1998 Ultravac Koch Vacuum Pack Sealer

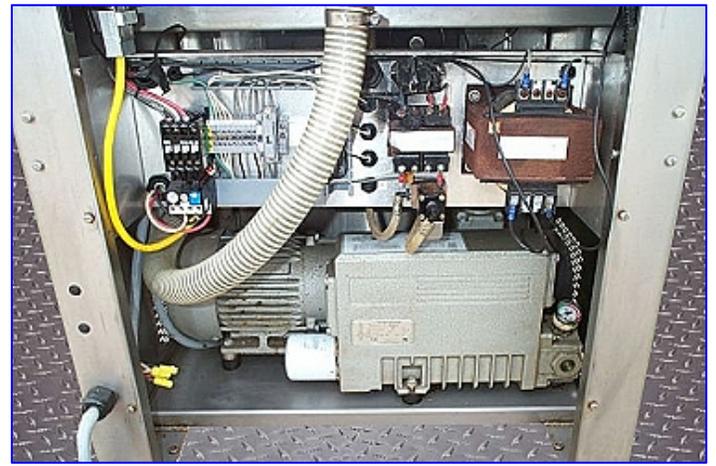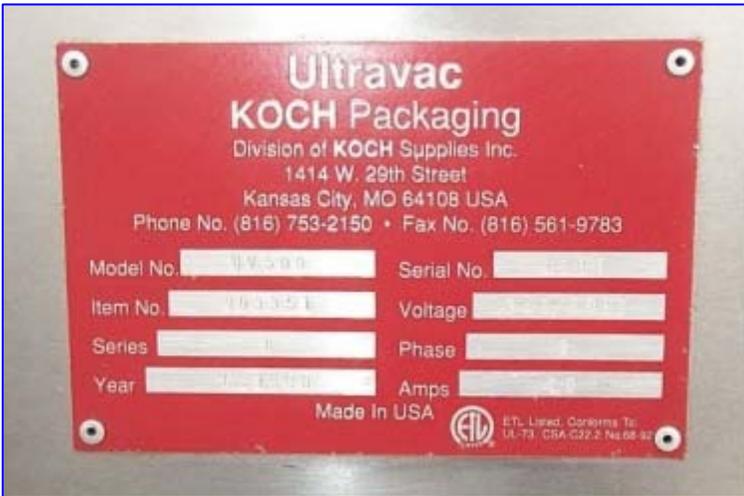| Mfg: Ultravac Koch	Model:
Stock No. KBMW087.22a	**Serial No.**

1998 Ultravac Koch Vacuum Pack Sealer. Power: 240 V, 10 amps, 60 Hz, 3 phase. Toshiba motor, 2 hp, 1735 rpm, 230/400 V, 5.8/2.9 amps, 60 Hz, 3 phase. Busch Vacuum Pump, type: RA0040-E5Z6-1003, S/N: E35323. Displacement: 28 cfm. Vacuum: 0.5 torr. Filter gauge. Control circuit with: pressure gauge: -1.0 to 0.0, power switch on/off, vacuum time: 0-10, seal: 0-10 with indicator sensor. Sealer dimensions: 18 in. L, clearance: 22 in. L x 18 in. W. Container dimensions: 25-1/2 in. L x 19-1/4 in. W x 4-1/2 in. H. (2) Container plates: 19 in. L x 18 in. W. Overall dimensions: 29 in. L x 24 in. W x 42 in. H.

Ultravac
KOCH Packaging

Division of **KOCH** Supplies Inc.
1414 W. 29th Street
Kansas City, MO 64108 USA
Phone No. (816) 753-2150 • Fax No. (816) 561-9783

Model No. UV599

Serial No.

Item No. 10535E

Voltage

Series

Phase

Year

Amps

Made In USA

ETL Listed, Conforms To:
UL-73, CSA-C22.2 No.68-92

ULTRAVAC® 500 VACUUM CHAMBER PACKAGING MACHINE

Owner's Manual

KOCH EQUIPMENT LLC

OWNER'S MANUAL

Ultravac® 500 Vacuum Chamber Packaging Machine

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Koch Equipment LLC
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info@kochequipment.com • kochequipment.com

Part Number
860052-C

KOCH EQUIPMENT LLC
Ultravac® 500 Owner's Manual

Introduction

Congratulations on your Ultravac® 500 vacuum packaging machine purchase. This machine was designed to provide years of trouble free operation and to help in the packaging of your quality food products.

Please read this owner's manual to gain the maximum benefits of your vacuum packaging machine and its different components.

A note about cleaning: Given all the various ways equipment is used in different environments, we recommend the owner consult sanitation experts on how to properly clean each piece of machinery in their plant and to do bacterial testing to insure that the equipment is cleaned properly.

For Sales, Call:
Phone (816) 753-2150 • Fax (816) 753-4976
Toll-Free (800) 777-5624

For Replacement Parts, Call:
Phone (816) 753-2150 • Fax (816) 561-2854
Toll-Free (800) 746-1723

For Technical Support, Call:
Phone (816) 753-2150 • Fax (816) 531-1477
Toll-Free (800) 777-5624

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General

This owner's manual contains information pertinent to your Ultravac® 500. Basic instructions and maintenance information is provided. Please read carefully. Failure to do so could result in bodily injury and/or damage to the equipment.

Receiving Problems: As in all cases, before signing the bill of lading, be sure all items have been received as listed and there is no damage in shipment. If needed, a claim must be made immediately to the local truck line office and noted on the bill of lading.

Please fill in the information from the bill of lading and the product identification tag.

Model No. _____

Serial No. _____

Ship Date: _____

Owner: _____

Location: _____

Electrical service size for your Ultravac® 500 (check one):

_____ 220 Volt, 3 phase, 60 Hz
_____ 220 Volt, Single phase, 60 Hz
_____ 380 Volt, 3 phase, 50 Hz

Please fill in the serial numbers from the pump identification tags:

Serial No. _____

Specifications
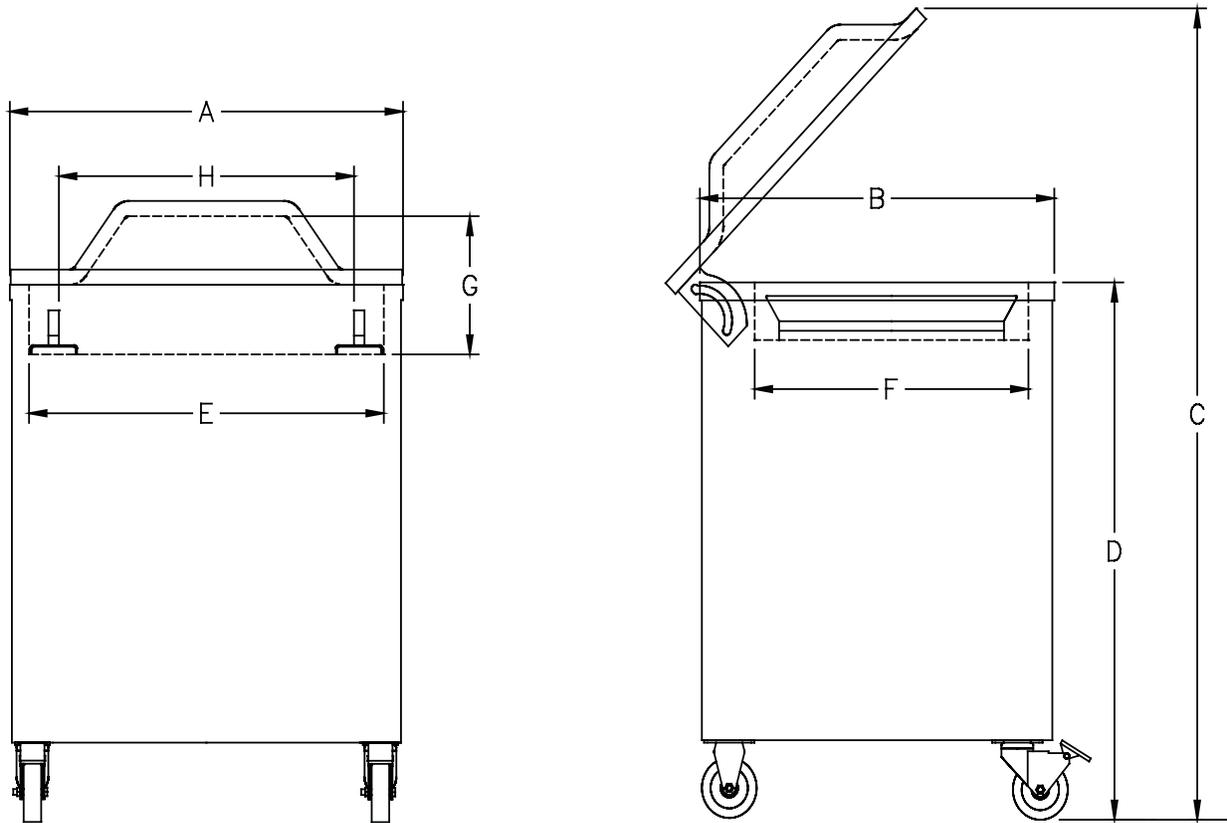
Length (A):	718mm (28.25-in.)
Width (B):	610mm (24-in.)
Maximum Height (C):	1334mm (52.5-in.)
Working Height (D):	892mm (35.125-in.)
Seal bar Length:	457mm (18-in.)
Chamber Length (E):	648mm (25.5-in.)
Chamber Width (F):	489mm (19.25-in.)
Chamber Height (G):	229mm (9-in.)
Between seal bars (H):	537mm (21.125-in.)
Vacuum pumps	48m³/h (28cfm) 1.5kW (2hp)
Net weight	160kg, 353lbs.
Electrical Connection:	See Power Requirements in Section 2
Capacity	20-30 seconds per cycle

SAFETY

Personal Safety

The following procedures and guidelines must be followed precisely to avoid problems that can result in property damage, personal injury, or death. If you have any questions related to this information, please contact the Koch Equipment Services Inc. at (800) 777-5624.

⚠ DANGER Hazardous voltage.
Disconnect and lockout power before servicing machine or cleaning. Do not remove panels unless power has been disconnected and locked out at risk of electric shock hazard.

⚠ WARNING

Read and understand owner's manual before using this machine. Failure to follow operating instructions could result in personal injury or damage to equipment.

⚠ WARNING Explosion hazard.
Do not use a gas with an oxygen content greater than 22% with gas flush option.

⚠ CAUTION Blade hazard.
Do not remove, install, or replace blades without protective gloves. Perforating knife blade is sharp. Use care when handling**.**

⚠ CAUTION Blade hazard.
Do not remove, install, or replace blades without protective gloves. Precut knife blade is sharp. Use care when handling**.**

Signal words used in classification of potential hazards are defined as follows:
    DANGER**:** Indicates an imminently hazardous situation, which, if not avoided, may result in death or serious injury.
    WARNING**:** Indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury.
    CAUTION**:** Indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury. Caution also indicates actions that may cause property damage.

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Food Safety

Food Packaging

While this machine is often used for food packaging and vacuum cooking, there are inherent risks associated with this packaging technique that could cause serious illness or death to the consumer of the food product. If you are using this machine for a food application, you must consult with a reputable food technologist or specialist in vacuum/modified atmosphere packaging (M.A.P.) to review the safety of your application.

Gas Flush

In order to ensure proper shelf life of the food product packaged in this machine, you must contact a reputable food technologist or specialist in vacuum/modified atmosphere packaging (M.A.P.) to review and develop the appropriate gas mixture for your package, and you must perform quality control and gas analysis on your finished M.A.P. packages.

Cleaning

Every environment and application is different; therefore, Koch Equipment LLC cannot provide cleaning instructions to guarantee microbiological sanitation. Koch Equipment requests that the owner of this machine consult with sanitation experts to review the unit working in their particular environment to develop a robust cleaning schedule and methodology, followed by bacterial testing to ensure satisfactory cleaning procedures are followed.

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General Safety Guidelines

Obvious safety guidelines should be observed.

➢ Be sure to turn off power to your packaging machine before any maintenance work is performed.

➢ Follow approved Lock Out/Tag Out procedures.

➢ Place machine on a flat, stable surface.

➢ Do not place tools, parts, or other objects on or inside machine while operating.

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SECTION

2

STARTUP

KOCH
E Q U I P M E N T

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Unpacking

1. Carefully remove crate from the skid.
2. Remove machine from skid.
3. Wipe down outside of the machine.

Power Requirements

The customer must supply the correct 3 phase or single phase power source in accordance with the National Electric Code. The machine is rated at 220 volt, three (3) phase, 60 Hz, 10 amps; or 220 volt, single phase, 60 Hz, 13 amps; or 380 volt, three (3) phase, 50 Hz, 6.3 amps. A 15 amp service is required for three (3) phase machines. A 20 amp service is required for single phase machines.

Startup

It is essential to check the oil level daily and to change the oil after every 500 hours of operation. Read the oil level with the machine turned off. Oil may be added until the level reaches the MAX level shown in the sight glass on the pump. Refer to the pump manual supplied with the machine for details on changing the oil.

Checking Vacuum Pump Rotation

Caution: Check oil level of pump before starting pump (please refer to pump manual.) To check the direction of the pump rotation, briefly engage the "POWER ON" switch and observe the motor fan at the end of the pump. The fan should rotate as indicated by the arrow on the fan cover. To correct the rotation, switch any two phases in the plug.

Gas Flush Connection

The customer must supply a suitable regulator with a range of 0 to 60 p.s.i. We recommend using food-grade flexible hose with a $\frac{1}{4}$-in. I.D. and a maximum length of 15-ft. Maximum regulator pressure is 15 p.s.i.

Air-Assist Connection

The machine is equipped with a regulator for air-assisted sealing. The hose barb will accept $\frac{1}{4}$-in. I.D. hose. The recommended air supply is 75 p.s.i. at 6 cfm. The maximum regulator setting is 40 p.s.i.

OPERATION

Placement of Product

For best sealing results, it is important to:

- Check the pump oil level **daily.**
- Select a pouch that fits the product.
- Carefully load the product into the pouch.
- Keep the product and the product residue away from the seal area of the pouch.
- Place the product as far into the pouch as possible.
- Maintain an equal amount of the product above and below the seal bar (see figure below on use of filler plates).
- Use Filler Plates for raising the height of the product.
- Lay the pouch flat on the seal area, keeping the pouch free of wrinkles.
- Place the pouch so that the open end is inside the chamber when the lid is closed.

PRODUCT HALF HEIGHT
EVEN WITH TOP OF
SEAL BAR
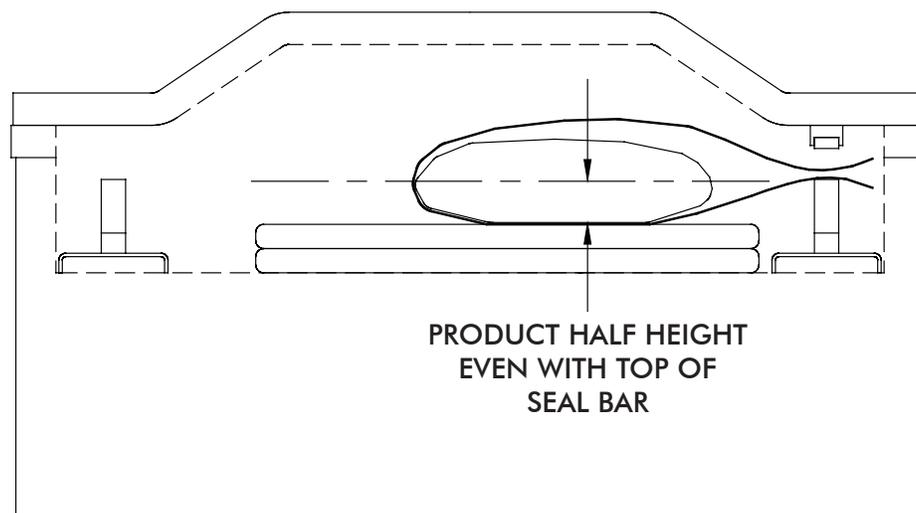
Analog Control Panel

Operation with Analog Control Panel

The analog control panel is shown below. The range for timed vacuum is 0 to 45 seconds and is controlled by the Vacuum Potentiometer. We suggest an initial setting of "3" on the dial.

To use the gas flush option, turn the Gas Flush Switch to "ON." The range for timed gas flush is 0 to 30 seconds and is adjusted by the Gas Flush Potentiometer. We recommend an initial setting of "3" on the potentiometer and an initial pressure regulator setting of 30 p.s.i. Increasing the gas flush time will allow more gas into the pouch. Increasing the pressure (up to a maximum of 40 p.s.i.) will allow gas to enter the pouch at a faster rate providing a shorter cycle time. Experiment with both settings to achieve the best results.

⚠ **WARNING**   Explosion hazard.
Do not use a gas with an oxygen content greater than 22% with gas flush option.

Seal impulse is the length of time the seal bar is turned on and can range from 0 to 2 seconds. The impulse time is controlled by the Seal Potentiometer. We recommend an initial setting of "4" on the potentiometer. This setting will vary according to the thickness of the pouch. Thinner pouches will require a lower setting while thicker pouches will require a higher setting.

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KOCH EQUIPMENT
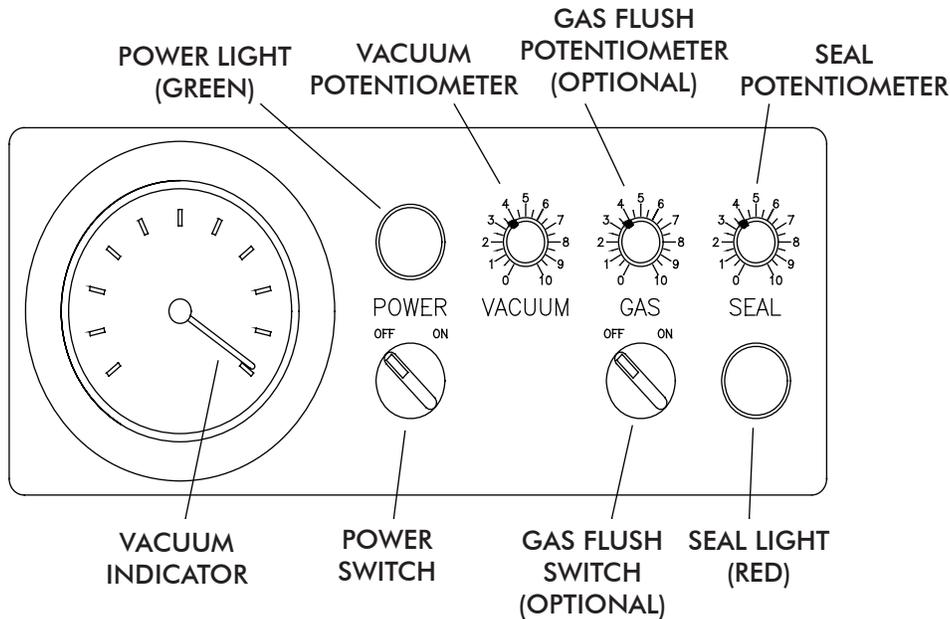
Digital Control Panel

Operation with Digital Control Panel

The digital control panel allows the user more options than the standard control panel. The embedded microprocessor controls each sequence of the packaging operation. Settings for the vacuum, gas, and sealing are entered as parameters through the keypad. This allows the user to custom program every step of the packaging process. The precise vacuum and gas pressures are controlled by a pressure based sensor. The vacuum pressure, gas pressure, and seal time are displayed on a large 16-character LCD backlit readout, which is easily readable in all lighting conditions. As each sequence is performed, the real-time pressure level or cycle time is displayed.

The digital front panel can save up to one hundred pre-programmed routines, which can be retrieved at any time for specific packaging applications. With the supervisor security feature turned on, these programs cannot be inadvertently changed.

The Vacplus option allows the operator to run the pump from 0 to 20 seconds after the set vacuum level is achieved.

The Gas Flush option allows the operator to introduce an inert gas into the chamber after the vacuum stage. This option can be used as a filler to prevent crushing of the product after sealing, as a means to prolong shelf life, or as a means to maintain desirable product appearance.

The digital front panel has an auto stop, which will automatically seal if the preset vacuum is not reached. The feature decreases the cycle time and optimizes the vacuum level of each product.

The digital front panel, which includes the keypad, illuminated display, and microprocessor, use sealed components and is conformal coated in a moisture-proof coating. The digital front panel meets or exceeds the requirements of NEMA 4. The front of the digital display is sealed and flush for easy cleaning.

Digital Control Panel
Operation with Digital Control Panel (continued)

The digital control has both pulsed vacuum and pulsed venting options for fragile product.

The digital control has a maintenance screen for testing valves and a special loop option for multiple vacuum/gas cycles before sealing.

Digital Control Panel

Part Number
860052-C
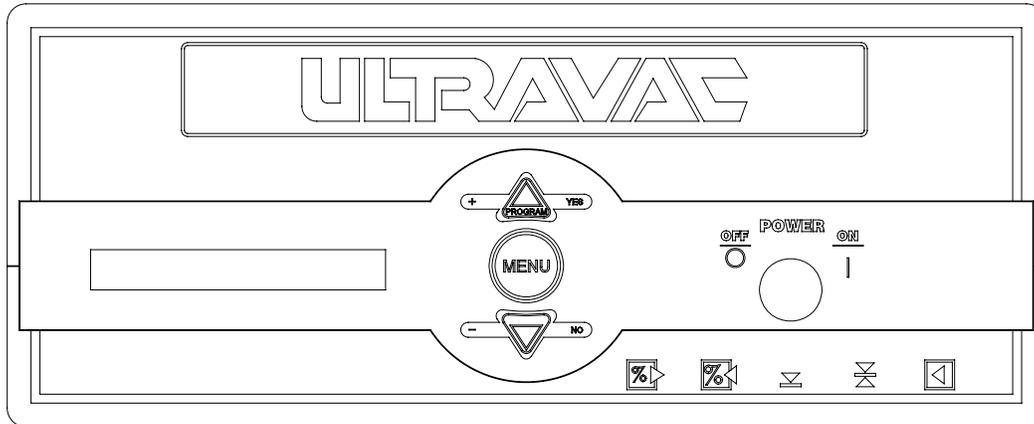
Digital Control Panel

Operator Menu

NOTE: IF THE SUPERVISOR HAS SET SECURITY ON,
THESE SETTINGS CANNOT BE CHANGED
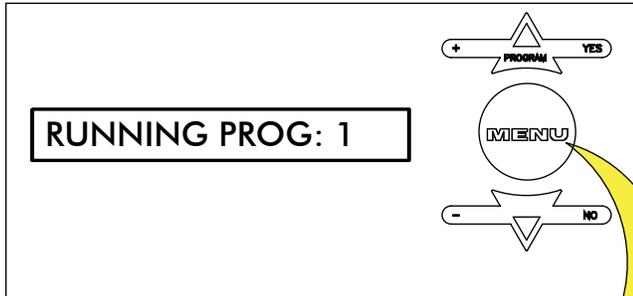
RUNNING PROG: 1

THIS IS THE MAIN MENU SCREEN. WHEN
THE MACHINE STARTS UP, THE LAST PROGRAM
THAT WAS RUN WILL BE THE CURRENT PROGRAM
SHOWN IN THE WINDOW. TO SET THE OPERATING
PARAMETERS FOR THE PROGRAM SHOWN,
PRESS THE MENU KEY.
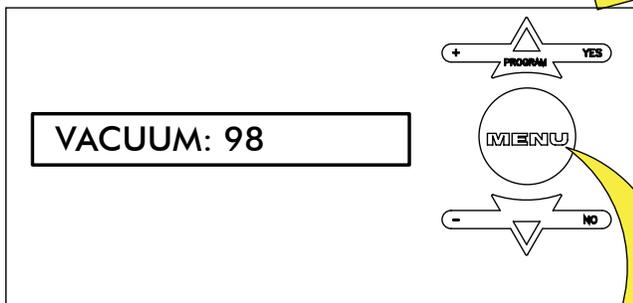
VACUUM: 98

VACUUM IS SET TO % VACUUM USING THE
UP AND DOWN ARROW KEYS.
THE RANGE IS 30% TO 99%.
PRESS THE MENU KEY.
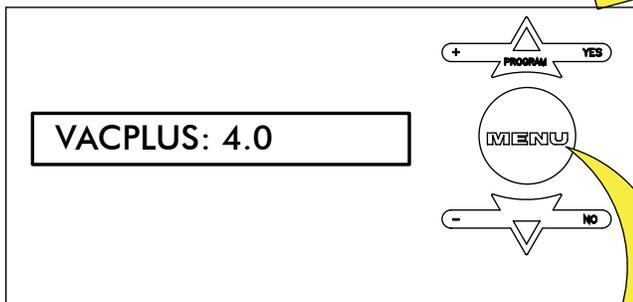
VACPLUS: 4.0

VACPLUS MAY BE SET FROM 0 TO 20 SECONDS.
A SETTING GREATER THAN ZERO ALLOWS THE
PUMP TO CONTINUE EVACUATING THE CHAMBER
(FOR THE SPECIFIED NUMBER OF SECONDS) AFTER
THE PRESSURE IN THE CHAMBER HAS REACHED
THE % VACUUM SET IN THE VACUUM MENU.
THE RANGE IS 0 TO 20 SECONDS.
PRESS THE MENU KEY.

SEAL: 1.2
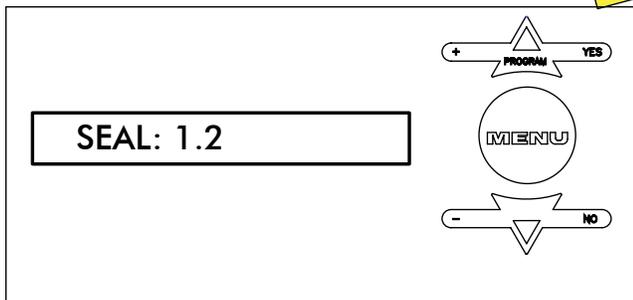
THE SEAL SETTING IS IN SECONDS.
USE THE UP AND DOWN ARROW KEYS TO
CHANGE THE SEAL TIME.
THE RANGE IS 0 TO 2 SECONDS.
PRESS THE MENU KEY.

Digital Control Panel

Operator Menu (continued)

GAS: YES
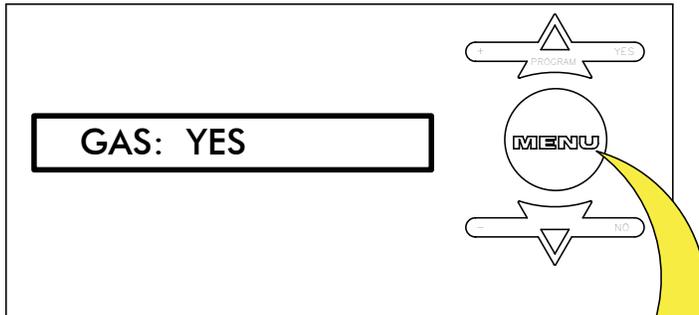
IF YOUR MACHINE IS EQUIPPED WITH THE GAS OPTION, IT CAN BE TURNED ON OR OFF BY PRESSING THE UP OR DOWN ARROW KEYS. PRESS THE MENU KEY.

GAS: 75
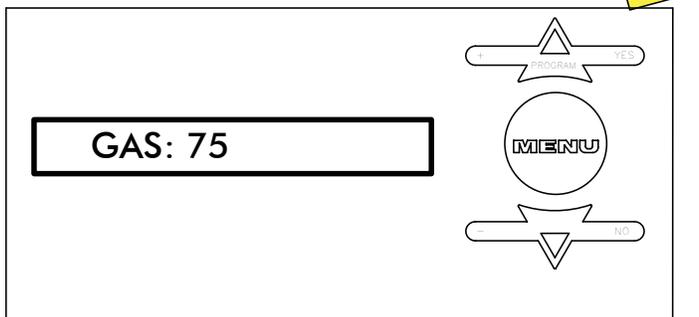
GAS IS SET TO % GAS USING THE UP AND DOWN ARROW KEYS. THIS VALUE ALSO CORRESPONDS TO THE VACUUM READING INSIDE THE CHAMBER. IT IS RECOMMENDED TO USE PULSE VENT WHEN GAS FLUSHING TO A LOW % VACUUM. THE RANGE IS 98% TO 30%. PRESS THE MENU KEY.

⚠ WARNING   Explosion hazard.
Do not use a gas with an oxygen content greater than 22% with gas flush option.

Digital Control Panel

Selecting a New Program

RUNNING PROG: 1
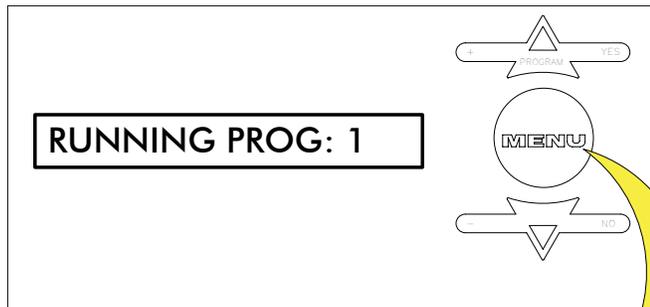
FROM THE MAIN MENU YOU MAY USE THE
UP AND DOWN ARROW KEYS TO SELECT A NEW
PROGRAM.

PRESS THE UP ARROW TO
SWITCH TO PROGRAM 2
(OR ANY OF THE 10 PROGRAMS)

ENTER PROGAM: 2
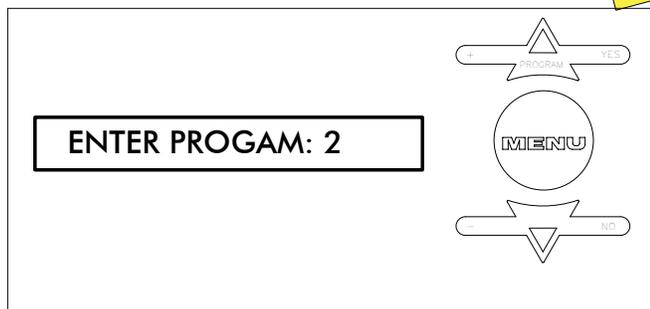
NOW YOU MAY SET NEW PARAMETERS FOR
VACUUM, SEAL TIME, AND GAS FOR PROGRAM 2
(FOLLOWING THE PROCEDURE DESCRIBED
IN THE PREVIOUS EXAMPLE) OR SIMPLY CLOSE
THE LID ON THE MACHINE AND RUN PROGRAM 2.

Sealing with Air-Assist

All machines are equipped with regulators for air-assisted sealing. Set the air pressure regulator to 20 p.s.i. increasing to a maximum of 40 p.s.i. While a good seal can be obtained without air-assist, use air-assist when:

- Gas back-flushing above average pressure.
- Using shrink pouches.
- Packaging a product that easily contaminates the seal area of the pouch.
- Trying to overlap pouches.
- Wrinkles cannot be avoided in the seal area.

Gas Flush Option

Gas flushing is the introduction of an inert gas into the chamber after the vacuum stage is finished. Gas can be used as a filler to prevent crushing of the product after sealing, as a means to prolong shelf life, or as a means to maintain desirable product appearance. Commonly used gasses include nitrogen, carbon dioxide, or a mixture of both. Consult your local gas supplier to select the proper gas for your product.

⚠ **WARNING**   Explosion hazard.

Do not use a gas with an oxygen content greater than 22% with gas flush option.

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MAINTENANCE

Cleaning

Every environment and application is different; therefore, Koch Equipment LLC cannot provide cleaning instructions to guarantee microbiological sanitation. Koch Equipment requests that the owner of this machines consult with sanitation experts to review the unit working in their particular environment to develop a robust cleaning schedule and methodology, followed by bacterial testing to ensure satisfactory cleaning procedures are followed.

Cleaning Recommendations

Before cleaning the machine, turn power off; disconnect the main power, and lockout the connection.

The machine is ETL and USDA approved. The machine is made from many different materials. Check with the detergent and sanitizer manufacturers that their products are compatible with the listed materials.

⚠ DANGER Hazardous voltage.
Disconnect and lockout power before servicing machine or cleaning. Do not remove panels unless power has been disconnected and locked out at risk of electric shock hazard.

Never hose down the machine. Damage caused by hosing or high pressure washing is not covered under warranty.

1. **Filler Plates:** Remove filler plates. The filler plates are made from polyethylene. Clean, sanitize, and dry. High pressure water spray can be used on the filler plates.
2. **Lid and Back up Strip:** The lid is constructed of acrylic. Use only nonabrasive soap and water. Do not use window sprays or kitchen scouring compounds. The Back up Strip is made of silicone. Clean, sanitize, and dry.
3. **Seal Bars:** Remove the seal bars by first lifting it up off of the guide rods. Remove the wire connectors from the adapter clips on the seal bar and remove the seal bar from the machine. The seal bars are made of aluminum and phenolic. Clean, sanitize, and dry.
4. **Chamber and Base:** The chamber and base are made of 304 stainless steel. Clean, sanitize, and dry, including under the seal bar bladder (not removable).
5. Clean under the machine.
6. Reinstall the seal bar.
7. Use bacteriological testing to insure cleaning process.

Vacuum Pump Maintenance

Consult the pump manufacturer's manual provided with the machine for detailed information.

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Seal Bar Maintenance

The following illustrations show replacement of the seal elements for the seal bars.

Step 1.
Remove the seal bars from the machine. Pull off the Teflon tape strip and discard. Clean off any remaining Teflon tape adhesive using acetone or an equivalent solvent.
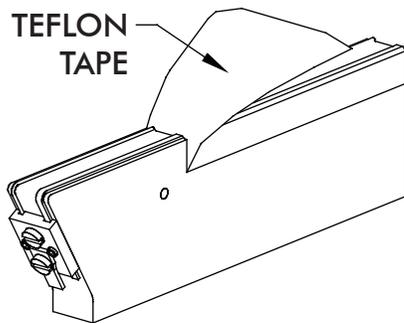
Step 2.
Using a 2mm Allen wrench, loose the set screws for the cut off wire and the seal element on both ends of the seal bar and discard.
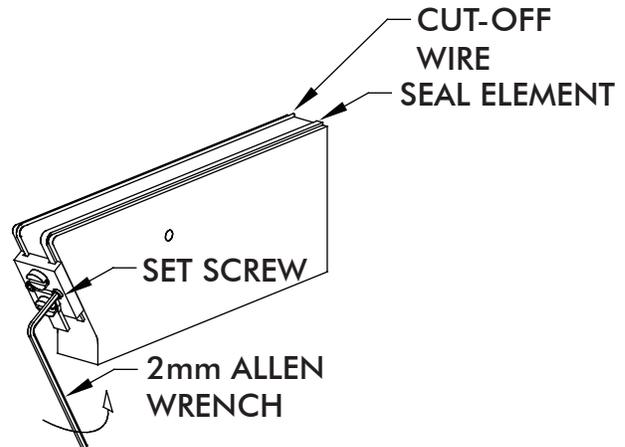
Step 3.
If you are replacing the L-shaped spring retainer and the spring at this time, loosen the set screw and remove the old spring retainer and spring and install the new ones. Adjust the spring retainer to allow a 1/8-in. gap between the spring retainer and the seal bar. This will allow the seal element to remain under tension after tightening the seal element.
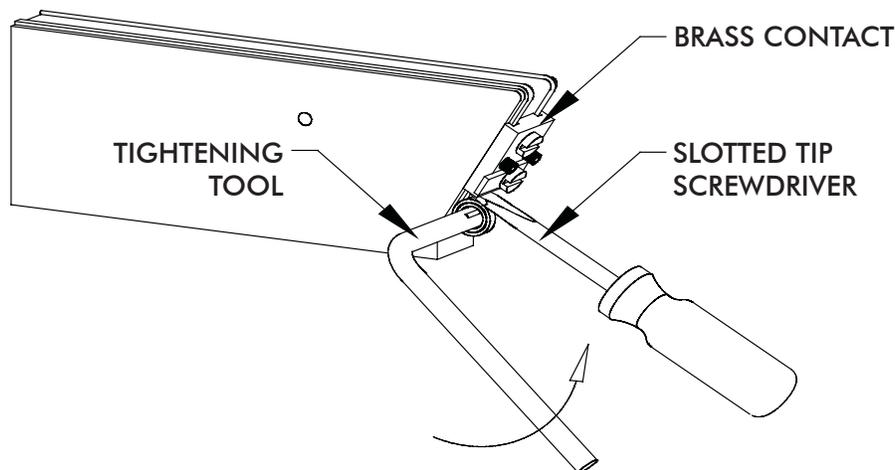
Troubleshooting

Reading the Indicators

All machines are controlled by a digital control module (with touch pad) designed to aid in troubleshooting. The digital panel has indicator lights mounted on the front below the ON/OFF switch. The indicator lights correspond to the operating devices and should turn on and off in the following sequence when the machine lid is closed:

1. ⧗▷ VACUUM VALVE [SOL-1]
2. ⧗◁ GAS FLUSH VALVE [SOL-2] (OPTIONAL)
3. ▽ SEAL BLADDER VALVE [SOL-3]
   (STAYS ON UNTIL COMPLETION OF CYCLE)
4. ⋈ SEAL IMPULSE CONTACTOR [C-2]
5. ◁⊤ VANTILATION VALVE [SOL-4]

The device should be operating when the light is illuminated. If the lights illuminate in the proper sequence, but there is still a problem, look for the problem in the operating device itself. If the lights do not sequence properly, look for a problem in the related potentiometer or the control module.

Troubleshooting

Problems and Remedies

Problem	Indications	Remedy
Machine will not start	Green power "ON" light not lit when switch is turned on	Make sure that the power requirements match those given on the nameplate. Also, check fuse F-2; replace if blown.
	Vacuum pump does not run	Make sure that the power requirements match those given on the nameplate.
No vacuum	When lid is closed, indicator light (VAC) is "OFF" on the control module	Check lid switches LS-1 for proper adjustment
	Vacuum not pulling lid down	Check intake screen in vacuum pump hose barb for blockage, pieces of bags, labels, bone, etc.
	Longer vacuum cycle times	Check intake screen in vacuum pump hose barb for blockage
No gas flush (optional)	If indicator light (GAS) is lit	Check for proper gas pressure going into gas inlet
		Check for proper operation of gas flush valve (SOL-2)
	If indicator light (GAS) is not lit	Check gas flush potentiometer POT-2 (analog control module) or possible defective control module
Chamber not venting (lid will not open) Note: Lid can be released by pulling the hose off of the vacuum gauge to remove product.	Lid will not open and red indicator light "VENT" on control module is lit	Check ventilation valve SOL-4 for proper operation
	"VENT" indicator light is not lit	Check cool down potentiometer POT-3 (analog control module) or possible defective control module

Troubleshooting

Problems and Remedies

Problem	Indications	Remedy
Improper or no sealing Note: For proper sealing, three things must occur: 1. The seal bar must come down and place adequate pressure between the seal bar and the back-up strip. 2. The seal element must heat up sufficiently to fuse the pouch. 3. The pouch must be allowed to cool for a time to ensure a good "set".	Seal bladder light on control module is lit but the seal bar does not go up	Check to make sure that the regulator knob is turned fully clockwise, or, if air-assist is used, set to the recommended pressure.
		Check seal bladder valve SOL-3 for proper operation
	The seal bar is not heating up even though the red seal light on the front panel comes on	Check seal bar connection points and clips for corrosion and proper tension
	The red seal light on the front panel either does not light for the proper length of time (½ to 1 second) or does not light at all	Check for broken seal element
		Check seal bar fuse F-1
		Make sure the seal impulse potentiometer POT-3 is set high enough or check for possible defective control module

Digital Control Panel

Supervisor Menu

Untrained personnel should not alter any setting in the supervisor menu.
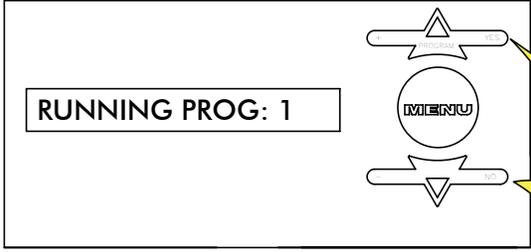
RUNNING PROG: 1

THIS IS THE MAIN MENU SCREEN. WHEN THE MACHINE STARTS UP, THE LAST PROGRAM THAT WAS RUN WILL BE THE CURRENT PROGRAM SHOWN IN THE WINDOW.

PRESS AND HOLD DOWN BOTH ARROW KEYS FOR AT LEAST 3 SECONDS TO ENTER THE SUPERVISOR MENU.

THE FOLLOWING ARE PARAMETERS THAT CAN ONLY BE SET IN THE SUPERVISOR MENU.
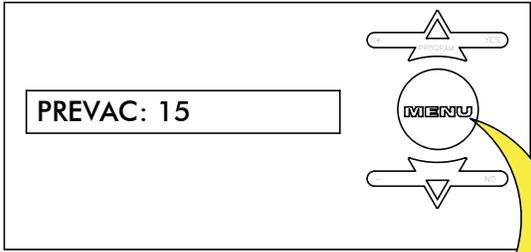
PREVAC: 15

NOTE: IF YOUR MACHINE IS NOT INSTALLED WITH THE PRECUT OPTION, DISREGARD THE PREVAC, CUTTIME, AND WAITTIME PARAMETERS.

PREVAC IS THE % VACUUM THAT YOU WISH TO REACH BEFORE ACTIVATING THE KNIFE WHICH MAKES SLITS IN THE BAG/POUCH FOR PRECUT. USE THE UP OR DOWN ARROW KEYS TO CHANGE THE CURRENT SETTING. THE RANGE IS FROM 5% TO 20% VACUUM. PRESS THE MENU KEY.
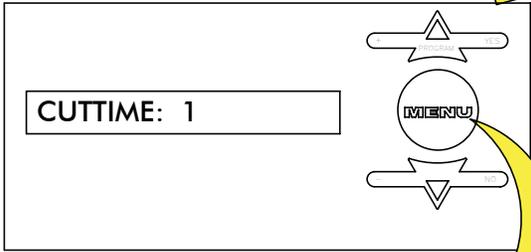
CUTTIME: 1

CUTTIME IS THE NUMBER OF SECONDS THAT THE SEAL VALVE IS ACTIVATED. THIS IS THE TIME WHEN THE KNIFE ACTUALLY MAKES THE EVACUATION SLITS IN THE BAG/POUCH FOR PRECUT. THE RANGE IS FROM O TO 3 SECONDS. PRESS THE MENU KEY.
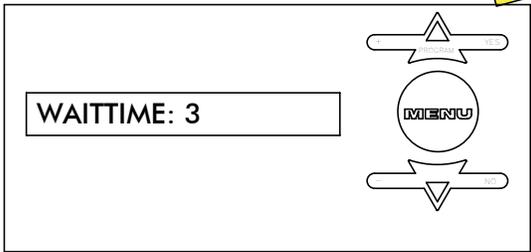
WAITTIME: 3

WAITTIME IS THE NUMBER OF SECONDS THE MACHINE WAITS FOR THE KNIVES TO RETRACT BEFORE RESUMING THE VACUUM CYCLE. THE RANGE IS FROM 0 TO 6 SECONDS. PRESS THE MENU KEY.

Digital Control Panel
Supervisor Menu (continued)
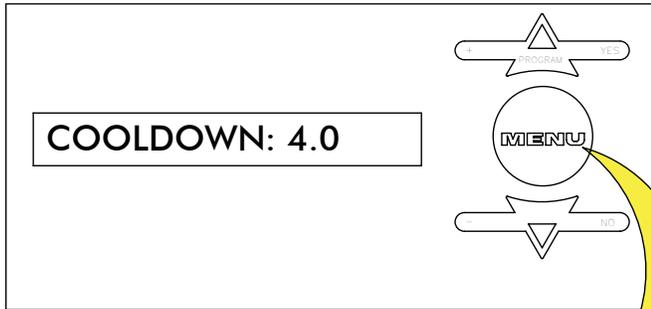
COOLDOWN: 4.0

COOLDOWN IS THE TIME THAT THE MACHINE WAITS AFTER SEALING THE BAG OR POUCH BEFORE THE SEALBARS RETRACT. THIS ALLOWS TIME FOR THE ACTUAL SEAL TO COOL DOWN AND TAKE A SET.
THE RANGE IS FROM 1 TO 8 SECONDS.
PRESS THE MENU KEY.
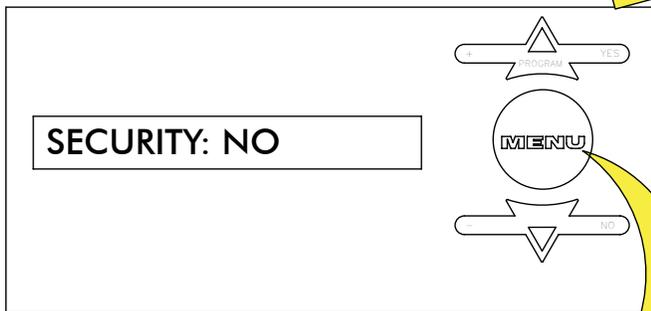
SECURITY: NO

SECURITY CAN BE TURNED ON BY SELECTING YES. IF SECURITY IS ON, THE OPERATOR MENU WILL BE READ ONLY AND THE OPERATOR WILL NOT BE ABLE TO CHANGE ANY SETTINGS.
PRESS THE MENU KEY.
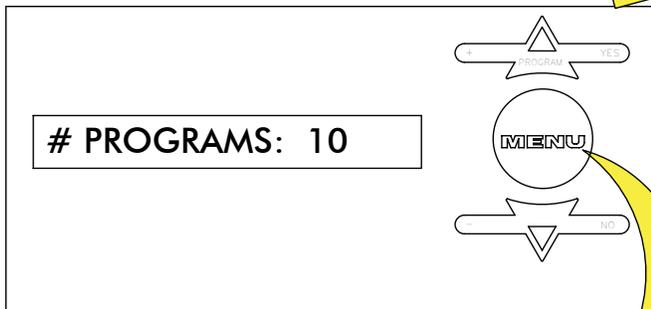
PROGRAMS: 10

THIS IS HOW YOU SPECIFY THE MAXIMUM NUMBER OF PROGRAMS THAT MAY BE SAVED IN MEMORY. EACH PROGRAM MAY HAVE ITS OWN SET OF UNIQUE PARAMETERS. THIS NUMBER CAN BE FROM 1 TO 10.
PRESS THE MENU KEY.

TEST: YES
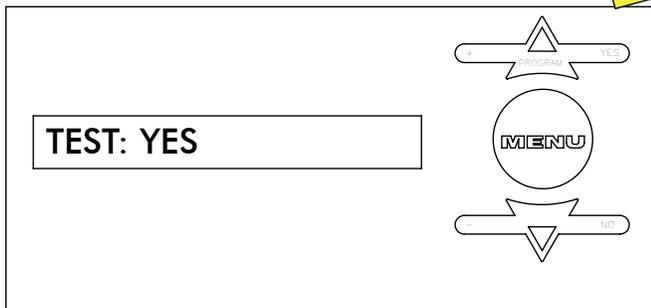
IF TEST IS SET TO YES (USING THE UP ARROW KEY), THE VACUUM VALVE AND VENT VALVE MAY BE OPERATED MANUALLY. THE UP ARROW KEY ACTIVATES THE VACUUM VALVE, THE DOWN ARROW KEY ACTIVATES THE VENT VALVE, AND PRESSING BOTH AT THE SAME TIME TURNS THEM BOTH OFF. AS YOU ACTIVATE EITHER VALVE, THE VACUUM PRESSURE IS DISPLAYED.
PRESS THE MENU KEY.

Digital Control Panel

Supervisor Menu (continued)
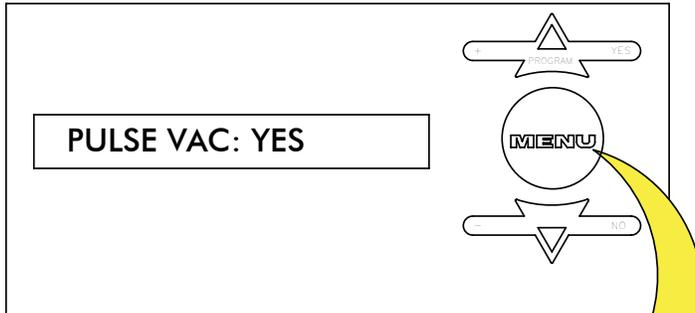
PULSE VAC: YES

PULSE VACUUM ALLOWS FOR A MORE CONTROLLED VACUUMING PROCESS. RATHER THAN SIMPLY OPENING UP THE VACUUM VALVE FOR A CONTINUOUS VACUUM THE VACUUM VALVE IS OPENED AND CLOSED REPEATEDLY UNTIL THE CHAMBER REACHES THE SET VACUUM LEVEL.
PRESS THE MENU KEY.

PULSE TO: 95
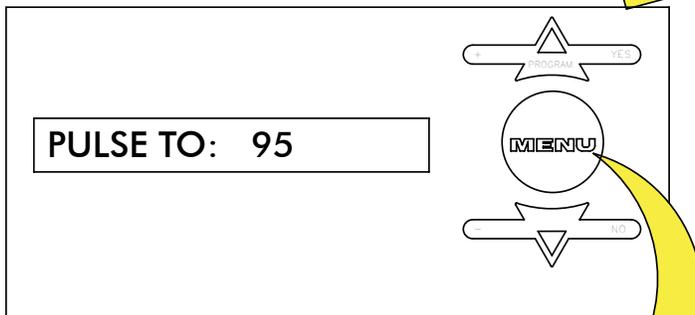
THIS IS THE % VACUUM REACHED BY PULSING THE VACUUM VALVE BEFORE THE VACUUM VALVE OPENS COMPLETELY TO FULLY EVACUATE THE CHAMBER.
THE RANGE IS 99% TO 20%.
PRESS THE MENU KEY.

PULSE ON: 1.2
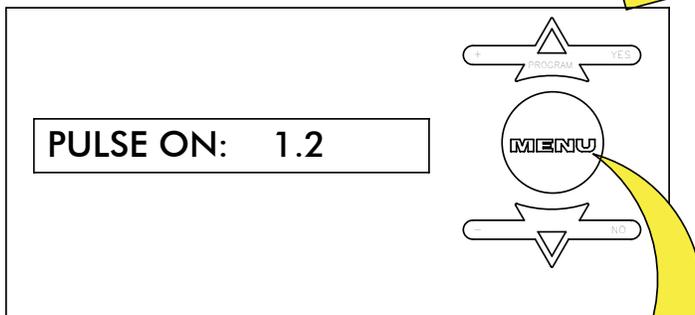
THIS IS HOW LONG THE VACUUM VALVE IS TURNED ON DURING THE VACUUM CYCLE. THE RANGE IS FROM 0 TO 3 SECONDS.
PRESS THE MENU KEY.

PULSE OFF: 1.0
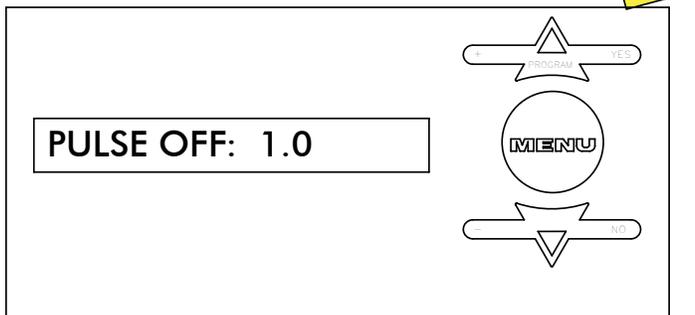
THIS IS HOW LONG THE VACUUM VALVE IS TURNED OFF DURING THE VACUUM CYCLE. THE RANGE IS FROM 0 TO 3 SECONDS.
PRESS THE MENU KEY.

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SCHEMATIC

Designation and Function of Controls

The following designations are found on the Electrical Diagrams:

Manually Activated Switches and Buttons:
    SW-1   On/Off Control Power Switch
    SW-2   On/Off Gas Flush Switch

Limit Switches:
    LS-1   Chamber Cycle Start Switch

Contactors and Relays:
    C-1   Vacuum Pump Contactor
    C-2   Seal Impulse Contactor

Overloads and Fusing:
    OL-1   Vacuum Pump Motor Overload
    F-1   Seal Bar Fuse
    F-2   Control Power Fuse

Control Modules:
    MCM   Master control module

Control Lights:
    LT-1   On/Off Control Power Light (Green)
    LT-2   Seal Impulse On Light (Red)

Transformers:
    T-1   Seal Impulse Transformer
    T-2   Control Power Transformer

Motors:
    M-1   Vacuum Pump

Potentiometers:
    POT-1   Vacuum Time Potentiometer
    POT-2   Gas Flush Time Potentiometer
    POT-3   Sealing Impulse and Cool Down Potentiometer

Designation and Function of Controls

Solenoid Valves:

SOL-1	Vacuum Solenoid Valve
SOL-2	Gas Flush Solenoid Valve
SOL-3	Seal Bladder Solenoid Valve
SOL-4	Ventilation Solenoid Valve

Misc. Valves:

V-1	Quick Exhaust Valve (Used only on machines with gas flush option)

Analog Control Panel
220 Volt, 60 Hz, Single Phase
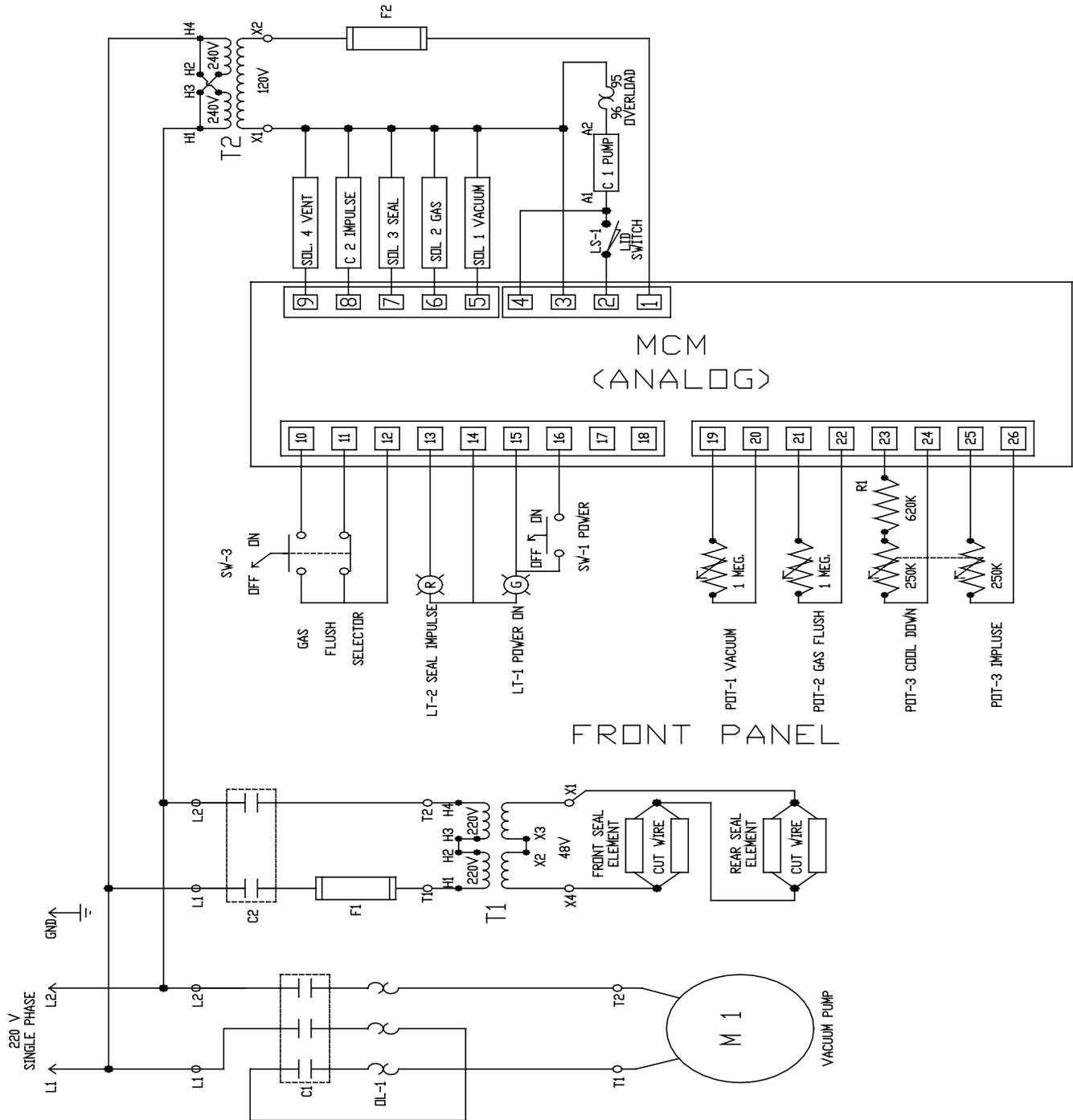
Analog Control Panel
220 Volt, 60 Hz, 3 Phase
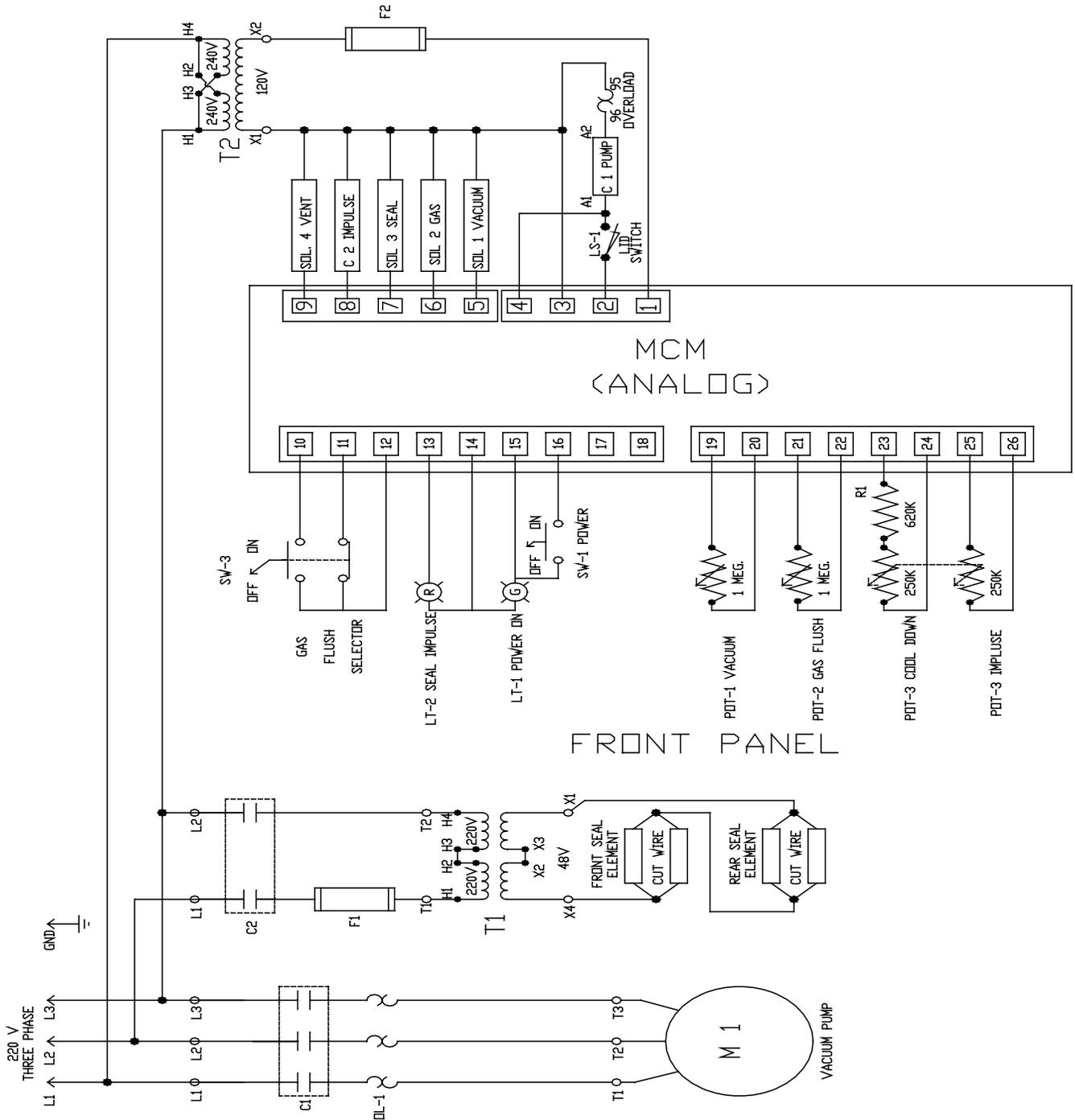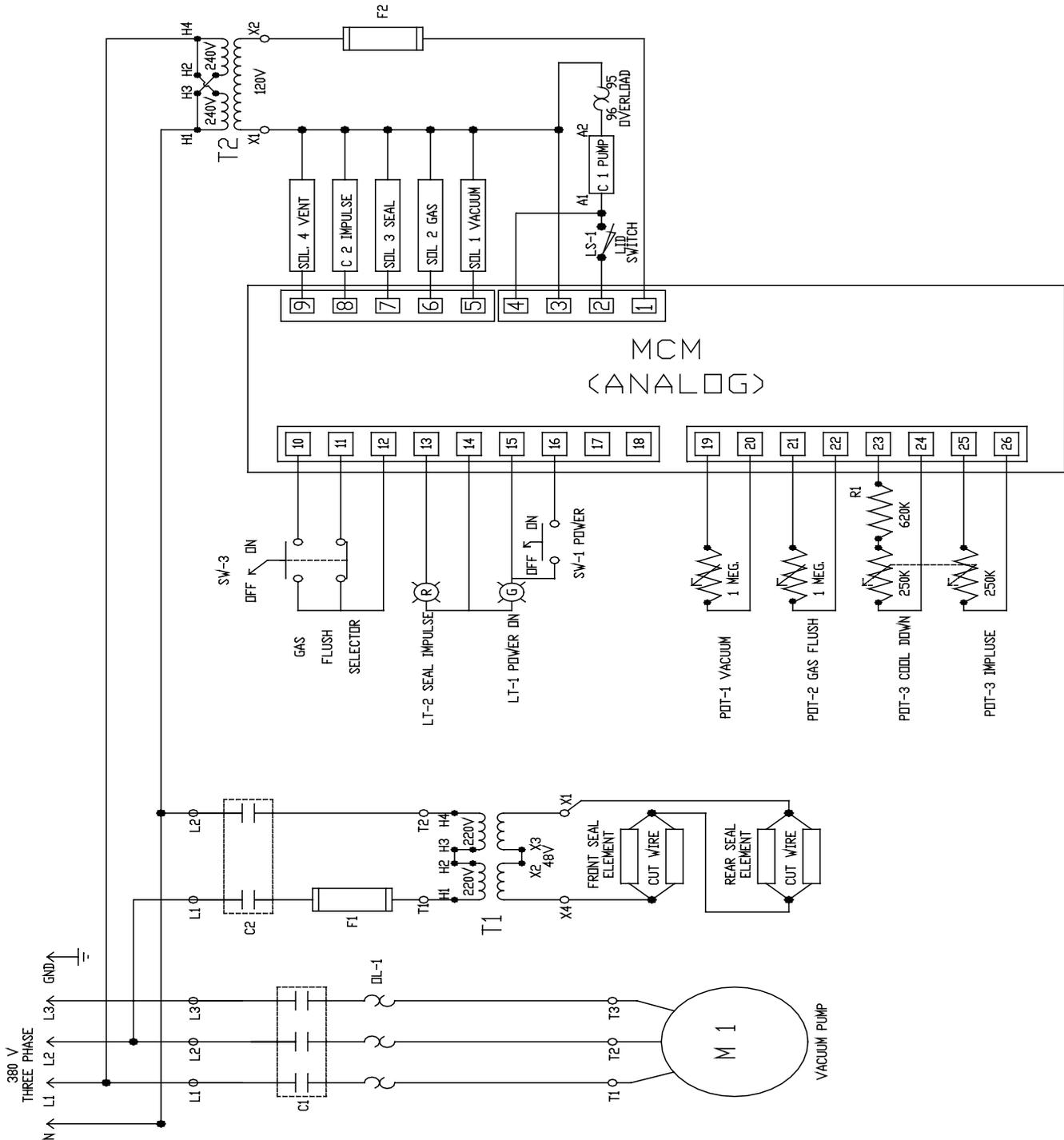
FRONT PANEL

KOCH
EQUIPMENT

Analog Control Panel
380 Volt, 50 Hz, 3 Phase

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Part Number
860052-C

Digital Control Panel
220 Volt, 60 Hz, Single Phase

KOCH EQUIPMENT

Digital Control Panel
220 Volt, 60 Hz, 3 Phase

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EQUIPMENT
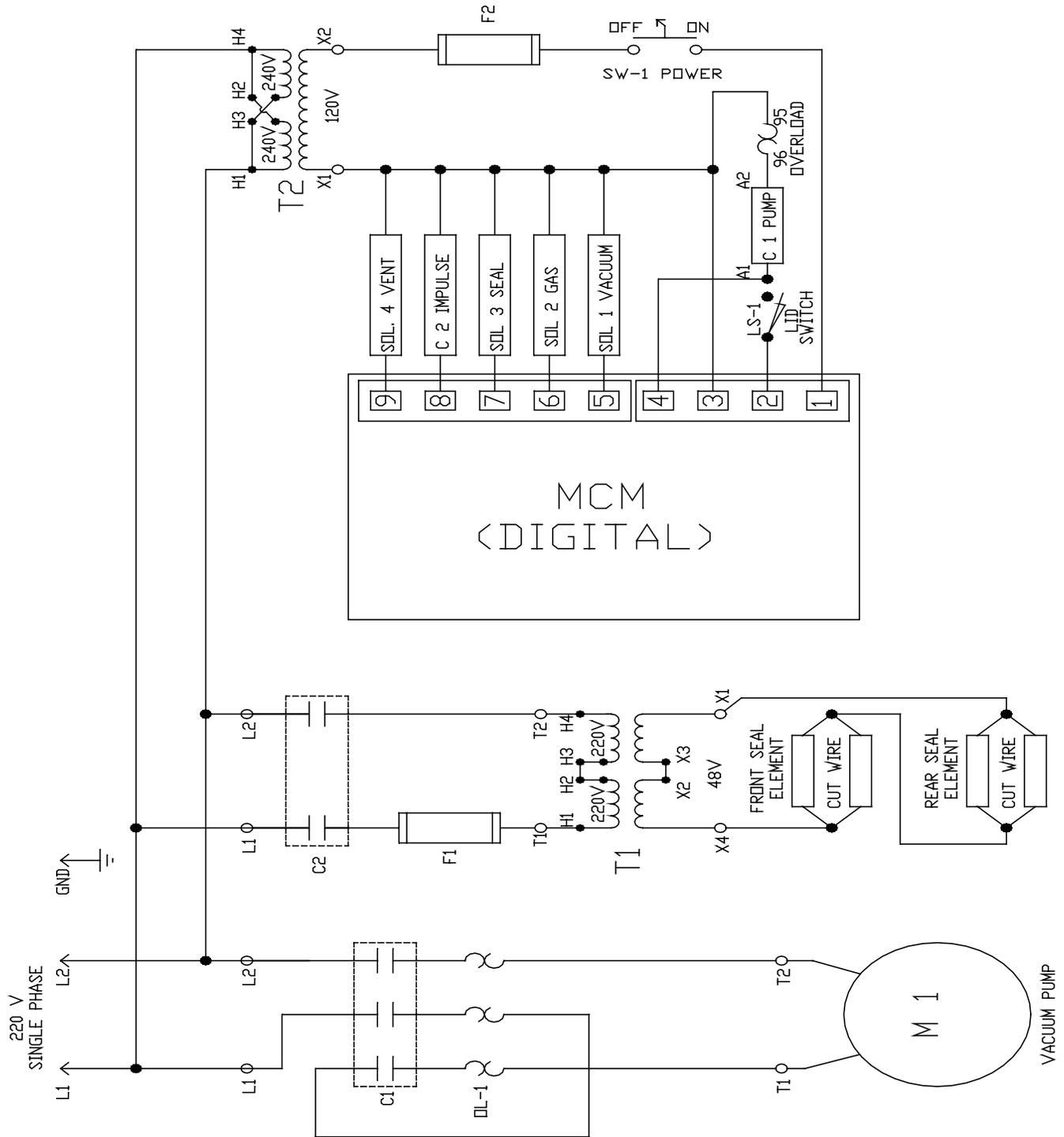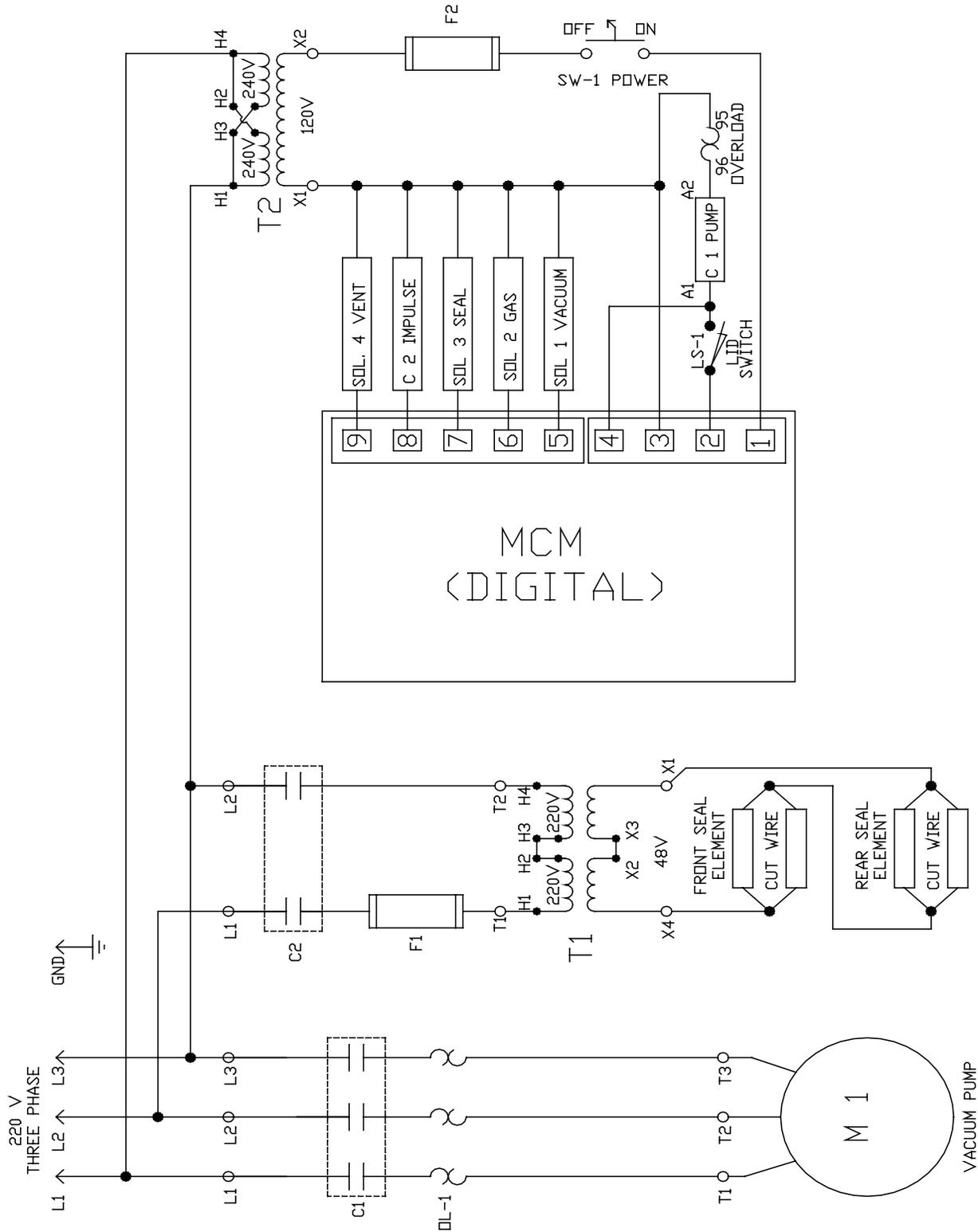
Digital Control Panel
380 Volt, 50 Hz, 3 Phase

KOCH
EQUIPMENT
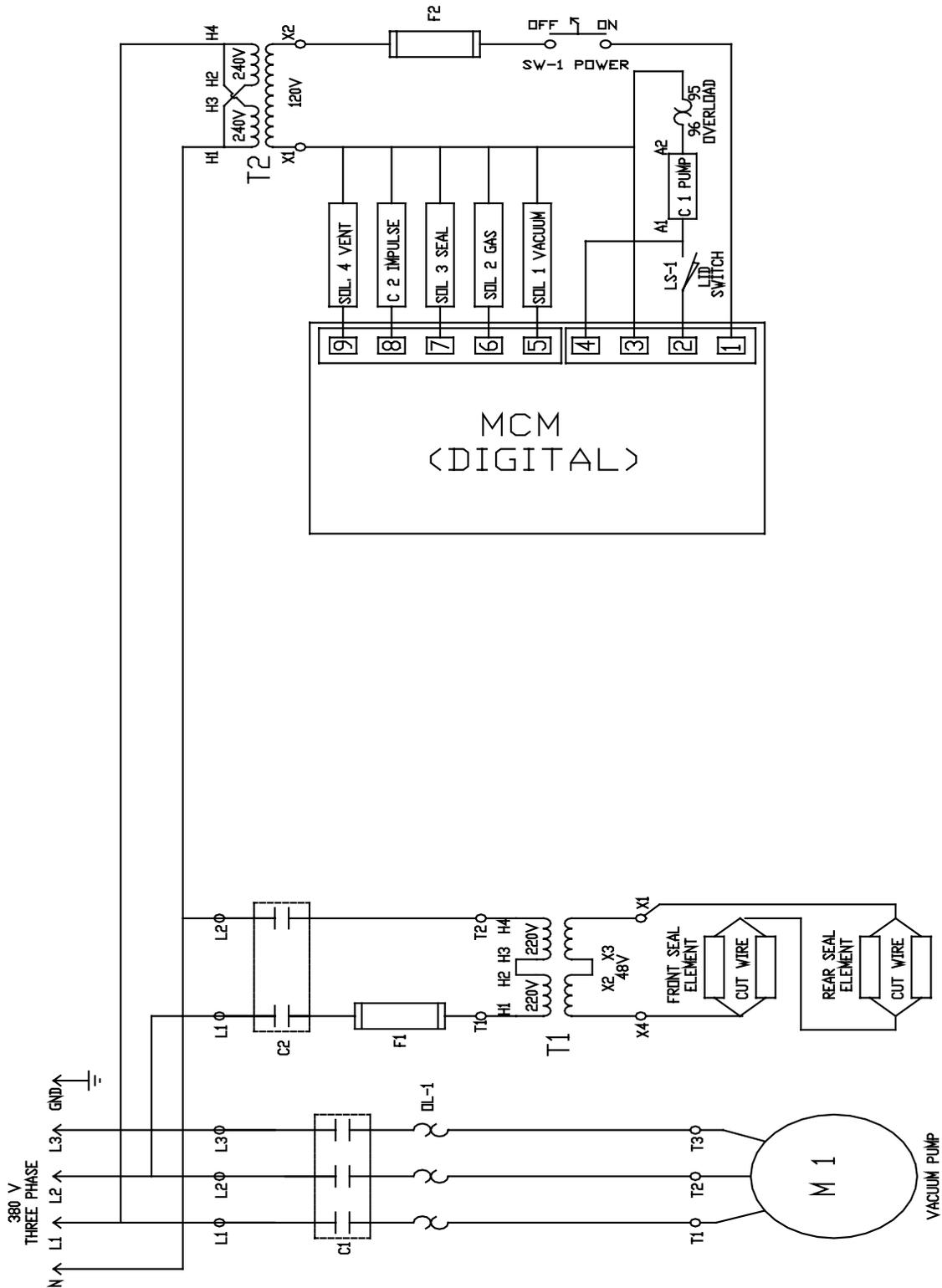
Pneumatic Diagram
Without Gas Flush

VAC. PORT

SEAL BAR

SOL. 3
SEAL

A

P   R

ATMOSPHERE

VACUUM
GAUGE

OPTIONAL

COMPRESSED AIR INLET
(OPTIONAL)

SOL. 4
VENT

OUT

IN

IN

SOL. 1
VACUUM

OUT

ATMOSPHERE

VACUUM PUMP
INLET

KOCH
EQUIPMENT

Part Number
860052
Revision
B
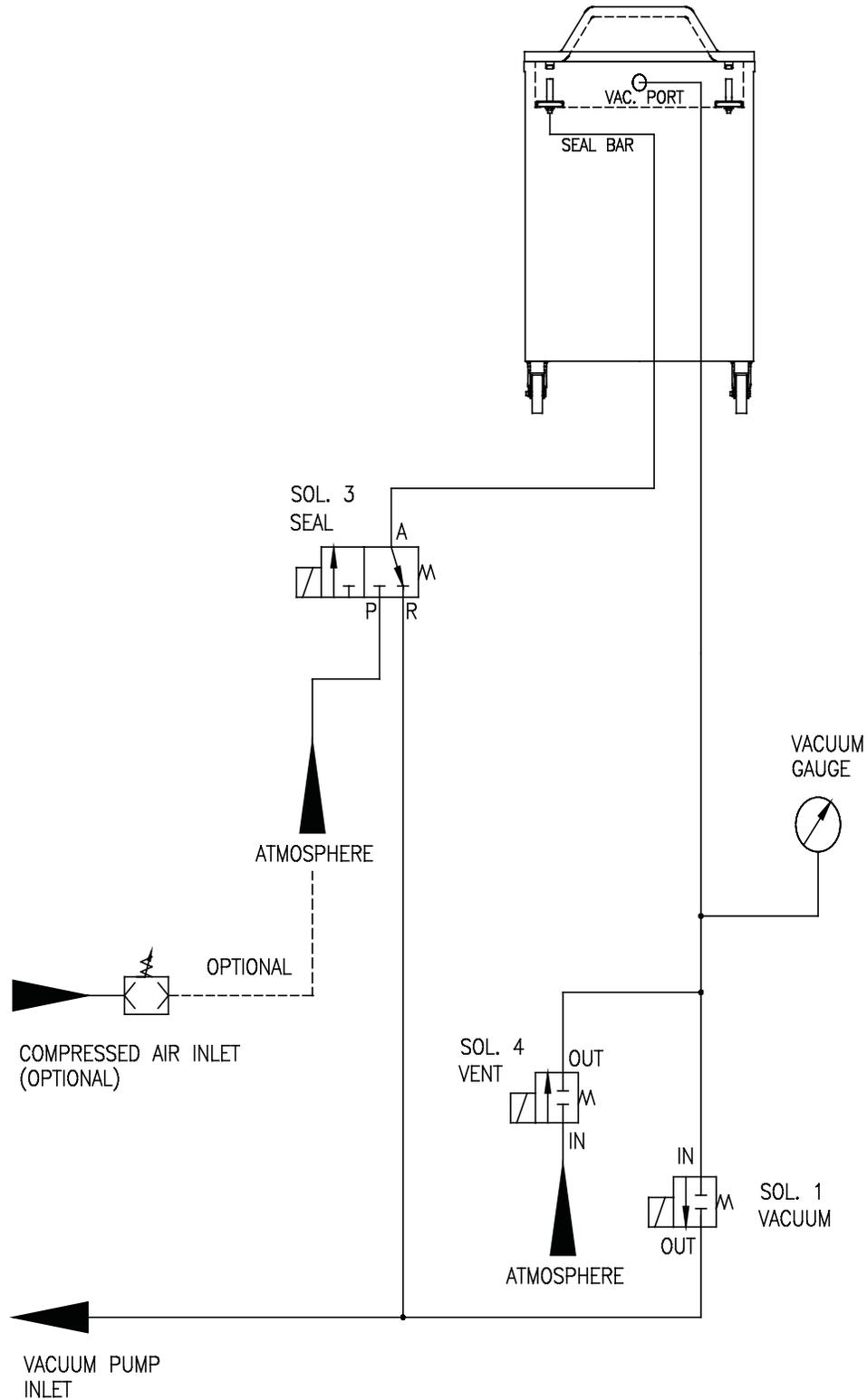
Pneumatic Diagram
With Gas Flush

VAC. PORT

SEAL BAR

GAS
NOZZLE

A

SOL. 3
SEAL

P   R

A

R

P

V1
QUICK
EXHAUST

ATMOSPHERE

SOL. 2
GAS

2

1

VACUUM
GAUGE

GAS
INLET

SOL. 4
VENT

OUT

IN

IN

SOL. 1
VACUUM

OUT

ATMOSPHERE

VACUUM PUMP
INLET

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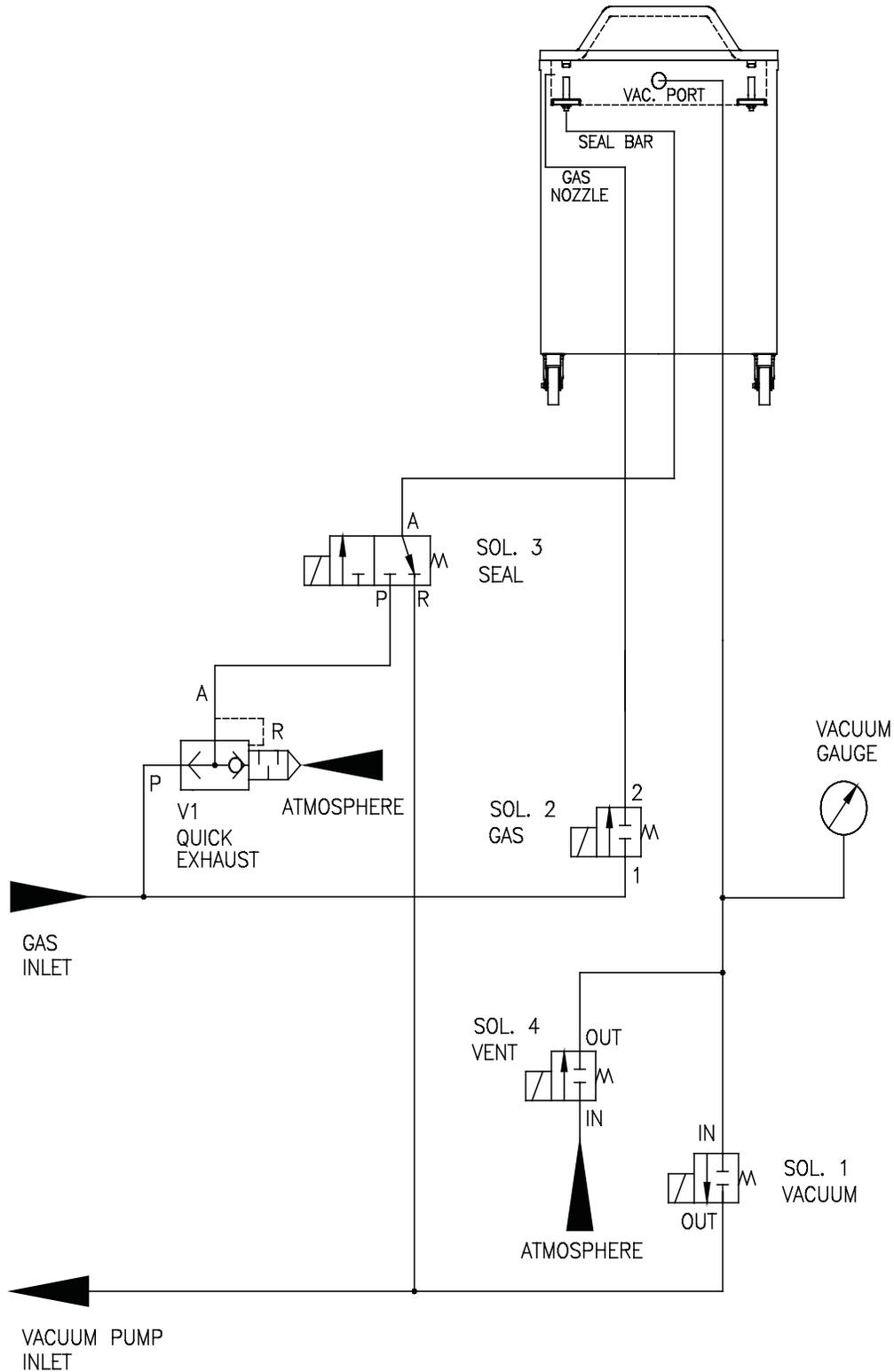
PARTS

Miscellaneous Machine Parts

Recommended Spare Parts

Qty.	Koch Part No.	Description
5 ea	840 337	Fuse, GMC 1A
1 ea	861 032	Seal Bar Assembly
1 ea	860 313	Potentiometer, Vacuum/Gas
1 ea	860 314	Potentiometer, Sealing
1 ea	860 045	Fuse, MDA 10A
6 ft	880 431	Backup Strip
8 ft	860 220	Lid Gasket
5 ea	860 034	Seal Element
10 ft	860 170	Teflon Tape
1 ea	840 370	DIN Coil
1 ea	860 029	Lid Switch
5 ft	860 035	Seal Bar Cut Wire
1 ea	860 037	Vent Valve
2 qt	884 755	Vacuum Pump 30W ND Oil
1 ea	Specify Pump	Vacuum Pump Oil Filter

Pump and Chassis

Parts List

Item No.	Koch Part No.	Description
1	840 053	ID Plate
2	840 076	Cabinet Assembly
3	900 052	Vacuum Pump, 220V, 60Hz, Single Phase, 2-hp
	900 059	Vacuum Pump, 220/380V, 60Hz, 3 Phase, 2-hp
	900 042	Vacuum Pump, 220V, 60Hz, Single Phase, 3-hp
	900 041	Vacuum Pump, 220/380V, 60Hz, 3 Phase, 3-hp
4	840 047	Rigid Caster
5	840 121	Swivel Caster
6	860 354	Plug for Main Power (240V Only)
7	860 377	Main Power Cable (240V)
	860 355	Main Power Cable (380V)
8	860 058	Cord Grip, PG21
9	860 800	Oil Drain Extension
10	860 799	Oil Drain Gasket
11	866 775	Washer, 8mm Flat
12	860 287	Bolt, M8x12 Hex Head
13	866 246	Plug
14	866 844	Screw, M6x20 Flat Socket Head
15	860 187	Vacuum Block Cover
16	860 188	Vacuum Block Spacer
17	860 148	Vacuum Block O-Ring
18	860 186	Vacuum Block
19	860 140	Hose Barb, 1.50-in.

Pump and Chassis
Diagram

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Part Number
860052-C

KOCH
EQUIPMENT

Valves and Fittings for Pump

Parts List

Item No.	Koch Part No.	Description
1	840 141	Close Nipple, 1-¼-in.
2	840 511	Fitting, 90° , 1/8-in. x 1/4-in.
3	840 106	Reinforced Hose, ¼-in. ID
4	860 139	Fitting, 90°, 1-¼-in. x 1-in.
5	840 142	Close Nipple, 1-in.
6	840 609	Vacuum Valve [SOL-1], 1-in.
	861 020	Vacuum Valve Harness, 43-in. LG
7	840 138	Fitting, 1-½-in. x 1-in. x ½-in. Tee
8	840 140	Hose Barb, 1-½-in.
9	860 143	Close Nipple, ½-in.
10	860 037	Vent Valve [SOL-4], ½-in.
	861 017	Vent Valve Harness
11	860 119	Hose Clamp, 1-½-in.
12	860 040	Vacuum Hose, 1-½-in. ID

KOCH EQUIPMENT

Valves and Fittings for Pumps
Diagram

Part Number
860052-C
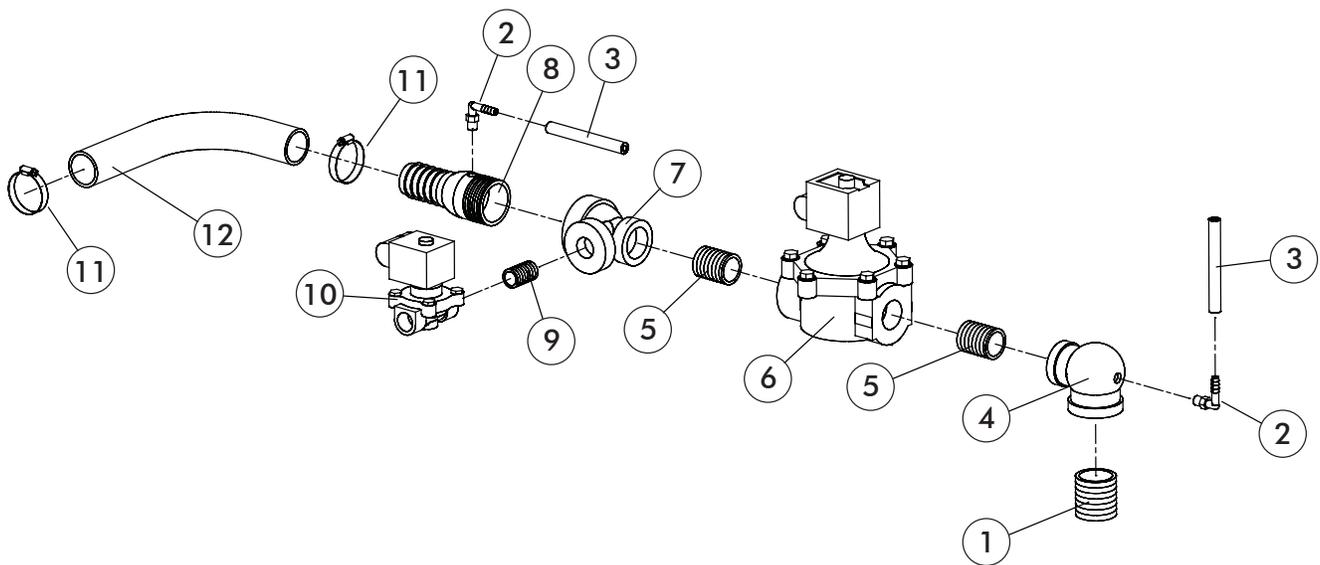
Valves and Fittings for Pump

Parts List

Item No.	Koch Part No.	Description
1	890 967	Valve, Mebner Vacuum and Vent
2	889 559	Fitting, 1-¼-in. 90° Elbow, SS
3	860 141	Nipple, Close 1-¼-in.
4	860 969	Hose Barb, 1-¼-in. NPT x 1-½-in. ID Hose
5	860 119	Hose Clamp, 1-½-in.
6	860 040	Vacuum Hose, 1-½-in.
7	860 106	Hose, ¼-in. Reinforced Air

Valves and Fittings for Pumps

Diagram
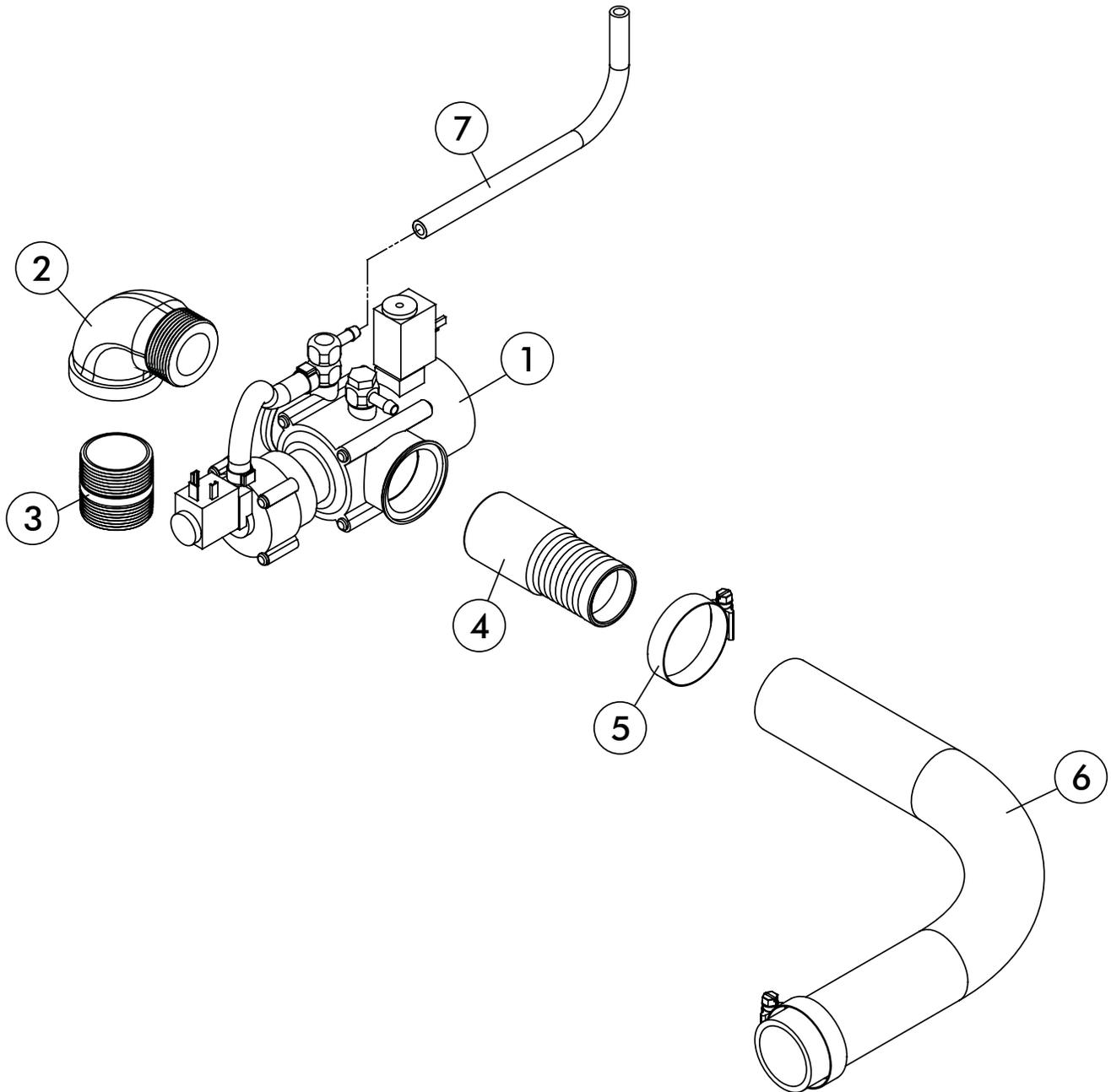
Gas Flush Components

Parts List

Item No.	Koch Part No.	Description
1	860 371	DIN Plug
2	861 019	Valve Harness
3	860 514	Hose Barb, ¼-in. x ¼-in. Elbow
4	860 325	Seal Pilot Valve [SOL-3], 3-way, Normally Closed
5	860 106	Reinforced Hose, ¼-in.
6	860 536	Close Nipple, ¼-in.
7	860 533	Quick Exhaust Valve [V1], ¼-in. NPT
8	860 324	Gas Valve [SOL-2], 2-way, Normally Closed
9	860 107	Plastic Hose Tee, ¼-in.
10	860 291	Brass Hex Nut, 3/8-24
11	860 109	Fitting, Dual Hose Barb
12	860 110	Hose Clamp for ¼-in. Reinforced Hose
13	866 254	Fitting, Aluminum Tee
14	860 548	Gas Hose, Blue
15	860 273	Fitting, Aluminum Elbow
16	860 118	Gas Nozzle
17	860 203	Holddown Pad
18	860 014	Holddown Block
19	840 514	Special Hose Barb, ¼-in. x ¼-in. Elbow

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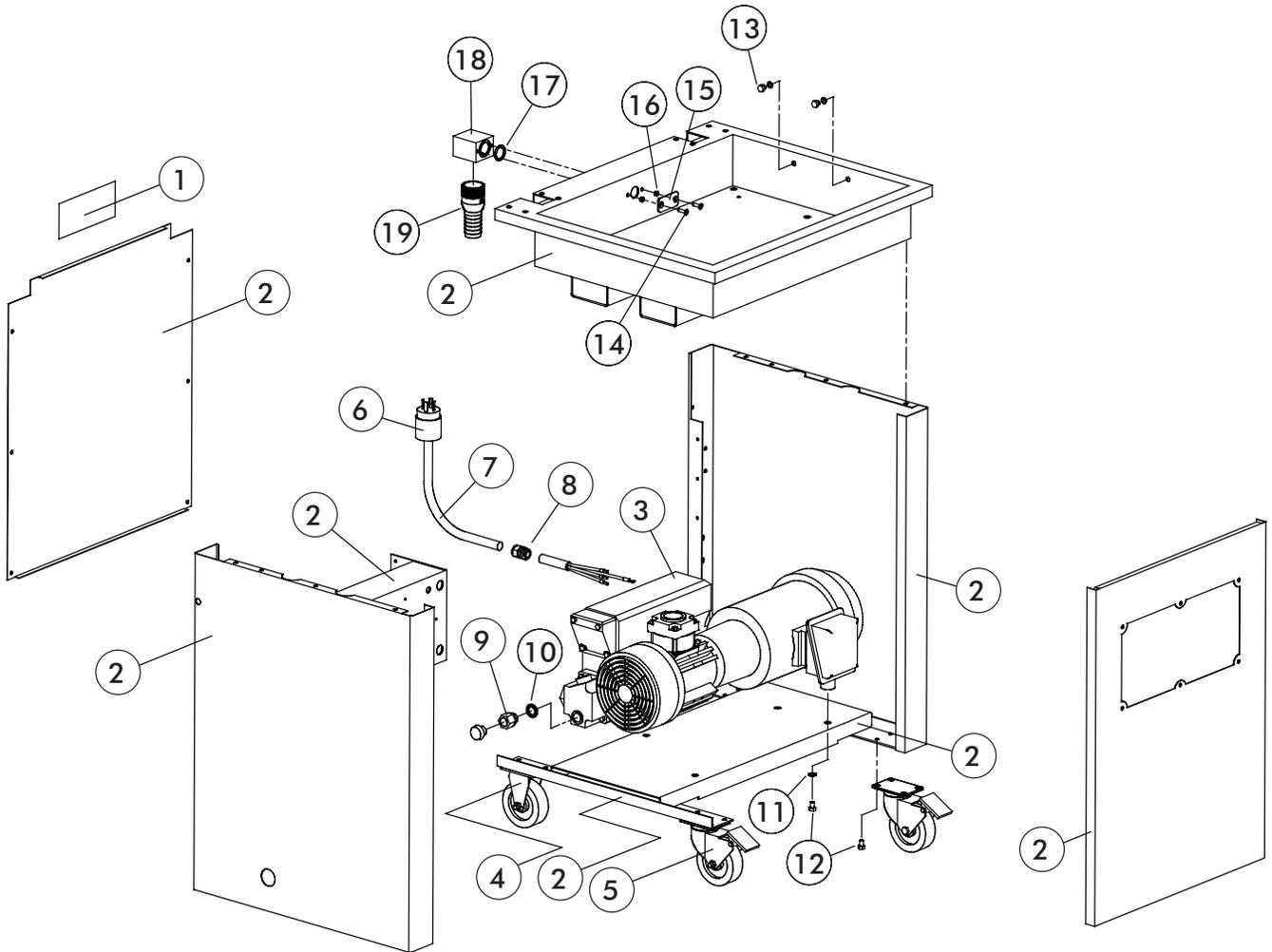info@kochequipment.com • kochequipment.com

Part Number
860052-C

Gas Flush Components
Diagram

GAS PRESSURE
TO PORT P

PORT A
TO BLADDER

PORT R
TO VACUUM

KOCH
EQUIPMENT

Part Number
860052-C
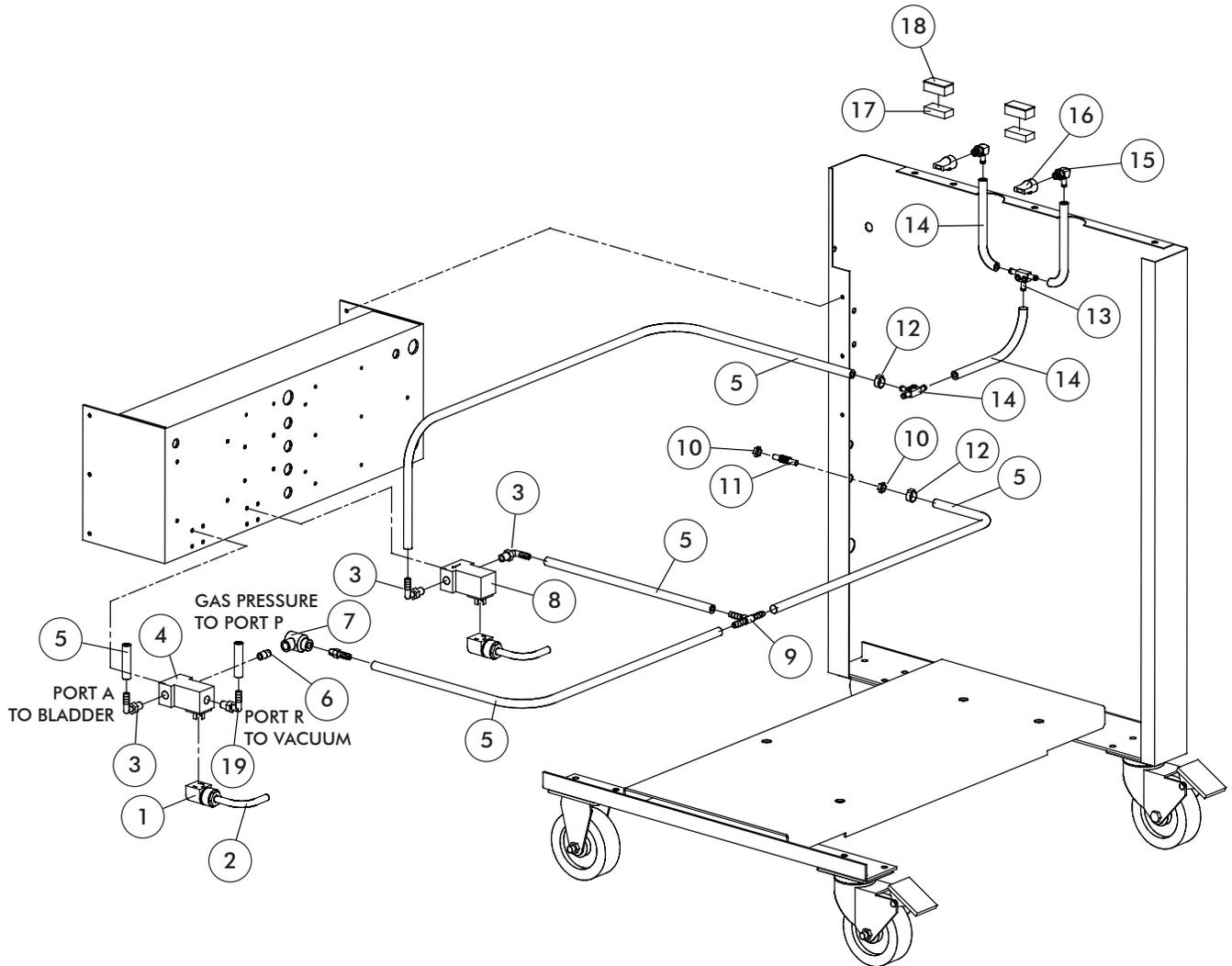
Seal Bar

Parts List

Item No.	Koch Part No.	Description
1	846 730	Capscrew, M6x10 Socket Head
2	846 784	Washer, 6mm Split
3	840 292	Washer, 6mm Custom Flat
4	840 074	Seal Bar Standoff
5	840 397	Cord Grip
6	840 549	Wire for Seal Bars
7	840 149	Gasket for Bladder Fitting (2 per bladder)
8	841 003	Seal Bladder Assembly
9	841 032	Aluminum Seal Bar Assembly
	861 053	Aluminum Seal Bar Assembly (6mm Wide)
10	840 398	Nut, 8mm Locking
11	840 990	Fiberglass Insulator Strip
12	840 033	Brass Electrical Contact
	860 640	Brass Electrical Contact (6mm Wide)
13	840 270	Screw, M4x12 Slotted Panhead
14	840 091	Seal Bar Spade
15	840 278	Set screw, M4x4 Socket
16	840 034	Sealing Element
	860 639	Sealing Element (6mm Wide) (Not Shown)
17	840 035	Cutting Wire
18	840 170	Teflon Adhesive Strip

Seal Bar

Diagram

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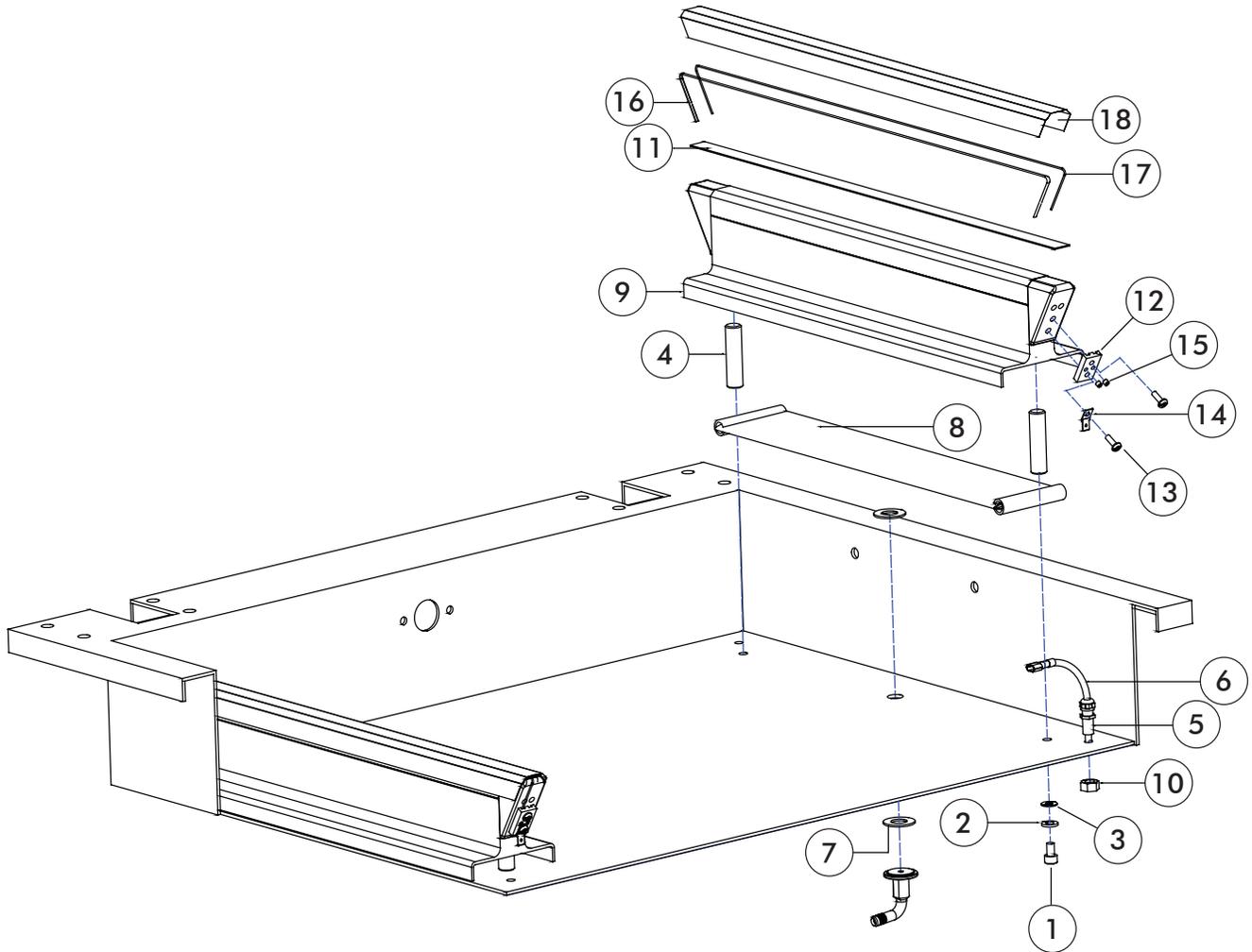
KOCH
EQUIPMENT

Lid and Hinge System

Parts List

Item No.	Koch Part No.	Description
1	840 716	Screw, M5x10 Slotted Panhead
2	840 039	Lid Switch Clamping Plate
3	840 031	Lid Switch Bracket
4	840 029	Lid Switch
5	846 729	Capscrew, M5x20 Socket Head
6	840 257	Screw, M5x20 Slotted Panhead
7	846 773	Washer, 5mm Flat
8	840 026	Anchor Block
9	840 056	Threaded Insert, M8x1.25 Internal Threads
10	840 028	Ball Stud, 10mm
11	840 038	Gas Spring
12	840 073	Gas Spring Quick Disconnect
13	840 024	Shaft, Stainless Steel $\frac{1}{2}$-in. x 4-in. LG
	840 150	Shaft, Stainless Steel $\frac{1}{4}$-in. x 11-in. LG
14	840 022	Hinge Block
15	840 021	Threaded Insert, M5x0.8 Internal Threads
16	840 252	Screw, M5x12 Slotted Flathead
17	840 019	Hinge Block Assembly
18	840 286	Bolt, M5x40 Hex Head
19	860 950	Seal Bar Backup Strip
20	840 025	Channel for Backup Strip
21	840 063	Lid Gasket (○)
	860 220	Lid Gasket
22	840 094	Lid
23	846 778	Washer, 5mm Star
24	846 791	Washer, 5mm Large OD
25	840 194	Hinge Block Bracket

KOCH EQUIPMENT

Lid and Hinge System

Diagram

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Part Number
860052-C

Main Electrical Components (Front Side)

Parts List

Item No.	Koch Part No.	Description
1	840 341	Terminal Stop Block
2	840 160	Pump Contactor
3	840 175	Pump Overload (220V)
4	840 339	Control Power Fuse Holder
5	840 337	Control Power Fuse, GMC1A [F3]
6	840 336	Sealing Fuse Holder
7	840 045	Sealing Fuse, MDA10 [F10]
8	840 342	Ground Block
9	840 340	Connection Block
10	840 347	Relay
	846 291	Relay Holder
11		DIN Rail
12	846 713	Screw, M4x6 Slotted Panhead
13		Wire Duct
14	840 041	Seal Contactor
15	840 394	Control Power Transformer, 50VA [T3]
16	840 256	Screw, M5x12 Slotted Panhead
17	840 044	Sealing Transformer, 750VA [T1]
18	840 325	Seal Pilot Valve [SOL-3], 3-way, Normally Closed
19	840 371	DIN Plug
20	840 352	Cable
21	840 514-A	Special Hose Barb, ¼-in. x ¼-in. Elbow
22	840 514	Hose Barb, ¼-in. x ¼-in. Elbow
23	840 270	Screw, M4x12 Slotted Panhead

Main Electrical Components (Front Side)

Diagram
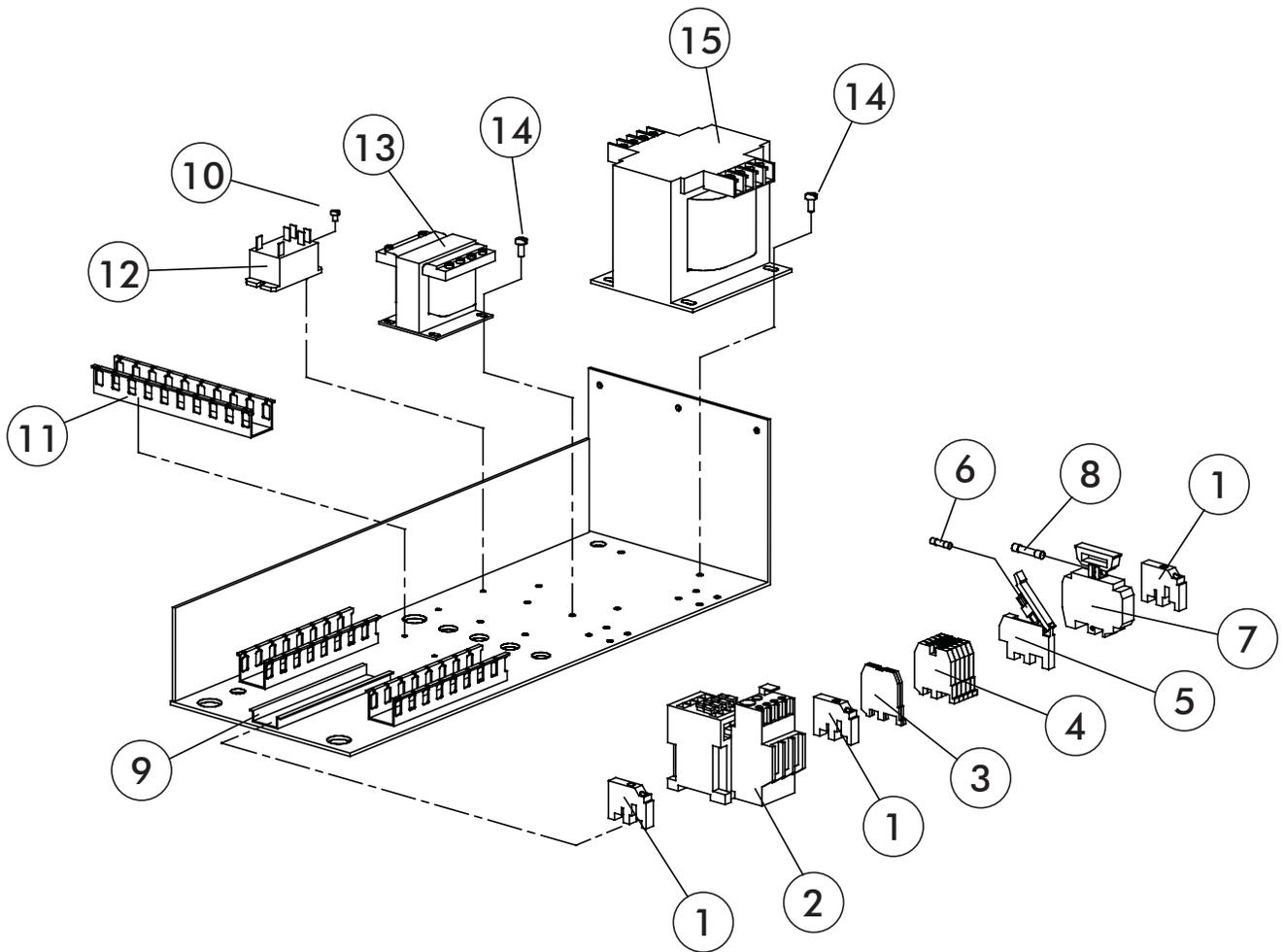
Main Electrical Components (Back Side)

Parts List

Item No.	Koch Part No.	Description
1	860 270	Screw, M4x12 Slotted Panhead
2	866 550	Cord Grip, PG7
3	860 058	Cord Grip, PG21
4	866 551	Cord Grip, PG9
5	860 514	Hose Barb, ¼-in. x ¼-in. Elbow
6	860 325	Seal Pilot Valve [SOL-3], 3-way, Normally Closed
7	840 371	DIN Plug
8	861 019	Valve Harness, 34-in. LG
9	860 514	Special Hose Barb, ¼-in. x ¼-in. Elbow

Main Electrical Components (Back Side)
Diagram

PORT R
TO VACUUM

PORT P
TO ATMOSPHERE

PORT A
TO BLADDER

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KOCH EQUIPMENT

Part Number
860052-C
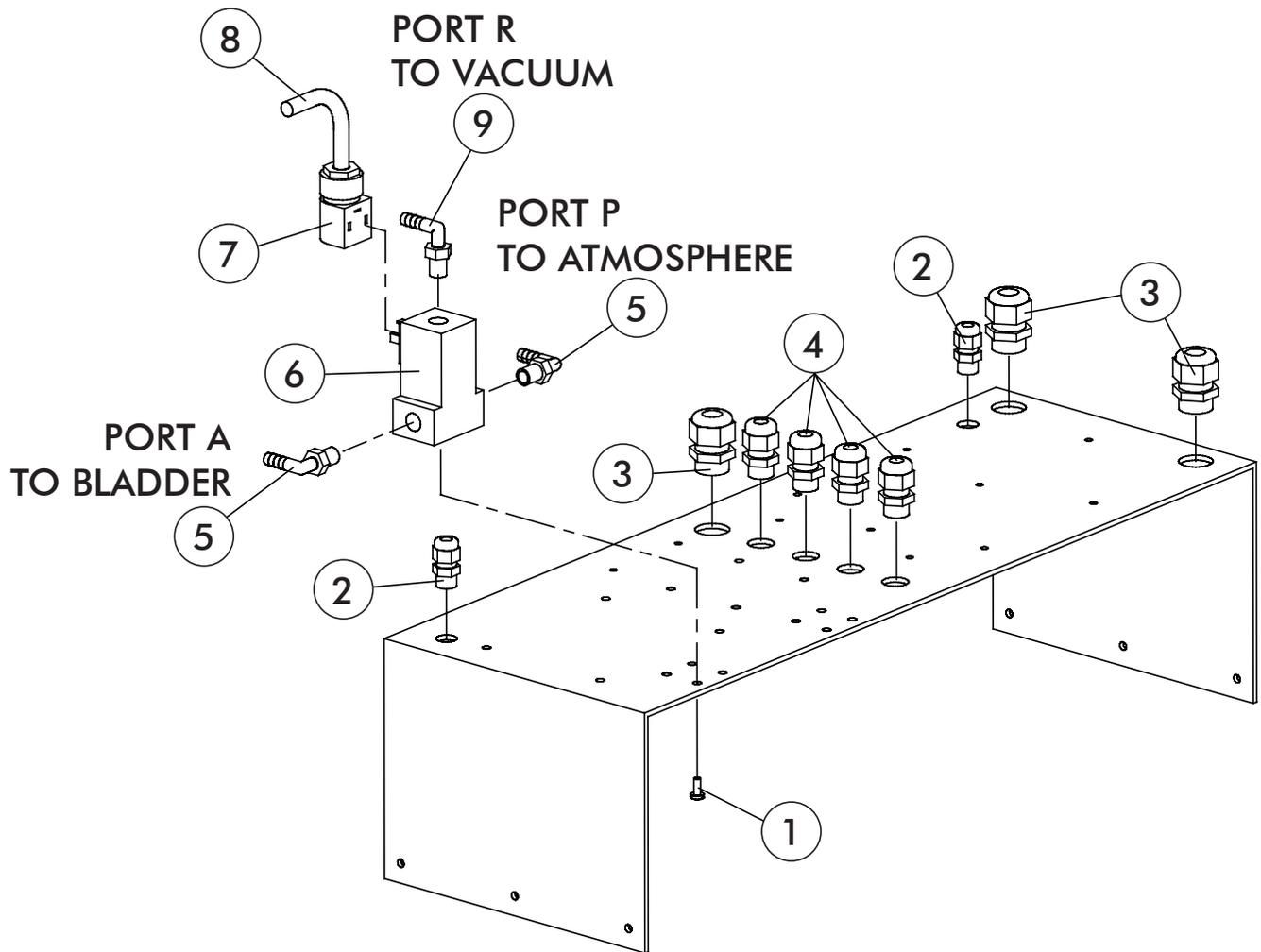
Analog Control Panel
Parts List

Item No.	Koch Part No.	Description
1	860 610	Standard Vacuum Gauge
2	860 319	Green Lens and Switch Body Assembly
3	860 316	Main Power On/Off Switch [SW-1]
4	860 316	Selector Switch Lever
5	860 320	Red Seal Light Lens
6	860 302	Blue Cap for Potentiometer Knob
	860 315	Potentiometer Knob Only
7	860 303	Yellow Cap for Potentiometer Knob (Optional with Gas Flush)
	860 315	Potentiometer Knob Only
8	860 301	Red Cap for Potentiometer Knob
	860 315	Potentiometer Knob Only
9	860 317	Gas Flush Switch Body [SW-3] (Optional with Gas Flush)
10	860 319	Light Body for Seal [LT-2] and Power [LT-1]
11	860 313	Potentiometer for Vacuum [POT-1] and Gas [POT-2] (Optional with Gas Flush)
	860 450	Vacuum Potentiometer [POT-1] for Special Produce Product
12	860 314	Sealing Potentiometer [POT-3], Standard for extended seal time
13	860 328	Connector, 4-pin
14	860 329	Connector, 5-pin
15	860 330	Connector, 8-pin
16	860 331	Connector, 9-pin
17	860 332	Connector Retainer
18	860 327	Main Control Module, Analog with Gas [MCM]
19	860 231	Main Control Module Standoff, 1"
20	861 056	Complete Assembled Front Control Panel witout Gas Flush
	861 057	Complete Assembled Front Control Panel with Gas Flush

Analog Control Panel

Diagram

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info@kochequipment.com • kochequipment.com

Part Number
860052-C
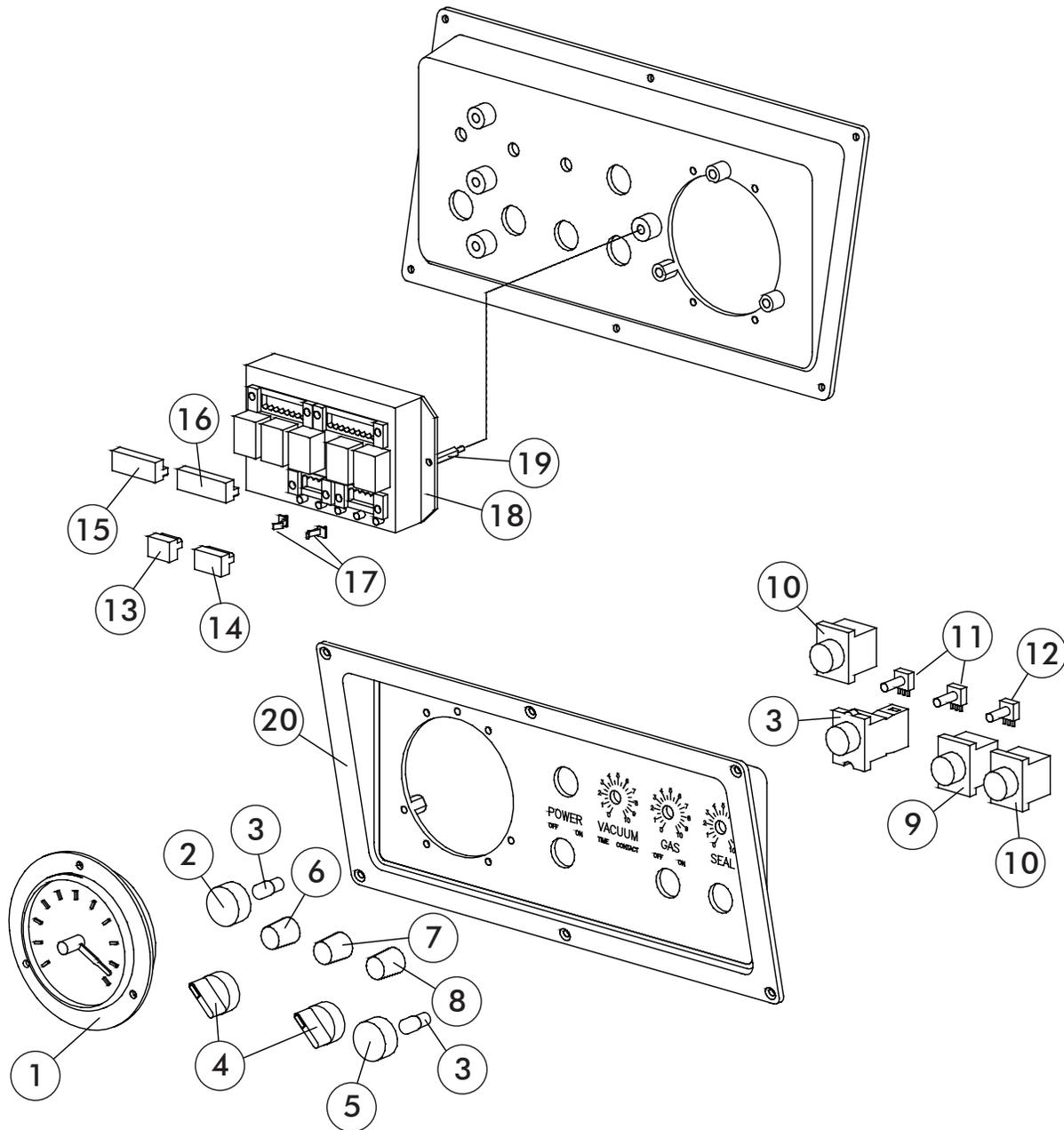
KOCH
EQUIPMENT

Digital Control Panel

Parts List

Item No.	Koch Part No.	Description
1	861 062	Front panel assembly
2	860 637	Vacuum sensor
3	860 316	Main power on/off switch [SW-1]

Digital Control Panel
Diagram

Part Number
860052-C
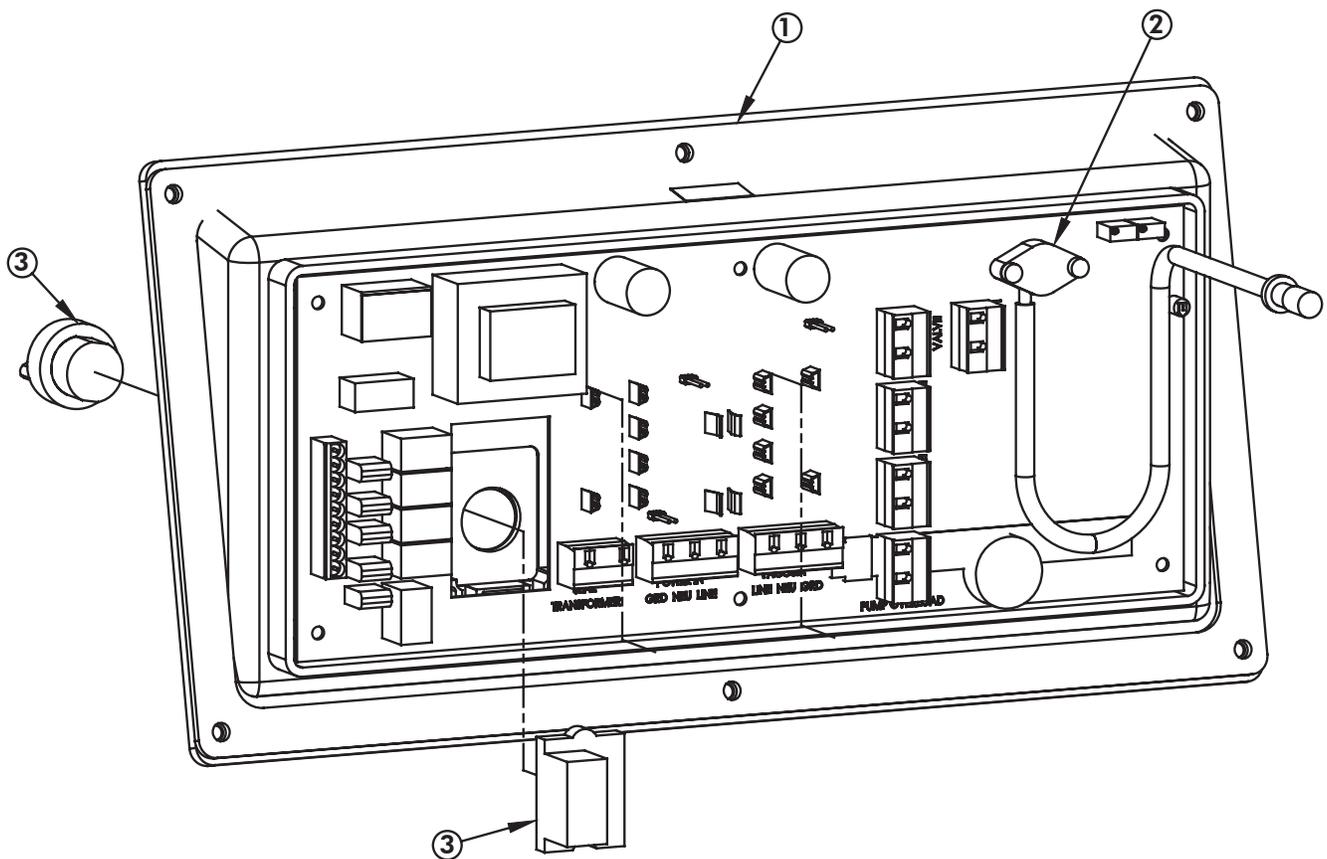
Miscellaneous Machine Parts

Parts List

Item No.	Koch Part No.	Description
1	840 050	Filler Plate Set
2	840 051	Stainless Steel Product Tray
3	840 124	Magnetic Stop for Product Tray
4	846 713	Screw, M4x6 Slotted Panhead
5	840 052	Operations and Maintenance Manual

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Part Number
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Miscellaneous Machine Parts

Diagram
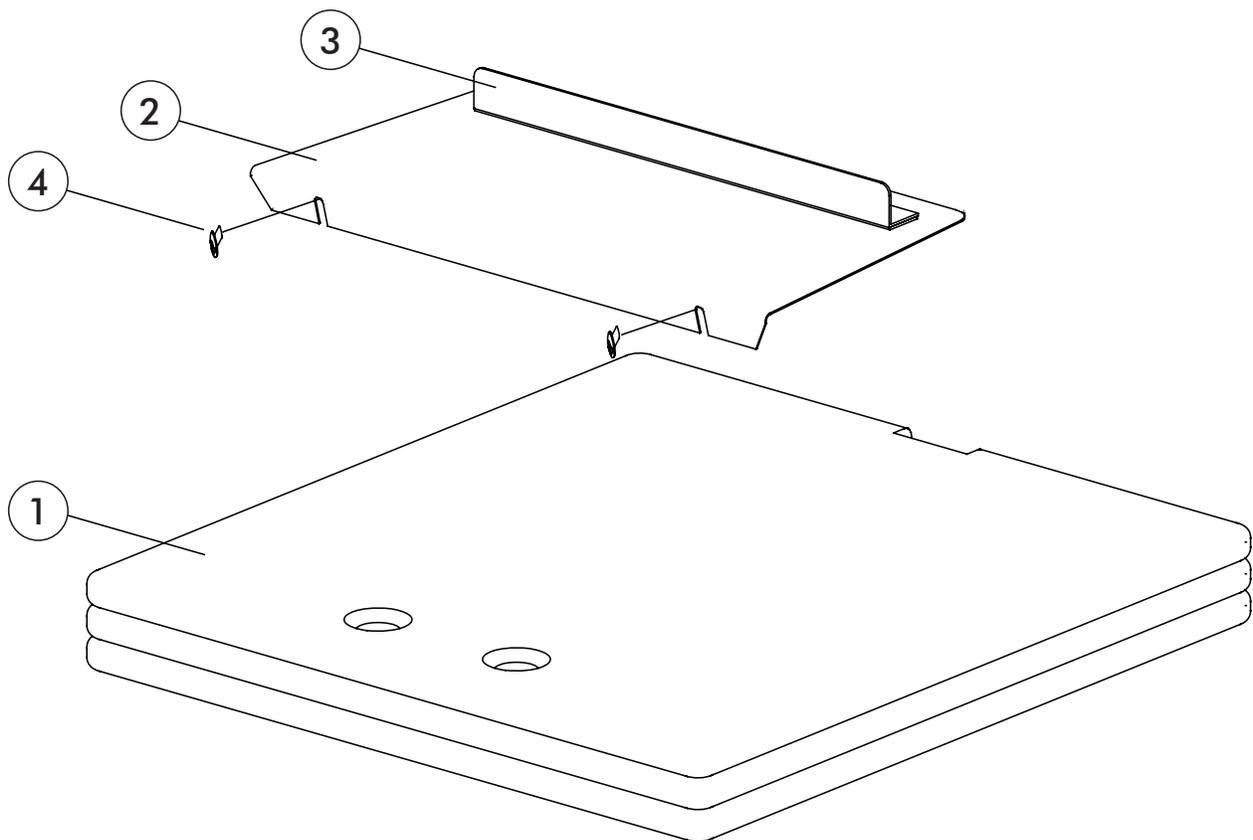
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Part Number
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SERVICE HISTORY

KOCH
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Part Number
860052-C

Service History

Date	Service Provided	Technician

Service History

Date	Service Provided	Technician

Koch Equipment LLC
1414 West 29th Street
Kansas City, MO 64108-3604

800-777-5624

Regular Telephone: (816) 753-2150
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E-mail: info@kochequipment.com
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Koch Replacement Parts
(800) 746-1723
Fax: (816) 561-2854

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Koch Equipment Services Inc.
(800) 777-5624
Fax: (816) 531-1447

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