RAVENOL®

RAVENOL®
ATF Professional Line 3.0

The device is designed for dynamic ATF exchange
in automatic transmissions

USER MANUAL

IMPORTANT!

Before operating the device, please read the recommendations contained in this manual.

Before packaging, each device was tested for hydraulic performance and proper operation, which is why there may be traces of oil on the hydraulic hoses.

The manufacturer is not liable for failures, defects, or other consequences caused by improper use of the device.

The manufacturer is not liable for any consequences caused by using the device contrary to its intended purpose.

The manufacturer is not liable for the consequences resulting from failure to comply with occupational health and safety regulations for automotive workshops.

Sale of the device to individuals is prohibited. The device may only be placed on the professional market; the buyer of the device may only be a business entity.

This manual must be kept near the device so that operators have easy access to it.

The manufacturer reserves the right to upgrade their devices at any time and without prior notice.

Other product and company names mentioned in this document may be trademarks registered by their respective owners.

The operator is obliged to monitor the operating status of the device and the amount of ATF transferred in the tanks of the device. In the event of a device failure, immediately turn off the engine of the vehicle and interrupt the service operation. Do not use the device if it is not in good working order. The manufacturer does not take responsibility for the consequences resulting from the operator's failure to fulfill their duties.

Original instructions

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1. Safety rules

1.1. Device

Before starting to use the device, carefully read this documentation.

Failure to comply with the information contained in this document may cause damage to the device or reduce the safety of use.

Do not remove or destroy plates or signs containing warnings, prohibitions, or mandatory instructions.

The device may only be powered by the power source specified in this documentation and on the nameplate.

Before using the device, remove the caps from the oil lines. Do not remove the metal oil strainer from the suction hose (Figure 2, item 14).

The device may only be operated by appropriately trained persons.

Do not smoke or use any sources of fire near the device and the vehicle.

The device must be protected from direct sunlight and rain.

Do not move the device by pulling on the hydraulic hoses or electrical cables. Pay special attention to ensure that the caster wheels are unlocked when moving the device. The device may only be moved on even, flat surfaces that allow its caster wheels to rotate without obstruction. Exercise extreme caution, as failure to comply with these recommendations may cause the device to overturn, for which the manufacturer bears no liability.

Do not use the device to transport other objects.

During transport and handling, ensure that there are no other objects on the device and that the front drawer is pushed in.

Maintenance of the device should be performed exclusively by trained personnel.

Do not clean the device using chemical products that may damage the paint coating, control panel components, or the display. The display should be cleaned with a damp cloth.

The device has been sealed inside and out. Unauthorized persons must not open the device. Any interference with the internal components of the device, opening the housing, or damaging the seals will void the warranty.

During the ATF exchange procedure and while using the device, the running vehicle emits harmful gases; therefore, the procedures must only be performed in well-ventilated rooms, using protective clothing, goggles, protective masks, and an exhaust extraction system, in accordance with occupational health and safety regulations. Furthermore, the working area should be dry and well-lit.

Before connecting the device, pay special attention to the hot components located in the engine compartment, transmission housing, engine radiator, ATF cooler, hydraulic lines, and other components that can cause burns. The device can only be connected to the car after it is ensured that there is no risk of burns or physical injury.

During the use of the device, the ATF flowing inside heats up, causing an increase in the temperature of the lines, the filter, quick couplers, adapters, and the housing.

Careless handling of hot components, such as hydraulic lines, couplers, vehicle components, etc., may cause burns. **Particular attention should be paid to protecting the eyes from potential jets of hot liquid.** Applicable occupational health and safety regulations in this regard must be observed.

While using the device, particular attention should be paid to rotating parts, e.g., the fans of the car engine radiator. Please note that these components, e.g., the fan, may start even if the key is removed from the ignition. To be safe, it is recommended to disconnect the battery of the vehicle before connecting the device, if possible. Applicable occupational health and safety regulations in this regard and recommendations of the vehicle manufacturer must be observed.

While using the device, hydraulic and electrical lines must be kept away from rotating components – fans, etc. Applicable occupational health and safety regulations in this regard must be observed.

The device operator must be familiar with automatic transmissions to avoid damaging the car through improper use of the device.

A safe distance should be maintained while lifting the vehicle. Third parties are not allowed near the lift while the vehicle is being lifted. The device should not be placed under a car that is on a lift. Applicable occupational health and safety regulations in this regard must be observed.

Any ATF leaks should be cleaned up to prevent slipping. Applicable occupational health and safety regulations and environmental protection regulations in this regard must be observed.

If the noise exceeds the limits specified by law, appropriate hearing protection must be used. The noise level emitted by the device was measured at 80 dB.

During the use of the device, do not lean on it, move it, or shift it, as this may cause an incorrect reading of the amount of new and old ATF. Do not stand on the device, place any objects on it, or use it to support other objects.

When used correctly and in accordance with the supplied manual, the device poses no danger to operators. The manufacturer is not liable for failures or other consequences resulting from improper use.

1.2. Disposal

Separate electrical, plastic, and metal parts before disposing of the device. Dispose of materials into containers in accordance with local regulations.

2. Main features

Power supply:

- 12–15 V DC
- Current consumption: 0.1–35 A

Display:

- 5”
- color
- resistive touchscreen

Printer:

- thermal

Control unit:

- controlling the operation of the entire system, including the pump power supply

Hydraulic performance:

- flow rate: 0–7.5 l/min.
- maximum pressure generated by the machine: 10 bar
- maximum operating pressure: 10 bar

Maximum permissible load of the device drawer: 3 kg.

Maximum permissible load of the ATF tray/scale: 50 kg.

Dimensions (H/W/D): 120/60/47 cm.

Dry weight of the device including the filter: approx. 100 kg.

Permissible ambient temperature (storage and use): 15–50°C.

Permissible ATF temperature: 10–90°C.

3. Description

The Ravenol Professional Line dynamic ATF exchange device was developed and designed by Polish engineers based on practical experience with dynamic ATF exchange and market demand.

The device features an automatic system for ATF flow control during the dynamic exchange process, which significantly reduces the extent of operations required during dynamic ATF exchange. Once the process starts, the device automatically adjusts the ATF flow rate, adapting to the operating conditions of the vehicle transmission in such a way that the ATF exchange proceeds quickly and efficiently, regardless of pressure or temperature differences. This eliminates the need to control the pressure manually. Additionally, the device monitors if the amount of new ATF and the available space in the old ATF tank are sufficient to carry out the exchange process.

The tanks for old and new ATF can be easily replaced in the device. The device comes with an extensive set of adapters for dynamic ATF exchange, which includes basic couplers and, among others, adapters for DSG, MPS6, Powershift, Aisin Warner (round, replacing the cooler), and DP0 (round, replacing the cooler) transmissions.

The 12–15 V DC power supply ensures mobility and the ability to conduct dynamic ATF exchange independently of the power grid.

A large and legible 5” color display ensures good readability and ease of operation of the device. The resistive touchscreen is sensitive to pressure, which ensures its reliability even when it is operated with dirty or wet hands. The device features a multilingual menu (including Polish, German, Russian, English, Romanian, and other languages, depending on the software version), depending on the selected settings.

Thanks to the built-in temperature sensor, the device continuously displays the approximate ATF temperature on the display.

The device uses a pump capable of generating a pressure of 10 bar, making it possible to perform the dynamic ATF exchange process, regardless of the device connection point and even when components of the transmission cooling system are partially clogged. The pump capacity is up to 7.5 l/min, which makes the dynamic ATF exchange process fast and efficient.

The filtrating system of the device has been separated from the main ATF circuit, so there is no risk of pumping old ATF from the device into the serviced automatic transmission.

The device has the following functions:

- **applying the detergent** – applying a special, aggressive chemical agent to increase the aggressiveness of the flushing process; it should be noted that some manufacturers prohibit the use of such flushing additives in their transmissions;
- **draining the ATF** – draining a portion of the ATF from the transmission, e.g., during the ATF level check after completing the dynamic ATF exchange process; additionally, the device displays the amount of drained ATF;
- **refilling the ATF** – refilling the ATF in the transmission, simultaneously displaying the amount of refilled ATF,
- **flushing/filtrating** – the device features an efficient filtrating system that separates solid contaminants from the automatic transmission system, with programmable flushing time,
- **dynamic ATF exchange** – the device automatically performs the dynamic ATF exchange process, controlling the amount of transferred ATF.

The device has a thermal printer that prints the workshop's data (saved in the memory of the device), the details of the serviced vehicle, the amount of refilled ATF, the flushing time, the type of selected ATF, and any amount of drained or refilled ATF

3.1. Device parts

Figure 1. Front view of the device

1 – Upper part of the housing

2 – Color touchscreen display

3 – Drawer with adapters

4 – Device status indicator lights

5 – Thermal printer

6 – Openings for visual inspection of the ATF level in the tanks

7 – Caster wheels with brakes

8 – Sight glasses for checking ATF quality and flow direction

Figure 2. Rear view of the device

9 – Nameplate

10 – Hoses connecting the device with the transmission

11 – Hose to the old ATF tank

12 – ATF filter

13 – Tank with a quick coupler for detergent application

14 – New ATF suction hose/strainer

15 – New ATF tray/scale

16 – Old ATF tray/scale

17 – Power supply cables for the device

18 – Fuse

19 – Main switch

20 – Overflow line

The device features a color touchscreen (2) that the operator uses to select the appropriate functions.

The thermal printer (5) prints the workshop's data, vehicle data, detergent application, transmission flushing time, the amount of ATF used for the dynamic ATF exchange, refilled ATF, and drained ATF.

The green indicator light (4) signals that the device is ready for operation.

The red indicator light (4) signals that the device is busy. This means that the device is currently performing certain operations, e.g., flushing.

A fully extendable drawer (3) with steel bearings can be used to store the set of adapters available with the device.

The steel caster wheels with brakes (7) enable easy movement and safe immobilization of the device.

The appropriately shaped upper housing (1) allows for the safe and easy placement of light items necessary during the operation of the device, e.g., the user manual, gloves, or cleaning cloths.

The built-in hook makes it possible to easily secure the lines of the device. The device is supplied with two hooks that must be mounted using the provided blind rivets in the prepared holes on both sides of the device.

Built-in ATF sight glasses allow for a visual assessment of ATF condition in the automatic transmission and comparing it to new ATF. Additionally, the sight glasses make it possible to manually detect and check ATF flow direction.

Long power supply cables and hydraulic lines make it easier to connect the device.

The large scales/trays for the ATF allow the use of various tanks.

The ATF Professional Line 3.0 device has an additional external fuse (30 A) and a main switch (Figure 3). The device is turned on by turning the switch.

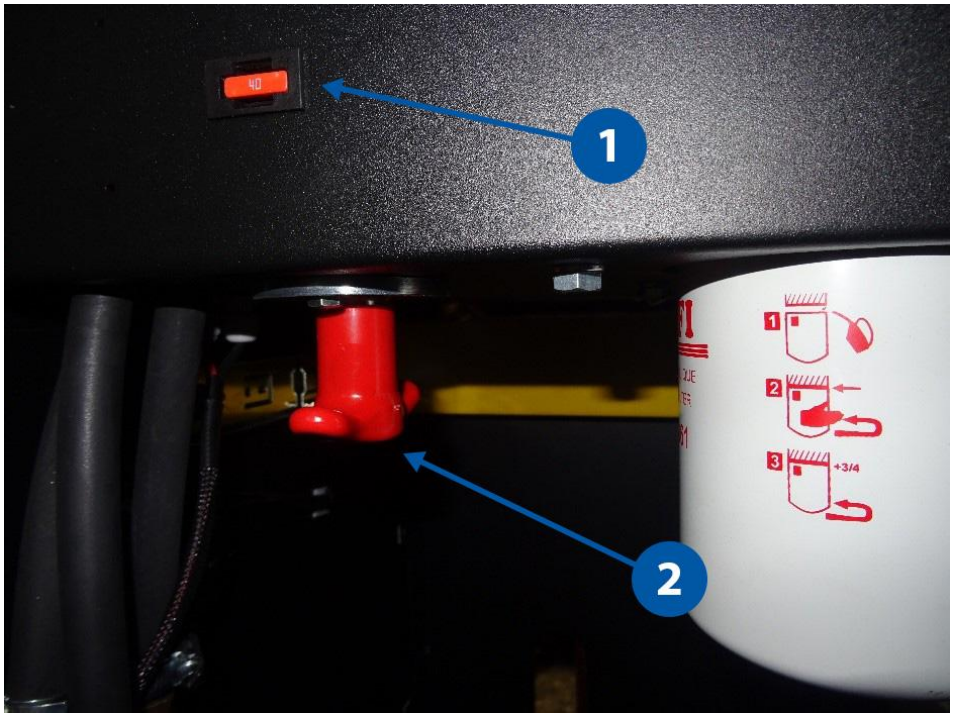

Figure 3. External fuse (1) and main switch (2). Switch in the ON position

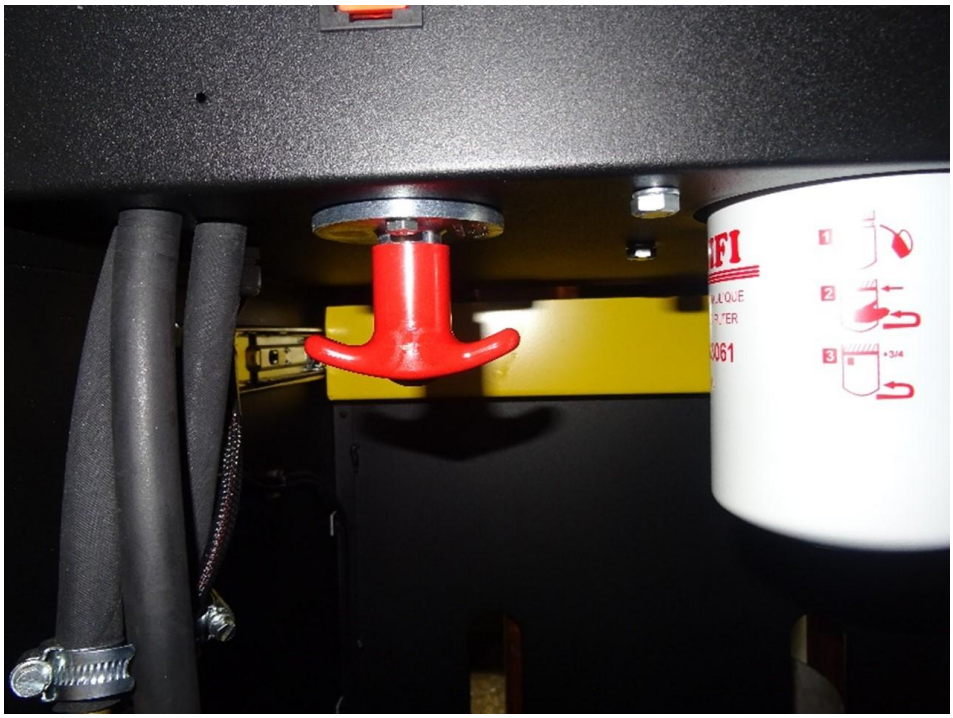

Figure 4. Switch in the OFF position

3.2. Adapters supplied with the device

Figure 5. Adapters supplied with the device

1 – DP0, gasket, mounting bolt, connection fittings

2 – DSG

3 – Powershift, MPS6, 6DCT 450

4 – AW55-50

5 – A set of spacers for DP0 and AW55-50

6 – Universal male couplers from 7.5 to 19.3 mm in diameter

7 – Universal male couplers from 7.5 to 19.3 mm in diameter

8 – Quick couplers

9 – Short mounting brackets for universal male couplers

10 – Long mounting brackets for universal male couplers

Additionally, a set of **rubber hoses** and **clamps** has been provided.

The device comes with adapters for servicing DP0, DSG, AW55-50, and MPS6 transmissions (1, 2, 3, 4). The device comes with a set of male couplers (6, 7) to connect transmissions from various manufacturers, such as ZF (e.g., 4HP, 5HP, 6HP), AisinWarner (e.g., 50-40L, 50-42L, 55-50SN, TF-80SC), Getrag, and others. The short mounting brackets (9, 10) can be used to fix universal male couplers in the housing of the transmission or ATF cooler. They are available in two lengths and various widths. Thanks to the combination of universal couplers and mounting brackets, the operator has great flexibility when connecting the device to the transmission, depending on the available space and transmission features.

The device can be equipped with additional dedicated adapters, which are available separately.

3.3. Full adapter specifications

Aisin transmissions with a round transmission cooler base. Renault, Peugeot, Citroën.

Getrag 6DCT450 and 6DCT470 transmissions (Ford PowerShift DPS6 Transmission, Volvo MPS6 Transmission). Ford Focus, C-Max, Fiesta, S-Max, Galaxy, Kuga, Mondeo, Volvo C30, S40, V50, C70, V70, S80, S60, V60.

AL4/DP0 transmissions. PSA Group, Renault Clio, Espace, Kangoo, Laguna, Logan, Megane, Modus, Safrane, Sandero, Scenic, Thalia, Fiat Ulisse.

DSG 02E and 0BT transmissions of the Volkswagen Group. **VW Golf, Passat, Tiguan, Touran, Sharan, Eos, Transporter, Polo, Škoda Octavia, Superb, Yeti, Audi A3, Q3, TT.**

Universal male couplers for various types of automatic transmissions: Aisin Warner, Getrag, ZF, Borg Warner, Mercedes-Benz, Honda, Jatco, Nissan, Ford, GM, Hyundai, Chrysler in cars of makes such as: Audi, BMW, Jaguar, Volkswagen, Alfa Romeo, Volvo, GM, Fiat, Ford, Jeep, Chrysler, Saab, Mercedes-Benz, Mitsubishi, Suzuki, Toyota, Land Rover, Subaru, Honda, Nissan, Hyundai, Chrysler, PSA.

Universal male couplers (20 pcs.):

- 2 × 7.5 mm
- 2 × 8.2 mm
- 2 × 9 mm
- 2 × 9.8 mm
- 2 × 10.6 mm
- 2 × 11.5 mm
- 2 × 12.2 mm
- 2 × 13 mm
- 2 × 13.8 mm
- 2 × 14.6 mm
- 2 × 15.5 mm
- 2 × 16.2 mm
- 2 × 17 mm
- 2 × 17.8 mm
- 2 × 18.5 mm
- 2 × 19.3 mm

Rubber hoses: 8 mm, 10 mm, 12 mm, 14 mm.

Set of universal mounting brackets for male couplers (16 pcs.):

- 2 × 12 mm long
- 2 × 12 mm short
- 2 × 14 mm long
- 2 × 14 mm short
- 2 × 16 mm long
- 2 × 16 mm short
- 2 × 18 mm long
- 2 × 18 mm short

4. Delivery, transport, and installation

4.1. Delivery and installation

Actions performed by the operator:

- Unloading the device in accordance with applicable occupational health and safety regulations.
- Removing and properly disposing of the packaging.
- Checking if the components and elements are intact. If necessary, contact the dealer immediately.

4.2. Transport

During transport, the following rules must be observed:

- observe the applicable occupational safety regulations (especially those relating to objects with a total weight of approximately 100 kg),
- remove components, accessories, or other parts that may hinder the movement of the device,
- persons not involved in the transport of the device should remain outside the working area,
- the device cabinet can be moved after unlocking caster wheel brakes, closing the drawer, and removing all items from the top of the device,
- the device can only be moved over even surfaces. Severe shocks and vibrations during movement may damage the device.

If the device is transported by road, make sure that it is properly secured and upright before driving.

5. Preparing the device

5.1. Vehicle preparation

After placing the vehicle on a car lift, shift the gear selector to the park position “**P**”.

Make sure that there is a sufficient amount of ATF in the transmission to perform the process and servicing operations using the device. After completing all operations, always check the ATF level in the transmission according to the procedures of the vehicle manufacturer.

5.2. Connecting to the transmission

Connect the ATF Professional device in series or parallel into the cooler and transmission circuit using the appropriate adapters (Figure 6). The connection point depends on the available couplers and the free space in the engine compartment. After installing the appropriate adapters and connecting the device, check the ATF flow direction.

Figure 6. Method of connecting the device adapters to the transmission. On the right: Connection to the ATF line of the transmission cooling system. On the left: In this case, in the AW55-50 transmission, the round heat exchanger was replaced with a special adapter (with a gasket and spacers).

6. Use

6.1. First start-up

During the first start-up of the device:

- save the workshop's data in the device memory,
- enter the volumes of ATF containers,
- tare the scales,
- set the ATF density manually to 850 g/l.

6.2. Start screen/main menu

The device is equipped with a 5” color display featuring touch control. The screen utilizes resistive technology, which means that it responds to pressure. This minimizes the risk of disruptions caused by operating the device while wearing gloves or with wet, dirty hands. Do not press the screen too hard during use, as this may cause damage. The display must not be operated using other objects (tools), except for dedicated styluses.

After connecting the ATF Professional Line 3.0 device to the battery and turning it on, the welcome screen will be displayed.

The ATF Professional Line 3.0 device cannot be activated in any other way than by creating an account on the **atfpro.eu** website and carrying out the activation through this website.

Activation takes place on the **atfpro.eu/activate** page and is available only to logged-in users (an account must first be created on the website). An unlogged user will be redirected to the login page and returned to the activation page after they log in.

During activation, the user provides the device serial number and the OTRC code from the sticker on the device screen (one-time registration code) and selects their distributor from the list.

After registering in this way:

- the device is associated with the user account,

- the device is associated with the selected distributor,

- the device receives the active status,

- the activation date is saved,

- the warranty end date is calculated and saved – the warranty period is 12 months from the activation date. This marks the start of the warranty period,

- the user sees a success message on the website and their PIN in a highlighted field,

- the system sends an activation confirmation e-mail,

- the user can enter the received PIN on the welcome screen of the device.

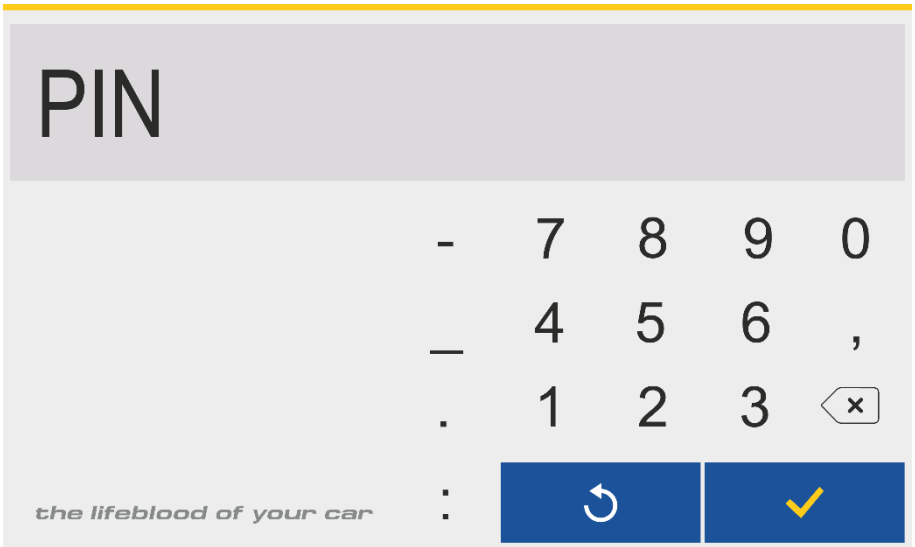

Figure 7. Device PIN code entry screen.

The main menu screen will be displayed next (Figure 8).

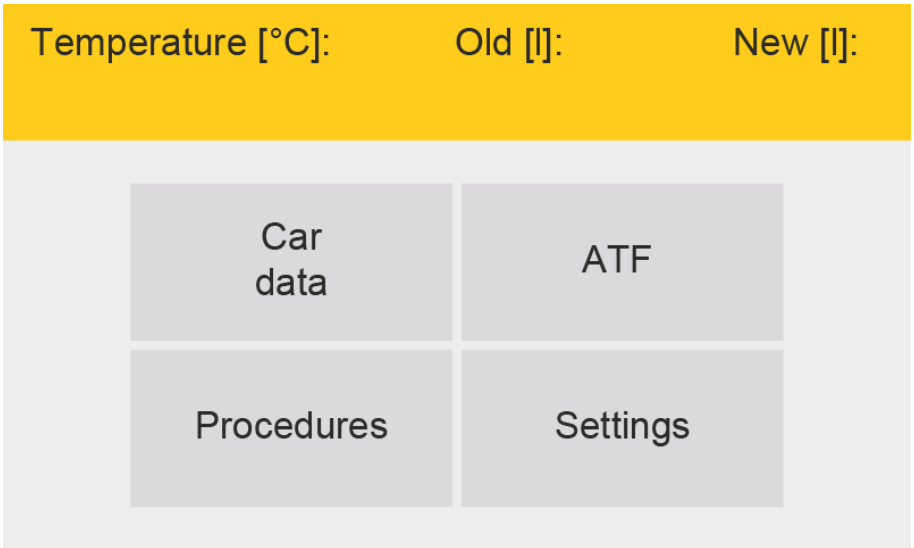

Figure 8. Main menu screen

The display shows the ATF temperature and the current scale readings for old and new ATF, expressed in liters.

There is a red and a green indicator light on the control panel. The indicator lights provide information about the device status. When selecting functions from the device menu, wait until the red indicator light goes out and the green one comes on.

Before each use of the device:

- tare the scales with the empty oil tanks so that they read 0.0. The taring function is available in the “Settings” menu,
- select/enter the appropriate ATF type,
- check the ATF flow direction to properly connect the device,
- adjust the length of the new ATF suction hose (see chapter 6.13).

The ATF temperature displayed by the control unit is measured indirectly by measuring the temperature of the aluminum distribution plate through which the ATF flows. The temperature sensor is placed between the oil channels to minimize the impact of external factors on the temperature reading. However, the temperature displayed by the device may still differ from the actual temperature of the ATF in the transmission.

6.3. Preparing the device

WARNING

The device must be powered by a 12–15 V DC power source. Ensure that the power source is sufficient to perform the complete vehicle service operation.

If a car battery is used to connect the ATF Professional Line 3.0 device, connect the black clamp to the negative terminal (-) and the red clamp to the positive terminal (+).

Each time the device is started, ensure that there are empty ATF tanks on the scales/trays for the new and old ATF, and then tare the scale readings using the "Taring" function in the "Settings" menu. After taring, ensure that the readings for the amount of new and old ATF are 0.0. Otherwise, the taring process must be repeated.

Before starting to use the device, ensure that the volumes of the tanks used match the volumes saved in the device memory ("Settings" menu, "Oil container's volume" function).

Place the suction hose with the strainer in the tank for the new ATF. Adjust the length of the suction hose so that the strainer is located as low as possible without touching the bottom of the container. If the oil strainer touches the bottom of the container, the device will not operate correctly. The measurement of the new ATF amount will be disrupted, causing the device to malfunction.

Fill the tank for the new ATF with the appropriate amount of new ATF. Ensure that the new ATF tank and the old ATF tank are located in the center of the scales/trays and do not touch the housing or other components. Otherwise, the operation of the device may be disrupted.

Using the "ATF" function in the main menu, manually enter or select from the list of ATFs the type of ATF used (the type of ATF in the new ATF container).

Using the "Car data" function, enter the details of the serviced car. When entering the make or model, you can also enter the mileage of the car and the service date.

Using appropriate adapters, connect the device to the transmission cooling system (Figure 6).

6.3.1. Determining the ATF flow direction

The ATF Professional Line 3.0 device enables automatic or manual detection of the ATF flow direction. Select the "Procedures" function from the device menu (Fig. 8) to display a message about the method for detecting the ATF flow direction. Select "Manually" or "Automatically".

After selecting "Automatically", connect the device to the transmission, start the car engine, and press the "accept" button. At this point, the device will automatically start detecting the ATF flow direction, which may take about a minute. After performing the procedure, the device will inform the user about the ATF flow direction. If it is correct, you can continue using the device. If the ATF flow direction is not correct, turn off the engine of the vehicle and swap the hydraulic lines.

In some transmissions, detecting the ATF flow direction may be difficult due to the transmission design and firmware version. In such cases, repeat the ATF flow direction detection procedure after engaging the reverse gear “R”.

If it is still not possible to detect the ATF flow direction, perform the manual ATF flow direction detection procedure. To this end, start the vehicle engine and observe the ATF flow direction in the sight glasses located on the main panel. The ATF should flow according to the arrows drawn on the panel. If the ATF flows in the opposite direction, turn off the car engine, swap the hydraulic hoses of the device, and check the ATF flow direction again.

After completing the flow direction determination procedure, turn off the car engine.

Before servicing the vehicle, ensure that the new ATF tank contains the amount of new ATF required for the exchange. **It is recommended to use two liters more ATF than required for the exchange, as some of the ATF will not be pumped out of the new ATF tank.**

Ensure that there is enough space in the old ATF tank for the old ATF pumped out during the car service operation.

Exercise caution when filling and emptying the tanks.

6.4. Settings

Select the “Settings” function to display the screen shown below (Figure 9).

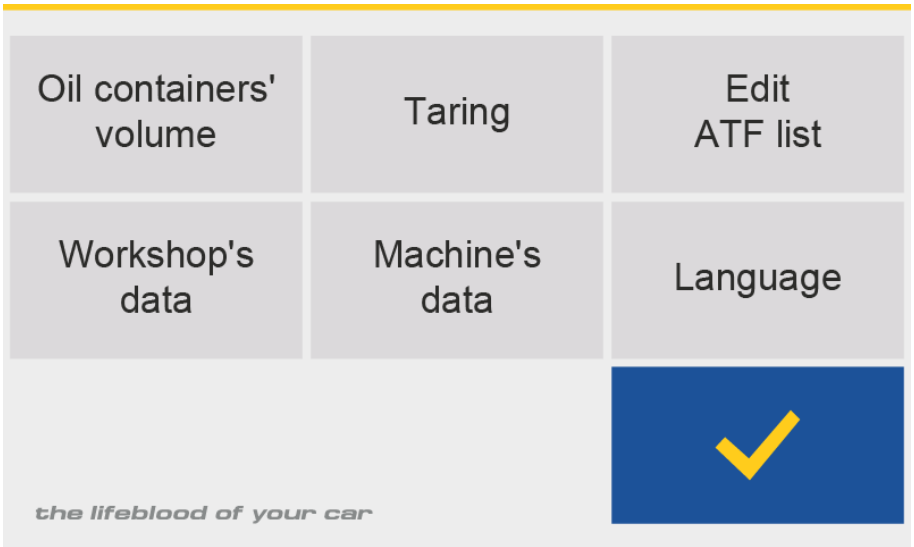

Figure 9. “Settings” menu screen

6.4.1. Oil containers’ volume

The device is designed for operation with various types of ATF containers. Before using the device, enter the volume of the old ATF tanks in the device settings.

To save the settings, press the “accept” button.

6.4.2. Taring

The taring function can be used to reset the readings of the scales with the old and new ATF. Every time the device is turned on, enter the “Settings” menu, place the empty containers that will be used

during the service operation on new and old ATF scales, and then select the “Taring” function. The process takes a few seconds and is indicated by a red indicator light turning on. After taring is complete, the program will automatically return to the main menu.

If taring is performed on empty scales (without containers), the actual amount of ATF displayed by the device will be incorrect. The mass of the container (tare) will be interpreted by the control unit as the ATF weight, which will result in an overestimation of the ATF amount in comparison with the actual amount. The available amount of new ATF displayed by the control unit will be greater than the actual amount in the new ATF tank. This can confuse the device operator. The amount of old ATF will also be overestimated. The warning about an insufficient amount of new ATF or an insufficient volume of the old ATF container will not work properly in such cases. For this reason, it is recommended to tare the scales with empty ATF tanks. Even if the scales are tared incorrectly as in the example above, the process of dynamic ATF exchange and ATF draining, or refilling will be performed correctly.

6.4.3. Workshop's data

The device enables entering the workshop's data (Fig. 10), which will be saved and printed every time the device is turned on. The device enables saving the company name, address, and phone number. When entering the workshop's data, you can also additionally enter any details that will fit on the display while typing. To apply the changes, press the “accept” button.

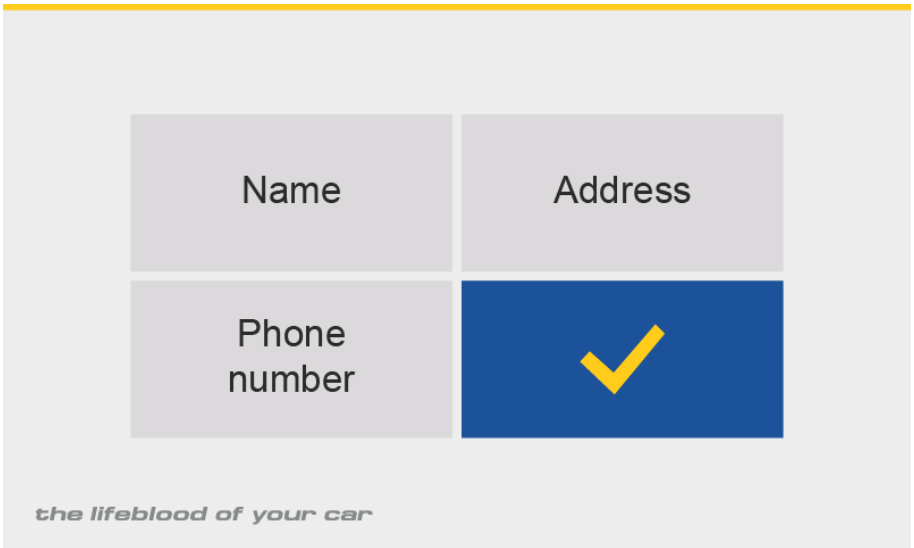

Figure 10. Workshop's data entry screen

6.4.4. Machine’s data

Select this function to display the serial number and firmware version of the device.

6.4.5. Edit ATF list

The device enables editing the list of ATFs saved in the memory. Click the “Edit ATF list” button to display the list of ATFs. The list can be edited freely. To change the name of the ATF, press the selected ATF, and then use the keyboard to enter the name. Next, click the ATF density window and enter the density for the new ATF. Failure to enter the density or entering an incorrect density will cause the device to incorrectly calculate the ATF amount.

6.4.6. Language

The device enables changing the language by selecting it from the menu. Enter the “Settings” menu and press the “Language” button to display a list of available languages.

6.5. Entering the data of the serviced car

Selecting the “Car data” function in the main menu to enter the brand, model, and plate number of the car that is serviced using the device (Fig. 11). The entered brand and model can be expanded to include the vehicle mileage and the date of service. To accept the entered data, press the “accept” button. The printer will then print out the entered data.

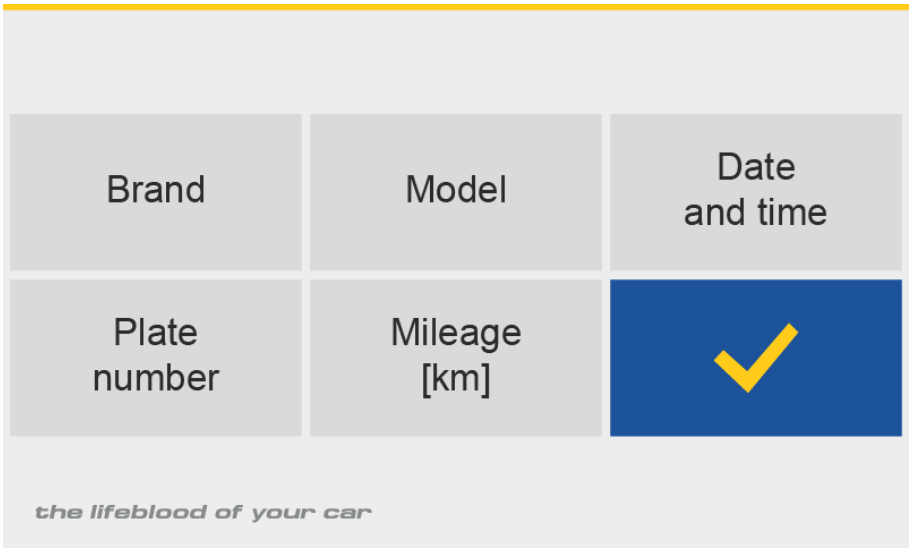

Figure 11. Vehicle data entry menu

6.6. Entering data of the ATF used for the procedures

Before using the device, select the type of ATF that will be used for the service procedures. Select the “ATF” function in the main menu to display a screen with information about the currently selected ATF (Figure 12).

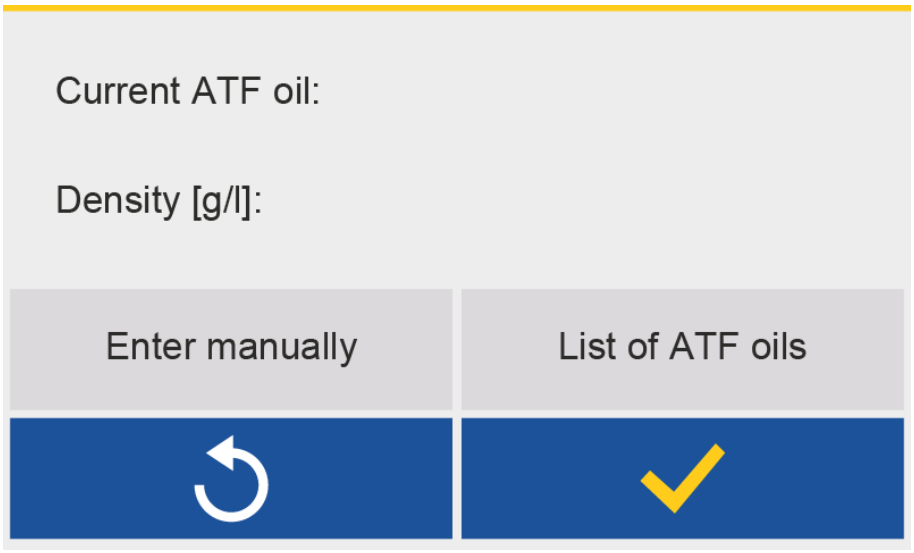

Figure 12. ATF type selection screen

Select the ATF type from the database by clicking the “List of ATF oils” button or enter any ATF manually by clicking “Enter manually”. This function allows you to maximize precision when refilling the transmission with new ATF. If this step is skipped, the device control unit will default to the last selected ATF type.

6.6.1. List of ATF oils

Select the “List of ATF oils” function to display a screen containing a list of ATFs (Figure 13). For each ATF type, its density is displayed in g/l (grams/liter).

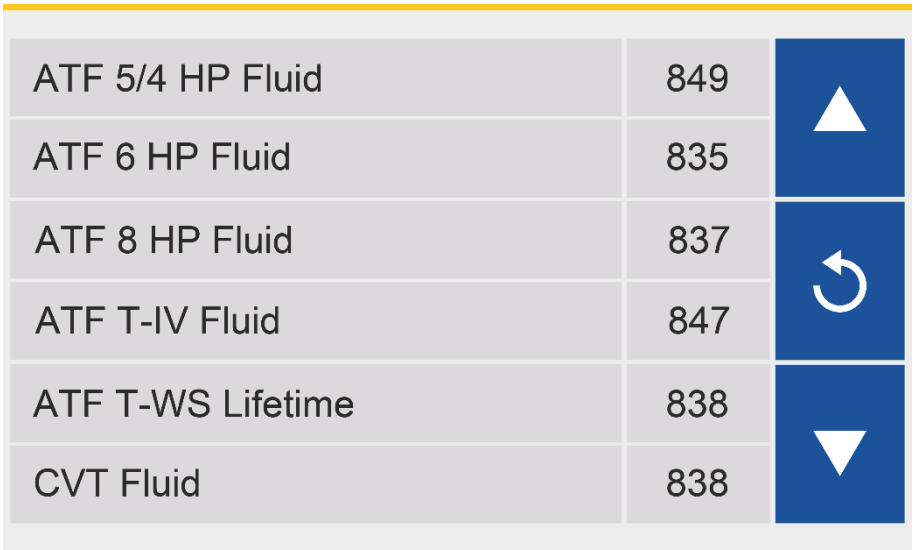

Figure 13. Fragment of the list of ATFs

To select a specific ATF, click its name. This will return you to the previous menu, where the name and density of the selected ATF will be shown in the upper part of the window (Figure 12). Press the “accept” to return you to the main menu and print out the ATF data on the receipt. The list of ATFs contains only ATFs produced by Ravenol.

6.6.2. Entering manually

Select the “Enter” function to display a screen where you can enter the density (in g/l) and name of the ATF to be used (Figure 14, Figure 15). Press the “accept” button to return you to the previous menu, where the name and density of the manually entered ATF will be shown at the top of the screen (Figure 12). Click the “accept” button to return to the main menu and print the ATF data.

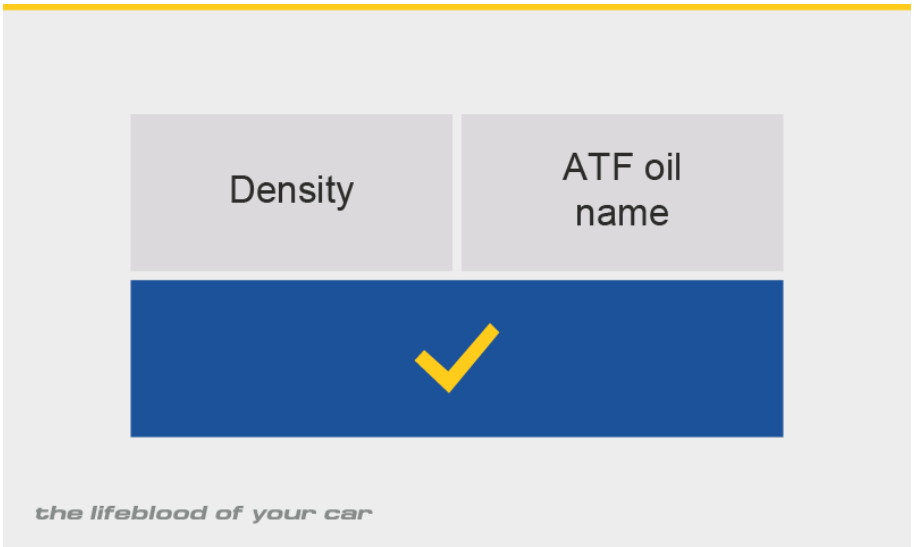

Figure 14. Manual entry of ATF data

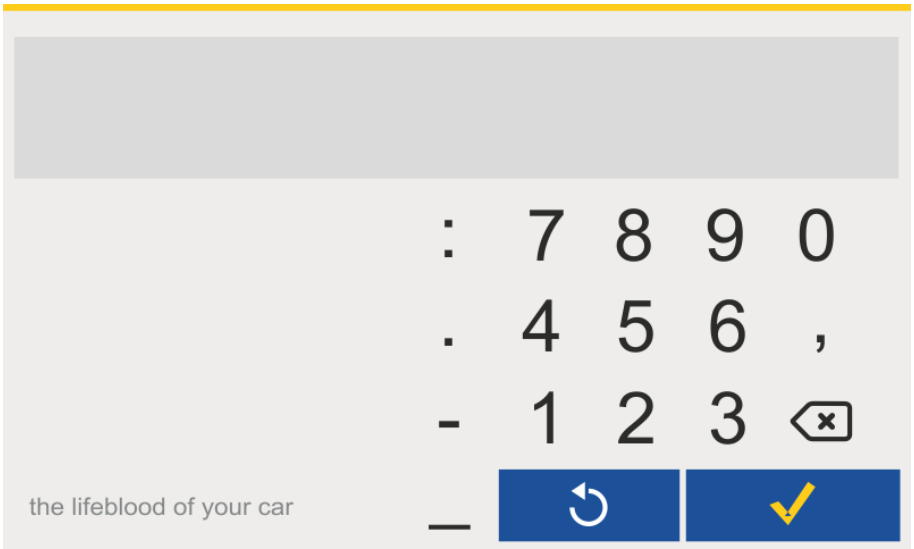

Figure 15. ATF density entry screen

6.7. Procedures

After selecting the “Procedures” function, information about the need to check the ATF flow direction will be displayed (Figure 16). The operator must decide whether to perform automatic ATF flow direction detection or manual detection according to the manual in section 6.3.1, “Determining the ATF flow direction”.

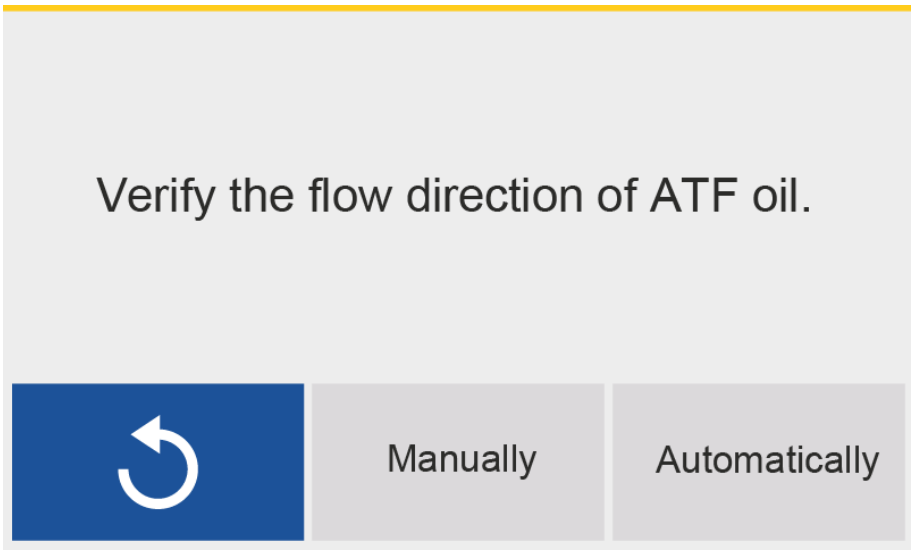

Figure 16. Information about the need to check the ATF flow direction

When the ATF flow direction detection process is completed, select the operating mode of the device: automatic or manual.

Select the manual operating mode to gain access to all the functions (Figure 17) that can be performed using the ATF Professional Line 3.0 device:

- detergent application,
- flushing/filtrating,
- dynamic exchange,
- oil refill,
- oil draining.

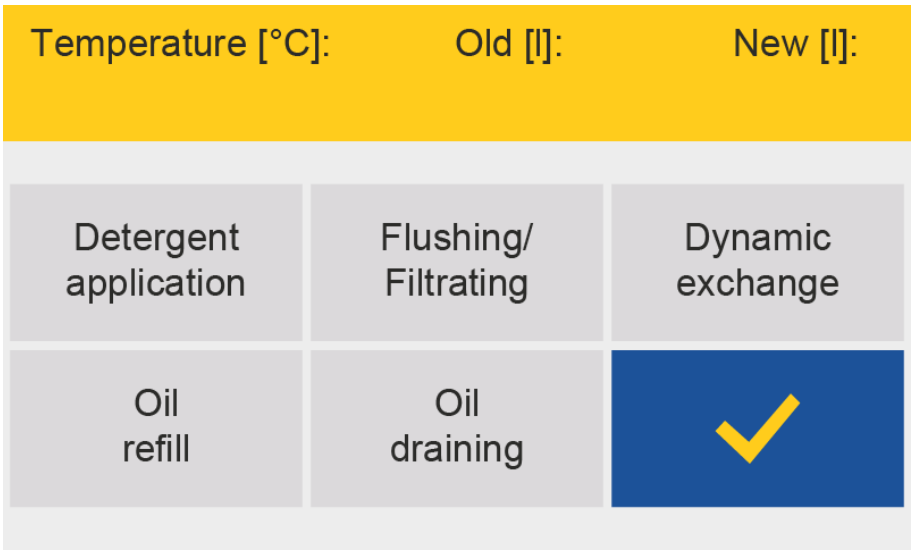

Figure 17. Menu of procedures available in the ATF Professional Line 3.0 device

If you select the automatic mode, you have to provide all the data requested by the device: the transmission flushing method (with detergent or new ATF), transmission flushing time, and the amount of ATF for the dynamic ATF exchange. Then, the device will start performing the subsequent steps automatically one after another.

In the automatic mode, flushing can be performed with the detergent or new ATF. If flushing is performed with new ATF, some of the old ATF can be drained manually through the drain plug or using the device. If the ATF is drained using the device, there is a risk of air contamination and seizing of the transmission

pump; therefore, this method is recommended for advanced users. If draining the ATF through the drain plug is selected, the device will display a message about the need to drain the ATF. After this action is completed and the “accept” button is clicked, the device will proceed to the following steps (ATF refill, flushing, and dynamic ATF exchange).

6.8. Detergent application

This function enables the introduction of flushing detergents into the system through an additional connection located at the back of the device (Figure 2, item 13). To apply the detergent, pour the appropriate amount of the detergent into the tank, screw on the cap, and connect the tank to the coupler at the back of the device. Next, press the “Detergent application” button. This will open the next menu; at the same time, the device will inform about the “busy” status by turning on the red LED (the sound of the solenoid valve shifting will be heard). The process can be continued after the green LED lights up again. Press the “Start” button (Figure 18) to start the pump of the device and pump the detergent into the system. Hold the “Start” button pressed until the detergent tank is empty. Press the “accept” button to return to the previous menu and print out an appropriate message. A red indicator light will turn on, indicating that the device is busy. The device can be used further after the green indicator light lights up.

Due to the extremely poor lubricating properties of some flushing detergents, the amount of detergent introduced at a single time must be limited to 300 ml to avoid damage to the device pump. To introduce a larger amount of the detergent, it should be diluted with ATF in a 1:1 ratio.

Every time after pumping in the detergent, pour approx. 300 ml of new ATF into the additional tank, connect the tank to the coupler at the back of the device, and select the “Detergent application” function again to pump in the ATF. This will allow the entire volume of the detergent to be pumped into the transmission. Otherwise, some of the detergent pumped in may remain in the suction hoses, the solenoid valve, and the pump. This will reduce the efficiency of the flushing process.

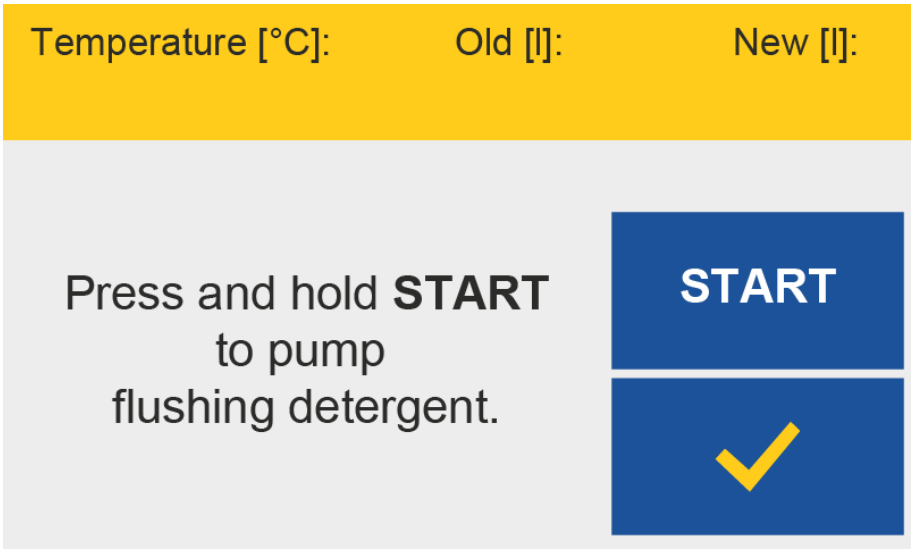

Figure 18. Flushing detergent application menu

6.9. Flushing/Filtrating

After selecting the “Flushing/Filtrating” function, enter the duration of ATF filtrating / transmission flushing. Press the “accept” button to proceed to the next screen and start the countdown timer (Figure 19).

Figure 19. Transmission flushing function menu

After the set time has elapsed, the control unit will terminate the flushing procedure. Press the “accept” button (Figure 20) to return to the previous menu and print out flushing time information on the receipt. You can terminate the flushing procedure at any time by pressing the “accept” button.

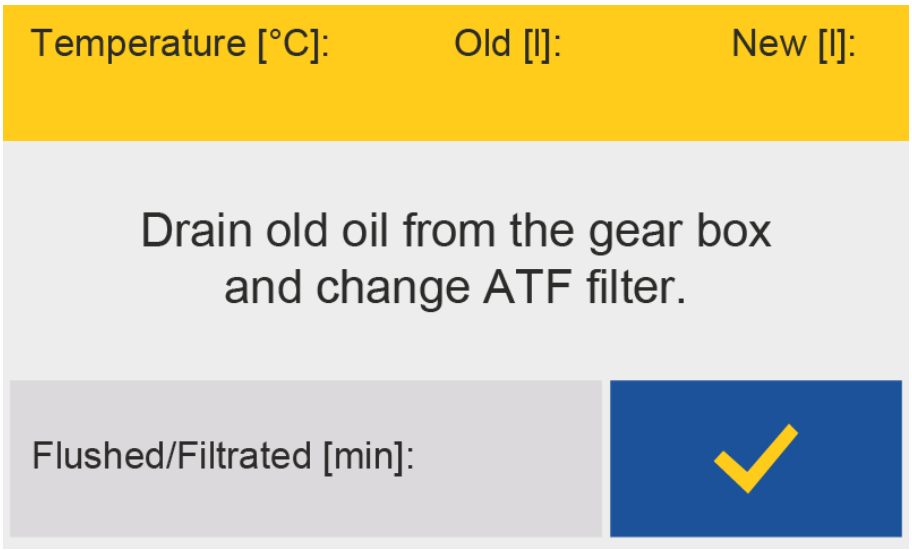

Figure 20. Flushing process completion menu

The flushing time should be selected by a properly trained operator individually depending on the car, its technical condition, and transmission type and depending on the ATF and flushing detergent used.

Ravenol recommends flushing the transmission using new ATF. This will result in the slow removal of contaminants from the transmission, without the risk of damaging components sensitive to aggressive chemicals. When flushing the transmission using new ATF, the flushing time should be extended; therefore, the maximum allowable flushing time with the ATF Professional Line 3.0 device is 99 minutes. However, make sure to monitor the condition of the device, the serviced vehicle, and the transmission during flushing. In case of any irregularities, immediately stop the process.

When flushing the transmission using chemical detergents, the flushing time should be kept to a minimum. The device manufacturer assumes no responsibility for any transmission damage.

6.10. Dynamic ATF exchange

The ATF Professional Line 3.0 device has built-in scales for measuring the amounts of new and old ATF. By selecting/entering the appropriate ATF (in the main menu), the device will convert the ATF weight into volume based on the entered density and display it at the top of the screen in liters. This way, the dynamic ATF exchange process can be carried out automatically by the device, which will automatically control the amount of ATF flowing out of the transmission and supply exactly the same amount of new ATF. The accuracy of the device during the dynamic ATF exchange is up to 150 g of ATF. Ensure that the amount of ATF on the scales and the amount of ATF displayed by the device are correct.

After pressing the “Dynamic exchange” button, enter the amount of ATF to be used for the dynamic ATF exchange, and then click the "accept" button. This will start the dynamic ATF exchange process. The red indicator light will turn on, signaling the operation of the device. A message will appear on the display, informing about the need to start the car engine; the amount of ATF selected for the dynamic ATF exchange and the amount of ATF that has already been transferred will be displayed (Figure 21). The amount of ATF entered for the dynamic ATF exchange should be at least 2 liters less than the amount of ATF in the new ATF tank and must not be greater than the currently available space in the old ATF container.

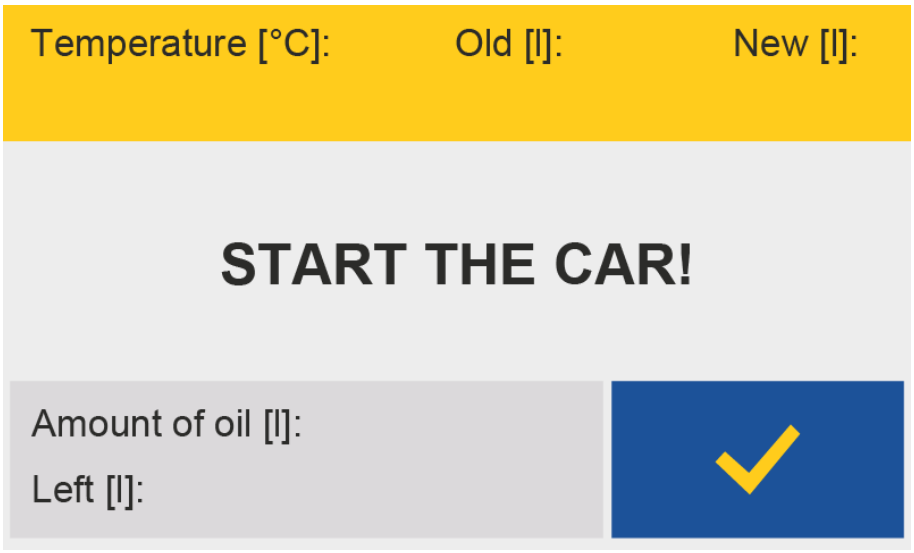

Figure 21. Dynamic exchange process menu

The amount of ATF entered by the operator is the maximum value. If it is reached, the process will end automatically, the corresponding information will be shown on the display of the device, and the green indicator light will light up. To interrupt the dynamic ATF exchange process at any time, press the "accept" button (Figure 21). After the dynamic ATF exchange process is complete, information about the amount of transferred ATF will be displayed; press the “accept” button again to return to the previous menu and print out the amount of transferred ATF on the receipt.

The design of the device separates the hydraulic system of the transmission from the filtrating system of the device. This way, after the dynamic ATF exchange is completed, the old ATF from the filter is not pumped back into the transmission. This function allows you to freely use all available functions of the device.

After completing the dynamic ATF exchange, check the ATF level in the transmission according to the procedure of the vehicle manufacturer.

The amount of ATF entered for the dynamic ATF exchange must be at least 2 liters less than the amount in the container with the new ATF, and it cannot be greater than the currently available space in the container with the old ATF. Otherwise, the message “Not enough of new AT or too much old ATF in container” will be displayed. (Figure 22). This function does not exempt the operator from the duty of monitoring the operating status of the device while it is running.

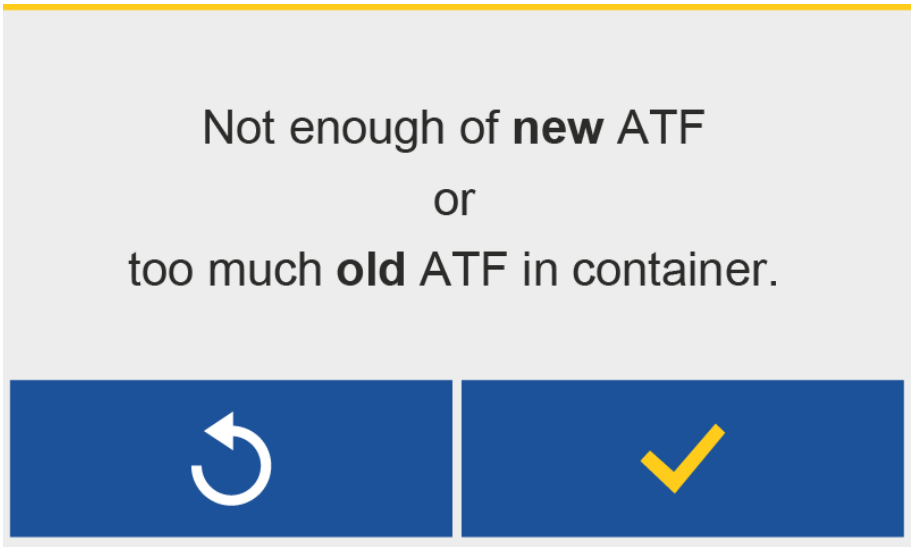

Figure 22. Warning message about an insufficient amount of new ATF or an insufficient volume of the old ATF container

Press the “return” button to return to the procedures menu and check/replenish the amount of new ATF or check the volume of the old ATF container. Pressing the “accept” button will cause the process to continue, which may result in damage to the transmission. Pressing the “accept” button despite the detected problem is done at the operator's own risk.

The amount of ATF required to carry out the dynamic ATF exchange process depends on the transmission model and its degree of wear. It should be at least 30% larger than the volume of an empty transmission. To carry out the dynamic ATF exchange process safely and efficiently, the device should contain at least 2 liters more of the new ATF than the amount planned for the dynamic ATF exchange because some of the ATF will not be sucked out of the container with the new ATF.

6.11. Oil refill

The “Oil refill” function enables refilling the ATF in the transmission. Press and hold the “Start” button (Figure 23) to activate the device pump and initiate the refill of the ATF in the transmission. Release the button to stop refilling the ATF. The amount of refilled ATF is shown on the display. Press the “accept” button to return to the previous menu and print information about the amount of refilled ATF on the receipt.

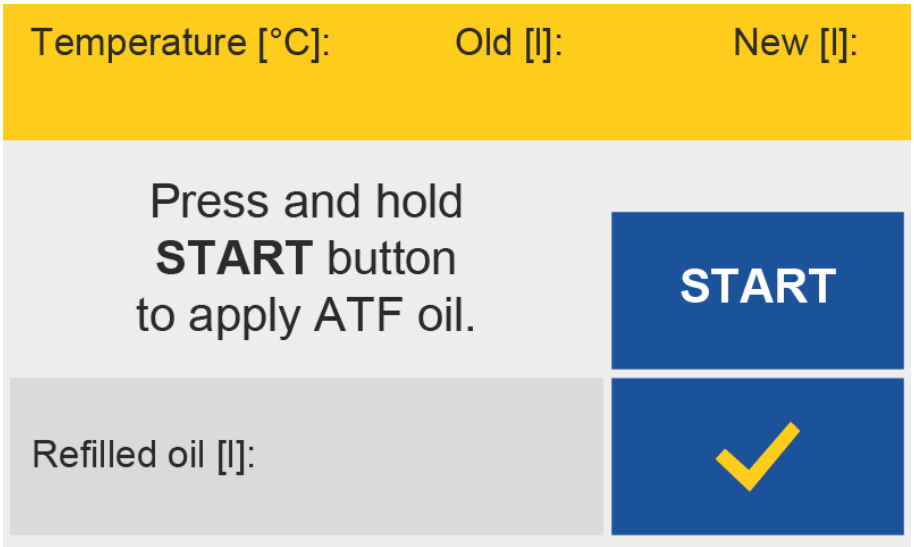

Figure 23. Menu for refilling ATF in the transmission

6.12. Oil draining

The “Oil draining” function can be used to drain a portion of the ATF from the transmission. For this function to work, the engine of the vehicle must be running, so that the transmission pump pumps ATF into the transmission cooling system and through the ATF Professional Line 3.0 device. Press the “Start” button (Figure 24) to redirect the ATF pumped by the transmission to the old ATF tank.

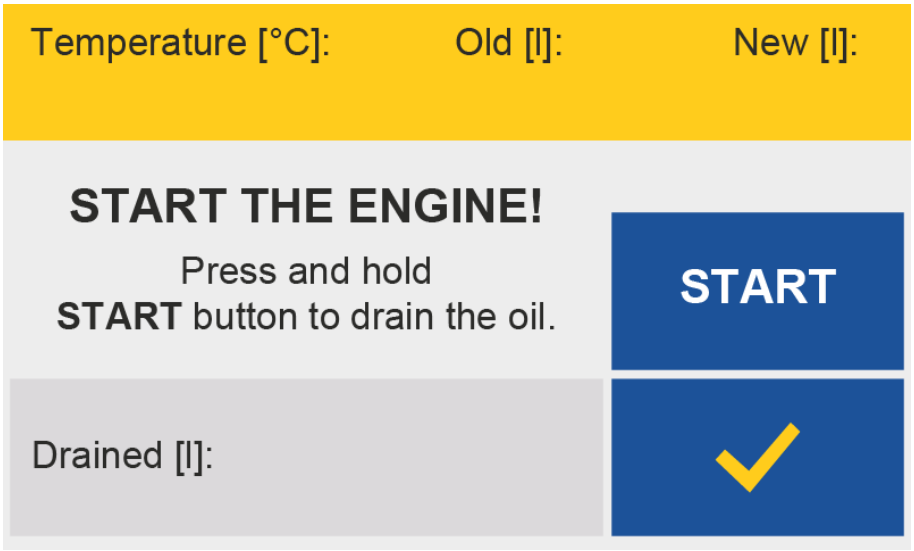

Figure 24. ATF draining menu

It is not recommended to drain large amounts of ATF (over 1 liter), because this can cause a significant drop in the ATF level in the transmission, introduce air into the automatic transmission oil pump, and damage it as a result.

Before starting the ATF draining function, ensure that there is a correct amount of ATF in the automatic transmission. The device will not inform the operator about air entering the pump in the transmission. If air bubbles appear in the sight glasses of the ATF Professional Line 3.0 device, immediately turn off the engine of the vehicle and follow the recommendations of the vehicle manufacturer.

6.13. Adjusting the length of the new ATF suction hose

Before each use of the device, adjust the length of the new ATF suction hose (Figure 25) so that, when it is inserted into the new ATF tank, the strainer is located as low as possible without touching the bottom of the container. Otherwise, it may cause an incorrect reading of the amount of new ATF, disrupting the operation of the device. If the strainer is located too high, a significant portion of the new ATF will not be sucked in by the device.

Figure 25. Clamp used for adjusting the length of the suction hose

7. Maintenance

Maintenance activities must be performed with the device disconnected from the power supply and the vehicle. Use personal protective equipment and comply with applicable occupational health and safety regulations.

To ensure the correct and reliable operation of the device, observe the following recommendations.

Excessive vibrations may shorten the life of some components, potentially voiding the warranty on the device.

Do not store items weighing more than 3 kg in the device drawer.

Only clean the device housing using mild and non-abrasive products, such as soaps or surfactants. DO NOT use solvents.

The device must not be used as a trolley to transport other equipment.

If it is necessary to transport the device, the ATF must be removed from the new and old ATF tanks.

Avoid sudden shocks.

Periodically check the condition of connection lines. If the hoses are worn, they should be replaced with new hoses to avoid possible damage.

7.1. Maintenance of the ATF filter and lines

The filter should be replaced at least after every 5–10 transmission flushing operations. To replace it, unscrew the old filter counterclockwise, moisten the seal of the new filter with ATF, and then screw on the new filter, tightening it carefully. Over-tightening may make it difficult to unscrew the filter during the next replacement. Insufficient tightening will result in leakage and ATF loss. When using filters other than those dedicated, make sure that they are intended for systems with a pressure of at least 10 bar and 10–15 µm filtrating.

There is no need to flush the hydraulic lines and the filter of the device between consecutive service operations even if different types of ATFs are used.

7.2. Printer paper replacement

To replace the paper roll, perform the following steps:

1. Open the printer panel.
2. Insert the paper roll.
3. Pull out some paper and close the panel.

The printer is now ready.

Use paper intended for thermal printers with a width of 57 mm and a diameter of up to 35 mm.

7.3. Bleeding the hydraulic pump

After prolonged downtime, air may get into the hydraulic pump. This will prevent the device from supplying ATF. In such cases, bleed the hydraulic pump as follows:

- Connect any adapter supplied with the device to the quick couplers of the hydraulic hoses of the device (Figure 2 – 10).
- Raise the ATF suction line at least to the height of the nameplate and turn the strainer upwards.
- Turn the strainer upside down, raise it, and fill the ATF suction line with ATF, making sure the ATF suction line is free from kinks or bends.
- Run the “Oil refill” function for 1–2 seconds, then fill the suction line with the ATF again.
- Run the “Oil refill” function for approx. 3 seconds.
- Place the strainer in its normal position.

Check the if the pump has been effectively bled; repeat the procedure if necessary.

7.4. Fuse replacement

If a fuse blows, it can be replaced with a new one with the same parameters (30 A). Special care should be taken when replacing the fuse (the device should be disconnected from the power supply).

7.5. Mounting hooks for ATF lines

The device drawer contains hooks to hold the hydraulic and electrical lines of the device (Fig. 26). Using the rivets included in the set, rivet the hooks to the side of the device (Fig. 27). Hook mounting points are located on both sides of the device (Fig. 28).

Figure 26. Location of the hooks in the drawer

Figure 27. Hook riveting method

Figure 28. Hook riveting points

8. Accessories and spare parts

Spare parts for the device are available. If necessary, please contact your device distributor.

9. Warranty

The device manufacturer guarantees that the purchased device is free from physical defects, simultaneously undertaking – in the event such defects are revealed during the warranty period and within the scope defined by this document – to remedy them in a manner depending on the nature of the defect.

The revealed defect will be remedied at the guarantor's expense within 14 days from the date of delivering the device to the manufacturer. In exceptional cases, where it is necessary to order spare parts, the repair time may be extended.

The device is covered by a one-year manufacturer's warranty. Each device is secured with a PIN code. To start the device for the first time, a PIN code will be required. The buyer fills out the registration form to obtain a PIN code. The registration and activation procedure is described in section 6.2 of this manual.

The run of the one-year warranty starts after the PIN code is generated.

Defects discovered during the above period will be repaired free of charge according to the following rules:

Any defect claim under this warranty must be submitted immediately upon detection.

Warranty claims should be submitted using the form available at **atfpro.eu/service-request.** In order for the device to be repaired under the warranty, submit a warranty claim correctly as described above.

Upon receipt of the warranty claim, the guarantor will inform the buyer about the potential need and method for collection/delivery of the device to the manufacturer or service point. If the warranty claim is reasonable, the guarantor will provide free transport within Poland. Outside of Poland, the buyer is obliged to deliver and collect the device at their own expense.

The buyer is obliged to prepare the device for shipment and secure it properly.

The warranty does not cover, among other things:

- damage resulting from improper use,
- damage resulting from the incorrect connection of the device,
- damage resulting from failure to follow the user manual,
- mechanical, chemical, or thermal damage,
- scratches, dents,
- damage to the paint coating caused by external factors (e.g., chemicals, corrosive substances, scratches, etc.),
- damage caused by external forces, e.g., a lightning strike, a flood,
- repairs and modifications made by companies or persons not authorized by the manufacturer,
- parts that are naturally subject to wear and tear, such as: bulbs, fuses, filters, rubber hoses, shelves, accessories,
- installation, maintenance, inspections, cleaning, unclogging, contaminant removal, and training,
- cases in which no product defect was found during the service inspection,
- mechanical damage to the display,
- mechanical damage to the components of the device and its accessories,
- mechanical damage to the adapters,
- damage to hydraulic hoses,

- » damage to electrical cables,
- » damage caused by improper use of the device,
- » activities provided for in the user manual of the claimed device that the user of the device is obliged to perform on their own.

The device has been designed for pumping oils and ATFs. Pumping other substances (e.g., crude oil, gasoline, solvents, water, chemicals) may cause damage to the device (pump, solenoid valves, hydraulic hoses, engine, control unit). Failure to comply with the manufacturer recommendations voids the warranty. Operating the device pump “dry” (i.e., without ATF) voids the warranty.

The manufacturer assumes no liability for the consequences of using the device during service and maintenance activities. The warranty does not cover damage resulting from improper operation or damage to the device during service and maintenance activities. Although every effort has been made to ensure that the ATF Professional Line 3.0 device operates correctly, it is not possible to accept any liability, other than the liability that cannot be legally excluded, for any potential damage, losses, or personal injury caused by unforeseeable material defects of the device. In no event shall the scope of liability of Ravenol, its distributors, and representatives exceed the amount paid for the ATF Professional Line 3.0 device.

The buyer is obliged to immediately examine the quality of the received device

and promptly notify the seller of any objections regarding its quality. Mechanical damage must be reported in writing in the form of a report at the time of delivery of the device – under penalty of voiding the warranty.

The buyer is entitled to have the equipment replaced with a new one if it still exhibits defects after three repairs have been performed during the warranty period. Repair is understood as the performance of specialized actions appropriate for removing a defect. The concept of repair does not include: installation, training, equipment maintenance, or the correction of mechanical or electrical connections.

Equipment replacement is performed by an authorized service center or, if this is impossible, the point of sale where the equipment was purchased. The returned equipment must be complete and free of mechanical damage. Failure to meet these conditions may void the warranty.

Note: Damage to or removal of the nameplate from the device will void the warranty.

This warranty excludes the buyer's rights under the statutory warranty for defects in the sold item.

Personal data obtained from the buyer in connection with a warranty claim or a service visit will be processed in accordance with Regulation (EU) 2016/679 of the European Parliament of 27 April 2016. Sale of the device to individuals is prohibited. The device may only be placed on the professional market; the buyer of the device may only be a business entity. This warranty is valid in the territory of Poland.

RAVENOL®	**Ravenol Polska Sp. z o.o. str. Chojnicka 61; 83-200 Starogard Gdański, Poland** CE

EU DECLARATION OF CONFORMITY

NR 01/2023

in the field of directives: **2014/35/UE; 2014/30/WE; 2017/2102; 2014/68/UE; 2014/68/UE.**

SAMPLE DOCUMENT

Producer	**Ravenol Polska Sp. z o.o.**
Address	**str. Chojnicka 61; 83-200 Starogard Gdański, Poland**

we declare with full responsibility that the product

Name	Symbol
ATF Professional Line A device for dynamic oil change in automatic gearboxes	**162305**

to which this declaration of conformity relates, complies with the following legislation:

- **Directive 2014/30/EC of the European Parliament and of the Council of 26 February 2014** on the harmonization of the laws of the Member States relating to electromagnetic compatibility (recast)
- **Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014** on the harmonization of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits
- **Directive (EU) 2017/2102 of the European Parliament and of the Council of 15 November 2017** amending Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment
- **Directive 2014/68/EU of the European Parliament and of the Council of 15 May 2014** on the harmonization of the laws of the Member States relating to the making available on the market of pressure equipment
- **Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006** on machinery and amending Directive 95/16/EC (recast)

Standards and/or technical documentation or parts thereof, applied to the product covered by this declaration of conformity: - harmonized standards

Numer	Tytuł
PN-EN IEC 61000-6-2:2019-04	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Standard for immunity in industrial environments
PN-EN IEC 61000-6-4:2019-12	Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments
PN-EN 60204-1:2018-12	Safety of machinery - Electrical equipment of machinery - Part 1: General requirements
PN-EN IEC 62311:2020-06	Evaluation of electronic and electrical devices in relation to human exposure limits in electromagnetic fields (0 Hz to 300 GHz)
PN-EN 50665:2017-12	Generic standard for evaluating electronic and electrical devices for the limits of human exposure to electromagnetic fields (0 Hz - 300 GHz)
PN-EN 62479:2011	Compliance assessment of low-power electronic and electrical devices with the basic restrictions on human exposure to electromagnetic fields (from 10 MHz to 300 GHz)
PN-EN 50663:2017-12	Generic Standard for the Evaluation of Low Power Electronic and Electrical Equipment Concerning the Limitation of Human Exposure to Electromagnetic Fields (10 MHz - 300 GHz)
PN-EN 62321-4:2014-08/A1:2017-12	Determination of selected substances in electrotechnical products - Part 4: Determination of mercury in plastics, metals and electronic devices by methods: CV-AAS, CV-AFS, ICP-OES and ICP-MS
PN-EN 62321-5:2014-08	Determination of selected substances in electrotechnical products - Part 5: Determination of cadmium, lead and chromium in plastics and electronic devices and cadmium and lead in metals by methods: AAS, AFS, ICP-OES and ICP-MS
PN-EN 62321-6:2015-10	Determination of selected substances in electrotechnical products - Part 6: Determination of polybrominated biphenyls and polybrominated diphenyl ethers in plastics by gas chromatography-mass spectrometry (GC-MS)
PN-EN 62321-7-2:2017-07	Determination of selected substances in electrical products - Part 7-2: Hexavalent chromium - Colorimetric determination of hexavalent chromium (Cr(VI)) content in plastics and electronic devices
PN-EN 62321-7-1:2016-02	Determination of selected substances in electrical products - Part 7-1: Determination of the presence of hexavalent chromium (Cr(VI)) by colorimetry in colored and colorless anti-corrosive coatings of metals
PN-EN 62321-8:2017-07	Determination of selected substances in electrotechnical products - Part 8: Determination of phthalates in plastics by gas chromatography-mass spectrometry (GC-MS) and pyrolysis or thermal desorption gas chromatography-mass spectrometry (Py/TD-GC-MS)
PN-EN ISO 12100:2012	Safety of machinery -- General principles of design -- Risk assessment and risk reduction
PN-EN 60204-1:2018-12	Safety of machinery - Electrical equipment of machinery - Part 1: General requirements

PN-EN ISO 13849-1:2016-02	**Safety of machinery - Safety related parts of control systems - Part 1: General principles of design**
PN-EN 13445-1:2021-10	**Unfired pressure vessels - Part 1: General requirements**
PN-EN 60204-1:2018-12	**Safety of machinery - Electrical equipment of machinery - Part 1: General requirements**

This CE declaration of conformity is issued under the sole responsibility of the manufacturer:

The last two digits of the year in which the CE marking was affixed: **23**

…… Place and date of issue	…… Name, surname, position and signature of the authorized person

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