



SIPOAL - B



Table of Contents

1.	Syster	ystem Overview03					
2.	Working 0						
3.	Specifications						
4.	Applications						
5.	Produ	Product Characteristics_					
6.	Charg	Charging the Product					
7.	App Installation						
	7.a	Account setu	ρ		10		
8.	Menu	Bar			13		
	8.a	Organization	Profile (Only fo	or SIPOAL ADMIN role)	14		
	8.b	My Account			22		
	8.d	Switch to the	Dark mode		23		
	8.e	Logout			23		
9. SIPOALS - List Page					24		
	9.a	Available Det	ails		25		
	9.b Department Filter						
	9.C	Status Filter					
	9.d	Sort_			26		
	9.e	Device Details					
		9.e. i.	Turning ON tl	ne device	27		
		9.e. ii.	SIPOAL - Cor	nmands	29		
			9.e.ii.1.	PLAY (Start the lubrication process)	30		
			9.e.ii.2.	PAUSE (Stop the lubrication process)	30		
			9.e.ii.3.	REFILL (Cartridge)	31		
			9.e.ii.4.	SYSTEM VALIDATION	32		
			9.e.ii.5.	SIPOAL DETAILS_	33		
			9.e.ii.6.	DOSAGE SETTINGS	33		
		9.e. iii.	Disconnecting	g the device	38		
10. HOME Page							
	10.b).b SIPOAL Overview					

SIPOAL-B Manual



		10.b. i.	TOTAL Count	39		
		10.b. ii.	ON Devices	40		
		10.b. iii.	PAUSE Devices	40		
		10.b. iv.	BATTERY LOW Devices	40		
		10.b. v.	CARTRIDGE LOW Devices	41		
		10.b. vi.	SIPOAL(S) TO REFILL Devices	41		
		10.b. v.	UNKOWN Devices	41		
11. FORGET PASSWORD 42						
]	10.a	RESET Passw	vord	42		



1. System Overview

SIPOAL-B is an IoT based Electro-mechanical type Single Point Automatic Lubricators

SIPOAL-B consists of self-powered electromechatronical drive unit to drive the lubricant cartridges which delivers the precise volume of lubricant to the lubrication point of machinery automatically at frequent intervals of time programmed by the user.

SIPOAL-B is designed to dispense correct volume of grease at short intervals of time automatically while the machine is in operation. This leads to longest bearing service life. Thus, machine reliability can be enhanced substantially with proper lubrication.

SIPOAL-B can be remotely monitored and controlled to ensure that the correct volume of lubricant at the right time is delivered to the lubrication point during its operation. This provides a more accurate amount of lubricant supplied properly when compared to traditional manual lubrication techniques.

This regime of grease delivery by SIPOAL-B maintains a steady-state of lubrication protection where excess lubrication or lubricant starvation does not occur, prevention of contaminants entry and eliminates all the problems integrated with manual lubrication process.



SIPOAL - Parts

DRIVE UNIT

to pump the lubricant in grease Cartridge

EMPTY GREASE CARTIDGE

Where grease can be filled / re-filled

FLANGE

To connect system and lube point and to support the system

COUPLER

To connect and hold the grease cartridge with drive unit

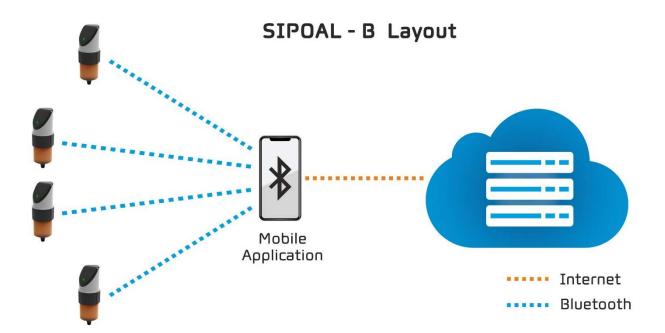


2. Working

SIPOAL - B are enabled with Bluetooth technology which connects the user thru Smartphone to program, monitor, control and manage the data of installed SIPOALs remotely.

Whenever required, user can connect the SIPOAL – B by using Bluetooth connectivity thru Smartphone to trigger initial time setting program or receive current feedbacks or to reset the program.

Whenever SIPOAL – B is connected with Smartphone, it will send the performance data of its functionality, lubricant level, battery level and respond to reset its program or pause / resume according to the updates received from the user, if any.





3. Specifications

Type : Electromechatronical Single Point Lubricator

Description : IoT based Fully Automatic Lubricator enabled with Bluetooth technology

(wireless network range: 5 - 20 m depends on installation environment)

Activation : Power Button and Remote – Thru Smartphone on the spot

Monitoring : Remote - Thru Smartphone from anywhere within the Bluetooth range

Control : Remote – Thru Smartphone from anywhere within the Bluetooth range

Database Management : Thru exclusive Mobile Application

Drive : DC Motor

Power Supply : Inbuilt 2600 mAh Lithium Battery (Rechargeable Type)

Recharge Pin : Type C

Permissible Lubricants : Greases upto NLGI 2 Grade

Dispensing Period : 1 Day to 12 Months

Pressure Generation : 5 Bar

Operating Temperature : -10 °C to +60 °C

Housing : Plastic

Cartridge Type : Reusable

Type of Refilling : Manually by cartridge refilling kit

Cartridge Volume : 120 ml / 240 ml

Approx. Weight : 510 Grams (120 ml) / 590 Grams (240 ml)

Multipoint Lubrication : Supply of Lubricant to 2 points (max). Applicable only for NLGI-0.

Remote Installation : Single Point - Upto 5 meters (16 ft) with 06 tube

Dual Point - Upto 2 meters (6 ft) per point with 06 tube (Up to 4 lube

points)

Protection Class : IP 65



4. Applications

Key Industrial Machine Elements Key Industrial Machines

Roller & Sliding Bearings Electric motors

Linear / Sliding Guides Pumps

Threaded Spindles Conveyors

Open Gears & Chains Drives

Robots

Cranes / Lifting systems

Cam & Followers

Blowers & Fans

Applicable Industries

Automotive Sewage Treatment Plants

Textile Recycling Plants

Steel Printing

Food and Beverage Metal Fabrication

Pulp & Paper Pharmaceutical

Cement Petrochemical

Construction Wind Turbines

Mining & Quarrying Refineries

And suitable for any type of Industries wherever friction management is requirement



5. Product Characteristics

Cloud Based Data processing -

Data of each SIPOAL-B installed in an industry like time settings, cartridge size, lubricant level, refilling time, battery level, etc. can be sent to cloud thru Bluetooth technology and Mobile App and it can be retrieved at any time thru Mobile phone / Computer from cloud by internet. Hence, no need to maintain the data manually in a register or computer and to check the data frequently so as to find out the refilling date & battering recharging of each SIPOAL-B installed in an industry.

Wireless Control Options -

Each SIPOAL-B can be connected with Smartphone thru Bluetooth and programmed, initiated, hold or kept on pause state during the plant shut off time or holidays thru wireless technology and internet.

Performance feedbacks and Notifications thru Smartphone -

Each SIPOAL-B installed in an industry can be connected thru Smartphone by Bluetooth technology and Performance data can be retrieved and stored on cloud. Mobile App can trigger Alert notifications on cartridge refill and battery low level of each SIPOAL-B.

Rechargeable type Drive Unit -

Rechargeable type lithium battery has been provided that can be recharged thru TYPE-C charger which eliminate change of batteries like in other conventional LUBRICATORS.

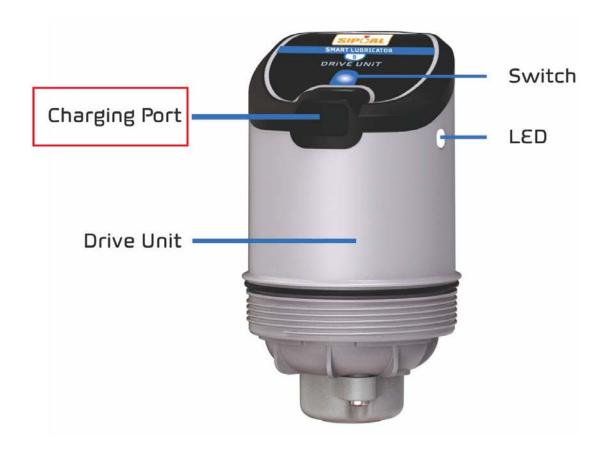
Refillable type Cartridge -

Lubricant Cartridges has been designed to perform refilling the lubricant which eliminates the replacement of cartridges once the lubricant is exhausted.



6. Charging

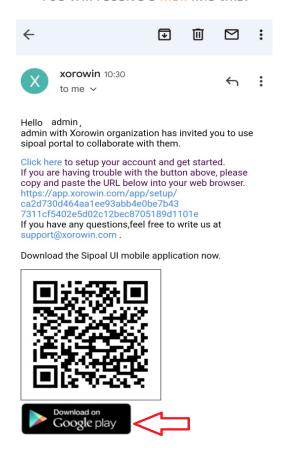
Before operating the system, charge it through the charging port. Green Led will glow while the device is in charging and Red Led will glow when the charge is full.



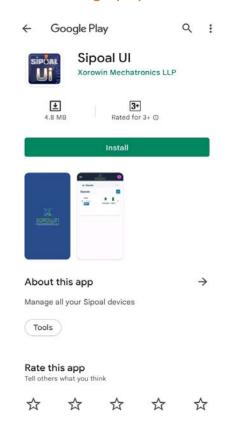


7. App Installation

You will receive a mail like this:

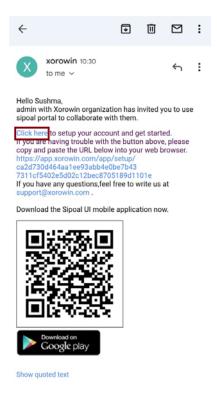


Click the download on Google play button to install the App:



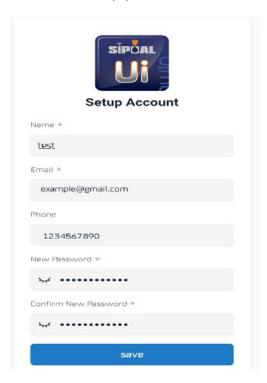


After installing the App, again go to the mail and click on click here to go to the account setup page:



a. Account Setup

You can set up your account here:



After setting up your account, you will be redirected to the login page:





Note:

Roles available:

- 1. SIPOAL Admin
- 2. SIPOAL User

Rights for SIPOAL Admin:

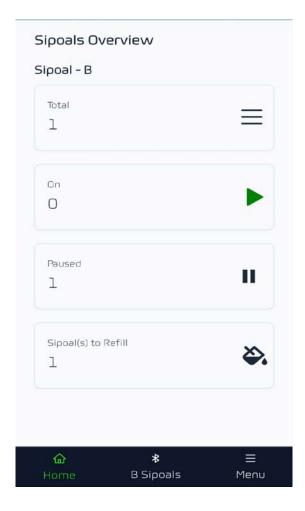
- Can view& edit & control all the SIPOAL devices in their organization.
- Can receive notifications.
- Can create new departments and assign SIPOAL devices and users to those departments.
- Can create new users and manage them.
- Can manage their organization profile.
- Can edit user profile.

Rights for SIPOAL User:

- Can view & control the SIPOAL devices which are assigned to their departments or SIPOAL devices which are not assigned to any department. Users cannot edit the details of the SIPOAL devices.
- User can edit user profile.



After logging, by default you will be redirected to Homepage



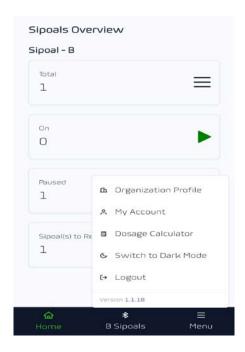
First Click on the Menu bar to update your organization details:



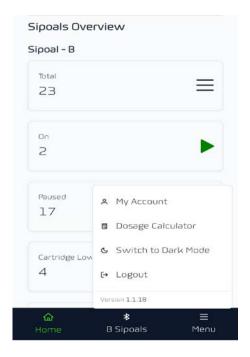


8. Menu Bar

Available options in menu bar for SIPOAL admin role:



Available options in menu bar for SIPOAL User role:



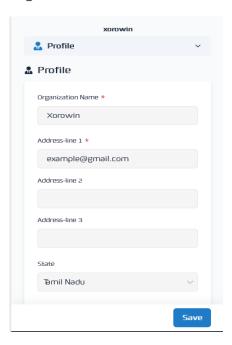


a. Organization Profile (only for SIPOAL Admin Role):

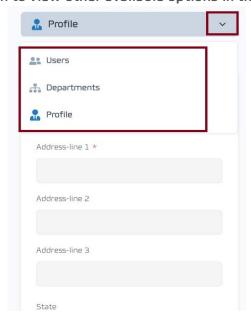
In this section, three options are available.

- i. Profile
- ii. Departments
- iii. Users
 - i. Profile:

In this section, details of the organization can be filled.



Click on the drop-down to view other available options in the organization profile:



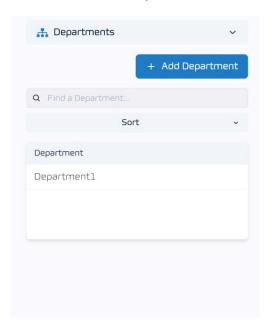


ii. Departments:

Departments can be used to group SIPOAL devices and users. Departments can be assigned to SIPOAL users, which restrict them from viewing SIPOAL devices of other departments. It can be used to filter SIPOAL devices on the SIPOAL list page.

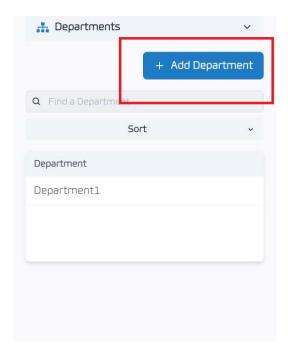
1. Department List:

Here you can see the list of available departments.



2. Adding a new Department:

Click on add department to add a new department.



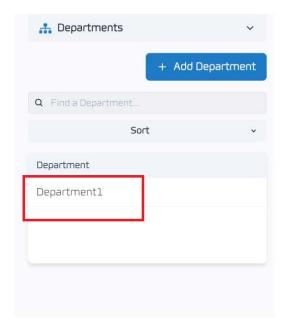


Enter the department name and click on add department button to add the department.



3. Editing/Deleting an existing department

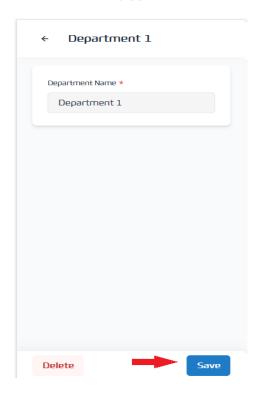
Click on the department which you want to edit/delete.



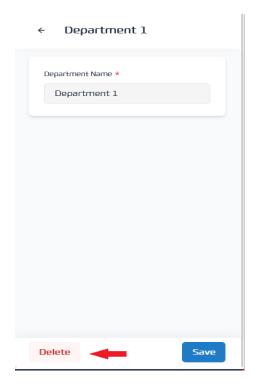
Here you can edit the department name and click on save to save the changes or you can delete the department using delete button.



To edit



To delete



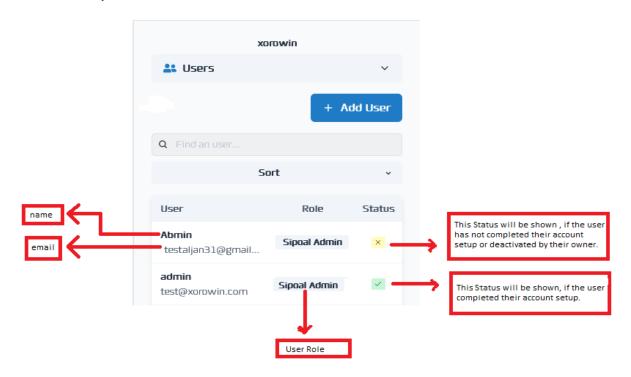


iii. Users

In this section, you can manage all your users.

1. User list

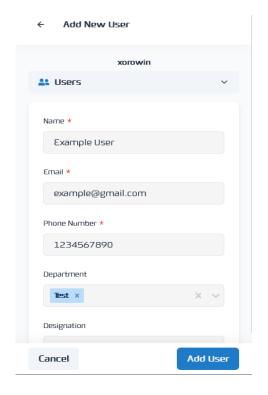
Here you can see list of available users.



2. Add User

Here you should fill the user details like name, email, phone number, and assign a role (SIPOAL admin/ SIPOAL user) to add a user.



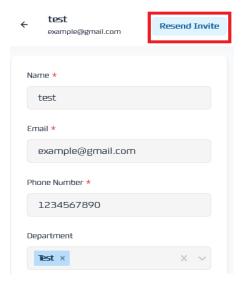


Note:

- If SIPOAL admin user role is given, then that user can see all the SIPOAL devices regardless of the department that user assigned to.
- If SIPOAL user role is given, then that user can only see the SIPOAL devices which are not assigned to any department or SIPOAL devices which are assigned to their department (departments can be assigned using department field).

3. Resending user Invitation

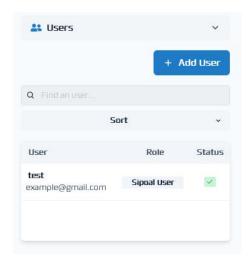
A newly created user has to complete their account setup before 48 hours. If it is not done, a new invitation email has to be sent using resend invite button available on the top right corner of the user edit page.



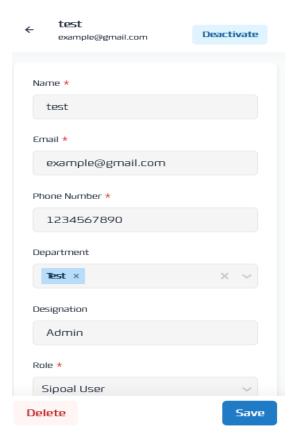


4. Editing an existing user

Click on the user which you want to edit



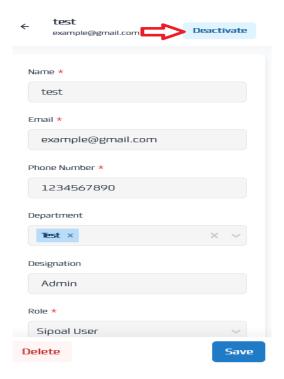
Here you can edit the details of the user and click save to save the changes.



5. Activate/Deactivate an existing user

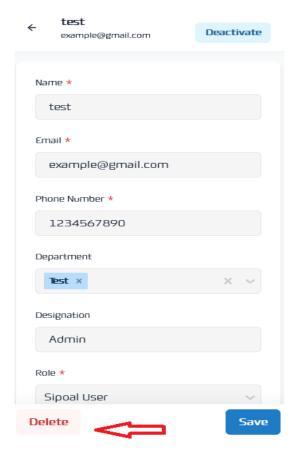
The deactivate option can be used to restrict users from logging in.





6. Deleting an existing user

Click the delete button to delete the user.



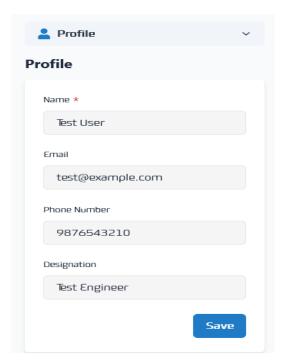
Note:

If the user deleted, then you have to contact XOROWIN MECHATRONICS LLP to enable that user again or that e-mail id again.

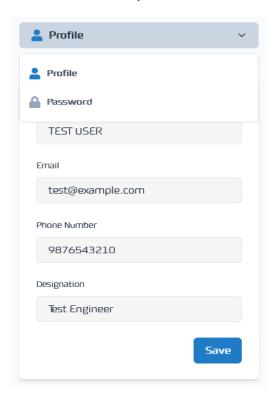


b. My Account

In this section, you can edit your name.



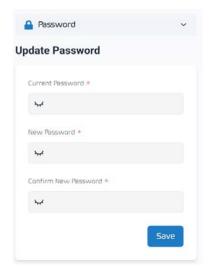
Click on the profile drop-down to see other options:



i. Update Password

In this section, you can update your account's password.





c. Switch to the dark mode

If user clicks the Switch to dark mode option, it will switch the app to dark mode.

d. Logout

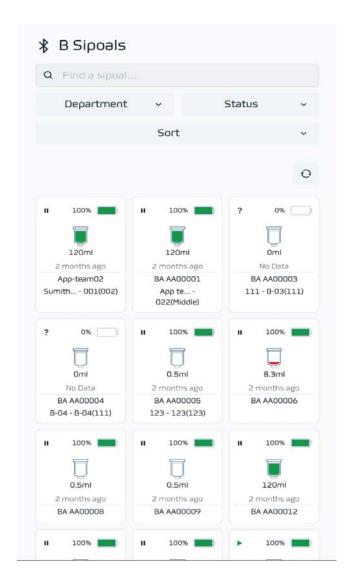
It will log out your account and redirect you to the login page



9. SIPOALS - List Page

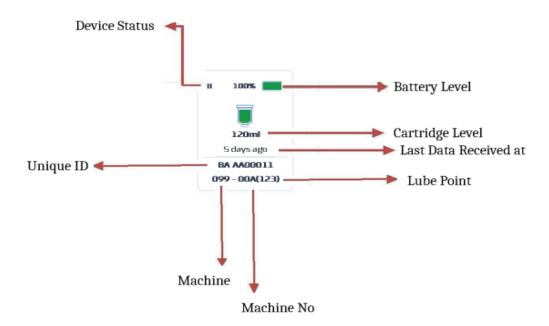
Click on the Sipoals icon to go to SIPOAL list page:





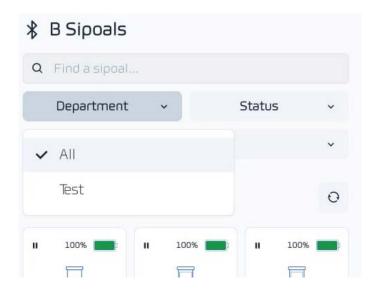


a. Available Details



b. Department filter

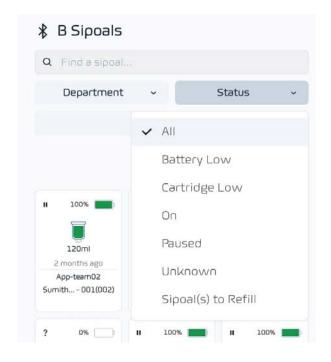
Individual departments can be selected to view the respective devices that are assigned to the department. If All Option is selected, all SIPOAL devices will be displayed.



c. Status Filter

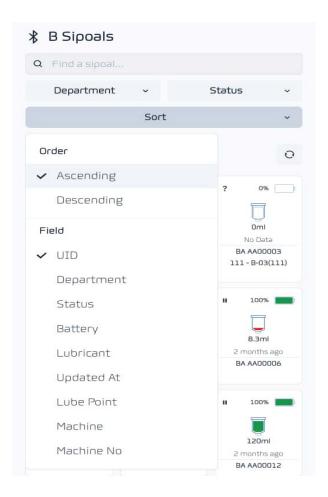
By using this filter, we can filter the devices by their status. If all option is selected, all devices will be listed or you can select a specific status to see the devices with that particular status.





d. Sort

We can arrange the devices in specific order with these fields.





e. Device Details

If you click on a sipoal device to connect / view the details, the below details will be shown. Initially there will be no data for that sipoal device as shown below.



i. Turning ON the Device

If the device is in off mode, you have to press the button one time and click the connect button on sipoal UI within one minute.

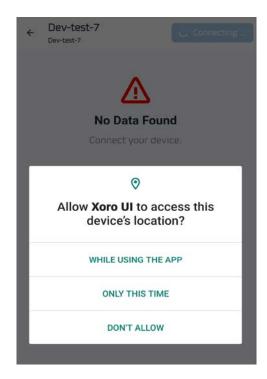


Note:

If the user did not connect the device within one minute, then the button to be pressed once again on device to connect with smartphone. If user did not press the button on device, the app will show the dialog box – data not found.

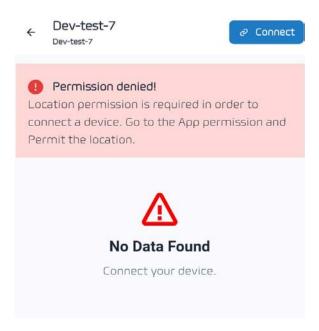


When you are trying to connect the device for the first time in app, it will ask for location permission to connect the device.



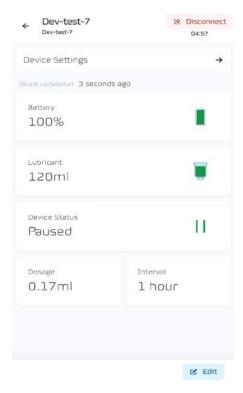
Allow the location permission to connect the device.

If you deny the location permission, you cannot connect to the device. The below prompt will be shown



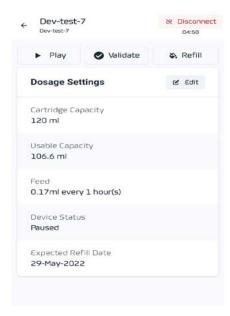


After successfully connecting the app, the data will be updated as shown below



Click the device settings to configure your device.

Available configurations



ii. SIPOAL Commands

You can perform operations like play, pause, validate on your SIPOAL device and you can update the SIPOAL device as refilled.

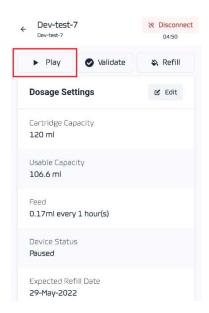
Note:

These commands can be performed only when the device is connected to the app.



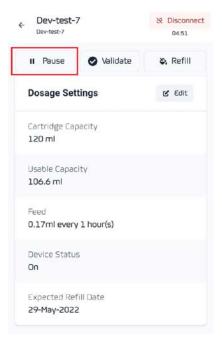
1. Play (Start the lubrication process)

You can able to start the lubrication process by clicking the **start** tab as shown below. The lubrication process will start when the device processes the command and will start to apply lubricant as per the given dosage settings. Whenever the lubrication process happens, the LED will glow simultaneously.



2. Pause (Stop the lubrication process)

You can able to stop the lubrication process by clicking the pause tab as shown below.



Note:

The play button will be available the devices which are in pause mode and pause button will be available for the devices which are in paly mode



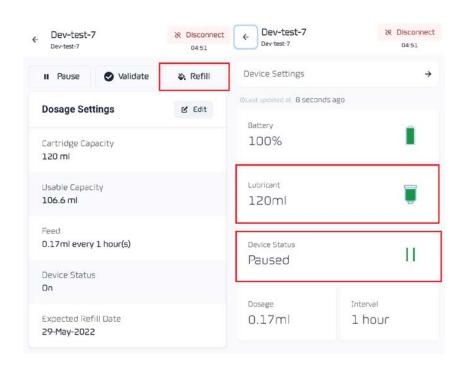
3. Refill (Cartridge)

Cartridges Filling:

Cartridges can be filled and reused. Available sizes - 120 ml.



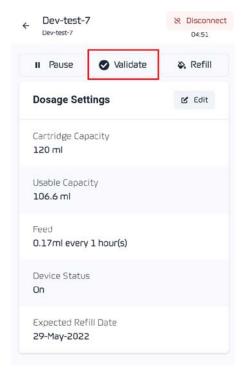
To Reset the Dosage value, the you have to click the refill tab as shown below. After resetting the lubricant level, SIPOAL device will go to PAUSE mode and the lubricant level will be updated as 120 ml.





4. System Validation

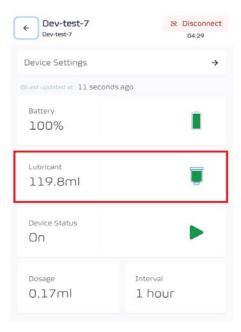
Users can able to validate the device by clicking the Validation tab as shown below. you can validate the below points,



Configuration buttons in the app will be disabled during the validation process and it will be enabled after the validation process.

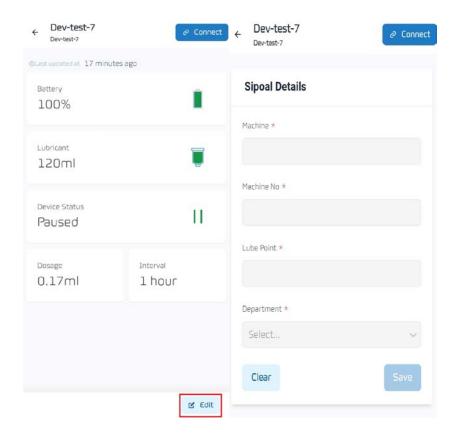
During the validation,

- Lubrication process will happen as per the given dosage settings and the LED will glow simultaneously.
- After the Lubrication process, the Lubricant value will be updated.





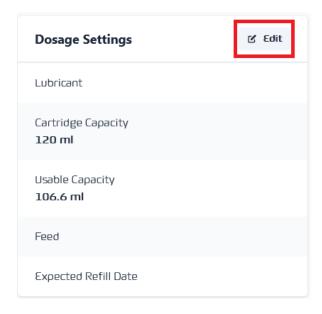
5. SIPOAL Details



These details can be used for your reference. The details will be shown on the SIPOAL list page, it will help you to identify your SIPOAL devices easily.

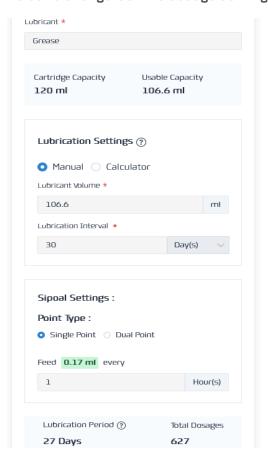
6. Dosage Settings

To calculate dosage, select **Edit** tab in Dosage settings as shown below.

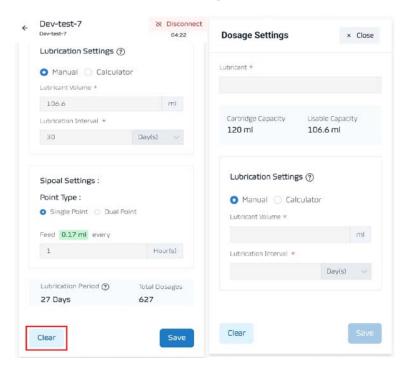




You have to fill the below fields to change/set the dosage settings in the SIPOAL device.



Click the clear button to clear the default configuration.



- 1. Lubricant is the type of the lubricant which will be used.
- 2. Cartridge capacity is the capacity of the cartridge.
- 3. Usable Capacity is the capacity which can be used for the lubrication process.
- 4. Lubrication Settings:

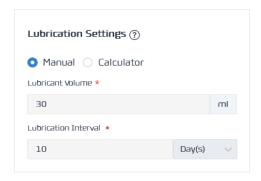


Types of lubrication settings:

- Manual
- Calculator

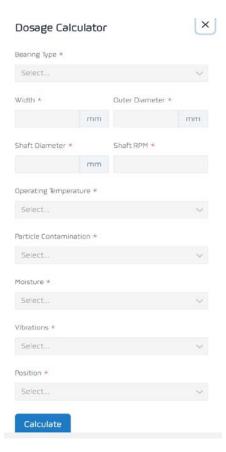
Manual:

This calculation may be used when your machine manufacturer recommends you to use a specific amount of grease for a certain period or when you have your own calculated values. For example, if you want to use 30 ml for 10 days. You have to fill the form like shown below.



Calculator:

The calculator can be used to calculate the lubricant volume per day by entering the lubrication point details



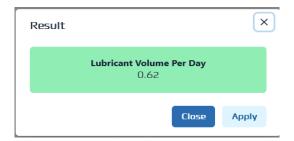
Fill the parameters to calculate Dosage in ml

- 1. Bearing Type Select one of the following type
- 2. Width in mm
- 3. Outer Diameter in mm



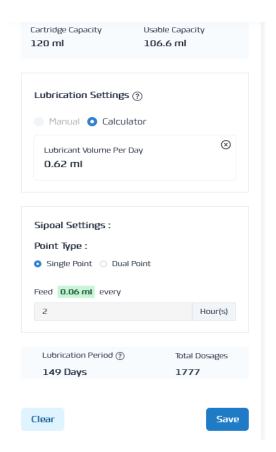
- 4. Shaft Diameter in mm
- 5. Shaft RPM
- 6. Operating Temperature
- 7. Particle Contamination
- 8. Moisture
- 9. Vibrations
- 10. Position

When you enter appropriate values, the result will show like below



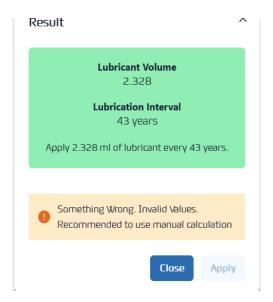
Click on apply to use this value.

The dosage form after applying the value will be like below. You can edit feed intervals according to your requirement.



When you enter inappropriate values, the result will be like this





So, you have to use manual calculation and enter the volume of lubricant and lubrication interval recommended by machine manufacturer and then you can edit the feed interval as show below



Point Type:

Point type is used to mention the number of lube points the Sipoal device has to apply the lubricant.

Available point type options:

- Single Point
- Dual Point

Feed Volume:



Feed Volume is the amount of lubricant will be applied.

Feed Interval:

Feed Interval is the interval between each lubrication process.

Lubrication Period:

Lubrication period indicates the days that usable capacity (ml) will be used. After that, the cartridge has to be refilled.

Total Dosages:

Total Dosages indicate the count of the lubrication process.

Fill all the above fields and click save to set these settings to your SIPOAL device.

iii. Disconnecting the Device

Users can disconnect the device manually by clicking disconnect on top right corner of the app or the device will automatically disconnect after 5 minutes of connectivity. Once the device disconnects, the settings or status changes will be updated on the device and the device will starts to function as per the updated changes.

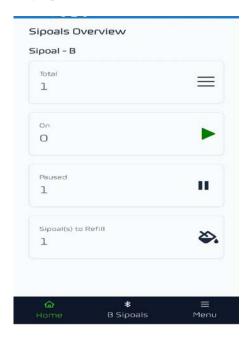


10. HOME Page

Click on the **Home** icon to go to home page:



You will be in the home page.



a. SIPOALS Overview

i. Total Count



- 1. Total number of SIPOAL devices will be displayed here.
- 2. Click this to view all the SIPOAL devices.



ii. ON Devices

When the device is ON, the lubrication process is happening.



- 1. Total number of ON SIPOAL devices will be displayed here.
- 2. Click this to view all the ON SIPOAL devices.

iii. Paused Devices

When the device is paused, the lubrication process is paused.



- 1. Total number of paused SIPOAL devices will be displayed here.
- 2. Click this to view all the paused SIPOAL devices.

iv. Battery Low Devices

It indicates the devices which have battery less than 20 percentage.



- 1. Total number of Battery Low devices will be displayed here.
- 2. Click this to view all the Battery Low devices.



v. Cartridge Low Devices

It indicates the devices which have Cartridge level less than 20 ml.



- 1. Total number of Cartridge Low devices will be displayed here.
- 2. Click this to view all the Cartridge Low devices.

vi. Sipoal(s) to refill

It indicates the devices which requires Cartridge refills.



- 1. Total number of SIPOALS to refill will be displayed here.
- 2. Click this to view all the SIPOALS which requires refill.

vii. Unknown Devices

The devices are considered as Unknown, when no data received from the device yet.



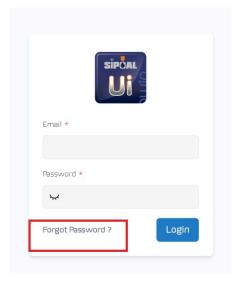
- 1. Total number of unknown devices will be displayed here.
- 2. Click this to view all the unknown devices



11. Forgot Password

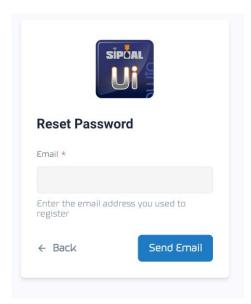
User can request to reset their password when they forgot their password.

If you click on forgot password, it will take you to reset password page.



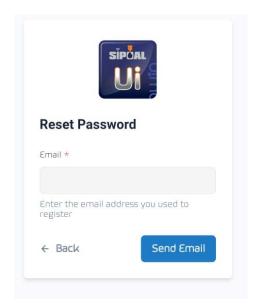
11.a Reset Password

Enter your email ID which linked with this account and click on send email to receive reset password email.



Enter your email ID which linked with this account and click on send email to receive reset password email.





Note:

You have to reset the password within 48 hours from receiving the email. If not, you have to request again for resetting the password.











Manufactured by

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