

# **KLE 150GT**

# INSTRUCTION AND PART MANUAL

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#### INSTRUCTION MANUAL

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# PARTS MANUAL ELECTRICAL BOX DOOR Page 12 CABINET Page 14 SPRAY ARM Page 15 PLUMBING Page 16 DRAIN PAGE 17



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#### READ ALL INSTRUCTION BEFORE INSTALLATION

#### INTRODUCTION

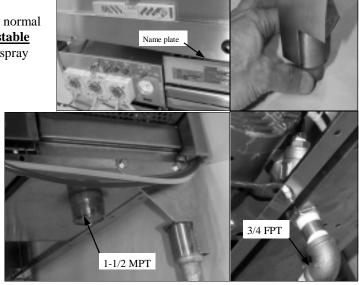
The KLE 150 GT dishwasher is designed to provide years of excellent warewash results under many types of conditions. This unit is configured as a push button start dishwasher. The dishwasher includes a three product chemical dispenser which dispenses liquid detergent, rinse product, and a chemical sanitizer suitable for low temperature (recommended 140 deg. F applications.) Options and additional features are also available. Contact your nearest Knight representative for more details.

#### INSTALLATION - Caution – Access into electrical enclosure must be performed by authorized personnel.

- 1. Inspect the dishwasher upon initial receipt. Open the door and locate the accessory package inside the dishwasher. Note that it includes a spray arm and other equipment required for installation.
- 2. Examine the spot where the dishwasher is to be operated. Insure that all electrical and plumbing connections have been considered for installation Parameters:

Electrical	Water line	Drain line
- 120V 20 AMP circuit or - 240V 10 AMP circuit (not field convertible) connection box on the tray stand.	20 psi flow pressure 140 deg. F 3/4" FPT lower left side 4 inches above floor.	1-1/2" MPT on scrap accumulator Lower right side, 6 inches above floor.

- 3. Install detergent, sanitizer, and rinse tubing to the inlet side of the peristaltic pumps. Use the provided hose clamp ties to secure tubing to squeeze tubing. If machine is ordered with Chem. alarm option, see page 6 for instructions.
- 4. Place the dishwasher at the spot desired for normal operation. <u>Level the dishwasher using adjustable</u> <u>bullet feet at the bottom of the legs</u>. Install spray arm included in the accessory box.
- 5. Connect hot water supply line to the 3/4 FPT elbow at bottom-left of machine. Insure that water pressure is sufficient for fill (approx. 10 GPM flow @ 20 psi.). Connect drain to 1-1/2" MPT nipple on scrap accumulator to the lower right.
- 6. Make electrical connections (refer to data plate for voltage and current ratings) to the stationary conduit box located on the stand tray behind electrical box. Remove cover from stationary conduit box and make connections (use appropriate wire size). Run all electrical wire through suitable conduit and insure all connections are made in accordance with local wiring codes. It is recommended that the circuit breaker carrying the dishwasher load have NO OTHER ELECTRICAL DEVICES and dishwasher is directly connected to the circuit breaker.





#### **INITIAL OPERATION**

- 1. Check pump intake screen for proper installation.
- 2. Start with all switches in the OFF position.
- 3. Turn on main power switch. <u>Open</u> and close door to reset the control board. With door closed, flip up the fill button to fill the dishwasher with fresh 140 deg. F water (120 deg. F min). Fill until level with top of drain ball stem (over flow point).



Water level

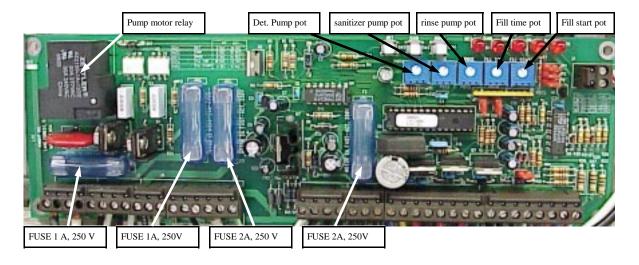
4. Press the RUN POWER switch and with door in closed position the machine will start to wash. Allow machine to run through one cycle and watch machine sequence through the following wash cycle: (90 second cycle evaluated). 120 second cycle consists of 50 second wash, 15 second drain and 55 second rinse. See pages 3,4 and 9 for more details on 72, and 120 cycles.

		TIME
	1 second – wash pump motor turns on	0
	3 seconds – detergent pump runs for adjusted period of time.	
		10
WASH		20
		30
		40
<b>⊢</b>	45 seconds – drain opens and machine drains for 15 seconds.	
DRAIN	Adjustable 48 to 60 seconds – fresh water valve opens and rinses inside of dishwasher (drain is still open)	50
	60 seconds – drain closes and fill remains open for period of time to fill dish machine.	60
	70 seconds – sanitizer and rinse pumps run for an adjustable period of time.	70
RINSE	70 seconds – wash pump motor stops for three seconds then starts to "burp" the machine.	70
RIN		80
	90 seconds – machine will stop. This is the end of the wash cycle.	90

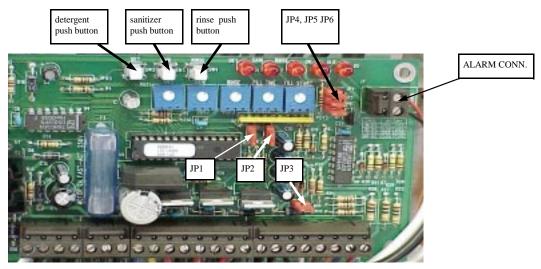
5. Machine is factory adjusted but may need to be adjusted to your location water pressure to operate properly.

#### TIME SETTINGS

Time settings will need to be done by authorized personnel only. The time settings for detergent pump, fresh water fill, sanitizer pump, and rinse pump are done inside the control box using the single turn pots. The pots control the time duration of each of the listed components. Use the chart below to make settings.



POT CONTROL	ACTIVE TIME IN 90 SECONDS	SPAN OF POT TIME ADJUSTMENT	COMMENTS
Detergent Pump	at time = 3 seconds	2-30 seconds	pot turns from 7 o'clock to 5 o'clock or 10 division. Each division is 2.7 seconds. Pump flow is approximately 1.3 ml/sec.
Sani Pump	at time = 70 seconds	0-15 seconds	pot turns 7 o'clock to 5 o'clock or 10 divisions. Each division is 1.5 seconds. Pump flow is approximately 1.3 ml/sec.
Rinse Pump	at time = 70 seconds	0-15 seconds	pot turns 7 o'clock to 5 o'clock or 10 divisions. Each division is 1.5 seconds. Pump flow is approximately 1.3 ml/sec.
Fill Start	at time = 48 to 59 seconds	0-11 seconds	fill start is activated during the fixed drain cycle (45 to 60 seconds) at the 7 o'clock setting time is 0 and will start fill at 48 seconds in cycle. At the 5 o'clock setting time is 11 seconds and will start fill at 59 seconds in cycle. Fill start is set according to water pressure and the required time to rinse debris down the drain. Normal setting at 20 psi flow pressure is 12 o'clock or 5.5 seconds.
Fill Time	determined by fill start	10-42 seconds	begins at the setting of the fill start. Once fill start is set the fill time determines the duration of time fresh water solenoid valve remains open. 7 o'clock setting time is 10 seconds, 5 o'clock setting time is 42 seconds. Adjust according to water pressure. Normal setting at 20 psi flow pressure is 11 o'clock or 15 seconds.



#### JUMPER SETTINGS

Jumper settings will need to be done by authorized personnel only. **JP1** and **JP2** control the wash cycle time. Machine is factory set at 90 second cycle. Use table below to activate other wash cycles. Turn OFF main power switch to change cycle times. Adjust pots for proper operation.

JUMPER	72 SEC	90 SEC	120 SEC	360 SEC	1
JP1	OPEN	OPEN	CLOSED	CLOSED	
JP2	CLOSED	OPEN	OPEN	CLOSED	1

JP4,

NOTE: JP3 MUST BE OPEN FOR PROPER OPERATION OF KLE 150GT.

JP3 MUST BE CLOSED FOR PROPER OPERATION OF KLE 175GT.

JP5 and JP6 control proof of detergent, sanitizer and rinse aid delivery respectively. They should be <u>closed</u> if proof of chemical delivery kit (P/N 7501318, optional) is not installed. Machine can be ordered with proof of chemical delivery kit or kit can be ordered separately.

#### PRIME CHEMICAL PUMPS

Each chemical pump can be primed simply by turning the delime switch to "ON" position during run time of pump in wash cycle. This feature elements opening the control box lid and holding chemical push button switches to prime.

#### CIRCUIT BOARD PUSH BUTTONS

Circuit board control done by authorized personnel only.

Detergent Push Button- Activities detergent pump any time during wash cycle or delime cycle. Active when

main power switch is on. Can be used to prime detergent pump.

Sanitizer Push Button- Same as detergent Rinse Push Button- Same as detergent

#### NORMAL OPERATION

- 1. Manually remove food debris from dishes, glasses, cups, etc. The better the pre-rinse the better the wash.
- 2. Place dishes, glasses, cups, etc. in dish rack. Do not stack dishes. Insure glasses and cups are placed upside down.
- 3. With the main power switch ON, close dish machine door (door must be open and closed after each cycle to reset the system) and press the run power switch, machine will start. The wash cycle will take 90 seconds (72 or 120 seconds).

#### PROOF OF DELIVERY SYSTEM (OPTION)

#### PROOF OF DELIVERY INSTALLATION INSTRUCTIONS

P/N 7501318

#### **Introduction:**

Proof of delivery system is designed to alert the dish washer operator of Interruptions in flow of liquid chemicals (detergent sanitizer rinse aid). This option can be ordered with your dishmachine orders or separately using part number 7501318.

#### Parts included in this kit:

A- P/N 9640943, Tube probe assembly. (3)

B-P/N 9600027, Cable set assembly. (1)

C-P/N 1900598-1, Buzzer, piezzo, w/ 15" lead. (1)

D-P/N 0300121, Cable tie 3.5". (3)

E-P/N 0300420, Hole plug. (1)

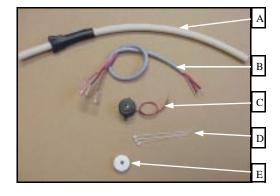
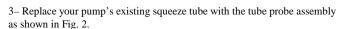


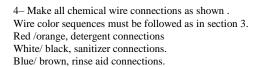
Fig. 1

#### Installation:

- 1- Turn main power switch and wall breaker to "OFF" position.
- 2– Plug all probe tube assembly connectors (A) in cable set assembly (B) Spade connectors in the following wire color sequences: Red/orange, white/ black and blue/brown for detergent , sani and Rinse aid respectively.



Insert other end of cable set assembly in hole plug (E) and pass through the Hole on the bottom of control box.



Jumpers JP4 (detergent), JP5 (sanitizer) and JP6 (rinse aid) must be opened at this time to enable the alarm for each Chemical.

Note: These jumpers are only opened if you are alarming Chemicals. If you are alarming one chemical, only The corresponding Jumper must be opned.



Fig. 2

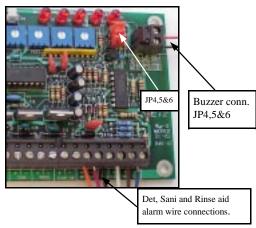


Fig. 3

- 5– Using a utility knife, cut out the buzzer hole on the control box cover label and install buzzer (C) as shown on Fig. 4.
- 6- Connect black and red wires to + and terminals respectively, on the upper right hand corner of control board (see Fig. 3 page 1). Snap on the hole plug (E) in The hole under control box. Using provided cable ties (D), secure all lose wire inside and outside control box.
- 7– Prime chemical pumps by switching the "DELIME" switch to "ON" position during each pump's normal run in dishmachine cycle.

Turn delime switch to "OFF" position after priming all pumps.

Your dishmachine is now ready for its normal operations and the alarm will sound during each injection if chemicals are not Passing through the chemical tubings.



Fig. 4

#### MAINTENANCE SCHEDULE

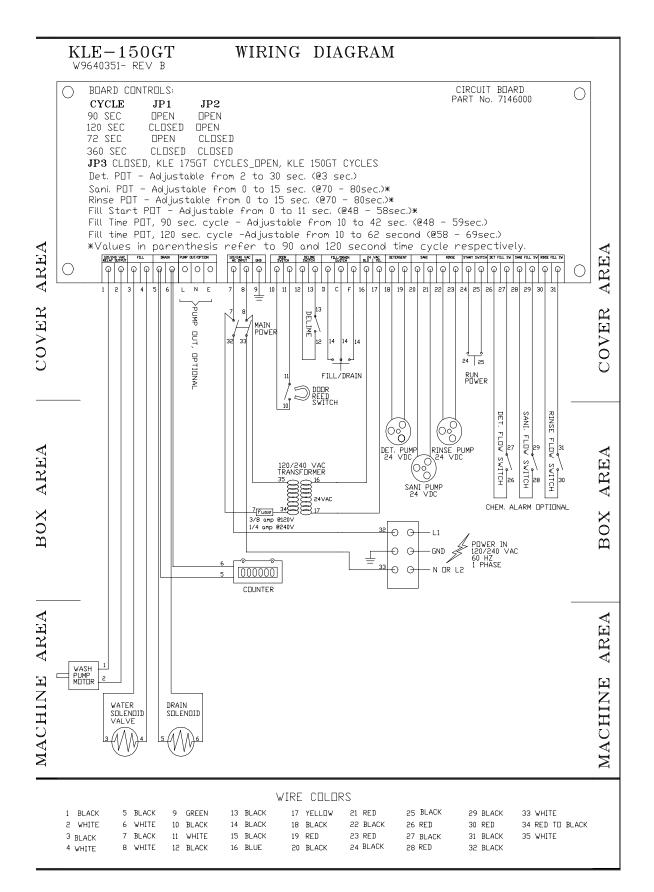
CAUTION! Before performing periodic maintenance insure water supply valve is off and circuit breaker is off.

TASK	FREQUENCY	PROCEDURE/COMMENTS
Clean fresh water line strainers	normal - every 2 months or - as needed	
clean scrap accumulator	at end of meal time or as needed	
clean drain ball and drain seat	once a day or as needed	wipe with damp wash cloth & detergent Do not press/wedge drain ball into drain seat. Set drain ball in place.
clean spray arms	once a day or as needed	remove end caps and dislodge any debris in spray jets with tooth pick or other pointed object. Flush length of spray arm with water.
Wipe down outside of machine	once a day or as needed	use damp wash cloth and a detergent
Delime inside of machine	as required	use a delime solution as recommended by manufacturer. Pour solution in machine and start machine. Flip delime switch ON and allow machine to run for 5 minutes.

#### TROUBLESHOOTING:

PROBLEM	CAUSE	REMEDY
Low/No spray arm pressure	Impeller clogged	*Remove pump face and clean impeller
	Pump intake tube clogged  Spray arm or spray tips clogged	*Remove pump face and push debris out of pump intake tube Remove spray arm and clean
	Low water level	(see maintenance table Fill tank to proper level (see initial operation)
Wash pump motor runs continuously	Delime switch is on. Faulty circuit board. Motor relay is stuck	Turn delime switch off  *Call for service  Tap on relay see time setting section for relay location.
Dish washer will not start	Door is open Run power switch is OFF No supply voltage Delime switch is ON 3/8 amp fuse to transformr is blown	Replace 3/8 amp fuse
Chemical injection bad/poor (detergent, rinse, sanitizer)	Not enough chemical Poor chemical flow Faulty chemical pump motor No chemical flow	*Adjust pot (time settings) Replace pump squeeze tube *Replace chemical pump motor Product container empty
Leaky/noisy vacuum breaker	Water pressure too low Water pressure too high	Clean screen (see maintenance schedule) Adjust fill pressure (see installation)
Reduced wash results	Worn spray arm bearing Washer not level Tray rails damaged	Replace bearing. Level with bullet feet (see installation) Replace tray rails.
Dish washer will not fresh water fill	Faulty solenoid valve	*Call for service
Dish washer will not nesh water in	'Y'strainer screen clogged	Clean screen (see maintenance schedule)
	Water supply line is off Faulty push button fill switch Fill level not set correctly	Open supply valve  *Call for service See installation section
Dish washer will not drain	Faulty drain solenoid Drain ball jammed in drain seat. Drain/fill fuse is blown	*Call for service Open machine and lift drain ball. Replace 2 amp slo blo fuse
Brown stains inside machine	High iron content in water	Delime machine to remove stains. When complete leave doors in open position to dry inside of machine.

<sup>\*</sup> By authorized personnel only.



#### **DISCLAIMER**

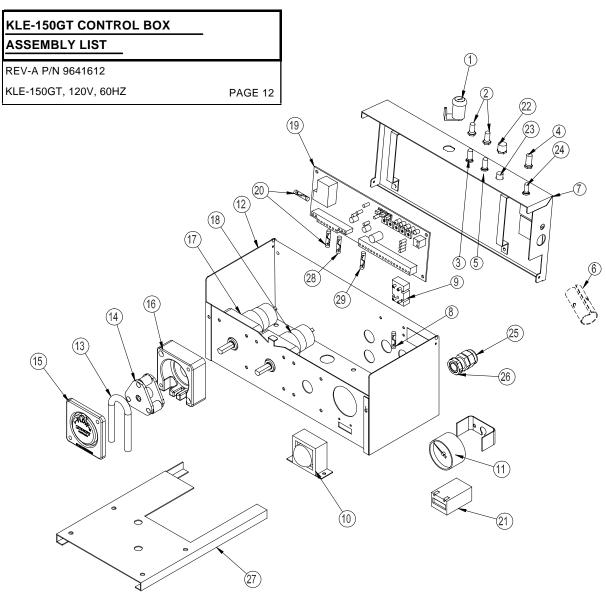
Knight Inc. does not accept responsibility for the mishandling, misuse, or non-performance of the described items when used for purposes other than those specified in the instructions. For hazardous material information consult label, MSDS, or Knight Inc.

#### WARRANTY

All stainless steel components have a three year limited warranty from date of purchase against manufacturers defects. The electronic control board has a two year warranty. Warranty replacement for component parts purchased by Knight are limited to warranty by the manufacturer. Warranty applies only to the replacement or repair of such parts when returned to factory with a Knight Return Authorization (KRA) number, freight prepaid and found to be defective upon factory authorized inspection. Bearings and pump seals or rubber and synthetic rubber parts such as "O"-rings, diaphragms, squeeze tubing, and gaskets are considered expendable and are not covered under warranty. Warranty does not cover liability resulting from performance of this equipment nor the labor to replace this equipment. Product abuse or misuse voids warranty.

# **PARTS MANUAL**





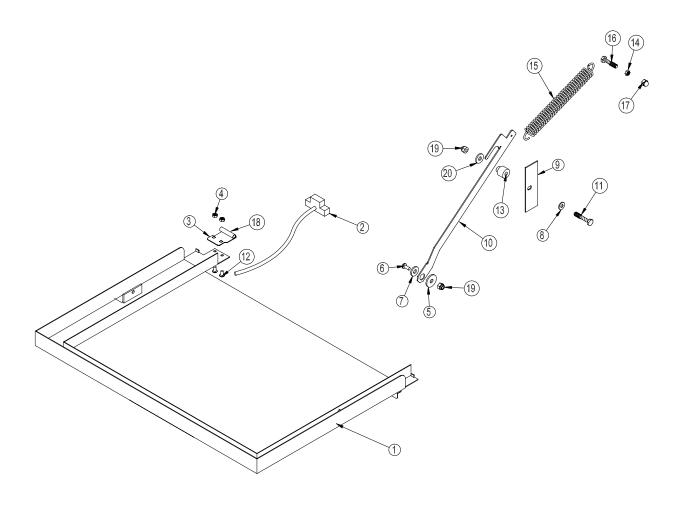
NO.	P/N	DESCRIPTION	QTY.	NO.	P/N	DESCRIPTION	QTY.
1	1200392	LOCK & KEY	1	16	7501311	PUMP BODY ONLY	3
2	9600578	RUBBER BOOT FOR SWITCH	1	17	7010241	40 RPM, 24V DC MOTOR (DET.)	1
3	7507400	TOGGLE SWITCH (ON/OFF)	1	18	7010216	15 RPM, 24V DC MOTOR (RINSE/SANI)	2
4	9600987	MAIN SWITCH BOOT	1	19	7146000	LTC CIRCUIT BOARD	1
5	9600861	FILL/DRAIN SWITCH	1	20	7012028	FUSE 1 AMP 120/250 VOLT	2
6	9640328	NEOPRENE SWITCH GUARD	1	21	9640327-F	COUNTER 120V (240V 96403273-F)	1
7	9640319	CONTROL BOX COVER	1	22	9640357-K	ARMORED PUSH BUTTON	1
8	0600311	3/8 AMP. 240V, FUSE	1	23	9600837	SWITCH MOMENTARY, PUSH BUTTON	1
9	0200500	BARRIER 3 POSITION	1	24	9600787	SWITCH, MASTER	1
10	2000575	TRANSFORMER TR-3040	1	25	1900400	STRIAN RELIEF BODY	6
11	9601975	TEMPERATURE GAGE	1	26	1900402	STRAIN RELIEF LOCKNUT	6
12	9640356	ELECTRICAL BOX BODY	1	27	9640947	ELECTRICAL BOX SLIDE BASE	1
13	7018096	SQUEEZE TUBE T-53-T	3	28	7012029	FUSE 2 AMP	1
14	7503453	3-LOBE ROLLER ASSY. BLUE	3	29	7012030	FUSE 3 AMP	1
15	7502312	FACE PLATE CLEAR	3				

## KLE-150GT DOOR ASSEMBLY PARTS

LIST

REV-A P/N 9641612

KLE-150GT, 120V, 60HZ



NO.	P/N	DESCRIPTION	QTY.	NO.	P/N	DESCRIPTION	QTY.
1	9640418	DOOR ASSEMBLY	1	11	9600436	1/4-20x1-1/2 HEX BOLT	2
2	9640357-D	REED SWITCH ASSY	1	12	9640944-A	CARRIAGE BOLT 10-24 X1/2"	2
3	9640424	DOOR MAGNET ASSEMBLY	1	13	9600843	DOOR PIVOT	2
4	9640944-B	CARRIAGE NUT 10-24	2	14	1400476	1/4"-20 NUT	2
5	9600430	5/16 S.S. WASHER	2	15	9640955	DOOR SPRING	2
6	9600834	1/4-20x5/8 TRUSS HEAD	1	16	9600641	1/4"-20X 1-1/4" HEX BOLT	2
7	9640713	DOOR PULLER SPACER	2	17	9600437	1/4"-20 ACORN NUT	2
8	9600421	.250IDx.562OD WASHER, BRASS	2	18	1300490	MAGNET 1/4"X 1 1/4"	1
9	9601910	HINGE SUPPORT PLATE	2	19	1400462	NUT 1/4"-20 SS NYLOCK	2
10	9640419	DOOR PULLER	2	20	9600781	WASHER S.S. 3/4" O.D.	2

# KLE-150GT MACHINE CHASSIS ASSEMBLY LIST REV-A P/N 9641612 KLE-150GT, 120V, 60HZ PAGE 14 8 11)

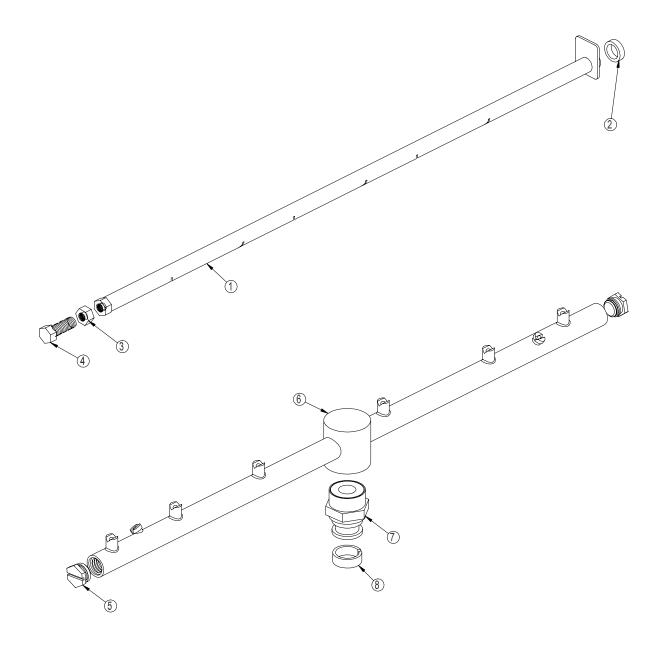
NO.	P/N	DESCRIPTION	QTY.	NO.	P/N	DESCRIPTION	QTY.
1	9640207	WRAPPER ASSEMBLY	1	10	9641418	FRONT PANEL	1
2	9640606	TRAY RAIL RIGHT	1	11	9640952	FRONT COVER	1
3	9640607	TRAY RAIL LEFT	1	12	9600423	1/4-20x1/2" BOLT	17
4	9640110	PAN ASSEMBLY	1	13	9600421	.250IDx.562OD WASHER, BRASS	23
5	9640817	STAND LEG LEFT SIDE	1	14	1400462	NUT, #1/4-20 W/NYLOCK	23
6	9640816	STAND LEG RIGHT SIDE	1	15	9600835	1/4-20x1-1/4 BOLT, HEX HEAD	6
7	9640822	STAND UPRIGHT / EXTN	2	16	9640712	PUMP INTAKE SCREEN	1
8	9641416	SCRAP TRAP ASSEMBLY	1	17	9600017	SPLASH SHIELD	1
9	9641408	SCRAP TRAY ASSEMBLY	1				

## KLE-150GT SPRAY ARMS ASSEMBLY

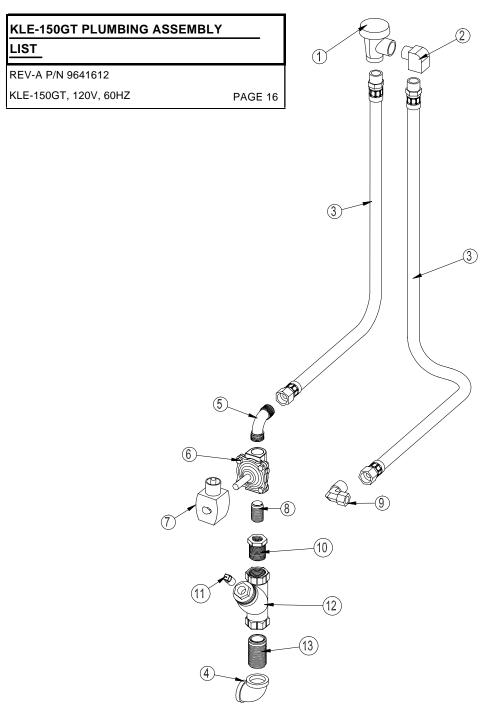
LIST

REV-A P/N 9641612

KLE-150GT, 120V, 60HZ



NO.	P/N	DESCRIPTION	QTY.	NO.	P/N	DESCRIPTION	QTY.
1	9641003	UPPER SPRAY ARM ASSEMBLY	1	5	9600417	END CAP	2
2	2300818	WASHER, EPDM	1	6	9602210-V	SPRAY ARM OVERSIZED 20"	1
3	9600889	NUT, 5/6-18, S.S. #18-8	1	7	9602205	SPRAY ARM BEARING W/SLEEVE	1
4	9600746	BOLT, HEX HEAD	1	8	9602207	BEARING SLEEVE	1



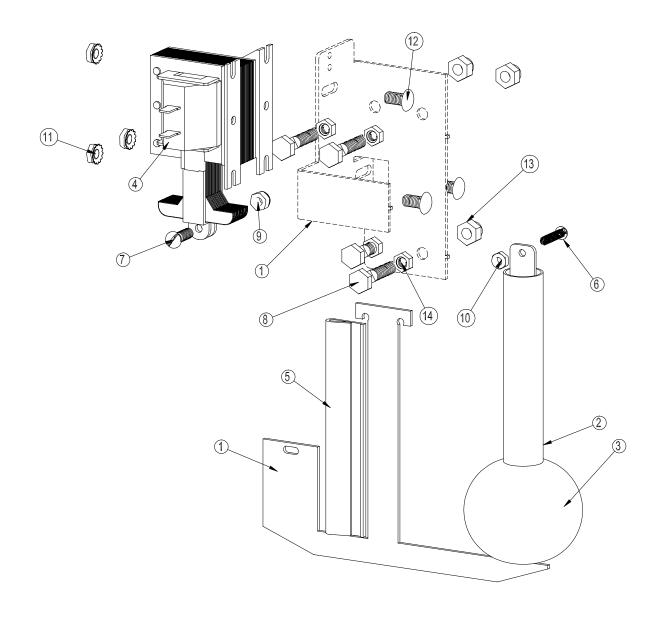
NO.	P/N	DESCRIPTION	QTY.	NO.	P/N	DESCRIPTION	QTY.
1*	7120102	VACUUM BREAKER WATTS 1/2"	1	8	9600549	NIPPLE 1/2NPT x1-1/2", BRASS	1
2	9600510	1/2" NPT STREET ELBOW	1	9	9600435	ELL 1/2 COMP x 1/2 MNPT	1
3	9600021	1/2FNPTx 30" BRAIDED HOSE	2	10	9501554	BUSHING 3/4"MNPT x 1/2"FNPT	1
4	9600771	3/4" FxF BRASS ELBOW	1	11	9600407	1/4" NPT HOLE PLUG	1
5	9600020	FITTING 1/2x 1/2 MNPT ELBOW	1	12	9600410	STRAINER, Y 3/4"NPT	1
6**	9600551-01	SOLENOID VALVE 1/2"NPT	1	13	9603037	3/4" NPT x 2" BRASS NIPPLE	1
7	9641904	SOLENOID COIL 120V (240V, 9641905)	1	*	9641907	DIAPHRAGM KIT 1/2" ASCO VALVE	
				**	7120102-1	REPAIR KIT 1/2" VAC. BREAKER	

#### **KLE-150GT DRAIN BALL SOLENOID**

# LINK ASSEMBLY PARTS LIST

REV-A P/N 9641612

KLE-150GT, 120V, 60HZ



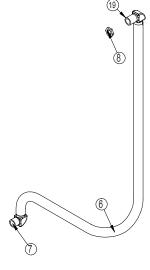
NO.	P/N.	DESCRIPTION	QTY.	NO.	P/N.	DESCRIPTION	QTY.
1	9641518	DRAIN LIFTING ARM	1	8	9600641	1/4-20 X 1-1/4 BOLT, HEX HEAD	4
2	9641519	DRAIN BALL STEM	1	9	1400461	NUT W/NYLOCK #8-32, S.S	1
3	9641506	DRAIN BALL	1	10	9603065	#6-32 NYLOCK NUT	1
4	9600444-1	DRAIN SOLENOID 120V/60HZ (240V, 9600454)	1	11	9640944-B	KEPS NUT 10-24 SS	3
5	9641516	DRAIN LIFTING ARM GUIDE	1	12	9640944-A	CARRIAGE BOLT 10-24 X 1/2 IN	3
6	1900738	#6-32X3/4, PAN HEAD SCREW	1	13	1400462	NUT W/NYLOCK, #1/4-20	4
7	1900616	#8-32 X 5/8 SCREW	1	14	1400476	NUT, 1/4-20, S.S.	4

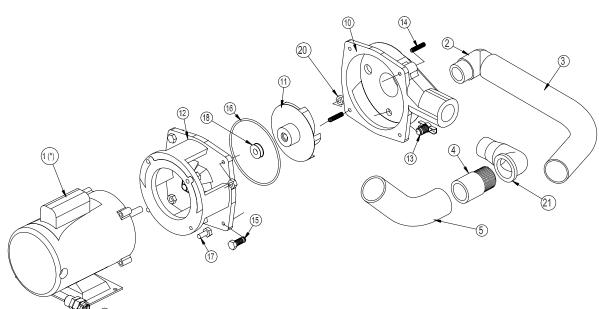
## KLE-150GT PUMP PLUMBING

# ASSEMBLY LIST

REV-A P/N 9641612

KLE-150GT, 120V, 60HZ





NO.	P/N	DESCRIPTION	QTY.	NO.	P/N	DESCRIPTION	QTY.
*1	9600008	PUMP MOTOR 1HP, 120V	1	12	9600742	PUMP BASE	1
2	9601897	FITTING, INSERT ELL	1	13	9600478	PET COCK, 1/4" NPT	1
3	9640553	PUMP INTAKE HOSE	1	14	1400528	SET SCREW 3/8-16X2" LONG	2
4	9601605	PUMP DISCHARGE NIPPLE	1	15	0200253	BOLT, HEX HEAD 3/8-16X 1"	2
5	9640554	PUMP OUTLET HOSE	1	16	9600748	"O" RING, PUMP ASSY.	1
6	9640555	PUMP DISCHARGE HOSE	1	17	0200252	BOLT, HEX, 3/8-16X 3/4"	4
7	9640532	1/2"x3/8 BARB ELBOW	1	18	9600745	PUMP SEAL KIT	1
8	9600768	1/2" IPS JAMB NUT	1	19	9640531	1/2" BEADED BARB ELL X 1/2"NPT	1
9	1900400	STRAIN RELIEF BODY, LIQUITITE	1	20	1400415	NUT, S.S. HEX 3/8-16	1
10	9600750-1	PUMP COVER MACHINED	1	21	9600530	1" 90DEG STREET ELBOW	1
11	9661202	OPEN IMPELLAR MACHINED	1	*	9600007	MOTOR-240, 50/60 HZ	