

Differential Multi-Compartment Expanders

Mammary expanders with integrated valve, POLYtxt® surface, round or oval base



The Differential Multi-Compartment Expanders expand the breast tissue to the shape individually desired. Their application avoids upper-pole deformities as their maximum point of projection is in the lower half.

Differential Multi-Compartment Expanders, C€ 0483

Advantages

- defined expansion avoiding undesirable deformities
- maximum projection in the lower half of the expanders
- differential, individual expansion

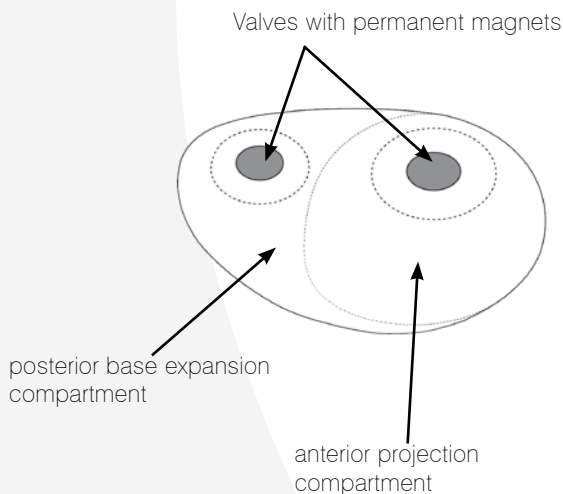
Characteristics

The Differential Multi-Compartment Expanders are optimally designed for breast reconstruction after mastectomy, the correction of hypoplasia and Poland Syndrome.

The expander consists of two separately fillable compartments. The posterior compartment has a round or oval base. The anterior projection compartment is rounded and located in the lower half of the expander.

Each compartment is equipped with an integrated valve. These valves are furnished with a permanent magnet which allows to locate the exact valve position after implantation. The valve (Ø 20mm) consists of a silicone shell holding an inner stainless-steel cylinder. This cylinder acts as puncture barrier and casing for the permanent magnet.

The expander consists of silicone elastomer. The POLYtxt® shell surface is textured (↓ 200–300µm, Ø 100–400µm). A reinforced base increases the stability of the posterior contact area and supports the directional expansion.

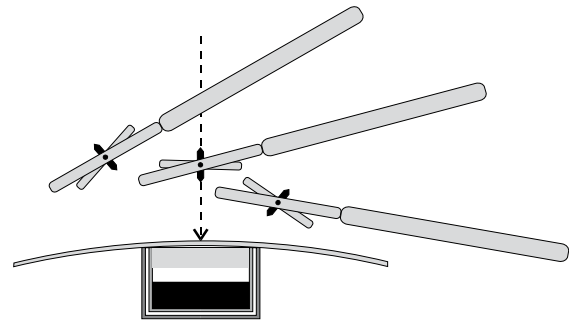


Point of Injection

After implantation a magnet finder allows the localization of the magnet valves. The magnet finder comprises of a frame in which a small magnet is suspended in a cardanic mechanism.



The cardanic suspension allows a precise location of the valves and gives an exact indication of the point of injection. The finder should be held close to the skin and moved from left to right as well as up and down, until the indicator magnet levels off at a vertical position directly above the valve. By pressing the pointed magnet against the skin, the injection point is marked.



valve-locating process

Filling Procedure

A sterile, pyrogen-free, physiological saline solution (0.9%) is injected with a needle no larger than 23 Gauge (i.e. 23 G, 24 G, 25 G, etc.) through the valves. During this process, the air in the compartments has to be extruded. The filling of the compartments and the sequence of expansion depends on the individual anatomical situation.

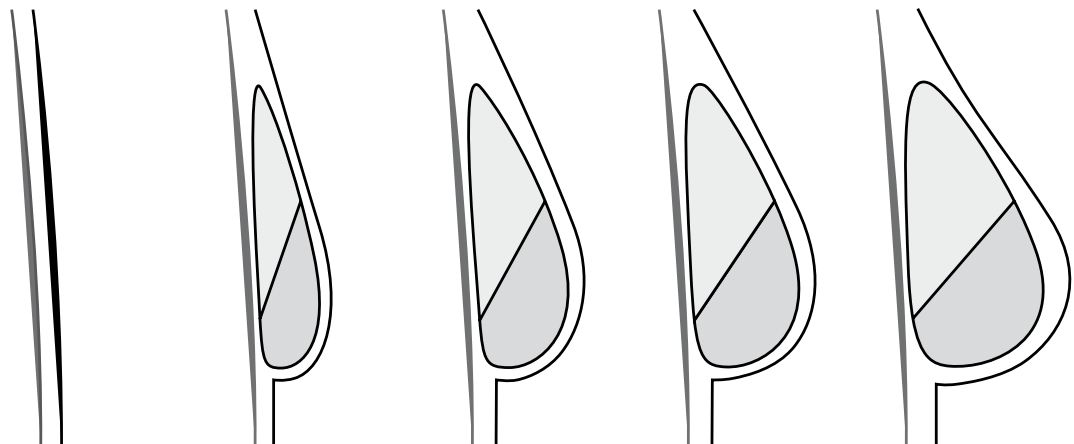
Principles of Differential Expansion

The contours of a reconstructed breast are predominantly determined by the shape of the applied expander. Successful expansion leading to an aesthetic reconstruction is influenced by two parameters:

1. minimal upper-pole deformity, and
2. maximal projection in the lower half of the expander.

Spheric or round expanders are widely used for breast reconstruction. Their maximum point of projection is located in the center of the expansion, which produces an excessive upper-pole deformity in the cranial area. This may result in contralateral operations to achieve symmetry. To avoid this, anatomically shaped expanders were developed, they produce a tissue expansion closer to the desired outcome. The consequent extrapolation initiated by this line of thought was the development of the double-chamber expander: it enables the surgeon to create a directed expansion adapted to the individual needs of the patient.

The differing tissue tension in the breast leads to different degrees of tissue expansion in the various areas. Therefore, the possibility of differential expansion with the POLYTECH Health & Aesthetics state-of-the-art multi-compartment expanders provides for an optimal result. Scientific studies¹⁾ show that double-chamber expanders create the lowest point of maximum projection and the least upper-pole deformity compared to single-chamber expanders. Clinical studies²⁾ have proven the simple handling, the low complication rate and the good results in over 89% of the cases.



directed expansion process

Shapes: Round and Oval

The designs of the POLYTECH Health & Aesthetics Differential Multi-Compartment Expanders differ in dimensions and form. The expander with the oval basis (reference n° 44677) provides a similar projection to the expander with round basis (reference n° 44637) while being longer. This elongated form resulted from the objective to provide even more possibilities for differential expansion, and to obtain an improved aesthetic result from the expansion process, especially in women with a longer chest.

Due to the integration of the projection compartment within the combined shape of our Differential Multi-Compartment Expander, the contour of the tissue during expansion is honed and smooth outlines are created.

Indications

- Temporary skin and tissue expansion
- Reconstruction after mastectomy
- Correction of hypoplasia
- Treatment of Poland Syndrome
- Correction of chest deformities

Literature:

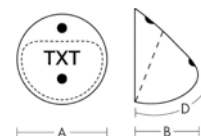
- 1) D. Hammond, L. Perry, P. Maxwell, J. Fisher: Morphologic Analysis of Tissue-Expander Shape Using a Biomechanical Model. Plastic and Reconstructive Surgery 92, n° 2 (1993), p255–259
- 2) K. Brunnert: Clinical Experience with a Double-Chamber Tissue Expander. Breast Surgery and Body Contouring Symposium (1997), p1–5

Differential Multi-Compartment Expanders, C€ 0483

Order n°	Dimensions (mm)			Volume (ml)		
	A	C	B	lower compartment	upper compartment	total

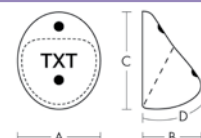
Differential Multi-Compartment Expander – round base, POLYtxt® surface

44637-300	118	118	57	150–170	140–160	290–330
44637-400	128	128	61	200–240	180–200	380–440
44637-500	138	138	65	260–280	230–260	490–540



Differential Multi-Compartment Expander – oval base, POLYtxt® surface

44677-400	118	136	57	200–220	160–180	360–400
44677-500	128	148	61	280–320	200–220	480–540
44677-600	138	160	65	300–340	260–280	560–620



Magnet Finder

20738-012 unsterile



Approximate measurements. Expanders in additional sizes and with remote valve upon request

Product Description

Mammary expanders are used to create additional tissue by expansion. Depending on the indication, mammary expanders are available in different anatomical shapes and volumes. On the inside, all expanders are equipped with a reinforced base to increase the stability of the posterior contact area and to support the directional expansion.

Anatomically shaped mammary expanders, like the Differential Multi-Compartment Expanders, improve the aesthetic result of post-mastectomy breast reconstructions.

Information on Materials

The shells of the Differential Multi-Compartment Expanders consist of a silicone elastomer with POLYtxt® textured surface (pore size of texturing: \downarrow 200–300 μ m, \varnothing 100–400 μ m).

The integrated valves with permanent magnets (\varnothing 20mm) can easily be located with the help of a magnet finder. The cardanic mechanism of the finder's indicator magnet allows to determine the exact position of the valve and the respective direction for an injection. During the expansion process, sterile, pyrogen-free saline solution (0.9%) is injected with a cannula ($\varnothing \leq 23$ G) through the valves. All valves are equipped with a puncture barrier.

Production of the expanders is based on a quality management according to ISO 9001 and ISO 13485. All materials used are of implantable medical quality.

Indications

Temporary skin and tissue expansion for:

- reconstruction after mastectomy
- correction of hypoplasia
- treatment of Poland Syndrome
- correction of chest deformities

Important Information

WARNING: expanders with integrated magnets are not eligible for patients having pace-makers or patients who need an MRI examination during the implantation period.

Custom-made products: expanders with specific dimensions and characteristics can be manufactured on request.

Differential Multi-Compartment Expanders are delivered individually packed and sterile.

One magnet finder is packed with each tissue expander with integrated magnetic valve. Additional magnet finders can be ordered separately. They are delivered individually packed and unsterile.

Attention: Please study the detailed instructions for use included with each product.



POLYTECH Health & Aesthetics GmbH
 Altheimer Str. 32 • 64807 Dieburg • Germany
 ☎ +49 (0) 60 71 98 63 0 • 📠 +49 (0) 60 71 98 63 30
 📧 info@polytechhealth.com • www.polytechhealth.com