



Instructions for use of TiREX® Retractor System

With this shipment you are receiving a high-quality surgical retractor system. To ensure that the function and safety as well as quality requirements will be maintained for a long period, please follow the instructions for use and also for Cleaning and Sterilization.

Components:

The System consists of **table post** with coupling clamp, **retractor frame**, **retractor clamps**, the individual **retractor hooks/blades** and the **CO₂-Cylinders**.

Table Post: The coupling clamp is from being inadvertently removing of the table post protected by two snap rings.

The table post cannot be further disassembled into individual parts.



After covering the patient with sterile towels, the opening of the table post can be put on the mouth of the table post at the universal rail of the operating table and mount tight – but not too tight - by turning clockwise of the pivot lever located at the top of the post.

If using reusable covers, we recommend for protecting the covers, to put a sterile compress or a sterile abdominal towel between mouth and universal rail. Please check the table post for tight seating!

Afterwards the pivot lever can be insert and countersink into the top of the table post.

Retractor Frame: The retractor frame consists of **the two support arms**, the **fixing arm** with the table post and the **pressure housing** with the cylindrical hand piece (Joystick) for insertion the CO₂-Cylinder. The round hand piece (Joystick) is to close by a **locking cap**, located at the top end.



The Frame cannot be further disassembled into individual parts. Before you insert the Frame with the fixing arm into the coupling clamp of the table post, you should load the CO₂-Cylinder. Therefore you insert the Cylinder into the round opening at the top end of the pressure housing, set the locking cap onto the Cylinder and screw by hand. After tightening the locking cap, both of retractor arms and fixing arm are fixed.

By depressing and holding of both buttons of pressure housing, the retractor arms can be adjusted into the desired position.

The right pushbutton navigates the right arm and the left pushbutton the left arm. When the pushbuttons are released, the arms remain in the desired position.



Squeezing and holding the lever behind the cylindrical hand piece, the fixing arm for insertion into the coupling clamp of the table post can be fixed into the desired position. The retractor arm remains the desired position by releasing the lever.

Insert the fixing arm into the coupling clamp of the table post and fix the retractor frame into the desired position to the patient by tightening the pivoted lever at the coupling clamp.

Be careful that the pressure housing and the retractor arms are not in direct contact with the patient.



The frame arms can be adjusted up to at least 50 times by pressing the buttons and the lever. Afterward it might be noted a slight reduction of the fixation of the retractor arms.

The CO₂-Cylinder is replaceable intra-operative.

To protect the patient, ensure tissue and organs, respectively remove the retractor blades out of the wound and secure the both retractor arms and the pressure housing against unwanted movements.

After finishing operation please remove immediately the CO₂-Cylinder out of the housing. Therefore screw down the locking cap firstly for 2 rotations to the left and wait till the gas is released. After that remove the cylinder and give the retractor with open cylinder receptacle without screwed-on locking cap for cleaning.

Clamps: For attaching the clamps onto the retractor arms, keep the clamps with the half-round mounting device over the retractor arms and push the clamps tightly onto the arm. The backside locking lever must be oriented to the right side, this means in open position. Now the retractor clamps can be moved to and fro or turned back and forth.



After insert the retractor blade shaft into the round opening, the clamps and the retractor blades can be fixed in the desired position by rotating the backside lock lever to the left and pressing the clamp tight – but not too tightly – against the retractor arm.

The retractor blades are always inserted to the side, where the little pushbutton upside of the round opening for the shaft is located.

Always take care for correct and reliable fit of the clamps on the arm and in all movements always ensure wound edges, tissue and organs of the patient

To generate more retraction by the retractor blades, push the blade shaft further backwards into the clamp. For this you don't have to release the locking lever.



To generate less retraction, press the little button at the top of the clamp and pull the retractor blade in the desired position.



Even after pressing the buttons of the pressure housing, the regulation of retraction can be generated by positioning the retractor arms.



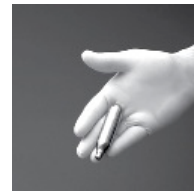
To remove the clamps from the frame, move the locking lever to the left and pull the clamp off the frame. When the clamps are not mounted on the frame, the locking lever has to be always in the open, left position.

Retractor Blades:

Both the selection for size and form and use of retractor blades respectively levers in situ, please note the actual and individual proportion and adjust the leverage and traction to current conditions (ratios and mass of soft-tissue, size of incision, bone conditions etc.). Too high forces can result in a failure of the material and/or can harm the patient.

CO₂-Cylinders:

The Cylinders are refilled with ultrapure CO₂. The Cylinders and the gas filling are specially tailored for operating with this system and meet all requirements of function and safety.



Safety Instructions:

- Never use foreign, other CO₂-Cylinders. This can result in destruction of the special gaskets and valves of systems and constitute a risk for patient safety.
- When using foreign CO₂-Cylinders, the manufacturer's warranty and guarantee expires.
- Store the cylinders at normal room temperature in dry environment.
- Do not expose the cylinders temperatures above 50 °C/122 °F (radiator, inside of vehicle under solar radiation etc.).
- Do not use the cylinders at temperatures below 6 °C/43 °F (possibly condensation water, freezing)
- Do not dispose full and unused cylinders.
- Filled cylinders keep out of the reach of children.
- Do not sterilize the cylinders!

For all questions or complaints please inform immediately your responsible sales manager or dealer or contact us directly!

With best regards,

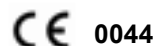
ORION Surgical Vertriebsges. mbH

Exclusively from:

ORION Surgical Vertriebsges. mbH
Albert-Einstein-Ring 21
D-22761 Hamburg



Medical Biomaterial Products GmbH
Lederstraße 7
D-19306 Neustadt-Glewe



Phone +49 (0)40 – 81 99 77 08
Fax +49 (0)40 – 81 95 89 57
E-mail info@orion-surgical.com