

NOTES:

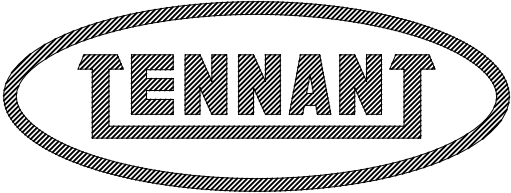
1. WORKMANSHIP STANDARD PER: IPC-J-STD-001D, IPC-A-610. SOLDERING AND ELECTRICAL CONNECTIONS: IPC-S-815B.
2. MASKED AREA WILL HAVE NO CONFORMAL COATING OR RTV ON THESE AREAS.  
a- COMPONENTS: J2, J5, J6, J9, J10, J11, J15, J16, CR2, F2, J7, J1, J19, J20, J6.  
b- (12) MOUNTING HOLES AND UNDER SCREW HEADS AND WASHERS.  
c- AREA UNDER HEAT SINK SIL PAD ON BOTTOM OF PCB.
3. APPLY RTV SILICONE FOR MECHANICAL STRENGTH ON BOTH SIDES OF CAPACITORS, EXCEPT BETWEEN POWER PLUGS J7 AND J11.
4. TORQUE SCREWS FOR HEAT SINK TO MIN 0.4519-.5084 Nm [63.99-71.99 OZ. INCH, 4.0-4.5 IN-LBS].
5. LABEL MUST HAVE THE FOLLOWING INFORMATION AND BE LOCATED BETWEEN J7 AND J11.  
a- TENNANT ASSEMBLY PART NUMBER WITH CURRENT DRAWING REVISION P/N: 1073764 REV.XX  
b- TENNANT OPL PART NUMBER WITH CURRENT ALPHA REVISION. 1073764-XX  
c- MANUFACTURER PART NUMBER.  
d- MANUFACTURER SERIAL NUMBER.  
e- TO BE IN A POSITION WHERE RTV DOES NOT MASK THE PRINT ON THIS LABEL.  
f- MANUFACTURERS PART NUMBER MUST FACILITATE TRACEABILITY TO PARTS USED TO CREATE THE POPULATED BOARD
6. LABEL MUST HAVE MODEL LISTED, SEE "PART NAME" CELL BETWEEN ( ) FOR MACHINE MODEL.
7. NO VOIDS IN BOTTOM SIDE SOLDERMASK IN THIS AREA (HEAT SINK AREA).

SECTION A - A

ECO CONSULTATION

ITEM NO	QTY	PART NUMBER	DESCRIPTION
1	1	1016816	PAD, THERMAL, HEAT SINK
2	1	1015127	PLATE, SINK, HEAT
3	4	6920	SCREW, PAN, M3 X 0.5 X 10, 4.8
4	4	1019218	WASHER, FLAT, 0.14B 0.31D, NYL

MATERIAL SPECIFICATIONS: NOTED		PAINT - COLOR NONE		02		CH54	07/26/2022
OTHER TREATMENTS AND FINISHES NONE		PAINT - GLOSS	PAINT - PERFORMANCE	PAINT - ACCEPTANCE	REV	ECO	BY DATE
SCALE: 1:1	DO NOT SCALE DWG	TOLERANCES UNLESS OTHERWISE SPECIFIED		GENERAL NOTES			
DWN: RICK ELUSHIK 08/14/2009		METRIC TOLERANCES INCH EQUIVALENT		PRIMARY DIMENSIONS ARE METRIC. SECONDARY DIMENSIONS WITH BRACKETS ARE INCH. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE AFTER TREATMENTS AND FINISHES.			
MDR:		X.X ±1.5	±.06	PROPRIETARY INFORMATION MAY NOT BE REPRODUCED OR DISCLOSED TO OTHERS WITHOUT WRITTEN PERMISSION OF TENNANT COMPANY.			
		X.XX ±0.75	±.030				
		X.XXX ±0.250	±.0100				
DES: STACEY CLEMENS 08/14/2009		ANGLES ±1.0°					
PART NAME: CIRCUITBOARD, LOGIC R14/STR RIDER-REV171				SHEET 1 OF 3			
				DWG D SIZE	PART NUMBER 1073764		



E

D

C

B

A

E

D

C

B

A

1024921 FUNCTIONAL TEST INSTRUCTIONS

Test Setup:

- SW 8 = CLOSED
- SW 9 = OPEN
- SW 10 = CLOSED
- SW 11 = OPEN
- SW 12 = OPEN
- SW 13 = CLOSED
- SW 14 = OPEN
- SW 15 = OPEN
- SW 16 = OPEN
- Plug in connectors; J5, J6, J8, J9, J10.
- Connect power supply ground to J7 (Stud).
- Connect power supply 24 Volts to J11 (Stud).
- Connector J6 pin 34 = 1.0 volts.
- Connector J6 pin 33 = 1.0 volts.
- Perform four modes of operation, to complete test.

1<sup>st</sup> Input Display Mode:

- CLOSE switch SW 7.
- CLOSE switch SW 9.
- Two seconds after Main contactor turns on, OPEN switch SW 7.
- Confirm LED D20 turns ON.
- CLOSE switch SW 17.
- Confirm LED D20 turns OFF.
- OPEN switch SW 17.
- Confirm LED D22 turns ON.
- CLOSE switch SW 18.
- Confirm LED D22 turns OFF.
- OPEN switch SW 18.
- Confirm Indicators are ON. , D2, D12, D17 and LED D13 is blinking.
- CLOSE SW 11 = LED D12 is OFF.
- OPEN SW 11 = LED D12 is ON.
- CLOSE SW 12 = LED D11 is ON.
- OPEN SW 12 = LED D11 is OFF.
- OPEN SW 13 = LED D10 is ON.
- CLOSE SW 13 = LED D10 is OFF.
- CLOSE SW 14 = Beeper sounds Continually.
- OPEN SW 14 = Beeper silent.
- CLOSE SW 16 = LED D1 is ON.
- OPEN SW 16 = LED D1 is OFF.
- OPEN SW 10 = Repeats an 8 beep sequence.
- CLOSE SW 10 = Continues 8 beep sequence.
- OPEN SW 8 = LED D2 turns OFF and continues 8 beep sequence.
- CLOSE SW 8 = LED D2 Remains OFF and continues 8 beep sequence.
- OPEN SW 9 = Power OFF.

2<sup>nd</sup> Self Test Mode:

- CLOSE switches, SW 2 and SW 3.
- CLOSE switch SW 9 (Turn on Power)
- Two seconds after Main contactor turns on, OPEN switches SW 2 and SW 3.
- Confirm Indicators turns ON and OFF, (Left and Right Brush).
- Confirm Indicator turns ON and OFF, (Vacuum Fan).
- Confirm LED D22 turns ON.
- CLOSE switch SW 18 for two seconds.
- OPEN switch SW 18.
- Confirm LED D23 turns ON and OFF.
- Allow approx. 40 seconds for automated Self-Test to complete.
- After Self-Test has finished, one of two things will happen.
  - System OK = Flashing LEDs D12, D13, D14, D15, D16.
  - System NOT OK = Error Codes will be displayed using other panel LEDs.
- If System NOT OK. See "Self Test Error Codes"
- If System OK. Open SW 9. (Turn off Power)

Self Test Error Codes

Flashing Fault Indicator = OPEN fault.  
Solid Fault Indicator = SHORT fault.

Fault Indicator (LED) System at Fault


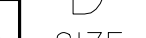
- ReadySpace.....ReadySpace Valve
- Wand.....Vac fan
- Down Pressure (+).....Front Brush
- Down Pressure (-).....Rear Brush
- Speed (+).....Brush Head Actuator
- Speed (-).....Extraction Shoe Actuator
- Solution.....Solution Pump
- Extract.....Extract Valve
- Solution Tank Empty.....Brake
- Recovery Tank Full.....Beeper/Horn
- Hose Fault Led.....ReadySpace Flush Valve

3<sup>rd</sup> Propel Diagnostic:

- CLOSE switches, SW 2 and SW 4.
- CLOSE switch SW 9 (Turn on Power)
- After LED D2 remains ON, and all others turn off, OPEN switches SW 2 and SW 4.
- CLOSE SW 15 = LED D2 turns OFF, LED D3 turns ON and Beeper ON, (1 per second).
- OPEN SW 15 = LED D2 is ON, LED D3 turns OFF and Beeper OFF.
- CLOSE SW 11 " = NOTHING CHANGES"
- Slowly increase voltage on Connector J6 pin 33 from 1.0 volt, up to 2.5 volts.
- Confirm LED turn on sequence, as voltage increases.
  - 1<sup>st</sup> D6
  - 2<sup>nd</sup> D5
  - 3<sup>rd</sup> D4.
- Slowly decrease voltage on Connector J6 pin 33 from 2.5 volt, down to 1.0 volts.
- Confirm LED turn off sequence, as voltage decreases.
  - 1<sup>st</sup> D4
  - 2<sup>nd</sup> D5
  - 3<sup>rd</sup> D6
- Slowly increase voltage on Connector J6 pin 34 from 1.0 volt, up to 2.5 volts.
- Confirm turn on sequence of indicator light and LEDs, as voltage increases.
  - 1<sup>st</sup> D9 ,D16 and Brake Indicator Lamp
  - 2<sup>nd</sup> D8
  - 3<sup>rd</sup> D7
- Confirm LED 16 turns ON.
- Slowly decrease voltage on Connector J6 pin 34 from 2.5 volt, down to 1.0 volts.
- Confirm LED turn off sequence, as voltage decreases.
  - 1<sup>st</sup> D7
  - 2<sup>nd</sup> D8
  - 3<sup>rd</sup> D9 ,D16 and Brake Indicator Lamp
- Confirm LED 16 turns OFF.
- OPEN SW 11 " = NOTHING CHANGES"
- OPEN SW 9 = Power OFF.

4<sup>th</sup> Manual Mode:

- CLOSE switch SW 5.
- CLOSE SW 9 switch.
- Two seconds after LED 14 starts to blink, open switch SW 5.
- Momentarily CLOSE SW 6.
- Confirm the following Indicator lights turn ON. Left Brush, Right Brush and Hour Meter.
- Momentarily CLOSE SW 6.
- Confirm the following Indicator lights turn OFF. Left Brush, Right Brush and Hour Meter.
- END OF TEST.

MATERIAL SPECIFICATIONS: NOTED				PAINT - COLOR NONE				02		CHS4	07/26/2022		
OTHER TREATMENTS AND FINISHES NONE				PAINT - GLOSS		PAINT - PERFORMANCE		PAINT - ACCEPTANCE		REV	ECO	BY	DATE
SCALE: N/A		DO NOT SCALE DWG		TOLERANCES UNLESS OTHERWISE SPECIFIED				GENERAL NOTES					
DWN: RICK ELUSHIK 08/14/2009				METRIC TOLERANCES		INCH EQUIVALENT							
MDR:				X.X ±1.5		±.06							
DES: STACEY CLEMENS 08/14/2009				X.XX ±0.75		±.030		PROPRIETARY INFORMATION MAY NOT BE REPRODUCED OR DISCLOSED TO OTHERS WITHOUT WRITTEN PERMISSION OF TENNANT COMPANY.					
				X.XXX ±0.250		±.0100							
PART NAME: CIRCUITBOARD, LOGIC R14/STR RIDER-REV171				ANGLES ±1.0°				DWG D SIZE		PART NUMBER 1073764			
SHEET 2 OF 3													

ECO CONSULTATION

E

D

C

B

A

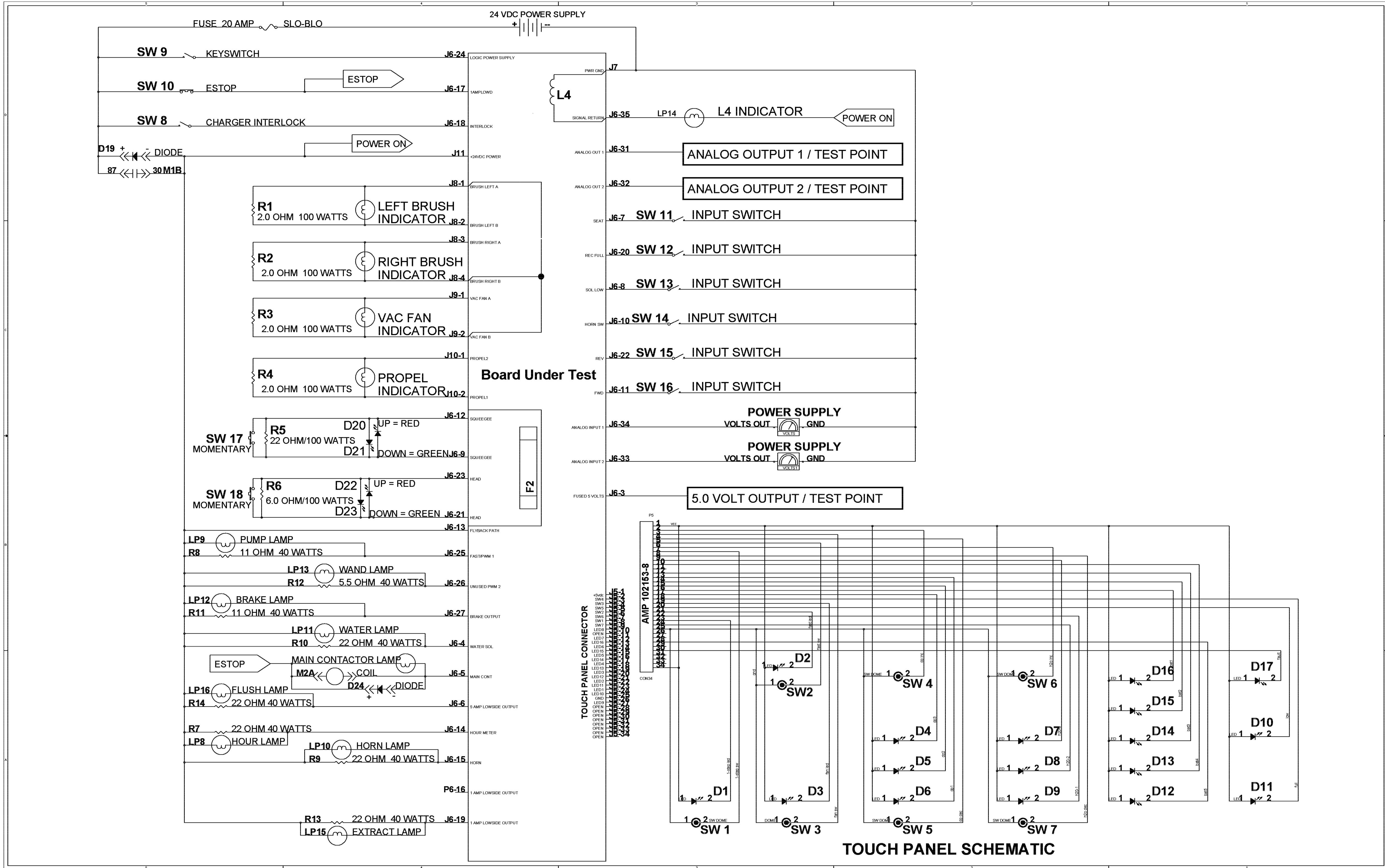
E


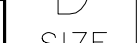
D

C

B

A



MATERIAL SPECIFICATIONS: NOTED			PAINT - COLOR NONE			02		CHS4	07/26/2022
OTHER TREATMENTS AND FINISHES NONE			PAINT - GLOSS	PAINT - PERFORMANCE	PAINT - ACCEPTANCE	REV	ECO	BY	DATE
SCALE:	DO NOT SCALE DWG	TOLERANCES UNLESS OTHERWISE SPECIFIED			GENERAL NOTES		<div></div>		
DWN: RICK ELUSHIK 08/14/2009		METRIC TOLERANCES	INCH EQUIVALENT	PRIMARY DIMENSIONS ARE METRIC. SECONDARY DIMENSIONS WITH BRACKETS ARE INCH. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE AFTER TREATMENTS AND FINISHES.					
MDR:		X.X ±1.5	±.06	PROPRIETARY INFORMATION MAY NOT BE REPRODUCED OR DISCLOSED TO OTHERS WITHOUT WRITTEN PERMISSION OF TENNANT COMPANY.					
		X.XX ±0.75	±.030						
DES: STACEY CLEMENS 08/14/2009		X.XXX ±0.250	±.0100						
PART NAME:		CIRCUITBOARD, LOGIC R14/STR RIDER-REV171	ANGLES ±1.0°	SHEET 3 OF 3		DWG D SIZE	PART NUMBER 1073764		

ECO CONSULTATION