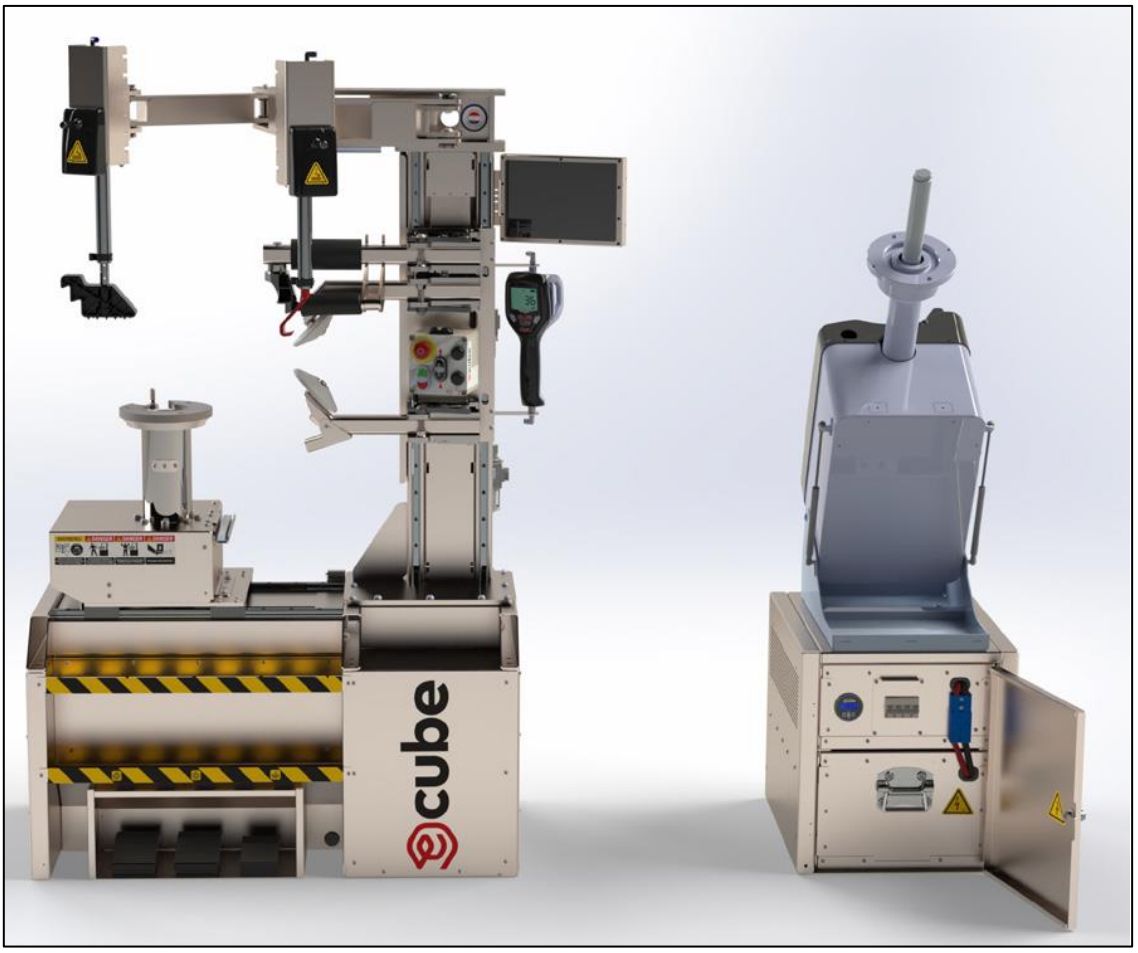
ecube generation 4 full operational guide



Picture may show a slight difference in your own model

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Valid guide since 11-03-2022

Version 4.2

Table of content

1 – Introduction

This manual provides all information regarding the ecube generation 4. The manual includes instructions and information which is required to operate and maintain the ecube G4.

Who is this manual for?

In this manual, there is expected that the operator is familiar with tire service and has the knowledge of handling a basic machine. Make sure all other operators read this manual also. By proceeding with operation the operator agrees that he fully understands the contents of this manual.

Unauthorized use is strictly inadvisable due to safety measurements and insufficient knowledge. This may lead to serious injuries and/or machine failure. The ecube is to be used only by a qualified trained operator ()

Warranty

The ecube generation 4 comes with a 12 months warranty on its components (wear and tear parts excluded).

Definitions

Within the manual, certain definitions are marked *Italic* or **Bold** to provide additional information or explanation. **Bold** is often used to mark important definitions.

Operator responsibility

Follow all safety-, operation- and maintenance instructions. Make sure all labels are clean and visible.

Liability information

ecube International B.V. assumes no liability for damages resulting from:

- Use of the equipment for purposes other than those described in this manual

- Modifications to the equipment without prior, written permission from ecube International B.V.

- Damage to the equipment from external influences

- Incorrect operation of the equipment

Limitations

Every effort has been made to have complete and accurate instructions in this manual. However, product updates, revisions, and/or changes may have occurred since this manual was published. ecube international B.V. reserves the right to change any information in this manual without incurring any obligation for equipment previously or subsequently sold.

2 – General safety signs and instructions

2.1 – Signs

These symbols indicate potential danger:

DANGER:

Watch for this symbol, it means **BE ALERT!** Your safety and the safety of others is involved. Negligence could result in personal injury, machine and/or property damage.

CAUTION:

Hot surface! Contact may cause burns.

CAUTION:

Crush hazard! Mind your hands

CAUTION:

230 volt power source, electrical shock hazard.

CAUTION:

Laser radiation/collimated LED. Risk of eye injuries. Avoid direct eye exposure.

2.2 – Instructions

- Keep the manual near the machine
- Do not use ecube in the presence of open fires, flammable liquids, gases or dust
- Only manufacturer's recommended attachments and accessories, original parts or parts approved by manufacturer should be used with ecube
- Do not wear jewelry and/or loose clothing when operating ecube, always wear safety boots, gloves, safety glasses and ear protection

- When ecube is not in use make sure it’s turned off and disconnect external devices
- Read the full operational manual before operating ecube
- Keep al warning signals and stickers visible on the machine for safety purpose
- Improper use may lead to injuries and damage to the machine
- Proper back support while lifting tires & wheels is mandatory
- Do not lean or reach over tire when inflating
- Do not exceed maximum tire pressure as shown on tire’s side wall
- Do not stand on the tire changer
- Carefully guide/support wheel balancer during tilting process
- Report any defect immediately
- Hanging on the helper arm is not permitted
- If extension cords are used, make sure a cord with a current rating equal or more than that of the equipment should be used
- In any case of emergency, consult your team leader
- Do not work in ambient temperatures above 50 degree/122 F and ensure proper ventilation
- Battery bank may only be charged and used at temperatures above 0 degree/ 32F
- Keep work area clean and well lighted
- Make sure the wheel is fully deflated and rotates during the bread breaking process

3 – General operational & safety guidelines

- Do not operate without a completed operator’s training

- Do not cover the air vents in the frame

- The yellow inch indicator is a helper only. Exact rim dimensions might vary from their specifications

- ecube is only suitable for indoor use.

- Remove all wheel weights when demounting the wheel due to potential damage

- Prior to driving: store wheel balancer in vertical position and secure the helper arm in its designated holder

- Always use a sufficient amount of elube tire spray during (de)mounting to minimize stress on the bead

- Remove any liquids immediately, ecube contains a variety of electronic parts

4 – DC/DC plugin

Always make sure to meet with local regulations!

Gen 4 has an integrated Anderson connector in the powerbox (yellow color)

The second Anderson connector comes separately and should be handed over to the installer.

Is my DC/DC system functioning?

1. **UNPLUG THE AC/DC CHARGER IN CASE IT IS CONNECTED.**
2. **START THE ENGINE**
3. **GO TO THE POWER MENU ON YOUR TOUCH SCREEN**
4. **IT SHOULD NOW SHOW A MAXIMUM CHARGING CURRENT OF 15A**
5. **IF THE AMPS KEEP SHOWING ZERO THERE IS NO POWER REACHING THE DC/DC CHARGING SYSTEM – PLEASE CHECK THE CONNECTION AS PREPARED BY THE INSTALLER**

Simultaneous DC/DC and AC/DC charging is possible, however it is not recommended at unsuited temperatures as mentioned within **2 – General safety signs and instructions**

5 - Installation instructions

ecube is a heavy machine which requires a forklift for transportation. Inside the cargo area, ecube may be positioned with the help of slide plates. Use EXTREME caution during the positioning process!

For safe and efficient installation, multiple skilled people are recommended

STEP 1: Use a forklift to lift the pallet with the ecube

STEP 2: Adjust the height of the pallet just so it is in line with the vehicle's cargo floor

STEP 3: Turn off the forklift or put it on the handbrake

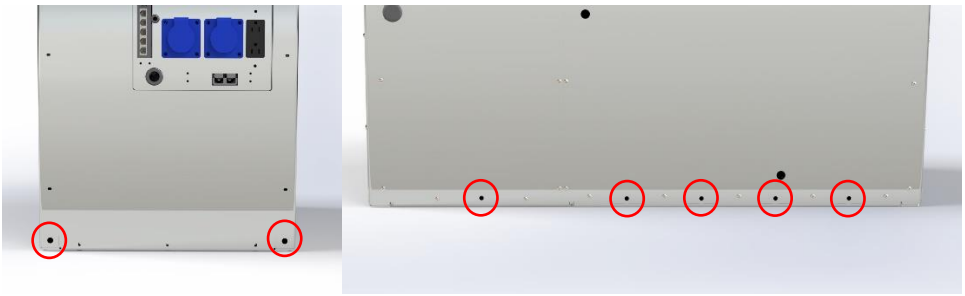
STEP 4: Push the ecube with at least 2 people into the vehicle.

STEP 5: Position ecube at the preferred position

STEP 6: Install multiple roof brackets to avoid ecube from tilting

STEP 7: Check the vehicle's anchoring points for maximum output per anchoring point as specified by the vehicle manufacturer

STEP 8: Use several of the 11 connections at the lower part of the frame(s) to connect with the anchoring points of the vehicle. Or drill in floor when anchoring points aren't available.



STEP 9: Test ecube stability by doing a test drive and evaluate if the connection points need adjusting

TIPS:

- Use slide plates in order to move the ecube easily and preventing any damage
- We recommend for roof connectors heavy duty flat brackets
- For floor connectors, we recommend heavy duty L-angle profiles or corner brackets
- Preferably, load the ecube at the back of the vehicle, not from the side door. This due to the height of the machine
- Be careful! Vans have a different height specifications. Occasionally, the helper arms might have to be removed during the installation process

6 – Specifications Ecube generation 4

6.1 - Specifications

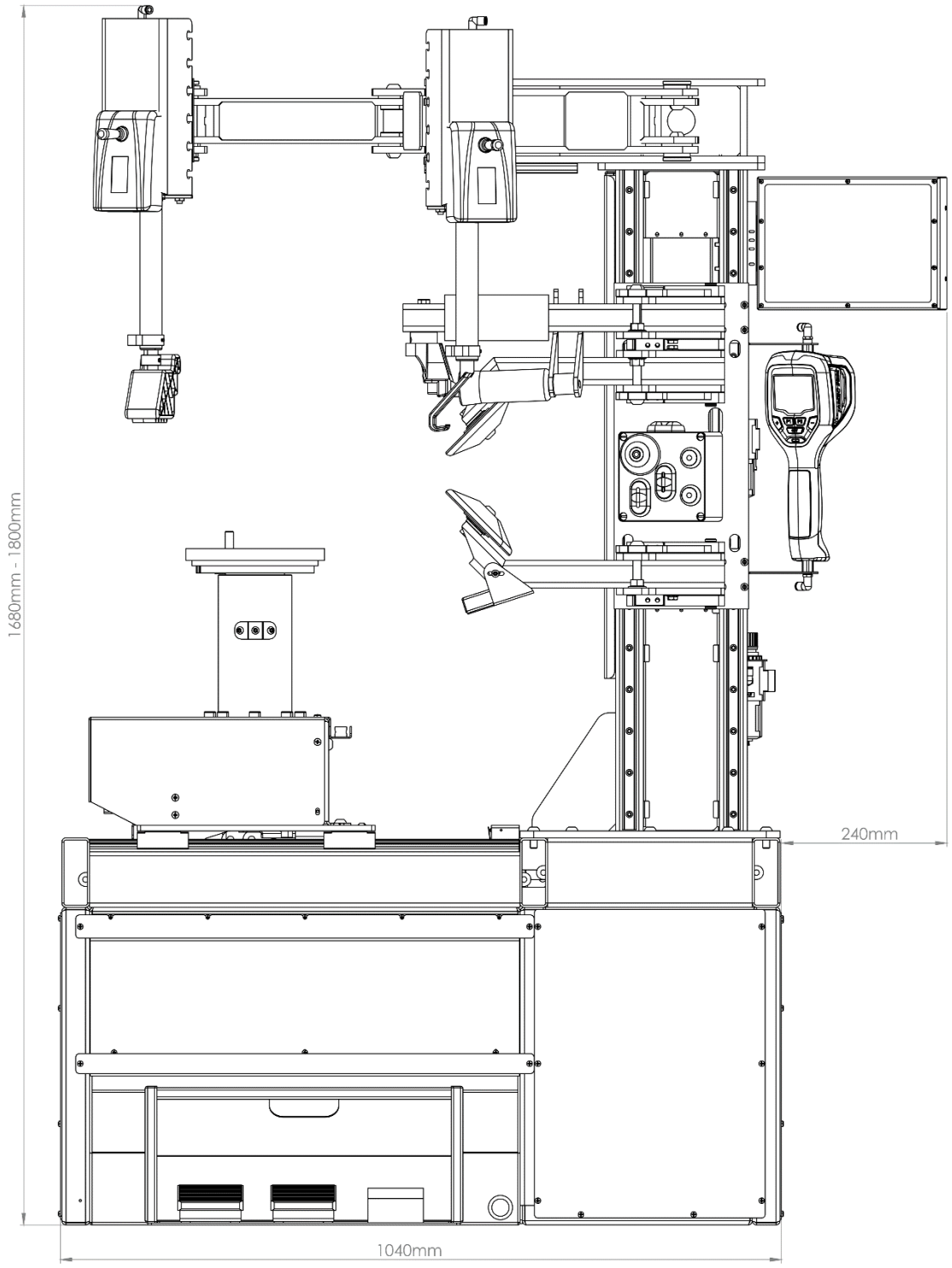
SPECIFICATIONS E-CUBE GEN 4 TIRE CHANGER/ENERGY SOURCE			
TIRE CHANGER	48/230 VOLT SEMI AUTOMATIC 10''-24'' [max wheel D.43'']		
WHEEL BALANCER	MOTORIZED (Made in Italy) 2D 10''-26''. Digital balancer – 98 RPM – 3 sensor – 3 cones 42 – 111,5mm, LED light, Electronic brake		
BATTERY PACK	LITHIUM LiFeP04	48V	110Ah/ 5,63 Kw
INVERTER (2 units)	48V / 110V / 1200 VA pure sine		
TOUCHSCREEN	HDMI LCD 10.1 inch IPS 1280x800 capacitive Touchscreen. Camera live feed - Battery and inverter status - battery consumption & history - Service page with manuals, videos, troubleshooting - Router login - Optional page for EV emergency charge system		
INFLATION	DIGITAL with start stop function		
PNEUMATIC HELPER ARM	YES (Adjustable height)		
PNEUMATIC HELPER ARM W. IN-CONTROL	OPTIONAL		
DUAL COMPUTER SYSTEM	YES		
MOTOR CONTROL	"Micro computer - Atmel AT mega 32U4 16Mhz Crystal oscillator 8-bit resolution"		
CENTRAL CONTROL	"Micro computer -core 64-bit processor clocked at 1.4 GHz, 2GB LPDDR" SDRAM"		
CAMERA	Mini CCD/CMOS HD digital camera 1080p		
ROUTER	NO		
WIFI (THROUGH HOTSPOT)	YES		
POWER SUPPLY CHARGING SMART	AC - 48V - 70A / DC - 48V - 10A		
POWER SUPPLY CHARGING COMBINED	AC/DC - 48V - 80A		
POWER PACK REMOVABLE	YES		
POWER PACK MULTI-USE	Usable as portable UNIT: 5000W AC		
POWER PACK PROTECTION	For low discharge and overcharge		
SOFT START	Yes		

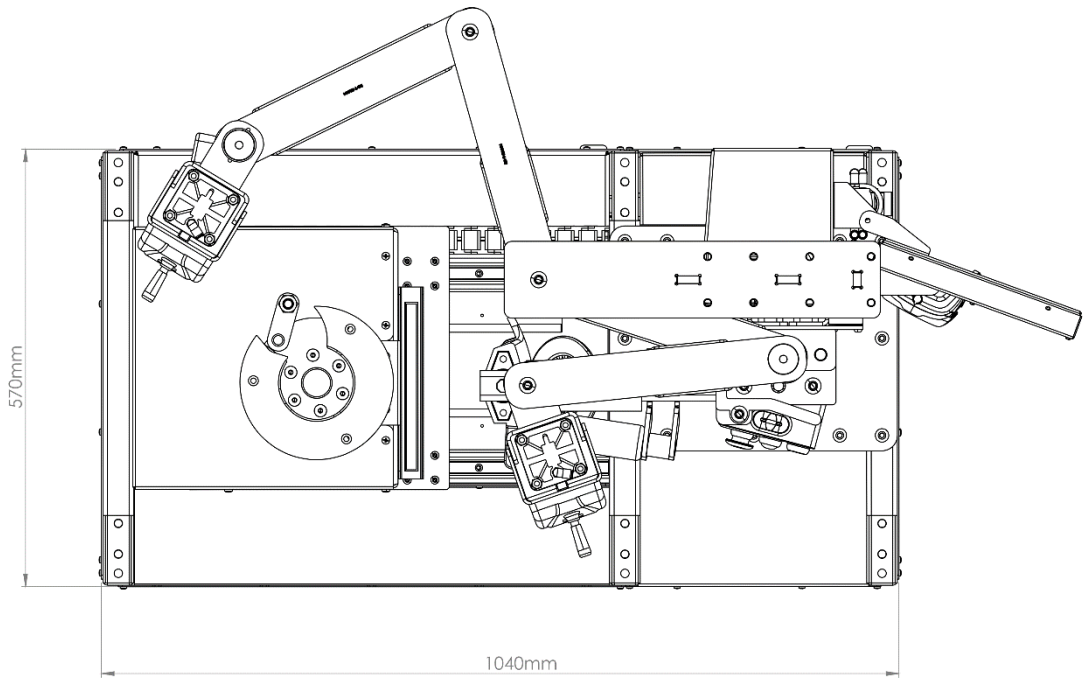
TIRE CHANGER	MIN. ''	MAX. ''
RIM DIAMETER	10"	24''
TOTAL TIRE DIAMETER WITH RIM 24"	-	43''
TOTAL TIRE DIAMETER WITH RIM 23''	-	42''
TOTAL TIRE DIAMETER WITH RIM 22''	-	41''
TOTAL TIRE DIAMETER WITH RIM 21''	-	40''
TOTAL TIRE DIAMETER WITH RIM 20''	-	39''
TOTAL TIRE DIAMETER WITH RIM 19''	-	38''

TOTAL TIRE DIAMETER WITH RIM 18''	-	37''
TOTAL TIRE DIAMETER WITH RIM 17''	-	36''
TOTAL TIRE DIAMETER WITH RIM 16''	-	35''
TOTAL TIRE DIAMETER WITH RIM 15''	-	34''
TOTAL TIRE DIAMETER WITH RIM 14''	-	33''
TOTAL TIRE DIAMETER WITH RIM 13''	-	32''
TOTAL TIRE DIAMETER WITH RIM 12''	-	31''
TOTAL TIRE DIAMETER WITH RIM 11''	-	30''
TOTAL TIRE DIAMETER WITH RIM 10''	-	29''
WHEEL WIDTH	2''	19''
BEAD PRESS SYSTEM	Upper and lower bead press by roller	
BEAD PRESS ROLLER FORCE	-	-
CLAMPING SYSTEM TIRE CHANGER	Clamping with pneumatic spindle & Haweka quicknut	
CLAMPING SYSTEM BALANCER	Clamping with spindle, cones, uniplate & Haweka quicknut	
ROTATING SPINDLE SPEED	1 RPM	15 RPM
ROTATING SPINDLE FORCE	800Nm	
INVERTER MOTORS	YES	
GEARBOX	Made in Italy	
COMPRESSOR	**48V- 2 CILINDER 1,5 HP**	
AIR TANK CAPACITY	10 - 15 Gallon	
AIR PRESSURE	116-145 Psi	
AIR FLOW PUMP OUT	10 Cfm	
NOISE VOLUME	69 Db. (A)	
ECUBE KEY DATA		
WEIGHT	1050 Lbs / Vary per Ecube	
DIMENSIONS L X W X H	L. 40.9” + 18.4” W. 22.3” + 7.9” H. 65.7” - 70.4”	

6.2 – Drawings Ecube Gen 4

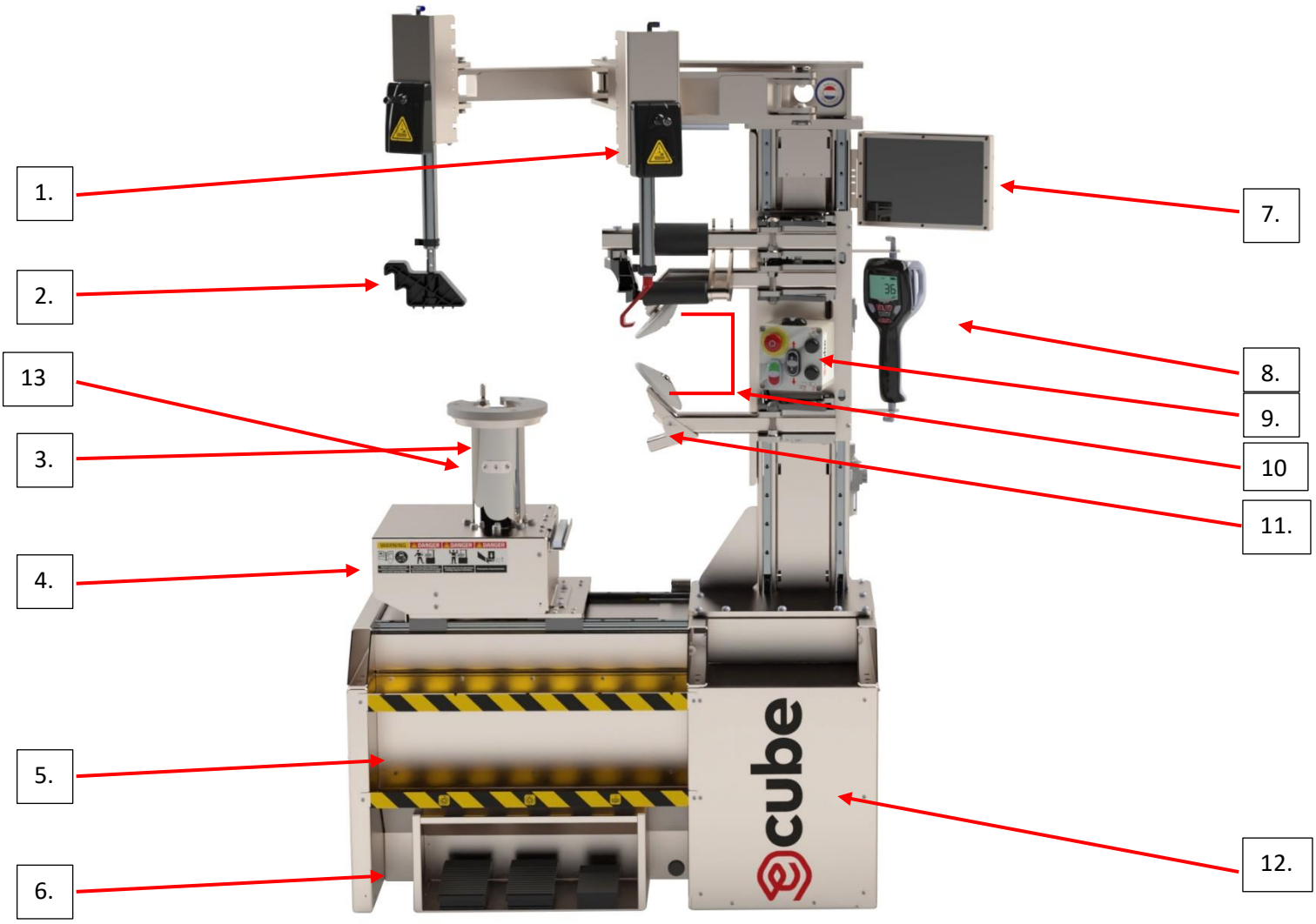
Parts of the Ecube gen 4 including the balancer may be found at 7.1 – Ecube layout *and* 7.2 – Control panel layout7.2 – Control panel layout




570mm
1040mm

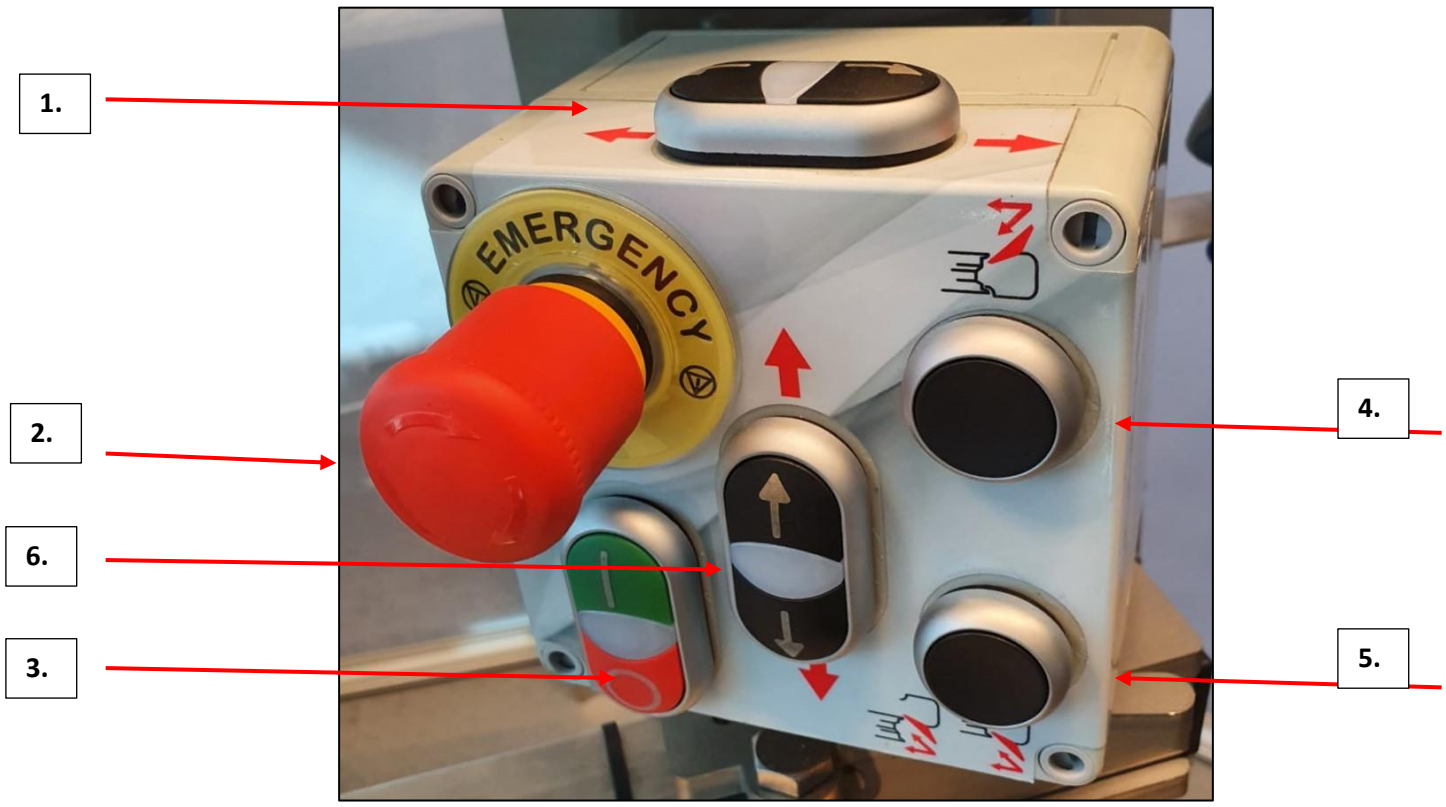
7 –Ecube Tire Changer guide

7.1 – Ecube layout



1 = Helper arm + In-Control hook	8 = Digital inflator/pressure gauge with auto-stop function
2 = Helper arm	9 = Control panel
3 = Adjustable height center post	10 = Bead press rollers
4 = Tire changer table	11 = Camera
5 = 10-15 gallon air tank (not visible)	12 = Oil less compressor (not visible)
6 = Foot control station	13 = Height adjuster turntable
7 = Touchscreen including manuals, videos, power menu, camera and more	

7.2 – Control panel layout



1: Move tire changer table left/right

2: Emergency Stop

3: On (green)/off (red) button

4: Upper bead press – dual movement, safely retracts after pressing “UP” button

5: Lower bead press – dual movement, safely retracts after pressing “DOWN” button

6: Up/down button

7.3 - Operating principle tire changer

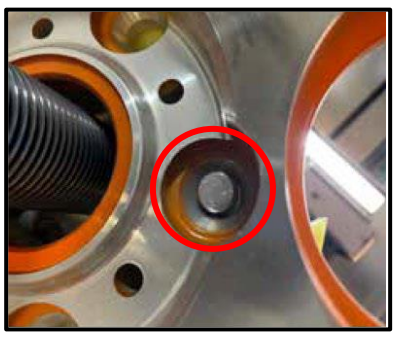
MAKE SURE TO HAVE COMPLETED ECUBE OPERATOR TRAINING AND THAT THE HAZARDS AND RISKS AROUND ECUBE ARE WELL UNDERSTOOD. THE MAJORITY OF TIRE/WHEEL ASSEMBLIES CAN BE SERVICED WITH YOUR ECUBE. SOME MIGHT REQUIRE ADDITIONAL ACCESSORIES LIKE RIM PROTECTORS AND CLAMPS. ECUBE AND ITS AUTHORIZED DISTRIBUTORS CANNOT BE HELD LIABLE FOR INJURIES, DAMAGE AND/OR EXCESSIVE WEAR CAUSED BY IMPROPER USE, MAINTENANCE AND/OR MODIFICATIONS TO THE MACHINE.

7.3.1 – Start-up

STEP 1 TURN ON THE MACHINE BY PRESSING THE GREEN BUTTON. ENSURE THAT THE TIRE CHANGER TABLE IS IN THE MOST LEFT POSITION BEFORE POSITIONING THE WHEEL.

STEP 2 POSITION THE WHEEL.

STEP 3 ENSURE THAT THE LOCK PIN ON THE MOUNTING TABLE IS INSERTED INTO ONE OF THE STUD HOLES.



STEP 4 CHECK IF CENTER HOLE OF THE RIM IS LINED UP WITH THE CENTER POST SPINDLE. THEN PRESS AND HOLD THE **RIGHT FOOT PEDAL** TO ELEVATE THE CENTER POST SPINDLE TO ITS MAX HEIGHT.

STEP 5 POSITION THE YELLOW PLASTIC CONE COVER, HOLDING THE DUAL METAL CONES, BY SLIDING IT OVER THE CENTER POST SPINDLE.

STEP 6 POSITION THE STEEL QUICK NUT AND FIRMLY TIGHTEN IT. ENSURE THAT THE RIM IS PERFECTLY CENTERED. **NOW RELEASE THE RIGHT FOOT PEDAL.**

STEP 7 THE ARMS OF THE QUICK NUT CAN NOW BE FOLDED DOWN TO MINIMIZE INTERFERENCE WHEN USING THE TIRE LEVER.

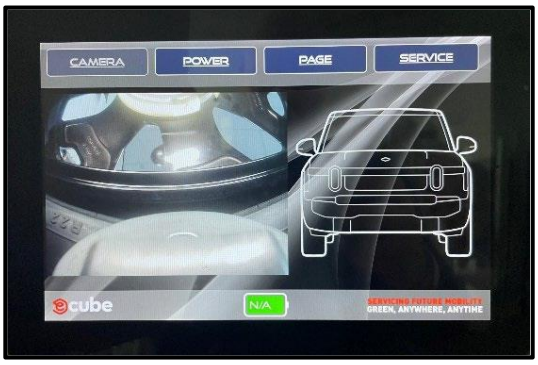
STEP 8 **SET THE STARTING POSITION OF THE MACHINE** BY CHECKING THE TIRE SIZE. THEN MOVE THE TABLE TO THE RIGHT TIRE SIZE WITH THE HELP OF THE YELOW RULER AND INDICATOR. INDICATION ONLY, FINE TUNING MIGHT BE REQUIRED.

7.3.2 – Demounting

STEP 1 REMOVE THE VALVE CORE AND AIR PRESSURE FROM THE TIRE. DON'T START THE BEAD BREAKING PROCESS UNTIL THE TIRE IS COMPLETELY DEFLATED.

STEP 2 **TO SAVE TIME IT'S RECOMMENDED TO START WITH THE LOWER BEAD.** LOWER THE VERTICAL TOOL SELECTOR UNTILTHE BOTTOM BEAD PRESS ARM WITH DISK CAN MOVE FREELY UNDERNEATH THE TIRE. MOVE THE ARM TO ITS LOCKING POSITION.

STEP 3 MOVE THE VERTICAL TOOL SELECTOR UPWARDS BY PRESSING THE "UP" BUTTON. ENSURE OF 0,1 INCH CLEARANCE BETWEEN THE DISK AND THE RIM EDGE. USE CAMERA SCREEN OR VISUAL INSPECTION FOR GUIDANCE.



STEP 4 PUSH DOWN THE MIDDLE FOOT PEDAL; THE CENTER POST TURNS CLOCKWISE. APPLY ELUBE BETWEEN THE TIRE AND RIM.

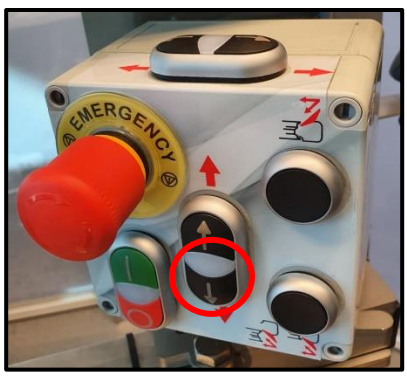
STEP 5 PRESS THE LOWER BEAD BREAKING BUTTON **IN SMALL INTERVALS** TO BREAK THE BOTTOM BEAD. KEEP LUBRICATING AS NEEDED TO ENABLE A SMOOTH BEAD BREAKING PROCESS.

STEP 6 AFTER FULLY COMPLETING THE BEAD BREAKING PROCESS PUSH THE “DOWN” BUTTON. THE CENTER POST RETURNS TO ITS STARTING POSITION.

STEP 7 AS SOON AS THERE’S ENOUGH CLEARANCE UNLOCK THE BEAD PRESS ARM WITH DISK. SWING IT BACK TO ITS STARTING POSITION.

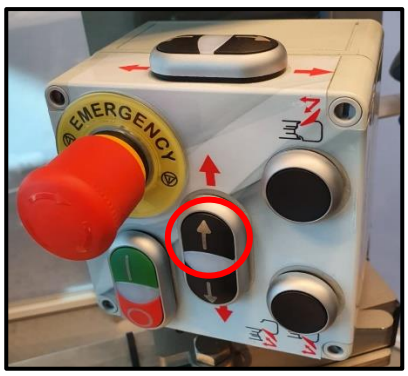
STEP 8 RAISE THE VERTICAL TOOL SELECTOR UNTILTHE UPPER BEAD PRESS ARM WITH DISK CAN MOVE FREELY OVER THE TIRE. MOVE THE ARM TO ITS LOCKING POSITION

STEP 9 MOVE THE VERTICAL TOOL SELECTOR DOWNWARDS BY PRESSING THE “DOWN” BUTTON. ENSURE OF 0,1 INCH CLEARANCE BETWEEN THE DISK AND THE RIM EDGE.



STEP 10 PUSH DOWN THE MIDDLE FOOT PEDAL; THE CENTER POST TURNS CLOCKWISE. APPLY ELUBE BETWEEN THE TIRE AND RIM.

STEP 11 PRESS THE UPPER BEAD BREAKING BUTTON **IN SMALL INTERVALS** TO BREAK THE UPPER BEAD. KEEP LUBRICATING AS NEEDED TO ENABLE A SMOOTH BEAD BREAKING PROCESS.



STEP 12 AFTER FULLY COMPLETING THE BEAD BREAKING PROCESS PUSH THE “UP” BUTTON. THE CENTER POST RETURNS TO ITS STARTING POSITION.

DEMOUNTING WITH (DE)MOUNT HEAD AND TIRE LEVER

STEP 13 RAISE THE VERTICAL TOOL SELECTOR UNTIL THE (DE)MOUNT HEAD ARM CAN MOVE FREELY OVER THE TIRE. MOVE THE ARM TO ITS LOCKING POSITION.

STEP 14 LOWER THE VERTICAL TOOL SELECTOR AND POSITION THE (DE)MOUNT HEAD ON THE EDGE OF THE RIM. ENSURE THAT THE (DE)MOUNT HEAD IS PROPERLY ALIGNED, ADJUST IF NEEDED.

STEP 15 USE THE HELPER ARM (2) AND ITS PRESS BLOCK TO GENTLY PRESS THE TIRE BEAD ON THE OPPOSITE SIDE. THIS TO MAKE SURE THAT THE BEAD IS IN THE DROP CENTER TO ENSURE SIFFICIENT SPACE WHILE MOUNTING WITH THE TIRE LEVER AND (DE)MOUNT HEAD. ELUBE TIRE SPRAY PLAYS A CRUCIAL ROLE DURING MOUNTING AND DEMOUNTING.

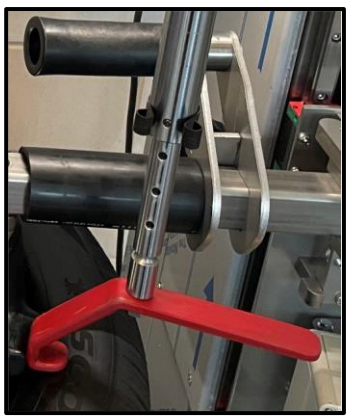
STEP 16 POSITION THE TIRE LEVER ONTO THE (DE)MOUNT HEAD, LIFT THE BEAD AND PULL IT OVER THE (DE)MOUNT HEAD.

STEP 17 NOW HAVE THE CENTER POST TURN CLOCKWISE TO REMOVE THE UPPER BEAD FROM THE RIM. MAKE SURE THAT THE TIRE LEVER COVER IS IN GOOD CONDITION TO AVOID METAL-ON-METAL FRICTION DURING ROTATION. (TIRE LEVER COVER IS A CONSUMABLE REPLACEMENT PART)

STEP 18 RAISE THE VERTICAL TOOL SELECTOR UNTIL THE (DE)MOUNT HEAD ARM CAN MOVE FREELY OVER THE TIRE. MOVE THE ARM TO ITS STARTING POSITION. MOVE HELPER ARM (2) SIDEWAYS.

DEMOUNTING WITH (DE)MOUNT HEAD AND IN-CONTROL HOOK

STEP 19 REPLACE THE PRESS BLOCK FROM HELPER ARM (1) WITH THE IN-CONTROL HOOK.

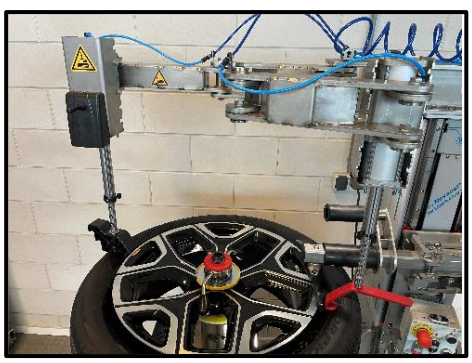


STEP 20 RAISE THE VERTICAL TOOL SELECTOR UNTIL THE (DE)MOUNT HEAD ARM CAN MOVE FREELY OVER THE TIRE. MOVE THE ARM TO ITS LOCKING POSITION.

STEP 21 LOWER THE VERTICAL TOOL SELECTOR AND POSITION THE (DE)MOUNT HEAD ON THE EDGE OF THE RIM. ENSURE TAT THE (DE)MOUNT HEAD IS PROPERLY ALIGNED, ADJUST IF NEEDED.

STEP 22 POSITION THE IN-CONTROL HOOK ONTO THE (DE)MOUNT HEAD.

STEP 23 DEPENDING ON THE TIRE COMPLEXITY, USE THE HELPER ARM (2) AND ITS PRESS BLOCK TO GENTLY PRESS THE TIRE BEAD ON THE OPPOSITE SIDE. THIS TO MAKE SURE THAT THE BEAD IS IN THE DROP CENTER TO ENSURE SUFFICIENT SPACE WHILE DEMOUNTING WITH THE IN-CONTROL HOOK AND (DE)MOUNT HEAD. ELUBE TIRE SPRAY PLAYS A CRUCIAL ROLE DURING MOUNTING AND DEMOUNTING.



STEP 24 LOWER THE HOOK, BY OPERATING THE PNEUMATIC CYLINDER, UNTIL IT GRABS THE TIRE BEAD. DURING THE PROCESS (BOTH UPWARDS AND DOWNWARDS) IT'S CRUCIAL TO GUIDE THE HOOK BY HOLDING THE GRIP.

STEP 25 USE THE HOOK TO PULL THE BEAD OVER THE (DE)MOUNT HEAD.

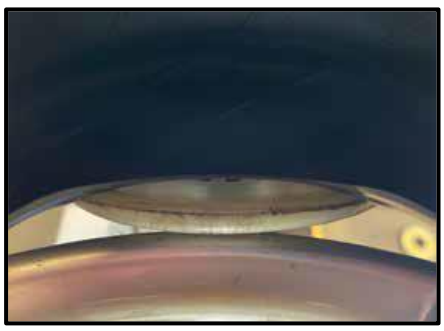
STEP 26 NOW HAVE THE CENTER POST TURN CLOCKWISE TO REMOVE THE UPPER BEAD FROM THE RIM WHILE STILL HOLDING THE HOOK.

STEP 27 RAISE THE VERTICAL TOOL SELECTOR UNTIL THE (DE)MOUNT HEAD ARM CAN MOVE FREELY OVER THE TIRE. MOVE THE ARM TO ITS STARTING POSITION. MOVE HELPER ARMS (1+2) SIDEWAYS.

STEP 28 LIFT THE TIRE ON THE RIGHT SIDE AS FAR AS POSSIBLE.

STEP 29 LOWER THE VERTICAL TOOL SELECTOR UNTIL THE BOTTOM BEAD PRESS ARM WITH DISK CAN MOVE FREELY UNDERNEATH THE TIRE. MOVE THE ARM TO ITS LOCKING POSITION.

STEP 30 MOVE THE VERTICAL TOOL SELECTOR UPWARDS BY PRESSING THE “UP” BUTTON. WHEN REACHING THE RIM EDGE, PRESS THE LOWER BEAD BREAKING BUTTON TO PUSH THE BEAD OVER THE RIM EDGE. KEEP 0,25 INCH CLEARANCE IN BETWEEN DISK AND RIM EDGE. MAKE SURE THE TMPS SENSOR ISN’T DAMAGED DURING THE PROCESS.



STEP 31 NOW HAVE THE CENTER POST TURN CLOCKWISE TO COMPLETELY REMOVE THE TIRE FROM THE RIM.

STEP 32 PRESS THE “DOWN” BUTTON UNTIL THE TURNTABLE IS BACK TO ITS ORIGINAL POSITION.

STEP 33 AS SOON AS THERE’S ENOUGH CLEARANCE UNLOCK THE BEAD PRESS ARM WITH DISK. SWING IT BACK TO ITS STARTING POSITION.

STEP 34 CHECK THE RIM FOR ANY IMPERFECTIONS OR DAMAGE BEFORE FITTING A NEW TIRE. ALWAYS CHECK/REPLACE THE VALVE AND CHECK/PROGRAM/REPLACE THE TPMS IF NEEDED.

7.3.3 – Mounting tire

STEP 1 LUBRICATE THE NEW TIRE WITH ELUBE TIRE SPRAY.

STEP 2 CHECK FOR DIRECTIONAL MARKS OR SIDE MARKS ON THE TIRE. POSITION THE TIRE ON THE RIM.

STEP 3 RAISE THE VERTICAL TOOL SELECTOR UNTIL THE (DE)MOUNT HEAD ARM CAN MOVE FREELY OVER THE RIM. MOVE THE ARM TO ITS LOCKING POSITION.

STEP 4 LOWER THE VERTICAL TOOL SELECTOR AND POSITION THE (DE)MOUNT HEAD. ENSURE THAT THE (DE)MOUNT HEAD IS PROPERLY ALIGNED, KEEP 0,13 INCH CLEARANCE. ADJUST IF NEEDED.

STEP 5 NOW HAVE THE CENTER POST TURN CLOCKWISE TO FIT THE LOWER BEAD ON THE RIM.

STEP 6 POSITION EDGE OF TIRE BEAD ON TOP OF THE MOUNTING LIP OF THE (DE)MOUNT HEAD. THE MOUNTING LIP IS ON THE LEFT SIDE OF THE LIP.

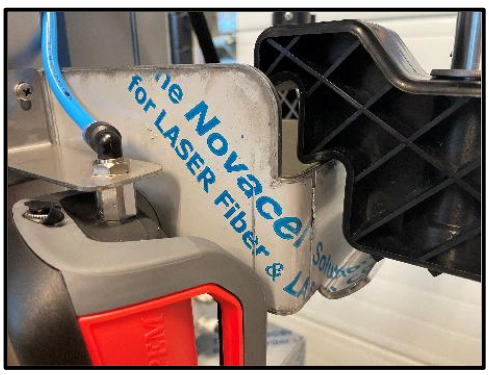
STEP 7 PUSH EDGE OF TIRE BEAD UNDER THE DEMOUNTING LIP OF THE HEAD, WHILE KEEPING THE OTHER EDGE OF TIRE BEAD ABOVE THE MOUNTING LIP.

STEP 8 TWIST TIRE CLOCKWISE BY HAND TO LOCK THE TIRE INTO THE MOUNTING POSITION. TURN CENTER POST CLOCKWISE.

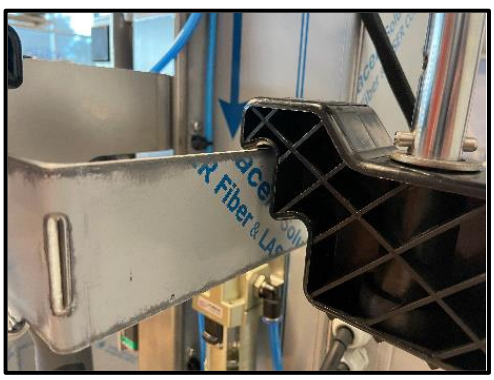
STEP 9 NOW HAVE THE CENTER POST TURN CLOCKWISE TO FIT THE UPPER BEAD ON THE RIM.

STEP 10 WHEN NECESSARY USE HELPER ARM (2) WITH PRESS BLOCK AND/OR IN-CONTROL BEAD PRESS ROLLER.

STEP 11 STORE THE HELPER ARMS IN THEIR HOME POSITION, LOCK THEM BY USING AIR PRESSURE. AVOID EXCESSIVE PRESSURE!



HELPER ARM 1 AT SIDE



HELPER ARM 2 AT REAR

STEP 10 INFLATE TIRE WITH AIR TO THE PRESSURE ADVISED BY THE MANUFACTURER. AN AUTOMATIC INFLATOR (8) IS AVAILABLE. PLEASE READ THE MANUAL BEFORE USING THE INFLATOR.

KEEP HANDS AND BODY AS FAR AWAY AS POSSIBLE FROM TIRE DURING INFLATION.
TIRES ARE TO BE INFLATED WITH UTMOST CAUTION.

7.3.4 – End of use

STEP 1 MOVE TURNTABLE TO THE LEFT IN ORDER TO CREATE ENOUGH CLEARANCE.

STEP 2 PRESS AND HOLD THE RIGHT FOOT PEDAL

STEP 3 TURN ARMS OF THE QUICK NUT UP

STEP 4 UNSCREW THE QUICK NUT AND REMOVE PLASTIC CONE COVER HOLDING THE DUAL METAL CONES.

STEP 5 RELEASE THE RIGHT FOOT PEDAL TO LOWER THE CENTER POST SPINDLE.

STEP 6 CAREFULLY REMOVE THE WHEEL FROM THE CENTER POST.

STEP 7 THE WHEEL IS NOW READY FOR BALANCING.

ATTENTION:

ECUBE BENEFITS FROM MULTIPLE STEPPER MOTORS.
IN CASE OF A TORQUE OVERLOAD THE MOTOR THAT ENSURES THE ROTATION OF THE TURNTABLE WILL STOP. BY SWITCHING THE MACHINE OFF/ON IT WILL BE OPERATIONAL AGAIN.
MAKE SURE TO USE SUFFICIENT ELUBE DURING THE (DE)MOUNTING PROCESS.

SMALL INTERVALS DURING THE BEAD BREAKING PROCESS HELP TO AVOID TORQUE OVERLOAD.

ECUBE COMES EQUIPPED WITH INSTRUCTIONAL VIDEOS ON HOW TO CHANGE A TIRE, BALANCE A WHEEL, AND TROUBLESHOOT ANY PROBLEM YOU MAY ENCOUNTER ALONG THE WAY.

7.4 – Touchscreen

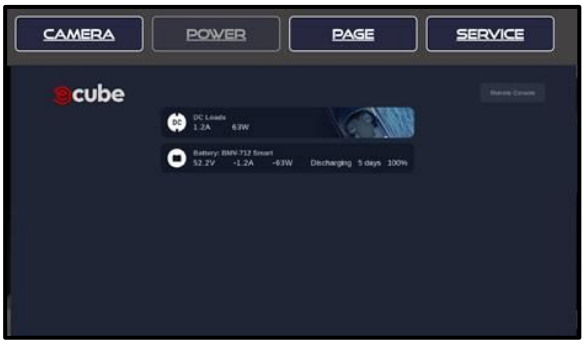
Your ecube touchscreen offers a variety of interesting features. Use pinch gestures to zoom in or out (as your fingers move apart, the screen zooms in).

7.4.1 – Camera

The camera tab allows you to monitor the bead breaking process of the lower bead. Remember that you can use pinch gestures to zoom in and zoom out.

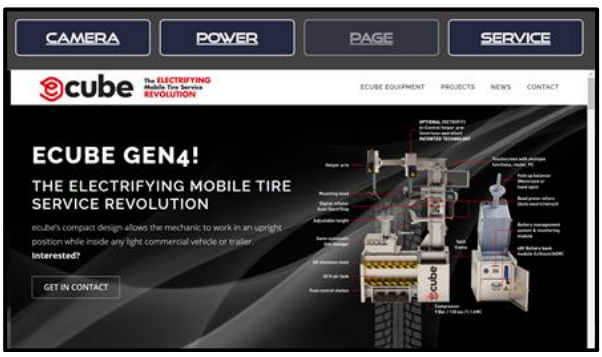
7.4.2 – Power

The power tab shows you the power system. it allows you to check the ac/dc and dc/dc charging performance. you also have the possibility to switch the inverter on/off. (‘off’ is recommended when you are not using your ecube for a longer time)



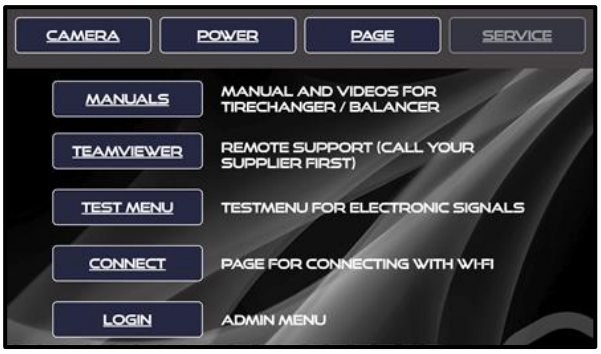
7.4.3 – Page

The html based page tab brings you to the ecube-equipment website as long as connected with the internet (through cell phone or by entering an approved network environment).



7.4.4 – Service

The service tab brings you to the page with manuals and ‘how to’ videos. It also shows the TeamViewer tab for remote access/support by authorized ecube staff and only after your approval.



The test menu tab helps to quickly identify a possible connection problem between components.

The connect tab helps you to establish a WiFi connection.

The login tab is available to authorized ecube service technicians only.

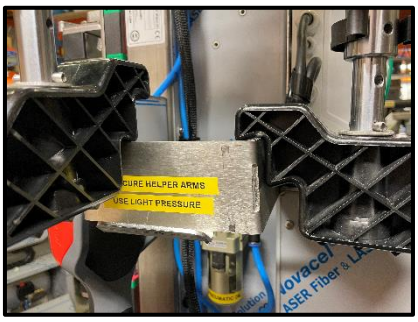
7.5 - Miscellaneous

Emergency stop button

When a dangerous situation occurs which requires immediate action, press the Emergency stop button. This knob stops the tire changer completely and ensures no electricity and moving parts will be active anymore.

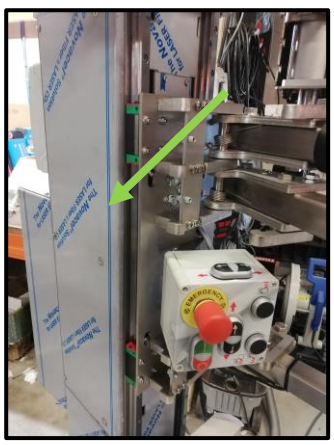
Helper arm positioning

If you do not work for a long time with the Ecube, we suggest to place the helper arms in their holders. This way, no accidents or damage can take place. When driving, ALWAYS place the helper arms in their holders to prevent them from moving around in the vehicle.



Safety switch protection

Within the machine, multiple safety switches are located in order to prevent accidents and lethal damage. When a tire is hitting the plate of the vertical axle, the machine will likely shut off out of protection.

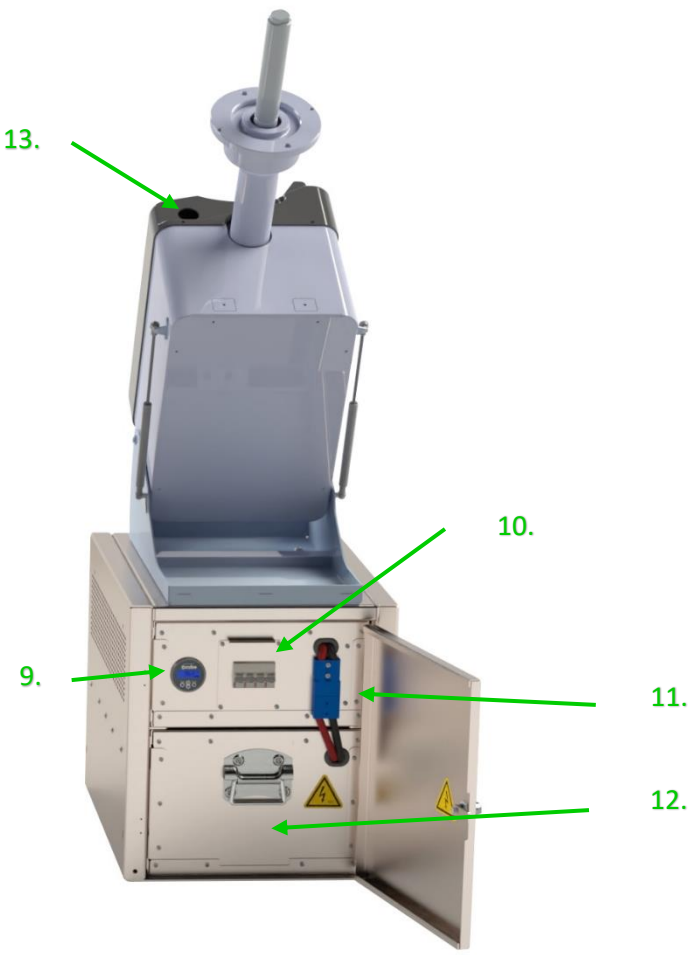


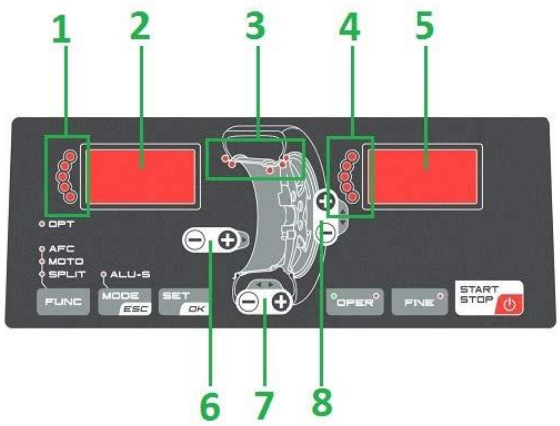
Quick nut usage

Place the quick nut above the black spindel. By pushing the metal 'handles' to the opposite direction, the quick nut expands and allows you to move it to the bottom of the spindel. Release the handles at the end in order to return the screw thread. Tighten extra if required.

8 – Ecube Wheel Balancer guide

8.1 – Wheel Balancer Layout





Picture may show a slight difference in your own model

1 = Balancing indication inner rim flange

2 = Display inner rim flange

3 = Position balancing weight

4 = Balancing indication outer rim flange

5 = Display outer rim flange

6 = Dimension rim to machine adjustment

7 = Width rim adjustment

8 = Diameter rim adjustment

9 = Monitor battery

10 = Main power switches

11 = Power connection battery > balancer

12 = Battery box

13 = Measuring arm

8.2 – Wheel Balancer control panel definitions

<MODE>: ..... To select balancing type: Dynamic-Static-Alu.

<SET>: ..... Confirm selection

<OPER>: ..... To select Operator 1 or Operator 2.

<FINE>: ..... To select reading scale.

<FUNC>: ..... To select specific functions.

<START-STOP>: ..... Starts-stops wheel spinning.

6 <DISTANCE -/+>: ..... Set internal side measure.

7 <WIDTH -/+>: ..... Set width rim.

8 <DIAMETER -/+> ..... Set diameter rim.

LED INDICATORS

1-4: ..... Indicates location of weight required.

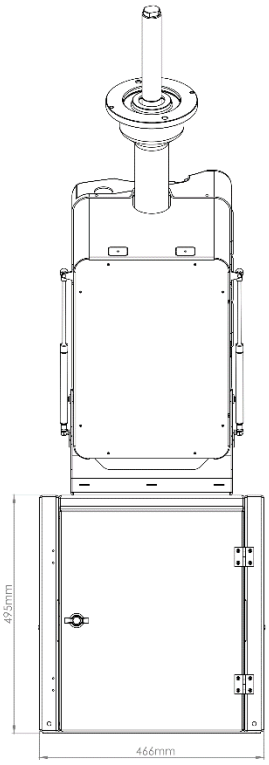
2-5: ..... Indicates amount of weight required.

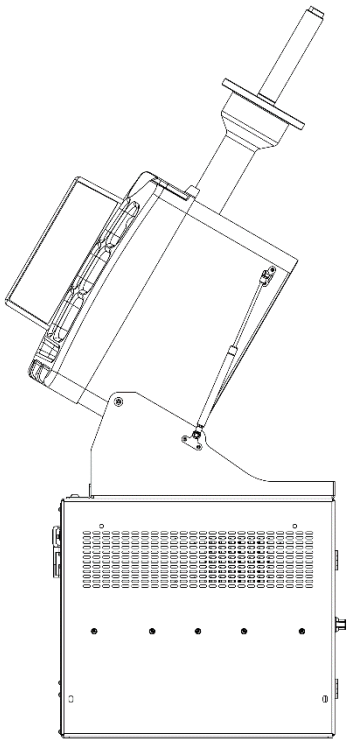
3: ..... Indicates the application point of weights.

8.3 – Wheel Balancer specifications

Ecube Balancer generation 4 Specifications	
Dimensions	930x456x520 mm / 36.61x 17.95x 20.47 inches (LxWxH)
Weight	Gross: 57 kg / 125,7 lb, Net 45 kg / 99.21 lb
Power	60W
Speed balancing	98 RPM
Measuring time	4-15 seconds
Precision	± 1 grs (± 1/28 ounce)
Rim diameter dimensions	From 8'' to 26''
Wheel diameter with cover	Max. 34''
Rim width with cover	Max. 16''
Wheel weight	Max. 70 kg / 155 Lbs

8.3.1 – Wheel Balancer dimensions





8.4 – Calibrating the wheel balancer

Indications for the need of calibration:

-Constant low or high weight readings

-Point of unbalance constantly wrong

-2+ spins required in order to balance the wheel correctly

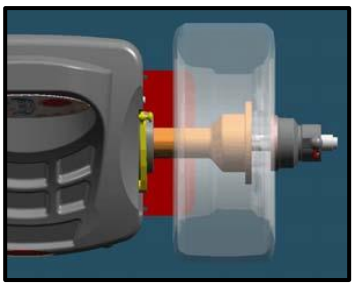
STEP 1 Turn on the wheel balancer

STEP 2 Press <SET> when <SOF> appears on the display

STEP 3 Select mode CAL USR

STEP 4 Let the wheel balancer spin until it stops (C0 on screen)

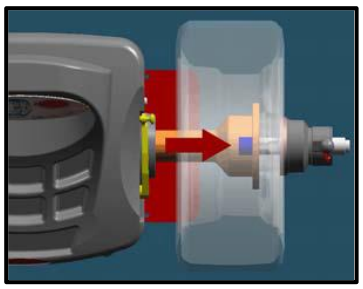
STEP 5 After the first spin is done, place any steel wheel on the flange (C1 on screen)

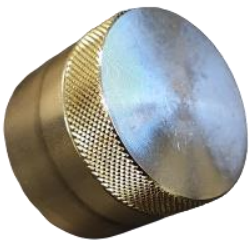


STEP 6 ATTENTION! Do not forget to tighten the wheel with the cone and quick nut

STEP 7 Let the wheel balancer spin

STEP 8 Start C2 (calibration 2) with the calibration weight on the flange installed





STEP 9 Let the wheel balancer spin

STEP 10 Calibration is finished

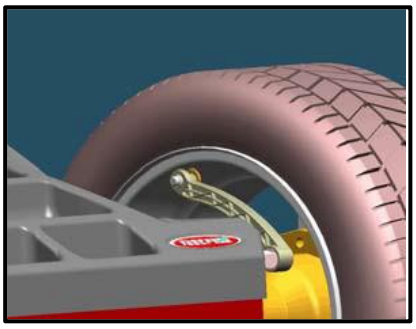
STEP 11 Press <MODE/ESC> in order to balance normal again

8.5 - Balancing a wheel

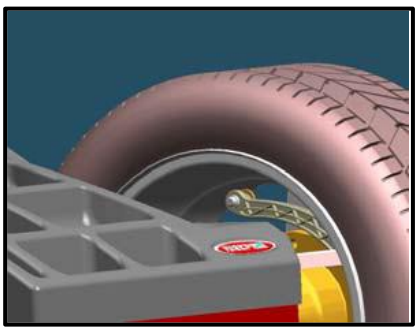
STEP 1 Position the wheel, install cone and tighten quick nut

STEP 2 Place your uni-plate if preferred

STEP 3 Move the measuring arm to the edge of the rim to measure internal rim data and wait for the “BEEP”



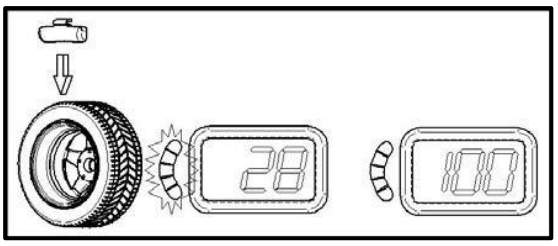
STEP 4 Move the measuring arm to the inside of the rim to measure external rim data and wait for the “BEEP”



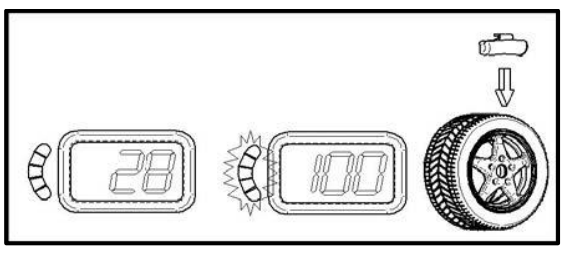
STEP 5 Press <START> in order to start a measurement run

STEP 6 If GOOD does not appears on screen, unbalance will be indicated on the screen

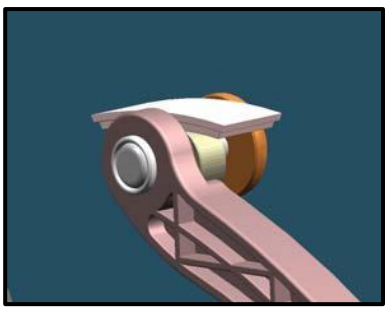
STEP 7 Internal unbalance: When all LEDs are on, the wheel is in the correct position to apply weights



STEP 8 External unbalance: When all LEDs are on, the wheel is in the correct position to apply weights



STEP 9 Place the weight on the measuring arm



STEP 10 Turn the wheel to the position in order to have both screens balanced

STEP 11 Move the measuring arm until = = = appears on the screen

STEP 12 Apply the weight and repeat for the opposite weight if needed

8.8 – Safety precautions

- As this unit runs at a speed below 100rpm, a safety cover is not due CE regulations.
- Ecube International B.V. shall not be responsible for any inconvenience, breakdown, accidents caused directly or indirectly by unauthorized service. Service by unauthorized technicians will void warranty.
- Minimize vibrations during wheel balancing process
- Keep safe distance from wheel balancer when it is spinning

8.9 – Errors recognized by the computer

ERR 1: Shaft does not rotate

ERR 2: Rotation Direction is wrong

ERR 3: Rotation speed is not ready

ERR 4: Rotation speed is wrong (too low or too high)

ERR 5: Position Sensor or Position Disk failure

ERR 6: Safety cover is open

ERR 7: Measuring cycle was interrupted

ERR 8: Calibration weight was not inserted.

ERR 9: Activation code not correct

ERR 10: Overflow in calculations

ERR 11: Serial number is wrong

ERR 12: Serial number not inserted

ERR 13: Reserved

ERR 14: Incorrect password

ERR 15: E^2prom error

ERR 16: Calibration memory error

ERR 17: Rod in uncorrected position

ERR 18: Excessive weight detected

ERR 19: Reserved

ERR 20: Excessive Deceleration

ERR 21: Error in inputting data

ERR 22: Brake error

ERR 23: Reserved

ERR 24: Insufficient air pressure (PL version)

ERR 25: Reserved

ERR 26: Piezo sensor error

ERR 27: Wheel is not securely tightened on the shaft

ERR 28: Laser error

ERR 29: Reserved

9 – LIDA Compressor Belt type

Please check the Air Compressor manual in your manual set for additional information.

10 – General maintenance Ecube

Daily Maintenance

- **Monitor your battery system for max performance from your battery pack**
- **Switch off the machine when not in use**
- **Clean surface area's for smooth constant processing**

Weekly Maintenance

- **Drain water from the tank**
- **Check water filter and oil lubricator**
- **Tolerance on mounting head check**
- **Tighten bolds and nuts if required**
- **Inspect wear & tear parts like (de)mount head and rollers**

Monthly Maintenance

- **Lubricate the horizontal and vertical spindles with a grease brush**
- **Thorough cleaning surface**

General Maintenance

- **Replace/renew all wear and tear parts like mounting head, bead press roller, tire lever protection and turntable boot when necessary.**

11 – Technician owner information

Mounting	**Trained**	**Declined**
Positioning mounting head		
Mount lower beat		
Mount upper beat with helper arm		
Inflate tire		
Additional tool usage		
Third roll usage *(Optional)*		
In control helper arm (*Optional)*		

Maintenance	**Trained**	**Declined**
Separate checklist chapter 10		

By signing this paper, the technician is certified to use the Generation 4 Ecube

Trainer Signature	Trainee Signature
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Date signature	Date Signature
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