



ServiceBox

Manual



December 7, 2021
Version: 1.0.0

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INTRODUCTION

Thank you for purchasing the ServiceBox. The ServiceBox makes it easy to remotely connect to your device on the most secure way. Through the Windows ServiceBox App, you are 2 clicks away from your device anywhere in the world.

1 About

HydroDynamics BV is an international operating young dynamic company established in Enschede. Through our specialization in the design and manufacturing of advanced hydraulic systems and associated control systems, we are a partner for your project, innovative product or system. You can contact us for complete hydraulic systems and diesel power packs including its control systems. Are you facing a hydraulic challenge then HydroDynamics is the partner you are looking for. HydroDynamics BV guarantees the best possible solution for your problem if you need a hydraulic system for your factory, on board a dredger or on an oil rig. The ServiceBox is a white label product distributed by HydroDynamics BV.

As part of the Hydac group, HydroDynamics BV has access to a global service and supply network for the construction of its systems.

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2 Disclaimer

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INFORMATION

For more information goto servicebox.tech

3 Hardware Overview

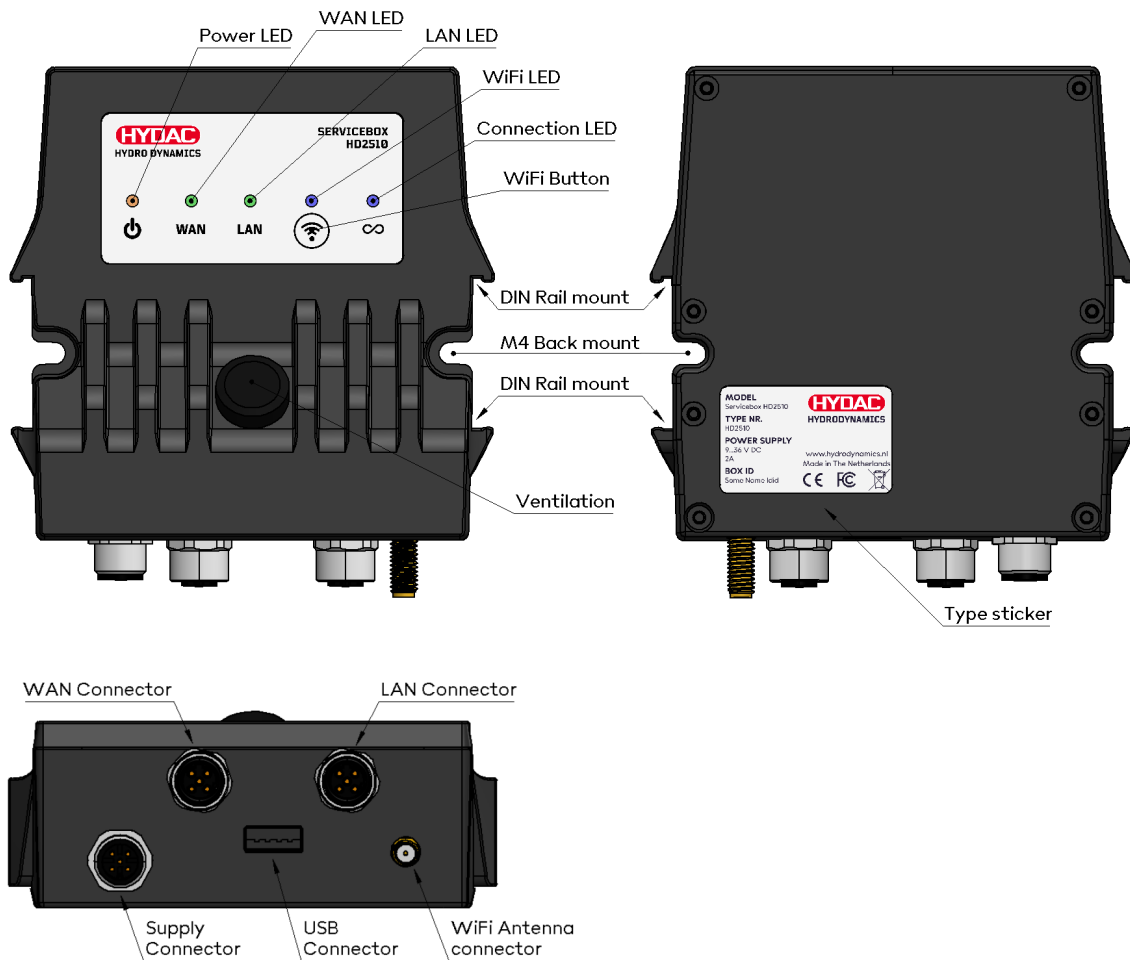


Figure 1: ServiceBox Overview

4 Electrical Requirements

| Description | Minimum | Typically | Maximum |
|-------------------|-------------|---------------|----------------------------------|
| Supply voltage | 9 V DC | 12 or 24 V DC | 36 V DC |
| Supply current | 50 mA | 150 mA | (corresponds to output load) 2 A |
| USB output Supply | +5 V DC 1 A | | |

5 Digital Input Specifications

| Description | Minimum | Typically | Maximum |
|------------------|--------------------|---------------|-----------------|
| Number of inputs | 1 | | |
| Input voltage | 9 V DC | 12 or 24 V DC | 36 V DC |
| Signal level | low: < + ??? V | | high: > + ??? V |
| Input current | 3.7 mA at +24 V DC | | |
| Input delay | 50 ms | | |

6 Digital Output Specifications

| Description | |
|-----------------------|-----------------------|
| Number of outputs | 2 |
| Short-circuit proof | yes |
| Maximum current | 0.7 A |
| Maximum total current | 1.4 A |
| Output voltage | Supply voltage -0.8 V |

7 Environmental Conditions

| Description | |
|---------------------------|----------------|
| Storage temperature | -20 ... +65 °C |
| Environmental temperature | 0 ... +60 °C |
| Ingress protection | IP65 |

8 Mechanical Dimensions

The ServiceBox is designed to combine waterproof connectivity with a user friendly interface. Units of dimensions in millimeter.

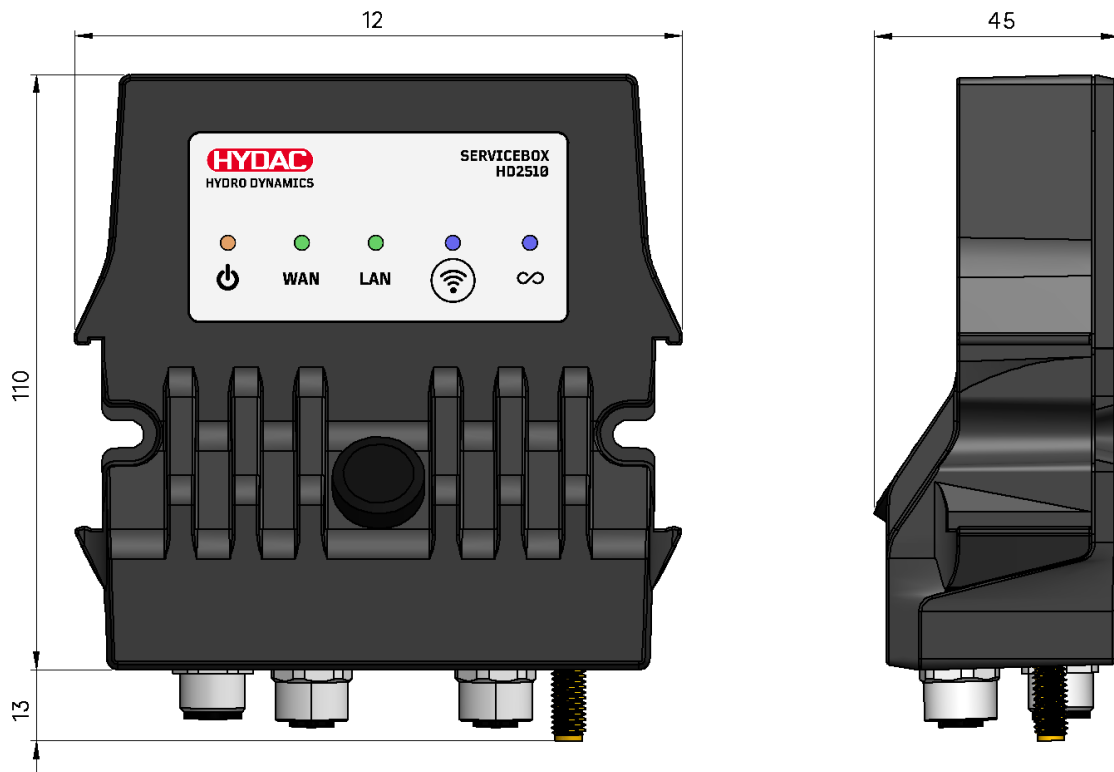


Figure 2: ServiceBox dimensions

INSTALLATION

9 Electrical Installation

The ServiceBox is designed to connect only with standard connectors. All connectors, except the USB-A connector, need to be mounted in place to meet the full ingress protection degree.

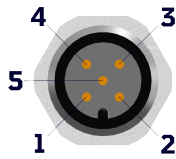
9.1 Connector Layout



Figure 3: ServiceBox Connector Layout

9.2 Connector Pinout

9.2.1 X1: Supply Connector



| M12 5P male A-Code | Supply Connector |
|-----------------------|------------------|
| 1 | Supply+ |
| 2 | Digital Input 1 |
| 3 | Supply- |
| 4 | Digital Input 2 |
| 5 | Digital Output |

9.2.2 X2: WAN Connector



| M12 4P female D-Code | WAN Connector |
|-------------------------|-------------------|
| 1 | Transmit + (TxD+) |
| 2 | Receive + (RxD+) |
| 3 | Transmit - (TxD-) |
| 4 | Receive - (RxD-) |

9.2.3 X3: LAN Connector



| M12 4P female D-Code | LAN Connector |
|-------------------------|-------------------|
| 1 | Transmit + (TxD+) |
| 2 | Receive + (RxD+) |
| 3 | Transmit - (TxD-) |
| 4 | Receive - (RxD-) |

9.2.4 X4: SMA Connector



| SMA female | WiFi 2.4 GHz Connector |
|------------|------------------------|
| 50 Ohm | Coaxial |

9.2.5 X5: USB Connector



| USB-A 2.0 female | USB Host Connector |
|------------------|--------------------|
| 1 | +5V DC |
| 2 | D- |
| 3 | D+ |
| 4 | GND |

10 Mounting Instructions

The ServiceBox is designed to mechanically mount in different ways.

10.1 DIN-Rail mounting



Figure 4: ServiceBox DIN-Rail mount

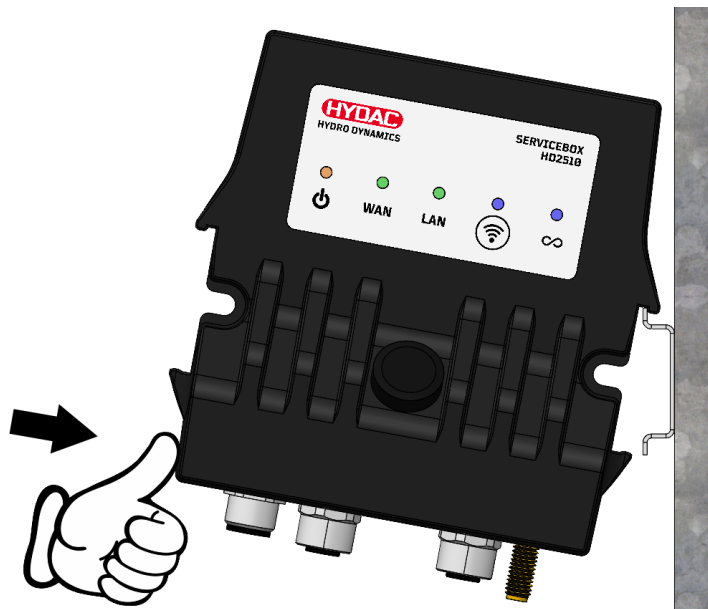


Figure 5: ServiceBox DIN-Rail mount instruction

Press firmly on the thumbs spot. Press until the ServiceBox clicks onto the DIN-Rail. For releasing the ServiceBox, just pull at the counter side of the thumbs spot.

10.2 Screw mounting



Figure 6: ServiceBox screw mount

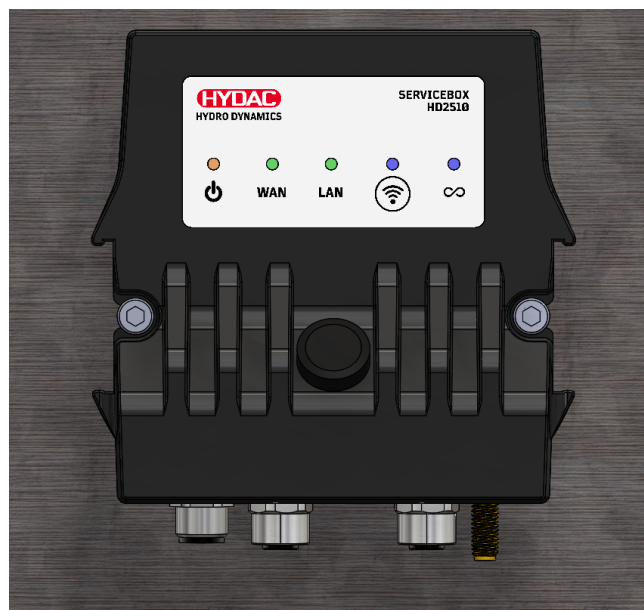


Figure 7: ServiceBox screw mount instruction

Mount the ServiceBox with M4 or M5 bolts to a solid backplate. Tighten it slightly so damage to the enclosure will be prevented.

OPERATION

11 Front Sticker

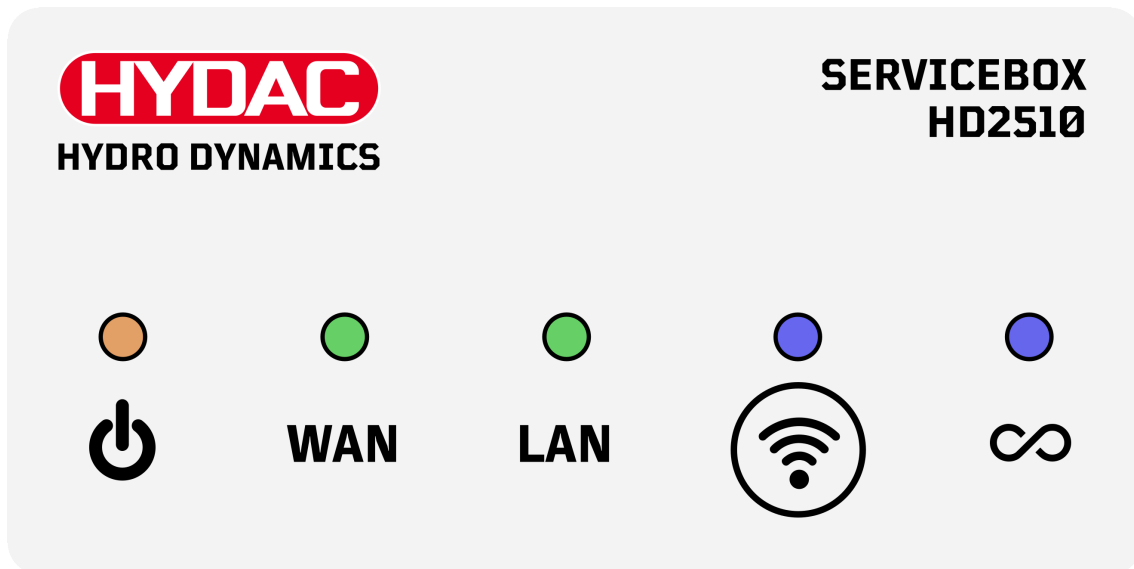


Figure 8: ServiceBox Front Sticker Layout

11.1 Power Indicator

The power indicator visualizes the status of the supply connector X1.



| Indicator | Function |
|----------------|---------------------------------------|
| Off | No supply connected |
| Red | Supply connected and starting up |
| Green flashing | Firmware loaded, starting up software |
| Green | Software loaded and ready to use |

11.2 WAN Indicator

The WAN indicator visualizes the status of the WAN connector X2.



| Indicator | Function |
|----------------|---|
| Off | No Ethernet device connected |
| Green | Ethernet device connected |
| Green flashing | Ethernet device connected and communicating |

11.3 LAN Indicator

The LAN indicator visualizes the status of the LAN connector X3.



| Indicator | Function |
|----------------|---|
| Off | No Ethernet device connected |
| Green | Ethernet device connected |
| Green flashing | Ethernet device connected and communicating |

11.4 WiFi Indicator And Button

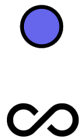
The WiFi indicator visualizes the status of the WiFi connection to an access-point. The WiFi button enables and disables the WiFi radio with a single press on the WiFi symbol.



| Indicator | Function |
|---------------|--|
| Off | WiFi is OFF |
| Blue flashing | WiFi is ON and searching for an access-point |
| Blue | WiFi connected successfully to an access-point |

11.5 Connection Indicator

The Connection indicator visualizes the status of the remote VPN connection.



| Indicator | Function |
|---------------|--|
| Off | No remote connection available |
| Blue flashing | ServiceBox is connected to the Cloud. Connecting is possible through the ServiceBox App |
| Blue | Secure remote VPN connection is established with the Cloud. |

12 Installing ServiceBox App

To make a secure VPN connection with the ServiceBox, the ServiceBox App needs to be installed. Follow the steps below to install the ServiceBox App and start your secure remote service.

12.1 Download ServiceBox App

Goto hydac.service.tech and download the latest Windows ServiceBox App software.

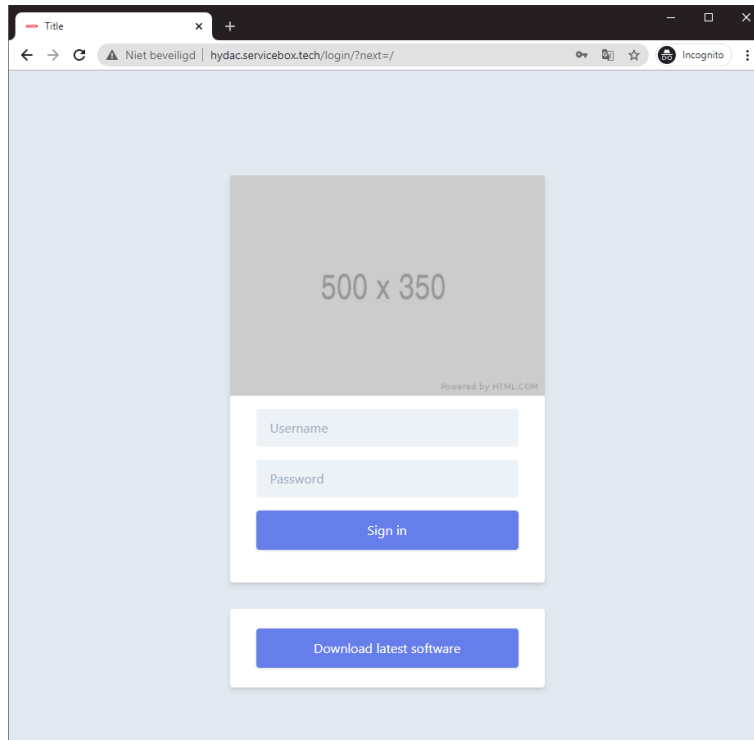
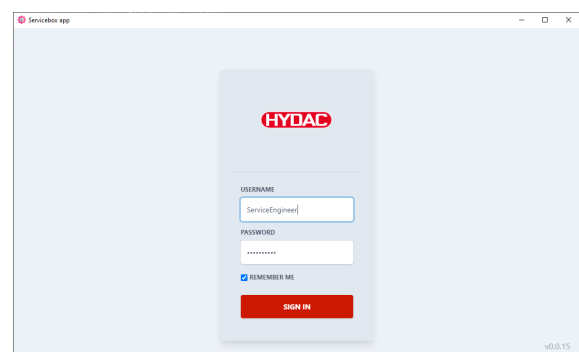
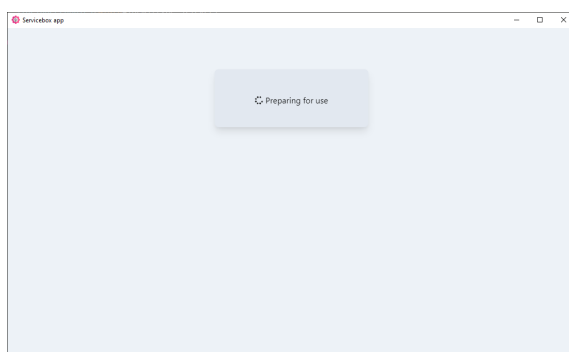
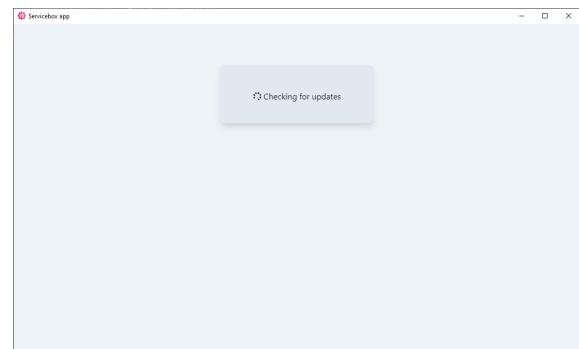
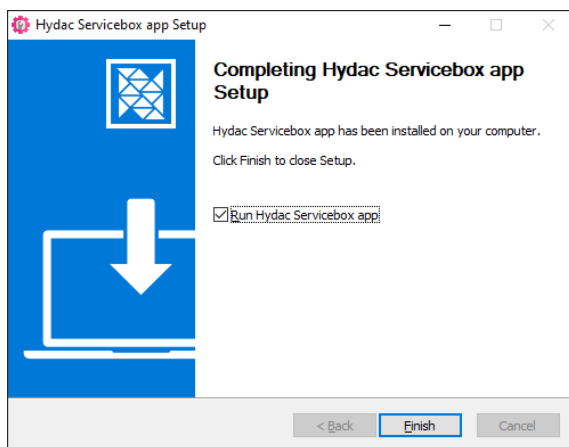
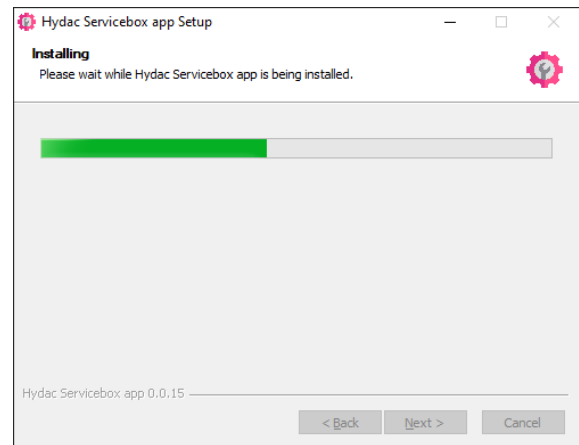
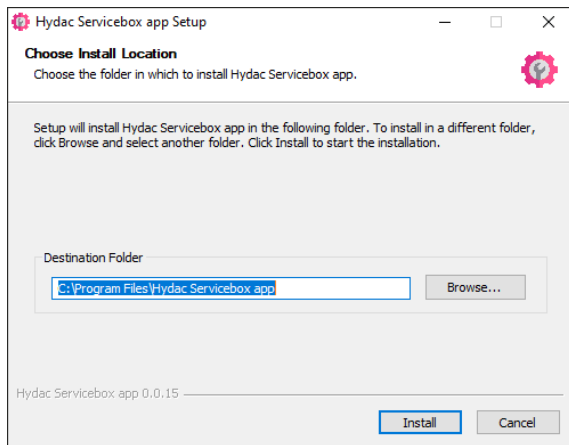


Figure 9: ServiceBox App Download Location

12.2 Install ServiceBox App

Open the **Hydac Servicebox app Setup 000.000.015.exe** executable file to install the ServiceBox App. Follow the instructions below.



13 Type Sticker

The type sticker contains general information of the ServiceBox. The BOX ID is a unique identifier of the unique ServiceBox. This ID is used in the ServiceBox App to identify and connect the ServiceBox to a certain ServiceLocation.



Figure 10: ServiceBox Type Sticker Layout

APPENDIX

14 Change log

| Version | Date | Changes |
|---------|------------------|--|
| 1.0.0 | December 7, 2021 | <ul style="list-style-type: none">- first release.- added Changelog |
| 0.0.1 | March 22, 2021 | <ul style="list-style-type: none">- initial revision |

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