTION
Faulty air filter or inlet line.	Replace elements and/or air inlet connection.
Faulty lubricant filter or filter head.	Replace lubricant filter element. Inspect filter head for open bypass.
Lubricant breakdown.	Change lubricant at prescribed intervals. Possible lubricant contamination. Ensure lubricant sample is analyzed frequently. See Section 4.0.
Contamination of lubricant.	Change lubricant and lubricant filter, and flush if necessary. Check for contamination source. See Section 4.0.
Incorrect lubricant filter and/or separator element.	Use Rogers’ replacement elements only. Do not attempt to clean separator elements.
Emulsion forming in separator.	Operate compressor at recommended reservoir pressure and lubricant injection temperature. Contact your Rogers factory representative.
Mixing different grades or types of lubricant.	DO NOT MIX DIFFERENT GRADES OR TYPES OF LUBRICANT. DO NOT MIX LUBRICANTS OF DIFFERENT MANUFACTURERS.

7.7 LOW RESERVOIR PRESSURE / LOW AIR DELIVERY	
POSSIBLE CAUSE	**CORRECTION**
Excessive leaks in service lines.	Check air system for leaks, fix leaks.
Inlet valve not fully open.	Replace valve. Contact your Rogers factory representative.
Plugged air intake filter.	Clean air filter element or replace with new element.
Air pressure settings not set correctly.	Readjust the air pressure set points to the desired load and unload pressure. See Description of Operations.
Faulty blowdown valve or unloading valve (open while loaded).	Verify control setting. Repair or replace, if necessary. See Description of Operations / Display and Controls manual. Check wiring connections.
Restriction in system.	Check separator element, aftercooler, dryer and filters for restriction. Check for ice formation internal to aftercooler. Contact your Rogers factory representative.
Faulty control line regulator.	Repair/replace regulator.
Faulty safety relief valve.	Repair/replace, as necessary.
High altitude installation.	Contact your Rogers factory representative.

7.8 HIGH DISCHARGE PRESSURE	
POSSIBLE CAUSE	**CORRECTION**
Fails to unload Load/unload pressure settings incorrectly set.	Reset pressure set points to desired load/unload pressures. See Description of Operation / Display and Controls manual.
Faulty control line filter.	Check for leaks. Clean filter. Replace element.
Inlet valve not fully closed.	Inspect/Adjust inlet valve. See Section 1.6. See Description of Operation.
Leaky control air lines.	Inspect and repair leaks.
Plugged separator.	Replace with new air/lubricant separator. Determine cause of contamination. See “Separator Clogging”, Section 7.6.

7.9 HIGH DISCHARGE AIR TEMPERATURE AND/OR HIGH LUBRICANT INJECTION TEMPERATURE	
POSSIBLE CAUSE	**CORRECTION**
Inadequate circulation of cooling air at the cooler (air-cooled models).	See Section 2.5. Check cooler installations.
Low lubricant level in the reservoir.	Add lubricant to recommended level. See Section 4.3.
Lubricant line restrictions.	Check Lubricant piping system. Clean as required or replace.
Clogged lubricant filter.	Replace lubricant filter element(s).
Clogged lubricant cooler.	Check lubricant cooler for varnishing and deposits. See Section 4.5.1.
Excessive ambient temperatures.	Ventilate room or relocate compressor if necessary. Contact your Rogers factory representative. See Section 2.2
Incorrect fan rotation.	Verify correct fan rotation such that fan is pushing air through cooler. Cooling air should enter the cabinet,

	pass through the fan, then the cooler cores, and finally exit the compressor cabinet. See Section 6.1m.
Improper lubricant.	Use recommended lubricants only—see Section 4.0
Faulty temperature regulating valve.	Repair or replace as necessary.
Faulty sensors.	Check and replace. See Description of Operation.
POSSIBLE CAUSE	**CORRECTION**
Air end failure.	Contact your Rogers factory representative.
Incorrect cooler installation.	Contact your Rogers factory representative.

7.10 COMPRESSOR DOES NOT LOAD

POSSIBLE CAUSE	CORRECTION
Improper pressure setting.	Correct pressure set points entered. See Description of Operation.
Loose wiring connection.	Check and tighten wiring terminals.
Faulty air inlet valve assembly.	Check and repair air inlet valve.
Faulty unloading solenoid valve.	Repair or replace as necessary.
Faulty differential pilot valve or ice in valve.	Orifice plugged, clean or replace as necessary.
Faulty control air regulator / setting.	Replace, service, and/or set regulator.
Clogged control air filter.	Clean or replace filter element.

7.11 EXCESSIVE CYCLING BETWEEN LOAD AND UNLOAD

POSSIBLE CAUSE	CORRECTION
Insufficient system volume.	Provide additional volume by adding air receiver to system. See Section 2.12.
Air pressure load and unload settings too near the setting of the differential pilot valve.	Set load pressure set point lower than differential pilot valve setting. Separate load and unload settings in the Compressor Control panel. See Description of Operation.
Air pressure load and unload settings are too close to each other.	Reset load and unload settings. Typical settings are 10 psi apart
Downstream restriction in system between compressor and air receiver.	Check pressure drop from compressor discharge to first storage receiver. Often filters or dryers will plug creating excessive pressure drop which reduces the control band of the compressor control and may cause the compressor to short cycle. Check possible icing in aftercooler and / or refrigerated air dryer. See section 7.16
Leaks in control lines.	Check and repair any leaks.
Contaminants in control system.	Drain lines, service filter, check differential pilot valve orifice. Install heat tracing in cold environments (if due to ice).

7.12 EXCESSIVE WATER IN PLANT AIR DISTRIBUTION SYSTEM

POSSIBLE CAUSE	CORRECTION
Clogged moisture separator/trap.	Clean or replace as required. See Section 2.9.

Discharge air temperature excessive.	See “High Air Discharge Temperature”, Section 7.9.
Installation/Application.	Check other compressors on same system.
System requires compressed air dryer.	Contact your Rogers factory representative.
Plant receiver needs draining.	Drain receiver. Contact your Rogers factory representative. for automatic condensate drain options.

7.13 FREQUENT LUBRICANT FILTER CLOGGING

POSSIBLE CAUSE	CORRECTION
Incorrect lubricant filter.	Use genuine Rogers’ replacement filters rated for this service.
Faulty, incorrect or inadequate inlet air filter.	Replace air filter element. Check air inlet system for leaks. Use genuine Rogers replacement filters.
POSSIBLE CAUSE	**CORRECTION**
Lubricant breakdown.	See “Frequent Air/Lubricant Separator Clogging”, Section 7.6.
Lubricant contamination.	See Section 4.0.

7.14 SAFETY VALVE OPENS

POSSIBLE CAUSE	CORRECTION
Unload pressure setting too high.	Reset unload pressure setting. See Description of Operations / Display and Controls Manual.
Plugged separator.	Replace with new air/lubricant separator. Determine cause of contamination. See “Separator Clogging” Section 7.6.
Faulty pressure transmitter.	Test and replace if necessary.
Faulty safety valve.	Check safety valve for proper operation. Replace as needed.
High reservoir pressure.	See “High Reservoir Pressure”, see Section 7.8.

7.15 VIBRATION

POSSIBLE CAUSE	CORRECTION
Base not evenly supported.	Shim base as required. See Section 2.3.
Wooden pallet has rotted out.	Do not use wooden pallets for permanent mounting.
Motor and/or compressor not evenly supported.	Realign motor/compressor per Section 2.5 and 2.6
Loose compressor or motor mounting bolts.	Realign motor/compressor per Section 2.5 and 2.6.
Improper compressor to motor alignment	Realign motor/compressor per Section 2.5 and 2.6.
Defective motor bearing.	Contact your Rogers factory representative.
Defective compressor bearings.	Contact your Rogers factory representative.
Machine excited from other equipment operating nearby or discharge piping.	Machine must not vibrate while shut down. See Section 2.11.
Piping strain.	See Section 2.11
Unbalanced fan.	Replace fan.

7.16 ERRATIC INLET VALVE OPERATION	
POSSIBLE CAUSE	**CORRECTION**
Plant air system too small.	Install receiver. Contact your Rogers factory representative for sizing support. Check auto drain on existing receiver. The receiver may be full of liquid water.
Restriction in system.	Check pressure drop from compressor discharge to first storage receiver. Often filters or dryers will plug creating excessive pressure drop which eats into the control band of the compressor. Check possible icing in aftercooler and / or refrigerated air dryer.
Faulty inlet valve.	See Section 1.6. Contact your Rogers factory representative.
Faulty control system components	Repair or replace. See description of Operations.

7.17 FREQUENT INLET AIR FILTER CLOGGING (ALARMS IN <1,000 HRS. SERVICE)	
POSSIBLE CAUSE	**CORRECTION**
Compressor operating in highly contaminated atmosphere.	Move compressor to cleaner environment. Use remote air intake to air filter. Add panel filters to the cabinet cooling air intake.
Faulty filter service switch.	Test and replace switch as necessary.

7.18 COMPRESSOR DISPLAY PANEL (CDP) IS NOT ON OR NOT RESPONDING	
POSSIBLE CAUSE	**CORRECTION**
CDP not operating correctly.	Refer to CDP Description of Operations for panel troubleshooting.
Bad power supply.	Check power supply fuse. Replace fuse if necessary. Insure control power disconnect feeding the CDP is closed.
Loose wire or cable connections.	Check all wiring terminals and cable connections for contact and tightness.
No control power.	Check incoming power supply. Check control power fuses. Replace as required.
Unauthorized loads on control circuits.	Remove electrical loads not shown on electrical schematic supplied with compressor. Contact your Rogers factory representative.. See Section 3.1.

7.19 HIGH RESERVOIR PRESSURE	
POSSIBLE CAUSE	**CORRECTION**
Faulty pressure transmitter.	Check switch. Replace if necessary.
High Discharge Pressure	See “High Discharge Pressure”, Section 7.8.
Faulty Check Valve	Repair or replace check valve.
Clogged separator.	See “Frequent Air/Lubricant Separator Clogging”, Section 7.6.

KI & KIV Series

Rotary Screw Air Compressors

CHAPTER 8

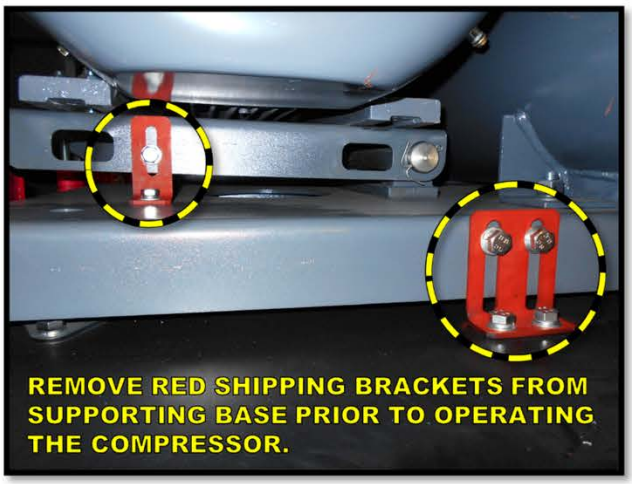
FORMS, RECORDS AND ELECTRICAL SCHEMATICS

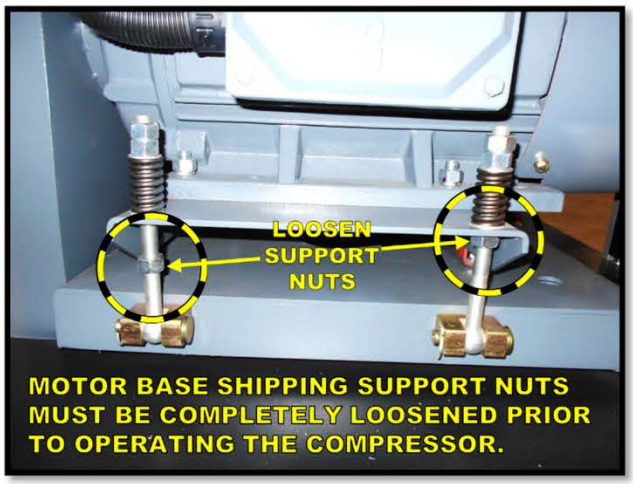
ROGERS®

IMPORTANT
Please Read

Remove red shipping brackets from supporting base and completely loosen motor base shipping support nuts prior to operating the compressor.

The red steel brackets located at the supporting base and support nuts on the under side of the belt tensioning posts are intended to stabilize the machinery during shipping. The brackets must be removed and the nuts completely loosened prior to compressor operation.





Contact Your Local Rogers Machinery Branch Office or Distributor With Any Questions.

360-736-9356 www.rogers-machinery.com FAX 360-736-8630

Rogers Machinery Oil-Lubricated
Rotary Screw Air Compressors

We value your business. Let us help you keep your system in top shape by providing us with your operating data.

We will review the readings when received and notify you if we see any readings that are abnormal.

FIRM/PLANT NAME _____ COMPRESSOR MODEL _____

CONTACT NAME _____ **SERIAL NO.** _____

PHONE _____ FAX OR E-MAIL _____ MONTH OF _____

DATE	EQUIP OUT PRESS (P1)	CAPACITY (%)	DIFF PRESSURE (ΔP)	TEMPERATURES			HOURMETERS		CHECK LUBE LEVEL	CHECK AIR FILTER	TAKEN BY	MAINTENANCE PERFORMED
				COMP OUT TEMP (T1)	(some models) LUBRICANT INJECTION (T2)	(some models) A/C AIR (T3)	Load/Off load (RUN)	Load Hours (LOAD)				
1												
2												
3												
4												
5												
6												
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RECORD COMPRESSOR INFORMATION DAILY – TURN OVER TO RECORD SERVICE INFORMATION

ROGERS®
Machinery
Company, Inc.

3509 Galvin Road
P.O. Box 548
Centralia, WA 98531
360.736.9356

K SERIES ROTARY SCREW AIR COMPRESSOR START-UP REPORT

Start-up Date	Model	Serial Number
Distributor / Branch	Customer Name (Company)	
Address	Address	
City, State, ZIP	City, State, ZIP	
Phone No. / FAX No.	Phone No. / FAX No.	
Start-up Person(s) (Please Print)	Customer Contact Name	
Work Order No.	Lubricant Type / Manufacturer Factory Fill: ☐ Other: ☐	
Electrical Print No.	Main Motor Serial No.	
RMC Airend Serial No.	Inverter/Solid State Starter Manufacturer	Inverter/Solid State Starter Serial No.

INSTALLATION INFORMATION: (Fill In the Information Below for ALL Compressors)

LOCATION: INDOOR ☐ OUTDOOR ☐ W/ OVERHANG ☐ OCEAN ☐ ROOFTOP ☐ ELEVATION _____ OTHER _____

ENVIRONMENT: CLEAN ☐ AVERAGE ☐ DIRTY ☐ MOTOR RAMP-UP TIME (IN SECONDS) _____

Check/tighten all electrical connections: (PLEASE CIRCLE)	Yes / No	Check all fittings/clamps: (PLEASE CIRCLE)	Yes / No	Parts list enclosed: (PLEASE CIRCLE)	Yes / No	Adequate ventilation: (PLEASE CIRCLE)	Yes / No
Check/tighten all plumbing connections: (PLEASE CIRCLE)	Yes / No	Machine supported properly: (PLEASE CIRCLE)	Yes / No	Instruction manual enclosed: (PLEASE CIRCLE)	Yes / No	Re-tighten oil filter after oil warmed up: (PLEASE CIRCLE)	Yes / No

						Actual Full Load Amps			Actual Full Load Voltage		
	HP	Volts	Nameplate Amps	Service Factor	Service Factor Amps	L1	L2	L3	L1-L2	L1-L3	L2-L3
Main Motor											
Fan Motor											

Water Temp In:	°F	Water Temp Out:	°F	Water Pressure In:		Water Pressure Out:		Ambient Temp:	

RMC DATA

EQUIP OUT PRESSURE (P1)	*CAPACITY (%)	*DIFF PRESSURE (Δ P)	COMP OUT TEMP (T1)	*LUBRICANT INJECTION (some models) (T2)	*A/C AIR (some models) (T3)	LOAD/ OFF LOAD (RUN)	OIL FILTER PRESSURE		OIL LEVEL (1/4, 1/2, 3/4, FULL)	AIR FILTER CONDITION
							*BEFORE	*AFTER		

Parallel Drive Coupling Alignment Checked:	Yes / No	Angular Drive Coupling Alignment Checked:	Yes / No	Belt Tension and Alignment Checked:	Yes / No

Verify operation of all shutdown devices:

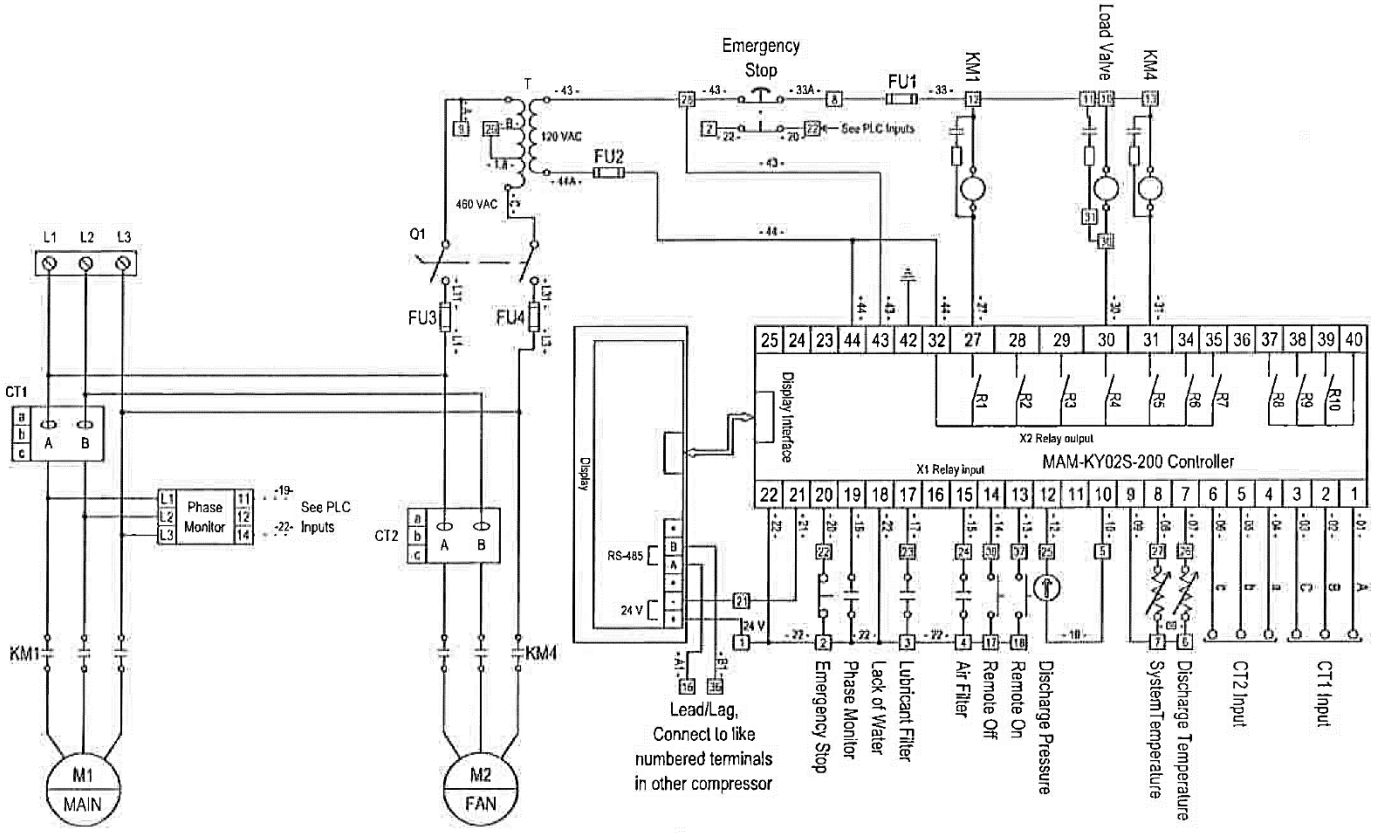
High air/oil temp switch tested? (located at air/oil discharge of airend)	YES, shuts down at indicated air temperature of:	°F	If either is NO, explain why:
*High discharge air temp switch tested? (top of separator tank piping)	*YES, shuts down at indicated air temperature of:	°F	

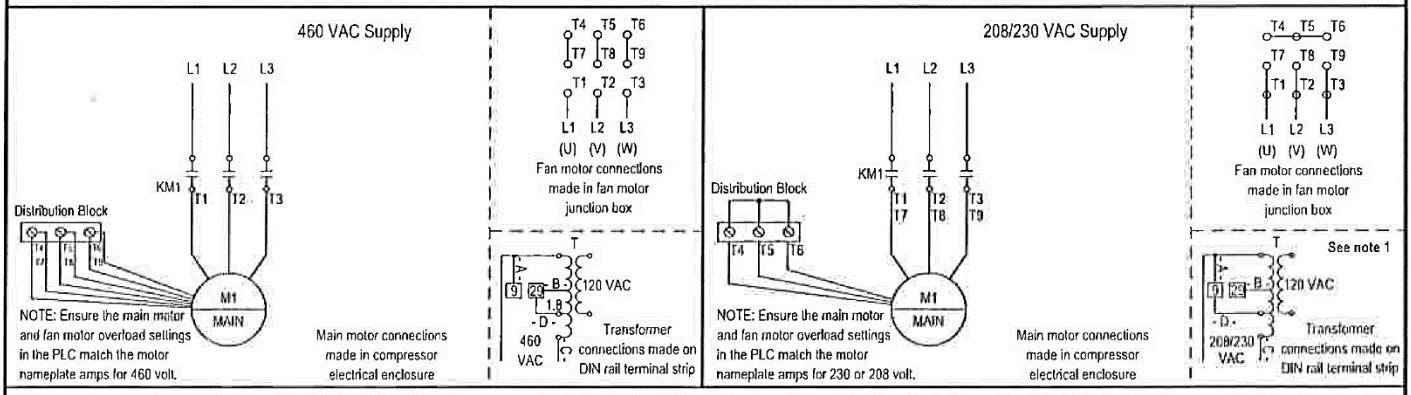
Main Motor Overload:		Fan Motor Overload:		Last Fault Recall was:			
Verify Service Counters Are Set:	Yes / No	Correct Time, Date Set?	Yes / No	High Air Pressure Set @	PSI		

Comments

* NOT on KI/KIV models

REV	DATE	BY	DESCRIPTION
A	05/24/16	KAT	ORIGINAL RELEASE
B	10/21/16	APV	MOVE TO SINGLE SHEET, CORRECTED LEGEND
C	06/05/17	KAT	ADD REMOTE CONNECTIONS, 208V XFMR





Note 1: For 230V, connect wire - D - to XFMR terminal 1.8; for 208V, connect to XFMR terminal 1.9

LEGEND

- ## -	Wire label	KM2	Not used
##	DIN rail terminal number	KM3	Not used
CT1	Current transformer, Main motor current	KM4	Contactor, Fan
CT2	Current transformer, Fan motor current	M1	Motor, Compressor
FU1, 2	Fuse, Transformer secondary protection	M2	Motor, Cooling fan
FU3, 4	Fuse, Transformer primary protection	Q1	Circuit breaker, Control power
KM1	Contactor, Main motor	T	Transformer, Control power

ELECTRICAL SCHEMATIC

RMC-KI SERIES

10 HP

208, 230, 460 VAC

DRAWN	K.A. TURKELL		02/17/16
CHECKED			
SHEET		SCALE	
REF:	KSLGDGF0130060LA-B		

ROGERS MACHINERY COMPANY, INC.

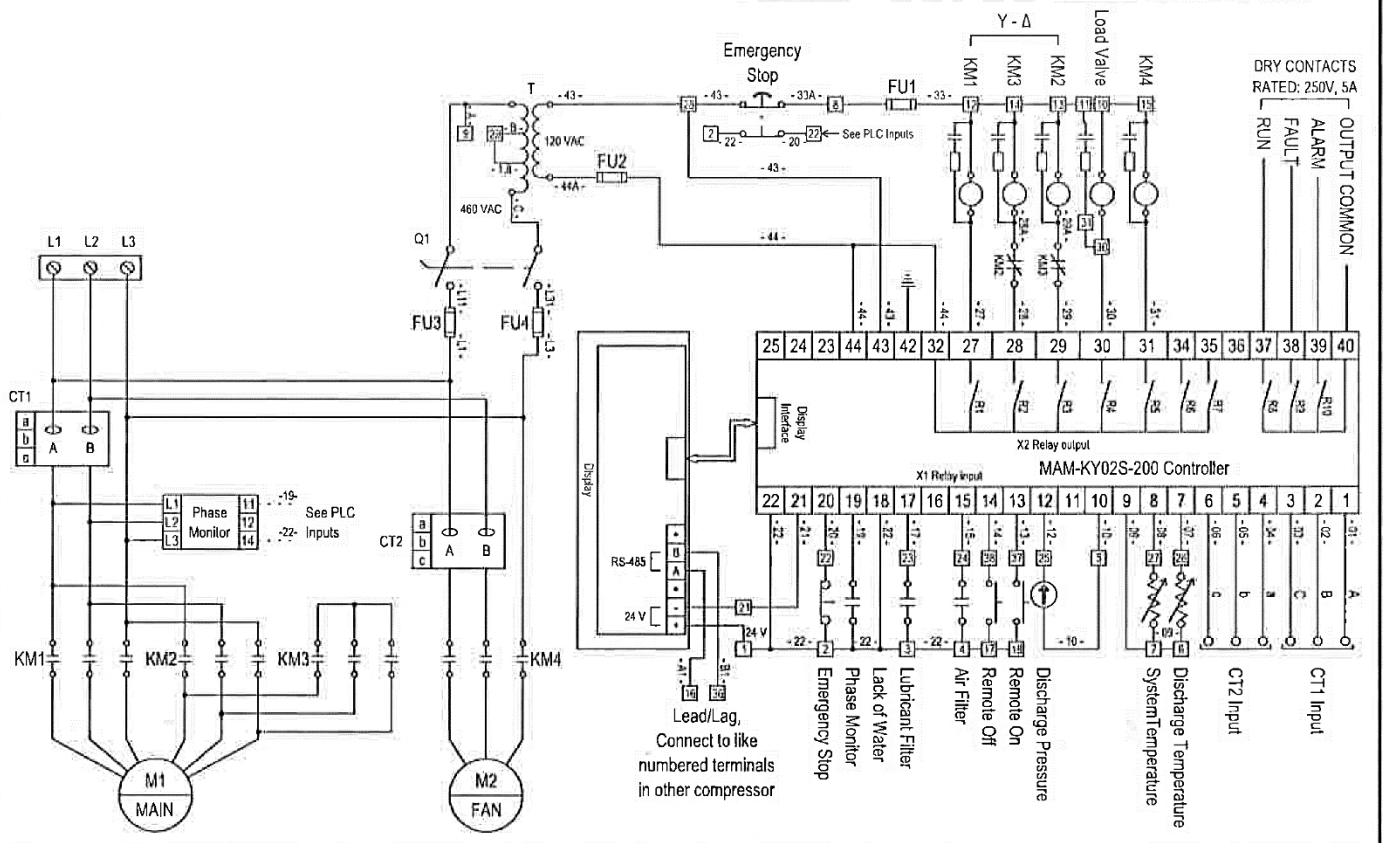
CORPORATE ENGINEERING
14650 S.W. 72ND AVENUE
PORTLAND, OREGON 97224
www.rogers-machinery.com

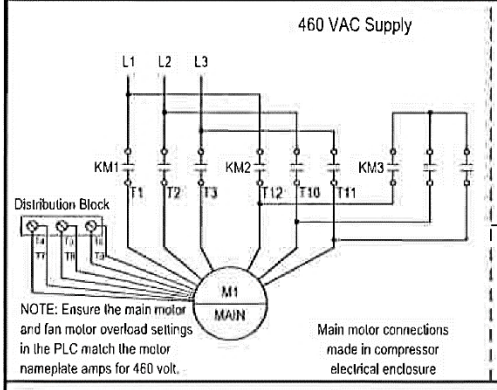
DRAWING NUMBER

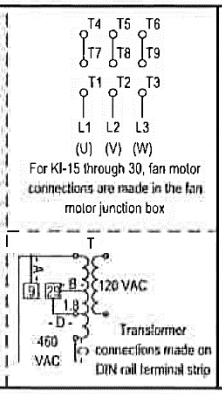
R00001E.C

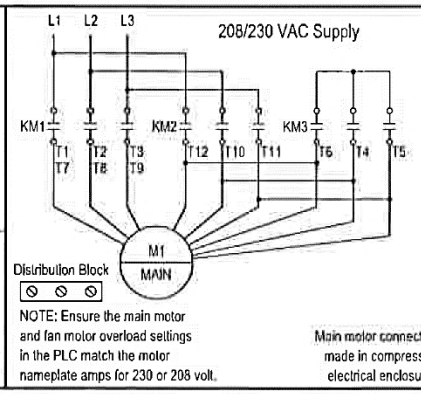
K:\DGN\R\0\0\0\R00001E.dgn

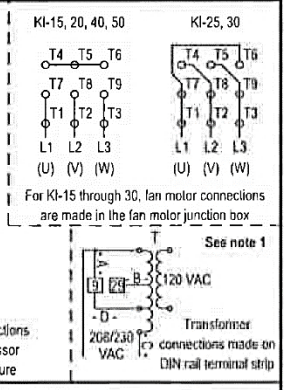
REV	DATE	BY	DESCRIPTION
E	06/02/17	KAT	ADD REMOTE CONNECTIONS, 208V XFMR
F	9/7/17	KAT	CHG 25,30 HP FAN CONNECTION
G	2/28/18	STT	ADDED DRY CONTACTS











Note 1: For 230V, connect wire - D - to XFMR terminal 1.8; for 208V, connect to XFMR terminal 1.9

LEGEND

- ## -	Wire label	KM2	Contactor, Main motor wye
##	DIN rail terminal number	KM3	Contactor, Main motor delta
CT1	Current transformer, Main motor current	KM4	Contactor, Fan motor
CT2	Current transformer, Fan motor current	M1	Motor, Compressor
FU1, 2	Fuse, Transformer secondary protection	M2	Motor, Cooling fan
FU3, 4	Fuse, Transformer primary protection	Q1	Circuit breaker, Control power
KM1	Contactor, Main motor	T	Transformer, Control power

ELECTRICAL SCHEMATIC

RMC-KI SERIES

15 - 50 HP

208, 230, 460 VAC

DRAWN	K.A. TURKELL	02/17/16
CHECKED		
SHEET	SCALE	
REF:	KSLGCGF0130060LB-B	

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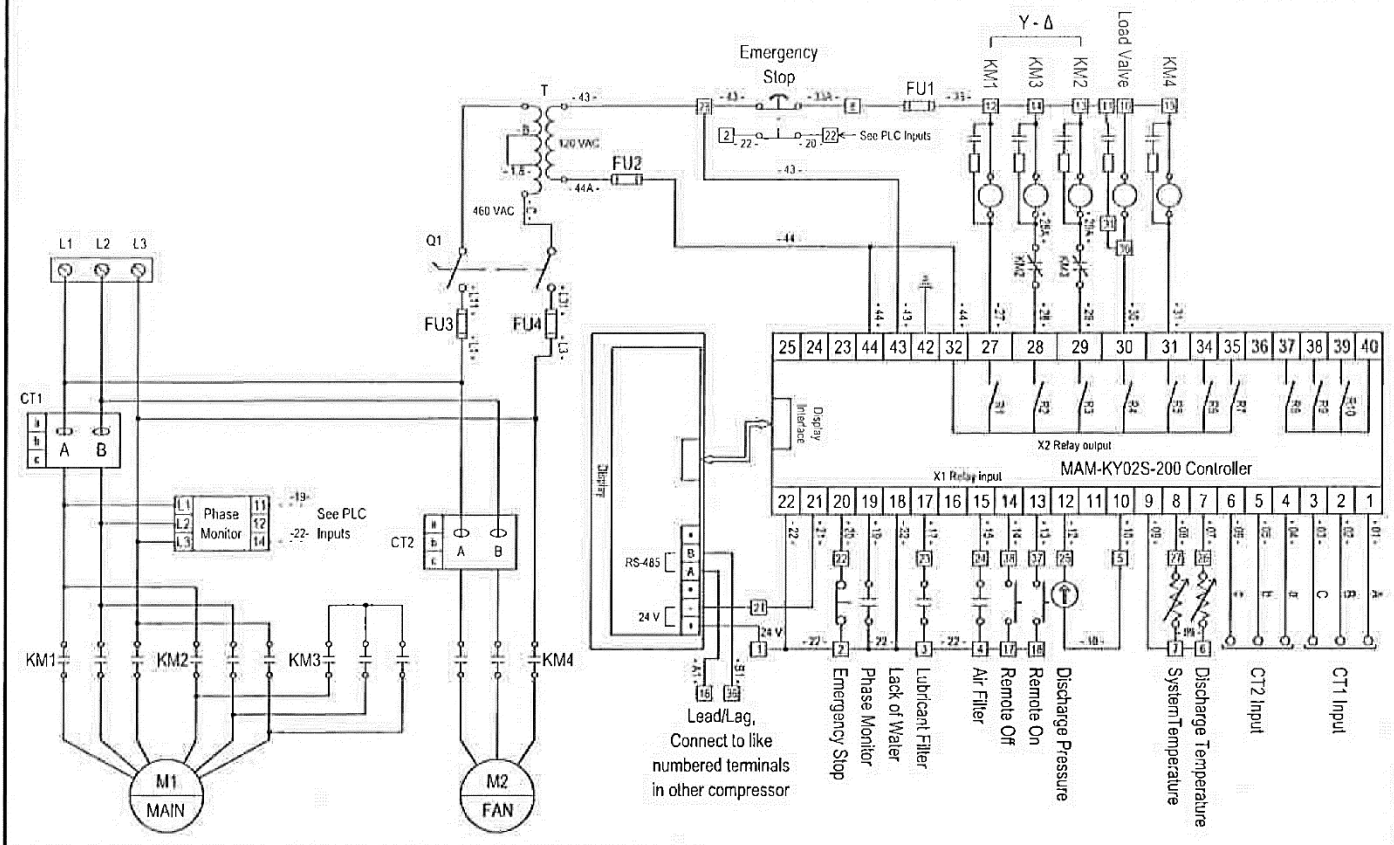
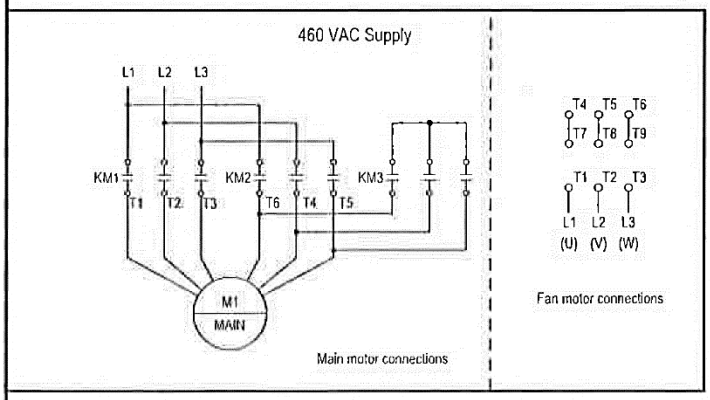
DRAWING NUMBER

R00002E.G

REV	DATE	BY	DESCRIPTION
A	05/23/16	KAT	ORIGINAL RELEASE
B	10/21/16	APV	MOVE TO SINGLE SHEET
C	06/05/17	KAT	ADD REMOTE CONTACTS





LEGEND

- ## -	Wire label	KM2	Contactor, Main motor wye
##	DIN rail terminal number	KM3	Contactor, Main motor delta
CT1	Current transformer, Main motor current	KM4	Contactor, Fan motor
CT2	Current transformer, Fan motor current	M1	Motor, Compressor
FU1, 2	Fuse, Transformer secondary protection	M2	Motor, Cooling fan
FU3, 4	Fuse, Transformer primary protection	Q1	Circuit breaker, Control power
KM1	Contactor, Main motor	T	Transformer, Control power

ELECTRICAL SCHEMATIC

RMC-KI SERIES
60 - 100 HP
460 VAC

DRAWN	K.A. TURKELL		05/23/16
CHECKED			
SHEET		SCALE	
REF:	KSLGDGF0146060LC-B		

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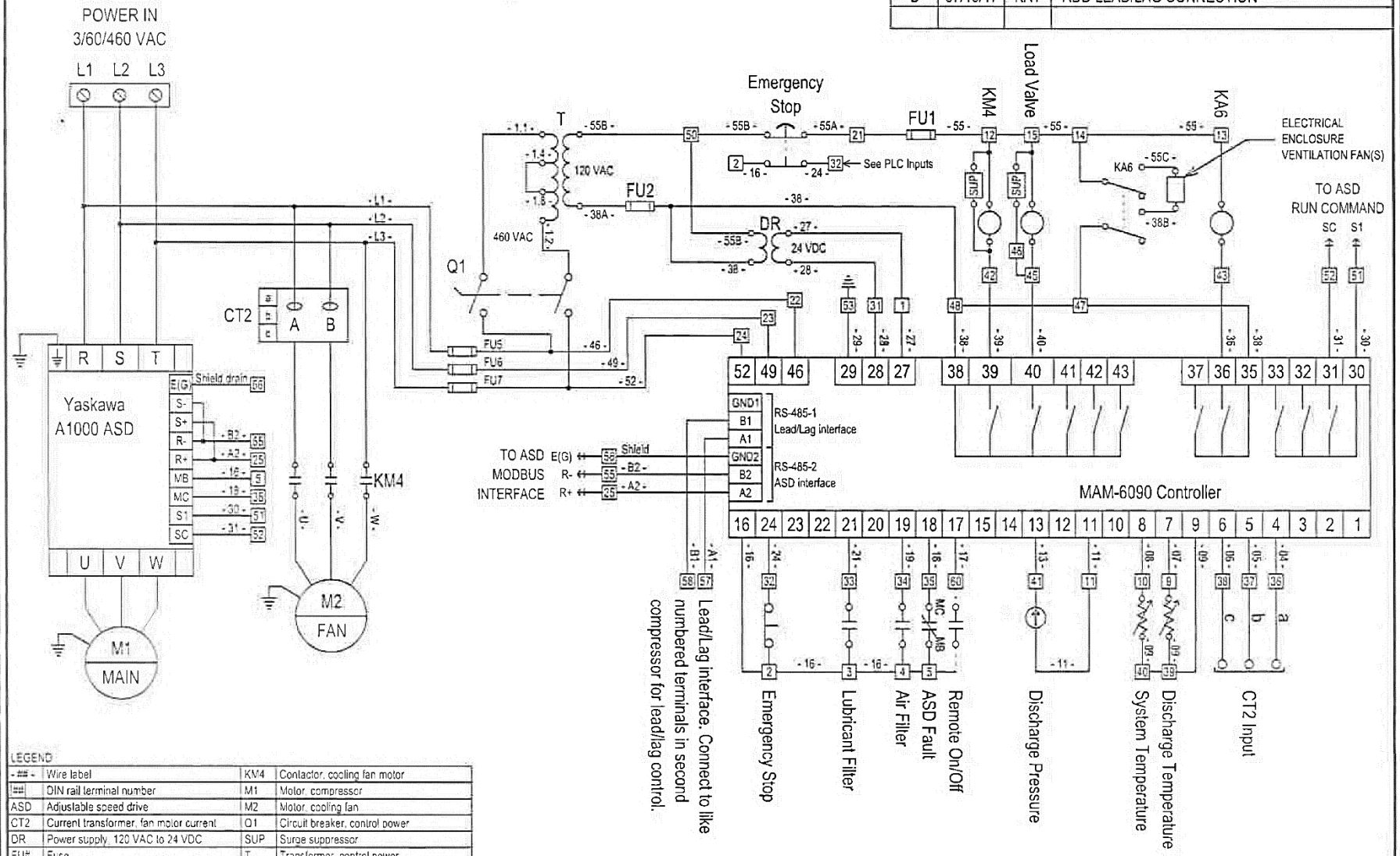
DRAWING NUMBER

R00003E.C

K:\DGN\R\0\0\0\R00003E.dgn

REV	DATE	BY	DESCRIPTION
A	11/21/16	KAT	ORIGINAL RELEASE
B	07/19/17	KAT	ADD LEAD/LAG CONNECTION



LEGEND

-##-	Wire label	KM4	Contactor, cooling fan motor
##|	DIN rail terminal number	M1	Motor, compressor
ASD	Adjustable speed drive	M2	Motor, cooling fan
CT2	Current transformer, fan motor current	O1	Circuit breaker, control power
DR	Power supply, 120 VAC to 24 VDC	SUP	Surge suppressor
FU#	Fuse	T	Transformer, control power
KA6	Electrical enclosure cooling fan control		

DRAWN	K.A. TURKELL		11/21/16
CHECKED			
SHEET		SCALE	
REF:	KSLGDGF0346060CB		

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PORTLAND, OREGON 97224
www.rogers-machinery.com

ELECTRICAL SCHEMATIC

RMC-KIV SERIES
10 - 100 HP
460 VAC

DRAWING NUMBER

R00004E.B

K:\DGN\R\0\0\0\R00004E.dgn

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www.rogers-kseries.com

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