



## VELA &amp; VELA Medical

**VERSION:** VELA Tango & VELA Salsa



VELA Tango



VELA Salsa

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**NOTE:** This manual is intended only for dealers and technical staff working with VELA chairs. Do not attempt to remodel, adjust or repair the chair yourself.

## DEAR CUSTOMER

This service manual is for all models and variants of VELA Tango and VELA Salsa. Here you will find useful information and technical descriptions in relation to servicing the chairs.

### 1.0 TECHNICAL SERVICE

VELA/VELA Medical offers to perform on-site service at selected destinations. In addition, we offer technical support during business hours via our dealers and partners throughout the world. Our partners' technical staff can assist you with troubleshooting, technical documentation and repair questions. There is also a lot of helpful information on our websites: [www.vela.eu](http://www.vela.eu)/[www.vela-medical.com](http://www.vela-medical.com)

**VELA's customer service can also be contacted: phone +45 96 34 76 00 or email [mail@vela.eu](mailto:mail@vela.eu)/[mail@vela-medical.com](mailto:mail@vela-medical.com) for further help**

### 1.1 RIGHT OF COMPLAINT

We grant the right of complaint according to the current law of the country in which the chair was purchased. The right of complaint only applies when using original spare parts and accessories, when any customisations have been made by professionals and when the chair has received normal use according to the user manual. The user manual is available on our website: [www.vela.eu](http://www.vela.eu)/[www.vela-medical.com](http://www.vela-medical.com)

In case of complaints or other enquiries about the product, please provide the chair identification number. This six-digit number can be found on a 6 x 2 cm silver-coloured label under the chair:



## 2.0 CLEANING

VELA/VELA Medical chairs withstand thorough cleaning and can be reused. We recommend that professionals examine the chair following the checklist in **section 3.1**. Several of the items on the list are described in further detail in **section 3.0**.

For instructions concerning regular cleaning, please refer to the chair's user manual, which is available on our website: [www.vela.eu/www.vela-medical.com](http://www.vela.eu/www.vela-medical.com)

### 2.0.1 CHAIRS WITH GAS SPRING HEIGHT ADJUSTMENT

Chairs with gas spring can be cleaned either with a hard-wrung cloth or through chemical disinfection with approved disinfectants.

We also recommend regular maintenance after cleaning. This includes lubrication of inner and outer tubes described in **section 3.2.2**.

### 2.0.2 CHAIRS WITH ELECTRIC HEIGHT ADJUSTMENT

Chairs with electric height adjustment can be cleaned either with a hard-wrung cloth or with chemical disinfection using approved disinfectants.

## 3.0 MAINTENANCE

The purpose of a maintenance check is to identify defective and worn parts and similar issues. We recommend an annual overhaul of the chair as well as an overhaul when a new user takes over the chair. The following sections contain further details about the checklist (**section 3.1**).

## 3.1 CHECKLIST FOR TESTING AND CHECKING

### 1. Frame

- ☐ Inspect weldings
- ☐ Inspect for fractures
- ☐ Tighten screws

### 2a. Column, gas spring

- ☐ Check function
- ☐ Lubrication of moving parts
- ☐ Inspect for wear
- ☐ Tighten screws

### 2b. Column, electrical

- ☐ Inspect wires for damage
- ☐ Lubrication of moving parts
- ☐ Tighten screws
- ☐ Listen for bad sounds
- ☐ Charging function

### 3. Castors

- ☐ Inspect rolling resistance
- ☐ Inspect bearings for backlash
- ☐ Tighten screws
- ☐ Remove built-up dirt
- ☐ Clean castors

### 4. Brake function

- ☐ Inspect brake function
- ☐ Inspect weldings
- ☐ Listen for bad sounds
- ☐ Tighten screws

### 5. Seat mechanism

- ☐ Inspect all functions
- ☐ Listen for bad sounds
- ☐ Tighten screws
- ☐ Lubricate moving parts (not the lamellae)

### 6. Armrests

- ☐ Inspect function
- ☐ Inspect weldings
- ☐ Inspect for fractures
- ☐ Tighten screws
- ☐ Inspect surface/upholstery

### 7. Upholstery

- ☐ Inspect seat unholstery
- ☐ Inspect backrest upholstery
- ☐ Inspect headrest upholstery
- ☐ Inspect body support upholstery
- ☐ Inspect loose seat covers

### 8. Accessories

- ☐ Inspect function of body support
- ☐ Inspect function of push bar
- ☐ Inspect function of head support
- ☐ Inspect function of leg supports
- ☐ Inspect function of thigh support

### 9. Electrical accessories

- ☐ Electric brakes
- ☐ Switches
- ☐ Hand control unit

### 10. Cleaning

- ☐ Upholstery
- ☐ Frame
- ☐ Armrests
- ☐ Accessories

## 3.2 GENERAL

Place the chair on a level surface. Check that all castors are in contact with the ground. If this is not the case, the chair has one or more incorrectly installed or defective castors, or a defective frame, which must be replaced.

All welded components must be visually inspected for cracks or fractures.

Parts with visible wear should be replaced.

### 3.2.1 CASTORS

It is recommended to check the castors regularly and to wipe off any residual threads, etc.

Certain floor types and floor cleaning agents have a greater tendency to accumulate on the castors and build up a layer of dirt. Dirt on the castors can transfer back onto the floors. Therefore, ensure to clean the castors or replace the castors.

All castors should also be tested for wear and tear in castor bearings and swivel bearings. If there is noticeable wear and tear in any castor, it must be replaced. It is recommended to replace all castors at the same time to ensure the chair rolls optimally.

### 3.2.2 LUBRICATION OF INNER AND OUTER TUBES

It is recommended to regularly lubricate inner and outer tubes on chairs with gas spring to ensure that the chair can be easily raised and lowered. Follow these steps:

- Raise the chair to its top position.
- Clean inner tube/gas spring with a degreaser.
- Apply lubricant (e.g. HHS2000) in an even layer to all surfaces of the inner tube/gas spring.
- When the chair is subsequently raised and lowered, the lubricant will be distributed to the outer tube.

Chairs with electric lift are lubricated on the inside by the factory and should not be wiped or lubricated during the life of the chair.

### 3.2.3 WIRES

Check all wires and plugs for damage and loose connections and replace damaged or defective components. Please refer to the spare parts drawing (available at [www.vela.eu](http://www.vela.eu)) for a wiring chart of your model.

### 3.2.4 SEAT MECHANISM

The seat mechanism is located under the seat and controls the seat-tilt feature. The release levers are also mounted on this plate.

Inspect the seat mechanism for excessive wear and tear as well as any noise during use. Noise in itself is not dangerous but may indicate that something else needs attention.

Moving parts should be lubricated, except for clutch plates (see **section 3.5.4**). Clutch plates should be cleaned of grease and dust and gently lubricated at one end to prevent noise during use. It is important to only lubricate one end, otherwise, the clutch plate may lose function. After applying, check that the lubricant does not run down to the opposite end.

Loose screws must be identified and tightened.

Note: Do not tighten nuts described in **section 3.5.4** unless experiencing seat or backrest angle sliding, even when the release lever is not activated.

### 3.2.5 SEAT AND BACKREST

Check seat and backrest for worn upholstery. If there is a hole in the upholstery, it is recommended to replace the entire seat or backrest.

Make sure the seat is firmly secured by tilting it, rocking from side to side, and back and forth. If the seat seems loose, it is important to check and tighten the screws that secure the seat.

### 3.2.6 ARMREST

Check the condition of the armrest padding and replace it if there are cracks.

Check that all welds are intact and that hand screws are sufficiently tight so that the armrest is secure and stable.

### 3.2.7 ACCESSORIES

Check that the accessories are in proper condition and securely mounted on the chair.

### 3.3 TROUBLESHOOTING CHAIRS WITH ELECTRIC LIFT

The wiring for VELA/VELA Medical chairs with electric lift can be found on the spare parts drawing, which is available on our website: [www.vela.eu](http://www.vela.eu)

#### 3.3.1 INSPECTION OF CHARGER AND BATTERIES

**Inspection of the charger:**

*There is no light in the LED indicator when the charger is plugged into a powered outlet.* The charger needs to be replaced.

*There is a green light in the LED indicator when the charger is plugged into a powered outlet.* The charger is working.

*The LED indicator only lights up green when the charger is plugged into a powered outlet, and the charging plug is inserted into the chair.* The batteries are not detected. Check the wires and fuse (see section 3.3.2). If no faults are found in the wires or fuse, the batteries need to be replaced.

*The LED indicator turns orange and after a few seconds turns green again.* The charger has detected the batteries. However, the voltage of the batteries is too low. The batteries need to be replaced.

*The LED indicator remains orange.*

The charging process is ongoing, and the batteries and charger are okay. Continue charging until the charger turns off, and the LED indicator turns green (this can take up to six hours).

**Daily charging is recommended.**

Daily charging extends the battery life and ensures sufficient power for everyday use (we recommend charging the chair overnight).

**Note:** The chair should not be used during charging.

#### 3.3.2 ELECTRICAL FUNCTIONS DO NOT WORK

**Check if the switches on the armrest/hand control are defective.** Test with another armrest pad/hand control.

**Does the relay not click when pressing the switch? (Not applicable for chairs with soft start/stop).**

Check if the fuse has blown. The location of the fuse

is shown on the spare parts diagram for the specific model..

**Has the fuse blown?** Replace the fuse and check all wires thoroughly. Then check the chair's electrical functions, such as up, down, and charging.

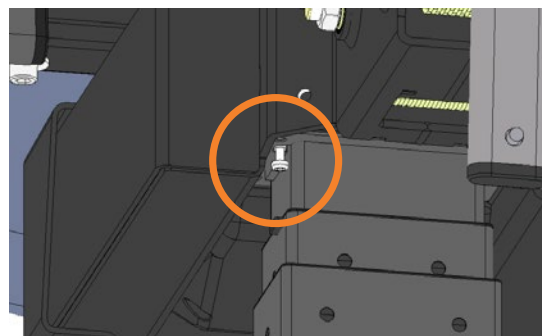
**Has the fuse not blown?** Check the battery voltage - it should be  $\geq 24V$ . Check the chair's batteries and charger (see section 3.3.1).

If the battery charges correctly (see section 3.3.1), charge until the LED indicator turns green, preferably for a longer period, such as overnight. If the batteries do not charge correctly, check that all wires are connected as indicated in the spare parts diagram.

If the batteries still do not charge correctly, contact VELA/VELA Medical.

#### 3.3.3 ELECTRIC LIFT CAN MOVE UP BUT NOT DOWN

Activate the end switch for the downward lift function (not applicable for chairs with soft start/stop): Press the adjusting screw down a few times. The adjusting screw is a galvanized screw with a star head. It is located close to the column, near the underside of the bearing plate. See picture:



#### 3.3.4 ELECTRIC LIFT CAN MOVE DOWN BUT NOT UP

Check that the chair's battery charges correctly (see section 3.1.1). Check the voltage across the batteries. The voltage should be  $\geq 24V$  on a fully charged battery. If the voltage is  $\leq 24V$ , the batteries need to be replaced.

If this does not solve the problem, replace the actuator or contact VELA/VELA Medical.

### 3.3.5 CHAIRS WITH SOFT START/STOP CANNOT BE MOVED UP

Perform a reset of the actuator. Hold both buttons (up and down) simultaneously for 20 seconds. Keep holding the buttons until the actuator has fully retracted and then moved approximately 5 mm up again.

If this does not solve the problem, replace the actuator or contact VELA/VELA Medical.

## 3.4 REPLACING COMPONENTS

Regular service and maintenance may require parts of the chair to be disassembled to inspect individual components and provide access to other components, and to replace spare parts. Detailed assembly instructions with text and images are available on [www.vela.eu](http://www.vela.eu), where they are divided into model-specific instructions, which include both standard configurations and accessories. Some instructions also include video tutorials.

### 3.4.1 RECOMMENDED TOOLS

Only a small number of tools are required to disassemble a VELA/VELA Medical chair. As a minimum, it is recommended to always have the following tools available in the toolbox:

- Allen key sizes 4, 5, and 6
- Small, flat-bladed screwdriver
- Philips screwdriver
- Shifting spanner up to 24 mm
- Fibre hammer/rubber hammer
- Lubricant, e.g. HSS2000

Several of the screws on VELA/VELA Medical chairs are fitted with locking glue from the factory to provide optimum safety for use. Therefore, only use original screws when replacing components to preserve locking glue in the intended locations.

## 3.5 ADJUSTING COMPONENTS

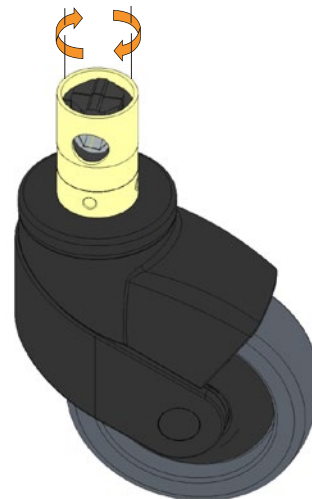
**REMEMBER:** VELA/VELA Medical chairs are medical devices and the chair is customised for the individual user. Pay special attention to the position settings of various parts, such as the armrests, before carrying out any work on them.

An occupational therapist may have decided on a precise setting for the user, so settings should always be set as they were before maintenance.

### 3.5.1 ADJUSTING BRAKE PRESSURE ON CASTORS

The brake function works by clamping the wheel thread, so it may be necessary to adjust the brake pressure on a worn castor as follows:

- Remove the castor (see mounting instructions on [www.vela.eu](http://www.vela.eu)).
- Tighten the inner plastic part of the castor a half or a full turn with a shifting spanner (see image below)
- Remount the castor.



### 3.5.2 INTERVAL ADJUSTMENT

(Does not apply to VELA Tango 300/310)

As part of the customisation, VELA/VELA Medical chairs can be adjusted in height beyond the range of the gas spring and actuator. This may be necessary if the user of the chair grows taller, or if the chair is to be reused by another user. In this way, the seat height of the chair may be increased or decreased further.

Interval adjustment instructions for each chair model (including illustrations and procedure) are available on our website: [www.vela.eu](http://www.vela.eu)



### 3.5.3 ADJUSTING ARMREST AND OTHER FUNCTIONS

Several of the chair adjustment options are made with hand screws so the user can set the function without using tools.

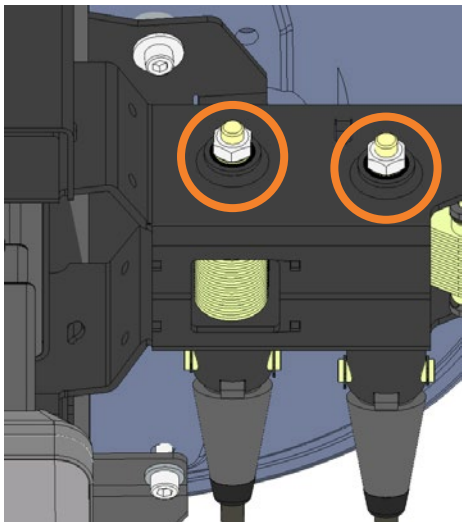
If the user is unable to perform such adjustments, the hand screws can be replaced with screws and nuts with common metric threads. However, be sure to use the right sizes and lengths.

### 3.5.4 ADJUSTING CLUTCH PLATES

(Does not apply to VELA Tango 300/310)

The seat and back angles are generally adjusted by clutch plates, which consist of a stack of thin plates that fix the angle by means of friction. A spring presses on to the plates and creates friction. This spring can be tightened if any issues are encountered with the seat or back angles, even when the release lever is not activated.

To tighten the clutch plate, tighten the nut as shown in the figure below. Note: if the nut is tightened too much, the angle can no longer be adjusted by activating the release lever. In this case, loosen the nut a little.



The nut may be hidden behind a plug which can be removed by hand or with gentle use of a flat-headed screwdriver.

### 3.6 EMC DETAILS FOR CHAIRS WITH ELECTRIC LIFT

Chairs with electric seat lift have been tested to ensure compliance with current electromagnetic compatibility (EMC) requirements. The details are available here.

CISPR 11:2019+A1:2010, Class B up to 30MHz (conducted)

CISPR 11:2019+A1:2010, Class B up to 1 GHz (radiated)

CISPR 32:2015, Class B from 1GHz up to 6GHz (radiated)

IEC 61000-3-3:2013 Voltage changes, voltage fluctuations and flicker

#### Immunity:

IEC 61000-4-2:2008: ESD immunity:

Contact Discharge:  $\pm 8$  kV Air Discharge:  $\pm 2$ ,  $\pm 4$ ,  $\pm 8$ ,  $\pm 15$  kV

IEC 61000-4-3:2006+A1:2007+A2:20110: RF immunity:

80MHz to 2.7GHz test level 10V/m, 80% AM at 1kHz.

Frequencies from 80 MHz to 5.8 GHz evaluated according to the table below:

Service	Band (MHz)	Distance	Test level
TERA 400	380 – 390 MHz	0,3 m	27 V/m
GMRS 460	430 – 470 MHz	0,3 m	28 V/m
LTE bånd 13.17	704 – 787 MHz	0,3 m	9 V/m
GSM 800/900	800 – 960 MHz	0,3 m	28 V/m
GSM 1800:	1700 – 1990 MHz	0,3 m	28 V/m
Bluetooth:	2400 – 2570 MHz	0,3 m	28 V/m
WLAN:	5100 – 5800 MHz	0,3 m	9 V/m

IEC61000-4-4:2012: Electrical fast transient and burst immunity:

Power Port:  $\pm 1$  kV

Signal Port:  $\pm 2$  kV

IEC 61000-4-5:2006: Surge immunity

Power Port (Line to Line): 0.5 kV, 1 kV

Power Port (Line to Earth and Neutral to Earth): 0.5 kV, 1 kV, 2 kV

IEC 61000-4-6:2013: Immunity to Conducted disturbances induces by RF fields:

Range: 150kHz to 80MHz, Outside ISM band: 80% AM at 1kHz, 3 VRMS

ISM band: 80% AM at 1kHz, 6 VRMS

IEC 61000-4-8:2009: Power frequency magnetic field immunity: 30 A/m, 50/60Hz

IEC 61000-4-11:2004: Immunity to voltage dips, variations, and short interruptions:

#### Voltage dips:

0 % UT (100 % dip in UT) for 0.5 cycle at 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°

0 % UT 1 cycle, and 70% UT 25 cycles (at 50Hz) / 70% UT 30 cycles (at 60Hz)

#### Voltage interruptions:

0% UT 250 period for 50Hz 300 period for 60Hz



