

ProMaker Boom Profile Creator

Web-based interface

Operator Manual



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Section 1: Setup

Topics:

- Setup a ProMaker Account
- Main ProMaker Web Page
 Explanation



Setup a ProMaker Account

1. Go to https://promaker.capstanair.com.

1	Capstan AG [®] ProMaker [®] (2)	2
the Product tested by a prospe	TEINS OF USE. ostan") is the owner of a prototype Beta Software Program Product identified as a nozzle configuration software tool for use with an aerial spraying system (the 'Product'). Capitan desires to editive user in what is commonly referred to as a 'Beta Test." Nou desire to be able to access and use the Product. In consideration of being able to access and use the Product, You are willing t be Terms of Use carefully before accessing and/or using this Product.	
	x indicating that You have read and agree to the Terms of Use, You are considered to have agreed to be bound by these Terms of Use. If You are not willing to be bound by these T ox or access or use the Product.	ferms of
Capstan reserves the right to up	update these Terms of use at any time without any prior notice to You.	
Email		
3 Password Venfy Password		
8 Register		

Figure 1: Sign Up Page

- 2. Read the TERMS OF USE (Figure 1, Item 1).
- 3. Use the slider bar (Figure 1, Item 2) to scroll through all of the information.
- **4.** After you have read and understand the Terms of Use, put a checkmark in the box (Figure 1, Item 3) next to **I agree to the terms of use**.
- 5. In the box (Figure 1, Item 4) next to **Email** enter your email address.
- 6. In the box (Figure 1, Item 5) next to **Username** enter a username.
- 7. In the box (Figure 1, Item 6) next to **Password** enter a password.
- 8. In the box (Figure 1, Item 7) next to Verify Password enter the password again.
- 9. Select Register (Figure 1, Item 8).

A verification email is sent to the email address you provided.

	Verify your CapstanAg ProMaker Registration 🦻 🔤
4	Capstan Ag Systems <no-reply@capstanag.com> to me +</no-reply@capstanag.com>
1	Thank you for signing up for ProMaker by CapstanAG. Please click on the link below to verify your account:
	Your account has no planes associated. <u>Create one?</u>
	(2)

Figure 2: Verify Email

10. Go to your email and open the verification email.

11. Click **Verify Email** (Figure 2, Item 1) verify your account information.

You will taken to the homepage.

The first time you login, your account will have no planes associated with your account.

12. Select **Create one?** (Figure 2, Item 2) to make a plane profile.

6		
Home	1 Plane Model:	
Plane Management	Air Tractor 602 T-Boom Nozzles Left of Center:	×
Account Management	2 T-Boom Nozzles Right of Center:	~
Profile Management	A Name:	~
Logout	N816HP	
(5 Create Plane	

Figure 3: Create Plane

- 13. Select the box (Figure 3, Item 1) below Plane Model.
- 14. Select your plane model from the list.
- 15. Select the box (Figure 3, Item 2) below T-Boom Nozzles Left of Center.
- 16. Select the correct value from the list.
- 17. Select the box (Figure 3, Item 3) below T-Boom Nozzles Right of Center.
- **18.** Select the correct value from the list.
- **19.** Select the box (Figure 3, Item 4) below Name.
- **20.** Enter a name for your plane.
- 21. Select Create Plane (Figure 3, Item 5).

More planes can be created to fill out the entire fleet from **Plane Management** (Figure 3, Item 6) on the sidebar. For more information, see Plane Management.



Home	N816HP 2
Plane Management	€ Launch ProMaker
Management Profile Management	Launch Boom Configurator
Logout	N838IP
	C Launch ProMaker
	Eaunch Boom Configurator

Figure 4: Home Screen

22. Select Launch Boom Configurator (Figure 4, Item 1) to make a boom configuration for the plane.

For more information, see Make a Boom Configuration.

23. Select Launch ProMaker (Figure 4, Item 2) to make a profile. For more information, see Make a New ProMaker Profile.

Main ProMaker Web Page Explanation

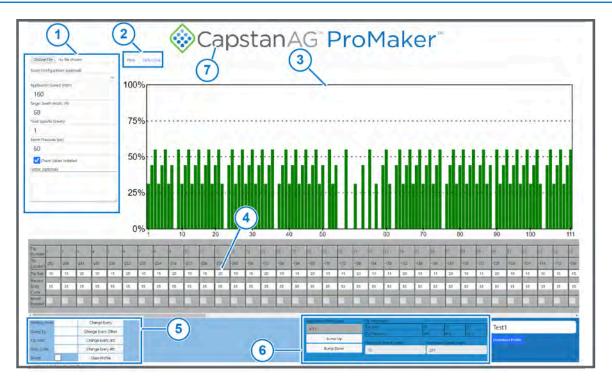


Figure 5: Main Web Page

Left side menu (Figure 5, Item 1) includes:

- Choose File—Lets you to find and edit an existing profile.
- **Boom Configuration: (optional)**—Loads an existing boom configuration, including the tip size, tip type, and color settings. For more information see Make a Boom Configuration.
- Application Speed:—The target ground speed at which the product will be applied.
- Target Swath Width:—The target width of product application.
- Fluid Specific Gravity:—This information will be found on the label for the chemicals you use.
- **Boom Pressure:**—The target boom pressure for application.
- **Check Valves Installed**—If the boom uses CapstanAG check valves this box should be checked.

The tabs (Figure 5, Item 2) show two different views of nozzles in the bar graph (Figure 5, Item 3) below.

- Flow—proportional flow
- **Duty Cycle**—proportional duty cycle

When all nozzles have the same tip size, the bar graphs look the same. At different tip sizes larger tips will show more flow at the same duty cycle.

You can manually enter the tip size and duty cycle for each nozzle using the table in the gray box (Figure 5, Item 4) below the menu and bar graph.

To enter information more quickly use the information in the light blue box (Figure 5, Item 5) on the bottom left side.



After the general profile information has been entered, the bottom middle darker blue box (Figure 5, Item 6) will show the application rate and tip pressures for each configured tip size. Use **Bump Up** or **Bump Down** to quickly adjust the target rate. **Minimum Speed:** and **Maximum Speed:** boxes are only relevant when using Auto mode. This will be the speed range where the target rate can be achieved within the inputted system parameters.

To return to the Home Screen, click on the CapstanAG logo. (Figure 5, Item 7).



Section 2: Operation

Topics:

- Make a Boom Configuration
- Make a New ProMaker Profile
- Upload and Change a
 ProMaker Profile
- Edit a Boom Configuration
- Plane Management
- Account Management
- Profile Management

Make a Boom Configuration

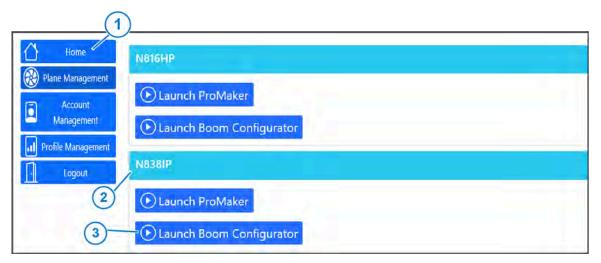


Figure 6: Home Screen

1. Log into your ProMaker account at https://promaker.capstanair.com or select Home (Figure 6, Item 1) from the sidebar.

If you do not have a ProMaker account, see Setup a ProMaker Account.

2. In the box (Figure 6, Item 2) below the desired plane, select Launch Boom Configurator (Figure 6, Item 3).

1.	CapstanAG [®] ProMaker [®]								
			Boo	om Conf	igurator				
Tio Number 1									
Tip Cenfigurat 1	Tip Configuration Tip Type Tip5* ADaffaction Angle/Color 1 None Samting Frame Geting to Charge Every Other Tip Configuration Tip Configuration Charge Every 3rd Samting Frame Charge Every 4th Charge Every 4th								
Edit a Canfigural	CapstanAG [®] ProMaker [®] Boom Configurator								
To fumor 1 2 3 4 5 5 7 8 9 0 11 12 13 14 15 16 17 13 19 20 21 22 23 24 25 26 27 29 18 20 11 12 13 24 17 16 17 10 19 20 11 12 13 14 15 16 15 16 17 10 10 10 10 10 10 10 10 10 10 10 10 10									
Tip Configurat	tion Tip Type T CP11T1 4C* Flat Fan 20 CP11TT Streight Stream 20 Custom 25 Deflected Flat Flan 25	ip Size Deflection / 0 43	Ingle Color Pick a color Pick a color Pick a color		Starting Promi 2 Gelag (c: 111 11n Gentlyaetton: 2		Change Every Change Every Other Change Every 3rd Change Every 4th	Save Boom Coeffiguration	9
4	None				\bigcirc				

Figure 7: Boom Configurator



- **3.** Click on the box (Figure 7, Item 1) below **Tip Type**.
- Select the desired tip type from the list.
 Only use custom if the desired tip is not shown on the existing list.
- 5. Click on the box (Figure 7, Item 2) below Tip Size.
- 6. Enter the correct type size.
- 7. Click on the box (Figure 7, Item 3) below **Deflection Angle**.
- 8. Enter the correct value.
- 9. If desired, click on **Pick a color** (Figure 7, Item 4).
- **10.** Pick the desired color and click anywhere outside the box that shows.
- **11.** Repeat Steps 4 to 12 for each tip type installed on the boom.
- **12.** After the tip configurations are made, assign the tips to the correct location on the boom.
 - a) Click in the box (Figure 7, Item 5) next to **Starting From:** and enter the starting tip number.
 - b) Click in the box (Figure 7, Item 6) next to Going to: and enter the ending tip number.
 - c) Click in the box (Figure 7, Item 7) next to **Tip Configuration:** and enter the correct tip configuration list on the left side of the page.
 - d) Select which tips to change from the list (Figure 7, Item 8):
 - Change Every
 - Change Every Other
 - Change Every 3rd
 - Change Every 4th
 - e) Repeat adding the tip configuration information until you have all of the information correct for your profile.

Tip configurations can also be changed individually using the menu for each tip in the gray box.

- **13.** Click on the **Boom Configuration Name** box (Figure 7, Item 9) and enter the desired name of the configuration.
- Click Save Boom Configuration (Figure 7, Item 10).
 You will automatically go back to the *Home* screen.

Make a New ProMaker Profile

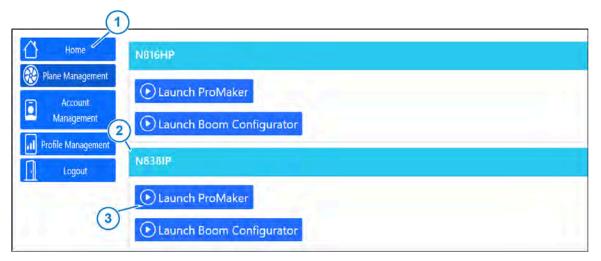


Figure 8: Home Screen

1. Log into your ProMaker account at https://promaker.capstanair.com or select Home (Figure 8, Item 1) from the sidebar.

If you do not have a ProMaker account, see Setup a ProMaker Account.

In the box (Figure 8, Item 2) below the desired plane, select Launch ProMaker (Figure 8, Item 3).

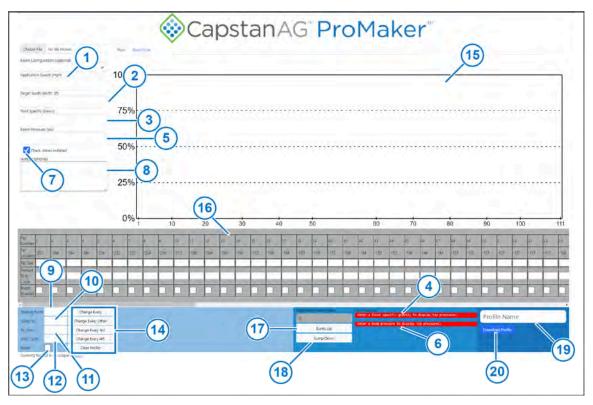


Figure 9: Main Profile Page



- 3. Click in the box (Figure 9, Item 1) below **Application Speed:** and enter the target ground speed at which the product will be applied.
- 4. Click in the box (Figure 9, Item 2) below **Target Swath Width:** and enter the target width of product application.
- 5. Click in the box (Figure 9, Item 3) below Fluid Specific Gravity: and enter the information for the product you will apply.

This information can be found on the label for the chemicals you use. You must enter this value, or a message (Figure 9, Item 4) will show.

6. Click on the box (Figure 9, Item 5) below **Boom Pressure:** and enter the target boom pressure for application.

Note: This value is NOT the pressure at the tips.

You must enter this value, or a message (Figure 9, Item 6) will show.

- 7. If the boom uses CapstanAG check valves, make sure to put a check mark in the box (Figure 9, Item 7) next to Check Valves Installed.
- 8. If desired, click in the box (Figure 9, Item 8) below Notes: (optional) and enter any additional information you want to have with this profile.

This information will only show in ProMaker and will not show on the CapView display.

- 9. Enter your tip information:
 - a) Click in the box (Figure 9, Item 9) next to **Starting From:** and enter the starting tip number.
 - b) Click in the box (Figure 9, Item 10) next to Going to: and enter the ending tip number.
 - c) Click in the box (Figure 9, Item 11) next to **Tip Size:** and enter the correct tip size. This box can be left blank to change duty cycle without changing the tip size.
 - d) Click on the box (Figure 9, Item 12) next to **Duty Cycle:** and enter the value of the desired duty cycle.

This box can be left blank to change tip size without changing the duty cycle.

e) If you are using boost, make sure to put a check mark in the box (Figure 9, Item 13) next to **Boost**.

A nozzle can only be boost if its duty cycle is 0.

- f) Select which tips to change from the list (Figure 9, Item 14):
 - Change Every
 - Change Every Other
 - Change Every 3rd
 - Change Every 4th
 - Clear Profile—remove the duty cycle of all valves but does not remove other parameters such as tip size, application speed, swath width, etc.

Hovering over a button will show the changes you are about to make in orange.

Information will be added to the bar graph (Figure 9, Item 15) and the tip information table (Figure 9, Item 16).

g) Repeat adding the tip size information until you have all of the tip sizes for your profile added.

If using a boom profile, buttons will show to let you change all valves with the same tip size in the range of start to end. When using a boom profile, tip size is disabled as it is configured in the boom profile.

10. To change the application rate, select **Bump Up** (Figure 9, Item 17) or **Bump Down** (Figure 9, Item 18).



The profile can also be changed by directly editing information in the grey region.

- 11. Click on the Profile Name box (Figure 9, Item 19) and enter the desired name of the profile.
- 12. Click Save Profile (Figure 9, Item 20).

The profile is now ready to upload to the CapView, see the information to Upload a Profile to the CapView in the Installation Manual, Pilot Operating Handbook, or the Instructions for Continued Airworthiness.

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Upload and Change a ProMaker Profile

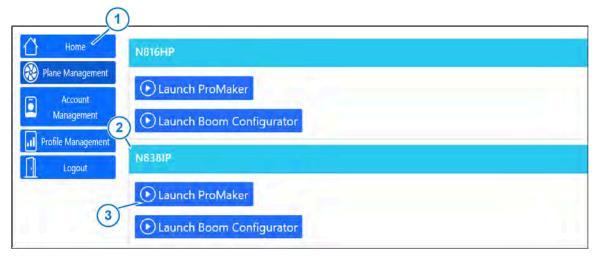


Figure 10: Home Screen

1. Log into your ProMaker account at https://promaker.capstanair.com or select Home (Figure 10, Item 1) from the sidebar.

If you do not have a ProMaker account, see Setup a ProMaker Account.

In the box (Figure 10, Item 2) below the desired plane, select Launch ProMaker (Figure 10, Item 3).

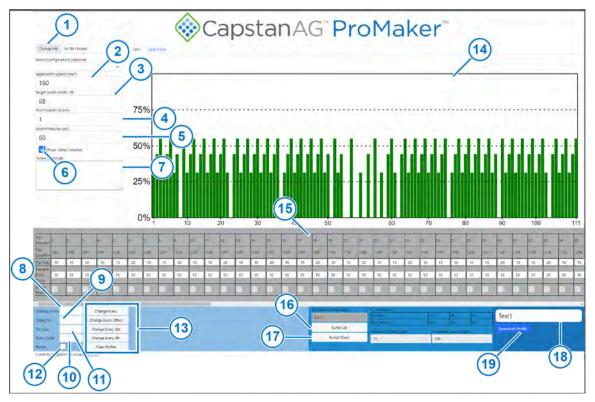


Figure 11: Change a Profile

- 3. Select Choose File (Figure 11, Item 1) and select the desired profile.
- 4. To change the application speed, click in the box (Figure 11, Item 21) below **Application Speed:** and enter the target ground speed at which the product will be applied.
- 5. To change the swath width, click in the box (Figure 11, Item 3) below **Target Swath Width:** and enter the target width of product application.
- 6. To change the fluid specific gravity, click in the box (Figure 11, Item 4) below Fluid Specific Gravity: and enter the information for the product you will apply.
- 7. To change the boom pressure, click on the box (Figure 11, Item 5) below **Boom Pressure:** and enter the target boom pressure for application.

Note: This value is NOT the pressure at the tips.

- 8. If the boom uses CapstanAG check valves, make sure to put a check mark in the box (Figure 11, Item 6) next to Check Valves Installed.
- **9.** If desired, click in the box (Figure 11, Item 7) below **Notes: (optional)** and enter any additional information you want to have with this profile.
- **10.** Add the tip size information to the profile:
 - a) Click in the box (Figure 11, Item 8) next to **Starting From:** and enter the starting tip number.
 - b) Click in the box (Figure 11, Item 9) next to Going to: and enter the ending tip number.
 - c) Click in the box (Figure 11, Item 10) next to **Tip Size:** and enter the correct tip size.
 - d) Click on the box (Figure 11, Item 11) next to **Duty Cycle:** and enter the value of the desired duty cycle.
 - e) If you are using boost, make sure to put a check mark in the box (Figure 11, Item 12) next to **Boost**.
 - f) Select which tips to change from the list (Figure 11, Item 13):
 - Change Every
 - Change Every Other
 - Change Every 3rd
 - Change Every 4th
 - Clear Profile

Information will be added to the bar graph (Figure 11, Item 14) and the tip information table (Figure 11, Item 15).

- g) Repeat adding the tip size information until you have all of the tip sizes for your profile added.
- **11.** To change the application rate, select **Bump Up** (Figure 11, Item 16) or **Bump Down** (Figure 11, Item 17).
- 12. Click on the **Profile Name** box (Figure 11, Item 18) and enter the desired name of the profile.
- **13.** Click **Save Profile** (Figure 11, Item 19).

Edit a Boom Configuration

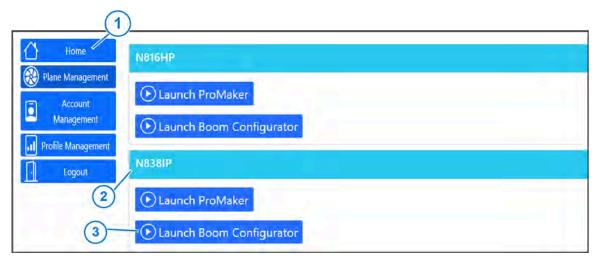


Figure 12: Home Screen

1. Log into your ProMaker account at https://promaker.capstanair.com or select Home (Figure 12, Item 1) from the sidebar.

If you do not have a ProMaker account, see Setup a ProMaker Account.

2. In the box (Figure 12, Item 2) below the desired plane, select Launch Boom Configurator (Figure 12, Item 3).

Image: State and State				
The Configuration Tip Type Tip Step Deflection Angle(Color) 1 Nome Step Step Deflection Angle(Color) 1 Deflection Angle(Color) <				
CapstanAG [®] ProMaker [®] Boom Configurator				
	5 6 17 18 5 20 21 22 23 24 25 26 27 28 30 31 20 31 40 155 172 178 126 120 116 135 120 116 11 100 135 122 13 100			

Figure 13: Boom Configurator

- 3. Select the Edit a Configuration box (Figure 13, Item 1).
- 4. Select the desired boom configuration from the list.
- 5. Click on the box (Figure 13, Item 2) below Tip Type.
- Select the desired tip type from the list.
 Only use custom if the desired tip is not shown on the existing list.
- 7. Click on the box (Figure 13, Item 3) below **Tip Size**.
- 8. Enter the correct type size.
- 9. Click on the box (Figure 13, Item 4) below Deflection Angle.
- 10. Enter the correct value.
- 11. If desired, click on Pick a color (Figure 13, Item 5).
- **12.** Pick the desired color and click anywhere outside the box that shows.
- **13.** Repeat Steps 5 to 12 for each tip type installed on the boom.
- **14.** After the tip configurations are made, assign the tips to the correct location on the boom.
 - a) Click in the box (Figure 13, Item 6) next to **Starting From:** and enter the starting tip number.
 - b) Click in the box (Figure 13, Item 7) next to **Going to:** and enter the ending tip number.
 - c) Click in the box (Figure 13, Item 8) next to **Tip Configuration:** and enter the correct tip configuration list on the left side of the page.
 - d) Select which tips to change from the list (Figure 13, Item 9):
 - Change Every
 - Change Every Other
 - Change Every 3rd
 - Change Every 4th
 - e) Repeat adding the tip configuration information until you have all of the information correct for your profile.

Tip configurations can also be changed individually using the menu for each tip in the gray box.

15. Click on the **Boom Configuration Name** box (Figure 13, Item 10) and enter the desired name of the configuration.

16. Click Save Boom Configuration (Figure 13, Item 11).

You will automatically go back to the *Home* screen.



Plane Management

As many planes as you need can be created by selecting Plane Management on the sidebar.

You can also edit or delete a plane from this screen.

Create a New Plane

(<u>)</u>	
Home	N816HP	
Plane Management	🕑 Launch ProMaker	
Account Management	🕑 Launch Boom Configurator	
Profile Management	N838IP	
	🕑 Launch ProMaker	
2	Dunch Boom Configurator	
	+ Create New Plane.	

Figure 14: Plane Management

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- 1. Select Plane Management (Figure 14, Item 1) from the sidebar.
- 2. Select Create New Plane (Figure 14, Item 2).

Home	Plane Model:	
Plane Management	Air Tractor 602 T-Boom Nozzles Left of Center:	~
Account Management	2 T-Boom Nozzles Right of Center:	~
Profile Management	4) Name:	~
Logout	N816HP	
	Create Plane 5	

Figure 15: New Plane Screen

- 3. Select the box (Figure 15, Item 1) below Plane Model.
- 4. Select your plane model from the list.
- 5. Select the box (Figure 15, Item 2) below T-Boom Nozzles Left of Center.
- 6. Select the correct value from the list.

- 7. Select the box (Figure 15, Item 3) below T-Boom Nozzles Right of Center.
- 8. Select the correct value from the list.
- 9. Select the box (Figure 15, Item 4) below Name.
- 10. Enter a name for your plane.
- **11.** Select Create Plane (Figure 15, Item 5).

Edit a Plane

Home	N816HP	ž i
Plane Management Account Management Profile Management	1 Launch ProMaker Launch Boom Configurator	2
Logaut	N83BIP	
	Eaunch ProMaker	
	O Launch Boom Configurator	
	+ Create New Plane.	

Figure 16: Plane Management

- 1. Select Plane Management (Figure 16, Item 1) from the sidebar.
- 2. Select the Edit icon (Figure 16, Item 2) next to the desired plane.

Home	Plane Model	
Plane Management	Air Tractor 602	
Account Management	Plane Name	
Profile Managemen	N816HP	
Logout	Submit	

Figure 17: Edit a Plane Name

- 3. Select the box (Figure 17, Item 1) below Plane Name.
- **4.** Enter the desired plane name. Only the plane name can be changed.
- 5. Select Submit (Figure 17, Item 2).



Delete a Plane

Home	N816HP	Z ģ
Plane Management Account Management Profile Management	Launch ProMaker Launch Boom Configurator	2
Logout	N83BIP	口可
	🕑 Launch ProMaker	
	O Launch Boom Configurator	
	+ Create New Plane.	4

Figure 18: Plane Management

- 1. Select Plane Management (Figure 18, Item 1) from the sidebar.
- 2. Select the **Delete** icon (Figure 18, Item 2) next to the desired plane.

Account Management

Home	Email	johndoe@email.com
Plane Management	Username	John Doe
Account Management	Current Password New Password	
Profile Management	(1) Confirm Password	
Logout		Reset Password

Figure 19: Account Management

Select **Account Management** (Figure 19, Item 1) from the sidebar to manage your account information and change your password.

Profile Management

Home	N816HP		8	
Plane Management	Profile Name	Date Created	Search	
Management	1 GPA Fung	2022-02-22 17:39:31		5)
Profile Management	10GPA All On	2022-02-22 17:11:38	₽ 🗹 (5)	
Logout	1GPA Herb Taper	2022-02-22 17:39:45	\odot	
1	3 GPA Fung	2022-02-22 17:12:44		
0	3GPA Herb Taper	2022-02-22 17:43:58		
	5 GPA Fung	2022-02-22 17:12:43	\bigcirc	
	5 GPA Herb Taper	2022-02-22 17:10:13	\bigcirc	
3	Showing 1 to 7 of 7 entries			
	N838IP			
(2			Search:	
C	Profile Name	Date Created		_
	SGPA Herb Taper	2022-02-22 17:49:21	\bigcirc	
	Showing 1 to 1 of 1 entries			

Figure 20: Profile Management

- 1. Select Profile Management (Figure 20, Item 1) from the sidebar.
- The profiles (Figure 20, Item 2) connected to each plane will show below the plane name (Figure 20, Item 3).
- **3.** To download a profile, select the **download** icon (Figure 20, Item 4).
- 4. To edit a profile, select the edit icon (Figure 20, Item 5).
- 5. To search for a specific profile, select the box (Figure 20, Item 6) next to Search:.
- 6. Select the arrow (Figure 20, Item 7) next to Profile Name to organize the profiles alphabetically.
- 7. Select the arrow (Figure 20, Item 8) next to Date Created to organize the profiles by date.



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Section 3: Troubleshooting

Topics:

• Troubleshooting Charts

Troubleshooting Charts

Problem	Correction	
If you have configured valves with duty cycles but the graph is blank	Verify the application speed, swath width, specific gravity, and boom pressure are appropriate values. If they are not appropriate values the graph will be blank	
If you cannot horizontally scroll to more valves	Verify that you can use the scrollbar at the bottom of the gray box and not the scroll bar at the bottom of the page	
If you cannot enable boost on a nozzle	Verify the duty cycle for that nozzle is 0	
If you cannot change the tip size for a nozzle	Make sure that you are not using a boom profile or make a boom profile with the desired changes	



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