



NOVA 210

Orchard Navigation & Section Control Computer

Installation & User Manual

TNOV210.01 · 2W / 4W

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About this Document

Document Information

Document Type	Installation & User Manual
Document Abstract	Overview and detailed instructions for the installation and use of the NOVA 210 orchard navigation and automatic section control computer (2-section and 4-section versions)
Product	NOVA 210 (TNOV210.01)
Software	NOVA 200 platform software – the installed version is shown under Data Display → Device Data
Document Status	V.0.1
Document Prepared By	Timdigitize Documentation Team

Document Revision History

Sr.	Version	Date	Comments
1.	0.1	01-Oct-2026	First Release
2.			
3.			

This manual is an integral part of the product and must accompany it in case of sale or change of ownership. Keep it for future reference. NOVA 210 uses the same software and menus as NOVA 200; screen illustrations may show the NOVA 200 layout. Screen texts are written [like this](#) . Tim reserves the right to modify product specifications and instructions at any time without notice.

1. Symbols & Abbreviations



The installation tasks described in this manual must be performed by qualified technicians only.

1.1 Symbols Used

Symbol	Type of Hazard	Description
	DANGER	Indicates a hazardous situation that needs immediate attention. If not avoided, serious injury or even death may occur.
	WARNING	Indicates a hazardous situation that could lead to death or serious injury if precautions are not taken.
	CAUTION	Indicates a situation that might result in minor injury or damage to the product if not avoided.
	NOTE	Provides tips that are valuable for the optimal operation of your product.

1.2 Abbreviations

Term	Meaning
ASC	Automatic Section Control – sections close automatically over already sprayed ground and outside the boundary
ARC	Automatic Rate Control – the application rate (l/ha) is kept constant at every speed
Section	A part of the sprayer switched on and off by its own section valve (2 or 4 on NOVA 210)
GNSS / GPS	Satellite positioning; NOVA 210 uses the Cross 200 Smart GNSS or Cross 300 Smart Antenna
A–B line	Straight guidance line defined by two points A and B; parallel lines follow the tree rows
Boundary	Orchard perimeter recorded with GNSS; flow stops outside it
Pause point	Marked position (e.g. before refilling) to which NOVA 210 guides you back
HDOP	Horizontal dilution of precision – quality of the GNSS position (lower is better)
Worklength	Total working width of the sprayer = sum of all section widths
PTO	Power take-off of the tractor

2. Before Using the Product



Carefully read all the safety instructions. Otherwise, there is a risk of accident, injury or damage to the product.



Never clean the computer, the antenna or the valves with direct high-pressure water jets.



Do not use solvents or fuel to clean the outer surfaces.



Comply with the specified supply voltage: **12 VDC**. Reverse polarity can cause irreversible damage.



Do not expose the computer to temperatures above 70 °C. Do not store or place flammable substances near the product or its wiring.



Before any electric arc welding on the tractor or sprayer, disconnect all cables from NOVA 210.



Only use genuine Tim cables, spare parts and accessories.

2.1 Intended Use

NOVA 210 is a GNSS-guided cab computer for orchard and vineyard sprayers (airblast / turbo atomizers). It provides A-B guidance along the tree rows, automatic section control for 2 or 4 sections, automatic rate control and orchard boundaries.

Any other use is considered improper. Tim is not liable for damage resulting from improper use or failure to observe this manual.

2.2 Important Safety Instructions

2.2.1 Liquid pressure and plant protection products



The sprayer circuit is under pressure (orchard valve kits up to 40 bar). Never loosen fittings, hoses or valves while the pump is running or the circuit is pressurized.

- Wear the personal protective equipment prescribed on the label of the plant protection product.
- Carry out all installation work and the first tests with **clean water only**.
- NOVA 210 can open the main and section valves automatically. Switch the main switch OFF before working near the sprayer.

2.2.2 Electrical safety and ESD

- Connect NOVA 210 only to a fused 12 VDC supply using the supplied power cable.
- Do not route cables near hot parts, sharp edges or the PTO shaft; protect them from chemicals.
- Do not open the housing. There are no user-serviceable parts inside.
- Electronic components are sensitive to electrostatic discharge (ESD). Touch a grounded metal part before handling connectors.

2.3 Installation Pre-requisites

1. The tractor is switched off and the sprayer is parked safely on level ground.
2. The tank is empty or filled with clean water only, and the circuit is depressurized.
3. There is no excessive humidity, dust or dirt, and no flammables or explosives nearby.
4. All federal, state and local site safety requirements are in place.

3. About the Product

3.1 About NOVA 210

NOVA 210 brings the NOVA 200 workflow to orchards and vineyards. It replaces three devices in the cab: the rate controller, the GNSS guidance display and the section switch box. With the Cross 200 or Cross 300 antenna on the cab roof, NOVA 210 knows where the sprayer is and which trees have already been sprayed.

- **A-B guidance along the tree rows** with lightbar, row number, shift line and pause point.
- **Automatic section control (ASC)** for 2 sections (left / right) or 4 sections (left and right, upper and lower) – no tree is sprayed twice, e.g. after a refill stop.
- **Orchard boundary** recorded with GNSS – flow stops automatically outside it.
- **Automatic rate control (ARC)** – the target rate (l/ha) is held at every speed.
- **Coverage map** with sprayed, overlapped and unsprayed areas; 9 job memories; data logging to SD card.
- **Wi-Fi software updates** and 6 menu languages.

3.2 Specifications

Specification	Value
Display	7" colour display, 1024 × 600, day / night mode
Supply voltage	12 VDC
Sections	2 (NOVA 210 2W) or 4 (NOVA 210 4W) + main valve + proportional (rate) valve
GNSS	Cross 200 Smart GNSS (KYP036) or Cross 300 Smart Antenna (KYP067, RTK)
Sensor inputs	Flowmeter, wheel speed sensor, pressure sensor (4–20 mA), tank level sensor (4–20 mA), RPM sensor
Sprayer connector	Burndy 23-pin (ARAG Bravo 400 compatible pin assignment)
Memory	5 tractors, 5 equipment profiles, 9 jobs, boundaries on SD card
Data	microSD card (logging every 2 s, boundaries, jobs), Wi-Fi (software update)
Languages	English, Русский, Türkçe, Ελληνικά, Español, Português
Operating temperature	–20 °C ... +70 °C

3.3 Versions: 2W and 4W



NOVA 210 2W



NOVA 210 4W

Version	Section switches
NOVA 210 2W	1 = left side, 2 = right side of the sprayer.
NOVA 210 4W	LEFT: 1 = upper, 2 = lower · RIGHT: 3 = upper, 4 = lower. In the software the sections are numbered 1 to 4 from left to right.

3.4 Product Overview

Note: The final product may differ from the illustration depending on the production batch and customer specifications.



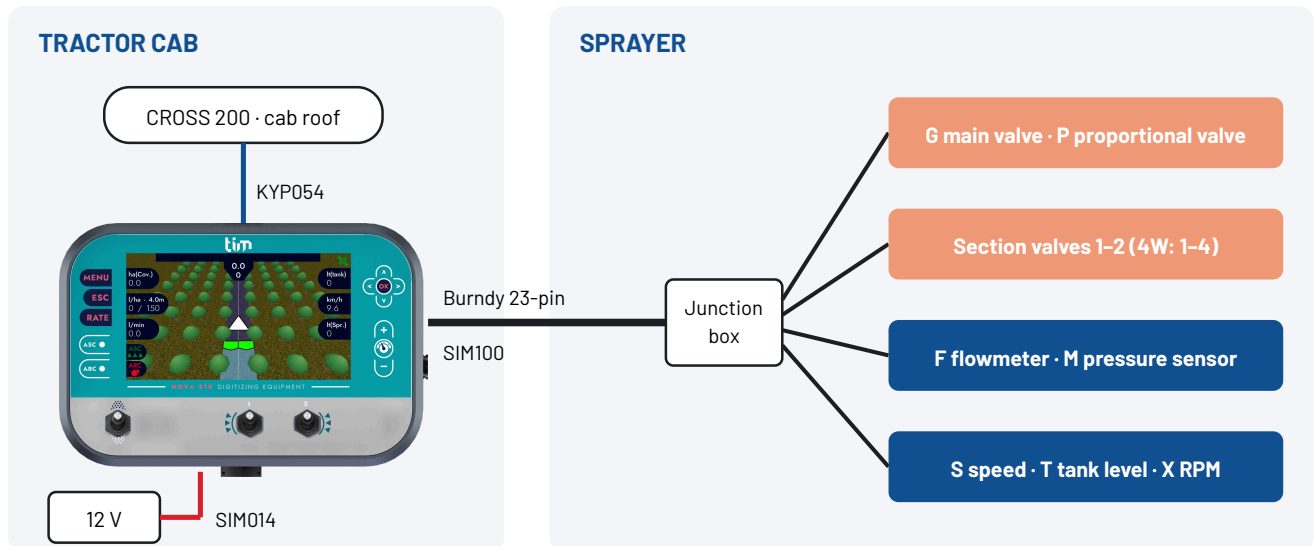
No.	Part	Function
1	MENU	Back to the HOME menu (closes the main and section valves).
2	ESC	Back / cancel. On the run screen: shows the active alarms.
3	RATE	Opens the Job Menu (dosage selection).
4	ASC + LED	Switches automatic section control on / off. Works only with a valid GNSS signal.
5	ARC + LED	Switches automatic rate control on / off (manual rate with + / -).
6	Display	7" colour display.
7	Navigation buttons + OK	Menu navigation; on the run screen ^ v zoom, < opens the left panel, > the right panel.
8	+ / -	ARC on: target rate ± 10 % (50-150 %). ARC off: opens / closes the proportional valve.
9	Main switch	Spraying ON (up) / OFF (down). OFF closes the main valve and all sections.
10-11	Section switches	2W: 1= left side, 2 = right side. 4W: see section 3.3.

4. Installation



The installation must be carried out by a skilled professional only. If the mounting bracket is not securely fastened, the computer can move or fall during operation and cause damage or injury.

4.1 System Overview



4.2 Mounting the Computer

Step 1. Unbox the equipment and place NOVA 210 on a flat, clean surface.

Step 2. Mount it with the triple suction cup mount **KYP029** on a clean, smooth glass or panel surface, or with the screw mount **KYP037** on a rigid part of the cab.

Step 3. Place it within reach of the driver, out of direct sunlight, without blocking the view.

4.3 GNSS Antenna

Mount the Cross 200 Smart GNSS (or Cross 300) on the **cab roof**, at the highest point, **exactly on the centre line of the tractor**, with the connector towards the rear and a clear view of the sky. Never install the antenna inside the cab. Connect it to NOVA 210 with the Smart GNSS harness **KYP054** (or the 14-pin cable **KYP055**).



Measure the distance from the antenna to the rear axle with a tape measure – it is entered as GPS antenna / Rear Axle in the tractor profile (section 6.2). See the CROSS 200 manual for the mounting details.

4.4 Power and Sprayer Cables

Power cable SIM014

Connect the power cable directly to the tractor battery (pin 1 black = –, pin 2 red = +). Use a fused line; do not share it with high loads.

Valve cable SIM100 (4.5 + 1.5 m) / SIM101 (10.5 + 1.5 m)

The valve cable runs from the Burndy 23-pin socket of NOVA 210 to a junction box on the sprayer. Its drops are marked with letters and numbers. Valve drops use DIN square connectors (pin 1 = +12 V, pin 2 = GND, pin 3 = signal); sensor drops use AMP 3-pin connectors.

Drop	Connect to	Burndy pin	Drop	Connect to	Burndy pin
G	Main valve	C	F	Flowmeter	T
1	Section valve 1	F	S	Speed sensor (optional)	Y
2	Section valve 2	M	M	Pressure sensor (optional)	Z
3	Section valve 3 (4W)	X	T	Tank level sensor (optional)	N
4	Section valve 4 (4W)	H	X	RPM sensor (optional)	P
P	Proportional (rate) valve	J / K	Sensor supply: A = +12 V, B = GND		

- Drops 5–7 of the valve cable are not used on NOVA 210; keep their caps on.
- Section 1 must always be the **left** side of the sprayer (seen in the driving direction). Check this in the Test Menu (section 6.6).
- The pin assignment of the Burndy connector corresponds to the ARAG Bravo 400 23-pin standard.



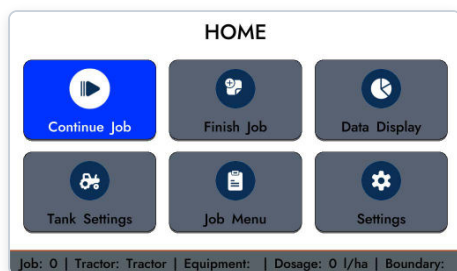
Connectors must be waterproof (IP65 or higher). Close all unused drops and the Burndy socket with their caps.

Valves and fittings

NOVA 210 works with the 40 BAR 2W electro valve kits (Orion **TA 881B14252D** or Wolf **TA 881B14252K**) with fitting set, elbow fitting and manometer. Fit the valve group according to the kit instructions; the flowmeter must be installed in the flow direction marked on it.

5. Software Operations

5.1 HOME Menu



HOME

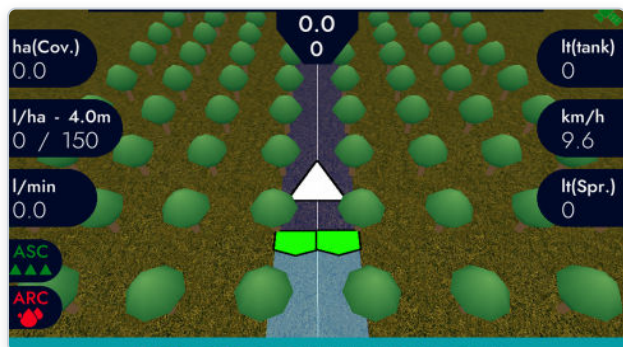
Tile	Function
Continue Job	Resumes the open job with its coverage map, area and quantity. Greyed out when no job is open.
Start New Job / Finish Job	Starts a new job (all job values from zero) or closes the open job.
Data Display	GPS, job and device data, field overview.
Tank Settings	Refill tank, set tank level.
Job Menu	Dosage, jobs, boundaries, tractor and equipment selection.
Settings	All settings (section 5.6).

The information line at the bottom shows the active job, tractor, equipment, dosage and boundary. On the first start NOVA 210 searches the GNSS receiver ([Searching for GPS sources](#)) and shows **GPS Connection Successful!** or **GPS Connection Failed!** .



Without GNSS signal, Continue Job shows: WARNING! GPS signal does not exist – Section Control is disabled! The job can be continued, but ASC stays off.

5.2 Run Screen

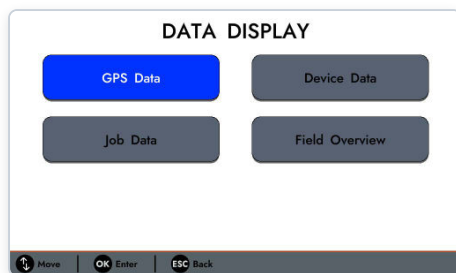


Run screen (2 sections, orchard)

- **Top bar** – lightbar with the deviation from the guidance line (m) and the row number.
- **Data boxes** – six configurable values (User Settings → Configure Display), e.g. ha(Cov.), l/ha with working width, l/min, It(tank), km/h, It(Spr.).
- **ASC / ARC indicators** – green = active.
- **Section bar** behind the tractor symbol – green = spraying, red = closed.
- **Map** – trees, sprayed area, A-B lines, boundary, pause point.

Key on the run screen	Function
^ v	Zoom in / out (8 levels)
< left panel	Refill tank · day / night mode · 3D / 2D view
> right panel	Shift line · pause point · A-B line · field boundary (requires GNSS)
RATE / MENU	Job Menu / HOME (the valves close)
ESC	Alarm list

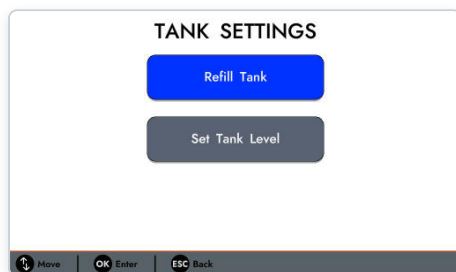
5.3 Data Display



DATA DISPLAY

- **GPS Data** – longitude, latitude, data frequency, number of satellites, date and time, HDOP, speed. **OK** changes the GPS baud rate.
- **Job Data** – the 9 job records (area, quantity); a record can be reset.
- **Device Data** – hardware and software version, CPU temperature, total traversed area, total sprayed amount, IP address.
- **Field Overview** – the whole job: sprayed, overlapped and unsprayed area. Arrows pan, + / – zoom.

5.4 Tank Settings



TANK SETTINGS

- **Refill Tank** – sets the tank level to the tank capacity of the equipment (after a full refill).
- **Set Tank Level** – enter the current content in litres (after a partial refill). **Invalid Tank Level!** if above capacity.

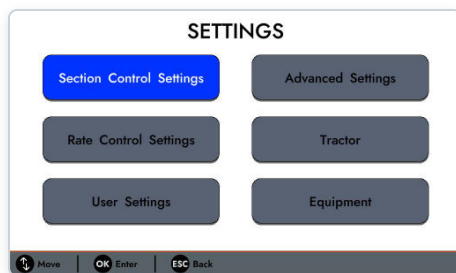
5.5 Job Menu



JOB MENU

- **Select Dosage** – choose one of 9 dosages (l/ha, with ISO nozzle colour).
- **Edit Dosage** – target rate (l/ha) and nozzle type (ISO colour) of each dosage.
- **Job Selection** – recall a job stored on the SD card (date, time, covered and total area, sprayed quantity). Requires an SD card.
- **Boundary Menu** – select a saved orchard boundary (field name, area).
- **Load Tractor** / **Load Equipment** – activate a saved profile.

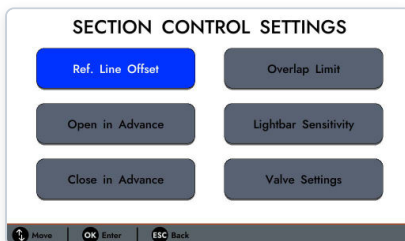
5.6 Settings



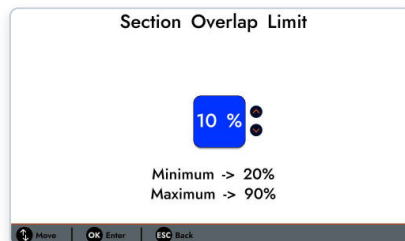
SETTINGS

Menu	Contents
Section Control Settings	Ref. line offset, overlap limits, open / close in advance, lightbar sensitivity, valve settings
Rate Control Settings	Speed source, minimum speed, aggressiveness
User Settings	Configure display, screen settings, units, language, export data, time zone
Advanced Settings	Sensor calibration, test menu, software update, factory settings, Wi-Fi, audio
Tractor	Create / edit tractor profiles (up to 5)
Equipment	Create / edit sprayer profiles (up to 5)

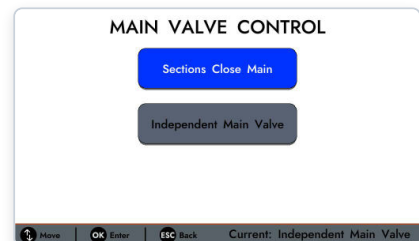
5.6.1 Section Control Settings



SECTION CONTROL SETTINGS



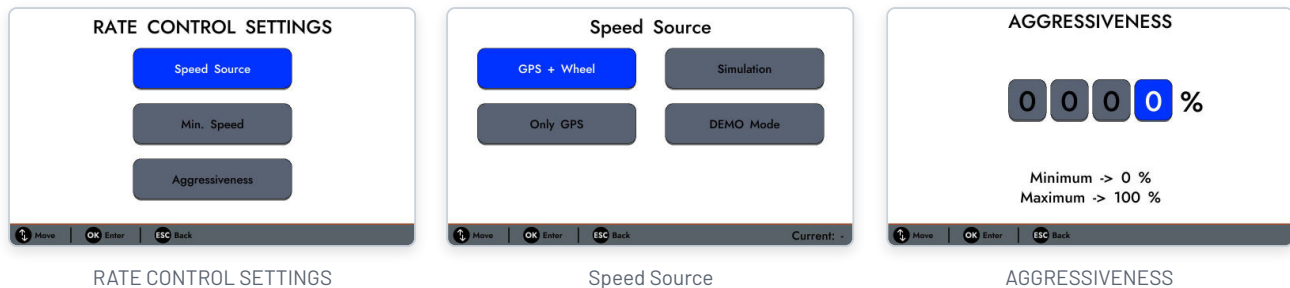
Section Overlap Limit



MAIN VALVE CONTROL

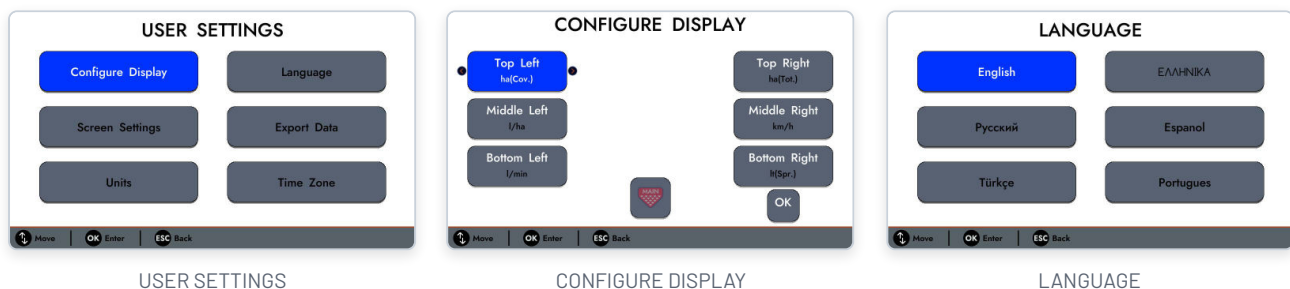
Item	Function	Range / default
Ref. Line Offset	Changes the distance between the guidance lines (Increase / Decrease). Line distance = worklength ± offset.	default 0 m
Section Overlap Limit	A section closes when this share of its width is over already sprayed ground.	20–90 %, 50 %
Boundary Overlap Limit	A section closes when this share of its width is outside the boundary.	20–90 %, 50 %
Open in Advance	Sections open this distance before reaching unsprayed ground.	0–4 m, 0
Close in Advance	Sections close this distance before reaching sprayed ground.	0–4 m, 0
Lightbar Sensitivity	Deviation per lightbar step.	default 0.5 m
Valve Settings	Valve Closing Delay and Valve Opening Delay (s) – compensate the reaction time of the valves (section 6.4). Main Valve Control : Sections Close Main (recommended – the main valve closes when all sections are closed) or Independent Main Valve .	delays 0 s

5.6.2 Rate Control Settings



Item	Function	Range
Speed Source	GPS + Wheel (GNSS speed, wheel sensor as backup) · Only GPS · Simulation (fixed test speed) · DEMO Mode (demonstration only – not for spraying).	–
Min. Speed	Below this speed the main valve and all sections close (alarm MIN SPEED REACHED!). 0 = off.	0–10 km/h
Aggressiveness	How fast the proportional valve reacts. Too high → pressure oscillates; too low → slow reaction.	0–100 %

5.6.3 User Settings



- Configure Display** – choose the value of each of the six data boxes (Top / Middle / Bottom, Left / Right): ha(Cov.), l/ha, l/min, ha(Tot.), km/h, lt(Spr.), bar, lt(tank), heading, satellites. Confirm with **OK**.
- Screen Settings** – brightness of the display. **Units** – metric.
- Language** – English, Русский, Türkçe, Ελληνικά, Español, Português.
- Export Data** – starts data logging to the SD card (file NOVA.txt, one record every 2 s).
- Time Zone** – UTC –12 ... +12 (default +3).

5.6.4 Advanced Settings



- Sensor Calib.** – **Zero Pressure Sensor** (only with 0 bar in the line), **RPM Sensor Stud Count**, **Tank Level Correction** (correction factor, e.g. 1.0 = correct).
- Test Menu** – see section 6.6.
- Software Update** – requires Wi-Fi with internet: **Checking for updates** → **Press OK to Update** → **Update Complete**. Do not switch off during the update.
- Factory Settings** – **Factory Reset** deletes all settings, profiles, jobs and boundaries; **Screen Default** resets the display settings.

5.6.5 Tractor

EDIT TRACTOR

Create Tractor / **Edit Tractor** – up to 5 tractor profiles with name and geometry:

- **Wheelbase:** front axle to rear axle (m).
- **Rear axle / Conn. Point:** rear axle to the hitch / drawbar (m).
- **GPS antenna / Rear Axle:** antenna on the roof to the rear axle (m).

5.6.6 Equipment

NEW EQUIPMENT

Geometry

EQUIPMENT

Item	Function
Equipment Type:	Sprayer (with rate control) or Other (no rate control, guidance and coverage only). Change with < >.
Equipment Name:	Name with the on-screen keyboard.
Sections	Nozzle Spacing (cm) and the number of nozzles of Section #1 ... #7 . Section width = nozzles × spacing. For NOVA 210 enter sections 1-2 (2W) or 1-4 (4W) consecutively ; leave the others at 0.
Worklength:	Total working width (calculated). It is also the distance between the guidance lines.
Geometry	Towed : Application <-> Wheel Points and Wheel <-> Connection Points . Carried : Application <-> Connection points (m).
Spraying Parameters	Valve Type (3 Way / 2 Way) · Flowmeter Constant (pls/lt, from the flowmeter label) · Wheel Constant (cm/pls, manual or automatic: GO 100m!) · Tank Setup (capacity, minimum level, level source manual / sensor) · Pressure Sensor (Estimation / Sensor / None, max. pressure).
Save Equipment	Saves the profile (Equipment Saved!). Then load it in the Job Menu.



Orchard example (2W): row distance 4.0 m, nozzle spacing 50 cm → Section #1 = 4 nozzles (2.0 m, left), Section #2 = 4 nozzles (2.0 m, right) → Worklength 4.0 m = distance between the guidance lines. For 4W use 2 nozzles per section (1.0 m each).

6. Operating Instructions

6.1 First Operation

1. Switch NOVA 210 on and wait for the HOME menu and **GPS Connection Successful!** .
2. **Language and time zone**: Settings → User Settings.
3. **Tractor**: Settings → Tractor → **Create Tractor** . Measure all distances with a tape measure.
4. **Equipment**: Settings → Equipment → **Create Equipment** : type Sprayer, sections (2 or 4, consecutive), geometry, spraying parameters (valve type, flowmeter constant from the label, tank). **Save Equipment** .
5. **Load** the tractor and equipment in the Job Menu.
6. **Dosage**: Job Menu → **Edit Dosage** → target rate (l/ha) and nozzle; then **Select Dosage** .
7. **Valve tests** and **valve delays** (6.3, 6.4), **aggressiveness** (6.5).
8. Check the section order in the Test Menu (6.6).



Incorrect tractor or equipment geometry, or an antenna that is not on the tractor centre line, causes guidance and section control errors.

6.2 Start a New Job

1. HOME → **Start New Job** → **Are You Sure?** → Yes.
2. Check: tractor, equipment, dosage, tank level (**Refill Tank**), section control settings and boundary.
3. Switch ASC and ARC on (LEDs on), main switch and the section switches ON, and drive into the orchard.

Continue Job resumes a job after a break or the next day with the stored coverage map – already sprayed trees are not sprayed again. **Finish Job** closes the job.

6.3 Valve Tests

Test the electro valves before the first spraying, with clean water only.

Electrical test (engine off)

1. Stop the tractor engine so that the valves can be heard. HOME → **Start New Job** ; ARC **off**; valve cable connected.
2. Switch the section valves 1-2 (4W: 1-4) on and off – each valve must click.
3. Press + / – – the proportional valve must run.

Liquid test

1. Start the tractor, **Continue Job** , ARC off. Open all sections and the main switch, engage the PTO – spraying must start.
2. If the pressure is too low, hold + until the working pressure is reached.
3. Switch the sections off and on one by one: section 1 must be the **left** side. With 3-way valves, set the bypass (calibration) screws so that the pressure stays constant when a section closes or opens.

6.4 Valve Delay Measurement

ARC off, PTO on, main valve and all sections open:

- Close the main switch and measure the time until the nozzles stop (manometer at 0 bar) → enter it as **Valve Closing Delay** (typically about 0.3 s).
- Open the main switch and measure the time until the working pressure is reached → enter it as **Valve Opening Delay** (typically about 1.5 s).

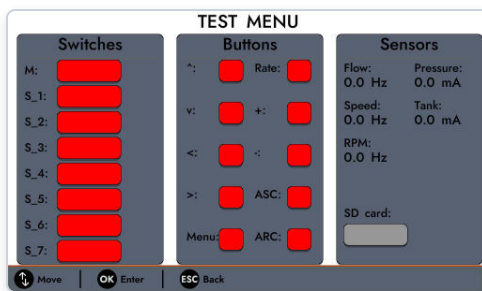
6.5 Aggressiveness Fine Adjustment

1. Settings → Rate Control Settings → **Aggressiveness** ; typical starting value **35 %**.
2. Set **Speed Source** to **Simulation** , switch ARC on, enter the target rate.
3. Run the PTO at spraying speed and change the simulated speed over your working range.
4. If the manometer oscillates at any speed, reduce the aggressiveness. Do the final check in the orchard at real working speeds and set the speed source back to **GPS + Wheel** or **Only GPS** .



Simulation and DEMO Mode finish the current job. Start a new job after the test.

6.6 Test Menu



TEST MENU

- **Switches** – **M** (main) and **S_1** ... : turns green when the switch is ON; the valve is switched at the same time.
- **Buttons** – each key lights green when pressed.
- **Sensors** – **Flow** and **Speed** (Hz), **Pressure** and **Tank** (mA), **RPM** (Hz), SD card.

Use it to check that switch 1 opens the left valve and that the flowmeter gives pulses when liquid flows.

6.7 A-B Line along the Tree Rows

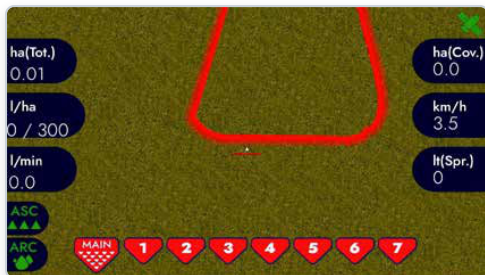


A-B guidance (NOVA 200 screen)

1. Drive into the first alley, in the middle between two tree rows.
2. Run screen → **>** → A-B line icon → **OK -> Mark A?** → **OK**.
3. Drive straight along the row; NOVA 210 shows **Move ... m away from A**. After at least **30 m** press **OK** at **Mark B?** – the best result is at the end of the row.
4. Parallel lines are drawn at the worklength distance (= row distance). Follow the lightbar.

- **Shift line** (right panel): moves the A-B line to the current position, e.g. when a row is not straight.
- **Ref. Line Offset** (Section Control Settings): adapts the line distance if it differs from the worklength.
- **ESC** switches the A-B guidance on and off. A, B and the pause point are kept after switching off.

6.8 Orchard Boundary



Recorded boundary (red line)

1. Run screen → **>** → boundary icon.
2. **Field Boundary** : choose **Left** or **Right** – the side of the sprayer that runs along the edge (Left = drive clockwise, Right = counter-clockwise).
3. **Press OK to start** and drive around the orchard at steady speed. **<** pauses / continues; **OK** finishes.
4. Enter a name (**Please enter Name for the Boundary**) – the boundary is saved on the SD card.

With an active boundary, sections that are outside it close automatically (Boundary Overlap Limit). Saved boundaries are selected in Job Menu → **Boundary Menu** .



Keep a steady speed and a good GNSS signal while recording. An SD card is required (No SD card. Failed!).

6.9 Pause Point and Refilling

1. Before leaving the row to refill, open the right panel (**>**) and set the **pause point**.
2. Refill the tank, then left panel (**<**) → refill tank, or HOME → Tank Settings → **Refill Tank** .
3. Drive back: the distance to the pause point is shown on the screen. Sections stay closed over the trees already sprayed and open where you stopped (ASC on).
4. Clear the pause point in the right panel.

6.10 ASC and ARC

- **ASC** requires a GNSS signal and a loaded equipment with section widths. If the GNSS signal is lost for more than 5 s, ASC switches off and the sections follow the switches only.
- **ARC** keeps the target rate with the flowmeter and the proportional valve. With ARC off, + / – move the proportional valve manually. ARC is not available with equipment type **Other** .

7. Alarms & Troubleshooting

Alarms are shown in a pop-up with a sound (Audio Settings). **ESC** on the run screen lists the active alarms. Rate alarms are active with ARC on.

Alarm	Cause	Action
MIN SPEED REACHED!	Speed below Min. Speed – main valve and sections are closed	Drive faster or set Min. Speed lower
TANK LEVEL LOW!	Tank level below the minimum level	Refill and use Refill Tank
NO SPEED DETECTED!	Flow but no speed	Start moving; check GNSS / speed sensor
NO FLOW!	Section open and moving, but no flow for more than 2 s	Check pump, filters, valves, flowmeter (Test Menu)
INCREASE SPEED! / DECREASE SPEED!	Target rate cannot be reached for 8 s	Adapt speed, pressure or nozzles
NO GPS SIGNAL!	No GNSS data for more than 5 s – ASC off	Check the antenna on the cab roof and its cable
ORIGIN FAR AWAY	The field origin of the job is more than 10 km away	Start a new job for this field

7.1 Troubleshooting

Problem	Solution
GPS Connection Failed!	Check the antenna cable; Data Display → GPS Data → OK to select the baud rate.
Switch and section do not match	Sections must be entered consecutively from Section #1; check in the Test Menu.
Guidance lines not on the rows	Check the worklength (= row distance), Ref. Line Offset, tractor geometry and the antenna position on the centre line.
Sections close too early / too late	Check equipment geometry and valve delays; adapt Open / Close in Advance.
Pressure oscillates	Reduce Aggressiveness.
NO SD CARD!	Insert the SD card (needed for jobs and boundaries).

8. Package Contents

8.1 Core Elements

Code	Description	Image
TNOV210.01	NOVA 210 Computer	
SIM014	2 m Power Cable	
SIM100	Valve Cable · 4.5 + 1.5 m	
KYP036	Cross 200 Smart GNSS	
KYP054	Smart GNSS Harness	

8.2 Optional Products

Code	Description	Image
SIM101	Valve Cable · 10.5 + 1.5 m	
KYP029	Triple Suction Cup Mount · 6 cm short arm	
KYP037	Screw Mount · 6 cm short arm	
KYP030	Speed Sensor · 2 m cable	
KYP055	GNSS 14 Pin Cable	
KYP067	Cross 300 Smart Antenna (RTK)	
KYP021	Level Sensor 0.4 BAR · 2 m cable	
KYP022	Pressure Sensor 25 BAR · G 1/4	

8.3 Required Products

One of the following 40 BAR 2W electro valve kits:

Code	Description	Qty	Image
TA 881B14252D	40 BAR 2W Electro Valve Orion Kit	×1	
TA 881B14252K	40 BAR 2W Electro Valve Wolf Kit	×1	
TA 010004	Fitting Set	×1	
TA 1190425	Elbow Fitting	×1	
TA 911040	Manometer	×1	

9. Disposal



9.1 For business users in the European Union

The crossed-out wheeled bin on the product, its accessories or packaging indicates that this product must not be treated as household waste. Dispose of it at a collection point for the recycling of electrical and electronic equipment (WEEE). Correct disposal saves valuable natural resources and prevents possible negative effects on the environment and human health. Ask your local authorities or your Tim dealer for details. Improper disposal may be subject to fines under national regulations.

10. Warranty

Every Tim product is covered by a **2-year warranty** from the date of purchase. The warranty does not cover damage caused by improper installation or use, use of cables or accessories not supplied by Tim, opening of the housing, frost damage, chemical damage caused by insufficient rinsing, accidents, or failure to observe this manual. For warranty claims contact your Tim dealer.

Changes to the text, design and technical specifications may occur without prior notice; we reserve the right to make these changes.



Tim Dijital Teknolojiler A.Ş.
Esenşehir Mah. Haseki Sok. No:20/2
Ümraniye - İstanbul / Türkiye
Tel: +90 216 499 71 90
E-mail: info@timdigitize.com