ATIS
professional scuba diving

Dive planner

Illustrated user manual · with a glossary of terms

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ATIS Diving Club

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⚠ Teaching tool, not certified. Always check the plan against official tables and a dive computer. In the water the computer rules; the slate is the backup plan.

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1 Opening and installing the app

The planner is a web app: it opens in the browser, with no download from the App Store or Play Store.

Scan the QR code with your phone camera, or type this in the browser's **address bar** (not in the Google search box):

`planner.atis-shop.it`

The presentation page opens: tap **Open the planner**. The app itself is at `planner.atis-shop.it/app`. The **EN / IT** button at the top switches language.

> **The easiest way:** in the planner press the green 📲 **Install app** button at the top. On Chrome, Edge and Android it installs the app in one click; on iPhone and Safari it shows you the right steps for your device.

Putting the icon on your phone

iPhone / iPad (Safari)

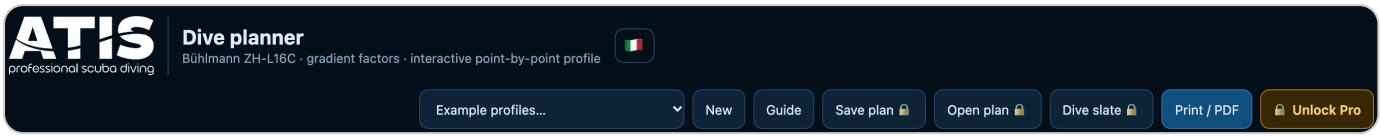
1. Open the site in **Safari**.
2. Tap the **Share** button (square with an up arrow).
3. Choose **Add to Home Screen** → **Add**.

Android (Chrome)

1. Open the site in **Chrome**.
2. Tap the ⋮ menu at the top right.
3. Choose **Install app** (or **Add to Home screen**).

> **Offline:** after the first visit the app also works without a connection, for example on the boat. Updates arrive on their own: if you don't see a new feature, close and reopen the app.

2 The screen

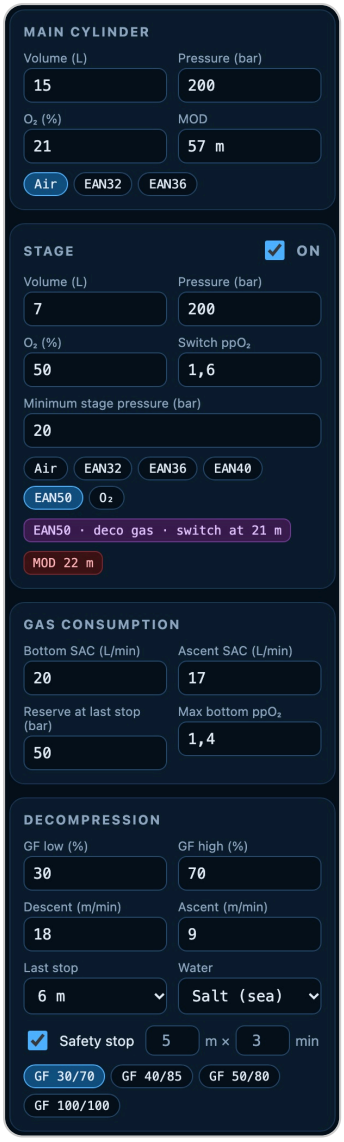


The top bar with its buttons.

BUTTON	WHAT IT DOES
Example profiles	Loads a ready-made profile (square, multilevel, wreck, deco with stage) to start from. Multilevel and deco with stage are PRO.
Save plan PRO	Downloads the plan as a `.json` file to keep or send to a buddy.
Open plan PRO	Reopens a saved file.
New	Clears the profile so you can draw a new one. Cylinder, SAC and GF stay as they are.
Guide	Opens this manual.
🇬🇧 / 🇮🇹	Next to the title: switches between English and Italian. The choice is remembered.
⋯ **More**	Phone only: groups Save plan, Open plan, Dive slate and Print, to leave more room for the chart.
Dive slate PRO	Prints the cards to take into the water (see chapter 8).
Print / PDF	Prints the whole page, with chart and tables, on A4. For a PDF choose "Save as PDF" in the print window.
🔒 **Unlock Pro**	Opens the window where you enter the Pro code (see chapter 11). With the code active it becomes ★ **Pro**.

Below the bar the page has two parts: on the left the **inputs** (cylinders, consumption, decompression); on the right the **results** (verdict, chart, tables). On a phone the two parts are one below the other.

3 Cylinders, consumption and GF



The input panel, with the stage on.

Main cylinder

- **Volume** in litres (e.g. 15) and fill **pressure** (e.g. 200 bar).
- **O_2 %**: 21 for air, 32 or 36 for nitrox. The Air / EAN32 / EAN36 buttons set it in one tap.
- **MOD** is worked out automatically: it is the maximum depth for that mix.

Stage PRO

- Tick **on** if you carry a second cylinder.
- If it has **more oxygen** than the main cylinder (e.g. EAN50) it is a **deco stage**: the app uses it on the ascent from the switch depth, shown in the purple label (e.g. "switch at 21 m").
- If it has the same mix or less oxygen it is a **reserve stage**: it is breathed first, down to the **minimum stage pressure**.
- **Switch ppO_2**: normally 1.6 (some divers use 1.4). It decides the depth of the gas switch.
- **Minimum stage pressure**: the pressure below which the stage is no longer used (normally 20 bar). It is separate from the reserve of the main cylinder: a stage can be breathed almost empty.

Gas consumption

- **Bottom SAC** and **ascent SAC**: your surface consumption in litres per minute. It is usually lower on the ascent. If you don't know it, 20 L/min is a cautious value.
- **Reserve at last stop**: the bar you still want when you reach the last stop (the 50 bar rule).
- **Max bottom ppO_2**: normally 1.4. It is used to work out the MOD.

Decompression

- **GF low / GF high**: how cautious you want to be. The 30/70, 40/85, 50/80 and 100/100 buttons set them straight away; the lower the numbers, the more conservative the plan.
- **Descent** and **ascent** rates in metres per minute (normally 18 and 9).
- **Last stop**: 6 m or 3 m.

- **Water**: salt (sea) or fresh (lake). It slightly changes the pressure calculation.
- **Safety stop**: leave it on. Normally 5 m × 3 min; the two boxes let you change depth (3 to 6 m) and duration.

> **Every change is instant:** there is no "Calculate" button. Change a number and the chart, plan and verdict update straight away.

4 Drawing the profile

The profile is made of **points**. Each point means: *"I reach this depth at this minute"*. The app draws a line between one point and the next. **After the last point** it works out the ascent, stops and safety stop by itself.

WHAT YOU WANT TO DO	MOUSE	FINGER (PHONE/TABLET)
Quick plan	type depth and bottom time in the **Quick plan** box: stops and chart update at once (more levels with Pro). Leave the time **empty** (AUTO) and the planner finds the longest time that reaches the last stop with the reserve; adjust it with the ▲▼ arrows	
Add a point	click on the chart	tap on the chart
Move a point	drag the circle	drag the circle
Read values	hover over the chart	slide your finger sideways on the chart
Scroll the page	mouse wheel	drag on the edges of the chart (on the numbers at the sides or at the bottom, where you see ↑↓) or touch outside the chart; inside it your finger works on the points
Delete a point	double-click	long press, or double tap
Exact values	type depth and minute in the **Profile points** table	

Quick plan: type the numbers, see the stops

It is the fastest way, especially on a phone. The **Quick plan** box sits above the chart:

- Type the **depth** and the **bottom time** (the minute you leave the bottom, descent included). Right below you get the **stops**, **runtime**, **TTS** and the expected **bar** at the last stop; the chart draws itself.
- **AUTO time**: leave the time **empty**. The planner finds the longest time that reaches the last stop with at least the reserve you set (e.g. 50 bar), stops included. **AUTO** appears under the box.
- **▲▼ arrows**: add or remove one minute. On an AUTO time they make it manual starting from the calculated value; to go back to automatic, clear the number.
- **+ Level** PRO: up to 4 levels (e.g. 45 m, then 20 m). For the levels after the first, type the **duration** at that level, or leave it on AUTO: AUTO levels share the available time.

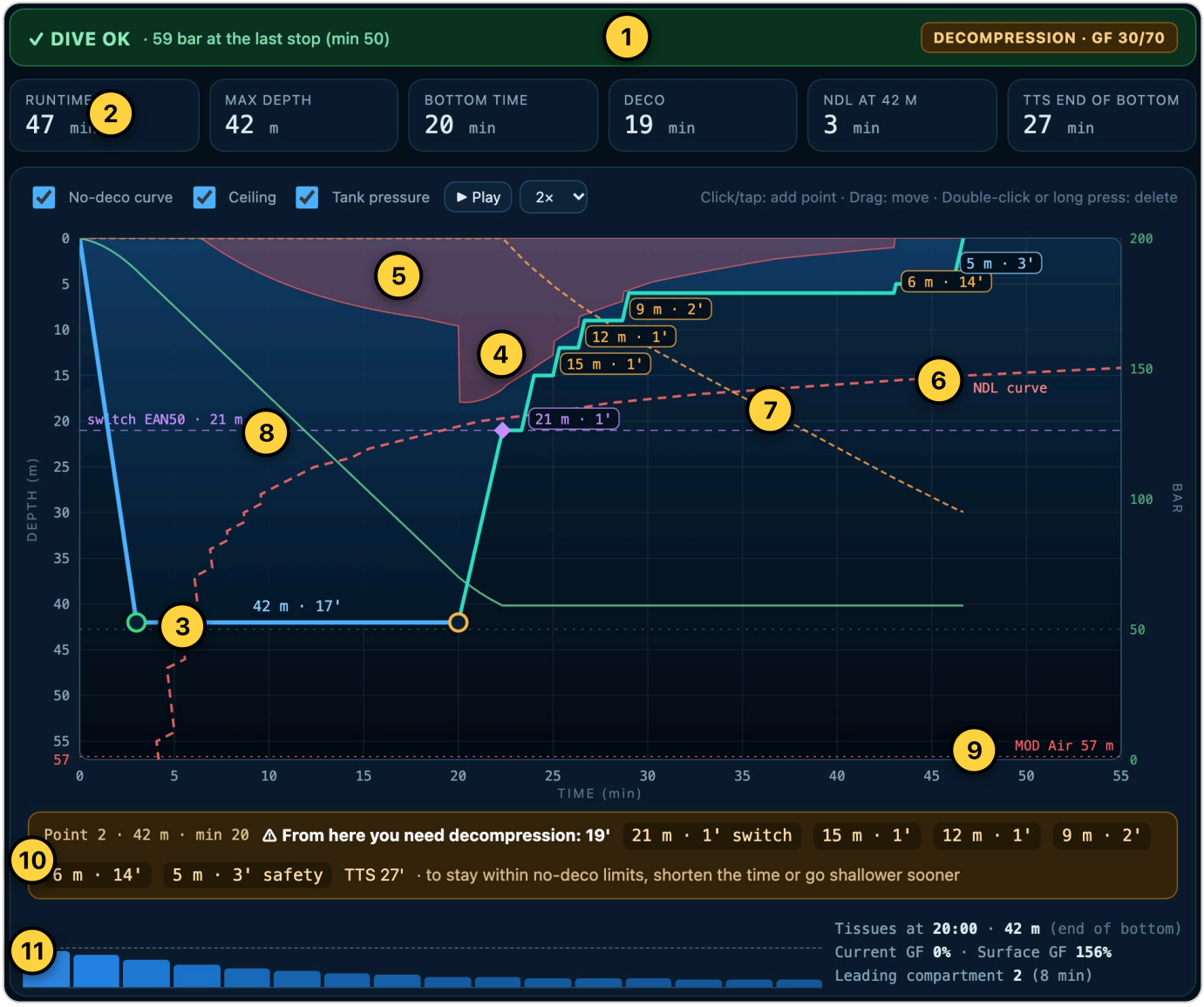
- If you move a point on the chart, the Quick plan numbers update.

Examples

- **Square profile** 30 m for 20': two points, `30 m at minute 2` (end of descent) and `30 m at minute 20` (end of bottom time).
- **Multilevel** PRO: add points at shallower depths, e.g. 30 → 18 → 15 → 12 m. Two points at the same depth make a **level**. In the free version the profile can have up to 3 points.

> **Live hint:** while you add or drag a point, the chart shows for a few seconds the dashed ascent with the label **"↑ if you ascend here"** (these are not stops of your plan, just a preview), and a strip below the chart tells you what would happen **if you ascended from that point**: no-deco with how many minutes of NDL left, or which deco stops you would need. The point's circle is **green** if you are within no-deco limits and **orange** if deco is needed.

5 Reading the chart



Example "Deco 42 m · 20' with EAN50 stage".

1. **Verdict**: OK (green) or no-go (red), with the bar left at the last stop. On the right, **NO-DECO** or **DECOMPRESSION** and the GF in use.
2. **Boxes**: total runtime, maximum depth, bottom time, deco minutes, NDL at maximum depth, TTS at the end of the bottom time.
3. **Your points** (circles): drag them to change the profile. The blue line is the part you drew.
4. **Calculated ascent** (aqua line) with the **stops** labelled, e.g. `6 m · 14'`.
5. **Ceiling** (pink area): the depth you must not go above at that moment. If the profile line enters the pink area, you are ascending too early.
6. **NDL curve** (red dashes): for each depth, the maximum time without deco. If the bottom time ends to the right of the curve, decompression is needed.
7. **Cylinder pressure** (bar scale on the right): green for the main cylinder, dashed orange for the stage.

8. **Gas switch line** (purple): from here up you breathe the deco stage.
9. **MOD** of the main mix: do not go below this line.
10. **"If you ascend from here" strip**: what you would need if you ascended from the selected point.
11. **Tissues**: the 16 bars show how loaded with nitrogen each compartment is. Move your finger or the mouse over the chart to see the values minute by minute.

The boxes above the chart (**No-deco curve**, **Ceiling**, **Tank pressure**) turn these lines on and off.

▶ **Play** plays the dive: the cursor runs along the profile and stops by itself at the key points (end of bottom time, gas switch, stops), showing the values at that moment. Press **Continue** to go on; the box next to it sets the speed (1× = one minute of dive per second, up to 10×). ■ or a tap on the chart closes playback.

6 The verdict and the warnings

✓ **DIVE OK**: the plan respects all the limits you set. ✕ **NO-GO DIVE**: at least one limit is exceeded. The reason is written under **Summary and warnings**.

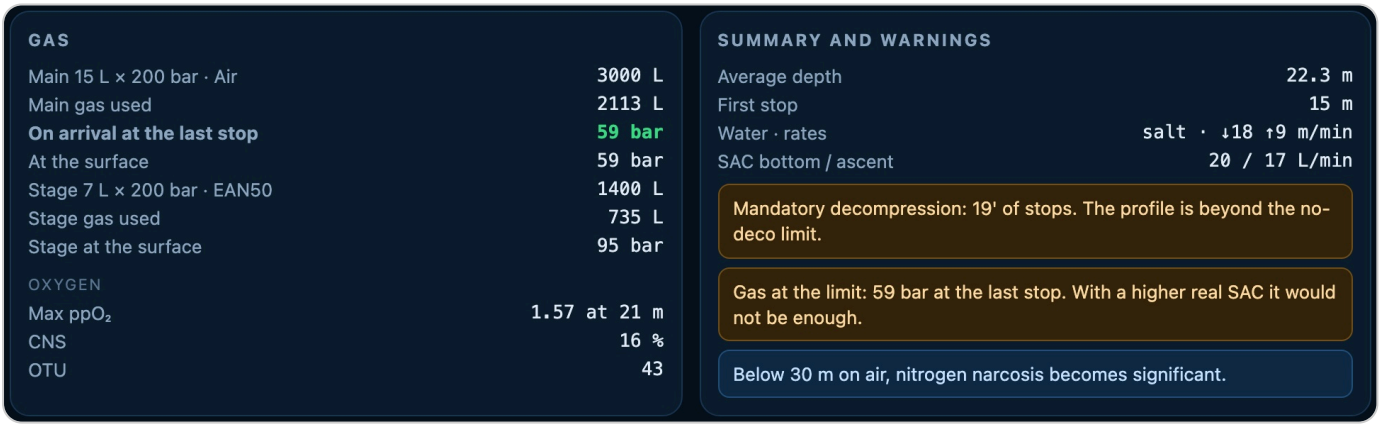
CAUSE OF "NO-GO"	WHAT TO DO
Gas below reserve	Less than the reserve is left at the last stop. Shorten the bottom time, use a bigger cylinder or add a stage.
Beyond the MOD	You are deeper than the mix allows. Go shallower or use a mix with less O_2.
Above the ceiling	The drawn profile ascends before the deco is done. Move the points deeper or later in time.
CNS ≥ 100 %	Too much oxygen breathed. Reduce time or ppO_2.
Stage not enough	The deco stage runs out before the surface. More litres or more bar.

Yellow warnings don't make the dive no-go, but read them: mandatory deco, gas at the limit, ascent rate, narcosis below 30 m on air, GF that are not very conservative.

7 Tables, gas and summary



- **Profile points**: each point with depth, runtime, duration of the leg, rate and the **"If you ascend from here"** column (no-deco with NDL, or deco).
- **Dive plan**: the whole dive line by line. Descent, levels, ascents *(calc.)*, deco stops, gas switch and safety stop, with duration, runtime and gas breathed.

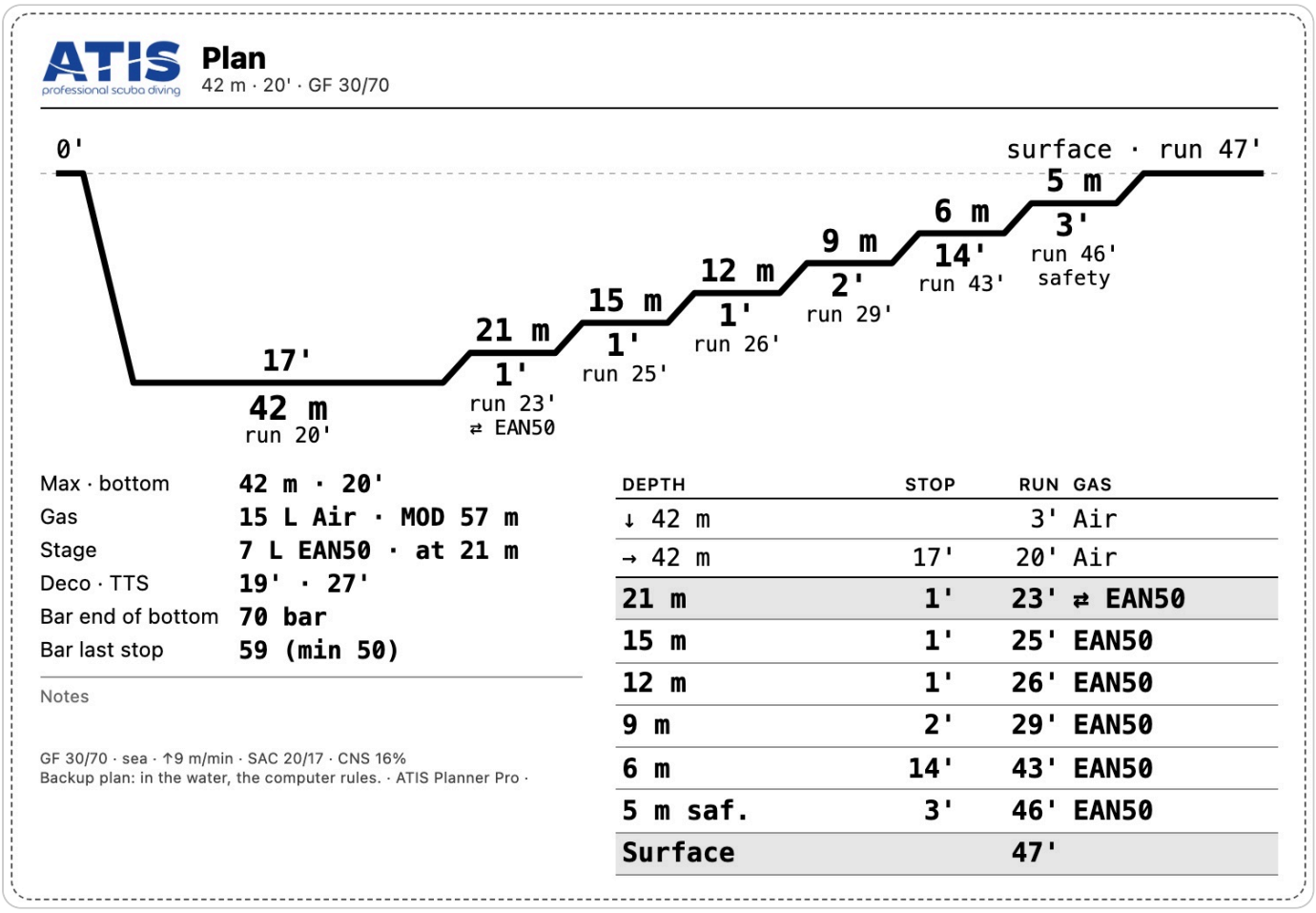


- **Gas**: litres available, litres used, **bar on arrival at the last stop** (the key figure, green if above the reserve), bar at the surface, the same for the stage, then max ppO_2, CNS and OTU.
- **Summary**: average depth, first stop, water type and rates, SAC used and the list of warnings.

8 The dive slate to take into the water PRO

The **Dive slate** button prints, in black and white and in large type, the cards to copy onto your slate or to laminate. Each card takes half an A4 sheet.

CARD	WHEN TO USE IT
Plan	The dive as you planned it.
Contingency +3/+3	If you overrun: **3 m deeper and 3 minutes longer** on the bottom. The ascent is already recalculated.
Lost stage	Only with a deco stage: the whole ascent on the main cylinder, if you lose the stage or cannot use it.



The "Plan" card for the 42 m deco example.

How to read it

- **The drawing** shows the profile as you would sketch it on a slate: the bottom at the bottom (`42 m` , `17'` , `run 20'`), then a step for each stop with **depth**, **minutes** and **run**. It is not to scale: every stop gets the same space so it is easy to read.
- **run** = runtime, i.e. the minute on the timer when that stop **ends**. Example: `6 m · 14' · run 43'` means: stay at 6 m until the timer shows 43.

- ⇄ **EAN50** shows where to switch gas. The line is highlighted in grey.
- **Bar end of bottom**: how many bar you should have when you start the ascent. If you have less, you are breathing more than expected.
- **Bar last stop**: the expected bar at the last stop and the minimum reserve.
- ⚠ **box**: it appears if that variant is not safe, for example "Last stop with 23 bar: below reserve". It means the plan has **no margin** for that contingency: better to change it before the dive.

> **Rule of thumb:** when no ⚠ appears on the +3/+3 card, the plan has a margin even for a mistake.

9 Saving, opening, printing

- Every time you open the app the **profile starts empty**; cylinder, consumption and GF stay as you set them. To pick up a plan again use **Open plan**.
- **Save plan** creates a file to archive or send by WhatsApp or email. Whoever receives it opens it with **Open plan**.
- **Print / PDF**: the whole page on A4, useful for the briefing or your logbook. For a PDF choose "Save as PDF" in the print window.
- **Dive slate**: the cards for the water. On iPhone you can also save them as a PDF from the print window (spread the preview with two fingers, then Share).

10 Step-by-step example

Goal: 30 m for 20 minutes, 15 L cylinder at 200 bar on air, GF 30/70.

1. Press **New**. Set the cylinder to `15 L`, `200 bar`, **Air**, SAC `20 / 17`, GF **30/70**.
2. Tap the chart at **30 m at minute 2** (end of descent) and then at **30 m at minute 20** (end of bottom time). If needed, correct the numbers in the points table.
3. Read the verdict: **OK**, but with **decompression** (stops at 12 m and 6 m) and 67 bar at the last stop.
4. Press **Dive slate**: the **+3/+3** card shows ⚠ "10 bar: below reserve". The plan has no margin.
5. Try to improve it, each time checking the bar at the last stop on the +3/+3 card:
   - bottom time **17'** instead of 20': 46 bar, still below 50;
   - **EAN32** instead of air: only 3' of deco, but +3/+3 at 48 bar, still at the limit;
   - a 7 L **EAN50 stage**: +3/+3 at 66 bar ✓, the plan has a margin.
6. When no ⚠ appears, print and copy the slate. Set up your wrist computer anyway: in the water, it rules.

Steps 4 and 5 use the **dive slate** and the **stage**, which are part of the Pro version.

11 Free and Pro versions

The free version shows you how dive planning works, with fixed **example values**: 15 L air cylinder, SAC 26 L/min, GF 30/70. The **Pro** version lets you plan **your own** dive with your own values, adds the features for more complex dives and supports the ATIS club.

FREE	PRO 5 €
Profile with up to 3 points, example values	**Your own values** (cylinder, nitrox, SAC, GF, water) and **multilevel** profiles with as many points as you like
Decompression, NDL and safety stop	**Stage and deco gas**: EAN50, O_2, reserve bottle
Gas consumption, reserve, MOD and CNS warnings	**Dive slate** with profile, +3/+3 and lost stage
Chart, tables and plan printing	**Ready-made examples**, save and open plans

Free 24-hour trial

When you tap a 🔒 feature (stage, dive slate, save, Pro examples…) the planner offers a free **24-hour** Pro trial: enter your email, receive a **6-digit code** and type it in the app. During the trial the top button shows the time left (e.g. **★ Pro trial · 18 h**). When it ends the locks come back and you go on with the free version, or you unlock Pro. The trial can be used **once** per email and per device. You will also find it in the 🔒 **Unlock Pro** window.

How to unlock it

1. Buy the code from the `planner.atis-shop.it` page (**Buy the Pro code** button). If you have a **gift code**, enter it at checkout: the total becomes 0 €. The shop is in Italian: the code is in the order confirmation email.
2. You receive the code by email. It looks like this: `ATIS-XXXX-XXXX-XXXX`.
3. In the planner press 🔒 **Unlock Pro**, enter **the email used for the order** and the code, tick the notice box and press **Unlock Pro**. Or tap the **Attiva Pro nel planner** button in the email: email and code are filled in for you.

> **The code never expires**, is tied to your email and works on **2 devices** (e.g. computer and smartphone). On a phone, activate it from the **installed app**, not from the browser: to the phone they are two different things. Internet is only needed for activation, then the planner also works offline. To move it to another device press **★ Pro → Remove the code from this device**. If you get stuck, write to ATIS.

Is the app locked again when you reopen it? Your browser deletes site data when you close it (in Chrome: "Delete data sites have saved to your device when you close all windows"). When you unlock, the planner notices it and shows an orange box with the steps for your browser and a **Copy address** button: add `planner.atis-shop.it` to the sites allowed to save data. Entering email and code again on the same device **does not use up a slot**.

Glossary of terms

RUN runtime	Minutes since the start of the dive, i.e. since you left the surface. It is the number on the computer's timer. On the slate it is the minute when each stop ends.
SAC Surface Air Consumption	Your personal air consumption at the surface, in litres per minute. At 10 m you use twice as much, at 20 m three times. It varies with cold, effort and stress.
Bottom time	Minutes from the start of the descent to the start of the ascent.
Max depth	The greatest depth reached.
Average depth	The average depth over the whole dive.
NDL No Decompression Limit	Minutes you can still stay at that depth without needing deco stops.
No-deco / deco	No-deco: you can ascend straight to the surface, with just the safety stop. Deco: mandatory decompression stops are needed.
NDL curve	On the chart, the line joining the NDLs of all depths.
Deco decompression	The mandatory stops on the ascent to eliminate nitrogen. The "Deco" box shows the total minutes of stops.
Deco stop	A mandatory stop at a depth that is a multiple of 3 m (18, 15, 12, 9, 6, 3 m).
Last stop	The shallowest stop before the surface: 6 m or 3 m.
Safety stop	Normally 3 minutes at 5 m, recommended on every dive, even no-deco ones. On the slate: "saf." or "safety".
Ceiling	The shallowest depth you can be at, at that moment, without exceeding the limits. Do not go above the ceiling.
TTS Time To Surface	Minutes needed to get back to the surface from that moment, stops included.
GF Gradient Factor	Two percentages (e.g. 30/70) that make the calculation more conservative. **GF low** sets the depth of the first stop (the lower it is, the deeper); **GF high** sets how long you stay at the shallow stops and the NDL curve (the lower it is, the longer the stops and the shorter the NDLs).
Bühlmann ZH-L16C	The mathematical decompression model used by the app and by many dive computers. It simulates 16 body "tissues".
Tissues compartments	The 16 parts of the model, each absorbing nitrogen at a different speed. The bars below the chart show how loaded each one is.

M-value	The maximum nitrogen load a tissue can tolerate according to the model. GFs are a percentage of this limit.
MOD Maximum Operating Depth	The maximum depth at which a mix can be breathed without exceeding the ppO_2 set. At ppO_2 1.4: air 57 m, EAN32 about 34 m, EAN50 18 m.
ppO_2 partial pressure of oxygen	How much the oxygen "weighs" in the mix at that depth. Usual limit 1.4 on the bottom, up to 1.6 during deco.
Air / Nitrox / EAN	Air = 21 % oxygen. Nitrox (EAN32, EAN36, EAN50…) = enriched air: the number is the oxygen percentage. More oxygen means less nitrogen, so longer NDLs but a shallower MOD.
O_2	Pure oxygen (100 %), used only for deco at 6 m or shallower.
Stage	A second cylinder carried at the side. **Deco stage**: a richer mix to speed up the ascent. **Reserve stage**: extra gas for the bottom.
Gas switch ⇄	The point of the ascent where you change from the main cylinder to the deco stage.
Reserve 50 bar rule	The bar that must still be in the cylinder when you reach the last stop, as a safety margin.
Bar end of bottom	The expected bar in the main cylinder when you start the ascent. It is the reference to check on your gauge.
Bar last stop	The expected bar on arrival at the last stop, to compare with the reserve.
CNS	Percentage of nervous-system exposure to oxygen. Above 80 % it is at the limit, at 100 % the dive is no-go.
OTU	Oxygen toxicity units for the lungs. They matter on long or repeated dives.
Narcosis	The "drunken" effect of nitrogen at depth, significant below 30 m on air.
Square profile	Descent, all the time at the same depth, ascent.
Multilevel	A profile that comes up in steps (e.g. 30 → 18 → 12 m): it allows more total time than a square one.
+3/+3 plan	A contingency plan worked out for 3 m deeper and 3 minutes longer on the bottom.
Lost stage	A contingency plan with the whole ascent on the main cylinder.
Verdict	OK or no-go, based on gas, MOD, ceiling and oxygen.
Ascent rate	Metres per minute (normally 9 m/min). Slower is safer.

Salt / fresh water	Fresh water is lighter: the same depth gives a slightly lower pressure (10.2 m per bar instead of 9.9).