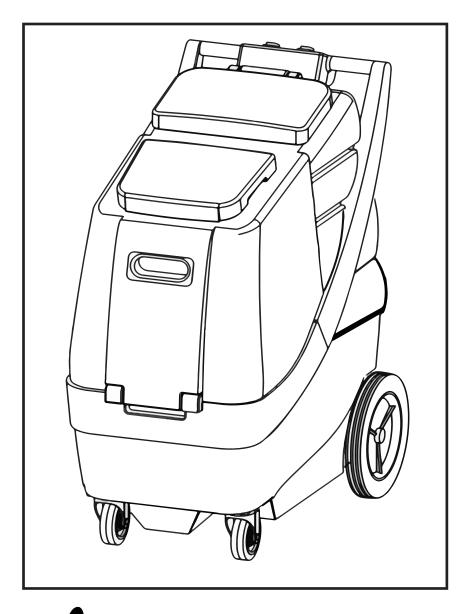
# TPL-17-220-CE-HEAT-TCP

# PROFESSIONAL 17 GALLON CARPET EXTRACTOR

OWNER'S/OPERATOR'S MANUAL



Trusted Class
Clean







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REVISION 1-17-17



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## RECEIVING YOUR NEW TPL-17-220-CE-HEAT-TCP:

When your package is delivered, check the carton carefully for signs of rough handling. If your TPL-17-220-CE-HEAT-TCP is damaged, notify the carrier immediately and request an inspection. Be sure to keep the carton, packing inserts, packing lists and carrier's receipt until the inspector has verified your claim.

CLEANFREAK.COM's liability ceases when the carrier picks up the shipment. However, our customer service staff will be happy to furnish any information needed in connection with the claim and will attempt to expedite a resolution.

# PLEASE READ BEFORE OPERATING YOUR NEW TPL-17-220-CE-HEAT-TCP:

Read the manual carefully and completely before attempting to operate the unit. This manual has important information for the use and safe operation of the machine. Keep this manual handy at all times.

This equipment has been engineered and manufactured to provide excellent performance and service. To ensure that your equipment will continue to perform as intended:

- Maintain equipment regularly- following the suggested maintenance schedule provided.
- Use only original CLEANFREAK.COM parts when servicing.
- Operate equipment with care.

If additional information is needed, please contact: CLEANFREAK.COM 888-722-5508

All information and specifications printed in the manual are current at the time of printing; however because of CLEANFREAK.COM's policy of continual product development, we reserve the right to make changes at any time without notice.

#### FAILURE TO COMPLY WITH THE FOL-LOWING WARNINGS AND INSTRUCTIONS WILL VOID THE WARRANTY.

#### **WARNING!**

- The machine was designed for use on carpet cleaning applications as per instructions and recommendations written in this manual. Any deviation from its proper use or purpose and the consequential damage that may occur is the sole responsibility of the end user.
- Disconnect the power cord from the outlet before servicing. Do not leave machine connected to an electrical outlet when unattended.
- Do not immerse or use this machine in standing water. Such use may cause electric shock.
- When using an extension cord, use only a 3-prong conductor grounding cord-12 gauge wire or heavier.
- To avoid electric shock, do not expose the unit to rain or snow. Store it indoors in a heated location only.
- Do not use the machine for dry vacuuming.
- Use defoamer at all times to prevent damage to the vacuum motor.
- Do not use water in excess of 130°F (54°C) in the solution tank
- To prevent seal damage and chemical build-up to the pump system, run clean water through the solution lines after each day's use.
- Use only commercially available carpet cleaning solutions and defoamer intended for use with machines of this type. Do not use dyes, bleaches, ammonia, or other additives.
- The use of powdered cleaning solution, if not diluted properly, may result in damage to the pump. Powdered chemical is not recommended. If powdered chemicals are used, premix in a separate container before placing in the solution tank.
- Always read and understand your chemical's MSDS (Material Safety Data Sheet) before use.
- This equipment is not designed to handle or use combustible/volatile substances such as gasoline or kerosene, in, on, or near the machine. The use of such materials will cause extreme hazardous condition.
- Do not expose machine to freezing temperatures.



- All repairs must be done by an authorized CLEANFREAK.COM repair station.
- Do not use replacement parts other than original CLEANFREAK.COM parts.
- Do not allow your spray stream to remain in one fixed location as surface damage may occur.
- Check that all spray nozzles are securely fastened. Loose nozzles could be ejected from equipment at high speeds.
- This is not a toy. Keep away from children.
- Do not pull by the power or use power cord as a handle. Always unplug by grabbing the plug and pulling, do not unplug by pulling the power cord.
- Inspect cord for damage. Do not use damaged cords. Connect only to properly grounded outlets.
- Keep hair, fingers, loose clothing, and body parts away from moving parts and openings.
- Turn off all controls before disconnecting machine
- Use caution with ejected liquid or chemicals. High pressures and temperatures could be hazardous to nearby people or surroundings.
- Do not run the heater dry. always make sure you have water
- Do not expose heater to freezing temperatures.
- Prevent burns by wearing gloves or using a barrier to remove hot quick disconnects.
- Never leave heater or equipment unattended when connected or powered on.
- The accessory heater was designed for use on TPL-17-220-CE-HEAT-TCP extractors for carpet, floor and upholstery extraction applications. Any deviation from its proper use or purpose and the consequential damage that may occur is the sole responsibility of the end user.



#### ELECTRICAL - 115 Volt Model: TPL-17-220-CE-HEAT-TCP

This machine is designed to operate on a standard 15 amp, 120 volt, 60 Hz, AC circuit. Voltages below 105 volt AC or above 125 volts AC could cause serious damage to the motor.

## GROUNDING INSTRUCTIONS FOR 115VOLT:

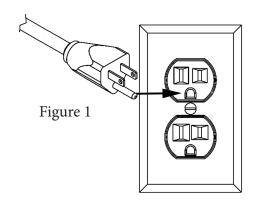
This piece of equipment must be grounded. Should an electrical malfunction occur, grounding provides a path of least resistance for electrical current- reducing the risk of electric shock. This piece of equipment is furnished with a cord that has a grounding conductor and grounding plug. The grounded plug must only be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

#### **WARNING:**

Connecting the equipment to an improperly grounded outlet can result in an increased risk of electric shock. A qualified electrician should be consulted if you are unsure that the outlet is properly grounded. Do not modify the plug provided with the equipment. If it will not fit the outlet, have a proper outlet installed by a qualified electrician.

This appliance is designed for use on a 120-volt circuit. The grounding plug provided looks like the plug illustrated in Figure 1. Replace the power cord if the grounding pin is damaged or broken.

Extension cords connected to this machine should be 12 gauge, three-wire cords with three-prong plugs and outlets. DO NOT use extension cords more than 25 feet (7.6 m) long.





#### **MAINTENANCE:**

This TPL-17-220-CE-HEAT-TCP has been engineered and built to require minimum maintenance. But like any machine, it does require basic care to keep it in optimum working condition. Careful attention to these maintenance instructions will give you maximum operating performance and life expectancy of the machine.

#### CAUTION: Disconnect the power cord from the outlet before doing any clean up or maintenance on the machine

- 1. Keep the machine clean. Do not allow dust to accumulate on external surfaces or near any moving parts.
- 2. After every job, wipe down the surface of the machine with a clean damp cloth.
- 3. Inspect cord for damage. Do not use machine with a damaged cord.

#### PERIODIC MAINTENANCE

- Use only chemicals safe for extractors
- Adhere to the appropriate mix ratios for all chemicals
- For optimal performance, it is suggested that the operator flush the system after every job or at the end of the day.
- Pump seals and valves may need to be replaced at the 1000 hour mark if a loss in pressure is noted

#### Daily:

- 1. Always keep the machine clean inside and out.
- 2. Pour 2 gallons of clean hot water in the solution tank. Turn the pump on and flush the entire system through the wand nozzles for about a minute to prevent alkaline build-up.
- Remove dirt and lint build-up inside the filter screen in the recovery tank. Lint should be cleaned off so that air flow is not impeded.
- 4. Check the solution tank strainer in the solution tank. If lint has accumulated on the screen, remove and rinse it in clear running water.

#### Weekly:

- Check and clean solution filter
- Check for obstructions in vacuum pathways
- Quarterly:
- Check pump, plumbing and fittings for leaks
- Check power cords and hoses for tears

#### **CORD STORAGE:**

While not in use, storage can be accomplished by winding cord around handle assy. Cord should be completely unwound during operation.

#### **CORD SAFETY**

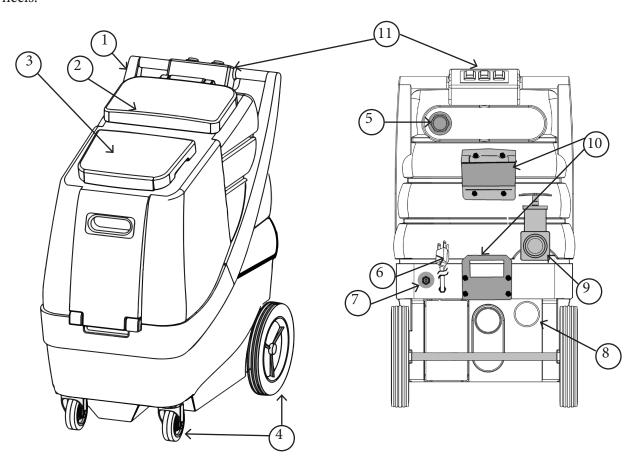
- Do not leave appliance when plugged in. Unplug from outlet when not in use and before servicing
- Do not use with damaged cord or plug. If appliance is not working as it should, has been dropped, damaged, left outdoors, or dropped into water, return to service center for inspection and repair.
- Do not pull or carry by cord, use cord as handle, close a door on cord, or pull cord around sharp edges or corners. Do not run this TPL-17-220-CE-HEAT-TCP over cord. Keep cord away from heated surfaces.
- Do not unplug by pulling cord. To unplug, grasp the plug, not the cord.
- Do not handle plug or appliance with wet hands.
- This equipment should be stored indoors and not exposed to rain.



### TPL-17-220-CE-HEAT-TCP OVERVIEW

- 1. Handle- Used to maneuver and position the TPL-17-220-CE-HEAT-TCP. Contains switch box (for switchbox, see #12).
- 2. Recovery tank and lid- Tank collects recovered waste water. Lid allows access to recovery tank and creates a seal to ensure suction.
- 3. Solution tank and lid- Tank used to store clean water or solution for your job. Lid allows access to the solution tank and prevents external contamination of solution tank.
- 4. Non-marking front 4" locking casters and rear 10" wheels.

- 5. Recovery/vacuum hose inlet barb- connect your recovery vacuum hose to this barb.
- 6. Male twist lock pigtail- Connects to 50ft power cord. One circuit per cord.
- 7. Solution line Q.D.- Pressurized connection for solution line.
- 8. Cool air intake for vacuum.
- 9. Recovery tank dump valve
- 10. Heater mounting brackets.
- 11. Switch box- Two switches marked "VACUUM" and one switch marked "PUMP".

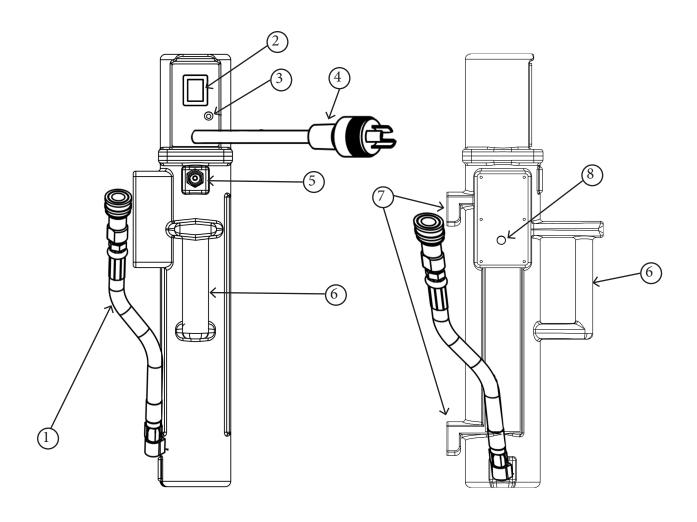




- 1. INLET QUICK DISCONNECT AND HOSE- Connects to machine's outlet.
- 2. POWER SWITCH.
- 3. LAMP- Indicates when heat element is on and working.
- 4. TWIST LOCK PIG-TAIL- This connects to the female twistlock plug on the rear of the 17-150-CE-HEAT-TC.
- 5. OUTLET QUICK DISCONNECT- Connects to

- working solution line.
- 6. HANDLE- Used to hold and transport the heater
- 7. MOUNTING FEET- Used to engage the mounting brackets on an 17-150-CE-HEAT-TC extractor and secure the heater.
- 8. RESET ACCESS POINT- Allows access to the breaker switch in the event the unit has been run dry.

# ACCESSORY HEATER KIT 705HR-TC OVERVIEW





#### **HOW TO USE AN ACCESSORY HEATER:**

- 1. Fill the solution tank of your TPL-17-220-CE-HEAT-TCP extractor with sufficient water or solution for the task at hand. Do not use water over 130° F.
- 2. Mount the Heater by lining up the two mounting legs (See #7 on page 7) to the two mounting brackets on the rear of the machine (#10 on page 6).



3. Connect your heater's inlet hose (#1 on page 7) to the machine's outlet quick disconnect (#7 on page 6).



4. Connect your 25ft solution hose to the heater's Q.D. (#5 on page 7)



5. Connect your 50FT power cord to the twist lock pigtail on the heater (#4 on page 7).



- 6. Connect the power cord(s) to the machine and an approved 15 amp outlet. Each of the two cords must be on a separate 15 amp circuit.
- 7. Connect your 25ft vacuum hose to the extractor's vacuum inlet barb (#5 on page 6)
- 8. Connect your vacuum and solution line to a carpet wand or upholstery attachment.
- 9. COMPLETE THIS STEP BEFORE TURNING HEATER ON: Turn the pump switch to the "ON" position using the pump switch on the handle of your TPL-17-220-CE-HEAT-TCP. Pressing the solution valve trigger of your attachment, spray water for 10-15 seconds until you have a steady flow. This ensures the heater is filled with fluid and will prevent damage to the heater.
- 10. Turn heater on using the power switch (#2 on page 7) and allow up to 3 minutes for the unit to heat up.
- 11. The heater is ready for use once the green lamp (#3 on page 7) shuts off. Once you start cleaning, the green lamp will turn on and off throughout your job as the thermostats automatically regulate the temperature.



#### **CLEANING CARPET:**

- 1. Using a dedicated dry vacuum, pre-vacuum the space to be cleaned to remove as much dirt as possible. Do not use the extractor to dry vacuum as it does not have a dry filter.
- 2. Pre-spray the carpet
- 3. See steps 1-11 in section "How to use an accessory heater"
- 4. Make sure the drain valve (#10 on page 6) is closed by pushing the T-handle all the way in.
- 5. Always use de-foamer- Previously shampooed carpets usually have a heavy build-up of old shampoo residue which can cause the vacuum system to ingest foam and result in damage to the vacuum motor.
- 6. With the vacuum and pump switches in the "ON" position, slowly pull the tool towards you with the solution valve trigger pressed. Make a dry pass forward and backward over the cleaned area to recover residual dirt and solution.
- 7. Do not overwet carpet! Make overlapping passes to prevent streaking.
- 8. If the carpet is heavily soiled, squeeze solution valve trigger on the forward pass as well as backwards, allowing cleaning solution a few seconds longer to work prior to vacuuming. Another method is to raise the wand 8" above the carpet and pre-spray lightly prior to cleaning passes. On extremely soiled carpets, we recommend using a pre-spray solution.
- 9. When you are close to running out of solution, turn off the pump and the heater. Attach the drain elbow on the drain valve. Place a pail under the downspout and pull up the drain valve T-handle. Dirty solution will pour out until the tank is empty. Close the drain valve. Use a clean bucket when you refill the solution tank so you do not create contamination.
- 10. When the job is completed, turn the switches off, including the heater, and disconnect the vacuum and solution hoses from the carpet tool and the machine. Drain the recovery tank through the drain valve as before.

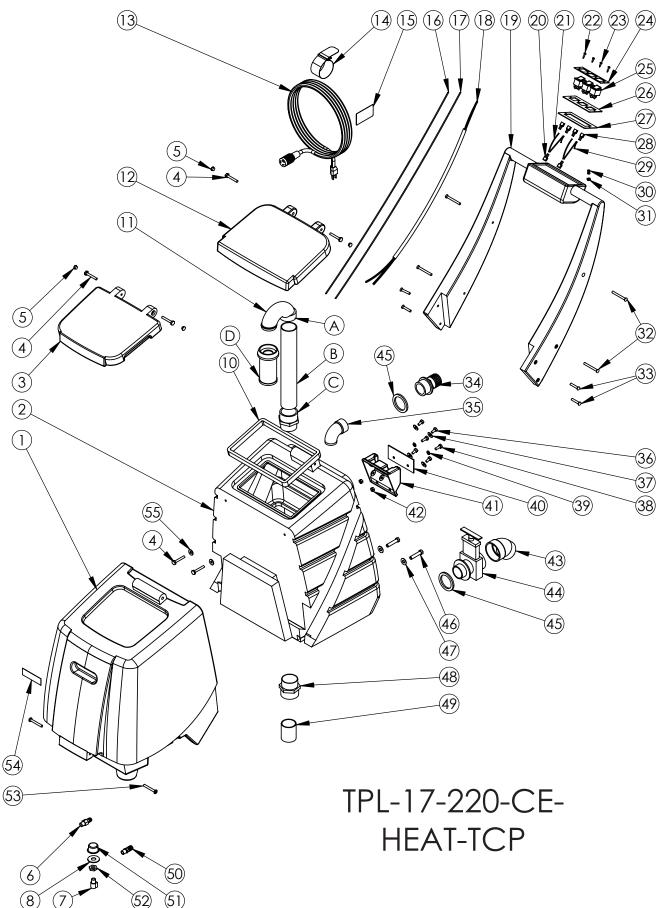
#### **CLEANING UPHOLSTERY:**

Cleaning upholstery with success requires a good knowledge of the type of fabric to be worked on. Look for the cleaning instruction label sewn on the underside of the furniture for the recommended method of cleaning the fabric. If it calls for dry cleaning, do not attempt to clean with the wet extraction method. Otherwise, damage to the fabric could occur. Extraction works perfectly on most synthetic fabrics including synthetic velvets.

Before proceeding, test the fabric for colourfastness. Apply a small amount of ready-to-use cleaning solution on the fabric in an inconspicuous spot. Wait for 2 to 3 minutes and rub the area with a white terry cloth towel. If no color comes off the towel, the fabric should be safe to clean. If a little color comes off, there is some risk of colors running when you clean. It may be possible to stabilise colors by cleaning with an acidic rinse.

- 1. Using a dedicated dry vacuum, pre-vacuum the space to be cleaned to remove as much dirt as possible. Do not use the extractor to dry vacuum as it does not have a dry filter.
- 2. See steps 1-11 in section "How to use an accessory heater"
- 3. Make sure the drain valve (#10 on page 6) is closed by pushing the T-handle all the way in.
- 4. Attach an upholstery tool to the hose set.
- 5. Always use de-foamer. Previously cleaned upholstery may have a heavy build-up of old shampoo residue which can cause the vacuum system to ingest foam and result in damage to the vacuum motor.
- 6. With the vacuum and pump switches in the "ON" position, slowly pull the tool backward with the solution valve trigger pressed. Make a dry pass forward and backward over the cleaned area to recover residual dirt and solution.
- Clean using as little solution as possible. Do not overwet the upholstery! Make overlapping passes to prevent streaking.
- 8. On heavily soiled areas like arm rests, pre-treat with a recommended pre-spray and /or hold the upholstery tool a few inches above the fabric and press lever to spray on the solution before making a pass.





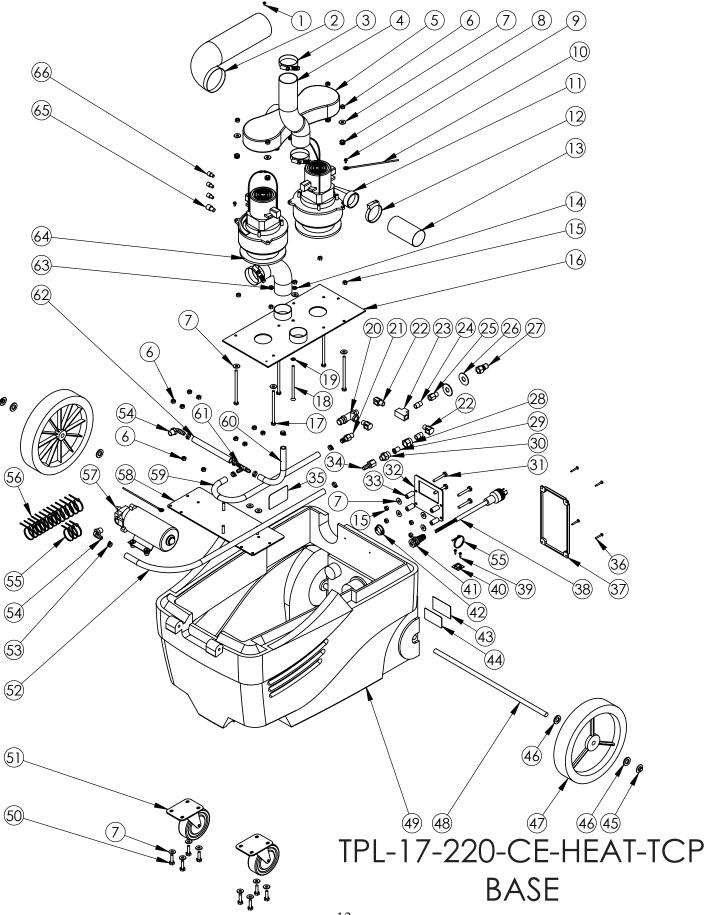


### TPL-17-220-CE-HEAT-TCP UPPER

ITEM	DESCRIPTION	QTY
1	F11787-1BWG Solution Tank,	1
2	F11788-1BWG Recovery Tank	1
3	F11791-1BWG Lid, Sol Tank, Galaxy Pro	1
4	C11167 Screw, .25 - 20 X .75,\$\$	6
5	K02714 Plug, .500	4
6	A00060 3-8 Barb X 1-4MP, Brass	1
7	A00052 90 Elbow, .25MP X .25FP	1
8	C11244 Washer, .56 X 1.5 X .05	1
10	E11836 Gasket, Galaxy Pro Lid	1
11	12906A Stand Pipe Assembly, Galaxy Pro	1
Α	K11965 Elbow, 180 Deg. Float Ball	1
В	K00672 Pvc Pipe, 1.5 X 14.75 in, Sch 40 Wht	1
С	K00741 Adapter, Male, 1.5 in Sch 40	1
D	10989-2A Float Ball Screen	1
12	F11785-1BWG Lid, Recovery	1
13	B11769 Extension Cord, 12-3 SJTW	2
14	C11177 Velcro Strap	2
15	H02548-2 Label, Important, Cord	2
16	B00185-30 Wires, 73 in	2
17	B00185-40 Wires, 73 in	2
18	B010314 Wire Harness	1
19	F11786-1BWG Handle, 17 Gal	1
20	B00177 Terminal Lug, Female, QD, .25 X .032, 16-14 AWG, Fully Insulated	4
21	B00185-40 Wire,14 GA Black, UL1015, 10 in	1
22	C00295-1 #10 X .75in Pan, Black SMS, Phillips	2
23	C00293 #8 X .5in Pan, Black SMS, Phillips	2
24	D11168 Cover, Switchplate, Galaxy	1
25	B02211-1 Switch, Rocker, Green Light	3
26	D010284 Switchplate	1

ITEM	DESCRIPTION	
27	E010453 Gasket, Switchplate	1
28	B00177-1 Terminal Lug, Female, QD, .25 X .032	2
29	B00185-30 Wire,14 GA White, UL1015, 10 in	1
30	C02315 Lockwasher, #10 Int. Str, SS	2
31	C00264 Nut, 10-32	1
32	C00288-1 .25-20 X 2.25 Flat Head	4
33	C00288 .25-20 X 1.5 Flat Head	4
34	K00665-1 Hose Adapter, 1.5in, Black	1
36	C00314-1 Hex Bolt, .25 X 20 X 1, Zinc	4
37	C00233 Washer, Flat, .25 in	6
38	C00313 Hex Bolt, .25 X 20 X .75 SS	2
39	C02312 Lockwasher, .25 in., Internal Star	2
40	D010283 Plate, Heater Mounting	1
41	F1 1804 Heater Mount	1
42	C00261 Nut, .25-20, Hex	2
43	K00710 Elbow, Drain Valve, Black	
44	K00711 Drain Valve, Black	
45	E11128 Gasket, Drain Valve	2
46	C12110 Hex Bolt, .375-16 X 1.75	2
47	C11540 Washer, .375 ID X .875 OD	2
48	K00741 Adapter, Male, 1.5 in Sch 40	1
49	K00672-1 Pvc Pipe, 1.5 X 2.25 in, Sch 40 Wht	1
50	A90004 .50 Barb X .25 MP, Brass	1
51	D00373 Inlet Filter, .25 NPT	2
52	A00124 Hex Nut, .25 NPT Brass	2
53	C11144 Screw, .25-20 X 2, SS	2
54	S11179 Non-Skid Tape, 1 in. Roll	1
55	C00238 Washer, .275 in, Neosteel	2







### TPL-17-220-CE-HEAT-TCP BASE

ITEM	DESCRIPTION	QTY
	C00297 SCREW, #8 X .25IN, PAN	
1	HEAD	1
	J11863 HOSE, 3IN	
2		1
	J00639 SCREW CLAMP, 1.63-2.43IN	
3		3
	J00618 VACUUM HOSE, 2 IN GREY,	
4	WIRE22 IN LG	1
	F11178-BLK INTERCOOLER,	
5	GALAXY, BLACK	1
	C00273 LOCKNUT, 1-4 X 20,	
6	NYLON, SS	16
7	C00233 WASHER, FLAT, .25 IN	26
8		
0	E00449 GROMMET	6
0	C00284 SCREW, 10-32 X .375	
9	GROUND	2
10	B11150 GROUND WIRE, GALAXY	2
	G11394 VACUUM, 106 IN, 115 V,	
11	5.7 IN	1
12	J00657 HOSE CLAMP, 2 IN SLDPRT	1
	J00618 VACUUM HOSE, 2 IN GREY,	
13	WIRE, 4 IN LG	1
	C00254 LOCK WASHER, 1-4 IN SPLIT	
14	C00254 LOCK WASHER, 1-4 IN SI LII	1
15	C000/1 NUT OF 00 HEV	10
	C00261 NUT, .25-20, HEX	_
16	D11134-1 VAC PLATE	1
	C11189 SCREW, 1-4 X 20 X 4.5IN,	_
17	HEX	5
	C11516 SCREW, 1-4 X 20 X 4.5IN,	
18	FLAT HEAD, PHILLIPS	1
	C02312 LOCKWASHER, .25 IN,	
19	INTERNAL STAR	1
	G11314-3 PRESSURE REGULATOR	
20		1
	A00060 3-8 BARB X 1-4 MP, BRASS	
21	7 (00000 0 0 B) (((B) X 1 4 W(( ) B) (( ) 00	1
	A00052 .25 X .375 M-F 90 DEG,	<u> </u>
22	BRASS	2
23		3
	A00161 TEE, .25 FP, BRASS	1
24	A00111 NIPPLE, .25 IN	2
	A00121 FITTING, .25 MP X .25 FP,	
25	BRASS	1
	C11244 WASHER, .56 X 1.5 X .05	
26		2
	A00104 QD, 1-4M X 1-4FP, BRASS	
27		1
	A00097A CAP, INLINE FILTER	
28	7.000777 CFW , INVENTE FIETER	1
	A00094E CHECKVALVE, NO	<u> </u>
29		1
<i>_</i> /	STRAINER	<u> </u>
20	40000 40 OHEOK VALVE BODY	١.
30	A00094C CHECK VALVE BODY	1
31	C02291 HEATER PLATE HEX	4
32	D010379 HEATER MOUNTING PLATE	1

ITEM	DESCRIPTION	QTY
34	A00061 3-8 BARB X 1-4RP, BRASS	1
	H02564-2 LABEL, CAUTION, MOTOR	
35	HOUSING	1
	C11165 SCREW, #8 X 1 IN, PAN,	
36	BLACK	4
27	F11790-1STCB HEATER, TUNNEL COVER, BLUE GRANITE	١,
37	COVER, BLUE GRANITE	1
38	B11779 STUB, 12-3 SJTW, YELLOW	1
20	C00293 #8 X .5 IN PAN, BLACK	_
39	SMS, PHILLIPS	2
40	B00192 MOUNT, NYLON TIE	
41	B11606 STRAIN RELIEF, PIGTAIL	1
42	K10510 PLUG, 1.25 IN, BLACK	1
43	H03545 COVER, SERIAL # LABEL	1
44	H00565-5 LABEL, SERIAL NUMBER	1
45	C02305 CAP NUT, .5 IN PUSH- ON	2
l.,	C00240 WASHER, SHOULDER,	
46	NYLON	2
47	G11767 WHEEL, 10 IN	2
48	D11170 AXLE	1
49	F11789-1STCB BASE	1
.,	111767 10108 8702	·
50	C02310 HEX BOLT, 1/4 X 20 X 1 1/4"	8
51	G03518-L LOCKING CASTER, 4 IN	2
	J00613B SOLUTION HOSE, .375 IN,	
52	BLACK	1
	J11508 SCREW CLAMP #6, .43 TO	
53	.875 IN	8
- A	A00054 ELBOW, 90, .375 MP X	
54	.375B, NYLON	2
55	B00191 NYLON TIE, 11 IN BLACK	4
56	B00190 NYLON TIE, 4 IN	13
57	G13639 PUMP, 200 PSI	1
58	D1 1835 PUMP PLATE	1
	J00613B SOLUTION HOSE, .375 X 26	
59	IN, BLACK	1
/0	J11154 SOLUTION HOSE, .375 X 10	,
60	IN, WIRE REINFORCED A11243 TEE, .375B X .375B X .375B,	1
61	NYLON	1
01	J11154 SOLUTION HOSE, .375 X 6	'
62	IN, WIRE REINFORCED	1
	J00618 VACUUM HOSE, 2 IN GREY,	
63	WIRE, 7 IN LG	1
	E11169 GASKET, VAC MOTOR,	
64	GALAXY	2
65	B00179-2 CLOSED END CNTR, 16-3	1
66	B00179-1 CLOSED END CNTR, 16-3	3
00	DOUT / TO CLOSED LIND CIVIN, 10-3	٥



### TROUBLESHOOTING

ELECTRICAL SYSTEM		
PROBLEM	SOLUTION	
NO ELECTRICAL POWER	<ol> <li>Defective power cord.</li> <li>House or building circuit breaker tripped</li> </ol>	
POWER IS INTERMITTENT TO ONE OR ALL MOTORS	<ol> <li>Faulty electrical cable.</li> <li>Defective switches.</li> <li>Loose terminal or discolored terminal connections.</li> </ol>	

#### **VACUUM SYSTEM**

PROBLEM	SOLUTION
NO VACUUM SUCTION	1. Drain Valve open.
	2. Vacuum lid is not sealed against tank.
	3. Loose vacuum hose, vacuum connection
LOW VACUUM SUCTION	1. Accumulated dirt on intake filter screen.
	2. Worn out vacuum lid gasket.
	3. Lint & dirt build-up on wand head.
	4. Defective vacuum hose.
	5. Loose connection in the vacuum motor.

#### **SOLUTION SYSTEM**

PROBLEM	SOLUTION
PUMP MOTOR RUNS BUT NO SPRAY THROUGH	1. Clogged spray tips.
SPRAY TIPS	2. Clogged solution intake filter screen.
	3. Clogged female quick disconnect coupler.
	4. Quick disconnects not fully connected
	5. Dirty or damaged pump head valves.
	6. Defective pump check valve.
	7. Crack in pump housing.
	8. Lost Prime.
UNEVEN OR WEAK SPRAY FOR SPRAY TIPS	1. Clogged or dirty spray tips.
	2. Accumulated dirt on solution intake filter screen.
	3. Accumulation of debris inside pump and plumbing.
	4. Worn pump bearing (excessive noise).
	5. Punctured pump diaphragm.
	6. Defective rectifier or motor.
	7. Worn nozzles.
ERRATIC PRESSURE	1. Pump check valves defective or dirty
	2. Defective pump pressure switch



### WIRING DIAGRAM

**HANDLE** 

**MOTOR HOUSING** 

**BLACK** 

WHITE

MHTE

3LACK