




Dental Simulator Stand Alone

USER GUIDE & SERVICE MANUAL

CONTENTS

SYMBOLS USED IN THE MANUAL AND IN THE PRODUCT..... 02
 TRANSPORTATION..... 02
 GENERAL INFORMATION..... 02
 INTRODUCTION..... 03
 SAFETY 03
 SAFETY INSTRUCTION..... 03
 PRODUCT SAFETY INSTRUCTION..... 03
 RATING PLATE 04
 TECHNICAL DATA..... 04
 FOOTSWITCH..... 04
 PRODUCT DESCRIPTION..... 05
 FIRST USE..... 06
 POSITION THE DENTAL SIMULATOR..... 06
 CONVERTING RIGHT/LEFT handers..... 07
 PLACE IN TREATMENT POSITION..... 08
 CONTROLS..... 08
 USE FOOT SWITCH..... 08
 ACCESSORIES..... 08
 SERVICE & MAINTAINANCE..... 09
 CLEANING..... 10
 STORAGE CONDITION..... 10
 REPAIRS..... 10
 WARRANTY..... 10
 RAEE WARNING..... 11
 ACCESSORIES..... 11

SYMBOLS USED IN THE MANUAL AND IN THE PRODUCT

-  Follow instructions for use
-  Prohibition (this icon identifies what to prevent doing not to cause damage to the device)
-  Warning (this symbol warns to be very careful in order to avoid any situation that could cause damage to the device)
-  RAEE symbol
-  CE mark (Communauté Européenne).
A product with this mark meets the requirements of the corresponding EU Directive, i.e. the applicable European standard.

TRANSPORTATION

The manufacturer is not liable for damage arising from transportation. Immediately inspect the delivery after receipt!

If external damage to the packaging is visible upon delivery, follow the procedure below:

1. The recipient must record the loss or damage in the notice of delivery. The recipient and employee of the transportation firm must sign the notice of delivery. The recipient can only assert damages against the transportation company based on these records.
2. Leave the product and packaging unchanged.
3. Do not use the product.

If the product is damaged and there is no discernable damage to the packaging upon delivery, proceed as follows:

1. Report the damage immediately or at least 7 days after the delivery to the delivery company.
2. Leave the product and packaging

GENERAL INFORMATION

The user must ensure that that the device works properly and is in a satisfactory condition before each use.

During use, national legal regulations must be observed, in particular:

- the applicable health and safety regulations.
- the applicable accident prevention regulations.

Follow the general guidelines and/or national laws, national regulations and the rules of technology for this product applicable for startup and use of the product for the intended purpose.

The waste that arises must be recycled or disposed of in a manner safe for humans and the environment. Observe the applicable national regulations.

Please direct all questions regarding the proper disposal to the manufacturer.

It's not permitted to use this product in areas subject to explosion hazard.

Authorised to repair and service on the product must be made by :

- Technicians from Ritter branches who are trained to deal with the product.
- the technicians of the Ritter's franchised dealers specifically trained by Ritter.

INTRODUCTION

SIMULATOR is used for the training and vocational training of dentistry students at universities and for advanced dentist training at advanced training institutes, clinics and universities.

! WARNING
Injuries or damage caused by use not compliant with intended purpose.

Risk of injury and danger to material and unit. Do not treat patients with the dental simulation unit!

Operating the dentail simulation unit in accordance with its intended purpose is possible if the conditions of IEC 1010, 1.4 are met.

This product is licensed for indoor use only.

SAFETY

Description of safety instructions

Warning symbol

! Warning symbol

danger levels

Safety instructions with three hazard levels are used in this document for avoiding personal and property damage.

! CAUTION
 indicates a hazardous situation that can lead to property damage or minor to moderate injury.

! WARNING
 indicates a hazardous situation that can lead to serious injury or death.

! DANGER
 indicates a maximum hazardous situation that can directly cause serious injury or death

PRODUCT SAFETY INSTRUCTION

! WARNING
Injury or damage from damaged functional parts.
When functional parts are damaged, it can cause additional damage or personal injury.

- When operating parts are damaged: Stop working and eliminate the damage or notify a service technician.
- Check the electrode lines and accessories for damage to the insulation.

! CAUTION
Injuries or damage caused by use not compliant with intended purpose.

Safety devices provided may be put out of action if the product is not used in accordance with the instructions for use.

- Risk of injury and danger to material and unit.*
- Use the unit only in line with the manufacturer's instructions for use!

! CAUTION
Danger if unit not in proper working order or not being used properly.

Risk of injury and danger to material and unit.

- Use only suitable tools.
- Use the unit properly and in accordance with its intended purpose.
- Operate tools only at the permitted speeds.
- Comply with the servicing regulations.
- Comply with the accident prevention regulations (eye goggles, protective equipment, handpiece holder etc.).
- Remove any traces of wear and tear and damage.

! CAUTION
The pressurised water unit may not be empty.

Device damage
 - Before turning on device, ensure that the pressurised water bottle is filled.

! CAUTION
The wastewater tank of the suction unit may not be full.

No suction is possible when the container is full.
 - Before turning on device, ensure that the container is empty.

! CAUTION
Rotating tools
 Injury hazard

- Use goggles when working with rotating tools.

! CAUTION
Injury from the swing arms.

Crushing or shearing from the swing arm for the dentist element, assistant element and dental patient simulator.
 - Carefully move the swing arm.

RATING PLATE

The rating plate is positioned on the back of the dental simulator unit (see product description).

Type	Dental Simulator
SN	Serial Number

	CE mark
	Follow instructions for use!
	For disposal information, see use in accordance with intended purpose

TECHNICAL DATA

Recommended space requirement for DENTAL SIMULATOR (individual place)

- Width: 1200mm
- Depth: 2000mm
- Height (to place it under bench): 790 mm

General Dimensions:

- Width: 455 mm (tray closed) / 964 mm (tray opened)
- Depth: 706 mm / 1178 mm (phantom horizontal)
- Height : 790 mm (max)
- Weight: 100Kg

Media

- Water quality: Tap water
- Water hardness: 1.5 to 2.14 mmol/l ≈ 8.4 to 12 dH

Connected loads

- Minimum air pressure at customer's: 5 to 7 bar
- Minimum water pressure at customer's: 2 to 3 bar
- Max. water consumption: 0.1 l/min
- Maximum air consumption with internal suction: 150l/min
- Maximum air consumption with external suction: 60l/min

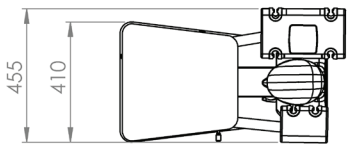
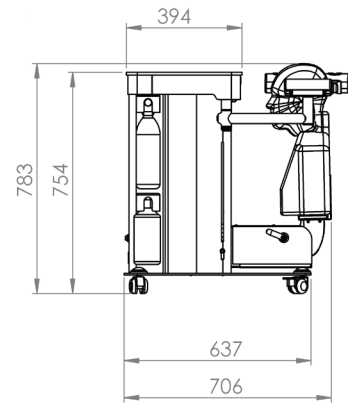
Operating environment

- Ambient temperature: 5 to 40°C
- Relative humidity: 30 to 80%
- Degree of soiling: 2
- Setup site: Maximum 2000m above sea level

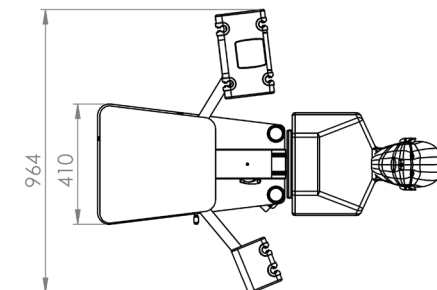
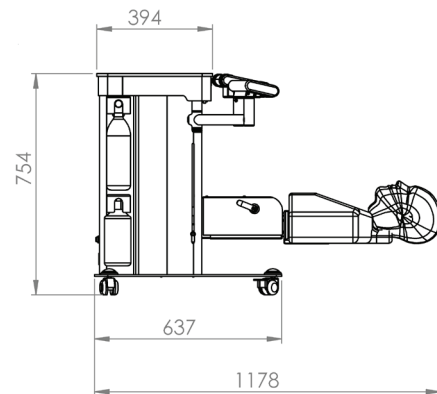
Transportation and storage conditions:

- Ambient temperature: -10 to +50°C
- Relative humidity: 10 to 90%
- Air pressure: 700hPa to 1060 hPa

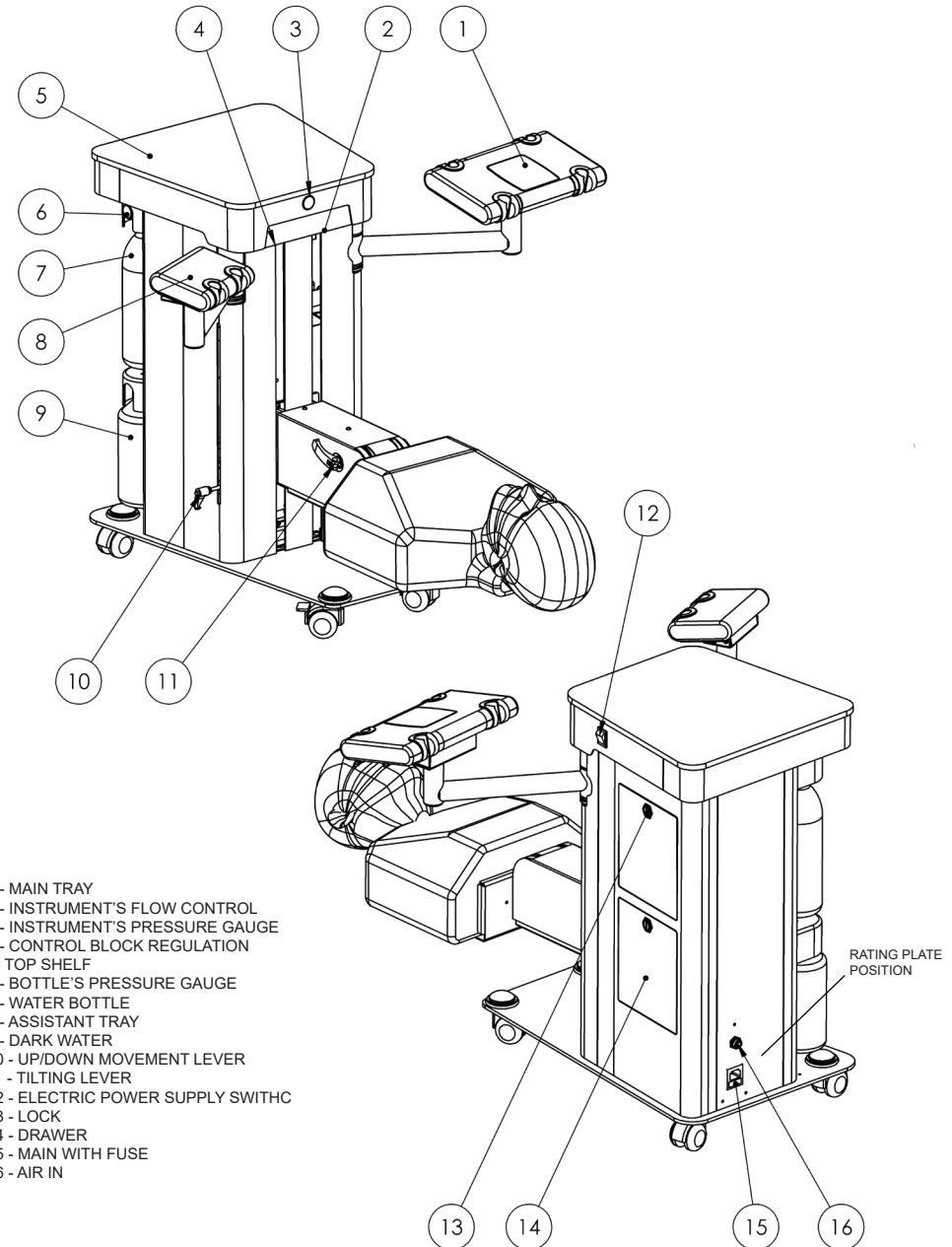
DENTAL SIMULATOR CLOSED



DENTAL SIMULATOR OPENED



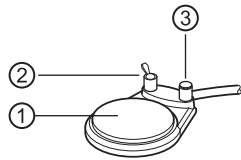
PRODUCT DESCRIPTION



- 1 - MAIN TRAY
- 2 - INSTRUMENT'S FLOW CONTROL
- 3 - INSTRUMENT'S PRESSURE GAUGE
- 4 - CONTROL BLOCK REGULATION
- 5 - TOP SHELF
- 6 - BOTTLE'S PRESSURE GAUGE
- 7 - WATER BOTTLE
- 8 - ASSISTANT TRAY
- 9 - DARK WATER
- 10 - UP/DOWN MOVEMENT LEVER
- 11 - TILTING LEVER
- 12 - ELECTRIC POWER SUPPLY SWITCH
- 13 - LOCK
- 14 - DRAWER
- 15 - MAIN WITH FUSE
- 16 - AIR IN

RATING PLATE POSITION

FOOTSWITCH



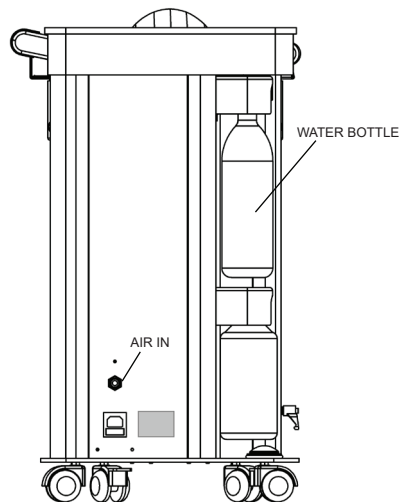
- 1_Footplate gradual speed control
- 2_Spray button
- 3_Chip button (if available)

FIRST USE

Requirement:

The air to be used for the dental simulation unit must be dry, oil-free, non-contaminated and free of pollution. Use a compressor with a dry air system if required.

- Connect the air connection, and regulate pressure
- Fill the bottle indicated in figure with tap water.
- Mount turbines and instruments.

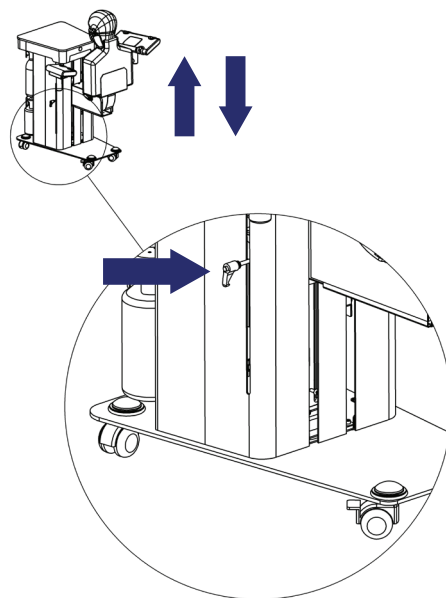
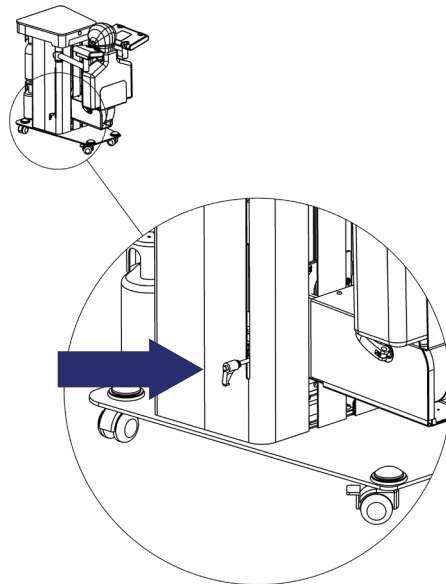


POSITION THE DENTAL PATIENT SIMULATOR

NOTE:
Do not forcefully push down the patient simulator; it can tip over

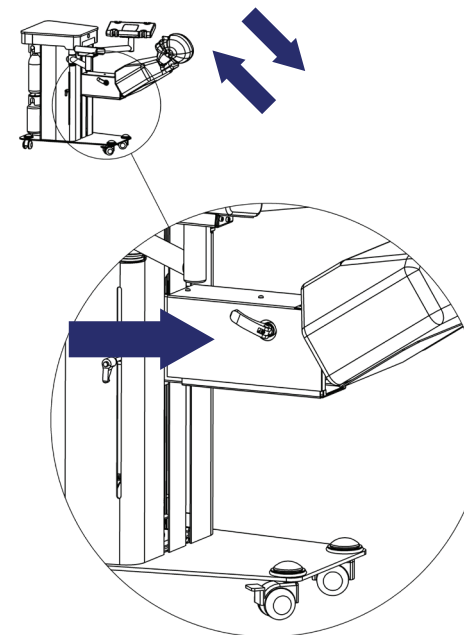
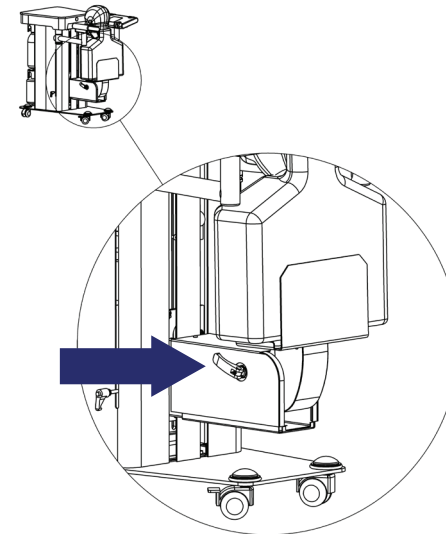
Set the height of patient simulator

Push and turn the handle counter-clockwise, raise the dental patient simulator to the desired point and turn the handle clockwise to lock everything.



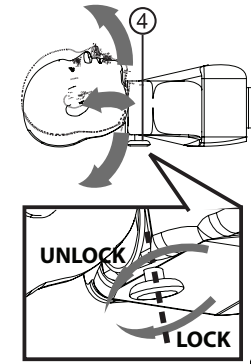
Set horizontal the patient simulator

Turn the handle until it stops, turn the dental patient simulator to the desired position. Release the handle



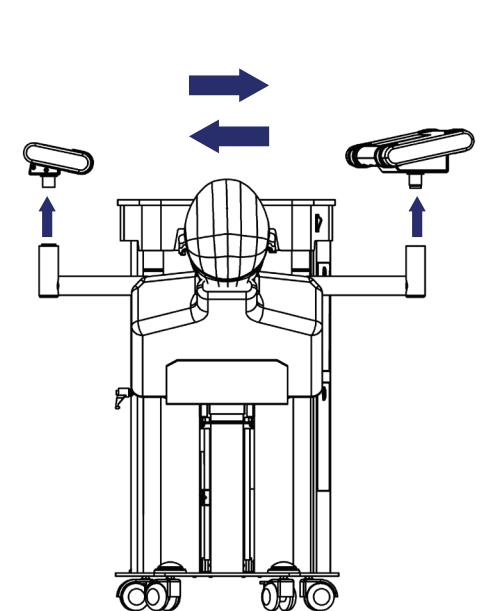
Adjust the inclination of the head of patient simulator

Turn the knob counter-clockwise, adjust the head and turn the knob clockwise to lock everything.



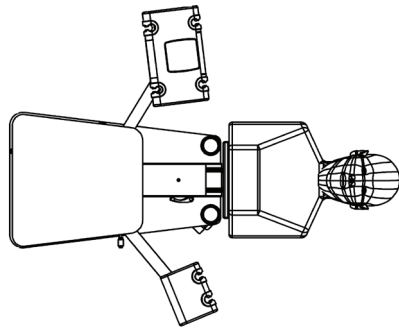
CONVERTING the SIMULATOR for RIGHTS/LEFT handers

- Lift up and off the dentist's element and assistant's element
- Change the dentist's or assistant's unit from left to right or from right to left depending on starting position
- Mount the two units back in position



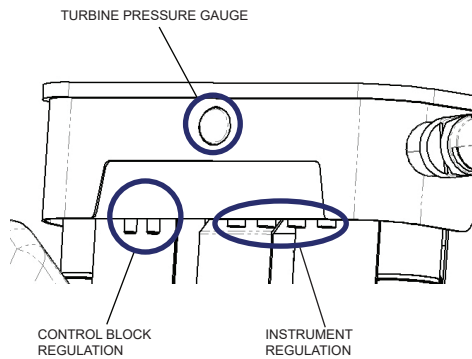
PLACE IN TREATMENT POSITION

Place the dentist's and assistant's unit in treatment position like in the figure below



CONTROLS

It is possible to regulate the working pressure of the instruments by regulating the flow controls and the control block through the knobs indicated in figure.

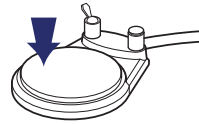


The instruments that is possible to mount on the DENTAL SIMULATOR are:

- 1_Turbine
- 2_Syringe
- 3_Saliva ejector

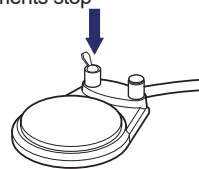
! Only pneumatically-operated instruments can be used with SIMULATOR 01

USE FOOT SWITCH



Using the instrument

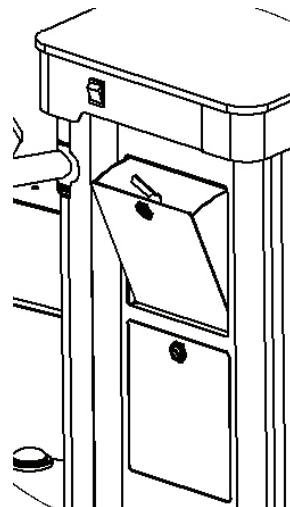
- Press and hold down the footplate. The instruments starts
- Increase pressure. The speed is gradually increased
- Decrease pressure. The speed is gradually decreased
- Release the footplate. The instruments stop



Turn on the spray water

- Hold down the Spray button. The spray water is turned on.
- Hold down the Spray button. The spray water is turned off.

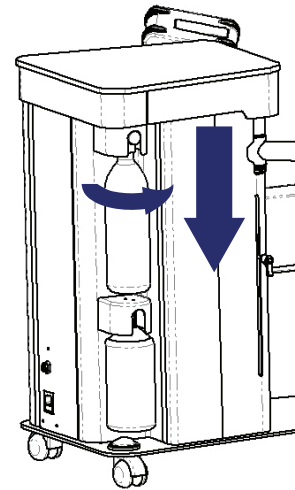
ACCESSORIES



The simulator is provided with 2 drawers to store different elements useful for the study. The drawers are equipped with a lock system with keys.

SERVICE & MAINTAINANCE

Fill the pressurised water system



! **Note**
The unit must not be vented. The air pressure automatically decreases when the bottle is open.

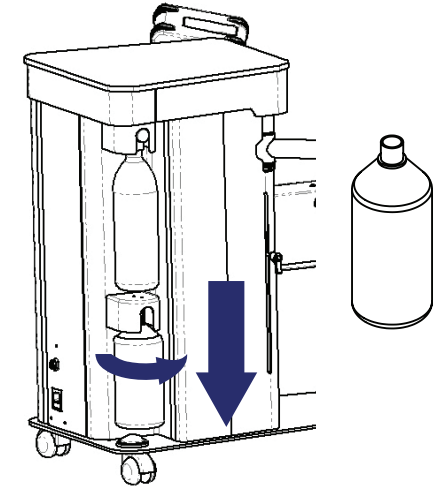
- Screw on the bottle. Hold the bottle connection tight, and turn the bottle clockwise.
- Remove the bottle from the holder and fill it.
- Screw on the bottle. Hold the bottle connection tight, and turn the bottle counter-clockwise. *Pressure automatically builds up.*

! **The bottle is sensitive to heat.**
Material fatigue
-Do not place the bottle in the dish washer or rinse with hot water (above 50 °C)

! **Useful life of the bottle.**
The maximum life is two years
-Do not use the bottle after this period

Properties of water
The following types of water may not be used:
-Tap water, 8-12 dH
-Distilled or demineralised water
-Low-carbon-dioxide-free mineral water

Drain the water tank



! **Daily drain and clean the water tank see in the figure above and clean it.**

- Screw on the bottle. Hold the bottle connection tight, and turn the bottle clockwise.
- Remove the bottle from the holder and drain it.
- Screw on the bottle. Hold the bottle connection tight, and turn the bottle counter-clockwise.

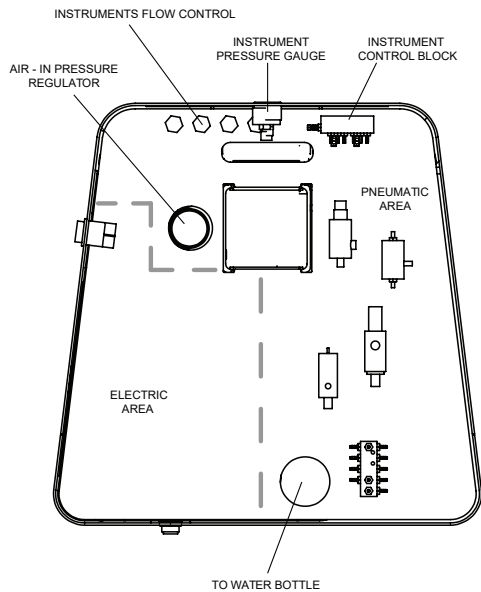
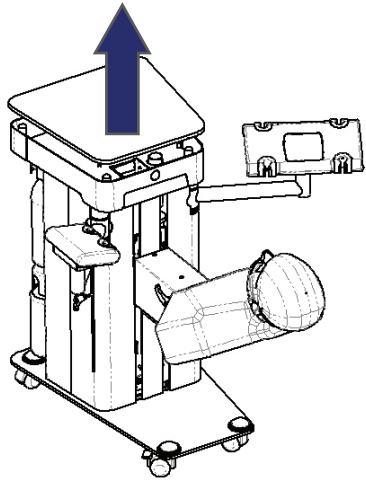
Maintainance annual checklist

An annual (or less if necessary) maintenance of the Dental Simulator is needed to keep the system functioning.

- Lube O-rings in Syringe
- Look for any compressed air leaks in the pneumatic system, repair if necessary
- Look for water leaks inside and around the simulator
- Check and maintain water tubes and hoses
- Inspect water tubings looking for any visible damage that can later evolve in leaks
- Check for loose screws and tighten them

Pneumatic control overview

To have access to the pneumatic control area to make periodic checks and repairs remove the top shelf as indicated in figure and have access to the tubings.



CLEANING

-If dirty, clean the unit on the outside with a damp cloth (Do not use alcohol)

STORAGE CONDITION

Store in a closed, dry and protected place.
Do not expose to heat stress and do not expose out of the following limits:
-Temperature: -10 ° C to 50 ° C
- Relative humidity: 10% to 90%
- Atmospheric pressure: 700 to 1060 hPa.

REPAIRS

The manufacturer is never responsible for repairs carried out by third parties or unauthorized persons. Contact us directly to get the addresses of distributors and authorized technicians.
The manufacturer is responsible, for the purposes of safety, reliability and performance of the equipment only if:
- Assembly operations, extensions, adjustments, modifications or repairs are carried out by authorized personnel;
- The electrical installation of the room complies with the requirements;
- The device is used in accordance with instructions provided.

WARRANTY

The product is covered by warranty for a period of **12 months** from the date of delivery to the end user.

Warranty service must be performed by the manufacturer or via an authorized repairer. Costs and risks of transport are borne by the customer. Warranty repair will be made only if the item to be repaired will be accompanied by invoice.
The warranty covers failure due to bad quality of material or manufacturing defects, in case of a claim founded the warranty will repair or replace free of charge.
There is no possibility of obtaining compensation for damages and / or interests. The guarantee is not valid, at the discretion of Ritter, in case of tampering, damage, improper use, lack of maintenance or normal wear.

RAEE WARNING

Indications about disposal

The European directives 2002/95/CE, 2002/96/CE and 2003/108/CE foresee the dental operating light in the category of electrical and electronic products that should be disposed separately from the municipal waste stream (RAEE).
The disused product shall be disposed separately to optimise the recovery and re-cycle of materials that compose the unit, in order to obtain a significant energy saving and to prevent potential negative consequences for environment and human health.
This crossed-out bin symbol is shown to all products that request to be disposed via designated collection facilities.
The user can hand over the disused dental operating light to his/ her city office or to the designated collection facilities appointed by his/her government or local authorities.
The illegal or inadequate disposal of disused product by the user implies the application of economic and/ or administrative sanctions accordingly to the Law.

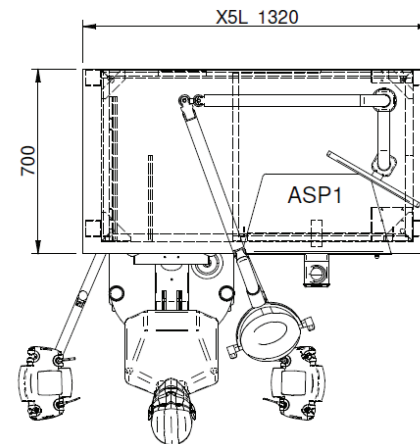
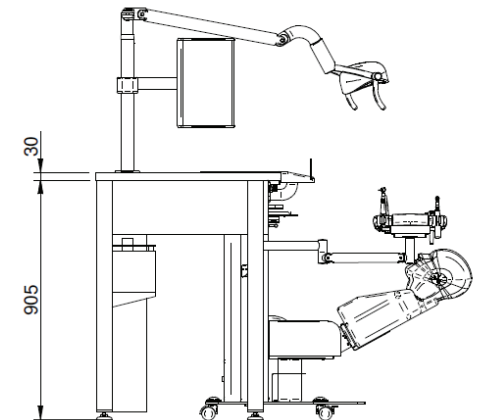
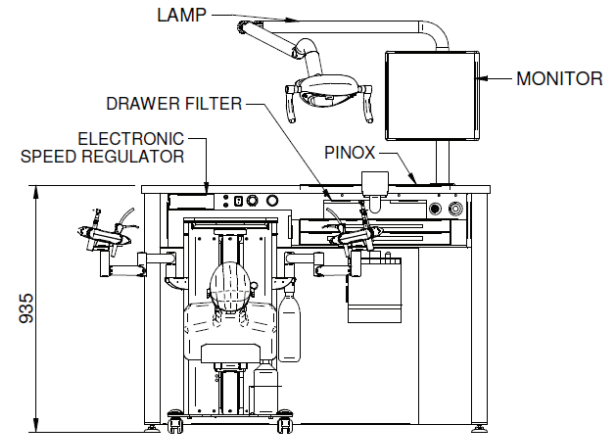


ACCESSORIES

Upper and lower Jaw installation

Simply attach the model to articulator by the magnet plate on the model.













SC1N INV
mirror image
ON SIZE L=1300
without LEFT DRAWER
with space
for Simulation Unit

Dental Simulator with Workbench

DENTAL SIMULATOR - SPARE PARTS LIST

Component	Code	
Needle Flow Control with Knob	V-1515G	
Water Valve	V-1805	
Control Block 2 Instruments	90050016	
1L Water Bottle X-tra heavy duty	P1811 1 L	
1L Clear transparent Water Bottle	P1811/T	
Foot Control Wet / Dry	F1210	
Foot Control replacement toggle	V1550	
Gas Spring	SPRG01	
Phantom Rotation Spring	SPRG02	
Turbine Hose	11150317	
Mini Air-Water regulator	C-1835	
2,5 A Fuse	47040021	

WORK BENCH - SPARE PARTS LIST

Component		Code	
Air nozzle with 1/4" connection for 6x4mm pipe		6528744	
6x4mm blue pipe for air nozzle with connections, per meter		6528745	
Waste plastic insert for drawer under the workplace		6528731	
Long stainless steel handle (distance between holes 320mm)		8212261	
Electronic board with potentiometer for suction system		4810045	
Packet of 10 microfiber filter bags for ASP1/ASPR, 98% filter capacity		FLASP10	
Packet of 5 microfiber filter bags for ASP1/ASPR, 98% filter capacity		FLASP5	
Suction peg with support for ASPG		CASP	
Motor 1200W for ASPG		D000035678	

DENTAL SIMULATOR - OPTIONS

Component	
Pair of upper and lower Jaw	
Kit of teeth	
Face mask with single water drain	
Face mask with double water drain	

We reserve the rights to modify the specifications without prior notice

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