TENNANT



# **Telemetry Membrane Bezel Kit**

Model: T600e w/Telemetry

This kit includes the necessary parts to replace a defective membrane control board with telemetry technology. Kit installation must be performed by Tennant *True* service or an authorized service provider.

# **INSTALLATION INSTRUCTIONS:**

#### Installation Time: 1 Hour

Tools Required: 9/16" Wrench, T-25 Torque Screwdriver

**Kit Installation Requirement:** Tennant ServiceLINK computer or a computer with Wi-Fi connection to access the Tennant Service Diagnostics Application Software.

#### Kit Contents:

- Telemetry Membrane Bezel Assembly
- USB cable (1071235)
- \* Electrical Harness (1077063)
- \* 4G Telemetry Antenna (1247522)
- \* FCC Label (1252880)

\* **NOTE:** Parts required on models manufactured before serial number T600e- 11015347 or equipped with the discontinued bezel membrane.





Discontinued membrane

New membrane

### INSTALL NEW BEZEL ASSEMBLY:

FOR SAFETY: Before servicing machine, stop on level surface, turn off machine, and set parking brake if equipped.

1. Disconnect battery cables from machine.

WARNING: Always disconnect battery cables from machine before working on electrical components.

 Remove the two lower torque screws at bottom of control console and carefully lower console cover (Figure 1)



 Remove the two upper torque screws from old bezel assembly and lower the bezel as shown (Figure 2)



Fig. 2

 Disconnect the electrical connections and the telemetry antenna wire from the defective bezel assembly and discard bezel assembly (Figure 3).

The new bezel kit comes equipped with SIM card factory installed, so there is no need to remove old SIM card from defective bezel assembly.



Fig. 3

5. See **\* NOTE**: Replace the electrical harness located in the control console to adapt to the new redesigned replacement bezel assembly (Figure 4). Secure harness with wire- ties.





Fig. 4

 See \* NOTE on page 1: Install the supplied telemetry antenna to tank as shown (Figure 5). Remove the old antenna(s) from machine and discard.





 Connect the wire harness connectors and antenna to the new bezel assembly and attach bezel to machine (Figure 6). When handling the new bezel control board, it is recommended to use a static wrist strap to protect the control board from damage.



Fig. 6

- 8. Replace the lower console cover on machine.
- 9. See **\* NOTE** on page 1: Replace the existing FCC label with new FCC label as shown (Figure 7).



Fig. 7 Program the new bezel control board as described in the next section.

#### **PROGRAM THE BEZEL CONTROL BOARD:**

The Tennant Service Application Software is required to program the new bezel control board. See **TENNANT SERVICE APPLICATION SOFTWARE** on page 4 to access software .

If the Tennant Service Application Software (Service Diagnostics Tool) is currently installed on your computer, ensure the latest software version is installed.

If you encounter any problems during the programming process please contact the Technical Service Department for support.

- 1. Reconnect the battery cables to machine.
- 2. Start the Service Software Application program "Service Diagnostics tool" (Figure 8). *Refer to Figure 22 for further details to access software.*





3. After software start up, the following screen will appear (Figure 9).





- 4. Connect the USB cable, supplied with kit, to computer and to the USB port on machine as shown. Turn the key switch to the on position (Figure 10).
- 5. The Service Diagnostics Tool will then connect to the machine (Figure 10). If the application remains on the "Connecting to Machine..." screen for an extended period, cycle key or reconnect USB cord. If it still fails to connect, restart software or computer.





9.

The following screen will appear when the Service 6. Diagnostics tool is connected to machine (Figure 11). Enter the machine serial number (ex. T600e-12345678). Select the appropriate model from the drop-down menu. Press the arrow button to advance to next screen.

Service Diagnostics SE 1.5.1	
CONNECTED: T600e-P1B11	A new board has been installed in this machine and must be properly configured. This wizard will guide you through the process.
- Ann	
	Serial Number         Ev: 1000-1234           Model         T600 ProPanel
	5
	4



7. Carefully select the configurable options that apply from the drop down menus, then click the arrow button to begin programming the machine (Figure 12).





The Service diagnostics tool will begin the process of 8 configuring the new control board. The following screen will appear (Figure 13). During this process, the software may prompt for key cycles. Turn off key, wait a few seconds and turn key back on to continue. The process will also automatically update any machine firmware as needed.



Fig. 13

The following screen will appear when the process 9. has completed (Figure 14). Press the arrow button to return to the Home Screen.

CONNECTED: T600E-P1B11 0	
	✓ Machine Setup Complete
▲ ⊶	$\langle \cdot \rangle$
Standard	2
Advanced	



10. Press the Provisioning button to register the machine's telemetry technology to cloud (Figure 15).



Fig. 15

11. Enter the model and serial number and click the Provision Device button (Figure 16). After "Success" appears return to the home page.



12. Press the Upload Hour button to verify the machine is connected to the cloud (Figure 18).







Fig. 18

14. Wait for the Upload Hour to complete (Figure 19).



Fig. 19

15. Once the payload is ready; the screen will display all the information about the board as you can see below. Scroll down to see all the events happening in the machine (Figure 20).

COMMETTE TISOAMI ISOARI COMPANY	Drive is not connected.		
	Halas dan Hara		
	Upload Hour Result		
	"Buckdoston" 1           "Buckdoston" 1           "Colline": A1144008,           "Scation-AvacCode": 17937,           "Spatializing/DBM", 113           J           "MobileCountry_Code": 310,           "MobileCountry_Code: 70,           "MobileCountry_Code: 10,           "Councetion: 10,           "MobileCountry_Code: 10,           "SpaceDoutersecountry,"           "Gound Contry," 61,           "Councetion: 41,		
		10	

Fig. 20

16. Check for important fields in the payload for e.g. machine serial number, endpoints, and machine events type (scrub, propel, charging...). Click the Valid button to complete the process (Figure 21)

Upload Hour Resu	t	
"DateTimeStart": "2	021-10-29T16:40:04Z*,	2
"Error": {		
"Code": "0x0903",		
"Definition": "prop	el no communications"	
J, "EventType": "Diag	nosticTroubleCode"	
"IsActive": true,	issuen oublecode (	
"UUID": "35138399	-1730-48e1-ab5c-4f09844dc018"	
}		
], "Sorial#": "T350-ΙΔΝ2		
"WifiAccessPoints": [		
{		
"Bssid": "c6:d4:54:a	53:e6",	
"Frequency": 2412, "SignalStrongthBcc	". 73	
),	13	
{		
"Bssid": "0c:80:63:e	2:25:11",	$\wedge$
"Frequency": 2462,		(M
		$\sum$
Fail 🗙		Valid
iervice Diegnostics SE 1.8.5.3		- 0
NOCTOD TIME O	Crise is not convected.	
transfer the second sec		
TENNANT		
COMPANY		



- 17. Remove the USB cable and cycle key.
- 18. Test the machine to ensure all the installed options are functioning and no fault codes appear. If a fault code appears proceed, check for loose wire connectors at new control board. Reconnect the application software to machine and check the machine configuration selections for an incorrect installed option.

# TENNANT SERVICE APPLICATION SOFTWARE:

The Tennant Service Application Software is required to program the new Bezel kit. The software can be accessed or downloaded as described below.

# Tennant *True* Service with ServiceLINK computers:

The software is pre-installed on your computer as shown below. The software application is titled **"Service Diagnostics"** (Figure 22).

lcon on Desktop



#### From Start menu



# From Start menu > All Programs > Tennant Company > Tennant Service Diagnostics



Fig. 22

## Authorized Tennant Service Providers:

The Service Application Software can be downloaded from the Tennant Public website as described below.

**NOTE:** If the Service Application Software is currently installed on your computer, confirm or re-download the software to ensure latest software version is installed.

To access the Service Application Software, go to www.tennantco.com. Depending on your geographical location, the website may have a "My Account Log In/Sign Up" button at the upper right or a "My Tennant Customer Sign In" tab at the upper right of the Tennant website as shown below (Figure 23).

Proceed with the software download instructions as described on the following pages.



OR



Fig. 23

### Website with "My Account Log In/Sign Up" button:

1. Press "My Account Log In/Sign Up" to open or create an account (Figure 24).



Fig. 24

2. Once logged in to the "My Account" website, click on the "**DISTRIBUTOR RESOURCES**" link as shown below (Figure 25).

# **NOTE:** For internal customers, the link will be titled "INTERNAL RESOURCES".



Fig. 25

3. Click on the "SERVICE APPLICATION SOFTWARE" link as shown below (Figure 26).



## Website with "My Tennant Customer Sign in" tab:

1. Log in to the "My Tennant" website or register as a new user (Figure 27).



Fig. 27

2. Once logged on to the "My Tennant" website, click on the "Service Application Software" link under the "Product Support & Solution" section as shown below (Figure 28).



 Within the Service Application Software page, click on the link titled "Service Diagnostics LE version x.x.xx" to download the application installer (Figure 29).

					eŋ	My Tennant	Sign Out
TENHANT					Contact Us	Search	
	Equipment	Coatings	Industries	Parts and Service	Company	My Tennant	
Home » Product Sup Service Ap	port & Solutions	Softwa	re			•2 SMR	с принс е
Welcome to S	ervice Appli	cation Uti	lity Downloa	ad page			
Tennant Company hi equipment to perfor computer running W	as developed a PC m certain service f indows 7 or later	software appl unctions. The and a USB cab	ication that comm software utility red le from USB A to N	unicates with select quires a Windows-based lini-B is required.		TENN	INT
Supported Equipm	nent						
The following list of	machines are sup	ported with th	is tool.				
Tennant	N	obles				E	
• B5		SneedGleam	5				
• B7		Speedolean	7				
• M17		Speed Scrub	300				
* M30		(SS300)					
- T20		Speed Scrub	500				
<ul> <li>T300</li> </ul>		(SS500)					
• T300e							
<ul> <li>T500</li> </ul>							
• T500e							٦
Alfa		C	ontico	Discost	ice I E	warnian	
- 4100		2	ervice	Diagnost	ICS LE	version	1
* A500							
Control Module Re	eplacements		1				
When replacing certa to complete the inst application tool is ne	ain modules on Te allation procedure eeded.	nnant equipm . See the instri	ent, ogramming act is in the insta	the machine may be requi ellation kit to determine if	red this		
Firmware Undates			1				
To ensure your Tenn updating the machin	ant equipment op te firmware for sup	erates at pea' oported mod	erformance, this	service utility is capable of	r).		
Fault Codes							
This service utility of	an report the speci	fic fault (	and the short text	description to make			
troubleshooting a lit	tle easier.	1		and the second sec			
		1					
Download Click the link below	to download the a	pplic on inst	aller. Run the inst	aller and follow the onscre	en		
Show 25 V antria		1				attack Country	
Title		-/		1 Literature Type	K	Modified D	ate
Canada Diana	r I E Channa I	1		Technical lafe		4/6/0047	
Service Diagnostic	s co chenge Log			Technical Informatio		4/6/2017	
Service Diagnostic	s Le User Manua			Technical Informatic	in	4/6/2017	
Service Diagnostic	s LE version 1.5.22			Technical Informatio	in .	4/6/2017	

### **Telemetry Membrane Bezel Kit Parts List**



Ref.	Part No.	Description	Qty.
1	9021604	Bezel Kit, Membrane, Telem,	1
		Ci [T600e]	
2	1071235	Cable, USB	1
3	*1247522	Antenna, Telem [4G, 72"]	1
4	*1077063	Harness, Ele [OP. STATION]	1
5	*1252880	Label, Mach, Telem, Universal	1

\* Parts required on models manufactured before serial number T600e- 11015347 or equipped with the discontinued bezel membrane.





Note visual difference

Discontinued membrane

New membrane