

## TECHNICAL DESCRIPTION



ELECTRIC/ELECTROMEDICAL CHAIR  
WITH MOVING PARTS AND LIFTER

## ONDA MODEL



OBLIGATORY

READ THIS DOCUMENT BEFORE INSTALLATION AND USE OF THE CHAIR FOR ITS  
SAFE AND APPROPRIATE USE.

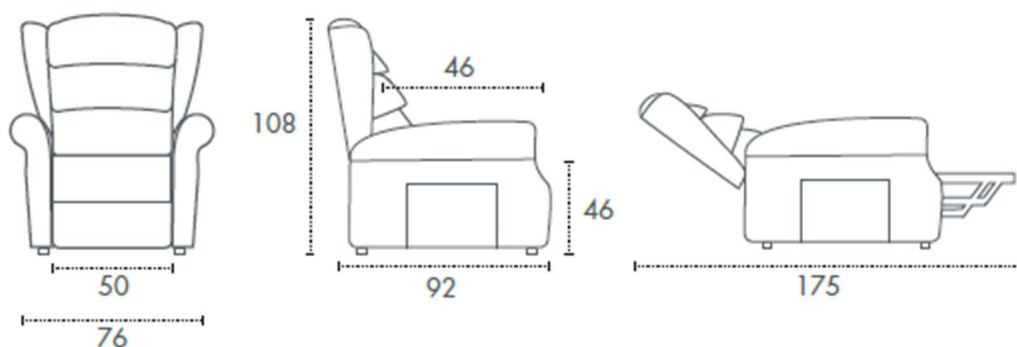
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## 1. Significant physical and performance characteristics

Below are the features of the model.

### 1.1. Dimensions, chair weight and maximum user weight



Chair weight 56 kg

Max user weight 100 kg

Maximum total weight 150 kg

### 1.2. Mechanical data

Material Structure and mechanism	Made of powder-coated steel
Material : Armchair frame	wood
Standard rear wheels (diameter)	35 mm pivoting
Roller-system wheels (diameter)	48 mm (front), 38 mm (rear) pivoting
Front frame supports	Rubber 40mm x 15mm
Front armchair feet	Wood $\phi$ 40 mm
Number of linear actuators	2 independent
Seat angle in normal position (relative to horizontal)	-6°
Height achievable when lifting with the seat horizontally	8 cm in front, 16.5 cm in back
Seat angle in lift position (relative to horizontal)	+17°
Minimum backrest angle (relative to the seat)	80°
Maximum backrest angle (relative to the seat)	108°, 132° (cardiorelax)
Minimum footboard angle to seat (closed)	96th
Maximum footboard angle to seat (extended)	0°
Maximum footboard angle with respect to horizontal (cardiorelax)	-9°
time taken by the backrest per max excursion;	Approx. 17s
time taken by the footboard per max excursion;	Approx. 13s
time taken by the armchair to stand up with the horizontal seat	Approx. 5s
Time taken by the chair to rise and lean forward at its maximum range in the lift position:	Approx. 20s

### 1.3. Electrical data

Input Voltage	230 V AC
Frequency	50/60 Hz
Power supply output voltage	29V DC

	Current Rating	1.3A
	Length of power supply cable	3.1m
	Rated Power:	1900 VA
	Internal power supply unit	38W
	Insulation class	Class II (protection against direct and indirect contact)
	Power supply protection class	IP20
	Installation Environment	Home Residential Interior
	Supply Voltage and Power Actuators	29v DC, 75W
	Maximum continuous operating time of each of the electric actuators / minimum cooling time	2 min. ON / 18 min. OFF
	Wired control panel	4 keys
<b>1.4. Applied parts</b>	Classification of applied parts ( <i>seat, seat, footboard, armrest, handle, pedal roller-system</i> lifting mechanism)	type B (degree of protection against direct and indirect contact)
<b>1.5. Coatings</b>	Water-repellent and stain-resistant fabric	See specification
	Hypoallergenic fabric	
	Biological Evaluation	EN ISO 10993
<b>1.6. padding</b>	material	non-deformable polyurethane foam with dacron layer
	Backrest	23 Kg/m <sup>3</sup>
	Footboard	21 Kg/m <sup>3</sup>
	Sitting	35 Kg/m <sup>3</sup>
	Armrests	30 Kg/m <sup>3</sup>
<b>1.7. Electromagnetic data</b>	RF EMISSIONS (CISPR 11)	GROUP 1, CLASS B
<b>1.8. Environmental data</b>	Operating conditions	
	<i>Temperature</i>	10°C÷40°C
	<i>Humidity</i>	30%÷75%
	<i>Atmospheric pressure</i>	795hPa÷1060hPa
	<i>Altitude</i>	2000m a.s.l.
	Storage Conditions	
	<i>Temperature</i>	-10°C÷50°C
	<i>Humidity</i>	20%÷90% (anti-condensation)
	<i>Atmospheric pressure</i>	795hPa ÷1060hPa
	Conditions of carriage	
	<i>Temperature</i>	-10°C÷50°C
	<i>Humidity</i>	20%÷90% (anti-condensation)
	<i>Atmospheric pressure</i>	795hPa ÷1060hPa

## 2. Variants and fixings

Below are the main variants due to the mechanics and accessories of the armchairs. In the technical description document (which can be downloaded from the Spazio Relax S.P.A. website by framing the QR code on the second page of the manual with your smartphone), you will find variants and accessories specific to the model purchased.

### 2.1 Mechanics with one motor



Backrest and footboard move in synchronised fashion. The movement of the footboard is anticipated, and it is raised before the backrest is lowered, thus allowing the comfortable position for the TV. This mechanism has the lift-up movement that allows people with mobility difficulties to easily assume an upright position. In the first phase of the lift, the chair can assume the raised position of 10 cm with the seat horizontal.

## 2.2 Mechanics with two motors



The two linear actuators supplied are intended for the independent operation of the backrest one, and of the footboard the other, both equipped with forward and return limit switches with integrated safety switch-off. The footboard actuator is entrusted with the lift movement, which allows the chair to rise and tilt forward with the user on top. In the first phase of the lift, the chair can assume the raised position of 10 cm with the seat horizontal.

## 2.3 Mechanics with two cardiorelax motors



The cardiorelax mechanic is a two-motor mechanism that, in addition to its functions, allows the user to assume an anti-shock position, i.e. the supine and obliquely inclined position so that the head is lower than the feet.

## 2.4 Roller System



The Roller System is an accessory that is used to make the armchair mobile on castors. Operated by means of a foot lever located at the back of the chair, it lifts it onto a frame equipped with 4 independent wheels.

The roller system is used to allow an easy movement of the armchair from one room to another on stable and non-yielding flat floors, free of obstacles. Thanks to the pivoting wheels, it allows both linear movements and the total rotation of the chair.

The roller system is designed and built to be used with the chair unloaded. It should not be used with the user occupying the chair.

## 2.5 Handle



Practical and solid steel handle, useful for moving and moving the armchair.

Arranged on the back of the backrest, it is used to push and rotate the armchair equipped with the Roller system, avoiding handling the armchair from the upholstery fabric.

## 2.6 Pull-out armrests



With the "PULL-OUT ARMREST" version, it is possible to use the armchair under a normal dining table or, alternatively, insert the coffee table accessory if necessary.

## 2.7 Small table



With the "PULL-OUT ARMREST" version, it is possible to use the armchair under a normal dining table or, alternatively, insert the coffee table accessory if necessary.

## 2.8 Armchair covers



Auxiliary, removable and washable covers, which protect the armchair in the most worn parts.

The protective covers have been designed to ensure that the most prone areas of the armchair are protected from wear and dirt.

There is a cover for the backrest, one for the seat and one for the armrests that conform to the components, making their presence imperceptible.

### 3. ELECTROMAGNETIC COMPATIBILITY

#### 3.1 ELECTROMAGNETIC EMISSIONS - GUIDELINES AND MANUFACTURER'S DECLARATION

The device is intended for use in the electromagnetic environment specified below.

The customer or user of the device must ensure that it is used in such an environment.

Emissions test	Conformity	Electromagnetic Environment - Guide
Radiated RF (radio frequency energy) emission CISPR 11	Group 1	The device uses radio frequency energy only for its internal function.  The armchair is suitable for use in any residential building and those directly connected to the low-voltage public power supply that supplies domestic environments.
Radiated RF (radio frequency energy) emission CISPR 11	Class B	Therefore, its emissions are very low and cannot cause any interference in nearby electronic equipment.
Harmonic emissions IEC 61000-3-2	All values were found to be below the established limits. The emission meets the specifications of the applicable standard	
Voltage fluctuations/flicker IEC 61000-3-3	All values were found to be below the established limits. The maximum relative voltage variation at the terminals of the EUT meets the specifications of the applicable standard	


#### 3.2 ELECTROMAGNETIC IMMUNITY - GUIDELINES AND MANUFACTURER'S DECLARATION

The device is intended for use in the electromagnetic environment specified below.

The customer or user of the device must ensure that it is used in such an environment.

Immunity Test	IEC 60601 Test Level	Level of Compliance	Electromagnetic Environment – Guidelines
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV in air	±8 kV contact ±15 kV in air	Floors should be made of wood, concrete or ceramic tiles. If the floors are covered with synthetic material, the relative humidity must be at least 30%
Fast Transients/Bursts IEC 61000-4-4	±2 kV for electric current ±1 kV for Input/Output	±2 kV for electric current	

Immunity Test	IEC 60601 Test Level	Level of Compliance	Electromagnetic Environment – Guidelines
<b>Overvoltage IEC 61000-4-5</b>	Differential Mode ±1 kV ±2 kV common mode	Smooth operation during and after the test and without degradation or loss of performance and complied with the applicable susceptibility criterion	
<b>Power drops, brief interruptions, and changes in Voltage on power input networks 61000-4-11</b>	<5% UT (>95% drop in UT) for 0.5 cycle  40% UT (60% drop in UT) for 5 cycles  70% UT (30% drop in UT) for 25 cycles  <5% UT (>95% drop in UT) for 5 sec.	It works with 30 and 60% voltage dips and shuts down with 100% dips. Complied with the applicable susceptibility criterion	
<b>Power Frequency (Range 50/60 Hz IEC 61000-4-8</b>	3 A/m	Smooth operation during and after the test and without degradation or loss of performance and complied with the applicable susceptibility criterion	Magnetic fields at power frequency should be at levels no higher than those of locations located in typical heavy industrial applications, power plants, and high-voltage substation control rooms.
<b>Note: UT is the mains alternating current before the test level is applied.</b>			
<b>RF Conducted IEC 61000-4-6</b>	3 Vrms 150 kHz to 80 MHz outside the ISM bands <sup>(a)</sup>  10 Vrms  150 kHz to 80 MHz within the ISM bands <sup>(a)</sup>	Smooth operation during and after the test and without degradation or loss of performance and complied with the applicable susceptibility criterion	Do not use portable and mobile radio frequency communication equipment in the vicinity of any part of the chair, including cables, except at the recommended distance, calculated from the equation Applicable to transmitter frequency.
<b>Radiated RF IEC 61000-4-3</b>	10 V/m 80 MHz to 2.5 GHz	Smooth operation during and after the test and without degradation or loss of performance and complied with the applicable susceptibility criterion	Separation Distance Recommended: d = 1.2 √P from 80 MHz to 800 MHz d = 2.3√P 800 MHz to 2.5 GHz where P is the maximum output power range of the transmitter in watts (W) according to the transmitter manufacturer's data and d is the recommended distance in meters <sup>(b)</sup> The field strengths of fixed radio frequency transmitters, as determined by an

Immunity Test	IEC 60601 Test Level	Level of Compliance	Electromagnetic Environment – Guidelines
			electromagnetic site survey <sup>(c)</sup> , should be less than the compliance level in each frequency range <sup>(d)</sup> . In the vicinity of appliances marked with this symbol  Interference may occur.

NOTE 1: At 80 MHz and 800 MHz, the upper frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects, and people.

<sup>(a)</sup> The ISM (industrial, scientific and medical) bands between 150 kHz and 80 MHz are 6.765 MHz to 6.795 MHz; 13.553 MHz to 13.567 MHz; 26.957 MHz to 27.283 MHz; and 40.66 to 40.70 MHz.

<sup>(b)</sup> Compliance levels in the ISM bands between 150 kHz and 80 MHz and 80 MHz and 2.5 GHz are designed to decrease the possibility of interference in the event that portable and mobile communications equipment is inadvertently approached the patient's area. For this reason, an extra factor of 10/3 is used when calculating the recommended separation distance for transmitters operating in these frequency ranges.

<sup>(c)</sup> It is not possible to predict the field strengths of fixed transmitters, such as base stations for radio telephones (cellular/cordless) and mobile radios, amateur radios, AM and FM broadcasts, and TV, with certainty.

To measure the electromagnetic environment resulting from fixed RF transmitters, it is necessary to consider the possibility of conducting a specific on-site inspection. If the field power measured at the location where the chair is used exceeds the specific RF compliance level above, the chair should be monitored for proper operation. If a malfunction is detected, additional measures such as reorienting or repositioning the chair may need to be taken.

<sup>(d)</sup> Above the frequency range between 150 kHz and 80 MHz, the field powers shall be less than 1 V/m.

### 3.3 Recommended separation distances:

The device is suitable for use in an electromagnetic environment where radiated RF disturbances are controlled. The customer or user of the device can help avoid electromagnetic interference by maintaining a minimum distance between the mobile and portable RF transmitting equipment and the device as recommended below, in accordance with the maximum Output Power of the transmitter.

Maximum nameplate power of transmitter ( W)	Separation distance according to transmitter frequency (m)		
	150 kHz to 80MHz d = 1.2√P	80 MHz to 800 MHz d = 1.2√P	800 MHz to 2.7 GHz d = 2.3√P
0,01	0,12	0,12	0,23
0,1	0,38	0,38	0,73
1	1,2	1,2	2,3
10	3,8	3,8	7,3
100	12	12	23

For transmitters whose maximum nameplate power is not shown in the list above, the recommended separation distance "d" in meters (m) can be calculated using the transmitter frequency equation, where P is the maximum nameplate output power of the transmitter in watts (W), according to the transmitter manufacturer.